# *ANEJO Nº 6. ESTRUCTURAS*

# 4. Cálculos

# *4.3. Viaducto de la Riera de la Rierussa*

# VIADUCTO DE LA RIERA DE LA RIERUSSA

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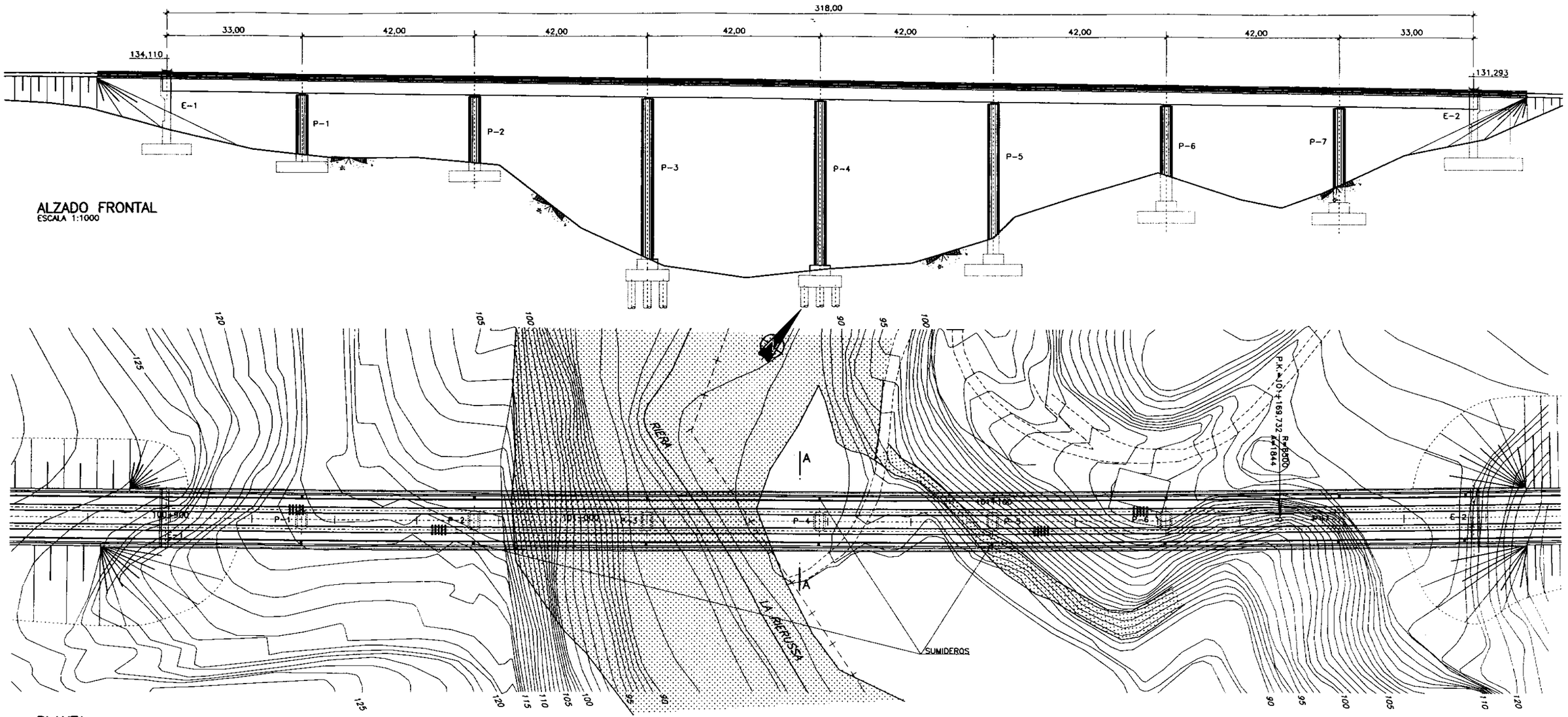
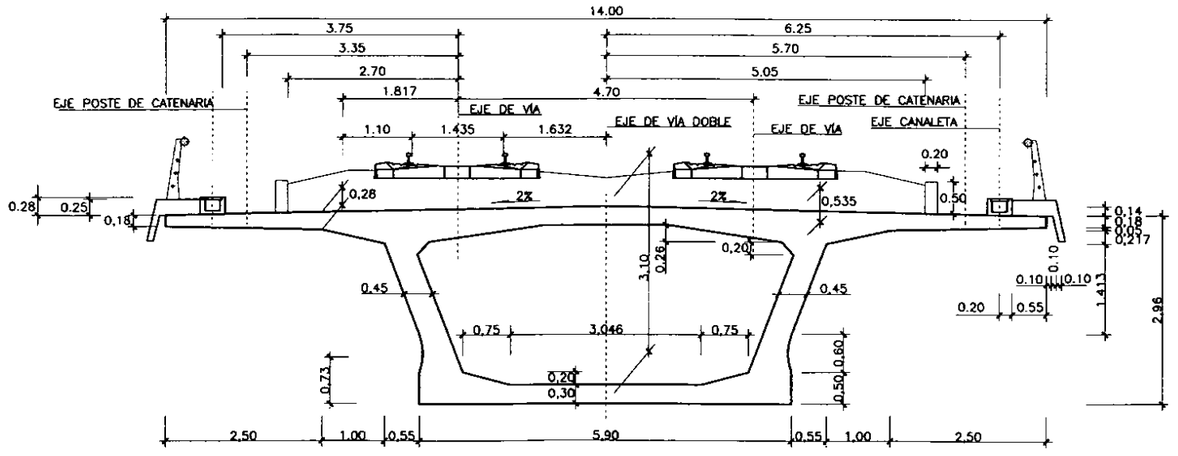
# 0. INTRODUCCIÓN

# 0. INTRODUCCIÓN

En el presente documento se incluyen la definición y los cálculos de la estructura ubicada en el P.K. 101+169 de la Línea de Alta Velocidad Madrid – Barcelona – Zaragoza – Frontera Francesa. Tramo Gelida. Viaducto de la Riera de la Rierussa.

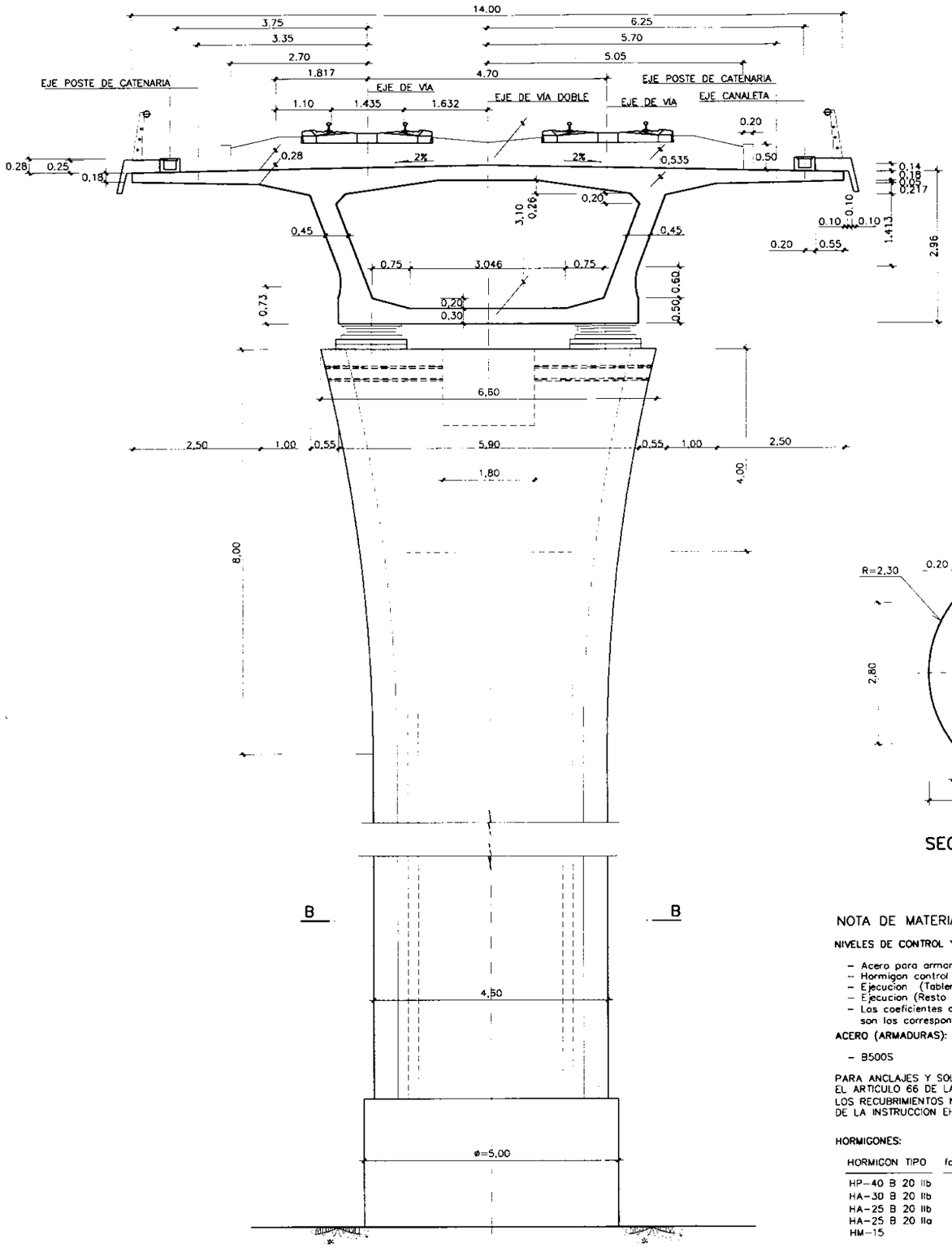
# 1. DEFINICIÓN GENERAL



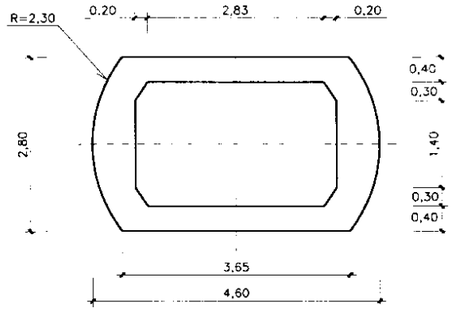




.DEFRAL–RIERUSSA

| | | | | | |
|---|---|---|---|---|---|
| GIF Gestor de Infraestructuras Ferroviarias | TÍTULO<br>PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA<br>L.A.V. MADRID–ZARAGOZA–BARCELONA–FRONTERA FRANCESA<br>TRAMO: GELIDA–SANT LLORENÇ D'HORTONS | AUTOR<br>Eptisa<br>Fdo: FÉLIX ZAPATA PARRA | ESCALA<br>VARIAS<br>UNE A-3 ORIGINALES<br>Gráfica | FECHA<br>MARZO 2002 | TÍTULO DEL PLANO<br><br>Nº DE PLANO<br>Hoja de |




SECCION TIPO DE VIADUCTO
ESCALA 1:100




SECCION B–B

NOTA DE MATERIALES

**NIVELES DE CONTROL Y COEFICIENTES DE SEGURIDAD:**

- Acero para armar, control normal ($\gamma$ = 1,15)
- Hormigon control estadistico ($\gamma$ = 1,50)
- Ejecucion (Tablero y Pilas) nivel intenso
- Ejecucion (Resto obra) nivel intenso
- Los coeficientes de seguridad de las acciones son los correspondientes a la IAP-98 y EC-1

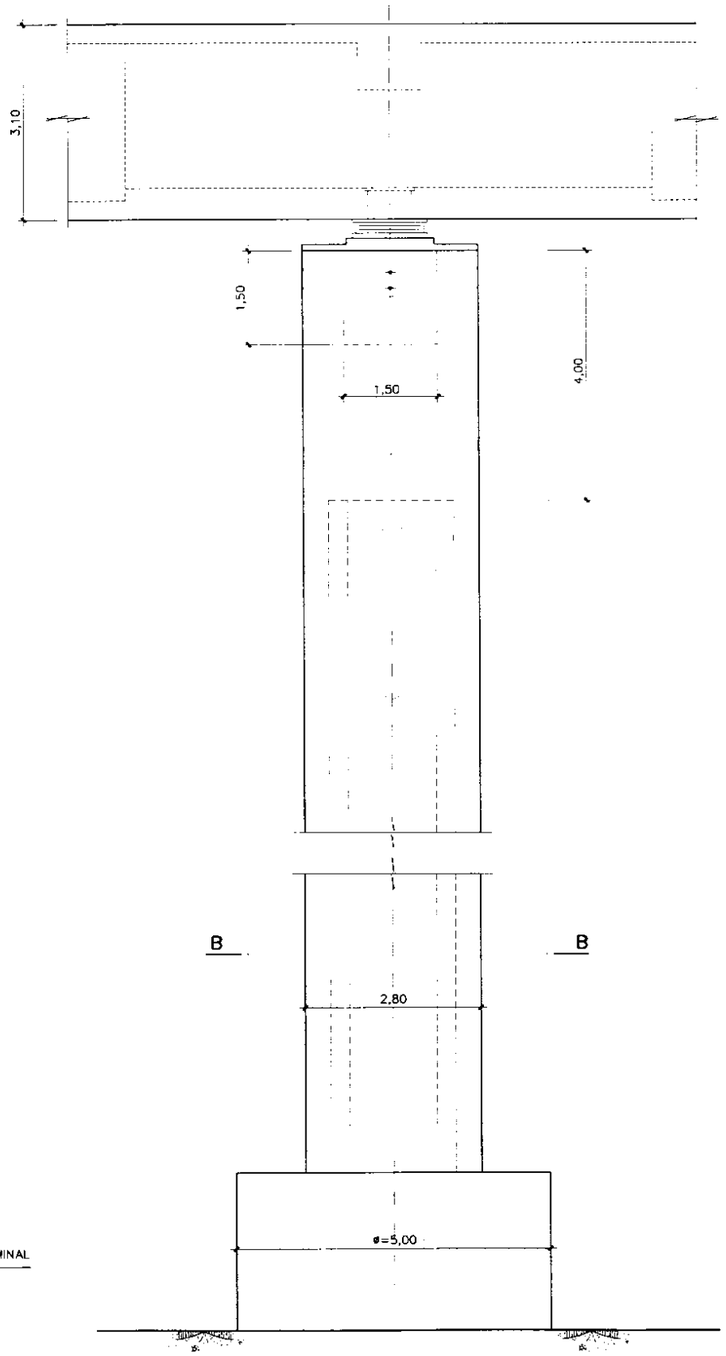
**ACERO (ARMADURAS):**

- B500S fy = 500 N/mm2

PARA ANCLAJES Y SOLAPES, SE SEGUIRAN LAS PRESCRIPCIONES CONTENIDAS EN EL ARTICULO 66 DE LA INSTRUCCION EHE
LOS RECUBRIMIENTOS NOMINALES SE DETERMINARAN SEGUN EL ARTICULO 37 DE LA INSTRUCCION EHE PARA UN AMBIENTE IIb y IIa.

**HORMIGONES:**

| HORMIGON TIPO | fck (N/mm2) | ELEMENTO ESTRUCTURAL | RECUBRIMIENTO NOMINAL |
|---|---|---|---|
| HP-40 B 20 IIb | 40 | Tablero | 3,5 cm. |
| HA-30 B 20 IIb | 30 | Alzados de Pilas | 3,5 cm. |
| HA-25 B 20 IIb | 25 | Alzados de Estribos | 3,5 cm. |
| HA-25 B 20 IIa | 25 | Zapatas, Encepados y Pilotes | 3,5 cm. |
| HM-15 | 15 | Capas de regularizacion | |




ALZADO LATERAL DE PILA
ESCALA 1:100

DEFRAL2-RIERUSSA

| | | | | | |
|---|---|---|---|---|---|
| GIF Gestor de Infraestructuras Ferroviarias | TÍTULO<br>PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA<br>L.A.V. MADRID–ZARAGOZA–BARCELONA–FRONTERA FRANCESA<br>TRAMO: GELIDA–SANT LLORENÇ D'HORTONS | AUTOR<br>Eptisa<br>Fdo: FÉLIX ZAPATA PARRA | ESCALA<br>VARIAS<br>1/NE 4-3 ORIGINALES \| Gráfico | FECHA<br>MARZO 2002 | TÍTULO DEL PLANO<br>Nº DE PLANO<br>Hoja de |

# 2. MEMORIA DE CÁLCULO

# 2. MEMORIA DE CÁLCULO

## 2.1. Descripción de la estructura

NOMBRE: Viaducto de la Riera de la Rierussa.

ASPECTOS GENERALES:

| | |
|---|---|
| Tipología: | Cajón de hormigón empujado |
| Luces: | 33 + 6x42 + 33 m |
| Longitud: | 318 m |
| Trazado en planta: | Ligeramente Curvo |

TABLERO:

| | |
|---|---|
| Canto: | 3.10 m ; |
| Anchura del tablero: | 14.00 m |

ESTRIBO 1:

| | |
|---|---|
| Tipología: | Estribo cerrado |
| Altura: | 9.20 m |
| Número de apoyos: | 2 |
| Separación entre apoyos: | 4.6 m |
| Tipo de apoyos: | POT (6000 kN) |
| Empotran tablero a torsión: | Sí |
| Estribo fija en sentido longitudinal: | No |

PILAS:

| | |
|---|---|
| Sección: | tipo hipódromo aligerada 4.60 x 2.80 |
| Altura de fustes: | de 16 a 39 m |
| Número de apoyos: | 2 |
| Tipo de apoyos: | POT (15000 o 17500 kN) |
| Separación entre apoyos: | 4.60 m |
| Empotran el tablero a torsión: | Sí |
| Pilas fijas en sentido longitudinal: | No |

ESTRIBO 2:

| | |
|---|---|
| Altura: | 11.0 m |
| Número de apoyos: | 2 |
| Separación entre apoyos | 4.60 m |
| Tipo de apoyos: | POT (6000 kN) |
| Empotran tablero a torsión: | Sí |
| Estribo fijo en sentido longitudinal: | Sí |

CIMENTACIÓN:

Directa

| Elemento | Zapata | Ten. Admisible |
|---|---|---|
| E-1 | 14.4x12.0x2.5 | 0.40 N/mm$^2$ |
| P-1 | 11.5x11.5x2.6 | 0.40 N/mm$^2$ |
| P-2 | 12.5x12.5x2.6 | 0.40 N/mm$^2$ |
| P-5 | 14.0x14.0x2.8 | 0.40 N/mm$^2$ |
| P-6 | 14.0x14.0x2.8 | 0.40 N/mm$^2$ |
| P-7 | 10.5x13.0x2.8 | 0.50 N/mm$^2$ |
| E-2 | 19.0x14.4x3.0 | 0.40 N/mm$^2$ |

Profunda

| Elemento | Encepado | Carga Admisible |
|---|---|---|
| P-3 | 10.4x10.4x2.8 (9 pilotes 1.80) | 1030 kN |
| P-4 | 10.4x10.4x2.8 (9 pilotes 1.80) | 885 kN |

CONSTRUCCIÓN:

Procedimiento constructivo: Tablero empujado con dovelas de ½ vano.

IMPERMEABILIZACIÓN Y DRENAJE:

La cara superior del tablero lleva una capa de impermeabilización y se han dispuesto sumideros con rejilla.

## 2.2. Bases de cálculo

### 2.2.1. Instrucciones y normas aplicadas

Para el establecimiento de acciones y las combinaciones necesarias para la obtención de cálculo que se emplearán en la comprobación de los diferentes Estados Límite se seguirá una doble vía paralela:

- **Cálculo 1**: se utilizarán las siguientes Instrucciones:
  - "Instrucción relativa a las acciones a considerar en el Proyecto de Puentes de Ferrocarril", correspondiente a la O. M. de 25 de Junio 1975 (IPF-75).
  - "Norma de construcción sismorresistente: Parte general y edificación (NSCE-94)". R. D. 29 de Diciembre de 1994.

Para establecer las hipótesis y combinaciones de cálculo y sus correspondientes coeficientes de ponderación se utilizará la siguiente instrucción:

- "Instrucción de Hormigón Estructural EHE" R: D. 2661/1998 de 11 de Diciembre.

- **Cálculo 2**: se utilizarán la siguiente Instrucción:
  - "Eurocódigo 1: Bases de proyecto y acciones en estructuras. Parte 3: Cargas de tráfico en puentes" UNE- ENV 1991- 3. Octubre 1997. (EC1.1.3).

Para establecer las hipótesis y combinaciones de cálculo y sus correspondientes coeficientes de ponderación se utilizará la siguiente Instrucción:

- "Eurocódigo 1: Bases de proyecto y acciones en estructuras. Parte 1: Bases de proyecto" UNE- ENV 1991-1. Octubre 1997. (EC.1).

Una vez realizados los dos cálculos paralelos por las dos vías anteriores se adoptarán como solicitaciones (esfuerzos, movimientos, etc.) de diseño la envolvente de las obtenidas.

Para el dimensionamiento y comprobación de secciones se actuará en todo momento de acuerdo con la normativa española.

- "Instrucción de Hormigón Estructural EHE" R. D. 2661/ 1998 de 11 de diciembre.

El estudio de fatiga de los materiales se hará de acuerdo con la siguiente norma:

- "Eurocódigo 2: Proyecto de estructuras de hormigón. Parte 2: Puentes de hormigón. ENV 1992.2: Septiembre 1996. (EC2.2).

La comprobación de flechas, deformaciones y vibraciones se hará de acuerdo con la norma:

- "Eurocódigo 1: Bases de proyecto y acciones en estructuras. Parte 3: Cargas de tráfico en puentes" UNE- ENV 1991-3. Octubre 1997. (EC1.1.3).

### 2.2.2. Características de los materiales

Hormigones:

| TIPO | $f_{ck}$ (N/mm$^2$) | ELEMENTO ESTRUCTURAL |
|---|---|---|
| HP-40 | 40 | Tablero pretensado |
| HA-30 | 30 | Pilas |
| HA-25 | 25 | Estribos, zapatas, encepados y pilotes |
| HM-15 | 15 | Limpieza en cimentaciones |

Coeficiente parcial de seguridad para E.L.U.: $\gamma c$= 1.50

Acero:

- Armaduras pasivas:

B 500 S fyk = 500 N/mm$^2$

Recubrimiento nominal: El recubrimiento mínimo es de 30 mm para un ambiente IIb.

Coeficiente parcial de seguridad para E.L.U.: $\gamma s$= 1.15

- Armaduras activas

Y 1860 S7 $\phi$ 15.2 mm fmáx = 1860 N/mm$^2$

- Características del acero de pretensado:

Relajación del 2.5 para una tensión del 70% de $f_{máx}$ aplicada durante 1000 horas.

Tendones de pretensado interior adherentes no reemplazables.

Tensiones máximas de anclajes de 0.75 $f_{máx,k}$ al tesar.

Tensiones máximas de anclajes de 0.75 $f_{máx,k}$ al bloquear

Coeficiente parcial de seguridad para E.L.U.: $\gamma_p$= 1.15

### 2.2.3. Niveles de control de calidad adoptados

Tanto para el tablero como para la subestructura se ha empleado un nivel de control de ejecución a nivel intenso.

### 2.2.4. Durabilidad

Recubrimientos y abertura de fisura máxima:

| Elemento estructural | Tipo de ambiente | $r_{min}$ (mm) | $r_{nom}$(mm) | $w_{máx}$(mm) |
|---|---|---|---|---|
| Tablero de HP | IIb | 30 | 35 | 0.2 |
| Encepados y pilotes | IIa | 25 | 30 | - |

### 2.2.5. Criterios generales de cálculo

Se ha realizado un análisis estructural de tipo lineal. La estructura se ha idealizado como un pórtico espacial de seis grados de libertad por nudo. Con los esfuerzos obtenidos a partir de este análisis se han efectuado las siguientes comprobaciones en los Estados Límite Últimos y de Servicio:

**Tablero**

Flexión longitudinal: Para obtener la armadura activa se ha realizado la comprobación tensional en E.L.S. y seccional en E.L.U. a partir de los resultados del modelo general (pórtico espacial). La armadura para cortante y torsión se ha obtenido de la comprobación en E.L.U. para solicitaciones tangentes.

Flexión transversal: Se ha realizado un estudio mediante un pórtico plano para dimensionar la armadura necesaria.

Adicionalmente se ha realizado un análisis para las riostras sobre pilas y estribos.

**Estribos**

Para su análisis, se han considerado las acciones verticales y las acciones horizontales concomitantes. Se ha realizado la comprobación en E.L.S. para el terreno y en E.L.U. para los elementos de hormigón armado.

**Pilas**

Para su análisis, se han considerado las acciones verticales y las acciones horizontales concomitantes. Se ha realizado la comprobación en E.L.S. para el terreno y en E.L.U. para los elementos de hormigón armado.

## 2.3. Acciones

### 2.3.1. Acciones permanentes (G)

2.3.1.1. Peso Propio

Partiendo de las características de los elementos, el programa ROBOT ofrece la opción de introducir el peso propio de la estructura.

No se considera el hecho de que la estructura esté en curva, pues la diferencia es despreciable.

2.3.1.2. Cargas Muertas

En el modelo, la carga muerta se representa por una carga uniformemente repartida.

- Balasto:

$\gamma_{bal}$ = 16 kN/m$^3$

Área balasto = 6.79 m$^2$

$q_0$ = 16 * 6.79 = -108.70 kN/ml

$m_0$ = -108.70 * 0.14 = -15.22 mkN/ml

- hip.1: Valor característico:

$q_0$ = -108.70 kN/ml

$m_0$ = -15.22 mkN/ml

- hip2: Valor máximo:

$q_s$ = -0.30 * 108.70 = -32.61 kN/ml

$m_s$ = -0.30 * 15.22 = -4.57 mkN/ml

- hip3: Valor mínimo:

$q_i$ = 0.30 * 108.70 = 32.61 kN/ml

$m_i$ = 0.30 * 15.22 = 4.57 mkN/ml

- hip4: Desbalastado 50% de una vía en toda su longitud

$q_{desb}$ = 108.70 * 0.5 = 54.35 kN/ml

$m_{desb}$ = 15.22 * 0.5 = 7.61 mkN/ml

- Traviesas y carriles:

$q_{traviesas}$ = -5.20 kN/ml

$q_{carriles}$ = -1.20 kN/ml

Para doble vía:

q = -2 (5.20 + 1.20) = -12.80 kN/ml

- Murete de retención:

q= -2 x 2.5 kN/ml = -5.00 kN/ml

- Conductos de cableado y paseos:

$q_{cond+cables}$ = -3.00 kN/ml

q = -3.0 x 2 kN/ml = 6.00 kN/ml

- Impostas y barandillas:
  - Imposta

A = 0.25 m$^2$

q = 2 x 25 x 0.25 = -12.50 kN/ml

  - Barandilla

q = -2 x 1.00 kN/ml = -2.00 kN/ml

$q_{imp+bar}$ = -14.50 kN/ml

Por tanto:

Hip1: $p_z$ = -147.00 kN/ml
$m_x$ = 15.22 mkN/ml

Hip2: $p_z$ = -32.61 kN/ml
$m_x$ = 4.57 mkN/ml

Hip3: $p_z$ = 32.61 kN/ml
$m_x$ = -4.57 mkN/ml

Hip4: $p_z$ = 54.35 kN/ml
$m_x$ = -7.61 mkN/ml

### 2.3.2. Acciones Permanentes de Valor No Constante (G*)

2.3.2.1. Pretensado.

Dentro del modelo, las fuerzas generadas por el pretensado se introducen como cargas equivalentes en los nudos. En el cálculo se introduce un tendón equivalente a una fuerza de tesado de 1000 kN, por lo que en la combinación de hipótesis la correspondiente al pretensado estará afectada por el coeficiente que represente la fuerza real introducida. Estos coeficientes se indican en las siguientes tablas:

| **Pretensado Curvo 2 x 19 ϕ 0.6"** | | | |
|---|---|---|---|
| | Servicio t = 0 | Servicio (t = ∞) | Rotura (t = ∞) |
| Eurocódigo | 7.430 | 6.464 | 6.464 |
| IPF-75 | 8.173 | 5.818 | 6.464 |

| **Pretensado Recto 2 x 9 ϕ 0.6"** | | | |
|---|---|---|---|
| | Servicio t = 0 | Servicio (t = ∞) | Rotura (t = ∞) |
| Eurocódigo | 3.187 | 2.919 | 2.919 |
| IPF-75 | 3.506 | 2.540 | 2.919 |

## FLUENCIA
**Art. 39.8 EHE**

**PROYECTO:** **LAV Gelida. Viaductos empujados. Fluencia a 90 días.**

**DATOS INICIALES:**

| | | | |
|---|---|---|---|
| Resistencia característica | | $f_{ck}$ | 40 N/mm$^2$ |
| Número de tendones de pretensado | | | 1 Uds |
| Fuerza en anclajes de pretensado | | | 49080 kN |
| Área de la sección transversal (m2) | | A | 8.82 m2 |
| Perímetro en contacto con la atmósfera (m) | | u | 47.26 m |
| Período de actuación de la fluencia (Infinito: (t - $t_0$) >10000) | | t - $t_0$ | 90 días |
| Edad del hormigón al actuar la carga. | | $t_0$ | 14 días |
| Humedad relativa aproximada: | | Humedad | 70 % |
| En agua | 100 % | | |
| En atmósfera muy húmeda | 90 % | | |
| En atmósfera húmeda | 70 % | | |
| En atmósfera seca | 40 % | | |

**VALORES INTERMEDIOS:**

| | | |
|---|---|---|
| Espesor ficticio (cm) | e | 373.151 mm |
| Coeficiente básico de fluencia | $\varphi_{HR}$ | 1.4209 |
| | $\beta(f_{cm})$ | 2.4249 |
| | $\beta(t_0)$ | 0.5570 |
| | $\varphi_0$ | 1.9193 |
| | $\beta_H$ | 833.9929 |
| | $\beta_c$ (t - to) | 0.49725 |

**COEFICIENTE DE FLUENCIA:** $\varphi(t,t_0)$ **0.9544**

**DEFORMACIÓN DE FLUENCIA:** $\varepsilon\varphi(t,t_0)$ **146.178 *E-0.6**

## FLUENCIA
**Art. 39.8 EHE**

**PROYECTO:** **LAV Gelida. Viaductos empujados. Fluencia a t=inf.**

**DATOS INICIALES:**

| | | | |
|---|---|---|---|
| Resistencia característica | | $f_{ck}$ | 40 N/mm$^2$ |
| Número de tendones de pretensado | | | 1 Uds |
| Fuerza en anclajes de pretensado | | | 49080 kN |
| Área de la sección transversal (m2) | | A | 8.82 m2 |
| Perímetro en contacto con la atmósfera (m) | | u | 47.26 m |
| Período de actuación de la fluencia (Infinito: (t - $t_0$) >10000) | | t - $t_0$ | 10000 días |
| Edad del hormigón al actuar la carga. | | $t_0$ | 14 días |
| Humedad relativa aproximada: | | Humedad | 70 % |
| En agua | 100 % | | |
| En atmósfera muy húmeda | 90 % | | |
| En atmósfera húmeda | 70 % | | |
| En atmósfera seca | 40 % | | |

**VALORES INTERMEDIOS:**

| | | |
|---|---|---|
| Espesor ficticio (cm) | e | 373.151 mm |
| Coeficiente básico de fluencia | $\varphi_{HR}$ | 1.4209 |
| | $\beta(f_{cm})$ | 2.4249 |
| | $\beta(t_0)$ | 0.5570 |
| | $\varphi_0$ | 1.9193 |
| | $\beta_H$ | 833.9929 |
| | $\beta_c$ (t - to) | 0.97626 |

**COEFICIENTE DE FLUENCIA:** $\varphi(t,t_0)$ **1.8737**

**DEFORMACIÓN DE FLUENCIA:** $\varepsilon\varphi(t,t_0)$ **286.993 *E-0.6**

## RETRACCIÓN
**Art. 39.7 EHE**

**PROYECTO:** **LAV Gelida.** **Viaductos empujados. Retracción a 90 días.**

**DATOS INICIALES:**

| | | | |
|---|---|---|---|
| Resistencia característica | | $f_{ck}$ | 40 N/mm$^2$ |
| Área de la sección transversal (m$^2$) | | A | 8.82 m2 |
| Perímetro en contacto con la atmósfera (m) | | u | 47.26 m |
| Período de actuación de la retracción. (Infinito: (t - $t_s$) >10000) | | t - $t_s$ | 90 días |
| Humedad relativa aproximada: | | HR | 70 % |
| Sumergido en agua | 100 % | | |
| En atmósfera muy húmeda | 90 % | | |
| En atmósfera húmeda | 70 % | | |
| En atmósfera seca | 40 % | | |

**VALORES INTERMEDIOS:**

| | | |
|---|---|---|
| Espesor ficticio (cm) | e | 373.151 mm |
| | $\varepsilon_s$ | 370.000 *E-0.6 |
| | $\beta_{HR}$ | -1.0184 |
| Coeficiente básico de retracción | $\varepsilon_{cs0}$ | -376.790 *E-0.6 |
| | $\beta_s$ (t - $t_s$) | 0.1347 |

**DEFORMACIÓN DE RETRACCIÓN:** $\varepsilon_{cs}$ (t, $t_s$) = **-50.737 *E-0.6**

## RETRACCIÓN
**Art. 39.7 EHE**

**PROYECTO:** **LAV Gelida.** **Viaductos empujados. Retracción a t=inf.**

**DATOS INICIALES:**

| | | | |
|---|---|---|---|
| Resistencia característica | | $f_{ck}$ | 40 N/mm$^2$ |
| Área de la sección transversal (m$^2$) | | A | 8.82 m2 |
| Perímetro en contacto con la atmósfera (m) | | u | 47.26 m |
| Período de actuación de la retracción. (Infinito: (t - $t_s$) >10000) | | t - $t_s$ | 10000 días |
| Humedad relativa aproximada: | | HR | 70 % |
| Sumergido en agua | 100 % | | |
| En atmósfera muy húmeda | 90 % | | |
| En atmósfera húmeda | 70 % | | |
| En atmósfera seca | 40 % | | |

**VALORES INTERMEDIOS:**

| | | |
|---|---|---|
| Espesor ficticio (cm) | e | 373.151 mm |
| | $\varepsilon_s$ | 370.000 *E-0.6 |
| | $\beta_{HR}$ | -1.0184 |
| Coeficiente básico de retracción | $\varepsilon_{cs0}$ | -376.790 *E-0.6 |
| | $\beta_s$ (t - $t_s$) | 0.8200 |

**DEFORMACIÓN DE RETRACCIÓN:** $\varepsilon_{cs}$ (t, $t_s$) = **-308.953 *E-0.6**

2.3.2.2. Fluencia y Retracción.

La acción del pretensado provocará un acortamiento de tablero por fluencia que se sumará al debido a la retracción del hormigón. Los valores de estas deformaciones se muestran en las páginas siguientes. Dada la interacción existente durante la vida útil entre el tablero y la vía, esta acción se introduce en dos etapas:

a) La deformación reológica producida durante los tres primeros meses de la estructura, se introduce en el modelo general del viaducto.

b) La deformación restante se introduce en el modelo de acciones longitudinales que tiene en cuenta la interacción entre la vía y la estructura.

**2.3.3. Sobrecargas de uso según IPF-75.**

2.3.3.1. Sobrecarga en Paseos.

$q_{sc}$ = -5.00 kN/m$^2$

$q_{sc}$ = -5 x 1.75 = -8.75 kN/ml

$m_{sc}$ = ±8.75 * 5.95= ±52.06 mkN/ml

2.3.3.2. Sobrecargas móviles.

- Tren tipo A
  Esta sobrecarga es más propia para el análisis de efectos locales en puentes cortos, por tanto se tendrá en cuenta en el análisis transversal.

- Tren tipo B

El viaducto en planta tiene dos alineaciones distintas: la primera es una clotoide de parámetro 1844 y la siguiente una curva de radio 8500 m. Para el cálculo, el trazado en planta se representa por una curva de radio 11800 m, siendo la máxima desviación que se produce al utilizar dicha curva de 11 cm. Esto se tiene en cuenta considerando un ripado de 30+11 cm hacia la derecha en ambas vías, con lo que se tienen las excentricidades:

- excentricidad: $e_{dcha}$ = 2.35 - 0.41 = 1.94 m
  $e_{min}$ = -2.35 - 0.41 = -2.76 m

Además se aplicará un coeficiente de impacto:

Para tramos apoyados continuos $I = 65 \cdot \frac{\mu}{1-\mu+\mu^2}$, donde $\mu = \frac{v \cdot T}{2 \cdot L}$

V=200 km/h = 55.55m/sg

$$T = \frac{2}{\pi}\sqrt{\frac{m}{EI}L^4}$$

donde:

m = 8.82 x 2.5 + 14.70 = 36.75 t/ml = 36750 kg/ml

E = 30891 * $10^6$ N/$m^2$

I = 11.76 $m^4$

L = 42 m

Operando se obtiene:

T = 0.357 s

$\mu$ = 0.236

I = 0.19

Por tanto se toma un coeficiente de impacto de 1.19.

Finalmente, los valores de la sobrecarga junto con el **ripado** y el **coeficiente dinámico** quedan:

| **Tren IPF-75** | Carga 120 kN/m | | Carga 100 kN/m | | Carga 10 kN/m | |
|---|---|---|---|---|---|---|
| | $q_z$ | $m_x$ | $q_z$ | $m_x$ | $q_z$ | $m_x$ |
| $E_{izda}$ | -142.8 | -277.0 | -119.00 | -230.8 | -11.9 | -23.1 |
| $E_{dcha}$ | -142.8 | 394.1 | -119.00 | 328.4 | -11.9 | 32.8 |

**Sin** considerar el **coeficiente de impacto**:

| **Tren IPF-75** | Carga 120 kN/m | | Carga 100 kN/m | | Carga 10 kN/m | |
|---|---|---|---|---|---|---|
| | $q_z$ | $m_x$ | $q_z$ | $m_x$ | $q_z$ | $m_x$ |
| $e_{dcha}$ | -120.00 | -232.8 | -100.00 | -194.0 | -10.00 | -19.4 |
| $e_{izda}$ | -120.00 | 331.2 | -100.00 | 276.0 | -10.00 | 27.6 |

En las siguientes páginas se muestran esquemáticamente las hipótesis consideradas según las distintas posiciones de la sobrecarga.

2.3.3.3. Carga de Frenado y Arranque.

- Frenado:

Se calcula el frenado para la hipótesis nº 12 de la sobrecarga (tren actuando en toda la longitud del puente con una carga de 120 ó 100 kN)

Carga horizontal: $H_{120}$ = 120 / 8 = ±15.0 kN/m

$H_{100}$ = 100 / 8 = ±12.5 kN/m

Momento repartido: $M_{120}$ = 15 * 1.95 = ±27.68 mkN/m

$M_{100}$ = 12.5 * 1.95 = ±23.06 mkN/m

- Arranque:

El arranque sólo actúa sobre la carga correspondiente a la locomotora, por lo cual su efecto es siempre menor o igual que el frenado.

2.3.3.4. Fuerza Centrífuga.

$$Fc = Q \cdot \frac{V^2}{127 \cdot R}$$

siendo:

R = 8500 m
V = 200 km/h
Q = Sobrecarga de trenes

Esta fuerza actuará a una altura de 1.80 m desde la cabeza del carril (3.75 m).

Al tener apoyos tipo POT guiados en dirección transversal es necesario introducir el Coeficiente de Impacto anteriormente calculado en esta hipótesis ($\gamma$=1.19).

| | SC 120 kN/m | SC 100 kN/m | SC 10 kN/m |
|---|---|---|---|
| Fy (kN/m) | 5.3 | 4.4 | 0.44 |
| Mx (mkN/m) | 19.8 | 16.5 | 1.65 |

Esta acción se introduce conjuntamente con la acción de la sobrecarga vertical que la produce.

2.3.3.5. Efecto de Lazo.

Fuerza transversal: Fy = ±50 kN
Momento torsor: Mx = 50 * 1.95 = -+97.5 mkN/ml

Se aplicará en pilas y estribos.

## 2.3.4. Sobrecargas Eurocódigo 1.

2.3.4.1. Sobrecarga en paseos.

$q_{sc}$ = -5.0 kN/m$^2$
$q_{sc}$ = -5.0 * 1.75 = -8.75 kN/ml
m = 8.75 * 5.95 = ±52.06 mkN/m

2.3.4.2. Sobrecargas Móviles.

- Tren L71
- Tren SW0
- Tren SW2

Para calcular los valores característicos de estas acciones, se tendrán en cuenta los siguientes criterios:

a) A los modelos 71 y SW/O se les aplicará un coeficiente a = 1.21

b) Se consideran las siguientes desviaciones de la sobrecarga respecto al eje de la vía en el sentido más desfavorable:

Ripado de la vía: +0.41 m
Asimetría de la carga (sólo modelo 71): ±1.435 / 18 = 0.080 m

con lo que se obtienen las excentricidades siguientes:

- exc. izda (modelo 71): e = -2.35 - 0.41 - 0.08 = -1.97 m
- exc. dcha (modelo 71): e = +0.41 + 0.08 +2.35 = 2.73 m
- exc. izda (modelos SW): e = -2.35 + 0.3 = -2.05 m
- exc. dcha (modelos SW): e = +2.35 + 0.3 = +2.65 m

c) Se aplicará un coeficiente de impacto:

$$\phi_2 = \frac{1.44}{\sqrt{L_\phi} - 0.2} + 0.82 \qquad \text{con } 1.0 < \phi_2 < 1.67$$

$$L_m = \frac{33 + 42 \cdot 6 + 33}{8} = 40m$$

$$n = 8 \Rightarrow k = 1.5$$

$$L_\varphi = k \cdot L_m = 1.5 \times 40 = 60m$$

$\phi_2 = 1.01 \cong 1.00$

Con estos datos la sobrecarga a aplicar será:

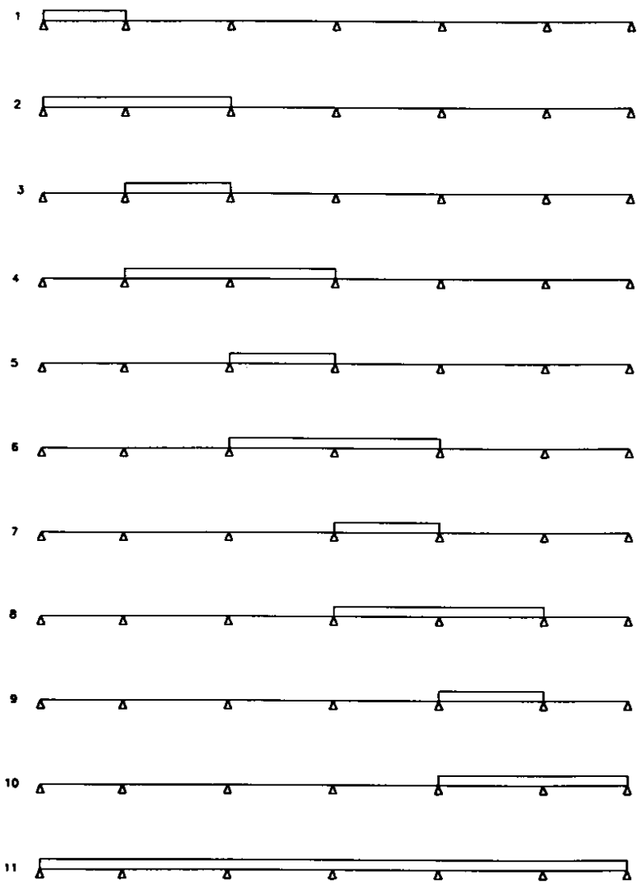
| **Modelo 71** | Exc. dcha | Exc. izda |
|---|---|---|
| Sobrecarga uniforme<br>q | -96.80 kN/m | -96.80 kN/ m |
| Cargas puntuales<br>Q | 4 * -302.50 kN | 4 * -302.50 kN |
| Momento sobrecarga uniforme<br>$m_q$ | 264.3 mkN/m | -190.7 mkN/m |
| Momento cargas puntuales<br>$m_Q$ | 4 * 834.9 mkN | 4 * -595.93 mkN |

| **Modelo SW/O** | Exc. dcha | Exc. izda |
|---|---|---|
| Sobrecarga uniforme<br>Q | -160.93 kN/m | -160.93 kN/ m |
| Momento sobrecarga uniforme<br>$M_q$ | 439.3 mkN/m | -317.0 mkN/m |

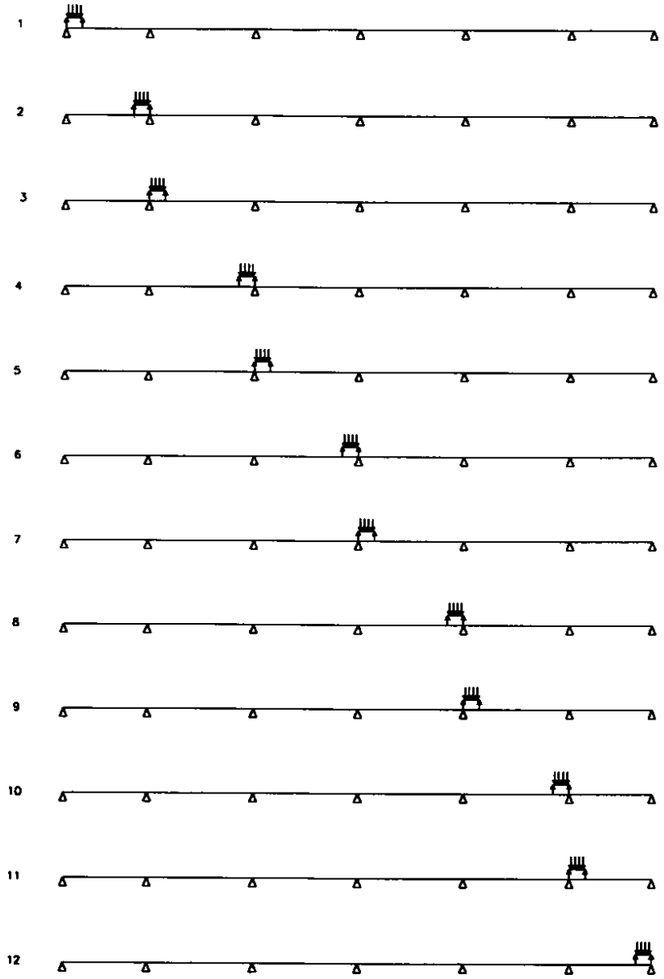
| **Modelo SW/2** | Exc. dcha | Exc. izda |
|---|---|---|
| Sobrecarga uniforme<br>q | -150.00 kN/m | -150.00 kN/ m |
| Momento sobrecarga uniforme<br>$m_q$ | 409.5 mkN/m | -295.5 mkN/m |

En las siguientes páginas se muestran esquemáticamente las hipótesis consideradas según las distintas posiciones de la sobrecarga.

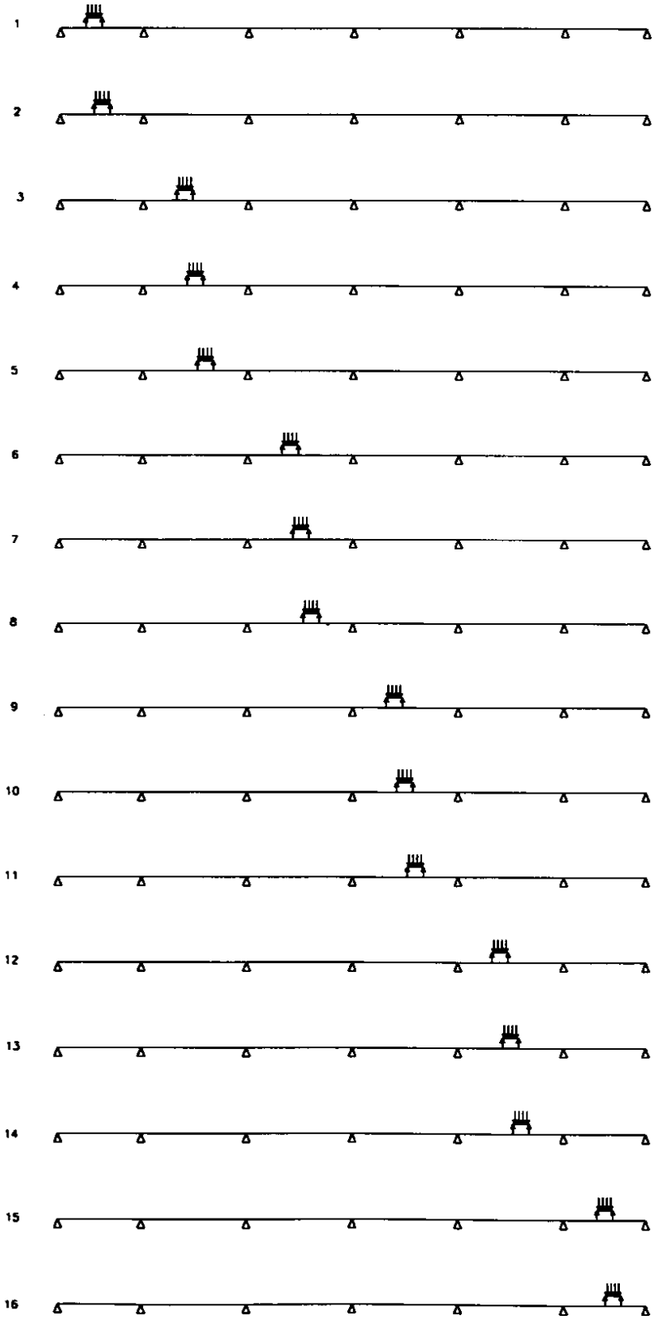
Modelo 71: SC uniforme



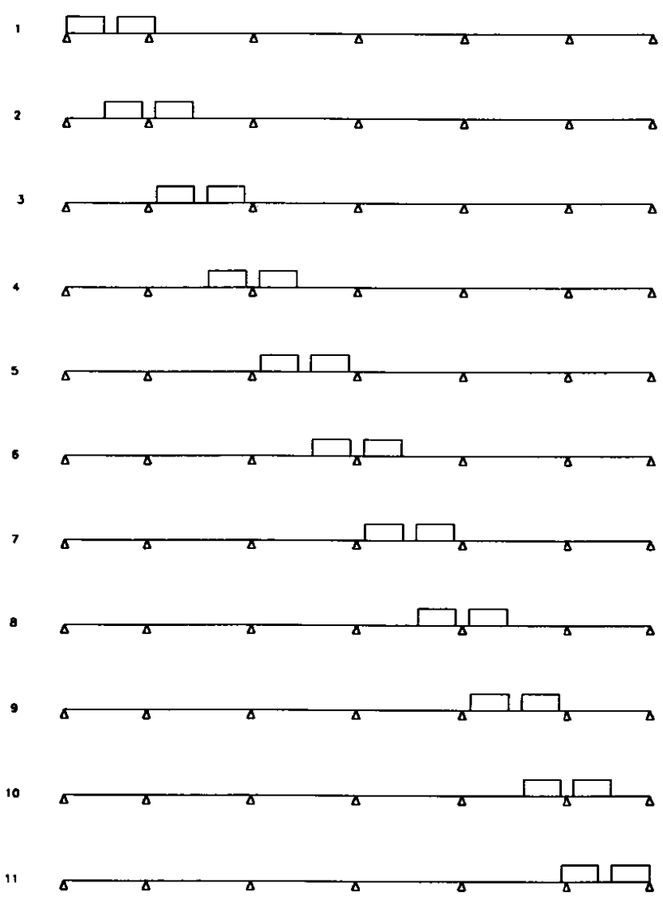

Modelo 71: SC puntual



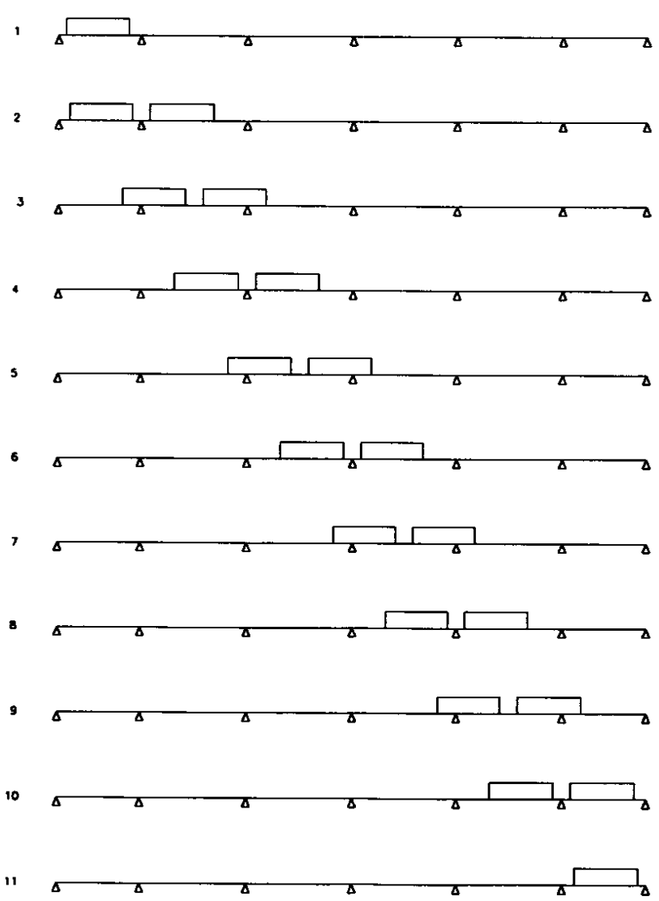

Modelo 71: SC puntual



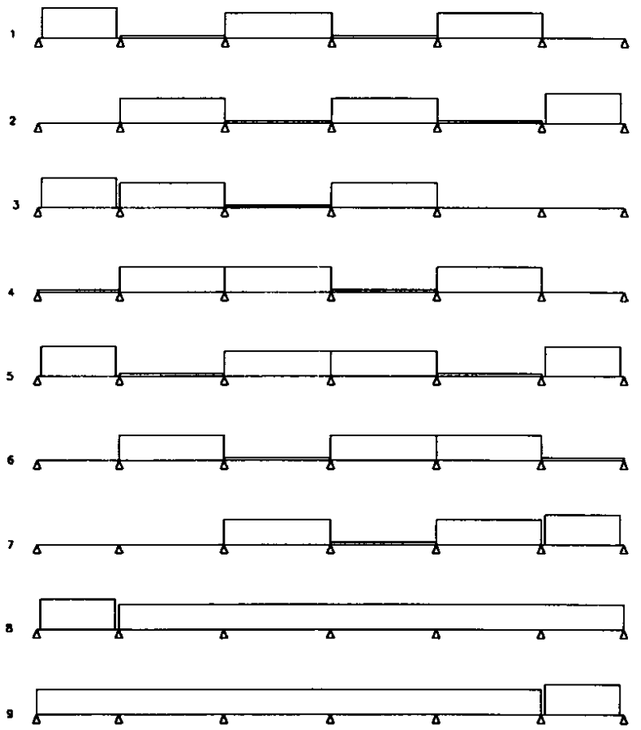
Modelo SW/0




Modelo SW/2




TREN TIPO B IPF-75



2.3.4.3. Carga de Tracción y Frenado.

Para los efectos de tracción y frenado el puente estará fijado en el estribo 1, por lo que resulta una estructura tipo (5) a). Para una longitud del viaducto de 150.00 m y vías continuas, no hay reducción de los esfuerzos de frenado y tracción.

Estos esfuerzos se verán incrementados por el coeficiente a = 1.21.

- Frenado:
  - Trenes 71:

    Qf = 1.21 * 20 kN/m * 150.00 m = **3630 kN** < 6000 kN

- Arranque:

  Qa = 1.21 * 33 kN/m * 150.00 m = 5989.5 kN > **1000 kN**

2.3.4.4. Fuerza Centrífuga.

$$F_{tk} = \frac{V^2}{127R} \cdot (f \times q_{vk})$$

donde:

$$f = 1 - \frac{V - 120}{1000} \cdot \left(\frac{814}{V} + 1.75\right) \cdot \left(1 - \sqrt{\frac{2.88}{L_f}}\right)$$

V = Velocidad en km/h

$q_{vk}$ = Carga clasificada vertical del modelo del tren ($\alpha$ = 1 para fuerza centrífuga)

R = 8500 m (radio de curvatura)

La acción actúa a una altura de 1.80 m sobre la superficie de rodadura, lo que da una distancia al centro de esfuerzos cortantes de la sección de 3.75 m.

Hipótesis 1: (Modelo 71 * f ); V = 300 km/h ; f

$L_f$ = 33 m; f = 0.44

$q_{vk}$ * f = 35.20 kN/m; $F_{qc}$ = -2.93 kN/m; $M_{qc}$ = 11.00 mkN/m

$Q_{vk}$ * f = 110.0 kN; $F_{Qc}$ = -9.16 kN; $M_{qc}$ = 34.38 mkN/m

Hipótesis 3: (Modelo SW/0); V = 80 km/h ; f = 1

$q_{vk}$ = 133 kN/m; $F_{qc}$ = -0.79 kN/m; $M_{qc}$ = 2.96 mkN/m

Hipótesis 4: (Modelo SW/2); V = 80 km/h ; f = 1

$q_{vk}$ = 150 kN/m; $F_{qc}$ = -0.89 kN/m; $M_{qc}$ = 3.33 mkN/m

Esta acción se introduce conjuntamente con la acción de la sobrecarga vertical que la produce.

2.3.4.5. Efecto de Lazo.

Fuerza transversal Fy= 100 kN

Momento torsor Mx = 100 * 3.75 = 375 mkN/ml

Se aplicará en pilas y estribos.

### 2.3.5. Interacción Vía - Estructura

Para el cálculo de las acciones longitudinales se realiza un modelo especial en el que se añade al tablero una barra con las características de las vías unidas al dintel por unas barras de gran rigidez. Las acciones longitudinales que se aplican sobre los carriles y las diferencias de deformación entre carriles y tablero producen transferencias de cargas entre carriles y tablero a través de las fijaciones de la vía y el balasto. Estas barras actúan como muelles en sentido longitudinal con la constante indicada en la ficha de la UIC. Para representar las condiciones de la barra larga soldada, se han añadido 200 m de vías antes y después del tablero, unidas al terreno por apoyos verticales y muelles longitudinales. Como simplificación, se ha realizado un modelo recto. En este modelo se han introducido las siguientes acciones:

- Frenado y arranque
- Temperatura
- Deformaciones reológicas transcurridos tres meses

La interacción vía – tablero se representará mediante una fuerza de rozamiento constante y de sentido contrario al movimiento relativo de vía y tablero definida por una ley bilineal. Esta ley vendrá determinada por el desplazamiento de plastificación y por la resistencia al deslizamiento.

Para una vía sobre balasto con carril tipo UIC60 se tomarán los siguientes valores de $u_0$ y k.

- $u_0$ = 2 mm
- k= 20 kN/m para vía descargada con mantenimiento bueno.
- k= 60 kN/m para vía cargada (sólo en la via cargada.

### 2.3.6. Acciones Climáticas

2.3.6.1. Cargas de viento

Según la IAP-98, el viento puede actuar de las siguientes formas:

- Viento considerado como acción concomitante:
  - Se considera el área expuesta teniendo en cuenta los 4 m. debidos a la presencia de las sobrecargas.
  - Se aplica el coeficiente reductor del 50 % al valor característico obtenido al ser simultáneo con las sobrecargas.

- Viento considerado como acción dominante:
  - No se considera ningún incremento de área expuesta con respecto al tablero
  - No se aplica ningún coeficiente reductor.

Se aplicará el método general. Por tanto:

Entorno tipo II

$K_z$ = 0.19

$Z_{min}$ = 4 < z = 41 m

$Z_0$ = 0.05

$C_t$ = 1.1

$C_r$ = 1.04

$C_z = K_z \ln(z/ z_0)$ = 1.27

$C_g$ = 1.40

$V_{ref}$ = 24 m/s

$$Vc = C_t C_r C_z C_g V_{ref} = 48.90 \text{ m/s}$$

Reducción de $C_D$:

No se aplica ninguna reducción, dada la forma ligeramente cóncava de la parte inferior del alma.

- Empuje dominante en el tablero:

Se considera una altura adicional de 1.20 a partir del voladizo como altura de la barreras, balasto y vías, con lo que el empuje actúa en una altura total de 4.16 m.

Para el cálculo del momento de vuelco se considera, de forma simplificada, el empuje del viento actuando a una altura del 60% de la altura total.

| | |
|---|---|
| Coef. de arrastre $C_D$ | 1.16 |
| Empuje $E_{dom}$ (kN/m) | 7.21 |
| Brazo b (m) | 0.61 |
| Momento de vuelco $M_{dom}$ (mkN/m) | 4.38 |

- Empuje del viento concomitante con las sobrecargas:

Se toma el empuje característico afectado por el coeficiente 0.5 de simultaneidad. El viento actuará sobre una altura de 8.16 m, procedentes de considerar una altura de 4.00 m de la sobrecarga sobre la cabeza del carril.

Para el cálculo del momento de vuelco se considera, de forma simplificada, el empuje de barlovento actuando a una altura del 60% de la altura total:

| | |
|---|---|
| Coef. De arrastre $C_D$ | 1.57 |
| Empuje $E_{conc}$ (kN/m) | 9.57 |
| Brazo B (m) | 3.01 |
| Momento de vuelco $M_{conc}$ (mkN/m) | 28.77 |

- Empuje del viento sobre las pilas:

La pilas tienen una sección equiparable a una sección rectangular de 4.60x2.80 m. El coeficiente de arrastre será:

- Dirección y-y' : $C_D$ = **1.60**

El área expuesta es de 2.80 m en la dirección y-y' a lo largo de toda la altura de la pila.

- Dirección y-y':

$E_{conc} = 0.5 * C_D A ( ½ \rho V_c^2 ) = 0.5 * 1.60 * 2.80 * ½ * 1.25 * 48.90^2 = 3.35$ kN/m

$E_{dom} = C_D A ( ½ \rho V_c^2 ) = 1.60 * 2.80 * ½ * 1.25 * 48.90^2 = 6.70$ kN/m

2.3.6.2. Acciones Térmicas.

- Variación uniforme de temperatura

El viaducto está situado en zona III
Según la Instrucción:

$\Delta T_1 = K \cdot z^a \cdot h^b \cdot s^c = 29.13 * 3^{0.301} * 3.10^{-0.148} * 1^0 = 34.30\ ^oC$

donde: z = 3
h = 3.10; $h_{mín} = 1.70\ m < h < h_{máx} = 4.00\ m$;
s = 1
De tabla 8:
Cajón de hormigón:
K = 29.13
a = 0.301
b = -0.148
c = 0

- Gradiente térmico vertical positivo del tablero:

Losa aligerada de hormigón:

$\Delta T_{si}\ (^oC) = K_1 * K_2 * K_3 * \Delta T_{si,ref} = 0.82 * 1.04 * 0.80 * 8.5 = 5.8\ ^oC$

donde: $K_1$: (fig. 10a) = 0.82 (h = 3.10 m)
$K_2$: (fig. 10b) = 1.04
$K_3$: (fig. 10c) = 0.80 (e = 12 cm.)
$\Delta T_{si,ref}$: (fig. 9) = 8.5 °C

- Gradiente térmico vertical inverso o negativo del tablero:

No se considera al ser el tablero de hormigón y tener pavimento bituminoso (o asimilable).

## 2.3.7. Acciones Dinámicas

Se ha realizado un análisis dinámico con los trenes de 3 y 4 del Eurocódigo para la evaluación del coeficiente dinámico. Estos trenes actúan sobre el tablero con velocidades comprendidas entre los 40 y 120 m/s.

Se estudian las flechas en las secciones de centro de vano y se comparan sus valores con los obtenidos con la aplicación estática del modelo 71 del Eurocódigo y del tren B de la IPF-75, afectados por sus correspondientes coeficientes dinámicos.

Tal y como se comprueba en el anejo de cálculo dinámico, las flechas dinámicas son superadas en gran medida por las producidas por los trenes de las instrucciones, por lo que los esfuerzos dinámicos serán igualmente menores que los que se obtengan con la aplicación del tren B y del modelo 71.

## 2.4. Casos de carga

CASOS DE CARGA
==========

Fichero 1: Cargas según IPF
==========

CASo # 1 PESO PROPIO
CASo # 2 LEVANTAMIENTO DE APOYOS
CASo # 3 CARGA PERMANENTE CARACTERISTICA
CASo # 4 VALOR MAXIMO DEL BALASTO
CASo # 5 VALOR MINIMO DEL BALASTO
CASo # 6 DESBALASTADO 50 POR CIENTO
CASo # 7 SC PASEOS VANO 1 DERECHA
CASo # 8 SC PASEOS VANO 2 DERECHA
CASo # 9 SC PASEOS VANO 3 DERECHA
CASo # 10 SC PASEOS VANO 4 DERECHA
CASo # 11 SC PASEOS VANO 5 DERECHA
CASo # 12 SC PASEOS VANO 6 DERECHA
CASo # 13 SC PASEOS VANO 1 IZQUIERDA
CASo # 14 SC PASEOS VANO 2 IZQUIERDA
CASo # 15 SC PASEOS VANO 3 IZQUIERDA
CASo # 16 SC PASEOS VANO 4 IZQUIERDA
CASo # 17 SC PASEOS VANO 5 IZQUIERDA
CASo # 18 SC PASEOS VANO 6 IZQUIERDA
CASo # 19 TREN B POS. 1 DERECHA
CASo # 20 TREN B POS. 1 IZQUIERDA
CASo # 21 TREN B POS. 2 DERECHA
CASo # 22 TREN B POS. 2 IZQUIERDA
CASo # 23 TREN B POS. 3 DERECHA
CASo # 24 TREN B POS. 3 IZQUIERDA
CASo # 25 TREN B POS. 4 DERECHA
CASo # 26 TREN B POS. 4 IZQUIERDA
CASo # 27 TREN B POS. 5 DERECHA
CASo # 28 TREN B POS. 5 IZQUIERDA
CASo # 29 TREN B POS. 6 DERECHA
CASo # 30 TREN B POS. 6 IZQUIERDA
CASo # 31 TREN B POS. 7 DERECHA
CASo # 32 TREN B POS. 7 IZQUIERDA
CASo # 33 TREN B POS. 8 DERECHA
CASo # 34 TREN B POS. 8 IZQUIERDA
CASo # 35 TREN B POS. 9 DERECHA
CASo # 36 TREN B POS. 9 IZQUIERDA
CASo # 37 GRAD.(5.8 C)
CASo # 38  LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Superior.  Est B
CASo # 39  LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Superior 8.  Est B
CASo # 40  LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Superior 9.  Est B
CASo # 41  LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Inferior.  Est B
CASo # 42  LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Inferior 5.  Est B
CASo # 43  LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Inferior 6.  Est B
CASo # 44  LAV GELIDA. V-Riera de la Rierussa. Tendon 1 (Servicio).  Est C
CASo # 45  LAV GELIDA. V-Riera de la Rierussa. Tendon 2 (Servicio).  Est B
CASo # 46  LAV GELIDA. V-Riera de la Rierussa. Tendon 3 (Servicio).  Est C
CASo # 47  LAV GELIDA. V-Riera de la Rierussa. Tendon 4 (Servicio).  Est C
CASo # 48  LAV GELIDA. V-Riera de la Rierussa. Tendon 5 (Servicio).  Est C
CASo # 49  LAV GELIDA. V-Riera de la Rierussa. Tendon 6 (Servicio).  Est C
CASo # 50  LAV GELIDA. V-Riera de la Rierussa. Tendon 7 (Servicio).  Est C
CASo # 51  LAV GELIDA. V-Riera de la Rierussa. Tendon 8 (Servicio).  Est C
CASo # 52  LAV GELIDA. V-Riera de la Rierussa. Tendon 9 (Servicio).  Est C
CASo # 53  LAV GELIDA. V-Riera de la Rierussa. Tendon 10 (Servicio).  Est C
CASo # 54  LAV GELIDA. V-Riera de la Rierussa. Tendon 11 (Servicio).  Est C
CASo # 55  LAV GELIDA. V-Riera de la Rierussa. Tendon 12 (Servicio).  Est C
CASo # 56  LAV GELIDA. V-Riera de la Rierussa. Tendon 13 (Servicio).  Est C
CASo # 57  LAV GELIDA. V-Riera de la Rierussa. Tendon 14 (Servicio).  Est C

Fichero 2: Cargas según EC
==========

CASo # 1 PESO PROPIO
CASo # 2 LEVANTAMIENTO DE APOYOS
CASo # 3 CARGA PERMANENTE CARACTERISTICA
CASo # 4 VALOR MAXIMO DEL BALASTO
CASo # 5 VALOR MINIMO DEL BALASTO
CASo # 6 DESBALASTADO 50 POR CIENTO
CASo # 7 SC PASEOS VANO 1 DERECHA
CASo # 8 SC PASEOS VANO 2 DERECHA
CASo # 9 SC PASEOS VANO 3 DERECHA
CASo # 10 SC PASEOS VANO 4 DERECHA
CASo # 11 SC PASEOS VANO 5 DERECHA
CASo # 12 SC PASEOS VANO 6 DERECHA
CASo # 13 SC PASEOS VANO 1 IZQUIERDA
CASo # 14 SC PASEOS VANO 2 IZQUIERDA
CASo # 15 SC PASEOS VANO 3 IZQUIERDA
CASo # 16 SC PASEOS VANO 4 IZQUIERDA
CASo # 17 SC PASEOS VANO 5 IZQUIERDA
CASo # 18 SC PASEOS VANO 6 IZQUIERDA
CASo # 19 TREN 71 SC UNIFORME POS. 1 DERECHA
CASo # 20 TREN 71 SC UNIFORME POS. 1 IZQUIERDA
CASo # 21 TREN 71 SC UNIFORME POS. 2 DERECHA
CASo # 22 TREN 71 SC UNIFORME POS. 2 IZQUIERDA
CASo # 23 TREN 71 SC UNIFORME POS. 3 DERECHA
CASo # 24 TREN 71 SC UNIFORME POS. 3 IZQUIERDA
CASo # 25 TREN 71 SC UNIFORME POS. 4 DERECHA
CASo # 26 TREN 71 SC UNIFORME POS. 4 IZQUIERDA
CASo # 27 TREN 71 SC UNIFORME POS. 5 DERECHA
CASo # 28 TREN 71 SC UNIFORME POS. 5 IZQUIERDA
CASo # 29 TREN 71 SC UNIFORME POS. 6 DERECHA
CASo # 30 TREN 71 SC UNIFORME POS. 6 IZQUIERDA
CASo # 31 TREN 71 SC UNIFORME POS. 7 DERECHA
CASo # 32 TREN 71 SC UNIFORME POS. 7 IZQUIERDA
CASo # 33 TREN 71 SC UNIFORME POS. 8 DERECHA
CASo # 34 TREN 71 SC UNIFORME POS. 8 IZQUIERDA
CASo # 35 TREN 71 SC UNIFORME POS. 9 DERECHA
CASo # 36 TREN 71 SC UNIFORME POS. 9 IZQUIERDA
CASo # 37 TREN 71 SC UNIFORME POS. 10 DERECHA
CASo # 38 TREN 71 SC UNIFORME POS. 10 IZQUIERDA
CASo # 39 TREN 71 SC UNIFORME POS. 11 DERECHA
CASo # 40 TREN 71 SC UNIFORME POS. 11 IZQUIERDA
CASo # 41 CARRO TREN 71 POSICION 1 DERECHA 300 km/h
CASo # 42 CARRO TREN 71 POSICION 1 IZQUIERDA 300 km/h
CASo # 43 CARRO TREN 71 POSICION 2 DERECHA 300 km/h
CASo # 44 CARRO TREN 71 POSICION 2 IZQUIERDA 300 km/h
CASo # 45 CARRO TREN 71 POSICION 3 DERECHA 300 km/h
CASo # 46 CARRO TREN 71 POSICION 3 IZQUIERDA 300 km/h
CASo # 47 CARRO TREN 71 POSICION 4 DERECHA 300 km/h
CASo # 48 CARRO TREN 71 POSICION 4 IZQUIERDA 300 km/h
CASo # 49 CARRO TREN 71 POSICION 5 DERECHA 300 km/h
CASo # 50 CARRO TREN 71 POSICION 5 IZQUIERDA 300 km/h
CASo # 51 CARRO TREN 71 POSICION 6 DERECHA 300 km/h
CASo # 52 CARRO TREN 71 POSICION 6 IZQUIERDA 300 km/h
CASo # 53 CARRO TREN 71 POSICION 7 DERECHA 300 km/h
CASo # 54 CARRO TREN 71 POSICION 7 IZQUIERDA 300 km/h
CASo # 55 CARRO TREN 71 POSICION 8 DERECHA 300 km/h
CASo # 56 CARRO TREN 71 POSICION 8 IZQUIERDA 300 km/h
CASo # 57 CARRO TREN 71 POSICION 9 DERECHA 300 km/h
CASo # 58 CARRO TREN 71 POSICION 9 IZQUIERDA 300 km/h
CASo # 59 CARRO TREN 71 POSICION 10 DERECHA 300 km/h
CASo # 60 CARRO TREN 71 POSICION 10 IZQUIERDA 300 km/h
CASo # 61 CARRO TREN 71 POSICION 11 DERECHA 300 km/h
CASo # 62 CARRO TREN 71 POSICION 11 IZQUIERDA 300 km/h
CASo # 63 CARRO TREN 71 POSICION 12 DERECHA 300 km/h
CASo # 64 CARRO TREN 71 POSICION 12 IZQUIERDA 300 km/h
CASo # 65 CARRO TREN 71 POSICION 13 DERECHA 300 km/h
CASo # 66 CARRO TREN 71 POSICION 13 IZQUIERDA 300 km/h
CASo # 67 CARRO TREN 71 POSICION 14 DERECHA 300 km/h
CASo # 68 CARRO TREN 71 POSICION 14 IZQUIERDA 300 km/h
CASo # 69 CARRO TREN 71 POSICION 15 DERECHA 300 km/h
CASo # 70 CARRO TREN 71 POSICION 15 IZQUIERDA 300 km/h
CASo # 71 CARRO TREN 71 POSICION 16 DERECHA 300 km/h
CASo # 72 CARRO TREN 71 POSICION 16 IZQUIERDA 300 km/h
CASo # 73 CARRO TREN 71 POSICION 17 DERECHA 300 km/h
CASo # 74 CARRO TREN 71 POSICION 17 IZQUIERDA 300 km/h
CASo # 75 CARRO TREN 71 POSICION 18 DERECHA 300 km/h
CASo # 76 CARRO TREN 71 POSICION 18 IZQUIERDA 300 km/h
CASo # 77 CARRO TREN 71 POSICION 19 DERECHA 300 km/h
CASo # 78 CARRO TREN 71 POSICION 19 IZQUIERDA 300 km/h
CASo # 79 CARRO TREN 71 POSICION 20 DERECHA 300 km/h
CASo # 80 CARRO TREN 71 POSICION 20 IZQUIERDA 300 km/h
CASo # 81 CARRO TREN 71 POSICION 21 DERECHA 300 km/h
CASo # 82 CARRO TREN 71 POSICION 21 IZQUIERDA 300 km/h
CASo # 83 CARRO TREN 71 POSICION 22 DERECHA 300 km/h
CASo # 84 CARRO TREN 71 POSICION 22 IZQUIERDA 300 km/h
CASo # 85 CARRO TREN 71 POSICION 23 DERECHA 300 km/h
CASo # 86 CARRO TREN 71 POSICION 23 IZQUIERDA 300 km/h
CASo # 87 CARRO TREN 71 POSICION 24 DERECHA 300 km/h
CASo # 88 CARRO TREN 71 POSICION 24 IZQUIERDA 300 km/h
CASo # 89 CARRO TREN 71 POSICION 25 DERECHA 300 km/h
CASo # 90 CARRO TREN 71 POSICION 25 IZQUIERDA 300 km/h
CASo # 91 CARRO TREN 71 POSICION 26 DERECHA 300 km/h
CASo # 92 CARRO TREN 71 POSICION 26 IZQUIERDA 300 km/h
CASo # 93 CARRO TREN 71 POSICION 27 DERECHA 300 km/h
CASo # 94 CARRO TREN 71 POSICION 27 IZQUIERDA 300 km/h
CASo # 95 CARRO TREN 71 POSICION 28 DERECHA 300 km/h
CASo # 96 CARRO TREN 71 POSICION 28 IZQUIERDA 300 km/h
CASo # 97 TREN SW0 POSICION 1 DERECHA 80 km/h
CASo # 98 TREN SW0 POSICION 1 IZQUIERDA 80 km/h
CASo # 99 TREN SW0 POSICION 2 DERECHA 80 km/h
CASo # 100 TREN SW0 POSICION 2 IZQUIERDA 80 km/h
CASo # 101 TREN SW0 POSICION 3 DERECHA 80 km/h
CASo # 102 TREN SW0 POSICION 3 IZQUIERDA 80 km/h
CASo # 103 TREN SW0 POSICION 4 DERECHA 80 km/h
CASo # 104 TREN SW0 POSICION 4 IZQUIERDA 80 km/h
CASo # 105 TREN SW0 POSICION 5 DERECHA 80 km/h
CASo # 106 TREN SW0 POSICION 5 IZQUIERDA 80 km/h
CASo # 107 TREN SW0 POSICION 6 DERECHA 80 km/h
CASo # 108 TREN SW0 POSICION 6 IZQUIERDA 80 km/h
CASo # 109 TREN SW0 POSICION 7 DERECHA 80 km/h
CASo # 110 TREN SW0 POSICION 7 IZQUIERDA 80 km/h
CASo # 111 TREN SW0 POSICION 8 DERECHA 80 km/h
CASo # 112 TREN SW0 POSICION 8 IZQUIERDA 80 km/h
CASo # 113 TREN SW0 POSICION 9 DERECHA 80 km/h
CASo # 114 TREN SW0 POSICION 9 IZQUIERDA 80 km/h
CASo # 115 TREN SW0 POSICION 10 DERECHA 80 km/h
CASo # 116 TREN SW0 POSICION 10 IZQUIERDA 80 km/h
CASo # 117 TREN SW0 POSICION 11 DERECHA 80 km/h
CASo # 118 TREN SW0 POSICION 11 IZQUIERDA 80 km/h
CASo # 119 TREN SW2 POSICION 1 DERECHA 80 km/h
CASo # 120 TREN SW2 POSICION 1 IZQUIERDA 80 km/h
CASo # 121 TREN SW2 POSICION 2 DERECHA 80 km/h
CASo # 122 TREN SW2 POSICION 2 IZQUIERDA 80 km/h
CASo # 123 TREN SW2 POSICION 3 DERECHA 80 km/h
CASo # 124 TREN SW2 POSICION 3 IZQUIERDA 80 km/h
CASo # 125 TREN SW2 POSICION 4 DERECHA 80 km/h

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CASo # 126  TREN SW2 POSICION   4 IZQUIERDA  80 km/h
CASo # 127  TREN SW2 POSICION   5 DERECHA  80 km/h
CASo # 128  TREN SW2 POSICION   5 IZQUIERDA  80 km/h
CASo # 129  TREN SW2 POSICION   6 DERECHA  80 km/h
CASo # 130  TREN SW2 POSICION   6 IZQUIERDA  80 km/h
CASo # 131  TREN SW2 POSICION   7 DERECHA  80 km/h
CASo # 132  TREN SW2 POSICION   7 IZQUIERDA  80 km/h
CASo # 133  TREN SW2 POSICION   8 DERECHA  80 km/h
CASo # 134  TREN SW2 POSICION   8 IZQUIERDA  80 km/h
CASo # 135  TREN SW2 POSICION   9 DERECHA  80 km/h
CASo # 136  TREN SW2 POSICION   9 IZQUIERDA  80 km/h
CASo # 137  TREN SW2 POSICION  10 DERECHA  80 km/h
CASo # 138  TREN SW2 POSICION  10 IZQUIERDA  80 km/h
CASo # 139  TREN SW2 POSICION  11 DERECHA  80 km/h
CASo # 140  TREN SW2 POSICION  11 IZQUIERDA  80 km/h
CASo # 141 GRAD.(5.8 C)
CASo # 142  LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Superior.  Est B
CASo # 143  LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Superior 8.  Est B
CASo # 144  LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Superior 9.  Est B
CASo # 145  LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Inferior.  Est B
CASo # 146  LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Inferior 5.  Est B
CASo # 147  LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Inferior 6.  Est B
CASo # 148  LAV GELIDA. V-Riera de la Rierussa. Tendon 1 (Servicio).  Est C
CASo # 149  LAV GELIDA. V-Riera de la Rierussa. Tendon 2 (Servicio).  Est B
CASo # 150  LAV GELIDA. V-Riera de la Rierussa. Tendon 3 (Servicio).  Est C
CASo # 151  LAV GELIDA. V-Riera de la Rierussa. Tendon 4 (Servicio).  Est C
CASo # 152  LAV GELIDA. V-Riera de la Rierussa. Tendon 5 (Servicio).  Est C
CASo # 153  LAV GELIDA. V-Riera de la Rierussa. Tendon 6 (Servicio).  Est C
CASo # 154  LAV GELIDA. V-Riera de la Rierussa. Tendon 7 (Servicio).  Est C
CASo # 155  LAV GELIDA. V-Riera de la Rierussa. Tendon 8 (Servicio).  Est C
CASo # 156  LAV GELIDA. V-Riera de la Rierussa. Tendon 9 (Servicio).  Est C
CASo # 157  LAV GELIDA. V-Riera de la Rierussa. Tendon 10 (Servicio).  Est C
CASo # 158  LAV GELIDA. V-Riera de la Rierussa. Tendon 11 (Servicio).  Est C
CASo # 159  LAV GELIDA. V-Riera de la Rierussa. Tendon 12 (Servicio).  Est C
CASo # 160  LAV GELIDA. V-Riera de la Rierussa. Tendon 13 (Servicio).  Est C
CASo # 161  LAV GELIDA. V-Riera de la Rierussa. Tendon 14 (Servicio).  Est C
```

## 2.5. Combinación de Acciones

En este apartado, la referencia a las acciones se hará de acuerdo con lo siguiente:

| | | |
|---|---|---|
| G | $G_1$: | Peso Propio |
| | $G_2$: | Balasto característico más cargas permanentes |
| | $G_3$: | Variaciones del balasto |
| | R.E. | Redistribución de esfuerzos por fluencia |
| | G* | Acortamiento del tablero por retracción y fluencia |
| | Pret | Pretensado |
| Q | TrenB | Tren B de la IPF |
| | M71 | Modelo 71 del Eurocódigo |
| | SW0 | Modelo SW0 del Eurocódigo |
| | SW2 | Modelo SW2 del Eurocódigo |
| | FR | Frenado y arranque |
| | FC | Fuerza centrífuga |
| | Wdom | Viento característico considerado como acción dominante |
| | Wc | Viento característico concomitante con las sobrecargas de tráfico |
| | T | Variación uniforme de temperatura |
| | GT | Gradiente térmico vertical positivo del tablero |

### 2.5.1. Estado Límite de Servicio

Combinaciones Frecuentes:

**Eurocódigo**

i) $1.00G+R.E.+1.\ 00Pret_{t=0} + 0.80((M71 \text{ ó } SW0 \text{ ó } SW2)+FC)+0.50(T+GT)$

ii) $1.00G+R.E.+1.\ 00Pret_{t=\infty} + 0.80((M71 \text{ ó } SW0 \text{ ó } SW2)+FC)+0.50(T+GT)$

**IPF**

iii) $1.00G+R.E +1.10Pret_{t=0} + 0.80(TrenB+FC)+ 0.50(T+GT)$

iv) $1.00G+R.E.+0.90Pret_{t=\infty} + 0.80(TrenB+FC)+ 0.50(T+GT)$

Combinaciones Cuasipermanentes:

i) $1.00G+R.E +1.10Pret_{t=0} + 0.50(T+GT)$

ii) $1.00G+R.E +0.90Pret_{t=\infty} + 0.50(T+GT)$

Combinaciones Raras (cálculo de Apoyos y Estribos):

**Eurocódigo**

i) $1.00G+R.E.+1.\ 00Pret_{t=\infty} + 1.00((M71 \text{ ó } SW0 \text{ ó } SW2)+FC)+0.60(T+GT+Vc)$

**IPF**

ii) $1.00G+R.E+0.90Pret_{t=\infty}+1.00(TrenB+FC)+0.60(T+GT+Vc)$

### 2.5.2. Estado Límite Último

- Para tablero:

**Eurocódigo**

Rotura por flexión y solicitaciones tangenciales:

i) $1.35G+R.E.+1.00Pret_{t=0}+(1.45(M71 \text{ ó } SW0) \text{ ó } 1.20SW2)+FC)+0.90(T+GT)$

Fatiga:

ii) $1.00G+R.E.+1.00Pret_{t=\infty}+1.00(M71+FC)+0.60(T+GT)$

**IPF**

iii) $1.35G+R.E+1.00Pret_{t=\infty}+1.50(TrenB+FC)+0.90(T+GT)$

- Para pilas:

**Eurocódigo**
Combinación 1

i) $1.35G+R.E.+1.00Pret_{t=\infty}+(1.45(M71 \text{ ó } SW0) \text{ ó } 1.20SW2)+FC)+0.90(T+GT+Vc)$
ii) $1.35G+R.E.+1.00Pret_{t=\infty}+1.50\ Vd+0.90(T+GT)$
iii) $1.00G+R.E.+1.00Pret_{t=\infty}+(1.45(M71 \text{ ó } SW0) \text{ ó } 1.20SW2)+FC)+0.90(T+GT+Vc)$
iv) $1.00G+R.E.+1.00Pret_{t=\infty}+1.50\ Vd+0.90(T+GT)$

**IPF**

i) $1.35G+R.E+1.00Pret_{t=\infty}+1.50(TrenB+FC)+0.90(T+GT+Vc)$
iii) $1.00G+R.E+1.00Pret_{t=\infty}+1.50(TrenB+FC)+0.90(T+GT+Vc)$

En todas las combinaciones, se considera un valor de $Pret_{t=\infty}$ igual al 87% del pretensado inicial.

ACCIONES DEL ANÁLISIS TRANSVERSAL

Se han considerado las siguientes hipótesis de carga acciones:

- Peso propio, barandilla, conducciones y murete de hormigón
- Balasto característico, traviesas y aceras
- Máximo balasto (1.30 * Balasto característico)
- Mínimo balasto (0.70 * Balasto característico)
- Vía izquierda 100% desbalastada
- Tren A de la IPF-75 en la vía derecha
- Tren A de la IPF-75 en la vía izquierda
- Sobrecarga de paseos en vía derecha
- Sobrecarga de paseos en vía izquierda
- Descarrilamiento: situación de proyecto I

A estas acciones cabe hacer las siguientes observaciones:

a) No se ha considerado ripado alguno, ya que la situación más desfavorable sería el caso en que las dos vías se desplazaran hacia el eje de la estructura. Esta situación es impensable por las condiciones de distancia mínima entre ejes de vía que precisa el tráfico de alta velocidad. El ripado de ambas vías en un mismo sentido empeora las acciones transmitidas por una vía, pero alivia los esfuerzos de la otra.

b) Únicamente se ha considerado el tren tipo A de la IPF al resultar la peor de las acciones puntuales tras aplicar los correspondientes coeficientes. Este razonamiento se justifica a continuación:

Coeficiente dinámico tren A:

| | |
|---|---|
| Luz entre ejes de almas: | 6.50 m |
| Espesor medio de la losa superior: | 0.40 m |
| Masa unitaria: | 1000 Kg/m |
| Inercia unitaria: | $5.33 \times 10^{-3}$ m$^4$ |

Para tramos apoyados continuos $I = 65 \cdot \frac{\mu}{1-\mu+\mu^2}$, donde $\mu = \frac{VT}{2L}$

V=200 km/h = 55.55m/sg

$$T = \frac{2}{\pi}\sqrt{\frac{m}{EI}L^4}$$

Operando se obtiene:

T = 0.0663
$\mu$ = 0.283
I = 0.23

Por tanto, el coeficiente dinámico queda: $\Phi = 1.23$

Coeficiente dinámico modelo 71:

| | |
|---|---|
| Longitud determinante: | 3 x 42 m |
| Coeficiente dinámico: | 1.0 |

| | |
|---|---|
| Total carga por eje tren A: | 300 x 1.23 = 369 kN |
| Total carga por eje modelo 71: | 250 x 1.21 x 1.00 = 303 kN |

## 2.6. Modelo de cálculo

Se han desarrollado dos modelos de cálculo: uno recto para el cálculo del tablero durante las fases de empuje y otro curvo para el cálculo del tablero en fase de servicio.

El primero es un modelo que tiene en cuenta todas las posibles posiciones relativas de apoyos y tablero durante el empuje. Al cajón de hormigón se ha añadido por delante una nariz de lanzamiento para la reducción de esfuerzos. En este modelo se introducen como acciones el peso propio de la estructura lanzada y el desplazamiento impuesto que supone la geometría longitudinal con acuerdo vertical.

Para el cálculo del tablero en fase de servicio, se ha realizado un modelo de tipo **pórtico espacial** de seis grados de libertad por nudo.

Se han utilizado dos modelos con la misma geometría para el cálculo de los Viaductos de las Rieras de Rierussa y Sant Joan, para simplificar el cálculo. Ello es posible dado que las secciones y luces son las mismas. Sin embargo, se introducen los cambios en las acciones que son distintas para uno y otro puente: pretensado y levatamiento de apoyos. El modelo tiene seis vanos con las luces extremas e intermedias comunes a ambos viaductos, por lo que la diferencia con los esfuerzos reales será mínima.

Los apoyos de pilas y estribos representan las condiciones reales de vinculación, liberando los giros allí donde están permitidos.

Los giros permitidos por los apoyos se liberan en el nudo inferior del nudo que representa el cargadero, orientada según el eje longitudinal del tablero. En el programa de cálculo se llama "relajación" a la función que permite liberar los movimientos y giros.

Por último, las pilas y estribos se introducen en la estructura por medio de barras, con las relajaciones correspondientes para liberar los grados de libertad no coaccionados.

## 2.7. Comportamiento Estructural

### 2.7.1. E.L.S.

#### 2.7.1.1. Tensiones

Combinaciones frecuentes: EC1

| Combinación i) t=∞ | Nudo | $\sigma_{sup}$ (N/mm$^2$) | $\sigma_{inf}$ (N/mm$^2$) |
|---|---|---|---|
| Centro Vano | 47 | | -1.3 |
| Apoyo Pila | 37 | +1.4 | |

Combinaciones frecuentes: IPF – 75

| Combinación i) t=∞ | Nudo | $\sigma_{sup}$ (N/mm$^2$) | $\sigma_{inf}$ (N/mm$^2$) |
|---|---|---|---|
| Centro Vano | 47 | | -2.2 |
| Apoyo Pila | 37 | -1.0 | |

La tensión mínima se produce en el nudo 47 con un valor de $\sigma_{inf}$=-2.2 N/mm$^2$.

Combinación Cuasipermanente:

Se comprueba que todas las fibras de pretensado están comprimidas para la combinación cuasipermanente.

#### 2.7.1.2. Comprobación del estado límite de fisuración.

De acuerdo con el resumen de tensiones, ninguna sección tiene tensiones de tracción que rebasen la resistencia mínima del hormigón a tracción, por lo que bajo la combinación de acciones frecuentes no se produce fisuración. De esta forma, no es necesario realizar el cálculo.

2.7.1.3. Giro por torsión del tablero

El giro por torsión del tablero del puente se calculará teniendo en cuenta los valores característicos del modelo de carga 71 multiplicados por el correspondiente Coeficiente de Impacto.

La máxima variación angular resultante se producirá cuando el carro se sitúe cerca del apoyo. La ley de torsores pésima producida por el tren 71 en los 3 primeros metros se refleja en el siguiente cuadro:

| MOMENTOS TORSORES (mkN) | |
|---|---|
| Nudo | Mt |
| 1 | 7900.11 |
| 2 | 7507.15 |

La variación angular unitaria:

$$\Delta\theta = \frac{M_T}{G \cdot J}$$

donde:

$$G = \frac{E}{2 \cdot (1+\nu)} = 12871.27 \frac{N}{mm^2}$$

J=19.623 $m^4$

$$\theta = \sum \Delta\theta \cdot d_i = \frac{(7900 \cdot 1.5 + 7507 \cdot 1.5)}{12871 \cdot 10^3 \cdot 19.623} = 9.15 \cdot 10^{-5} rad$$

t=1.28 mm<1.5 mm/3m

2.7.1.4. Giros en el final del tablero.

Con los valores característicos del modelo de carga 71, multiplicados por el coeficiente de impacto y el gradiente de temperatura, los máximos giros medidos en el extremo del vano en el eje de la vía no deben exceder de 3.5 $10^{-3}$ en puentes con dos vías. De los listados mostrados se obtienen los siguientes resultados:

- Giro por sobrecarga uniforme tren 71: -0.000614 rad
- Giro por cargas puntuales tren 71: -0.000080 rad
- Giro por gradiente: 0.000178 rad
- Giro máximo: 0.000694 < 0.0035 rad

2.7.1.5. Deformaciones Horizontales del tablero

Esta condición se comprueba para la carga de viento y la fuerza centrífuga, ya que la fuerza de lazo es despreciable.

La deformación horizontal $\delta_h$ no debe producir un radio de curvatura horizontal menor que 14000 metros, siendo el valor del radio de curvatura:

$$R = \frac{L^2}{8 \cdot \delta_h}$$

De los listados se obtienen los siguientes resultados:

| Deformación Horizontal | |
|---|---|
| CASO | Ux (mm) |
| Tren 71 | 5.82 |
| Viento concomitante·0.6 | 6.37 |
| Total | 12.19 |

R= 42^2 / 8·12.19·10^-3 = 18089 > 14000 m

2.7.1.6. Valores límite para la máxima deformación vertical en función del confort de los usuarios.

Para una luz de 42 metros en una estructura hiperestática de 8 vanos y con una velocidad de 350 km/h en la línea, se tiene la limitación para las cargas de tráfico:

f<L/1750=24.0 mm

en los listados se comprueba que la máxima deformación vertical de las cargas del tren 71 es:

- Sobrecarga uniforme: -5.61 mm
- Carro: -1.33 mm
- Total: -13.88 mm < 24.0 mm

### 2.7.3. ELU

2.7.2.1. E.L.U. de Agotamiento frente a Solicitaciones Normales

Se han comprobado distintas secciones a cálculo a rotura. Los momentos de cálculo (Md), y los coeficientes de seguridad obtenidos para las secciones analizadas son los siguientes:

| Sección | Nudo | Md (m kN) | $\gamma$ adicional |
|---|---|---|---|
| Centro de vano | 47 | 115313.4 | 1.047 |
| Apoyo Pila | 77 | -146309.0 | 1.176 |

2.7.2.2. E.L.U. de Cortante y Torsión

Los resultados obtenidos en las secciones pésimas son los siguientes:

| Sección | Nudo | Vd (kN) | Td (m kN) | $(V_{rd}/V_{u1})^{\beta} + (T_d/T_{u1})^{\beta}$ |
|---|---|---|---|---|
| | 1 | 3565 | 2004 | 0.196 |
| | 27 | 5742 | 1608 | 0.148 |

2.7.2.3. E.L.U. de Fatiga

De acuerdo con el Eurocódigo 2 - Parte 2, artículo 4.3.7.1., no es necesaria la comprobación a fatiga en:

1º acero de armar sin soldaduras ni acopladores en estructuras que estén en un estado de descompresión bajo la combinación de acciones cuasipermanentes y cumplan el ELS de fisuración bajo combinación de acciones frecuentes.

2º acero de pretensar con soldaduras o acopladores en zonas donde, bajo combinación de acciones frecuentes con un coeficiente reductor del pretensado de 0.85, existan sólo tensiones de compresión en las fibras extremas.

La primera condición se cumple claramente. En cuanto a la segunda, también se cumple debido a la colocación favorable de los acopladores del pretensado de empuje. El pretensado de servicio no tiene acopladores. Para ver la distribución de tensiones, ver los listados que figuran al final de los cálculos.

### 2.7.3. Tensiones en cimentación

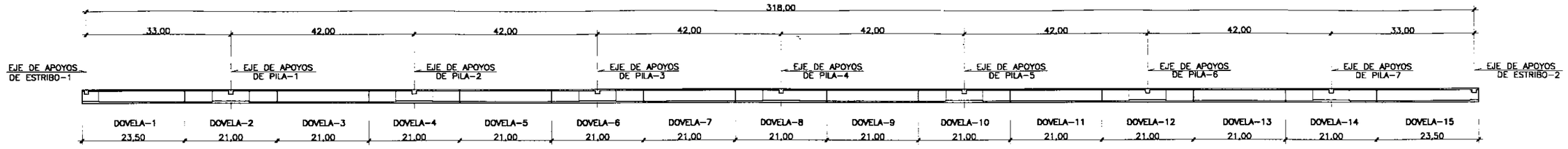
| Elemento | Q(kN) |
|---|---|
| Pilotes P-3 | 1029 |
| Pilotes P-4 | 885 |

| Elemento | σ (N / mm²) |
|---|---|
| E-1 | 3.95 |
| P-1 | 3.95 |
| P-2 | 3.85 |
| P-5 | 3.84 |
| P-6 | 3.84 |
| P-7 | 4.85 |
| E-2 | 4.46 |

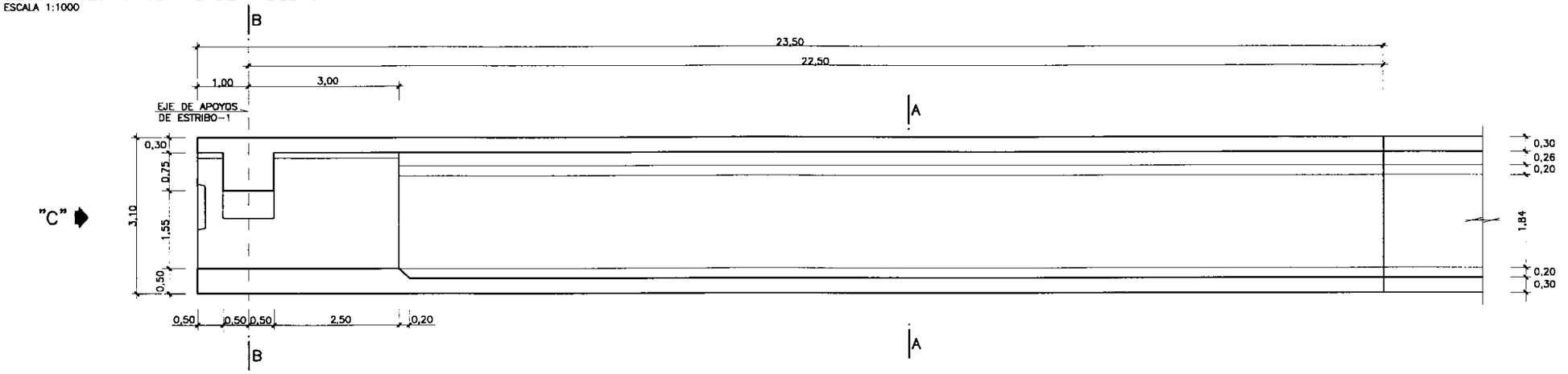
# 3. TABLERO

## 3.1. DEFINICIÓN, CARACTERÍSTICAS MECÁNICAS Y DISCRETIZACIÓN

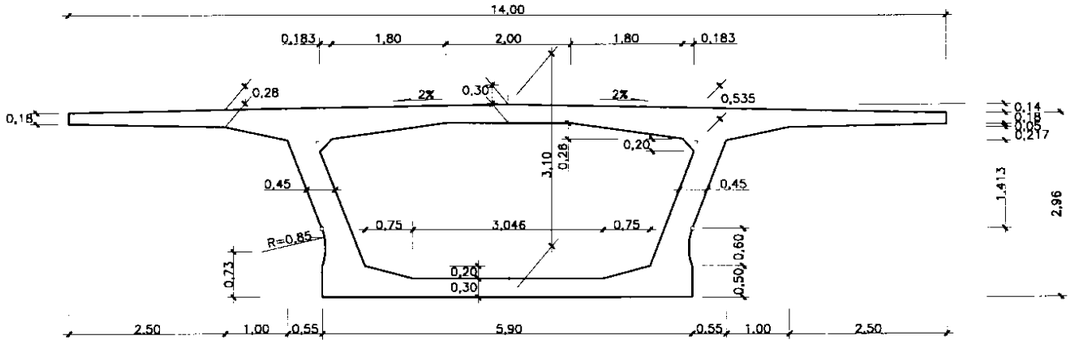
### 3.1.1. Definición geométrica




SECCION LONGITUDINAL DE TABLERO
ESCALA 1:1000




SECCION LONGITUDINAL DE DOVELA-1
ESCALA 1:100

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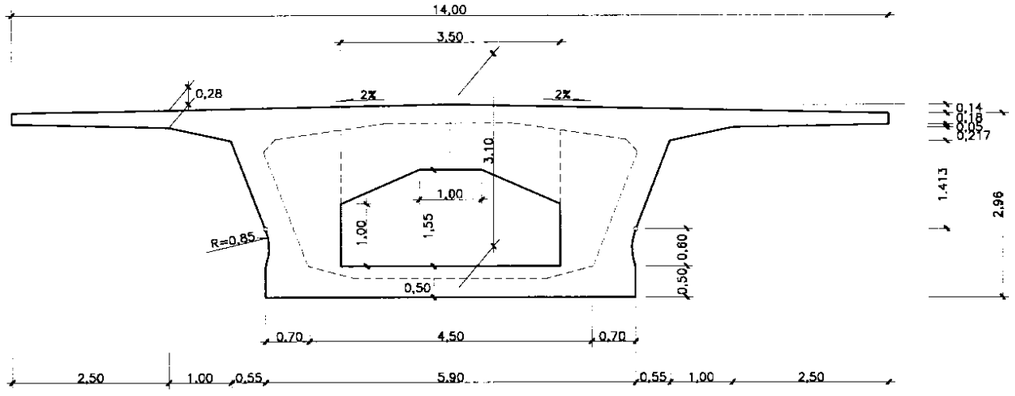


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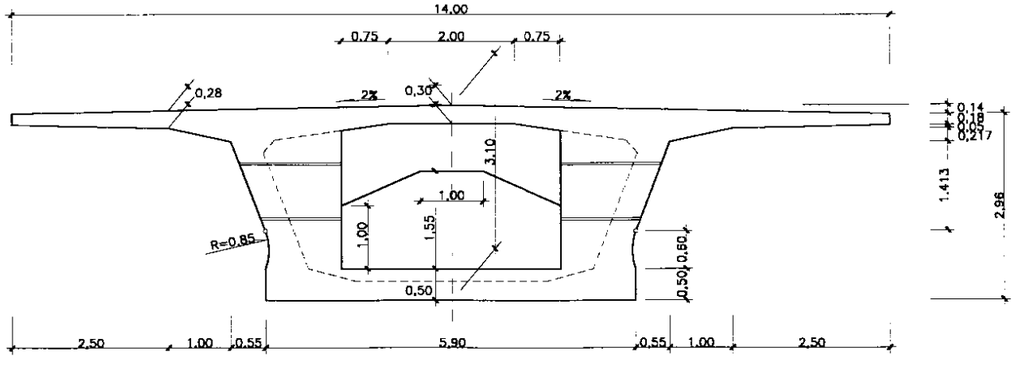
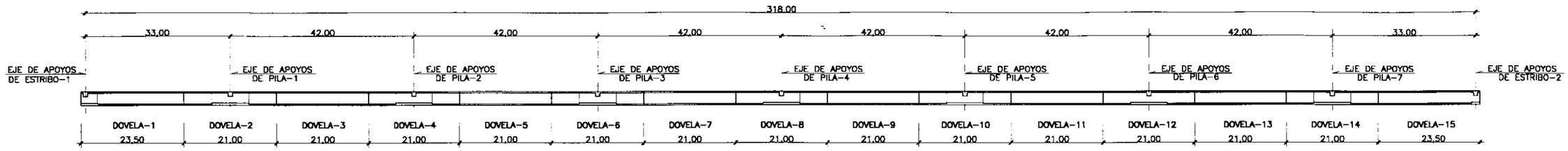



ALZADO POR "C"
ESCALA 1:100

.TDEF1-RIERUSSA

| | | | | | | |
|---|---|---|---|---|---|---|
| GIF Gestor de Infraestructuras Ferroviarias | TÍTULO: PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA TRAMO: GELIDA-SANT LLORENÇ D'HORTONS | AUTOR: Eptisa EP — Fdo: FÉLIX ZAPATA PARRA | ESCALA: VARIAS — UNE A-3 ORIGINALES — Gráfica | FECHA: MARZO 2002 | TÍTULO DEL PLANO | Nº DE PLANO: Hoja de |

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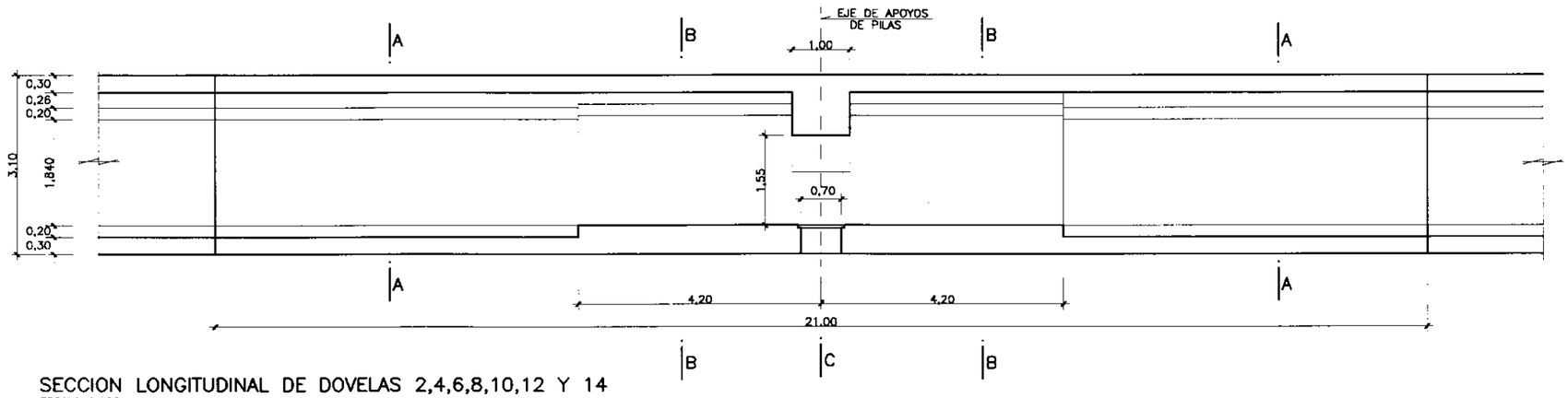
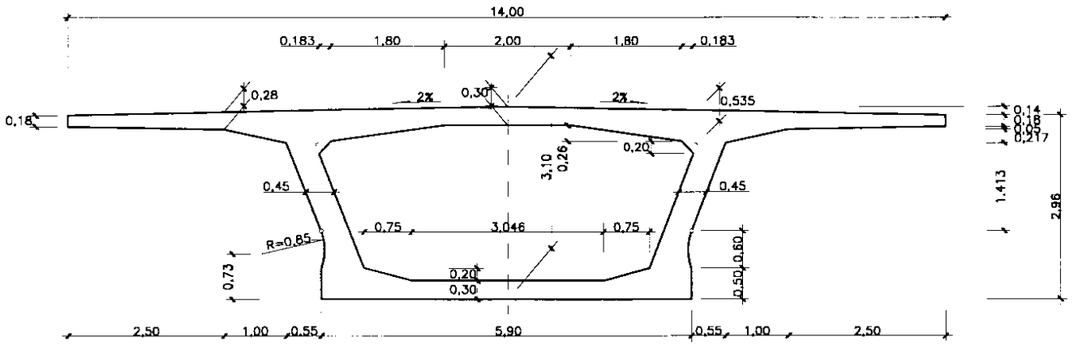



SECCION LONGITUDINAL DE DOVELAS 2,4,6,8,10,12 Y 14
ESCALA 1:100

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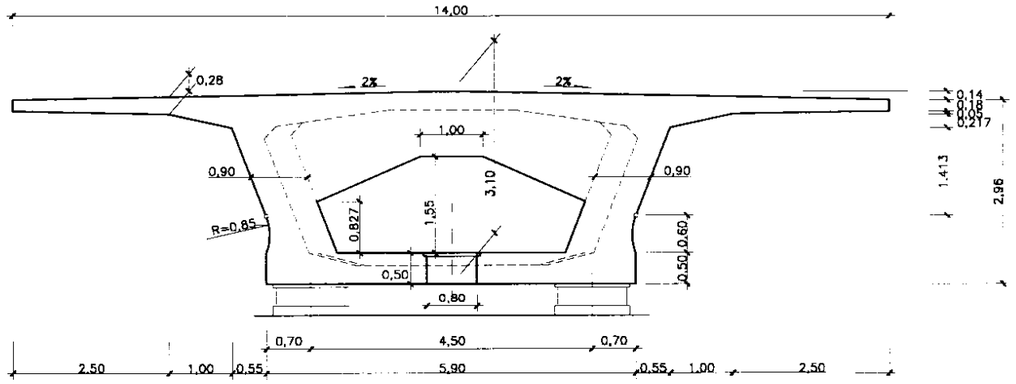
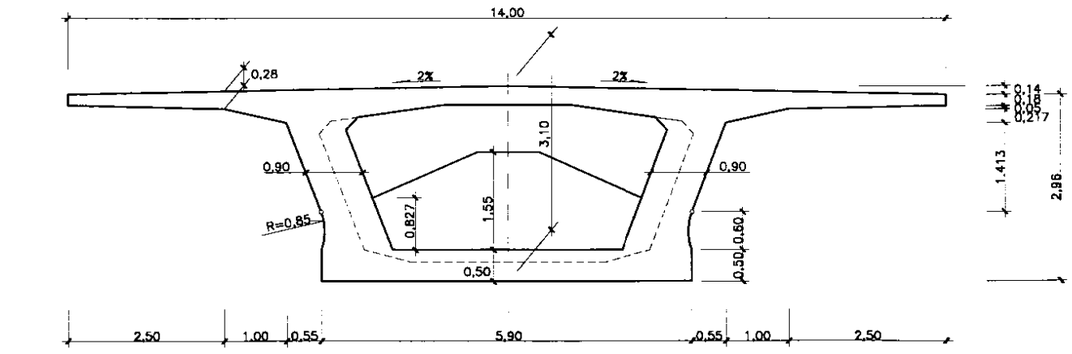



SECCION C-C
ESCALA 1:100

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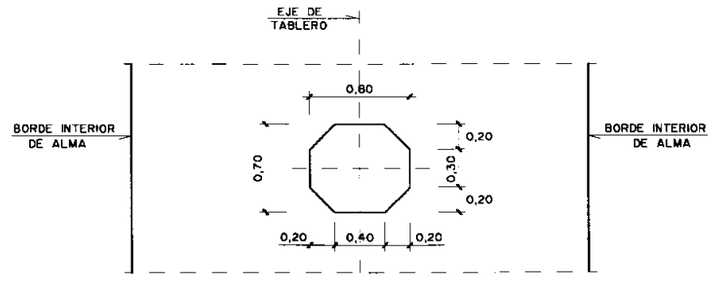
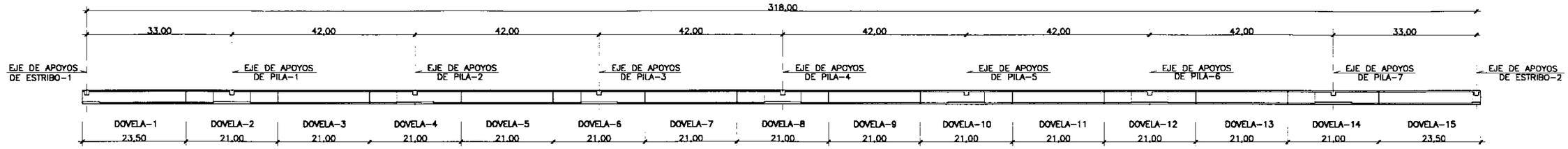


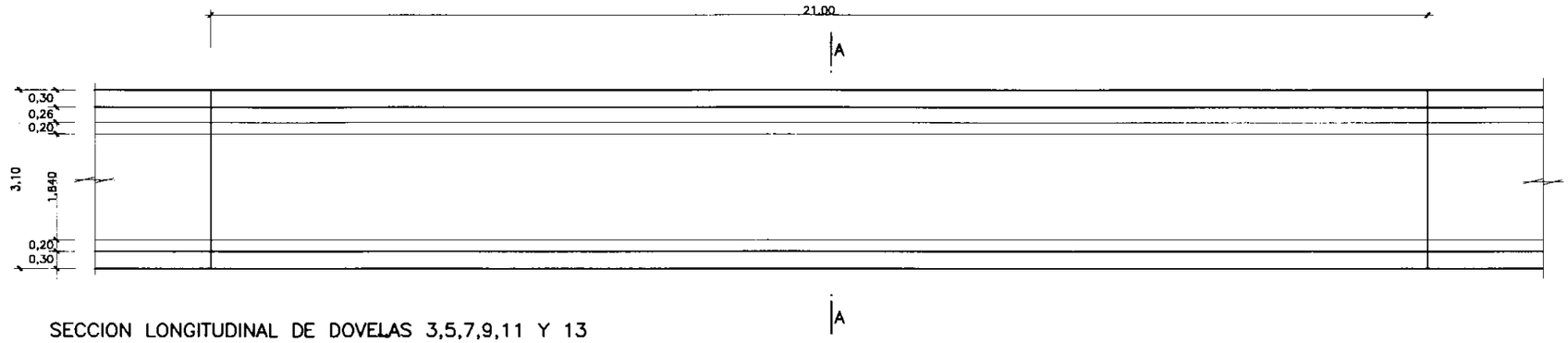

PLANTA DE ACCESO A PILA
ESCALA 1:50

| | | | | | | |
|---|---|---|---|---|---|---|
| GIF Gestor de Infraestructuras Ferroviarias | TÍTULO: PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA L.A.V. MADRID–ZARAGOZA–BARCELONA–FRONTERA FRANCESA TRAMO: GELIDA–SANT LLORENÇ D'HORTONS | AUTOR: Eptisa — Fdo: FELIX ZAPATA PARRA | ESCALA: VARIAS; UNE A-3 ORIGINALES; Gráfica | FECHA: MARZO 2002 | TÍTULO DEL PLANO | Nº DE PLANO: Hoja de |

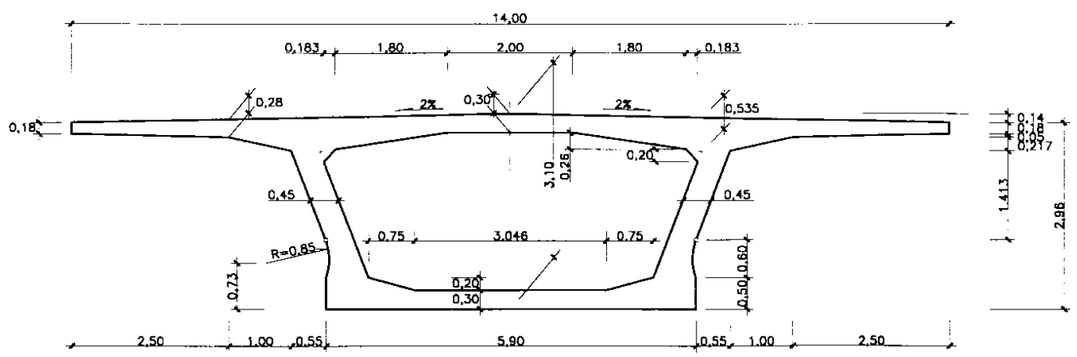
.TDEF2-RIERUSSA




SECCION LONGITUDINAL DE TABLERO
ESCALA 1:1000




SECCION LONGITUDINAL DE DOVELAS 3,5,7,9,11 Y 13
ESCALA 1:100




SECCION TIPO A–A
ESCALA 1:100

NOTA DE MATERIALES

NIVELES DE CONTROL Y COEFICIENTES DE SEGURIDAD:

- Acero para armar, control normal ($\delta$ = 1,15)
- Hormigon control estadistico ($\delta$ = 1,50)
- Ejecucion (Tablero y Pilas) nivel intenso
- Ejecucion (Resto obra) nivel intenso
- Los coeficientes de seguridad de las acciones son los correspondientes a la IAP–98 y EC–1

ACERO (ARMADURAS):

- B500S fy = 500 N/mm2

PARA ANCLAJES Y SOLAPES, SE SEGUIRAN LAS PRESCRIPCIONES CONTENIDAS EN EL ARTICULO 66 DE LA INSTRUCCION EHE
LOS RECUBRIMIENTOS NOMINALES SE DETERMINARAN SEGUN EL ARTICULO 37 DE LA INSTRUCCION EHE PARA UN AMBIENTE IIb y IIa.

HORMIGONES:

| HORMIGON TIPO | fck (N/mm2) | ELEMENTO ESTRUCTURAL | RECUBRIMIENTO NOMINAL |
|---|---|---|---|
| HP–40 B 20 IIb | 40 | Tablero | 3,5 cm. |
| HA–30 B 20 IIb | 30 | Alzados de Pilas | 3,5 cm. |
| HA–25 B 20 IIb | 25 | Alzados de Estribos | 3,5 cm. |
| HA–25 B 20 IIa | 25 | Zapatas, Encepados y Pilotes | 3,5 cm. |
| HM–15 | 15 | Capas de regularizacion | |

.TDEF3-RIERUSSA

GIF Gestor de Infraestructuras Ferroviarias

TÍTULO
PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA
L.A.V. MADRID–ZARAGOZA–BARCELONA–FRONTERA FRANCESA
TRAMO: GELIDA–SANT LLORENÇ D'HORTONS

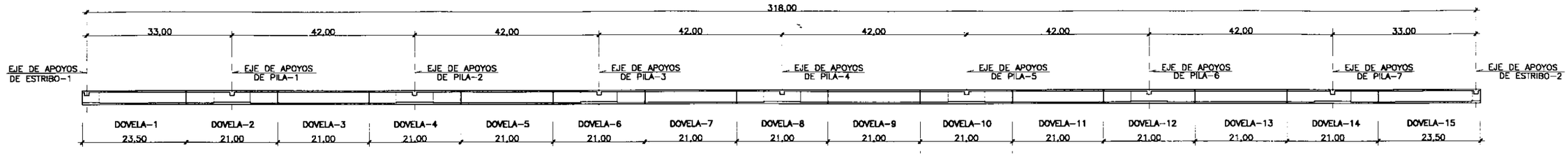
AUTOR
Eptisa
Fdo: FÉLIX ZAPATA PARRA

ESCALA
VARIAS
UNE A–3 ORIGINALES
Gráfica

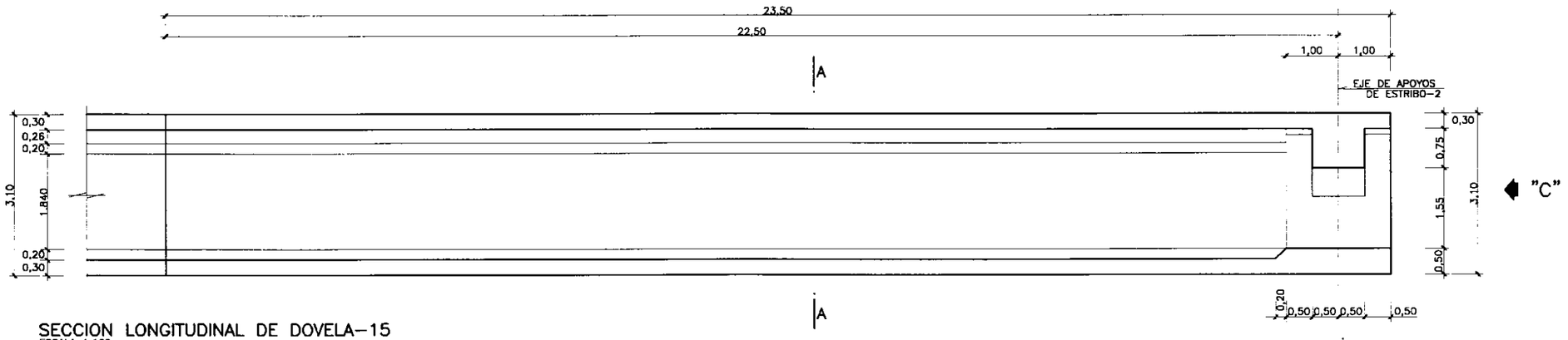
FECHA
MARZO 2002

TÍTULO DEL PLANO

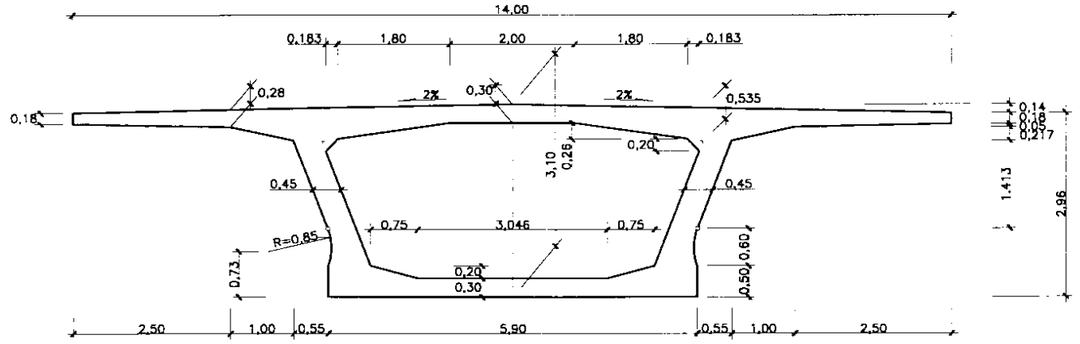
Nº DE PLANO
Hoja de



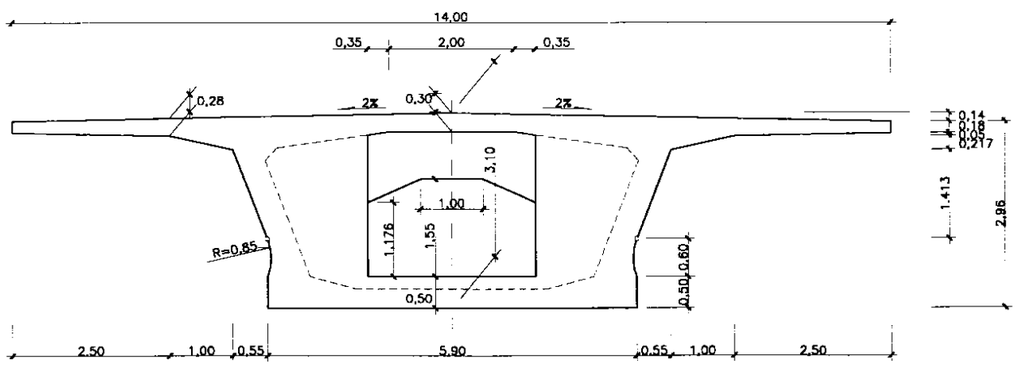

SECCION LONGITUDINAL DE TABLERO
ESCALA 1:1000



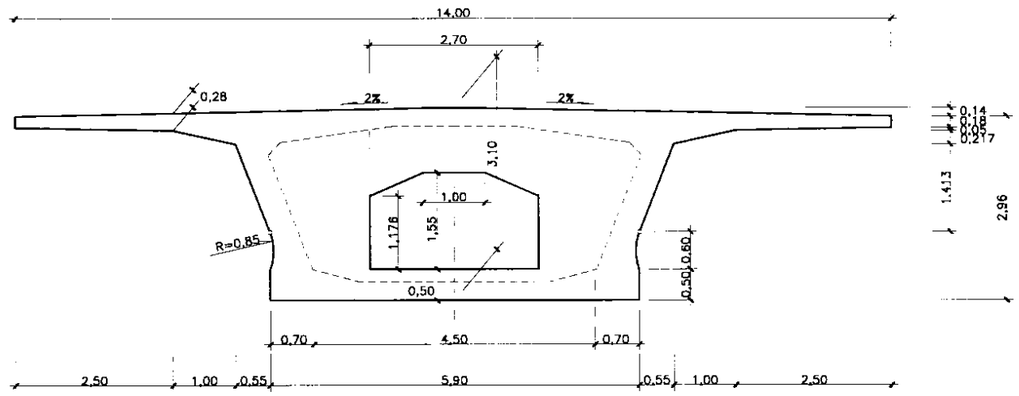

SECCION LONGITUDINAL DE DOVELA-15
ESCALA 1:100




SECCION TIPO A-A
ESCALA 1:100




ALZADO POR "C"
ESCALA 1:100

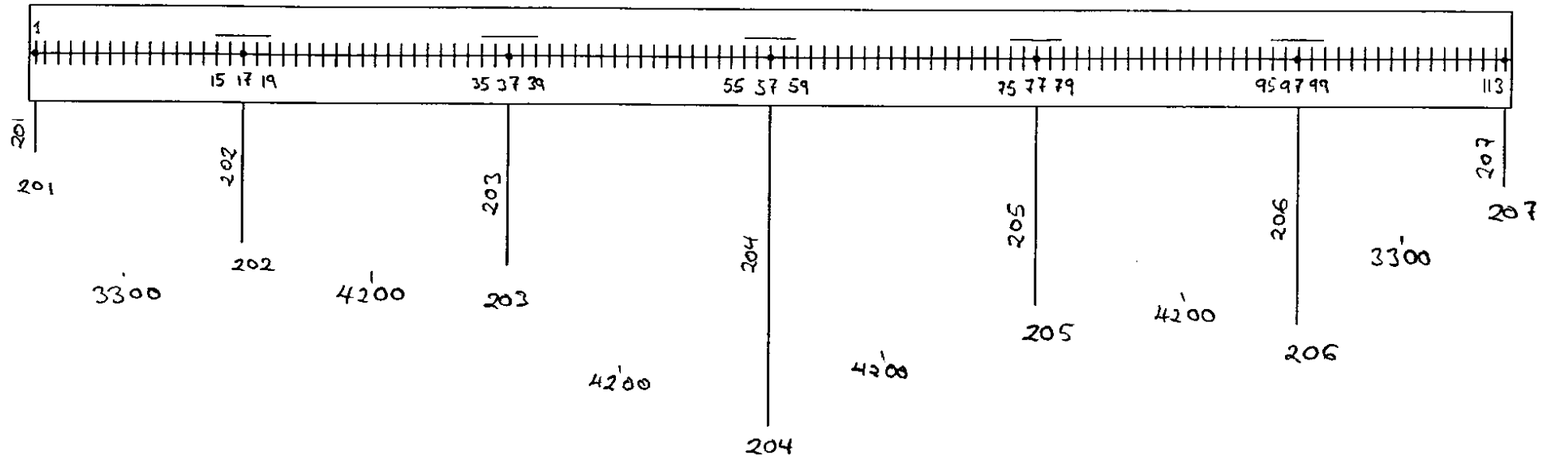


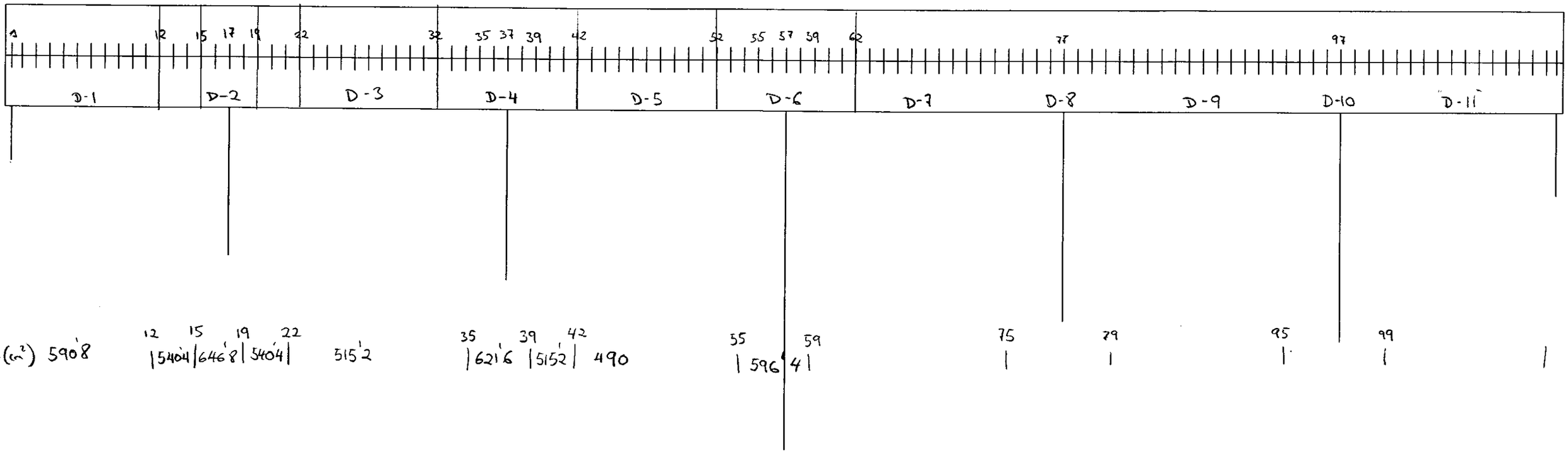

SECCION B-B
ESCALA 1:100

JDEF4-RIERUSSA

| | | | | | | |
|---|---|---|---|---|---|---|
| GIF Gestor de Infraestructuras Ferroviarias | TÍTULO<br>PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA<br>L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA<br>TRAMO: GELIDA-SANT LLORENÇ D'HORTONS | AUTOR<br>Eptisa<br>Fdo: FELIX ZAPATA PARRA | ESCALA<br>VARIAS<br>UNE A-3 ORGINALES<br>Gráfica | FECHA<br>MARZO 2002 | TÍTULO DEL PLANO | Nº DE PLANO<br>Hoja de |

Discretización: (6 vanos)




1
12
15
17
19
22
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42
52
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59
62
77
97
D-1
D-2
D-3
D-4
D-5
D-6
D-7
D-8
D-9
D-10
D-11
12
15
19
22
35
39
42
55
59
75
79
95
99
Aart(m²) 5908
5404
6468
5404
5152
490
6216
5152
596
41

1/600

### 3.1.2. Característicasmecánicas

Seccion: LAV Gelida. VIADUCTO DE LA RIERA DE LA RIERUSSA.Seccion por centro de vano.

Numero de contornos poligonales: 2
Numero aligeramientos circulares: 0

Contorno 1 (exterior):

| vertice | x | y |
|---|---|---|
| 1 | 0.0000 | 0.0000 |
| 2 | 7.0000 | -0.1400 |
| 3 | 7.0000 | -0.3200 |
| 4 | 4.5000 | -0.3700 |
| 5 | 3.5000 | -0.5870 |
| 6 | 2.9550 | -2.0000 |
| 7 | 2.8980 | -2.3000 |
| 8 | 2.9500 | -2.6000 |
| 9 | 2.9500 | -3.1000 |
| 10 | 0.0000 | -3.1000 |
| 11 | -2.9500 | -3.1000 |
| 12 | -2.9500 | -2.6000 |
| 13 | -2.8980 | -2.3000 |
| 14 | -2.9550 | -2.0000 |
| 15 | -3.5000 | -0.5870 |
| 16 | -4.5000 | -0.3700 |
| 17 | -7.0000 | -0.3200 |
| 18 | -7.0000 | -0.1400 |

Contorno 2 (interior):

| vertice | x | y |
|---|---|---|
| 1 | 1.0000 | -0.3000 |
| 2 | 2.8000 | -0.5600 |
| 3 | 2.9830 | -0.7600 |
| 4 | 2.2730 | -2.6000 |
| 5 | 1.5230 | -2.8000 |
| 6 | -1.5230 | -2.8000 |
| 7 | -2.2730 | -2.6000 |
| 8 | -2.9830 | -0.7600 |
| 9 | -2.8000 | -0.5600 |
| 10 | -1.0000 | -0.3000 |

********** Resultados **********

Caracteristicas mecanicas respecto a los ejes de referencia

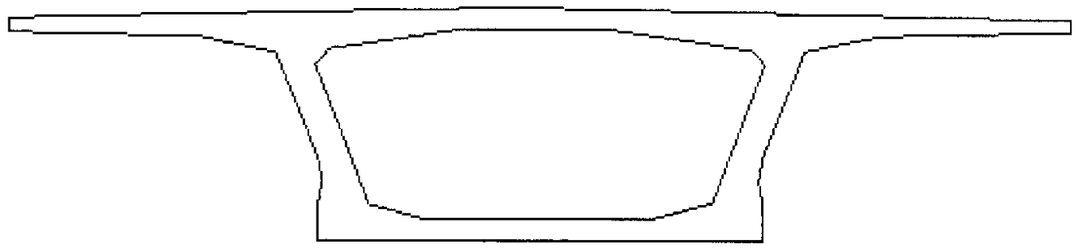
| | | | | |
|---|---|---|---|---|
| Area | Area= | 8.8174 | | |
| centro de grav. | Yg= | -1.2121 | Xg= | 0.0000 |
| dist. a fibra | Vsup= | 1.2121 | Vder= | 7.0000 |
| | Vinf= | 1.8879 | Vizq= | 7.0000 |
| mod. resistente | Wsup= | 9.7047 | Wder= | 12.4815 |
| | Winf= | 6.2307 | Wizq= | 12.4815 |
| nucleo central | Csup= | 0.7066 | Cder= | 1.4156 |
| | Cinf= | 1.1006 | Cizq= | 1.4156 |
| Momtos estaticos | Mxx= | -10.6874 | Myy= | 0.0000 |

Momentos de inercia en ejes paralelos en el c.d.g.

Ixxg= 11.76297
Iyyg= 87.37027
Ixyg= 0.00000

Ejes principales y momentos de inercia

angulo= 0.0000°
Imax= 87.37027
Imin= 11.76297



Desea volcar el dibujo a plotter <P> , a fichero <F>

Seccion: LAV Gelida. VIADUCTO DE LA RIERA DE LA RIERUSSA.Seccion sobre pilas.

angulo= 0.0000°
Imax= 99.23770
Imin= 14.03339

Numero de contornos poligonales: 2
Numero aligeramientos circulares: 0

Contorno 1 (exterior):

| vertice | x | y |
|---|---|---|
| 1 | 0.0000 | 0.0000 |
| 2 | 7.0000 | -0.1400 |
| 3 | 7.0000 | -0.3200 |
| 4 | 4.5000 | -0.3700 |
| 5 | 3.5000 | -0.5870 |
| 6 | 2.9550 | -2.0000 |
| 7 | 2.8980 | -2.3000 |
| 8 | 2.9500 | -2.6000 |
| 9 | 2.9500 | -3.1000 |
| 10 | 0.0000 | -3.1000 |
| 11 | -2.9500 | -3.1000 |
| 12 | -2.9500 | -2.6000 |
| 13 | -2.8980 | -2.3000 |
| 14 | -2.9550 | -2.0000 |
| 15 | -3.5000 | -0.5870 |
| 16 | -4.5000 | -0.3700 |
| 17 | -7.0000 | -0.3200 |
| 18 | -7.0000 | -0.1400 |

Contorno 2 (interior):

| vertice | x | y |
|---|---|---|
| 1 | 1.0000 | -0.3000 |
| 2 | 2.3740 | -0.4980 |
| 3 | 2.5570 | -0.6980 |
| 4 | 1.8230 | -2.6000 |
| 5 | -1.8230 | -2.6000 |
| 6 | -2.5570 | -0.6980 |
| 7 | -2.3740 | -0.4980 |
| 8 | -1.0000 | -0.3000 |

********** Resultados **********

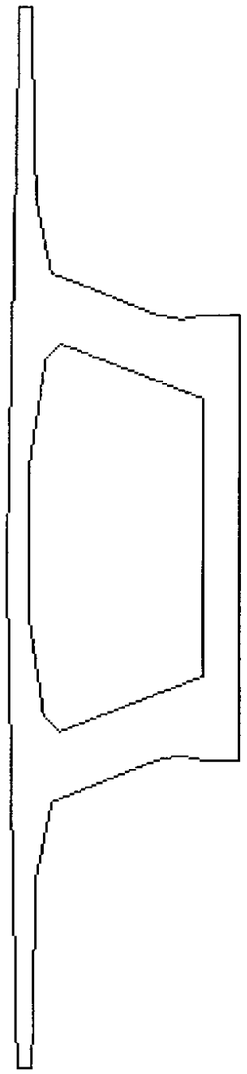
Caracteristicas mecanicas respecto a los ejes de referencia

| | | | | |
|---|---|---|---|---|
| Area | Area= | 11.4072 | | |
| centro de grav. | Yg= | -1.3699 | Xg= | 0.0000 |
| dist. a fibra | Vsup= | 1.3699 | Vder= | 7.0000 |
| | Vinf= | 1.7301 | Vizq= | 7.0000 |
| mod. resistente | Wsup= | 10.2437 | Wder= | 14.1768 |
| | Winf= | 8.1116 | Wizq= | 14.1768 |
| nucleo central | Csup= | 0.7111 | Cder= | 1.2428 |
| | Cinf= | 0.8980 | Cizq= | 1.2428 |
| Momtos estaticos | Mxx= | -15.6273 | Myy= | 0.0000 |

Momentos de inercia en ejes paralelos en el c.d.g.

Ixxg= 14.03339
Iyyg= 99.23770
Ixyg= 0.00000

Ejes principales y momentos de inercia



Desea volcar el dibujo a plotter <P> , a fichero <F>

-----RIOSTRA DE ESTRIBOS ----------

Area: 3.136
Perφmetro: 9.419
Caja de abarque: X: -14.010 -- -10.510
Y: 6.026 -- 7.250
Centro de gravedad: X: -12.260
Y: 6.765
Momentos de inercia: X: 143.768
Y: 474.929
Producto de inercia: XY: -260.084
Radios de giro: X: 6.771
Y: 12.307
Momentos principales y direcciones X-Y alrededor del centro de gravedad:
I: 0.252 a lo largo de [1.000 0.000]
J: 3.598 a lo largo de [0.000 1.000]

--REGRUESAMIENTO SECCION EN ZONA DE ESTRIBOS (3.0 m)-----

Area: 4.607
Perφmetro: 19.091
Caja de abarque: X: -15.244 -- -9.277
Y: 4.389 -- 6.781
Centro de gravedad: X: -12.260
Y: 5.571
Momentos de inercia: X: 145.325
Y: 712.703
Producto de inercia: XY: -314.622
Radios de giro: X: 5.617
Y: 12.439
Momentos principales y direcciones X-Y alrededor del centro de gravedad:
I: 2.369 a lo largo de [1.000 0.000]
J: 20.271 a lo largo de [0.000 1.000]

--- RIOSTRA DE PILAS ----------

Area: 4.626
Perφmetro: 12.019
Caja de abarque: X: -15.283 -- -10.169
Y: -1.685 -- -0.300
Centro de gravedad: X: -12.726
Y: -0.850
Momentos de inercia: X: 3.794
Y: 759.296
Producto de inercia: XY: 50.066
Radios de giro: X: 0.906
Y: 12.812
Momentos principales y direcciones X-Y alrededor del centro de gravedad:
I: 0.448 a lo largo de [1.000 0.000]
J: 10.104 a lo largo de [0.000 1.000]

LAV Gelida. VIADUCTO DE LA RIERA DE LA RIERUSSA. Seccion CDV.

VALORES COMUNES A TODAS LAS SECCIONES

| | | | | | |
|---|---|---|---|---|---|
| Ancho tablero | B = | 14.000 | Espesor tabla superior | ES = | 0.300 |
| Ancho max de tabla | AB = | 7.000 | Espesor cartela superior | ECS= | 0.260 |
| Espesor alma | EA = | 0.450 | Longitud cartela superior | LCS= | 1.800 |
| Longitud voladizo | LV = | 2.500 | Espesor cartela inferior | ECI= | 0.200 |
| Espesor final volad. | EV1= | 0.180 | Longitud cartela inferior | LCI= | 0.750 |
| Inc. espesor volad. | EV2= | 0.100 | Altura del macizo alma | EM = | 0.200 |
| | | | Ancho del macizo alma | AM = | 0.700 |

| Nudo | x | H | EI | Pend. |
|---|---|---|---|---|
| 1 | 0.000 | 3.100 | 0.300 | 0.3860 |
| 2 | 1.500 | 3.100 | 0.300 | 0.3860 |

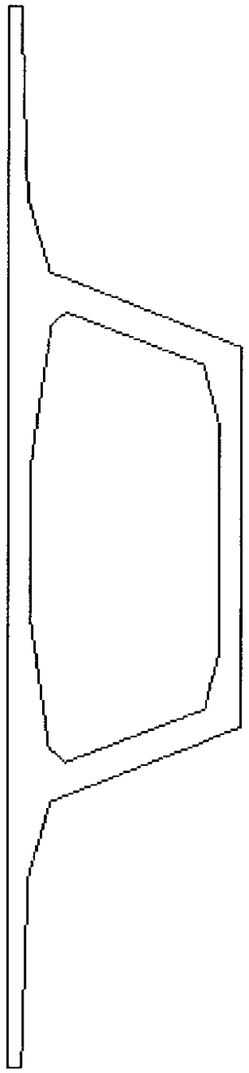
LAV Gelida. VIADUCTO DE LA RIERA DE LA RIERUSSA. Seccion CDV.

| Sec. | x | H | Yg | A | Ix | Iy | Jt | Wxs | Wxi | Wyd | Wyi |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.000 | 3.100 | -1.075 | 8.6690 | 11.2865 | 85.9550 | 19.6226 | 10.5026 | 5.5726 | 12.2793 | 12.2793 |
| 2 | 1.500 | 3.100 | -1.075 | 8.6690 | 11.2865 | 85.9550 | 19.6226 | 10.5026 | 5.5726 | 12.2793 | 12.2793 |

LAV Gelida. VIADUCTO DE LA RIERA DE LA RIERUSSA. Seccion CDV.

| Bar. | N.1 | N.2 | Longitud | A | Ix | Iy | Jt | pp / ml |
|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 2 | 1.5000 | 8.66904 | 11.28653 | 85.95504 | 19.62259 | 21.67259 |

| Sec. | Perim(m.) | A enc.(m2) | Z resal |
|---|---|---|---|
| 1 | 16.739 | 15.595 | 2.800 |
| 2 | 16.739 | 15.595 | 2.800 |



Desea volcar el dibujo a fichero <F> ■

LAV Gelida. VIADUCTO DE LA RIERA DE LA RIERUSSA. Seccion Pilas.

VALORES COMUNES A TODAS LAS SECCIONES

| | | | | | |
|---|---|---|---|---|---|
| Ancho tablero | B = | 14.000 | Espesor tabla superior | ES = | 0.300 |
| Ancho max de tabla | AB = | 7.000 | Espesor cartela superior | ECS= | 0.198 |
| Espesor alma | EA = | 0.900 | Longitud cartela superior | LCS= | 1.374 |
| Longitud voladizo | LV = | 2.500 | Espesor cartela inferior | ECI= | 0.000 |
| Espesor final volad. | EV1= | 0.180 | Longitud cartela inferior | LCI= | 0.000 |
| Inc. espesor volad. | EV2= | 0.100 | Altura del macizo alma | EM = | 0.200 |
| | | | Ancho del macizo alma | AM = | 1.126 |

| Nudo | x | H | EI | Pend. |
|---|---|---|---|---|
| 1 | 0.000 | 3.100 | 0.500 | 0.3860 |
| 2 | 1.500 | 3.100 | 0.500 | 0.3860 |

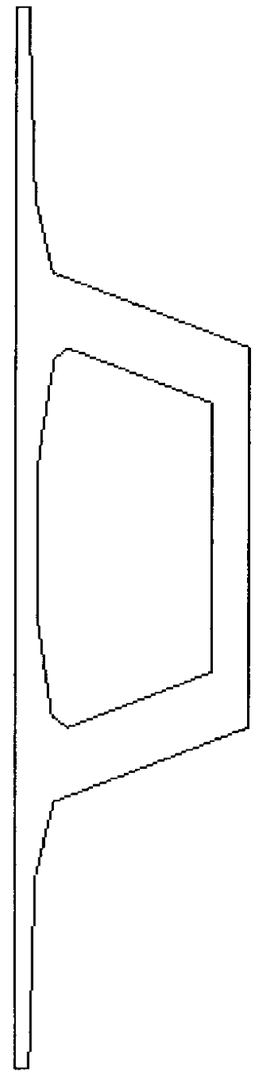
LAV Gelida. VIADUCTO DE LA RIERA DE LA RIERUSSA. Seccion Pilas.

| Sec. | x | H | Yg | A | Ix | Iy | Jt | Wxs | Wxi | Wyd | Wyi |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.000 | 3.100 | -1.267 | 11.1669 | 13.8600 | 96.1561 | 21.9364 | 10.9396 | 7.5612 | 13.7366 | 13.7366 |
| 2 | 1.500 | 3.100 | -1.267 | 11.1669 | 13.8600 | 96.1561 | 21.9364 | 10.9396 | 7.5612 | 13.7366 | 13.7366 |

LAV Gelida. VIADUCTO DE LA RIERA DE LA RIERUSSA. Seccion Pilas.

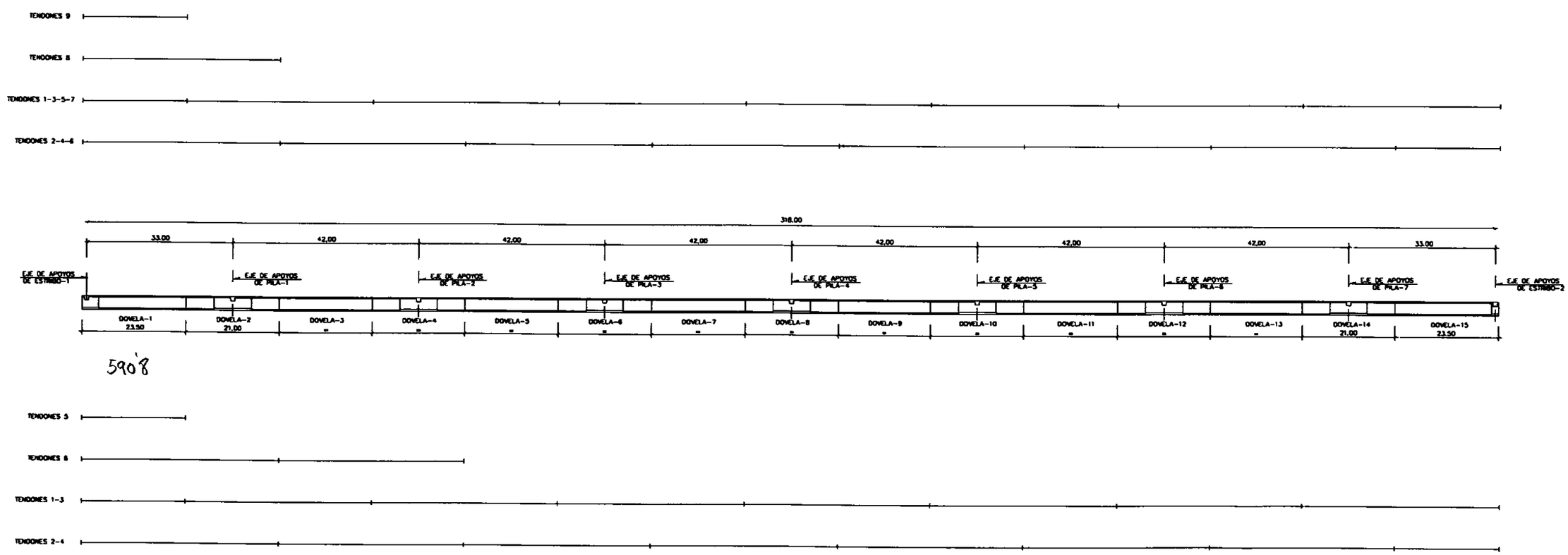
| Bar. | N.1 | N.2 | Longitud | A | Ix | Iy | Jt | pp / ml |
|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 2 | 1.5000 | 11.16688 | 13.85996 | 96.15614 | 21.93635 | 27.91719 |

| Sec. | Perim(m.) | A enc.(m2) | Z resal |
|---|---|---|---|
| 1 | 15.591 | 13.758 | 2.700 |
| 2 | 15.591 | 13.758 | 2.700 |



Desea volcar el dibujo a fichero <F> ■

## 3.2. PRETENSADO. TRAZADO Y CARACTERÍSTICAS




5908

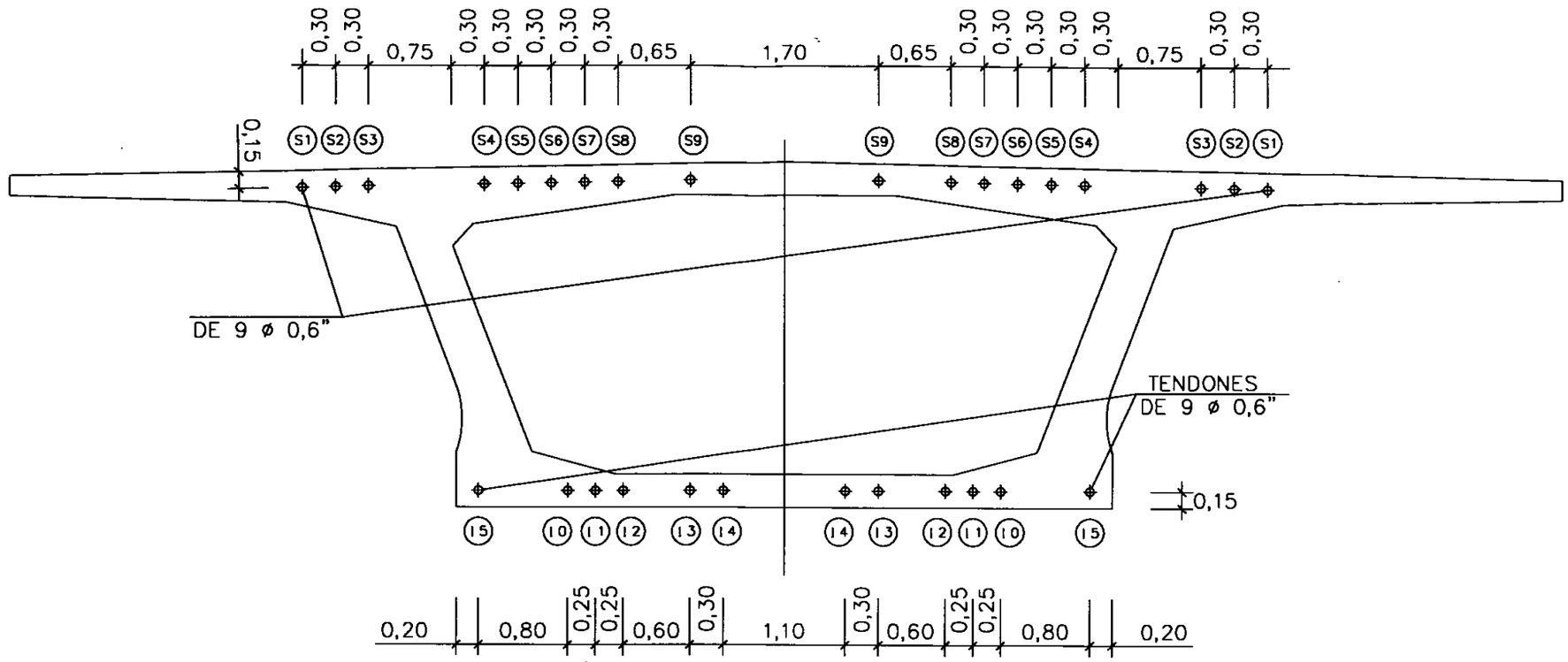
PRETENSADO DE EMPUJE
ESCALA 1:1000

$A(9\phi 0'6'') = 12'6\ cm^2 \times (7+4=11)\times 2 = 277'2\ cm^2$

$A(19\phi 0'6'') = 2660\ cm^2 \times (4\cdot 2 = 8) = 212'8\ cm^2$

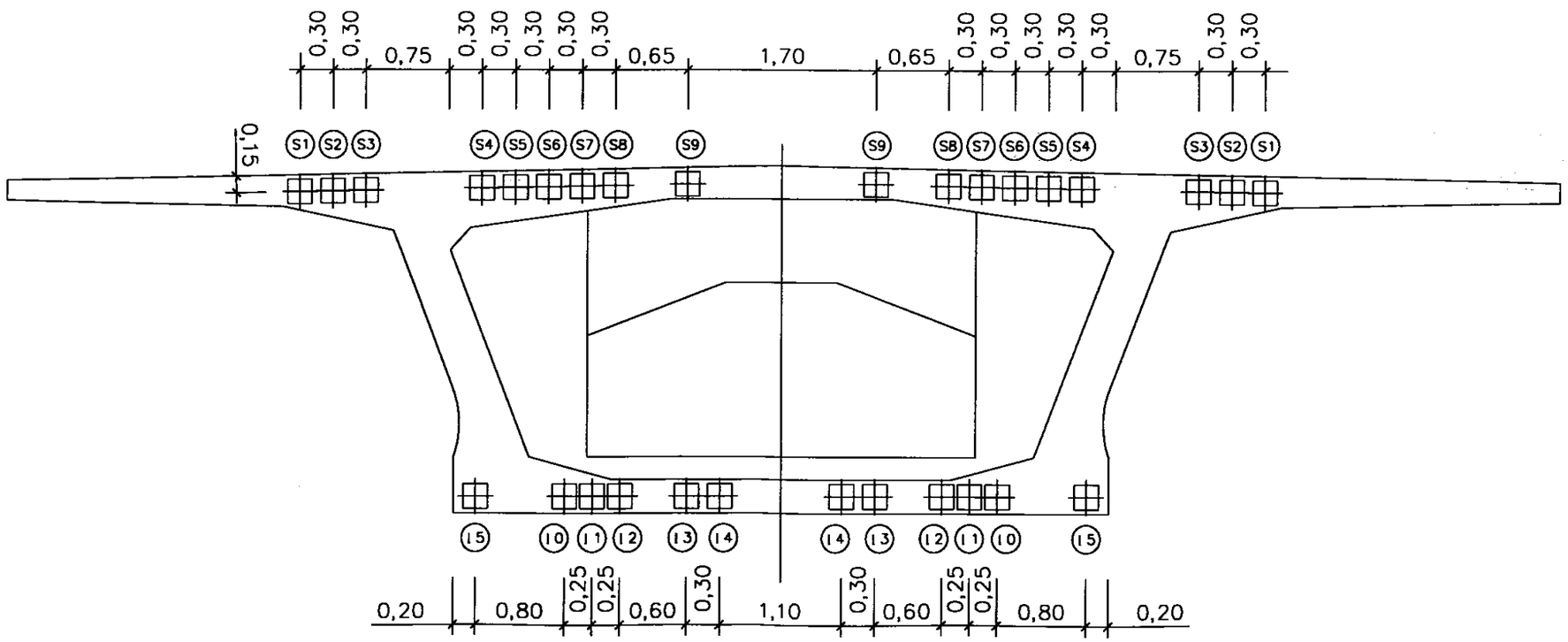
$\Big\} 490\ cm^2\ (mín)$

Zona pila $5964\ cm^2$ (mín)



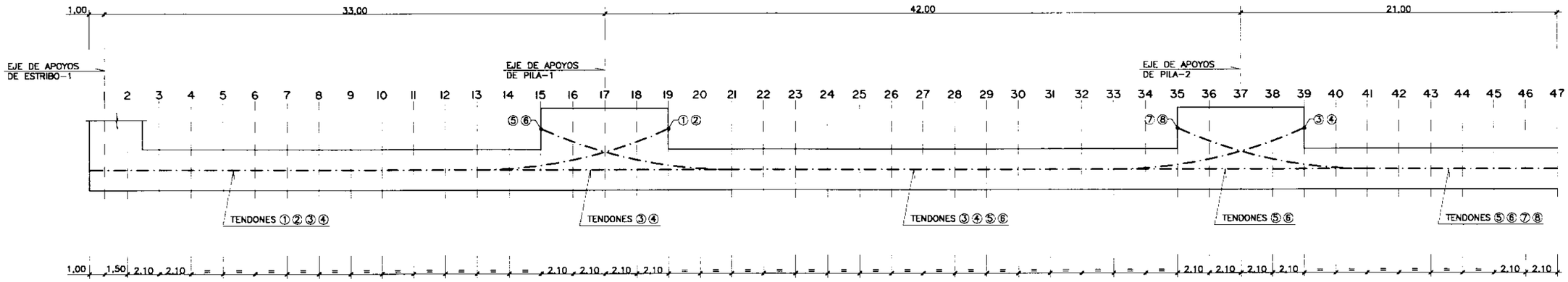

SECCION DE PRETENSADO DE EMPUJE EN DOVELA–1

ESCALA 1:60



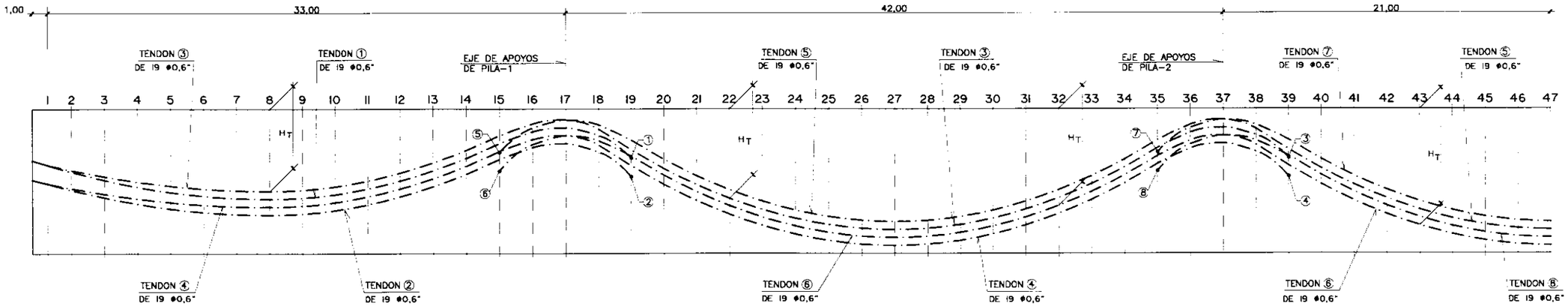

ALZADO POR "A"

ESCALA 1:60




## PLANTA DE TENDONES DE SERVICIO

ESCALAS H: 1/300
V: 1/50



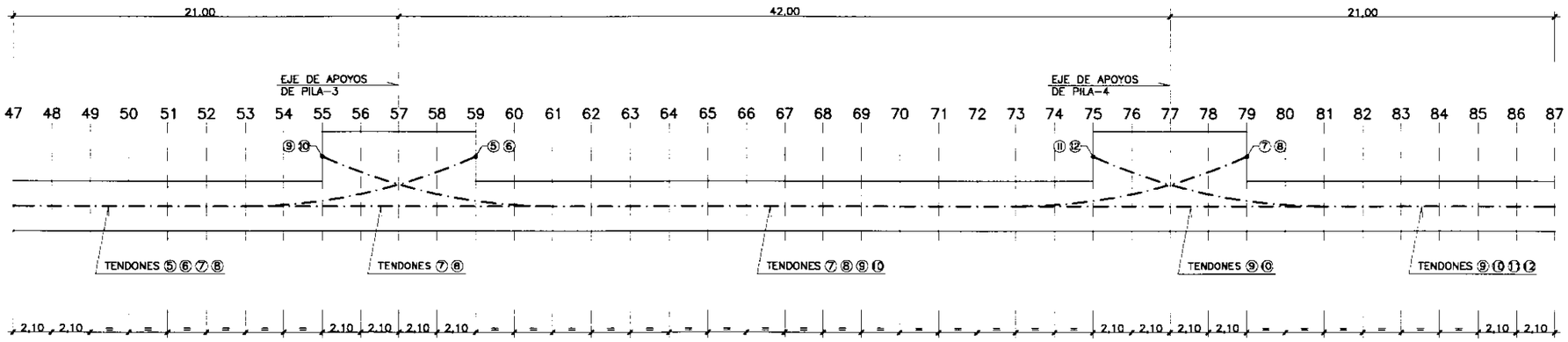

| | SECCION | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $H_T$ | TENDON-1 | 1,200 | 1,347 | 1,525 | 1,671 | 1,784 | 1,865 | 1,914 | 1,930 | 1,906 | 1,833 | 1,711 | 1,541 | 1,323 | 1,056 | 0,740 | 0,485 | 0,400 | 0,563 | 1,050 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | T-1 |
| | TENDON-2 | 1,600 | 1,735 | 1,898 | 2,032 | 2,136 | 2,211 | 2,255 | 2,270 | 2,246 | 2,173 | 2,051 | 1,881 | 1,663 | 1,396 | 1,080 | 0,825 | 0,740 | 0,918 | 1,450 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | T-2 |
| | TENDON-3 | 1,200 | 1,313 | 1,449 | 1,561 | 1,648 | 1,710 | 1,748 | 1,760 | 1,736 | 1,663 | 1,541 | 1,371 | 1,153 | 0,886 | 0,570 | 0,315 | 0,230 | 0,428 | 0,875 | 1,277 | 1,626 | 1,920 | 2,161 | 2,349 | 2,483 | 2,563 | 2,590 | 2,563 | 2,481 | 2,344 | 2,152 | 1,906 | 1,605 | 1,249 | 0,838 | 0,510 | 0,400 | 0,563 | 1,050 | | | | | | | T-3 |
| | TENDON-4 | 1,600 | 1,701 | 1,823 | 1,923 | 2,000 | 2,056 | 2,089 | 2,100 | 2,076 | 2,003 | 1,881 | 1,711 | 1,493 | 1,226 | 0,910 | 0,655 | 0,570 | 0,768 | 1,215 | 1,617 | 1,966 | 2,260 | 2,501 | 2,689 | 2,823 | 2,903 | 2,930 | 2,903 | 2,821 | 2,684 | 2,492 | 2,246 | 1,945 | 1,589 | 1,178 | 0,849 | 0,740 | 0,918 | 1,450 | | | | | | | T-4 |
| | TENDON-5 | | | | | | | | | | | | | | | 0,930 | 0,405 | 0,230 | 0,340 | 0,668 | 1,079 | 1,435 | 1,736 | 1,982 | 2,174 | 2,311 | 2,393 | 2,420 | 2,393 | 2,311 | 2,174 | 1,982 | 1,736 | 1,435 | 1,079 | 0,668 | 0,340 | 0,230 | 0,428 | 0,875 | 1,277 | 1,626 | 1,920 | 2,161 | 2,349 | 2,483 | 2,563 | 2,590 | T-5 |
| | TENDON-6 | | | | | | | | | | | | | | | 1,330 | 0,760 | 0,570 | 0,679 | 1,008 | 1,419 | 1,775 | 2,076 | 2,322 | 2,514 | 2,651 | 2,733 | 2,760 | 2,733 | 2,651 | 2,514 | 2,322 | 2,076 | 1,775 | 1,419 | 1,008 | 0,679 | 0,570 | 0,768 | 1,215 | 1,617 | 1,966 | 2,260 | 2,501 | 2,689 | 2,823 | 2,903 | 2,930 | T-6 |
| | TENDON-7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0,930 | 0,405 | 0,230 | 0,340 | 0,668 | 1,079 | 1,435 | 1,736 | 1,982 | 2,174 | 2,311 | 2,393 | 2,420 | T-7 |
| | TENDON-8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1,330 | 0,760 | 0,570 | 0,679 | 1,008 | 1,419 | 1,775 | 2,076 | 2,322 | 2,514 | 2,651 | 2,733 | 2,760 | T-8 |

## ALZADO DE TENDONES DE SERVICIO

ESCALAS H: 1/300
V: 1/100

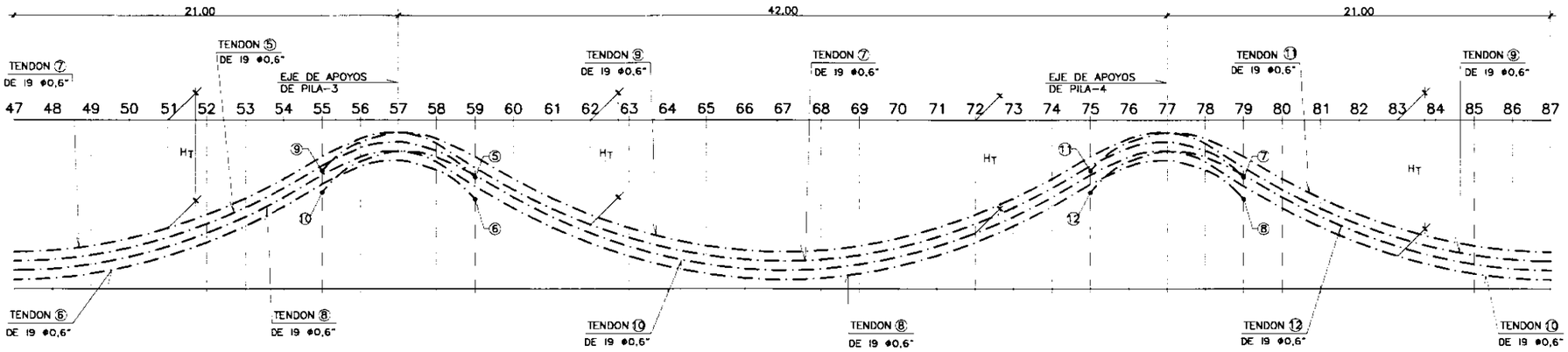
.TPSER1-RIERUSSA

| | | | | | |
|---|---|---|---|---|---|
| GIF Gestor de Infraestructuras Ferroviarias | TÍTULO: PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA L.A.V. MADRID–ZARAGOZA–BARCELONA–FRONTERA FRANCESA TRAMO: GELIDA–SANT LLORENÇ D'HORTONS | AUTOR: Eptisa — Fdo: FÉLIX ZAPATA PARRA | ESCALA: VARIAS — UNE A-3 ORIGINALES — Gráfica | FECHA: MARZO 2002 | TÍTULO DEL PLANO / Nº DE PLANO: 772 — Hoja de 61 |




## PLANTA DE TENDONES DE SERVICIO

ESCALAS H: 1/300
V: 1/50



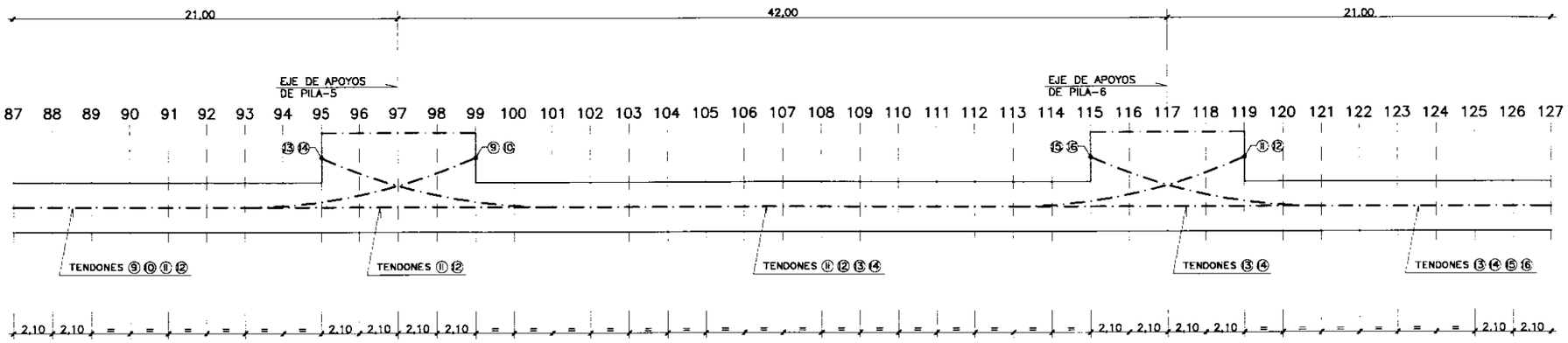

| | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | SECCION | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T-5 | 2,590 | 2,563 | 2,481 | 2,344 | 2,152 | 1,906 | 1,605 | 1,249 | 0,838 | 0,510 | 0,400 | 0,563 | 1,050 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | TENDON-5 | |
| T-6 | 2,930 | 2,903 | 2,821 | 2,684 | 2,492 | 2,246 | 1,945 | 1,589 | 1,178 | 0,849 | 0,740 | 0,918 | 1,450 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | TENDON-6 | |
| T-7 | 2,420 | 2,393 | 2,311 | 2,174 | 1,982 | 1,736 | 1,435 | 1,079 | 0,668 | 0,340 | 0,230 | 0,428 | 0,875 | 1,277 | 1,626 | 1,920 | 2,161 | 2,349 | 2,483 | 2,563 | 2,590 | 2,563 | 2,481 | 2,344 | 2,152 | 1,906 | 1,605 | 1,249 | 0,838 | 0,510 | 0,400 | 0,563 | 1,050 | | | | | | | | | TENDON-7 | |
| T-8 | 2,760 | 2,733 | 2,651 | 2,514 | 2,322 | 2,076 | 1,775 | 1,419 | 1,008 | 0,679 | 0,570 | 0,768 | 1,215 | 1,617 | 1,966 | 2,260 | 2,501 | 2,689 | 2,823 | 2,903 | 2,930 | 2,903 | 2,821 | 2,684 | 2,492 | 2,246 | 1,945 | 1,589 | 1,178 | 0,849 | 0,740 | 0,918 | 1,450 | | | | | | | | | TENDON-8 | |
| T-9 | | | | | | | | | 0,930 | 0,405 | 0,230 | 0,340 | 0,668 | 1,079 | 1,435 | 1,736 | 1,982 | 2,174 | 2,311 | 2,393 | 2,420 | 2,393 | 2,311 | 2,174 | 1,982 | 1,736 | 1,435 | 1,079 | 0,668 | 0,340 | 0,230 | 0,428 | 0,875 | 1,277 | 1,626 | 1,920 | 2,161 | 2,349 | 2,483 | 2,563 | 2,590 | TENDON-9 | $H_T$ |
| T-10 | | | | | | | | | 1,330 | 0,760 | 0,570 | 0,679 | 1,008 | 1,419 | 1,775 | 2,076 | 2,322 | 2,514 | 2,651 | 2,733 | 2,760 | 2,733 | 2,651 | 2,514 | 2,322 | 2,076 | 1,775 | 1,419 | 1,008 | 0,679 | 0,570 | 0,768 | 1,215 | 1,617 | 1,966 | 2,260 | 2,501 | 2,689 | 2,823 | 2,903 | 2,930 | TENDON-10 | |
| T-11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0,930 | 0,405 | 0,230 | 0,340 | 0,668 | 1,079 | 1,435 | 1,736 | 1,982 | 2,174 | 2,311 | 2,393 | 2,420 | TENDON-11 | |
| T-12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1,330 | 0,760 | 0,570 | 0,679 | 1,008 | 1,419 | 1,775 | 2,076 | 2,322 | 2,514 | 2,651 | 2,733 | 2,760 | TENDON-12 | |

## ALZADO DE TENDONES DE SERVICIO

ESCALAS H: 1/300
V: 1/100

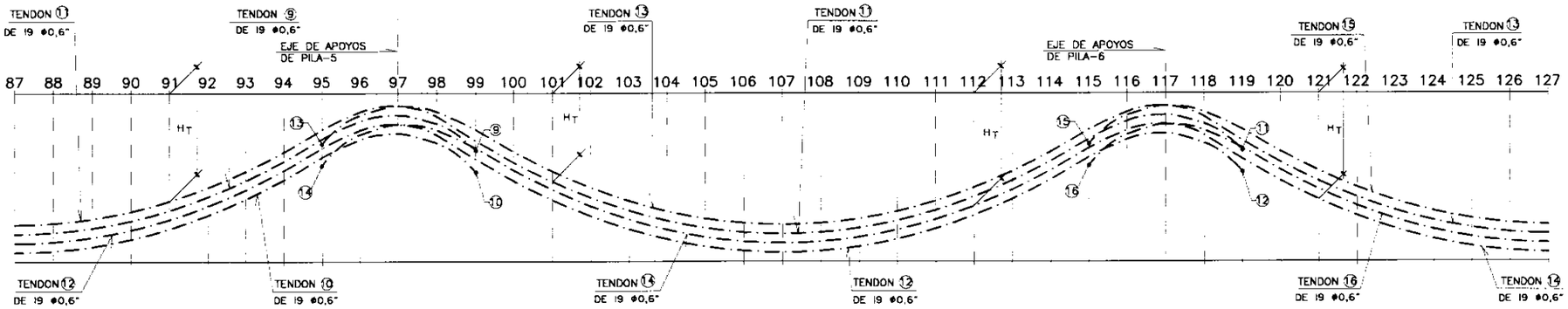
.TPSER2-RIERUSSA

| | | | | |
|---|---|---|---|---|
| GIF Gestor de Infraestructuras Ferroviarias | TÍTULO: PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA L.A.V. MADRID–ZARAGOZA–BARCELONA–FRONTERA FRANCESA TRAMO: GELIDA–SANT LLORENÇ D'HORTONS | AUTOR: Eptisa — Fdo: FÉLIX ZAPATA PARRA | ESCALA: VARIAS; UNE A-3 ORIGINALES; Gráfico | FECHA: MARZO 2002 | TÍTULO DEL PLANO | Nº DE PLANO: Hoja ce |




## PLANTA DE TENDONES DE SERVICIO

ESCALAS H: 1/300
V: 1/50



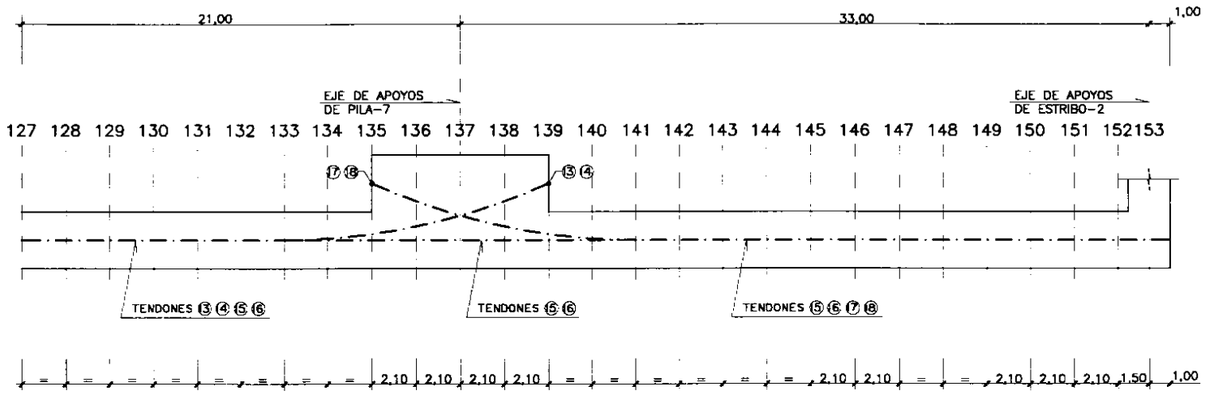

| | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 | 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 | 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 | 121 | 122 | 123 | 124 | 125 | 126 | 127 | SECCION | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T-9 | 2,590 | 2,563 | 2,481 | 2,344 | 2,152 | 1,906 | 1,605 | 1,249 | 0,838 | 0,510 | 0,400 | 0,563 | 1,050 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | TENDON-9 | |
| T-10 | 2,930 | 2,903 | 2,821 | 2,684 | 2,492 | 2,246 | 1,945 | 1,589 | 1,178 | 0,849 | 0,740 | 0,918 | 1,450 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | TENDON-10 | |
| T-11 | 2,420 | 2,393 | 2,311 | 2,174 | 1,982 | 1,736 | 1,435 | 1,079 | 0,668 | 0,340 | 0,230 | 0,428 | 0,875 | 1,277 | 1,626 | 1,920 | 2,161 | 2,349 | 2,483 | 2,563 | 2,590 | 2,563 | 2,481 | 2,344 | 2,152 | 1,906 | 1,605 | 1,249 | 0,838 | 0,510 | 0,400 | 0,563 | 1,050 | | | | | | | | | TENDON-11 | |
| T-12 | 2,760 | 2,733 | 2,651 | 2,514 | 2,322 | 2,076 | 1,775 | 1,419 | 1,008 | 0,679 | 0,570 | 0,768 | 1,215 | 1,617 | 1,966 | 2,260 | 2,501 | 2,689 | 2,823 | 2,903 | 2,930 | 2,903 | 2,821 | 2,684 | 2,492 | 2,246 | 1,945 | 1,589 | 1,178 | 0,849 | 0,740 | 0,918 | 1,450 | | | | | | | | | TENDON-12 | $H_T$ |
| T-13 | | | | | | | | | 0,930 | 0,405 | 0,230 | 0,340 | 0,668 | 1,079 | 1,435 | 1,736 | 1,982 | 2,174 | 2,311 | 2,393 | 2,420 | 2,393 | 2,311 | 2,174 | 1,982 | 1,736 | 1,435 | 1,079 | 0,668 | 0,340 | 0,230 | 0,428 | 0,875 | 1,277 | 1,626 | 1,920 | 2,161 | 2,349 | 2,483 | 2,563 | 2,590 | TENDON-13 | |
| T-14 | | | | | | | | | 1,330 | 0,760 | 0,570 | 0,679 | 1,008 | 1,419 | 1,775 | 2,076 | 2,322 | 2,514 | 2,651 | 2,733 | 2,760 | 2,733 | 2,651 | 2,514 | 2,322 | 2,076 | 1,775 | 1,419 | 1,008 | 0,679 | 0,570 | 0,768 | 1,215 | 1,617 | 1,966 | 2,260 | 2,501 | 2,689 | 2,823 | 2,903 | 2,930 | TENDON-14 | |
| T-15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0,930 | 0,405 | 0,230 | 0,340 | 0,668 | 1,079 | 1,435 | 1,736 | 1,982 | 2,174 | 2,311 | 2,393 | 2,420 | TENDON-15 | |
| T-16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1,330 | 0,760 | 0,570 | 0,679 | 1,008 | 1,419 | 1,775 | 2,076 | 2,322 | 2,514 | 2,651 | 2,733 | 2,760 | TENDON-16 | |

## ALZADO DE TENDONES DE SERVICIO

ESCALAS H: 1/300
V: 1/100

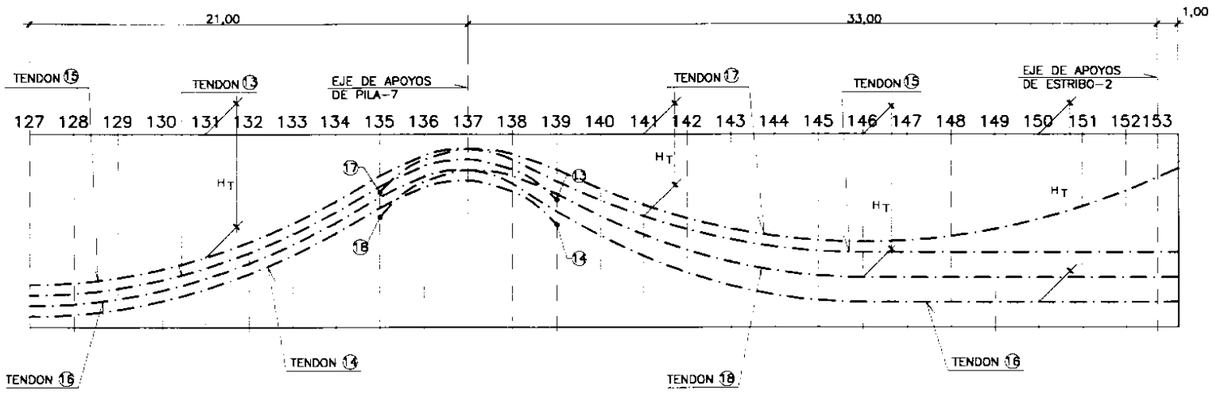
.TPSER3-RIERUSSA

| | | | | | |
|---|---|---|---|---|---|
| GIF Gestor de Infraestructuras Ferroviarias | TÍTULO: PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA L.A.V. MADRID–ZARAGOZA–BARCELONA–FRONTERA FRANCESA TRAMO: GELIDA–SANT LLORENÇ D'HORTONS | AUTOR: Eptisa — Fdo: FÉLIX ZAPATA PARRA | ESCALA: VARIAS — UNE A-3 ORIGINALES — Gráfica | FECHA: MARZO 2002 | TÍTULO DEL PLANO | Nº DE PLANO: Hoja de |




## PLANTA DE TENDONES DE SERVICIO

ESCALAS H: 1/300
V: 1/50




| | 127 | 128 | 129 | 130 | 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 | 141 | 142 | 143 | 144 | 145 | 146 | 147 | 148 | 149 | 150 | 151 | 152 | 153 | SECCION | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T-13 | 2,590 | 2,563 | 2,481 | 2,344 | 2,152 | 1,906 | 1,605 | 1,249 | 0,838 | 0,510 | 0,400 | 0,563 | 1,050 | | | | | | | | | | | | | | | TENDON-13 | HT |
| T-14 | 2,930 | 2,903 | 2,821 | 2,684 | 2,492 | 2,246 | 1,945 | 1,589 | 1,178 | 0,849 | 0,740 | 0,918 | 1,450 | | | | | | | | | | | | | | | TENDON-14 | |
| T-15 | 2,420 | 2,393 | 2,311 | 2,174 | 1,982 | 1,736 | 1,435 | 1,079 | 0,668 | 0,340 | 0,230 | 0,403 | 0,753 | 1,057 | 1,315 | 1,526 | 1,689 | 1,806 | 1,877 | 1,900 | 1,900 | 1,900 | 1,900 | 1,900 | 1,900 | 1,900 | 1,900 | TENDON-15 | |
| T-16 | 2,760 | 2,733 | 2,651 | 2,514 | 2,322 | 2,076 | 1,775 | 1,419 | 1,008 | 0,679 | 0,570 | 0,791 | 1,237 | 1,625 | 1,954 | 2,222 | 2,431 | 2,581 | 2,670 | 2,700 | 2,700 | 2,700 | 2,700 | 2,700 | 2,700 | 2,700 | 2,700 | TENDON-16 | |
| T-17 | | | | | | | | | 0,930 | 0,405 | 0,230 | 0,313 | 0,563 | 0,873 | 1,135 | 1,349 | 1,516 | 1,635 | 1,706 | 1,730 | 1,707 | 1,639 | 1,524 | 1,364 | 1,159 | 0,907 | 0,700 | TENDON-17 | |
| T-18 | | | | | | | | | 1,330 | 0,760 | 0,570 | 0,666 | 0,954 | 1,311 | 1,613 | 1,861 | 2,053 | 2,190 | 2,273 | 2,300 | 2,300 | 2,300 | 2,300 | 2,300 | 2,300 | 2,300 | 2,300 | TENDON-18 | |

## ALZADO DE TENDONES DE SERVICIO

ESCALAS H: 1/300
V: 1/100

NOTA DE PRETENSADO

A) DESIGNACION DE LOS ACEROS (EHE)
- Para armar: B 500 S
- Para pretensar: Y 1860 S7 ø 15.2 mm

B) ARMADURA ACTIVA
- 36 Tendones de 19 ø 0.6"
- Diametro de las vainas: 100 mm
- Anclajes activos en ambos extremos

C) VALORES PREVISTOS EN EL PROYECTO
- Penetracion de cuñas 5 mm
- Coeficiente rozamiento parasito por ml (k) = 0.0015
- Coeficiente rozamiento en curva (u) = 0.21
- Modulo elastico armadura activa Ep = 190.000 N/mm2

D) FASES DE TESADO
- Se iniciara una vez este concluido el empuje del tablero.
- Todos los tendones se tesaran por los dos extremos.
- Fuerza de tesado en cada anclaje: 3715 kN

ORDEN DE TESADO:
El orden de puesta en tension de los tendones sera el siguiente:

(i: izquierdo d: Derecha)
1i-1d-3i-3d-5i-5d-2i-2d-4i-4d-6i-6d
7i-7d-8i-8d-9i-9d-10i-10d-11i-11d-12i-12d
13i-13d-14i-14d-15i-15d-16i-16d-17i-17d-18i-18d

Retesado:
Concluido el tesado de la totalidad de los tendones, se realizara el retesado por el extremo opuesto de cada tendon.

E) ALARGAMIENTOS TEORICOS DE LOS TENDONES

| | Tesado por un extremo | Retesado por el otro |
|---|---|---|
| Tendones 1 | 27.5 cm | 0.1 cm |
| Tendones 2 | 25.8 cm | 0.1 cm |
| Tendones 3 | 50.1 cm | 2.9 cm |
| Tendones 4 | 50.1 cm | 2.8 cm |
| Tendones 5 a 13 (imp) | 52.5 cm | 6.5 cm |
| Tendones 6 a 14 (par) | 52.3 cm | 6.4 cm |
| Tendones 15 | 46.7 cm | 6.7 cm |
| Tendones 16 | 46.3 cm | 6.8 cm |
| Tendones 17 | 24.3 cm | 1.4 cm |
| Tendones 18 | 24.2 cm | 1.9 cm |

F) INYECCION
Una vez finalizado el tesado se inyectaran las vainas con lechada de cemento y se sellaran los cajetines de los anclajes.

RIERA DE LA RIERUSSA
PRETENSADO DE EMPUJE

NOTA DE PRETENSADO

A) DESIGNACION DE LOS ACEROS (EHE)
- Para armar: B 500 S
- Para pretensar: Y 1860 S7 0 15.2 mm

B) ARMADURA ACTIVA

- Tendones Superiores S1 a S9: 18 Tendones de 9 0 0.6"
- Tendones Inferiores I1 a I6: 12 Tendones de 9 0 0.6"
- Diámetro de las vainas: 75 mm
- Anclajes Reforzados

C) VALORES PREVISTOS EN EL PROYECTO
- Penetración de cuñas 5 mm
- Coeficiente rozamiento parásito por ml (k) = 0.0015
- Coeficiente rozamiento en curva (u) = 0.21
- Módulo elástico armadura activa Ep = 190.000 N/mm2

D) FASES DE TESADO

- Se efectuará un único tesado por el extremo libre de cada dovela
- Resistencia mínima del hormigón al tesar: 28 N/mm2
- Fuerza de tesado en cada anclaje: 1760 kN

ORDEN DE TESADO:

El orden de puesta en tensión de los tendones será el siguiente:

DOVELA IMPAR (i: izquierda d: Derecha)

S3i-S3d-I1i-I1d-S5i-S5d-S7i-S7d-I3i-I3d-S1i
S1d-(I5i-I5d-S9i-S9d)

DOVELA PAR (i: izquierda d: Derecha)

S4i-S4d-I2i-I2d-S2i-S2d-I4i-I4d-S6i-S6d-(S8i-S8d-I6i-I6d)

E) ALARGAMIENTOS TEORICOS DE LOS TENDONES

Despues del clavado de cunas

| | |
|---|---|
| Dovela 1 | 16.1 cm |
| Dovela 2 | 31.1 cm |
| Dovelas 3 a 14 | 30.0 cm |
| Dovela 15 tendones impares | 31.1 cm |
| Dovela 15 tendones pares | 16.1 cm |

F) INYECCIóN

Una vez finalizado el tesado de cada dovela se inyectaran las vainas de los tendones tesados con lechada de cemento.

RIERA DE LA RIERUSSA
PRETENSADO DE SERVICIO

NOTA DE PRETENSADO

A) DESIGNACION DE LOS ACEROS (EHE)
- Para armar: B 500 S
- Para pretensar: Y 1860 S7 0 15.2 mm

B) ARMADURA ACTIVA

- 36 Tendones de 19 0 0.6"
- Diámetro de las vainas: 100 mm
- Anclajes activos en ambos extremos

C) VALORES PREVISTOS EN EL PROYECTO
- Penetración de cuñas 5 mm
- Coeficiente rozamiento parásito por ml (k) = 0.0015
- Coeficiente rozamiento en curva (u) = 0.21
- Módulo elástico armadura activa Ep = 190.000 N/mm2

D) FASES DE TESADO
- Se iniciara una vez este concluido el empuje del tablero.
- Todos los tendones se tesarán por los dos extremos.
- Fuerza de tesado en cada anclaje: 3715 kN

ORDEN DE TESADO:

El orden de puesta en tensión de los tendones será el siguiente:

(i: izquierdo d: Derecho)
1i-1d-3i-3d-5i-5d-2i-2d-4i-4d-6i-6d
7i-7d-8i-8d-9i-9d-10i-10d-11i-11d-12i-12d
13i-13d-14i-14d-15i-15d-16i-16d-17i-17d-18i-18d

Retesado:
Concluido el tesado de la totalidad de los tendones, se realizara el retesado por el extremo opuesto de cada tendon.

E) ALARGAMIENTOS TEORICOS DE LOS TENDONES

| | Tesado por un extremo | Retesado por el otro |
|---|---|---|
| Tendones 1 | 27.5 cm | 0.1 cm |
| Tendones 2 | 25.8 cm | 0.1 cm |
| Tendones 3 | 50.1 cm | 2.9 cm |
| Tendones 4 | 50.1 cm | 2.8 cm |
| Tendones 5 a 13 (imp) | 52.5 cm | 6.5 cm |
| Tendones 6 a 14 (par) | 52.3 cm | 6.4 cm |
| Tendones 15 | 46.7 cm | 6.7 cm |
| Tendones 16 | 46.3 cm | 6.8 cm |
| Tendones 17 | 24.3 cm | 1.4 cm |
| Tendones 18 | 24.2 cm | 1.9 cm |

F) INYECCIαN
Una vez finalizado el tesado se inyectaran las vainas con lechada de cemento y se sellaran los cajetines de los anclajes.

## TRAZADO DE TENDONES

**Titulo:** LAV. Gelida. Puentes empujados. Pretensado de servicio.

**Tendón:** 1 **Tramo:** Vano 1 - A

| | | | |
|---|---|---|---|
| longitud: | 14.100 | | y=Ax^2+C |
| ord. tan=0: | -1.930 | A= | 0.00367185 |
| ord. final: | -1.200 | C= | -1.930 |

| | X | Y | Pendiente | Angulo (g) |
|---|---|---|---|---|
| 8 | 0.000 | -1.930 | 0.0000 | 0.000 |
| 7 | 2.100 | -1.914 | 0.0154 | 0.982 |
| 6 | 4.200 | -1.865 | 0.0308 | 1.963 |
| 5 | 6.300 | -1.784 | 0.0463 | 2.943 |
| 4 | 8.400 | -1.671 | 0.0617 | 3.922 |
| 3 | 10.500 | -1.525 | 0.0771 | 4.899 |
| 2 | 12.600 | -1.347 | 0.0925 | 5.874 |
| 1 | 14.100 | -1.200 | 0.1035 | 6.569 |

## TRAZADO DE TENDONES

**Titulo:** LAV. Gelida. Puentes empujados. Pretensado de servicio.

**Tendón:** 2 **Tramo:** Vano 1 - A

| | | | |
|---|---|---|---|
| longitud: | 14.100 | | y=Ax^2+C |
| ord. tan=0: | -2.270 | A= | 0.00337005 |
| ord. final: | -1.600 | C= | -2.270 |

| | X | Y | Pendiente | Angulo (g) |
|---|---|---|---|---|
| 8 | 0.000 | -2.270 | 0.0000 | 0.000 |
| 7 | 2.100 | -2.255 | 0.0142 | 0.901 |
| 6 | 4.200 | -2.211 | 0.0283 | 1.802 |
| 5 | 6.300 | -2.136 | 0.0425 | 2.702 |
| 4 | 8.400 | -2.032 | 0.0566 | 3.600 |
| 3 | 10.500 | -1.898 | 0.0708 | 4.498 |
| 2 | 12.600 | -1.735 | 0.0849 | 5.394 |
| 1 | 14.100 | -1.600 | 0.0950 | 6.032 |

## TRAZADO DE TENDONES

**Titulo:** LAV. Gelida. Puentes empujados. Pretensado de servicio.

**Tendón:** 3 **Tramo:** Vano 1 - A

| | | | |
|---|---|---|---|
| longitud: | 14.100 | | y=Ax^2+C |
| ord. tan=0: | -1.760 | A= | 0.00281676 |
| ord. final: | -1.200 | C= | -1.760 |

| | X | Y | Pendiente | Angulo (g) |
|---|---|---|---|---|
| 8 | 0.000 | -1.760 | 0.0000 | 0.000 |
| 7 | 2.100 | -1.748 | 0.0118 | 0.753 |
| 6 | 4.200 | -1.710 | 0.0237 | 1.506 |
| 5 | 6.300 | -1.648 | 0.0355 | 2.258 |
| 4 | 8.400 | -1.561 | 0.0473 | 3.010 |
| 3 | 10.500 | -1.449 | 0.0592 | 3.761 |
| 2 | 12.600 | -1.313 | 0.0710 | 4.511 |
| 1 | 14.100 | -1.200 | 0.0794 | 5.046 |

## TRAZADO DE TENDONES

**Titulo:** LAV. Gelida. Puentes empujados. Pretensado de servicio.

**Tendón:** 4 **Tramo:** Vano 1 - A

| | | | |
|---|---|---|---|
| longitud: | 14.100 | | y=Ax^2+C |
| ord. tan=0: | -2.100 | A= | 0.00251496 |
| ord. final: | -1.600 | C= | -2.100 |

| | X | Y | Pendiente | Angulo (g) |
|---|---|---|---|---|
| 8 | 0.000 | -2.100 | 0.0000 | 0.000 |
| 7 | 2.100 | -2.089 | 0.0106 | 0.672 |
| 6 | 4.200 | -2.056 | 0.0211 | 1.345 |
| 5 | 6.300 | -2.000 | 0.0317 | 2.017 |
| 4 | 8.400 | -1.923 | 0.0423 | 2.688 |
| 3 | 10.500 | -1.823 | 0.0528 | 3.359 |
| 2 | 12.600 | -1.701 | 0.0634 | 4.029 |
| 1 | 14.100 | -1.600 | 0.0709 | 4.507 |

## TRAZADO DE TENDONES

**Titulo:** LAV. Gelida. Puentes empujados. Pretensado de servicio.

**Tendón:** 1 **Tramo:** Vano 1 - B

| | |
|---|---|
| *Ord, origen:* | -1.930 |
| *Absc, pto 1:* | 14.700 |
| *Absc, pto 2:* | 14.700 |
| *Absc, pto 3:* | 18.900 |
| *Ord, pto 3:* | -0.400 |
| *Pend, pto 3:* | 0.000 |

| Nudo | X | Y | Pendiente | Ang, (g) | Radio Curv, |
|---|---|---|---|---|---|
| 8 | 0.000 | -1.930 | 0.0000 | 0.000 | 90.794 |
| 9 | 2.100 | -1.906 | 0.0231 | 1.472 | 90.867 |
| 10 | 4.200 | -1.833 | 0.0463 | 2.943 | 91.086 |
| 11 | 6.300 | -1.711 | 0.0694 | 4.410 | 91.451 |
| 12 | 8.400 | -1.541 | 0.0925 | 5.873 | 91.962 |
| 13 | 10.500 | -1.323 | 0.1156 | 7.330 | 92.622 |
| 14 | 12.600 | -1.056 | 0.1388 | 8.779 | 93.430 |
| 15 | 14.700 | -0.740 | 0.1619 | 10.219 | 67.420 |
| 16 | 16.800 | -0.485 | 0.0810 | 5.142 | -26.197 |
| 17 | 18.900 | -0.400 | 0.0000 | 0.000 | -25.941 |

## TRAZADO DE TENDONES

**Titulo:** LAV. Gelida. Puentes empujados. Pretensado de servicio.

**Tendón:** 2 **Tramo:** Vano 1 - B

*Ord, origen:* -2.270
*Absc, pto 1:* 14.700
*Absc, pto 2:* 14.700
*Absc, pto 3:* 18.900
*Ord, pto 3:* -0.740
*Pend, pto 3:* 0.000

| Nudo | X | Y | Pendiente | Ang, (g) | Radio Curv, |
|---|---|---|---|---|---|
| 8 | 0.000 | -2.270 | 0.0000 | 0.000 | 90.794 |
| 9 | 2.100 | -2.246 | 0.0231 | 1.472 | 90.867 |
| 10 | 4.200 | -2.173 | 0.0463 | 2.943 | 91.086 |
| 11 | 6.300 | -2.051 | 0.0694 | 4.410 | 91.451 |
| 12 | 8.400 | -1.881 | 0.0925 | 5.873 | 91.962 |
| 13 | 10.500 | -1.663 | 0.1156 | 7.330 | 92.622 |
| 14 | 12.600 | -1.396 | 0.1388 | 8.779 | 93.430 |
| 15 | 14.700 | -1.080 | 0.1619 | 10.219 | 67.420 |
| 16 | 16.800 | -0.825 | 0.0810 | 5.142 | -26.197 |
| 17 | 18.900 | -0.740 | 0.0000 | 0.000 | -25.941 |

## TRAZADO DE TENDONES

**Titulo:** LAV. Gelida. Puentes empujados. Pretensado de servicio.

**Tendón:** 3 **Tramo:** Vano 1 - B

*Ord, origen:* -1.760
*Absc, pto 1:* 14.700
*Absc, pto 2:* 14.700
*Absc, pto 3:* 18.900
*Ord, pto 3:* -0.230
*Pend, pto 3:* 0.000

| Nudo | X | Y | Pendiente | Ang, (g) | Radio Curv, |
|---|---|---|---|---|---|
| 8 | 0.000 | -1.760 | 0.0000 | 0.000 | 90.794 |
| 9 | 2.100 | -1.736 | 0.0231 | 1.472 | 90.867 |
| 10 | 4.200 | -1.663 | 0.0463 | 2.943 | 91.086 |
| 11 | 6.300 | -1.541 | 0.0694 | 4.410 | 91.451 |
| 12 | 8.400 | -1.371 | 0.0925 | 5.873 | 91.962 |
| 13 | 10.500 | -1.153 | 0.1156 | 7.330 | 92.622 |
| 14 | 12.600 | -0.886 | 0.1388 | 8.779 | 93.430 |
| 15 | 14.700 | -0.570 | 0.1619 | 10.219 | 67.420 |
| 16 | 16.800 | -0.315 | 0.0810 | 5.142 | -26.197 |
| 17 | 18.900 | -0.230 | 0.0000 | 0.000 | -25.941 |

## TRAZADO DE TENDONES

**Titulo:** LAV. Gelida. Puentes empujados. Pretensado de servicio.

**Tendón:** 4 **Tramo:** Vano 1 - B

*Ord, origen:* -2.100
*Absc, pto 1:* 14.700
*Absc, pto 2:* 14.700
*Absc, pto 3:* 18.900
*Ord, pto 3:* -0.570
*Pend, pto 3:* 0.000

| Nudo | X | Y | Pendiente | Ang, (g) | Radio Curv, |
|---|---|---|---|---|---|
| 8 | 0.000 | -2.100 | 0.0000 | 0.000 | 90.794 |
| 9 | 2.100 | -2.076 | 0.0231 | 1.472 | 90.867 |
| 10 | 4.200 | -2.003 | 0.0463 | 2.943 | 91.086 |
| 11 | 6.300 | -1.881 | 0.0694 | 4.410 | 91.451 |
| 12 | 8.400 | -1.711 | 0.0925 | 5.873 | 91.962 |
| 13 | 10.500 | -1.493 | 0.1156 | 7.330 | 92.622 |
| 14 | 12.600 | -1.226 | 0.1388 | 8.779 | 93.430 |
| 15 | 14.700 | -0.910 | 0.1619 | 10.219 | 67.420 |
| 16 | 16.800 | -0.655 | 0.0810 | 5.142 | -26.197 |
| 17 | 18.900 | -0.570 | 0.0000 | 0.000 | -25.941 |

## TRAZADO DE TENDONES

**Titulo:** LAV. Gelida. Puentes empujados. Pretensado de servicio.

**Tendón:** 3 **Tramo:** Vano 2 - A

*Ord, origen:* -2.590
*Absc, pto 1:* 18.500
*Absc, pto 2:* 18.500
*Absc, pto 3:* 21.000
*Ord, pto 3:* -0.230
*Pend, pto 3:* 0.000

| Nudo | X | Y | Pendiente | Ang, (g) | Radio Curv, |
|---|---|---|---|---|---|
| 27 | 0.000 | -2.590 | 0.0000 | 0.000 | 82.309 |
| 26 | 2.100 | -2.563 | 0.0255 | 1.624 | 82.390 |
| 25 | 4.200 | -2.483 | 0.0510 | 3.246 | 82.631 |
| 24 | 6.300 | -2.349 | 0.0765 | 4.863 | 83.034 |
| 23 | 8.400 | -2.161 | 0.1021 | 6.475 | 83.599 |
| 22 | 10.500 | -1.920 | 0.1276 | 8.078 | 84.327 |
| 21 | 12.600 | -1.626 | 0.1531 | 9.670 | 85.219 |
| 20 | 14.700 | -1.277 | 0.1786 | 11.251 | 86.279 |
| 19 | 16.800 | -0.875 | 0.2041 | 12.818 | 87.506 |
| 18 | 18.900 | -0.428 | 0.1888 | 11.880 | -11.723 |
| 17 | 21.000 | -0.230 | 0.0000 | 0.000 | -11.123 |

## TRAZADO DE TENDONES

**Titulo:** LAV. Gelida. Puentes empujados. Pretensado de servicio.

**Tendón:** 4 **Tramo:** Vano 2 - A

*Ord, origen:* -2.930
*Absc, pto 1:* 18.500
*Absc, pto 2:* 18.500
*Absc, pto 3:* 21.000
*Ord, pto 3:* -0.570
*Pend, pto 3:* 0.000

| Nudo | X | Y | Pendiente | Ang, (g) | Radio Curv, |
|---|---|---|---|---|---|
| 27 | 0.000 | -2.930 | 0.0000 | 0.000 | 82.309 |
| 26 | 2.100 | -2.903 | 0.0255 | 1.624 | 82.390 |
| 25 | 4.200 | -2.823 | 0.0510 | 3.246 | 82.631 |
| 24 | 6.300 | -2.689 | 0.0765 | 4.863 | 83.034 |
| 23 | 8.400 | -2.501 | 0.1021 | 6.475 | 83.599 |
| 22 | 10.500 | -2.260 | 0.1276 | 8.078 | 84.327 |
| 21 | 12.600 | -1.966 | 0.1531 | 9.670 | 85.219 |
| 20 | 14.700 | -1.617 | 0.1786 | 11.251 | 86.279 |
| 19 | 16.800 | -1.215 | 0.2041 | 12.818 | 87.506 |
| 18 | 18.900 | -0.768 | 0.1888 | 11.880 | -11.723 |
| 17 | 21.000 | -0.570 | 0.0000 | 0.000 | -11.123 |

## TRAZADO DE TENDONES

**Titulo:** LAV. Gelida. Puentes empujados. Pretensado de servicio.

**Tendón:** 5 **Tramo:** Vano 2 - A

*Ord, origen:* -2.420
*Absc, pto 1:* 16.800
*Absc, pto 2:* 16.800
*Absc, pto 3:* 21.000
*Ord, pto 3:* -0.230
*Pend, pto 3:* 0.000

| Nudo | X | Y | Pendiente | Ang, (g) | Radio Curv, |
|---|---|---|---|---|---|
| 27 | 0.000 | -2.420 | 0.0000 | 0.000 | 80.548 |
| 26 | 2.100 | -2.393 | 0.0261 | 1.659 | 80.630 |
| 25 | 4.200 | -2.311 | 0.0521 | 3.317 | 80.877 |
| 24 | 6.300 | -2.174 | 0.0782 | 4.969 | 81.288 |
| 23 | 8.400 | -1.982 | 0.1043 | 6.615 | 81.866 |
| 22 | 10.500 | -1.736 | 0.1304 | 8.252 | 82.610 |
| 21 | 12.600 | -1.435 | 0.1564 | 9.878 | 83.522 |
| 20 | 14.700 | -1.079 | 0.1825 | 11.492 | 84.605 |
| 19 | 16.800 | -0.668 | 0.2086 | 13.090 | 64.396 |
| 18 | 18.900 | -0.340 | 0.1043 | 6.615 | -20.466 |
| 17 | 21.000 | -0.230 | 0.0000 | 0.000 | -20.137 |

## TRAZADO DE TENDONES

**Titulo:** LAV. Gelida. Puentes empujados. Pretensado de servicio.

**Tendón:** 6 **Tramo:** Vano 2 - A

*Ord, origen:* -2.760
*Absc, pto 1:* 16.800
*Absc, pto 2:* 16.800
*Absc, pto 3:* 21.000
*Ord, pto 3:* -0.570
*Pend, pto 3:* 0.000

| Nudo | X | Y | Pendiente | Ang, (g) | Radio Curv, |
|---|---|---|---|---|---|
| 27 | 0.000 | -2.760 | 0.0000 | 0.000 | 80.548 |
| 26 | 2.100 | -2.733 | 0.0261 | 1.659 | 80.630 |
| 25 | 4.200 | -2.651 | 0.0521 | 3.317 | 80.877 |
| 24 | 6.300 | -2.514 | 0.0782 | 4.969 | 81.288 |
| 23 | 8.400 | -2.322 | 0.1043 | 6.615 | 81.866 |
| 22 | 10.500 | -2.076 | 0.1304 | 8.252 | 82.610 |
| 21 | 12.600 | -1.775 | 0.1564 | 9.878 | 83.522 |
| 20 | 14.700 | -1.419 | 0.1825 | 11.492 | 84.605 |
| 19 | 16.800 | -1.008 | 0.2086 | 13.090 | 64.396 |
| 18 | 18.900 | -0.679 | 0.1043 | 6.615 | -20.466 |
| 17 | 21.000 | -0.570 | 0.0000 | 0.000 | -20.137 |

## TRAZADO DE TENDONES

**Titulo:** LAV. Gelida. Puentes empujados. Pretensado de servicio.

**Tendón:** 3 **Tramo:** Vano 2 - B

*Ord, origen:* -2.590
*Absc, pto 1:* 16.800
*Absc, pto 2:* 16.800
*Absc, pto 3:* 21.000
*Ord, pto 3:* -0.400
*Pend, pto 3:* 0.000

| Nudo | X | Y | Pendiente | Ang, (g) | Radio Curv, |
|---|---|---|---|---|---|
| 27 | 0.000 | -2.590 | 0.0000 | 0.000 | 80.548 |
| 28 | 2.100 | -2.563 | 0.0261 | 1.659 | 80.630 |
| 29 | 4.200 | -2.481 | 0.0521 | 3.317 | 80.877 |
| 30 | 6.300 | -2.344 | 0.0782 | 4.969 | 81.288 |
| 31 | 8.400 | -2.152 | 0.1043 | 6.615 | 81.866 |
| 32 | 10.500 | -1.906 | 0.1304 | 8.252 | 82.610 |
| 33 | 12.600 | -1.605 | 0.1564 | 9.878 | 83.522 |
| 34 | 14.700 | -1.249 | 0.1825 | 11.492 | 84.605 |
| 35 | 16.800 | -0.838 | 0.2086 | 13.090 | 64.396 |
| 36 | 18.900 | -0.510 | 0.1043 | 6.615 | -20.466 |
| 37 | 21.000 | -0.400 | 0.0000 | 0.000 | -20.137 |

## TRAZADO DE TENDONES

**Titulo:** LAV. Gelida. Puentes empujados. Pretensado de servicio.

**Tendón:** 4 **Tramo:** Vano 2 - B

*Ord, origen:* -2.930
*Absc, pto 1:* 16.800
*Absc, pto 2:* 16.800
*Absc, pto 3:* 21.000
*Ord, pto 3:* -0.740
*Pend, pto 3:* 0.000

| Nudo | X | Y | Pendiente | Ang, (g) | Radio Curv, |
|---|---|---|---|---|---|
| 27 | 0.000 | -2.930 | 0.0000 | 0.000 | 80.548 |
| 28 | 2.100 | -2.903 | 0.0261 | 1.659 | 80.630 |
| 29 | 4.200 | -2.821 | 0.0521 | 3.317 | 80.877 |
| 30 | 6.300 | -2.684 | 0.0782 | 4.969 | 81.288 |
| 31 | 8.400 | -2.492 | 0.1043 | 6.615 | 81.866 |
| 32 | 10.500 | -2.246 | 0.1304 | 8.252 | 82.610 |
| 33 | 12.600 | -1.945 | 0.1564 | 9.878 | 83.522 |
| 34 | 14.700 | -1.589 | 0.1825 | 11.492 | 84.605 |
| 35 | 16.800 | -1.178 | 0.2086 | 13.090 | 64.396 |
| 36 | 18.900 | -0.849 | 0.1043 | 6.615 | -20.466 |
| 37 | 21.000 | -0.740 | 0.0000 | 0.000 | -20.137 |

## TRAZADO DE TENDONES

**Titulo:** LAV. Gelida. Puentes empujados. Pretensado de servicio.

**Tendón:** 5 **Tramo:** Vano 2 - B

*Ord, origen:* -2.420
*Absc, pto 1:* 16.800
*Absc, pto 2:* 16.800
*Absc, pto 3:* 21.000
*Ord, pto 3:* -0.230
*Pend, pto 3:* 0.000

| Nudo | X | Y | Pendiente | Ang, (g) | Radio Curv, |
|---|---|---|---|---|---|
| 27 | 0.000 | -2.420 | 0.0000 | 0.000 | 80.548 |
| 28 | 2.100 | -2.393 | 0.0261 | 1.659 | 80.630 |
| 29 | 4.200 | -2.311 | 0.0521 | 3.317 | 80.877 |
| 30 | 6.300 | -2.174 | 0.0782 | 4.969 | 81.288 |
| 31 | 8.400 | -1.982 | 0.1043 | 6.615 | 81.866 |
| 32 | 10.500 | -1.736 | 0.1304 | 8.252 | 82.610 |
| 33 | 12.600 | -1.435 | 0.1564 | 9.878 | 83.522 |
| 34 | 14.700 | -1.079 | 0.1825 | 11.492 | 84.605 |
| 35 | 16.800 | -0.668 | 0.2086 | 13.090 | 64.396 |
| 36 | 18.900 | -0.340 | 0.1043 | 6.615 | -20.466 |
| 37 | 21.000 | -0.230 | 0.0000 | 0.000 | -20.137 |

## TRAZADO DE TENDONES

**Titulo:** LAV. Gelida. Puentes empujados. Pretensado de servicio.

**Tendón:** 6 **Tramo:** Vano 2 - B

*Ord, origen:* -2.760
*Absc, pto 1:* 16.800
*Absc, pto 2:* 16.800
*Absc, pto 3:* 21.000
*Ord, pto 3:* -0.570
*Pend, pto 3:* 0.000

| Nudo | X | Y | Pendiente | Ang, (g) | Radio Curv, |
|---|---|---|---|---|---|
| 27 | 0.000 | -2.760 | 0.0000 | 0.000 | 80.548 |
| 28 | 2.100 | -2.733 | 0.0261 | 1.659 | 80.630 |
| 29 | 4.200 | -2.651 | 0.0521 | 3.317 | 80.877 |
| 30 | 6.300 | -2.514 | 0.0782 | 4.969 | 81.288 |
| 31 | 8.400 | -2.322 | 0.1043 | 6.615 | 81.866 |
| 32 | 10.500 | -2.076 | 0.1304 | 8.252 | 82.610 |
| 33 | 12.600 | -1.775 | 0.1564 | 9.878 | 83.522 |
| 34 | 14.700 | -1.419 | 0.1825 | 11.492 | 84.605 |
| 35 | 16.800 | -1.008 | 0.2086 | 13.090 | 64.396 |
| 36 | 18.900 | -0.679 | 0.1043 | 6.615 | -20.466 |
| 37 | 21.000 | -0.570 | 0.0000 | 0.000 | -20.137 |

## TRAZADO DE TENDONES

**Titulo:** LAV. Gelida. Puentes empujados. Pretensado de servicio.

**Tendón:** 11 **Tramo:** Vano 6 - A

*Ord, origen:* -1.900
*Absc, pto 1:* 16.650
*Absc, pto 2:* 16.650
*Absc, pto 3:* 18.900
*Ord, pto 3:* -0.230
*Pend, pto 3:* 0.000

| Nudo | X | Y | Pendiente | Ang, (g) | Radio Curv, |
|---|---|---|---|---|---|
| 106 | 0.000 | -1.900 | 0.0000 | 0.000 | 94.217 |
| 105 | 2.100 | -1.877 | 0.0223 | 1.419 | 94.287 |
| 104 | 4.200 | -1.806 | 0.0446 | 2.836 | 94.498 |
| 103 | 6.300 | -1.689 | 0.0669 | 4.251 | 94.850 |
| 102 | 8.400 | -1.526 | 0.0892 | 5.661 | 95.343 |
| 101 | 10.500 | -1.315 | 0.1114 | 7.066 | 95.978 |
| 100 | 12.600 | -1.057 | 0.1337 | 8.464 | 96.756 |
| 99 | 14.700 | -0.753 | 0.1560 | 9.853 | 97.678 |
| 98 | 16.800 | -0.403 | 0.1649 | 10.407 | -13.255 |
| 97 | 18.900 | -0.230 | 0.0000 | 0.000 | -12.732 |

## TRAZADO DE TENDONES

**Titulo:** LAV. Gelida. Puentes empujados. Pretensado de servicio.

**Tendón:** 12 **Tramo:** Vano 6 - A

*Ord, origen:* -2.700
*Absc, pto 1:* 16.650
*Absc, pto 2:* 16.650
*Absc, pto 3:* 18.900
*Ord, pto 3:* -0.570
*Pend, pto 3:* 0.000

| Nudo | X | Y | Pendiente | Ang, (g) | Radio Curv, |
|---|---|---|---|---|---|
| 106 | 0.000 | -2.700 | 0.0000 | 0.000 | 73.870 |
| 105 | 2.100 | -2.670 | 0.0284 | 1.809 | 73.959 |
| 104 | 4.200 | -2.581 | 0.0569 | 3.616 | 74.228 |
| 103 | 6.300 | -2.431 | 0.0853 | 5.416 | 74.677 |
| 102 | 8.400 | -2.222 | 0.1137 | 7.208 | 75.307 |
| 101 | 10.500 | -1.954 | 0.1421 | 8.989 | 76.120 |
| 100 | 12.600 | -1.625 | 0.1706 | 10.755 | 77.117 |
| 99 | 14.700 | -1.237 | 0.1990 | 12.505 | 78.301 |
| 98 | 16.800 | -0.791 | 0.2104 | 13.200 | -10.652 |
| 97 | 18.900 | -0.570 | 0.0000 | 0.000 | -9.982 |

## TRAZADO DE TENDONES

**Titulo:** LAV. Gelida. Puentes empujados. Pretensado de servicio.

**Tendón:** 13 **Tramo:** Vano 6 - A

*Ord, origen:* -1.730
*Absc, pto 1:* 14.700
*Absc, pto 2:* 14.700
*Absc, pto 3:* 18.900
*Ord, pto 3:* -0.230
*Pend, pto 3:* 0.000

| Nudo | X | Y | Pendiente | Ang, (g) | Radio Curv, |
|---|---|---|---|---|---|
| 106 | 0.000 | -1.730 | 0.0000 | 0.000 | 92.610 |
| 105 | 2.100 | -1.706 | 0.0227 | 1.443 | 92.681 |
| 104 | 4.200 | -1.635 | 0.0454 | 2.885 | 92.896 |
| 103 | 6.300 | -1.516 | 0.0680 | 4.324 | 93.254 |
| 102 | 8.400 | -1.349 | 0.0907 | 5.759 | 93.755 |
| 101 | 10.500 | -1.135 | 0.1134 | 7.187 | 94.401 |
| 100 | 12.600 | -0.873 | 0.1361 | 8.609 | 95.193 |
| 99 | 14.700 | -0.563 | 0.1587 | 10.021 | 68.666 |
| 98 | 16.800 | -0.313 | 0.0794 | 5.042 | -26.710 |
| 97 | 18.900 | -0.230 | 0.0000 | 0.000 | -26.460 |

## TRAZADO DE TENDONES

**Titulo:** LAV. Gelida. Puentes empujados. Pretensado de servicio.

**Tendón:** 14 **Tramo:** Vano 6 - A

| | |
|---|---|
| *Ord, origen:* | -2.300 |
| *Absc, pto 1:* | 14.700 |
| *Absc, pto 2:* | 14.700 |
| *Absc, pto 3:* | 18.900 |
| *Ord, pto 3:* | -0.570 |
| *Pend, pto 3:* | 0.000 |

| Nudo | X | Y | Pendiente | Ang, (g) | Radio Curv, |
|---|---|---|---|---|---|
| 106 | 0.000 | -2.300 | 0.0000 | 0.000 | 80.298 |
| 105 | 2.100 | -2.273 | 0.0262 | 1.665 | 80.380 |
| 104 | 4.200 | -2.190 | 0.0523 | 3.327 | 80.627 |
| 103 | 6.300 | -2.053 | 0.0785 | 4.985 | 81.040 |
| 102 | 8.400 | -1.861 | 0.1046 | 6.636 | 81.619 |
| 101 | 10.500 | -1.613 | 0.1308 | 8.278 | 82.366 |
| 100 | 12.600 | -1.311 | 0.1569 | 9.909 | 83.282 |
| 99 | 14.700 | -0.954 | 0.1831 | 11.527 | 60.263 |
| 98 | 16.800 | -0.666 | 0.0915 | 5.811 | -23.231 |
| 97 | 18.900 | -0.570 | 0.0000 | 0.000 | -22.942 |

## TRAZADO DE TENDONES

**Titulo:** LAV. Gelida. Puentes empujados. Pretensado de servicio.

**Tendón:** 13 **Tramo:** Vano 6-B

| | | | |
|---|---|---|---|
| longitud: | 14.100 | | y=Ax^2+C |
| ord. tan=0: | -1.730 | A= | 0.00518083 |
| ord. final: | -0.700 | C= | -1.730 |

| | X | Y | Pendiente | Angulo (g) |
|---|---|---|---|---|
| 106 | 0.000 | -1.730 | 0.0000 | 0.000 |
| 107 | 2.100 | -1.707 | 0.0218 | 1.385 |
| 108 | 4.200 | -1.639 | 0.0435 | 2.769 |
| 109 | 6.300 | -1.524 | 0.0653 | 4.150 |
| 110 | 8.400 | -1.364 | 0.0870 | 5.527 |
| 111 | 10.500 | -1.159 | 0.1088 | 6.899 |
| 112 | 12.600 | -0.907 | 0.1306 | 8.265 |
| 113 | 14.100 | -0.700 | 0.1461 | 9.236 |

## TRAZADO DE TENDONES

**Titulo:** LAV. Gelida. Puentes empujados. Pretensado de servicio.

**Tendón:** 5 **Tramo:** Vano 1- B

| | | | |
|---|---|---|---|
| longitud: | 4.200 | | y=Ax^2+C |
| ord. tan=0: | -0.230 | A= | -0.03968254 |
| ord. final: | -0.930 | C= | -0.230 |

| | X | Y | Pendiente | Angulo (g) |
|---|---|---|---|---|
| 17 | 0.000 | -0.230 | 0.0000 | 0.000 |
| 18 | 2.100 | -0.405 | -0.1667 | -10.514 |
| 19 | 4.200 | -0.930 | -0.3333 | -20.483 |

## TRAZADO DE TENDONES

**Titulo:** LAV. Gelida. Puentes empujados. Pretensado de servicio.

**Tendón:** 6 **Tramo:** Vano 1- B

| | | | |
|---|---|---|---|
| longitud: | 4.200 | | y=Ax^2+C |
| ord. tan=0: | -0.570 | A= | -0.0430839 |
| ord. final: | -1.330 | C= | -0.570 |

| | X | Y | Pendiente | Angulo (g) |
|---|---|---|---|---|
| 17 | 0.000 | -0.570 | 0.0000 | 0.000 |
| 18 | 2.100 | -0.760 | -0.1810 | -11.396 |
| 19 | 4.200 | -1.330 | -0.3619 | -22.106 |

## TRAZADO DE TENDONES

**Titulo:** LAV. Gelida. Puentes empujados. Pretensado de servicio.

**Tendón:** 1 **Tramo:** Vano 2 - A

| | | | |
|---|---|---|---|
| longitud: | 4.200 | | y=Ax^2+C |
| ord. tan=0: | -0.400 | A= | -0.03684807 |
| ord. final: | -1.050 | C= | -0.400 |

| | X | Y | Pendiente | Angulo (g) |
|---|---|---|---|---|
| 17 | 0.000 | -0.400 | 0.0000 | 0.000 |
| 18 | 2.100 | -0.563 | -0.1548 | -9.775 |
| 19 | 4.200 | -1.050 | -0.3095 | -19.109 |

## TRAZADO DE TENDONES

**Titulo:** LAV. Gelida. Puentes empujados. Pretensado de servicio.

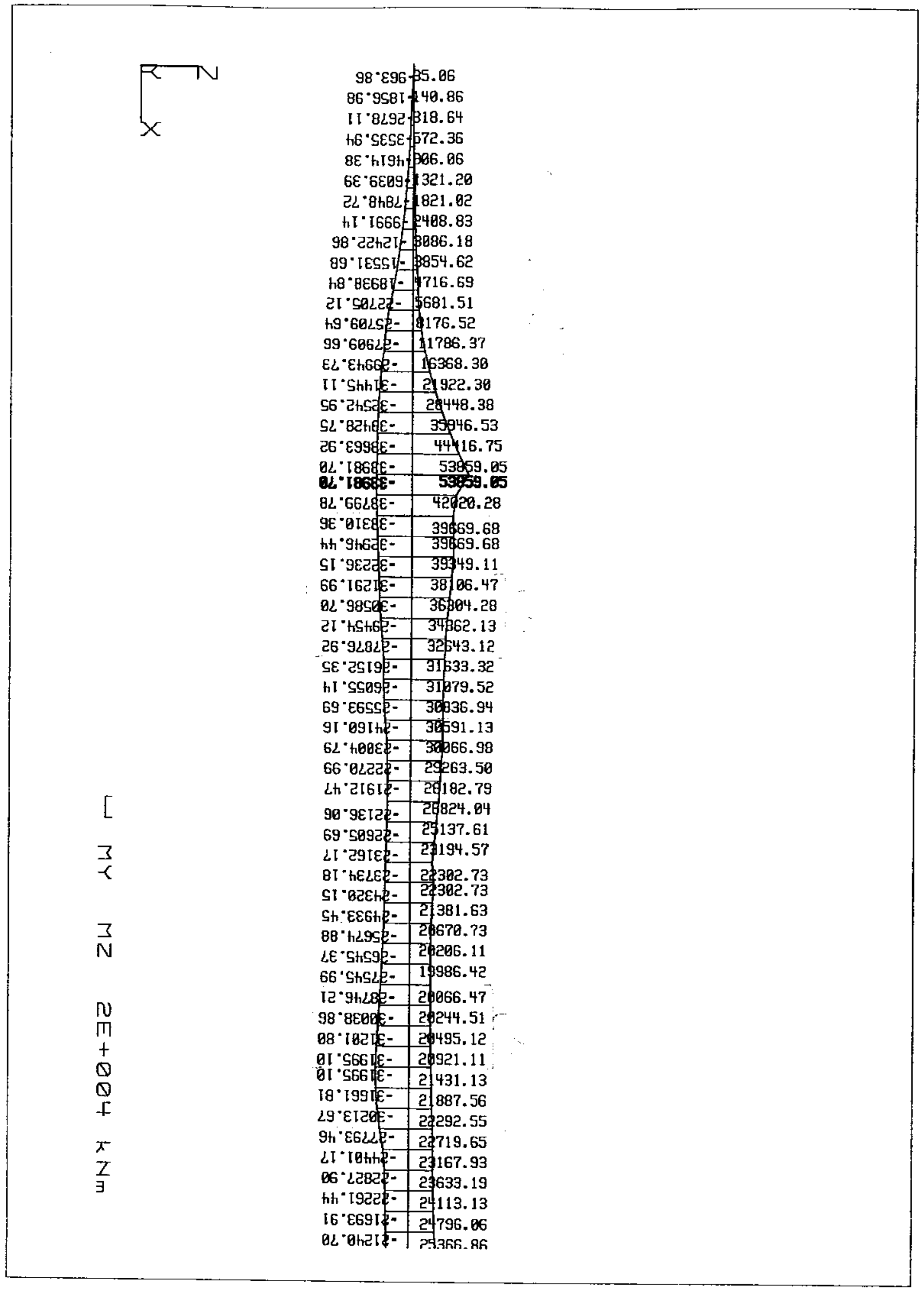
**Tendón:** 2 **Tramo:** Vano 2 - A

| | | | |
|---|---|---|---|
| longitud: | 4.200 | | y=Ax^2+C |
| ord. tan=0: | -0.740 | A= | -0.04024943 |
| ord. final: | -1.450 | C= | -0.740 |

| | X | Y | Pendiente | Angulo (g) |
|---|---|---|---|---|
| 17 | 0.000 | -0.740 | 0.0000 | 0.000 |
| 18 | 2.100 | -0.918 | -0.1690 | -10.661 |
| 19 | 4.200 | -1.450 | -0.3381 | -20.756 |

## 3.3. ANÁLISIS DEL TABLERO DURANTE EMPUJE

### 3.3.1. Envolventes de esfuerzos




Fecha: 7-02-2002 Hora: 12:16:10 Página: 790
ROBOTV6 v. 4.4 EIPSA 754
(c) Copyright RoboBAT 1985 - 1999 (GELEMPU3)
PORTICO ESPACIAL: , Escala= 1:620
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Valores extremos [ kN, kNm, m ] Elem: Pos: Compon:
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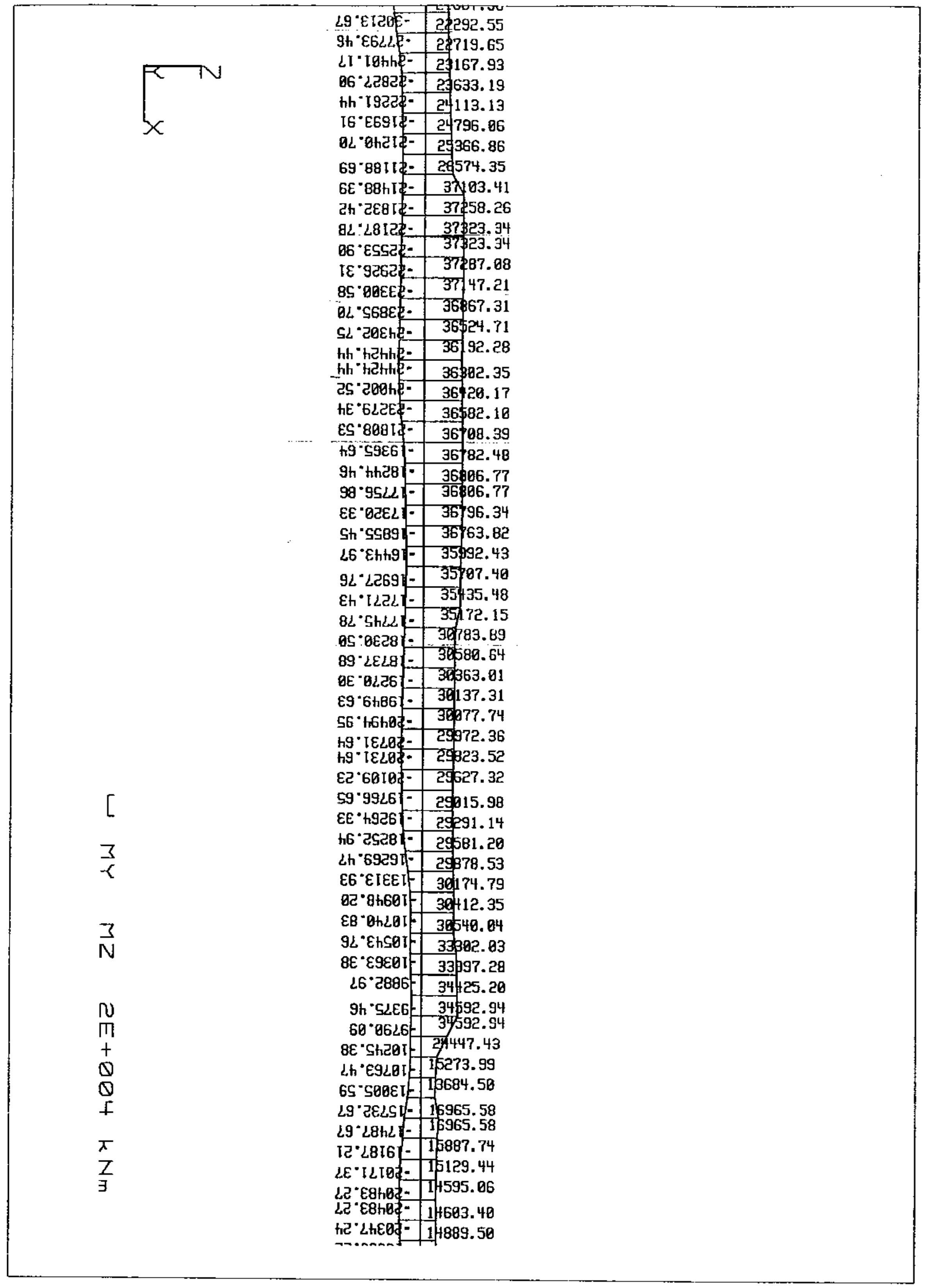


Fecha: 7-02-2002 Hora: 12:17:35 Página: 791
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PORTICO ESPACIAL: , Escala= 1:620
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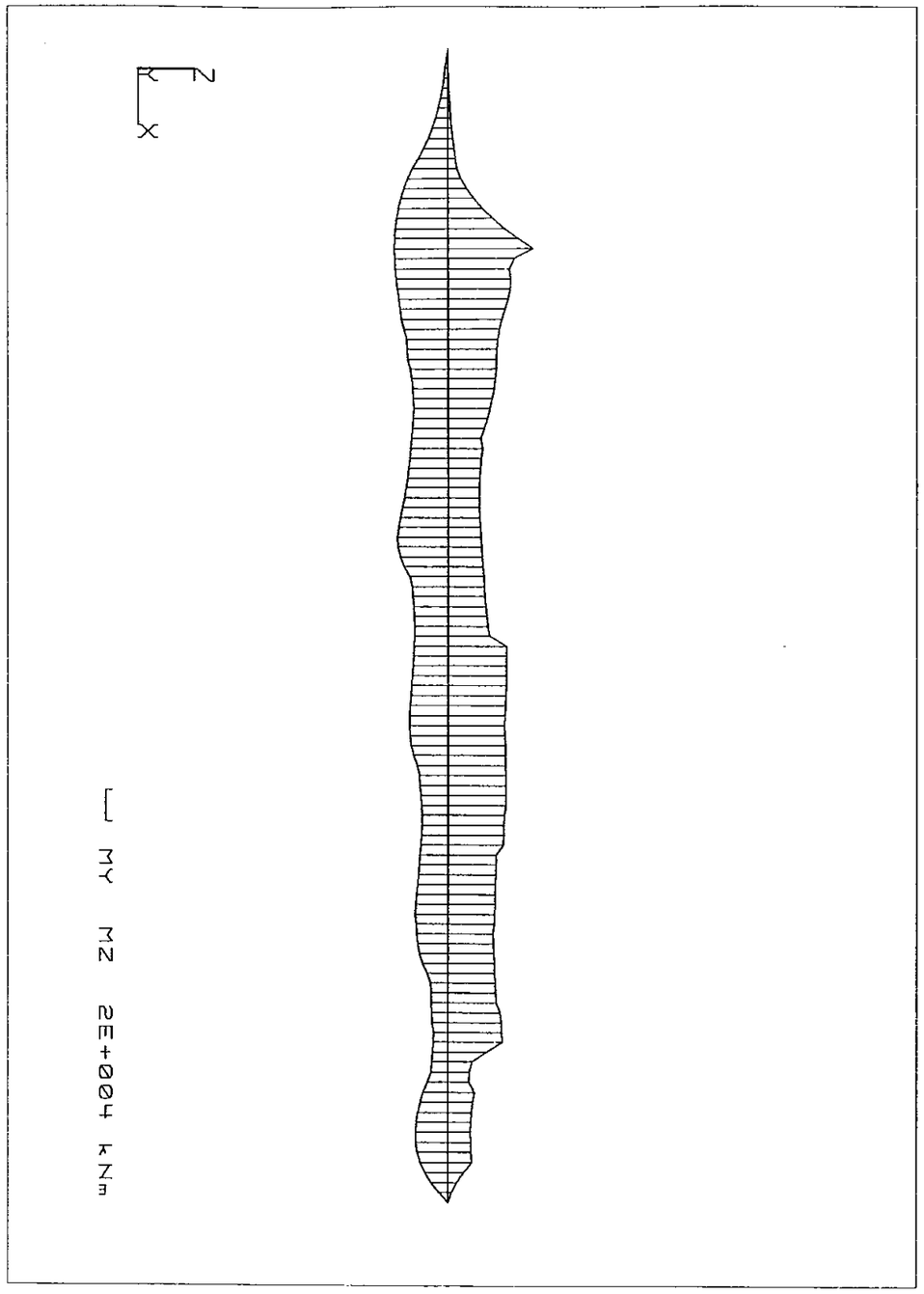
Valores extremos [ kN, kNm, m ] Elem: Pos: Compon:
MY = 5.39E+004 9 0 21

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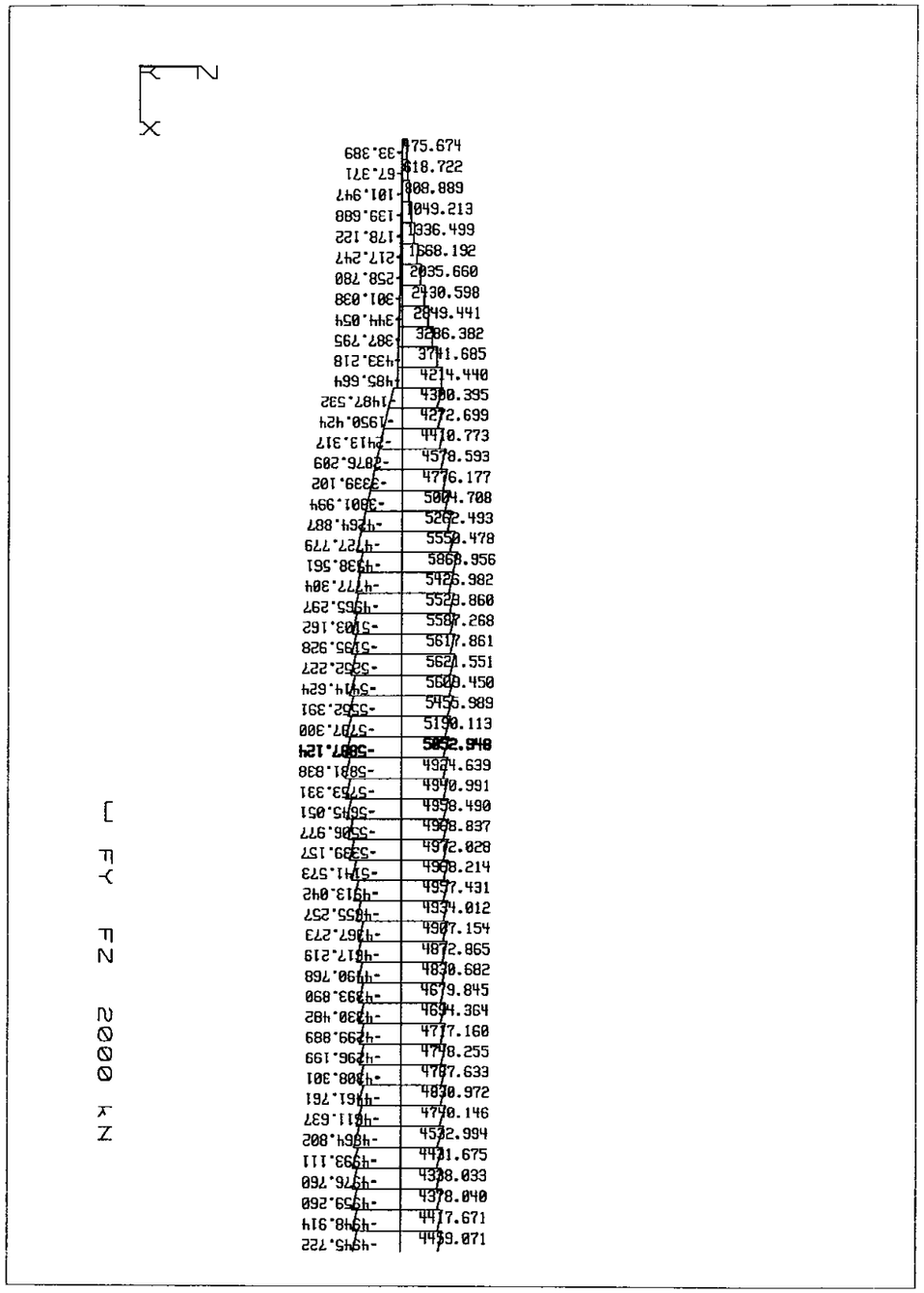
| Caso : #2 : CASOS CARGA ACTIVOS: 1 201 301 ...<br>Valores extremos [ kN, kNm, m ] | Elem: | Pos: | Compon: |
| MY = 5.39E+004 | 9 | 0 | 21 |

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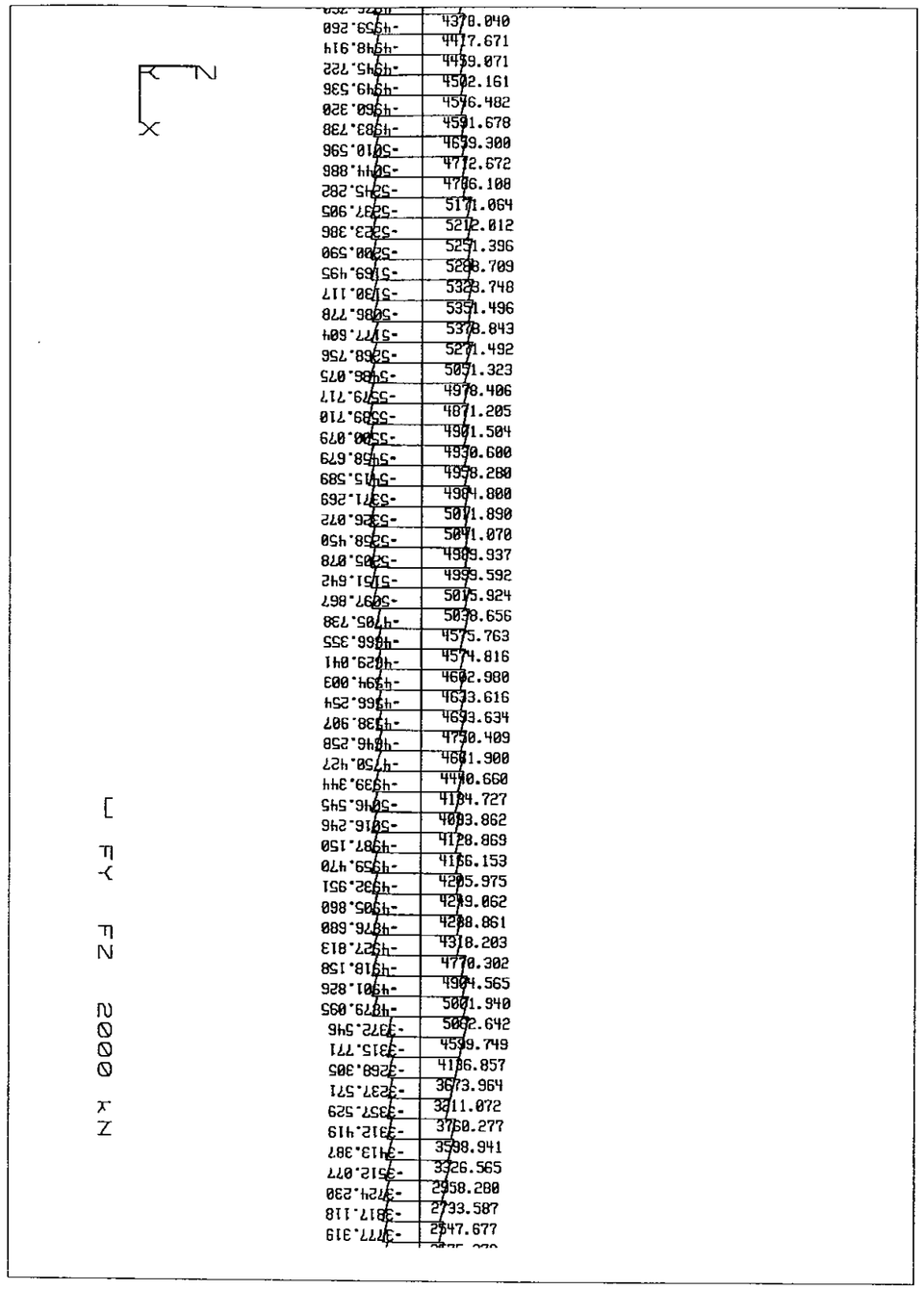
|---|---|---|---|
| ROBOTV6 v. 4.4 EIPSA 754<br>(c) Copyright RoboBAT 1985 - 1999 (GELEMPU3)<br>PORTICO ESPACIAL: , Escala= 1:620 | | | |
| Caso : #2 : CASOS CARGA ACTIVOS: 1 201 301 ...<br>Valores extremos [ kN, kNm, m ] | Elem: | Pos: | Compon: |
| FZ = 5.89E+003 | 18 | 1 | 11 |

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|---|---|---|---|
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| Caso : #2 : CASOS CARGA ACTIVOS: 1 201 301 ...<br>Valores extremos [ kN, kNm, m ] | Elem: | Pos: | Compon: |
| FZ = 5.89E+003 | 18 | 1 | 11 |

*Geltada - Sant Llorenç D'Hortons*

| Elem. | Nudo | Caso | FZ (kN) | MY (kNm) |
|---|---|---|---|---|
| 1 | 1 | 1301 | 4300.395>> | -5681.51 |
| 1 | 1 | 1901 | -888.664<< | -5681.51 |
| 1 | 1 | 701 | 1364.244 | 22705.12>> |
| 1 | 1 | 1501 | -888.664 | -5681.51<< |
| 1 | 2 | 1301 | 3701.527>> | 2720.51 |
| 1 | 2 | 1901 | -1487.532<< | -8176.52 |
| 1 | 2 | 801 | 1201.846 | 25709.64>> |
| 1 | 2 | 1501 | -1487.532 | -8176.52<< |
| 2 | 2 | 1401 | 4272.699>> | -8176.52 |
| 2 | 2 | 1701 | -1487.532<< | -8176.52 |
| 2 | 2 | 801 | 1201.846 | 25709.64>> |
| 2 | 2 | 1501 | -1487.532 | -8176.52<< |
| 2 | 3 | 1401 | 3809.806>> | 310.11 |
| 2 | 3 | 1701 | -1950.424<< | -11786.37 |
| 2 | 3 | 901 | 1200.054 | 27909.66>> |
| 2 | 3 | 1501 | -1950.424 | -11786.37<< |
| 3 | 3 | 1501 | 4410.773>> | -11786.37 |
| 3 | 3 | 2101 | -1950.424<< | -11786.37 |
| 3 | 3 | 901 | 1200.054 | 27909.66>> |
| 3 | 3 | 1501 | 4410.773 | -11786.37<< |
| 3 | 4 | 1501 | 3947.880>> | -3009.79 |
| 3 | 4 | 2101 | -2413.317<< | -16368.30 |
| 3 | 4 | 901 | 737.162 | 29943.73>> |
| 3 | 4 | 1701 | -2413.317 | -16368.30<< |
| 4 | 4 | 1601 | 4578.593>> | -16368.30 |
| 4 | 4 | 2101 | -2413.317<< | -16368.30 |
| 4 | 4 | 901 | 737.162 | 29943.73>> |
| 4 | 4 | 1701 | -2413.317 | -16368.30<< |
| 4 | 5 | 1601 | 4115.700>> | -7239.29 |
| 4 | 5 | 2101 | -2876.209<< | -21922.30 |
| 4 | 5 | 1001 | 754.227 | 31445.11>> |
| 4 | 5 | 1701 | -2876.209 | -21922.30<< |
| 5 | 5 | 1701 | 4776.177>> | -21922.30 |
| 5 | 5 | 2101 | -2876.209<< | -21922.30 |
| 5 | 5 | 1001 | 754.227 | 31445.11>> |
| 5 | 5 | 1701 | 4776.177 | -21922.30<< |
| 5 | 6 | 1701 | 4313.285>> | -12378.37 |
| 5 | 6 | 2101 | -3339.102<< | -28448.38 |
| 5 | 6 | 1001 | 291.335 | 32542.95>> |
| 5 | 6 | 2101 | -3339.102 | -28448.38<< |
| 6 | 6 | 1801 | 5004.708>> | -28448.38 |
| 6 | 6 | 2101 | -3339.102<< | -28448.38 |
| 6 | 6 | 1001 | 291.335 | 32542.95>> |

Especificación de esfuerzos

Resultados individuales

Convención de señales - fuerzas internas

| | |
|---|---|
| Elemento | todo |
| | IA212 |
| Nudo | todo |
| | IA212 |
| Caso | IA200ICA200 301A210ICA200 |
| | IA200ICA200 301A210ICA200 |

| | | |
|---|---|---|
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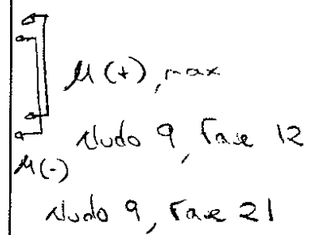
Especificación de esfuerzos

| Elem. | Nudo | Caso | FZ (kN) | MY (kNm) |
|---|---|---|---|---|
| 6 | 6 | 2101 | -3339.102 | -28448.38<< |
| 6 | 7 | 1801 | 4541.815>> | -18424.53 |
| 6 | 7 | 2101 | -3801.994<< | -35946.53 |
| 6 | 7 | 1101 | 327.486 | 33428.75>> |
| 6 | 7 | 2101 | -3801.994 | -35946.53<< |
| 7 | 7 | 1901 | 5262.493>> | -35946.53 |
| 7 | 7 | 2101 | -3801.994<< | -35946.53 |
| 7 | 7 | 1101 | 327.486 | 33428.75>> |
| 7 | 7 | 2101 | -3801.994 | -35946.53<< |
| 7 | 8 | 1901 | 4799.601>> | -25381.33 |
| 7 | 8 | 2101 | -4264.887<< | -44416.75 |
| 7 | 8 | 1201 | 382.772 | 33663.92>> |
| 7 | 8 | 2101 | -4264.887 | -44416.75<< |
| 8 | 8 | 2001 | 5550.478>> | -44416.75 |
| 8 | 8 | 2101 | -4264.887<< | -44416.75 |
| 8 | 8 | 1201 | 382.772 | 33663.92>> |
| 8 | 8 | 2101 | -4264.887 | -44416.75<< |
| 8 | 9 | 2001 | 5087.585>> | -33246.79 |
| 8 | 9 | 2101 | -4727.779<< | -53859.05 |
| 8 | 9 | 1201 | -80.120 | 33981.70>> |
| 8 | 9 | 2101 | -4727.779 | -53859.05<< |
| 9 | 9 | 2101 | 5868.956>> | -53859.05 |
| 9 | 9 | 201 | -4075.668<< | -27839.82 |
| 9 | 9 | 1201 | -80.120 | 33981.70>> |
| 9 | 9 | 2101 | 5868.956 | -53859.05<< |
| 9 | 10 | 2101 | 5406.064>> | -42020.28 |
| 9 | 10 | 201 | -4538.561<< | -36884.76 |
| 9 | 10 | 1301 | -1.613 | 33799.78>> |
| 9 | 10 | 2101 | 5406.064 | -42020.28<< |
| 10 | 10 | 201 | 5426.982>> | -36884.76 |
| 10 | 10 | 301 | -4314.411<< | -29310.64 |
| 10 | 10 | 1301 | -1.613 | 33799.78>> |
| 10 | 10 | 2101 | 5406.064 | -42020.28<< |
| 10 | 11 | 201 | 4964.090>> | -25974.13 |
| 10 | 11 | 301 | -4777.304<< | -38856.94 |
| 10 | 11 | 1301 | -464.505 | 33310.36>> |
| 10 | 11 | 301 | -4777.304 | -38856.94<< |
| 11 | 11 | 301 | 5523.860>> | -38856.94 |
| 11 | 11 | 401 | -4502.404<< | -29728.59 |
| 11 | 11 | 1301 | -464.505 | 33310.36>> |
| 11 | 11 | 301 | 5523.860 | -38856.94<< |
| 11 | 12 | 301 | 5060.968>> | -27742.87 |
| 11 | 12 | 401 | -4965.297<< | -39669.68 |
| 11 | 12 | 1401 | -356.226 | 32946.44>> |
| 11 | 12 | 401 | -4965.297 | -39669.68<< |
| 12 | 12 | 401 | 5587.268>> | -39669.68 |
| 12 | 12 | 501 | -4640.269<< | -29118.51 |
| 12 | 12 | 1401 | -356.226 | 32946.44>> |
| 12 | 12 | 401 | 5587.268 | -39669.68<< |
| 12 | 13 | 401 | 5124.376>> | -28422.45 |
| 12 | 13 | 501 | -5103.162<< | -39349.11 |
| 12 | 13 | 1501 | -218.152 | 32236.15>> |

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Especificación de esfuerzos

| Elem. | Nudo | Caso | FZ (kN) | MY (kNm) |
|---|---|---|---|---|
| 12 | 13 | 501 | -5103.162 | -39349.11<< |
| 13 | 13 | 501 | 5617.861>> | -39349.11 |
| 13 | 13 | 601 | -4733.035<< | -27681.06 |
| 13 | 13 | 1501 | -218.152 | 32236.15>> |
| 13 | 13 | 501 | 5617.861 | -39349.11<< |
| 13 | 14 | 501 | 5154.969>> | -28037.64 |
| 13 | 14 | 601 | -5195.928<< | -38106.47 |
| 13 | 14 | 1501 | -681.045 | 31291.99>> |
| 13 | 14 | 601 | -5195.928 | -38106.47<< |
| 14 | 14 | 601 | 5621.551>> | -38106.47 |
| 14 | 14 | 701 | -4789.334<< | -25760.65 |
| 14 | 14 | 1501 | -681.045 | 31291.99>> |
| 14 | 14 | 601 | 5621.551 | -38106.47<< |
| 14 | 15 | 601 | 5158.658>> | -26787.25 |
| 14 | 15 | 701 | -5252.227<< | -36304.28 |
| 14 | 15 | 1601 | -513.225 | 30586.70>> |
| 14 | 15 | 701 | -5252.227 | -36304.28<< |
| 15 | 15 | 701 | 5609.450>> | -36304.28 |
| 15 | 15 | 801 | -4815.757<< | -23620.23 |
| 15 | 15 | 1601 | -513.225 | 30586.70>> |
| 15 | 15 | 701 | 5609.450 | -36304.28<< |
| 15 | 16 | 701 | 5010.582>> | -25153.25 |
| 15 | 16 | 801 | -5414.624<< | -34362.13 |
| 15 | 16 | 1701 | -451.616 | 29454.12>> |
| 15 | 16 | 801 | -5414.624 | -34362.13<< |
| 16 | 16 | 801 | 5455.989>> | -34362.13 |
| 16 | 16 | 901 | -4953.523<< | -21611.91 |
| 16 | 16 | 1701 | -451.616 | 29454.12>> |
| 16 | 16 | 801 | 5455.989 | -34362.13<< |
| 16 | 17 | 801 | 4857.121>> | -23533.37 |
| 16 | 17 | 901 | -5552.391<< | -32643.12 |
| 16 | 17 | 1701 | -1050.483 | 27876.92>> |
| 16 | 17 | 901 | -5552.391 | -32643.12<< |
| 17 | 17 | 901 | 5190.113>> | -32643.12 |
| 17 | 17 | 1001 | -5188.433<< | -20108.80 |
| 17 | 17 | 1701 | -1166.483 | 27876.92>> |
| 17 | 17 | 901 | 5190.113 | -32643.12<< |
| 17 | 18 | 901 | 4591.246>> | -22372.70 |
| 17 | 18 | 1001 | -5787.300<< | -31633.32 |
| 17 | 18 | 1801 | -1073.927 | 26152.35>> |
| 17 | 18 | 1001 | -5787.300 | -31633.32<< |
| 18 | 18 | 1001 | 5052.948>> | -31633.32 |
| 18 | 18 | 1101 | -5288.256<< | -19345.38 |
| 18 | 18 | 1801 | -1073.927 | 26152.35>> |
| 18 | 18 | 1001 | 5052.948 | -31633.32<< |
| 18 | 19 | 1001 | 4454.080>> | -21650.94 |
| 18 | 19 | 1101 | -5887.124<< | -31079.52 |
| 18 | 19 | 1 | 11.707 | 26055.14>> |
| 18 | 19 | 1101 | -5887.124 | -31079.52<< |
| 19 | 19 | 1101 | 4924.639>> | -31079.52 |
| 19 | 19 | 1201 | -5368.945<< | -19076.12 |
| 19 | 19 | 1 | 11.707 | 26055.14>> |

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Especificación de esfuerzos

| Elem. | Nudo | Caso | FZ (kN) | MY (kNm) |
|---|---|---|---|---|
| 19 | 19 | 1101 | 4924.639 | -31079.52<< |
| 19 | 20 | 1101 | 4461.746>> | -21223.82 |
| 19 | 20 | 1201 | -5831.838<< | -30836.94 |
| 19 | 20 | 1 | -451.186 | 25593.69>> |
| 19 | 20 | 1201 | -5831.838 | -30836.94<< |
| 20 | 20 | 1201 | 4940.991>> | -30836.94 |
| 20 | 20 | 1301 | -5290.438<< | -18995.17 |
| 20 | 20 | 1 | -451.186 | 25593.69>> |
| 20 | 20 | 1201 | 4940.991 | -30836.94<< |
| 20 | 21 | 1201 | 4478.098>> | -20946.90 |
| 20 | 21 | 1301 | -5753.331<< | -30591.13 |
| 20 | 21 | 1 | -914.078 | 24160.16>> |
| 20 | 21 | 1301 | -5753.331 | -30591.13<< |
| 21 | 21 | 1301 | 4958.490>> | -30591.13 |
| 21 | 21 | 1401 | -5182.159<< | -18698.40 |
| 21 | 21 | 1 | -914.078 | 24160.16>> |
| 21 | 21 | 1301 | 4958.490 | -30591.13<< |
| 21 | 22 | 1301 | 4495.598>> | -20664.34 |
| 21 | 22 | 1401 | -5645.051<< | -30066.98 |
| 21 | 22 | 301 | -227.858 | 23004.79>> |
| 21 | 22 | 1401 | -5645.051 | -30066.98<< |
| 22 | 22 | 1401 | 4968.837>> | -30066.98 |
| 22 | 22 | 1501 | -5044.085<< | -18184.89 |
| 22 | 22 | 301 | -227.858 | 23004.79>> |
| 22 | 22 | 1401 | 4968.837 | -30066.98<< |
| 22 | 23 | 1401 | 4505.944>> | -20118.46 |
| 22 | 23 | 1501 | -5506.977<< | -29263.50 |
| 22 | 23 | 401 | -164.449 | 22270.99>> |
| 22 | 23 | 1501 | -5506.977 | -29263.50<< |
| 23 | 23 | 1501 | 4972.028>> | -29263.50 |
| 23 | 23 | 1601 | -4876.265<< | -17456.59 |
| 23 | 23 | 401 | -164.449 | 22270.99>> |
| 23 | 23 | 1501 | 4972.028 | -29263.50<< |
| 23 | 24 | 1501 | 4509.135>> | -19308.28 |
| 23 | 24 | 1601 | -5339.157<< | -28182.79 |
| 23 | 24 | 501 | -133.856 | 21912.47>> |
| 23 | 24 | 1601 | -5339.157 | -28182.79<< |
| 24 | 24 | 1601 | 4968.214>> | -28182.79 |
| 24 | 24 | 1701 | -4678.681<< | -16512.77 |
| 24 | 24 | 501 | -133.856 | 21912.47>> |
| 24 | 24 | 1601 | 4968.214 | -28182.79<< |
| 24 | 25 | 1601 | 4505.321>> | -18235.58 |
| 24 | 25 | 1701 | -5141.573<< | -26824.04 |
| 24 | 25 | 601 | -130.167 | 21854.54>> |
| 24 | 25 | 1701 | -5141.573 | -26824.04<< |
| 25 | 25 | 1701 | 4957.431>> | -26824.04 |
| 25 | 25 | 1801 | -4450.150<< | -15306.26 |
| 25 | 25 | 601 | -130.167 | 21854.54>> |
| 25 | 25 | 1701 | 4957.431 | -26824.04<< |
| 25 | 26 | 1701 | 4494.538>> | -16899.47 |
| 25 | 26 | 1801 | -4913.042<< | -25137.61 |
| 25 | 26 | 801 | 303.139 | 22136.06>> |

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Especificación de esfuerzos

| Elem. | Nudo | Caso | FZ (kN) | MY (kNm) |
|---|---|---|---|---|
| 25 | 26 | 1801 | -4913.042 | -25137.61<< |
| 26 | 26 | 1801 | 4934.012>> | -25137.61 |
| 26 | 26 | 1901 | -4192.365<< | -13904.56 |
| 26 | 26 | 801 | 303.139 | 22136.06>> |
| 26 | 26 | 1801 | 4934.012 | -25137.61<< |
| 26 | 27 | 1801 | 4471.120>> | -15262.23 |
| 26 | 27 | 1901 | -4655.257<< | -23194.57 |
| 26 | 27 | 901 | 289.238 | 22605.69>> |
| 26 | 27 | 1901 | -4655.257 | -23194.57<< |
| 27 | 27 | 1901 | 4907.154>> | -23194.57 |
| 27 | 27 | 2001 | -3904.380<< | -12270.01 |
| 27 | 27 | 901 | 289.238 | 22605.69>> |
| 27 | 27 | 1901 | 4907.154 | -23194.57<< |
| 27 | 28 | 1901 | 4444.261>> | -13375.58 |
| 27 | 28 | 2001 | -4367.273<< | -20955.24 |
| 27 | 28 | 1001 | 288.048 | 23162.17>> |
| 27 | 28 | 2001 | -4367.273 | -20955.24<< |
| 28 | 28 | 2001 | 4872.865>> | -20955.24 |
| 28 | 28 | 1 | -4154.326<< | -13092.61 |
| 28 | 28 | 1001 | 288.048 | 23162.17>> |
| 28 | 28 | 2001 | 4872.865 | -20955.24<< |
| 28 | 29 | 2001 | 4409.972>> | -11208.26 |
| 28 | 29 | 1 | -4617.219<< | -22302.73 |
| 28 | 29 | 1101 | 295.714 | 23734.18>> |
| 28 | 29 | 1 | -4617.219 | -22302.73<< |
| 29 | 29 | 2101 | 4830.682>> | -18407.22 |
| 29 | 29 | 201 | -4027.875<< | -12437.05 |
| 29 | 29 | 1101 | 295.714 | 23734.18>> |
| 29 | 29 | 1 | 4672.468 | -22302.73<< |
| 29 | 30 | 2101 | 4367.789>> | -8748.82 |
| 29 | 30 | 201 | -4490.768<< | -21381.63 |
| 29 | 30 | 1201 | 312.066 | 24320.15>> |
| 29 | 30 | 201 | -4490.768 | -21381.63<< |
| 30 | 30 | 201 | 4679.845>> | -21381.63 |
| 30 | 30 | 301 | -3930.998<< | -11929.60 |
| 30 | 30 | 1201 | 312.066 | 24320.15>> |
| 30 | 30 | 201 | 4679.845 | -21381.63<< |
| 30 | 31 | 201 | 4216.952>> | -12039.99 |
| 30 | 31 | 301 | -4393.890<< | -20670.73 |
| 30 | 31 | 1301 | 329.565 | 24933.45>> |
| 30 | 31 | 301 | -4393.890 | -20670.73<< |
| 31 | 31 | 301 | 4694.364>> | -20670.73 |
| 31 | 31 | 401 | -3867.589<< | -11598.13 |
| 31 | 31 | 1301 | 329.565 | 24933.45>> |
| 31 | 31 | 301 | 4694.364 | -20670.73<< |
| 31 | 32 | 301 | 4231.472>> | -11298.60 |
| 31 | 32 | 401 | -4330.482<< | -20206.11 |
| 31 | 32 | 1401 | 339.911 | 25674.88>> |
| 31 | 32 | 401 | -4330.482 | -20206.11<< |
| 32 | 32 | 401 | 4717.160>> | -20206.11 |
| 32 | 32 | 501 | -3836.996<< | -11442.70 |
| 32 | 32 | 1401 | 339.911 | 25674.88>> |

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Especificación de esfuerzos

| Elem. | Nudo | Caso | FZ (kN) | MY (kNm) |
|---|---|---|---|---|
| 32 | 32 | 401 | 4717.160 | -20206.11<< |
| 32 | 33 | 401 | 4254.268>> | -10786.11 |
| 32 | 33 | 501 | -4299.889<< | -19986.42 |
| 32 | 33 | 1501 | 343.103 | 26545.37>> |
| 32 | 33 | 501 | -4299.889 | -19986.42<< |
| 33 | 33 | 501 | 4748.255>> | -19986.42 |
| 33 | 33 | 601 | -3833.307<< | -11438.64 |
| 33 | 33 | 1501 | 343.103 | 26545.37>> |
| 33 | 33 | 501 | 4748.255 | -19986.42<< |
| 33 | 34 | 501 | 4285.362>> | -10501.13 |
| 33 | 34 | 601 | -4296.199<< | -19974.62 |
| 33 | 34 | 1601 | 339.289 | 27545.99>> |
| 33 | 34 | 601 | -4296.199 | -19974.62<< |
| 34 | 34 | 601 | 4787.633>> | -19974.62 |
| 34 | 34 | 701 | -3845.408<< | -11505.08 |
| 34 | 34 | 1601 | 339.289 | 27545.99>> |
| 34 | 34 | 601 | 4787.633 | -19974.62<< |
| 34 | 35 | 601 | 4324.741>> | -10406.63 |
| 34 | 35 | 701 | -4308.301<< | -20066.47 |
| 34 | 35 | 1801 | 767.980 | 28746.21>> |
| 34 | 35 | 701 | -4308.301 | -20066.47<< |
| 35 | 35 | 701 | 4830.972>> | -20066.47 |
| 35 | 35 | 801 | -3862.894<< | -11503.62 |
| 35 | 35 | 1801 | 767.980 | 28746.21>> |
| 35 | 35 | 701 | 4830.972 | -20066.47<< |
| 35 | 36 | 701 | 4232.105>> | -10550.24 |
| 35 | 36 | 801 | -4461.761<< | -20244.51 |
| 35 | 36 | 1901 | 605.146 | 30038.86>> |
| 35 | 36 | 801 | -4461.761 | -20244.51<< |
| 36 | 36 | 801 | 4740.146>> | -20244.51 |
| 36 | 36 | 901 | -4012.769<< | -11439.49 |
| 36 | 36 | 1901 | 605.146 | 30038.86>> |
| 36 | 36 | 801 | 4740.146 | -20244.51<< |
| 36 | 37 | 801 | 4141.279>> | -10919.01 |
| 36 | 37 | 901 | -4611.637<< | -20495.12 |
| 36 | 37 | 2001 | 434.882 | 31201.80>> |
| 36 | 37 | 901 | -4611.637 | -20495.12<< |
| 37 | 37 | 901 | 4532.994>> | -20495.12 |
| 37 | 37 | 1001 | -4265.935<< | -11333.83 |
| 37 | 37 | 2001 | 318.882 | 31201.80>> |
| 37 | 37 | 901 | 4532.994 | -20495.12<< |
| 37 | 38 | 901 | 3934.126>> | -11604.64 |
| 37 | 38 | 1001 | -4864.802<< | -20921.11 |
| 37 | 38 | 2101 | 140.724 | 31995.10>> |
| 37 | 38 | 1001 | -4864.802 | -20921.11<< |
| 38 | 38 | 1001 | 4431.675>> | -20921.11 |
| 38 | 38 | 1101 | -4394.244<< | -11574.41 |
| 38 | 38 | 2101 | 140.724 | 31995.10>> |
| 38 | 38 | 1001 | 4431.675 | -20921.11<< |
| 38 | 39 | 1001 | 3832.808>> | -12243.40 |
| 38 | 39 | 1101 | -4993.111<< | -21431.13 |
| 38 | 39 | 2101 | -458.143 | 31661.81>> |

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Especificación de esfuerzos

| Elem. | Nudo | Caso | FZ (kN) | MY (kNm) |
|---|---|---|---|---|
| 38 | 39 | 1101 | -4993.111 | -21431.13<< |
| 39 | 39 | 1101 | 4338.033>> | -21431.13 |
| 39 | 39 | 1201 | -4513.867<< | -11922.40 |
| 39 | 39 | 2101 | -458.143 | 31661.81>> |
| 39 | 39 | 1101 | 4338.033 | -21431.13<< |
| 39 | 40 | 1101 | 3875.141>> | -12807.30 |
| 39 | 40 | 1201 | -4976.760<< | -21887.56 |
| 39 | 40 | 2101 | -921.036 | 30213.67>> |
| 39 | 40 | 1201 | -4976.760 | -21887.56<< |
| 40 | 40 | 1201 | 4378.040>> | -21887.56 |
| 40 | 40 | 1301 | -4496.367<< | -12364.14 |
| 40 | 40 | 2101 | -921.036 | 30213.67>> |
| 40 | 40 | 1201 | 4378.040 | -21887.56<< |
| 40 | 41 | 1201 | 3915.148>> | -13179.71 |
| 40 | 41 | 1301 | -4959.260<< | -22292.55 |
| 40 | 41 | 2101 | -1383.928 | 27793.46>> |
| 40 | 41 | 1301 | -4959.260 | -22292.55<< |
| 41 | 41 | 1301 | 4417.671>> | -22292.55 |
| 41 | 41 | 1401 | -4486.021<< | -12812.97 |
| 41 | 41 | 2101 | -1383.928 | 27793.46>> |
| 41 | 41 | 1301 | 4417.671 | -22292.55<< |
| 41 | 42 | 1301 | 3954.778>> | -13501.48 |
| 41 | 42 | 1401 | -4948.914<< | -22719.65 |
| 41 | 42 | 2101 | -1846.821 | 24401.17>> |
| 41 | 42 | 1401 | -4948.914 | -22719.65<< |
| 42 | 42 | 1401 | 4459.071>> | -22719.65 |
| 42 | 42 | 1501 | -4482.830<< | -13267.95 |
| 42 | 42 | 2101 | -1846.821 | 24401.17>> |
| 42 | 42 | 1401 | 4459.071 | -22719.65<< |
| 42 | 43 | 1401 | 3996.178>> | -13841.64 |
| 42 | 43 | 1501 | -4945.722<< | -23167.93 |
| 42 | 43 | 601 | -38.299 | 22827.90>> |
| 42 | 43 | 1501 | -4945.722 | -23167.93<< |
| 43 | 43 | 1501 | 4502.161>> | -23167.93 |
| 43 | 43 | 1601 | -4486.644<< | -13725.20 |
| 43 | 43 | 601 | -38.299 | 22827.90>> |
| 43 | 43 | 1501 | 4502.161 | -23167.93<< |
| 43 | 44 | 1501 | 4039.268>> | -14199.43 |
| 43 | 44 | 1601 | -4949.536<< | -23633.19 |
| 43 | 44 | 601 | -501.192 | 22261.44>> |
| 43 | 44 | 1601 | -4949.536 | -23633.19<< |
| 44 | 44 | 1601 | 4546.482>> | -23633.19 |
| 44 | 44 | 1701 | -4497.427<< | -14182.49 |
| 44 | 44 | 601 | -501.192 | 22261.44>> |
| 44 | 44 | 1601 | 4546.482 | -23633.19<< |
| 44 | 45 | 1601 | 4083.589>> | -14571.61 |
| 44 | 45 | 1701 | -4960.320<< | -24113.13 |
| 44 | 45 | 701 | -457.853 | 21693.91>> |
| 44 | 45 | 1701 | -4960.320 | -24113.13<< |
| 45 | 45 | 1701 | 4591.678>> | -24113.13 |
| 45 | 45 | 1801 | -4520.845<< | -14816.25 |
| 45 | 45 | 701 | -457.853 | 21693.91>> |

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Especificación de esfuerzos

| Elem. | Nudo | Caso | FZ (kN) | MY (kNm) |
|---|---|---|---|---|
| 45 | 45 | 1701 | 4591.678 | -24113.13<< |
| 45 | 46 | 1701 | 4128.786>> | -14956.64 |
| 45 | 46 | 1801 | -4983.738<< | -24796.06 |
| 45 | 46 | 901 | 95.011 | 21240.70>> |
| 45 | 46 | 1801 | -4983.738 | -24796.06<< |
| 46 | 46 | 1801 | 4659.300>> | -24796.06 |
| 46 | 46 | 1901 | -4547.704<< | -15330.65 |
| 46 | 46 | 901 | 95.011 | 21240.70>> |
| 46 | 46 | 1801 | 4659.300 | -24796.06<< |
| 46 | 47 | 1801 | 4196.407>> | -15497.57 |
| 46 | 47 | 1901 | -5010.596<< | -25366.86 |
| 46 | 47 | 1001 | 129.667 | 21041.39>> |
| 46 | 47 | 1901 | -5010.596 | -25366.86<< |
| 47 | 47 | 1901 | 4712.672>> | -25366.86 |
| 47 | 47 | 2001 | -4581.993<< | -15845.25 |
| 47 | 47 | 1001 | 129.667 | 21041.39>> |
| 47 | 47 | 1901 | 4712.672 | -25366.86<< |
| 47 | 48 | 1901 | 4249.779>> | -15956.29 |
| 47 | 48 | 2001 | -5044.886<< | -25953.47 |
| 47 | 48 | 1101 | 172.001 | 21188.69>> |
| 47 | 48 | 1 | -4782.390 | -26574.35<< |
| 48 | 48 | 2001 | 4766.108>> | -25953.47 |
| 48 | 48 | 1 | -4782.390<< | -26574.35 |
| 48 | 48 | 1101 | 172.001 | 21188.69>> |
| 48 | 48 | 1 | -4782.390 | -26574.35<< |
| 48 | 49 | 2001 | 4303.215>> | -16430.68 |
| 48 | 49 | 1 | -5245.282<< | -37103.41 |
| 48 | 49 | 1201 | 212.007 | 21488.39>> |
| 48 | 49 | 1 | -5245.282 | -37103.41<< |
| 49 | 49 | 1 | 5171.064>> | -37103.41 |
| 49 | 49 | 201 | -4775.013<< | -26744.70 |
| 49 | 49 | 1201 | 212.007 | 21488.39>> |
| 49 | 49 | 1 | 5171.064 | -37103.41<< |
| 49 | 50 | 1 | 4708.172>> | -26730.21 |
| 49 | 50 | 201 | -5237.905<< | -37258.26 |
| 49 | 50 | 1301 | 251.638 | 21832.42>> |
| 49 | 50 | 201 | -5237.905 | -37258.26<< |
| 50 | 50 | 201 | 5212.012>> | -37258.26 |
| 50 | 50 | 301 | -4760.493<< | -26840.27 |
| 50 | 50 | 1301 | 251.638 | 21832.42>> |
| 50 | 50 | 201 | 5212.012 | -37258.26<< |
| 50 | 51 | 201 | 4749.119>> | -26799.08 |
| 50 | 51 | 301 | -5223.386<< | -37323.34 |
| 50 | 51 | 1401 | 293.038 | 22187.78>> |
| 50 | 51 | 301 | -5223.386 | -37323.34<< |
| 51 | 51 | 301 | 5251.396>> | -37323.34 |
| 51 | 51 | 401 | -4737.697<< | -26851.88 |
| 51 | 51 | 1401 | 293.038 | 22187.78>> |
| 51 | 51 | 301 | 5251.396 | -37323.34<< |
| 51 | 52 | 301 | 4788.503>> | -26781.45 |
| 51 | 52 | 401 | -5200.590<< | -37287.08 |
| 51 | 52 | 1501 | 336.128 | 22553.90>> |

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| Elem. | Nudo | Caso | FZ (kN) | MY (kNm) |
|---|---|---|---|---|
| 51 | 52 | 401 | -5200.590 | -37287.08<< |
| 52 | 52 | 401 | 5288.709>> | -37287.08 |
| 52 | 52 | 501 | -4706.603<< | -26777.31 |
| 52 | 52 | 1501 | 336.128 | 22553.90>> |
| 52 | 52 | 401 | 5288.709 | -37287.08<< |
| 52 | 53 | 401 | 4825.816>> | -26666.83 |
| 52 | 53 | 501 | -5169.495<< | -37147.21 |
| 52 | 53 | 1601 | 380.449 | 22926.31>> |
| 52 | 53 | 501 | -5169.495 | -37147.21<< |
| 53 | 53 | 501 | 5323.748>> | -37147.21 |
| 53 | 53 | 601 | -4667.224<< | -26580.10 |
| 53 | 53 | 1601 | 380.449 | 22926.31>> |
| 53 | 53 | 501 | 5323.748 | -37147.21<< |
| 53 | 54 | 501 | 4860.855>> | -26453.38 |
| 53 | 54 | 601 | -5130.117<< | -36867.31 |
| 53 | 54 | 1701 | 425.646 | 23300.58>> |
| 53 | 54 | 601 | -5130.117 | -36867.31<< |
| 54 | 54 | 601 | 5351.496>> | -36867.31 |
| 54 | 54 | 701 | -4623.886<< | -26328.52 |
| 54 | 54 | 1701 | 425.646 | 23300.58>> |
| 54 | 54 | 601 | 5351.496 | -36867.31<< |
| 54 | 55 | 601 | 4888.604>> | -26115.20 |
| 54 | 55 | 701 | -5086.778<< | -36524.71 |
| 54 | 55 | 1801 | 493.267 | 23895.70>> |
| 54 | 55 | 701 | -5086.778 | -36524.71<< |
| 55 | 55 | 701 | 5378.843>> | -36524.71 |
| 55 | 55 | 801 | -4578.736<< | -25948.12 |
| 55 | 55 | 1801 | 493.267 | 23895.70>> |
| 55 | 55 | 701 | 5378.843 | -36524.71<< |
| 55 | 56 | 701 | 4779.976>> | -25857.95 |
| 55 | 56 | 801 | -5177.604<< | -36192.28 |
| 55 | 56 | 1801 | -105.600 | 24302.75>> |
| 55 | 56 | 801 | -5177.604 | -36192.28<< |
| 56 | 56 | 801 | 5271.492>> | -36192.28 |
| 56 | 56 | 901 | -4669.889<< | -25510.56 |
| 56 | 56 | 1801 | -105.600 | 24302.75>> |
| 56 | 56 | 801 | 5271.492 | -36192.28<< |
| 56 | 57 | 801 | 4672.625>> | -25750.96 |
| 56 | 57 | 901 | -5268.756<< | -35946.14 |
| 56 | 57 | 1901 | -188.203 | 24424.44>> |
| 56 | 57 | 901 | -5268.756 | -35946.14<< |
| 57 | 57 | 901 | 5051.323>> | -35946.14 |
| 57 | 57 | 1001 | -4887.208<< | -25410.40 |
| 57 | 57 | 1901 | -304.203 | 24424.44>> |
| 57 | 57 | 901 | 5051.323 | -35946.14<< |
| 57 | 58 | 901 | 4452.456>> | -25967.17 |
| 57 | 58 | 1001 | -5486.075<< | -36302.35 |
| 57 | 58 | 2001 | -386.742 | 24002.52>> |
| 57 | 58 | 1001 | -5486.075 | -36302.35<< |
| 58 | 58 | 1001 | 4978.406>> | -36302.35 |
| 58 | 58 | 1101 | -4980.849<< | -25331.57 |
| 58 | 58 | 2001 | -386.742 | 24002.52>> |

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| Elem. | Nudo | Caso | FZ (kN) | MY (kNm) |
|---|---|---|---|---|
| 45 | 45 | 1701 | 4591.678 | -24113.13<< |
| 45 | 46 | 1701 | 4128.786>> | -14956.64 |
| 45 | 46 | 1801 | -4983.738<< | -24796.06 |
| 45 | 46 | 901 | 95.011 | 21240.70>> |
| 45 | 46 | 1801 | -4983.738 | -24796.06<< |
| 46 | 46 | 1801 | 4659.300>> | -24796.06 |
| 46 | 46 | 1901 | -4547.704<< | -15330.65 |
| 46 | 46 | 901 | 95.011 | 21240.70>> |
| 46 | 46 | 1801 | 4659.300 | -24796.06<< |
| 46 | 47 | 1801 | 4196.407>> | -15497.57 |
| 46 | 47 | 1901 | -5010.596<< | -25366.86 |
| 46 | 47 | 1001 | 129.667 | 21041.39>> |
| 46 | 47 | 1901 | -5010.596 | -25366.86<< |
| 47 | 47 | 1901 | 4712.672>> | -25366.86 |
| 47 | 47 | 2001 | -4581.993<< | -15845.25 |
| 47 | 47 | 1001 | 129.667 | 21041.39>> |
| 47 | 47 | 1901 | 4712.672 | -25366.86<< |
| 47 | 48 | 1901 | 4249.779>> | -15956.29 |
| 47 | 48 | 2001 | -5044.886<< | -25953.47 |
| 47 | 48 | 1101 | 172.001 | 21188.69>> |
| 47 | 48 | 1 | -4782.390 | -26574.35<< |
| 48 | 48 | 2001 | 4766.108>> | -25953.47 |
| 48 | 48 | 1 | -4782.390<< | -26574.35 |
| 48 | 48 | 1101 | 172.001 | 21188.69>> |
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| 48 | 49 | 2001 | 4303.215>> | -16430.68 |
| 48 | 49 | 1 | -5245.282<< | -37103.41 |
| 48 | 49 | 1201 | 212.007 | 21488.39>> |
| 48 | 49 | 1 | -5245.282 | -37103.41<< |
| 49 | 49 | 1 | 5171.064>> | -37103.41 |
| 49 | 49 | 201 | -4775.013<< | -26744.70 |
| 49 | 49 | 1201 | 212.007 | 21488.39>> |
| 49 | 49 | 1 | 5171.064 | -37103.41<< |
| 49 | 50 | 1 | 4708.172>> | -26730.21 |
| 49 | 50 | 201 | -5237.905<< | -37258.26 |
| 49 | 50 | 1301 | 251.638 | 21832.42>> |
| 49 | 50 | 201 | -5237.905 | -37258.26<< |
| 50 | 50 | 201 | 5212.012>> | -37258.26 |
| 50 | 50 | 301 | -4760.493<< | -26840.27 |
| 50 | 50 | 1301 | 251.638 | 21832.42>> |
| 50 | 50 | 201 | 5212.012 | -37258.26<< |
| 50 | 51 | 201 | 4749.119>> | -26799.08 |
| 50 | 51 | 301 | -5223.386<< | -37323.34 |
| 50 | 51 | 1401 | 293.038 | 22187.78>> |
| 50 | 51 | 301 | -5223.386 | -37323.34<< |
| 51 | 51 | 301 | 5251.396>> | -37323.34 |
| 51 | 51 | 401 | -4737.697<< | -26851.88 |
| 51 | 51 | 1401 | 293.038 | 22187.78>> |
| 51 | 51 | 301 | 5251.396 | -37323.34<< |
| 51 | 52 | 301 | 4788.503>> | -26781.45 |
| 51 | 52 | 401 | -5200.590<< | -37287.08 |
| 51 | 52 | 1501 | 336.128 | 22553.90>> |

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| Elem. | Nudo | Caso | FZ (kN) | MY (kNm) |
|---|---|---|---|---|
| 51 | 52 | 401 | -5200.590 | -37287.08<< |
| 52 | 52 | 401 | 5288.709>> | -37287.08 |
| 52 | 52 | 501 | -4706.603<< | -26777.31 |
| 52 | 52 | 1501 | 336.128 | 22553.90>> |
| 52 | 52 | 401 | 5288.709 | -37287.08<< |
| 52 | 53 | 401 | 4825.816>> | -26666.83 |
| 52 | 53 | 501 | -5169.495<< | -37147.21 |
| 52 | 53 | 1601 | 380.449 | 22926.31>> |
| 52 | 53 | 501 | -5169.495 | -37147.21<< |
| 53 | 53 | 501 | 5323.748>> | -37147.21 |
| 53 | 53 | 601 | -4667.224<< | -26580.10 |
| 53 | 53 | 1601 | 380.449 | 22926.31>> |
| 53 | 53 | 501 | 5323.748 | -37147.21<< |
| 53 | 54 | 501 | 4860.855>> | -26453.38 |
| 53 | 54 | 601 | -5130.117<< | -36867.31 |
| 53 | 54 | 1701 | 425.646 | 23300.58>> |
| 53 | 54 | 601 | -5130.117 | -36867.31<< |
| 54 | 54 | 601 | 5351.496>> | -36867.31 |
| 54 | 54 | 701 | -4623.886<< | -26328.52 |
| 54 | 54 | 1701 | 425.646 | 23300.58>> |
| 54 | 54 | 601 | 5351.496 | -36867.31<< |
| 54 | 55 | 601 | 4888.604>> | -26115.20 |
| 54 | 55 | 701 | -5086.778<< | -36524.71 |
| 54 | 55 | 1801 | 493.267 | 23895.70>> |
| 54 | 55 | 701 | -5086.778 | -36524.71<< |
| 55 | 55 | 701 | 5378.843>> | -36524.71 |
| 55 | 55 | 801 | -4578.736<< | -25948.12 |
| 55 | 55 | 1801 | 493.267 | 23895.70>> |
| 55 | 55 | 701 | 5378.843 | -36524.71<< |
| 55 | 56 | 701 | 4779.976>> | -25857.95 |
| 55 | 56 | 801 | -5177.604<< | -36192.28 |
| 55 | 56 | 1801 | -105.600 | 24302.75>> |
| 55 | 56 | 801 | -5177.604 | -36192.28<< |
| 56 | 56 | 801 | 5271.492>> | -36192.28 |
| 56 | 56 | 901 | -4669.889<< | -25510.56 |
| 56 | 56 | 1801 | -105.600 | 24302.75>> |
| 56 | 56 | 801 | 5271.492 | -36192.28<< |
| 56 | 57 | 801 | 4672.625>> | -25750.96 |
| 56 | 57 | 901 | -5268.756<< | -35946.14 |
| 56 | 57 | 1901 | -188.203 | 24424.44>> |
| 56 | 57 | 901 | -5268.756 | -35946.14<< |
| 57 | 57 | 901 | 5051.323>> | -35946.14 |
| 57 | 57 | 1001 | -4887.208<< | -25410.40 |
| 57 | 57 | 1901 | -304.203 | 24424.44>> |
| 57 | 57 | 901 | 5051.323 | -35946.14<< |
| 57 | 58 | 901 | 4452.456>> | -25967.17 |
| 57 | 58 | 1001 | -5486.075<< | -36302.35 |
| 57 | 58 | 2001 | -386.742 | 24002.52>> |
| 57 | 58 | 1001 | -5486.075 | -36302.35<< |
| 58 | 58 | 1001 | 4978.406>> | -36302.35 |
| 58 | 58 | 1101 | -4980.849<< | -25331.57 |
| 58 | 58 | 2001 | -386.742 | 24002.52>> |

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Especificación de esfuerzos

| Elem. | Nudo | Caso | FZ (kN) | MY (kNm) |
|---|---|---|---|---|
| 58 | 58 | 1001 | 4978.406 | -36302.35<< |
| 58 | 59 | 1001 | 4379.538>> | -26476.51 |
| 58 | 59 | 1101 | -5579.717<< | -36420.17 |
| 58 | 59 | 2101 | -468.942 | 23279.34>> |
| 58 | 59 | 1101 | -5579.717 | -36420.17<< |
| 59 | 59 | 1101 | 4871.205>> | -36420.17 |
| 59 | 59 | 1201 | -5076.818<< | -25434.75 |
| 59 | 59 | 2101 | -468.942 | 23279.34>> |
| 59 | 59 | 1101 | 4871.205 | -36420.17<< |
| 59 | 60 | 1101 | 4408.313>> | -26676.67 |
| 59 | 60 | 1201 | -5539.710<< | -36582.10 |
| 59 | 60 | 2101 | -931.834 | 21808.53>> |
| 59 | 60 | 1201 | -5539.710 | -36582.10<< |
| 60 | 60 | 1201 | 4901.504>> | -36582.10 |
| 60 | 60 | 1301 | -5037.187<< | -25644.26 |
| 60 | 60 | 2101 | -931.834 | 21808.53>> |
| 60 | 60 | 1201 | 4901.504 | -36582.10<< |
| 60 | 61 | 1201 | 4438.612>> | -26774.98 |
| 60 | 61 | 1301 | -5500.079<< | -36708.39 |
| 60 | 61 | 2101 | -1394.727 | 19365.64>> |
| 60 | 61 | 1301 | -5500.079 | -36708.39<< |
| 61 | 61 | 1301 | 4930.600>> | -36708.39 |
| 61 | 61 | 1401 | -4995.787<< | -25805.29 |
| 61 | 61 | 2101 | -1394.727 | 19365.64>> |
| 61 | 61 | 1301 | 4930.600 | -36708.39<< |
| 61 | 62 | 1301 | 4467.708>> | -26840.17 |
| 61 | 62 | 1401 | -5458.679<< | -36782.48 |
| 61 | 62 | 301 | -500.322 | 18244.46>> |
| 61 | 62 | 1401 | -5458.679 | -36782.48<< |
| 62 | 62 | 1401 | 4958.280>> | -36782.48 |
| 62 | 62 | 1501 | -4952.697<< | -25920.07 |
| 62 | 62 | 301 | -500.322 | 18244.46>> |
| 62 | 62 | 1401 | 4958.280 | -36782.48<< |
| 62 | 63 | 1401 | 4495.387>> | -26856.13 |
| 62 | 63 | 1501 | -5415.589<< | -36806.77 |
| 62 | 63 | 401 | -463.009 | 17756.86>> |
| 62 | 63 | 1501 | -5415.589 | -36806.77<< |
| 63 | 63 | 1501 | 4984.800>> | -36806.77 |
| 63 | 63 | 1601 | -4908.376<< | -26002.71 |
| 63 | 63 | 401 | -463.009 | 17756.86>> |
| 63 | 63 | 1501 | 4984.800 | -36806.77<< |
| 63 | 64 | 1501 | 4521.907>> | -26824.73 |
| 63 | 64 | 1601 | -5371.269<< | -36796.34 |
| 63 | 64 | 501 | -427.970 | 17320.33>> |
| 63 | 64 | 1601 | -5371.269 | -36796.34<< |
| 64 | 64 | 1601 | 5011.890>> | -36796.34 |
| 64 | 64 | 1701 | -4863.179<< | -26065.10 |
| 64 | 64 | 501 | -427.970 | 17320.33>> |
| 64 | 64 | 1601 | 5011.890 | -36796.34<< |
| 64 | 65 | 1601 | 4548.997>> | -26757.41 |
| 64 | 65 | 1701 | -5326.072<< | -36763.82 |
| 64 | 65 | 601 | -400.221 | 16855.45>> |

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| Elem. | Nudo | Caso | FZ (kN) | MY (kNm) |
|---|---|---|---|---|
| 64 | 65 | 1701 | -5326.072 | -36763.82<< |
| 65 | 65 | 1701 | 5041.070>> | -36763.82 |
| 65 | 65 | 1801 | -4795.558<< | -25435.73 |
| 65 | 65 | 601 | -400.221 | 16855.45>> |
| 65 | 65 | 1701 | 5041.070 | -36763.82<< |
| 65 | 66 | 1701 | 4578.178>> | -26663.61 |
| 65 | 66 | 1801 | -5258.450<< | -35992.43 |
| 65 | 66 | 701 | -372.874 | 16443.97>> |
| 65 | 66 | 1801 | -5258.450 | -35992.43<< |
| 66 | 66 | 1801 | 4989.937>> | -35992.43 |
| 66 | 66 | 1901 | -4742.186<< | -25262.77 |
| 66 | 66 | 701 | -372.874 | 16443.97>> |
| 66 | 66 | 1801 | 4989.937 | -35992.43<< |
| 66 | 67 | 1801 | 4527.045>> | -25999.60 |
| 66 | 67 | 1901 | -5205.078<< | -35707.40 |
| 66 | 67 | 901 | 150.448 | 16388.08>> |
| 66 | 67 | 1901 | -5205.078 | -35707.40<< |
| 67 | 67 | 1901 | 4999.592>> | -35707.40 |
| 67 | 67 | 2001 | -4688.750<< | -25103.07 |
| 67 | 67 | 901 | 150.448 | 16388.08>> |
| 67 | 67 | 1901 | 4999.592 | -35707.40<< |
| 67 | 68 | 1901 | 4536.700>> | -25694.29 |
| 67 | 68 | 2001 | -5151.642<< | -35435.48 |
| 67 | 68 | 1001 | 213.506 | 16927.76>> |
| 67 | 68 | 2001 | -5151.642 | -35435.48<< |
| 68 | 68 | 2001 | 5015.924>> | -35435.48 |
| 68 | 68 | 2101 | -4634.974<< | -24952.66 |
| 68 | 68 | 1001 | 213.506 | 16927.76>> |
| 68 | 68 | 2001 | 5015.924 | -35435.48<< |
| 68 | 69 | 2001 | 4553.032>> | -25388.08 |
| 68 | 69 | 2101 | -5097.867<< | -35172.15 |
| 68 | 69 | 1101 | 242.280 | 17271.43>> |
| 68 | 69 | 2101 | -5097.867 | -35172.15<< |
| 69 | 69 | 2101 | 5038.656>> | -35172.15 |
| 69 | 69 | 201 | -4242.846<< | -21387.88 |
| 69 | 69 | 1101 | 242.280 | 17271.43>> |
| 69 | 69 | 2101 | 5038.656 | -35172.15<< |
| 69 | 70 | 2101 | 4575.763>> | -25077.01 |
| 69 | 70 | 201 | -4705.738<< | -30783.89 |
| 69 | 70 | 1201 | 272.579 | 17745.78>> |
| 69 | 70 | 201 | -4705.738 | -30783.89<< |
| 70 | 70 | 2101 | 4575.763>> | -25077.01 |
| 70 | 70 | 301 | -4203.462<< | -21267.33 |
| 70 | 70 | 1201 | 272.579 | 17745.78>> |
| 70 | 70 | 201 | 4548.296 | -30783.89<< |
| 70 | 71 | 2101 | 4112.871>> | -15953.94 |
| 70 | 71 | 301 | -4666.355<< | -30580.64 |
| 70 | 71 | 1301 | 301.675 | 18230.50>> |
| 70 | 71 | 301 | -4666.355 | -30580.64<< |
| 71 | 71 | 301 | 4574.816>> | -30580.64 |
| 71 | 71 | 401 | -4166.149<< | -21128.06 |
| 71 | 71 | 1301 | 301.675 | 18230.50>> |

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| Elem. | Nudo | Caso | FZ (kN) | MY (kNm) |
|---|---|---|---|---|
| 71 | 71 | 301 | 4574.816 | -30580.64<< |
| 71 | 72 | 301 | 4111.923>> | -21459.56 |
| 71 | 72 | 401 | -4629.041<< | -30363.01 |
| 71 | 72 | 1401 | 329.355 | 18737.68>> |
| 71 | 72 | 401 | -4629.041 | -30363.01<< |
| 72 | 72 | 401 | 4602.980>> | -30363.01 |
| 72 | 72 | 501 | -4131.110<< | -20975.94 |
| 72 | 72 | 1401 | 329.355 | 18737.68>> |
| 72 | 72 | 401 | 4602.980 | -30363.01<< |
| 72 | 73 | 401 | 4140.087>> | -21182.79 |
| 72 | 73 | 501 | -4594.003<< | -30137.31 |
| 72 | 73 | 1501 | 355.874 | 19270.30>> |
| 72 | 73 | 501 | -4594.003 | -30137.31<< |
| 73 | 73 | 501 | 4633.616>> | -30137.31 |
| 73 | 73 | 601 | -4103.361<< | -20974.64 |
| 73 | 73 | 1501 | 355.874 | 19270.30>> |
| 73 | 73 | 501 | 4633.616 | -30137.31<< |
| 73 | 74 | 501 | 4170.723>> | -20892.75 |
| 73 | 74 | 601 | -4566.254<< | -30077.74 |
| 73 | 74 | 1601 | 382.965 | 19849.63>> |
| 73 | 74 | 601 | -4566.254 | -30077.74<< |
| 74 | 74 | 601 | 4693.634>> | -30077.74 |
| 74 | 74 | 701 | -4076.014<< | -20926.70 |
| 74 | 74 | 1601 | 382.965 | 19849.63>> |
| 74 | 74 | 601 | 4693.634 | -30077.74<< |
| 74 | 75 | 601 | 4230.742>> | -20707.15 |
| 74 | 75 | 701 | -4538.907<< | -29972.36 |
| 74 | 75 | 1701 | 412.145 | 20494.95>> |
| 74 | 75 | 701 | -4538.907 | -29972.36<< |
| 75 | 75 | 701 | 4750.409>> | -29972.36 |
| 75 | 75 | 801 | -4047.391<< | -20695.19 |
| 75 | 75 | 1701 | 412.145 | 20494.95>> |
| 75 | 75 | 701 | 4750.409 | -29972.36<< |
| 75 | 76 | 701 | 4151.541>> | -20625.32 |
| 75 | 76 | 801 | -4646.258<< | -29823.52 |
| 75 | 76 | 1701 | -186.722 | 20731.64>> |
| 75 | 76 | 801 | -4646.258 | -29823.52<< |
| 76 | 76 | 801 | 4661.900>> | -29823.52 |
| 76 | 76 | 901 | -4151.560<< | -20280.23 |
| 76 | 76 | 1701 | -186.722 | 20731.64>> |
| 76 | 76 | 801 | 4661.900 | -29823.52<< |
| 76 | 77 | 801 | 4063.033>> | -20662.34 |
| 76 | 77 | 901 | -4750.427<< | -29627.32 |
| 76 | 77 | 1901 | 98.717 | 20109.23>> |
| 76 | 77 | 901 | -4750.427 | -29627.32<< |
| 77 | 77 | 901 | 4440.660>> | -29627.32 |
| 77 | 77 | 1001 | -4340.477<< | -18977.09 |
| 77 | 77 | 1901 | -17.283 | 20109.23>> |
| 77 | 77 | 901 | 4440.660 | -29627.32<< |
| 77 | 78 | 901 | 3841.792>> | -20930.74 |
| 77 | 78 | 1001 | -4939.344<< | -28720.90 |
| 77 | 78 | 2001 | -136.926 | 19766.65>> |

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| Elem. | Nudo | Caso | FZ (kN) | MY (kNm) |
|---|---|---|---|---|
| 77 | 78 | 1001 | -4939.344 | -28720.90<< |
| 78 | 78 | 1001 | 4184.727>> | -28720.90 |
| 78 | 78 | 1101 | -4447.677<< | -19047.05 |
| 78 | 78 | 2001 | -136.926 | 19766.65>> |
| 78 | 78 | 1001 | 4184.727 | -28720.90<< |
| 78 | 79 | 1001 | 3585.859>> | -20561.78 |
| 78 | 79 | 1101 | -5046.545<< | -29015.98 |
| 78 | 79 | 2101 | -250.169 | 19264.33>> |
| 78 | 79 | 1101 | -5046.545 | -29015.98<< |
| 79 | 79 | 1101 | 4093.862>> | -29015.98 |
| 79 | 79 | 1201 | -4553.353<< | -19243.07 |
| 79 | 79 | 2101 | -250.169 | 19264.33>> |
| 79 | 79 | 1101 | 4093.862 | -29015.98<< |
| 79 | 80 | 1101 | 3630.969>> | -20904.91 |
| 79 | 80 | 1201 | -5016.246<< | -29291.14 |
| 79 | 80 | 2101 | -713.062 | 18252.94>> |
| 79 | 80 | 1201 | -5016.246 | -29291.14<< |
| 80 | 80 | 1201 | 4128.869>> | -29291.14 |
| 80 | 80 | 1301 | -4524.258<< | -19594.22 |
| 80 | 80 | 2101 | -713.062 | 18252.94>> |
| 80 | 80 | 1201 | 4128.869 | -29291.14<< |
| 80 | 81 | 1201 | 3665.976>> | -21106.56 |
| 80 | 81 | 1301 | -4987.150<< | -29581.20 |
| 80 | 81 | 2101 | -1175.954 | 16269.47>> |
| 80 | 81 | 1301 | -4987.150 | -29581.20<< |
| 81 | 81 | 1301 | 4166.153>> | -29581.20 |
| 81 | 81 | 1401 | -4496.578<< | -19949.68 |
| 81 | 81 | 2101 | -1175.954 | 16269.47>> |
| 81 | 81 | 1301 | 4166.153 | -29581.20<< |
| 81 | 82 | 1301 | 3703.261>> | -21318.32 |
| 81 | 82 | 1401 | -4959.470<< | -29878.53 |
| 81 | 82 | 2101 | -1638.847 | 13313.93>> |
| 81 | 82 | 1401 | -4959.470 | -29878.53<< |
| 82 | 82 | 1401 | 4205.975>> | -29878.53 |
| 82 | 82 | 1501 | -4470.058<< | -20301.63 |
| 82 | 82 | 2101 | -1638.847 | 13313.93>> |
| 82 | 82 | 1401 | 4205.975 | -29878.53<< |
| 82 | 83 | 1401 | 3743.082>> | -21532.02 |
| 82 | 83 | 1501 | -4932.951<< | -30174.79 |
| 82 | 83 | 601 | -132.298 | 10948.20>> |
| 82 | 83 | 1501 | -4932.951 | -30174.79<< |
| 83 | 83 | 1501 | 4249.062>> | -30174.79 |
| 83 | 83 | 1601 | -4442.968<< | -20596.08 |
| 83 | 83 | 601 | -132.298 | 10948.20>> |
| 83 | 83 | 1501 | 4249.062 | -30174.79<< |
| 83 | 84 | 1501 | 3786.169>> | -21737.79 |
| 83 | 84 | 1601 | -4905.860<< | -30412.35 |
| 83 | 84 | 701 | -75.524 | 10740.83>> |
| 83 | 84 | 1601 | -4905.860 | -30412.35<< |
| 84 | 84 | 1601 | 4288.861>> | -30412.35 |
| 84 | 84 | 1701 | -4413.787<< | -20785.05 |
| 84 | 84 | 701 | -75.524 | 10740.83>> |

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Especificación de esfuerzos

| Elem. | Nudo | Caso | FZ (kN) | MY (kNm) |
|---|---|---|---|---|
| 90 | 91 | 2101 | 4136.857 | -15273.99<< |
| 91 | 91 | 2101 | 4136.857>> | -15273.99 |
| 91 | 91 | 801 | -2805.412<< | -7307.10 |
| 91 | 91 | 1401 | 39.942 | 10245.38>> |
| 91 | 91 | 2101 | 4136.857 | -15273.99<< |
| 91 | 92 | 2101 | 3673.964>> | -7072.63 |
| 91 | 92 | 801 | -3268.305<< | -13684.50 |
| 91 | 92 | 1501 | 83.029 | 10763.47>> |
| 91 | 92 | 801 | -3268.305 | -13684.50<< |
| 92 | 92 | 2101 | 3673.964>> | -7072.63 |
| 92 | 92 | 901 | -2774.678<< | -7100.23 |
| 92 | 92 | 1501 | 83.029 | 10763.47>> |
| 92 | 92 | 801 | 2578.797 | -13684.50<< |
| 92 | 93 | 2101 | 3211.072>> | 156.66 |
| 92 | 93 | 901 | -3237.571<< | -13413.09 |
| 92 | 93 | 1801 | 1530.054 | 13005.59>> |
| 92 | 93 | 901 | -3237.571 | -13413.09<< |
| 93 | 93 | 2101 | 3211.072>> | 156.66 |
| 93 | 93 | 1001 | -2894.636<< | -10400.81 |
| 93 | 93 | 1801 | 1530.054 | 13005.59>> |
| 93 | 93 | 901 | 2530.676 | -13413.09<< |
| 93 | 94 | 2101 | 2748.179>> | 6413.87 |
| 93 | 94 | 1001 | -3357.529<< | -16965.58 |
| 93 | 94 | 1801 | 1067.162 | 15732.67>> |
| 93 | 94 | 1001 | -3357.529 | -16965.58<< |
| 94 | 94 | 1001 | 3760.277>> | -16965.58 |
| 94 | 94 | 1101 | -2849.526<< | -9417.69 |
| 94 | 94 | 1801 | 1067.162 | 15732.67>> |
| 94 | 94 | 1001 | 3760.277 | -16965.58<< |
| 94 | 95 | 1001 | 3297.384>> | -9555.04 |
| 94 | 95 | 1101 | -3312.419<< | -15887.74 |
| 94 | 95 | 1801 | 604.269 | 17487.67>> |
| 94 | 95 | 1101 | -3312.419 | -15887.74<< |
| 95 | 95 | 1101 | 3598.941>> | -15887.74 |
| 95 | 95 | 1201 | -2814.519<< | -8590.14 |
| 95 | 95 | 1801 | 604.269 | 17487.67>> |
| 95 | 95 | 1101 | 3598.941 | -15887.74<< |
| 95 | 96 | 1101 | 3000.074>> | -8958.77 |
| 95 | 96 | 1201 | -3413.387<< | -15129.44 |
| 95 | 96 | 1901 | 602.557 | 19187.21>> |
| 95 | 96 | 1201 | -3413.387 | -15129.44<< |
| 96 | 96 | 1201 | 3326.565>> | -15129.44 |
| 96 | 96 | 1301 | -2913.210<< | -7848.51 |
| 96 | 96 | 1901 | 602.557 | 19187.21>> |
| 96 | 96 | 1201 | 3326.565 | -15129.44<< |
| 96 | 97 | 1201 | 2727.697>> | -8772.47 |
| 96 | 97 | 1301 | -3512.077<< | -14595.06 |
| 96 | 97 | 2001 | 563.958 | 20171.37>> |
| 96 | 97 | 1301 | -3512.077 | -14595.06<< |
| 97 | 97 | 1301 | 2958.280>> | -14595.06 |
| 97 | 97 | 1401 | -3125.363<< | -7319.78 |
| 97 | 97 | 2001 | 447.958 | 20171.37>> |

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Especificación de esfuerzos

| Elem. | Nudo | Caso | FZ (kN) | MY (kNm) |
|---|---|---|---|---|
| 84 | 84 | 1601 | 4288.861 | -30412.35<< |
| 84 | 85 | 1601 | 3825.969>> | -21891.78 |
| 84 | 85 | 1701 | -4876.680<< | -30540.04 |
| 84 | 85 | 801 | -28.057 | 10543.76>> |
| 84 | 85 | 1701 | -4876.680 | -30540.04<< |
| 85 | 85 | 1701 | 4318.203>> | -30540.04 |
| 85 | 85 | 1801 | -4464.920<< | -23439.66 |
| 85 | 85 | 801 | -28.057 | 10543.76>> |
| 85 | 85 | 1701 | 4318.203 | -30540.04<< |
| 85 | 86 | 1701 | 3855.310>> | -21957.85 |
| 85 | 86 | 1801 | -4927.813<< | -33302.03 |
| 85 | 86 | 901 | 2.677 | 10363.38>> |
| 85 | 86 | 1801 | -4927.813 | -33302.03<< |
| 86 | 86 | 1801 | 4770.302>> | -33302.03 |
| 86 | 86 | 1901 | -4455.265<< | -24155.19 |
| 86 | 86 | 901 | 2.677 | 10363.38>> |
| 86 | 86 | 1801 | 4770.302 | -33302.03<< |
| 86 | 87 | 1801 | 4307.410>> | -23770.43 |
| 86 | 87 | 1901 | -4918.158<< | -33997.28 |
| 86 | 87 | 901 | -460.216 | 9882.97>> |
| 86 | 87 | 1901 | -4918.158 | -33997.28<< |
| 87 | 87 | 1901 | 4904.565>> | -33997.28 |
| 87 | 87 | 2001 | -4438.933<< | -24617.40 |
| 87 | 87 | 901 | -460.216 | 9882.97>> |
| 87 | 87 | 1901 | 4904.565 | -33997.28<< |
| 87 | 88 | 1901 | 4441.672>> | -24183.73 |
| 87 | 88 | 2001 | -4901.826<< | -34425.20 |
| 87 | 88 | 1101 | -72.171 | 8989.00>> |
| 87 | 88 | 2001 | -4901.826 | -34425.20<< |
| 88 | 88 | 2001 | 5001.940>> | -34425.20 |
| 88 | 88 | 2101 | -4416.202<< | -24832.88 |
| 88 | 88 | 1101 | -72.171 | 8989.00>> |
| 88 | 88 | 2001 | 5001.940 | -34425.20<< |
| 88 | 89 | 2001 | 4539.048>> | -24407.16 |
| 88 | 89 | 2101 | -4879.095<< | -34592.94 |
| 88 | 89 | 1201 | -37.164 | 9375.46>> |
| 88 | 89 | 2101 | -4879.095 | -34592.94<< |
| 89 | 89 | 2101 | 5062.642>> | -34592.94 |
| 89 | 89 | 601 | -2909.654<< | -8216.10 |
| 89 | 89 | 1201 | -37.164 | 9375.46>> |
| 89 | 89 | 2101 | 5062.642 | -34592.94<< |
| 89 | 90 | 2101 | 4599.749>> | -24447.43 |
| 89 | 90 | 601 | -3372.546<< | -14812.41 |
| 89 | 90 | 1301 | 0.121 | 9790.09>> |
| 89 | 90 | 2101 | 4599.749 | -24447.43<< |
| 90 | 90 | 2101 | 4599.749>> | -24447.43 |
| 90 | 90 | 701 | -2852.879<< | -7708.11 |
| 90 | 90 | 1301 | 0.121 | 9790.09>> |
| 90 | 90 | 2101 | 4599.749 | -24447.43<< |
| 90 | 91 | 2101 | 4136.857>> | -15273.99 |
| 90 | 91 | 701 | -3315.771<< | -14185.19 |
| 90 | 91 | 1401 | 39.942 | 10245.38>> |

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| Elem. | Nudo | Caso | FZ (kN) | MY (kNm) |
|---|---|---|---|---|
| 97 | 97 | 1301 | 2958.280 | -14595.06<< |
| 97 | 98 | 1301 | 2359.412>> | -9011.48 |
| 97 | 98 | 1401 | -3724.230<< | -14511.85 |
| 97 | 98 | 2001 | -150.910 | 20483.27>> |
| 97 | 98 | 1401 | -3724.230 | -14511.85<< |
| 98 | 98 | 1401 | 2733.587>> | -14511.85 |
| 98 | 98 | 1501 | -3218.251<< | -7216.26 |
| 98 | 98 | 2001 | -150.910 | 20483.27>> |
| 98 | 98 | 1401 | 2733.587 | -14511.85<< |
| 98 | 99 | 1401 | 2134.720>> | -9400.13 |
| 98 | 99 | 1501 | -3817.118<< | -14603.40 |
| 98 | 99 | 2101 | -226.183 | 20347.24>> |
| 98 | 99 | 1501 | -3817.118 | -14603.40<< |
| 99 | 99 | 1501 | 2547.677>> | -14603.40 |
| 99 | 99 | 1601 | -3314.427<< | -7443.17 |
| 99 | 99 | 2101 | -226.183 | 20347.24>> |
| 99 | 99 | 1501 | 2547.677 | -14603.40<< |
| 99 | 100 | 1501 | 2084.785>> | -9739.31 |
| 99 | 100 | 1601 | -3777.319<< | -14889.50 |
| 99 | 100 | 2101 | -689.076 | 19386.22>> |
| 99 | 100 | 1601 | -3777.319 | -14889.50<< |
| 100 | 100 | 1601 | 2575.279>> | -14889.50 |
| 100 | 100 | 1701 | -3285.085<< | -8032.37 |
| 100 | 100 | 2101 | -689.076 | 19386.22>> |
| 100 | 100 | 1601 | 2575.279 | -14889.50<< |
| 100 | 101 | 1601 | 2112.386>> | -9967.45 |
| 100 | 101 | 1701 | -3747.977<< | -15417.08 |
| 100 | 101 | 2101 | -1151.968 | 17453.13>> |
| 100 | 101 | 1701 | -3747.977 | -15417.08<< |
| 101 | 101 | 1701 | 2761.152>> | -15417.08 |
| 101 | 101 | 1801 | -2832.986<< | 2060.97 |
| 101 | 101 | 2101 | -1151.968 | 17453.13>> |
| 101 | 101 | 1701 | 2761.152 | -15417.08<< |
| 101 | 102 | 1701 | 2298.260>> | -10104.70 |
| 101 | 102 | 1801 | -3295.878<< | -4374.33 |
| 101 | 102 | 2101 | -1614.861 | 14547.96>> |
| 101 | 102 | 1701 | 2298.260 | -10104.70<< |
| 102 | 102 | 1701 | 2298.260>> | -10104.70 |
| 102 | 102 | 1901 | -2698.723<< | 4209.21 |
| 102 | 102 | 2101 | -1614.861 | 14547.96>> |
| 102 | 102 | 1701 | 2298.260 | -10104.70<< |
| 102 | 103 | 1701 | 1835.367>> | -5764.39 |
| 102 | 103 | 1901 | -3161.615<< | -1944.15 |
| 102 | 103 | 2101 | -2077.753 | 10670.71>> |
| 102 | 103 | 1701 | 1835.367 | -5764.39<< |
| 103 | 103 | 1701 | 1835.367>> | -5764.39 |
| 103 | 103 | 2001 | -2601.347<< | 5462.83 |
| 103 | 103 | 2101 | -2077.753 | 10670.71>> |
| 103 | 103 | 1701 | 1835.367 | -5764.39<< |
| 103 | 104 | 1701 | 1372.474>> | -2396.16 |
| 103 | 104 | 2001 | -3064.240<< | -486.04 |
| 103 | 104 | 2101 | -2540.646 | 5821.39>> |

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| Elem. | Nudo | Caso | FZ (kN) | MY (kNm) |
|---|---|---|---|---|
| 103 | 104 | 1701 | 1372.474 | -2396.16<< |
| 104 | 104 | 1701 | 1372.474>> | -2396.16 |
| 104 | 104 | 2101 | -2540.646<< | 5821.39 |
| 104 | 104 | 2101 | -2540.646 | 5821.39>> |
| 104 | 104 | 1701 | 1372.474 | -2396.16<< |
| 104 | 105 | 1701 | 909.582>> | 0.00 |
| 104 | 105 | 2101 | -3003.538<< | 0.00 |
| 104 | 105 | 1801 | 0.000 | 0.00>> |
| 104 | 105 | 2001 | 0.000 | 0.00<< |
| 201 | 201 | 1 | 475.674>> | 0.00 |
| 201 | 201 | 1001 | 0.000<< | 0.00 |
| 201 | 201 | 1301 | 0.000 | 0.00>> |
| 201 | 201 | 2101 | 0.000 | 0.00<< |
| 201 | 202 | 1 | 442.285>> | 963.86 |
| 201 | 202 | 1001 | -33.389<< | -35.06 |
| 201 | 202 | 1 | 442.285 | 963.86>> |
| 201 | 202 | 2001 | -33.389 | -35.06<< |
| 202 | 202 | 201 | 618.722>> | -35.06 |
| 202 | 202 | 1801 | -33.389<< | -35.06 |
| 202 | 202 | 1 | 442.285 | 963.86>> |
| 202 | 202 | 1001 | -33.389 | -35.06<< |
| 202 | 203 | 201 | 584.740>> | 1228.58 |
| 202 | 203 | 1801 | -67.371<< | -140.86 |
| 202 | 203 | 1 | 408.303 | 1856.98>> |
| 202 | 203 | 2001 | -67.371 | -140.86<< |
| 203 | 203 | 301 | 808.889>> | -140.86 |
| 203 | 203 | 1401 | -67.371<< | -140.86 |
| 203 | 203 | 1 | 408.303 | 1856.98>> |
| 203 | 203 | 2001 | -67.371 | -140.86<< |
| 203 | 204 | 301 | 774.313>> | 1521.51 |
| 203 | 204 | 1401 | -101.947<< | -318.64 |
| 203 | 204 | 1 | 373.727 | 2678.11>> |
| 203 | 204 | 1401 | -101.947 | -318.64<< |
| 204 | 204 | 401 | 1049.213>> | -318.64 |
| 204 | 204 | 1701 | -101.947<< | -318.64 |
| 204 | 204 | 1 | 373.727 | 2678.11>> |
| 204 | 204 | 1301 | -101.947 | -318.64<< |
| 204 | 205 | 401 | 1011.472>> | 1845.08 |
| 204 | 205 | 1701 | -139.688<< | -572.36 |
| 204 | 205 | 201 | 512.423 | 3535.94>> |
| 204 | 205 | 1401 | -139.688 | -572.36<< |
| 205 | 205 | 501 | 1336.499>> | -572.36 |
| 205 | 205 | 1701 | -139.688<< | -572.36 |
| 205 | 205 | 201 | 512.423 | 3535.94>> |
| 205 | 205 | 2001 | -139.688 | -572.36<< |
| 205 | 206 | 501 | 1298.066>> | 2193.94 |
| 205 | 206 | 1701 | -178.122<< | -906.06 |
| 205 | 206 | 301 | 698.139 | 4614.38>> |
| 205 | 206 | 1701 | -178.122 | -906.06<< |
| 206 | 206 | 601 | 1668.192>> | -906.06 |
| 206 | 206 | 701 | -178.122<< | -906.06 |
| 206 | 206 | 301 | 698.139 | 4614.38>> |

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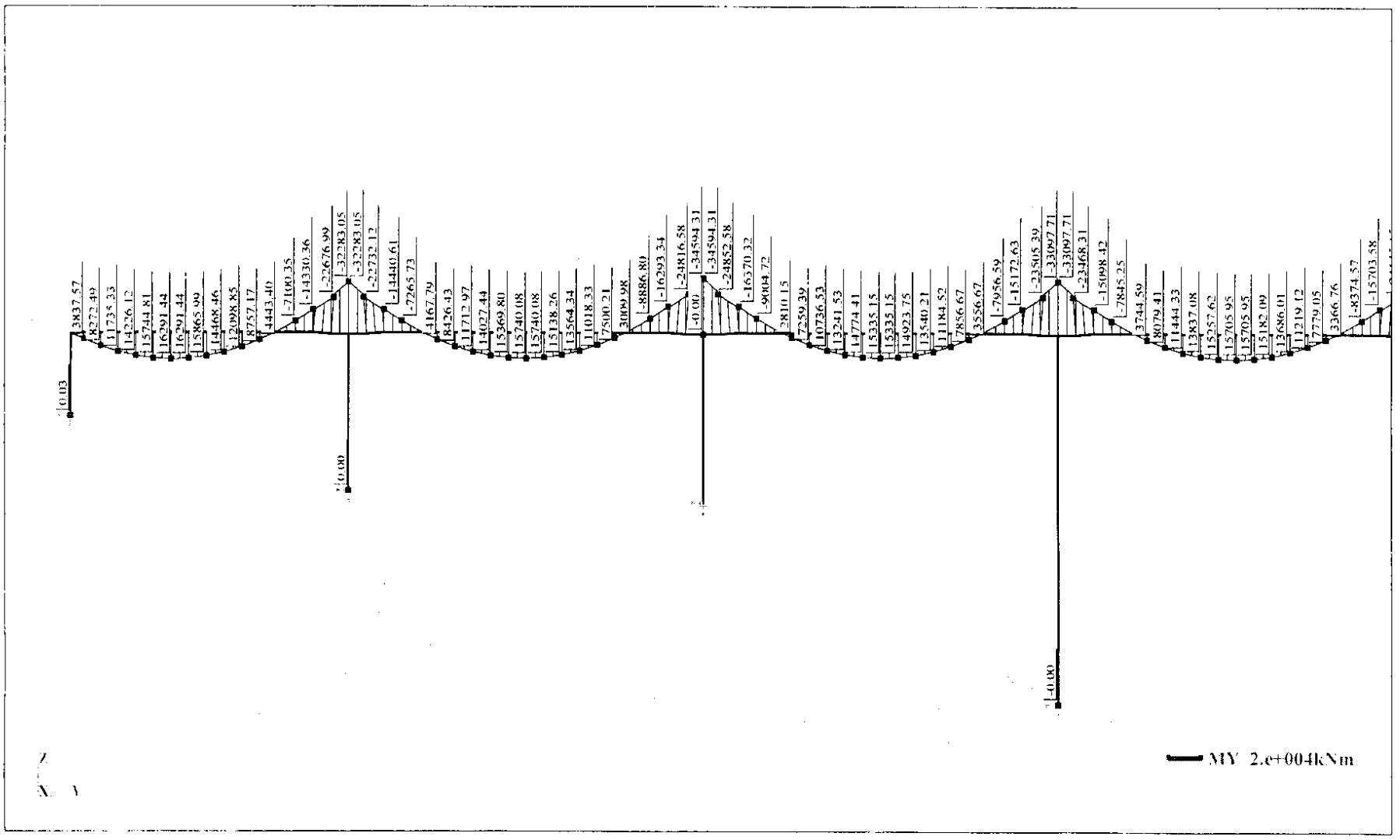
|---|---|---|---|---|
| 206 | 206 | 1701 | -178.122 | -906.06<< |
| 206 | 207 | 601 | 1629.067>> | 2556.06 |
| 206 | 207 | 701 | -217.247<< | -1321.20 |
| 206 | 207 | 301 | 659.013 | 6039.39>> |
| 206 | 207 | 1701 | -217.247 | -1321.20<< |
| 207 | 207 | 701 | 2035.660>> | -1321.20 |
| 207 | 207 | 1201 | -217.247<< | -1321.20 |
| 207 | 207 | 301 | 659.013 | 6039.39>> |
| 207 | 207 | 2001 | -217.247 | -1321.20<< |
| 207 | 208 | 701 | 1994.128>> | 2910.08 |
| 207 | 208 | 1201 | -258.780<< | -1821.02 |
| 207 | 208 | 401 | 892.380 | 7848.72>> |
| 207 | 208 | 1701 | -258.780 | -1821.02<< |
| 208 | 208 | 801 | 2430.598>> | -1821.02 |
| 208 | 208 | 1201 | -258.780<< | -1821.02 |
| 208 | 208 | 401 | 892.380 | 7848.72>> |
| 208 | 208 | 1701 | -258.780 | -1821.02<< |
| 208 | 209 | 801 | 2388.340>> | 3238.86 |
| 208 | 209 | 1201 | -301.038<< | -2408.83 |
| 208 | 209 | 501 | 1175.150 | 9991.14>> |
| 208 | 209 | 1701 | -301.038 | -2408.83<< |
| 209 | 209 | 901 | 2849.441>> | -2408.83 |
| 209 | 209 | 1201 | -301.038<< | -2408.83 |
| 209 | 209 | 501 | 1175.150 | 9991.14>> |
| 209 | 209 | 1701 | -301.038 | -2408.83<< |
| 209 | 210 | 901 | 2806.424>> | 3529.83 |
| 209 | 210 | 1201 | -344.054<< | -3086.18 |
| 209 | 210 | 601 | 1502.260 | 12422.86>> |
| 209 | 210 | 1701 | -344.054 | -3086.18<< |
| 210 | 210 | 1001 | 3286.382>> | -3086.18 |
| 210 | 210 | 1201 | -344.054<< | -3086.18 |
| 210 | 210 | 601 | 1502.260 | 12422.86>> |
| 210 | 210 | 1701 | -344.054 | -3086.18<< |
| 210 | 211 | 1001 | 3242.641>> | 3769.30 |
| 210 | 211 | 1201 | -387.795<< | -3854.62 |
| 210 | 211 | 601 | 1458.519 | 15531.68>> |
| 210 | 211 | 1201 | -387.795 | -3854.62<< |
| 211 | 211 | 1101 | 3741.685>> | -3854.62 |
| 211 | 211 | 1501 | -387.795<< | -3854.62 |
| 211 | 211 | 601 | 1458.519 | 15531.68>> |
| 211 | 211 | 1201 | -387.795 | -3854.62<< |
| 211 | 212 | 1101 | 3696.262>> | 3955.22 |
| 211 | 212 | 1501 | -433.218<< | -4716.69 |
| 211 | 212 | 701 | 1819.689 | 18938.84>> |
| 211 | 212 | 1201 | -433.218 | -4716.69<< |
| 212 | 212 | 1201 | 4214.440>> | -4716.69 |
| 212 | 212 | 1501 | -433.218<< | -4716.69 |
| 212 | 212 | 701 | 1819.689 | 18938.84>> |
| 212 | 212 | 1201 | 4214.440 | -4716.69<< |
| 212 | 1 | 1201 | 4161.995>> | 4078.57 |
| 212 | 1 | 1501 | -485.664<< | -5681.51 |
| 212 | 1 | 701 | 1767.244 | 22705.12>> |



Especificación de esfuerzos

| Elem. | Nudo | Caso | FZ (kN) | MY (kNm) |
|---|---|---|---|---|
| 212 | 1 | 1501 | -485.664 | -5681.51<< |

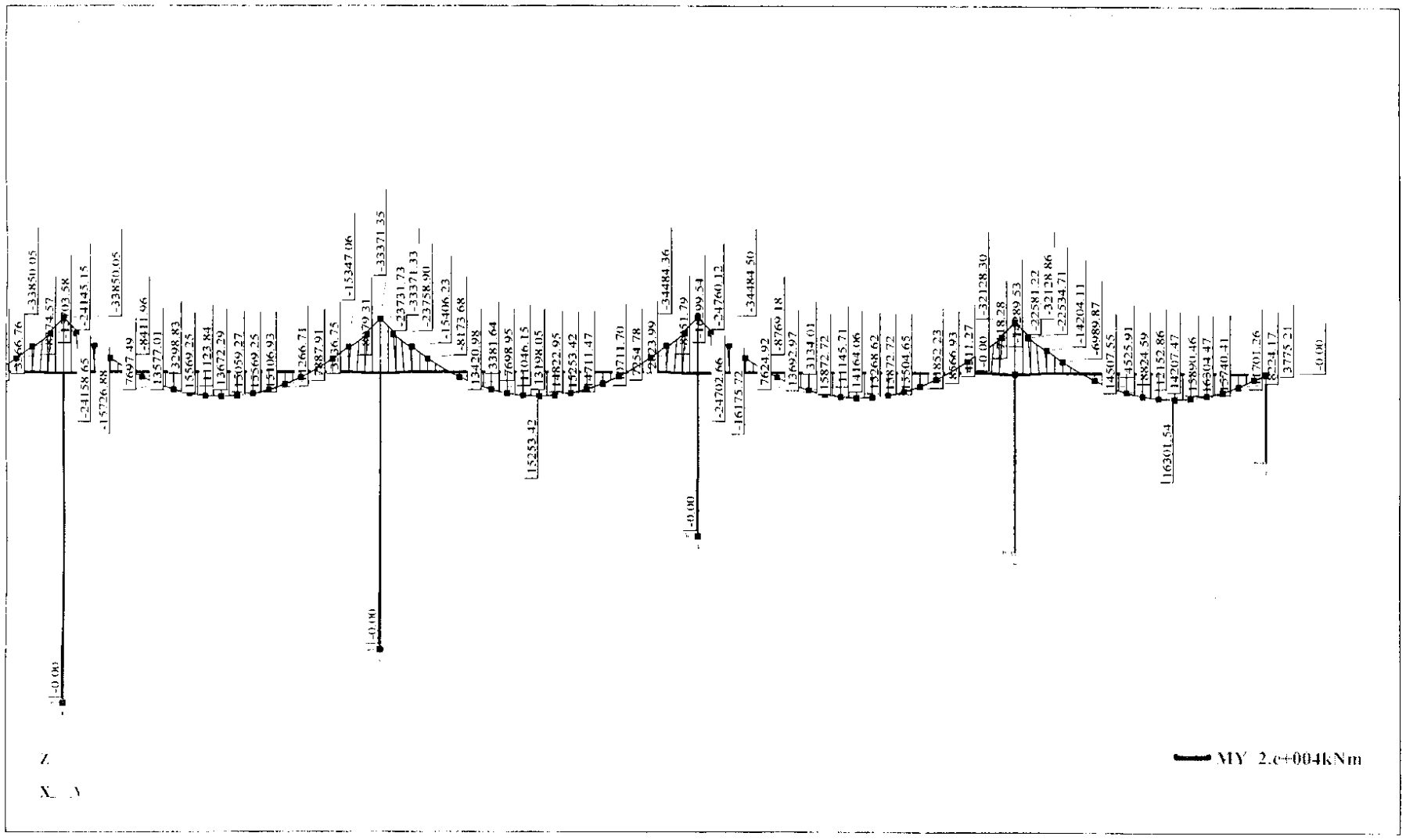
## Vista - MY; casos: 1 (PESO PROPIO) 1



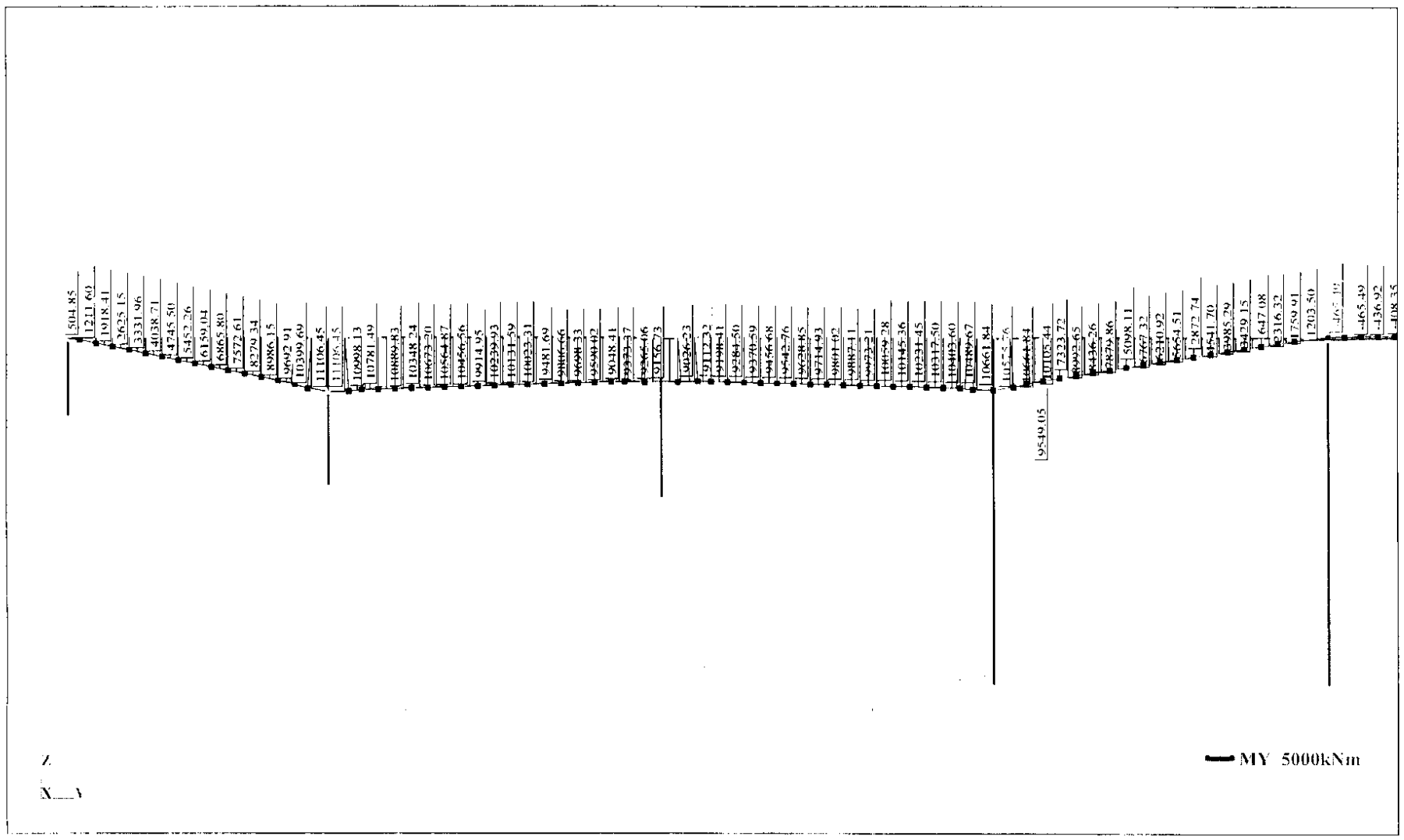





## Vista - MY; casos: 1 (PESO PROPIO)



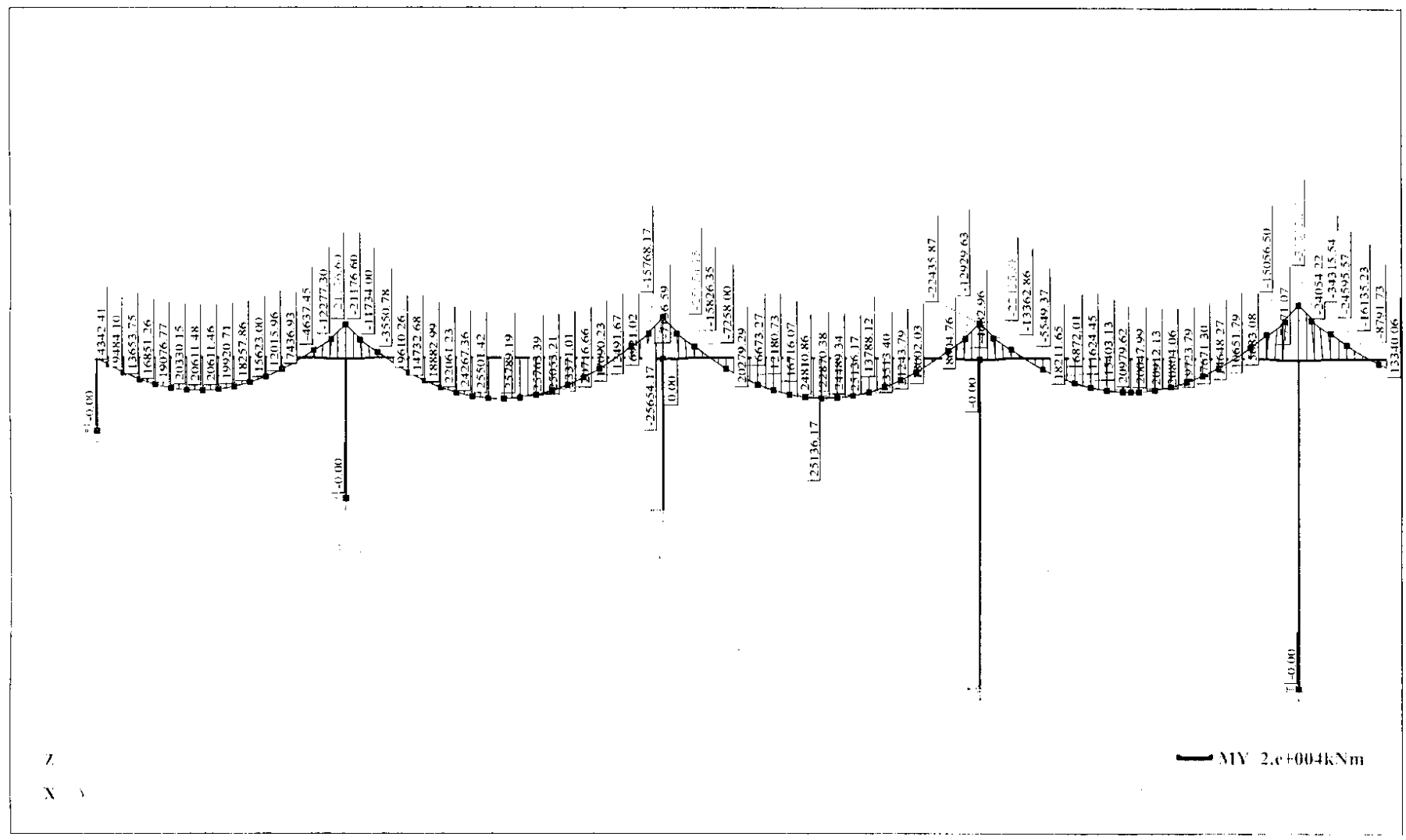
## Vista - MY; casos: 2 (LEVANTAMIENTO DE APOYOS)



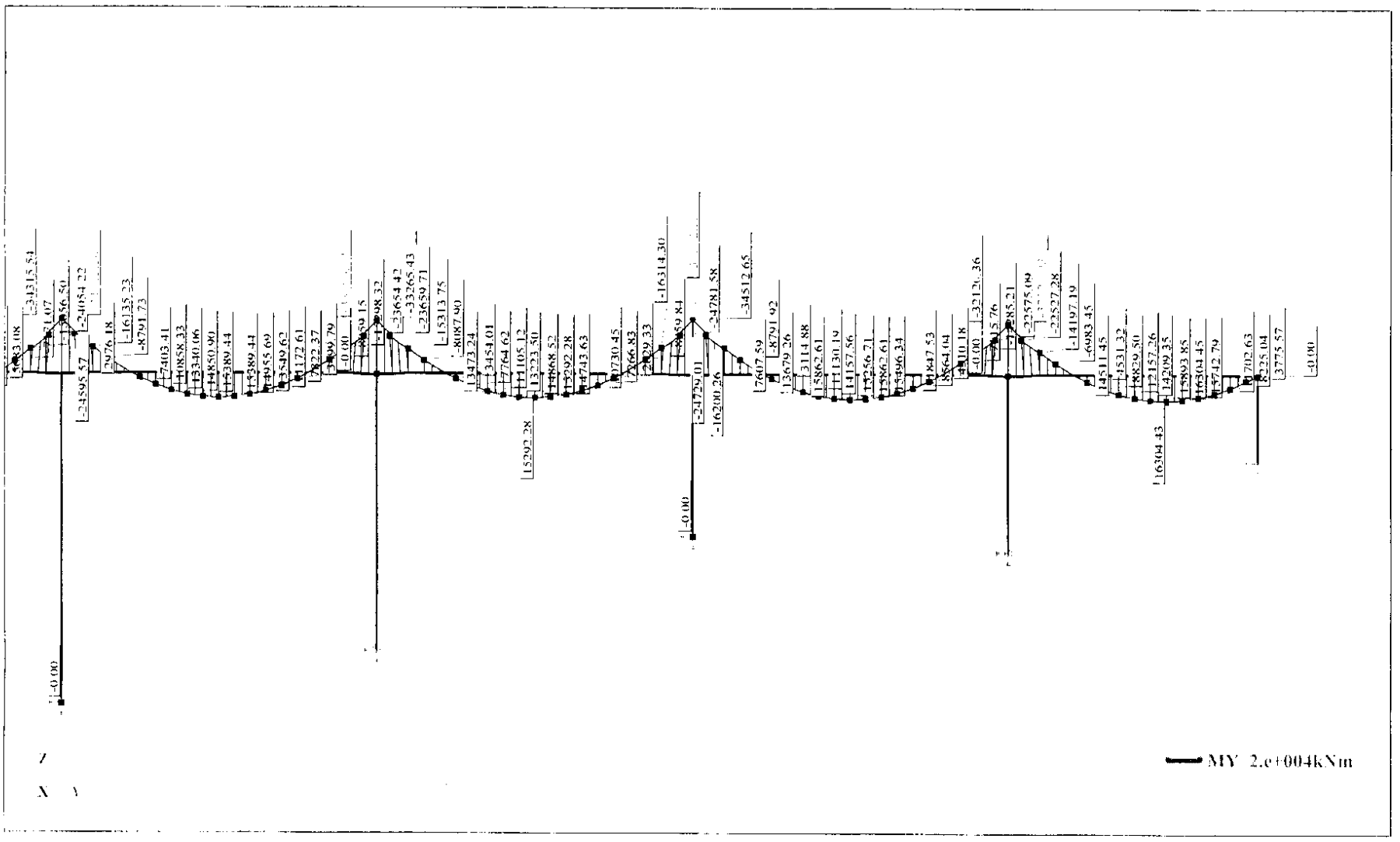





## Vista - MY; casos: 3 (PP + LEV. DE APOYOS)



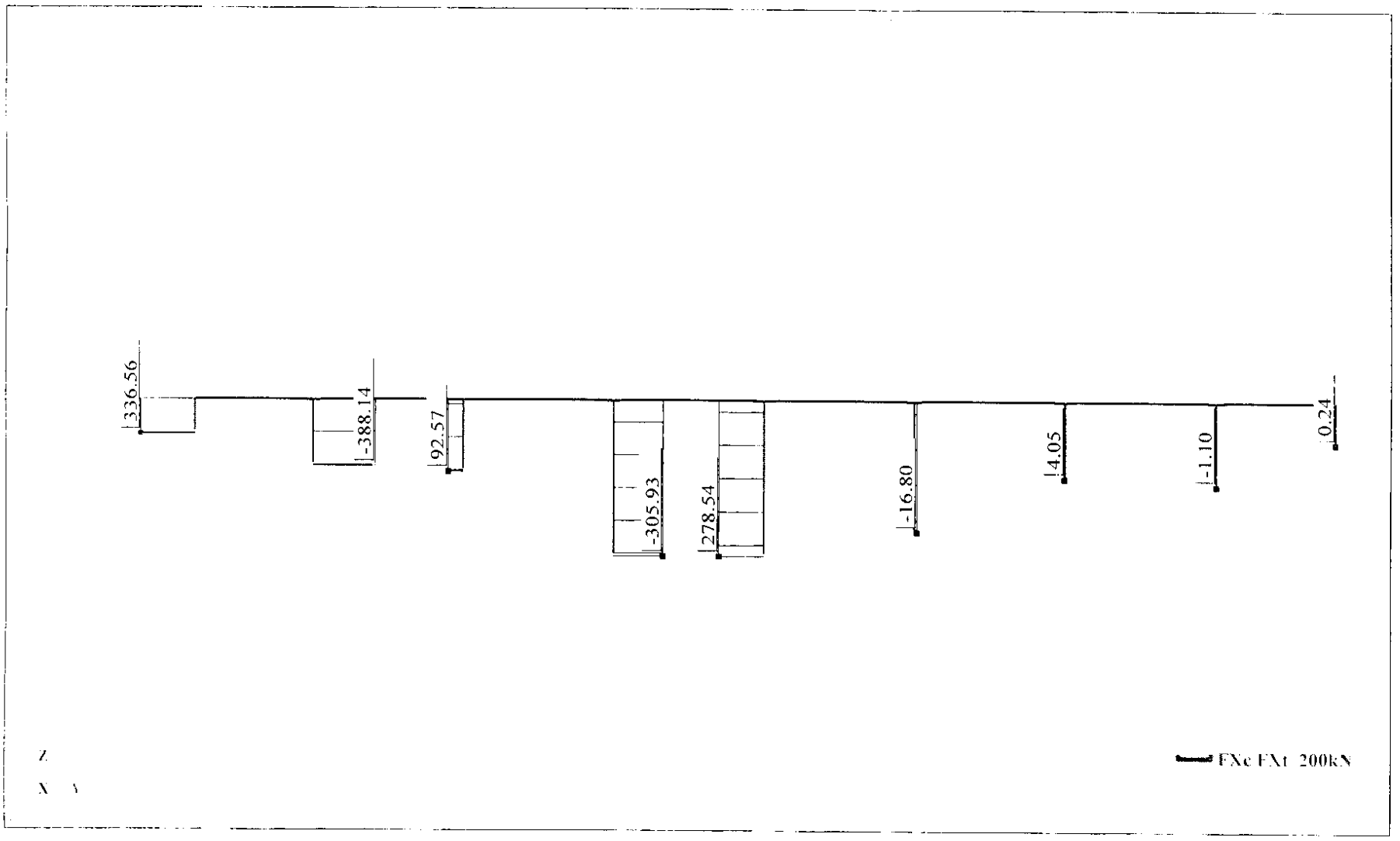
## Vista - MY; casos: 3 (PP + LEV. DE APOYOS) 2



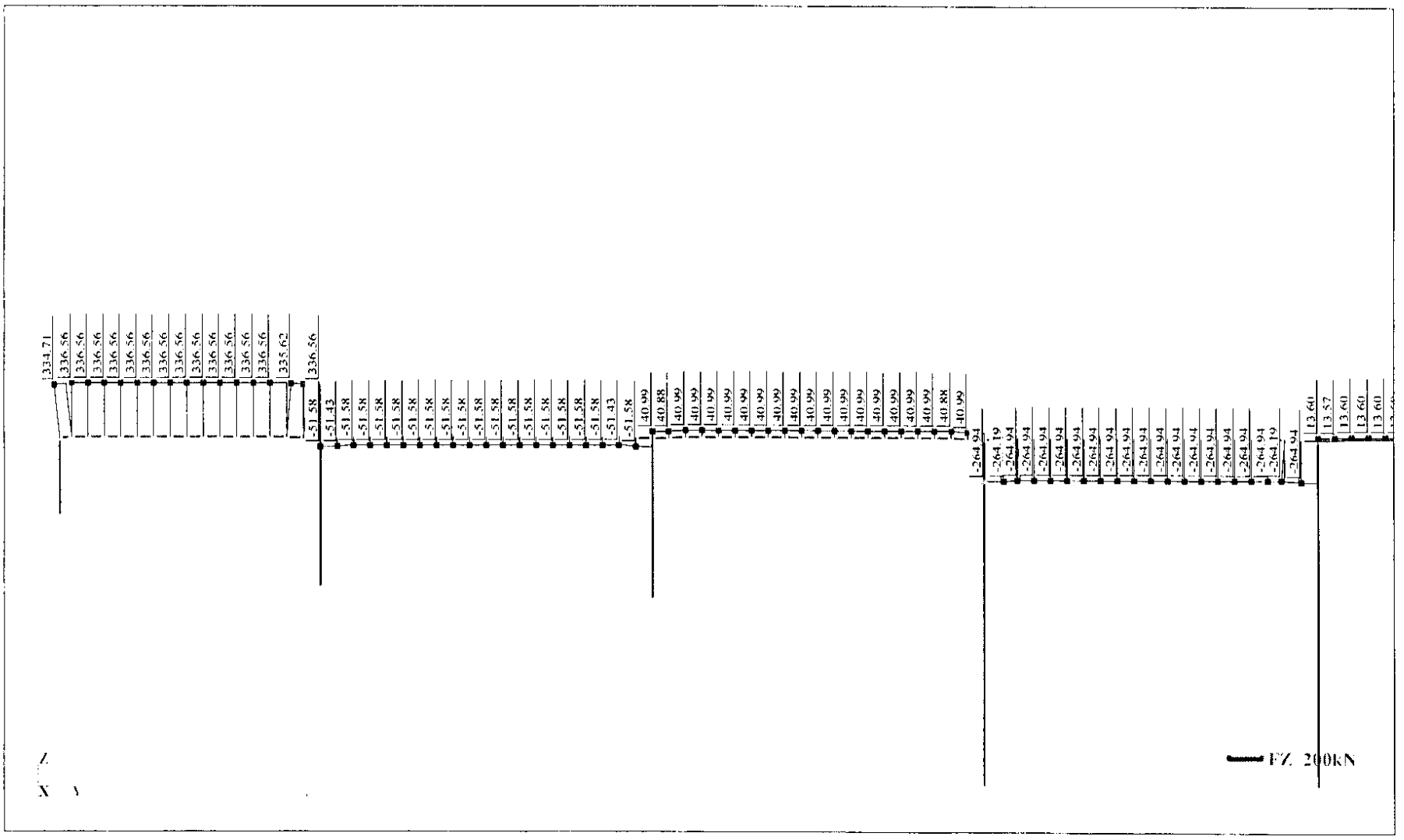





## Vista - FX; casos: 2 (LEVANTAMIENTO DE APOYOS) 1



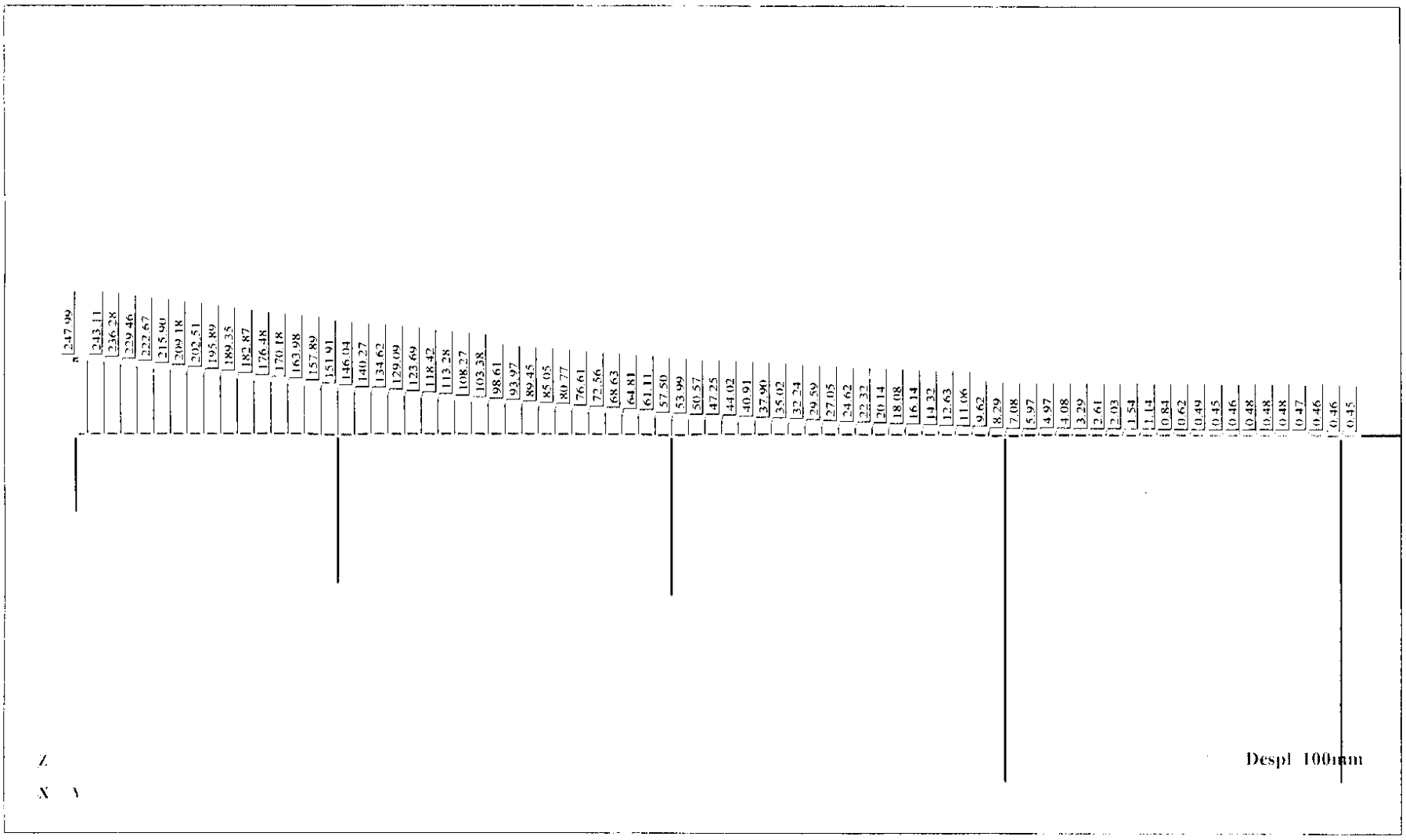
## Vista - FZ; casos: 2 (LEVANTAMIENTO DE APOYOS)








## Vista - Def. exacta; casos: 2 (LEVANTAMIENTO DE APOYOS)



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Especificación de reacciones - Extremos globales

Resultados individuales

Nudo todo
1A212
Caso 1A2001CA200 301A2101CA200
1A2001CA200 301A2101CA200

| Nudo | Caso | FZ (kN) |
|---|---|---|
| TOTAL MAX | | 10870.613 |
| Nudo | | 16 |
| Caso | | 801 |
| TOTAL MIN | | -909.582 |
| Nudo | | 105 |
| Caso | | 1701 |

## 3.3.2. Reacciones

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Especificación de reacciones

| Nudo | Caso | FZ (kN) |
|---|---|---|
| 20 | 1201 | 10772.829>> |
| 20 | 1801 | 0.000<< |
| 21 | 1301 | 10711.821>> |
| 21 | 701 | 0.000<< |
| 22 | 1401 | 10613.888>> |
| 22 | 1701 | 0.000<< |
| 23 | 1501 | 10479.005>> |
| 23 | 1601 | 0.000<< |
| 24 | 1601 | 10307.371>> |
| 24 | 1801 | 0.000<< |
| 25 | 1701 | 10099.004>> |
| 25 | 1001 | 0.000<< |
| 26 | 1801 | 9847.055>> |
| 26 | 1901 | 0.000<< |
| 27 | 1901 | 9562.411>> |
| 27 | 2001 | 0.000<< |
| 28 | 2001 | 9240.137>> |
| 28 | 1901 | 0.000<< |
| 29 | 1 | 9289.687>> |
| 29 | 1601 | 0.000<< |
| 30 | 201 | 9170.613>> |
| 30 | 1701 | 0.000<< |
| 31 | 301 | 9088.255>> |
| 31 | 1601 | 0.000<< |
| 32 | 401 | 9047.642>> |
| 32 | 2001 | 0.000<< |
| 33 | 501 | 9048.144>> |
| 33 | 1401 | 0.000<< |
| 34 | 601 | 9083.833>> |
| 34 | 2001 | 0.000<< |
| 35 | 701 | 9139.273>> |
| 35 | 1901 | 0.000<< |
| 36 | 801 | 9201.908>> |
| 36 | 1 | 0.000<< |
| 37 | 901 | 9260.631>> |
| 37 | 1801 | 0.000<< |
| 38 | 1001 | 9296.477>> |
| 38 | 201 | 0.000<< |
| 39 | 1101 | 9331.145>> |
| 39 | 1201 | 0.000<< |
| 40 | 1201 | 9354.800>> |
| 40 | 1701 | 0.000<< |
| 41 | 1301 | 9376.931>> |
| 41 | 1601 | 0.000<< |

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Especificación de reacciones

Resultados individuales

Nudo todo
1A212
Caso 1A2001CA200 301A2101CA200
1A2001CA200 301A2101CA200

| Nudo | Caso | FZ (kN) |
|---|---|---|
| 1 | 1301 | 5189.059>> |
| 1 | 301 | 0.000<< |
| 2 | 1401 | 5760.230>> |
| 2 | 1901 | 0.000<< |
| 3 | 1501 | 6361.197>> |
| 3 | 1701 | 0.000<< |
| 4 | 1601 | 6991.909>> |
| 4 | 1801 | 0.000<< |
| 5 | 1701 | 7652.386>> |
| 5 | 1901 | 0.000<< |
| 6 | 1801 | 8343.809>> |
| 6 | 1501 | 0.000<< |
| 7 | 1901 | 9064.487>> |
| 7 | 1801 | 0.000<< |
| 8 | 2001 | 9815.364>> |
| 8 | 2101 | 0.000<< |
| 9 | 2101 | 10596.736>> |
| 9 | 1801 | 0.000<< |
| 10 | 201 | 9965.543>> |
| 10 | 1 | 0.000<< |
| 11 | 301 | 10301.164>> |
| 11 | 1301 | 0.000<< |
| 12 | 401 | 10552.565>> |
| 12 | 2101 | 0.000<< |
| 13 | 501 | 10721.023>> |
| 13 | 2001 | 0.000<< |
| 14 | 601 | 10817.479>> |
| 14 | 1901 | 0.000<< |
| 15 | 701 | 10861.676>> |
| 15 | 2001 | 0.000<< |
| 16 | 801 | 10870.613>> |
| 16 | 1801 | 0.000<< |
| 17 | 901 | 10858.504>> |
| 17 | 1301 | 0.000<< |
| 18 | 1001 | 10840.248>> |
| 18 | 1701 | 0.000<< |
| 19 | 1101 | 10811.763>> |
| 19 | 2001 | 0.000<< |

Especificación de reacciones

| Nudo | Caso | FZ (kN) |
|---|---|---|
| 42 | 1401 | 9407.985>> |
| 42 | 1501 | 0.000<< |
| 43 | 1501 | 9447.883>> |
| 43 | 1701 | 0.000<< |
| 44 | 1601 | 9496.018>> |
| 44 | 1701 | 0.000<< |
| 45 | 1701 | 9551.998>> |
| 45 | 2001 | 0.000<< |
| 46 | 1801 | 9643.038>> |
| 46 | 1501 | 0.000<< |
| 47 | 1901 | 9723.268>> |
| 47 | 2101 | 0.000<< |
| 48 | 2001 | 9810.994>> |
| 48 | 801 | 0.000<< |
| 49 | 1 | 10416.347>> |
| 49 | 701 | 0.000<< |
| 50 | 201 | 10449.917>> |
| 50 | 2001 | 0.000<< |
| 51 | 301 | 10474.782>> |
| 51 | 1401 | 0.000<< |
| 52 | 401 | 10489.299>> |
| 52 | 1601 | 0.000<< |
| 53 | 501 | 10493.243>> |
| 53 | 1301 | 0.000<< |
| 54 | 601 | 10481.613>> |
| 54 | 1401 | 0.000<< |
| 55 | 701 | 10465.622>> |
| 55 | 1 | 0.000<< |
| 56 | 801 | 10449.096>> |
| 56 | 1601 | 0.000<< |
| 57 | 901 | 10436.080>> |
| 57 | 201 | 0.000<< |
| 58 | 1001 | 10464.481>> |
| 58 | 1 | 0.000<< |
| 59 | 1101 | 10450.922>> |
| 59 | 201 | 0.000<< |
| 60 | 1201 | 10441.215>> |
| 60 | 1 | 0.000<< |
| 61 | 1301 | 10430.680>> |
| 61 | 601 | 0.000<< |
| 62 | 1401 | 10416.959>> |
| 62 | 601 | 0.000<< |
| 63 | 1501 | 10400.389>> |



Especificación de reacciones

| Nudo | Caso | FZ (kN) |
|---|---|---|
| 63 | 1001 | 0.000<< |
| 64 | 1601 | 10383.158>> |
| 64 | 901 | 0.000<< |
| 65 | 1701 | 10367.142>> |
| 65 | 1001 | 0.000<< |
| 66 | 1801 | 10248.388>> |
| 66 | 401 | 0.000<< |
| 67 | 1901 | 10204.671>> |
| 67 | 901 | 0.000<< |
| 68 | 2001 | 10167.567>> |
| 68 | 1201 | 0.000<< |
| 69 | 2101 | 10136.522>> |
| 69 | 1401 | 0.000<< |
| 70 | 201 | 9254.034>> |
| 70 | 1501 | 0.000<< |
| 71 | 301 | 9241.170>> |
| 71 | 1001 | 0.000<< |
| 72 | 401 | 9232.021>> |
| 72 | 1401 | 0.000<< |
| 73 | 501 | 9227.619>> |
| 73 | 1901 | 0.000<< |
| 74 | 601 | 9259.888>> |
| 74 | 1301 | 0.000<< |
| 75 | 701 | 9289.316>> |
| 75 | 1501 | 0.000<< |
| 76 | 801 | 9308.158>> |
| 76 | 1801 | 0.000<< |
| 77 | 901 | 9307.087>> |
| 77 | 1701 | 0.000<< |
| 78 | 1001 | 9124.071>> |
| 78 | 301 | 0.000<< |
| 79 | 1101 | 9140.407>> |
| 79 | 1901 | 0.000<< |
| 80 | 1201 | 9145.114>> |
| 80 | 2001 | 0.000<< |
| 81 | 1301 | 9153.303>> |
| 81 | 2101 | 0.000<< |
| 82 | 1401 | 9165.445>> |
| 82 | 1901 | 0.000<< |
| 83 | 1501 | 9182.013>> |
| 83 | 501 | 0.000<< |
| 84 | 1601 | 9194.721>> |
| 84 | 1401 | 0.000<< |

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Especificación de reacciones

| Nudo | Caso | FZ (kN) |
|---|---|---|
| 85 | 1701 | 9194.883>> |
| 85 | 901 | 0.000<< |
| 86 | 1801 | 9698.115>> |
| 86 | 2101 | 0.000<< |
| 87 | 1901 | 9822.723>> |
| 87 | 701 | 0.000<< |
| 88 | 2001 | 9903.766>> |
| 88 | 1201 | 0.000<< |
| 89 | 2101 | 9941.737>> |
| 89 | 1 | 0.000<< |
| 90 | 601 | 6164.496>> |
| 90 | 1301 | 0.000<< |
| 91 | 701 | 5988.875>> |
| 91 | 1901 | 0.000<< |
| 92 | 801 | 5847.102>> |
| 92 | 1601 | 0.000<< |
| 93 | 901 | 5768.247>> |
| 93 | 1801 | 0.000<< |
| 94 | 1001 | 7117.806>> |
| 94 | 701 | 0.000<< |
| 95 | 1101 | 6911.360>> |
| 95 | 2101 | 0.000<< |
| 96 | 1201 | 6739.951>> |
| 96 | 2001 | 0.000<< |
| 97 | 1301 | 6586.357>> |
| 97 | 1901 | 0.000<< |
| 98 | 1401 | 6457.818>> |
| 98 | 2001 | 0.000<< |
| 99 | 1501 | 6364.796>> |
| 99 | 1901 | 0.000<< |
| 100 | 1601 | 6352.598>> |
| 100 | 1 | 0.000<< |
| 101 | 1701 | 6509.129>> |
| 101 | 1901 | 0.000<< |
| 102 | 1801 | 4684.556>> |
| 102 | 2001 | 0.000<< |
| 103 | 1901 | 4087.400>> |
| 103 | 2101 | 0.000<< |
| 104 | 2001 | 3527.132>> |
| 104 | 1801 | 0.000<< |
| 105 | 2101 | 3003.538>> |
| 105 | 1701 | -909.582<< |
| 201 | 1 | 475.674>> |
| 201 | 2101 | 0.000<< |

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Especificación de reacciones

| Nudo | Caso | FZ (kN) |
|---|---|---|
| 202 | 201 | 652.111>> |
| 202 | 801 | 0.000<< |
| 203 | 301 | 876.260>> |
| 203 | 1801 | 0.000<< |
| 204 | 401 | 1151.160>> |
| 204 | 1301 | 0.000<< |
| 205 | 501 | 1476.188>> |
| 205 | 2101 | 0.000<< |
| 206 | 601 | 1846.314>> |
| 206 | 901 | 0.000<< |
| 207 | 701 | 2252.908>> |
| 207 | 801 | 0.000<< |
| 208 | 801 | 2689.378>> |
| 208 | 1801 | 0.000<< |
| 209 | 901 | 3150.478>> |
| 209 | 1301 | 0.000<< |
| 210 | 1001 | 3630.436>> |
| 210 | 1601 | 0.000<< |
| 211 | 1101 | 4129.481>> |
| 211 | 1201 | 0.000<< |
| 212 | 1201 | 4647.659>> |
| 212 | 1701 | 0.000<< |

### 3.3.3. Desplazamiento de nudos

Desplazamiento de nudos

Resultados individuales

Caso 1A2001CA200 301A2101CA200
1A2001CA200 301A2101CA200
Nudo 1A20 201A212
1A212

| Caso | Nudo | UZ (m) |
|---|---|---|
| Nombre del c. | | EMPUJE POS. |
| 1 | 1 | 0.0717 |
| 1 | 2 | 0.0697 |
| 1 | 3 | 0.0676 |
| 1 | 4 | 0.0656 |
| 1 | 5 | 0.0636 |
| 1 | 6 | 0.0615 |
| 1 | 7 | 0.0592 |
| 1 | 8 | 0.0568 |
| 1 | 9 | 0.0540 |
| 1 | 10 | 0.0509 |
| 1 | 11 | 0.0474 |
| 1 | 12 | 0.0438 |
| 1 | 13 | 0.0402 |
| 1 | 14 | 0.0366 |
| 1 | 15 | 0.0331 |
| 1 | 16 | 0.0297 |
| 1 | 17 | 0.0266 |
| 1 | 18 | 0.0237 |
| 1 | 19 | 0.0211 |
| 1 | 20 | 0.0187 |
| 1 | 201 | 0.1460 |
| 1 | 202 | 0.1364 |
| 1 | 203 | 0.1271 |
| 1 | 204 | 0.1183 |
| 1 | 205 | 0.1102 |
| 1 | 206 | 0.1028 |
| 1 | 207 | 0.0961 |
| 1 | 208 | 0.0902 |
| 1 | 209 | 0.0851 |
| 1 | 210 | 0.0807 |
| 1 | 211 | 0.0771 |
| 1 | 212 | 0.0741 |
| Nombre del c. | | (Fase 2) . |
| 201 | 1 | 0.0715 |
| 201 | 2 | 0.0696 |
| 201 | 3 | 0.0678 |
| 201 | 4 | 0.0660 |
| 201 | 5 | 0.0643 |
| 201 | 6 | 0.0626 |
| 201 | 7 | 0.0607 |
| 201 | 8 | 0.0588 |
| 201 | 9 | 0.0566 |
| 201 | 10 | 0.0540 |
| 201 | 11 | 0.0510 |
| 201 | 12 | 0.0478 |
| 201 | 13 | 0.0443 |
| 201 | 14 | 0.0407 |
| 201 | 15 | 0.0372 |
| 201 | 16 | 0.0337 |
| 201 | 17 | 0.0304 |
| 201 | 18 | 0.0272 |
| 201 | 19 | 0.0243 |
| 201 | 20 | 0.0217 |
| 201 | 201 | 0.1565 |
| 201 | 202 | 0.1460 |



Desplazamiento de nudos

| Caso | Nudo | UZ (m) |
|---|---|---|
| 201 | 203 | 0.1356 |
| 201 | 204 | 0.1255 |
| 201 | 205 | 0.1160 |
| 201 | 206 | 0.1072 |
| 201 | 207 | 0.0993 |
| 201 | 208 | 0.0923 |
| 201 | 209 | 0.0863 |
| 201 | 210 | 0.0812 |
| 201 | 211 | 0.0771 |
| 201 | 212 | 0.0739 |
| Nombre del c. | | (Fase 3) . |
| 301 | 1 | 0.0721 |
| 301 | 2 | 0.0702 |
| 301 | 3 | 0.0684 |
| 301 | 4 | 0.0667 |
| 301 | 5 | 0.0651 |
| 301 | 6 | 0.0635 |
| 301 | 7 | 0.0619 |
| 301 | 8 | 0.0603 |
| 301 | 9 | 0.0585 |
| 301 | 10 | 0.0564 |
| 301 | 11 | 0.0540 |
| 301 | 12 | 0.0512 |
| 301 | 13 | 0.0480 |
| 301 | 14 | 0.0446 |
| 301 | 15 | 0.0411 |
| 301 | 16 | 0.0376 |
| 301 | 17 | 0.0341 |
| 301 | 18 | 0.0308 |
| 301 | 19 | 0.0277 |
| 301 | 20 | 0.0247 |
| 301 | 201 | 0.1684 |
| 301 | 202 | 0.1572 |
| 301 | 203 | 0.1460 |
| 301 | 204 | 0.1349 |
| 301 | 205 | 0.1241 |
| 301 | 206 | 0.1139 |
| 301 | 207 | 0.1046 |
| 301 | 208 | 0.0963 |
| 301 | 209 | 0.0891 |
| 301 | 210 | 0.0831 |
| 301 | 211 | 0.0783 |
| 301 | 212 | 0.0747 |
| Nombre del c. | | (Fase 4) . |
| 401 | 1 | 0.0742 |
| 401 | 2 | 0.0720 |
| 401 | 3 | 0.0699 |
| 401 | 4 | 0.0681 |
| 401 | 5 | 0.0664 |
| 401 | 6 | 0.0648 |
| 401 | 7 | 0.0633 |
| 401 | 8 | 0.0617 |
| 401 | 9 | 0.0601 |
| 401 | 10 | 0.0584 |
| 401 | 11 | 0.0564 |
| 401 | 12 | 0.0540 |
| 401 | 13 | 0.0512 |
| 401 | 14 | 0.0480 |
| 401 | 15 | 0.0447 |
| 401 | 16 | 0.0412 |
| 401 | 17 | 0.0377 |
| 401 | 18 | 0.0343 |
| 401 | 19 | 0.0310 |

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Desplazamiento de nudos

| Caso | Nudo | UZ (m) |
|---|---|---|
| 401 | 20 | 0.0279 |
| 401 | 201 | 0.1810 |
| 401 | 202 | 0.1694 |
| 401 | 203 | 0.1577 |
| 401 | 204 | 0.1460 |
| 401 | 205 | 0.1343 |
| 401 | 206 | 0.1230 |
| 401 | 207 | 0.1124 |
| 401 | 208 | 0.1028 |
| 401 | 209 | 0.0943 |
| 401 | 210 | 0.0872 |
| 401 | 211 | 0.0815 |
| 401 | 212 | 0.0772 |
| Nombre del c. | | (Fase 5) . |
| 501 | 1 | 0.0783 |
| 501 | 2 | 0.0756 |
| 501 | 3 | 0.0731 |
| 501 | 4 | 0.0708 |
| 501 | 5 | 0.0688 |
| 501 | 6 | 0.0669 |
| 501 | 7 | 0.0652 |
| 501 | 8 | 0.0635 |
| 501 | 9 | 0.0619 |
| 501 | 10 | 0.0603 |
| 501 | 11 | 0.0584 |
| 501 | 12 | 0.0564 |
| 501 | 13 | 0.0540 |
| 501 | 14 | 0.0512 |
| 501 | 15 | 0.0480 |
| 501 | 16 | 0.0446 |
| 501 | 17 | 0.0411 |
| 501 | 18 | 0.0377 |
| 501 | 19 | 0.0343 |
| 501 | 20 | 0.0310 |
| 501 | 201 | 0.1934 |
| 501 | 202 | 0.1816 |
| 501 | 203 | 0.1698 |
| 501 | 204 | 0.1579 |
| 501 | 205 | 0.1460 |
| 501 | 206 | 0.1340 |
| 501 | 207 | 0.1225 |
| 501 | 208 | 0.1117 |
| 501 | 209 | 0.1021 |
| 501 | 210 | 0.0938 |
| 501 | 211 | 0.0870 |
| 501 | 212 | 0.0819 |
| Nombre del c. | | (Fase 6) . |
| 601 | 1 | 0.0846 |
| 601 | 2 | 0.0812 |
| 601 | 3 | 0.0780 |
| 601 | 4 | 0.0751 |
| 601 | 5 | 0.0725 |
| 601 | 6 | 0.0702 |
| 601 | 7 | 0.0680 |
| 601 | 8 | 0.0661 |
| 601 | 9 | 0.0642 |
| 601 | 10 | 0.0624 |
| 601 | 11 | 0.0606 |
| 601 | 12 | 0.0587 |
| 601 | 13 | 0.0565 |
| 601 | 14 | 0.0540 |
| 601 | 15 | 0.0511 |
| 601 | 16 | 0.0479 |

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(c) RoboBAT | c:\a\gelempu3 | Fecha: 7-02-2002
Proyecto: | modificación de carga: 7-02-2002 | Hora: 13:20:04

Desplazamiento de nudos

| Caso | Nudo | UZ (m) |
|---|---|---|
| 601 | 17 | 0.0445 |
| 601 | 18 | 0.0410 |
| 601 | 19 | 0.0375 |
| 601 | 20 | 0.0341 |
| 601 | 201 | 0.2042 |
| 601 | 202 | 0.1926 |
| 601 | 203 | 0.1811 |
| 601 | 204 | 0.1695 |
| 601 | 205 | 0.1578 |
| 601 | 206 | 0.1460 |
| 601 | 207 | 0.1342 |
| 601 | 208 | 0.1227 |
| 601 | 209 | 0.1122 |
| 601 | 210 | 0.1028 |
| 601 | 211 | 0.0950 |
| 601 | 212 | 0.0890 |
| Nombre del c. | | (Fase 7) . |
| 701 | 1 | 0.0928 |
| 701 | 2 | 0.0886 |
| 701 | 3 | 0.0847 |
| 701 | 4 | 0.0810 |
| 701 | 5 | 0.0777 |
| 701 | 6 | 0.0747 |
| 701 | 7 | 0.0720 |
| 701 | 8 | 0.0695 |
| 701 | 9 | 0.0673 |
| 701 | 10 | 0.0652 |
| 701 | 11 | 0.0631 |
| 701 | 12 | 0.0611 |
| 701 | 13 | 0.0590 |
| 701 | 14 | 0.0566 |
| 701 | 15 | 0.0540 |
| 701 | 16 | 0.0510 |
| 701 | 17 | 0.0477 |
| 701 | 18 | 0.0443 |
| 701 | 19 | 0.0408 |
| 701 | 20 | 0.0374 |
| 701 | 201 | 0.2120 |
| 701 | 202 | 0.2011 |
| 701 | 203 | 0.1902 |
| 701 | 204 | 0.1793 |
| 701 | 205 | 0.1684 |
| 701 | 206 | 0.1573 |
| 701 | 207 | 0.1460 |
| 701 | 208 | 0.1346 |
| 701 | 209 | 0.1237 |
| 701 | 210 | 0.1137 |
| 701 | 211 | 0.1051 |
| 701 | 212 | 0.0981 |
| Nombre del c. | | (Fase 8) . |
| 801 | 1 | 0.1024 |
| 801 | 2 | 0.0974 |
| 801 | 3 | 0.0926 |
| 801 | 4 | 0.0881 |
| 801 | 5 | 0.0841 |
| 801 | 6 | 0.0803 |
| 801 | 7 | 0.0769 |
| 801 | 8 | 0.0738 |
| 801 | 9 | 0.0710 |
| 801 | 10 | 0.0685 |
| 801 | 11 | 0.0661 |
| 801 | 12 | 0.0638 |
| 801 | 13 | 0.0616 |

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(c) RoboBAT | c:\a\gelempu3 | Fecha: 7-02-2002
Proyecto: | modificación de carga: 7-02-2002 | Hora: 13:20:11

Desplazamiento de nudos

| Caso | Nudo | UZ (m) |
|---|---|---|
| 801 | 14 | 0.0592 |
| 801 | 15 | 0.0567 |
| 801 | 16 | 0.0540 |
| 801 | 17 | 0.0509 |
| 801 | 18 | 0.0476 |
| 801 | 19 | 0.0442 |
| 801 | 20 | 0.0407 |
| 801 | 201 | 0.2160 |
| 801 | 202 | 0.2062 |
| 801 | 203 | 0.1964 |
| 801 | 204 | 0.1866 |
| 801 | 205 | 0.1767 |
| 801 | 206 | 0.1666 |
| 801 | 207 | 0.1564 |
| 801 | 208 | 0.1460 |
| 801 | 209 | 0.1354 |
| 801 | 210 | 0.1253 |
| 801 | 211 | 0.1162 |
| 801 | 212 | 0.1085 |
| Nombre del c. | | (Fase 9) . |
| 901 | 1 | 0.1125 |
| 901 | 2 | 0.1066 |
| 901 | 3 | 0.1011 |
| 901 | 4 | 0.0959 |
| 901 | 5 | 0.0910 |
| 901 | 6 | 0.0865 |
| 901 | 7 | 0.0824 |
| 901 | 8 | 0.0787 |
| 901 | 9 | 0.0753 |
| 901 | 10 | 0.0722 |
| 901 | 11 | 0.0694 |
| 901 | 12 | 0.0668 |
| 901 | 13 | 0.0643 |
| 901 | 14 | 0.0619 |
| 901 | 15 | 0.0594 |
| 901 | 16 | 0.0568 |
| 901 | 17 | 0.0540 |
| 901 | 18 | 0.0509 |
| 901 | 19 | 0.0475 |
| 901 | 20 | 0.0441 |
| 901 | 201 | 0.2161 |
| 901 | 202 | 0.2077 |
| 901 | 203 | 0.1992 |
| 901 | 204 | 0.1907 |
| 901 | 205 | 0.1821 |
| 901 | 206 | 0.1734 |
| 901 | 207 | 0.1645 |
| 901 | 208 | 0.1554 |
| 901 | 209 | 0.1460 |
| 901 | 210 | 0.1364 |
| 901 | 211 | 0.1273 |
| 901 | 212 | 0.1192 |
| Nombre del c. | | (Fase 10) . |
| 1001 | 1 | 0.1222 |
| 1001 | 2 | 0.1157 |
| 1001 | 3 | 0.1095 |
| 1001 | 4 | 0.1036 |
| 1001 | 5 | 0.0981 |
| 1001 | 6 | 0.0930 |
| 1001 | 7 | 0.0882 |
| 1001 | 8 | 0.0838 |
| 1001 | 9 | 0.0799 |
| 1001 | 10 | 0.0763 |

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(c) RoboBAT | c:\a\gelempu3 | Fecha: 7-02-2002
Proyecto: | modificación de carga: 7-02-2002 | Hora: 13:20:18

Desplazamiento de nudos

| Caso | Nudo | UZ (m) |
|---|---|---|
| 1001 | 11 | 0.0730 |
| 1001 | 12 | 0.0700 |
| 1001 | 13 | 0.0672 |
| 1001 | 14 | 0.0646 |
| 1001 | 15 | 0.0621 |
| 1001 | 16 | 0.0595 |
| 1001 | 17 | 0.0569 |
| 1001 | 18 | 0.0540 |
| 1001 | 19 | 0.0509 |
| 1001 | 20 | 0.0475 |
| 1001 | 201 | 0.2132 |
| 1001 | 202 | 0.2061 |
| 1001 | 203 | 0.1990 |
| 1001 | 204 | 0.1919 |
| 1001 | 205 | 0.1847 |
| 1001 | 206 | 0.1774 |
| 1001 | 207 | 0.1700 |
| 1001 | 208 | 0.1623 |
| 1001 | 209 | 0.1543 |
| 1001 | 210 | 0.1460 |
| 1001 | 211 | 0.1375 |
| 1001 | 212 | 0.1293 |
| Nombre del c. | | (Fase 11) . |
| 1101 | 1 | 0.1310 |
| 1101 | 2 | 0.1241 |
| 1101 | 3 | 0.1175 |
| 1101 | 4 | 0.1111 |
| 1101 | 5 | 0.1050 |
| 1101 | 6 | 0.0993 |
| 1101 | 7 | 0.0940 |
| 1101 | 8 | 0.0890 |
| 1101 | 9 | 0.0845 |
| 1101 | 10 | 0.0804 |
| 1101 | 11 | 0.0767 |
| 1101 | 12 | 0.0733 |
| 1101 | 13 | 0.0702 |
| 1101 | 14 | 0.0674 |
| 1101 | 15 | 0.0647 |
| 1101 | 16 | 0.0621 |
| 1101 | 17 | 0.0595 |
| 1101 | 18 | 0.0569 |
| 1101 | 19 | 0.0540 |
| 1101 | 20 | 0.0508 |
| 1101 | 201 | 0.2090 |
| 1101 | 202 | 0.2032 |
| 1101 | 203 | 0.1975 |
| 1101 | 204 | 0.1916 |
| 1101 | 205 | 0.1857 |
| 1101 | 206 | 0.1797 |
| 1101 | 207 | 0.1735 |
| 1101 | 208 | 0.1671 |
| 1101 | 209 | 0.1604 |
| 1101 | 210 | 0.1534 |
| 1101 | 211 | 0.1460 |
| 1101 | 212 | 0.1383 |
| Nombre del c. | | (Fase 12) . |
| 1201 | 1 | 0.1388 |
| 1201 | 2 | 0.1318 |
| 1201 | 3 | 0.1248 |
| 1201 | 4 | 0.1181 |
| 1201 | 5 | 0.1116 |
| 1201 | 6 | 0.1055 |
| 1201 | 7 | 0.0997 |

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(c) RoboBAT | c:\a\gelempu3 | Fecha: 7-02-2002
Proyecto: | modificación de carga: 7-02-2002 | Hora: 13:20:24

Desplazamiento de nudos

| Caso | Nudo | UZ (m) |
|---|---|---|
| 1201 | 8 | 0.0943 |
| 1201 | 9 | 0.0893 |
| 1201 | 10 | 0.0848 |
| 1201 | 11 | 0.0806 |
| 1201 | 12 | 0.0768 |
| 1201 | 13 | 0.0734 |
| 1201 | 14 | 0.0703 |
| 1201 | 15 | 0.0674 |
| 1201 | 16 | 0.0648 |
| 1201 | 17 | 0.0622 |
| 1201 | 18 | 0.0596 |
| 1201 | 19 | 0.0569 |
| 1201 | 20 | 0.0540 |
| 1201 | 201 | 0.2063 |
| 1201 | 202 | 0.2015 |
| 1201 | 203 | 0.1967 |
| 1201 | 204 | 0.1918 |
| 1201 | 205 | 0.1868 |
| 1201 | 206 | 0.1818 |
| 1201 | 207 | 0.1765 |
| 1201 | 208 | 0.1711 |
| 1201 | 209 | 0.1654 |
| 1201 | 210 | 0.1593 |
| 1201 | 211 | 0.1529 |
| 1201 | 212 | 0.1460 |
| Nombre del c. | | (Fase 13) . |
| 1301 | 1 | 0.1460 |
| 1301 | 2 | 0.1389 |
| 1301 | 3 | 0.1319 |
| 1301 | 4 | 0.1250 |
| 1301 | 5 | 0.1183 |
| 1301 | 6 | 0.1118 |
| 1301 | 7 | 0.1057 |
| 1301 | 8 | 0.0999 |
| 1301 | 9 | 0.0945 |
| 1301 | 10 | 0.0896 |
| 1301 | 11 | 0.0850 |
| 1301 | 12 | 0.0808 |
| 1301 | 13 | 0.0770 |
| 1301 | 14 | 0.0736 |
| 1301 | 15 | 0.0705 |
| 1301 | 16 | 0.0676 |
| 1301 | 17 | 0.0649 |
| 1301 | 18 | 0.0623 |
| 1301 | 19 | 0.0596 |
| 1301 | 20 | 0.0569 |
| 1301 | 201 | 0.2079 |
| 1301 | 202 | 0.2036 |
| 1301 | 203 | 0.1992 |
| 1301 | 204 | 0.1948 |
| 1301 | 205 | 0.1904 |
| 1301 | 206 | 0.1858 |
| 1301 | 207 | 0.1810 |
| 1301 | 208 | 0.1760 |
| 1301 | 209 | 0.1708 |
| 1301 | 210 | 0.1652 |
| 1301 | 211 | 0.1592 |
| 1301 | 212 | 0.1528 |
| Nombre del c. | | (Fase 14) . |
| 1401 | 1 | 0.1528 |
| 1401 | 2 | 0.1460 |
| 1401 | 3 | 0.1391 |
| 1401 | 4 | 0.1322 |

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Proyecto: | modificación de carga: 7-02-2002 | Hora: 13:20:31

Desplazamiento de nudos

| Caso | Nudo | UZ (m) |
|---|---|---|
| 1401 | 5 | 0.1254 |
| 1401 | 6 | 0.1187 |
| 1401 | 7 | 0.1123 |
| 1401 | 8 | 0.1062 |
| 1401 | 9 | 0.1004 |
| 1401 | 10 | 0.0951 |
| 1401 | 11 | 0.0901 |
| 1401 | 12 | 0.0855 |
| 1401 | 13 | 0.0813 |
| 1401 | 14 | 0.0774 |
| 1401 | 15 | 0.0740 |
| 1401 | 16 | 0.0708 |
| 1401 | 17 | 0.0679 |
| 1401 | 18 | 0.0651 |
| 1401 | 19 | 0.0624 |
| 1401 | 20 | 0.0598 |
| 1401 | 201 | 0.2120 |
| 1401 | 202 | 0.2079 |
| 1401 | 203 | 0.2037 |
| 1401 | 204 | 0.1996 |
| 1401 | 205 | 0.1953 |
| 1401 | 206 | 0.1910 |
| 1401 | 207 | 0.1864 |
| 1401 | 208 | 0.1817 |
| 1401 | 209 | 0.1767 |
| 1401 | 210 | 0.1713 |
| 1401 | 211 | 0.1656 |
| 1401 | 212 | 0.1594 |
| Nombre del c. | | (Fase 15) . |
| 1501 | 1 | 0.1591 |
| 1501 | 2 | 0.1526 |
| 1501 | 3 | 0.1460 |
| 1501 | 4 | 0.1393 |
| 1501 | 5 | 0.1326 |
| 1501 | 6 | 0.1259 |
| 1501 | 7 | 0.1193 |
| 1501 | 8 | 0.1130 |
| 1501 | 9 | 0.1070 |
| 1501 | 10 | 0.1012 |
| 1501 | 11 | 0.0958 |
| 1501 | 12 | 0.0908 |
| 1501 | 13 | 0.0862 |
| 1501 | 14 | 0.0820 |
| 1501 | 15 | 0.0781 |
| 1501 | 16 | 0.0746 |
| 1501 | 17 | 0.0714 |
| 1501 | 18 | 0.0683 |
| 1501 | 19 | 0.0655 |
| 1501 | 20 | 0.0627 |
| 1501 | 201 | 0.2139 |
| 1501 | 202 | 0.2102 |
| 1501 | 203 | 0.2064 |
| 1501 | 204 | 0.2026 |
| 1501 | 205 | 0.1987 |
| 1501 | 206 | 0.1947 |
| 1501 | 207 | 0.1905 |
| 1501 | 208 | 0.1861 |
| 1501 | 209 | 0.1815 |
| 1501 | 210 | 0.1765 |
| 1501 | 211 | 0.1711 |
| 1501 | 212 | 0.1653 |
| Nombre del c. | | (Fase 16) . |
| 1601 | 1 | 0.1644 |

Desplazamiento de nudos

| Caso | Nudo | UZ (m) |
|---|---|---|
| 1601 | 2 | 0.1584 |
| 1601 | 3 | 0.1522 |
| 1601 | 4 | 0.1460 |
| 1601 | 5 | 0.1396 |
| 1601 | 6 | 0.1331 |
| 1601 | 7 | 0.1266 |
| 1601 | 8 | 0.1202 |
| 1601 | 9 | 0.1139 |
| 1601 | 10 | 0.1080 |
| 1601 | 11 | 0.1023 |
| 1601 | 12 | 0.0969 |
| 1601 | 13 | 0.0919 |
| 1601 | 14 | 0.0872 |
| 1601 | 15 | 0.0829 |
| 1601 | 16 | 0.0790 |
| 1601 | 17 | 0.0754 |
| 1601 | 18 | 0.0720 |
| 1601 | 19 | 0.0689 |
| 1601 | 20 | 0.0659 |
| 1601 | 201 | 0.2135 |
| 1601 | 202 | 0.2102 |
| 1601 | 203 | 0.2069 |
| 1601 | 204 | 0.2036 |
| 1601 | 205 | 0.2002 |
| 1601 | 206 | 0.1967 |
| 1601 | 207 | 0.1930 |
| 1601 | 208 | 0.1890 |
| 1601 | 209 | 0.1849 |
| 1601 | 210 | 0.1803 |
| 1601 | 211 | 0.1754 |
| 1601 | 212 | 0.1701 |
| Nombre del c. | | (Fase 17) . |
| 1701 | 1 | 0.1684 |
| 1701 | 2 | 0.1630 |
| 1701 | 3 | 0.1575 |
| 1701 | 4 | 0.1518 |
| 1701 | 5 | 0.1460 |
| 1701 | 6 | 0.1399 |
| 1701 | 7 | 0.1337 |
| 1701 | 8 | 0.1274 |
| 1701 | 9 | 0.1212 |
| 1701 | 10 | 0.1151 |
| 1701 | 11 | 0.1092 |
| 1701 | 12 | 0.1035 |
| 1701 | 13 | 0.0982 |
| 1701 | 14 | 0.0931 |
| 1701 | 15 | 0.0885 |
| 1701 | 16 | 0.0841 |
| 1701 | 17 | 0.0801 |
| 1701 | 18 | 0.0763 |
| 1701 | 19 | 0.0728 |
| 1701 | 20 | 0.0695 |
| 1701 | 201 | 0.2102 |
| 1701 | 202 | 0.2075 |
| 1701 | 203 | 0.2049 |
| 1701 | 204 | 0.2021 |
| 1701 | 205 | 0.1993 |
| 1701 | 206 | 0.1964 |
| 1701 | 207 | 0.1933 |
| 1701 | 208 | 0.1900 |
| 1701 | 209 | 0.1864 |
| 1701 | 210 | 0.1825 |
| 1701 | 211 | 0.1782 |
| 1701 | 212 | 0.1735 |



Desplazamiento de nudos

| Caso | Nudo | UZ (m) |
|---|---|---|
| Nombre del c. | | (Fase 18) . |
| 1801 | 1 | 0.1707 |
| 1801 | 2 | 0.1661 |
| 1801 | 3 | 0.1613 |
| 1801 | 4 | 0.1564 |
| 1801 | 5 | 0.1514 |
| 1801 | 6 | 0.1460 |
| 1801 | 7 | 0.1403 |
| 1801 | 8 | 0.1344 |
| 1801 | 9 | 0.1284 |
| 1801 | 10 | 0.1224 |
| 1801 | 11 | 0.1165 |
| 1801 | 12 | 0.1106 |
| 1801 | 13 | 0.1050 |
| 1801 | 14 | 0.0997 |
| 1801 | 15 | 0.0946 |
| 1801 | 16 | 0.0899 |
| 1801 | 17 | 0.0854 |
| 1801 | 18 | 0.0812 |
| 1801 | 19 | 0.0773 |
| 1801 | 20 | 0.0736 |
| 1801 | 201 | 0.2036 |
| 1801 | 202 | 0.2017 |
| 1801 | 203 | 0.1997 |
| 1801 | 204 | 0.1978 |
| 1801 | 205 | 0.1957 |
| 1801 | 206 | 0.1935 |
| 1801 | 207 | 0.1912 |
| 1801 | 208 | 0.1886 |
| 1801 | 209 | 0.1858 |
| 1801 | 210 | 0.1826 |
| 1801 | 211 | 0.1791 |
| 1801 | 212 | 0.1751 |
| Nombre del c. | | (Fase 19) . |
| 1901 | 1 | 0.1710 |
| 1901 | 2 | 0.1673 |
| 1901 | 3 | 0.1634 |
| 1901 | 4 | 0.1595 |
| 1901 | 5 | 0.1553 |
| 1901 | 6 | 0.1508 |
| 1901 | 7 | 0.1460 |
| 1901 | 8 | 0.1408 |
| 1901 | 9 | 0.1353 |
| 1901 | 10 | 0.1296 |
| 1901 | 11 | 0.1238 |
| 1901 | 12 | 0.1180 |
| 1901 | 13 | 0.1123 |
| 1901 | 14 | 0.1068 |
| 1901 | 15 | 0.1014 |
| 1901 | 16 | 0.0963 |
| 1901 | 17 | 0.0915 |
| 1901 | 18 | 0.0869 |
| 1901 | 19 | 0.0825 |
| 1901 | 20 | 0.0785 |
| 1901 | 201 | 0.1931 |
| 1901 | 202 | 0.1921 |
| 1901 | 203 | 0.1910 |
| 1901 | 204 | 0.1900 |
| 1901 | 205 | 0.1888 |
| 1901 | 206 | 0.1875 |
| 1901 | 207 | 0.1861 |
| 1901 | 208 | 0.1844 |
| 1901 | 209 | 0.1825 |

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Proyecto: | modificación de carga: 7-02-2002 | Hora: 13:20:51

Desplazamiento de nudos

| Caso | Nudo | UZ (m) |
|---|---|---|
| 1901 | 210 | 0.1802 |
| 1901 | 211 | 0.1776 |
| 1901 | 212 | 0.1745 |
| Nombre del c. | | (Fase 20) . |
| 2001 | 1 | 0.1689 |
| 2001 | 2 | 0.1662 |
| 2001 | 3 | 0.1634 |
| 2001 | 4 | 0.1605 |
| 2001 | 5 | 0.1573 |
| 2001 | 6 | 0.1539 |
| 2001 | 7 | 0.1502 |
| 2001 | 8 | 0.1460 |
| 2001 | 9 | 0.1413 |
| 2001 | 10 | 0.1362 |
| 2001 | 11 | 0.1309 |
| 2001 | 12 | 0.1253 |
| 2001 | 13 | 0.1197 |
| 2001 | 14 | 0.1142 |
| 2001 | 15 | 0.1087 |
| 2001 | 16 | 0.1033 |
| 2001 | 17 | 0.0982 |
| 2001 | 18 | 0.0932 |
| 2001 | 19 | 0.0885 |
| 2001 | 20 | 0.0840 |
| 2001 | 201 | 0.1782 |
| 2001 | 202 | 0.1782 |
| 2001 | 203 | 0.1782 |
| 2001 | 204 | 0.1782 |
| 2001 | 205 | 0.1781 |
| 2001 | 206 | 0.1779 |
| 2001 | 207 | 0.1775 |
| 2001 | 208 | 0.1769 |
| 2001 | 209 | 0.1761 |
| 2001 | 210 | 0.1749 |
| 2001 | 211 | 0.1733 |
| 2001 | 212 | 0.1713 |
| Nombre del c. | | (Fase 21) . |
| 2101 | 1 | 0.1638 |
| 2101 | 2 | 0.1623 |
| 2101 | 3 | 0.1607 |
| 2101 | 4 | 0.1590 |
| 2101 | 5 | 0.1571 |
| 2101 | 6 | 0.1550 |
| 2101 | 7 | 0.1524 |
| 2101 | 8 | 0.1495 |
| 2101 | 9 | 0.1460 |
| 2101 | 10 | 0.1419 |
| 2101 | 11 | 0.1373 |
| 2101 | 12 | 0.1323 |
| 2101 | 13 | 0.1270 |
| 2101 | 14 | 0.1216 |
| 2101 | 15 | 0.1162 |
| 2101 | 16 | 0.1108 |
| 2101 | 17 | 0.1054 |
| 2101 | 18 | 0.1002 |
| 2101 | 19 | 0.0951 |
| 2101 | 20 | 0.0903 |
| 2101 | 201 | 0.1583 |
| 2101 | 202 | 0.1596 |
| 2101 | 203 | 0.1609 |
| 2101 | 204 | 0.1621 |
| 2101 | 205 | 0.1632 |
| 2101 | 206 | 0.1642 |

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(c) RoboBAT | c:\a\gelempu3 | Fecha: 7-02-2002
Proyecto: | modificación de carga: 7-02-2002 | Hora: 13:20:58

Desplazamiento de nudos

| Caso | Nudo | UZ (m) |
|---|---|---|
| 2101 | 207 | 0.1651 |
| 2101 | 208 | 0.1657 |
| 2101 | 209 | 0.1661 |
| 2101 | 210 | 0.1661 |
| 2101 | 211 | 0.1657 |
| 2101 | 212 | 0.1650 |
| TOTAL MAX | | 0.2161 |
| Caso | | 901 |
| Nudo | | 201 |
| TOTAL MIN | | 0.0187 |
| Caso | | 1 |
| Nudo | | 20 |

## 3.4. ANÁLISIS DEL TABLERO EN E.L.S.

### 3.4.1. Resumen de tensiones

**LAV. GELIDA. VIADUCTO DE LA RIERA DE RIERUSSA**
**PRETENSADO DE EMPUJE**

Dovela 1 Sección de centro de vano

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| A ($m^2$) | 8.817 | Tendones: | 9 ϕ 0.6" | Tendones | | Excent.(m.) |
| I x ($m^4$) | 11.763 | $P_o$ (kN, t=0) | 1677.3 | Superiores | 18 | 1.009 |
| Wsup ($m^3$) | 9.705 | Pf (kN, fin cons) | 1593.4 | Inferiores | 12 | 1.738 |
| Winf ($m^3$) | 6.231 | | | | | |
| $y_g$ (m) | 1.212 | | | e= | -0.09 | |

| | | | t=0 | Final cons. |
|---|---|---|---|---|
| M (kN*m)= | 0 | $\sigma_{sup}$ (N/$mm^2$) | 5.24 | 4.98 |
| | | $\sigma_{inf}$ (N/$mm^2$) | 6.43 | 6.11 |

| | | | t=0 | Final cons. |
|---|---|---|---|---|
| M⁻ (kN*m)= | -53859.05 | $\sigma_{sup}$ (N/$mm^2$) | -0.31 | -0.57 |
| | | $\sigma_{inf}$ (N/$mm^2$) | 15.08 | 14.75 |

| | | | t=0 | Final cons. |
|---|---|---|---|---|
| M⁺ (kN*m)= | 33981.70 | $\sigma_{sup}$ (N/$mm^2$) | 8.74 | 8.48 |
| | | $\sigma_{inf}$ (N/$mm^2$) | 0.98 | 0.66 |

**LAV. GELIDA. VIADUCTO DE LA RIERA DE RIERUSSA**
**PRETENSADO DE EMPUJE**

Dovela 2 Sección de centro de vano

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| A ($m^2$) | 8.817 | | Tendones: | 9 f 0.6" | Tendones | | Excent.(m.) |
| I x ($m^4$) | 11.763 | | $P_o$ (kN, t=0) | 1677.3 | Superiores | 16 | 1.009 |
| Wsup ($m^3$) | 9.705 | | Pf (kN, fin cons) | 1593.4 | Inferiores | 10 | 1.738 |
| Winf ($m^3$) | 6.231 | | | | | | |
| $y_g$ (m) | 1.212 | | | | e= | -0.05 | |

| | | | t=0 | Final cons. |
|---|---|---|---|---|
| M (kN*m)= | 0 | $\sigma_{sup}$ (N/$mm^2$) | 4.73 | 4.50 |
| | | $\sigma_{inf}$ (N/$mm^2$) | 5.28 | 5.01 |

| | | | t=0 | Final cons. |
|---|---|---|---|---|
| M⁻ (kN*m)= | -39669.68 | $\sigma_{sup}$ (N/$mm^2$) | 0.64 | 0.41 |
| | | $\sigma_{inf}$ (N/$mm^2$) | 11.65 | 11.38 |

| | | | t=0 | Final cons. |
|---|---|---|---|---|
| M⁺ (kN*m)= | 33310.36 | $\sigma_{sup}$ (N/$mm^2$) | 8.16 | 7.93 |
| | | $\sigma_{inf}$ (N/$mm^2$) | -0.07 | -0.33 |

bearing

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**LAV. GELIDA. VIADUCTO DE LA RIERA DE RIERUSSA**
**PRETENSADO DE EMPUJE**

Dovela 2 Sección zona pilas

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| A ($m^2$) | 11.407 | | Tendones: | 9 f 0.6" | Tendones | | Excent.(m.) |
| I x ($m^4$) | 14.033 | | $P_o$ (kN, t=0) | 1677.3 | Superiores | 16 | 1.009 |
| Wsup ($m^3$) | 10.244 | | Pf (kN, fin cons) | 1593.4 | Inferiores | 10 | 1.738 |
| Winf ($m^3$) | 8.112 | | | | | | |
| $y_g$ (m) | 1.370 | | | | e= | -0.05 | |

| | | | t=0 | Final cons. |
|---|---|---|---|---|
| M (kN*m)= | 0 | $\sigma_{sup}$ (N/$mm^2$) | 3.62 | 3.44 |
| | | $\sigma_{inf}$ (N/$mm^2$) | 4.08 | 3.87 |

| | | | t=0 | Final cons. |
|---|---|---|---|---|
| M⁻ (kN*m)= | -38106.5 | $\sigma_{sup}$ (N/$mm^2$) | -0.10 | -0.28 |
| | | $\sigma_{inf}$ (N/$mm^2$) | 8.78 | 8.57 |

| | | | t=0 | Final cons. |
|---|---|---|---|---|
| M⁺ (kN*m)= | 31292.00 | $\sigma_{sup}$ (N/$mm^2$) | 6.68 | 6.49 |
| | | $\sigma_{inf}$ (N/$mm^2$) | 0.22 | 0.02 |



bearing

**LAV. GELIDA. VIADUCTO DE LA RIERA DE RIERUSSA**
**PRETENSADO DE EMPUJE**

Dovelas 3 y 4 Sección de centro de vano

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| A ($m^2$) | 8.817 | | Tendones: | 9 f 0.6" | Tendones | | Excent.(m.) |
| I x ($m^4$) | 11.763 | | $P_o$ (kN, t=0) | 1677.3 | Superiores | 14 | 1.009 |
| Wsup ($m^3$) | 9.705 | | Pf (kN, fin cons) | 1593.4 | Inferiores | 10 | 1.738 |
| Winf ($m^3$) | 6.231 | | | | | | |
| $y_g$ (m) | 1.212 | | | | e= | -0.14 | |

| | | | t=0 | Final cons. |
|---|---|---|---|---|
| M (kN*m)= | 0 | $\sigma_{sup}$ (N/$mm^2$) | 4.00 | 3.80 |
| | | $\sigma_{inf}$ (N/$mm^2$) | 5.44 | 5.17 |

| | | | t=0 | Final cons. |
|---|---|---|---|---|
| M⁻ (kN*m)= | -30591.1 | $\sigma_{sup}$ (N/$mm^2$) | 0.85 | 0.65 |
| | | $\sigma_{inf}$ (N/$mm^2$) | 10.35 | 10.08 |

| | | | t=0 | Final cons. |
|---|---|---|---|---|
| $M^+$ (kN*m)= | 31995.00 | $\sigma_{sup}$ (N/$mm^2$) | 7.30 | 7.10 |
| | | $\sigma_{inf}$ (N/$mm^2$) | 0.31 | 0.03 |

bearing

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**LAV. GELIDA. VIADUCTO DE LA RIERA DE RIERUSSA**
**PRETENSADO DE EMPUJE**

Dovelas 3 y 4 Sección zona pilas

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| A ($m^2$) | 11.407 | | Tendones: | 9 f 0.6" | Tendones | | Excent.(m.) |
| I x ($m^4$) | 14.033 | | $P_o$ (kN, t=0) | 1677.3 | Superiores | 14 | 1.009 |
| Wsup ($m^3$) | 10.244 | | Pf (kN, fin cons) | 1593.4 | Inferiores | 10 | 1.738 |
| Winf ($m^3$) | 8.112 | | | | | | |
| $y_g$ (m) | 1.370 | | | | e= | -0.14 | |

| | | | t=0 | Final cons. |
|---|---|---|---|---|
| M (kN*m)= | 0 | $\sigma_{sup}$ (N/$mm^2$) | 3.00 | 2.85 |
| | | $\sigma_{inf}$ (N/$mm^2$) | 4.20 | 3.99 |

| | | | t=0 | Final cons. |
|---|---|---|---|---|
| M⁻ (kN*m)= | -20921.1 | $\sigma_{sup}$ (N/$mm^2$) | 0.95 | 0.80 |
| | | $\sigma_{inf}$ (N/$mm^2$) | 6.78 | 6.57 |

| | | | t=0 | Final cons. |
|---|---|---|---|---|
| $M^+$ (kN*m)= | 31995.00 | $\sigma_{sup}$ (N/$mm^2$) | 6.12 | 5.97 |
| | | $\sigma_{inf}$ (N/$mm^2$) | 0.26 | 0.05 |

**LAV. GELIDA. VIADUCTO DE LA RIERA DE RIERUSSA**
**PRETENSADO DE EMPUJE**

Dovelas 5 a 15 Sección de centro de vano

| | | | | | | |
|---|---|---|---|---|---|---|
| A ($m^2$) | 8.817 | Tendones: | 9 f 0.6" | Tendones | | Excent.(m.) |
| I x ($m^4$) | 11.763 | $P_o$ (kN, t=0) | 1677.3 | Superiores | 14 | 1.009 |
| Wsup ($m^3$) | 9.705 | Pf (kN, fin cons) | 1593.4 | Inferiores | 8 | 1.738 |
| Winf ($m^3$) | 6.231 | | | | | |
| $y_g$ (m) | 1.212 | | | e= | 0.01 | |

| | | | t=0 | Final cons. |
|---|---|---|---|---|
| M (kN*m)= | 0 | $\sigma_{sup}$ (N/$mm^2$) | 4.22 | 4.01 |
| | | $\sigma_{inf}$ (N/$mm^2$) | 4.13 | 3.92 |

| | | | t=0 | Final cons. |
|---|---|---|---|---|
| M⁻ (kN*m)= | -37323.34 | $\sigma_{sup}$ (N/$mm^2$) | 0.38 | 0.17 |
| | | $\sigma_{inf}$ (N/$mm^2$) | 10.12 | 9.91 |

| | | | t=0 | Final cons. |
|---|---|---|---|---|
| $M^+$ (kN*m)= | 24424.44 | $\sigma_{sup}$ (N/$mm^2$) | 6.74 | 6.53 |
| | | $\sigma_{inf}$ (N/$mm^2$) | 0.21 | 0.00 |

bearing

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**LAV. GELIDA. VIADUCTO DE LA RIERA DE RIERUSSA**
**PRETENSADO DE EMPUJE**

Dovelas 5 a 15 Sección zona pilas

| | | | | | | |
|---|---|---|---|---|---|---|
| A ($m^2$) | 11.407 | Tendones: | 9 f 0.6" | Tendones | | Excent.(m.) |
| I x ($m^4$) | 14.033 | $P_o$ (kN, t=0) | 1677.3 | Superiores | 14 | 1.009 |
| Wsup ($m^3$) | 10.244 | Pf (kN, fin cons) | 1593.4 | Inferiores | 8 | 1.738 |
| Winf ($m^3$) | 8.112 | | | | | |
| $y_g$ (m) | 1.370 | | | e= | 0.01 | |

| | | | t=0 | Final cons. |
|---|---|---|---|---|
| M (kN*m)= | 0 | $\sigma_{sup}$ (N/$mm^2$) | 3.27 | 3.11 |
| | | $\sigma_{inf}$ (N/$mm^2$) | 3.19 | 3.03 |

| | | | t=0 | Final cons. |
|---|---|---|---|---|
| M⁻ (kN*m)= | -36867.3 | $\sigma_{sup}$ (N/$mm^2$) | -0.33 | -0.49 |
| | | $\sigma_{inf}$ (N/$mm^2$) | 7.73 | 7.57 |

| | | | t=0 | Final cons. |
|---|---|---|---|---|
| $M^+$ (kN*m)= | 24424.40 | $\sigma_{sup}$ (N/$mm^2$) | 5.66 | 5.49 |
| | | $\sigma_{inf}$ (N/$mm^2$) | 0.18 | 0.02 |

### 3.4.2. Cálculo de Fisuración

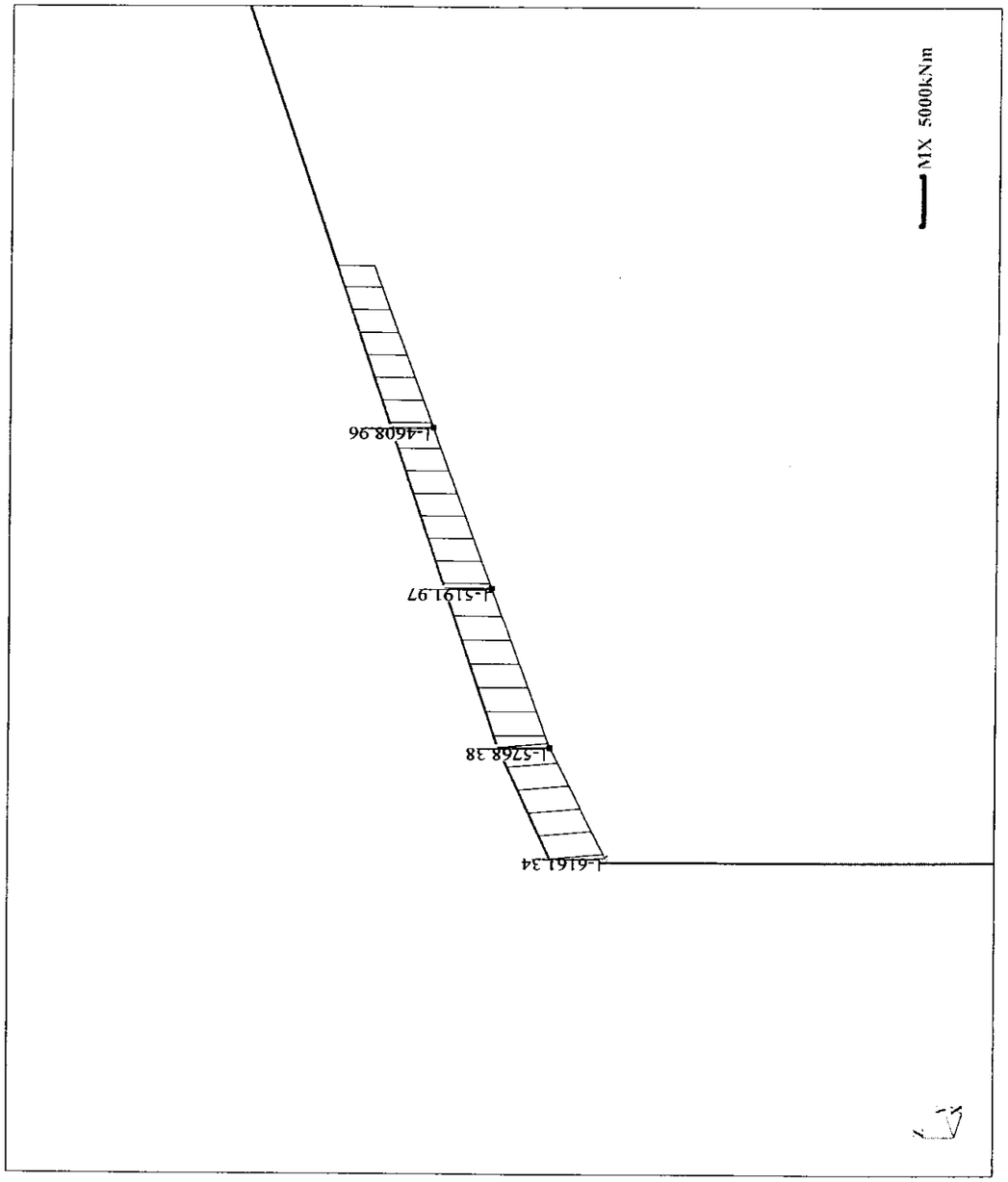
## ELS Fisuración

Como figura en el resumen de tensiones, la máxima tracción en el tablero es de 2'2 $N/mm^2$, inferior al límite de resistencia mínima a tracción del HP-40, $f_{ct,min} = 2'46\ N/mm^2$.

Con este nivel de tensiones en la combinación frecuente, inferior a la resistencia a tracción, no es necesario hacer verificación alguna en cuanto a fisuración.

### 3.4.3. Giro por torsión del tablero

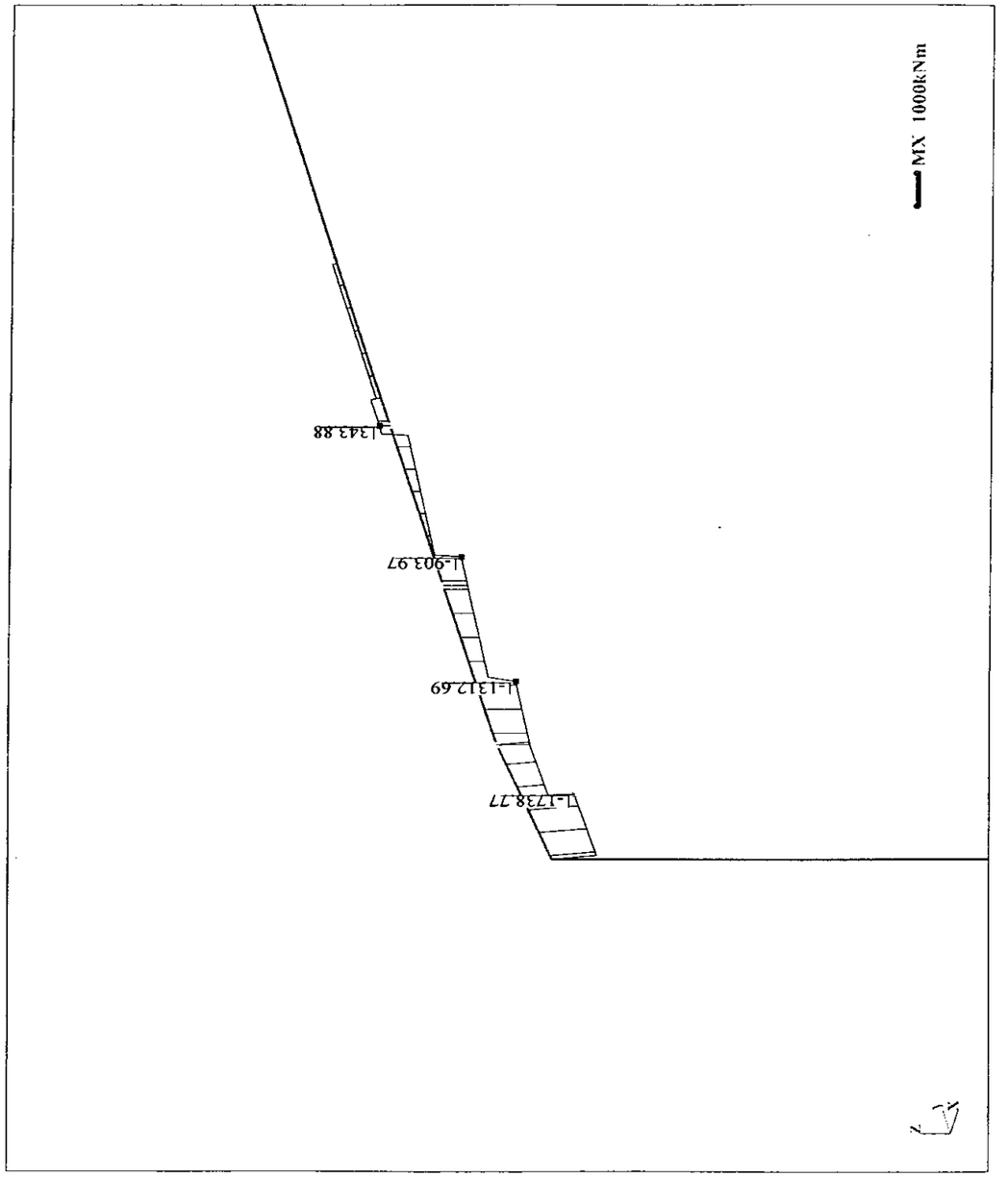
## Vista - MX, casos: 39 (TREN 71 SC UNIFORME POS. 11 DERECHA)








## Vista - MX, casos: 41 (CARRO TREN 71 POSICION 1 DERECHA 300 km/h)



### 3.4.4. Giros en el final del tablero

## Giros en final del tablero

**- Casos: 19A96**

| Nudo/Caso | | Nombre del caso | RX (Rad) |
|---|---|---|---|
| 1/ | 19 | TREN 71 SC UNIFORME POS. 1 DERECHA | -0.000307 |
| 1/ | 20 | TREN 71 SC UNIFORME POS. 1 IZQUIERDA | -0.000307 |
| 1/ | 21 | TREN 71 SC UNIFORME POS. 2 DERECHA | -0.000168 |
| 1/ | 22 | TREN 71 SC UNIFORME POS. 2 IZQUIERDA | -0.000168 |
| 1/ | 23 | TREN 71 SC UNIFORME POS. 3 DERECHA | 0.000139 |
| 1/ | 24 | TREN 71 SC UNIFORME POS. 3 IZQUIERDA | 0.000139 |
| 1/ | 25 | TREN 71 SC UNIFORME POS. 4 DERECHA | 0.000100 |
| 1/ | 26 | TREN 71 SC UNIFORME POS. 4 IZQUIERDA | 0.000100 |
| 1/ | 27 | TREN 71 SC UNIFORME POS. 5 DERECHA | -0.000038 |
| 1/ | 28 | TREN 71 SC UNIFORME POS. 5 IZQUIERDA | -0.000038 |
| 1/ | 29 | TREN 71 SC UNIFORME POS. 6 DERECHA | -0.000029 |
| 1/ | 30 | TREN 71 SC UNIFORME POS. 6 IZQUIERDA | -0.000029 |
| 1/ | 31 | TREN 71 SC UNIFORME POS. 7 DERECHA | 0.000010 |
| 1/ | 32 | TREN 71 SC UNIFORME POS. 7 IZQUIERDA | 0.000010 |
| 1/ | 33 | TREN 71 SC UNIFORME POS. 8 DERECHA | 0.000007 |
| 1/ | 34 | TREN 71 SC UNIFORME POS. 8 IZQUIERDA | 0.000007 |
| 1/ | 35 | TREN 71 SC UNIFORME POS. 9 DERECHA | -0.000003 |
| 1/ | 36 | TREN 71 SC UNIFORME POS. 9 IZQUIERDA | -0.000003 |
| 1/ | 37 | TREN 71 SC UNIFORME POS. 10 DERECHA | -0.000002 |
| 1/ | 38 | TREN 71 SC UNIFORME POS. 10 IZQUIERDA | -0.000002 |
| 1/ | 39 | TREN 71 SC UNIFORME POS. 11 DERECHA | -0.000199 |
| 1/ | 40 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA | -0.000199 |
| 1/ | 41 | CARRO TREN 71 POSICION 1 DERECHA 300 km/h | -0.000040 |
| 1/ | 42 | CARRO TREN 71 POSICION 1 IZQUIERDA 300 km/h | -0.000040 |
| 1/ | 43 | CARRO TREN 71 POSICION 2 DERECHA 300 km/h | -0.000019 |
| 1/ | 44 | CARRO TREN 71 POSICION 2 IZQUIERDA 300 km/h | -0.000019 |
| 1/ | 45 | CARRO TREN 71 POSICION 3 DERECHA 300 km/h | 0.000010 |
| 1/ | 46 | CARRO TREN 71 POSICION 3 IZQUIERDA 300 km/h | 0.000010 |
| 1/ | 47 | CARRO TREN 71 POSICION 4 DERECHA 300 km/h | 0.000005 |
| 1/ | 48 | CARRO TREN 71 POSICION 4 IZQUIERDA 300 km/h | 0.000005 |
| 1/ | 49 | CARRO TREN 71 POSICION 5 DERECHA 300 km/h | -0.000003 |
| 1/ | 50 | CARRO TREN 71 POSICION 5 IZQUIERDA 300 km/h | -0.000003 |
| 1/ | 51 | CARRO TREN 71 POSICION 6 DERECHA 300 km/h | -0.000002 |
| 1/ | 52 | CARRO TREN 71 POSICION 6 IZQUIERDA 300 km/h | -0.000002 |
| 1/ | 53 | CARRO TREN 71 POSICION 7 DERECHA 300 km/h | 0.000001 |
| 1/ | 54 | CARRO TREN 71 POSICION 7 IZQUIERDA 300 km/h | 0.000001 |
| 1/ | 55 | CARRO TREN 71 POSICION 8 DERECHA 300 km/h | 0.000000 |
| 1/ | 56 | CARRO TREN 71 POSICION 8 IZQUIERDA 300 km/h | 0.000000 |
| 1/ | 57 | CARRO TREN 71 POSICION 9 DERECHA 300 km/h | -0.000000 |
| 1/ | 58 | CARRO TREN 71 POSICION 9 IZQUIERDA 300 km/h | -0.000000 |
| 1/ | 59 | CARRO TREN 71 POSICION 10 DERECHA 300 km/h | -0.000000 |
| 1/ | 60 | CARRO TREN 71 POSICION 10 IZQUIERDA 300 km/ | -0.000000 |
| 1/ | 61 | CARRO TREN 71 POSICION 11 DERECHA 300 km/h | 0.000000 |
| 1/ | 62 | CARRO TREN 71 POSICION 11 IZQUIERDA 300 km/ | 0.000000 |
| 1/ | 63 | CARRO TREN 71 POSICION 12 DERECHA 300 km/h | 0.000000 |
| 1/ | 64 | CARRO TREN 71 POSICION 12 IZQUIERDA 300 km/ | 0.000000 |
| 1/ | 65 | CARRO TREN 71 POSICION 13 DERECHA 300 km/h | -0.000089 |
| 1/ | 66 | CARRO TREN 71 POSICION 13 IZQUIERDA 300 km/ | -0.000089 |
| 1/ | 67 | CARRO TREN 71 POSICION 14 DERECHA 300 km/h | -0.000084 |



ROBOT v 14.5.0
Autor: **EIPSA**
Dirección:
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Archivo: **Gelserec.rtd**
Proyecto: Gelserec

| Nudo/Caso | | Nombre del caso | RX (Rad) |
|---|---|---|---|
| 1/ | 68 | CARRO TREN 71 POSICION 14 IZQUIERDA 300 km/ | -0.000084 |
| 1/ | 69 | CARRO TREN 71 POSICION 15 DERECHA 300 km/h | 0.000032 |
| 1/ | 70 | CARRO TREN 71 POSICION 15 IZQUIERDA 300 km/ | 0.000032 |
| 1/ | 71 | CARRO TREN 71 POSICION 16 DERECHA 300 km/h | 0.000031 |
| 1/ | 72 | CARRO TREN 71 POSICION 16 IZQUIERDA 300 km/ | 0.000031 |
| 1/ | 73 | CARRO TREN 71 POSICION 17 DERECHA 300 km/h | 0.000026 |
| 1/ | 74 | CARRO TREN 71 POSICION 17 IZQUIERDA 300 km/ | 0.000026 |
| 1/ | 75 | CARRO TREN 71 POSICION 18 DERECHA 300 km/h | -0.000009 |
| 1/ | 76 | CARRO TREN 71 POSICION 18 IZQUIERDA 300 km/ | -0.000009 |
| 1/ | 77 | CARRO TREN 71 POSICION 19 DERECHA 300 km/h | -0.000008 |
| 1/ | 78 | CARRO TREN 71 POSICION 19 IZQUIERDA 300 km/ | -0.000008 |
| 1/ | 79 | CARRO TREN 71 POSICION 20 DERECHA 300 km/h | -0.000007 |
| 1/ | 80 | CARRO TREN 71 POSICION 20 IZQUIERDA 300 km/ | -0.000007 |
| 1/ | 81 | CARRO TREN 71 POSICION 21 DERECHA 300 km/h | 0.000002 |
| 1/ | 82 | CARRO TREN 71 POSICION 21 IZQUIERDA 300 km/ | 0.000002 |
| 1/ | 83 | CARRO TREN 71 POSICION 22 DERECHA 300 km/h | 0.000002 |
| 1/ | 84 | CARRO TREN 71 POSICION 22 IZQUIERDA 300 km/ | 0.000002 |
| 1/ | 85 | CARRO TREN 71 POSICION 23 DERECHA 300 km/h | 0.000002 |
| 1/ | 86 | CARRO TREN 71 POSICION 23 IZQUIERDA 300 km/ | 0.000002 |
| 1/ | 87 | CARRO TREN 71 POSICION 24 DERECHA 300 km/h | -0.000001 |
| 1/ | 88 | CARRO TREN 71 POSICION 24 IZQUIERDA 300 km/ | -0.000001 |
| 1/ | 89 | CARRO TREN 71 POSICION 25 DERECHA 300 km/h | -0.000001 |
| 1/ | 90 | CARRO TREN 71 POSICION 25 IZQUIERDA 300 km/ | -0.000001 |
| 1/ | 91 | CARRO TREN 71 POSICION 26 DERECHA 300 km/h | -0.000000 |
| 1/ | 92 | CARRO TREN 71 POSICION 26 IZQUIERDA 300 km/ | -0.000000 |
| 1/ | 93 | CARRO TREN 71 POSICION 27 DERECHA 300 km/h | 0.000000 |
| 1/ | 94 | CARRO TREN 71 POSICION 27 IZQUIERDA 300 km/ | 0.000000 |
| 1/ | 95 | CARRO TREN 71 POSICION 28 DERECHA 300 km/h | 0.000000 |
| 1/ | 96 | CARRO TREN 71 POSICION 28 IZQUIERDA 300 km/ | 0.000000 |

## Giro por gradiente

**- Caso: 141 (GRAD.(5.8 C))**

| Nudo/Caso | Nombre del caso | RX (Rad) |
|---|---|---|
| 1/ 141 | GRAD.(5.8 C) | 0.000178 |

### 3.4.5. Deformaciones horizontales del tablero

## Desplazamientos - Viento

- Casos: 58 59

| Nudo/Caso | | Nombre del caso | RZ (Rad) | UX (mm) |
|---|---|---|---|---|
| 1/ | 58 | VIENTO CONCOMITANTE + | 0.000078 | -0.01 |
| 1/ | 59 | VIENTO DOMINANTE + | 0.000053 | -0.01 |
| 2/ | 58 | VIENTO CONCOMITANTE + | 0.000077 | -0.13 |
| 2/ | 59 | VIENTO DOMINANTE + | 0.000052 | -0.08 |
| 3/ | 58 | VIENTO CONCOMITANTE + | 0.000077 | -0.29 |
| 3/ | 59 | VIENTO DOMINANTE + | 0.000052 | -0.19 |
| 4/ | 58 | VIENTO CONCOMITANTE + | 0.000077 | -0.45 |
| 4/ | 59 | VIENTO DOMINANTE + | 0.000052 | -0.30 |
| 5/ | 58 | VIENTO CONCOMITANTE + | 0.000078 | -0.61 |
| 5/ | 59 | VIENTO DOMINANTE + | 0.000053 | -0.42 |
| 6/ | 58 | VIENTO CONCOMITANTE + | 0.000078 | -0.78 |
| 6/ | 59 | VIENTO DOMINANTE + | 0.000053 | -0.53 |
| 7/ | 58 | VIENTO CONCOMITANTE + | 0.000079 | -0.94 |
| 7/ | 59 | VIENTO DOMINANTE + | 0.000054 | -0.64 |
| 8/ | 58 | VIENTO CONCOMITANTE + | 0.000080 | -1.11 |
| 8/ | 59 | VIENTO DOMINANTE + | 0.000055 | -0.75 |
| 9/ | 58 | VIENTO CONCOMITANTE + | 0.000082 | -1.28 |
| 9/ | 59 | VIENTO DOMINANTE + | 0.000056 | -0.87 |
| 10/ | 58 | VIENTO CONCOMITANTE + | 0.000084 | -1.45 |
| 10/ | 59 | VIENTO DOMINANTE + | 0.000057 | -0.99 |
| 11/ | 58 | VIENTO CONCOMITANTE + | 0.000086 | -1.63 |
| 11/ | 59 | VIENTO DOMINANTE + | 0.000058 | -1.11 |
| 12/ | 58 | VIENTO CONCOMITANTE + | 0.000088 | -1.81 |
| 12/ | 59 | VIENTO DOMINANTE + | 0.000060 | -1.23 |
| 13/ | 58 | VIENTO CONCOMITANTE + | 0.000091 | -2.00 |
| 13/ | 59 | VIENTO DOMINANTE + | 0.000062 | -1.36 |
| 14/ | 58 | VIENTO CONCOMITANTE + | 0.000095 | -2.20 |
| 14/ | 59 | VIENTO DOMINANTE + | 0.000065 | -1.49 |
| 15/ | 58 | VIENTO CONCOMITANTE + | 0.000098 | -2.40 |
| 15/ | 59 | VIENTO DOMINANTE + | 0.000067 | -1.63 |
| 16/ | 58 | VIENTO CONCOMITANTE + | 0.000103 | -2.58 |
| 16/ | 59 | VIENTO DOMINANTE + | 0.000071 | -1.76 |
| 17/ | 58 | VIENTO CONCOMITANTE + | 0.000108 | -2.80 |
| 17/ | 59 | VIENTO DOMINANTE + | 0.000074 | -1.91 |
| 18/ | 58 | VIENTO CONCOMITANTE + | 0.000112 | -3.03 |
| 18/ | 59 | VIENTO DOMINANTE + | 0.000077 | -2.07 |
| 19/ | 58 | VIENTO CONCOMITANTE + | 0.000115 | -3.31 |
| 19/ | 59 | VIENTO DOMINANTE + | 0.000080 | -2.25 |
| 20/ | 58 | VIENTO CONCOMITANTE + | 0.000119 | -3.55 |
| 20/ | 59 | VIENTO DOMINANTE + | 0.000082 | -2.43 |
| 21/ | 58 | VIENTO CONCOMITANTE + | 0.000122 | -3.80 |
| 21/ | 59 | VIENTO DOMINANTE + | 0.000084 | -2.60 |
| 22/ | 58 | VIENTO CONCOMITANTE + | 0.000124 | -4.06 |
| 22/ | 59 | VIENTO DOMINANTE + | 0.000086 | -2.78 |
| 23/ | 58 | VIENTO CONCOMITANTE + | 0.000126 | -4.33 |
| 23/ | 59 | VIENTO DOMINANTE + | 0.000087 | -2.96 |
| 24/ | 58 | VIENTO CONCOMITANTE + | 0.000127 | -4.59 |
| 24/ | 59 | VIENTO DOMINANTE + | 0.000088 | -3.15 |
| 25/ | 58 | VIENTO CONCOMITANTE + | 0.000128 | -4.86 |

| Nudo/Caso | | Nombre del caso | RZ (Rad) | UX (mm) |
|---|---|---|---|---|
| 25/ | 59 | VIENTO DOMINANTE + | 0.000089 | -3.33 |
| 26/ | 58 | VIENTO CONCOMITANTE + | 0.000128 | -5.13 |
| 26/ | 59 | VIENTO DOMINANTE + | 0.000089 | -3.52 |
| 27/ | 58 | VIENTO CONCOMITANTE + | 0.000128 | -5.40 |
| 27/ | 59 | VIENTO DOMINANTE + | 0.000089 | -3.71 |
| 28/ | 58 | VIENTO CONCOMITANTE + | 0.000127 | -5.66 |
| 28/ | 59 | VIENTO DOMINANTE + | 0.000088 | -3.89 |
| 29/ | 58 | VIENTO CONCOMITANTE + | 0.000126 | -5.93 |
| 29/ | 59 | VIENTO DOMINANTE + | 0.000088 | -4.08 |
| 30/ | 58 | VIENTO CONCOMITANTE + | 0.000125 | -6.19 |
| 30/ | 59 | VIENTO DOMINANTE + | 0.000087 | -4.26 |
| 31/ | 58 | VIENTO CONCOMITANTE + | 0.000123 | -6.45 |
| 31/ | 59 | VIENTO DOMINANTE + | 0.000086 | -4.44 |
| 32/ | 58 | VIENTO CONCOMITANTE + | 0.000121 | -6.71 |
| 32/ | 59 | VIENTO DOMINANTE + | 0.000084 | -4.62 |
| 33/ | 58 | VIENTO CONCOMITANTE + | 0.000119 | -6.96 |
| 33/ | 59 | VIENTO DOMINANTE + | 0.000083 | -4.80 |
| 34/ | 58 | VIENTO CONCOMITANTE + | 0.000117 | -7.21 |
| 34/ | 59 | VIENTO DOMINANTE + | 0.000081 | -4.97 |
| 35/ | 58 | VIENTO CONCOMITANTE + | 0.000114 | -7.45 |
| 35/ | 59 | VIENTO DOMINANTE + | 0.000080 | -5.14 |
| 36/ | 58 | VIENTO CONCOMITANTE + | 0.000112 | -7.64 |
| 36/ | 59 | VIENTO DOMINANTE + | 0.000078 | -5.27 |
| 37/ | 58 | VIENTO CONCOMITANTE + | 0.000110 | -7.88 |
| 37/ | 59 | VIENTO DOMINANTE + | 0.000076 | -5.44 |
| 38/ | 58 | VIENTO CONCOMITANTE + | 0.000107 | -8.10 |
| 38/ | 59 | VIENTO DOMINANTE + | 0.000075 | -5.59 |
| 39/ | 58 | VIENTO CONCOMITANTE + | 0.000103 | -8.37 |
| 39/ | 59 | VIENTO DOMINANTE + | 0.000072 | -5.78 |
| 40/ | 58 | VIENTO CONCOMITANTE + | 0.000099 | -8.59 |
| 40/ | 59 | VIENTO DOMINANTE + | 0.000070 | -5.93 |
| 41/ | 58 | VIENTO CONCOMITANTE + | 0.000095 | -8.79 |
| 41/ | 59 | VIENTO DOMINANTE + | 0.000067 | -6.07 |
| 42/ | 58 | VIENTO CONCOMITANTE + | 0.000091 | -8.99 |
| 42/ | 59 | VIENTO DOMINANTE + | 0.000064 | -6.21 |
| 43/ | 58 | VIENTO CONCOMITANTE + | 0.000086 | -9.17 |
| 43/ | 59 | VIENTO DOMINANTE + | 0.000060 | -6.34 |
| 44/ | 58 | VIENTO CONCOMITANTE + | 0.000081 | -9.35 |
| 44/ | 59 | VIENTO DOMINANTE + | 0.000057 | -6.46 |
| 45/ | 58 | VIENTO CONCOMITANTE + | 0.000076 | -9.51 |
| 45/ | 59 | VIENTO DOMINANTE + | 0.000053 | -6.58 |
| 46/ | 58 | VIENTO CONCOMITANTE + | 0.000071 | -9.67 |
| 46/ | 59 | VIENTO DOMINANTE + | 0.000049 | -6.69 |
| 47/ | 58 | VIENTO CONCOMITANTE + | 0.000065 | -9.81 |
| 47/ | 59 | VIENTO DOMINANTE + | 0.000045 | -6.79 |
| 48/ | 58 | VIENTO CONCOMITANTE + | 0.000059 | -9.94 |
| 48/ | 59 | VIENTO DOMINANTE + | 0.000042 | -6.88 |
| 49/ | 58 | VIENTO CONCOMITANTE + | 0.000054 | -10.06 |
| 49/ | 59 | VIENTO DOMINANTE + | 0.000038 | -6.96 |
| 50/ | 58 | VIENTO CONCOMITANTE + | 0.000048 | -10.16 |
| 50/ | 59 | VIENTO DOMINANTE + | 0.000033 | -7.03 |
| 51/ | 58 | VIENTO CONCOMITANTE + | 0.000042 | -10.26 |





| Nudo/Caso | | Nombre del caso | RZ (Rad) | UX (mm) |
|---|---|---|---|---|
| 51/ | 59 | VIENTO DOMINANTE + | 0.000029 | -7.10 |
| 52/ | 58 | VIENTO CONCOMITANTE + | 0.000037 | -10.34 |
| 52/ | 59 | VIENTO DOMINANTE + | 0.000025 | -7.16 |
| 53/ | 58 | VIENTO CONCOMITANTE + | 0.000031 | -10.41 |
| 53/ | 59 | VIENTO DOMINANTE + | 0.000021 | -7.21 |
| 54/ | 58 | VIENTO CONCOMITANTE + | 0.000025 | -10.47 |
| 54/ | 59 | VIENTO DOMINANTE + | 0.000018 | -7.25 |
| 55/ | 58 | VIENTO CONCOMITANTE + | 0.000020 | -10.52 |
| 55/ | 59 | VIENTO DOMINANTE + | 0.000014 | -7.28 |
| 56/ | 58 | VIENTO CONCOMITANTE + | 0.000015 | -10.50 |
| 56/ | 59 | VIENTO DOMINANTE + | 0.000010 | -7.27 |
| 57/ | 58 | VIENTO CONCOMITANTE + | 0.000010 | -10.52 |
| 57/ | 59 | VIENTO DOMINANTE + | 0.000007 | -7.29 |
| 58/ | 58 | VIENTO CONCOMITANTE + | 0.000006 | -10.54 |
| 58/ | 59 | VIENTO DOMINANTE + | 0.000004 | -7.30 |
| 59/ | 58 | VIENTO CONCOMITANTE + | 0.000001 | -10.61 |
| 59/ | 59 | VIENTO DOMINANTE + | 0.000001 | -7.34 |
| 60/ | 58 | VIENTO CONCOMITANTE + | -0.000005 | -10.60 |
| 60/ | 59 | VIENTO DOMINANTE + | -0.000003 | -7.34 |
| 61/ | 58 | VIENTO CONCOMITANTE + | -0.000011 | -10.59 |
| 61/ | 59 | VIENTO DOMINANTE + | -0.000007 | -7.33 |
| 62/ | 58 | VIENTO CONCOMITANTE + | -0.000016 | -10.56 |
| 62/ | 59 | VIENTO DOMINANTE + | -0.000011 | -7.31 |
| 63/ | 58 | VIENTO CONCOMITANTE + | -0.000022 | -10.52 |
| 63/ | 59 | VIENTO DOMINANTE + | -0.000015 | -7.28 |
| 64/ | 58 | VIENTO CONCOMITANTE + | -0.000028 | -10.46 |
| 64/ | 59 | VIENTO DOMINANTE + | -0.000020 | -7.24 |
| 65/ | 58 | VIENTO CONCOMITANTE + | -0.000034 | -10.40 |
| 65/ | 59 | VIENTO DOMINANTE + | -0.000024 | -7.20 |
| 66/ | 58 | VIENTO CONCOMITANTE + | -0.000040 | -10.32 |
| 66/ | 59 | VIENTO DOMINANTE + | -0.000028 | -7.14 |
| 67/ | 58 | VIENTO CONCOMITANTE + | -0.000046 | -10.23 |
| 67/ | 59 | VIENTO DOMINANTE + | -0.000032 | -7.08 |
| 68/ | 58 | VIENTO CONCOMITANTE + | -0.000052 | -10.13 |
| 68/ | 59 | VIENTO DOMINANTE + | -0.000036 | -7.01 |
| 69/ | 58 | VIENTO CONCOMITANTE + | -0.000058 | -10.01 |
| 69/ | 59 | VIENTO DOMINANTE + | -0.000040 | -6.93 |
| 70/ | 58 | VIENTO CONCOMITANTE + | -0.000063 | -9.88 |
| 70/ | 59 | VIENTO DOMINANTE + | -0.000044 | -6.84 |
| 71/ | 58 | VIENTO CONCOMITANTE + | -0.000069 | -9.75 |
| 71/ | 59 | VIENTO DOMINANTE + | -0.000048 | -6.74 |
| 72/ | 58 | VIENTO CONCOMITANTE + | -0.000074 | -9.60 |
| 72/ | 59 | VIENTO DOMINANTE + | -0.000052 | -6.64 |
| 73/ | 58 | VIENTO CONCOMITANTE + | -0.000079 | -9.44 |
| 73/ | 59 | VIENTO DOMINANTE + | -0.000055 | -6.53 |
| 74/ | 58 | VIENTO CONCOMITANTE + | -0.000083 | -9.27 |
| 74/ | 59 | VIENTO DOMINANTE + | -0.000058 | -6.41 |
| 75/ | 58 | VIENTO CONCOMITANTE + | -0.000088 | -9.09 |
| 75/ | 59 | VIENTO DOMINANTE + | -0.000061 | -6.28 |
| 76/ | 58 | VIENTO CONCOMITANTE + | -0.000092 | -8.85 |
| 76/ | 59 | VIENTO DOMINANTE + | -0.000064 | -6.11 |
| 77/ | 58 | VIENTO CONCOMITANTE + | -0.000095 | -8.65 |

| Nudo/Caso | | Nombre del caso | RZ (Rad) | UX (mm) |
|---|---|---|---|---|
| 77/ | 59 | VIENTO DOMINANTE + | -0.000066 | -5.98 |
| 78/ | 58 | VIENTO CONCOMITANTE + | -0.000098 | -8.45 |
| 78/ | 59 | VIENTO DOMINANTE + | -0.000068 | -5.83 |
| 79/ | 58 | VIENTO CONCOMITANTE + | -0.000101 | -8.29 |
| 79/ | 59 | VIENTO DOMINANTE + | -0.000071 | -5.72 |
| 80/ | 58 | VIENTO CONCOMITANTE + | -0.000105 | -8.07 |
| 80/ | 59 | VIENTO DOMINANTE + | -0.000073 | -5.57 |
| 81/ | 58 | VIENTO CONCOMITANTE + | -0.000108 | -7.85 |
| 81/ | 59 | VIENTO DOMINANTE + | -0.000075 | -5.42 |
| 82/ | 58 | VIENTO CONCOMITANTE + | -0.000111 | -7.62 |
| 82/ | 59 | VIENTO DOMINANTE + | -0.000077 | -5.26 |
| 83/ | 58 | VIENTO CONCOMITANTE + | -0.000114 | -7.38 |
| 83/ | 59 | VIENTO DOMINANTE + | -0.000079 | -5.09 |
| 84/ | 58 | VIENTO CONCOMITANTE + | -0.000117 | -7.14 |
| 84/ | 59 | VIENTO DOMINANTE + | -0.000081 | -4.92 |
| 85/ | 58 | VIENTO CONCOMITANTE + | -0.000120 | -6.89 |
| 85/ | 59 | VIENTO DOMINANTE + | -0.000083 | -4.75 |
| 86/ | 58 | VIENTO CONCOMITANTE + | -0.000122 | -6.64 |
| 86/ | 59 | VIENTO DOMINANTE + | -0.000085 | -4.57 |
| 87/ | 58 | VIENTO CONCOMITANTE + | -0.000124 | -6.38 |
| 87/ | 59 | VIENTO DOMINANTE + | -0.000086 | -4.40 |
| 88/ | 58 | VIENTO CONCOMITANTE + | -0.000126 | -6.12 |
| 88/ | 59 | VIENTO DOMINANTE + | -0.000087 | -4.21 |
| 89/ | 58 | VIENTO CONCOMITANTE + | -0.000127 | -5.85 |
| 89/ | 59 | VIENTO DOMINANTE + | -0.000088 | -4.03 |
| 90/ | 58 | VIENTO CONCOMITANTE + | -0.000128 | -5.58 |
| 90/ | 59 | VIENTO DOMINANTE + | -0.000089 | -3.84 |
| 91/ | 58 | VIENTO CONCOMITANTE + | -0.000128 | -5.31 |
| 91/ | 59 | VIENTO DOMINANTE + | -0.000089 | -3.65 |
| 92/ | 58 | VIENTO CONCOMITANTE + | -0.000129 | -5.04 |
| 92/ | 59 | VIENTO DOMINANTE + | -0.000089 | -3.47 |
| 93/ | 58 | VIENTO CONCOMITANTE + | -0.000128 | -4.78 |
| 93/ | 59 | VIENTO DOMINANTE + | -0.000089 | -3.28 |
| 94/ | 58 | VIENTO CONCOMITANTE + | -0.000127 | -4.51 |
| 94/ | 59 | VIENTO DOMINANTE + | -0.000088 | -3.09 |
| 95/ | 58 | VIENTO CONCOMITANTE + | -0.000126 | -4.24 |
| 95/ | 59 | VIENTO DOMINANTE + | -0.000087 | -2.91 |
| 96/ | 58 | VIENTO CONCOMITANTE + | -0.000125 | -3.94 |
| 96/ | 59 | VIENTO DOMINANTE + | -0.000086 | -2.70 |
| 97/ | 58 | VIENTO CONCOMITANTE + | -0.000122 | -3.68 |
| 97/ | 59 | VIENTO DOMINANTE + | -0.000084 | -2.52 |
| 98/ | 58 | VIENTO CONCOMITANTE + | -0.000120 | -3.43 |
| 98/ | 59 | VIENTO DOMINANTE + | -0.000083 | -2.35 |
| 99/ | 58 | VIENTO CONCOMITANTE + | -0.000117 | -3.21 |
| 99/ | 59 | VIENTO DOMINANTE + | -0.000080 | -2.20 |
| 100/ | 58 | VIENTO CONCOMITANTE + | -0.000115 | -2.97 |
| 100/ | 59 | VIENTO DOMINANTE + | -0.000079 | -2.03 |
| 101/ | 58 | VIENTO CONCOMITANTE + | -0.000113 | -2.73 |
| 101/ | 59 | VIENTO DOMINANTE + | -0.000078 | -1.87 |
| 102/ | 58 | VIENTO CONCOMITANTE + | -0.000112 | -2.49 |
| 102/ | 59 | VIENTO DOMINANTE + | -0.000077 | -1.71 |
| 103/ | 58 | VIENTO CONCOMITANTE + | -0.000111 | -2.26 |





| Nudo/Caso | | Nombre del caso | RZ (Rad) | UX (mm) |
|---|---|---|---|---|
| 103/ | 59 | VIENTO DOMINANTE + | -0.000076 | -1.54 |
| 104/ | 58 | VIENTO CONCOMITANTE + | -0.000110 | -2.03 |
| 104/ | 59 | VIENTO DOMINANTE + | -0.000076 | -1.39 |
| 105/ | 58 | VIENTO CONCOMITANTE + | -0.000110 | -1.80 |
| 105/ | 59 | VIENTO DOMINANTE + | -0.000075 | -1.23 |
| 106/ | 58 | VIENTO CONCOMITANTE + | -0.000109 | -1.57 |
| 106/ | 59 | VIENTO DOMINANTE + | -0.000075 | -1.07 |
| 107/ | 58 | VIENTO CONCOMITANTE + | -0.000109 | -1.34 |
| 107/ | 59 | VIENTO DOMINANTE + | -0.000075 | -0.91 |
| 108/ | 58 | VIENTO CONCOMITANTE + | -0.000109 | -1.11 |
| 108/ | 59 | VIENTO DOMINANTE + | -0.000075 | -0.76 |
| 109/ | 58 | VIENTO CONCOMITANTE + | -0.000109 | -0.88 |
| 109/ | 59 | VIENTO DOMINANTE + | -0.000075 | -0.60 |
| 110/ | 58 | VIENTO CONCOMITANTE + | -0.000109 | -0.65 |
| 110/ | 59 | VIENTO DOMINANTE + | -0.000075 | -0.44 |
| 111/ | 58 | VIENTO CONCOMITANTE + | -0.000109 | -0.42 |
| 111/ | 59 | VIENTO DOMINANTE + | -0.000075 | -0.29 |
| 112/ | 58 | VIENTO CONCOMITANTE + | -0.000109 | -0.19 |
| 112/ | 59 | VIENTO DOMINANTE + | -0.000075 | -0.13 |
| 113/ | 58 | VIENTO CONCOMITANTE + | -0.000110 | -0.02 |
| 113/ | 59 | VIENTO DOMINANTE + | -0.000075 | -0.01 |

## Desplazamientos - Casos: 19A96 : Envolvente: 1

- Casos: 19A96

| Nudo/Caso | | RZ (Rad) | UX (mm) | Nombre del caso |
|---|---|---|---|---|
| 1/ | 40 | **0.000030>>** | -0.02 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 1/ | 39 | **-0.000069<<** | 0.04 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 1/ | 21 | -0.000062 | **0.04>>** | TREN 71 SC UNIFORME POS. 2 DERECHA |
| 1/ | 22 | 0.000026 | **-0.02<<** | TREN 71 SC UNIFORME POS. 2 IZQUIERDA |
| 2/ | 40 | **0.000028>>** | -0.07 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 2/ | 39 | **-0.000066<<** | 0.15 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 2/ | 39 | -0.000066 | **0.15>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 2/ | 40 | 0.000028 | **-0.07<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 3/ | 40 | **0.000028>>** | -0.13 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 3/ | 39 | **-0.000066<<** | 0.28 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 3/ | 39 | -0.000066 | **0.28>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 3/ | 40 | 0.000028 | **-0.13<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 4/ | 40 | **0.000028>>** | -0.18 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 4/ | 39 | **-0.000066<<** | 0.42 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 4/ | 39 | -0.000066 | **0.42>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 4/ | 40 | 0.000028 | **-0.18<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 5/ | 40 | **0.000028>>** | -0.24 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 5/ | 39 | **-0.000065<<** | 0.56 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 5/ | 39 | -0.000065 | **0.56>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 5/ | 40 | 0.000028 | **-0.24<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 6/ | 40 | **0.000028>>** | -0.30 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 6/ | 39 | **-0.000065<<** | 0.70 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 6/ | 39 | -0.000065 | **0.70>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 6/ | 40 | 0.000028 | **-0.30<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 7/ | 40 | **0.000028>>** | -0.36 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 7/ | 39 | **-0.000064<<** | 0.83 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 7/ | 39 | -0.000064 | **0.83>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 7/ | 40 | 0.000028 | **-0.36<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 8/ | 40 | **0.000028>>** | -0.42 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 8/ | 39 | **-0.000064<<** | 0.97 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 8/ | 39 | -0.000064 | **0.97>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 8/ | 40 | 0.000028 | **-0.42<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 9/ | 40 | **0.000028>>** | -0.48 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 9/ | 39 | **-0.000063<<** | 1.10 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 9/ | 39 | -0.000063 | **1.10>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 9/ | 40 | 0.000028 | **-0.48<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 10/ | 40 | **0.000028>>** | -0.54 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 10/ | 39 | **-0.000062<<** | 1.23 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 10/ | 39 | -0.000062 | **1.23>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 10/ | 40 | 0.000028 | **-0.54<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 11/ | 40 | **0.000027>>** | -0.59 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 11/ | 39 | **-0.000061<<** | 1.36 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 11/ | 39 | -0.000061 | **1.36>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 11/ | 40 | 0.000027 | **-0.59<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 12/ | 40 | **0.000027>>** | -0.65 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 12/ | 39 | **-0.000060<<** | 1.49 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 12/ | 39 | -0.000060 | **1.49>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 12/ | 40 | 0.000027 | **-0.65<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 13/ | 40 | **0.000027>>** | -0.71 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |





| Nudo/Caso | | RZ (Rad) | UX (mm) | Nombre del caso |
|---|---|---|---|---|
| 13/ | 39 | **-0.000059<<** | 1.61 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 13/ | 39 | -0.000059 | **1.61>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 13/ | 40 | 0.000027 | **-0.71<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 14/ | 40 | **0.000026>>** | -0.76 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 14/ | 39 | **-0.000059<<** | 1.74 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 14/ | 39 | -0.000059 | **1.74>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 14/ | 40 | 0.000026 | **-0.76<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 15/ | 40 | **0.000025>>** | -0.82 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 15/ | 39 | **-0.000058<<** | 1.86 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 15/ | 39 | -0.000058 | **1.86>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 15/ | 40 | 0.000025 | **-0.82<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 16/ | 40 | **0.000024>>** | -0.85 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 16/ | 39 | **-0.000056<<** | 1.94 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 16/ | 39 | -0.000056 | **1.94>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 16/ | 40 | 0.000024 | **-0.85<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 17/ | 40 | **0.000023>>** | -0.90 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 17/ | 39 | **-0.000055<<** | 2.06 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 17/ | 39 | -0.000055 | **2.06>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 17/ | 40 | 0.000023 | **-0.90<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 18/ | 40 | **0.000022>>** | -0.94 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 18/ | 39 | **-0.000054<<** | 2.17 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 18/ | 39 | -0.000054 | **2.17>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 18/ | 40 | 0.000022 | **-0.94<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 19/ | 40 | **0.000020>>** | -1.01 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 19/ | 39 | **-0.000050<<** | 2.32 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 19/ | 39 | -0.000050 | **2.32>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 19/ | 40 | 0.000020 | **-1.01<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 20/ | 40 | **0.000019>>** | -1.05 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 20/ | 39 | **-0.000049<<** | 2.43 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 20/ | 39 | -0.000049 | **2.43>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 20/ | 40 | 0.000019 | **-1.05<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 21/ | 40 | **0.000019>>** | -1.09 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 21/ | 39 | **-0.000049<<** | 2.53 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 21/ | 39 | -0.000049 | **2.53>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 21/ | 40 | 0.000019 | **-1.09<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 22/ | 40 | **0.000018>>** | -1.13 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 22/ | 39 | **-0.000048<<** | 2.63 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 22/ | 39 | -0.000048 | **2.63>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 22/ | 40 | 0.000018 | **-1.13<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 23/ | 40 | **0.000018>>** | -1.17 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 23/ | 39 | **-0.000047<<** | 2.73 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 23/ | 39 | -0.000047 | **2.73>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 23/ | 40 | 0.000018 | **-1.17<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 24/ | 40 | **0.000018>>** | -1.20 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 24/ | 39 | **-0.000047<<** | 2.83 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 24/ | 39 | -0.000047 | **2.83>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 24/ | 40 | 0.000018 | **-1.20<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 25/ | 40 | **0.000017>>** | -1.24 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 25/ | 39 | **-0.000046<<** | 2.93 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 25/ | 39 | -0.000046 | **2.93>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 25/ | 40 | 0.000017 | **-1.24<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 26/ | 40 | **0.000017>>** | -1.28 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |

| Nudo/Caso | RZ (Rad) | UX (mm) | Nombre del caso |
|---|---|---|---|
| 26/ 39 | **-0.000046<<** | 3.03 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 26/ 39 | -0.000046 | **3.03>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 26/ 40 | 0.000017 | **-1.28<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 27/ 40 | **0.000017>>** | -1.31 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 27/ 39 | **-0.000046<<** | 3.12 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 27/ 39 | -0.000046 | **3.12>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 27/ 40 | 0.000017 | **-1.31<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 28/ 40 | **0.000017>>** | -1.35 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 28/ 39 | **-0.000046<<** | 3.22 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 28/ 39 | -0.000046 | **3.22>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 28/ 40 | 0.000017 | **-1.35<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 29/ 40 | **0.000017>>** | -1.38 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 29/ 39 | **-0.000046<<** | 3.31 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 29/ 39 | -0.000046 | **3.31>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 29/ 40 | 0.000017 | **-1.38<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 30/ 40 | **0.000017>>** | -1.42 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 30/ 29 | **-0.000046<<** | 1.42 | TREN 71 SC UNIFORME POS. 6 DERECHA |
| 30/ 39 | -0.000046 | **3.41>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 30/ 40 | 0.000017 | **-1.42<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 31/ 40 | **0.000017>>** | -1.46 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 31/ 29 | **-0.000048<<** | 1.52 | TREN 71 SC UNIFORME POS. 6 DERECHA |
| 31/ 39 | -0.000046 | **3.51>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 31/ 40 | 0.000017 | **-1.46<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 32/ 40 | **0.000017>>** | -1.49 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 32/ 29 | **-0.000049<<** | 1.62 | TREN 71 SC UNIFORME POS. 6 DERECHA |
| 32/ 39 | -0.000047 | **3.61>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 32/ 40 | 0.000017 | **-1.49<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 33/ 40 | **0.000017>>** | -1.53 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 33/ 29 | **-0.000051<<** | 1.72 | TREN 71 SC UNIFORME POS. 6 DERECHA |
| 33/ 39 | -0.000048 | **3.70>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 33/ 40 | 0.000017 | **-1.53<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 34/ 40 | **0.000017>>** | -1.56 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 34/ 29 | **-0.000052<<** | 1.83 | TREN 71 SC UNIFORME POS. 6 DERECHA |
| 34/ 39 | -0.000049 | **3.81>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 34/ 40 | 0.000017 | **-1.56<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 35/ 40 | **0.000017>>** | -1.60 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 35/ 29 | **-0.000053<<** | 1.94 | TREN 71 SC UNIFORME POS. 6 DERECHA |
| 35/ 39 | -0.000050 | **3.91>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 35/ 40 | 0.000017 | **-1.60<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 36/ 21 | **0.000017>>** | 1.76 | TREN 71 SC UNIFORME POS. 2 DERECHA |
| 36/ 29 | **-0.000055<<** | 2.02 | TREN 71 SC UNIFORME POS. 6 DERECHA |
| 36/ 39 | -0.000049 | **3.95>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 36/ 40 | 0.000016 | **-1.60<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 37/ 21 | **0.000018>>** | 1.72 | TREN 71 SC UNIFORME POS. 2 DERECHA |
| 37/ 29 | **-0.000056<<** | 2.14 | TREN 71 SC UNIFORME POS. 6 DERECHA |
| 37/ 39 | -0.000050 | **4.05>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 37/ 40 | 0.000015 | **-1.64<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 38/ 21 | **0.000018>>** | 1.69 | TREN 71 SC UNIFORME POS. 2 DERECHA |
| 38/ 29 | **-0.000057<<** | 2.26 | TREN 71 SC UNIFORME POS. 6 DERECHA |
| 38/ 39 | -0.000052 | **4.16>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 38/ 40 | 0.000015 | **-1.67<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 39/ 21 | **0.000019>>** | 1.67 | TREN 71 SC UNIFORME POS. 2 DERECHA |





| Nudo/Caso | RZ (Rad) | UX (mm) | Nombre del caso |
|---|---|---|---|
| 39/ 29 | **-0.000054<<** | 2.42 | TREN 71 SC UNIFORME POS. 6 DERECHA |
| 39/ 39 | -0.000050 | **4.33>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 39/ 40 | 0.000014 | **-1.73<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 40/ 21 | **0.000019>>** | 1.63 | TREN 71 SC UNIFORME POS. 2 DERECHA |
| 40/ 29 | **-0.000055<<** | 2.53 | TREN 71 SC UNIFORME POS. 6 DERECHA |
| 40/ 39 | -0.000051 | **4.44>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 40/ 40 | 0.000013 | **-1.76<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 41/ 21 | **0.000019>>** | 1.59 | TREN 71 SC UNIFORME POS. 2 DERECHA |
| 41/ 29 | **-0.000054<<** | 2.64 | TREN 71 SC UNIFORME POS. 6 DERECHA |
| 41/ 39 | -0.000051 | **4.55>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 41/ 40 | 0.000013 | **-1.79<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 42/ 21 | **0.000020>>** | 1.55 | TREN 71 SC UNIFORME POS. 2 DERECHA |
| 42/ 29 | **-0.000054<<** | 2.76 | TREN 71 SC UNIFORME POS. 6 DERECHA |
| 42/ 39 | -0.000051 | **4.65>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 42/ 40 | 0.000013 | **-1.82<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 43/ 21 | **0.000020>>** | 1.51 | TREN 71 SC UNIFORME POS. 2 DERECHA |
| 43/ 29 | **-0.000053<<** | 2.87 | TREN 71 SC UNIFORME POS. 6 DERECHA |
| 43/ 39 | -0.000051 | **4.76>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 43/ 40 | 0.000013 | **-1.84<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 44/ 21 | **0.000020>>** | 1.47 | TREN 71 SC UNIFORME POS. 2 DERECHA |
| 44/ 33 | **-0.000052<<** | 1.53 | TREN 71 SC UNIFORME POS. 8 DERECHA |
| 44/ 39 | -0.000050 | **4.86>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 44/ 40 | 0.000013 | **-1.87<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 45/ 21 | **0.000021>>** | 1.42 | TREN 71 SC UNIFORME POS. 2 DERECHA |
| 45/ 33 | **-0.000053<<** | 1.64 | TREN 71 SC UNIFORME POS. 8 DERECHA |
| 45/ 39 | -0.000049 | **4.97>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 45/ 40 | 0.000013 | **-1.90<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 46/ 21 | **0.000021>>** | 1.38 | TREN 71 SC UNIFORME POS. 2 DERECHA |
| 46/ 33 | **-0.000053<<** | 1.75 | TREN 71 SC UNIFORME POS. 8 DERECHA |
| 46/ 39 | -0.000047 | **5.07>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 46/ 40 | 0.000013 | **-1.93<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 47/ 21 | **0.000021>>** | 1.34 | TREN 71 SC UNIFORME POS. 2 DERECHA |
| 47/ 33 | **-0.000053<<** | 1.86 | TREN 71 SC UNIFORME POS. 8 DERECHA |
| 47/ 39 | -0.000045 | **5.17>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 47/ 40 | 0.000012 | **-1.95<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 48/ 21 | **0.000021>>** | 1.29 | TREN 71 SC UNIFORME POS. 2 DERECHA |
| 48/ 33 | **-0.000053<<** | 1.97 | TREN 71 SC UNIFORME POS. 8 DERECHA |
| 48/ 39 | -0.000043 | **5.26>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 48/ 40 | 0.000012 | **-1.98<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 49/ 21 | **0.000021>>** | 1.25 | TREN 71 SC UNIFORME POS. 2 DERECHA |
| 49/ 33 | **-0.000053<<** | 2.09 | TREN 71 SC UNIFORME POS. 8 DERECHA |
| 49/ 39 | -0.000041 | **5.35>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 49/ 40 | 0.000012 | **-2.00<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 50/ 21 | **0.000021>>** | 1.20 | TREN 71 SC UNIFORME POS. 2 DERECHA |
| 50/ 33 | **-0.000053<<** | 2.20 | TREN 71 SC UNIFORME POS. 8 DERECHA |
| 50/ 39 | -0.000038 | **5.43>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 50/ 40 | 0.000011 | **-2.03<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 51/ 21 | **0.000021>>** | 1.16 | TREN 71 SC UNIFORME POS. 2 DERECHA |
| 51/ 33 | **-0.000052<<** | 2.31 | TREN 71 SC UNIFORME POS. 8 DERECHA |
| 51/ 39 | -0.000035 | **5.50>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 51/ 40 | 0.000011 | **-2.05<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 52/ 21 | **0.000021>>** | 1.11 | TREN 71 SC UNIFORME POS. 2 DERECHA |

| Nudo/Caso | RZ (Rad) | UX (mm) | Nombre del caso |
|---|---|---|---|
| 52/ 33 | **-0.000051<<** | 2.41 | TREN 71 SC UNIFORME POS. 8 DERECHA |
| 52/ 39 | -0.000032 | **5.57>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 52/ 40 | 0.000010 | **-2.07<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 53/ 21 | **0.000021>>** | 1.07 | TREN 71 SC UNIFORME POS. 2 DERECHA |
| 53/ 33 | **-0.000049<<** | 2.52 | TREN 71 SC UNIFORME POS. 8 DERECHA |
| 53/ 39 | -0.000028 | **5.64>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 53/ 40 | 0.000009 | **-2.09<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 54/ 25 | **0.000023>>** | 2.92 | TREN 71 SC UNIFORME POS. 4 DERECHA |
| 54/ 33 | **-0.000048<<** | 2.62 | TREN 71 SC UNIFORME POS. 8 DERECHA |
| 54/ 39 | -0.000024 | **5.69>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 54/ 40 | 0.000008 | **-2.11<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 55/ 25 | **0.000026>>** | 2.87 | TREN 71 SC UNIFORME POS. 4 DERECHA |
| 55/ 33 | **-0.000046<<** | 2.72 | TREN 71 SC UNIFORME POS. 8 DERECHA |
| 55/ 39 | -0.000020 | **5.74>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 55/ 40 | 0.000007 | **-2.12<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 56/ 25 | **0.000031>>** | 2.77 | TREN 71 SC UNIFORME POS. 4 DERECHA |
| 56/ 33 | **-0.000044<<** | 2.79 | TREN 71 SC UNIFORME POS. 8 DERECHA |
| 56/ 39 | -0.000014 | **5.71>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 56/ 40 | 0.000004 | **-2.10<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 57/ 25 | **0.000034>>** | 2.70 | TREN 71 SC UNIFORME POS. 4 DERECHA |
| 57/ 33 | **-0.000042<<** | 2.88 | TREN 71 SC UNIFORME POS. 8 DERECHA |
| 57/ 39 | -0.000010 | **5.73>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 57/ 40 | 0.000003 | **-2.11<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 58/ 25 | **0.000036>>** | 2.63 | TREN 71 SC UNIFORME POS. 4 DERECHA |
| 58/ 33 | **-0.000040<<** | 2.96 | TREN 71 SC UNIFORME POS. 8 DERECHA |
| 58/ 39 | -0.000005 | **5.75>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 58/ 40 | 0.000002 | **-2.11<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 59/ 25 | **0.000038>>** | 2.58 | TREN 71 SC UNIFORME POS. 4 DERECHA |
| 59/ 33 | **-0.000035<<** | 3.08 | TREN 71 SC UNIFORME POS. 8 DERECHA |
| 59/ 39 | 0.000001 | **5.82>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 59/ 40 | -0.000001 | **-2.15<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 60/ 25 | **0.000040>>** | 2.50 | TREN 71 SC UNIFORME POS. 4 DERECHA |
| 60/ 33 | **-0.000032<<** | 3.15 | TREN 71 SC UNIFORME POS. 8 DERECHA |
| 60/ 39 | 0.000005 | **5.81>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 60/ 40 | -0.000002 | **-2.14<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 61/ 25 | **0.000042>>** | 2.41 | TREN 71 SC UNIFORME POS. 4 DERECHA |
| 61/ 33 | **-0.000029<<** | 3.22 | TREN 71 SC UNIFORME POS. 8 DERECHA |
| 61/ 39 | 0.000009 | **5.80>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 61/ 40 | -0.000003 | **-2.14<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 62/ 25 | **0.000043>>** | 2.32 | TREN 71 SC UNIFORME POS. 4 DERECHA |
| 62/ 37 | **-0.000027<<** | 1.32 | TREN 71 SC UNIFORME POS. 10 DERECHA |
| 62/ 39 | 0.000013 | **5.77>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 62/ 40 | -0.000004 | **-2.13<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 63/ 25 | **0.000044>>** | 2.23 | TREN 71 SC UNIFORME POS. 4 DERECHA |
| 63/ 37 | **-0.000027<<** | 1.38 | TREN 71 SC UNIFORME POS. 10 DERECHA |
| 63/ 39 | 0.000017 | **5.74>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 63/ 40 | -0.000005 | **-2.12<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 64/ 25 | **0.000045>>** | 2.14 | TREN 71 SC UNIFORME POS. 4 DERECHA |
| 64/ 37 | **-0.000027<<** | 1.44 | TREN 71 SC UNIFORME POS. 10 DERECHA |
| 64/ 39 | 0.000020 | **5.70>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 64/ 40 | -0.000006 | **-2.11<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 65/ 25 | **0.000046>>** | 2.04 | TREN 71 SC UNIFORME POS. 4 DERECHA |





| Nudo/Caso | RZ (Rad) | UX (mm) | Nombre del caso |
|---|---|---|---|
| 65/ 37 | **-0.000027<<** | 1.49 | TREN 71 SC UNIFORME POS. 10 DERECHA |
| 65/ 39 | 0.000023 | **5.66>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 65/ 40 | -0.000006 | **-2.10<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 66/ 25 | **0.000047>>** | 1.94 | TREN 71 SC UNIFORME POS. 4 DERECHA |
| 66/ 37 | **-0.000027<<** | 1.55 | TREN 71 SC UNIFORME POS. 10 DERECHA |
| 66/ 39 | 0.000026 | **5.61>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 66/ 40 | -0.000007 | **-2.08<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 67/ 25 | **0.000047>>** | 1.84 | TREN 71 SC UNIFORME POS. 4 DERECHA |
| 67/ 37 | **-0.000027<<** | 1.61 | TREN 71 SC UNIFORME POS. 10 DERECHA |
| 67/ 39 | 0.000028 | **5.55>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 67/ 40 | -0.000007 | **-2.07<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 68/ 25 | **0.000047>>** | 1.74 | TREN 71 SC UNIFORME POS. 4 DERECHA |
| 68/ 37 | **-0.000027<<** | 1.66 | TREN 71 SC UNIFORME POS. 10 DERECHA |
| 68/ 39 | 0.000031 | **5.49>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 68/ 40 | -0.000008 | **-2.05<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 69/ 25 | **0.000047>>** | 1.65 | TREN 71 SC UNIFORME POS. 4 DERECHA |
| 69/ 37 | **-0.000026<<** | 1.72 | TREN 71 SC UNIFORME POS. 10 DERECHA |
| 69/ 39 | 0.000033 | **5.42>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 69/ 40 | -0.000008 | **-2.04<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 70/ 25 | **0.000047>>** | 1.55 | TREN 71 SC UNIFORME POS. 4 DERECHA |
| 70/ 37 | **-0.000026<<** | 1.77 | TREN 71 SC UNIFORME POS. 10 DERECHA |
| 70/ 39 | 0.000034 | **5.35>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 70/ 40 | -0.000008 | **-2.02<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 71/ 29 | **0.000046>>** | 3.11 | TREN 71 SC UNIFORME POS. 6 DERECHA |
| 71/ 37 | **-0.000026<<** | 1.83 | TREN 71 SC UNIFORME POS. 10 DERECHA |
| 71/ 39 | 0.000036 | **5.28>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 71/ 40 | -0.000009 | **-2.00<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 72/ 29 | **0.000048>>** | 3.01 | TREN 71 SC UNIFORME POS. 6 DERECHA |
| 72/ 37 | **-0.000025<<** | 1.88 | TREN 71 SC UNIFORME POS. 10 DERECHA |
| 72/ 39 | 0.000037 | **5.20>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 72/ 40 | -0.000009 | **-1.98<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 73/ 29 | **0.000049>>** | 2.91 | TREN 71 SC UNIFORME POS. 6 DERECHA |
| 73/ 37 | **-0.000025<<** | 1.93 | TREN 71 SC UNIFORME POS. 10 DERECHA |
| 73/ 39 | 0.000037 | **5.12>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 73/ 40 | -0.000009 | **-1.96<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 74/ 29 | **0.000049>>** | 2.81 | TREN 71 SC UNIFORME POS. 6 DERECHA |
| 74/ 37 | **-0.000025<<** | 1.98 | TREN 71 SC UNIFORME POS. 10 DERECHA |
| 74/ 39 | 0.000038 | **5.05>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 74/ 40 | -0.000010 | **-1.94<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 75/ 29 | **0.000049>>** | 2.70 | TREN 71 SC UNIFORME POS. 6 DERECHA |
| 75/ 37 | **-0.000024<<** | 2.04 | TREN 71 SC UNIFORME POS. 10 DERECHA |
| 75/ 39 | 0.000038 | **4.97>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 75/ 40 | -0.000010 | **-1.92<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 76/ 29 | **0.000052>>** | 2.55 | TREN 71 SC UNIFORME POS. 6 DERECHA |
| 76/ 37 | **-0.000024<<** | 2.06 | TREN 71 SC UNIFORME POS. 10 DERECHA |
| 76/ 39 | 0.000040 | **4.81>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 76/ 40 | -0.000012 | **-1.87<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 77/ 29 | **0.000052>>** | 2.44 | TREN 71 SC UNIFORME POS. 6 DERECHA |
| 77/ 37 | **-0.000023<<** | 2.11 | TREN 71 SC UNIFORME POS. 10 DERECHA |
| 77/ 39 | 0.000039 | **4.73>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 77/ 40 | -0.000012 | **-1.84<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 78/ 29 | **0.000051>>** | 2.34 | TREN 71 SC UNIFORME POS. 6 DERECHA |

| Nudo/Caso | RZ (Rad) | UX (mm) | Nombre del caso |
|---|---|---|---|
| 78/ 37 | **-0.000023<<** | 2.16 | TREN 71 SC UNIFORME POS. 10 DERECHA |
| 78/ 39 | 0.000039 | **4.65>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 78/ 40 | -0.000013 | **-1.82<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 79/ 29 | **0.000050>>** | 2.26 | TREN 71 SC UNIFORME POS. 6 DERECHA |
| 79/ 37 | **-0.000019<<** | 2.24 | TREN 71 SC UNIFORME POS. 10 DERECHA |
| 79/ 39 | 0.000040 | **4.64>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 79/ 40 | -0.000014 | **-1.82<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 80/ 29 | **0.000049>>** | 2.16 | TREN 71 SC UNIFORME POS. 6 DERECHA |
| 80/ 37 | **-0.000018<<** | 2.28 | TREN 71 SC UNIFORME POS. 10 DERECHA |
| 80/ 39 | 0.000040 | **4.55>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 80/ 40 | -0.000015 | **-1.79<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 81/ 29 | **0.000048>>** | 2.05 | TREN 71 SC UNIFORME POS. 6 DERECHA |
| 81/ 37 | **-0.000016<<** | 2.31 | TREN 71 SC UNIFORME POS. 10 DERECHA |
| 81/ 39 | 0.000040 | **4.47>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 81/ 40 | -0.000015 | **-1.76<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 82/ 29 | **0.000048>>** | 1.95 | TREN 71 SC UNIFORME POS. 6 DERECHA |
| 82/ 40 | **-0.000015<<** | -1.73 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 82/ 39 | 0.000040 | **4.38>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 82/ 40 | -0.000015 | **-1.73<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 83/ 29 | **0.000047>>** | 1.85 | TREN 71 SC UNIFORME POS. 6 DERECHA |
| 83/ 40 | **-0.000016<<** | -1.69 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 83/ 39 | 0.000041 | **4.30>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 83/ 40 | -0.000016 | **-1.69<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 84/ 29 | **0.000046>>** | 1.76 | TREN 71 SC UNIFORME POS. 6 DERECHA |
| 84/ 40 | **-0.000016<<** | -1.66 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 84/ 39 | 0.000041 | **4.21>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 84/ 40 | -0.000016 | **-1.66<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 85/ 29 | **0.000045>>** | 1.66 | TREN 71 SC UNIFORME POS. 6 DERECHA |
| 85/ 40 | **-0.000016<<** | -1.63 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 85/ 39 | 0.000042 | **4.13>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 85/ 40 | -0.000016 | **-1.63<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 86/ 29 | **0.000044>>** | 1.57 | TREN 71 SC UNIFORME POS. 6 DERECHA |
| 86/ 40 | **-0.000017<<** | -1.59 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 86/ 39 | 0.000043 | **4.04>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 86/ 40 | -0.000017 | **-1.59<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 87/ 39 | **0.000044>>** | 3.94 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 87/ 40 | **-0.000017<<** | -1.56 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 87/ 39 | 0.000044 | **3.94>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 87/ 40 | -0.000017 | **-1.56<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 88/ 39 | **0.000046>>** | 3.85 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 88/ 40 | **-0.000017<<** | -1.52 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 88/ 39 | 0.000046 | **3.85>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 88/ 40 | -0.000017 | **-1.52<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 89/ 39 | **0.000048>>** | 3.75 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 89/ 40 | **-0.000018<<** | -1.49 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 89/ 39 | 0.000048 | **3.75>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 89/ 40 | -0.000018 | **-1.49<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 90/ 39 | **0.000049>>** | 3.65 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 90/ 40 | **-0.000018<<** | -1.45 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 90/ 39 | 0.000049 | **3.65>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 90/ 40 | -0.000018 | **-1.45<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 91/ 39 | **0.000051>>** | 3.54 | TREN 71 SC UNIFORME POS. 11 DERECHA |





| Nudo/Caso | RZ (Rad) | UX (mm) | Nombre del caso |
|---|---|---|---|
| 91/ 40 | **-0.000019<<** | -1.41 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 91/ 39 | 0.000051 | **3.54>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 91/ 40 | -0.000019 | **-1.41<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 92/ 39 | **0.000053>>** | 3.44 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 92/ 40 | **-0.000020<<** | -1.37 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 92/ 39 | 0.000053 | **3.44>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 92/ 40 | -0.000020 | **-1.37<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 93/ 39 | **0.000055>>** | 3.32 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 93/ 40 | **-0.000021<<** | -1.32 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 93/ 39 | 0.000055 | **3.32>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 93/ 40 | -0.000021 | **-1.32<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 94/ 39 | **0.000058>>** | 3.20 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 94/ 40 | **-0.000022<<** | -1.28 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 94/ 39 | 0.000058 | **3.20>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 94/ 40 | -0.000022 | **-1.28<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 95/ 39 | **0.000060>>** | 3.08 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 95/ 40 | **-0.000023<<** | -1.23 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 95/ 39 | 0.000060 | **3.08>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 95/ 40 | -0.000023 | **-1.23<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 96/ 39 | **0.000065>>** | 2.90 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 96/ 40 | **-0.000026<<** | -1.16 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 96/ 39 | 0.000065 | **2.90>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 96/ 40 | -0.000026 | **-1.16<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 97/ 39 | **0.000067>>** | 2.76 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 97/ 40 | **-0.000027<<** | -1.10 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 97/ 39 | 0.000067 | **2.76>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 97/ 40 | -0.000027 | **-1.10<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 98/ 39 | **0.000070>>** | 2.62 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 98/ 40 | **-0.000028<<** | -1.05 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 98/ 39 | 0.000070 | **2.62>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 98/ 40 | -0.000028 | **-1.05<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 99/ 39 | **0.000073>>** | 2.51 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 99/ 40 | **-0.000030<<** | -1.01 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 99/ 39 | 0.000073 | **2.51>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 99/ 40 | -0.000030 | **-1.01<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 100/ 39 | **0.000075>>** | 2.35 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 100/ 40 | **-0.000031<<** | -0.94 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 100/ 39 | 0.000075 | **2.35>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 100/ 40 | -0.000031 | **-0.94<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 101/ 39 | **0.000077>>** | 2.19 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 101/ 40 | **-0.000032<<** | -0.88 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 101/ 39 | 0.000077 | **2.19>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 101/ 40 | -0.000032 | **-0.88<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 102/ 39 | **0.000079>>** | 2.03 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 102/ 40 | **-0.000032<<** | -0.81 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 102/ 39 | 0.000079 | **2.03>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 102/ 40 | -0.000032 | **-0.81<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 103/ 39 | **0.000081>>** | 1.86 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 103/ 40 | **-0.000033<<** | -0.74 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 103/ 39 | 0.000081 | **1.86>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 103/ 40 | -0.000033 | **-0.74<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 104/ 39 | **0.000083>>** | 1.69 | TREN 71 SC UNIFORME POS. 11 DERECHA |

| Nudo/Caso | RZ (Rad) | UX (mm) | Nombre del caso |
|---|---|---|---|
| 104/ 40 | **-0.000034<<** | -0.67 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 104/ 39 | 0.000083 | **1.69>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 104/ 40 | -0.000034 | **-0.67<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 105/ 39 | **0.000085>>** | 1.51 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 105/ 40 | **-0.000034<<** | -0.60 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 105/ 39 | 0.000085 | **1.51>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 105/ 40 | -0.000034 | **-0.60<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 106/ 39 | **0.000086>>** | 1.33 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 106/ 40 | **-0.000034<<** | -0.53 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 106/ 39 | 0.000086 | **1.33>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 106/ 40 | -0.000034 | **-0.53<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 107/ 39 | **0.000088>>** | 1.15 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 107/ 40 | **-0.000034<<** | -0.46 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 107/ 39 | 0.000088 | **1.15>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 107/ 40 | -0.000034 | **-0.46<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 108/ 39 | **0.000089>>** | 0.96 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 108/ 40 | **-0.000035<<** | -0.39 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 108/ 39 | 0.000089 | **0.96>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 108/ 40 | -0.000035 | **-0.39<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 109/ 39 | **0.000090>>** | 0.78 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 109/ 40 | **-0.000035<<** | -0.31 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 109/ 39 | 0.000090 | **0.78>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 109/ 40 | -0.000035 | **-0.31<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 110/ 39 | **0.000090>>** | 0.59 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 110/ 40 | **-0.000035<<** | -0.24 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 110/ 39 | 0.000090 | **0.59>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 110/ 40 | -0.000035 | **-0.24<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 111/ 39 | **0.000091>>** | 0.40 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 111/ 40 | **-0.000035<<** | -0.17 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 111/ 39 | 0.000091 | **0.40>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 111/ 40 | -0.000035 | **-0.17<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 112/ 39 | **0.000091>>** | 0.21 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 112/ 40 | **-0.000035<<** | -0.09 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 112/ 39 | 0.000091 | **0.21>>** | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 112/ 40 | -0.000035 | **-0.09<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 113/ 39 | **0.000094>>** | 0.06 | TREN 71 SC UNIFORME POS. 11 DERECHA |
| 113/ 40 | **-0.000037<<** | -0.04 | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |
| 113/ 37 | 0.000078 | **0.07>>** | TREN 71 SC UNIFORME POS. 10 DERECHA |
| 113/ 40 | -0.000037 | **-0.04<<** | TREN 71 SC UNIFORME POS. 11 IZQUIERDA |





## Desplazamientos - Casos: 19A96 : Extremos globales:

**- Casos: 19A96**

| | RZ (Rad) | UX (mm) |
|---|---|---|
| | | |
| MAX | 0.000094 | 5.82 |
| Nudo | 113 | 59 |
| Caso | 39 | 39 |
| | | |
| MIN | -0.000069 | -2.15 |
| Nudo | 1 | 59 |
| Caso | 39 | 40 |

### 3.4.6. Deformaciones verticales

## Desplazamientos - Casos: 19A40 : Envolvente:

**- Casos: 19A40**

| Nudo/Caso | | UZ (mm) | Nombre del caso |
|---|---|---|---|
| 1/ | 23 | 0.01>> | TREN 71 SC UNIFORME POS. 3 DEREC |
| 1/ | 20 | -0.03<< | TREN 71 SC UNIFORME POS. 1 IZQUIE |
| 2/ | 23 | 0.21>> | TREN 71 SC UNIFORME POS. 3 DEREC |
| 2/ | 19 | -0.49<< | TREN 71 SC UNIFORME POS. 1 DEREC |
| 3/ | 23 | 0.50>> | TREN 71 SC UNIFORME POS. 3 DEREC |
| 3/ | 19 | -1.11<< | TREN 71 SC UNIFORME POS. 1 DEREC |
| 4/ | 23 | 0.77>> | TREN 71 SC UNIFORME POS. 3 DEREC |
| 4/ | 19 | -1.68<< | TREN 71 SC UNIFORME POS. 1 DEREC |
| 5/ | 23 | 1.03>> | TREN 71 SC UNIFORME POS. 3 DEREC |
| 5/ | 19 | -2.17<< | TREN 71 SC UNIFORME POS. 1 DEREC |
| 6/ | 23 | 1.25>> | TREN 71 SC UNIFORME POS. 3 DEREC |
| 6/ | 19 | -2.56<< | TREN 71 SC UNIFORME POS. 1 DEREC |
| 7/ | 23 | 1.44>> | TREN 71 SC UNIFORME POS. 3 DEREC |
| 7/ | 19 | -2.84<< | TREN 71 SC UNIFORME POS. 1 DEREC |
| 8/ | 23 | 1.59>> | TREN 71 SC UNIFORME POS. 3 DEREC |
| 8/ | 19 | -3.00<< | TREN 71 SC UNIFORME POS. 1 DEREC |
| 9/ | 23 | 1.68>> | TREN 71 SC UNIFORME POS. 3 DEREC |
| 9/ | 19 | -3.04<< | TREN 71 SC UNIFORME POS. 1 DEREC |
| 10/ | 23 | 1.72>> | TREN 71 SC UNIFORME POS. 3 DEREC |
| 10/ | 19 | -2.96<< | TREN 71 SC UNIFORME POS. 1 DEREC |
| 11/ | 23 | 1.70>> | TREN 71 SC UNIFORME POS. 3 DEREC |
| 11/ | 19 | -2.76<< | TREN 71 SC UNIFORME POS. 1 DEREC |
| 12/ | 23 | 1.60>> | TREN 71 SC UNIFORME POS. 3 DEREC |
| 12/ | 19 | -2.46<< | TREN 71 SC UNIFORME POS. 1 DEREC |
| 13/ | 23 | 1.42>> | TREN 71 SC UNIFORME POS. 3 DEREC |
| 13/ | 19 | -2.07<< | TREN 71 SC UNIFORME POS. 1 DEREC |
| 14/ | 23 | 1.15>> | TREN 71 SC UNIFORME POS. 3 DEREC |
| 14/ | 19 | -1.62<< | TREN 71 SC UNIFORME POS. 1 DEREC |
| 15/ | 23 | 0.79>> | TREN 71 SC UNIFORME POS. 3 DEREC |
| 15/ | 19 | -1.14<< | TREN 71 SC UNIFORME POS. 1 DEREC |
| 16/ | 23 | 0.33>> | TREN 71 SC UNIFORME POS. 3 DEREC |
| 16/ | 19 | -0.65<< | TREN 71 SC UNIFORME POS. 1 DEREC |
| 17/ | 27 | 0.03>> | TREN 71 SC UNIFORME POS. 5 DEREC |
| 17/ | 21 | -0.41<< | TREN 71 SC UNIFORME POS. 2 DEREC |
| 18/ | 19 | 0.22>> | TREN 71 SC UNIFORME POS. 1 DEREC |
| 18/ | 23 | -0.86<< | TREN 71 SC UNIFORME POS. 3 DEREC |
| 19/ | 19 | 0.56>> | TREN 71 SC UNIFORME POS. 1 DEREC |
| 19/ | 23 | -1.56<< | TREN 71 SC UNIFORME POS. 3 DEREC |
| 20/ | 19 | 0.84>> | TREN 71 SC UNIFORME POS. 1 DEREC |
| 20/ | 23 | -2.28<< | TREN 71 SC UNIFORME POS. 3 DEREC |
| 21/ | 19 | 1.06>> | TREN 71 SC UNIFORME POS. 1 DEREC |
| 21/ | 23 | -2.98<< | TREN 71 SC UNIFORME POS. 3 DEREC |
| 22/ | 19 | 1.22>> | TREN 71 SC UNIFORME POS. 1 DEREC |
| 22/ | 23 | -3.64<< | TREN 71 SC UNIFORME POS. 3 DEREC |
| 23/ | 19 | 1.33>> | TREN 71 SC UNIFORME POS. 1 DEREC |
| 23/ | 23 | -4.22<< | TREN 71 SC UNIFORME POS. 3 DEREC |
| 24/ | 27 | 1.48>> | TREN 71 SC UNIFORME POS. 5 DEREC |
| 24/ | 23 | -4.69<< | TREN 71 SC UNIFORME POS. 3 DEREC |
| 25/ | 27 | 1.66>> | TREN 71 SC UNIFORME POS. 5 DEREC |





| Nudo/Caso | | UZ (mm) | Nombre del caso |
|---|---|---|---|
| 25/ | 23 | -5.05<< | TREN 71 SC UNIFORME POS. 3 DEREC |
| 26/ | 27 | 1.82>> | TREN 71 SC UNIFORME POS. 5 DEREC |
| 26/ | 23 | -5.27<< | TREN 71 SC UNIFORME POS. 3 DEREC |
| 27/ | 27 | 1.95>> | TREN 71 SC UNIFORME POS. 5 DEREC |
| 27/ | 23 | -5.35<< | TREN 71 SC UNIFORME POS. 3 DEREC |
| 28/ | 27 | 2.03>> | TREN 71 SC UNIFORME POS. 5 DEREC |
| 28/ | 23 | -5.28<< | TREN 71 SC UNIFORME POS. 3 DEREC |
| 29/ | 27 | 2.07>> | TREN 71 SC UNIFORME POS. 5 DEREC |
| 29/ | 23 | -5.07<< | TREN 71 SC UNIFORME POS. 3 DEREC |
| 30/ | 27 | 2.05>> | TREN 71 SC UNIFORME POS. 5 DEREC |
| 30/ | 23 | -4.73<< | TREN 71 SC UNIFORME POS. 3 DEREC |
| 31/ | 27 | 1.96>> | TREN 71 SC UNIFORME POS. 5 DEREC |
| 31/ | 23 | -4.26<< | TREN 71 SC UNIFORME POS. 3 DEREC |
| 32/ | 27 | 1.81>> | TREN 71 SC UNIFORME POS. 5 DEREC |
| 32/ | 23 | -3.69<< | TREN 71 SC UNIFORME POS. 3 DEREC |
| 33/ | 27 | 1.58>> | TREN 71 SC UNIFORME POS. 5 DEREC |
| 33/ | 23 | -3.04<< | TREN 71 SC UNIFORME POS. 3 DEREC |
| 34/ | 27 | 1.26>> | TREN 71 SC UNIFORME POS. 5 DEREC |
| 34/ | 23 | -2.33<< | TREN 71 SC UNIFORME POS. 3 DEREC |
| 35/ | 27 | 0.85>> | TREN 71 SC UNIFORME POS. 5 DEREC |
| 35/ | 23 | -1.61<< | TREN 71 SC UNIFORME POS. 3 DEREC |
| 36/ | 27 | 0.35>> | TREN 71 SC UNIFORME POS. 5 DEREC |
| 36/ | 23 | -0.89<< | TREN 71 SC UNIFORME POS. 3 DEREC |
| 37/ | 31 | 0.03>> | TREN 71 SC UNIFORME POS. 7 DEREC |
| 37/ | 25 | -0.47<< | TREN 71 SC UNIFORME POS. 4 DEREC |
| 38/ | 23 | 0.34>> | TREN 71 SC UNIFORME POS. 3 DEREC |
| 38/ | 27 | -0.92<< | TREN 71 SC UNIFORME POS. 5 DEREC |
| 39/ | 23 | 0.83>> | TREN 71 SC UNIFORME POS. 3 DEREC |
| 39/ | 27 | -1.65<< | TREN 71 SC UNIFORME POS. 5 DEREC |
| 40/ | 23 | 1.23>> | TREN 71 SC UNIFORME POS. 3 DEREC |
| 40/ | 27 | -2.40<< | TREN 71 SC UNIFORME POS. 5 DEREC |
| 41/ | 23 | 1.55>> | TREN 71 SC UNIFORME POS. 3 DEREC |
| 41/ | 27 | -3.13<< | TREN 71 SC UNIFORME POS. 5 DEREC |
| 42/ | 23 | 1.78>> | TREN 71 SC UNIFORME POS. 3 DEREC |
| 42/ | 27 | -3.81<< | TREN 71 SC UNIFORME POS. 5 DEREC |
| 43/ | 23 | 1.93>> | TREN 71 SC UNIFORME POS. 3 DEREC |
| 43/ | 27 | -4.41<< | TREN 71 SC UNIFORME POS. 5 DEREC |
| 44/ | 23 | 2.02>> | TREN 71 SC UNIFORME POS. 3 DEREC |
| 44/ | 27 | -4.91<< | TREN 71 SC UNIFORME POS. 5 DEREC |
| 45/ | 23 | 2.04>> | TREN 71 SC UNIFORME POS. 3 DEREC |
| 45/ | 27 | -5.28<< | TREN 71 SC UNIFORME POS. 5 DEREC |
| 46/ | 23 | 2.01>> | TREN 71 SC UNIFORME POS. 3 DEREC |
| 46/ | 27 | -5.52<< | TREN 71 SC UNIFORME POS. 5 DEREC |
| 47/ | 23 | 1.94>> | TREN 71 SC UNIFORME POS. 3 DEREC |
| 47/ | 27 | -5.61<< | TREN 71 SC UNIFORME POS. 5 DEREC |
| 48/ | 31 | 1.84>> | TREN 71 SC UNIFORME POS. 7 DEREC |
| 48/ | 27 | -5.55<< | TREN 71 SC UNIFORME POS. 5 DEREC |
| 49/ | 31 | 1.85>> | TREN 71 SC UNIFORME POS. 7 DEREC |
| 49/ | 27 | -5.35<< | TREN 71 SC UNIFORME POS. 5 DEREC |
| 50/ | 31 | 1.82>> | TREN 71 SC UNIFORME POS. 7 DEREC |
| 50/ | 27 | -5.01<< | TREN 71 SC UNIFORME POS. 5 DEREC |
| 51/ | 31 | 1.72>> | TREN 71 SC UNIFORME POS. 7 DEREC |

| Nudo/Caso | UZ (mm) | Nombre del caso |
|---|---|---|
| 51/ 27 | -4.55 | << TREN 71 SC UNIFORME POS. 5 DEREC |
| 52/ 31 | 1.55 | >> TREN 71 SC UNIFORME POS. 7 DEREC |
| 52/ 27 | -3.98 | << TREN 71 SC UNIFORME POS. 5 DEREC |
| 53/ 31 | 1.31 | >> TREN 71 SC UNIFORME POS. 7 DEREC |
| 53/ 27 | -3.33 | << TREN 71 SC UNIFORME POS. 5 DEREC |
| 54/ 31 | 0.99 | >> TREN 71 SC UNIFORME POS. 7 DEREC |
| 54/ 27 | -2.62 | << TREN 71 SC UNIFORME POS. 5 DEREC |
| 55/ 31 | 0.58 | >> TREN 71 SC UNIFORME POS. 7 DEREC |
| 55/ 27 | -1.89 | << TREN 71 SC UNIFORME POS. 5 DEREC |
| 56/ 23 | 0.25 | >> TREN 71 SC UNIFORME POS. 3 DEREC |
| 56/ 27 | -1.17 | << TREN 71 SC UNIFORME POS. 5 DEREC |
| 57/ 35 | 0.08 | >> TREN 71 SC UNIFORME POS. 9 DEREC |
| 57/ 29 | -1.01 | << TREN 71 SC UNIFORME POS. 6 DEREC |
| 58/ 35 | 0.25 | >> TREN 71 SC UNIFORME POS. 9 DEREC |
| 58/ 31 | -1.17 | << TREN 71 SC UNIFORME POS. 7 DEREC |
| 59/ 27 | 0.58 | >> TREN 71 SC UNIFORME POS. 5 DEREC |
| 59/ 31 | -1.89 | << TREN 71 SC UNIFORME POS. 7 DEREC |
| 60/ 27 | 0.99 | >> TREN 71 SC UNIFORME POS. 5 DEREC |
| 60/ 31 | -2.62 | << TREN 71 SC UNIFORME POS. 7 DEREC |
| 61/ 27 | 1.31 | >> TREN 71 SC UNIFORME POS. 5 DEREC |
| 61/ 31 | -3.33 | << TREN 71 SC UNIFORME POS. 7 DEREC |
| 62/ 27 | 1.55 | >> TREN 71 SC UNIFORME POS. 5 DEREC |
| 62/ 31 | -3.99 | << TREN 71 SC UNIFORME POS. 7 DEREC |
| 63/ 27 | 1.72 | >> TREN 71 SC UNIFORME POS. 5 DEREC |
| 63/ 31 | -4.56 | << TREN 71 SC UNIFORME POS. 7 DEREC |
| 64/ 27 | 1.82 | >> TREN 71 SC UNIFORME POS. 5 DEREC |
| 64/ 31 | -5.02 | << TREN 71 SC UNIFORME POS. 7 DEREC |
| 65/ 27 | 1.85 | >> TREN 71 SC UNIFORME POS. 5 DEREC |
| 65/ 31 | -5.36 | << TREN 71 SC UNIFORME POS. 7 DEREC |
| 66/ 27 | 1.84 | >> TREN 71 SC UNIFORME POS. 5 DEREC |
| 66/ 31 | -5.56 | << TREN 71 SC UNIFORME POS. 7 DEREC |
| 67/ 35 | 1.93 | >> TREN 71 SC UNIFORME POS. 9 DEREC |
| 67/ 31 | -5.62 | << TREN 71 SC UNIFORME POS. 7 DEREC |
| 68/ 35 | 2.01 | >> TREN 71 SC UNIFORME POS. 9 DEREC |
| 68/ 31 | -5.53 | << TREN 71 SC UNIFORME POS. 7 DEREC |
| 69/ 35 | 2.04 | >> TREN 71 SC UNIFORME POS. 9 DEREC |
| 69/ 31 | -5.29 | << TREN 71 SC UNIFORME POS. 7 DEREC |
| 70/ 35 | 2.01 | >> TREN 71 SC UNIFORME POS. 9 DEREC |
| 70/ 31 | -4.92 | << TREN 71 SC UNIFORME POS. 7 DEREC |
| 71/ 35 | 1.92 | >> TREN 71 SC UNIFORME POS. 9 DEREC |
| 71/ 31 | -4.43 | << TREN 71 SC UNIFORME POS. 7 DEREC |
| 72/ 35 | 1.77 | >> TREN 71 SC UNIFORME POS. 9 DEREC |
| 72/ 31 | -3.83 | << TREN 71 SC UNIFORME POS. 7 DEREC |
| 73/ 35 | 1.54 | >> TREN 71 SC UNIFORME POS. 9 DEREC |
| 73/ 31 | -3.15 | << TREN 71 SC UNIFORME POS. 7 DEREC |
| 74/ 35 | 1.22 | >> TREN 71 SC UNIFORME POS. 9 DEREC |
| 74/ 31 | -2.42 | << TREN 71 SC UNIFORME POS. 7 DEREC |
| 75/ 35 | 0.82 | >> TREN 71 SC UNIFORME POS. 9 DEREC |
| 75/ 31 | -1.67 | << TREN 71 SC UNIFORME POS. 7 DEREC |
| 76/ 35 | 0.33 | >> TREN 71 SC UNIFORME POS. 9 DEREC |
| 76/ 31 | -0.93 | << TREN 71 SC UNIFORME POS. 7 DEREC |
| 77/ 27 | 0.04 | >> TREN 71 SC UNIFORME POS. 5 DEREC |





| Nudo/Caso | UZ (mm) | Nombre del caso |
|---|---|---|
| 77/ 33 | -0.51 | << TREN 71 SC UNIFORME POS. 8 DEREC |
| 78/ 31 | 0.34 | >> TREN 71 SC UNIFORME POS. 7 DEREC |
| 78/ 35 | -0.91 | << TREN 71 SC UNIFORME POS. 9 DEREC |
| 79/ 31 | 0.84 | >> TREN 71 SC UNIFORME POS. 7 DEREC |
| 79/ 35 | -1.63 | << TREN 71 SC UNIFORME POS. 9 DEREC |
| 80/ 31 | 1.25 | >> TREN 71 SC UNIFORME POS. 7 DEREC |
| 80/ 35 | -2.36 | << TREN 71 SC UNIFORME POS. 9 DEREC |
| 81/ 31 | 1.57 | >> TREN 71 SC UNIFORME POS. 7 DEREC |
| 81/ 35 | -3.07 | << TREN 71 SC UNIFORME POS. 9 DEREC |
| 82/ 31 | 1.80 | >> TREN 71 SC UNIFORME POS. 7 DEREC |
| 82/ 35 | -3.72 | << TREN 71 SC UNIFORME POS. 9 DEREC |
| 83/ 31 | 1.95 | >> TREN 71 SC UNIFORME POS. 7 DEREC |
| 83/ 35 | -4.30 | << TREN 71 SC UNIFORME POS. 9 DEREC |
| 84/ 31 | 2.04 | >> TREN 71 SC UNIFORME POS. 7 DEREC |
| 84/ 35 | -4.77 | << TREN 71 SC UNIFORME POS. 9 DEREC |
| 85/ 31 | 2.06 | >> TREN 71 SC UNIFORME POS. 7 DEREC |
| 85/ 35 | -5.11 | << TREN 71 SC UNIFORME POS. 9 DEREC |
| 86/ 31 | 2.02 | >> TREN 71 SC UNIFORME POS. 7 DEREC |
| 86/ 35 | -5.33 | << TREN 71 SC UNIFORME POS. 9 DEREC |
| 87/ 31 | 1.94 | >> TREN 71 SC UNIFORME POS. 7 DEREC |
| 87/ 35 | -5.39 | << TREN 71 SC UNIFORME POS. 9 DEREC |
| 88/ 31 | 1.82 | >> TREN 71 SC UNIFORME POS. 7 DEREC |
| 88/ 35 | -5.32 | << TREN 71 SC UNIFORME POS. 9 DEREC |
| 89/ 31 | 1.66 | >> TREN 71 SC UNIFORME POS. 7 DEREC |
| 89/ 35 | -5.10 | << TREN 71 SC UNIFORME POS. 9 DEREC |
| 90/ 31 | 1.48 | >> TREN 71 SC UNIFORME POS. 7 DEREC |
| 90/ 35 | -4.75 | << TREN 71 SC UNIFORME POS. 9 DEREC |
| 91/ 31 | 1.27 | >> TREN 71 SC UNIFORME POS. 7 DEREC |
| 91/ 35 | -4.27 | << TREN 71 SC UNIFORME POS. 9 DEREC |
| 92/ 31 | 1.06 | >> TREN 71 SC UNIFORME POS. 7 DEREC |
| 92/ 35 | -3.70 | << TREN 71 SC UNIFORME POS. 9 DEREC |
| 93/ 31 | 0.84 | >> TREN 71 SC UNIFORME POS. 7 DEREC |
| 93/ 35 | -3.04 | << TREN 71 SC UNIFORME POS. 9 DEREC |
| 94/ 31 | 0.62 | >> TREN 71 SC UNIFORME POS. 7 DEREC |
| 94/ 35 | -2.34 | << TREN 71 SC UNIFORME POS. 9 DEREC |
| 95/ 31 | 0.41 | >> TREN 71 SC UNIFORME POS. 7 DEREC |
| 95/ 35 | -1.62 | << TREN 71 SC UNIFORME POS. 9 DEREC |
| 96/ 31 | 0.22 | >> TREN 71 SC UNIFORME POS. 7 DEREC |
| 96/ 35 | -0.92 | << TREN 71 SC UNIFORME POS. 9 DEREC |
| 97/ 31 | 0.04 | >> TREN 71 SC UNIFORME POS. 7 DEREC |
| 97/ 37 | -0.52 | << TREN 71 SC UNIFORME POS. 10 DERE |
| 98/ 35 | 0.27 | >> TREN 71 SC UNIFORME POS. 9 DEREC |
| 98/ 39 | -0.51 | << TREN 71 SC UNIFORME POS. 11 DERE |
| 99/ 35 | 0.73 | >> TREN 71 SC UNIFORME POS. 9 DEREC |
| 99/ 39 | -0.64 | << TREN 71 SC UNIFORME POS. 11 DERE |
| 100/ 35 | 1.10 | >> TREN 71 SC UNIFORME POS. 9 DEREC |
| 100/ 39 | -0.84 | << TREN 71 SC UNIFORME POS. 11 DERE |
| 101/ 35 | 1.37 | >> TREN 71 SC UNIFORME POS. 9 DEREC |
| 101/ 39 | -1.07 | << TREN 71 SC UNIFORME POS. 11 DERE |
| 102/ 35 | 1.55 | >> TREN 71 SC UNIFORME POS. 9 DEREC |
| 102/ 39 | -1.31 | << TREN 71 SC UNIFORME POS. 11 DERE |
| 103/ 35 | 1.65 | >> TREN 71 SC UNIFORME POS. 9 DEREC |

| Nudo/Caso | UZ (mm) | Nombre del caso |
|---|---|---|
| 103/ 39 | -1.53 | << TREN 71 SC UNIFORME POS. 11 DERE |
| 104/ 35 | 1.68 | >> TREN 71 SC UNIFORME POS. 9 DEREC |
| 104/ 39 | -1.70 | << TREN 71 SC UNIFORME POS. 11 DERE |
| 105/ 35 | 1.65 | >> TREN 71 SC UNIFORME POS. 9 DEREC |
| 105/ 39 | -1.80 | << TREN 71 SC UNIFORME POS. 11 DERE |
| 106/ 35 | 1.56 | >> TREN 71 SC UNIFORME POS. 9 DEREC |
| 106/ 39 | -1.83 | << TREN 71 SC UNIFORME POS. 11 DERE |
| 107/ 35 | 1.41 | >> TREN 71 SC UNIFORME POS. 9 DEREC |
| 107/ 39 | -1.77 | << TREN 71 SC UNIFORME POS. 11 DERE |
| 108/ 35 | 1.23 | >> TREN 71 SC UNIFORME POS. 9 DEREC |
| 108/ 39 | -1.63 | << TREN 71 SC UNIFORME POS. 11 DERE |
| 109/ 35 | 1.01 | >> TREN 71 SC UNIFORME POS. 9 DEREC |
| 109/ 39 | -1.40 | << TREN 71 SC UNIFORME POS. 11 DERE |
| 110/ 35 | 0.76 | >> TREN 71 SC UNIFORME POS. 9 DEREC |
| 110/ 39 | -1.10 | << TREN 71 SC UNIFORME POS. 11 DERE |
| 111/ 35 | 0.49 | >> TREN 71 SC UNIFORME POS. 9 DEREC |
| 111/ 39 | -0.74 | << TREN 71 SC UNIFORME POS. 11 DERE |
| 112/ 35 | 0.21 | >> TREN 71 SC UNIFORME POS. 9 DEREC |
| 112/ 39 | -0.33 | << TREN 71 SC UNIFORME POS. 11 DERE |
| 113/ 35 | 0.01 | >> TREN 71 SC UNIFORME POS. 9 DEREC |
| 113/ 40 | -0.03 | << TREN 71 SC UNIFORME POS. 11 IZQUIE |
| 201/ 19 | 0.0 | >> TREN 71 SC UNIFORME POS. 1 DEREC |
| 201/ 19 | 0.0 | << TREN 71 SC UNIFORME POS. 1 DEREC |
| 202/ 19 | 0.0 | >> TREN 71 SC UNIFORME POS. 1 DEREC |
| 202/ 19 | 0.0 | << TREN 71 SC UNIFORME POS. 1 DEREC |
| 203/ 19 | 0.0 | >> TREN 71 SC UNIFORME POS. 1 DEREC |
| 203/ 19 | 0.0 | << TREN 71 SC UNIFORME POS. 1 DEREC |
| 204/ 19 | 0.0 | >> TREN 71 SC UNIFORME POS. 1 DEREC |
| 204/ 19 | 0.0 | << TREN 71 SC UNIFORME POS. 1 DEREC |
| 205/ 19 | 0.0 | >> TREN 71 SC UNIFORME POS. 1 DEREC |
| 205/ 19 | 0.0 | << TREN 71 SC UNIFORME POS. 1 DEREC |
| 206/ 19 | 0.0 | >> TREN 71 SC UNIFORME POS. 1 DEREC |
| 206/ 19 | 0.0 | << TREN 71 SC UNIFORME POS. 1 DEREC |
| 207/ 19 | 0.0 | >> TREN 71 SC UNIFORME POS. 1 DEREC |
| 207/ 19 | 0.0 | << TREN 71 SC UNIFORME POS. 1 DEREC |





## Desplazamientos - Casos: 41A96 : Envolvente:

- Casos: 41A96

| Nudo/Caso | UZ (mm) | Nombre del caso |
|---|---|---|
| 1/ 69 | 0.00 | >> CARRO TREN 71 POSICION 15 DEREC |
| 1/ 41 | -0.01 | << CARRO TREN 71 POSICION 1 DEREC |
| 2/ 69 | 0.05 | >> CARRO TREN 71 POSICION 15 DEREC |
| 2/ 65 | -0.14 | << CARRO TREN 71 POSICION 13 DEREC |
| 3/ 69 | 0.12 | >> CARRO TREN 71 POSICION 15 DEREC |
| 3/ 65 | -0.32 | << CARRO TREN 71 POSICION 13 DEREC |
| 4/ 69 | 0.18 | >> CARRO TREN 71 POSICION 15 DEREC |
| 4/ 65 | -0.49 | << CARRO TREN 71 POSICION 13 DEREC |
| 5/ 69 | 0.24 | >> CARRO TREN 71 POSICION 15 DEREC |
| 5/ 65 | -0.63 | << CARRO TREN 71 POSICION 13 DEREC |
| 6/ 69 | 0.29 | >> CARRO TREN 71 POSICION 15 DEREC |
| 6/ 65 | -0.75 | << CARRO TREN 71 POSICION 13 DEREC |
| 7/ 69 | 0.34 | >> CARRO TREN 71 POSICION 15 DEREC |
| 7/ 65 | -0.83 | << CARRO TREN 71 POSICION 13 DEREC |
| 8/ 69 | 0.37 | >> CARRO TREN 71 POSICION 15 DEREC |
| 8/ 67 | -0.88 | << CARRO TREN 71 POSICION 14 DEREC |
| 9/ 69 | 0.39 | >> CARRO TREN 71 POSICION 15 DEREC |
| 9/ 67 | -0.89 | << CARRO TREN 71 POSICION 14 DEREC |
| 10/ 69 | 0.40 | >> CARRO TREN 71 POSICION 15 DEREC |
| 10/ 67 | -0.87 | << CARRO TREN 71 POSICION 14 DEREC |
| 11/ 69 | 0.40 | >> CARRO TREN 71 POSICION 15 DEREC |
| 11/ 67 | -0.80 | << CARRO TREN 71 POSICION 14 DEREC |
| 12/ 69 | 0.38 | >> CARRO TREN 71 POSICION 15 DEREC |
| 12/ 67 | -0.70 | << CARRO TREN 71 POSICION 14 DEREC |
| 13/ 69 | 0.34 | >> CARRO TREN 71 POSICION 15 DEREC |
| 13/ 67 | -0.58 | << CARRO TREN 71 POSICION 14 DEREC |
| 14/ 69 | 0.27 | >> CARRO TREN 71 POSICION 15 DEREC |
| 14/ 67 | -0.44 | << CARRO TREN 71 POSICION 14 DEREC |
| 15/ 69 | 0.19 | >> CARRO TREN 71 POSICION 15 DEREC |
| 15/ 67 | -0.30 | << CARRO TREN 71 POSICION 14 DEREC |
| 16/ 69 | 0.09 | >> CARRO TREN 71 POSICION 15 DEREC |
| 16/ 67 | -0.17 | << CARRO TREN 71 POSICION 14 DEREC |
| 17/ 75 | 0.01 | >> CARRO TREN 71 POSICION 18 DEREC |
| 17/ 45 | -0.05 | << CARRO TREN 71 POSICION 3 DEREC |
| 18/ 67 | 0.07 | >> CARRO TREN 71 POSICION 14 DEREC |
| 18/ 69 | -0.19 | << CARRO TREN 71 POSICION 15 DEREC |
| 19/ 67 | 0.17 | >> CARRO TREN 71 POSICION 14 DEREC |
| 19/ 69 | -0.35 | << CARRO TREN 71 POSICION 15 DEREC |
| 20/ 67 | 0.24 | >> CARRO TREN 71 POSICION 14 DEREC |
| 20/ 69 | -0.52 | << CARRO TREN 71 POSICION 15 DEREC |
| 21/ 67 | 0.30 | >> CARRO TREN 71 POSICION 14 DEREC |
| 21/ 69 | -0.69 | << CARRO TREN 71 POSICION 15 DEREC |
| 22/ 67 | 0.35 | >> CARRO TREN 71 POSICION 14 DEREC |
| 22/ 69 | -0.85 | << CARRO TREN 71 POSICION 15 DEREC |
| 23/ 67 | 0.38 | >> CARRO TREN 71 POSICION 14 DEREC |
| 23/ 69 | -0.99 | << CARRO TREN 71 POSICION 15 DEREC |
| 24/ 67 | 0.39 | >> CARRO TREN 71 POSICION 14 DEREC |
| 24/ 69 | -1.10 | << CARRO TREN 71 POSICION 15 DEREC |
| 25/ 67 | 0.40 | >> CARRO TREN 71 POSICION 14 DEREC |

| Nudo/Caso | UZ (mm) | Nombre del caso |
|---|---|---|
| 25/ 71 | -1.20 | << CARRO TREN 71 POSICION 16 DEREC |
| 26/ 75 | 0.42 | >> CARRO TREN 71 POSICION 18 DEREC |
| 26/ 71 | -1.26 | << CARRO TREN 71 POSICION 16 DEREC |
| 27/ 75 | 0.45 | >> CARRO TREN 71 POSICION 18 DEREC |
| 27/ 71 | -1.29 | << CARRO TREN 71 POSICION 16 DEREC |
| 28/ 75 | 0.47 | >> CARRO TREN 71 POSICION 18 DEREC |
| 28/ 71 | -1.26 | << CARRO TREN 71 POSICION 16 DEREC |
| 29/ 75 | 0.48 | >> CARRO TREN 71 POSICION 18 DEREC |
| 29/ 71 | -1.20 | << CARRO TREN 71 POSICION 16 DEREC |
| 30/ 75 | 0.48 | >> CARRO TREN 71 POSICION 18 DEREC |
| 30/ 73 | -1.12 | << CARRO TREN 71 POSICION 17 DEREC |
| 31/ 75 | 0.46 | >> CARRO TREN 71 POSICION 18 DEREC |
| 31/ 73 | -1.01 | << CARRO TREN 71 POSICION 17 DEREC |
| 32/ 75 | 0.42 | >> CARRO TREN 71 POSICION 18 DEREC |
| 32/ 73 | -0.87 | << CARRO TREN 71 POSICION 17 DEREC |
| 33/ 75 | 0.37 | >> CARRO TREN 71 POSICION 18 DEREC |
| 33/ 73 | -0.71 | << CARRO TREN 71 POSICION 17 DEREC |
| 34/ 75 | 0.30 | >> CARRO TREN 71 POSICION 18 DEREC |
| 34/ 73 | -0.54 | << CARRO TREN 71 POSICION 17 DEREC |
| 35/ 75 | 0.21 | >> CARRO TREN 71 POSICION 18 DEREC |
| 35/ 73 | -0.36 | << CARRO TREN 71 POSICION 17 DEREC |
| 36/ 75 | 0.09 | >> CARRO TREN 71 POSICION 18 DEREC |
| 36/ 73 | -0.20 | << CARRO TREN 71 POSICION 17 DEREC |
| 37/ 81 | 0.01 | >> CARRO TREN 71 POSICION 21 DEREC |
| 37/ 49 | -0.06 | << CARRO TREN 71 POSICION 5 DEREC |
| 38/ 73 | 0.09 | >> CARRO TREN 71 POSICION 17 DEREC |
| 38/ 75 | -0.20 | << CARRO TREN 71 POSICION 18 DEREC |
| 39/ 73 | 0.20 | >> CARRO TREN 71 POSICION 17 DEREC |
| 39/ 75 | -0.37 | << CARRO TREN 71 POSICION 18 DEREC |
| 40/ 73 | 0.30 | >> CARRO TREN 71 POSICION 17 DEREC |
| 40/ 75 | -0.55 | << CARRO TREN 71 POSICION 18 DEREC |
| 41/ 73 | 0.37 | >> CARRO TREN 71 POSICION 17 DEREC |
| 41/ 75 | -0.72 | << CARRO TREN 71 POSICION 18 DEREC |
| 42/ 73 | 0.42 | >> CARRO TREN 71 POSICION 17 DEREC |
| 42/ 75 | -0.88 | << CARRO TREN 71 POSICION 18 DEREC |
| 43/ 73 | 0.46 | >> CARRO TREN 71 POSICION 17 DEREC |
| 43/ 75 | -1.03 | << CARRO TREN 71 POSICION 18 DEREC |
| 44/ 73 | 0.47 | >> CARRO TREN 71 POSICION 17 DEREC |
| 44/ 75 | -1.14 | << CARRO TREN 71 POSICION 18 DEREC |
| 45/ 73 | 0.48 | >> CARRO TREN 71 POSICION 17 DEREC |
| 45/ 77 | -1.24 | << CARRO TREN 71 POSICION 19 DEREC |
| 46/ 73 | 0.47 | >> CARRO TREN 71 POSICION 17 DEREC |
| 46/ 77 | -1.31 | << CARRO TREN 71 POSICION 19 DEREC |
| 47/ 73 | 0.45 | >> CARRO TREN 71 POSICION 17 DEREC |
| 47/ 77 | -1.33 | << CARRO TREN 71 POSICION 19 DEREC |
| 48/ 81 | 0.44 | >> CARRO TREN 71 POSICION 21 DEREC |
| 48/ 77 | -1.31 | << CARRO TREN 71 POSICION 19 DEREC |
| 49/ 81 | 0.44 | >> CARRO TREN 71 POSICION 21 DEREC |
| 49/ 77 | -1.25 | << CARRO TREN 71 POSICION 19 DEREC |
| 50/ 81 | 0.44 | >> CARRO TREN 71 POSICION 21 DEREC |
| 50/ 79 | -1.17 | << CARRO TREN 71 POSICION 20 DEREC |
| 51/ 81 | 0.41 | >> CARRO TREN 71 POSICION 21 DEREC |





| Nudo/Caso | UZ (mm) | Nombre del caso |
|---|---|---|
| 51/ 79 | -1.06 | << CARRO TREN 71 POSICION 20 DEREC |
| 52/ 81 | 0.38 | >> CARRO TREN 71 POSICION 21 DEREC |
| 52/ 79 | -0.92 | << CARRO TREN 71 POSICION 20 DEREC |
| 53/ 81 | 0.32 | >> CARRO TREN 71 POSICION 21 DEREC |
| 53/ 79 | -0.76 | << CARRO TREN 71 POSICION 20 DEREC |
| 54/ 81 | 0.25 | >> CARRO TREN 71 POSICION 21 DEREC |
| 54/ 79 | -0.59 | << CARRO TREN 71 POSICION 20 DEREC |
| 55/ 83 | 0.16 | >> CARRO TREN 71 POSICION 22 DEREC |
| 55/ 79 | -0.42 | << CARRO TREN 71 POSICION 20 DEREC |
| 56/ 73 | 0.06 | >> CARRO TREN 71 POSICION 17 DEREC |
| 56/ 79 | -0.25 | << CARRO TREN 71 POSICION 20 DEREC |
| 57/ 87 | 0.02 | >> CARRO TREN 71 POSICION 24 DEREC |
| 57/ 51 | -0.13 | << CARRO TREN 71 POSICION 6 DEREC |
| 58/ 87 | 0.06 | >> CARRO TREN 71 POSICION 24 DEREC |
| 58/ 81 | -0.25 | << CARRO TREN 71 POSICION 21 DEREC |
| 59/ 77 | 0.16 | >> CARRO TREN 71 POSICION 19 DEREC |
| 59/ 81 | -0.42 | << CARRO TREN 71 POSICION 21 DEREC |
| 60/ 79 | 0.25 | >> CARRO TREN 71 POSICION 20 DEREC |
| 60/ 81 | -0.59 | << CARRO TREN 71 POSICION 21 DEREC |
| 61/ 79 | 0.32 | >> CARRO TREN 71 POSICION 20 DEREC |
| 61/ 81 | -0.76 | << CARRO TREN 71 POSICION 21 DEREC |
| 62/ 79 | 0.38 | >> CARRO TREN 71 POSICION 20 DEREC |
| 62/ 81 | -0.92 | << CARRO TREN 71 POSICION 21 DEREC |
| 63/ 79 | 0.41 | >> CARRO TREN 71 POSICION 20 DEREC |
| 63/ 81 | -1.06 | << CARRO TREN 71 POSICION 21 DEREC |
| 64/ 79 | 0.44 | >> CARRO TREN 71 POSICION 20 DEREC |
| 64/ 81 | -1.17 | << CARRO TREN 71 POSICION 21 DEREC |
| 65/ 79 | 0.44 | >> CARRO TREN 71 POSICION 20 DEREC |
| 65/ 83 | -1.25 | << CARRO TREN 71 POSICION 22 DEREC |
| 66/ 79 | 0.44 | >> CARRO TREN 71 POSICION 20 DEREC |
| 66/ 83 | -1.31 | << CARRO TREN 71 POSICION 22 DEREC |
| 67/ 87 | 0.45 | >> CARRO TREN 71 POSICION 24 DEREC |
| 67/ 83 | -1.33 | << CARRO TREN 71 POSICION 22 DEREC |
| 68/ 87 | 0.47 | >> CARRO TREN 71 POSICION 24 DEREC |
| 68/ 83 | -1.31 | << CARRO TREN 71 POSICION 22 DEREC |
| 69/ 87 | 0.48 | >> CARRO TREN 71 POSICION 24 DEREC |
| 69/ 83 | -1.24 | << CARRO TREN 71 POSICION 22 DEREC |
| 70/ 87 | 0.47 | >> CARRO TREN 71 POSICION 24 DEREC |
| 70/ 85 | -1.14 | << CARRO TREN 71 POSICION 23 DEREC |
| 71/ 87 | 0.45 | >> CARRO TREN 71 POSICION 24 DEREC |
| 71/ 85 | -1.03 | << CARRO TREN 71 POSICION 23 DEREC |
| 72/ 87 | 0.42 | >> CARRO TREN 71 POSICION 24 DEREC |
| 72/ 85 | -0.89 | << CARRO TREN 71 POSICION 23 DEREC |
| 73/ 87 | 0.37 | >> CARRO TREN 71 POSICION 24 DEREC |
| 73/ 85 | -0.72 | << CARRO TREN 71 POSICION 23 DEREC |
| 74/ 87 | 0.29 | >> CARRO TREN 71 POSICION 24 DEREC |
| 74/ 85 | -0.55 | << CARRO TREN 71 POSICION 23 DEREC |
| 75/ 87 | 0.20 | >> CARRO TREN 71 POSICION 24 DEREC |
| 75/ 85 | -0.37 | << CARRO TREN 71 POSICION 23 DEREC |
| 76/ 87 | 0.09 | >> CARRO TREN 71 POSICION 24 DEREC |
| 76/ 85 | -0.20 | << CARRO TREN 71 POSICION 23 DEREC |
| 77/ 79 | 0.01 | >> CARRO TREN 71 POSICION 20 DEREC |

| Nudo/Caso | UZ (mm) | Nombre del caso |
|---|---|---|
| 77/ 55 | -0.06 | << CARRO TREN 71 POSICION 8 DEREC |
| 78/ 85 | 0.09 | >> CARRO TREN 71 POSICION 23 DEREC |
| 78/ 87 | -0.20 | << CARRO TREN 71 POSICION 24 DEREC |
| 79/ 85 | 0.20 | >> CARRO TREN 71 POSICION 23 DEREC |
| 79/ 87 | -0.37 | << CARRO TREN 71 POSICION 24 DEREC |
| 80/ 85 | 0.30 | >> CARRO TREN 71 POSICION 23 DEREC |
| 80/ 87 | -0.54 | << CARRO TREN 71 POSICION 24 DEREC |
| 81/ 85 | 0.37 | >> CARRO TREN 71 POSICION 23 DEREC |
| 81/ 87 | -0.71 | << CARRO TREN 71 POSICION 24 DEREC |
| 82/ 85 | 0.42 | >> CARRO TREN 71 POSICION 23 DEREC |
| 82/ 87 | -0.87 | << CARRO TREN 71 POSICION 24 DEREC |
| 83/ 85 | 0.46 | >> CARRO TREN 71 POSICION 23 DEREC |
| 83/ 87 | -1.01 | << CARRO TREN 71 POSICION 24 DEREC |
| 84/ 85 | 0.47 | >> CARRO TREN 71 POSICION 23 DEREC |
| 84/ 87 | -1.12 | << CARRO TREN 71 POSICION 24 DEREC |
| 85/ 85 | 0.48 | >> CARRO TREN 71 POSICION 23 DEREC |
| 85/ 89 | -1.21 | << CARRO TREN 71 POSICION 25 DEREC |
| 86/ 85 | 0.47 | >> CARRO TREN 71 POSICION 23 DEREC |
| 86/ 89 | -1.27 | << CARRO TREN 71 POSICION 25 DEREC |
| 87/ 85 | 0.45 | >> CARRO TREN 71 POSICION 23 DEREC |
| 87/ 89 | -1.29 | << CARRO TREN 71 POSICION 25 DEREC |
| 88/ 85 | 0.42 | >> CARRO TREN 71 POSICION 23 DEREC |
| 88/ 89 | -1.27 | << CARRO TREN 71 POSICION 25 DEREC |
| 89/ 93 | 0.39 | >> CARRO TREN 71 POSICION 27 DEREC |
| 89/ 89 | -1.20 | << CARRO TREN 71 POSICION 25 DEREC |
| 90/ 93 | 0.38 | >> CARRO TREN 71 POSICION 27 DEREC |
| 90/ 91 | -1.11 | << CARRO TREN 71 POSICION 26 DEREC |
| 91/ 93 | 0.37 | >> CARRO TREN 71 POSICION 27 DEREC |
| 91/ 91 | -1.00 | << CARRO TREN 71 POSICION 26 DEREC |
| 92/ 93 | 0.34 | >> CARRO TREN 71 POSICION 27 DEREC |
| 92/ 91 | -0.86 | << CARRO TREN 71 POSICION 26 DEREC |
| 93/ 93 | 0.29 | >> CARRO TREN 71 POSICION 27 DEREC |
| 93/ 91 | -0.70 | << CARRO TREN 71 POSICION 26 DEREC |
| 94/ 93 | 0.23 | >> CARRO TREN 71 POSICION 27 DEREC |
| 94/ 91 | -0.53 | << CARRO TREN 71 POSICION 26 DEREC |
| 95/ 93 | 0.16 | >> CARRO TREN 71 POSICION 27 DEREC |
| 95/ 91 | -0.36 | << CARRO TREN 71 POSICION 26 DEREC |
| 96/ 93 | 0.06 | >> CARRO TREN 71 POSICION 27 DEREC |
| 96/ 91 | -0.20 | << CARRO TREN 71 POSICION 26 DEREC |
| 97/ 85 | 0.01 | >> CARRO TREN 71 POSICION 23 DEREC |
| 97/ 59 | -0.07 | << CARRO TREN 71 POSICION 10 DEREC |
| 98/ 89 | 0.08 | >> CARRO TREN 71 POSICION 25 DEREC |
| 98/ 93 | -0.18 | << CARRO TREN 71 POSICION 27 DEREC |
| 99/ 91 | 0.18 | >> CARRO TREN 71 POSICION 26 DEREC |
| 99/ 93 | -0.31 | << CARRO TREN 71 POSICION 27 DEREC |
| 100/ 91 | 0.26 | >> CARRO TREN 71 POSICION 26 DEREC |
| 100/ 93 | -0.45 | << CARRO TREN 71 POSICION 27 DEREC |
| 101/ 91 | 0.33 | >> CARRO TREN 71 POSICION 26 DEREC |
| 101/ 93 | -0.59 | << CARRO TREN 71 POSICION 27 DEREC |
| 102/ 91 | 0.37 | >> CARRO TREN 71 POSICION 26 DEREC |
| 102/ 93 | -0.71 | << CARRO TREN 71 POSICION 27 DEREC |
| 103/ 91 | 0.39 | >> CARRO TREN 71 POSICION 26 DEREC |





| Nudo/Caso | UZ (mm) | Nombre del caso |
|---|---|---|
| 103/ 93 | -0.81 | << CARRO TREN 71 POSICION 27 DEREC |
| 104/ 91 | 0.40 | >> CARRO TREN 71 POSICION 26 DEREC |
| 104/ 93 | -0.87 | << CARRO TREN 71 POSICION 27 DEREC |
| 105/ 91 | 0.39 | >> CARRO TREN 71 POSICION 26 DEREC |
| 105/ 93 | -0.90 | << CARRO TREN 71 POSICION 27 DEREC |
| 106/ 91 | 0.37 | >> CARRO TREN 71 POSICION 26 DEREC |
| 106/ 93 | -0.88 | << CARRO TREN 71 POSICION 27 DEREC |
| 107/ 91 | 0.33 | >> CARRO TREN 71 POSICION 26 DEREC |
| 107/ 95 | -0.83 | << CARRO TREN 71 POSICION 28 DEREC |
| 108/ 91 | 0.29 | >> CARRO TREN 71 POSICION 26 DEREC |
| 108/ 95 | -0.75 | << CARRO TREN 71 POSICION 28 DEREC |
| 109/ 91 | 0.24 | >> CARRO TREN 71 POSICION 26 DEREC |
| 109/ 95 | -0.63 | << CARRO TREN 71 POSICION 28 DEREC |
| 110/ 91 | 0.18 | >> CARRO TREN 71 POSICION 26 DEREC |
| 110/ 95 | -0.49 | << CARRO TREN 71 POSICION 28 DEREC |
| 111/ 91 | 0.12 | >> CARRO TREN 71 POSICION 26 DEREC |
| 111/ 95 | -0.32 | << CARRO TREN 71 POSICION 28 DEREC |
| 112/ 91 | 0.05 | >> CARRO TREN 71 POSICION 26 DEREC |
| 112/ 95 | -0.14 | << CARRO TREN 71 POSICION 28 DEREC |
| 113/ 91 | 0.00 | >> CARRO TREN 71 POSICION 26 DEREC |
| 113/ 63 | -0.01 | << CARRO TREN 71 POSICION 12 DEREC |
| 201/ 41 | 0.0 | >> CARRO TREN 71 POSICION 1 DEREC |
| 201/ 41 | 0.0 | << CARRO TREN 71 POSICION 1 DEREC |
| 202/ 41 | 0.0 | >> CARRO TREN 71 POSICION 1 DEREC |
| 202/ 41 | 0.0 | << CARRO TREN 71 POSICION 1 DEREC |
| 203/ 41 | 0.0 | >> CARRO TREN 71 POSICION 1 DEREC |
| 203/ 41 | 0.0 | << CARRO TREN 71 POSICION 1 DEREC |
| 204/ 41 | 0.0 | >> CARRO TREN 71 POSICION 1 DEREC |
| 204/ 41 | 0.0 | << CARRO TREN 71 POSICION 1 DEREC |
| 205/ 41 | 0.0 | >> CARRO TREN 71 POSICION 1 DEREC |
| 205/ 41 | 0.0 | << CARRO TREN 71 POSICION 1 DEREC |
| 206/ 41 | 0.0 | >> CARRO TREN 71 POSICION 1 DEREC |
| 206/ 41 | 0.0 | << CARRO TREN 71 POSICION 1 DEREC |
| 207/ 41 | 0.0 | >> CARRO TREN 71 POSICION 1 DEREC |
| 207/ 41 | 0.0 | << CARRO TREN 71 POSICION 1 DEREC |

## 3.5. ANÁLISIS DEL TABLERO EN E.L.U.

### 3.5.1. Solicitaciones Normales

**E.L.U. : COMPROBACIÓN A ROTURA**

**MOMENTOS SOLICITANTES DE LAS SECCIONES REPRESENTATIVAS**

Unidades en m. y KN.

| Sección | Nudo | e | N | Misos | Mpret | Mhiper | Mext IPF | Mext EC | **Mext+Mhiper** |
|---|---|---|---|---|---|---|---|---|---|
| cdv | 47 | -0.629 | 53971.5 | -33963.80 | -18422.40 | 15541.40 | 99772.00 | 97519.00 | 115313.40 |
| Pila | 77 | 0.567 | 64541.8 | 36599.75 | 46928.30 | 10328.55 | -156637.50 | -147454.30 | -146308.95 |

### 3.5.1.1. Comprobación de Secciones

CALCULO DE ESFUERZOS ULTIMOS EN SECCIONES DE HORMIGON
ARMADO Y PRETENSADO

Nombre de la sección: LAV-Gelida. V. Rierussa. Centro de vano 3. Nudo 47.

NUMERO DE TRAMOS DE HORMIGON: 12

| Trap. | Altura | Asup | Ainf |
|---|---|---|---|
| 1 | 14.0 | 0.0 | 1400.0 |
| 2 | 16.0 | 1400.0 | 1400.0 |
| 3 | 2.0 | 1200.0 | 1172.4 |
| 4 | 5.0 | 1172.4 | 603.0 |
| 5 | 19.0 | 603.0 | 165.2 |
| 6 | 2.7 | 165.2 | 135.0 |
| 7 | 17.3 | 135.0 | 90.0 |
| 8 | 124.0 | 90.0 | 90.0 |
| 9 | 30.0 | 90.0 | 101.8 |
| 10 | 30.0 | 101.8 | 135.4 |
| 11 | 20.0 | 135.4 | 285.4 |
| 12 | 30.0 | 590.0 | 590.0 |

NUMERO DE CAPAS DE ACERO PASIVO: 0

| Capa | Area | Profund. |
|---|---|---|

CARACTERISTICAS DEL PRETENSADO:

| Capa | A.Tendones | A.Vainas | Profund. | F.Pret. |
|---|---|---|---|---|
| 1 | 176.400 | 618.500 | 20.2 | 1943.0 |
| 2 | 53.200 | 157.080 | 242.0 | 586.0 |
| 3 | 53.200 | 157.080 | 259.0 | 586.0 |
| 4 | 53.200 | 157.080 | 276.0 | 586.0 |
| 5 | 53.200 | 157.080 | 293.0 | 586.0 |
| 6 | 100.800 | 353.430 | 295.0 | 1110.3 |

CARACTERISTICAS DE LOS MATERIALES:

Resistencia característica del hormigón..(Kp/cm²): 400
Coeficiente de minoración del hormigón.....: 1.5
Resistencia característica del pasivo....(Kp/cm²): 5100
Coeficiente de minoración del pasivo.....: 1.15
Resistencia característica del activo....(Kp/cm²): 17100
Coeficiente de minoración del activo.....: 1.15

CONTROL DEL DIAGRAMA:

Se ha introducido el diagrama de interacción completo:

Profundidad mínima de la fibra neutra: -310
Profundidad máxima de la fibra neutra: 930
Número de divisiones ( < 50 ): 50

CARACTERISTICAS MECANICAS DE LA SECCION:

Canto total de la sección (cm.): 310

Profundidad del centro de gravedad de la sección bruta (cm.): 121.2014
Area total de la sección bruta (cm2.): 88163.31
Inercia de la sección bruta (cm4.): 1.176262E+09

Profundidad del centro de gravedad de la sección neta (cm.): 120.8497
Area total de la sección neta (cm2.): 87673.31
Inercia de la sección neta (cm4.): 1.145549E+09

Profundidad del centro de gravedad de la sección hom. (cm.): 123.2545
Area total de la sección hom. (cm2.): 91298.04
Inercia de la sección hom. (cm4.): 1.214478E+09

ESFUERZOS EN EL MOMENTO DE LA INYECCION:

Momento en inyección (m.T) * Positivo traccionando abajo *: 0
Axil en inyección (T.) * Positivo compresión * : 0

DEFORMACIONES DE NEUTRALIZACION:

| Capa | Deformación Neutralización |
|---|---|
| 1 | -.00573153 |
| 2 | -.00590560 |
| 3 | -.00591893 |
| 4 | -.00593227 |
| 5 | -.00594561 |
| 6 | -.00594714 |

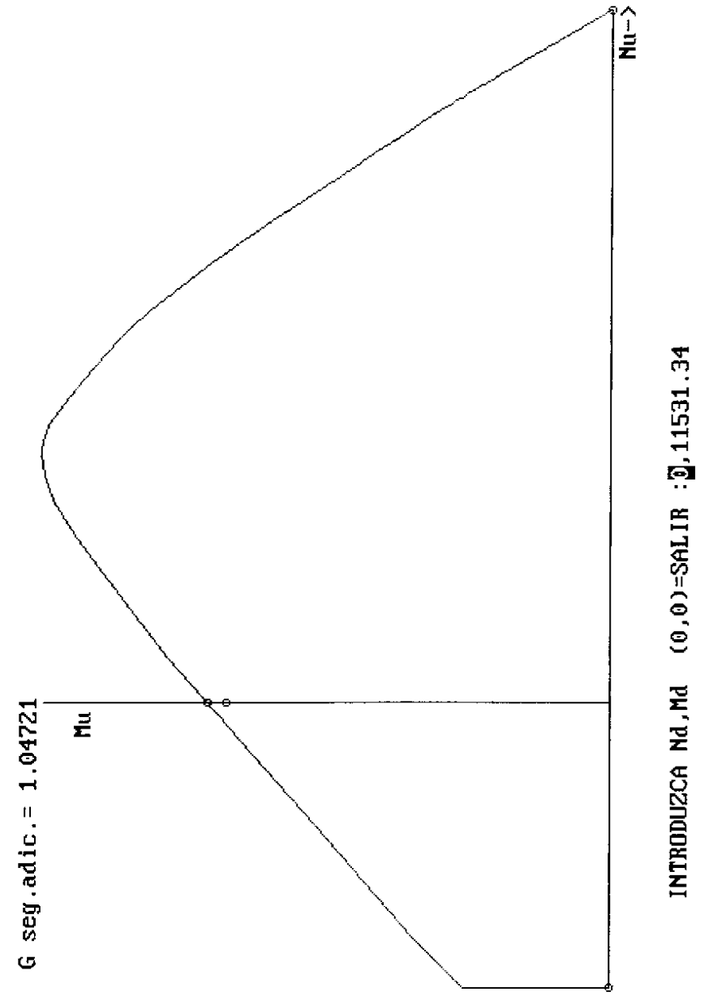
DIAGRAMA DE INTERACCION:

| XF (m.) | Mult. (mT.) | Nult. (T.) |
|---|---|---|
| -310.0 | 0.0 | -7286.1 |
| -285.2 | 4435.4 | -7286.1 |
| -260.4 | 4435.4 | -7286.1 |
| -235.6 | 4435.4 | -7286.1 |
| -210.8 | 4435.4 | -7286.1 |
| -186.0 | 4435.4 | -7286.1 |
| -161.2 | 4435.4 | -7286.1 |
| -136.4 | 4435.4 | -7286.1 |
| -111.6 | 4435.4 | -7286.1 |
| -86.8 | 4435.4 | -7286.1 |
| -62.0 | 4435.4 | -7286.1 |
| -37.2 | 4520.7 | -7203.3 |
| -12.4 | 4748.3 | -6982.4 |
| 12.4 | 5799.4 | -6112.4 |
| 37.2 | 13193.5 | 1088.6 |
| 62.0 | 15918.2 | 4176.5 |
| 86.8 | 16611.5 | 5131.1 |
| 111.6 | 16884.7 | 5665.2 |
| 136.4 | 17012.4 | 6122.1 |
| 161.2 | 17038.9 | 6559.8 |
| 186.0 | 16844.0 | 7093.2 |
| 210.8 | 16294.8 | 7784.4 |
| 235.6 | 15586.5 | 8510.6 |
| 260.4 | 14841.2 | 9209.2 |
| 285.2 | 13900.8 | 9981.1 |
| 310.0 | 12032.4 | 11251.1 |
| 334.8 | 10112.3 | 12354.3 |

| | | |
|---|---|---|
| 359.6 | 8764.7 | 13122.0 |
| 384.4 | 7779.7 | 13678.5 |
| 409.2 | 7035.8 | 14095.3 |
| 434.0 | 6459.0 | 14415.9 |
| 458.8 | 6001.6 | 14668.2 |
| 483.6 | 5632.2 | 14870.4 |
| 508.4 | 5328.9 | 15035.1 |
| 533.2 | 5076.5 | 15171.3 |
| 558.0 | 4863.9 | 15285.1 |
| 582.8 | 4682.8 | 15381.4 |
| 607.6 | 4527.2 | 15463.6 |
| 632.4 | 4392.2 | 15534.4 |
| 657.2 | 4274.4 | 15595.8 |
| 682.0 | 4170.7 | 15649.5 |
| 706.8 | 4079.0 | 15696.8 |
| 731.6 | 3997.3 | 15738.5 |
| 756.4 | 3924.3 | 15775.7 |
| 781.2 | 3858.6 | 15808.9 |
| 806.0 | 3799.2 | 15838.7 |
| 830.8 | 3745.4 | 15865.6 |
| 855.6 | 3696.5 | 15889.9 |
| 880.4 | 3651.8 | 15912.0 |
| 905.2 | 3610.8 | 15932.2 |
| 930.0 | 3573.2 | 15950.6 |

ESFUERZOS DE CALCULO:

Axil de cálculo : 0.000 / Momento de cálculo : 11531.34 / Coef. seg. adicional : 1.047



CALCULO DE ESFUERZOS ULTIMOS EN SECCIONES DE HORMIGON
ARMADO Y PRETENSADO

Nombre de la sección: LAV-Gelida. V. Rierussa. Pila. Nudo 77.

NUMERO DE TRAMOS DE HORMIGON: 11

| Trap. | Altura | Asup | Ainf |
|---|---|---|---|
| 1 | 50.0 | 510.0 | 510.0 |
| 2 | 30.0 | 225.4 | 191.8 |
| 3 | 30.0 | 191.8 | 180.0 |
| 4 | 130.2 | 180.0 | 180.0 |
| 5 | 11.1 | 180.0 | 209.0 |
| 6 | 8.9 | 209.0 | 307.0 |
| 7 | 12.8 | 307.0 | 603.0 |
| 8 | 5.0 | 603.0 | 1172.4 |
| 9 | 2.0 | 1172.4 | 1200.0 |
| 10 | 16.0 | 1400.0 | 1400.0 |
| 11 | 14.0 | 1400.0 | 0.0 |

NUMERO DE CAPAS DE ACERO PASIVO: 0

| Capa | Area | Profund. |
|---|---|---|

CARACTERISTICAS DEL PRETENSADO:

| Capa | A.Tendones | A.Vainas | Profund. | F.Pret. |
|---|---|---|---|---|
| 1 | 100.800 | 353.430 | 15.0 | 1090.8 |
| 2 | 53.200 | 157.080 | 236.0 | 575.7 |
| 3 | 106.400 | 314.160 | 253.0 | 1151.4 |
| 4 | 53.200 | 157.080 | 270.0 | 575.7 |
| 5 | 106.400 | 314.160 | 287.0 | 1151.4 |
| 6 | 176.400 | 618.500 | 289.8 | 1909.0 |

CARACTERISTICAS DE LOS MATERIALES:

Resistencia característica del hormigón..(Kp/cm²): 400
Coeficiente de minoración del hormigón.....: 1.5
Resistencia característica del pasivo....(Kp/cm²): 5100
Coeficiente de minoración del pasivo.....: 1.15
Resistencia característica del activo....(Kp/cm²): 17100
Coeficiente de minoración del activo.....: 1.15

CONTROL DEL DIAGRAMA:

Se ha introducido el diagrama de interacción completo:

Profundidad mínima de la fibra neutra: -310
Profundidad máxima de la fibra neutra: 930
Número de divisiones ( < 50 ): 50

CARACTERISTICAS MECANICAS DE LA SECCION:

Canto total de la sección (cm.): 310

Profundidad del centro de gravedad de la sección bruta (cm.): 178.3868
Area total de la sección bruta (cm2.): 110061
Inercia de la sección bruta (cm4.): 1.311669E+09

Profundidad del centro de gravedad de la sección neta (cm.): 178.1071
Area total de la sección neta (cm2.): 109464.6
Inercia de la sección neta (cm4.): 1.287219E+09

Profundidad del centro de gravedad de la sección hom. (cm.): 180.0386
Area total de la sección hom. (cm2.): 113843.1
Inercia de la sección hom. (cm4.): 1.341287E+09

ESFUERZOS EN EL MOMENTO DE LA INYECCION:

Momento en inyección (m.T) * Positivo traccionando abajo *: 0
Axil en inyección (T.) * Positivo compresión * : 0

DEFORMACIONES DE NEUTRALIZACION:

| Capa | Deformación Neutralización |
|---|---|
| 1 | -.00559378 |
| 2 | -.00574423 |
| 3 | -.00575586 |
| 4 | -.00576739 |
| 5 | -.00577902 |
| 6 | -.00578092 |

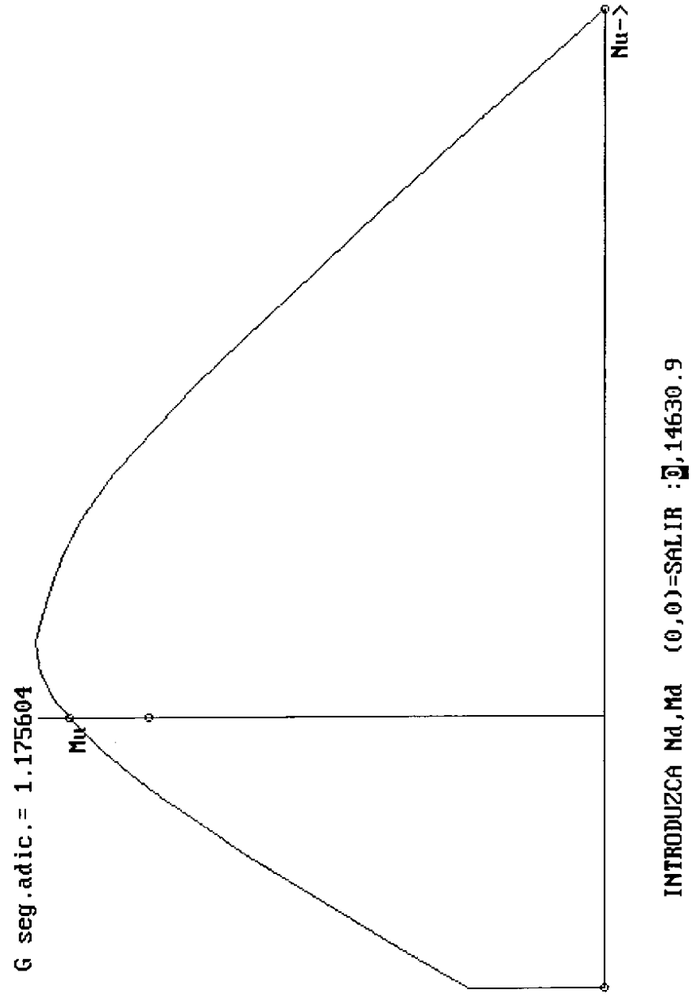
DIAGRAMA DE INTERACCION:

| XF (m.) | Mult. (mT.) | Nult. (T.) |
|---|---|---|
| -310.0 | 0.0 | -8868.2 |
| -285.2 | 4406.3 | -8868.2 |
| -260.4 | 4406.3 | -8868.2 |
| -235.6 | 4406.3 | -8868.2 |
| -210.8 | 4406.3 | -8868.2 |
| -186.0 | 4406.3 | -8868.2 |
| -161.2 | 4406.3 | -8868.2 |
| -136.4 | 4406.3 | -8868.2 |
| -111.6 | 4406.3 | -8868.2 |
| -86.8 | 4406.3 | -8868.2 |
| -62.0 | 4406.3 | -8868.2 |
| -37.2 | 4577.6 | -8764.4 |
| -12.4 | 4789.6 | -8635.9 |
| 12.4 | 6856.7 | -7452.6 |
| 37.2 | 11472.2 | -4576.8 |
| 62.0 | 14577.2 | -2382.3 |
| 86.8 | 16071.2 | -1171.9 |
| 111.6 | 17007.0 | -243.9 |
| 136.4 | 17686.4 | 614.0 |
| 161.2 | 18157.6 | 1478.1 |
| 186.0 | 18307.4 | 2533.6 |
| 210.8 | 17940.2 | 3896.0 |
| 235.6 | 17465.0 | 5182.1 |
| 260.4 | 16892.7 | 6393.0 |
| 285.2 | 15877.2 | 7906.0 |
| 310.0 | 13338.0 | 10664.5 |
| 334.8 | 11079.2 | 12817.4 |
| 359.6 | 9498.9 | 14317.6 |

| | | |
|---|---|---|
| 384.4 | 8347.2 | 15406.6 |
| 409.2 | 7480.0 | 16223.3 |
| 434.0 | 6809.5 | 16852.5 |
| 458.8 | 6279.4 | 17348.1 |
| 483.6 | 5852.3 | 17746.0 |
| 508.4 | 5502.6 | 18070.6 |
| 533.2 | 5212.3 | 18339.1 |
| 558.0 | 4968.4 | 18564.0 |
| 582.8 | 4761.2 | 18754.4 |
| 607.6 | 4583.5 | 18917.2 |
| 632.4 | 4429.8 | 19057.5 |
| 657.2 | 4295.8 | 19179.4 |
| 682.0 | 4178.3 | 19286.1 |
| 706.8 | 4074.4 | 19380.0 |
| 731.6 | 3982.2 | 19463.2 |
| 756.4 | 3899.9 | 19537.3 |
| 781.2 | 3826.0 | 19603.6 |
| 806.0 | 3759.4 | 19663.1 |
| 830.8 | 3699.1 | 19716.9 |
| 855.6 | 3644.4 | 19765.6 |
| 880.4 | 3594.4 | 19809.9 |
| 905.2 | 3548.8 | 19850.3 |
| 930.0 | 3506.9 | 19887.3 |

ESFUERZOS DE CALCULO:

Axil de cálculo : 0.000 / Momento de cálculo : 14630.90 / Coef. seg. adicional : 1.176



### 3.5.2. Solicitaciones Tangentes

"TITULO:" VIADUCTO DE RIERA DE LA RIERUSSA.

DATOS PARA CALCULO CORTANTE

DATOS MATERIALES

| Fck(N/mm2) | Gammac | Fyk(N/mm2) | Fpk(N/mm2) | Gammas | Alfa | Ctor | Canto |
|---|---|---|---|---|---|---|---|
| 40 | 1.5 | 500 | 1710 | 1.15 | 90 | 1.50 | "C" |

DATOS SECCIONES

"Numero de secciones tipo:" 2

| NS | Area | Inercia | Ycdg(m) | d(m) | b0(m) | u(m) | Ae(m2) | he(m) | Vola.(m) | Evmax(m) | Evmin(m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 8.817 | 11.763 | 1.212 | 3.05 | 0.80 | 16.739 | 15.595 | 0.30 | 3.50 | 0.517 | 0.180 |
| 2 | 11.407 | 14.033 | 1.370 | 3.05 | 1.70 | 15.595 | 13.758 | 0.30 | 3.50 | 0.517 | 0.180 |

"Numero de nudos :" 113

COORDENADAS C.D.G. y PRETENSADO

| NUDO | Z (prof.) | Arm pas (cm2) | Arm act (cm2) |
|---|---|---|---|
| 1 | 1.370 | 118.59 | 490.00 |
| 2 | 1.212 | 118.59 | 490.00 |
| 3 | 1.212 | 118.59 | 490.00 |
| 4 | 1.212 | 118.59 | 490.00 |
| 5 | 1.212 | 118.59 | 490.00 |
| 6 | 1.212 | 118.59 | 490.00 |
| 7 | 1.212 | 118.59 | 490.00 |
| 8 | 1.212 | 118.59 | 490.00 |
| 9 | 1.212 | 118.59 | 490.00 |
| 10 | 1.212 | 118.59 | 490.00 |
| 11 | 1.212 | 118.59 | 490.00 |
| 12 | 1.212 | 118.59 | 490.00 |
| 13 | 1.212 | 118.59 | 490.00 |
| 14 | 1.212 | 118.59 | 490.00 |
| 15 | 1.212 | 118.59 | 490.00 |
| 16 | 1.370 | 118.59 | 490.00 |
| 17 | 1.370 | 118.59 | 490.00 |
| 18 | 1.370 | 118.59 | 490.00 |
| 19 | 1.212 | 118.59 | 490.00 |
| 20 | 1.212 | 118.59 | 490.00 |
| 21 | 1.212 | 118.59 | 490.00 |
| 22 | 1.212 | 118.59 | 490.00 |
| 23 | 1.212 | 118.59 | 490.00 |
| 24 | 1.212 | 118.59 | 490.00 |
| 25 | 1.212 | 118.59 | 490.00 |
| 26 | 1.212 | 118.59 | 490.00 |
| 27 | 1.212 | 118.59 | 490.00 |
| 28 | 1.212 | 118.59 | 490.00 |
| 29 | 1.212 | 118.59 | 490.00 |
| 30 | 1.212 | 118.59 | 490.00 |
| 31 | 1.212 | 118.59 | 490.00 |
| 32 | 1.212 | 118.59 | 490.00 |
| 33 | 1.212 | 118.59 | 490.00 |
| 34 | 1.212 | 118.59 | 490.00 |
| 35 | 1.212 | 118.59 | 490.00 |
| 36 | 1.370 | 118.59 | 490.00 |
| 37 | 1.370 | 118.59 | 490.00 |
| 38 | 1.370 | 118.59 | 490.00 |
| 39 | 1.212 | 118.59 | 490.00 |
| 40 | 1.212 | 118.59 | 490.00 |
| 41 | 1.212 | 118.59 | 490.00 |
| 42 | 1.212 | 118.59 | 490.00 |

| | | | |
|---|---|---|---|
| 43 | 1.212 | 118.59 | 490.00 |
| 44 | 1.212 | 118.59 | 490.00 |
| 45 | 1.212 | 118.59 | 490.00 |
| 46 | 1.212 | 118.59 | 490.00 |
| 47 | 1.212 | 118.59 | 490.00 |
| 48 | 1.212 | 118.59 | 490.00 |
| 49 | 1.212 | 118.59 | 490.00 |
| 50 | 1.212 | 118.59 | 490.00 |
| 51 | 1.212 | 118.59 | 490.00 |
| 52 | 1.212 | 118.59 | 490.00 |
| 53 | 1.212 | 118.59 | 490.00 |
| 54 | 1.212 | 118.59 | 490.00 |
| 55 | 1.212 | 118.59 | 490.00 |
| 56 | 1.370 | 118.59 | 490.00 |
| 57 | 1.370 | 118.59 | 490.00 |
| 58 | 1.370 | 118.59 | 490.00 |
| 59 | 1.212 | 118.59 | 490.00 |
| 60 | 1.212 | 118.59 | 490.00 |
| 61 | 1.212 | 118.59 | 490.00 |
| 62 | 1.212 | 118.59 | 490.00 |
| 63 | 1.212 | 118.59 | 490.00 |
| 64 | 1.212 | 118.59 | 490.00 |
| 65 | 1.212 | 118.59 | 490.00 |
| 66 | 1.212 | 118.59 | 490.00 |
| 67 | 1.212 | 118.59 | 490.00 |
| 68 | 1.212 | 118.59 | 490.00 |
| 69 | 1.212 | 118.59 | 490.00 |
| 70 | 1.212 | 118.59 | 490.00 |
| 71 | 1.212 | 118.59 | 490.00 |
| 72 | 1.212 | 118.59 | 490.00 |
| 73 | 1.212 | 118.59 | 490.00 |
| 74 | 1.212 | 118.59 | 490.00 |
| 75 | 1.212 | 118.59 | 490.00 |
| 76 | 1.370 | 118.59 | 490.00 |
| 77 | 1.370 | 118.59 | 490.00 |
| 78 | 1.370 | 118.59 | 490.00 |
| 79 | 1.212 | 118.59 | 490.00 |
| 80 | 1.212 | 118.59 | 490.00 |
| 81 | 1.212 | 118.59 | 490.00 |
| 82 | 1.212 | 118.59 | 490.00 |
| 83 | 1.212 | 118.59 | 490.00 |
| 84 | 1.212 | 118.59 | 490.00 |
| 85 | 1.212 | 118.59 | 490.00 |
| 86 | 1.212 | 118.59 | 490.00 |
| 87 | 1.212 | 118.59 | 490.00 |
| 88 | 1.212 | 118.59 | 490.00 |
| 89 | 1.212 | 118.59 | 490.00 |
| 90 | 1.212 | 118.59 | 490.00 |
| 91 | 1.212 | 118.59 | 490.00 |
| 92 | 1.212 | 118.59 | 490.00 |
| 93 | 1.212 | 118.59 | 490.00 |
| 94 | 1.212 | 118.59 | 490.00 |
| 95 | 1.212 | 118.59 | 490.00 |
| 96 | 1.370 | 118.59 | 490.00 |
| 97 | 1.370 | 118.59 | 490.00 |
| 98 | 1.370 | 118.59 | 490.00 |
| 99 | 1.212 | 118.59 | 490.00 |
| 100 | 1.212 | 118.59 | 490.00 |
| 101 | 1.212 | 118.59 | 490.00 |
| 102 | 1.212 | 118.59 | 490.00 |
| 103 | 1.212 | 118.59 | 490.00 |
| 104 | 1.212 | 118.59 | 490.00 |
| 105 | 1.212 | 118.59 | 490.00 |
| 106 | 1.212 | 118.59 | 490.00 |
| 107 | 1.212 | 118.59 | 490.00 |
| 108 | 1.212 | 118.59 | 490.00 |
| 109 | 1.212 | 118.59 | 490.00 |
| 110 | 1.212 | 118.59 | 490.00 |
| 111 | 1.212 | 118.59 | 490.00 |
| 112 | 1.212 | 118.59 | 490.00 |
| 113 | 1.370 | 118.59 | 490.00 |

RESUMEN DE ARMADURAS

VIADUCTO DE RIERA DE LA RIERUSSA. Calculo segun IPF.

| NUDO | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß | Sd/Su1 | |
|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 326.55 | 7.81 | 11.21 | 0.155 | 0.108 | |
| 2 | 34.41 | 334.43 | 6.31 | 27.92 | 0.645 | 0.270 | |
| 3 | 25.26 | 300.61 | 5.67 | 23.33 | 0.520 | 0.226 | |
| 4 | 16.20 | 266.17 | 5.02 | 18.79 | 0.401 | 0.182 | |
| 5 | 7.13 | 231.71 | 4.35 | 14.23 | 0.290 | 0.138 | |
| 6 | 0.00 | 197.21 | 3.70 | 9.70 | 0.187 | 0.094 | |
| 7 | 0.00 | 162.24 | 3.04 | 5.18 | 0.109 | 0.050 | |
| 8 | 0.00 | 127.69 | 2.39 | 4.84 | 0.087 | 0.047 | |
| 9 | 0.00 | 92.46 | 1.73 | 8.52 | 0.149 | 0.082 | |
| 10 | 3.39 | 58.56 | 1.10 | 12.39 | 0.222 | 0.120 | |
| 11 | 11.10 | 74.49 | 1.40 | 16.28 | 0.302 | 0.157 | |
| 12 | 18.91 | 92.27 | 1.77 | 20.21 | 0.391 | 0.195 | |
| 13 | 28.89 | 106.46 | 2.13 | 24.16 | 0.480 | 0.234 | |
| 14 | 37.00 | 139.36 | 2.79 | 28.11 | 0.584 | 0.272 | |
| 15 | 45.18 | 182.18 | 3.46 | 32.07 | 0.693 | 0.310 | |
| 16 | 47.07 | 210.85 | 4.83 | 41.01 | 0.273 | 0.397 | |
| 17 | 59.29 | 338.07 | 7.77 | 46.64 | 0.340 | 0.677 | ← Max Arm Tor Long. |
| 18 | 44.72 | 310.76 | 7.19 | 39.83 | 0.278 | 0.385 | |
| 19 | 43.94 | 290.62 | 5.53 | 31.17 | 0.698 | 0.301 | |
| 20 | 36.91 | 244.02 | 4.96 | 27.74 | 0.604 | 0.268 | |
| 21 | 29.92 | 215.84 | 4.40 | 24.32 | 0.512 | 0.235 | |
| 22 | 23.86 | 187.71 | 3.88 | 20.87 | 0.418 | 0.202 | |
| 23 | 16.49 | 156.52 | 3.30 | 17.36 | 0.332 | 0.168 | |
| 24 | 9.19 | 128.85 | 2.71 | 13.88 | 0.251 | 0.134 | |
| 25 | 1.91 | 100.53 | 2.12 | 10.41 | 0.175 | 0.101 | |
| 26 | 0.00 | 72.85 | 1.53 | 6.93 | 0.104 | 0.067 | |
| 27 | 0.00 | 45.18 | 0.95 | 3.86 | 0.055 | 0.037 | |
| 28 | 0.00 | 55.23 | 1.16 | 7.05 | 0.105 | 0.068 | |
| 29 | 2.10 | 70.79 | 1.49 | 10.50 | 0.166 | 0.102 | |
| 30 | 9.36 | 92.75 | 1.95 | 13.96 | 0.239 | 0.135 | |
| 31 | 16.63 | 120.42 | 2.54 | 17.43 | 0.318 | 0.169 | |
| 32 | 23.99 | 148.37 | 3.13 | 20.93 | 0.403 | 0.202 | |
| 33 | 31.33 | 176.02 | 3.71 | 24.41 | 0.491 | 0.236 | |
| 34 | 38.71 | 203.58 | 4.30 | 27.91 | 0.583 | 0.270 | |
| 35 | 46.13 | 240.51 | 4.88 | 31.43 | 0.679 | 0.304 | |
| 36 | 50.41 | 267.55 | 6.39 | 41.29 | 0.278 | 0.599 | |
| 37 | 62.05 | 307.47 | 7.34 | 46.54 | 0.340 | 0.675 | |
| 38 | 48.92 | 279.03 | 6.66 | 40.62 | 0.275 | 0.589 | |
| 39 | 47.12 | 249.76 | 5.10 | 31.91 | 0.697 | 0.309 | |
| 40 | 39.65 | 213.92 | 4.52 | 28.37 | 0.601 | 0.274 | |
| 41 | 32.28 | 186.35 | 3.93 | 24.87 | 0.508 | 0.241 | |
| 42 | 25.99 | 158.69 | 3.40 | 21.36 | 0.415 | 0.207 | |
| 43 | 18.48 | 128.89 | 2.81 | 17.85 | 0.329 | 0.173 | |
| 44 | 11.06 | 101.11 | 2.20 | 14.37 | 0.249 | 0.139 | |
| 45 | 3.65 | 73.90 | 1.61 | 10.90 | 0.174 | 0.105 | |
| 46 | 0.00 | 46.55 | 1.01 | 7.42 | 0.107 | 0.072 | |
| 47 | 0.00 | 34.94 | 0.76 | 3.94 | 0.052 | 0.038 | |
| 48 | 0.00 | 53.49 | 1.16 | 7.20 | 0.104 | 0.070 | |
| 49 | 3.13 | 79.90 | 1.74 | 10.65 | 0.173 | 0.103 | |
| 50 | 10.51 | 107.79 | 2.35 | 14.11 | 0.248 | 0.136 | |

VIADUCTO DE RIERA DE LA RIERUSSA.

| NUDO | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß | Sd/Su1 | |
|---|---|---|---|---|---|---|---|
| 51 | 17.91 | 134.99 | 2.94 | 17.58 | 0.328 | 0.170 | |
| 52 | 25.40 | 162.15 | 3.54 | 21.08 | 0.413 | 0.204 | |
| 53 | 32.85 | 189.27 | 4.13 | 24.56 | 0.501 | 0.238 | |
| 54 | 40.36 | 216.36 | 4.73 | 28.07 | 0.593 | 0.271 | |
| 55 | 47.91 | 270.75 | 5.32 | 31.58 | 0.687 | 0.305 | |
| 56 | 52.57 | 291.37 | 7.15 | 41.44 | 0.283 | 0.601 | |
| 57 | 64.37 | 313.41 | 7.69 | 46.69 | 0.344 | 0.677 | |
| 58 | 48.89 | 297.02 | 7.30 | 39.80 | 0.268 | 0.577 | |
| 59 | 46.80 | 276.55 | 5.45 | 31.07 | 0.676 | 0.300 | |
| 60 | 39.21 | 222.29 | 4.86 | 27.53 | 0.581 | 0.266 | |
| 61 | 31.71 | 195.11 | 4.26 | 24.03 | 0.490 | 0.232 | |
| 62 | 24.19 | 167.76 | 3.66 | 20.52 | 0.402 | 0.198 | |
| 63 | 16.70 | 140.61 | 3.06 | 17.01 | 0.317 | 0.165 | |
| 64 | 9.27 | 113.40 | 2.47 | 13.53 | 0.237 | 0.131 | |
| 65 | 1.87 | 85.52 | 1.86 | 10.06 | 0.163 | 0.097 | |
| 66 | 0.00 | 58.81 | 1.28 | 6.58 | 0.095 | 0.064 | |
| 67 | 0.00 | 40.38 | 0.88 | 4.55 | 0.064 | 0.044 | |
| 68 | 0.00 | 42.72 | 0.93 | 8.03 | 0.119 | 0.078 | |
| 69 | 4.90 | 68.43 | 1.49 | 11.49 | 0.184 | 0.111 | |
| 70 | 12.28 | 96.24 | 2.10 | 14.94 | 0.259 | 0.145 | |
| 71 | 19.68 | 123.45 | 2.69 | 18.41 | 0.340 | 0.178 | |
| 72 | 27.17 | 150.96 | 3.29 | 21.91 | 0.425 | 0.212 | |
| 73 | 34.63 | 178.15 | 3.89 | 25.40 | 0.514 | 0.246 | |
| 74 | 42.14 | 205.25 | 4.48 | 28.90 | 0.606 | 0.280 | |
| 75 | 49.69 | 243.05 | 5.08 | 32.42 | 0.701 | 0.314 | |
| 76 | 54.39 | 269.52 | 6.61 | 42.25 | 0.288 | 0.613 | |
| 77 | 66.19 | 297.57 | 7.30 | 47.50 | 0.349 | 0.689 | ← Max. Arm. Cort. |
| 78 | 50.27 | 261.83 | 6.43 | 40.41 | 0.266 | 0.586 | |
| 79 | 48.15 | 236.16 | 4.91 | 31.70 | 0.678 | 0.307 | |
| 80 | 40.55 | 197.71 | 4.32 | 28.16 | 0.582 | 0.272 | |
| 81 | 33.06 | 170.54 | 3.72 | 24.66 | 0.492 | 0.239 | |
| 82 | 25.55 | 143.34 | 3.13 | 21.16 | 0.403 | 0.205 | |
| 83 | 18.04 | 116.38 | 2.54 | 17.64 | 0.319 | 0.171 | |
| 84 | 10.61 | 89.17 | 1.94 | 14.16 | 0.240 | 0.137 | |
| 85 | 3.21 | 70.29 | 1.53 | 10.69 | 0.169 | 0.103 | |
| 86 | 0.00 | 54.26 | 1.18 | 7.21 | 0.108 | 0.070 | |
| 87 | 0.00 | 46.12 | 1.00 | 4.00 | 0.057 | 0.039 | |
| 88 | 0.00 | 74.05 | 1.61 | 6.74 | 0.101 | 0.065 | |
| 89 | 2.15 | 101.27 | 2.21 | 10.20 | 0.170 | 0.099 | |
| 90 | 9.53 | 128.47 | 2.80 | 13.65 | 0.244 | 0.132 | |
| 91 | 16.93 | 156.13 | 3.40 | 17.12 | 0.324 | 0.166 | |
| 92 | 24.35 | 183.46 | 3.99 | 20.60 | 0.409 | 0.199 | |
| 93 | 31.59 | 210.79 | 4.58 | 24.02 | 0.496 | 0.232 | |
| 94 | 38.81 | 238.09 | 5.17 | 27.43 | 0.585 | 0.265 | |
| 95 | 46.01 | 291.81 | 5.76 | 30.83 | 0.677 | 0.298 | |
| 96 | 50.21 | 311.86 | 7.59 | 40.80 | 0.283 | 0.592 | |
| 97 | 61.93 | 330.98 | 8.01 | 46.04 | 0.344 | 0.668 | |
| 98 | 48.18 | 207.74 | 5.02 | 39.97 | 0.256 | 0.580 | |
| 99 | 47.51 | 179.46 | 3.53 | 31.89 | 0.673 | 0.308 | |
| 100 | 39.20 | 133.80 | 2.85 | 28.00 | 0.568 | 0.271 | |

VIADUCTO DE RIERA DE LA RIERUSSA.

| NUDO | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß | Sd/Su1 |
|---|---|---|---|---|---|---|
| 101 | 30.95 | 114.41 | 2.43 | 24.14 | 0.469 | 0.233 |
| 102 | 22.81 | 95.23 | 2.01 | 20.31 | 0.380 | 0.196 |
| 103 | 14.75 | 76.93 | 1.62 | 16.51 | 0.299 | 0.160 |
| 104 | 6.83 | 63.91 | 1.35 | 12.76 | 0.224 | 0.123 |
| 105 | 0.00 | 95.88 | 2.02 | 9.04 | 0.156 | 0.087 |
| 106 | 0.00 | 128.40 | 2.71 | 5.18 | 0.094 | 0.050 |
| 107 | 0.00 | 161.45 | 3.41 | 4.79 | 0.106 | 0.046 |
| 108 | 0.66 | 193.99 | 4.10 | 9.78 | 0.186 | 0.095 |
| 109 | 11.13 | 226.37 | 4.79 | 14.75 | 0.291 | 0.143 |
| 110 | 21.67 | 259.01 | 5.49 | 19.75 | 0.410 | 0.191 |
| 111 | 32.23 | 291.47 | 6.19 | 24.75 | 0.537 | 0.239 |
| 112 | 42.80 | 323.93 | 6.88 | 29.74 | 0.669 | 0.288 |
| 113 | 2.42 | 339.02 | 9.00 | 17.82 | 0.188 | 0.172 |

RESUMEN DE ARMADURAS

VIADUCTO DE RIERA DE LA RIERUSSA. Calculo segun EC(1).

| NUDO | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß | Sd/Su1 |
|---|---|---|---|---|---|---|
| 1 | 0.00 | 292.22 | 6.99 | 10.69 | 0.130 | 0.103 |
| 2 | 28.85 | 269.52 | 5.09 | 25.12 | 0.549 | 0.243 |
| 3 | 20.45 | 245.96 | 4.64 | 20.91 | 0.440 | 0.202 |
| 4 | 12.99 | 230.52 | 4.34 | 17.17 | 0.346 | 0.166 |
| 5 | 5.50 | 202.81 | 3.81 | 13.41 | 0.258 | 0.130 |
| 6 | 0.00 | 179.45 | 3.37 | 9.68 | 0.176 | 0.094 |
| 7 | 0.00 | 145.81 | 2.73 | 5.48 | 0.101 | 0.053 |
| 8 | 0.00 | 145.26 | 2.72 | 5.64 | 0.090 | 0.055 |
| 9 | 0.00 | 89.18 | 1.67 | 9.48 | 0.158 | 0.092 |
| 10 | 3.42 | 69.50 | 1.30 | 12.41 | 0.215 | 0.120 |
| 11 | 10.51 | 83.67 | 1.57 | 15.98 | 0.291 | 0.155 |
| 12 | 16.74 | 97.74 | 1.88 | 19.11 | 0.364 | 0.185 |
| 13 | 25.01 | 115.83 | 2.31 | 22.26 | 0.435 | 0.215 |
| 14 | 31.49 | 150.88 | 3.02 | 25.41 | 0.515 | 0.246 |
| 15 | 38.03 | 182.07 | 3.35 | 28.57 | 0.599 | 0.276 |
| 16 | 39.65 | 193.91 | 4.44 | 37.60 | 0.235 | 0.364 |
| 17 | 53.76 | 326.40 | 7.50 | 43.99 | 0.338 | 0.638 |
| 18 | 41.65 | 293.60 | 6.78 | 38.42 | 0.274 | 0.372 |
| 19 | 40.39 | 263.75 | 5.08 | 29.44 | 0.641 | 0.285 |
| 20 | 34.21 | 230.19 | 4.68 | 26.43 | 0.560 | 0.256 |
| 21 | 28.07 | 207.31 | 4.22 | 23.43 | 0.481 | 0.227 |
| 22 | 22.85 | 184.87 | 3.82 | 20.39 | 0.400 | 0.197 |
| 23 | 16.34 | 159.38 | 3.36 | 17.29 | 0.325 | 0.167 |
| 24 | 8.83 | 133.27 | 2.81 | 13.71 | 0.243 | 0.133 |
| 25 | 2.41 | 110.59 | 2.33 | 10.65 | 0.177 | 0.103 |
| 26 | 0.00 | 84.49 | 1.78 | 7.06 | 0.105 | 0.068 |
| 27 | 0.00 | 73.01 | 1.54 | 4.86 | 0.065 | 0.047 |
| 28 | 0.00 | 73.90 | 1.56 | 7.81 | 0.115 | 0.076 |
| 29 | 3.92 | 90.31 | 1.90 | 11.37 | 0.186 | 0.110 |
| 30 | 10.31 | 112.24 | 2.36 | 14.41 | 0.252 | 0.139 |
| 31 | 17.81 | 138.34 | 2.91 | 17.99 | 0.334 | 0.174 |
| 32 | 24.30 | 160.72 | 3.39 | 21.08 | 0.409 | 0.204 |
| 33 | 30.77 | 182.77 | 3.86 | 24.15 | 0.486 | 0.234 |
| 34 | 37.28 | 217.08 | 4.58 | 27.24 | 0.566 | 0.263 |
| 35 | 43.84 | 249.78 | 4.92 | 30.34 | 0.649 | 0.293 |
| 36 | 48.65 | 257.49 | 6.15 | 40.50 | 0.268 | 0.392 |
| 37 | 61.04 | 315.25 | 7.53 | 46.08 | 0.332 | 0.669 |
| 38 | 46.25 | 283.08 | 6.76 | 39.41 | 0.265 | 0.381 |
| 39 | 43.92 | 248.82 | 5.04 | 30.38 | 0.651 | 0.294 |
| 40 | 37.33 | 219.19 | 4.63 | 27.26 | 0.568 | 0.264 |
| 41 | 30.82 | 196.83 | 4.15 | 24.18 | 0.488 | 0.234 |
| 42 | 25.39 | 174.78 | 3.75 | 21.08 | 0.406 | 0.204 |
| 43 | 18.76 | 150.22 | 3.27 | 17.98 | 0.332 | 0.174 |
| 44 | 11.12 | 124.13 | 2.70 | 14.40 | 0.250 | 0.139 |
| 45 | 4.60 | 102.43 | 2.23 | 11.34 | 0.184 | 0.110 |
| 46 | 0.00 | 76.10 | 1.66 | 7.76 | 0.113 | 0.075 |
| 47 | 0.00 | 72.85 | 1.59 | 4.69 | 0.062 | 0.045 |
| 48 | 0.00 | 85.78 | 1.87 | 7.54 | 0.111 | 0.073 |
| 49 | 4.07 | 108.44 | 2.36 | 11.10 | 0.182 | 0.107 |
| 50 | 10.57 | 130.79 | 2.85 | 14.14 | 0.248 | 0.137 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| NUDO | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß | Sd/Su1 |
|---|---|---|---|---|---|---|
| 51 | 18.19 | 156.40 | 3.41 | 17.71 | 0.330 | 0.171 |
| 52 | 24.79 | 178.04 | 3.88 | 20.80 | 0.404 | 0.201 |
| 53 | 31.36 | 199.65 | 4.36 | 23.87 | 0.480 | 0.231 |
| 54 | 37.99 | 233.37 | 5.10 | 26.96 | 0.559 | 0.261 |
| 55 | 44.66 | 272.51 | 5.44 | 30.06 | 0.641 | 0.291 |
| 56 | 49.78 | 279.73 | 6.87 | 40.20 | 0.265 | 0.389 |
| 57 | 62.37 | 319.52 | 7.84 | 45.80 | 0.332 | 0.664 |
| 58 | 46.24 | 294.69 | 7.24 | 38.62 | 0.262 | 0.374 |
| 59 | 43.58 | 266.16 | 5.34 | 29.56 | 0.629 | 0.286 |
| 60 | 36.87 | 225.22 | 4.92 | 26.44 | 0.547 | 0.256 |
| 61 | 30.26 | 203.22 | 4.44 | 23.35 | 0.468 | 0.226 |
| 62 | 23.62 | 181.47 | 3.96 | 20.25 | 0.391 | 0.196 |
| 63 | 17.01 | 159.84 | 3.48 | 17.16 | 0.318 | 0.166 |
| 64 | 9.37 | 134.24 | 2.92 | 13.58 | 0.236 | 0.131 |
| 65 | 2.84 | 111.95 | 2.44 | 10.52 | 0.171 | 0.102 |
| 66 | 0.00 | 86.35 | 1.88 | 6.94 | 0.101 | 0.067 |
| 67 | 0.00 | 75.36 | 1.64 | 5.30 | 0.072 | 0.051 |
| 68 | 0.00 | 77.84 | 1.69 | 8.36 | 0.124 | 0.081 |
| 69 | 5.83 | 99.72 | 2.17 | 11.92 | 0.195 | 0.115 |
| 70 | 12.32 | 121.96 | 2.66 | 14.96 | 0.261 | 0.145 |
| 71 | 19.94 | 147.55 | 3.22 | 18.53 | 0.343 | 0.179 |
| 72 | 26.55 | 169.46 | 3.70 | 21.62 | 0.418 | 0.209 |
| 73 | 33.13 | 191.14 | 4.17 | 24.69 | 0.495 | 0.239 |
| 74 | 39.75 | 224.86 | 4.91 | 27.78 | 0.574 | 0.269 |
| 75 | 46.42 | 253.13 | 5.26 | 30.89 | 0.656 | 0.299 |
| 76 | 51.55 | 264.38 | 6.49 | 40.99 | 0.270 | 0.396 |
| 77 | 64.14 | 304.78 | 7.48 | 46.59 | 0.334 | 0.676 |
| 78 | 48.59 | 265.40 | 6.52 | 39.67 | 0.258 | 0.384 |
| 79 | 45.83 | 235.65 | 4.79 | 30.62 | 0.648 | 0.296 |
| 80 | 39.11 | 200.16 | 4.37 | 27.49 | 0.566 | 0.266 |
| 81 | 32.51 | 178.21 | 3.89 | 24.41 | 0.486 | 0.236 |
| 82 | 25.88 | 156.48 | 3.41 | 21.31 | 0.409 | 0.206 |
| 83 | 19.25 | 135.04 | 2.94 | 18.21 | 0.335 | 0.176 |
| 84 | 11.60 | 109.35 | 2.38 | 14.62 | 0.253 | 0.141 |
| 85 | 5.08 | 87.20 | 1.90 | 11.57 | 0.187 | 0.112 |
| 86 | 0.00 | 69.00 | 1.50 | 7.98 | 0.117 | 0.077 |
| 87 | 0.00 | 70.66 | 1.54 | 5.02 | 0.067 | 0.049 |
| 88 | 0.00 | 84.06 | 1.83 | 6.86 | 0.101 | 0.066 |
| 89 | 2.64 | 105.93 | 2.31 | 10.43 | 0.172 | 0.101 |
| 90 | 9.14 | 127.61 | 2.78 | 13.47 | 0.237 | 0.130 |
| 91 | 16.76 | 153.77 | 3.35 | 17.04 | 0.318 | 0.165 |
| 92 | 23.30 | 175.58 | 3.82 | 20.11 | 0.391 | 0.194 |
| 93 | 29.66 | 197.39 | 4.29 | 23.11 | 0.465 | 0.224 |
| 94 | 36.00 | 231.36 | 5.03 | 26.11 | 0.542 | 0.253 |
| 95 | 42.33 | 270.79 | 5.37 | 29.10 | 0.621 | 0.281 |
| 96 | 46.93 | 278.06 | 6.77 | 39.33 | 0.259 | 0.380 |
| 97 | 59.44 | 310.97 | 7.53 | 44.93 | 0.328 | 0.652 |
| 98 | 40.60 | 177.99 | 4.30 | 36.57 | 0.221 | 0.354 |
| 99 | 40.06 | 142.95 | 2.72 | 28.36 | 0.581 | 0.274 |
| 100 | 33.44 | 113.34 | 2.41 | 25.27 | 0.501 | 0.244 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| NUDO | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß | Sd/Su1 |
|---|---|---|---|---|---|---|
| 101 | 26.88 | 99.45 | 2.11 | 22.20 | 0.425 | 0.215 |
| 102 | 20.43 | 86.09 | 1.82 | 19.18 | 0.352 | 0.185 |
| 103 | 14.05 | 73.11 | 1.54 | 16.18 | 0.286 | 0.156 |
| 104 | 6.80 | 67.03 | 1.41 | 12.74 | 0.217 | 0.123 |
| 105 | 1.10 | 100.77 | 2.12 | 10.01 | 0.162 | 0.097 |
| 106 | 0.00 | 142.20 | 3.00 | 6.04 | 0.096 | 0.058 |
| 107 | 0.00 | 145.28 | 3.07 | 3.89 | 0.100 | 0.038 |
| 108 | 0.00 | 167.31 | 3.54 | 8.08 | 0.167 | 0.078 |
| 109 | 5.88 | 189.22 | 4.00 | 12.25 | 0.243 | 0.118 |
| 110 | 14.73 | 223.74 | 4.75 | 16.45 | 0.331 | 0.159 |
| 111 | 23.61 | 231.30 | 4.91 | 20.65 | 0.431 | 0.200 |
| 112 | 33.29 | 253.17 | 5.38 | 25.23 | 0.544 | 0.244 |
| 113 | 0.00 | 274.41 | 7.29 | 14.07 | 0.136 | 0.136 |

RESUMEN DE ARMADURAS

VIADUCTO DE RIERA DE LA RIERUSSA. Calculo segun EC(2).

| NUDO | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß | Sd/Su1 |
|---|---|---|---|---|---|---|
| 1 | 0.00 | 257.73 | 6.16 | 11.01 | 0.108 | 0.106 |
| 2 | 29.94 | 241.03 | 4.55 | 25.67 | 0.570 | 0.248 |
| 3 | 20.97 | 207.06 | 3.90 | 21.17 | 0.448 | 0.205 |
| 4 | 12.50 | 196.15 | 3.70 | 16.92 | 0.336 | 0.164 |
| 5 | 4.49 | 164.29 | 3.09 | 12.90 | 0.234 | 0.125 |
| 6 | 0.00 | 136.82 | 2.57 | 8.95 | 0.147 | 0.087 |
| 7 | 0.00 | 122.25 | 2.29 | 4.90 | 0.093 | 0.047 |
| 8 | 0.00 | 124.19 | 2.33 | 5.20 | 0.082 | 0.050 |
| 9 | 0.00 | 113.87 | 2.13 | 8.43 | 0.143 | 0.082 |
| 10 | 1.92 | 82.00 | 1.53 | 11.65 | 0.203 | 0.113 |
| 11 | 8.95 | 86.13 | 1.62 | 15.19 | 0.275 | 0.147 |
| 12 | 15.60 | 100.21 | 1.93 | 18.54 | 0.351 | 0.179 |
| 13 | 24.28 | 116.35 | 2.32 | 21.90 | 0.427 | 0.212 |
| 14 | 31.20 | 155.39 | 3.11 | 25.26 | 0.515 | 0.244 |
| 15 | 38.17 | 179.07 | 3.34 | 28.64 | 0.606 | 0.277 |
| 16 | 38.04 | 199.33 | 4.57 | 36.86 | 0.227 | 0.356 |
| 17 | 50.88 | 271.57 | 6.24 | 42.67 | 0.299 | 0.619 |
| 18 | 41.16 | 268.30 | 6.20 | 38.20 | 0.262 | 0.369 |
| 19 | 41.13 | 260.09 | 4.98 | 29.80 | 0.668 | 0.288 |
| 20 | 33.91 | 214.80 | 4.37 | 26.28 | 0.567 | 0.254 |
| 21 | 26.73 | 181.07 | 3.69 | 22.77 | 0.470 | 0.220 |
| 22 | 20.82 | 159.04 | 3.29 | 19.42 | 0.362 | 0.188 |
| 23 | 13.87 | 152.92 | 3.22 | 16.11 | 0.284 | 0.156 |
| 24 | 6.44 | 136.53 | 2.88 | 12.57 | 0.209 | 0.122 |
| 25 | 0.00 | 109.98 | 2.31 | 9.30 | 0.148 | 0.090 |
| 26 | 0.00 | 105.38 | 2.22 | 5.82 | 0.102 | 0.056 |
| 27 | 0.00 | 96.12 | 2.02 | 4.34 | 0.072 | 0.042 |
| 28 | 0.00 | 106.26 | 2.24 | 6.58 | 0.106 | 0.064 |
| 29 | 0.94 | 109.29 | 2.30 | 9.95 | 0.163 | 0.096 |
| 30 | 7.78 | 127.04 | 2.68 | 13.21 | 0.225 | 0.128 |
| 31 | 15.19 | 142.99 | 3.01 | 16.74 | 0.298 | 0.162 |
| 32 | 22.13 | 146.36 | 3.09 | 20.04 | 0.374 | 0.194 |
| 33 | 29.05 | 173.08 | 3.65 | 23.33 | 0.456 | 0.226 |
| 34 | 36.22 | 217.99 | 4.60 | 26.73 | 0.571 | 0.258 |
| 35 | 43.83 | 261.88 | 5.17 | 30.34 | 0.673 | 0.293 |
| 36 | 47.33 | 261.70 | 6.25 | 39.90 | 0.275 | 0.386 |
| 37 | 57.27 | 275.22 | 6.57 | 44.38 | 0.317 | 0.644 |
| 38 | 45.10 | 265.45 | 6.34 | 38.89 | 0.265 | 0.376 |
| 39 | 44.02 | 256.54 | 5.11 | 30.43 | 0.677 | 0.294 |
| 40 | 36.37 | 212.06 | 4.48 | 26.80 | 0.574 | 0.259 |
| 41 | 29.02 | 179.10 | 3.78 | 23.31 | 0.456 | 0.225 |
| 42 | 23.09 | 158.34 | 3.39 | 20.00 | 0.370 | 0.193 |
| 43 | 16.01 | 152.66 | 3.33 | 16.69 | 0.293 | 0.161 |
| 44 | 8.46 | 136.03 | 2.96 | 13.15 | 0.221 | 0.127 |
| 45 | 1.48 | 116.24 | 2.53 | 9.88 | 0.160 | 0.096 |
| 46 | 0.00 | 111.42 | 2.43 | 6.40 | 0.102 | 0.062 |
| 47 | 0.00 | 99.53 | 2.17 | 4.09 | 0.068 | 0.040 |
| 48 | 0.00 | 108.81 | 2.37 | 6.28 | 0.098 | 0.061 |
| 49 | 1.04 | 112.77 | 2.46 | 9.67 | 0.155 | 0.094 |
| 50 | 8.00 | 138.65 | 3.02 | 12.94 | 0.215 | 0.125 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| NUDO | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß | Sd/Su1 |
|---|---|---|---|---|---|---|
| 51 | 15.53 | 154.21 | 3.36 | 16.46 | 0.288 | 0.159 |
| 52 | 22.59 | 157.23 | 3.43 | 19.76 | 0.366 | 0.191 |
| 53 | 29.61 | 177.55 | 3.88 | 23.05 | 0.447 | 0.223 |
| 54 | 37.07 | 221.69 | 4.84 | 26.53 | 0.564 | 0.257 |
| 55 | 44.82 | 268.60 | 5.42 | 30.13 | 0.665 | 0.291 |
| 56 | 48.63 | 268.35 | 6.58 | 39.69 | 0.272 | 0.384 |
| 57 | 58.72 | 278.37 | 6.83 | 44.17 | 0.313 | 0.641 |
| 58 | 45.10 | 269.27 | 6.61 | 38.12 | 0.258 | 0.369 |
| 59 | 43.71 | 260.61 | 5.27 | 29.62 | 0.652 | 0.286 |
| 60 | 35.93 | 211.79 | 4.63 | 25.99 | 0.551 | 0.251 |
| 61 | 28.47 | 179.37 | 3.92 | 22.51 | 0.435 | 0.218 |
| 62 | 21.38 | 160.55 | 3.50 | 19.20 | 0.353 | 0.186 |
| 63 | 14.31 | 157.53 | 3.43 | 15.89 | 0.276 | 0.154 |
| 64 | 6.76 | 141.20 | 3.08 | 12.35 | 0.203 | 0.119 |
| 65 | 0.00 | 115.15 | 2.51 | 9.08 | 0.143 | 0.088 |
| 66 | 0.00 | 108.23 | 2.36 | 5.67 | 0.087 | 0.055 |
| 67 | 0.00 | 102.31 | 2.23 | 4.70 | 0.074 | 0.045 |
| 68 | 0.00 | 112.67 | 2.45 | 7.01 | 0.113 | 0.068 |
| 69 | 2.74 | 116.48 | 2.54 | 10.47 | 0.172 | 0.101 |
| 70 | 9.69 | 134.48 | 2.93 | 13.73 | 0.233 | 0.133 |
| 71 | 17.22 | 149.95 | 3.27 | 17.25 | 0.306 | 0.167 |
| 72 | 24.28 | 153.17 | 3.34 | 20.56 | 0.382 | 0.199 |
| 73 | 31.32 | 174.27 | 3.80 | 23.85 | 0.464 | 0.231 |
| 74 | 38.81 | 218.42 | 4.77 | 27.34 | 0.582 | 0.264 |
| 75 | 46.55 | 260.25 | 5.34 | 30.95 | 0.683 | 0.299 |
| 76 | 50.38 | 260.18 | 6.38 | 40.47 | 0.278 | 0.391 |
| 77 | 60.46 | 275.48 | 6.76 | 44.95 | 0.320 | 0.652 |
| 78 | 47.27 | 257.46 | 6.32 | 39.08 | 0.260 | 0.378 |
| 79 | 45.80 | 248.33 | 5.06 | 30.60 | 0.673 | 0.296 |
| 80 | 38.01 | 201.91 | 4.41 | 26.97 | 0.571 | 0.261 |
| 81 | 30.72 | 169.55 | 3.70 | 23.57 | 0.457 | 0.228 |
| 82 | 23.63 | 144.17 | 3.14 | 20.26 | 0.375 | 0.196 |
| 83 | 16.55 | 141.34 | 3.08 | 16.94 | 0.299 | 0.164 |
| 84 | 8.99 | 124.92 | 2.72 | 13.40 | 0.227 | 0.130 |
| 85 | 2.01 | 109.07 | 2.38 | 10.13 | 0.166 | 0.098 |
| 86 | 0.00 | 104.23 | 2.27 | 6.75 | 0.107 | 0.065 |
| 87 | 0.00 | 92.39 | 2.01 | 4.49 | 0.068 | 0.043 |
| 88 | 0.00 | 103.63 | 2.26 | 5.63 | 0.098 | 0.054 |
| 89 | 0.00 | 106.72 | 2.32 | 9.09 | 0.142 | 0.088 |
| 90 | 6.74 | 129.86 | 2.83 | 12.35 | 0.202 | 0.119 |
| 91 | 14.28 | 145.71 | 3.17 | 15.88 | 0.276 | 0.154 |
| 92 | 21.28 | 148.88 | 3.24 | 19.16 | 0.353 | 0.185 |
| 93 | 28.32 | 170.82 | 3.71 | 22.48 | 0.454 | 0.217 |
| 94 | 35.73 | 215.31 | 4.68 | 25.98 | 0.549 | 0.251 |
| 95 | 43.13 | 262.89 | 5.24 | 29.48 | 0.648 | 0.285 |
| 96 | 46.45 | 262.54 | 6.39 | 39.11 | 0.266 | 0.378 |
| 97 | 56.47 | 272.57 | 6.60 | 43.60 | 0.307 | 0.632 |
| 98 | 38.93 | 193.17 | 4.67 | 35.82 | 0.211 | 0.346 |
| 99 | 40.19 | 165.70 | 3.30 | 28.42 | 0.587 | 0.275 |
| 100 | 33.12 | 140.41 | 2.99 | 25.11 | 0.500 | 0.243 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| NUDO | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß | Sd/Su1 |
|---|---|---|---|---|---|---|
| 101 | 26.11 | 114.52 | 2.43 | 21.84 | 0.417 | 0.211 |
| 102 | 19.21 | 88.67 | 1.88 | 18.60 | 0.338 | 0.180 |
| 103 | 12.38 | 70.74 | 1.49 | 15.38 | 0.270 | 0.149 |
| 104 | 5.18 | 73.04 | 1.54 | 11.97 | 0.201 | 0.116 |
| 105 | 0.00 | 117.39 | 2.47 | 8.93 | 0.152 | 0.086 |
| 106 | 0.00 | 125.58 | 2.65 | 5.57 | 0.089 | 0.054 |
| 107 | 0.00 | 116.38 | 2.46 | 3.92 | 0.087 | 0.038 |
| 108 | 0.00 | 130.52 | 2.76 | 8.24 | 0.132 | 0.080 |
| 109 | 6.67 | 156.32 | 3.31 | 12.63 | 0.214 | 0.122 |
| 110 | 16.05 | 194.74 | 4.13 | 17.07 | 0.321 | 0.165 |
| 111 | 25.98 | 196.97 | 4.18 | 21.78 | 0.438 | 0.211 |
| 112 | 36.33 | 229.36 | 4.87 | 26.67 | 0.567 | 0.258 |
| 113 | 0.00 | 245.88 | 6.53 | 15.19 | 0.120 | 0.147 |

RESUMEN DE ARMADURAS

VIADUCTO DE RIERA DE LA RIERUSSA. Calculo segun EC(3).

| NUDO | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß | Sd/Su1 |
|---|---|---|---|---|---|---|
| 1 | 0.00 | 257.79 | 6.16 | 11.32 | 0.108 | 0.110 |
| 2 | 31.04 | 241.08 | 4.55 | 26.22 | 0.566 | 0.254 |
| 3 | 21.48 | 207.11 | 3.90 | 21.43 | 0.442 | 0.207 |
| 4 | 12.02 | 188.31 | 3.55 | 16.68 | 0.324 | 0.161 |
| 5 | 3.47 | 160.78 | 3.02 | 12.38 | 0.225 | 0.120 |
| 6 | 0.00 | 133.31 | 2.50 | 8.23 | 0.137 | 0.080 |
| 7 | 0.00 | 118.76 | 2.23 | 4.32 | 0.094 | 0.042 |
| 8 | 0.00 | 115.45 | 2.16 | 4.76 | 0.068 | 0.046 |
| 9 | 0.00 | 98.77 | 1.85 | 7.39 | 0.115 | 0.071 |
| 10 | 0.41 | 73.59 | 1.38 | 10.89 | 0.182 | 0.105 |
| 11 | 7.39 | 82.35 | 1.54 | 14.40 | 0.255 | 0.139 |
| 12 | 14.47 | 104.81 | 2.04 | 17.96 | 0.338 | 0.174 |
| 13 | 23.55 | 128.88 | 2.57 | 21.55 | 0.418 | 0.208 |
| 14 | 30.90 | 145.01 | 2.90 | 25.12 | 0.508 | 0.243 |
| 15 | 38.32 | 170.80 | 3.22 | 28.72 | 0.602 | 0.278 |
| 16 | 36.43 | 199.28 | 4.56 | 36.11 | 0.219 | 0.349 |
| 17 | 48.75 | 271.11 | 6.23 | 41.79 | 0.294 | 0.600 |
| 18 | 40.68 | 270.63 | 6.22 | 37.97 | 0.265 | 0.367 |
| 19 | 41.86 | 262.21 | 5.07 | 30.16 | 0.654 | 0.292 |
| 20 | 33.60 | 216.07 | 4.39 | 26.13 | 0.546 | 0.253 |
| 21 | 25.39 | 182.86 | 3.73 | 22.12 | 0.444 | 0.214 |
| 22 | 18.80 | 160.83 | 3.32 | 18.45 | 0.346 | 0.178 |
| 23 | 11.39 | 154.70 | 3.26 | 14.92 | 0.265 | 0.144 |
| 24 | 4.06 | 145.03 | 3.05 | 11.43 | 0.201 | 0.111 |
| 25 | 0.00 | 140.85 | 2.96 | 7.94 | 0.133 | 0.077 |
| 26 | 0.00 | 129.90 | 2.73 | 4.59 | 0.090 | 0.044 |
| 27 | 0.00 | 126.80 | 2.67 | 3.82 | 0.073 | 0.037 |
| 28 | 0.00 | 126.62 | 2.66 | 5.36 | 0.093 | 0.052 |
| 29 | 0.00 | 132.00 | 2.78 | 8.53 | 0.138 | 0.082 |
| 30 | 5.26 | 136.48 | 2.87 | 12.00 | 0.209 | 0.116 |
| 31 | 12.57 | 152.43 | 3.21 | 15.49 | 0.274 | 0.150 |
| 32 | 19.96 | 155.79 | 3.29 | 19.00 | 0.355 | 0.184 |
| 33 | 27.33 | 182.51 | 3.85 | 22.51 | 0.440 | 0.218 |
| 34 | 35.15 | 206.25 | 4.36 | 26.22 | 0.540 | 0.254 |
| 35 | 43.82 | 255.17 | 5.05 | 30.33 | 0.648 | 0.293 |
| 36 | 46.02 | 262.97 | 6.28 | 39.31 | 0.276 | 0.380 |
| 37 | 53.49 | 270.61 | 6.46 | 42.68 | 0.309 | 0.619 |
| 38 | 43.96 | 267.41 | 6.39 | 38.38 | 0.270 | 0.371 |
| 39 | 44.13 | 257.84 | 5.15 | 30.48 | 0.653 | 0.295 |
| 40 | 35.42 | 211.35 | 4.46 | 26.35 | 0.544 | 0.255 |
| 41 | 27.21 | 187.32 | 3.95 | 22.45 | 0.440 | 0.217 |
| 42 | 20.80 | 166.56 | 3.57 | 18.93 | 0.351 | 0.183 |
| 43 | 13.26 | 160.75 | 3.50 | 15.40 | 0.270 | 0.149 |
| 44 | 5.80 | 144.12 | 3.14 | 11.90 | 0.208 | 0.115 |
| 45 | 0.00 | 139.46 | 3.04 | 8.42 | 0.138 | 0.081 |
| 46 | 0.00 | 129.53 | 2.82 | 5.04 | 0.094 | 0.049 |
| 47 | 0.00 | 127.89 | 2.78 | 3.55 | 0.073 | 0.034 |
| 48 | 0.00 | 130.95 | 2.85 | 5.02 | 0.093 | 0.049 |
| 49 | 0.00 | 141.35 | 3.08 | 8.25 | 0.137 | 0.080 |
| 50 | 5.43 | 146.39 | 3.19 | 11.73 | 0.206 | 0.113 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| NUDO | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß | Sd/Su1 |
|---|---|---|---|---|---|---|
| 51 | 12.86 | 161.95 | 3.53 | 15.21 | 0.267 | 0.147 |
| 52 | 20.38 | 164.97 | 3.60 | 18.73 | 0.347 | 0.181 |
| 53 | 27.86 | 185.29 | 4.04 | 22.22 | 0.431 | 0.215 |
| 54 | 36.16 | 208.98 | 4.56 | 26.10 | 0.533 | 0.252 |
| 55 | 44.97 | 259.06 | 5.27 | 30.21 | 0.640 | 0.292 |
| 56 | 47.49 | 266.72 | 6.54 | 39.18 | 0.274 | 0.379 |
| 57 | 55.07 | 268.18 | 6.58 | 42.55 | 0.307 | 0.617 |
| 58 | 43.96 | 267.50 | 6.57 | 37.61 | 0.262 | 0.364 |
| 59 | 43.84 | 258.80 | 5.28 | 29.68 | 0.627 | 0.287 |
| 60 | 34.98 | 209.45 | 4.58 | 25.55 | 0.520 | 0.247 |
| 61 | 26.69 | 185.46 | 4.05 | 21.68 | 0.418 | 0.210 |
| 62 | 19.14 | 166.66 | 3.63 | 18.15 | 0.334 | 0.176 |
| 63 | 11.61 | 163.64 | 3.57 | 14.63 | 0.255 | 0.141 |
| 64 | 4.15 | 147.31 | 3.21 | 11.13 | 0.196 | 0.108 |
| 65 | 0.00 | 142.94 | 3.11 | 7.64 | 0.128 | 0.074 |
| 66 | 0.00 | 132.82 | 2.89 | 4.39 | 0.086 | 0.043 |
| 67 | 0.00 | 129.75 | 2.82 | 4.11 | 0.082 | 0.040 |
| 68 | 0.00 | 130.17 | 2.83 | 5.66 | 0.102 | 0.055 |
| 69 | 0.00 | 138.84 | 3.02 | 9.02 | 0.148 | 0.087 |
| 70 | 7.05 | 144.80 | 3.15 | 12.49 | 0.219 | 0.121 |
| 71 | 14.49 | 160.26 | 3.49 | 15.98 | 0.282 | 0.155 |
| 72 | 22.01 | 163.48 | 3.57 | 19.49 | 0.363 | 0.189 |
| 73 | 29.51 | 184.58 | 4.03 | 23.00 | 0.448 | 0.222 |
| 74 | 37.87 | 207.82 | 4.54 | 26.90 | 0.552 | 0.260 |
| 75 | 46.69 | 254.39 | 5.24 | 31.01 | 0.660 | 0.300 |
| 76 | 49.21 | 262.39 | 6.44 | 39.95 | 0.280 | 0.386 |
| 77 | 56.79 | 265.55 | 6.52 | 43.32 | 0.313 | 0.628 |
| 78 | 45.94 | 258.35 | 6.34 | 38.49 | 0.265 | 0.372 |
| 79 | 45.77 | 249.25 | 5.09 | 30.59 | 0.648 | 0.296 |
| 80 | 36.90 | 200.94 | 4.39 | 26.45 | 0.540 | 0.256 |
| 81 | 28.93 | 177.58 | 3.88 | 22.73 | 0.441 | 0.220 |
| 82 | 21.39 | 152.20 | 3.32 | 19.20 | 0.356 | 0.186 |
| 83 | 13.84 | 149.39 | 3.25 | 15.67 | 0.275 | 0.152 |
| 84 | 6.38 | 132.96 | 2.90 | 12.18 | 0.207 | 0.118 |
| 85 | 0.00 | 128.71 | 2.80 | 8.69 | 0.138 | 0.084 |
| 86 | 0.00 | 124.97 | 2.72 | 5.51 | 0.096 | 0.053 |
| 87 | 0.00 | 125.28 | 2.73 | 3.97 | 0.077 | 0.038 |
| 88 | 0.00 | 129.06 | 2.81 | 4.40 | 0.086 | 0.043 |
| 89 | 0.00 | 139.91 | 3.05 | 7.75 | 0.130 | 0.075 |
| 90 | 4.35 | 143.29 | 3.12 | 11.22 | 0.196 | 0.109 |
| 91 | 11.79 | 153.29 | 3.34 | 14.71 | 0.258 | 0.142 |
| 92 | 19.25 | 156.46 | 3.41 | 18.21 | 0.337 | 0.176 |
| 93 | 26.97 | 178.41 | 3.88 | 21.85 | 0.429 | 0.211 |
| 94 | 35.47 | 210.62 | 4.58 | 25.86 | 0.529 | 0.250 |
| 95 | 43.93 | 258.56 | 5.27 | 29.85 | 0.634 | 0.289 |
| 96 | 45.98 | 264.05 | 6.43 | 38.90 | 0.268 | 0.376 |
| 97 | 53.50 | 264.35 | 6.40 | 42.27 | 0.297 | 0.613 |
| 98 | 37.27 | 193.03 | 4.66 | 35.08 | 0.205 | 0.339 |
| 99 | 40.32 | 165.56 | 3.34 | 28.48 | 0.584 | 0.275 |
| 100 | 32.80 | 141.44 | 3.01 | 24.96 | 0.494 | 0.241 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| NUDO | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß | Sd/Su1 |
|---|---|---|---|---|---|---|
| 101 | 25.34 | 125.19 | 2.66 | 21.47 | 0.408 | 0.208 |
| 102 | 17.98 | 99.34 | 2.11 | 18.02 | 0.327 | 0.174 |
| 103 | 10.71 | 80.88 | 1.71 | 14.59 | 0.250 | 0.141 |
| 104 | 3.57 | 72.58 | 1.53 | 11.20 | 0.182 | 0.108 |
| 105 | 0.00 | 96.59 | 2.03 | 7.86 | 0.120 | 0.076 |
| 106 | 0.00 | 110.83 | 2.34 | 5.10 | 0.071 | 0.049 |
| 107 | 0.00 | 114.37 | 2.42 | 3.95 | 0.087 | 0.038 |
| 108 | 0.00 | 128.50 | 2.72 | 8.40 | 0.136 | 0.081 |
| 109 | 7.46 | 154.31 | 3.27 | 13.00 | 0.230 | 0.126 |
| 110 | 17.37 | 180.39 | 3.83 | 17.70 | 0.336 | 0.171 |
| 111 | 28.36 | 197.04 | 4.18 | 22.91 | 0.461 | 0.222 |
| 112 | 39.37 | 229.43 | 4.87 | 28.11 | 0.593 | 0.272 |
| 113 | 0.00 | 245.94 | 6.53 | 16.32 | 0.120 | 0.158 |

### 3.5.3. Análisis Transversal

#### 3.5.3.1. Modelo

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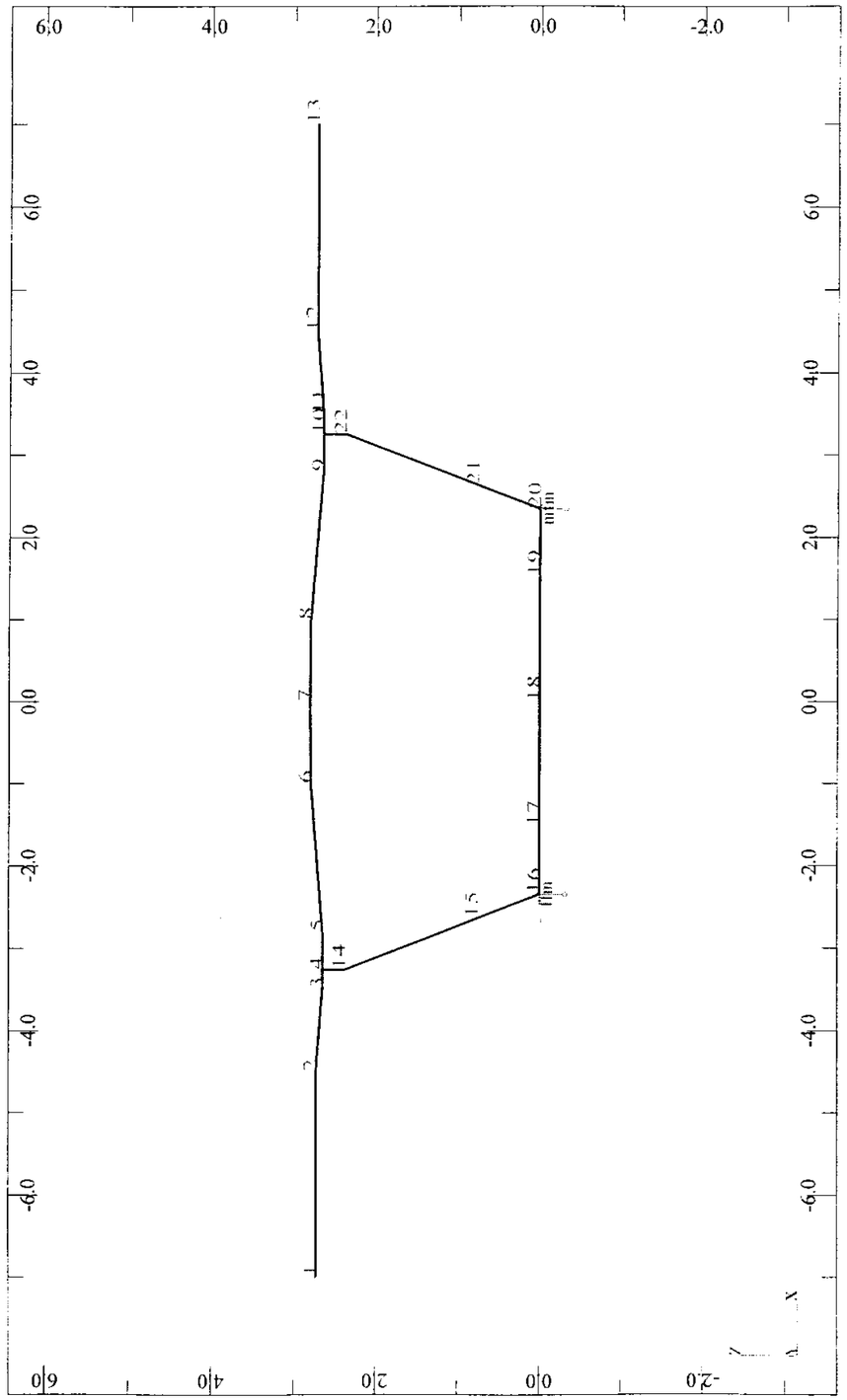
Proyecto: flextraC

## Nudos y apoyos



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Dirección:

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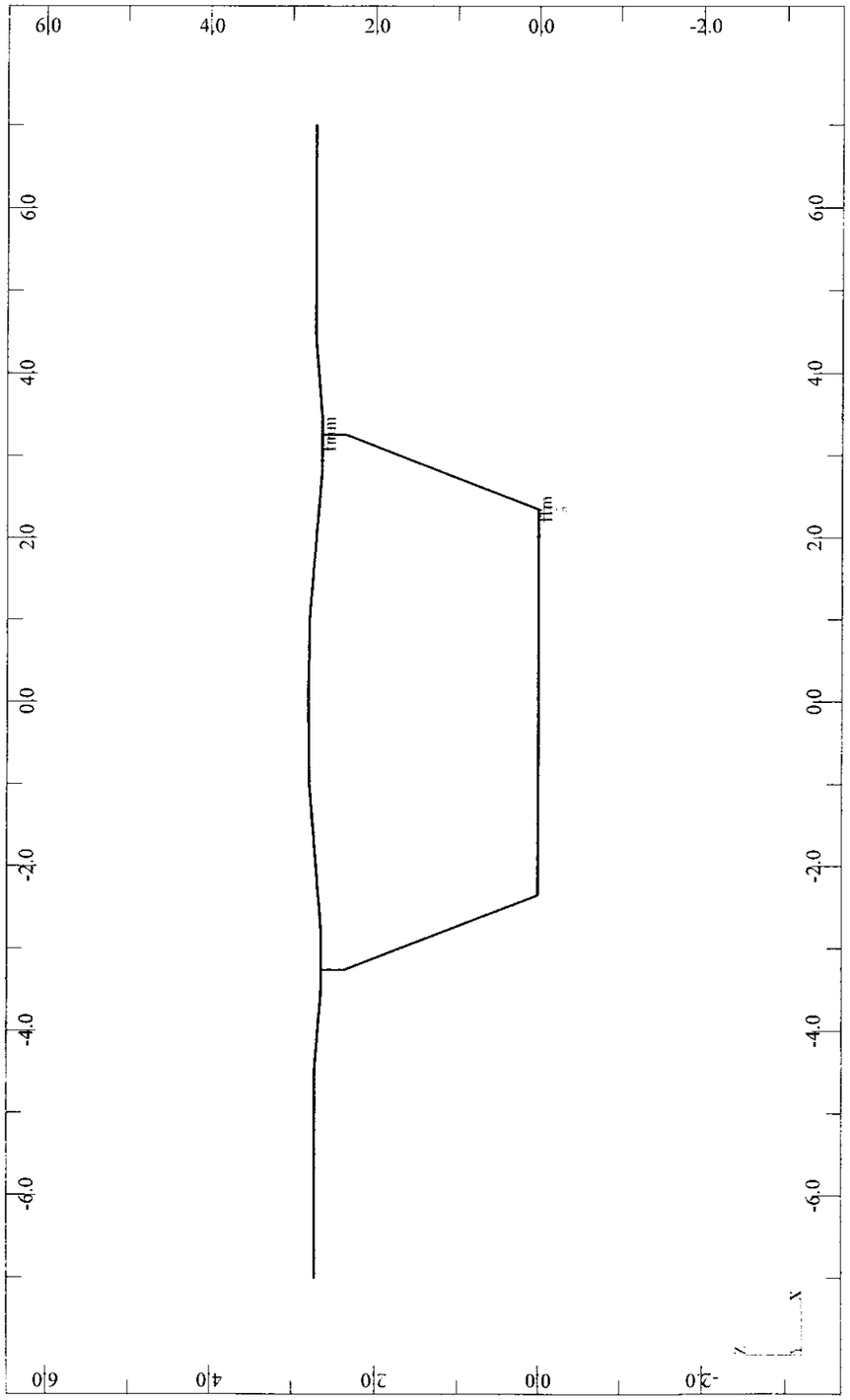
Archivo: **FlextraEB.rtd**
Proyecto: FlextraEB

## Apoyos Modelo Tren B Excéntrico




Fecha : 28/02/02 Página : **1**

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Autor: **EIPSA**
Dirección:

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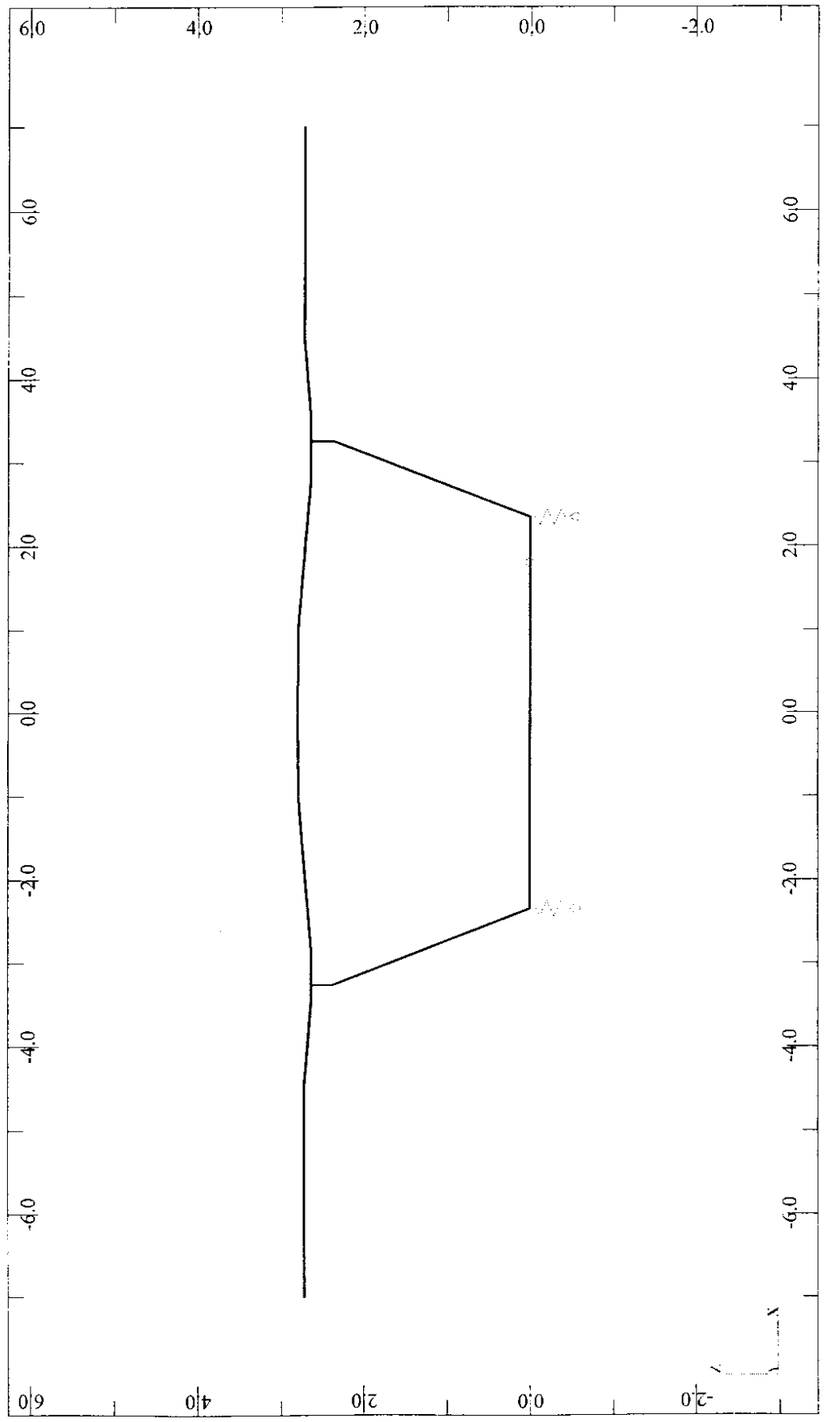
Archivo: **FlextraM.rtd**
Proyecto: FlextraM

## Apoyos




Fecha : 28/02/02 Página : **1**

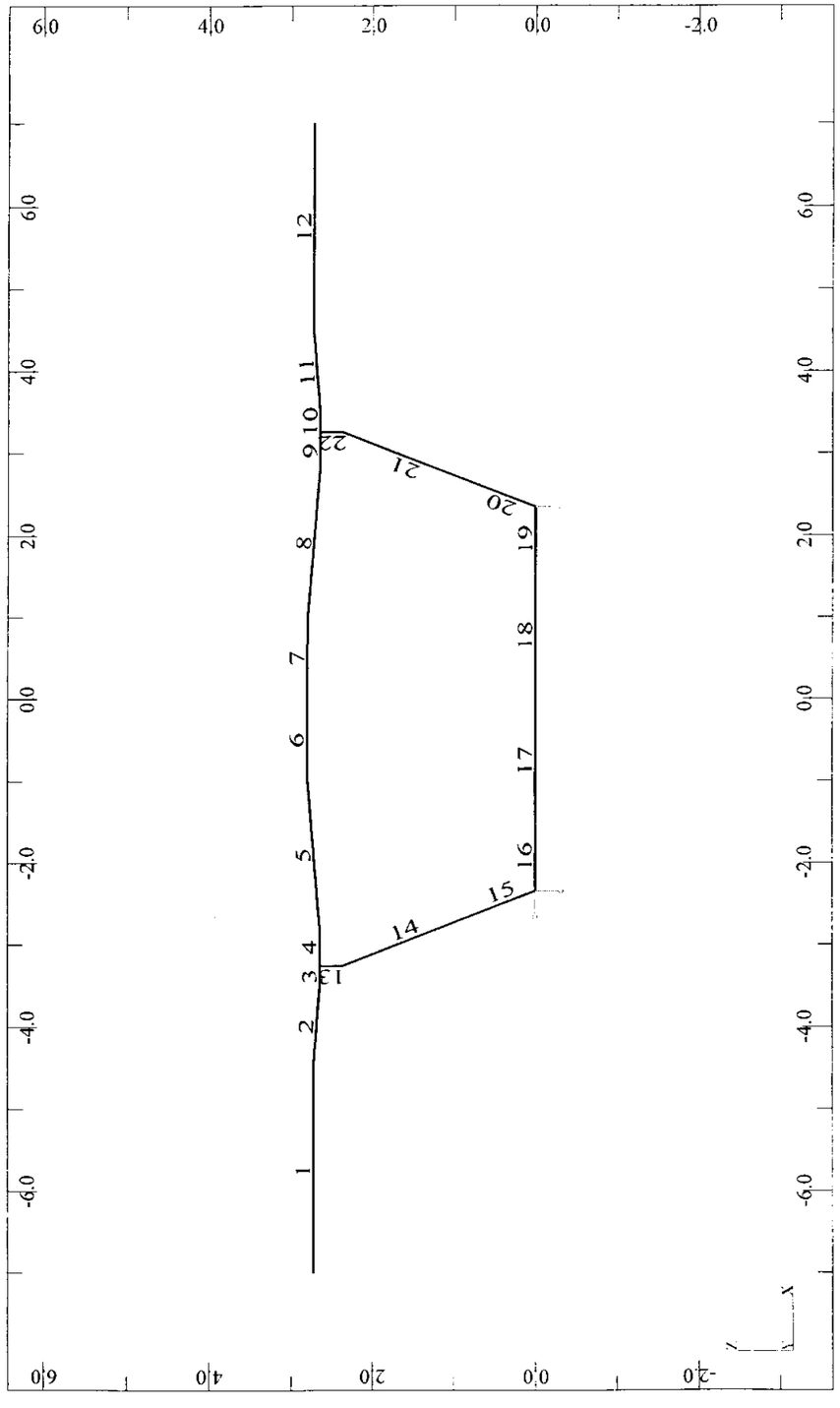
## Apoyos:

| | Nombre del apoyo | Lista de nudos | Condiciones de apoyo |
|---|---|---|---|
| | FlextraM_APO 1 | 16 | KZ=117710.00 (kN/m) |
| | FlextraM_APO 2 | 20 | UX KZ=117710.00 (kN/m) |





## Barras



## Nudos y Apoyos:

| Nudo | X (m) | Z (m) | Apoyo - código | Apoyo |
|---|---|---|---|---|
| 1 | -7.000 | 2.720 | | |
| 2 | -4.500 | 2.720 | | |
| 3 | -3.500 | 2.642 | | |
| 4 | -3.259 | 2.642 | | |
| 5 | -2.800 | 2.642 | | |
| 6 | -1.000 | 2.790 | | |
| 7 | 0.0 | 2.800 | | |
| 8 | 1.000 | 2.790 | | |
| 9 | 2.800 | 2.642 | | |
| 10 | 3.259 | 2.642 | | |
| 11 | 3.500 | 2.642 | | |
| 12 | 4.500 | 2.720 | | |
| 13 | 7.000 | 2.720 | | |
| 14 | -3.259 | 2.363 | | |
| 15 | -2.636 | 0.750 | | |
| 16 | -2.347 | 0.0 | ffl | flextraC_APO 1 |
| 17 | -1.523 | 0.0 | | |
| 18 | 0.0 | 0.0 | | |
| 19 | 1.523 | 0.0 | | |
| 20 | 2.347 | 0.0 | lfl | flextraC_APO 2 |
| 21 | 2.636 | 0.750 | | |
| 22 | 3.259 | 2.363 | | |

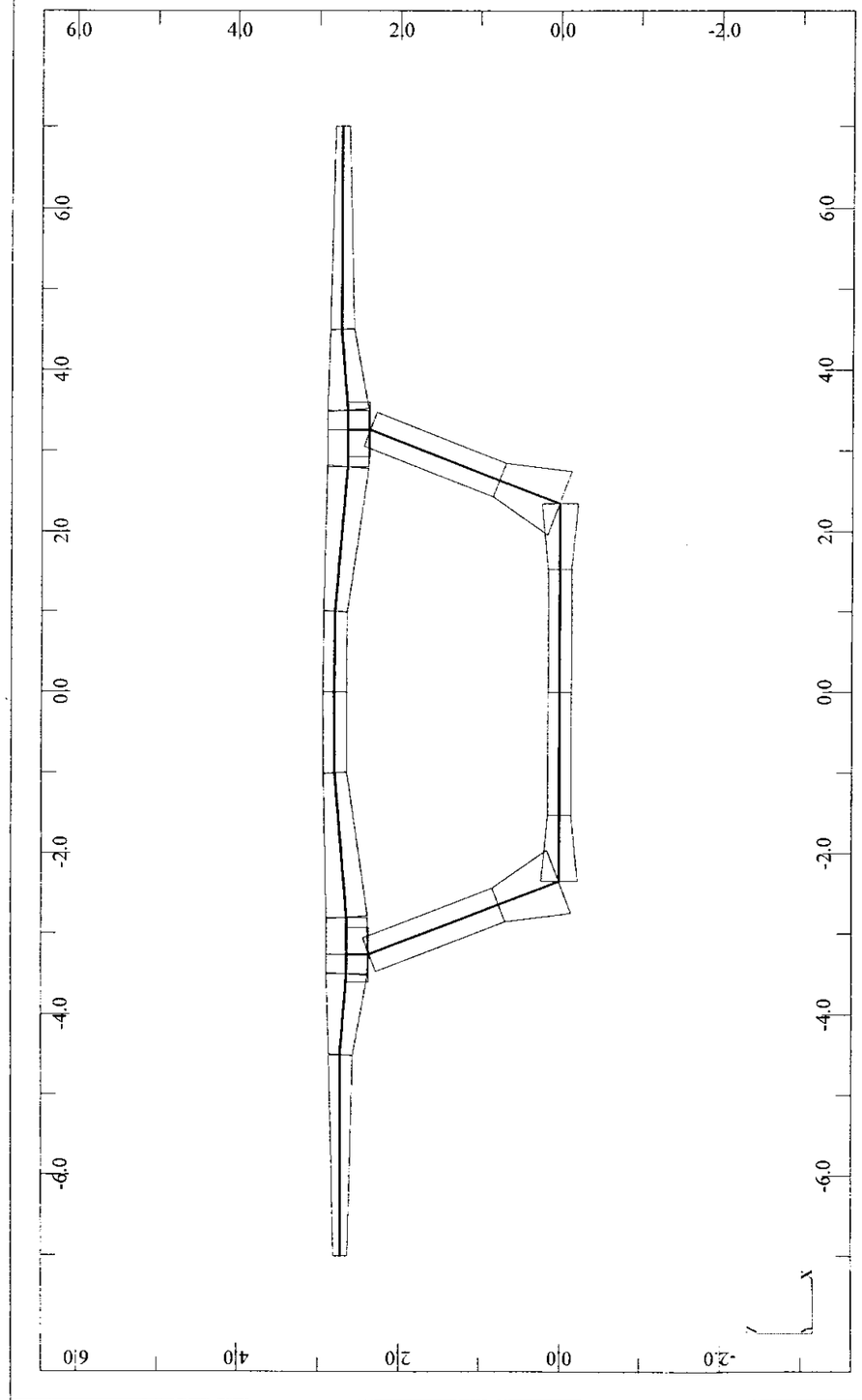




## Barras:

| Barra | Nudos | Nudo 2 | Sección | Material |
|---|---|---|---|---|
| 1 | 1 | 2 | RE 1 | *HORMIGON* |
| 2 | 2 | 3 | RE 2 | *HORMIGON* |
| 3 | 3 | 4 | RE 3 | *HORMIGON* |
| 4 | 4 | 5 | RE 4 | *HORMIGON* |
| 5 | 5 | 6 | RE 5 | *HORMIGON* |
| 6 | 6 | 7 | RE 6 | *HORMIGON* |
| 7 | 7 | 8 | RE 7 | *HORMIGON* |
| 8 | 8 | 9 | RE 8 | *HORMIGON* |
| 9 | 9 | 10 | RE 9 | *HORMIGON* |
| 10 | 10 | 11 | RE 3 | *HORMIGON* |
| 11 | 11 | 12 | RE 10 | *HORMIGON* |
| 12 | 12 | 13 | RE 11 | *HORMIGON* |
| 13 | 4 | 14 | RE 12 | *HORMIGON* |
| 14 | 14 | 15 | RE 13 | *HORMIGON* |
| 15 | 15 | 16 | RE 14 | *HORMIGON* |
| 16 | 16 | 17 | RE 15 | *HORMIGON* |
| 17 | 17 | 18 | RE 16 | *HORMIGON* |
| 18 | 18 | 19 | RE 16 | *HORMIGON* |
| 19 | 19 | 20 | RE 17 | *HORMIGON* |
| 20 | 20 | 21 | RE 18 | *HORMIGON* |
| 21 | 21 | 22 | RE 13 | *HORMIGON* |
| 22 | 22 | 10 | RE 12 | *HORMIGON* |

## Espesores








## Cargas

| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 1 | peso propio | 1A22 | PZ Menos |
| 2 | fuerza sobre barra | 1 | FZ=-10.25(kN) X=0.450(m) |
| 2 | fuerza sobre barra | 12 | FZ=-10.25(kN) X=2.050(m) |
| 2 | carga trapezoidal | 2 | PZ2=-1.60(kN/m) PZ1=-1.60(kN/m) X2=1.000(m) X1=0.150(m) g |
| 2 | sobrecarga uniforme | 3A5 | PZ=-1.60(kN/m) |
| 2 | carga trapezoidal | 6 | PZ2=-1.60(kN/m) PZ1=-1.60(kN/m) X2=0.650(m) X1=0.0(m) glo |
| 2 | carga trapezoidal | 7 | PZ2=-1.60(kN/m) PZ1=-1.60(kN/m) X2=1.000(m) X1=0.350(m) g |
| 2 | sobrecarga uniforme | 8A10 | PZ=-1.60(kN/m) |
| 2 | carga trapezoidal | 11 | PZ2=-1.60(kN/m) PZ1=-1.60(kN/m) X2=0.850(m) X1=0.0(m) glo |
| 2 | carga trapezoidal | 1 | PZ2=-10.83(kN/m) PZ1=-10.83(kN/m) X2=2.500(m) X1=1.750(m |
| 2 | sobrecarga uniforme | 2A11 | PZ=-10.83(kN/m) |
| 2 | carga trapezoidal | 12 | PZ2=-10.83(kN/m) PZ1=-10.83(kN/m) X2=0.750(m) X1=0.0(m) g |
| 3 | carga trapezoidal | 12 | PZ2=-3.11(kN/m) PZ1=-3.11(kN/m) X2=0.750(m) X1=0.0(m) glo |
| 3 | sobrecarga uniforme | 2A11 | PZ=-3.11(kN/m) |
| 3 | carga trapezoidal | 1 | PZ2=-3.11(kN/m) PZ1=-3.11(kN/m) X2=2.500(m) X1=1.750(m) g |
| 4 | carga trapezoidal | 1 | PZ2=3.11(kN/m) PZ1=3.11(kN/m) X2=2.500(m) X1=1.750(m) gl |
| 4 | sobrecarga uniforme | 2A11 | PZ=3.11(kN/m) |
| 4 | carga trapezoidal | 12 | PZ2=3.11(kN/m) PZ1=3.11(kN/m) X2=0.750(m) X1=0.0(m) glob |
| 5 | sobrecarga uniforme | 7A11 | PZ=10.35(kN/m) |
| 5 | carga trapezoidal | 12 | PZ2=10.35(kN/m) PZ1=10.35(kN/m) X2=0.750(m) X1=0.0(m) gl |
| 6 | fuerza sobre barra | 1 | FZ=-8.75(kN) X=0.450(m) |
| 7 | fuerza sobre barra | 12 | FZ=-8.75(kN) X=2.050(m) |
| 8 | carga trapezoidal | 2 | PZ2=-61.50(kN/m) PZ1=-61.50(kN/m) X2=1.000(m) X1=0.150(m |
| 8 | sobrecarga uniforme | 3A5 | PZ=-61.50(kN/m) |
| 8 | carga trapezoidal | 6 | PZ2=-61.50(kN/m) PZ1=-61.50(kN/m) X2=0.650(m) X1=0.0(m) g |
| 9 | carga trapezoidal | 7 | PZ2=-61.50(kN/m) PZ1=-61.50(kN/m) X2=1.000(m) X1=0.350(m |
| 9 | sobrecarga uniforme | 8A10 | PZ=-61.50(kN/m) |
| 9 | carga trapezoidal | 11 | PZ2=-61.50(kN/m) PZ1=-61.50(kN/m) X2=0.850(m) X1=0.0(m) g |

## Combinaciones de casos Cargas Centradas

**- Casos: 10A12**

| Combinación | Nombre | Tipo de análisis | Naturaleza de |
|---|---|---|---|
| 10 (C) | 1.35(PP+CPmax)+1.50 TREN A (2 VIAS) | Combinación lin | ELU |
| 11 (C) | 1.35(PP+CPmax)+1.50 TREN A (2 VIAS) + 0.75 SC PASEOS | Combinación lin | ELU |
| 12 (C) | 1.35(PP+CP) | Combinación lin | ELU |

| Combinación | Naturaleza de | Definición |
|---|---|---|
| 10 (C) | explotac | (1+2+3)*1.35+(8+9)*1.50 |
| 11 (C) | explotac | (1+2+3)*1.35+(6+7)*0.75+(8+9)*1.50 |
| 12 (C) | explotac | (1+2)*1.35 |



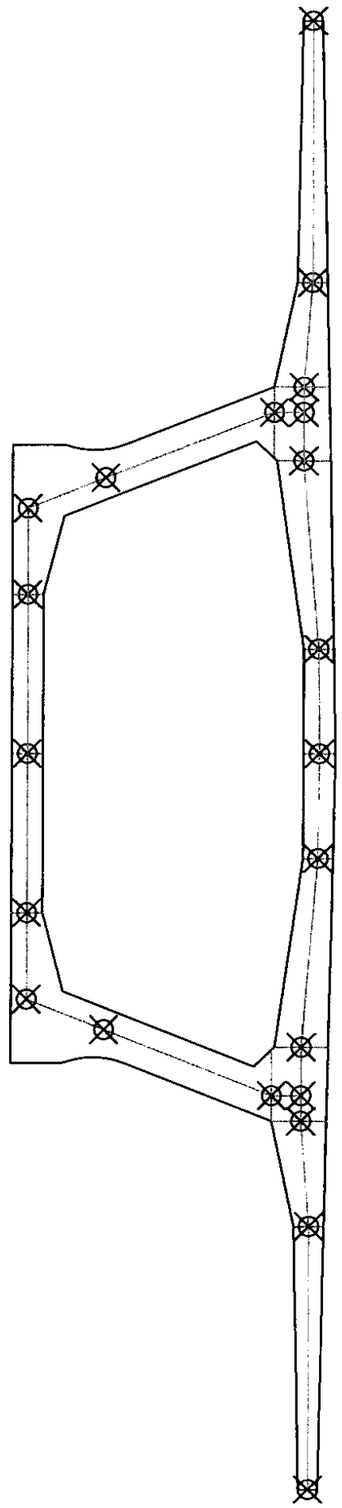


## Combinaciones Tren B Excéntrico

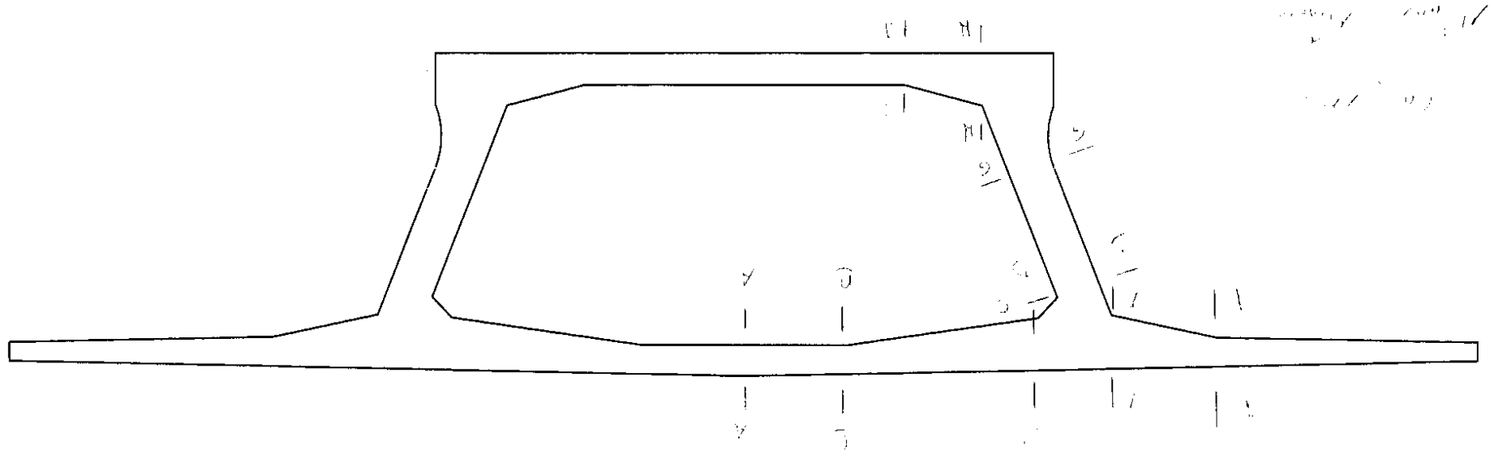
**- Caso: 11 (1.35 DESBAL. + 1.50 TREN B IZDA + 0.75 SC PASEOS IZDA)**

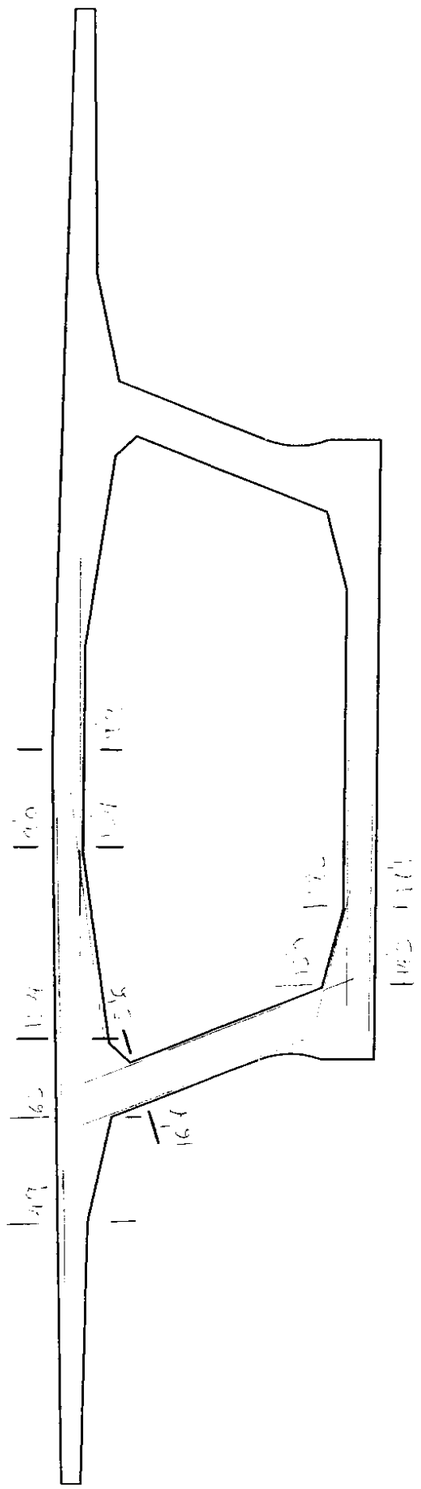
| Combinación | Nombre | Tipo de análisis | Naturaleza de |
|---|---|---|---|
| 11 (C) | 1.35 DESBAL. + 1.50 TREN B IZDA + 0.75 SC PASEOS IZDA | Combinación lin | ELU |

| Combinación | Naturaleza de | Definición |
|---|---|---|
| 11 (C) | explotac | 5*1.35+6*0.75+8*0.90 |



### 3.5.3.2. Resultados





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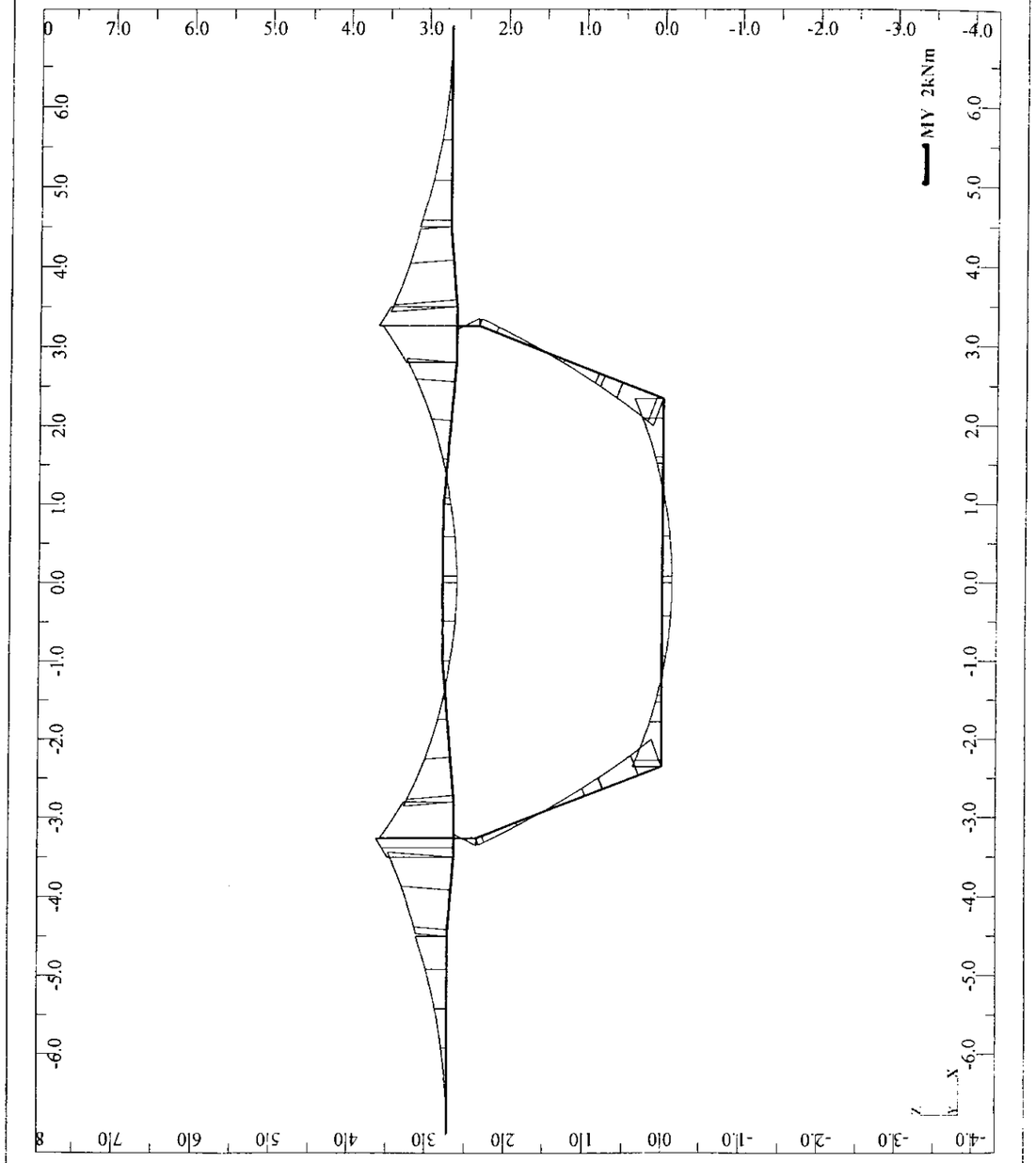
Archivo: **flextraC.rtd**
Proyecto: flextraC

## Vista - MY, casos: 1 (PESO PROPIO)



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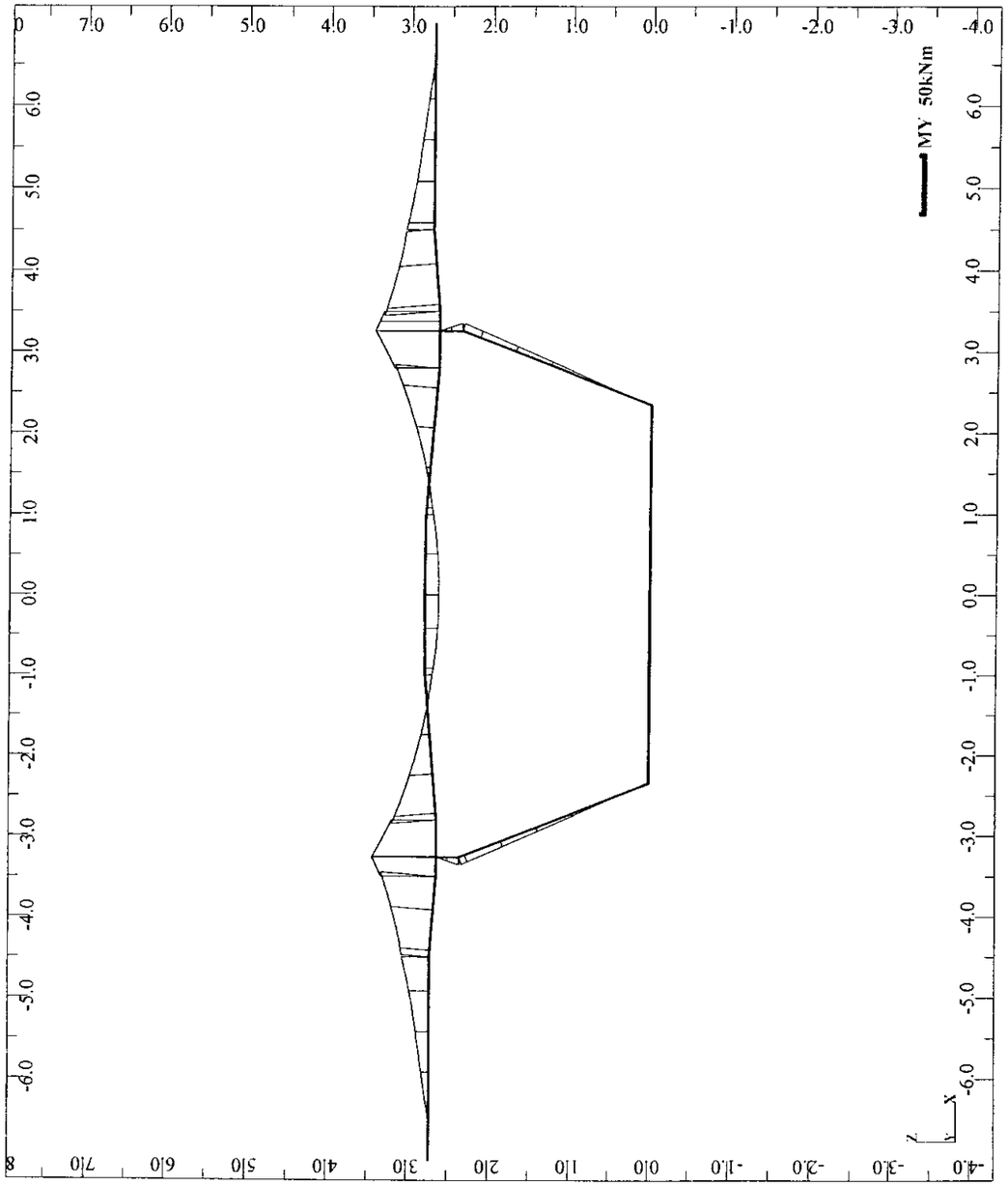
Archivo: **flextraC.rtd**
Proyecto: flextraC

## Vista - MY, casos: 2 (CARGA PERMANENTE)



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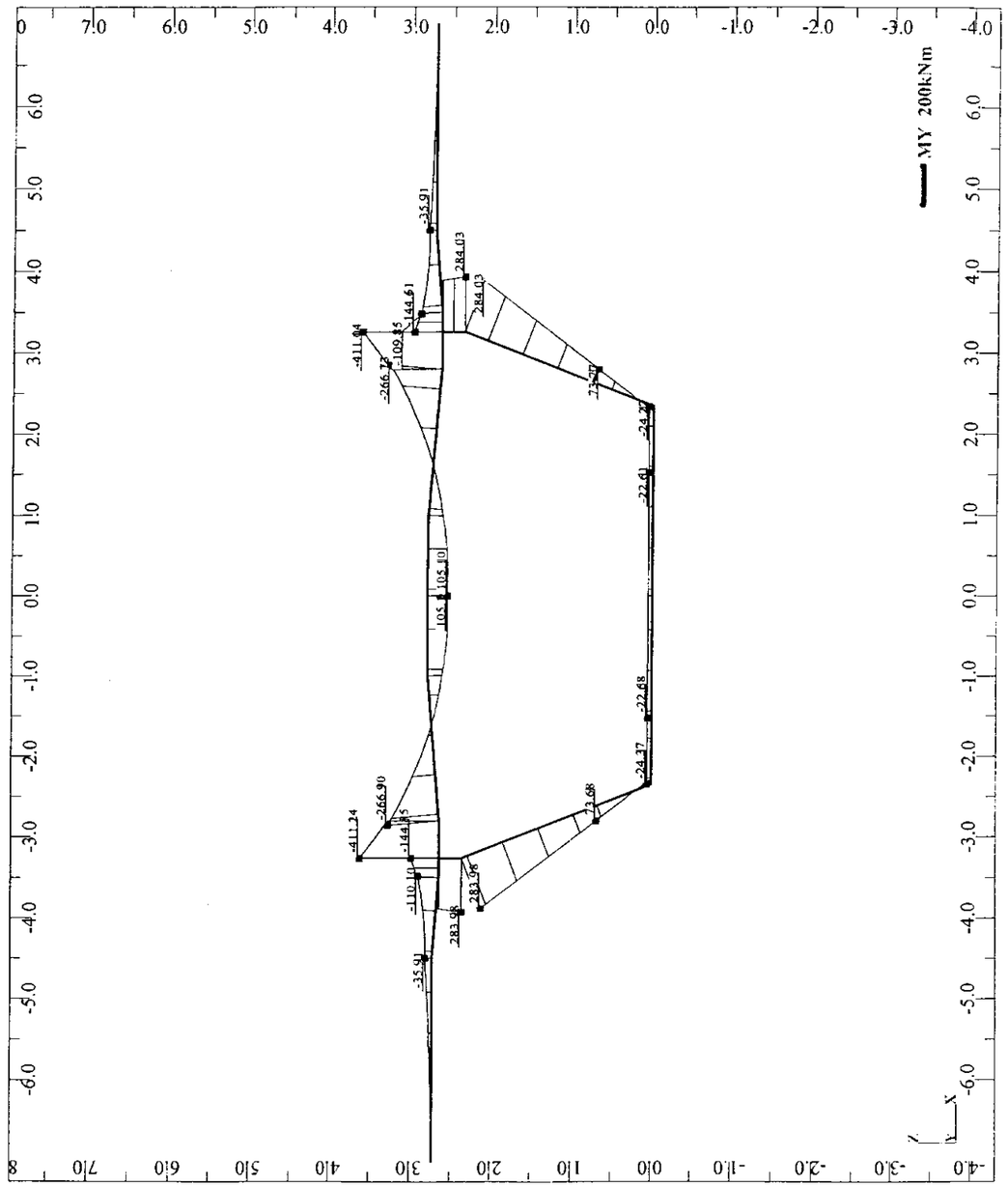
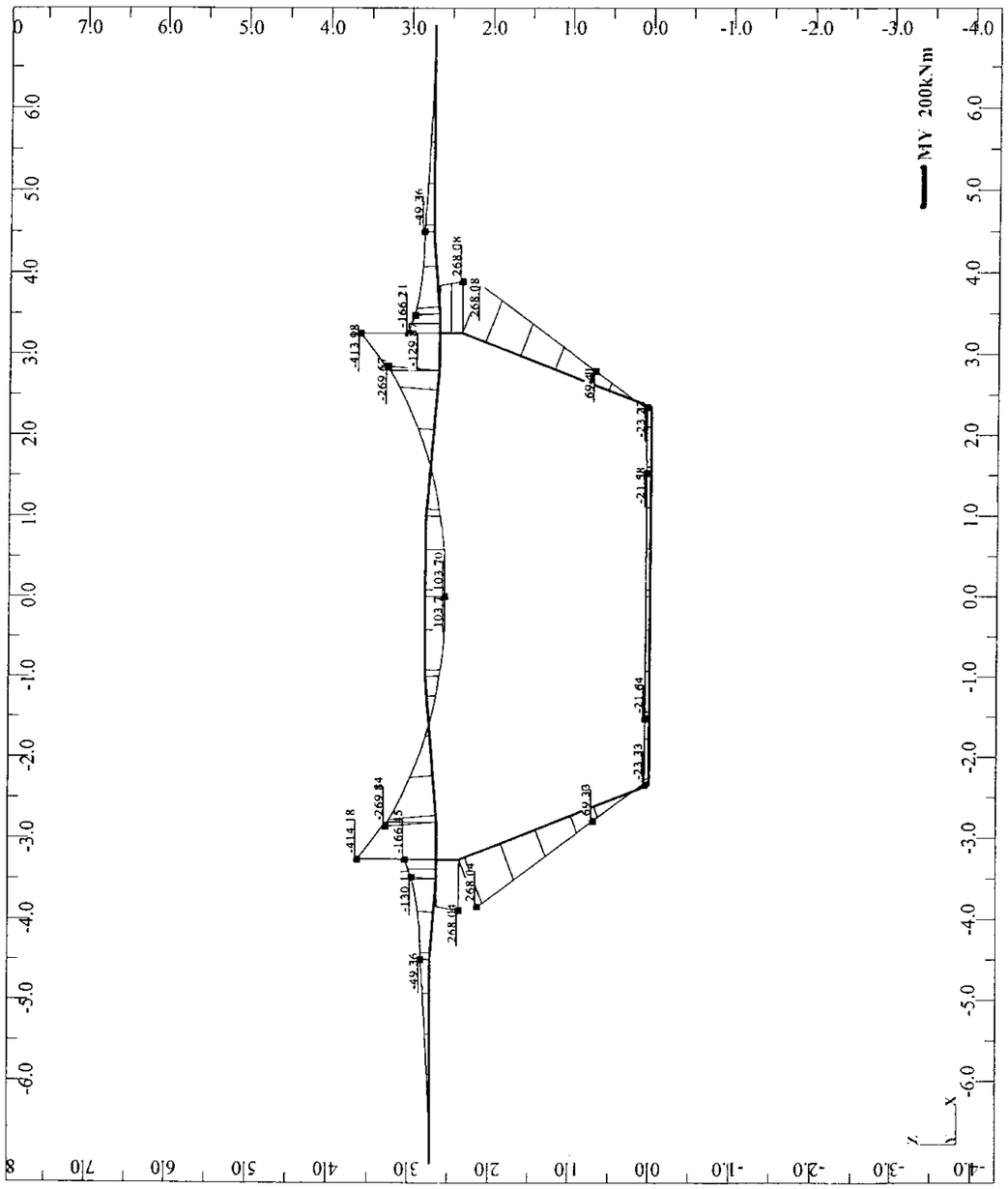
Archivo: **flextraC.rtd**
Proyecto: flextraC

## Vista - MY, casos: 10 (1.35(PP+CPmax)+1.50 TREN A (2 VIAS))



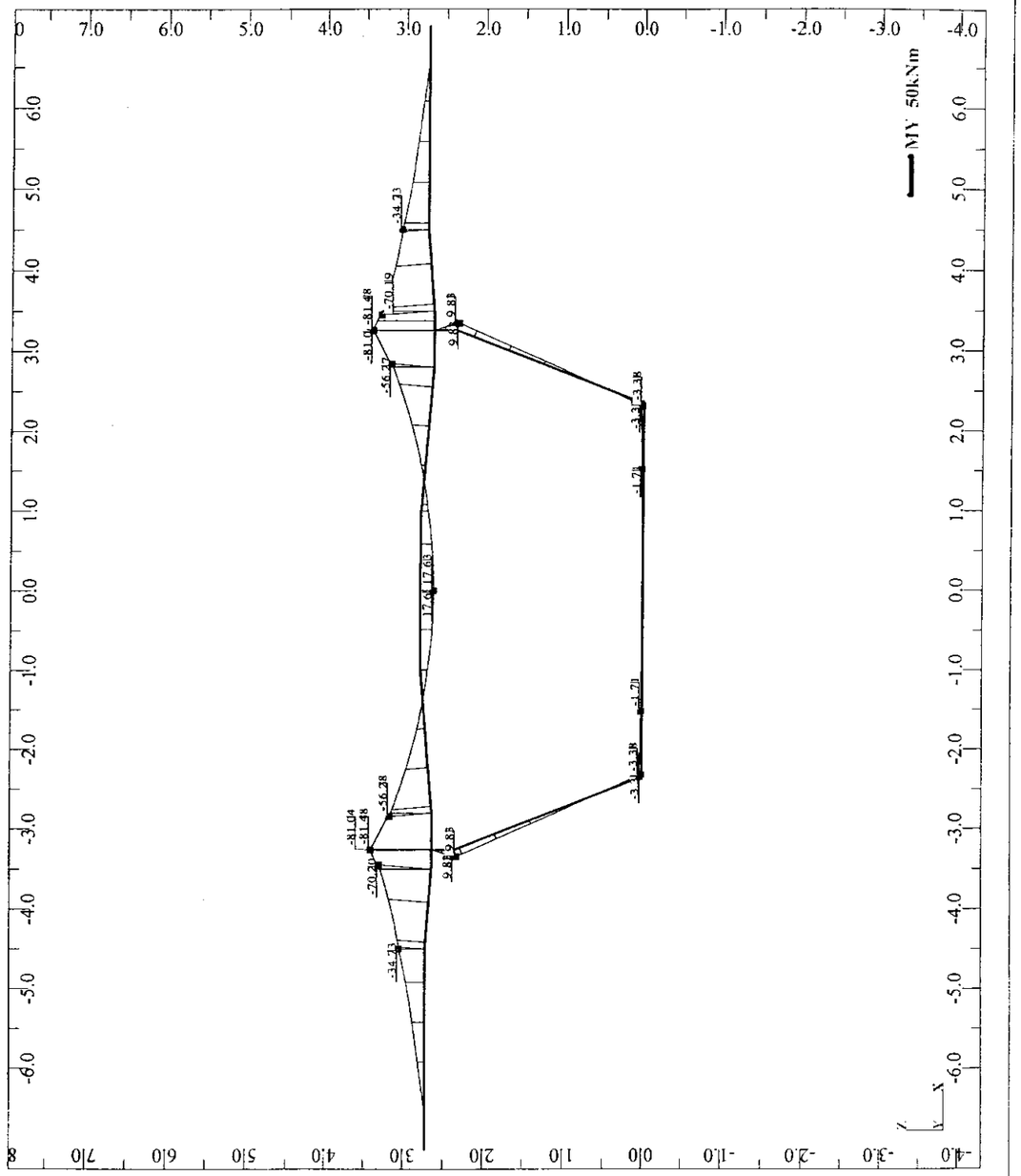
## Vista - MY, casos: 11 (1.35(PP+CPmax)+1.50 TREN A (2 VIAS) + 0.75 SC PASEOS)



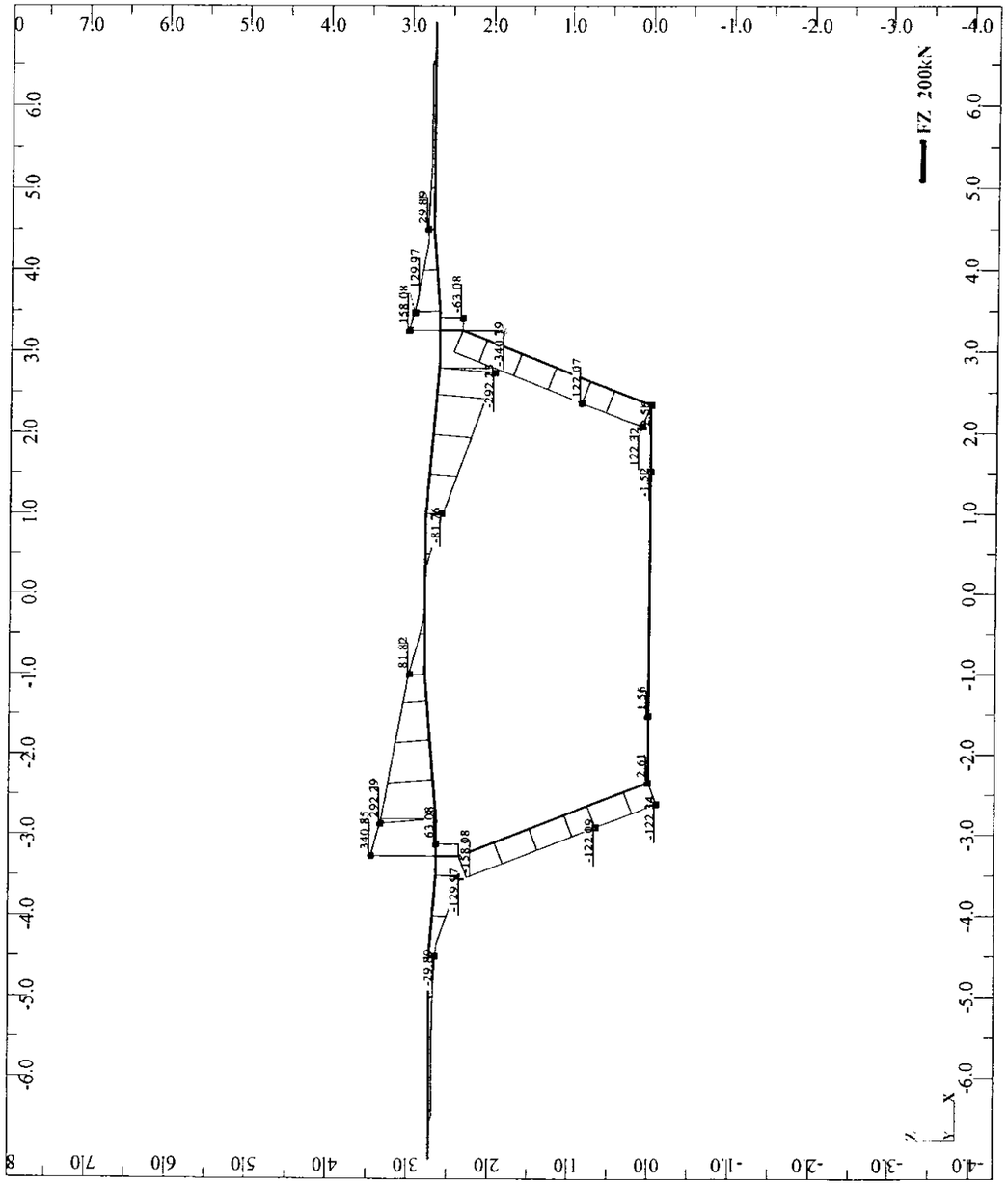





## Vista - MY, casos: 12 (1.35(PP+CP))



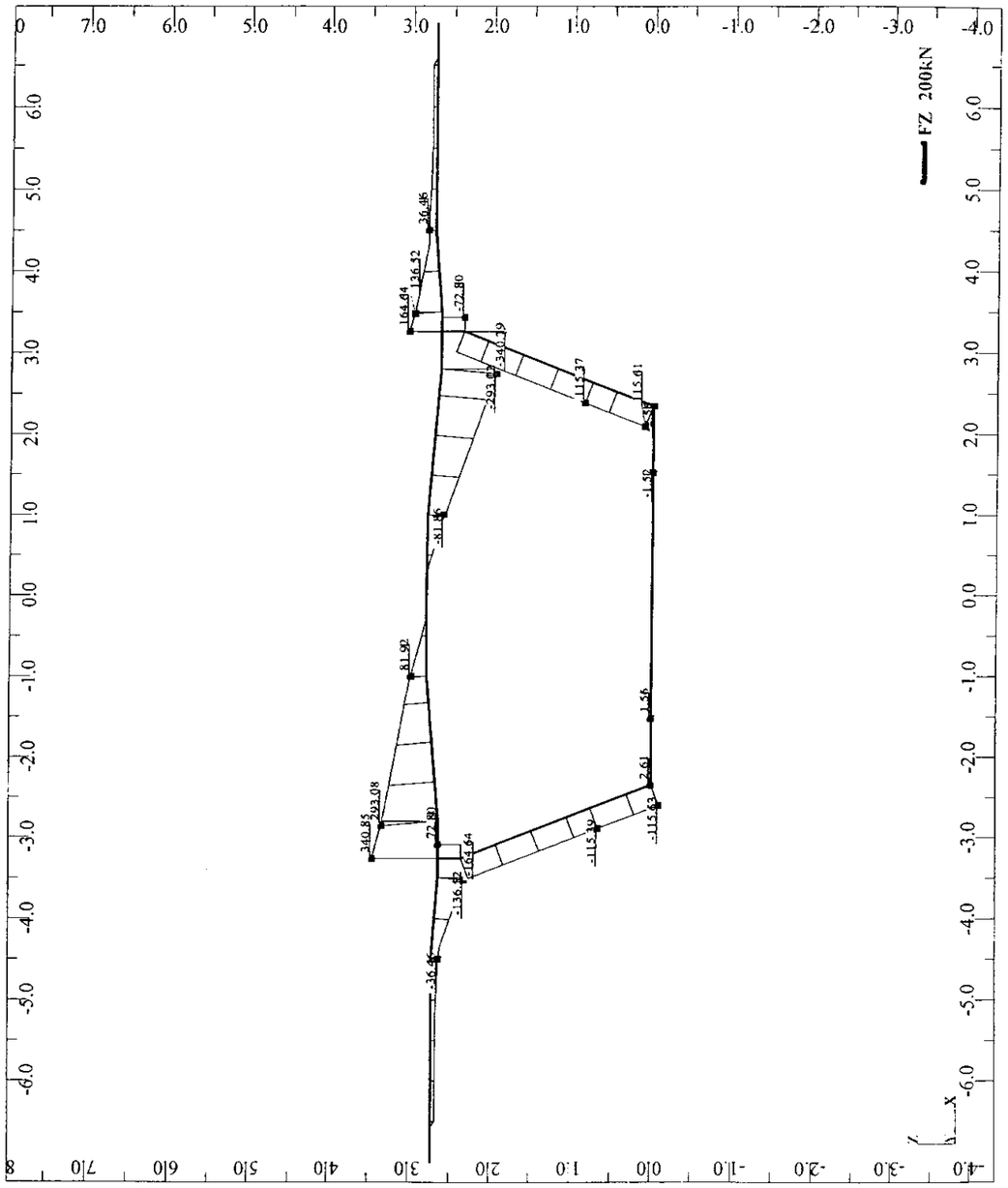
## Vista - FZ, casos: 10 (1.35(PP+CPmax)+1.50 TREN A (2 VIAS))



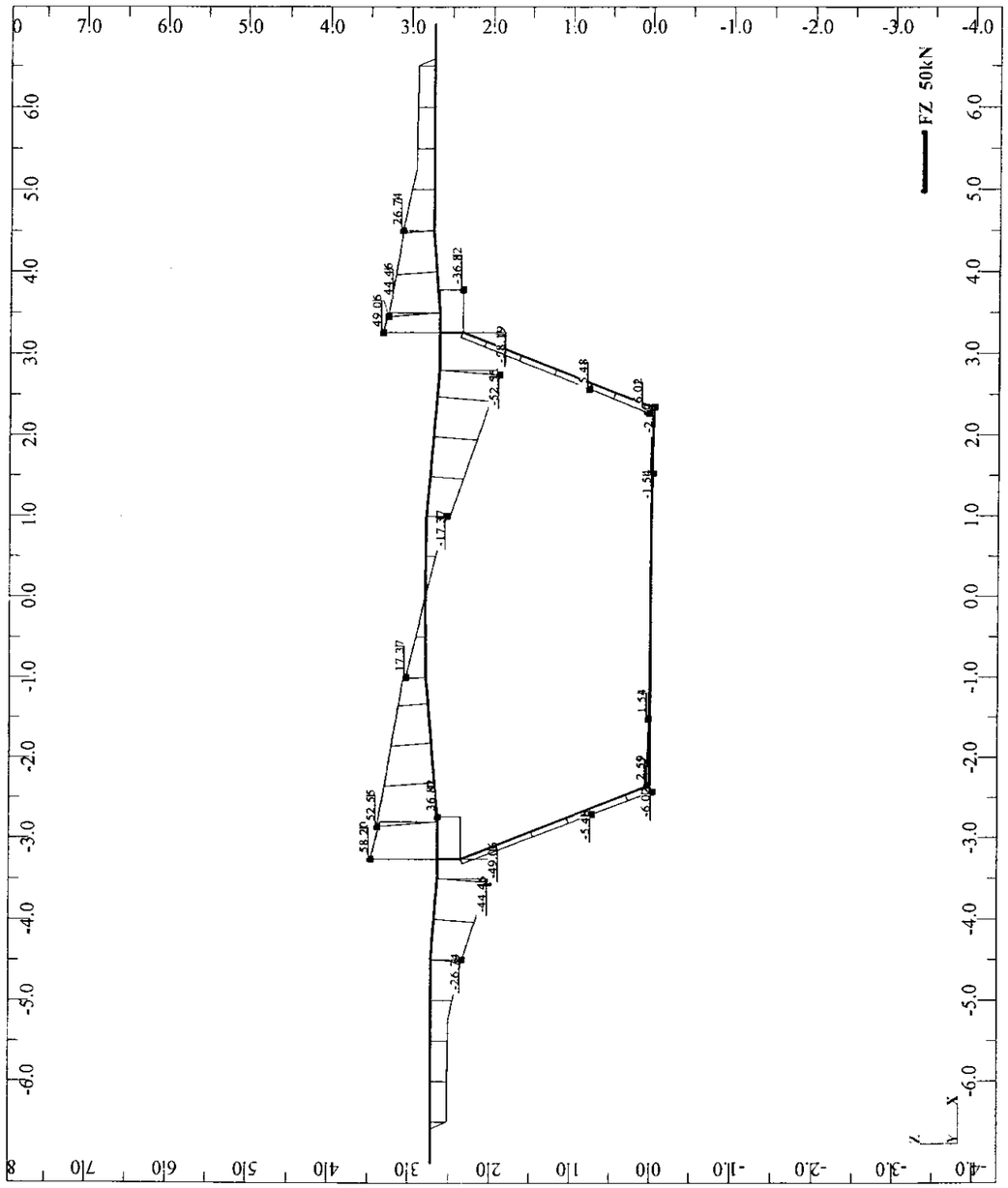





## Vista - FZ, casos: 11 (1.35(PP+CPmax)+1.50 TREN A (2 VIAS) + 0.75 SC PASEOS)



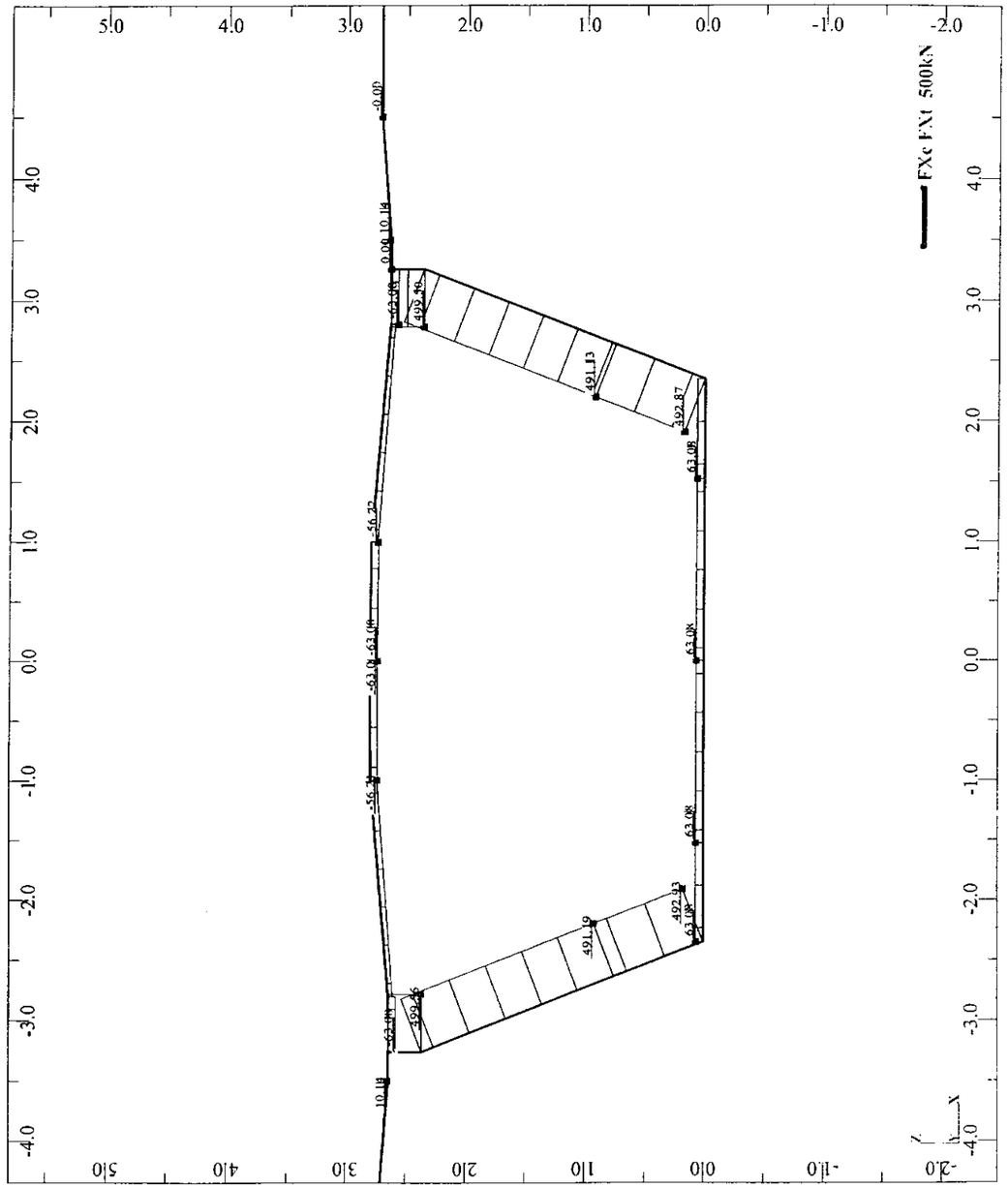
## Vista - FZ, casos: 12 (1.35(PP+CP))



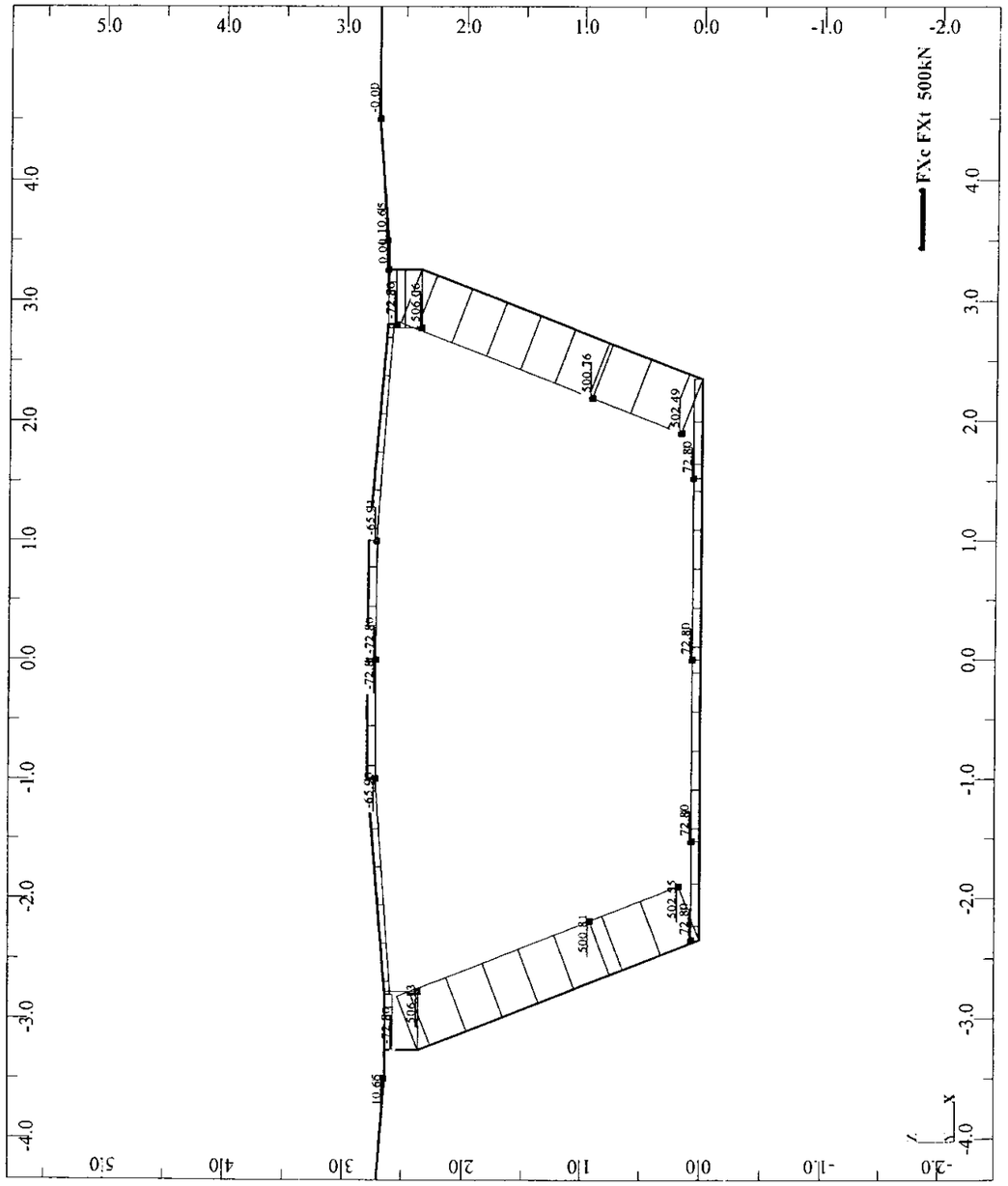





## Vista - FX, casos: 10 (1.35(PP+CPmax)+1.50 TREN A (2 VIAS))



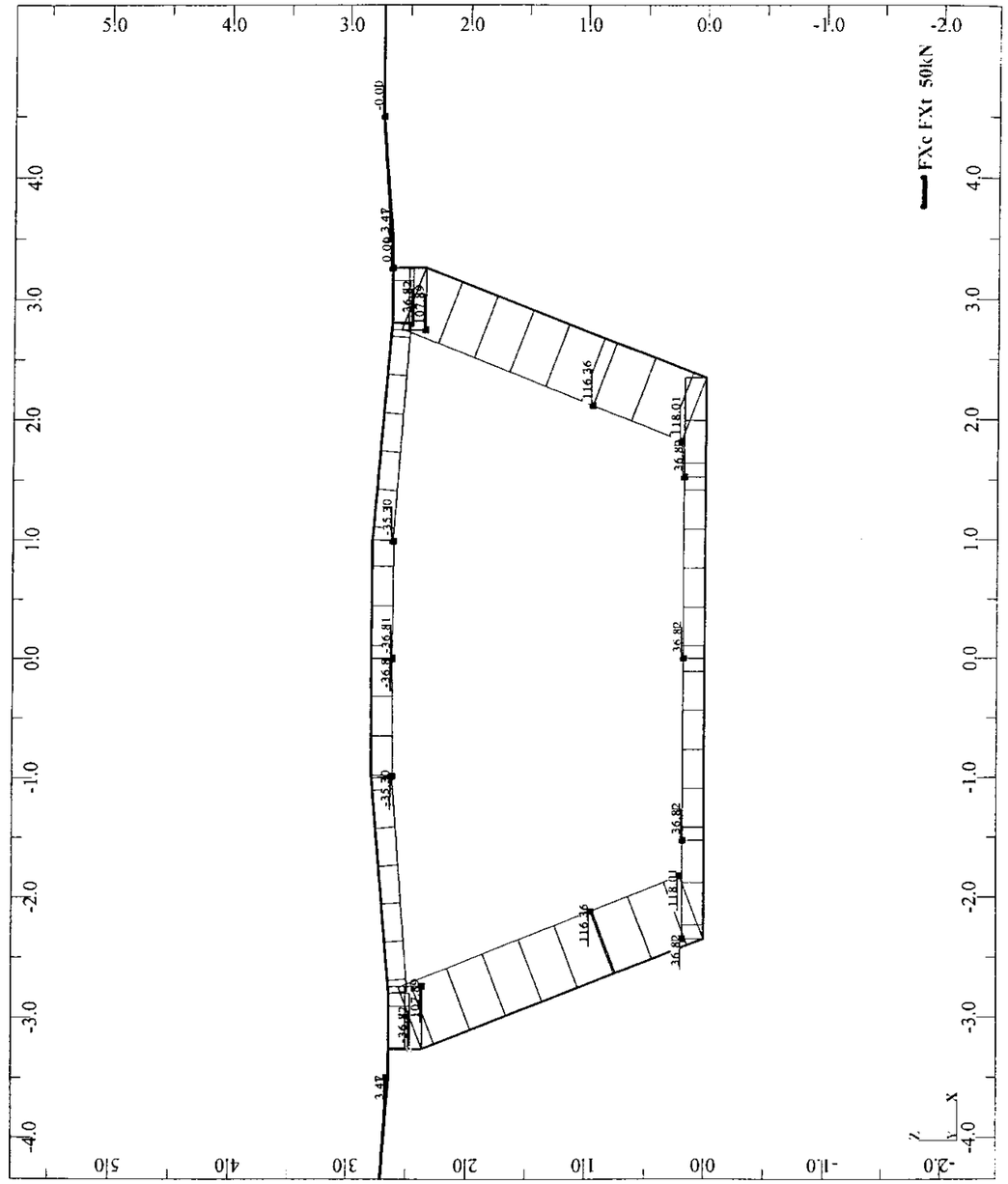
## Vista - FX, casos: 11 (1.35(PP+CPmax)+1.50 TREN A (2 VIAS) + 0.75 SC PASEOS)





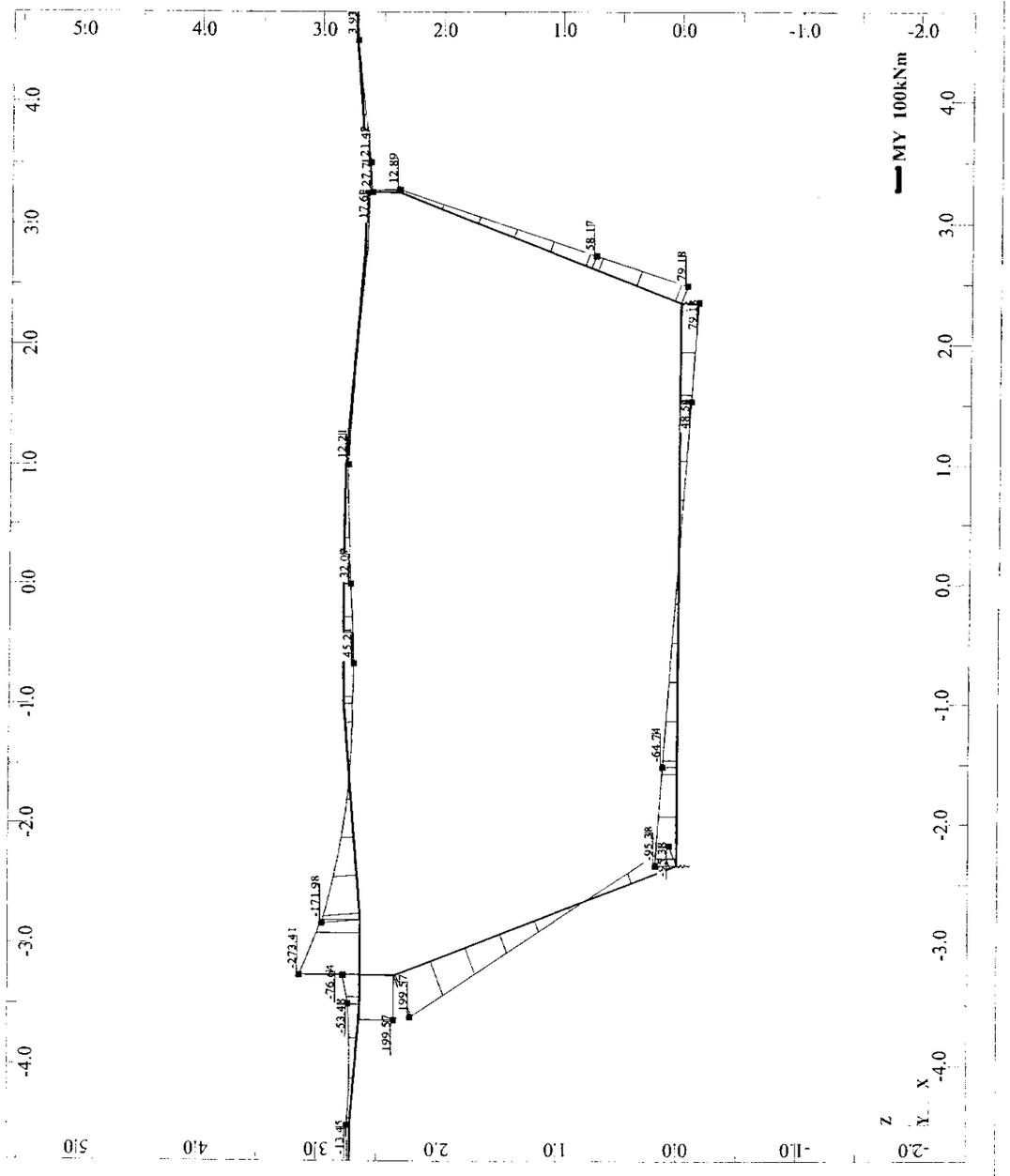



## Vista - FX, casos: 12 (1.35(PP+CP))



## Vista - MY, casos: 10 (1.35 DESBAL. + 1.50 TREN A IZDA + 0.75 SC

## PASEOS IZDA)

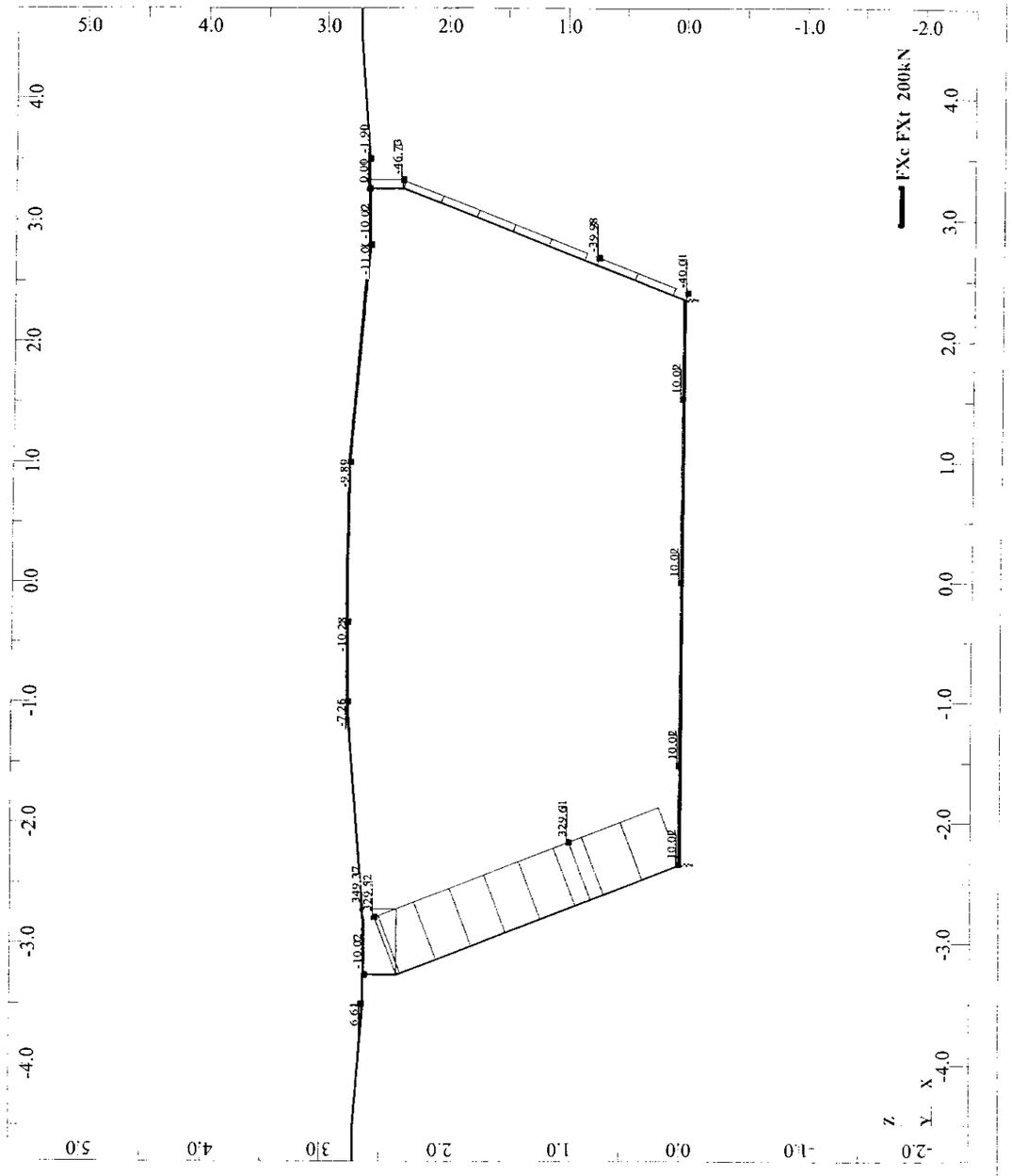







## Vista - FX, casos: 10 (1.35 DESBAL. + 1.50 TREN A IZDA + 0.75 SC

## PASEOS IZDA)



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Dirección :

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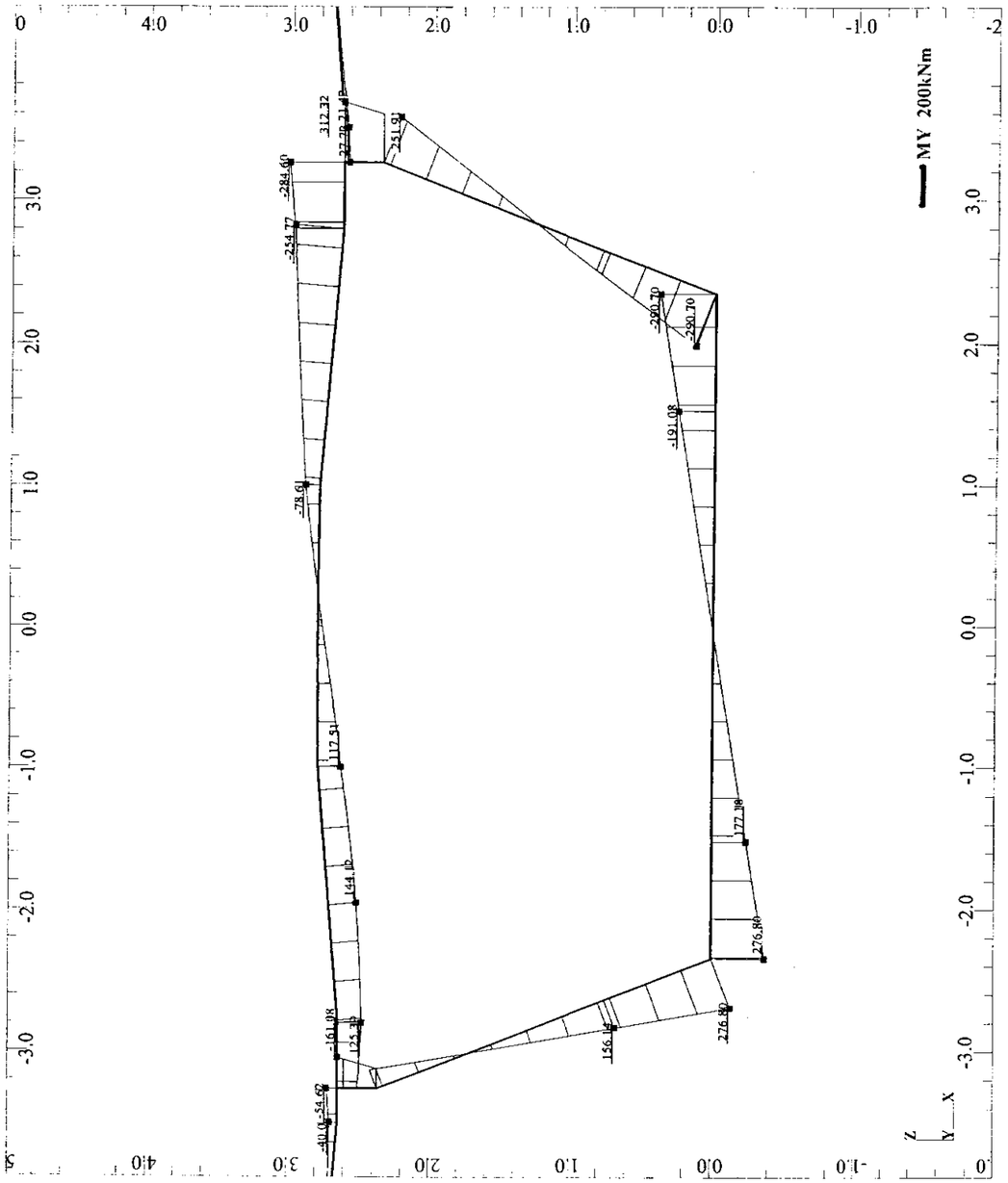
Proyecto : FlextraEB

## Vista - MY, casos: 11 (1.35 DESBAL. + 1.50 TREN B IZDA + 0.75 SC PASEOS IZDA)



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Dirección :

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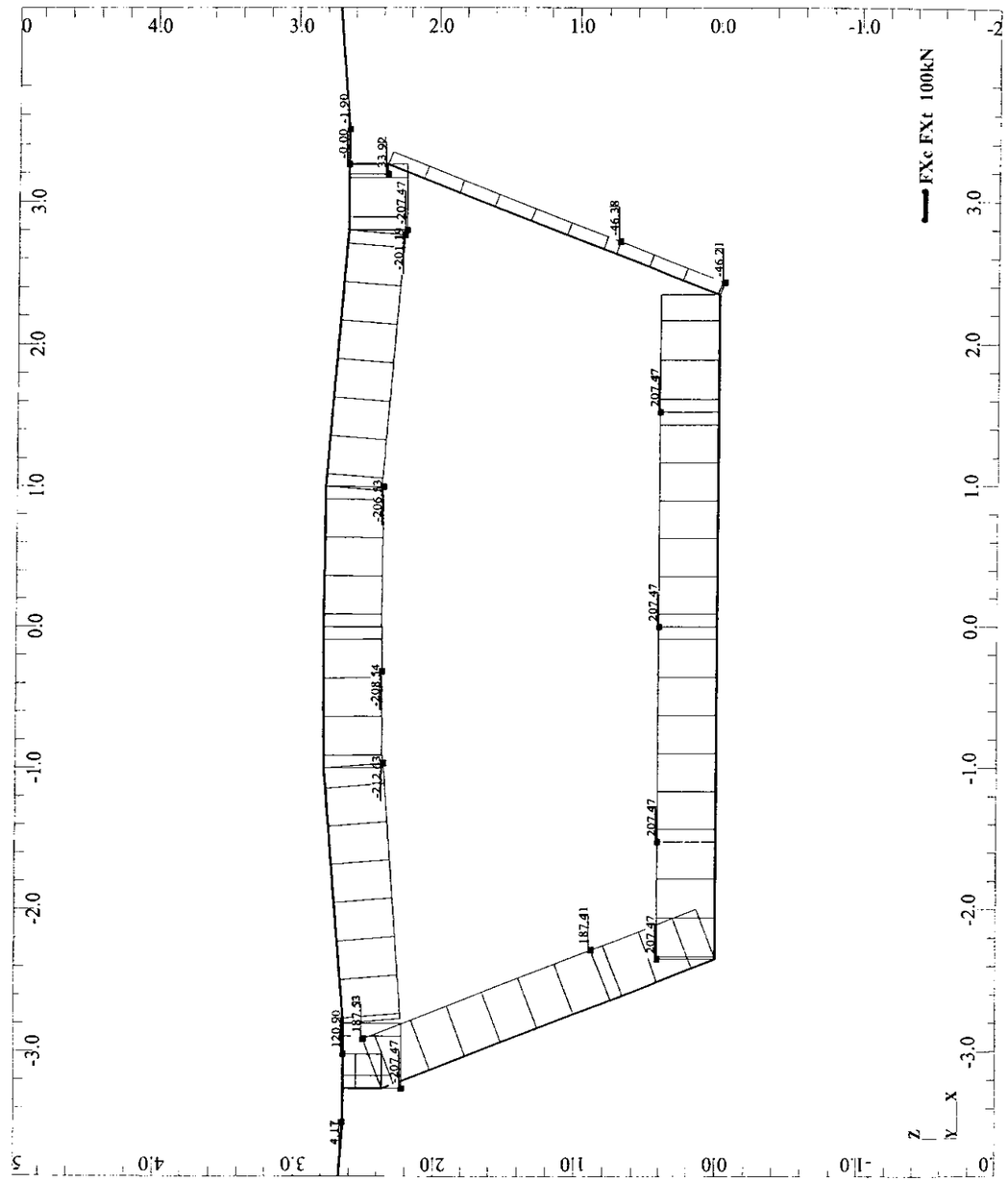
Archivo : **FlextraEB.rtd**
Proyecto : FlextraEB

## Vista - FX, casos: 11 (1.35 DESBAL. + 1.50 TREN B IZDA + 0.75 SC PASEOS IZDA)



### 3.5.3.3. Riostras de Pilas

Introducción de cargas en apoyos

en pilas

$V_{max} = 149{,}7$ Tn / aparato de apoyo en pilas

esta carga concentrada produce una flecha Td

$$Td = \varphi^2 Vol \left(1 - \frac{b_1}{b}\right)$$

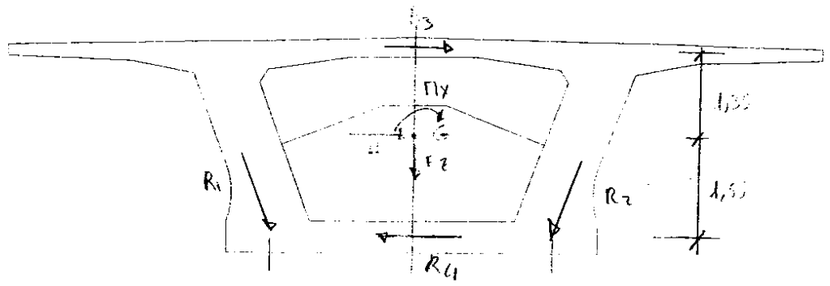
$b_1 = 1{,}00$ dimensión del aparato de apoyo

$b$ = [illegible] en la que se halla la carga longitudinalmente en el tablero

$Td = 335{,}7$ Tn $\Rightarrow$ $As = 75{,}7$ cm² 24 ϕ 20

3 capas de 8 ϕ 20

# Riostra de Pilas




**Acciones sin mayorar**

| | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|
| Macizamiento en cabeza | 0,00 | 0,00 | 108,17 | 0,00 | 0,00 |
| Puente en construcción | 60,50 | 45,00 | 1100,00 | 123,12 | 0,00 |
| Puente en servicio sin s.c. (0) | 57,23 | 0,00 | 1635,00 | 0,00 | 0,00 |
| Puente en servicio con s.c. (1) | 57,23 | 0,00 | 2773,89 | 41,56 | 0,00 |
| Puente en servicio con s.c. (2) | 57,23 | 0,00 | 1887,62 | 759,04 | 0,00 |
| Viento en servicio (3) | 0,00 | 73,80 | 0,00 | 325,62 | 0,00 |

| | Fyd | Fzd | Mxd |
|---|---|---|---|
| I) ((2) + (3)) x 1,5 x 0,9 | 99,63 | 2718,17 | 1464 |
| II (1) x 1,5 | 0 | 4160,83 | 62,34 |
| III) (1) x 1,5 | 0 | 2831,43 | 1138 |

haciendo $q = \frac{M_x}{2A_c}$ ⇒ I) $q = \frac{1464}{2 \times 17,22} = 42,5$ T/m

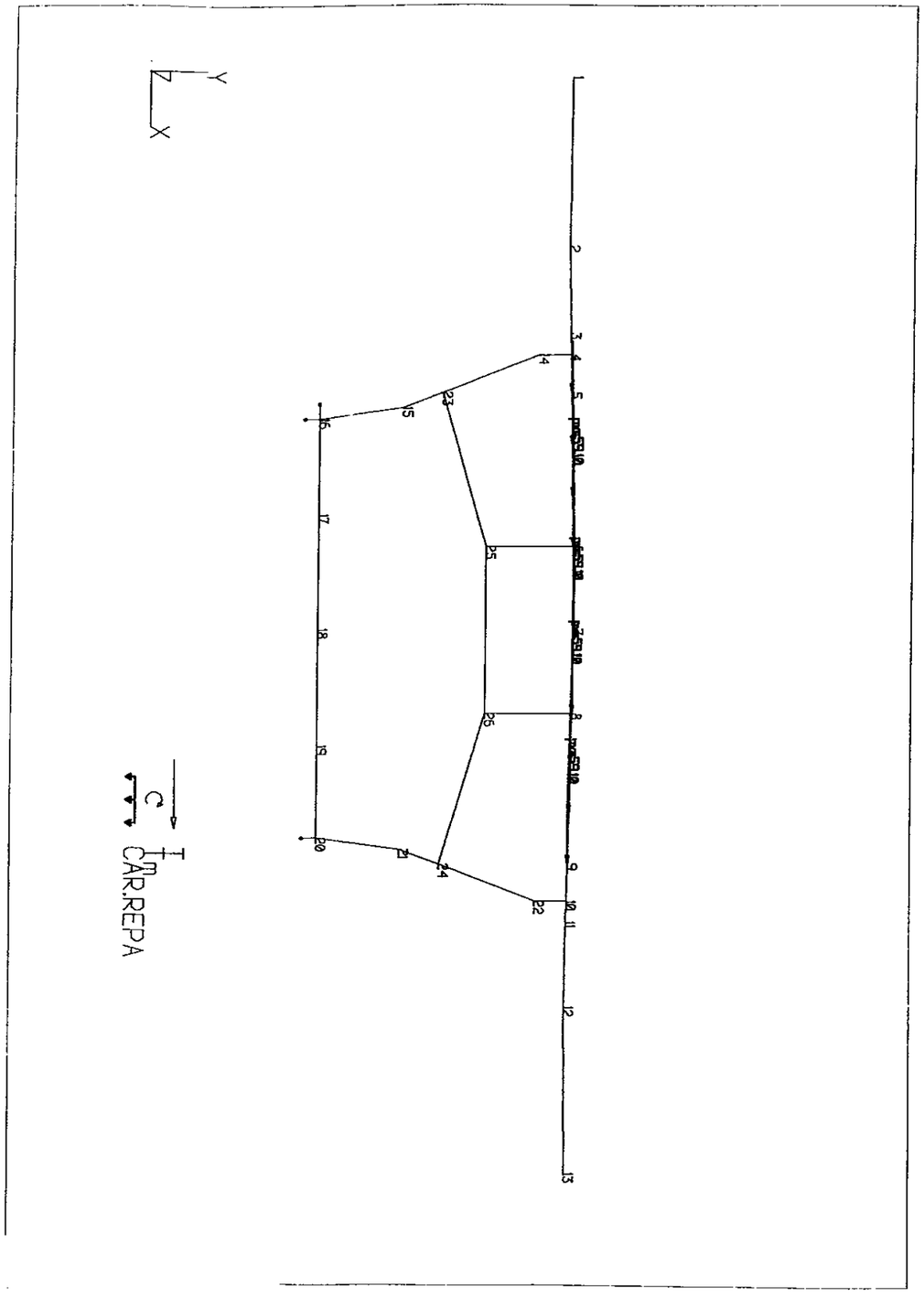
$l_1 = 3,00$
$l_2 = 3,00$
$l_3 = 6,00$
$l_4 = 4,500$

$R_1 d = \frac{F_z d}{2} - q l_1 = 1231,6$ Tm

$R_2 d = \frac{F_z d}{2} + q l_1 = 1486,1$ Tm

$R_3 d = q l_3 + \frac{F_y}{2} = 304,8$ Tm

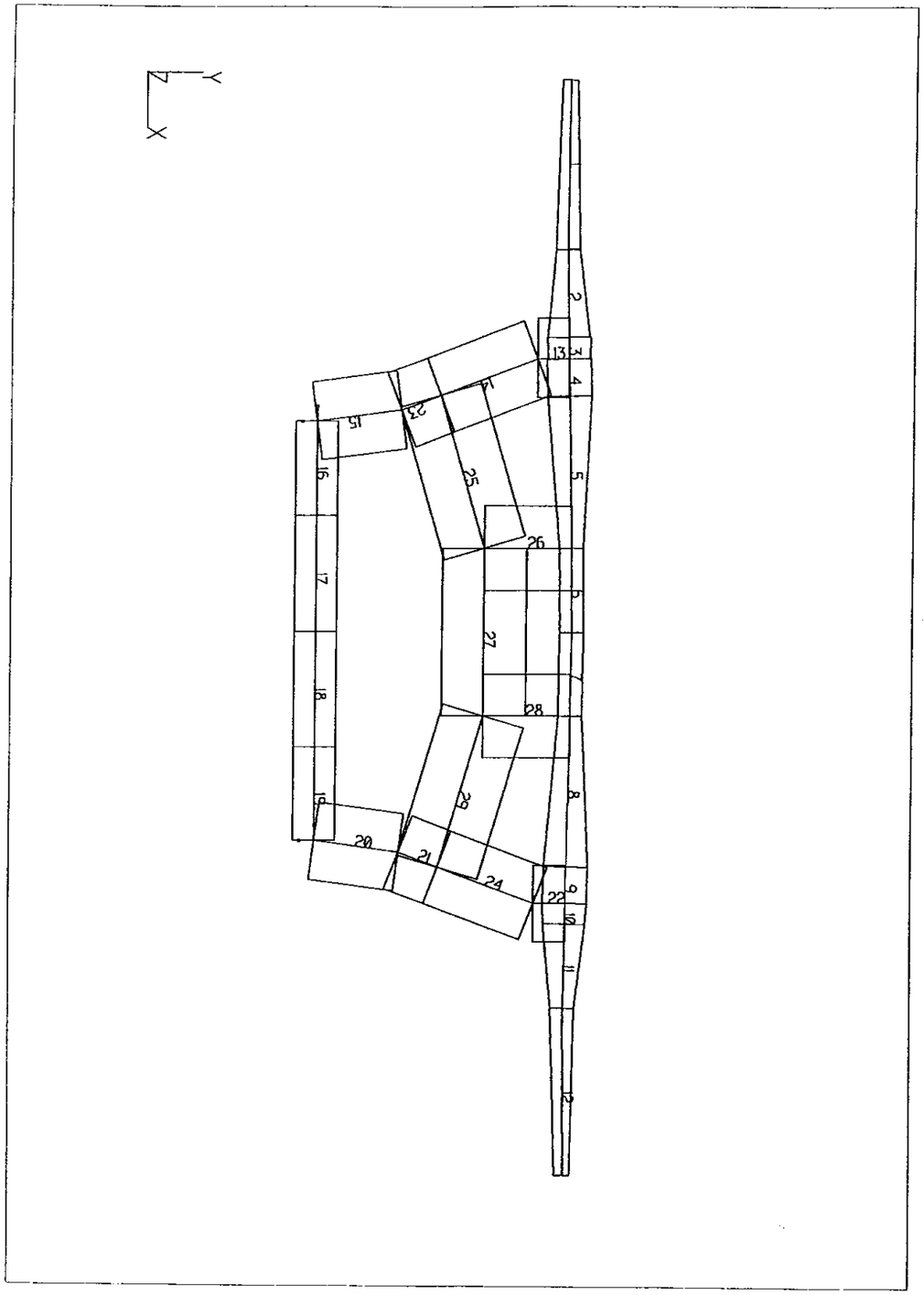
$R_4 d = q l_2 - \frac{F_y}{2} = 141,0$ Tm




Hora: 17:13:28 Página: 2718

ROBOTV6 v. 4.1 EIPSA 754
(c) Copyright RoboBAT 1985 - 1996 (RIOSTRA.)
PORTICO PLANO: , Escala= 1:69

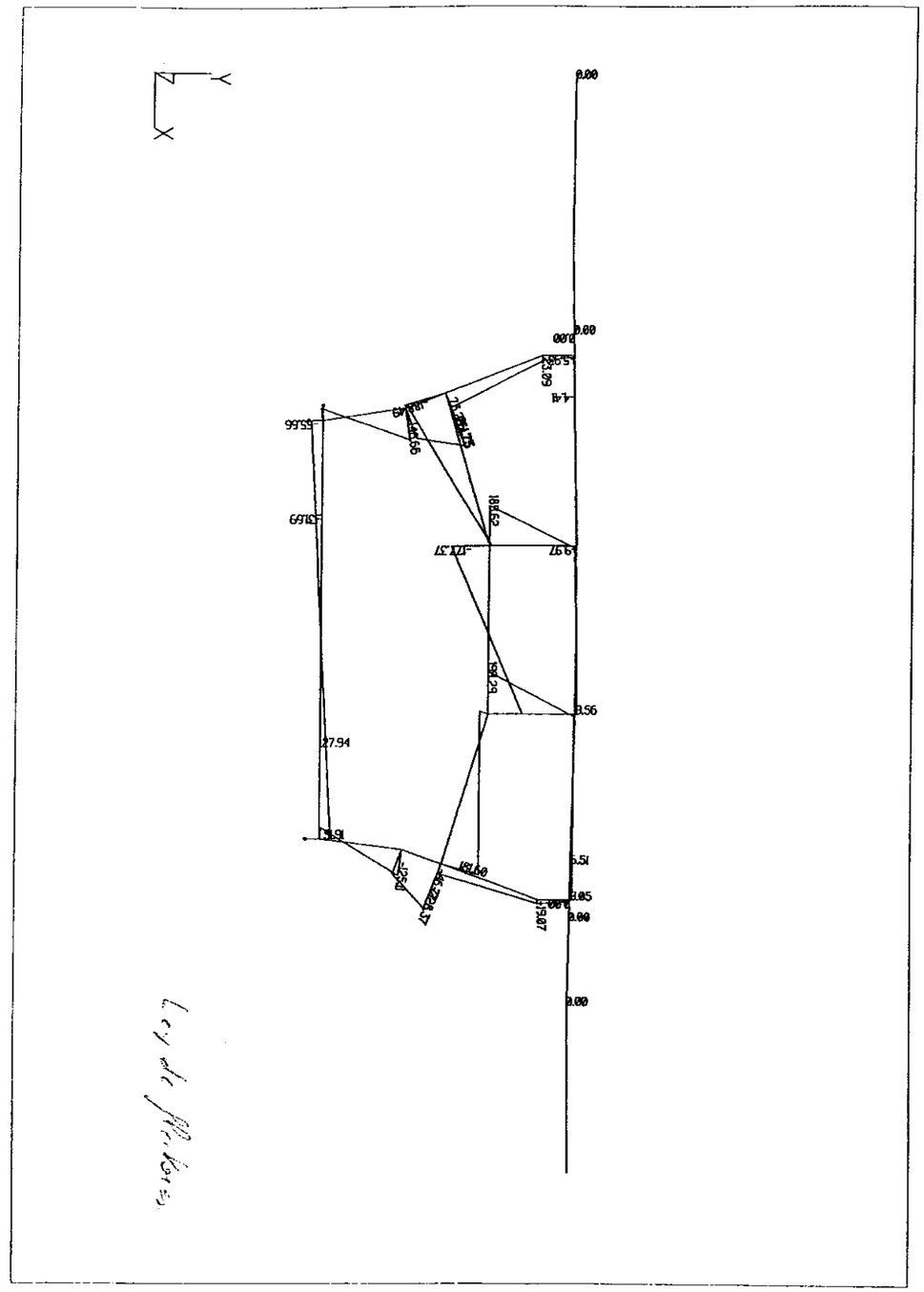
Caso : #1 : CARGA TORSORA STATI




Hora: 17:14:56 Página: 2719

ROBOTV6 v. 4.1 EIPSA 754
(c) Copyright RoboBAT 1985 - 1996 (RIOSTRA.)
PORTICO PLANO: , Escala= 1:69

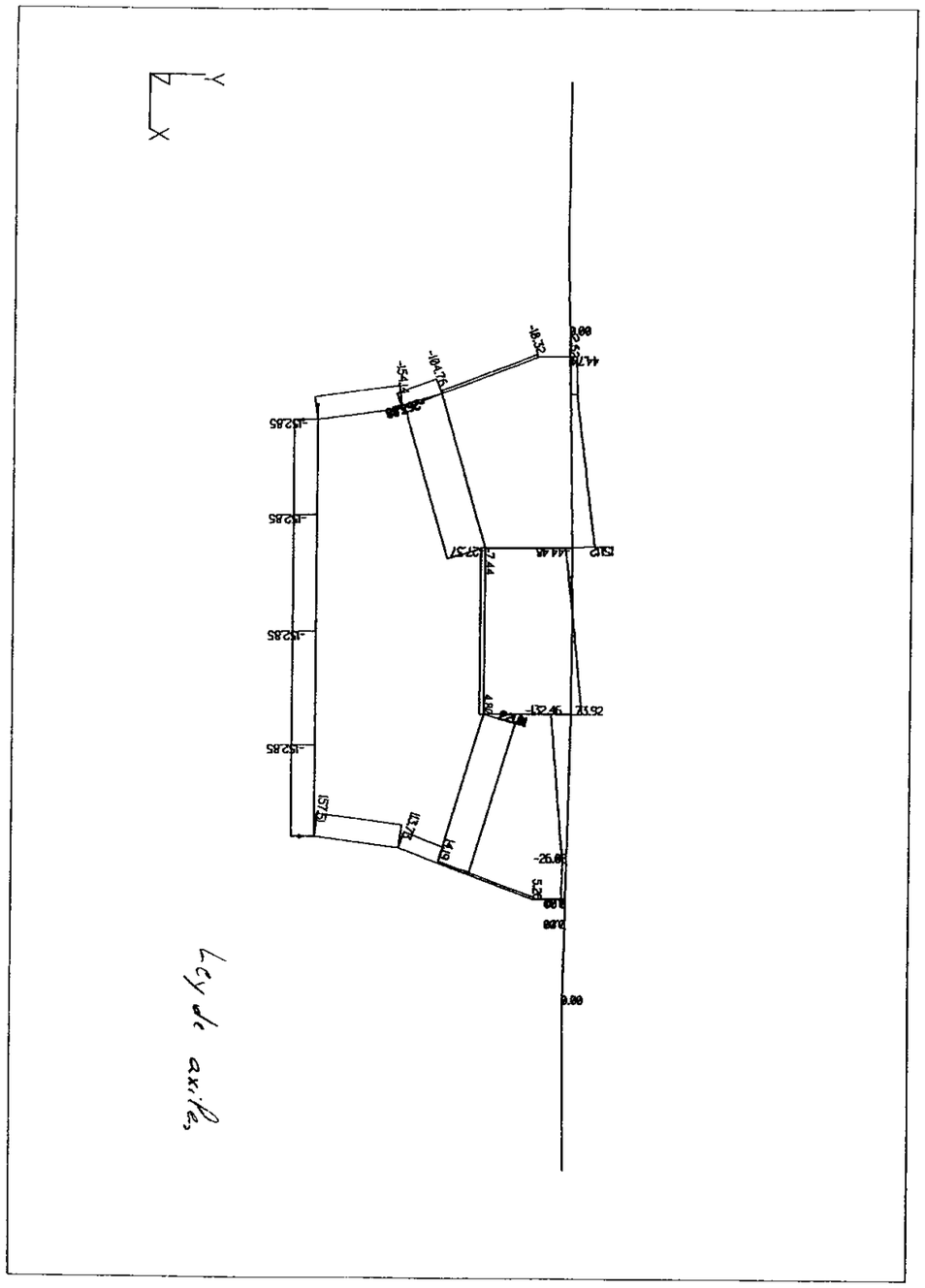
Caso : #1 : CARGA TORSORA STATI




Hora: 17:16:52 Página: 2720

ROBOTV6 v. 4.1 EIPSA 754
(c) Copyright RoboBAT 1985 - 1996 (RIOSTRA.)
PORTICO PLANO: , Escala= 1:72

| Caso : #1 : CARGA TORSORA<br>Valores extremos [ T, Tm, m ] | | STATI<br>Elem: | Pos: | Compon: |
|---|---|---|---|---|
| MZ = | 262 | 23 | 0 | 1 |



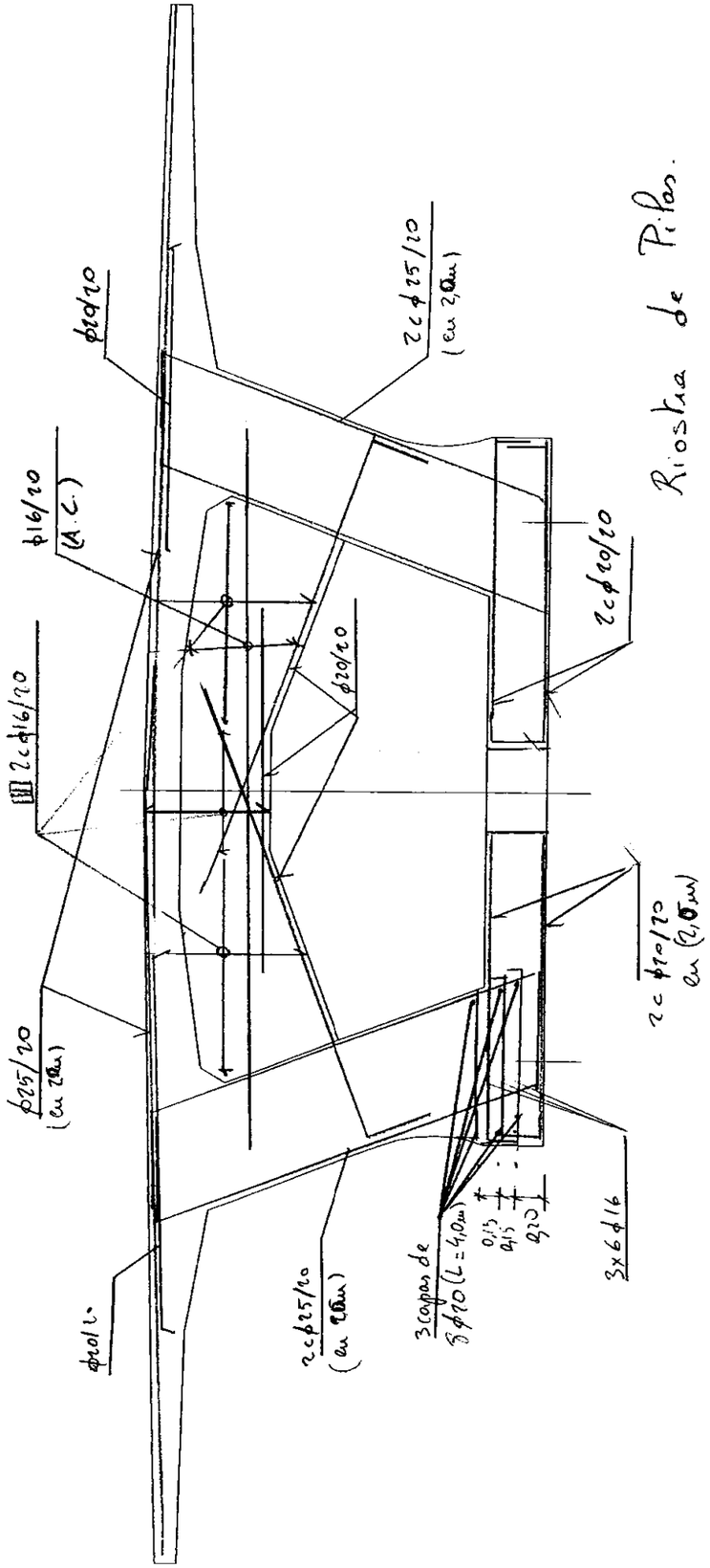

| Hora: 17:42:44 | Página: 2721 | | |
|---|---|---|---|
| ROBOTV6 v. 4.1 EIPSA 754<br>(c) Copyright RoboBAT 1985 - 1996 (RIOSTRA.)<br>PORTICO PLANO: , Escala= 1:73 | | | |
| Caso : #1 : CARGA TORSORA<br>Valores extremos [ T, Tm, m ] | | STATI<br>Elem: | Pos: | Compon |
| FXt= -264<br>FXc= 221 | | 25<br>29 | 0<br>0 | 1<br>1 |

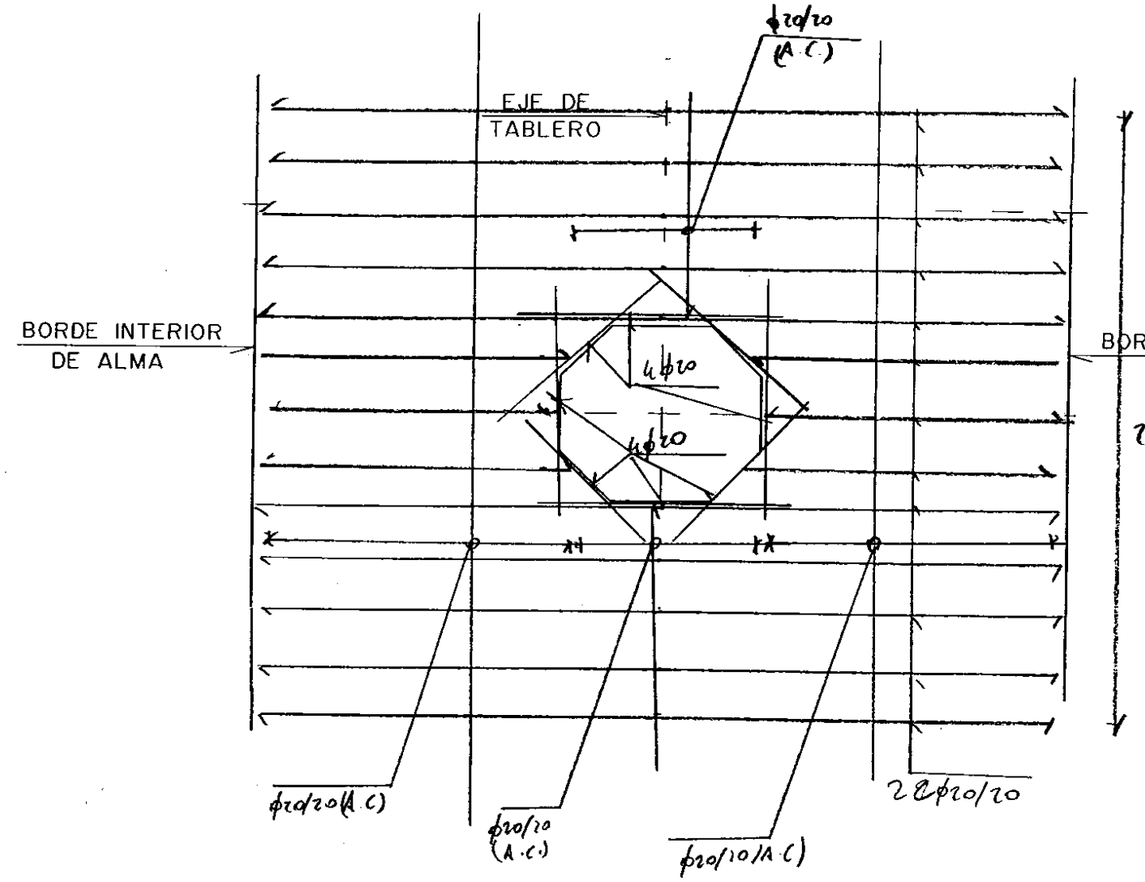
Se estudia la viostra como un pórtico plano en el que se introduce la carga $R_3$ puesto que es la única que ocasiona flexión transversal en dicha sección

En el eje se tiene $q = 42,5 + \frac{99,63}{6} = 59,1$ Tn/ml

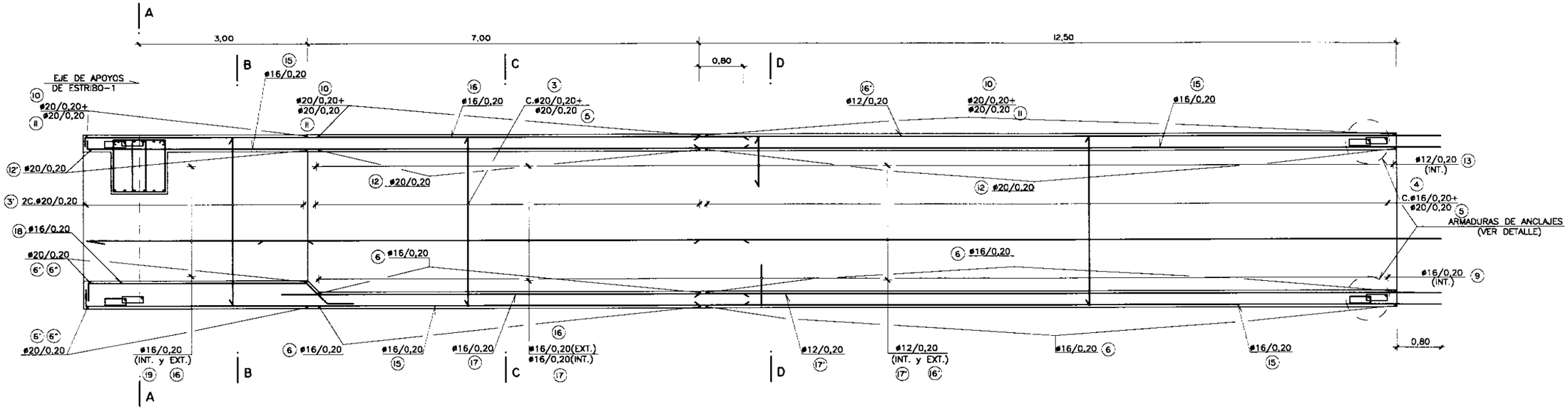
En el alma se tiene

$M_d = 261,75$ mT

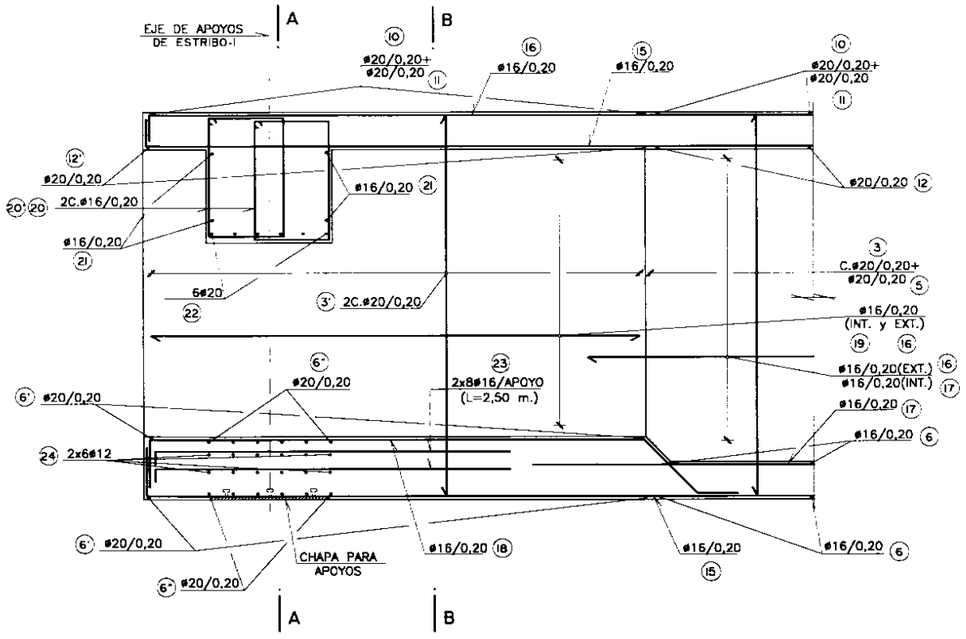

Rioskra de Pilas.
2cφ25/10
(en 2,0m)
φ20/20
φ16/20
(A.C.)
2cφ16/20
φ20/20
φ25/20
(en 2m)
2cφ10/20
2cφ20/20
(en 2,0m)
3capas de
5φ20 (L=4,0m)
0,15
0,15
0,20
3x6φ16
2cφ25/20
(en 2m)
φ20 l.


φ20/20
(A.C.)
EJE DE
TABLERO
BORDE INTERIOR
DE ALMA
4φ20
4φ20
BORDE INTERI
DE ALMA
2,50m
φ20/20(A.C.)
φ20/20
(A.C.)
φ20/20(A.C.)
22φ20/20

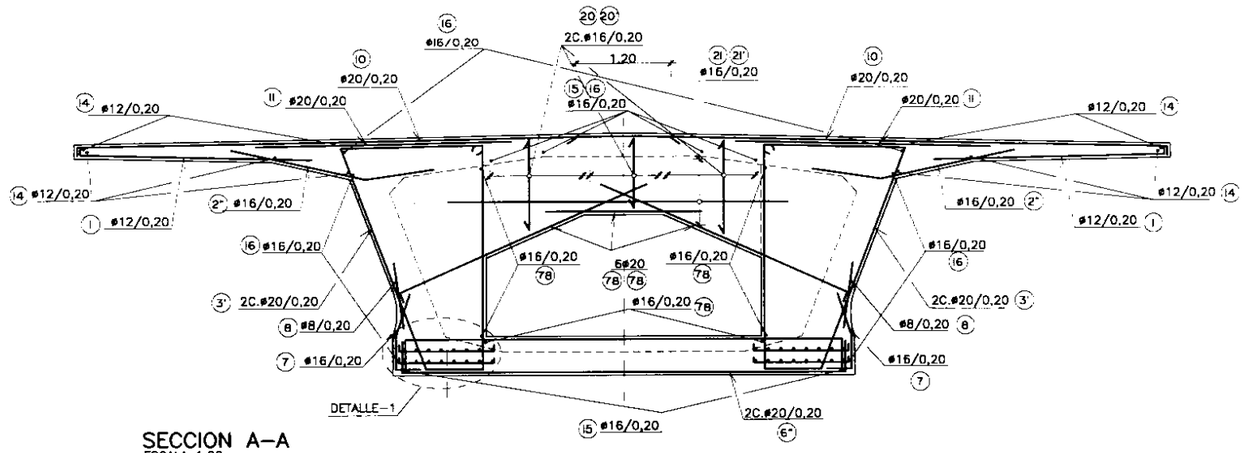
### 3.5.4. Esquemas de Armado




SECCION LONGITUDINAL DE DOVELA-1
ESCALA 1:80




DETALLE DE ARMADURAS EN RIOSTRA DE ESTRIBO-1
ESCALA 1:50

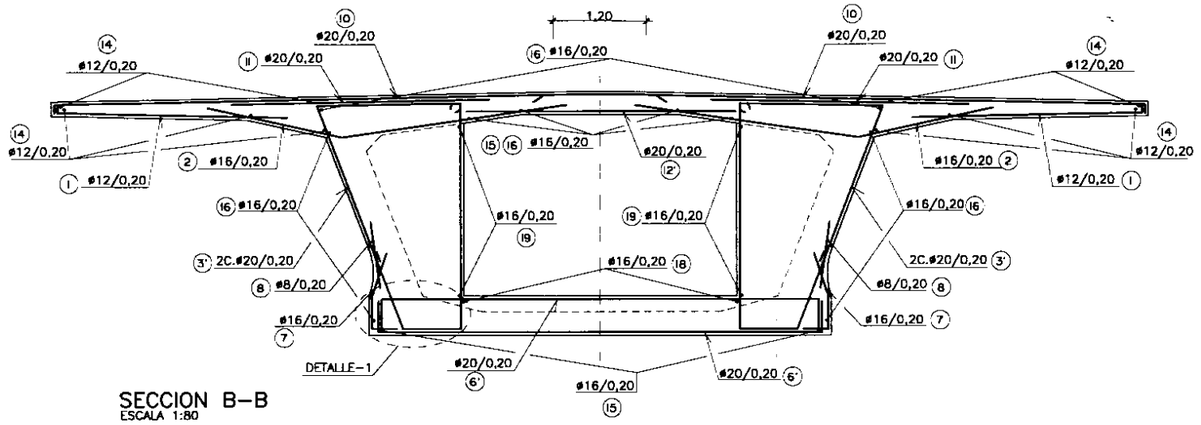



SECCION A-A
ESCALA 1:80

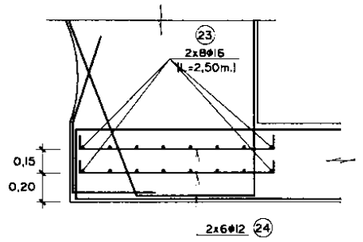
NOTA:
LAS CHAPAS PARA APOYOS SE DEFINIRAN SEGUN LAS DIMENSIONES DEL APARATO DE APOYO COLOCADO.

.TARM1-RIERUSSA

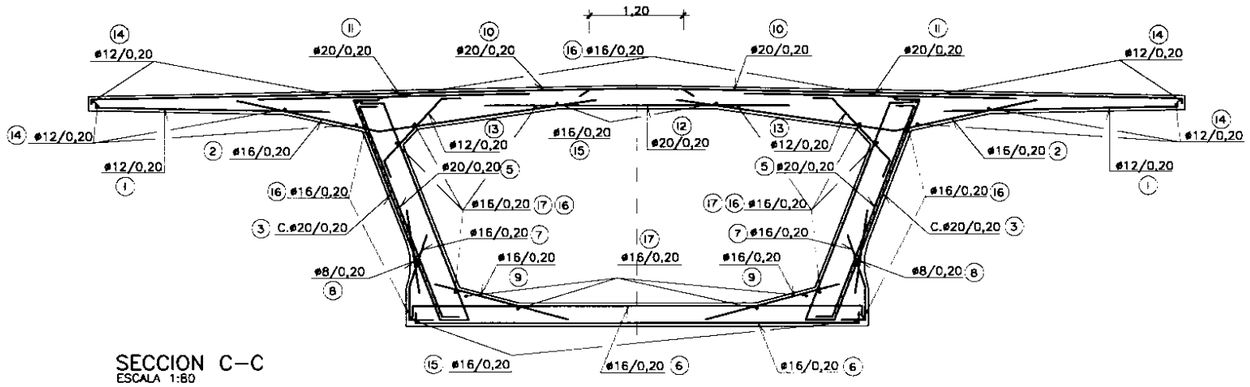
| | | | | | |
|---|---|---|---|---|---|
| GIF Gestor de Infraestructuras Ferroviarias | TÍTULO: PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA TRAMO: GELIDA-SANT LLORENÇ D'HORTONS | AUTOR: Eptisa — Edo: FÉLIX ZAPATA PARRA | ESCALA: VARIAS — UNE A-3 ORIGINALES — Gráfica | FECHA: MARZO 2002 | TÍTULO DEL PLANO / Nº DE PLANO: Hoja de |



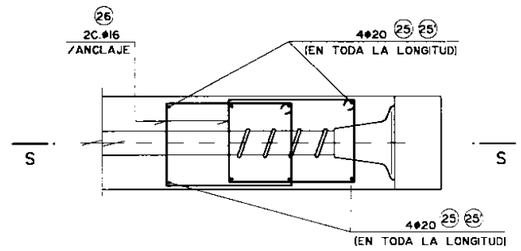

SECCION B–B
ESCALA 1:80



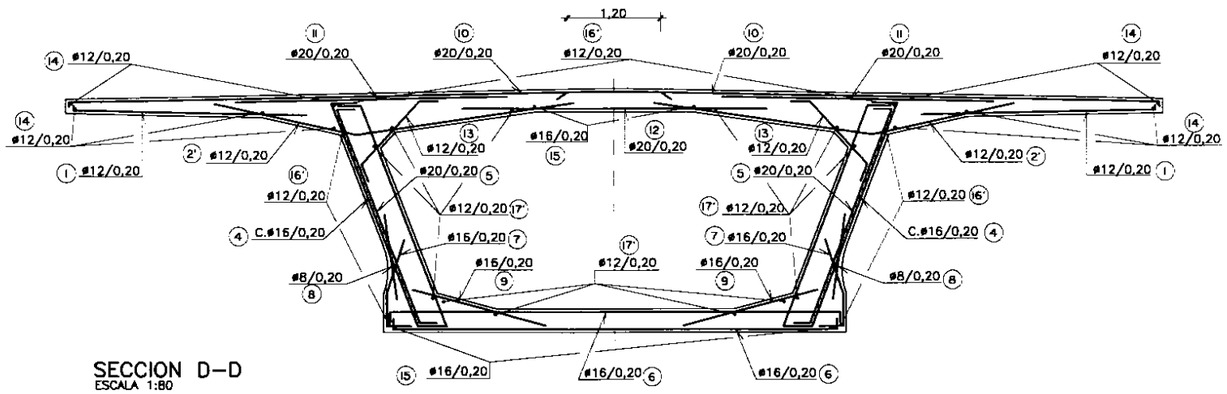

DETALLE–1
ESCALA 1:40



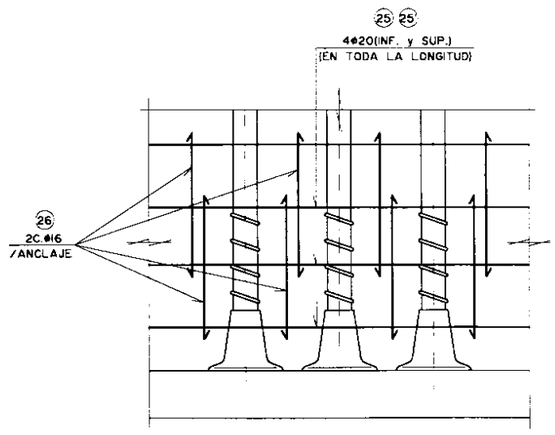

SECCION C–C
ESCALA 1:80




DETALLE DE ARMADURA DE ANCLAJES
ESCALA 1:20



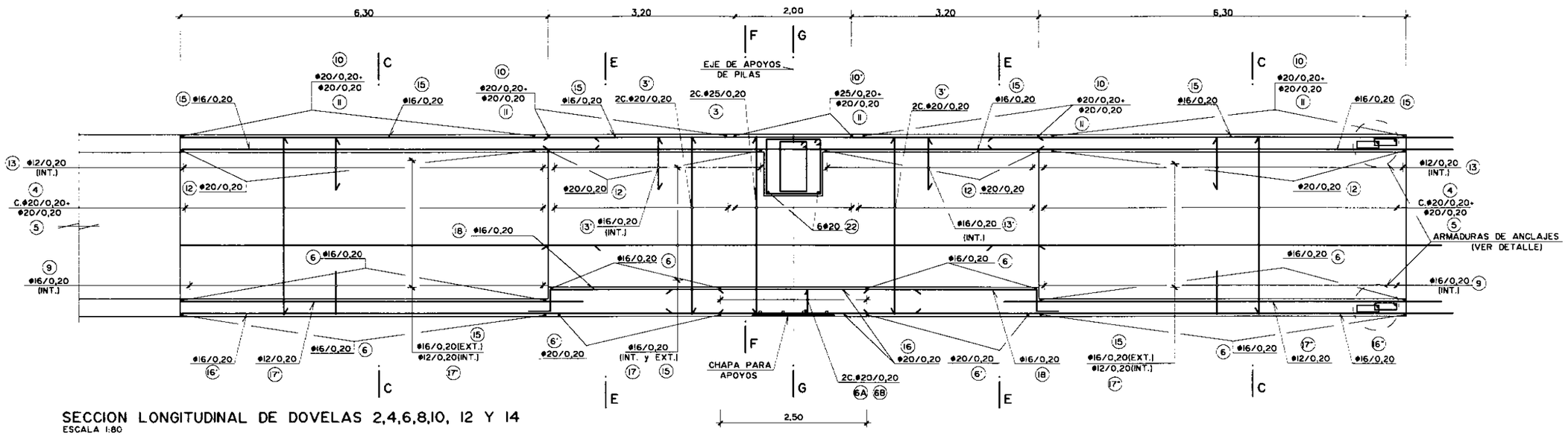

SECCION D–D
ESCALA 1:80



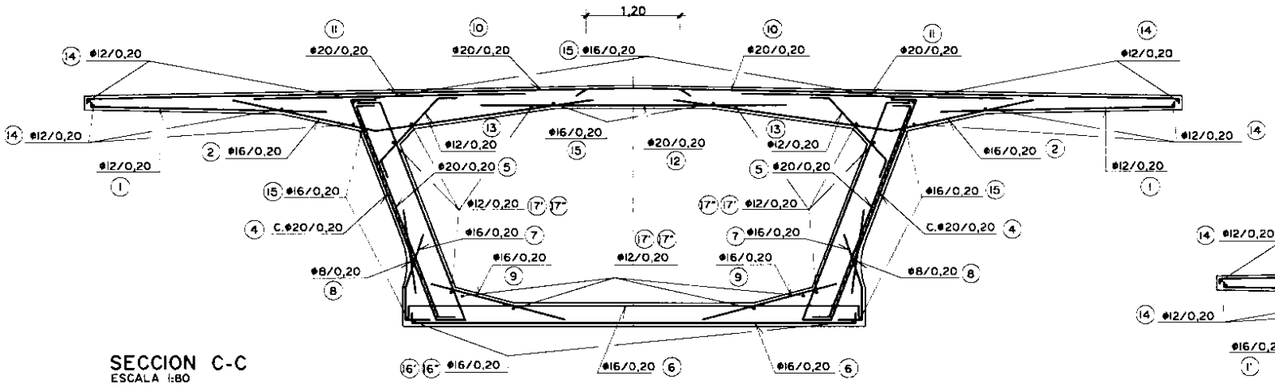

SECCION S–S
ESCALA 1:20

.TARM2-RIERUSSA

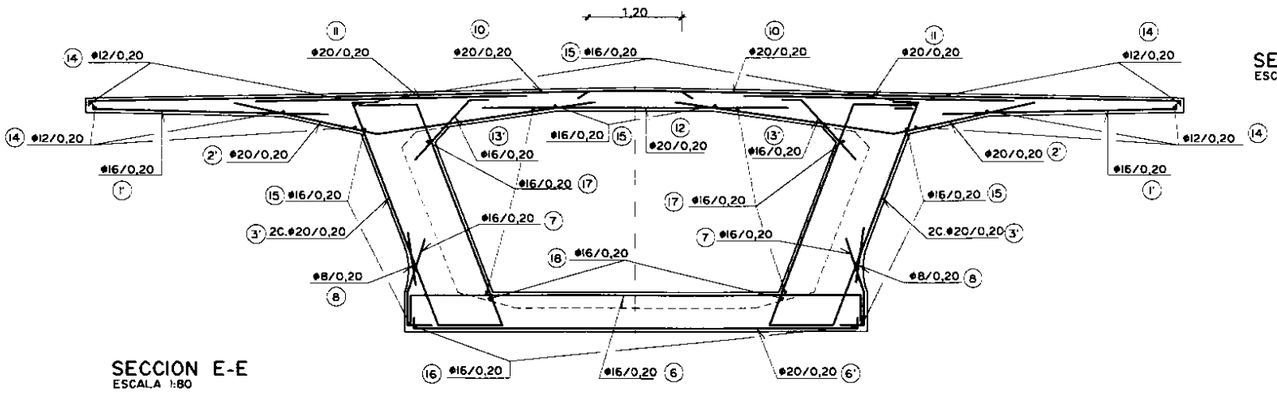
| | | | | | | |
|---|---|---|---|---|---|---|
| GIF Gestor de Infraestructuras Ferroviarias | TÍTULO<br>PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA<br>L.A.V. MADRID–ZARAGOZA–BARCELONA–FRONTERA FRANCESA<br>TRAMO: GELIDA–SANT LLORENÇ D'HORTONS | AUTOR<br>Eptisa<br>Fdo: FÉLIX ZAPATA PARRA | ESCALA<br>VARIAS<br>ORIGINALES: NE A-3<br>Gráfica | FECHA<br>MARZO 2002 | TÍTULO DEL PLANO | Nº DE PLANO<br>Hoja de |



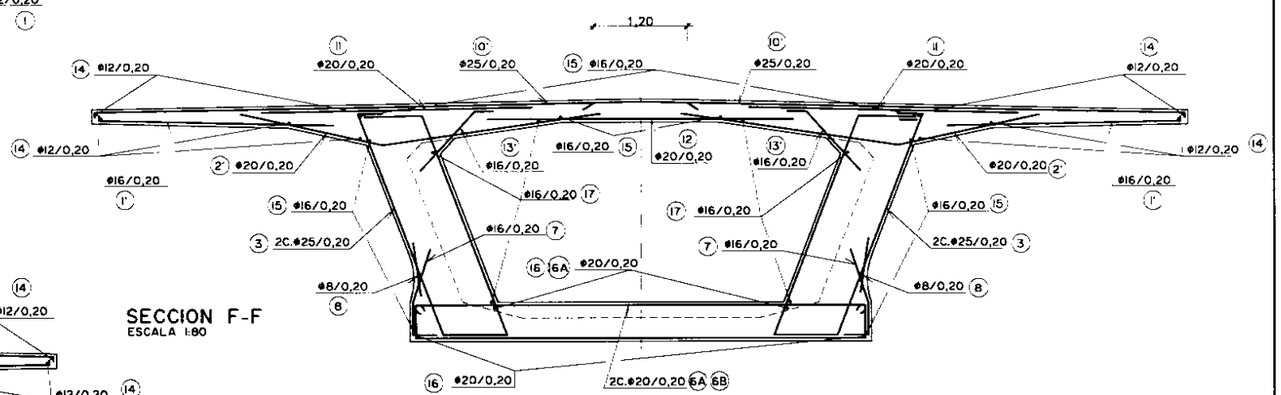

SECCION LONGITUDINAL DE DOVELAS 2,4,6,8,10, 12 Y 14
ESCALA 1:80



SECCION C-C
ESCALA 1:80



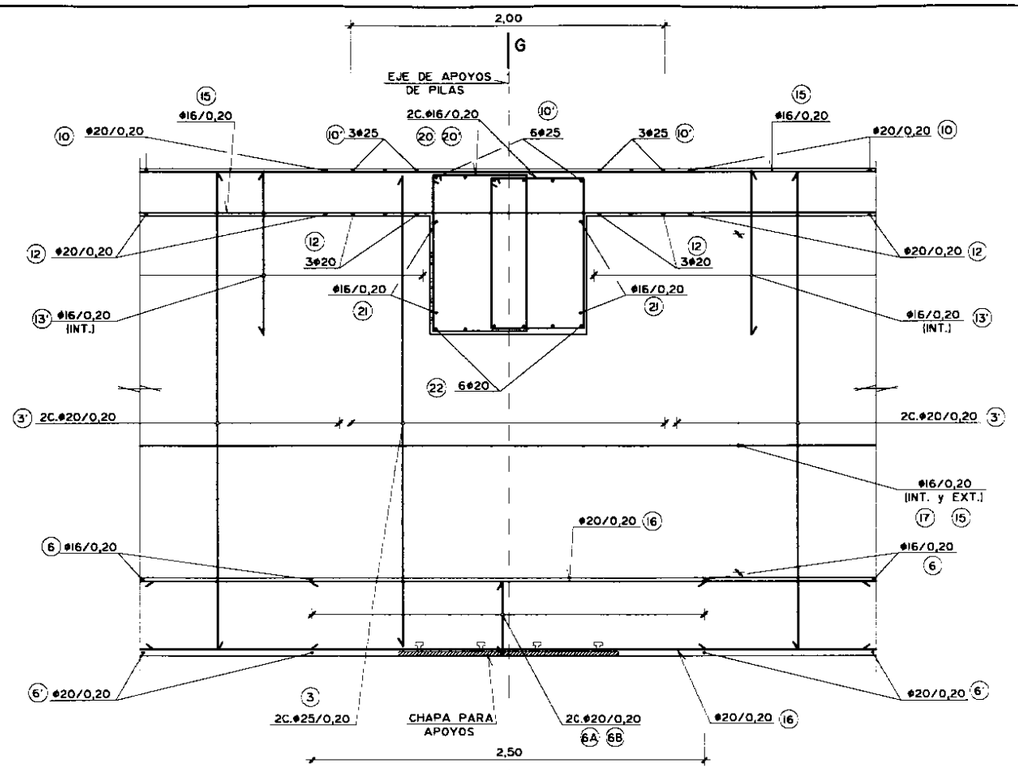
SECCION E-E
ESCALA 1:80



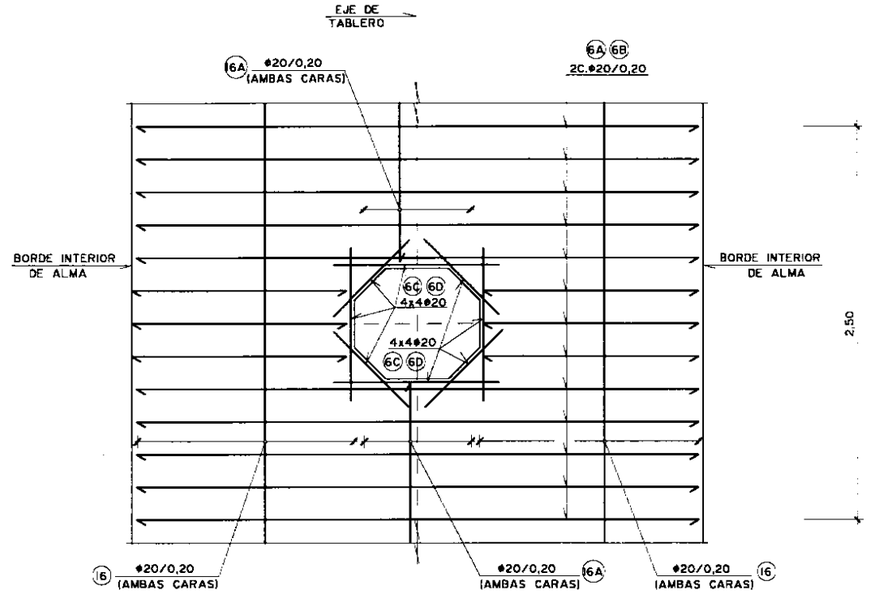
SECCION F-F
ESCALA 1:80

TARM3-RIERUSSA

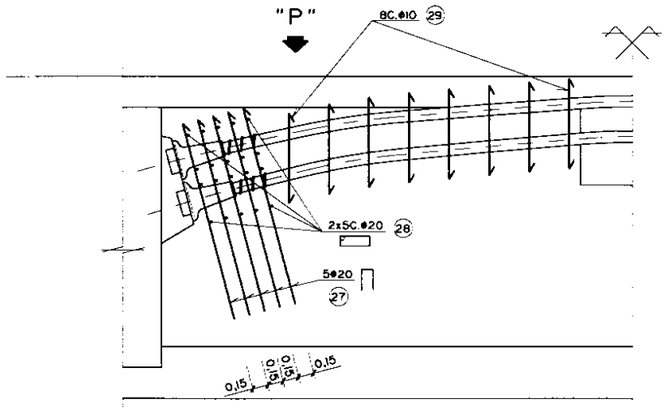
| | | | | | | |
|---|---|---|---|---|---|---|
| GIF Gestor de Infraestructuras Ferroviarias | TÍTULO<br>PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA<br>L.A.V. MADRID–ZARAGOZA–BARCELONA–FRONTERA FRANCESA<br>TRAMO: GELIDA–SANT LLORENÇ D'HORTONS | AUTOR<br>Eptisa<br>Fdo: FELIX ZAPATA PARRA | ESCALA<br>VARIAS<br>S/NE A-3 ORIGINALES<br>Gráfica | FECHA<br>MARZO 2002 | TÍTULO DEL PLANO | Nº DE PLANO<br>Hoja de |



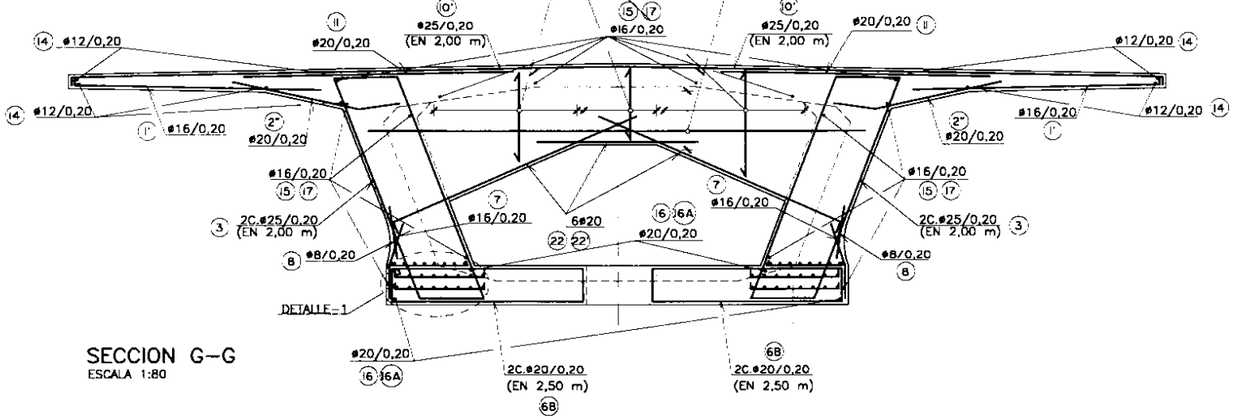

DETALLE DE RIOSTRA DE PILAS
ESCALA 1:40



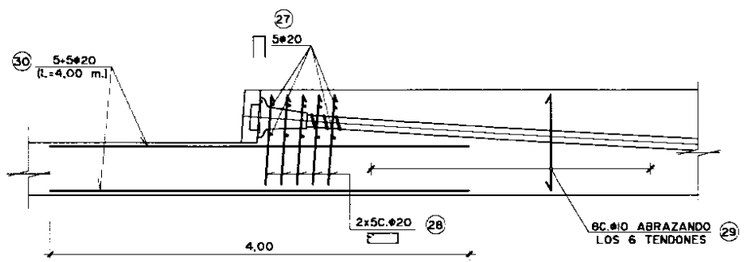

ARMADURAS DE ACCESO A PILA
ESCALA 1:40



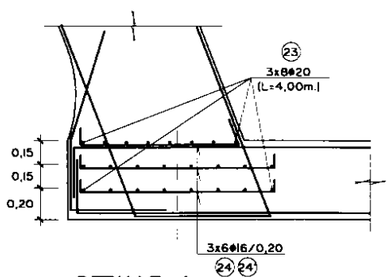

ALZADO DE ARMADURAS DE ANCLAJES EN PILAS
ESCALA 1:60




SECCION G-G
ESCALA 1:80



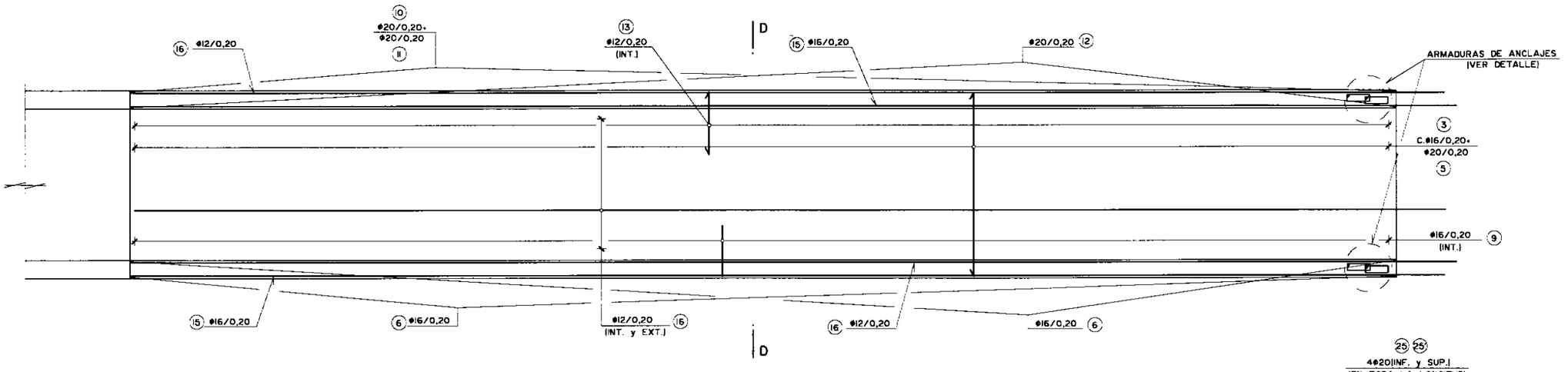

PLANTA POR "P"
ESCALA 1:60



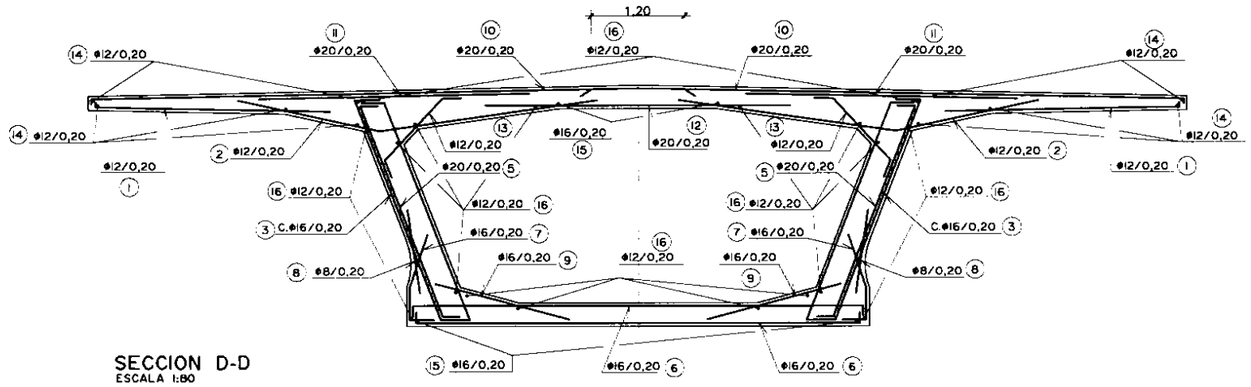

DETALLE-1
ESCALA 1:40

.TARM4-RIERUSSA

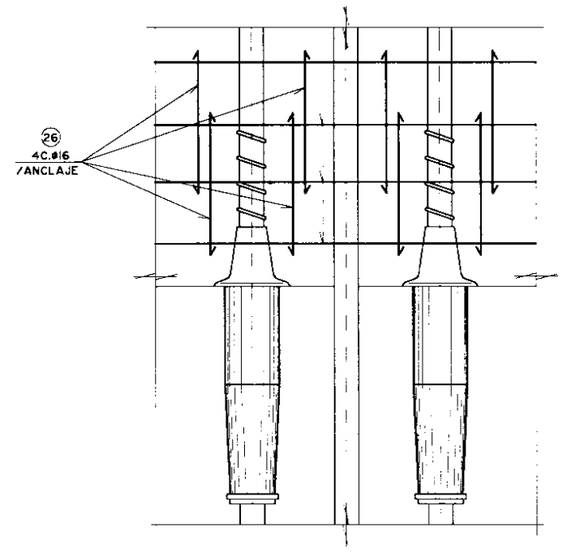
| | | | | | | |
|---|---|---|---|---|---|---|
| GIF Gestor de Infraestructuras Ferroviarias | TÍTULO: PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA L.A.V. MADRID–ZARAGOZA–BARCELONA–FRONTERA FRANCESA TRAMO: GELIDA–SANT LLORENÇ D'HORTONS | AUTOR: Eptisa — Fdo: FELIX ZAPATA PARRA | ESCALA: VARIAS — LINEA A-3 ORIGINALES — Gráfica | FECHA: MARZO 2002 | TÍTULO DEL PLANO | Nº DE PLANO: Hoja de |

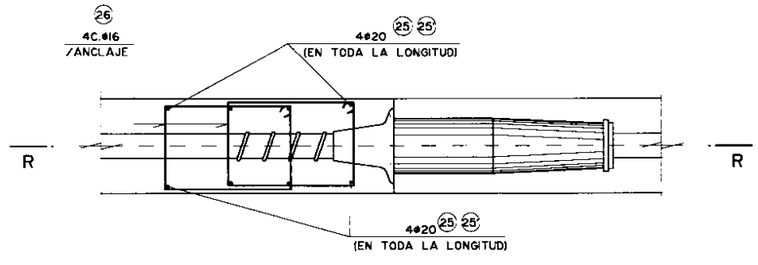



## SECCION LONGITUDINAL DE DOVELAS 3, 5, 7, 9, 11 Y 13
ESCALA 1:80




## SECCION D-D
ESCALA 1:80

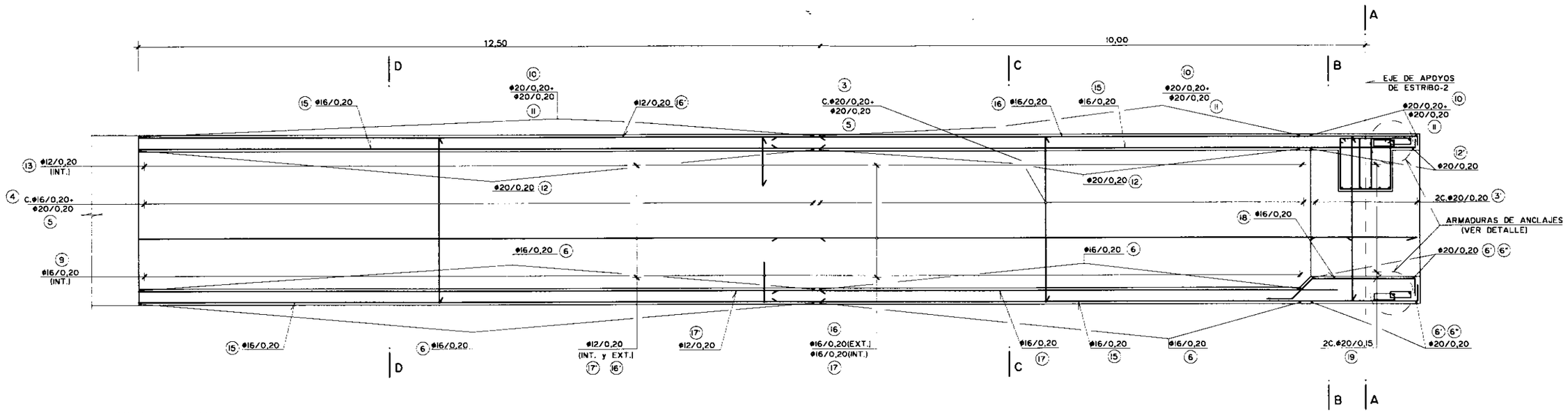


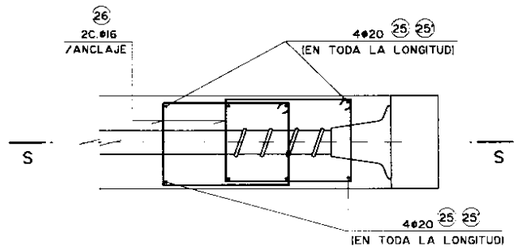

## DETALLE DE ARMADURA DE ANCLAJES EN JUNTA DE DOVELA
ESCALA 1:20

.TARMS-RIERUSSA

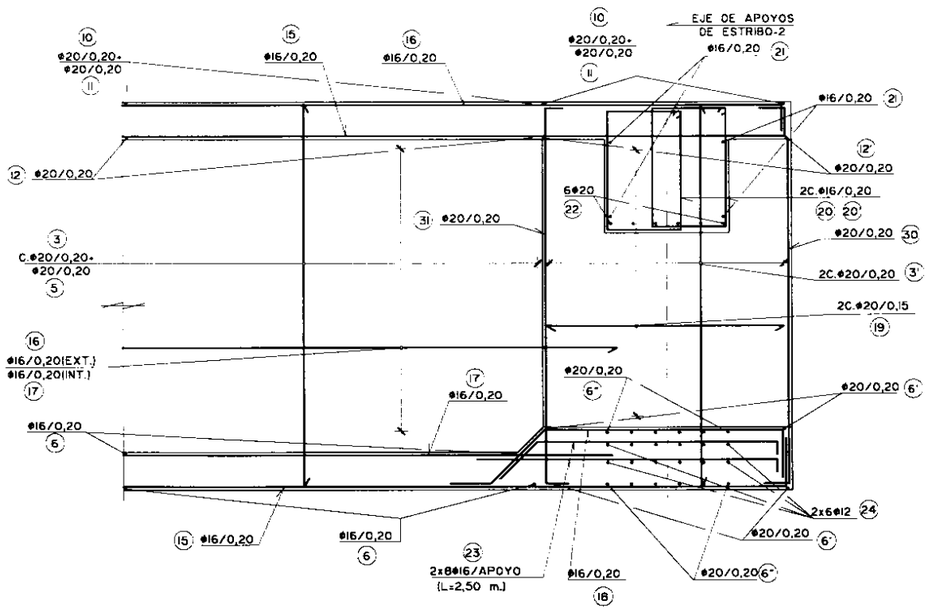
| | | | | | | |
|---|---|---|---|---|---|---|
| GIF Gestor de Infraestructuras Ferroviarias | TÍTULO: PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA L.A.V. MADRID–ZARAGOZA–BARCELONA–FRONTERA FRANCESA TRAMO: GELIDA–SANT LLORENÇ D'HORTONS | AUTOR: Eptisa — Fdo: FÉLIX ZAPATA PARRA | ESCALA: VARIAS; UNE A-3 ORIGINALES; Gráfico | FECHA: MARZO 2002 | TÍTULO DEL PLANO | Nº DE PLANO: Hoja de |



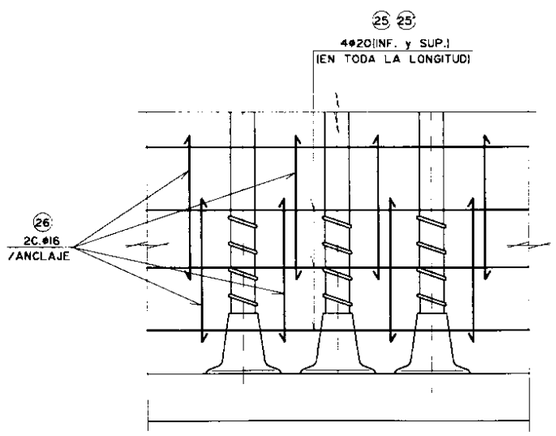

SECCION LONGITUDINAL DE DOVELA–15
ESCALA 1:80




DETALLE DE ARMADURA DE ANCLAJES
ESCALA 1:20




DETALLE DE ARMADURAS EN RIOSTRA DE ESTRIBO–2
ESCALA 1:50




SECCION S–S
ESCALA 1:20

NOTA DE MATERIALES

NIVELES DE CONTROL Y COEFICIENTES DE SEGURIDAD:

- Acero para armar, control normal ($\gamma$ = 1,15)
- Hormigon control estadistico ($\gamma$ = 1,50)
- Ejecucion (Tablero y Pilas) nivel intenso
- Ejecucion (Resto obra) nivel intenso
- Los coeficientes de seguridad de las acciones son los correspondientes a la IAP–98 y EC–1

ACERO (ARMADURAS):

- B500S fy = 500 N/mm2

PARA ANCLAJES Y SOLAPES, SE SEGUIRAN LAS PRESCRIPCIONES CONTENIDAS EN EL ARTICULO 66 DE LA INSTRUCCION EHE
LOS RECUBRIMIENTOS NOMINALES SE DETERMINARAN SEGUN EL ARTICULO 37 DE LA INSTRUCCION EHE PARA UN AMBIENTE IIb y IIa.

HORMIGONES:

| HORMIGON TIPO | fck (N/mm2) | ELEMENTO ESTRUCTURAL | RECUBRIMIENTO NOMINAL |
|---|---|---|---|
| HP–40 B 20 IIb | 40 | Tablero | 3,5 cm. |
| HA–30 B 20 IIb | 30 | Alzados de Pilas | 3,5 cm. |
| HA–25 B 20 IIb | 25 | Alzados de Estribos | 3,5 cm. |
| HA–25 B 20 IIa | 25 | Zapatas, Encepados y Pilotes | 3,5 cm. |
| HM–15 | 15 | Capas de regularizacion | |

.TARMS–RIERUSSA

GIF Gestor de Infraestructuras Ferroviarias

TÍTULO: PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA L.A.V. MADRID–ZARAGOZA–BARCELONA–FRONTERA FRANCESA TRAMO: GELIDA–SANT LLORENÇ D'HORTONS

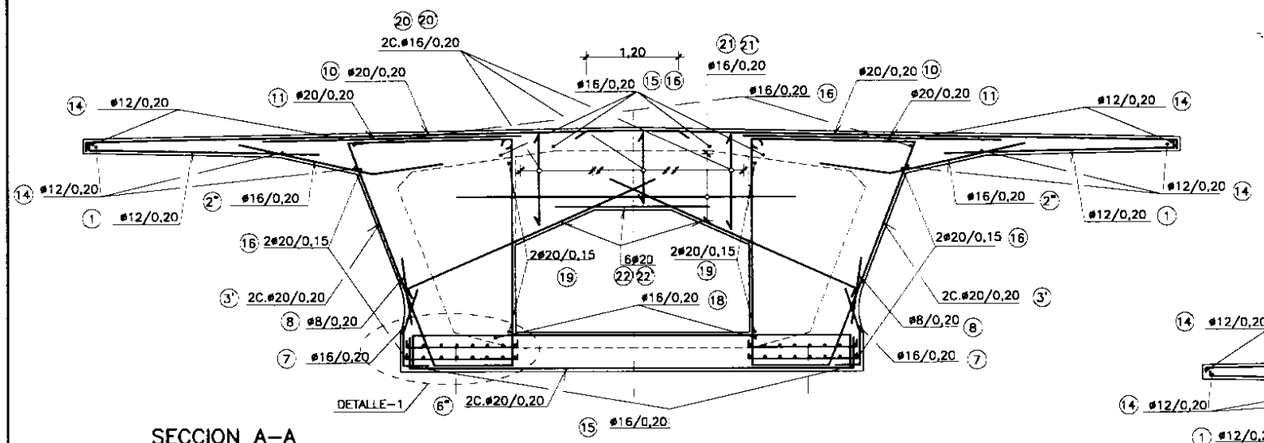
AUTOR: Eptisa — Fdo: FÉLIX ZAPATA PARRA

ESCALA: VARIAS — UNE A–3 ORIGINALES — Gráfica

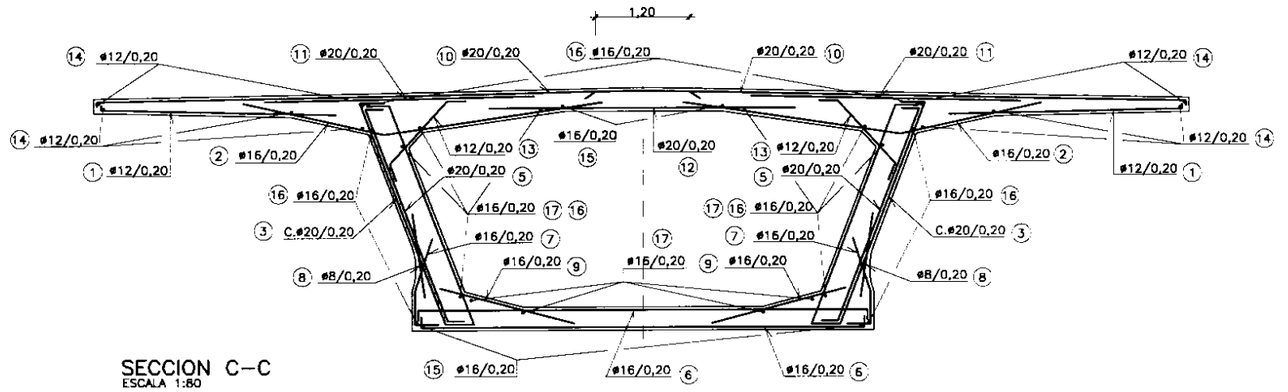
FECHA: MARZO 2002

TÍTULO DEL PLANO

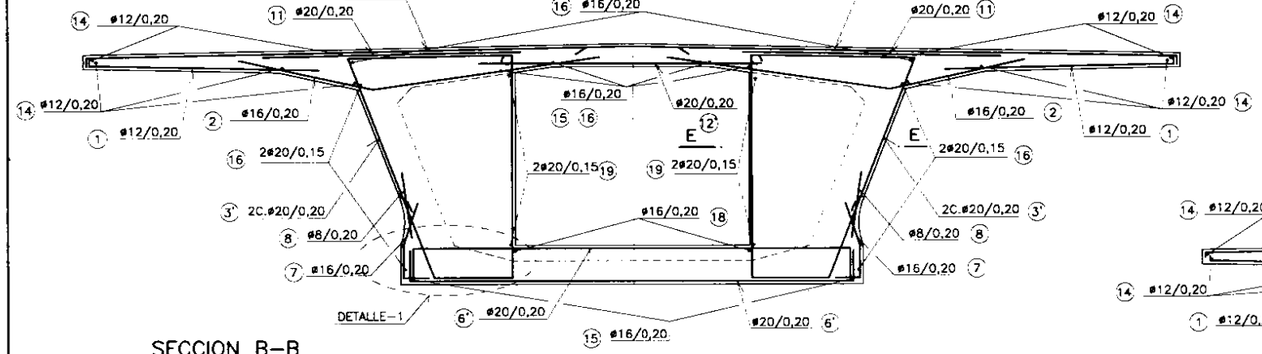
Nº DE PLANO: Hoja de



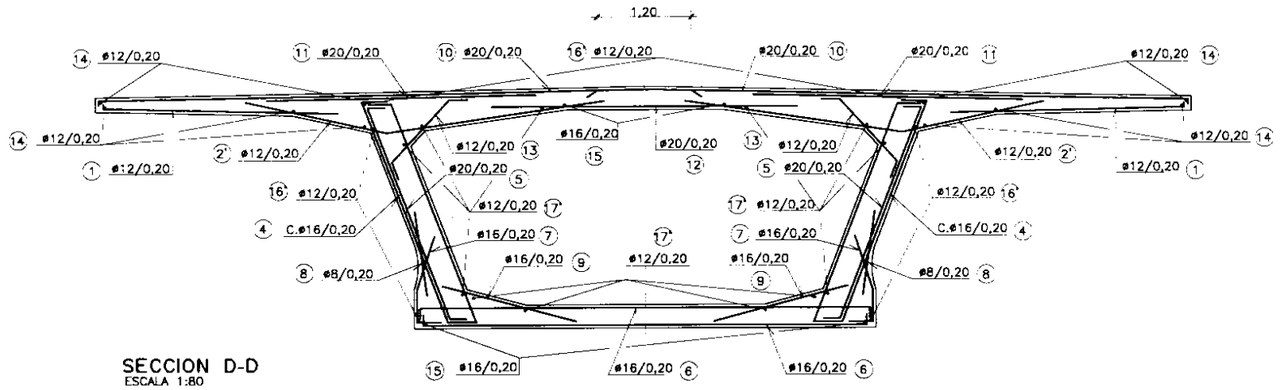

SECCION A–A
ESCALA 1:80



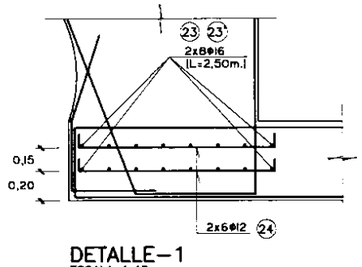

SECCION C–C
ESCALA 1:80



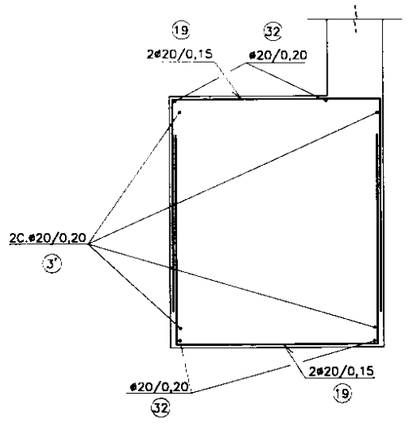

SECCION B–B
ESCALA 1:80




SECCION D-D
ESCALA 1:80




DETALLE–1
ESCALA 1:40




SECCION E-E
ESCALA 1:50

.TARM7-RIERUSSA

| | | | | | | |
|---|---|---|---|---|---|---|
| GIF Gestor de Infraestructuras Ferroviarias | TÍTULO<br>PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA<br>L.A.V. MADRID–ZARAGOZA–BARCELONA–FRONTERA FRANCESA<br>TRAMO: GELIDA–SANT LLORENÇ D'HORTONS | AUTOR<br>Eptisa<br>Fdo: FÉLIX ZAPATA PARRA | ESCALA<br>VARIAS<br>UNE A-3<br>ORIGINALES<br>Gráfico | FECHA<br>MARZO 2002 | TÍTULO DEL PLANO | Nº DE PLANO<br>Hoja de |

## *3.6. Recálculo del tablero*

## 3.6. VIADUCTO DE RIERUSSA

El viaducto Rierussa, aunque no modifica las características tipológicas ni geométricas, la modificación del proceso constructivo obligó a recalcular el tablero de forma completa. Las zapatas, pilas y estribos no se han modificado respecto a la solución de proyecto. A continuación se adjuntan los cálculos y definición correspondientes a la solución adoptada, que considera la ejecución mediante cimbra autoportante.

**PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA.**

**LÍNEA DE ALTA VELOCIDAD**
**Madrid-Zaragoza- Barcelona-Frontera francesa.**

**TRAMO:GELIDA–SANT LLORENÇ D'HORTONS.**
**Provincia: Barcelona.**

**"DEFINICIÓN DEL VIADUCTO DE RIERUSSA"**

FERNANDEZ
CONSTRUCTOR
GRUPO BRUESA

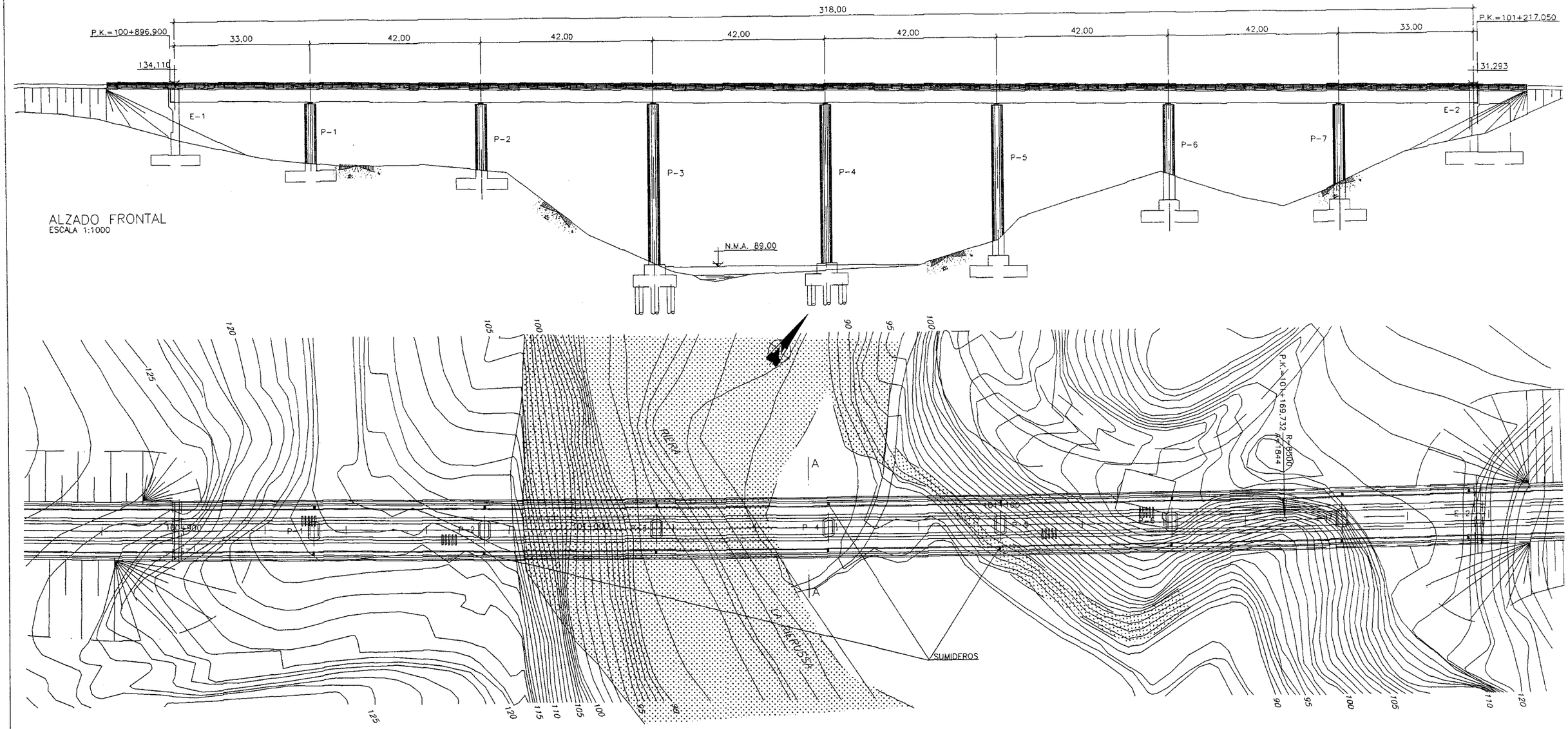
# 1.MEMORIA Y ANEJOS DE CÁLCULO

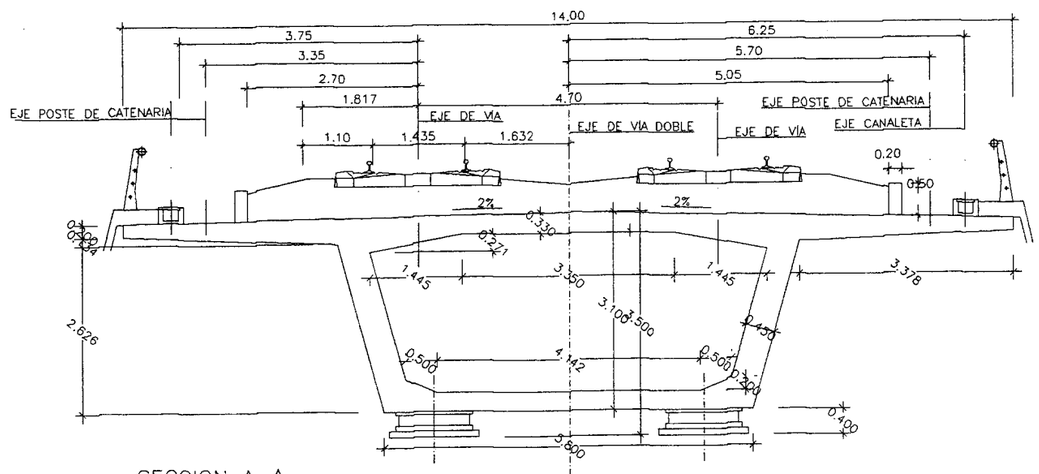
# 0. INTRODUCCIÓN

# 0. INTRODUCCIÓN

En el presente documento se incluyen la definición y los cálculos de la estructura ubicada en el P.K. 100+897 de la Línea de Alta Velocidad Madrid–Barcelona-Zaragoza–Frontera Francesa. Tramo Gelida. Viaducto de la Riera de la Rierussa.

# 1. DEFINICIÓN GENERAL

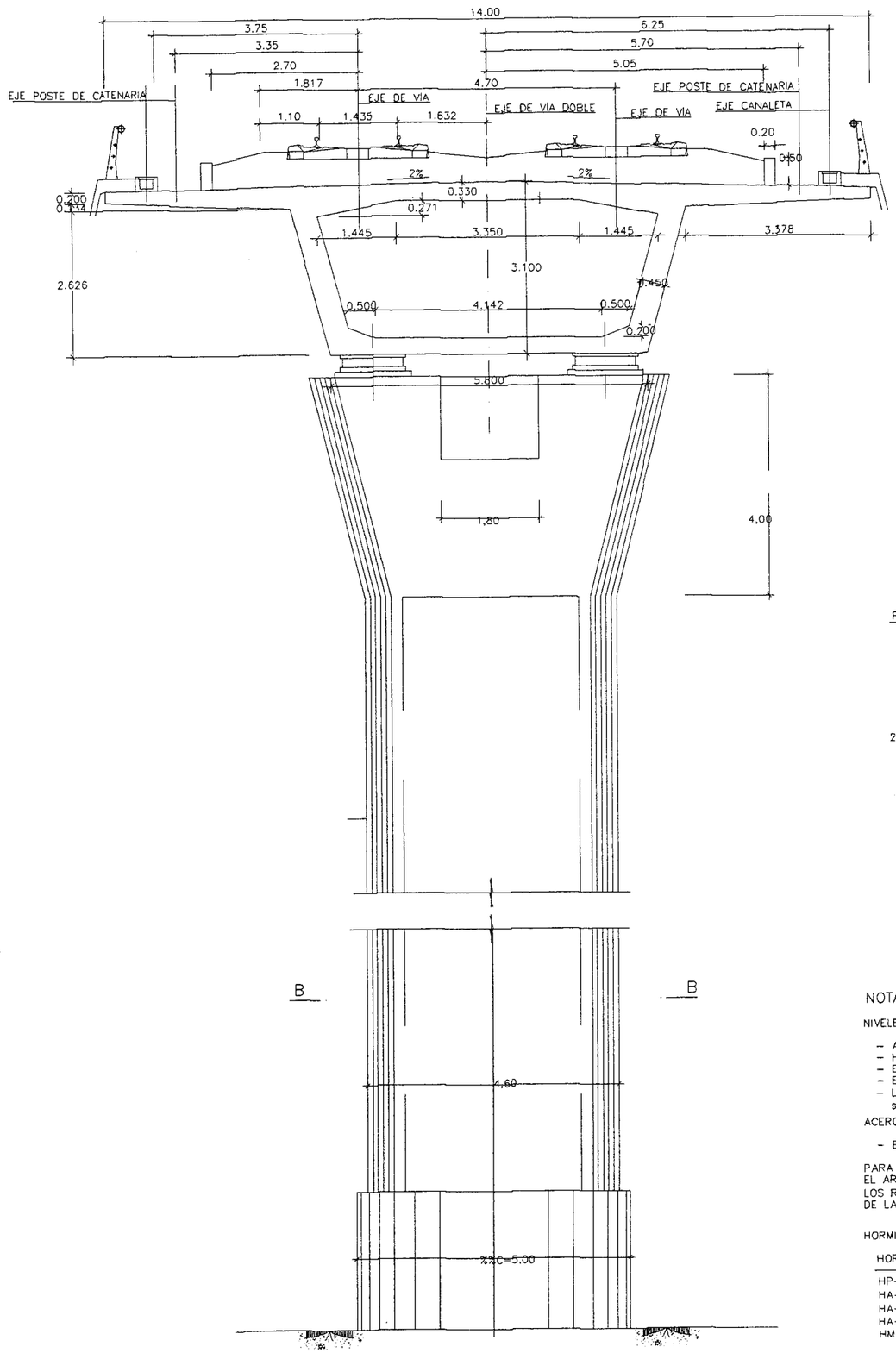


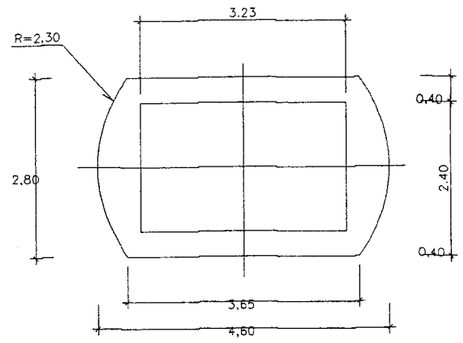

SECCION A-A
ESCALA 1:100

| | | | | | |
|---|---|---|---|---|---|
| GIF Gestor de Infraestructuras Ferroviarias | TÍTULO PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA TRAMO:GELIDA-SANT LLORENÇ D'HORTONS | AUTOR Eptisa Fdo: FÉLIX ZAPATA PARRA | ESCALA UNE A-3 ORIGINALES Gráfica | FECHA JUNIO 2003 | TÍTULO DEL PLANO VIADUCTO DE RIERA DE RIERUSSA PLANTA, ALZADO Y SECCION | Nº DE PLANO 2.9.2.1.B Hoja 1 de 194 |

C:\GELIDA\MODIFESTRUCTURAS\RIERUSSA\MODIFICADO\RIERA-RIERUSSA.dwg




SECCION TIPO DE VIADUCTO
ESCALA 1:100




SECCION B-B

NOTA DE MATERIALES

NIVELES DE CONTROL Y COEFICIENTES DE SEGURIDAD:

- Acero para armar, control normal ($\gamma$ = 1,15)
- Hormigon control estadistico ($\gamma$ = 1,50)
- Ejecucion (Tablero y Pilas) nivel intenso
- Ejecucion (Resto obra) nivel intenso
- Los coeficientes de seguridad de las acciones son los correspondientes a la IAP-98 y EC-1

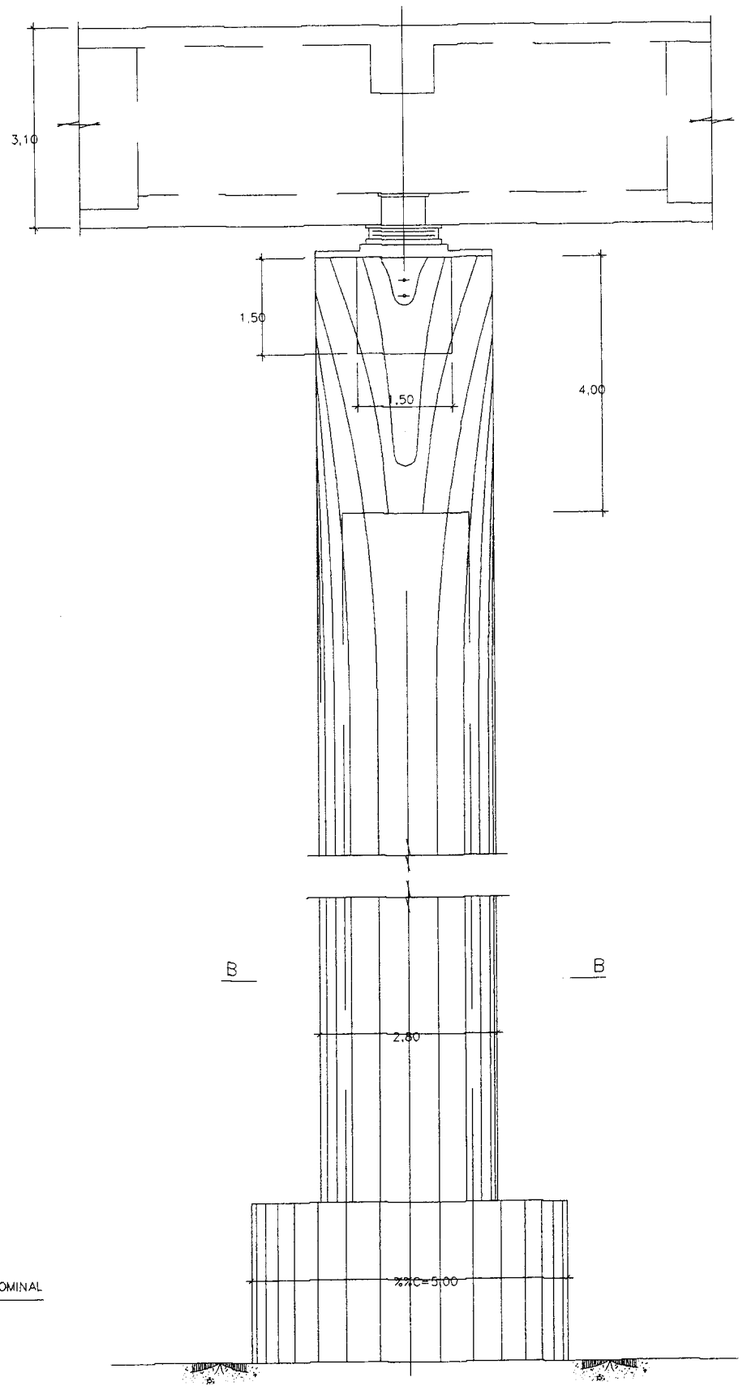
ACERO (ARMADURAS):

- B500S fy = 500 N/mm2

PARA ANCLAJES Y SOLAPES, SE SEGUIRAN LAS PRESCRIPCIONES CONTENIDAS EN EL ARTICULO 66 DE LA INSTRUCCIÓN EHE
LOS RECUBRIMIENTOS NOMINALES SE DETERMINARAN SEGUN EL ARTICULO 37 DE LA INSTRUCCION EHE PARA UN AMBIENTE IIb y IIa.

HORMIGONES:

| HORMIGON TIPO | fck (N/mm2) | ELEMENTO ESTRUCTURAL | RECUBRIMIENTO NOMINAL |
|---|---|---|---|
| HP-40 B 20 IIb | 40 | Tablero | 3,5 cm. |
| HA-30 B 20 IIb | 30 | Alzados de Pilas | 3,5 cm. |
| HA-25 B 20 IIb | 25 | Alzados de Estribos | 3,5 cm. |
| HA-25 B 20 IIa | 25 | Zapatas, Encepados y Pilotes | 3,5 cm. |
| HM-15 | 15 | Capas de regularizacion | |




ALZADO LATERAL DE PILA
ESCALA 1:100

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| | | | | | |
|---|---|---|---|---|---|
| GIF Gestor de Infraestructuras Ferroviarias | TITULO: PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA TRAMO:GELIDA-SANT LLORENÇ D?HORTONS | AUTOR: Eptisa / Fdo: FELIX ZAPATA PAPPA | ESCALA: UNE A-3 ORIGINALES / Gráfico | FECHA: JUNIO 2003 | TITULO DEL PLANO: VIADUCTO DE RIERA DE RIERUSSA SECCIONES GENERALES | Nº DE PLANO: 2.9.2.1 B / Hoja 2 de 195 |

# 2. MEMORIA DE CÁLCULO

## 2. MEMORIA DE CÁLCULO

### 2.1. Descripción de la estructura

NOMBRE: Viaducto de la Riera de la Rierussa.

ASPECTOS GENERALES:

| | |
|---|---|
| Tipología: | Cajón de hormigón ejecutado mediante cimbra autolanzable. |
| Luces: | 33+6x42+33 m |
| Longitud: | 318 m |
| Trazado en planta: | Ligeramente Curvo |

TABLERO:

| | |
|---|---|
| Canto: | 3.10 m |
| Anchura del tablero: | 14.00 m |

ESTRIBO 1:

| | |
|---|---|
| Tipología: | Estribo cerrado |
| Altura: | 9.20 m |
| Número de apoyos: | 2 |
| Separación entre apoyos: | 4.25 m |
| Tipo de apoyos: | POT (6000 kN) |
| Empotran tablero a torsión: | Sí |
| Estribo fijo en sentido longitudinal: | No |

PILAS:

| | |
|---|---|
| Sección: | Tipo hipódromo aligerada 4.60x2.80 |
| Altura de fustes: | de 16 a 39 m |
| Número de apoyos: | 2 |
| Tipo de apoyos: | POT (16000 ó 17500 kN) |
| Separación entre apoyos: | 4.25 m |

Empotran tablero a torsión: Sí

Pilas fijas en sentido longitudinal: No

ESTRIBO 2:

Altura: 11 m

Número de apoyos: 2

Separación entre apoyos: 4.25 m

Tipo de apoyos: POT (6000 kN)

Empotran tablero a torsión: Sí

Estribo fijo en sentido longitudinal: Sí

CIMENTACIÓN:

Directa

| Elemento | Zapata | Tensión Admisible |
|---|---|---|
| E-1 | 14.4x12.0x2.5 | 0.40 N/mm$^2$ |
| P-1 | 11.5x11.5x2.6 | 0.40 N/mm$^2$ |
| P-2 | 12.5x12.5x2.6 | 0.40 N/mm$^2$ |
| P-5 | 14.0x14.0x2.8 | 0.40 N/mm$^2$ |
| P-6 | 14.0x14.0x2.8 | 0.40 N/mm$^2$ |
| P-7 | 10.5x13.0x2.8 | 0.50 N/mm$^2$ |
| E-2 | 19.0x14.4x3.0 | 0.40 N/mm$^2$ |

Profunda

| Elemento | Zapata | Tensión Admisible |
|---|---|---|
| P-3 | 10.4x10.4x2.8 (9 pilotes 1.80) | 1030 kN |
| P-4 | 10.4x10.4x2.8 (9 pilotes 1.80) | 885 kN |

CONSTRUCCIÓN:

Procedimiento constructivo: Tablero ejecutado mediante cimbra autolanzable

IMPERMEABILIZACIÓN Y DRENAJE:

La cara superior del tablero lleva una capa de impermeabilización y se han dispuesto sumideros con rejilla.

## 2.2. Bases de Cálculo

### 2.2.1 Instrucciones y normas aplicadas

Para el establecimiento de acciones y las combinaciones necesarias para la obtención de cálculo que se emplearán en la comprobación de los diferentes Estados Límites se seguirán las siguientes instrucciones:

- "Instrucción sobre acciones a considerar en el Proyecto de Puentes de Ferrocarril" ( Febrero de 2003)
- "Norma de construcción sismorresistente: Parte general y edificación (NSCE-94)". R.D. 29 de Diciembre de 1994.

Para establecer las hipótesis y combinaciones de cálculo y sus correspondientes coeficientes de ponderación se utilizará la siguiente instrucción:

- "Instrucción de Hormigón Estructural EHE" R.D. 2661/1998 de 11 de Diciembre.

Para el dimensionamiento y comprobación de secciones se actuará en todo momento de acuerdo con la normativa española.

- "Instrucción de Hormigón Estructural EHE" R.D. 2661/1998 de 11 de Diciembre.

El estudio de fatiga de los materiales, comprobación de flechas, deformaciones y vibraciones se hará de acuerdo con la siguiente norma:

- "Instrucción sobre acciones a considerar en el Proyecto de Puentes de Ferrocarril" (Febrero de 2003)

### 2.2.2. Características de los materiales

Hormigones:

| *TIPO* | $f_{ck}$ *(N/mm²)* | *ELEMENTO ESTRUCTURAL* |
|---|---|---|
| HP-40 | 40 | Tablero pretensado |
| HA-30 | 30 | Pilas |
| HP-25 | 25 | Estribos, zapatas, encepados y pilotes |
| HM-15 | 15 | Limpieza en cimentaciones |

Coeficiente parcial de seguridad para E.L.U.:$\gamma_C$=1.50

Acero:

-Armaduras pasivas:

B 500 S fyk = 500 N/mm²

Recubrimiento nominal: El recubrimiento mínimo es de 30 mm para un ambiente IIb

Coeficiente parcial de seguridad para E.L.U.: $\gamma_S$=1.15

-Armaduras Activas:

Y 1860 S7 Φ 15.2 mm fmáx = 1860 N/mm²

- Características del acero de pretensado:

Relajación del 2.5 para una tensión del 70% de $f_{máx}$ aplicada durante 1000 horas.

Tendones de pretensado interior adherentes no reemplazables.

Tensiones máximas de anclajes de 0.75 $f_{máx,k}$ al tesar.

Tensiones máximas de anclajes de 0.75 $f_{máx,k}$ al bloquear.

Coeficiente parcial de seguridad para E.L.U.: $\gamma_P$=1.15

### 2.2.3 Niveles de control de calidad adoptados

Tanto para el tablero como para la superestructura se ha empleado un nivel de control de ejecución a nivel intenso.

### 2.2.4 Durabilidad

Recubrimientos y abertura de fisura máxima:

| *Elemento Estructural* | *Tipo Ambiente* | $r_{mín}(mm)$ | $r_{nom}(mm)$ | $w_{máx}(mm)$ |
|---|---|---|---|---|
| Tablero de HP | IIb | 30 | 35 | 0.2 |
| Encepados y pilotes | IIa | 25 | 30 | - |

### 2.2.5 Criterios generales de cálculo

Se ha realizado un análisis estructural tipo lineal. La estructura se ha idealizado como un pórtico espacial de seis grados de libertad por nudo. Con los esfuerzos obtenidos a partir de este análisis se han efectuado las siguientes comprobaciones en los Estados Límite Últimos y de Servicio:

**Tablero**

Flexión longitudinal: Para obtener la armadura activa se ha realizado la comprobación tensional en E.L.S y seccional en E.L.U. a partir de los resultados del modelo general (pórtico espacial). La armadura para cortante y torsión se ha obtenido de la comprobación en E.L.U. para solicitaciones tangentes.

Flexión transversal: Se ha realizado un estudio mediante un pórtico plano para dimensionar la armadura necesaria.

Adicionalmente se ha realizado un análisis para las riostras sobre pilas y estribos.

**Estribos**

Para su análisis, se han considerado las acciones verticales y las acciones horizontales concomitantes. Se ha realizado la comprobación en E.L.S. para el terreno y en E.L.U. para los elementos de hormigón armado.

**Pilas**

Para su análisis, se han considerado las acciones verticales y las acciones horizontales concomitantes. Se ha realizado la comprobación en E.L.S. para el terreno y en E.L.U. para los elementos de hormigón armado.

## 2.3. Acciones

Las acciones consideradas para el dimensionamiento de la estructura han sido:

-Acciones permanentes
-Acciones permanentes no constantes
-Acciones climáticas
-Acciones dinámicas

### 2.3.1. Acciones permanentes (G)

2.3.1.1. Peso Propio del tablero.

Partiendo de las características de los elementos, el programa STAAD ofrece la opción de introducir el peso propio de la estructura.

No se considera el hecho de que la estructura esté en curva, pues la diferencia es despreciable.

2.3.1.2. Cargas muertas

En proyecto se ha considerado como valor de la carga permanente 18.3 Tm/m. Esta carga se ha obtenido con un 30 % más de balasto. La carga máxima considerada en el proyecto base es de 17.96 Tm/ml.

En el modelo, la carga muerta se representa por una carga uniformemente repartida

-Balasto:

$\gamma_{bal}$ = 16 kN/m$^3$

Área balasto = 6.95 m$^2$

$q_o$ = 16 x 6.95 = -111.31 kN/ml

$m_o$ = -111.31 x 0.14 = -15.58 mkN/ml

hip. 1: Valor característico:

$q_o$ = -111.31 kN/ml

$m_o$ = -15.58 mkN/ml

hip 2: Valor máximo:

$q_S$ = -0.30 x 111.31 = -33.39 kN/ml

$m_S$ = -0.30 x 15.58 = -4.67 mkN/ml

hip 3: Valor mínimo:

$q_i$ = 0.30 x 111.31 = 33.39 kN/ml

$m_i$ = 0.30 x 15.58 = 4.67 mkN/ml

hip 4: Desbalastado 50% de una vía en toda su longitud

$q_{desb}$ = 111.31 x 0.5 = 55.65 kN/ml

$m_{desb}$ = 15.58 x 0.5 = 7.79 mkN/ml

-Traviesas y carriles:

$q_{traviesas}$ = -5.20 kN/ml

$q_{carriles}$ = -1.20 mkN/ml

Para doble vía:

q = -2 (5.20 + 1.20) = -12.80 kN/ml

-Murete de retención:

q = -2 x2.5 kN/ml = - 5.00 kN/ml

-Conductos de cableado y paseos:

$q_{cond+cables}$ = -3.00 kN/ml

q = -3.0 x 2 kN/ml = 6.00 kN/ml

-Impostas y barandillas:

-Imposta:

A = 0.25 m$^2$

q = 2x25x.025 = -12.50 kN/ml

-Barandilla:

q = -2x1.00 kN/ml = -2.00 kN/ml

$q_{imposta+barandilla}$ = -14.50 kN/ml

*Cálculos:*

*Carga permanente* = $q_{balasto}$ *x 1.3* + $q_{traviesas+carriles}$ + $q_{murete\ de\ retención}$ + $q_{cables}$ + $q_{impostas+barandilla}$ = 111.31 x 1.3 + 12.80 + 5.00 + 6.00 + 14.50 = 183 kN/ml

**Obtención de la Deformación Impuesta a 3 días:**

**Datos:**

| | |
|---|---|
| $f_{ck}(N/mm^2)$= | 40 |
| Humedad relativa= | 70% |
| ts (tiempo de tesado)= | 3 días |
| t (para Infi 10000)= | 90 días |
| Área Sección = | 8.227 $m^2$ |
| u (perímetro At) = | 28.150 m |
| Área Pretensado = | 42368 $mm^2$ |
| Tensión de Pretensado = | 135 $Kg/mm^2$ |
| A térmico: | 20 °C |
| e (mm) = | 585 |
| E = | 3634241 $T/m^2$ |

Retracción: -0.03202 mm/m

Coeficiente de fluencia:

Coeficiente básico de fluencia: 2.455

Fluencia: 1.103

Deformación Elástica por pretensado: 0.19130 mm/m

Deformación impuesta Total: 0.63436 mm/m

AT° Equivalente: 63.44 °C

**Obtención de la Deformación Impuesta a 10000 días:**

**Datos:**

| | |
|---|---|
| $f_{ck}(N/mm^2)$= | 40 |
| Humedad relativa= | 70% |
| ts (tiempo de tesado)= | 3 días |
| t (para Infi 10000)= | 10000 días |
| Área Sección = | 8.227 $m^2$ |
| u (perímetro At) = | 28.150 m |
| Área Pretensado = | 42368 $mm^2$ |
| Tensión de Pretensado = | 135 $Kg/mm^2$ |
| A térmico: | 20 °C |
| e (mm) = | 585 |
| E = | 3634241 $T/m^2$ |

Retracción: -0.25425 mm/m

Coeficiente de fluencia:

Coeficiente básico de fluencia: 2.455

Fluencia: 2.375

Deformación Elástica por pretensado: 0.19130 mm/m

Deformación impuesta Total: 1.09992 mm/m

AT° Equivalente: 109.99 °C

### 2.3.2. Acciones Permanentes de Valor No Constante (G*)

Para analizar el pretensado se ha utilizado un proyecto de viga continua que tiene en cuenta las fuerzas cortantes y las pérdidas diferidas e instantáneas.

2.3.2.1. Fluencia y Retracción.

La acción del pretensado provocará un acortamiento de tablero por fluencia que se sumará al debido a la retracción del hormigón. Los valores de estas deformaciones se muestran en las páginas siguientes. Dada la interacción existente durante la vida útil entre el tablero y la vía, esta acción se introduce en dos etapas:

a) La deformación reológica producida durante los tres primeros meses de la estructura, se introduce en el modelo general del viaducto.

b) La deformación restante se introduce en el modelo de acciones longitudinales que tiene en cuenta la interacción entre la vía y la estructura.

2.3.2.2. Fuerza Centrífuga.

$$F_c = Q\, v^2 / 127\, R$$

siendo R = 8500 m.; v =200 Km/h; Q = sobrecarga de trenes

Esta fuerza actuará a una altura de 1.80 metros desde la cabeza del carril (3.75 metros).

2.3.2.3. Efecto lazo.

Fuerza transversal: $F_y = 50$ Kn

Momento torsor: $M_x = 50 \times 1.95 = 97.5$ Kn.m

Se aplicará en pilas y estribos.

### 2.3.3. Acciones Climáticas

2.3.3.1 Cargas de Viento

Según la IAP-98, el viento puede actuar de las siguientes formas:

- Viento considerado como acción concomitante:
  - Se considera el área expuesta teniendo en cuenta los 4 m. debidos a la presencia de las sobrecargas.
  - Se aplica el coeficiente reductor del 50% al valor característico obtenido al ser simultáneo con las sobrecargas.

- Viento considerado como acción dominante:
  - No se considera ningún incremento de área expuesta con respecto al tablero
  - No se aplica ningún coeficiente reductor

Se aplicará el método general. Por tanto:

Entorno tipo II

$K_Z = 0.19$

$Z_{min} = 4 < z = 41$ m

$Z_0 = 0.05$

$C_t = 1.1$

$C_r = 1.04$

$C_z = K_z \ln(z/z_0) = 1.27$

$C_g = 1.40$

$V_{ref} = 24$ m/s

$$V_c = C_t\, C_r\, C_z\, C_g\, V_{ref} = 48.90 \text{ m/s}$$

Reducción de $C_D$:

No se aplica ninguna reducción, dada la forma ligeramente cóncava de la parte inferior del alma.

- Empuje dominante en el tablero:

Se considera una altura adicional de 1.20 a partir del voladizo como altura de la barrera, balasto y vías, con lo que el empuje actúa en una altura total de 4.16 m.

Para el cálculo del momento de vuelco se considera, de forma simplificada, el empuje del viento actuando a una altura del 60 % de la altura total.

| | |
|---|---|
| Coeficiente de arrastre $C_D$ | 1.16 |
| Empuje $E_{dom}$ (kN/m) | 7.21 |
| Brazo b (m) | 0.61 |
| Momento de vuelco $M_{dom}$ (mkN/m) | 4.38 |

- Empuje del viento concomitante con las sobrecargas:

Se toma el empuje característico afectado por el coeficiente 0.5 de simultaneidad. El viento actuará sobre una altura de 8.26 m, procedentes de considerar una altura de 4.00 m de la sobrecarga sobre la cabeza de carril.

Para el cálculo del momento de vuelco se considera, de forma simplificada, el empuje de barlovento actuando a una altura del 60 % de la altura total:

| | |
|---|---|
| Coeficiente de arrastre $C_D$ | 1.57 |
| Empuje $E_{dom}$ (kN/m) | 9.57 |
| Brazo b (m) | 3.01 |
| Momento de vuelco $M_{dom}$ (mkN/m) | 28.77 |

-Empuje del viento sobre las pilas:

Las pilas tienen una sección equiparable a una sección rectangular de 4.60x2.80 m.
El coeficiente de arrastre será:

-Dirección y-y': $C_D = 1.60$

El área expuesta es de 2.80 m en la dirección y-y' a lo largo de toda la altura de la pila.

-Dirección y-y':

$E_{conc} = 0.5 \times C_D\ A\ (1/2\ \rho\ V_C^2) = 0.5 \times 1.60 \times 2.80 \times ½ \times 1.25 \times 48.90^2 = 3.35$ kN/m

$E_{dom} = C_D\ A\ (1/2\ \rho\ V_C^2) = 1.60 \times 2.80 \times ½ \times 1.25 \times 48.90^2 = 6.70$ kN/m

1.3.3.2. Acciones Térmicas.

-Variación uniforme de temperatura

El viaducto está situado en zona III
Según la Instrucción:

$\Delta T_1 = K \times z^a \times h^b \times s^c = 29.13 \times 3^{0.301} \times 3.10^{-0.148} \times 1^0 = 34.30\ ^oC$

donde: z = 3 m

h = 3.10; $h_{min}$ = 1.70 m < h < $h_{máx}$ = 4.00 m;

De tabla 8:

Cajón de hormigón

K = 29.13

a = 0.301

b = -0.148

c = 0

-Gradiente térmico vertical positivo del tablero:

Losa aligerada de hormigón:

$\Delta T_{si}$ (ºC) = $K_1$ $K_2$ $K_3$ $\Delta T_{si,ref}$ = 0.82 x 1.04 x 0.80 x 8.5 = 5.8 ºC

donde: $K_1$:(fig 10a) = 0.82 (h=3.10 m)

$K_2$:(fig 10b) = 1.04

$K_3$:(fig 10c) = 0.80 (e = 12 cm.)

$\Delta T_{si,ref}$ : (fig.9) = 8.5 ºC

-Gradiente térmico vertical inverso o negativo del tablero:

No se considera al ser el tablero de hormigón y tener pavimento bituminoso (o asimilable).

### 2.3.4. Acciones Dinámicas

Se han realizado un análisis dinámico con los trenes de 3 y 4 del Eurocódigo para la evaluación del coeficiente dinámico. Estos trenes actúan sobre el tablero con velocidades comprendidas entre los 40 y 120 m/s.

Se estudian las flechas en las secciones de centro de vano y se comparan sus valores con los obtenidos con la aplicación estática del modelo 71 del Eurocódigo y del tren B de la IPF-75, afectados por sus correspondientes coeficientes dinámicos.

Tal y como se comprueba en el anejo de cálculo dinámico, las flechas dinámicas son superadas en gran medida por las producidas por los trenes de las instrucciones, por lo que los esfuerzos dinámicos serán igualmente menores que los que se obtengan con la aplicación del tren B y del modelo 71.

Además de las acciones descritas anteriormente, se han tenido en cuenta otras acciones para el dimensionamiento de la estructura; como son las que siguen:

- Sobrecarga de 80 Kn/m amplificada por el coeficiente de clasificación (1.21) y de impacto (1.00). Además de la sobrecarga uniforme se ha considerado una carga concentrada, formada por 4 ejes de 250 KN/vía separados 1.60 metros entre si y amplificados por los mismos coeficientes anteriores. En la zona de actuación de la sobrecarga concentrada no se considera la sobrecarga repartida.

- Frenado y arranque. Como acción debida al frenado se ha considerado 740 Tm y para el arranque 122 Tm. en Riera de Rierussa. Los valores indicados ya incluyen el coeficiente de clasificación.

- Acciones de tipo reológico y variaciones térmicas durante la construcción y una vez puesta en servicio la estructura. En los apoyos deslizantes se ha considerado una fuerza de rozamiento comprendida entre el 3 y el 5% del peso propio en construcción y del peso propio más la carga permanente en servicio.

- Acciones del terreno sobre los estribos. El empuje originado por el suelo-cemento dispuesto en el bloque técnico se ha asimilado a un terreno con un ángulo de rozamiento interno de 40º y un peso específico de 2.40 T/m3. Se ha tenido en

cuenta que sobre el terraplén actúa la carga permanente más una sobrecarga de 3 Tm/m2.

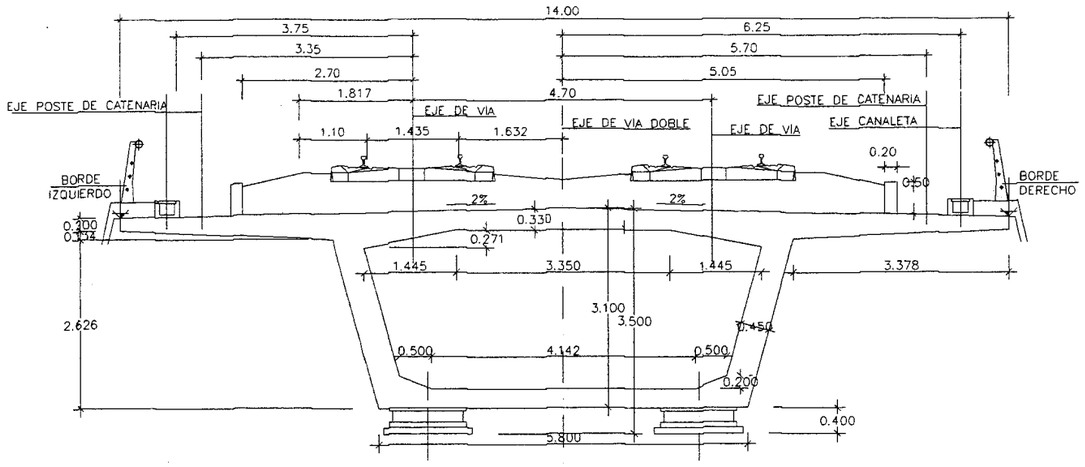
Las acciones consideradas son superior al tren tipo A de la Instrucción IPF-75 para efectos locales y similares al tren tipo B para esfuerzos generales de flexión y cortante.

El coeficiente de impacto considerado ha sido de 1.01 obtenido mediante el borrador de la Instrucción de acciones a considerar en el Proyecto de Puentes de Ferrocarril de Febrero de 2003, Art. 2.3.3.2.

**Comentario Adicional:**

Este documento queda ligado al proyecto base. En caso de contradicción entre ambos prevalecerá lo prescrito en el presente documento y en caso de omisión prevalecerá lo prescrito en el proyecto base.

# PLANOS DEL TABLERO




EL EMPUJE SE REALIZARA DESDE EL ESTRIBO 2 CON LAS SIGUIENTES CARACTERISTICAS:

A). LA GEOMETRIA DEL TABLERO EN PLANTA CORRESPONDE EN TODA SU LONGITUD A UNA CURVA DE RADIO CIRCULAR CONSTANTE R= −11487 M Y CENTRO (x= 397557.623 ; Y=4599703.336) SOBRE DICHA CURVA SE SITUAN LOS PUNTOS BÁSICOS DE REPLANTEO DE LAS PILAS, SIENDO LA SEPARACION MAXIMA ENTRE EL TRAZADO DE LA VIA Y EL EJE DEL TABLERO DE 0,11 M. DICHA EXCENTRICIDAD HA SIDO CONSIDERADA EN EL CALCULO.

B). SE EMPUJARA UN TABLERO DE PENDIENTE CONSTANTE E IGUAL A LA DEL TRAZADO DE LA PARTE FINAL DEL PUENTE (−0,8 %). LOS APOYOS EN TODAS LAS PILAS ESTARAN NIVELADOS A LA COTA DEDUCIDA DEL TRAZADO REAL. EL TABLERO DEBERÁ POR TANTO ADAPTARSE ELASTICAMENTE A LA CURVATURA DEL TRAZADO EN SU PARTE INICIAL DONDE EXISTE UN ACUERDO DE PARAMETRO Kv= 40000 HASTA EL P.K. 101+039.927. ESTE EFECTO HA SIDO CONSIDERADO EN EL CALCULO.

# BORDE IZQUIERDO

| PK | Dist. eje | X | Y | Z |
|---|---|---|---|---|
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| 100886.000 | −7.000 | 404487.862 | 4590551.167 | 133.337 |
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| PK | Dist. eje | X | Y | Z |
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| PK | Dist. eje | X | Y | Z |
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| 101158.000 | −7.000 | 404702.612 | 4590717.818 | 130.865 |
| 101160.000 | −7.000 | 404704.177 | 4590719.063 | 130.849 |
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| 101164.000 | −7.000 | 404707.305 | 4590721.552 | 130.817 |
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| 101168.000 | −7.000 | 404710.432 | 4590724.042 | 130.785 |
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| 101222.000 | −7.000 | 404752.564 | 4590757.766 | 130.353 |

C:\GELIDA\MODIFESTRUCTURAS\RIERUSSA\MODIFICACION\TRSEQ\2R2B5R9.dwg

GIF Gestor de Infraestructuras Ferroviarias

TÍTULO
PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA
L.A.V. MADRID–ZARAGOZA–BARCELONA–FRONTERA FRANCESA
TRAMO: GELIDA–SANT LLORENÇ D'HORTONS

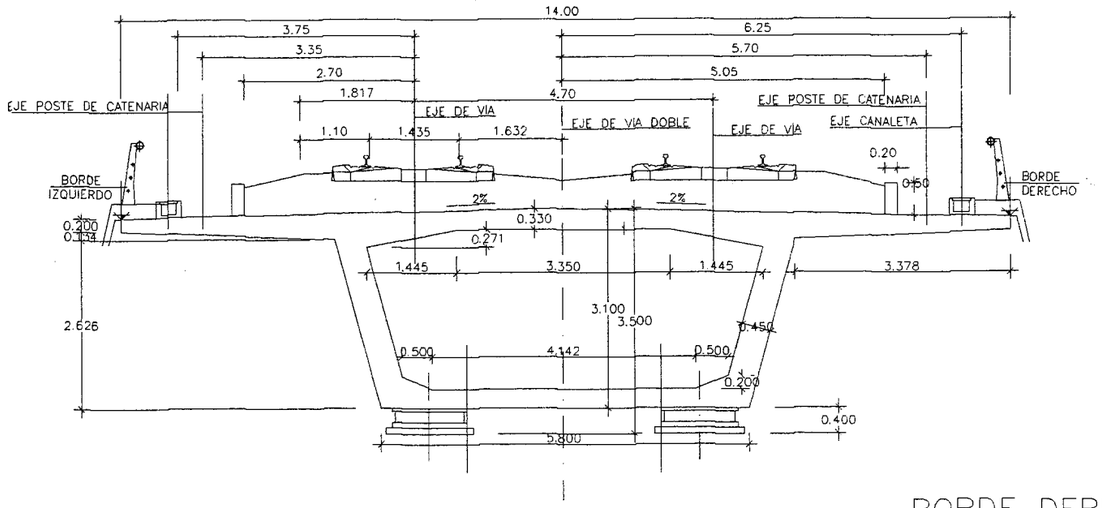
AUTOR
Eptisa GRUPO EP
Fdo: FELIX ZAPATA PAPPA

ESCALA
UNE A-3 ORIGINALES
Gráfica

FECHA
JUNIO 2003

TÍTULO DEL PLANO
VIADUCTO DE RIERA DE RIERUSSA
TABLERO. DEFINICION GEOMETRICA (1)

Nº DE PLANO
2.9.2.2 .B
Hoja 1 de 208

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A). LA GEOMETRIA DEL TABLERO EN PLANTA CORRESPONDE EN TODA SU LONGITUD A UNA CURVA DE RADIO CIRCULAR CONSTANTE R= -11487 M Y CENTRO (X= 397557.623 ; Y=4599703.336) SOBRE DICHA CURVA SE SITUAN LOS PUNTOS BÁSICOS DE REPLANTEO DE LAS PILAS, SIENDO LA SEPARACION MÁXIMA ENTRE EL TRAZADO DE LA VIA Y EL EJE DEL TABLERO DE 0,11 M. DICHA EXCENTRICIDAD HA SIDO CONSIDERADA EN EL CALCULO.

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# BORDE DERECHO

| PK | Dist. eje | X | Y | Z |
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| 100886.000 | 7.000 | 404496.313 | 4590540.006 | 133.337 |
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| 100892.000 | 7.000 | 404501.098 | 4590543.632 | 133.267 |
| 100894.000 | 7.000 | 404502.693 | 4590544.841 | 133.243 |
| 100896.000 | 7.000 | 404504.288 | 4590546.050 | 133.220 |
| 100898.000 | 7.000 | 404505.882 | 4590547.260 | 133.197 |
| 100900.000 | 7.000 | 404507.476 | 4590548.470 | 133.174 |
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| 100906.000 | 7.000 | 404512.257 | 4590552.101 | 133.105 |
| 100908.000 | 7.000 | 404513.850 | 4590553.312 | 133.083 |
| 100910.000 | 7.000 | 404515.443 | 4590554.523 | 133.060 |
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| 100920.000 | 7.000 | 404523.405 | 4590560.584 | 132.949 |
| 100922.000 | 7.000 | 404524.997 | 4590561.797 | 132.927 |
| 100924.000 | 7.000 | 404526.588 | 4590563.010 | 132.905 |
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| 100928.000 | 7.000 | 404529.771 | 4590565.437 | 132.862 |
| 100930.000 | 7.000 | 404531.361 | 4590566.651 | 132.840 |
| 100932.000 | 7.000 | 404532.952 | 4590567.866 | 132.819 |
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| 100942.000 | 7.000 | 404540.902 | 4590573.942 | 132.713 |
| 100944.000 | 7.000 | 404542.492 | 4590575.158 | 132.692 |
| 100946.000 | 7.000 | 404544.081 | 4590576.374 | 132.671 |
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| 100962.000 | 7.000 | 404556.787 | 4590586.114 | 132.509 |
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| 100992.000 | 7.000 | 404580.574 | 4590604.424 | 132.222 |
| 100994.000 | 7.000 | 404582.158 | 4590605.647 | 132.203 |
| 100996.000 | 7.000 | 404583.742 | 4590606.871 | 132.185 |

| PK | Dist. eje | X | Y | Z |
|---|---|---|---|---|
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| 101000.000 | 7.000 | 404586.909 | 4590609.318 | 132.149 |
| 101002.000 | 7.000 | 404588.492 | 4590610.542 | 132.131 |
| 101004.000 | 7.000 | 404590.075 | 4590611.766 | 132.113 |
| 101006.000 | 7.000 | 404591.658 | 4590612.991 | 132.095 |
| 101008.000 | 7.000 | 404593.241 | 4590614.215 | 132.078 |
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| 101014.000 | 7.000 | 404597.987 | 4590617.892 | 132.025 |
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| 101038.000 | 7.000 | 404616.954 | 4590632.621 | 131.825 |
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| 101052.000 | 7.000 | 404628.004 | 4590641.231 | 131.713 |
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| 101056.000 | 7.000 | 404631.159 | 4590643.694 | 131.681 |
| 101058.000 | 7.000 | 404632.737 | 4590644.926 | 131.665 |
| 101060.000 | 7.000 | 404634.314 | 4590646.156 | 131.649 |
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| 101102.000 | 7.000 | 404667.382 | 4590672.093 | 131.313 |
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| 101108.000 | 7.000 | 404672.099 | 4590675.808 | 131.265 |

| PK | Dist. eje | X | Y | Z |
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| 101162.000 | 7.000 | 404714.458 | 4590709.352 | 130.833 |
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| 101170.000 | 7.000 | 404720.720 | 4590714.339 | 130.769 |
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GIF Gestor de Infraestructuras Ferroviarias

TÍTULO
PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO: GELIDA-SANT LLORENÇ D'HORTONS

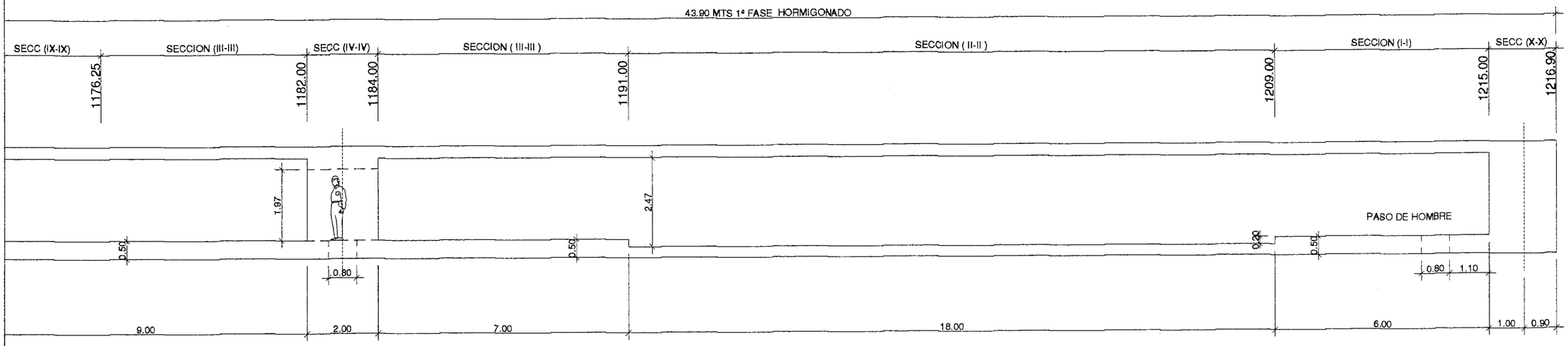
AUTOR
Eptisa GRUPO EP
Fdo: FÉLIX ZAPATA PARRA

ESCALA
UNE A-3 ORIGINALES | Gráfica

FECHA
JUNIO 2003

TÍTULO DEL PLANO
VIADUCTO DE RIERA DE RIERUSSA
TABLERO. DEFINICION GEOMETRICA (2)

Nº DE PLANO
2.9.2.2.B
Hoja 2 de 2

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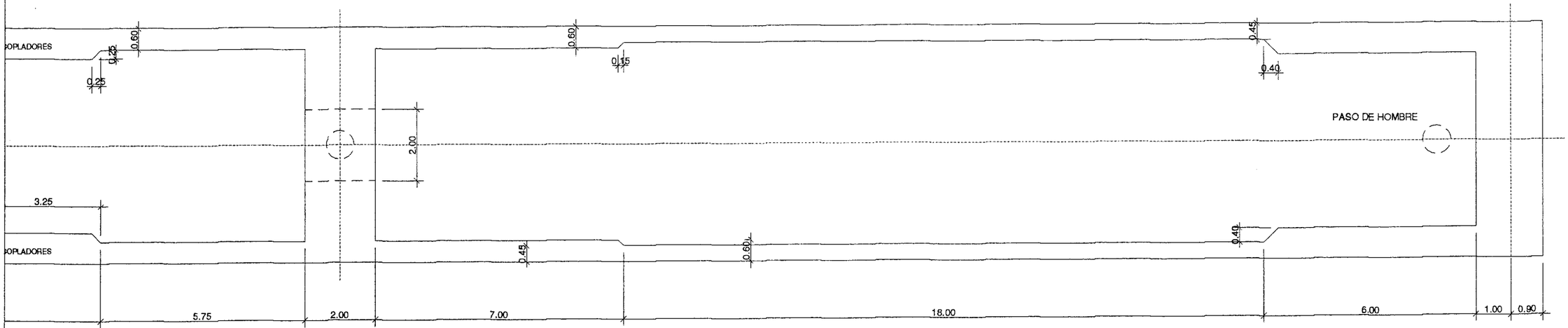
# E-2

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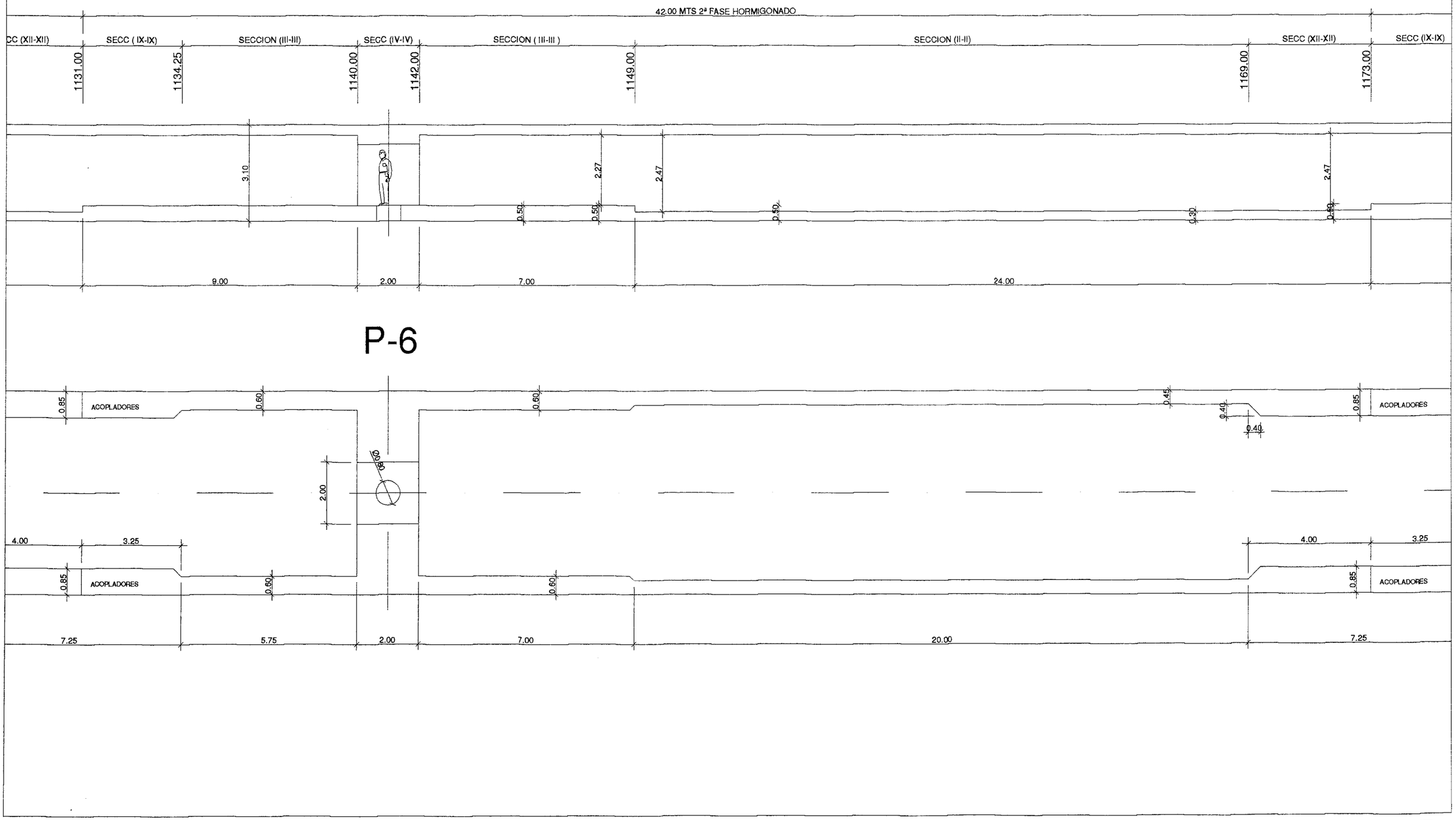
| | | | | | | |
|---|---|---|---|---|---|---|
| GIF Gestor de Infraestructuras Ferroviarias | TÍTULO<br>PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA<br>L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA<br>TRAMO:GELIDA-SANT LLORENÇ D?HORTONS | AUTOR<br>FERNANDEZ CONSTRUCTOR<br>Fdo: MANUEL COSTA PEREZ | ESCALA<br>1:1000<br>UNE A-3 ORIGINALES<br>Gráfica 0 50m | FECHA<br>OCTUBRE-03 | TÍTULO DEL PLANO<br>VIADUCTO DE RIERUSSA<br>DEFINICION GEOMETRICA (1) | Nº DE PLANO<br>2.9.2.2.B<br>Hoja 3 de 22 |

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GIF Gestor de Infraestructuras Ferroviarias

TÍTULO
PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO:GELIDA-SANT LLORENÇ D?HORTONS

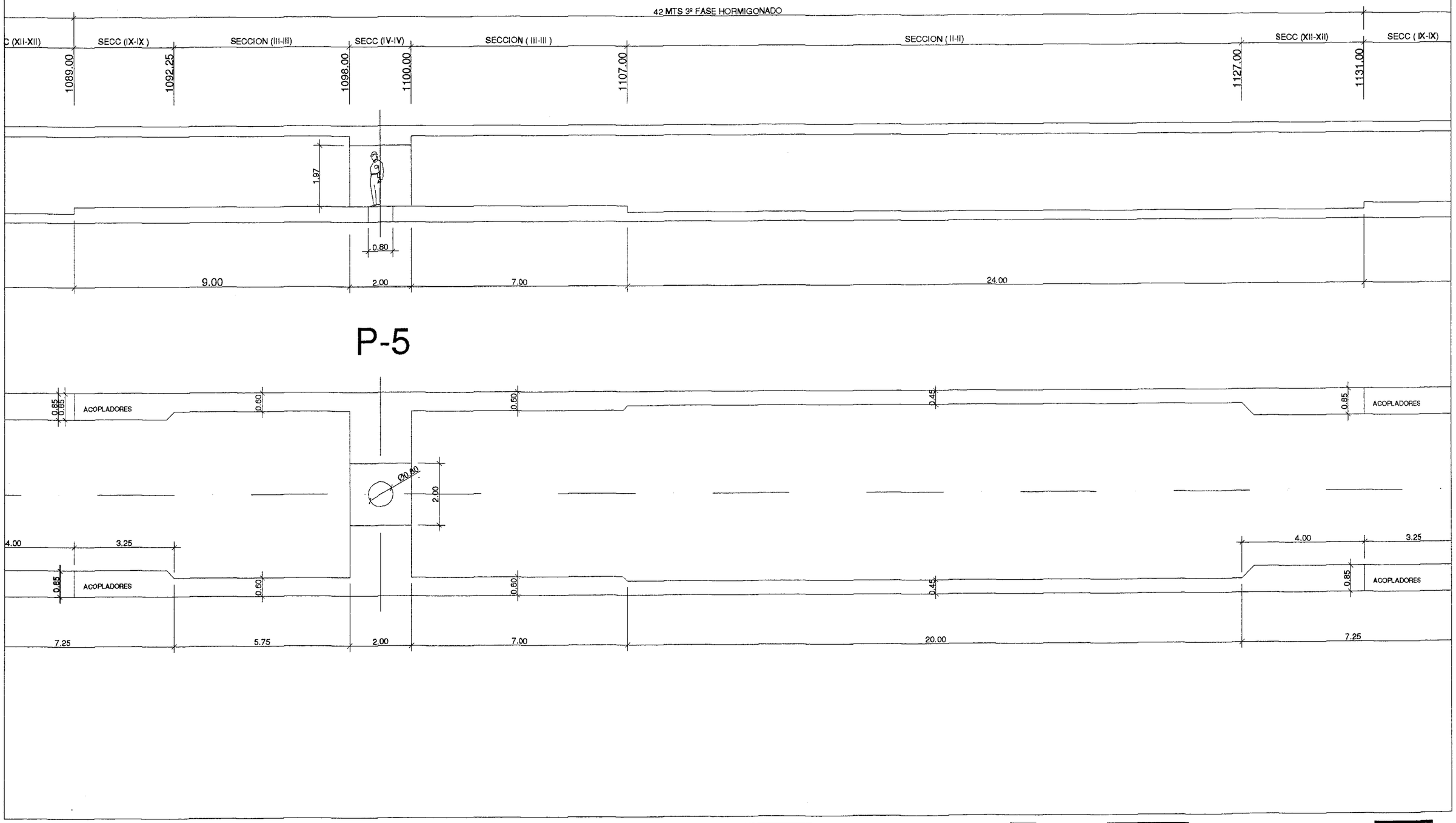
AUTOR
FERNANDEZ CONSTRUCTOR
Fdo: MANUEL COSTA PEREZ

ESCALA
1:1000
UNE A-3 ORIGINALES
Gráfico 0 50m

FECHA
OCTUBRE-03

TÍTULO DEL PLANO
VIADUCTO DE RIERUSSA
DEFINICION GEOMETRICA (2)

Nº DE PLANO
2.9.2.2.B
Hoja 4 de 27

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GIF Gestor de Infraestructuras Ferroviarias

TÍTULO
PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO:GELIDA-SANT LLORENÇ D'HORTONS

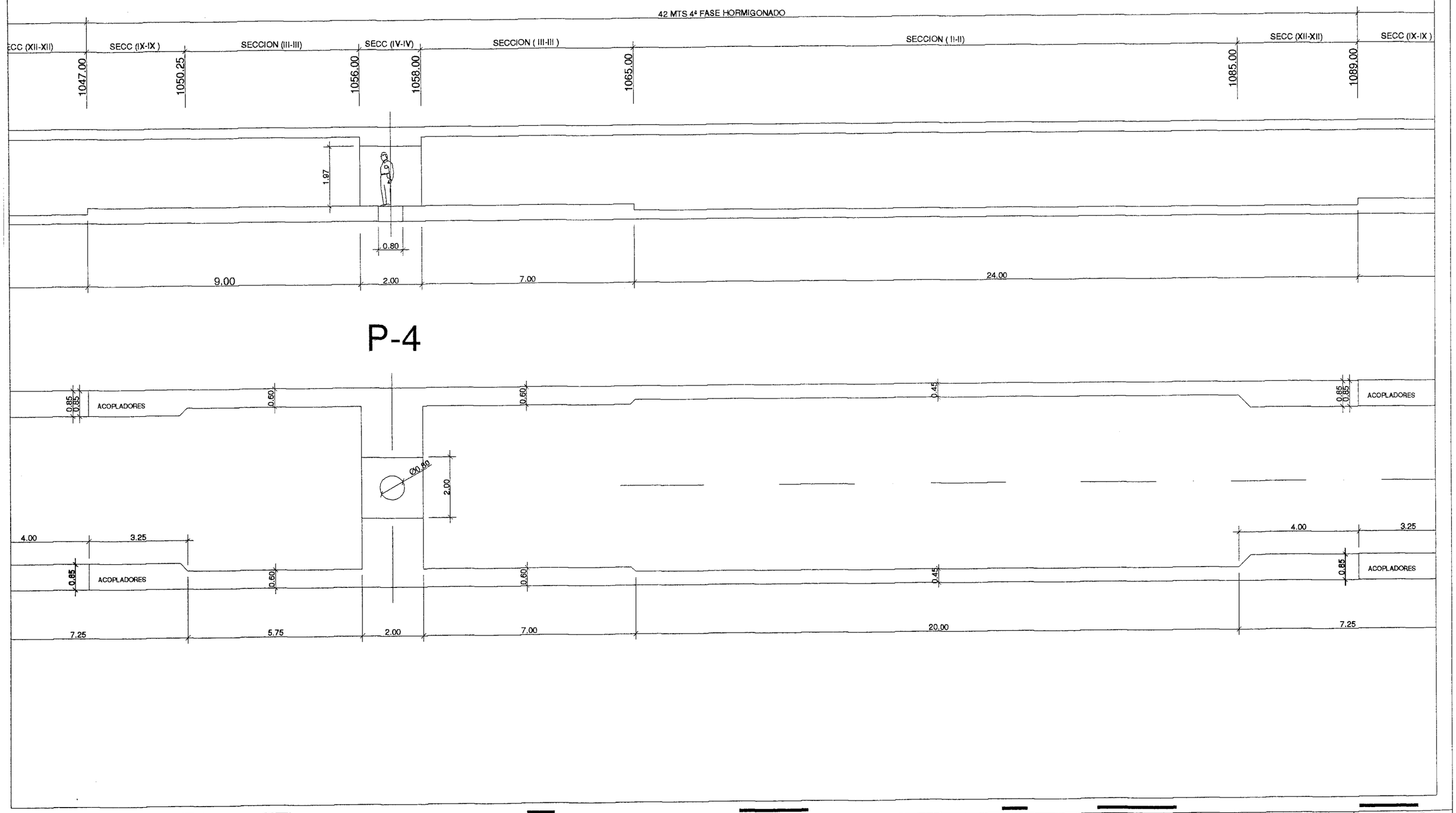
AUTOR
FERNANDEZ CONSTRUCTOR
Fdo: MANUEL COSTA PEREZ

ESCALA
1:1000
UNE A-3 ORIGINALES
Gráfica
0 50m

FECHA
OCTUBRE-03

TÍTULO DEL PLANO
VIADUCTO DE RIERUSSA
DEFINICION GEOMETRICA (3)

Nº DE PLANO
2.9.2.2.B
Hoja 5 de 21




GIF Gestor de Infraestructuras Ferroviarias

TÍTULO
PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO:GELIDA-SANT LLORENÇ D?HORTONS

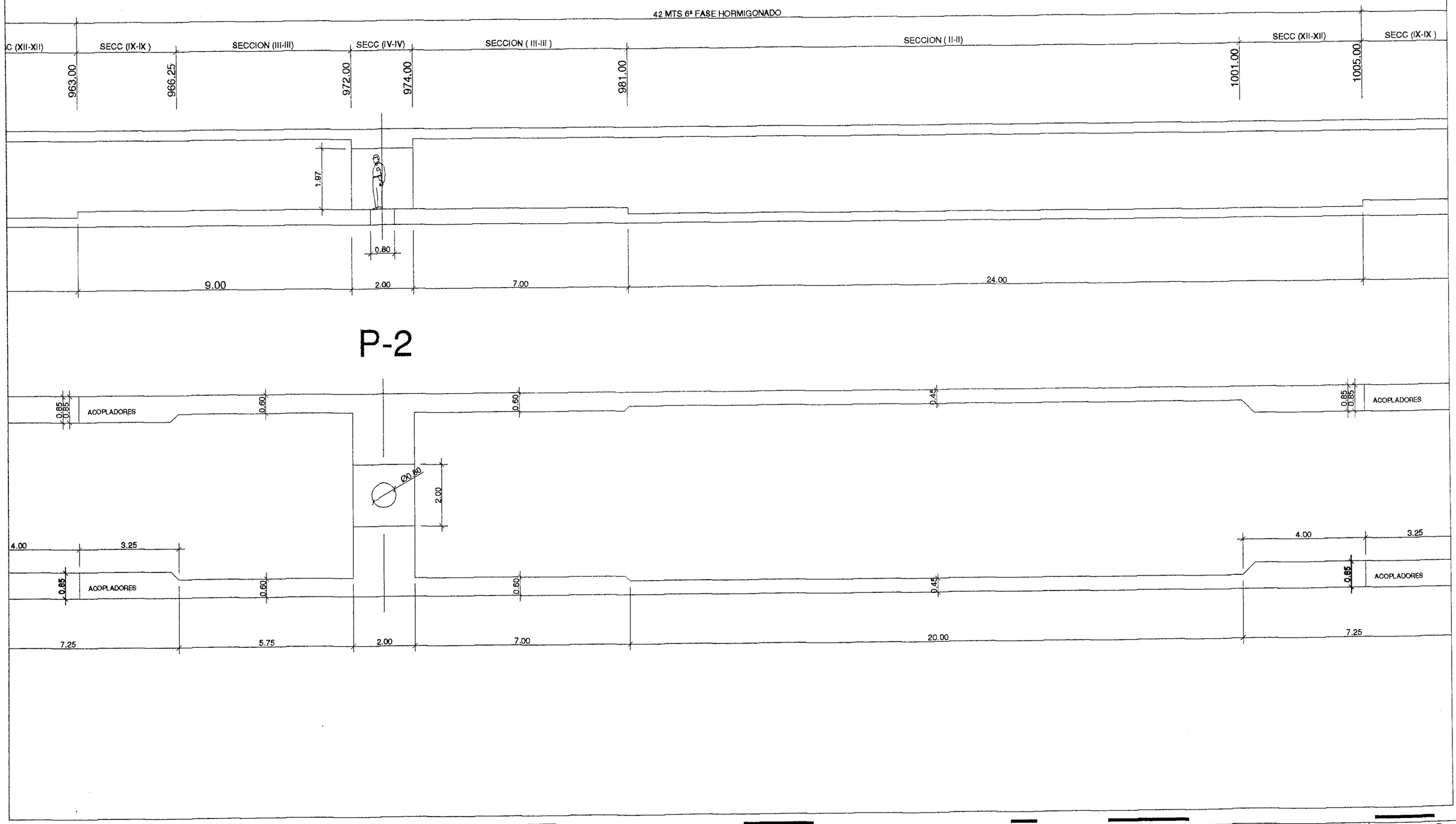
AUTOR
FERNANDEZ
CONSTRUCTOR Fdo: MANUEL COSTA PEREZ

ESCALA
1:1000
UNE A-3 ORIGINALES
Gráfica 0 50m

FECHA
OCTUBRE-03

TÍTULO DEL PLANO
VIADUCTO DE RIERUSSA
DEFINICION GEOMETRICA (4)

Nº DE PLANO
2.9.2.2.B
Hoja 6 de 24

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GIF Gestor de Infraestructuras Ferroviarias

TÍTULO
PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO:GELIDA-SANT LLORENÇ D?HORTONS

AUTOR
FERNANDEZ CONSTRUCTOR
Fdo: MANUEL COSTA PEREZ

ESCALA
1:1000
UNE A-3 ORIGINALES
Gráfica
0 50m

FECHA
OCTUBRE-03

TÍTULO DEL PLANO
VIADUCTO DE RIERUSSA
DEFINICION GEOMETRICA (6)

Nº DE PLANO
2.9.2.2.B
Hoja 8 de 214

42 MTS 7ª FASE HORMIGONADO

(XII-XII) | SECC (IX-IX) | SECCION (III-III) | SECC (IV-IV) | SECCION ( III-III ) | SECCION ( II-II) | SECC (XII-XII) | SECC (IX-IX )

921.00 | 924.25 | 930.00 | 932.00 | 939.00 | 959.00 | 963.00

1.97

Ø1.80

0.80

9.000 | 2.00 | 7.00 | 24.00

# P-1

0.85 ACOPLADORES | 0.60 | 0.60 | 0.45 | 0.85 0.85 ACOPLADORES

Ø0.80

2.00

1.00 | 3.25 | 4.00 | 3.25

0.85 ACOPLADORES | 0.60 | 0.60 | 0.45 | 0.85 ACOPLADORES

5.75 | 2.00 | 7.00 | 20.00 | 7.25

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GIF Gestor de Infraestructuras Ferroviarias

TÍTULO
PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO:GELIDA-SANT LLORENÇ D'HORTONS

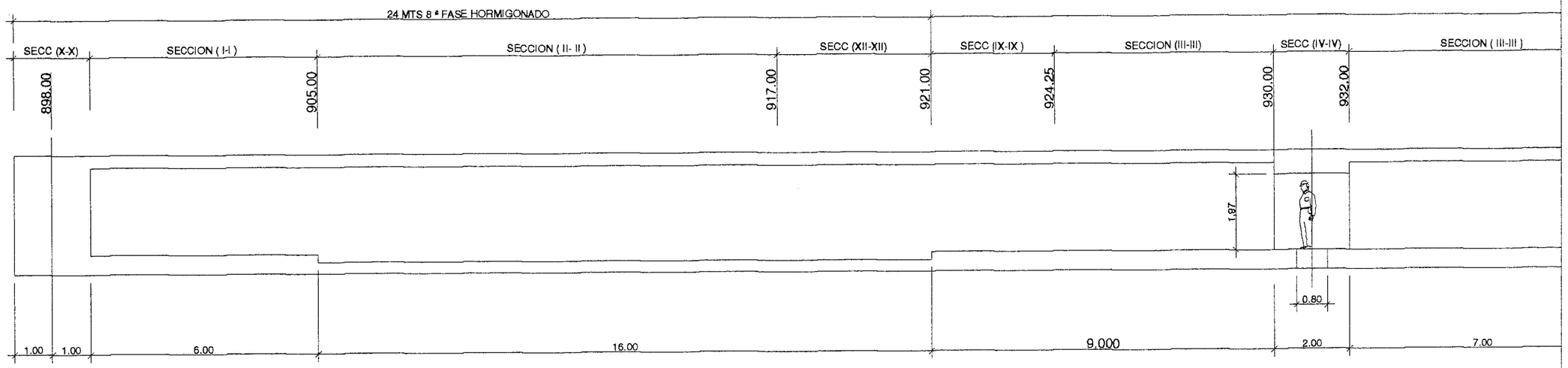
AUTOR
FERNANDEZ CONSTRUCTOR Fdo: MANUEL COSTA PEREZ

ESCALA
1:1000
UNE A-3 ORIGINALES
Gráfica 0 50m

FECHA
OCTUBRE-03

TÍTULO DEL PLANO
VIADUCTO DE RIERUSSA
DEFINICION GEOMETRICA (7)

Nº DE PLANO
2.9.2.2.B
Hoja 9 de 21

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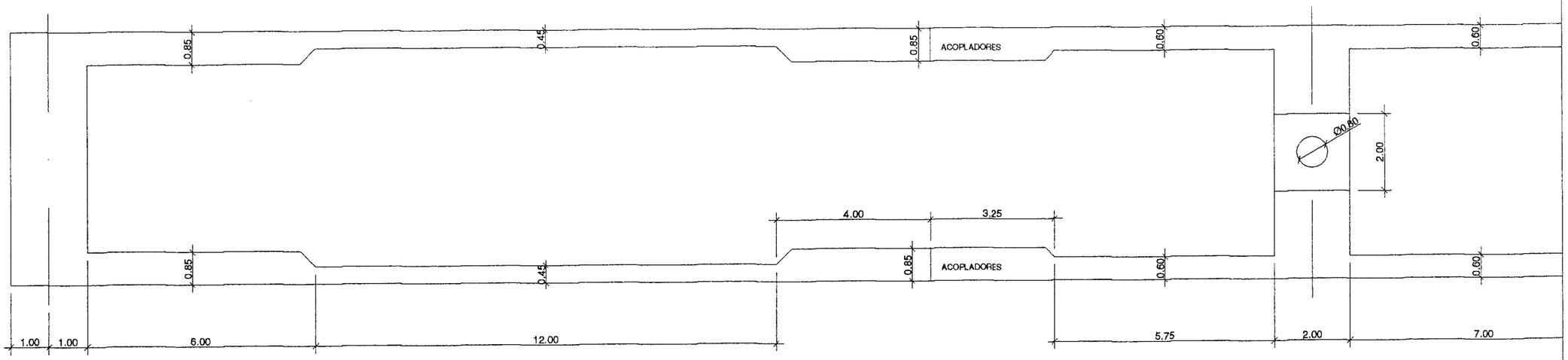
P-1

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GIF Gestor de Infraestructuras Ferroviarias

TÍTULO
PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO:GELIDA-SANT LLORENÇ D?HORTONS

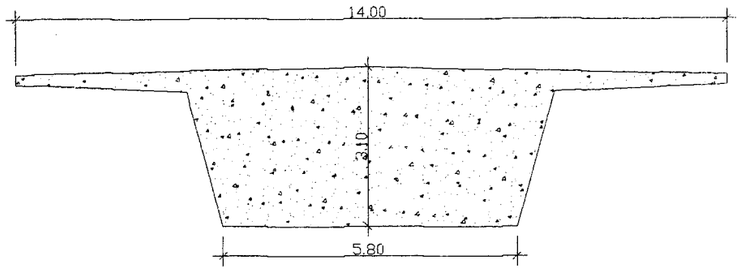
AUTOR
FERNANDEZ CONSTRUCTOR
Fdo: MANUEL COSTA PEREZ

ESCALA
1:1000
UNE A-3 ORIGINALES
Gráfica
0 50m

FECHA
OCTUBRE-03

TÍTULO DEL PLANO
VIADUCTO DE RIERUSSA
DEFINICION GEOMETRICA (8)

Nº DE PLANO
2.9.2.2.B
Hoja 10 de 21

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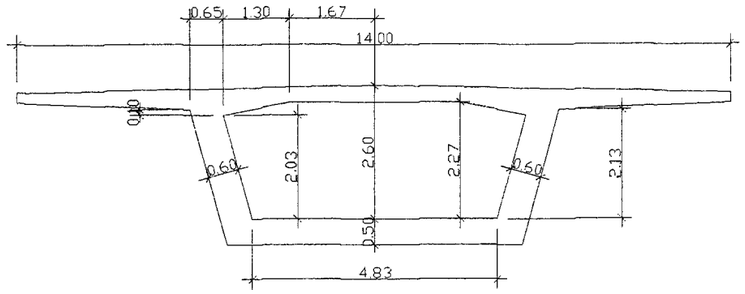


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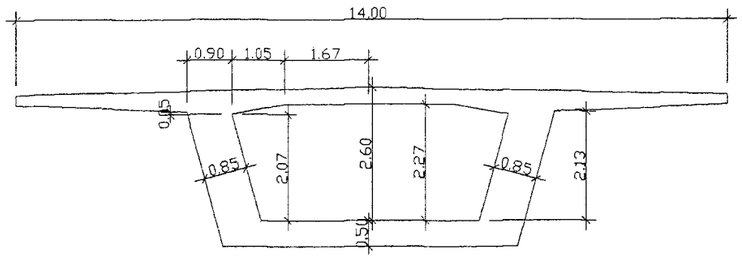
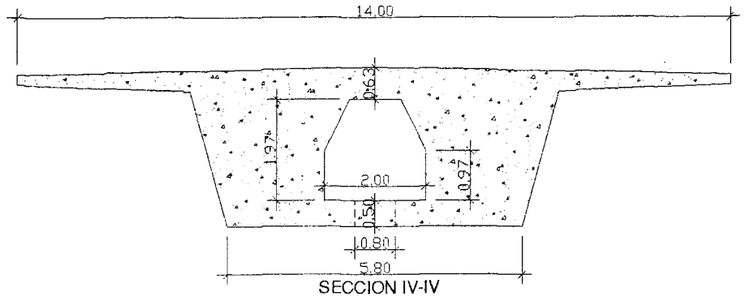



SECCION I-I
SECCION IX-IX

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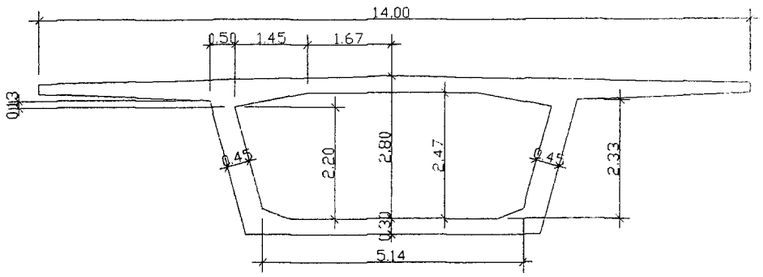


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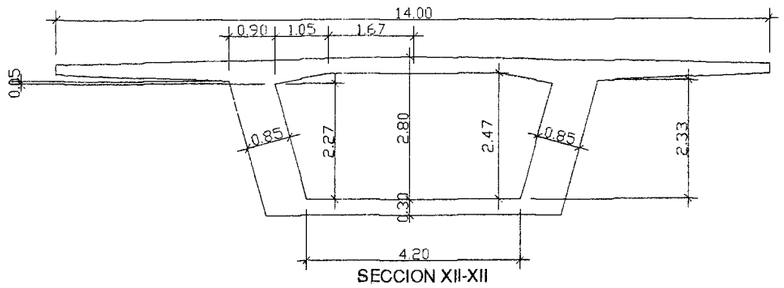


SECCION XII-XII

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GIF Gestor de Infraestructuras Ferroviarias

TÍTULO
PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO:GELIDA-SANT LLORENÇ D'HORTONS

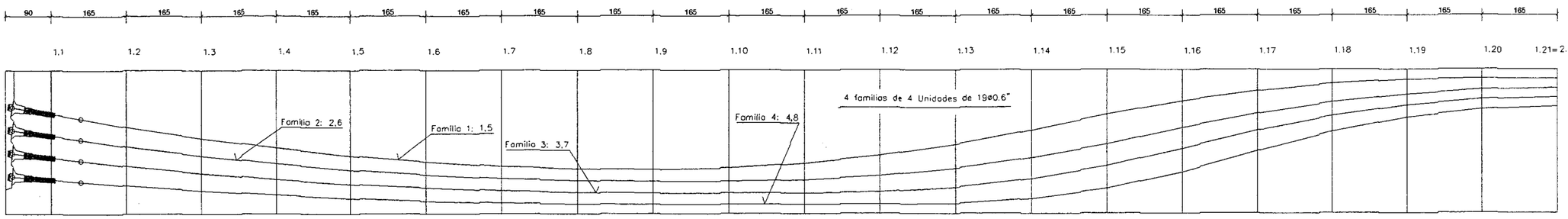
AUTOR
FERNANDEZ CONSTRUCTOR Fdo: MANUEL COSTA PEREZ

ESCALA
1:1000 UNE A-3 ORIGINALES
Gráfica 0 50m

FECHA
OCTUBRE-03

TÍTULO DEL PLANO
VIADUCTO DE RIERUSSA
SECCIONES TIPOS

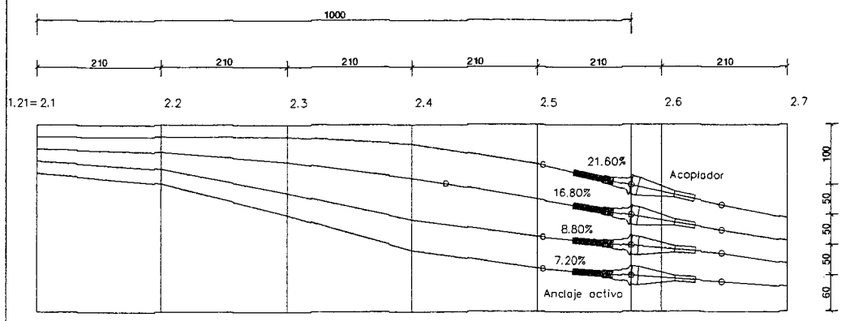
Nº DE PLANO
2.9.2.2.B
Hoja 11 de 21




| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 215.2 | 187.3 | 162.8 | 142.1 | 125.1 | 112 | 102.5 | 96.9 | 95 | 98.4 | 106.4 | 125.2 | 148.6 | 178.8 | 213.2 | 241.9 | 264 | 279.3 | 287.9 | 290 | 290 |
| RIERA RIERUSSA | 168 | 145.2 | 125.2 | 108.4 | 94.6 | 83.8 | 76.1 | 71.5 | 70 | 70 | 72.1 | 81 | 96.7 | 119.3 | 148.8 | 184.1 | 215 | 239.1 | 256.3 | 266.6 | 270 |
| | 120.7 | 103.1 | 87.7 | 74.6 | 64 | 55.7 | 49.7 | 46.2 | 45 | 45 | 45 | 46.5 | 56.1 | 74.7 | 102.2 | 138.6 | 178.5 | 209.8 | 232.1 | 245.5 | 250 |
| | 73.4 | 61 | 50.1 | 40.9 | 33.4 | 27.5 | 23.3 | 20.8 | 20 | 20 | 20 | 20 | 20.8 | 31.2 | 53.5 | 87.9 | 133.9 | 176 | 206 | 224 | 230 |

Distancia desde fondo de encofrado a ejes de cables

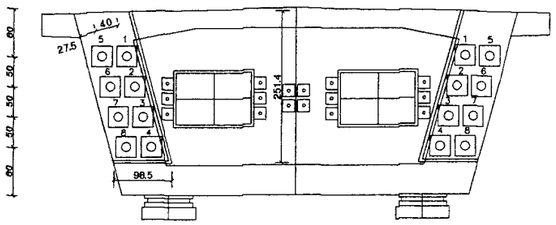
ALZADO PRETENSADO (1? FASE)
Escala 1/50.Cotas en cm.



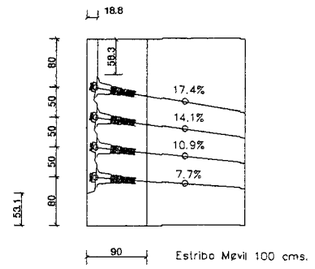

| | | | | | | |
|---|---|---|---|---|---|---|
| 290 | 290 | 290 | 278.1 | 244.5 | 199.2 | 155.2 |
| 270 | 264.6 | 248.5 | 221.6 | 186.8 | 151.6 | 117.4 |
| 250 | 236.8 | 197.2 | 152 | 124.1 | 104 | 79.6 |
| 230 | 212.4 | 159.7 | 101.8 | 71.6 | 56.4 | 41.7 |

ALZADO PRETENSADO (1? FASE)
Escala 1/50.Cotas en cm.

2 apoyos de neopreno zunchado Tipo 5 850x1250x109(75)
16 barras de diametro 47 mm. tesados a 100 Tm.
Protura=186Tm. Plimite=168 Tm.
Placa de anclaje 200x200x60

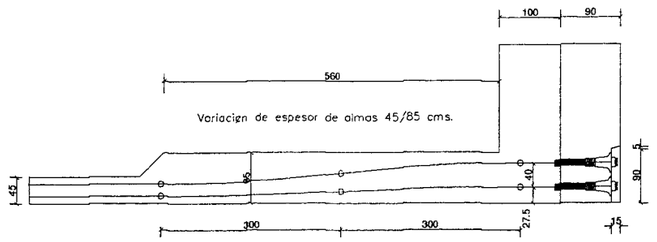



VISTA DE LOS ANCLAJES EN ESTRIBOS
Escala 1/50.Cotas en cm.

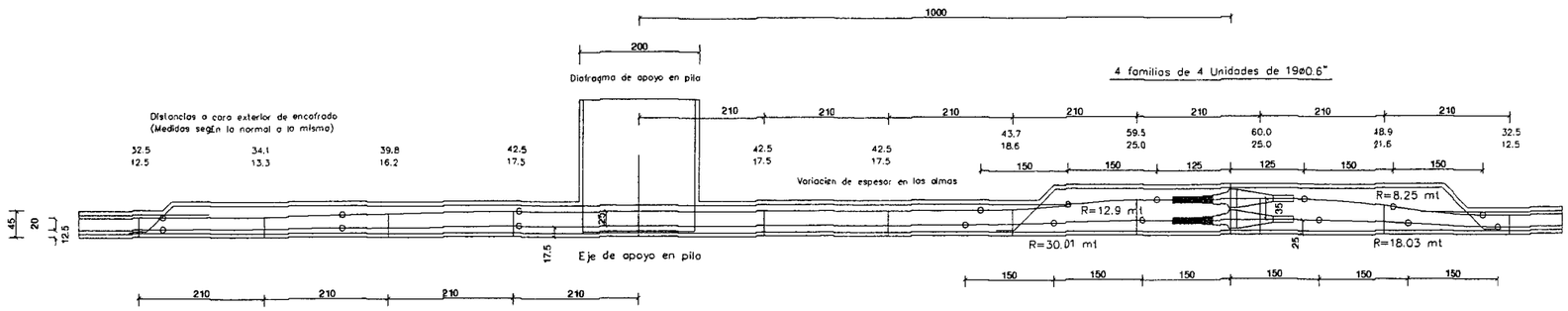



DETALLE EN ALZADO DE CAJETINES DE ANCLAJE EN ESTRIBOS
Escala 1/50.Cotas en cm.

Estribo Movil 100 cms.

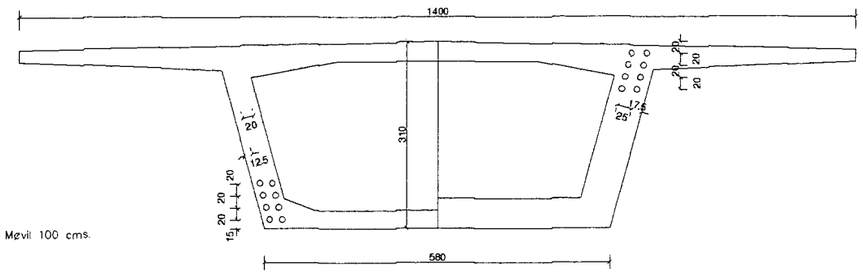



DETALLE EN PLANTA DE TRAZADO EN ZONA DE ESTRIBOS
Escala 1/50.Cotas en cm.




DETALLE EN PLANTA DE TRAZADO EN ZONA DE ACOPLADORES
Escala 1/50.Cotas en cm.

Pretensado formado por 4 familias de 4 Unidades de 19 de 0.6"




SECCION TIPO POR APOYO EN PILA
Escala 1/50.Cotas en cm.

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GIF Gestor de Infraestructuras Ferroviarias

TITULO
PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO:GELIDA-SANT LLORENÇ D?HORTONS

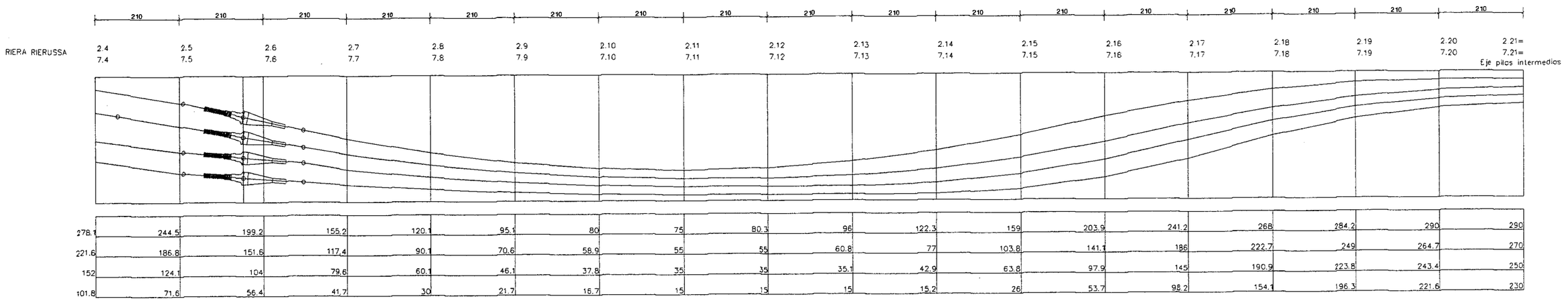
AUTOR
FERNANDEZ CONSTRUCTOR Fdo: MANUEL COSTA PEREZ

ESCALA
1:1000 UNE A-3 ORIGINALES
Gráfica 0 50m

FECHA
OCTUBRE-03

TITULO DEL PLANO
VIADUCTO DE RIERUSSA
TABLERO PRETENSADO (1)

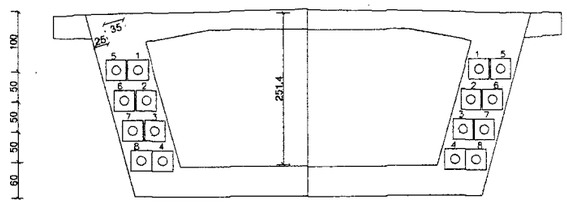
Nº DE PLANO
2.9.2.2
Hoja 12 de 21



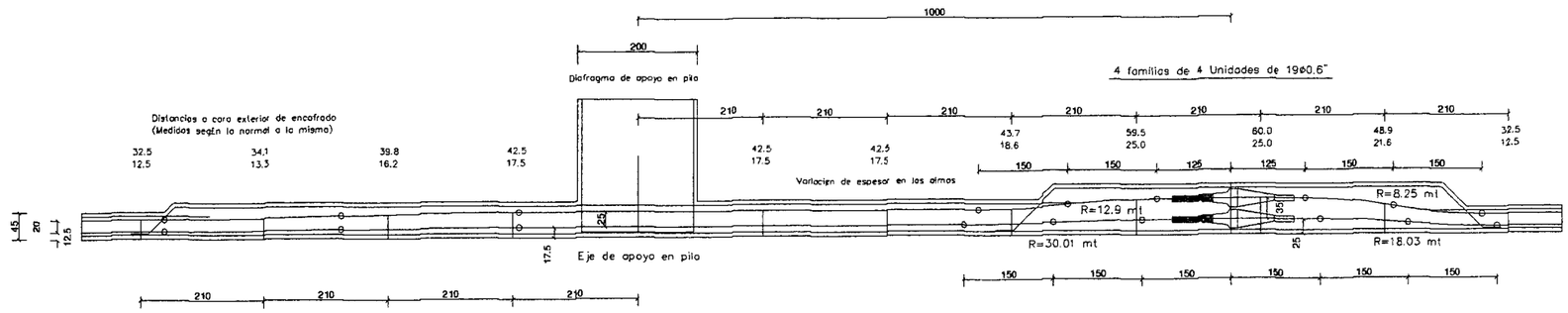

ALZADO PRETENSADO (FASES INTERMEDIAS)
Escala 1/50.Cotas en cm.




ALZADO PRETENSADO (FASES INTERMEDIAS)
Escala 1/50.Cotas en cm.




VISTA DE LOS ANCLAJES EN ACOPLADORES
Escala 1/50.Cotas en cm.




DETALLE EN PLANTA DE TRAZADO EN ZONA DE ACOPLADORES
Escala 1/50.Cotas en cm.

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GIF Gestor de Infraestructuras Ferroviarias

TÍTULO
PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO:GELIDA-SANT LLORENÇ D?HORTONS

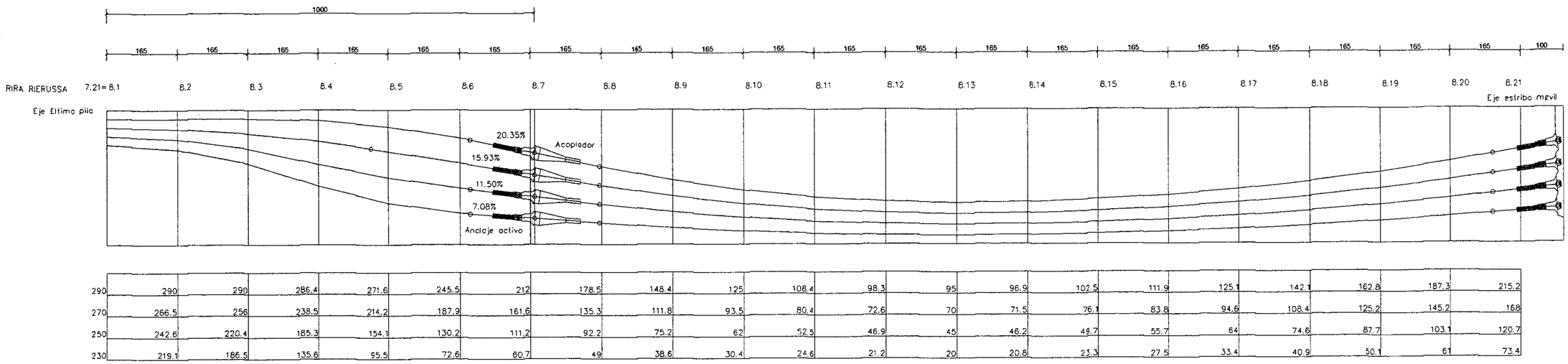
AUTOR
FERNANDEZ CONSTRUCTOR
Fdo: MANUEL COSTA PEREZ

ESCALA
1:1000
UNE A-3 ORIGINALES
Gráfica 0 50m

FECHA
OCTUBRE-03

TÍTULO DEL PLANO
VIADUCTO DE RIERUSSA
TABLERO PRETENSADO (2)

Nº DE PLANO
2.9.2.2
Hoja 13 de 21




| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 290 | 290 | 290 | 290 | 286.4 | 271.6 | 245.5 | 212 | 178.5 | 148.4 | 125 | 108.4 | 98.3 | 95 | 96.9 | 102.5 | 111.9 | 125.1 | 142.1 | 162.8 | 187.3 | 215.2 |
| 270 | 266.5 | 256 | 238.5 | 214.2 | 187.9 | 161.6 | 135.3 | 111.8 | 93.5 | 80.4 | 72.6 | 70 | 71.5 | 76.1 | 83.8 | 94.6 | 108.4 | 125.2 | 145.2 | 168 | |
| 250 | 242.6 | 220.4 | 185.3 | 154.1 | 130.2 | 111.2 | 92.2 | 75.2 | 62 | 52.5 | 46.9 | 45 | 46.2 | 49.7 | 55.7 | 64 | 74.6 | 87.7 | 103.1 | 120.7 | |
| 230 | 219.1 | 186.5 | 135.6 | 95.5 | 72.6 | 60.7 | 49 | 38.6 | 30.4 | 24.6 | 21.2 | 20 | 20.8 | 23.3 | 27.5 | 33.4 | 40.9 | 50.1 | 61 | 73.4 | |

ALZADO PRETENSADO (ULTIMA FASE)
Escala 1/50.Cotas en cm.

## NOTAS SOBRE EL PRETENSADO LONGITUDINAL

1) DEFINICION

En cada una de las Fases del P.C. se disponen 16 Uds. de (19ø0.6") cada una, que van desde el comienzo de la fase hasta el final de la misma disponiendo anclajes activos en ambos extremos pero tesonso sólo desde el final de la fase.

TODAS LAS UNIDADES DE PRETENSADO, EN CADA FASE, SON IGUALES Y TIENEN LAS SIGUIENTES CARACTERISTICAS:

COMPOSICION: 19 TORONES DE 0.6" (19ø 0.6")
AREA UNITARIA: Ap.= 2648 mm2.
DIAMETRO INTERIOR DE LA VAINA: 100 mm.
PLACAS DE ANCLAJE: 340 x 340 mm2.
PESO POR M.L.: 20.94 Kg/mt.

LONGITUD DE LOS TENDONES: (Ver Cuadro)
LONGITUD APROXIMADA DE LOS TENDONES (MEDIDA EN EL EJE DE LA VIGA)

| FASE | ①⑤ | ②⑥ | ③⑦ | ④⑧ |
|---|---|---|---|---|
| PRIMERA | 44.09 | 44.10 | 44.16 | 44.24 |
| INTERMED. | 42.32 | 42.29 | 42.32 | 42.39 |
| ULTIMA | 23.98 | 23.93 | 23.90 | 23.87 |

2) PRETENSADO DEFINITIVO

A los 3 d?as como m?nimo, y siempre que Fcj alcance 300 Kp/cm2., se proceder? al tesado definitivo. Cada tend?n se tesar? a una fuerza de 384 Mp. (Qp0= 145 Kp/mm2.), medidos antes del biocajes de cu?as con penetraci?n de estas no mayor de 6 mm. Para el tesado se respetar? estrictamente el orden que se indica en el siguiente cuadro:

| FASE | ORDEN DE PUESTA EN TENSION |
|---|---|
| TODAS | 4 7 2 5 8 3 6 1 |

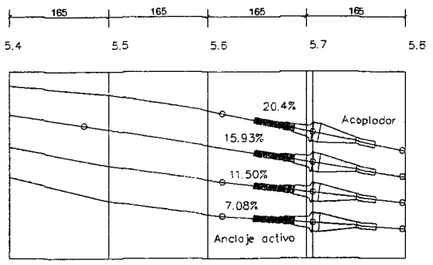
3) CALIDAD DEL ACERO DE PRETENSADO

Carga de rotura caracter?stica: Fpk à 190 Kp/mm2.
Modulo El?stico: Ep0 à 19500 Kp/mm2.
L?mite El?stico caracter?stico: 0.2%, Fyk à 171 Kp/mm2.
Alargamiento en rotura sobre 500 mm.: à 0.035
Relajaci?n a 1000 h.bajo Qpi=0.7xFpk,a 20°, ρ 1000 < 2.0% Qpi

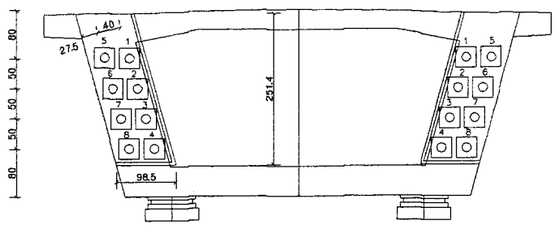
4) ALARGAMIENTO PREVISTO (MM)

Medido antes de la penetraci?n de cu?as y contando con Ep0= 20000 Kp/mm2., resulta:

| | PRIMERA | | | | INTERMEDIAS | | | | ULTIMA | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FAMILIA | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| EXTREMO 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EXTREMO 2 | 269 | 270 | 257 | 247 | 271 | 273 | 263 | 254 | 149 | 150 | 151 | 152 |



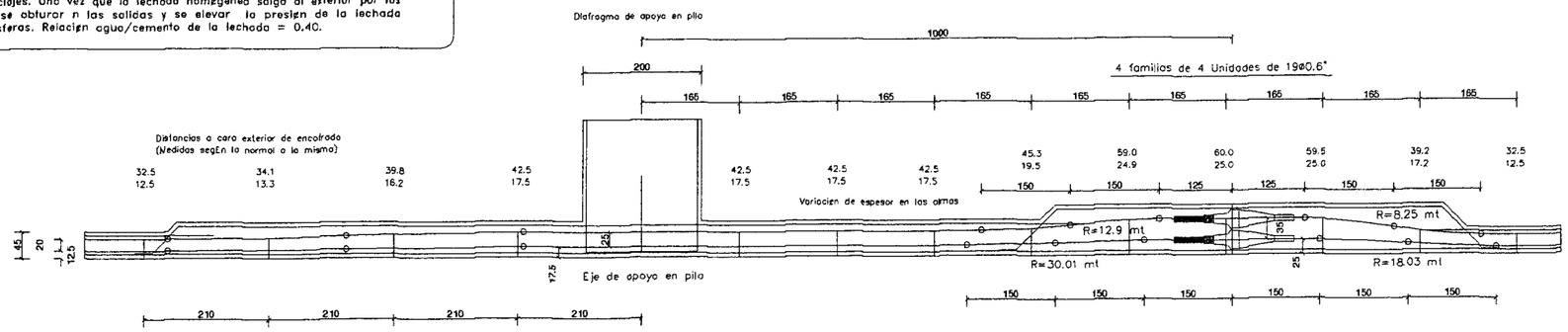

DETALLE EN ALZADO DE CAJETINES DE ANCLAJE EN ACOPLADORES
Escala 1/50.Cotas en cm.




VISTA DE LOS ANCLAJES EN ESTRIBOS
Escala 1/50.Cotas en cm.

5) INYECCION

Se inyectar?n con mortero de cemento y plastificante los tendones a una presi?n m?nima de 6 atm?sferas. La entrada de lechada se realizar? por los puntos bajos de los cables, dejando respiraderos en los puntos altos sobre los pilas y los anclajes. Uno vez que la lechada homogenea salga al exterior por los respiraderos, se obturar n las salidas y se elevar la presign de la lechada hasta 6 atmosferas. Relacign agua/cemento de la lechada = 0.40.




DETALLE EN PLANTA DE TRAZADO EN ZONA DE ACOPLADORES
Escala 1/50.Cotas en cm.

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GIF Gestor de Infraestructuras Ferroviarias

TÍTULO
PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO:GELIDA-SANT LLORENÇ D?HORTONS

AUTOR
FERNANDEZ CONSTRUCTOR
Fdo: MANUEL COSTA PEREZ

ESCALA
1:1000
UNE A-3
ORIGINALES
Gráfica
0 50m

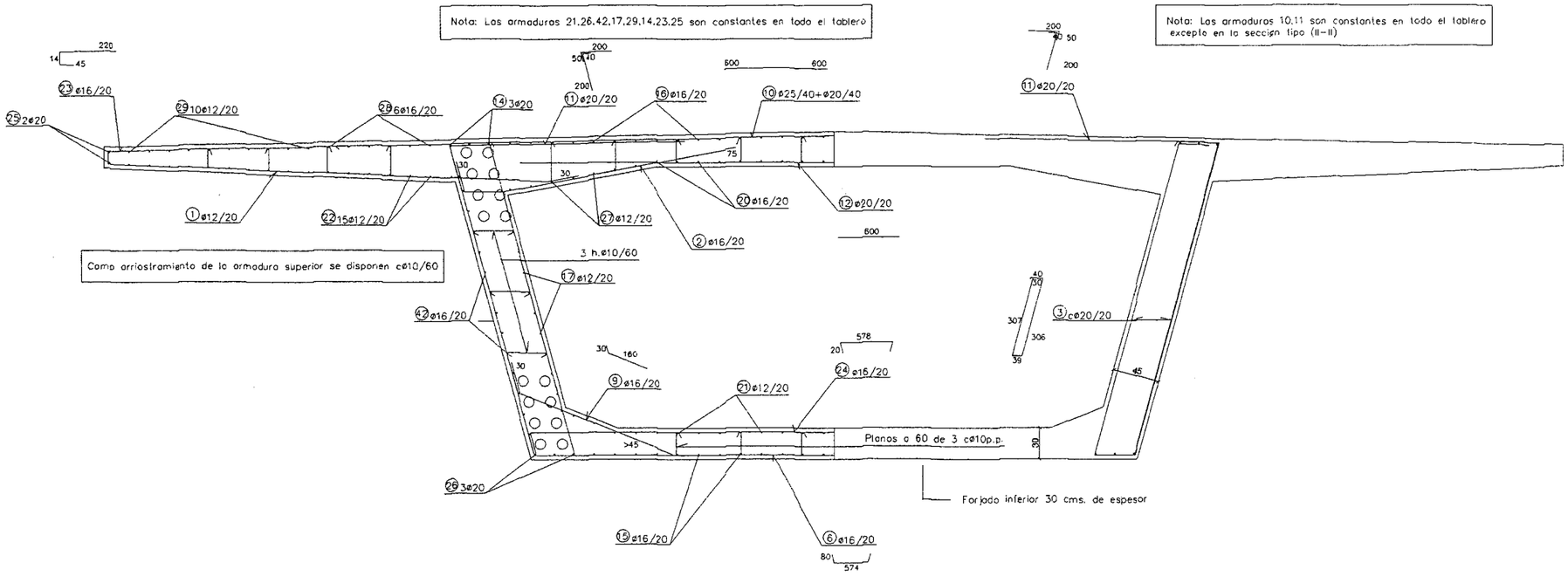
FECHA
OCTUBRE-03

TÍTULO DEL PLANO
VIADUCTO DE RIERUSSA
TABLERO PRETENSADO (3)

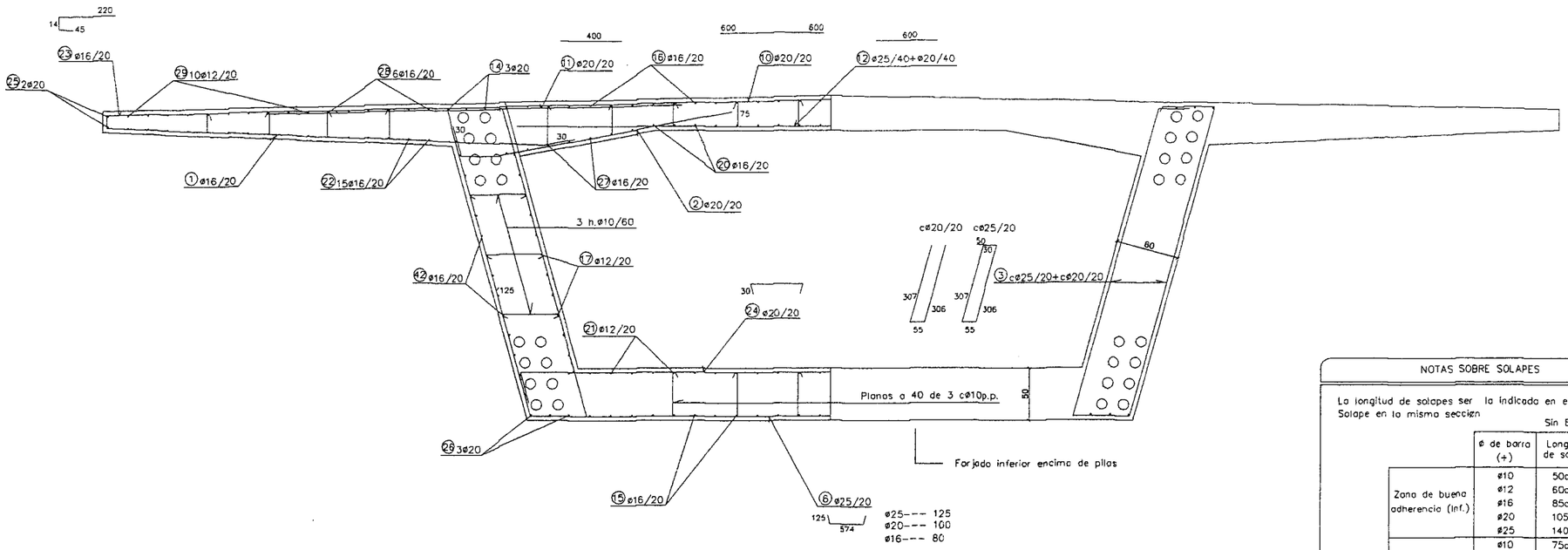
Nº DE PLANO
2.9.2.2
Hoja 14 de 21
220

Nota: Las armaduras 21.26.42.17.29.14.23.25 son constantes en todo el tablero

Nota: Las armaduras 10.11 son constantes en todo el tablero excepto en la seccion tipo (II-II)




SECCION TRANSVERSAL TIPO (II-II)
Escala 1/25.Cotas en cm.




SECCION TRANSVERSAL (III-III)
Escala 1/25.Cotas en cm.

**NOTAS SOBRE SOLAPES**

La longitud de solapes ser la indicada en el cuadro adjunto
Solape en la misma seccion

| | ⌀ de barra (+) | Sin E.D. Longitud de solape | Con E.D. Longitud de solape |
|---|---|---|---|
| Zona de buena adherencia (Inf.) | ⌀10 | 50cm. | 70cm. |
| | ⌀12 | 60cm. | 85cm. |
| | ⌀16 | 85cm. | 115cm. |
| | ⌀20 | 105cm. | 140cm. |
| | ⌀25 | 140cm. | 180cm. |
| Zona de mala adherencia (Sup.) | ⌀10 | 75cm. | 90cm. |
| | ⌀12 | 90cm. | 110cm. |
| | ⌀16 | 120cm. | 145cm. |
| | ⌀20 | 150cm. | 180cm. |
| | ⌀25 | 200cm. | 240cm. |

**NOTA SOBRE RECUBRIMIENTOS**

LOS RECUBRIMIENTOS SERAN DE 3.5 CM A LA BARRA EXTERIOR

**CONDICIONES**

HORMIGON

-TABLERO: HP-40/S/15/IIb ; $f_c$ >40 N/mm². Relacion Agua/Cemento<0.43. Contenido M ximo de Cemento: 400Kg/m³.

El hormigon llegar a la obra con consistencia seca debiendo pasarse a consistencia fluida mediante la adicion de un superfluidificante.

ACERO

-CORRUGADO, SIMBOLO ⌀,B 500 S; $f_y$ >500 N/mm².

NIVELES DE CONTROL

-MATERIALES: INTENSO ELU $\gamma_c$=1.5 : $\gamma_s$=1.15; ELS $\gamma_c$=1.0 : $\gamma_s$=1.00

-EJECUCION : INTENSO ELU $\gamma_c$=1.35 ; $\gamma_s$=1.00; $\gamma_c$=1.50; $\gamma_s$=1.50; ELS $\gamma_c$=1.00 ; $\gamma_s$=1.05; $\gamma_c$=1.00; $\gamma_s$=1.00

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TRAMO:GELIDA-SANT LLORENÇ D?HORTONS

AUTOR
FERNANDEZ CONSTRUCTOR
Fdo: MANUEL COSTA PEREZ

ESCALA
1:1000
UNE A-3 ORIGINALES
Gráfica 0 50m

FECHA
OCTUBRE-03

TITULO DEL PLANO
VIADUCTO DE RIERUSSA
TABLERO. ARMADURA (1)

Nº DE PLANO
2.9.2.2
Hoja 15 de 21



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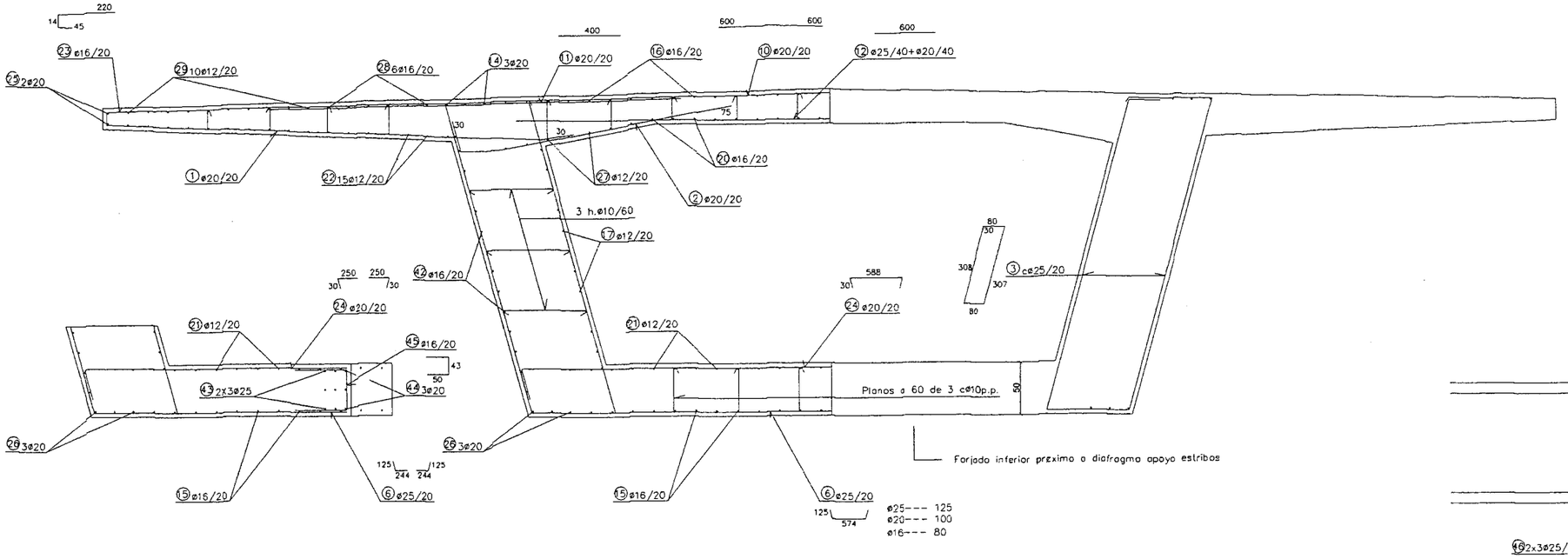
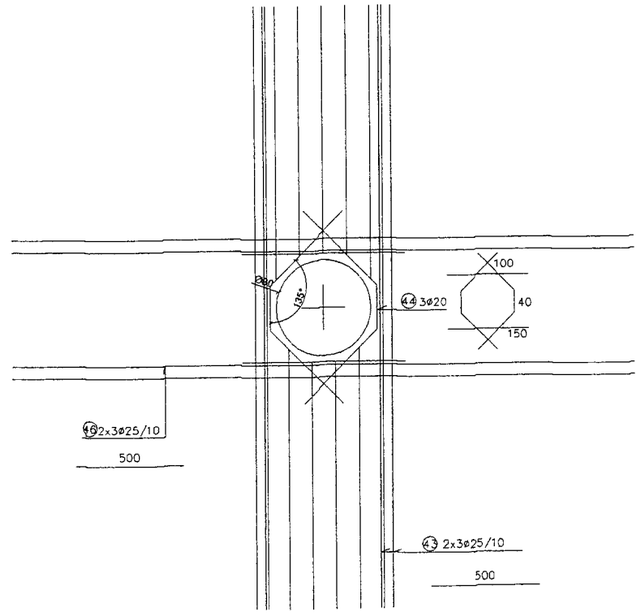



DETALLE DE REFUERZO EN PASO DE HOMBRE

Escala 1/25.Cotas en cm.

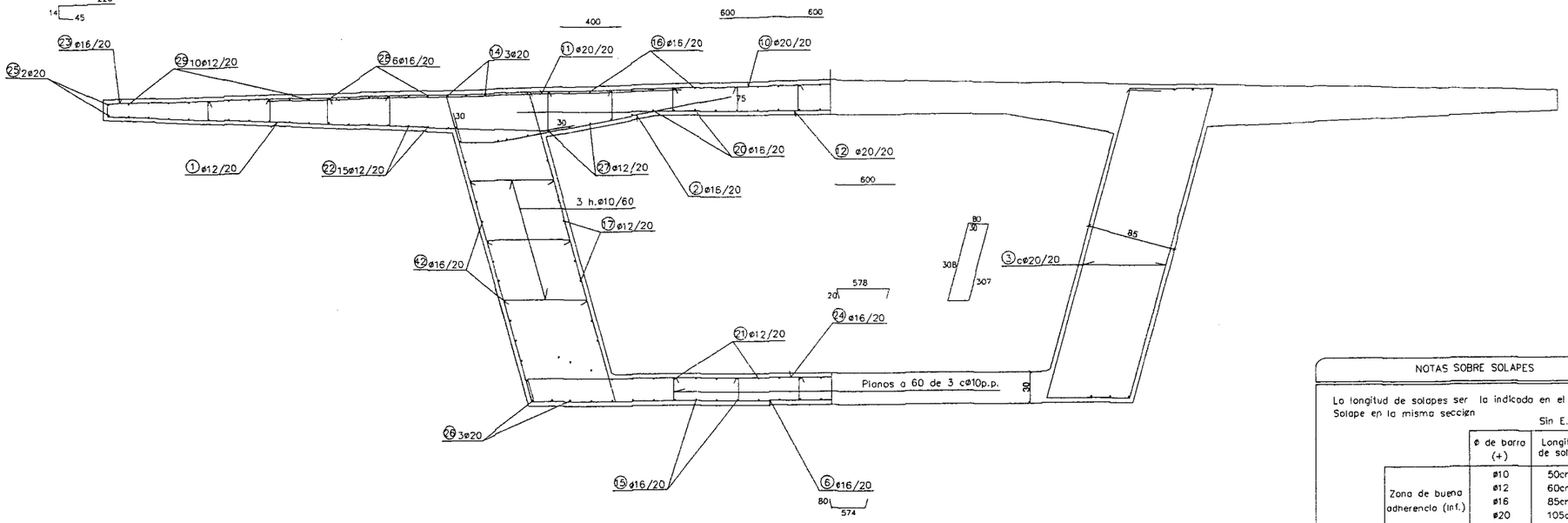
SECCION TRANSVERSAL (I-I)

Escala 1/25.Cotas en cm.




PLANTA DE REFUERZO EN PASO DE HOMBRE

Escala 1/25.Cotas en cm.




SECCION TRANSVERSAL TIPO (XII-XII)

Escala 1/25.Cotas en cm.

NOTAS SOBRE SOLAPES

Lo longitud de solapes ser la indicada en el cuadro adjunto
Solape en la misma seccion

| | ø de barra (+) | Sin E.D. Longitud de solape | Con E.D. Longitud de solape |
|---|---|---|---|
| Zona de buena adherencia (Inf.) | ø10 | 50cm. | 70cm. |
| | ø12 | 60cm. | 85cm. |
| | ø16 | 85cm. | 115cm. |
| | ø20 | 105cm. | 140cm. |
| | ø25 | 140cm. | 180cm. |
| Zona de mala adherencia (Sup.) | ø10 | 75cm. | 90cm. |
| | ø12 | 90cm. | 110cm. |
| | ø16 | 120cm. | 145cm. |
| | ø20 | 150cm. | 180cm. |
| | ø25 | 200cm. | 240cm. |

NOTA SOBRE RECUBRIMIENTOS

LOS RECUBRIMIENTOS SERAN DE 3.5 CM A LA BARRA EXTERIOR

CONDICIONES

HORMIGON

-TABLERO: HP-40/S/15/IIb ; $f_{ck}$>40 N/mm$^2$.
Relacion Agua/Cemento<0.43.
Contenido M ximo de Cemento: 400Kg/m$^3$
El hormigon llegar a la obra con consistencia seca debiendo pasarse a consistencia fluida mediante la adicion de un superfluidificante.

ACERO

-CORRUGADO,SIMBOLO ø,B 500 S; $f_{yk}$>500 N/mm$^2$.

NIVELES DE CONTROL

-MATERIALES: INTENSO ELU $\gamma_s$=1.5 : $\gamma_s$=1.15; ELS $\gamma_s$=1.0 : $\gamma_s$=1.00

-EJECUCION :INTENSO ELU $\gamma_c$=1.35 ; $\gamma_g$=1.00; $\gamma_p$=1.50; $\gamma_q$=1.50; ELS $\gamma_c$=1.00 ; $\gamma_g$=1.05; $\gamma_p$=1.00; $\gamma_q$=1.00

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GIF Gestor de Infraestructuras Ferroviarias

TITULO
PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO:GELIDA-SANT LLORENÇ D'HORTONS

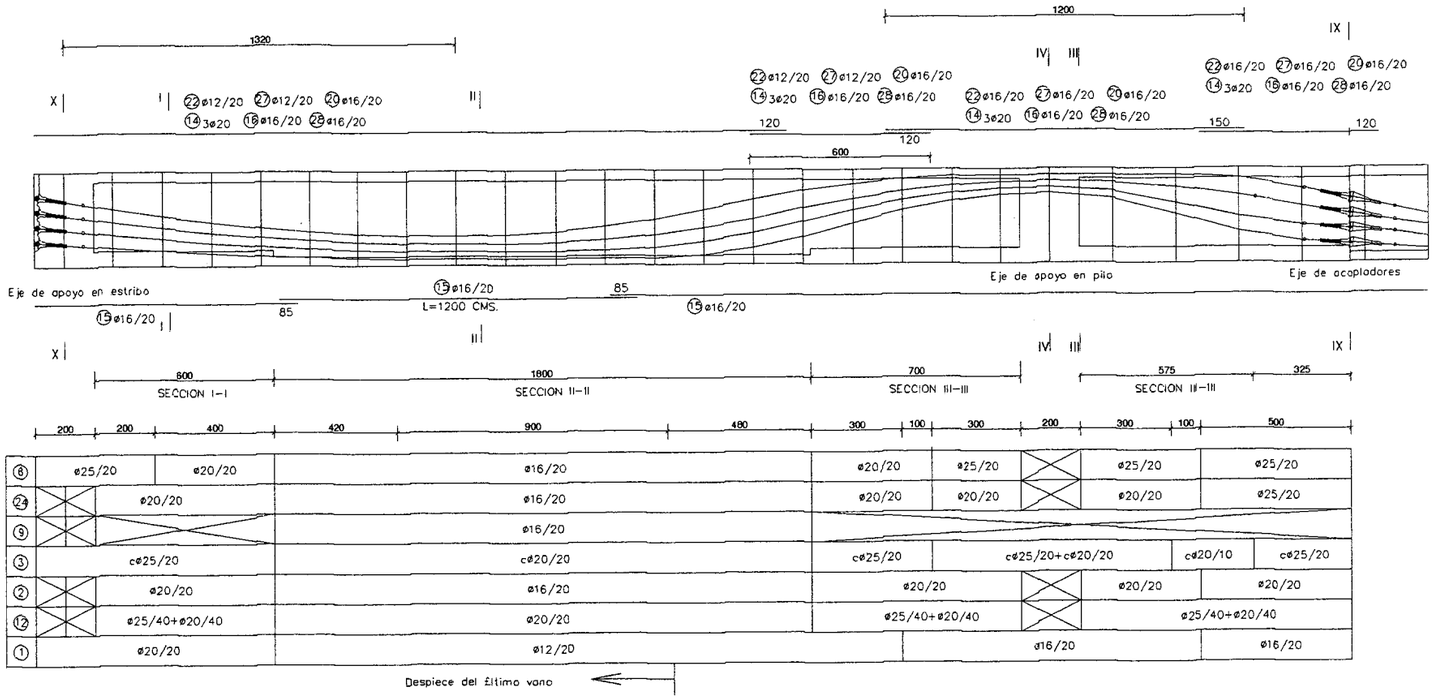
AUTOR
FERNANDEZ CONSTRUCTOR
Edo: MANUEL COSTA PEREZ

ESCALA
1:1000
UNE A-3 ORIGINALES
Gráfica
0 50m

FECHA
OCTUBRE-03

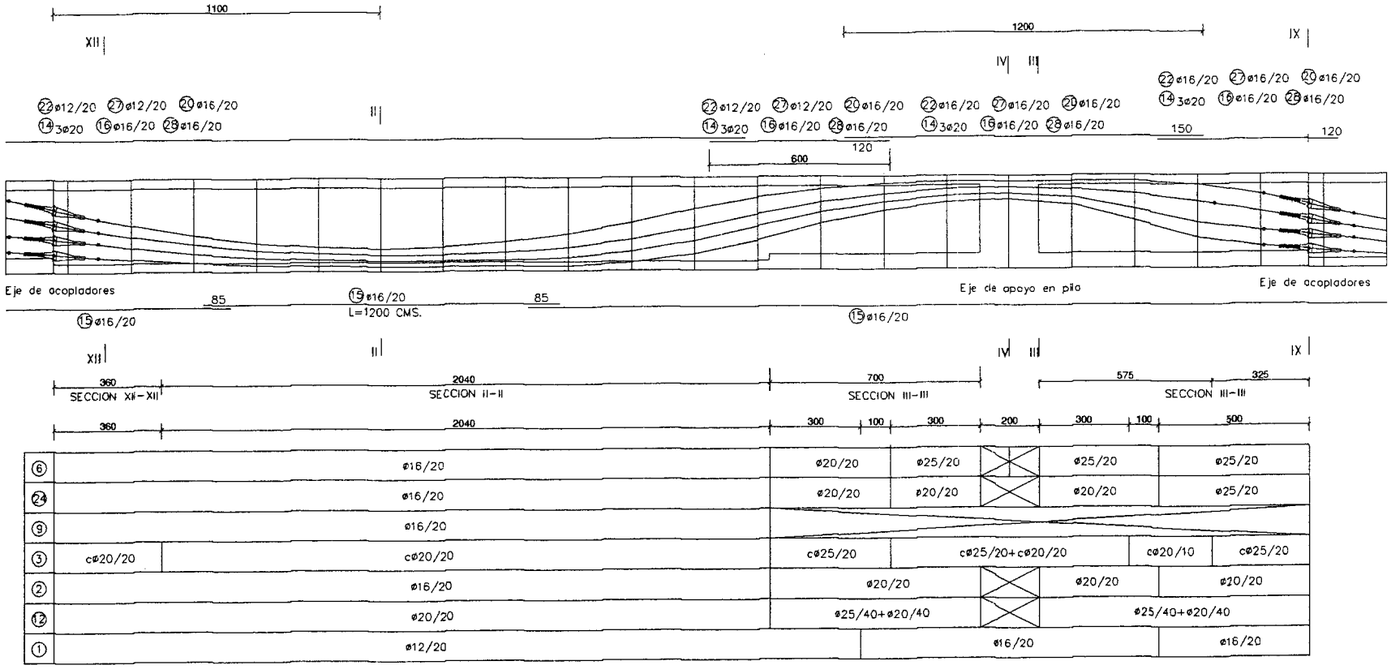
TITULO DEL PLANO
VIADUCTO DE RIERUSSA
TABLERO. ARMADURA (2)

Nº DE PLANO
2.9.2.2
Hoja 16 de 21




ESQUEMA DE DISTRIBUCION DE LA ARMADURA TRANSVERSAL

Escala 1/100.Cotas en cm.




ESQUEMA DE DISTRIBUCION DE LA ARMADURA LONGITUDINAL

Escala 1/100.Cotas en cm.

NOTAS SOBRE SOLAPES

La longitud de solapes ser la indicada en el cuadro adjunto
Solape en la misma seccign

| | ø de barra (+) | Sin E.D. Longitud de solape | Con E.D. Longitud de solape |
|---|---|---|---|
| Zona de buena adherencia (Inf.) | ø10 | 50cm. | 70cm. |
| | ø12 | 60cm. | 85cm. |
| | ø16 | 85cm. | 115cm. |
| | ø20 | 105cm. | 140cm. |
| | ø25 | 140cm. | 180cm. |
| Zona de mala adherencia (Sup.) | ø10 | 75cm. | 90cm. |
| | ø12 | 90cm. | 110cm. |
| | ø16 | 120cm. | 145cm. |
| | ø20 | 150cm. | 180cm. |
| | ø25 | 200cm. | 240cm. |

NOTA SOBRE RECUBRIMIENTOS

LOS RECUBRIMIENTOS SERAN DE 3.5 CM A LA BARRA EXTERIOR

CONDICIONES

HORMIGON

-TABLERO: HP-40/S/15/IIb : $f_{ck} \geq 40$ N/mm².
Relacion Agua/Cemento<0.43.
Contenido M ximo de Cemento: 400Kg/m³

El hormigen llegar a la obra con consistencia seca debiendo posarse a consistencia fluida mediante la adicign de un superfluidificante.

ACERO

-CORRUGADO, SIMBOLO ø,B 500 S; $f_y$ >500 N/mm².

NIVELES DE CONTROL

-MATERIALES: INTENSO ELU $\gamma_s$=1.5 ; $\gamma_s$=1.15
ELS $\gamma_s$=1.0 ; $\gamma_s$=1.00

-EJECUCION : INTENSO ELU $\gamma_c$=1.35 ; $\gamma_c$=1.00; $\gamma_c$=1.50; $\gamma_c$=1.50
ELS $\gamma_c$=1.00 ; $\gamma_c$=1.05; $\gamma_c$=1.00; $\gamma_c$=1.00

GIF Gestor de Infraestructuras Ferroviarias

TITULO
PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO:GELIDA-SANT LLORENÇ D?HORTONS

AUTOR
FERNANDEZ CONSTRUCTOR Edo: MANUEL COSTA PEREZ

ESCALA
1:1000
UNE A-3 ORIGINALES
Gráfica 0 50m

FECHA
OCTUBRE-03

TITULO DEL PLANO
VIADUCTO DE RIERUSSA
TABLERO. ARMADURA (3)

Nº DE PLANO
2.9.2.2
Hoja 17 de 21

223

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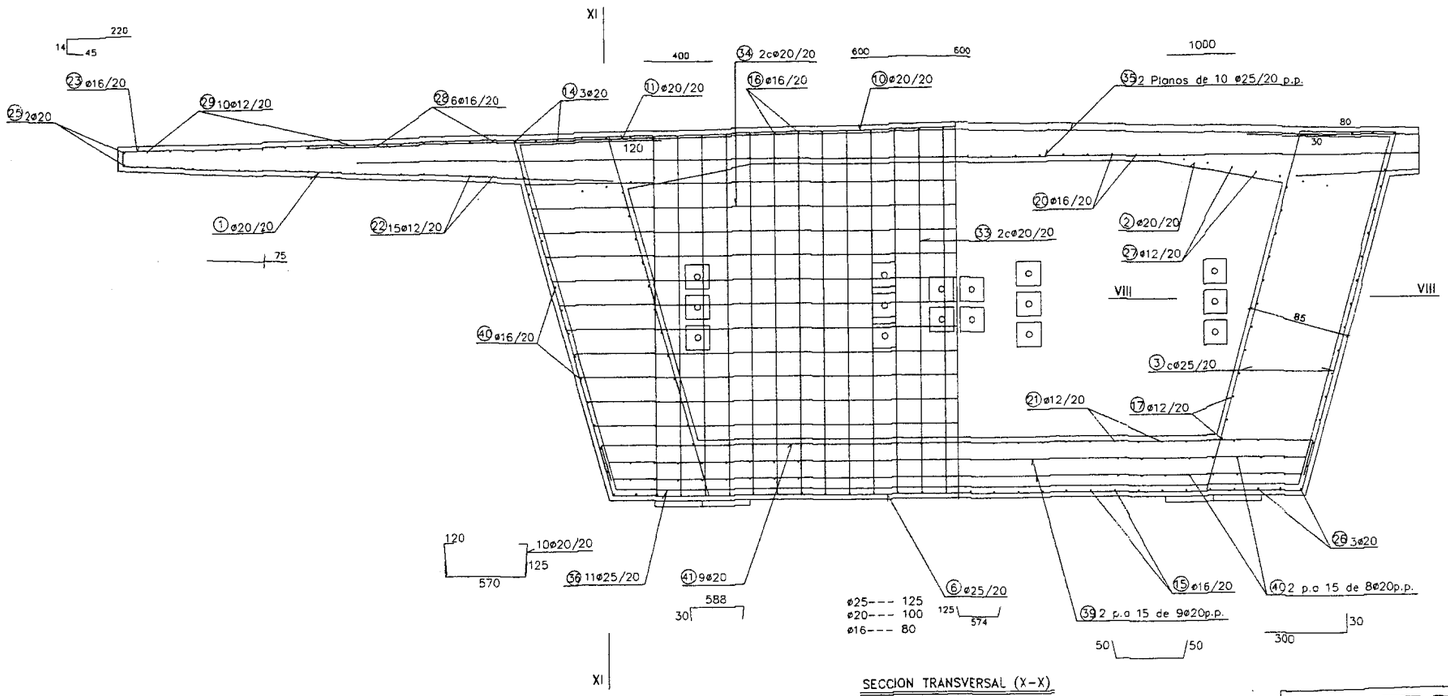


SECCION TRANSVERSAL (X-X)
Escala 1/25.Cotas en cm.

REFUERZO DE ARMADURA EN ZONA DE APOYOS VERTICALES
Escala 1/25.Cotas en cm.

REFUERZO DE ARMADURA EN ZONA DE INTRODUCCION DE PRETENSADO EN DIAFRAGMA DE APOYO EN ESTRIBOS
Escala 1/25.Cotas en cm.

**NOTAS SOBRE SOLAPES**

La longitud de solapes ser la indicada en el cuadro adjunto
Solape en la misma seccion

| | ø de barra (+) | Sin E.D. Longitud de solape | Con E.D. Longitud de solape |
|---|---|---|---|
| Zona de buena adherencia (Inf.) | ø10 | 50cm. | 70cm. |
| | ø12 | 60cm. | 85cm. |
| | ø16 | 85cm. | 115cm. |
| | ø20 | 105cm. | 140cm. |
| | ø25 | 140cm. | 180cm. |
| Zona de mala adherencia (Sup.) | ø10 | 75cm. | 90cm. |
| | ø12 | 90cm. | 110cm. |
| | ø16 | 120cm. | 145cm. |
| | ø20 | 150cm. | 180cm. |
| | ø25 | 200cm. | 240cm. |

**NOTA SOBRE RECUBRIMIENTOS**

LOS RECUBRIMIENTOS SERAN DE 3.5 CM A LA BARRA EXTERIOR

**CONDICIONES**

HORMIGON

- TABLERO: HP-40/S/15/IIb : $f_{ck}$≥40 N/mm². Relacion Agua/Cemento<0.43. Contenido M ximo de Cemento: 400Kg/m³.

El hormigon llegar a la obra con consistencia seca debiendo pasarse a consistencia fluida mediante la adicion de un superfluidificante.

ACERO

- CORRUGADO, SIMBOLO ø,B 500 S; $f_s$ >500 N/mm².

NIVELES DE CONTROL

- MATERIALES: INTENSO ELU $\gamma_s$=1.5 : $\gamma_s$=1.15; ELS $\gamma_s$=1.0 : $\gamma_s$=1.00
- EJECUCION : INTENSO ELU $\gamma_n$=1.35 ; $\gamma_h$=1.00; $\gamma_f$=1.50; $\gamma_p$=1.50; ELS $\gamma_n$=1.00 ; $\gamma_h$=1.05; $\gamma_f$=1.00; $\gamma_p$=1.00

| | | | | | | |
|---|---|---|---|---|---|---|
| GIF Gestor de Infraestructuras Ferroviarias | TÍTULO: PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA TRAMO:GELIDA-SANT LLORENÇ D?HORTONS | AUTOR: FERNANDEZ CONSTRUCTOR Fdo: MANUEL COSTA PEREZ | ESCALA: 1:1000 UNE A-3 ORIGINALES; Gráfica 0 50m | FECHA: OCTUBRE-03 | TÍTULO DEL PLANO: VIADUCTO DE RIERUSSA TABLERO. ARMADURA (4) | Nº DE PLANO: 2.9.2.2 Hoja 18 de 224 |

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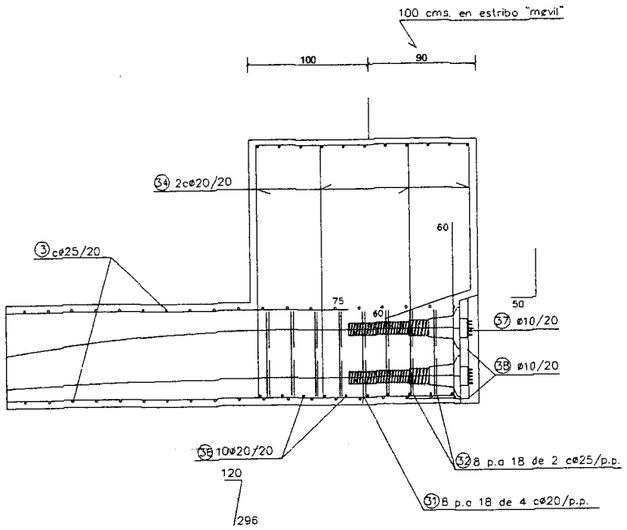
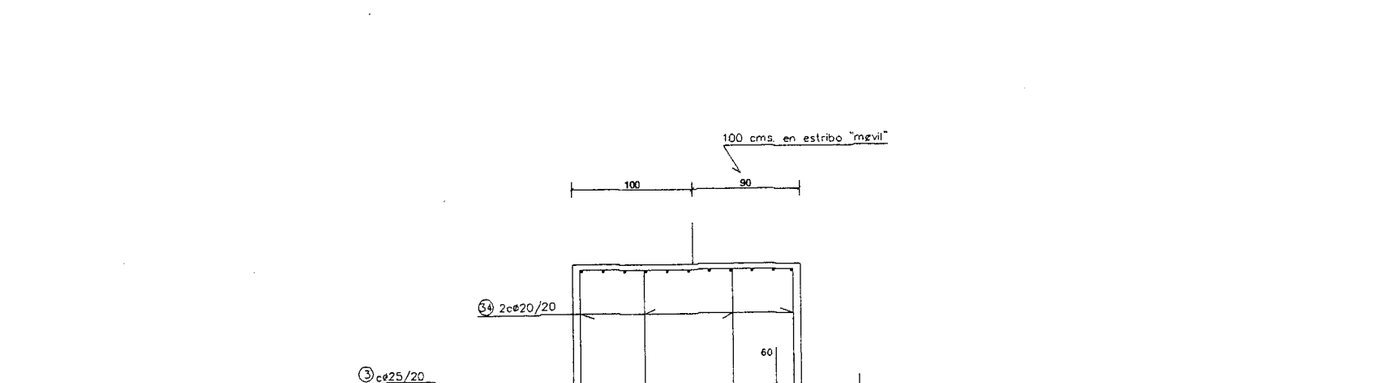
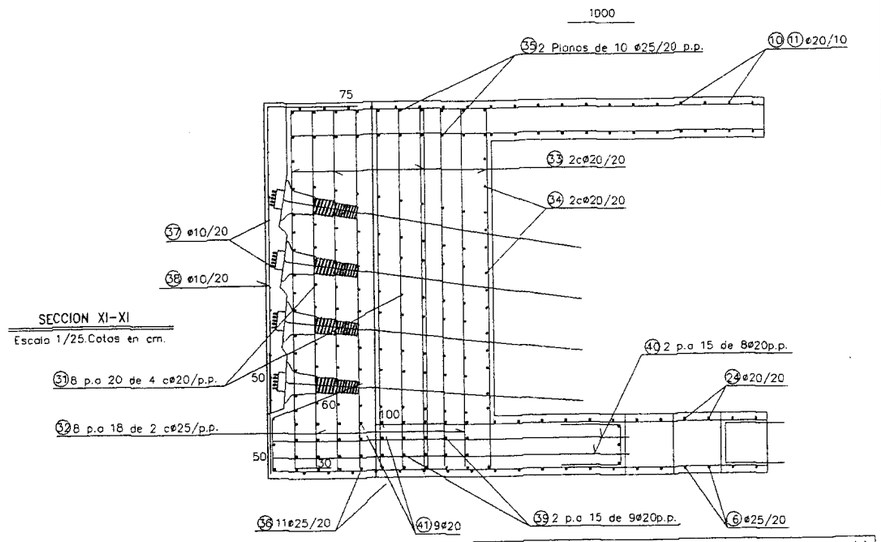



SECCION VIII-VIII
Escala 1/25.Cotas en cm.




SECCION VIII-VIII
Escala 1/25.Cotas en cm.




SECCION XI-XI
Escala 1/25.Cotas en cm.

Ver refuerzo de armadura paso de hombre en Plano Armadura (11)

### NOTAS SOBRE SOLAPES

La longitud de solapes ser la indicada en el cuadro adjunto
Solape en la misma seccion

| | ø de barra (+) | Sin E.D. Longitud de solape | Con E.D. Longitud de solape |
|---|---|---|---|
| Zona de buena adherencia (Inf.) | ø10 | 50cm. | 70cm. |
| | ø12 | 60cm. | 85cm. |
| | ø16 | 85cm. | 115cm. |
| | ø20 | 105cm. | 140cm. |
| | ø25 | 140cm. | 180cm. |
| Zona de mala adherencia (Sup.) | ø10 | 75cm. | 90cm. |
| | ø12 | 90cm. | 110cm. |
| | ø16 | 120cm. | 145cm. |
| | ø20 | 150cm. | 180cm. |
| | ø25 | 200cm. | 240cm. |

### NOTA SOBRE RECUBRIMIENTOS

LOS RECUBRIMIENTOS SERAN DE 3.5 CM A LA BARRA EXTERIOR

### CONDICIONES

HORMIGON

- TABLERO: HP-40/S/15/IIb ; $f_{ck} \geq 40$ N/mm$^2$.
  Relacion Agua/Cemento<0.43.
  Contenido M ximo de Cemento: 400Kg/m$^3$
  El hormigon llegar a la obra con consistencia seca debiendo pasarse a consistencia fluida mediante la adicion de un superfluidificante.

ACERO

- CORRUGADO, SIMBOLO ø,B 500 S; $f_y \geq 500$ N/mm$^2$.

NIVELES DE CONTROL

- MATERIALES: INTENSO — ELU $\gamma_s$=1.5 ; $\gamma_s$=1.15 / ELS $\gamma_s$=1.0 ; $\gamma_s$=1.00
- EJECUCION : INTENSO — ELU $\gamma_g$=1.35 ; $\gamma_q$=1.00; $\gamma_q$=1.50; $\gamma_q$=1.50 / ELS $\gamma_g$=1.00 ; $\gamma_q$=1.05; $\gamma_q$=1.00; $\gamma_q$=1.00

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GIF Gestor de Infraestructuras Ferroviarias

TITULO
PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO:GELIDA-SANT LLORENÇ D?HORTONS

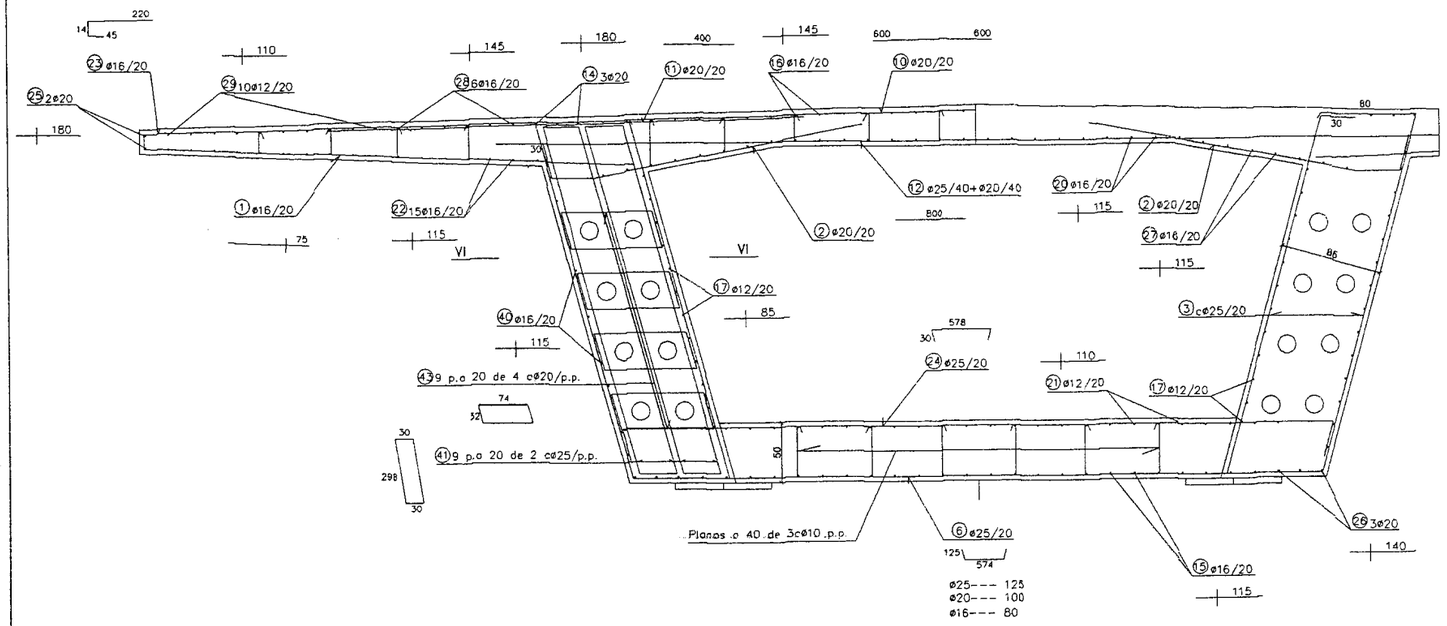
AUTOR
FERNANDEZ CONSTRUCTOR Fdo: MANUEL COSTA PEREZ

ESCALA
1:1000
UNE A-3 ORIGINALES
Gráfica 0 50m

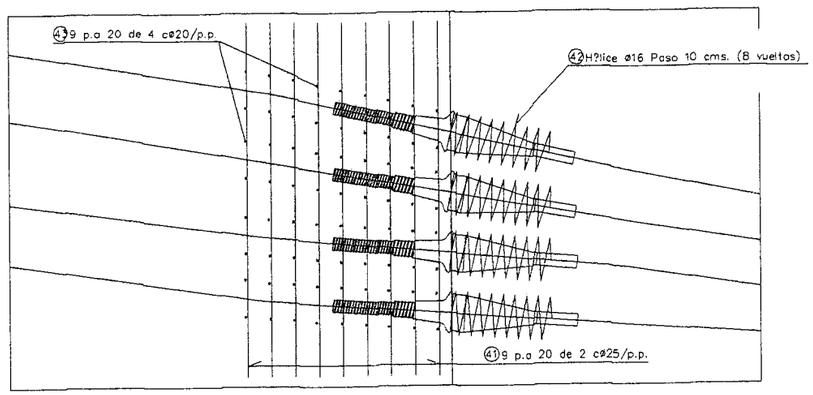
FECHA
OCTUBRE-03

TITULO DEL PLANO
VIADUCTO DE RIERUSSA
TABLERO. ARMADURA (5)

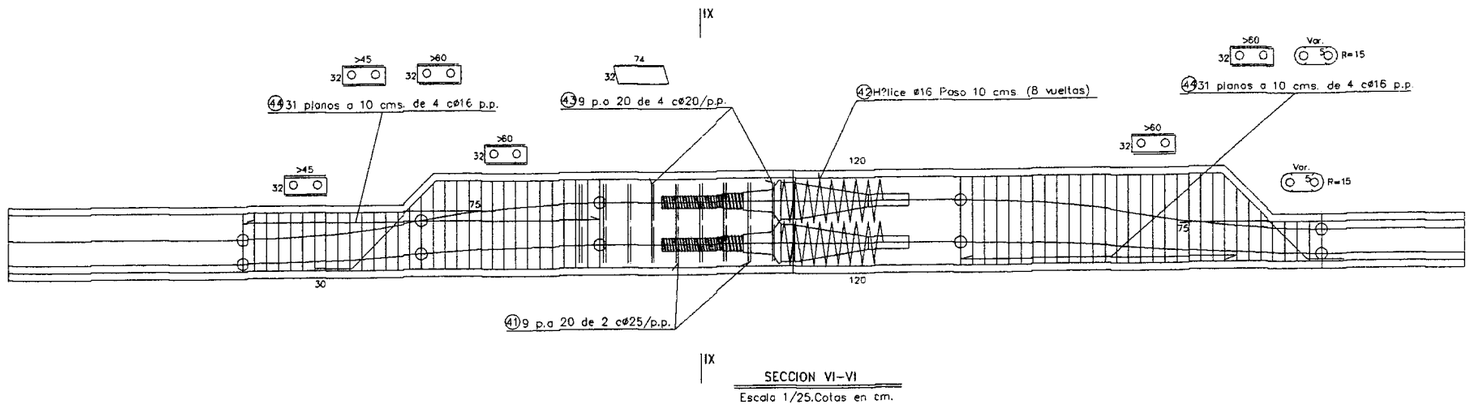
Nº DE PLANO
2.9.2.2
Hoja 19 de 225




SECCIÓN TRANSVERSAL (IX-IX)
Escala 1/25.Cotas en cm.




REFUERZO DE ARMADURA EN ZONA DE ACOPLADORES
Escala 1/25.Cotas en cm.




SECCION VI-VI
Escala 1/25.Cotas en cm.

**NOTAS SOBRE SOLAPES**

La longitud de solapes ser la indicada en el cuadro adjunto
Solape en la misma seccion

| | ø de barra (+) | Sin E.D. Longitud de solape | Con E.D. Longitud de solape |
|---|---|---|---|
| Zona de buena adherencia (Inf.) | ø10 | 50cm. | 70cm. |
| | ø12 | 60cm. | 85cm. |
| | ø16 | 85cm. | 115cm. |
| | ø20 | 105cm. | 140cm. |
| | ø25 | 140cm. | 180cm. |
| Zona de mala adherencia (Sup.) | ø10 | 75cm. | 90cm. |
| | ø12 | 90cm. | 110cm. |
| | ø16 | 120cm. | 145cm. |
| | ø20 | 150cm. | 180cm. |
| | ø25 | 200cm. | 240cm. |

**NOTA SOBRE RECUBRIMIENTOS**

LOS RECUBRIMIENTOS SERAN DE 3.0 CM A LA BARRA EXTERIOR

**CONDICIONES**

HORMIGON

- TABLERO: HF-40/S/15/IIb : $f_{ck}$≥40 N/mm². Relacion Agua/Cemento≤0,43. Contenido M ximo de Cemento: 400Kg/m³.

  El hormigon llegar a la obra con consistencia seco debiendo pasarse a consistencia fluida mediante la adicion de un superfluidificante.

ACERO

- CORRUGADO, SIMBOLO ø, B 500 S; $f_y$ ≥500 N/mm².

NIVELES DE CONTROL

- MATERIALES: INTENSO — ELU $\gamma_s$=1.5 ; $\gamma_s$=1.15; ELS $\gamma_s$=1.0 ; $\gamma_s$=1.00
- EJECUCION : INTENSO — ELU $\gamma_c$=1.35 ; $\gamma_c$=1.00; $\gamma_c$=1.50; $\gamma_c$=1.50; ELS $\gamma_c$=1.00 ; $\gamma_c$=1.05; $\gamma_c$=1.00; $\gamma_c$=1.00

GIF Gestor de Infraestructuras Ferroviarias

TÍTULO: PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA TRAMO:GELIDA-SANT LLORENÇ D?HORTONS

AUTOR: FERNANDEZ CONSTRUCTOR — Fdo: MANUEL COSTA PEREZ

ESCALA: 1:1000 UNE A-3 ORIGINALES | Gráfica 0 50m

FECHA: OCTUBRE-03

TÍTULO DEL PLANO: VIADUCTO DE RIERUSSA TABLERO. ARMADURA (6)

Nº DE PLANO: 2.9.2.2

Hoja 20 de 226

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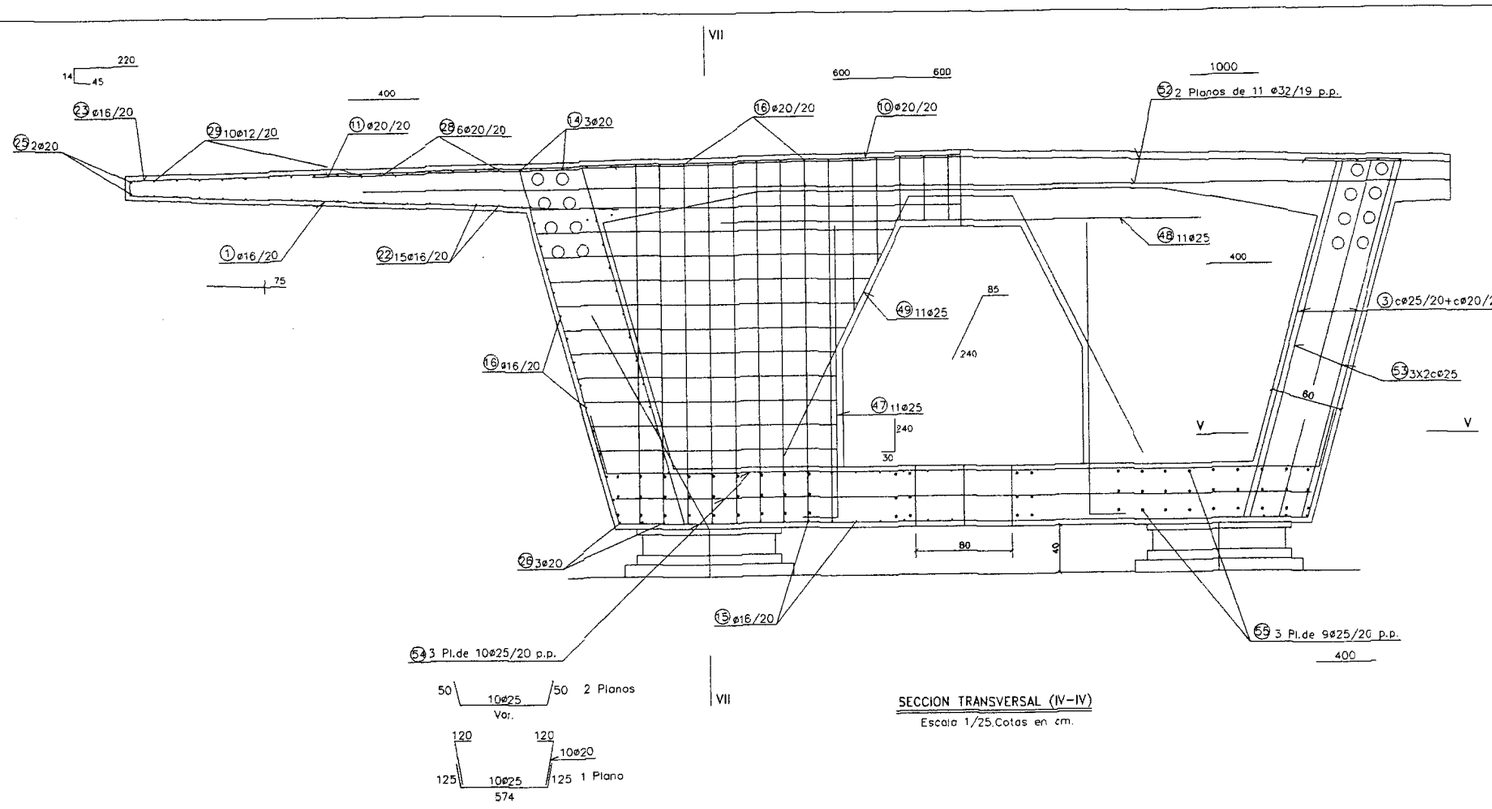
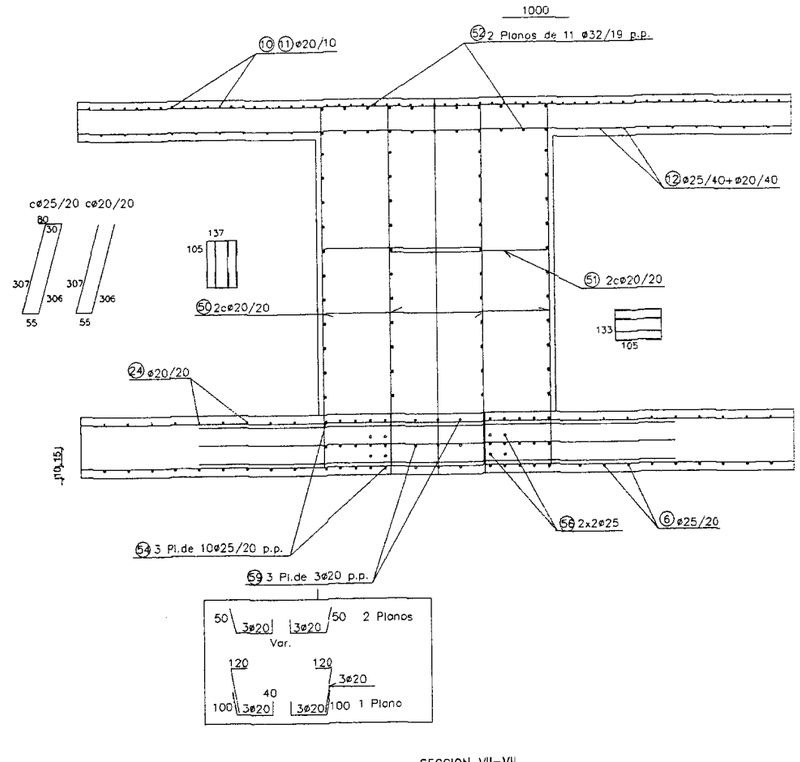
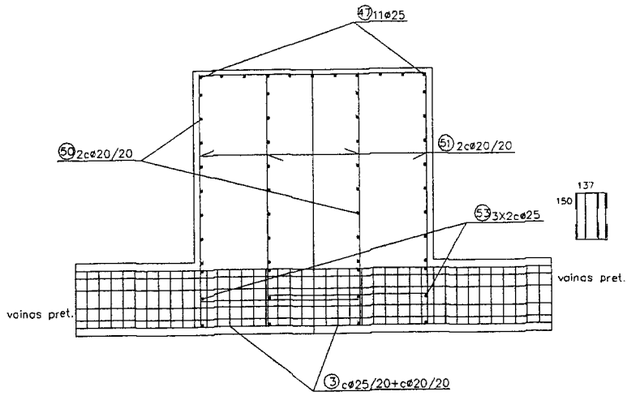


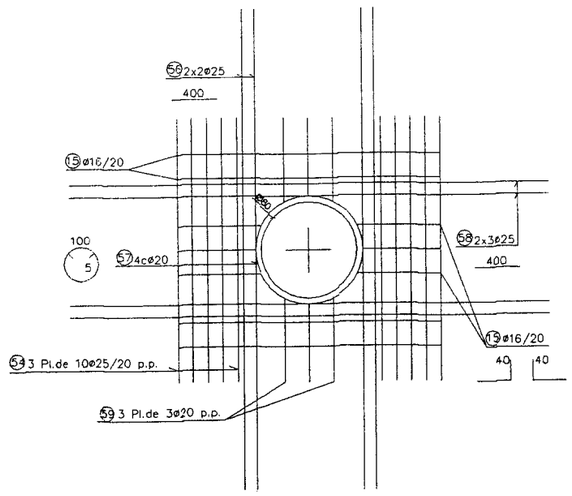

SECCION TRANSVERSAL (IV-IV)
Escala 1/25.Cotas en cm.




SECCION VII-VII
Escala 1/25.Cotas en cm.




SECCION V-V
Escala 1/25.Cotas en cm.




DETALLE DE ARMADURA DE REFUERZO EN HUECO ø80 CMS.
Escala 1/25.Cotas en cm.

**NOTAS SOBRE SOLAPES**

La longitud de solapes ser la indicado en el cuadro adjunto
Solape en la misma seccign

| | ø de barra (+) | Sin E.D. Longitud de solape | Con E.D. Longitud de solape |
|---|---|---|---|
| Zona de buena adherencia (inf.) | ø10 | 50cm. | 70cm. |
| | ø12 | 60cm. | 85cm. |
| | ø16 | 85cm. | 115cm. |
| | ø20 | 105cm. | 140cm. |
| | ø25 | 140cm. | 180cm. |
| Zona de mala adherencia (Sup.) | ø10 | 75cm. | 90cm. |
| | ø12 | 90cm. | 110cm. |
| | ø16 | 120cm. | 145cm. |
| | ø20 | 150cm. | 180cm. |
| | ø25 | 200cm. | 240cm. |

**NOTA SOBRE RECUBRIMIENTOS**

LOS RECUBRIMIENTOS SERAN DE 3.5 CM A LA BARRA EXTERIOR

**CONDICIONES**

HORMIGON

- TABLERO: HP-40/S/15/IIb : $f_{ck} \geq 40$ N/mm$^2$.
  Relacion Agua/Cemento<0.43.
  Contenido M ximo de Cemento: 400Kg/m$^3$
  El hormigon llegar a la obra con consistencia seca debiendo pasarse a consistencia fluida mediante la adicign de un superfluidificante.

ACERO

- CORRUGADO, SIMBOLO ø,B 500 S; $f_s > 500$ N/mm$^2$.

NIVELES DE CONTROL

- MATERIALES: INTENSO — ELU $\gamma_c = 1.5$ : $\gamma_s = 1.15$; ELS $\gamma_c = 1.0$ : $\gamma_s = 1.00$
- EJECUCION : INTENSO — ELU $\gamma_f = 1.35$ ; $\gamma_d = 1.00$; $\gamma_e = 1.50$; $\gamma_m = 1.50$; ELS $\gamma_f = 1.00$ ; $\gamma_d = 1.05$; $\gamma_e = 1.00$; $\gamma_m = 1.00$

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GIF Gestor de Infraestructuras Ferroviarias

TÍTULO
PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO:GELIDA-SANT LLORENÇ D?HORTONS

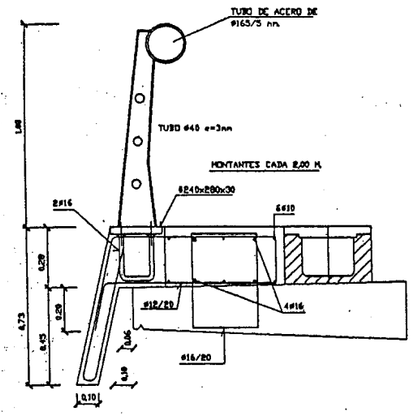
AUTOR
FERNANDEZ CONSTRUCTOR
Fdo: MANUEL COSTA PEREZ

ESCALA
1:1000
UNE A-3 ORIGINALES
Gráfica
0 50m

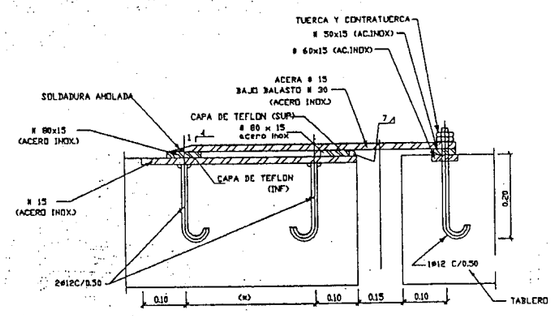
FECHA
OCTUBRE-03

TÍTULO DEL PLANO
VIADUCTO DE RIERUSSA
TABLERO. ARMADURA (7)

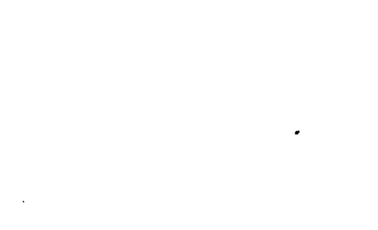
Nº DE PLANO
2.9.2.2
Hoja 21 de 227




DETALLE DE PASILLO DE SERVICIO(I)
Es 1/10 Cotas en cm.




DETALLE DE JUNTA EN ESTRIBO LIBRE
Es 1/10 Cotas en cms.




DETALLE DE JUNTA EN ESTRIBO FIJO
Es 1/10 Cotas en cms.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | SUSTITUYE A: | ESCALAS | TITULO | CLAVE | PLANO Nº | DESIGNACION |
| | | | | | | SUSTITUIDO POR: | A-1 | | | | DETALLES |
| | | | | | | | ORIGINALES | | | | |

FECHA: MAYO 2.003
HOJA DE

# ESFUERZOS DEBIDOS AL PP DURANTE EL PROCESO CONSTRUCTIVO

Software licensed to ALONSO COBO EST. DE ING. S.L.

Job No | Sheet No 1 | Rev

Part

Job Title: FASE 1

Ref

By | Date 22-Oct-03 | Chd

Client

File fase1.STD | Date/Time 22-Oct-2003 12:09

## Sección 1.9

$A = 8'727\ m^2$ $P_o = 4928\ T$

$I = 11'3766\ m^4$ $e = 1'365\ m$

$V = 1'16\ m$

$V' = 1'94\ m$

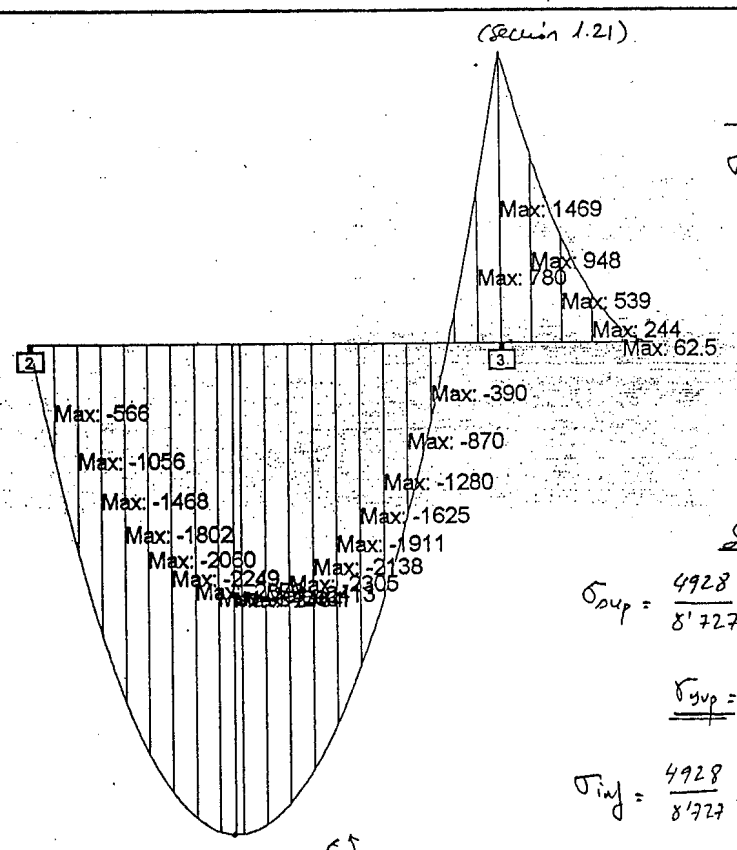
## Sección 1.21

$A = 10'28\ m^2$ $P_o = 5534\ T$

$I = 13'614\ m^4$ $e = 0'83\ m$

$V = 1'33\ m$

$V' = 1'77\ m$




## Comprobación σ

### Sección 1.21

$$\sigma_{sup} = \frac{5534}{10'28} + \frac{5534 \cdot 0'83}{13'614} \cdot 1'33 - \frac{1469 \cdot 1'33}{13'614}$$

$\sigma_{sup} = 843'54\ T/m^2 = 84\ Kg/cm^2$ (compresión)

$$\sigma_{inf} = \frac{5534}{10'28} - \frac{5534 \cdot 0'83 \cdot 1'77}{13'614} + \frac{1469 \cdot 1'77}{13'614}$$

$\sigma_{inf} = 137'14\ T/m^2 = 13\ Kg/cm^2$ (compresión)

### Sección 1.9

$$\sigma_{sup} = \frac{4928}{8'727} - \frac{4928 \cdot 1'365}{11'3766} \cdot 1'16 + \frac{2464 \cdot 1'16}{11'3766}$$

$\sigma_{sup} = 56 - 69 + 25 = 13\ Kg/cm^2$ (compresión)

$$\sigma_{inf} = \frac{4928}{8'727} + \frac{4928 \cdot 1'365 \cdot 1'94}{11'3766} - \frac{2464 \cdot 1'94}{11'3766}$$

$\sigma_{inf} = 56 + 115 - 42 = 129\ Kg/cm^2$ (compresión)

FASE1

Print Time/Date: 22/10/2003 13:39 | STAAD.Pro for Windows Release 2002 | Print Run 1 of 1

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Job No | Sheet No 1 | Rev

Part

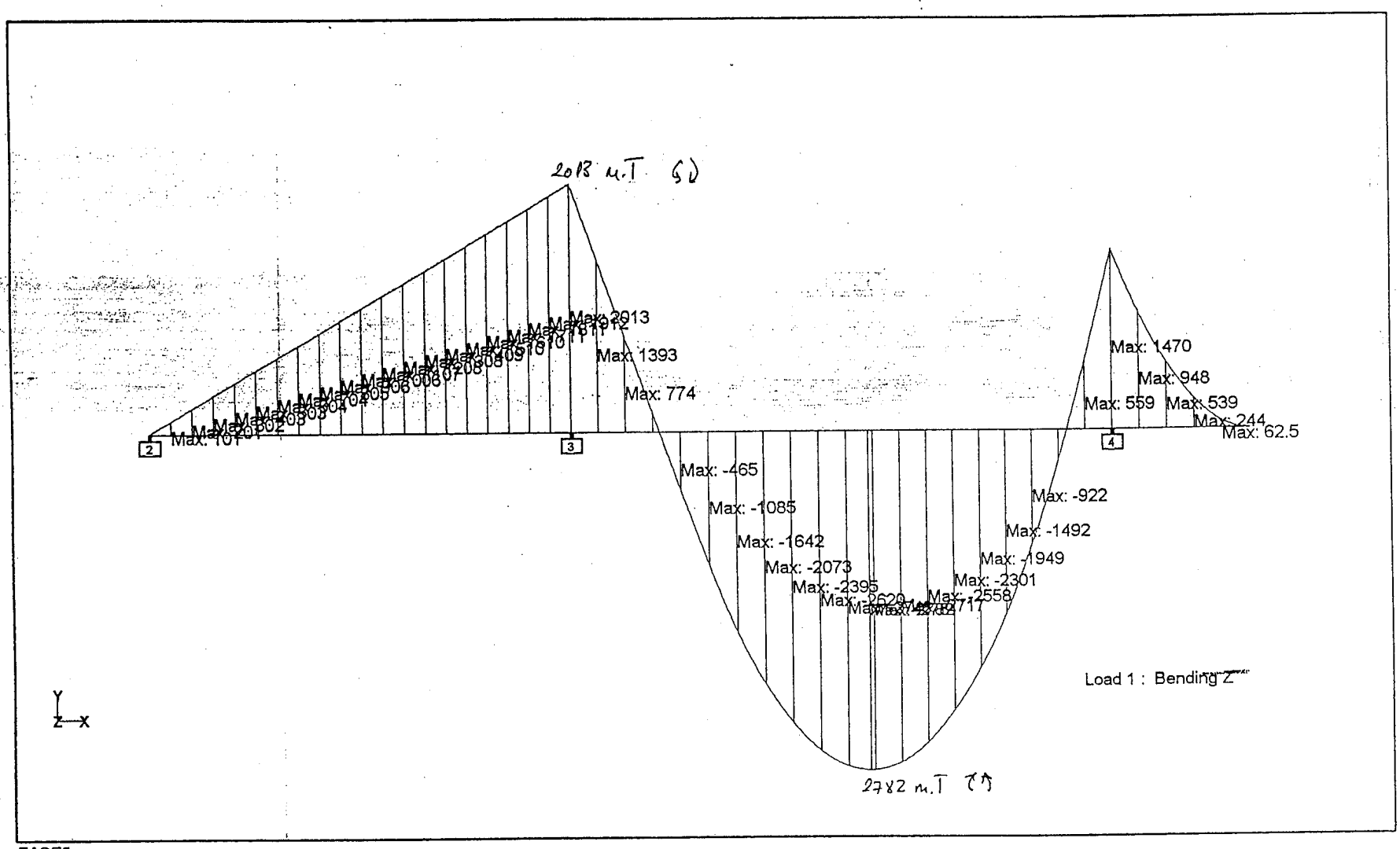
Job Title: FASE 2

Ref

By | Date 22-Oct-03 | Chd

Client

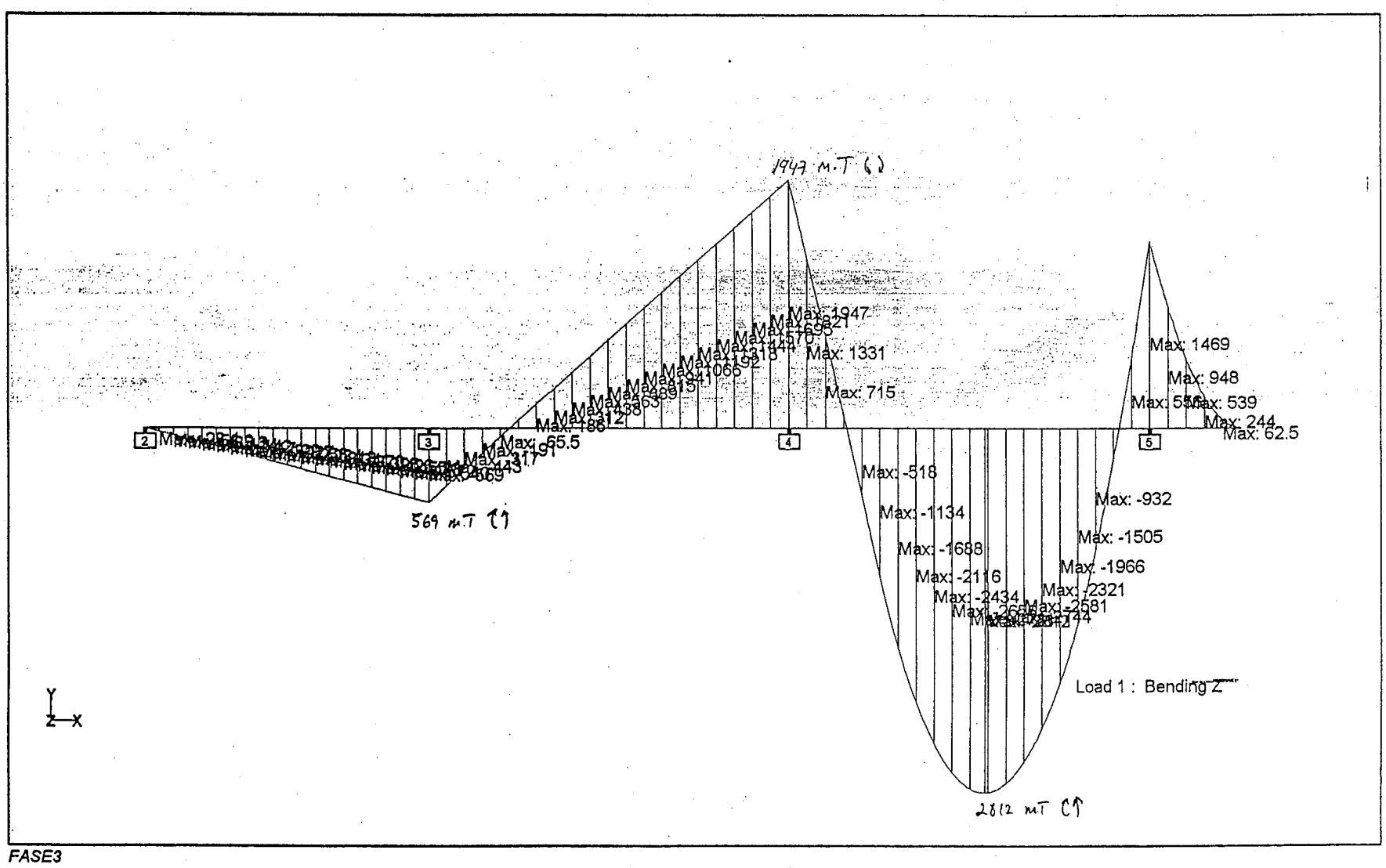
File fase2.STD | Date/Time 22-Oct-2003 12:26




FASE2

Print Time/Date: 22/10/2003 13:43 | STAAD.Pro for Windows Release 2002 | Print Run 1 of 1

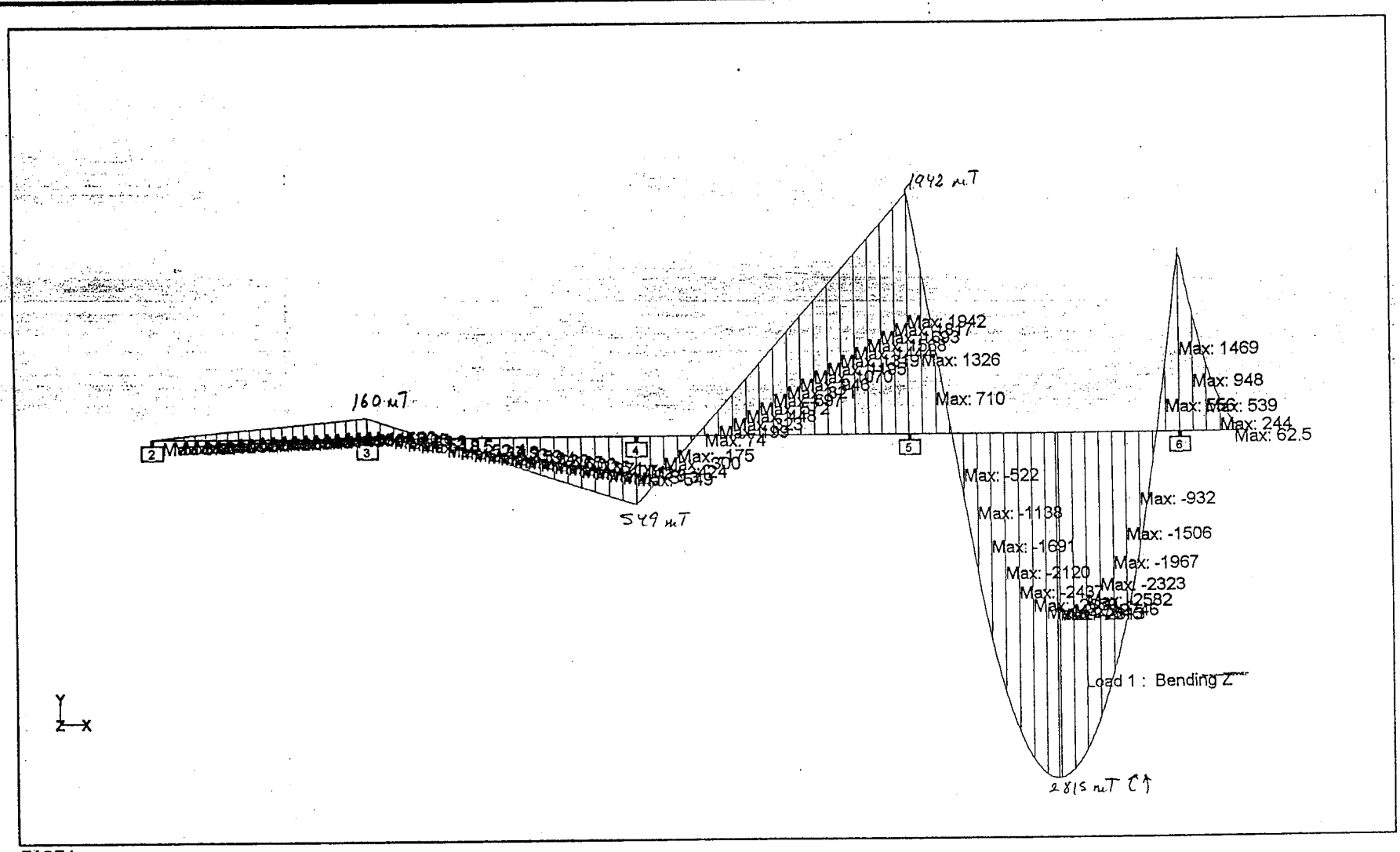
| | | | |
|---|---|---|---|
| Software licensed to ALONSO COBO EST. DE ING. S.L. | Job No | Sheet No 1 | Rev |
| | Part | | |
| Job Title: FASE 3 | Ref | | |
| | By | Date 22-Oct-03 | Chd |
| Client | File fase3.STD | Date/Time 22-Oct-2003 12:42 | |




FASE3

Print Time/Date: 22/10/2003 13:48 STAAD.Pro for Windows Release 2002 Print Run 1 of 1

| | | | |
|---|---|---|---|
| Software licensed to ALONSO COBO EST. DE ING. S.L. | Job No | Sheet No 1 | Rev |
| | Part | | |
| Job Title: FASE 4 | Ref | | |
| | By | Date 22-Oct-03 | Chd |
| Client | File fase4.STD | Date/Time 22-Oct-2003 13:53 | |

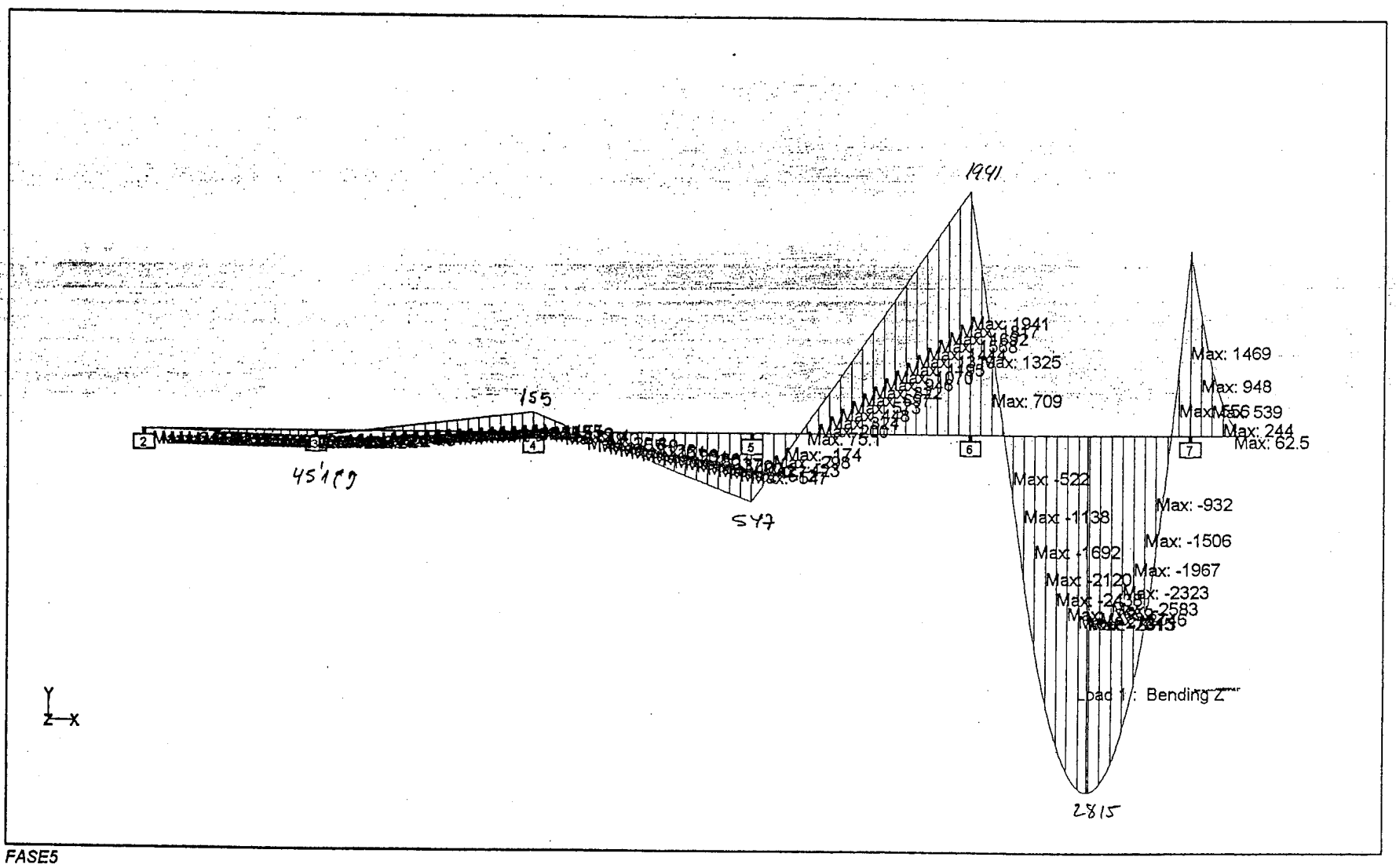



FASE4



Print Time/Date: 22/10/2003 13:54 STAAD.Pro for Windows Release 2002 Print Run 1 of 1

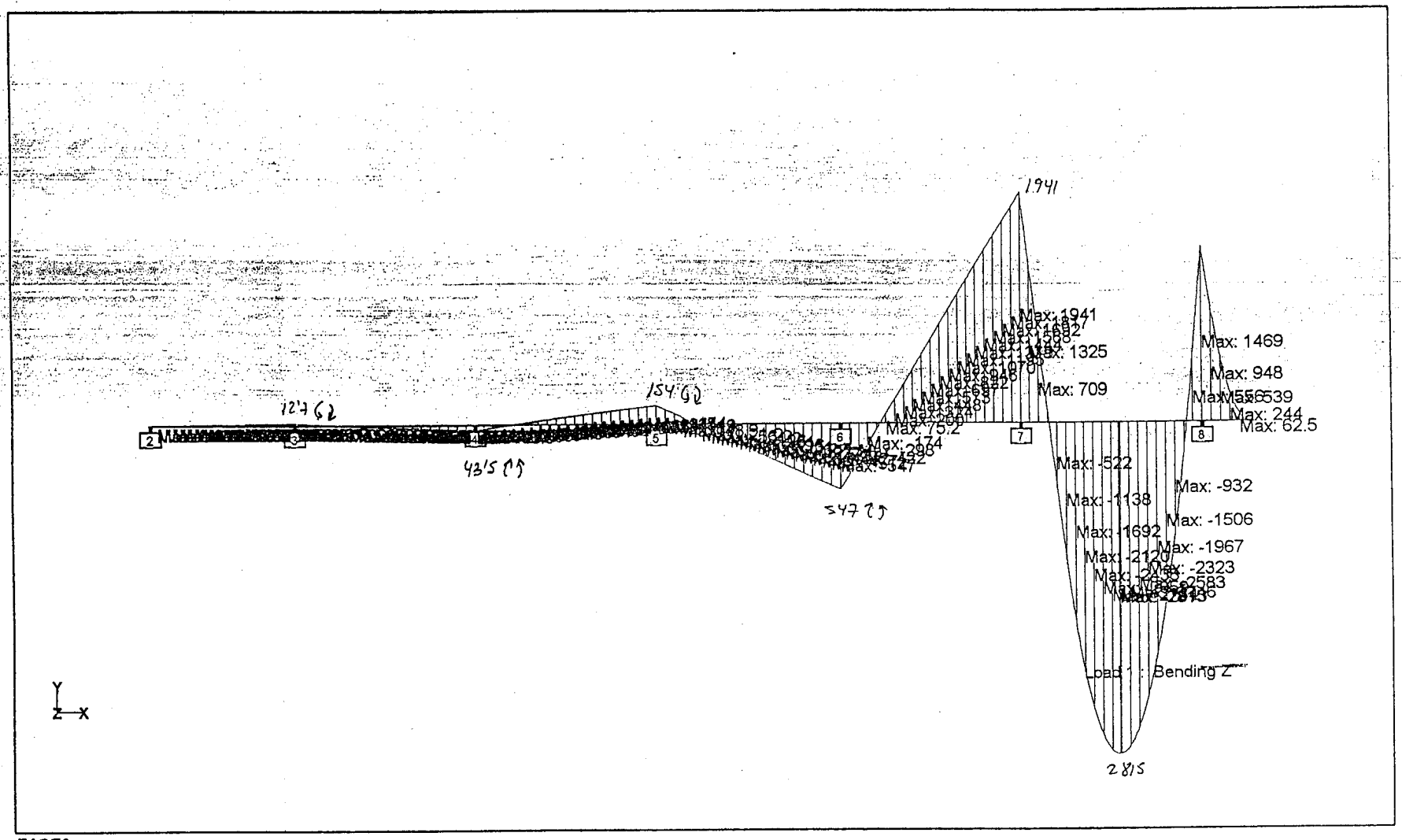
| | | | |
|---|---|---|---|
| Software licensed to ALONSO COBO EST. DE ING. S.L. | Job No | Sheet No 1 | Rev |
| Job Title: FASE 5 | Part | | |
| | Ref | | |
| Client | By | Date 22-Oct-03 | Chd |
| | File fase5.STD | Date/Time 22-Oct-2003 13:05 | |




FASE5

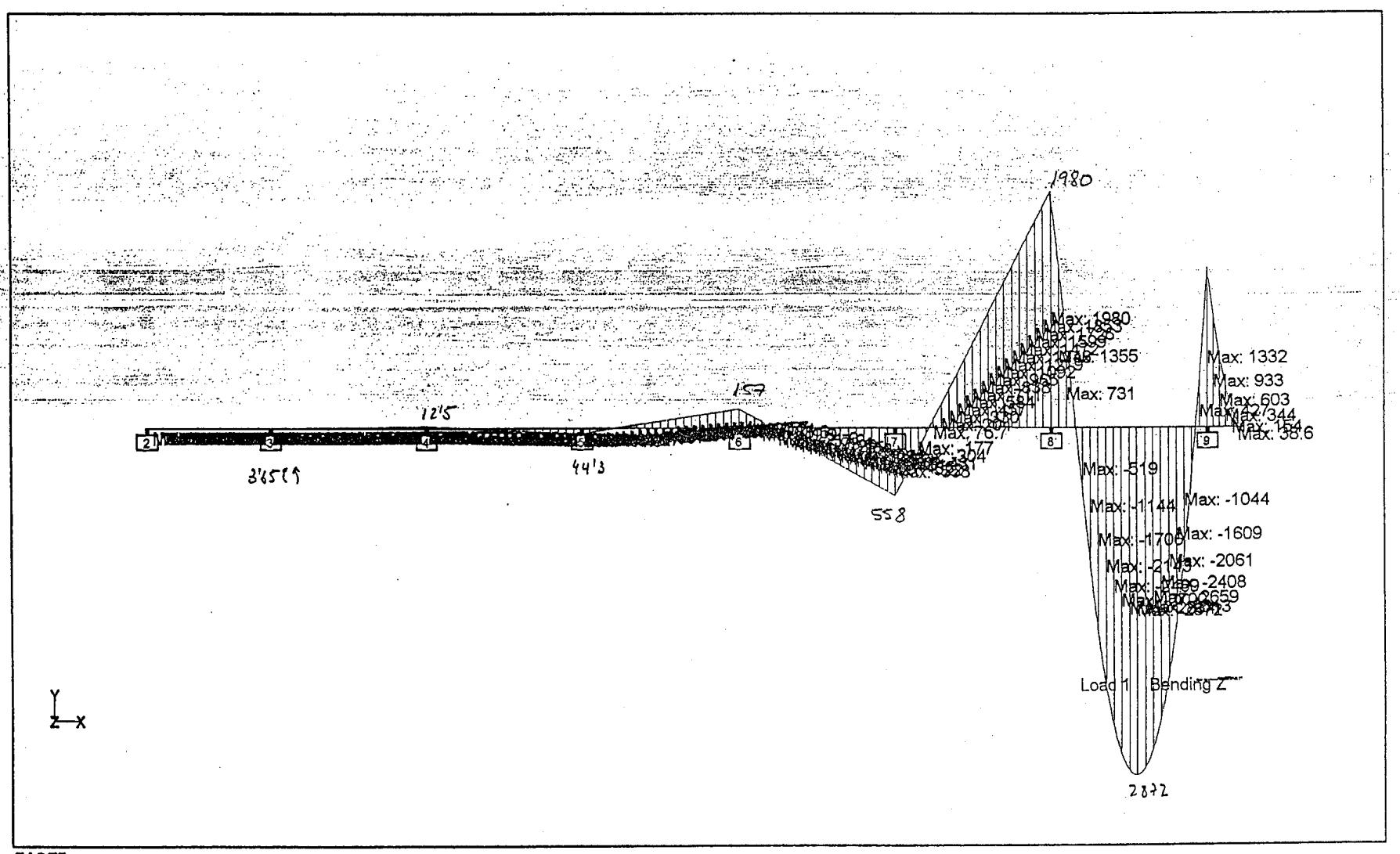


| | | | |
|---|---|---|---|
| Software licensed to ALONSO COBO EST. DE ING. S.L. | Job No | Sheet No 1 | Rev |
| Job Title: FASE 6 | Part | | |
| | Ref | | |
| Client | By | Date 22-Oct-03 | Chd |
| | File fase6.STD | Date/Time 22-Oct-2003 13:15 | |




FASE6

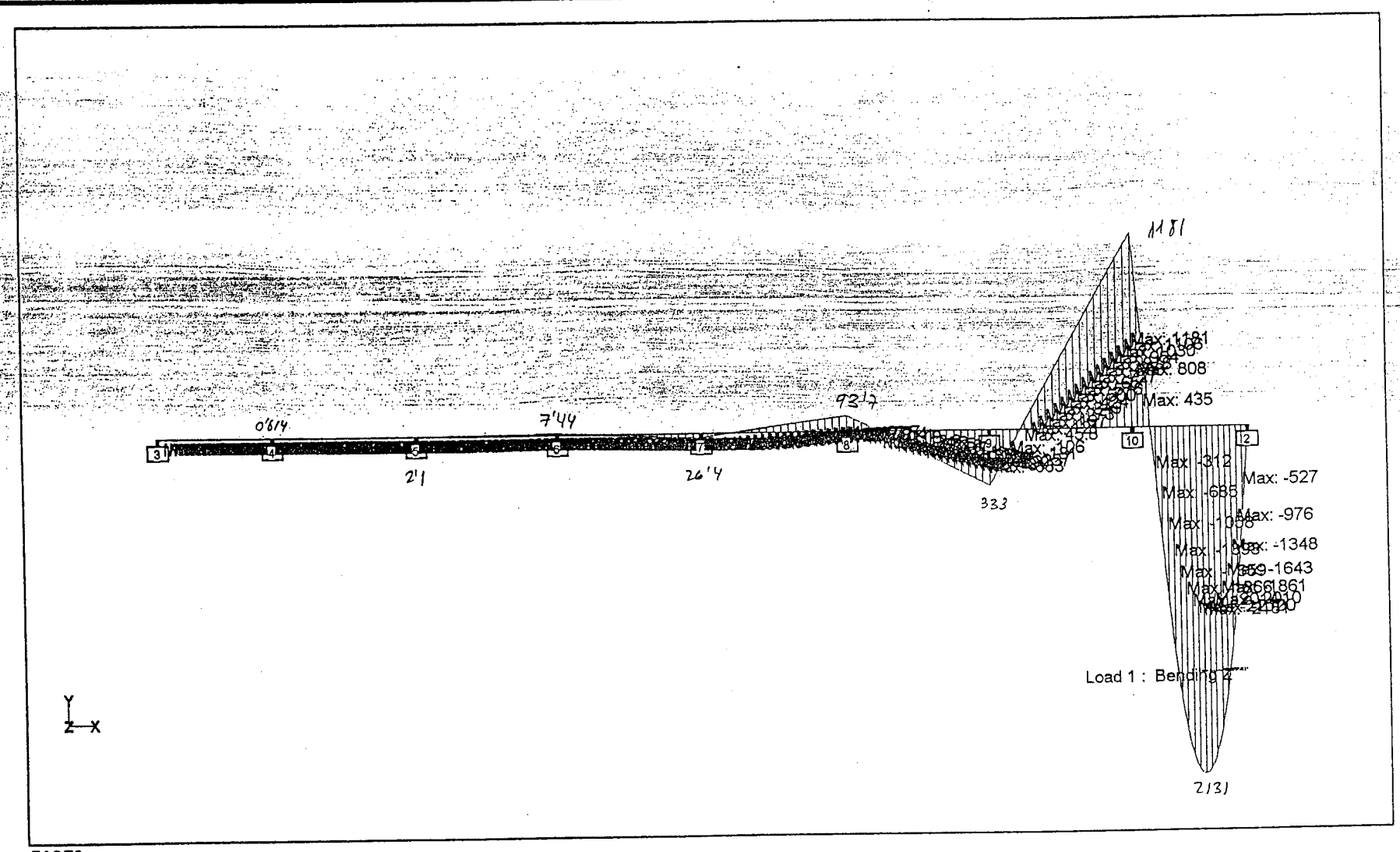
| | | | |
|---|---|---|---|
| Software licensed to ALONSO COBO EST. DE ING. S.L. | Job No | Sheet No 1 | Rev |
| | Part | | |
| Job Title FASE 7 | Ref | | |
| | By | Date 22-Oct-03 | Chd |
| Client | File fase7.STD | Date/Time 22-Oct-2003 13:26 | |




FASE7



| | | | |
|---|---|---|---|
| Software licensed to ALONSO COBO EST. DE ING. S.L. | Job No | Sheet No 1 | Rev |
| | Part | | |
| Job Title FASE 8 | Ref | | |
| | By | Date 22-Oct-03 | Chd |
| Client | File fase8.STD | Date/Time 22-Oct-2003 13:34 | |




FASE8

| BARRA | FASE 1 | FASE 2 | FASE 3 | FASE 4 | FASE 5 | FASE 6 | FASE 7 | FASE 8 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | 1331.8 | 1181.3 | 2513.1 |
| | | | | | | | -932.5 | -808.0 | -1740.5 |
| 2 | | | | | | | 603.2 | 434.7 | 1037.9 |
| | | | | | | | -343.8 | -61.4 | -405.3 |
| 3 | | | | | | | 154.4 | -311.8 | -157.4 |
| | | | | | | | -38.6 | 685.1 | 646.5 |
| 4 | | | | | | | | -1058.4 | -1058.4 |
| | | | | | | | | 1393.0 | 1393.0 |
| 5 | | | | | | | | -1659.4 | -1659.4 |
| | | | | | | | | 1866.4 | 1866.4 |
| 6 | | | | | | | | -2013.9 | -2013.9 |
| | | | | | | | | 2102.1 | 2102.1 |
| 7 | | | | | | | | -2130.9 | -2130.9 |
| | | | | | | | | 2100.2 | 2100.2 |
| 8 | | | | | | | | -2010.2 | -2010.2 |
| | | | | | | | | 1860.8 | 1860.8 |
| 9 | | | | | | | | -1643.0 | -1643.0 |
| | | | | | | | | 1348.1 | 1348.1 |
| 10 | | | | | | | | -975.9 | -975.9 |
| | | | | | | | | 526.6 | 526.6 |
| 11 | | | | | | | 932.5 | 808.0 | 1740.5 |
| | | | | | | | -603.2 | -434.7 | -1037.9 |
| 12 | | | | | | | 343.8 | 61.4 | 405.3 |
| | | | | | | | -154.4 | 311.8 | 157.4 |
| 13 | | | | | | | 38.6 | -685.1 | -646.5 |
| | | | | | | | 0.0 | 1058.4 | 1058.4 |
| 14 | | | | | | | | -1393.0 | -1393.0 |
| | | | | | | | | 1659.4 | 1659.4 |
| 15 | | | | | | | | -1866.4 | -1866.4 |
| | | | | | | | | 2013.9 | 2013.9 |
| 16 | | | | | | | | -2102.1 | -2102.1 |
| | | | | | | | | 2130.9 | 2130.9 |

Criterio de signos

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| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 17 | | | | | | | | -2100.2 | -2100.2 |
| | | | | | | | | 2010.2 | 2010.2 |
| 18 | | | | | | | | -1860.8 | -1860.8 |
| | | | | | | | | 1643.0 | 1643.0 |
| 19 | | | | | | | | -1348.1 | -1348.1 |
| | | | | | | | | 975.9 | 975.9 |
| 20 | | | | | | | | -526.6 | -526.6 |
| | | | | | | | | 0.0 | 0.0 |
| 21 | | | | | | | 1469.5 | 1980.0 | -332.8 | 3116.8 |
| | | | | | | | -947.755 | -1355.3 | 257.1 | -2046.0 |
| 22 | | | | | | | 947.755 | 1355.3 | -257.1 | 2046.0 |
| | | | | | | | -539.346 | -730.6 | 181.4 | -1088.6 |
| 23 | | | | | | | 539.346 | 730.6 | -181.4 | 1088.6 |
| | | | | | | | -244.27 | -105.9 | 105.7 | -244.5 |
| 24 | | | | | | | 244.27 | 105.9 | -105.7 | 244.5 |
| | | | | | | | -62.535 | 518.9 | 30.0 | 486.3 |
| 25 | | | | | | | 62.535 | -518.9 | -30.0 | -486.3 |
| | | | | | | | 0 | 1143.6 | -45.8 | 1097.8 |
| 26 | | | | | | | | -1143.6 | 45.8 | -1097.8 |
| | | | | | | | | 1705.8 | -121.5 | 1584.3 |
| 27 | | | | | | | | -1705.8 | 121.5 | -1584.3 |
| | | | | | | | | 2142.9 | -197.2 | 1945.7 |
| 28 | | | | | | | | -2142.9 | 197.2 | -1945.7 |
| | | | | | | | | 2469.4 | -272.9 | 2196.5 |
| 29 | | | | | | | | -2469.4 | 272.9 | -2196.5 |
| | | | | | | | | 2699.6 | -348.6 | 2351.1 |
| 30 | | | | | | | | -2699.6 | 348.6 | -2351.1 |
| | | | | | | | | 2833.7 | -424.3 | 2409.4 |
| 31 | | | | | | | | -2833.7 | 424.3 | -2409.4 |
| | | | | | | | | 2871.5 | -500.0 | 2371.5 |
| 32 | | | | | | | | -2871.5 | 500.0 | -2371.5 |
| | | | | | | | | 2813.1 | -575.7 | 2237.4 |
| 33 | | | | | | | | -2813.1 | 575.7 | -2237.4 |
| | | | | | | | | 2658.5 | -651.4 | 2007.1 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 34 | | | | | | | -2658.5 | 651.4 | -2007.1 |
| | | | | | | | 2407.7 | -727.1 | 1680.6 |
| 35 | | | | | | | -2407.7 | 727.1 | -1680.6 |
| | | | | | | | 2060.6 | -802.8 | 1257.9 |
| 36 | | | | | | | -2060.6 | 802.8 | -1257.9 |
| | | | | | | | 1608.8 | -878.5 | 730.3 |
| 37 | | | | | | | -1608.8 | 878.5 | -730.3 |
| | | | | | | | 1043.6 | -954.2 | 89.5 |
| 38 | | | | | | | -1043.6 | 954.2 | -89.5 |
| | | | | | | | 365.2 | -1029.9 | -664.7 |
| 39 | | | | | | | -365.2 | 1029.9 | 664.7 |
| | | | | | | | -426.7 | -1105.6 | -1532.2 |
| 40 | | | | | | | 426.7 | 1105.6 | 1532.2 |
| | | | | | | | -1331.8 | -1181.3 | -2513.1 |
| 41 | | | | | | 555.503 | 1853.1 | -311.4 | 2097.2 |
| | | | | | | -1469.5 | -1980.0 | 332.8 | -3116.8 |
| 42 | | | | | | -245.146 | 1726.2 | -290.1 | 1191.0 |
| | | | | | | -555.503 | -1853.1 | 311.4 | -2097.2 |
| 43 | | | | | | -932.467 | 1599.4 | -268.8 | 398.1 |
| | | | | | | 245.146 | -1726.2 | 290.1 | -1191.0 |
| 44 | | | | | | -1506.443 | 1472.5 | -247.5 | -281.4 |
| | | | | | | 932.467 | -1599.4 | 268.8 | -398.1 |
| 45 | | | | | | -1967.088 | 1345.6 | -226.1 | -847.6 |
| | | | | | | 1506.443 | -1472.5 | 247.5 | 281.4 |
| 46 | | | | | | -2322.951 | 1218.7 | -204.8 | -1309.1 |
| | | | | | | 1967.088 | -1345.6 | 226.1 | 847.6 |
| 47 | | | | | | -2582.598 | 1091.8 | -183.5 | -1674.3 |
| | | | | | | 2322.951 | -1218.7 | 204.8 | 1309.1 |
| 48 | | | | | | -2746.029 | 964.9 | -162.2 | -1943.3 |
| | | | | | | 2582.598 | -1091.8 | 183.5 | 1674.3 |
| 49 | | | | | | -2813.241 | 838.0 | -140.8 | -2116.1 |
| | | | | | | 2746.029 | -964.9 | 162.2 | 1943.3 |
| 50 | | | | | | -2784.237 | 711.1 | -119.5 | -2192.6 |
| | | | | | | 2813.241 | -838.0 | 140.8 | 2116.1 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 51 | | | | | | -2659.015 | 584.2 | -98.2 | -2173.0 |
| | | | | | | 2784.237 | -711.1 | 119.5 | 2192.6 |
| 52 | | | | | | -2437.577 | 457.4 | -76.9 | -2057.1 |
| | | | | | | 2659.015 | -584.2 | 98.2 | 2173.0 |
| 53 | | | | | | -2119.918 | 330.5 | -55.5 | -1845.0 |
| | | | | | | 2437.577 | -457.4 | 76.9 | 2057.1 |
| 54 | | | | | | -1691.621 | 203.6 | -34.2 | -1522.3 |
| | | | | | | 2119.918 | -330.5 | 55.5 | 1845.0 |
| 55 | | | | | | -1138.251 | 76.7 | -12.9 | -1074.5 |
| | | | | | | 1691.621 | -203.6 | 34.2 | 1522.3 |
| 56 | | | | | 62.533 | -522.353 | -50.2 | 8.4 | -501.6 |
| | | | | | 0 | 1138.251 | -76.7 | 12.9 | 1074.5 |
| 57 | | | | | 244.269 | 93.549 | -177.1 | 29.8 | 190.5 |
| | | | | | -62.533 | 522.353 | 50.2 | -8.4 | 501.6 |
| 58 | | | | | 539.342 | 709.451 | -304.0 | 51.1 | 995.9 |
| | | | | | -244.269 | -93.549 | 177.1 | -29.8 | -190.5 |
| 59 | | | | | 947.749 | 1325.349 | -430.9 | 72.4 | 1914.6 |
| | | | | | -539.342 | -709.451 | 304.0 | -51.1 | -995.9 |
| 60 | | | | | 1469.499 | 1941.254 | -557.8 | 93.7 | 2946.7 |
| | | | | | -947.749 | -1325.349 | 430.9 | -72.4 | -1914.6 |
| 61 | | | | 1469.5 | 1941.283 | -546.845 | 157.1 | -26.4 | 2994.7 |
| | | | | -947.752 | -1325.38 | 422.44 | -121.4 | 20.4 | -1951.7 |
| 62 | | | | 947.752 | 1325.38 | -422.44 | 121.4 | -20.4 | 1951.7 |
| | | | | -539.344 | -709.481 | 298.036 | -85.6 | 14.4 | -1022.0 |
| 63 | | | | 539.344 | 709.481 | -298.036 | 85.6 | -14.4 | 1022.0 |
| | | | | -244.27 | -93.579 | 173.631 | -49.9 | 8.4 | -205.7 |
| 64 | | | | 244.27 | 93.579 | -173.631 | 49.9 | -8.4 | 205.7 |
| | | | | -62.535 | 522.32 | 49.226 | -14.1 | 2.4 | 497.2 |
| 65 | | | | 62.535 | -522.32 | -49.226 | 14.1 | -2.4 | -497.2 |
| | | | | 0 | 1138.226 | -75.18 | 21.6 | -3.6 | 1081.0 |
| 66 | | | | | -1138.226 | 75.18 | -21.6 | 3.6 | -1081.0 |
| | | | | | 1691.594 | -199.585 | 57.3 | -9.6 | 1539.7 |
| 67 | | | | | -1691.594 | 199.585 | -57.3 | 9.6 | -1539.7 |
| | | | | | 2119.893 | -323.989 | 93.1 | -15.6 | 1873.3 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 68 | | | | | -2119.893 | 323.989 | -93.1 | 15.6 | -1873.3 |
| | | | | | 2437.553 | -448.395 | 128.8 | -21.7 | 2096.3 |
| 69 | | | | | -2437.553 | 448.395 | -128.8 | 21.7 | -2096.3 |
| | | | | | 2658.993 | -572.799 | 164.6 | -27.7 | 2223.1 |
| 70 | | | | | -2658.993 | 572.799 | -164.6 | 27.7 | -2223.1 |
| | | | | | 2784.216 | -697.204 | 200.3 | -33.7 | 2253.7 |
| 71 | | | | | -2784.216 | 697.204 | -200.3 | 33.7 | -2253.7 |
| | | | | | 2813.222 | -821.61 | 236.1 | -39.7 | 2188.0 |
| 72 | | | | | -2813.222 | 821.61 | -236.1 | 39.7 | -2188.0 |
| | | | | | 2746.011 | -946.014 | 271.8 | -45.7 | 2026.1 |
| 73 | | | | | -2746.011 | 946.014 | -271.8 | 45.7 | -2026.1 |
| | | | | | 2582.581 | -1070.42 | 307.6 | -51.7 | 1768.0 |
| 74 | | | | | -2582.581 | 1070.42 | -307.6 | 51.7 | -1768.0 |
| | | | | | 2322.937 | -1194.824 | 343.3 | -57.7 | 1413.7 |
| 75 | | | | | -2322.937 | 1194.824 | -343.3 | 57.7 | -1413.7 |
| | | | | | 1967.073 | -1319.229 | 379.0 | -63.7 | 963.2 |
| 76 | | | | | -1967.073 | 1319.229 | -379.0 | 63.7 | -963.2 |
| | | | | | 1506.432 | -1443.634 | 414.8 | -69.7 | 407.9 |
| 77 | | | | | -1506.432 | 1443.634 | -414.8 | 69.7 | -407.9 |
| | | | | | 932.453 | -1568.039 | 450.5 | -75.7 | -260.8 |
| 78 | | | | | -932.453 | 1568.039 | -450.5 | 75.7 | 260.8 |
| | | | | | 245.138 | -1692.445 | 486.3 | -81.7 | -1042.8 |
| 79 | | | | | -245.138 | 1692.445 | -486.3 | 81.7 | 1042.8 |
| | | | | | -555.51 | -1816.849 | 522.0 | -87.7 | -1938.1 |
| 80 | | | | | 555.51 | 1816.849 | -522.0 | 87.7 | 1938.1 |
| | | | | | -1469.499 | -1941.254 | 557.8 | -93.7 | -2946.7 |
| 81 | | | | 555.526 | 1816.869 | -511.799 | 147.0 | -24.7 | 1982.9 |
| | | | | -1469.5 | -1941.283 | 546.845 | -157.1 | 26.4 | -2994.7 |
| 82 | | | | -245.101 | 1692.457 | -476.753 | 137.0 | -23.0 | 1084.6 |
| | | | | -555.526 | -1816.869 | 511.799 | -147.0 | 24.7 | -1982.9 |
| 83 | | | | -932.395 | 1568.044 | -441.707 | 126.9 | -21.3 | 299.5 |
| | | | | 245.101 | -1692.457 | 476.753 | -137.0 | 23.0 | -1084.6 |
| 84 | | | | -1506.349 | 1443.632 | -406.661 | 116.8 | -19.6 | -372.2 |
| | | | | 932.395 | -1568.044 | 441.707 | -126.9 | 21.3 | -299.5 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 85 | | | | -1966.972 | 1319.219 | -371.614 | 106.8 | -17.9 | -930.5 |
| | | | | 1506.349 | -1443.632 | 406.661 | -116.8 | 19.6 | 372.2 |
| 86 | | | | -2322.815 | 1194.806 | -336.568 | 96.7 | -16.3 | -1384.1 |
| | | | | 1966.972 | -1319.219 | 371.614 | -106.8 | 17.9 | 930.5 |
| 87 | | | | -2582.439 | 1070.394 | -301.522 | 86.6 | -14.6 | -1741.5 |
| | | | | 2322.815 | -1194.806 | 336.568 | -96.7 | 16.3 | 1384.1 |
| 88 | | | | -2745.847 | 945.981 | -266.476 | 76.6 | -12.9 | -2002.6 |
| | | | | 2582.439 | -1070.394 | 301.522 | -86.6 | 14.6 | 1741.5 |
| 89 | | | | -2813.037 | 821.569 | -231.43 | 66.5 | -11.2 | -2167.6 |
| | | | | 2745.847 | -945.981 | 266.476 | -76.6 | 12.9 | 2002.6 |
| 90 | | | | -2784.01 | 697.156 | -196.384 | 56.4 | -9.5 | -2236.3 |
| | | | | 2813.037 | -821.569 | 231.43 | -66.5 | 11.2 | 2167.6 |
| 91 | | | | -2658.765 | 572.743 | -161.338 | 46.4 | -7.8 | -2208.8 |
| | | | | 2784.01 | -697.156 | 196.384 | -56.4 | 9.5 | 2236.3 |
| 92 | | | | -2437.305 | 448.331 | -126.292 | 36.3 | -6.1 | -2085.1 |
| | | | | 2658.765 | -572.743 | 161.338 | -46.4 | 7.8 | 2208.8 |
| 93 | | | | -2119.623 | 323.918 | -91.245 | 26.2 | -4.4 | -1865.1 |
| | | | | 2437.305 | -448.331 | 126.292 | -36.3 | 6.1 | 2085.1 |
| 94 | | | | -1691.304 | 199.505 | -56.199 | 16.1 | -2.7 | -1534.6 |
| | | | | 2119.623 | -323.918 | 91.245 | -26.2 | 4.4 | 1865.1 |
| 95 | | | | -1137.914 | 75.093 | -21.153 | 6.1 | -1.0 | -1078.9 |
| | | | | 1691.304 | -199.505 | 56.199 | -16.1 | 2.7 | 1534.6 |
| 96 | | | 62.534 | -521.99 | -49.32 | 13.893 | -4.0 | 0.7 | -498.2 |
| | | | 0 | 1137.914 | -75.093 | 21.153 | -6.1 | 1.0 | 1078.9 |
| 97 | | | 244.269 | 93.93 | -173.732 | 48.939 | -14.1 | 2.4 | 201.7 |
| | | | -62.534 | 521.99 | 49.32 | -13.893 | 4.0 | -0.7 | 498.2 |
| 98 | | | 539.344 | 709.857 | -298.146 | 83.985 | -24.1 | 4.1 | 1015.0 |
| | | | -244.269 | -93.93 | 173.732 | -48.939 | 14.1 | -2.4 | -201.7 |
| 99 | | | 947.752 | 1325.777 | -422.558 | 119.031 | -34.2 | 5.7 | 1941.5 |
| | | | -539.344 | -709.857 | 298.146 | -83.985 | 24.1 | -4.1 | -1015.0 |
| 100 | | | 1469.5 | 1941.7 | -546.97 | 154.078 | -44.3 | 7.4 | 2981.5 |
| | | | -947.752 | -1325.777 | 422.558 | -119.031 | 34.2 | -5.7 | -1941.5 |
| 101 | | 1469.501 | 1946.941 | -548.565 | 154.529 | -43.53 | 12.5 | -2.1 | 2989.3 |
| | | -947.754 | -1330.756 | 424.052 | -119.454 | 33.649 | -9.7 | 1.6 | -1948.3 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 102 | | 947.8 | 1330.8 | -424.1 | 119.5 | -33.6 | 9.7 | -1.6 | 1948.3 |
| | | -539.3 | -714.6 | 299.5 | -84.4 | 23.8 | -6.8 | 1.1 | -1020.7 |
| 103 | | 539.3 | 714.6 | -299.5 | 84.4 | -23.8 | 6.8 | -1.1 | 1020.7 |
| | | -244.3 | -98.4 | 175.0 | -49.3 | 13.9 | -4.0 | 0.7 | -206.4 |
| 104 | | 244.3 | 98.4 | -175.0 | 49.3 | -13.9 | 4.0 | -0.7 | 206.4 |
| | | -62.5 | 517.8 | 50.5 | -14.2 | 4.0 | -1.2 | 0.2 | 494.6 |
| 105 | | 62.5 | -517.8 | -50.5 | 14.2 | -4.0 | 1.2 | -0.2 | -494.6 |
| | | 0.0 | 1134.0 | -74.0 | 20.8 | -5.9 | 1.7 | -0.3 | 1076.4 |
| 106 | | | -1134.0 | 74.0 | -20.8 | 5.9 | -1.7 | 0.3 | -1076.4 |
| | | | 1687.6 | -198.5 | 55.9 | -15.8 | 4.5 | -0.8 | 1533.1 |
| 107 | | | -1687.6 | 198.5 | -55.9 | 15.8 | -4.5 | 0.8 | -1533.1 |
| | | | 2116.2 | -323.0 | 91.0 | -25.6 | 7.4 | -1.2 | 1864.7 |
| 108 | | | -2116.2 | 323.0 | -91.0 | 25.6 | -7.4 | 1.2 | -1864.7 |
| | | | 2434.2 | -447.5 | 126.1 | -35.5 | 10.2 | -1.7 | 2085.7 |
| 109 | | | -2434.2 | 447.5 | -126.1 | 35.5 | -10.2 | 1.7 | -2085.7 |
| | | | 2655.9 | -572.1 | 161.1 | -45.4 | 13.0 | -2.2 | 2210.4 |
| 110 | | | -2655.9 | 572.1 | -161.1 | 45.4 | -13.0 | 2.2 | -2210.4 |
| | | | 2781.4 | -696.6 | 196.2 | -55.3 | 15.9 | -2.7 | 2239.0 |
| 111 | | | -2781.4 | 696.6 | -196.2 | 55.3 | -15.9 | 2.7 | -2239.0 |
| | | | 2810.7 | -821.1 | 231.3 | -65.2 | 18.7 | -3.1 | 2171.3 |
| 112 | | | -2810.7 | 821.1 | -231.3 | 65.2 | -18.7 | 3.1 | -2171.3 |
| | | | 2743.8 | -945.6 | 266.4 | -75.0 | 21.6 | -3.6 | 2007.4 |
| 113 | | | -2743.8 | 945.6 | -266.4 | 75.0 | -21.6 | 3.6 | -2007.4 |
| | | | 2580.6 | -1070.1 | 301.4 | -84.9 | 24.4 | -4.1 | 1747.3 |
| 114 | | | -2580.6 | 1070.1 | -301.4 | 84.9 | -24.4 | 4.1 | -1747.3 |
| | | | 2321.2 | -1194.6 | 336.5 | -94.8 | 27.2 | -4.6 | 1391.0 |
| 115 | | | -2321.2 | 1194.6 | -336.5 | 94.8 | -27.2 | 4.6 | -1391.0 |
| | | | 1965.7 | -1319.1 | 371.6 | -104.7 | 30.1 | -5.1 | 938.5 |
| 116 | | | -1965.7 | 1319.1 | -371.6 | 104.7 | -30.1 | 5.1 | -938.5 |
| | | | 1505.3 | -1443.6 | 406.7 | -114.6 | 32.9 | -5.5 | 381.2 |
| 117 | | | -1505.3 | 1443.6 | -406.7 | 114.6 | -32.9 | 5.5 | -381.2 |
| | | | 931.6 | -1568.2 | 441.7 | -124.4 | 35.8 | -6.0 | -289.5 |
| 118 | | | -931.6 | 1568.2 | -441.7 | 124.4 | -35.8 | 6.0 | 289.5 |
| | | | 244.6 | -1692.7 | 476.8 | -134.3 | 38.6 | -6.5 | -1073.5 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 119 | | | -244.576 | 1692.674 | -476.82 | 134.317 | -38.6 | 6.5 | 1073.5 |
| | | | -555.793 | -1817.187 | 511.895 | -144.197 | 41.4 | -7.0 | -1970.8 |
| 120 | | | 555.793 | 1817.187 | -511.895 | 144.197 | -41.4 | 7.0 | 1970.8 |
| | | | -1469.5 | -1941.7 | 546.97 | -154.078 | 44.3 | -7.4 | -2981.5 |
| 121 | | 559.097 | 1821.162 | -513.126 | 144.546 | -40.717 | 11.7 | -2.0 | 1980.7 |
| | | -1469.501 | -1946.941 | 548.565 | -154.529 | 43.53 | -12.5 | 2.1 | -2989.3 |
| 122 | | -237.973 | 1695.383 | -477.686 | 134.563 | -37.905 | 10.9 | -1.8 | 1085.4 |
| | | -559.097 | -1821.162 | 513.126 | -144.546 | 40.717 | -11.7 | 2.0 | -1980.7 |
| 123 | | -921.705 | 1569.603 | -442.247 | 124.58 | -35.093 | 10.1 | -1.7 | 303.5 |
| | | 237.973 | -1695.383 | 477.686 | -134.563 | 37.905 | -10.9 | 1.8 | -1085.4 |
| 124 | | -1492.101 | 1443.823 | -406.808 | 114.596 | -32.281 | 9.3 | -1.6 | -365.1 |
| | | 921.705 | -1569.603 | 442.247 | -124.58 | 35.093 | -10.1 | 1.7 | -303.5 |
| 125 | | -1949.158 | 1318.044 | -371.369 | 104.613 | -29.469 | 8.5 | -1.4 | -920.3 |
| | | 1492.101 | -1443.823 | 406.808 | -114.596 | 32.281 | -9.3 | 1.6 | 365.1 |
| 126 | | -2301.44 | 1192.265 | -335.929 | 94.63 | -26.657 | 7.7 | -1.3 | -1370.8 |
| | | 1949.158 | -1318.044 | 371.369 | -104.613 | 29.469 | -8.5 | 1.4 | 920.3 |
| 127 | | -2557.507 | 1066.485 | -300.49 | 84.647 | -23.844 | 6.9 | -1.2 | -1725.0 |
| | | 2301.44 | -1192.265 | 335.929 | -94.63 | 26.657 | -7.7 | 1.3 | 1370.8 |
| 128 | | -2717.358 | 940.706 | -265.051 | 74.664 | -21.032 | 6.0 | -1.0 | -1983.0 |
| | | 2557.507 | -1066.485 | 300.49 | -84.647 | 23.844 | -6.9 | 1.2 | 1725.0 |
| 129 | | -2780.995 | 814.927 | -229.612 | 64.681 | -18.22 | 5.2 | -0.9 | -2144.9 |
| | | 2717.358 | -940.706 | 265.051 | -74.664 | 21.032 | -6.0 | 1.0 | 1983.0 |
| 130 | | -2748.416 | 689.147 | -194.172 | 54.698 | -15.408 | 4.4 | -0.7 | -2210.5 |
| | | 2780.995 | -814.927 | 229.612 | -64.681 | 18.22 | -5.2 | 0.9 | 2144.9 |
| 131 | | -2619.622 | 563.368 | -158.733 | 44.715 | -12.596 | 3.6 | -0.6 | -2179.9 |
| | | 2748.416 | -689.147 | 194.172 | -54.698 | 15.408 | -4.4 | 0.7 | 2210.5 |
| 132 | | -2394.613 | 437.588 | -123.294 | 34.731 | -9.784 | 2.8 | -0.5 | -2053.0 |
| | | 2619.622 | -563.368 | 158.733 | -44.715 | 12.596 | -3.6 | 0.6 | 2179.9 |
| 133 | | -2073.388 | 311.809 | -87.854 | 24.748 | -6.971 | 2.0 | -0.3 | -1830.0 |
| | | 2394.613 | -437.588 | 123.294 | -34.731 | 9.784 | -2.8 | 0.5 | 2053.0 |
| 134 | | -1641.522 | 186.03 | -52.415 | 14.765 | -4.159 | 1.2 | -0.2 | -1496.3 |
| | | 2073.388 | -311.809 | 87.854 | -24.748 | 6.971 | -2.0 | 0.3 | 1830.0 |
| 135 | | -1084.589 | 60.25 | -16.976 | 4.782 | -1.347 | 0.4 | -0.1 | -1037.6 |
| | | 1641.522 | -186.03 | 52.415 | -14.765 | 4.159 | -1.2 | 0.2 | 1496.3 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 136 | 62.534 | -465.123 | -65.529 | 18.463 | -5.201 | 1.465 | -0.4 | 0.1 | -453.7 |
| | 0 | 1084.589 | -60.25 | 16.976 | -4.782 | 1.347 | -0.4 | 0.1 | 1037.6 |
| 137 | 244.27 | 154.346 | -191.309 | 53.903 | -15.184 | 4.277 | -1.2 | 0.2 | 249.3 |
| | -62.534 | 465.123 | 65.529 | -18.463 | 5.201 | -1.465 | 0.4 | -0.1 | 453.7 |
| 138 | 539.342 | 773.811 | -317.088 | 89.342 | -25.167 | 7.089 | -2.0 | 0.3 | 1065.6 |
| | -244.27 | -154.346 | 191.309 | -53.903 | 15.184 | -4.277 | 1.2 | -0.2 | -249.3 |
| 139 | 947.753 | 1393.279 | -442.867 | 124.781 | -35.15 | 9.902 | -2.8 | 0.5 | 1995.3 |
| | -539.342 | -773.811 | 317.088 | -89.342 | 25.167 | -7.089 | 2.0 | -0.3 | -1065.6 |
| 140 | 1469.5 | 2012.746 | -568.647 | 160.22 | -45.134 | 12.714 | -3.7 | 0.6 | 3038.4 |
| | -947.753 | -1393.279 | 442.867 | -124.781 | 35.15 | -9.902 | 2.8 | -0.5 | -1995.3 |
| 141 | 779.65 | 1912.109 | -540.214 | 152.209 | -42.877 | 12.078 | -3.5 | 0.6 | 2270.1 |
| | -1469.5 | -2012.746 | 568.647 | -160.22 | 45.134 | -12.714 | 3.7 | -0.6 | -3038.4 |
| 142 | -390.143 | 1710.834 | -483.35 | 136.187 | -38.363 | 10.807 | -3.1 | 0.5 | 943.4 |
| | -159.77 | -1811.471 | 511.782 | -144.198 | 40.62 | -11.442 | 3.3 | -0.6 | -1571.7 |
| 143 | -1280.063 | 1509.56 | -426.485 | 120.165 | -33.85 | 9.535 | -2.7 | 0.5 | -103.4 |
| | 870.087 | -1610.197 | 454.917 | -128.176 | 36.107 | -10.171 | 2.9 | -0.5 | -385.0 |
| 144 | -1911.251 | 1308.285 | -369.62 | 104.143 | -29.337 | 8.264 | -2.4 | 0.4 | -891.5 |
| | 1625.356 | -1408.922 | 398.053 | -112.154 | 31.593 | -8.9 | 2.6 | -0.4 | 527.2 |
| 145 | -2304.846 | 1107.01 | -312.756 | 88.121 | -24.823 | 6.993 | -2.0 | 0.3 | -1442.0 |
| | 2137.747 | -1207.648 | 341.188 | -96.132 | 27.08 | -7.628 | 2.2 | -0.4 | 1196.4 |
| 146 | -2460.848 | 905.736 | -255.891 | 72.099 | -20.31 | 5.721 | -1.6 | 0.3 | -1754.9 |
| | 2412.546 | -1006.373 | 284.323 | -80.11 | 22.567 | -6.357 | 1.8 | -0.3 | 1628.1 |
| 147 | -2379.257 | 704.461 | -199.026 | 56.077 | -15.797 | 4.45 | -1.3 | 0.2 | -1830.2 |
| | 2449.752 | -805.098 | 227.459 | -64.088 | 18.053 | -5.086 | 1.5 | -0.2 | 1822.2 |
| 148 | -2060.075 | 503.187 | -142.162 | 40.055 | -11.283 | 3.178 | -0.9 | 0.2 | -1667.9 |
| | 2249.365 | -603.824 | 170.594 | -48.066 | 13.54 | -3.814 | 1.1 | -0.2 | 1778.7 |
| 149 | -1467.675 | 301.912 | -85.297 | 24.033 | -6.77 | 1.907 | -0.5 | 0.1 | -1232.3 |
| | 1802.48 | -402.549 | 113.729 | -32.044 | 9.027 | -2.543 | 0.7 | -0.1 | 1488.7 |
| 150 | -566.435 | 100.637 | -28.432 | 8.011 | -2.257 | 0.636 | -0.2 | 0.0 | -488.0 |
| | 1055.66 | -201.275 | 56.865 | -16.022 | 4.513 | -1.271 | 0.4 | -0.1 | 898.8 |
| 151 | 159.77 | 1811.471 | -511.782 | 144.198 | -40.62 | 11.442 | -3.3 | 0.6 | 1571.7 |
| | -779.65 | -1912.109 | 540.214 | -152.209 | 42.877 | -12.078 | 3.5 | -0.6 | -2270.1 |
| 152 | -870.087 | 1610.197 | -454.917 | 128.176 | -36.107 | 10.171 | -2.9 | 0.5 | 385.0 |
| | 390.143 | -1710.834 | 483.35 | -136.187 | 38.363 | -10.807 | 3.1 | -0.5 | -943.4 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 153 | -1625.4 | 1408.9 | -398.1 | 112.2 | -31.6 | 8.9 | -2.6 | 0.4 | -527.2 |
| | 1280.1 | -1509.6 | 426.5 | -120.2 | 33.9 | -9.5 | 2.7 | -0.5 | 103.4 |
| 154 | -2137.7 | 1207.6 | -341.2 | 96.1 | -27.1 | 7.6 | -2.2 | 0.4 | -1196.4 |
| | 1911.3 | -1308.3 | 369.6 | -104.1 | 29.3 | -8.3 | 2.4 | -0.4 | 891.5 |
| 155 | -2412.5 | 1006.4 | -284.3 | 80.1 | -22.6 | 6.4 | -1.8 | 0.3 | -1628.1 |
| | 2304.8 | -1107.0 | 312.8 | -88.1 | 24.8 | -7.0 | 2.0 | -0.3 | 1442.0 |
| 156 | -2449.8 | 805.1 | -227.5 | 64.1 | -18.1 | 5.1 | -1.5 | 0.2 | -1822.2 |
| | 2460.8 | -905.7 | 255.9 | -72.1 | 20.3 | -5.7 | 1.6 | -0.3 | 1754.9 |
| 157 | -2249.4 | 603.8 | -170.6 | 48.1 | -13.5 | 3.8 | -1.1 | 0.2 | -1778.7 |
| | 2379.3 | -704.5 | 199.0 | -56.1 | 15.8 | -4.5 | 1.3 | -0.2 | 1830.2 |
| 158 | -1802.5 | 402.5 | -113.7 | 32.0 | -9.0 | 2.5 | -0.7 | 0.1 | -1488.7 |
| | 2060.1 | -503.2 | 142.2 | -40.1 | 11.3 | -3.2 | 0.9 | -0.2 | 1667.9 |
| 159 | -1055.7 | 201.3 | -56.9 | 16.0 | -4.5 | 1.3 | -0.4 | 0.1 | -898.8 |
| | 1467.7 | -301.9 | 85.3 | -24.0 | 6.8 | -1.9 | 0.5 | -0.1 | 1232.3 |
| 160 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 566.4 | -100.6 | 28.4 | -8.0 | 2.3 | -0.6 | 0.2 | 0.0 | 488.0 |

## Obtención de la Deformación Impuesta:

Datos:

| | | |
|---|---|---|
| $f_{ck}(N/mm^2)$= | 40 | |
| HumedadRelativa= | 70 | % |
| ts(tiempo de tesado)= | 3 | dias. |
| t(paraInfi10000)= | 90 | dias. |
| AreaSección= | 8.227 | $m^2$. |
| u(perímetroAt.)= | 28.150 | m. |
| AreaPretensado= | 42368 | $mm^2$. |
| Tensión¡Pretensado= | 135 | $Kg/mm^2$. |
| Atérmico: | 20 | °C. |
| e(mm)= | 585 | |
| E= | 3634241 | $T/m^2$. |

Retracción : -0.03202 mm/m.

Coeficiente de Fluencia:

Coeficiente Básico de Fluencia: 2.455

Fluencia: 1.103

Deformación Elástica por pretensado: 0.19130 mm/m.

Deformación impuesta Total: 0.63436 mm/m. AT°Equivalente: 63.44 °C.

Recinto hueco de ataguía de pie de pila

$E(t) = E_c e^{-\varphi} + E_\varphi (1-e^{-\varphi})$

$E_c$ Cfte de la edad

$\rho_a$ = 272

$\rho^*_{1020}$ = 45%

Tabla de datos de ataguía definida c P.P

| Sección | Hpp fin P.C | Hpp cimb |
|---|---|---|
| 19 | 1844 Tn | 1621 |
| Pila 1 | 3038 Tn | 3457 Tn m. |
| Ø Van 2 | 2145 Tn | 1634 Tm m |
| Pila 2 | 2985 Tn | 3644 Tn. |
| Ø Van 3 | 2171 Tn | 1565 Tn |
| Pila 3 | 2982 Tn | 3554 Tm |

Ø Vano 2

$M(a) = 2145\, e^{-2.72} + 1434(1-e^{-2.72}) = 1413 + 1526.4 = \underline{1668\ Tm\ m}$

$H_M \Rightarrow 2145\, e^{-1.27} + 1634(1-e^{-1.27}) \Rightarrow 1778\ Tm.$

Hay ataguía de pie de pila con cimentación de hormigón

## Obtención de la Deformación Impuesta:

Datos:

| | | |
|---|---|---|
| $f_{ck}(N/mm^2)$= | 40 | |
| HumedadRelativa= | 70 | % |
| ts(tiempo de tesado)= | 3 | dias. |
| t(paraInfi10000)= | 10000 | dias. |
| AreaSección= | 8.227 | $m^2$. |
| u(perímetroAt.)= | 28.150 | m. |
| AreaPretensado= | 42368 | $mm^2$. |
| Tensión¡Pretensado= | 135 | $Kg/mm^2$. |
| Atérmico: | 20 | °C. |
| e(mm)= | 585 | |
| E= | 3634241 | $T/m^2$. |

Retracción : -0.25425 mm/m.

Coeficiente de Fluencia:

Coeficiente Básico de Fluencia: 2.455

Fluencia: 2.375

Deformación Elástica por pretensado: 0.19130 mm/m.

Deformación impuesta Total: 1.09992 mm/m. AT°Equivalente: 109.99 °C.

# ESFUERZOS EN SERVICIO

| | | Estribo E1 | Pila P1 | Pila P2 | Pila P3 | Pila P4 | Pila P5 | Pila P6 | Pila P7 | Estribo E2 | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Verticales:* | | | | | | | | | | | | |
| PP Estructura: | | 369.7 | 1,037.1 | 1,049.1 | 1,043.6 | 1,045.5 | 1,043.6 | 1,049.1 | 1,037.1 | 369.7 | 8,044.5 | |
| C Permanente | | 220.6 | 752.9 | 762.9 | 758.3 | 760.0 | 758.3 | 762.9 | 752.9 | 220.6 | 5,749.4 | |
| Gradiente 6° | | 19.4 | -23.0 | 4.0 | -1.4 | 0.7 | -1.4 | 4.0 | -23.0 | 19.4 | | |
| | | | | | | | | | | | Φ=1,02 | |
| Sobrecarga Tren | | | | | | | | | | | aunque en la tabla =1 | |
| R+ | | 430.0 | 1,027.3 | 1,093.0 | 1,108.0 | 1,112.4 | 1,108.0 | 1,093.0 | 1,027.3 | 430.0 | | |
| R- | | -79.5 | -97.8 | -144.0 | -163.5 | -166.3 | -163.5 | -144.0 | -97.8 | -79.5 | | |
| Sobrecarga Pasillo | | | | | | | | | | | | |
| R+ | | 27.6 | 81.6 | 83.0 | 88.3 | 88.7 | 88.3 | 83.0 | 81.6 | 27.6 | | |
| R- | | -5.7 | -7.0 | -11.3 | -13.1 | -13.4 | -13.1 | -11.3 | -7.0 | -5.7 | | |
| ***Sc Tot +*** | | **457.6** | **1,108.9** | **1,176.0** | **1,196.3** | **1,201.1** | **1,196.3** | **1,176.0** | **1,108.9** | **457.6** | | |
| ***Sc Tot -*** | | **-85.2** | **-104.8** | **-155.3** | **-176.6** | **-179.7** | **-176.6** | **-155.3** | **-104.8** | **-85.2** | | |
| V max (Tn) | | 1,047.9 | 2,898.9 | 2,988.0 | 2,998.2 | 3,006.6 | 2,998.2 | 2,988.0 | 2,898.9 | 1,047.9 | | |
| Vmin (Tn) | | 505.1 | 1,685.2 | 1,656.7 | 1,625.3 | 1,625.8 | 1,625.3 | 1,656.7 | 1,685.2 | 505.1 | | |
| *Horizontales:* | | | | | | | | | | | | |
| Deform Imp Long | Hx | 29.5 | 89.5 | 90.6 | 90.1 | 90.3 | 90.1 | 90.6 | 89.5 | 660.2 | | |
| Frenado/Arranq | Hx | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 862.0 | | |
| Lazo | Hy | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | | |
| Viento Transv Desc | Hy | 4.5 | 38.4 | 102.2 | 20.3 | 26.3 | 29.7 | 56.9 | 16.6 | 55.3 | | P=1,10 Tn/ml |
| Viento Transv Carg | Hy | 5.8 | 49.8 | 132.7 | 26.4 | 34.2 | 38.6 | 73.9 | 21.6 | 71.8 | | P=1,43 Tn/ml |
| Interacción Vía-Estr | Hx | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 219.0 | | |
| Sismo Long | Hx | - | - | - | - | - | - | - | - | - | | Tablero anclado a estribo |
| Sismo Transv | Hy | - | - | - | - | - | - | - | - | - | | |
| | Mz | - | - | - | - | - | - | - | - | - | | |

Acciones con valores en Tn

STRUCTURE DATA

TYPE = SPACE

NJ = 161

NM = 160

NE = 0

NS = 0

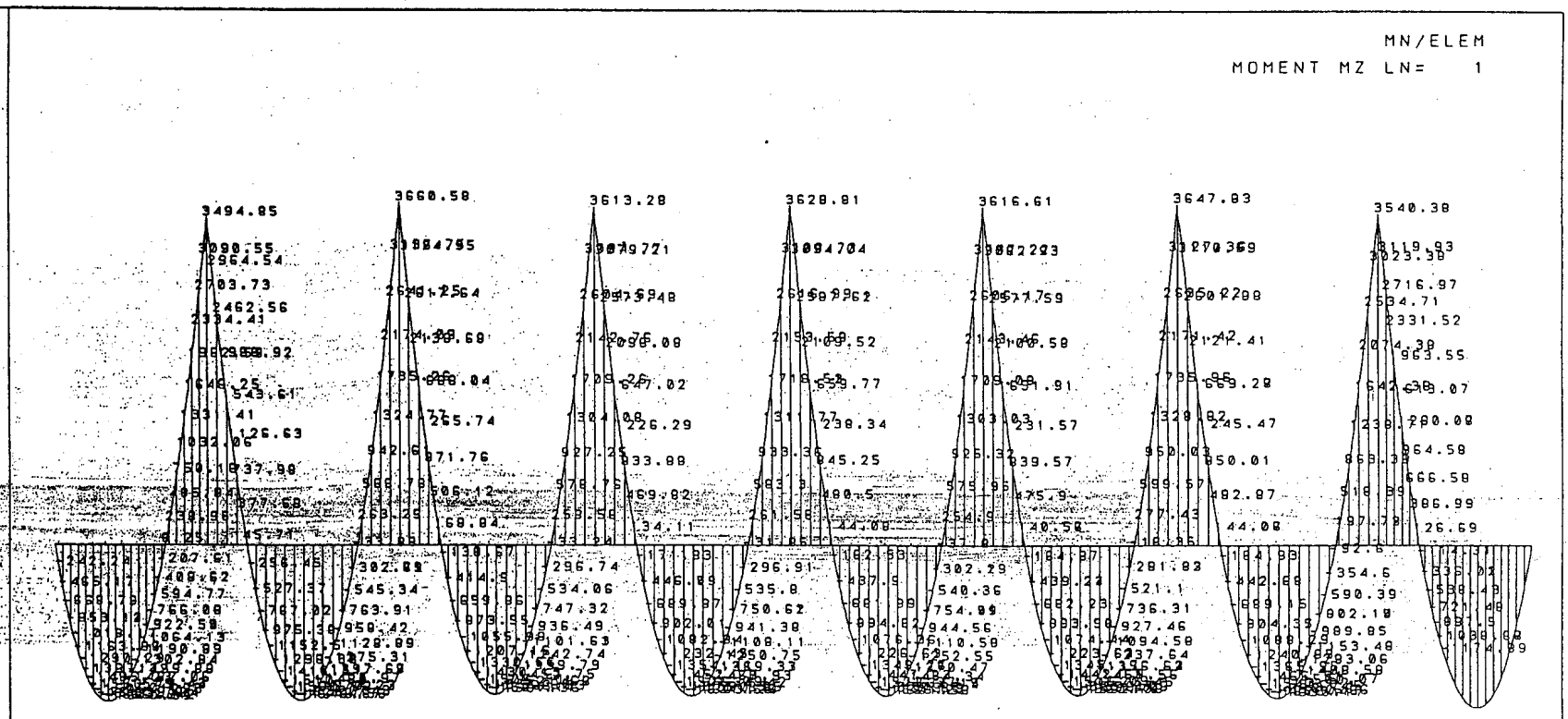
NRJ= 9

NL = 3

XMAX= 318.0

YMAX= .0

ZMAX= .0




Maximum= 3660.58
J=161,M=160

PP EN SERVICIO

UNIT MET MTO

S T A A D P O S T - P L O T (REV: 22.3 )

TITLE: VIADUCTO RIERUSA

DATE: OCT 22, 2003

STRUCTURE DATA

TYPE = SPACE

NJ = 161

NM = 160

NE = 0

NS = 0

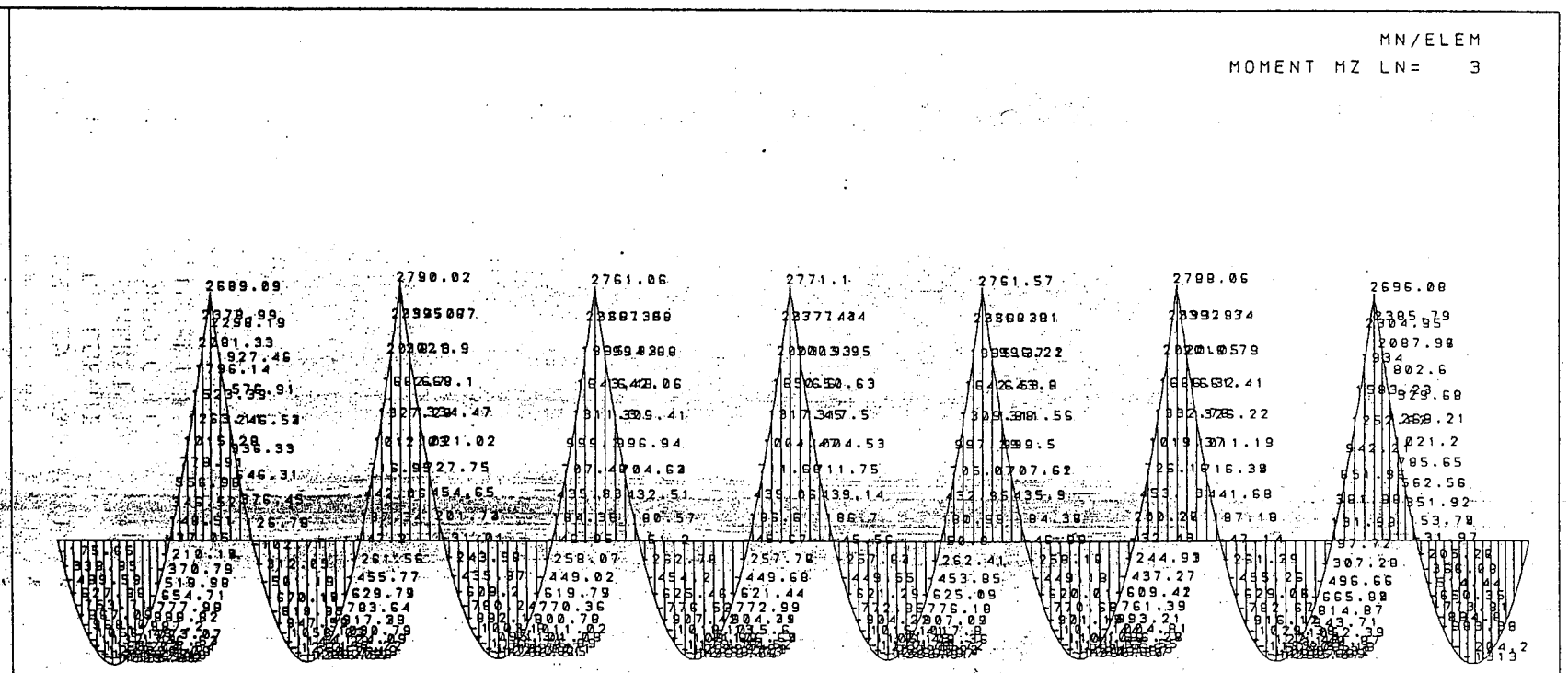
NRJ= 9

NL = 3

XMAX= 318.0

YMAX= .0

ZMAX= .0




Maximum= 2790.02
J=161,M=160

CP EN SERVICIO

UNIT MET MTO

S T A A D P O S T - P L O T (REV: 22.3 )

TITLE: VIADUCTO RIERUSA

DATE: OCT 22, 2003

```
:\PONTEX>>PON1/R 4100

    ************************************
    *      ESTUDIO DE INGENIERIA       *
    *        CARLOS ALONSO COBO        *
    *       PROGRAMA  GENERAL DE       *
    *        TABLERO  DE PUENTE        *
    *  CONTINUO CON INERCIA  VARIABLE  *
    *        =================         *
    *        =  P O N T E X  =         *
    *        =================         *
    *          OCTUBRE  1987.          *
    ************************************



        NUMERO DE VANOS =  5

            LUZ VANO  1 =   33.00 MS.
            LUZ VANO  2 =   42.00 MS.
            LUZ VANO  3 =   42.00 MS.
            LUZ VANO  4 =   42.00 MS.
            LUZ VANO  5 =   33.00 MS.
Execution terminated : 0

:\PONTEX>>PON3/R 4100
```

CUADRO DE CARACT. MECANICAS :

| VANO | SECC | AREA | INERCIA | V | V1 | CANTO | ANCHO | C | C1 | RDTO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 11.344 | 14.0450 | 1.350 | -1.750 | 3.100 | 14.000 | 0.707 | 0.917 | 0.524 |
| 1 | 2 | 11.344 | 14.0450 | 1.350 | -1.750 | 3.100 | 14.000 | 0.707 | 0.917 | 0.524 |
| 1 | 3 | 11.344 | 14.0450 | 1.350 | -1.750 | 3.100 | 14.000 | 0.707 | 0.917 | 0.524 |
| 1 | 4 | 11.344 | 14.0450 | 1.350 | -1.750 | 3.100 | 14.000 | 0.707 | 0.917 | 0.524 |
| 1 | 5 | 11.344 | 14.0450 | 1.350 | -1.750 | 3.100 | 14.000 | 0.707 | 0.917 | 0.524 |
| 1 | 6 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 1 | 7 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 1 | 8 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 1 | 9 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 1 | 10 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 1 | 11 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 1 | 12 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 1 | 13 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 1 | 14 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 1 | 15 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 1 | 16 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 1 | 17 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 1 | 18 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 1 | 19 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 1 | 20 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 1 | 21 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 2 | 1 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 2 | 2 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 2 | 3 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 2 | 4 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 2 | 5 | 11.344 | 14.0450 | 1.350 | -1.750 | 3.100 | 14.000 | 0.707 | 0.917 | 0.524 |
| 2 | 6 | 11.344 | 14.0450 | 1.350 | -1.750 | 3.100 | 14.000 | 0.707 | 0.917 | 0.524 |
| 2 | 7 | 11.344 | 14.0450 | 1.350 | -1.750 | 3.100 | 14.000 | 0.707 | 0.917 | 0.524 |
| 2 | 8 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 2 | 9 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 2 | 10 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 2 | 11 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 2 | 12 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 2 | 13 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 2 | 14 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 2 | 15 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 2 | 16 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 2 | 17 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 2 | 18 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 2 | 19 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 2 | 20 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 2 | 21 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 3 | 1 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 3 | 2 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 3 | 3 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 3 | 4 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 3 | 5 | 11.344 | 14.0450 | 1.350 | -1.750 | 3.100 | 14.000 | 0.707 | 0.917 | 0.524 |
| 3 | 6 | 11.344 | 14.0450 | 1.350 | -1.750 | 3.100 | 14.000 | 0.707 | 0.917 | 0.524 |
| 3 | 7 | 11.344 | 14.0450 | 1.350 | -1.750 | 3.100 | 14.000 | 0.707 | 0.917 | 0.524 |
| 3 | 8 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 3 | 9 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 3 | 10 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 3 | 11 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 3 | 12 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 3 | 13 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 3 | 14 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 3 | 15 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 3 | 16 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 3 | 17 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 3 | 18 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 3 | 19 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 3 | 20 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 3 | 21 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 4 | 1 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 4 | 2 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 4 | 3 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 4 | 4 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 4 | 5 | 11.344 | 14.0450 | 1.350 | -1.750 | 3.100 | 14.000 | 0.707 | 0.917 | 0.524 |
| 4 | 6 | 11.344 | 14.0450 | 1.350 | -1.750 | 3.100 | 14.000 | 0.707 | 0.917 | 0.524 |
| 4 | 7 | 11.344 | 14.0450 | 1.350 | -1.750 | 3.100 | 14.000 | 0.707 | 0.917 | 0.524 |
| 4 | 8 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 4 | 9 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 4 | 10 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 4 | 11 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 4 | 12 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 4 | 13 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 4 | 14 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 4 | 15 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 4 | 16 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 4 | 17 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 4 | 18 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 4 | 19 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 4 | 20 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 4 | 21 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 5 | 1 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 5 | 2 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 5 | 3 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |
| 5 | 4 | 10.280 | 13.6140 | 1.330 | -1.770 | 3.100 | 14.000 | 0.748 | 0.996 | 0.563 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 5 | 5 | 11.344 | 14.0450 | 1.350 | -1.750 | 3.100 | 14.000 | 0.707 | 0.917 | 0.524 |
| 5 | 6 | 11.344 | 14.0450 | 1.350 | -1.750 | 3.100 | 14.000 | 0.707 | 0.917 | 0.524 |
| 5 | 7 | 11.344 | 14.0450 | 1.350 | -1.750 | 3.100 | 14.000 | 0.707 | 0.917 | 0.524 |
| 5 | 8 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 5 | 9 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 5 | 10 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 5 | 11 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 5 | 12 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 5 | 13 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 5 | 14 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 5 | 15 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 5 | 16 | 8.727 | 11.3766 | 1.160 | -1.940 | 3.100 | 14.000 | 0.672 | 1.124 | 0.579 |
| 5 | 17 | 11.344 | 14.0450 | 1.350 | -1.750 | 3.100 | 14.000 | 0.707 | 0.917 | 0.524 |
| 5 | 18 | 11.344 | 14.0450 | 1.350 | -1.750 | 3.100 | 14.000 | 0.707 | 0.917 | 0.524 |
| 5 | 19 | 11.344 | 14.0450 | 1.350 | -1.750 | 3.100 | 14.000 | 0.707 | 0.917 | 0.524 |
| 5 | 20 | 11.344 | 14.0450 | 1.350 | -1.750 | 3.100 | 14.000 | 0.707 | 0.917 | 0.524 |
| 5 | 21 | 11.344 | 14.0450 | 1.350 | -1.750 | 3.100 | 14.000 | 0.707 | 0.917 | 0.524 |

MEDICION VOLUMENES DEL TABLERO :
**********

VOLUMEN VANO 1 = 318.953 M3.
VOLUMEN VANO 2 = 409.112 M3.
VOLUMEN VANO 3 = 409.112 M3.
VOLUMEN VANO 4 = 409.112 M3.
VOLUMEN VANO 5 = 329.345 M3.

VOLUMEN TOTAL = 1875.633 M3.

F( 1, 1) = 1.959164
F( 1, 2) = 0.575042
F( 1, 3) = 0.000000
F( 1, 4) = 0.000000
F( 2, 1) = 0.575042
F( 2, 2) = 2.193802
F( 2, 3) = 0.575042
F( 2, 4) = 0.000000
F( 3, 1) = 0.000000
F( 3, 2) = 0.575042
F( 3, 3) = 2.193802
F( 3, 4) = 0.575042
F( 4, 1) = 0.000000
F( 4, 2) = 0.000000
F( 4, 3) = 0.575042
F( 4, 4) = 1.962148

LINEAS INFLUENCIA MF. APOYOS (MTON).
**********

| APOYO | CARGA EN | | M.FLECTOR |
|---|---|---|---|
| 2 | 1 | 1 | 0.0000 |
| 2 | 1 | 2 | -0.4229 |
| 2 | 1 | 3 | -0.8404 |
| 2 | 1 | 4 | -1.2471 |
| 2 | 1 | 5 | -1.6376 |
| 2 | 1 | 6 | -2.0066 |
| 2 | 1 | 7 | -2.3422 |
| 2 | 1 | 8 | -2.6379 |
| 2 | 1 | 9 | -2.8869 |
| 2 | 1 | 10 | -3.0827 |
| 2 | 1 | 11 | -3.2185 |
| 2 | 1 | 12 | -3.2877 |
| 2 | 1 | 13 | -3.2836 |
| 2 | 1 | 14 | -3.1996 |
| 2 | 1 | 15 | -3.0290 |
| 2 | 1 | 16 | -2.7651 |
| 2 | 1 | 17 | -2.4014 |
| 2 | 1 | 18 | -1.9485 |
| 2 | 1 | 19 | -1.4011 |
| 2 | 1 | 20 | -0.7534 |
| 2 | 2 | 1 | 0.0000 |
| 2 | 2 | 2 | -0.9843 |
| 2 | 2 | 3 | -1.7999 |
| 2 | 2 | 4 | -2.4583 |
| 2 | 2 | 5 | -2.9711 |
| 2 | 2 | 6 | -3.3539 |
| 2 | 2 | 7 | -3.6180 |
| 2 | 2 | 8 | -3.7746 |
| 2 | 2 | 9 | -3.8123 |
| 2 | 2 | 10 | -3.7450 |
| 2 | 2 | 11 | -3.5865 |
| 2 | 2 | 12 | -3.3506 |
| 2 | 2 | 13 | -3.0513 |
| 2 | 2 | 14 | -2.7028 |
| 2 | 2 | 15 | -2.3175 |
| 2 | 2 | 16 | -1.9108 |
| 2 | 2 | 17 | -1.4959 |
| 2 | 2 | 18 | -1.0858 |
| 2 | 2 | 19 | -0.6921 |

| | | | |
|---|---|---|---|
| 2 | 2 | 20 | -0.3263 |
| 2 | 3 | 1 | 0.0000 |
| 2 | 3 | 2 | 0.2786 |
| 2 | 3 | 3 | 0.5095 |
| 2 | 3 | 4 | 0.6958 |
| 2 | 3 | 5 | 0.8409 |
| 2 | 3 | 6 | 0.9492 |
| 2 | 3 | 7 | 1.0238 |
| 2 | 3 | 8 | 1.0681 |
| 2 | 3 | 9 | 1.0787 |
| 2 | 3 | 10 | 1.0595 |
| 2 | 3 | 11 | 1.0146 |
| 2 | 3 | 12 | 0.9478 |
| 2 | 3 | 13 | 0.8630 |
| 2 | 3 | 14 | 0.7642 |
| 2 | 3 | 15 | 0.6553 |
| 2 | 3 | 16 | 0.5402 |
| 2 | 3 | 17 | 0.4228 |
| 2 | 3 | 18 | 0.3068 |
| 2 | 3 | 19 | 0.1955 |
| 2 | 3 | 20 | 0.0922 |
| 2 | 4 | 1 | 0.0000 |
| 2 | 4 | 2 | -0.0786 |
| 2 | 4 | 3 | -0.1437 |
| 2 | 4 | 4 | -0.1961 |
| 2 | 4 | 5 | -0.2368 |
| 2 | 4 | 6 | -0.2672 |
| 2 | 4 | 7 | -0.2880 |
| 2 | 4 | 8 | -0.3002 |
| 2 | 4 | 9 | -0.3029 |
| 2 | 4 | 10 | -0.2972 |
| 2 | 4 | 11 | -0.2843 |
| 2 | 4 | 12 | -0.2652 |
| 2 | 4 | 13 | -0.2412 |
| 2 | 4 | 14 | -0.2132 |
| 2 | 4 | 15 | -0.1825 |
| 2 | 4 | 16 | -0.1501 |
| 2 | 4 | 17 | -0.1172 |
| 2 | 4 | 18 | -0.0848 |
| 2 | 4 | 19 | -0.0539 |
| 2 | 4 | 20 | -0.0253 |
| 2 | 5 | 1 | 0.0000 |
| 2 | 5 | 2 | 0.0171 |
| 2 | 5 | 3 | 0.0317 |
| 2 | 5 | 4 | 0.0439 |
| 2 | 5 | 5 | 0.0539 |
| 2 | 5 | 6 | 0.0618 |
| 2 | 5 | 7 | 0.0679 |
| 2 | 5 | 8 | 0.0722 |
| 2 | 5 | 9 | 0.0744 |
| 2 | 5 | 10 | 0.0747 |
| 2 | 5 | 11 | 0.0733 |
| 2 | 5 | 12 | 0.0704 |
| 2 | 5 | 13 | 0.0660 |
| 2 | 5 | 14 | 0.0604 |
| 2 | 5 | 15 | 0.0537 |
| 2 | 5 | 16 | 0.0460 |
| 2 | 5 | 17 | 0.0376 |
| 2 | 5 | 18 | 0.0286 |
| 2 | 5 | 19 | 0.0193 |
| 2 | 5 | 20 | 0.0097 |
| 3 | 1 | 1 | 0.0000 |
| 3 | 1 | 2 | 0.1198 |
| 3 | 1 | 3 | 0.2380 |
| 3 | 1 | 4 | 0.3532 |
| 3 | 1 | 5 | 0.4638 |
| 3 | 1 | 6 | 0.5683 |
| 3 | 1 | 7 | 0.6633 |
| 3 | 1 | 8 | 0.7470 |
| 3 | 1 | 9 | 0.8176 |
| 3 | 1 | 10 | 0.8730 |
| 3 | 1 | 11 | 0.9115 |
| 3 | 1 | 12 | 0.9311 |
| 3 | 1 | 13 | 0.9299 |
| 3 | 1 | 14 | 0.9061 |
| 3 | 1 | 15 | 0.8578 |
| 3 | 1 | 16 | 0.7831 |
| 3 | 1 | 17 | 0.6801 |
| 3 | 1 | 18 | 0.5518 |
| 3 | 1 | 19 | 0.3968 |
| 3 | 1 | 20 | 0.2134 |
| 3 | 2 | 1 | 0.0000 |
| 3 | 2 | 2 | -0.3141 |
| 3 | 2 | 3 | -0.6681 |
| 3 | 2 | 4 | -1.0506 |
| 3 | 2 | 5 | -1.4504 |
| 3 | 2 | 6 | -1.8561 |
| 3 | 2 | 7 | -2.2567 |
| 3 | 2 | 8 | -2.6414 |
| 3 | 2 | 9 | -2.9930 |
| 3 | 2 | 10 | -3.2979 |
| 3 | 2 | 11 | -3.5428 |
| 3 | 2 | 12 | -3.7141 |
| 3 | 2 | 13 | -3.7984 |
| 3 | 2 | 14 | -3.7822 |
| 3 | 2 | 15 | -3.6521 |
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| 3 | 2 | 17 | -2.9961 |
| 3 | 2 | 18 | -2.4687 |
| 3 | 2 | 19 | -1.8010 |
| 3 | 2 | 20 | -0.9819 |
| 3 | 3 | 1 | 0.0000 |
| 3 | 3 | 2 | -0.9493 |
| 3 | 3 | 3 | -1.7357 |
| 3 | 3 | 4 | -2.3705 |
| 3 | 3 | 5 | -2.8648 |
| 3 | 3 | 6 | -3.2338 |
| 3 | 3 | 7 | -3.4882 |
| 3 | 3 | 8 | -3.6389 |
| 3 | 3 | 9 | -3.6750 |
| 3 | 3 | 10 | -3.6099 |
| 3 | 3 | 11 | -3.4568 |
| 3 | 3 | 12 | -3.2291 |
| 3 | 3 | 13 | -2.9403 |
| 3 | 3 | 14 | -2.6037 |
| 3 | 3 | 15 | -2.2326 |
| 3 | 3 | 16 | -1.8404 |
| 3 | 3 | 17 | -1.4406 |
| 3 | 3 | 18 | -1.0454 |
| 3 | 3 | 19 | -0.6662 |
| 3 | 3 | 20 | -0.3140 |
| 3 | 4 | 1 | 0.0000 |
| 3 | 4 | 2 | 0.2679 |
| 3 | 4 | 3 | 0.4895 |
| 3 | 4 | 4 | 0.6681 |
| 3 | 4 | 5 | 0.8069 |
| 3 | 4 | 6 | 0.9102 |
| 3 | 4 | 7 | 0.9811 |

| | | | |
|---|---|---|---|
| 3 | 4 | 8 | 1.0227 |
| 3 | 4 | 9 | 1.0319 |
| 3 | 4 | 10 | 1.0126 |
| 3 | 4 | 11 | 0.9686 |
| 3 | 4 | 12 | 0.9037 |
| 3 | 4 | 13 | 0.8217 |
| 3 | 4 | 14 | 0.7264 |
| 3 | 4 | 15 | 0.6217 |
| 3 | 4 | 16 | 0.5114 |
| 3 | 4 | 17 | 0.3994 |
| 3 | 4 | 18 | 0.2890 |
| 3 | 4 | 19 | 0.1835 |
| 3 | 4 | 20 | 0.0861 |
| 3 | 5 | 1 | 0.0000 |
| 3 | 5 | 2 | -0.0582 |
| 3 | 5 | 3 | -0.1079 |
| 3 | 5 | 4 | -0.1495 |
| 3 | 5 | 5 | -0.1835 |
| 3 | 5 | 6 | -0.2107 |
| 3 | 5 | 7 | -0.2313 |
| 3 | 5 | 8 | -0.2458 |
| 3 | 5 | 9 | -0.2534 |
| 3 | 5 | 10 | -0.2546 |
| 3 | 5 | 11 | -0.2499 |
| 3 | 5 | 12 | -0.2398 |
| 3 | 5 | 13 | -0.2250 |
| 3 | 5 | 14 | -0.2058 |
| 3 | 5 | 15 | -0.1829 |
| 3 | 5 | 16 | -0.1568 |
| 3 | 5 | 17 | -0.1281 |
| 3 | 5 | 18 | -0.0976 |
| 3 | 5 | 19 | -0.0658 |
| 3 | 5 | 20 | -0.0331 |
| 4 | 1 | 1 | 0.0000 |
| 4 | 1 | 2 | -0.0340 |
| 4 | 1 | 3 | -0.0676 |
| 4 | 1 | 4 | -0.1003 |
| 4 | 1 | 5 | -0.1317 |
| 4 | 1 | 6 | -0.1613 |
| 4 | 1 | 7 | -0.1883 |
| 4 | 1 | 8 | -0.2121 |
| 4 | 1 | 9 | -0.2321 |
| 4 | 1 | 10 | -0.2479 |
| 4 | 1 | 11 | -0.2588 |
| 4 | 1 | 12 | -0.2644 |
| 4 | 1 | 13 | -0.2640 |
| 4 | 1 | 14 | -0.2573 |
| 4 | 1 | 15 | -0.2436 |
| 4 | 1 | 16 | -0.2229 |
| 4 | 1 | 17 | -0.1951 |
| 4 | 1 | 18 | -0.1567 |
| 4 | 1 | 19 | -0.1127 |
| 4 | 1 | 20 | -0.0606 |
| 4 | 2 | 1 | 0.0000 |
| 4 | 2 | 2 | 0.0892 |
| 4 | 2 | 3 | 0.1897 |
| 4 | 2 | 4 | 0.2983 |
| 4 | 2 | 5 | 0.4118 |
| 4 | 2 | 6 | 0.5270 |
| 4 | 2 | 7 | 0.6408 |
| 4 | 2 | 8 | 0.7500 |
| 4 | 2 | 9 | 0.8498 |
| 4 | 2 | 10 | 0.9364 |
| 4 | 2 | 11 | 1.0059 |
| 4 | 2 | 12 | 1.0546 |
| 4 | 2 | 13 | 1.0785 |
| 4 | 2 | 14 | 1.0739 |
| 4 | 2 | 15 | 1.0369 |
| 4 | 2 | 16 | 0.9638 |
| 4 | 2 | 17 | 0.8507 |
| 4 | 2 | 18 | 0.7009 |
| 4 | 2 | 19 | 0.5114 |
| 4 | 2 | 20 | 0.2788 |
| 4 | 3 | 1 | 0.0000 |
| 4 | 3 | 2 | -0.3249 |
| 4 | 3 | 3 | -0.6880 |
| 4 | 3 | 4 | -1.0782 |
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| 4 | 3 | 7 | -2.2994 |
| 4 | 3 | 8 | -2.6868 |
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| 4 | 3 | 12 | -3.7582 |
| 4 | 3 | 13 | -3.8398 |
| 4 | 3 | 14 | -3.8200 |
| 4 | 3 | 15 | -3.6856 |
| 4 | 3 | 16 | -3.4233 |
| 4 | 3 | 17 | -3.0196 |
| 4 | 3 | 18 | -2.4865 |
| 4 | 3 | 19 | -1.8130 |
| 4 | 3 | 20 | -0.9879 |
| 4 | 4 | 1 | 0.0000 |
| 4 | 4 | 2 | -0.9432 |
| 4 | 4 | 3 | -1.7238 |
| 4 | 4 | 4 | -2.3528 |
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| 4 | 4 | 6 | -3.2054 |
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| 4 | 4 | 11 | -3.4109 |
| 4 | 4 | 12 | -3.1823 |
| 4 | 4 | 13 | -2.8935 |
| 4 | 4 | 14 | -2.5581 |
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| 4 | 4 | 17 | -1.4063 |
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| 4 | 4 | 19 | -0.6462 |
| 4 | 4 | 20 | -0.3032 |
| 4 | 5 | 1 | 0.0000 |
| 4 | 5 | 2 | 0.2049 |
| 4 | 5 | 3 | 0.3798 |
| 4 | 5 | 4 | 0.5265 |
| 4 | 5 | 5 | 0.6463 |
| 4 | 5 | 6 | 0.7418 |
| 4 | 5 | 7 | 0.8144 |
| 4 | 5 | 8 | 0.8656 |
| 4 | 5 | 9 | 0.8924 |
| 4 | 5 | 10 | 0.8965 |
| 4 | 5 | 11 | 0.8800 |
| 4 | 5 | 12 | 0.8446 |
| 4 | 5 | 13 | 0.7922 |
| 4 | 5 | 14 | 0.7248 |
| 4 | 5 | 15 | 0.6442 |

| | | | |
|---|---|---|---|
| 4 | 5 | 16 | 0.5523 |
| 4 | 5 | 17 | 0.4510 |
| 4 | 5 | 18 | 0.3436 |
| 4 | 5 | 19 | 0.2316 |
| 4 | 5 | 20 | 0.1166 |
| 5 | 1 | 1 | 0.0000 |
| 5 | 1 | 2 | 0.0100 |
| 5 | 1 | 3 | 0.0198 |
| 5 | 1 | 4 | 0.0294 |
| 5 | 1 | 5 | 0.0386 |
| 5 | 1 | 6 | 0.0473 |
| 5 | 1 | 7 | 0.0552 |
| 5 | 1 | 8 | 0.0622 |
| 5 | 1 | 9 | 0.0680 |
| 5 | 1 | 10 | 0.0726 |
| 5 | 1 | 11 | 0.0758 |
| 5 | 1 | 12 | 0.0775 |
| 5 | 1 | 13 | 0.0774 |
| 5 | 1 | 14 | 0.0754 |
| 5 | 1 | 15 | 0.0714 |
| 5 | 1 | 16 | 0.0652 |
| 5 | 1 | 17 | 0.0566 |
| 5 | 1 | 18 | 0.0459 |
| 5 | 1 | 19 | 0.0330 |
| 5 | 1 | 20 | 0.0178 |
| 5 | 2 | 1 | 0.0000 |
| 5 | 2 | 2 | -0.0261 |
| 5 | 2 | 3 | -0.0556 |
| 5 | 2 | 4 | -0.0874 |
| 5 | 2 | 5 | -0.1207 |
| 5 | 2 | 6 | -0.1544 |
| 5 | 2 | 7 | -0.1878 |
| 5 | 2 | 8 | -0.2198 |
| 5 | 2 | 9 | -0.2491 |
| 5 | 2 | 10 | -0.2744 |
| 5 | 2 | 11 | -0.2948 |
| 5 | 2 | 12 | -0.3091 |
| 5 | 2 | 13 | -0.3161 |
| 5 | 2 | 14 | -0.3147 |
| 5 | 2 | 15 | -0.3039 |
| 5 | 2 | 16 | -0.2825 |
| 5 | 2 | 17 | -0.2493 |
| 5 | 2 | 18 | -0.2054 |
| 5 | 2 | 19 | -0.1499 |
| 5 | 2 | 20 | -0.0817 |
| 5 | 3 | 1 | 0.0000 |
| 5 | 3 | 2 | 0.0952 |
| 5 | 3 | 3 | 0.2016 |
| 5 | 3 | 4 | 0.3160 |
| 5 | 3 | 5 | 0.4350 |
| 5 | 3 | 6 | 0.5554 |
| 5 | 3 | 7 | 0.6739 |
| 5 | 3 | 8 | 0.7874 |
| 5 | 3 | 9 | 0.8908 |
| 5 | 3 | 10 | 0.9803 |
| 5 | 3 | 11 | 1.0518 |
| 5 | 3 | 12 | 1.1014 |
| 5 | 3 | 13 | 1.1253 |
| 5 | 3 | 14 | 1.1195 |
| 5 | 3 | 15 | 1.0801 |
| 5 | 3 | 16 | 1.0033 |
| 5 | 3 | 17 | 0.8849 |
| 5 | 3 | 18 | 0.7287 |
| 5 | 3 | 19 | 0.5313 |
| 5 | 3 | 20 | 0.2895 |
| 5 | 4 | 1 | 0.0000 |
| 5 | 4 | 2 | -0.3371 |
| 5 | 4 | 3 | -0.7137 |
| 5 | 4 | 4 | -1.1181 |
| 5 | 4 | 5 | -1.5389 |
| 5 | 4 | 6 | -1.9643 |
| 5 | 4 | 7 | -2.3831 |
| 5 | 4 | 8 | -2.7842 |
| 5 | 4 | 9 | -3.1496 |
| 5 | 4 | 10 | -3.4653 |
| 5 | 4 | 11 | -3.7177 |
| 5 | 4 | 12 | -3.8929 |
| 5 | 4 | 13 | -3.9770 |
| 5 | 4 | 14 | -3.9563 |
| 5 | 4 | 15 | -3.8169 |
| 5 | 4 | 16 | -3.5450 |
| 5 | 4 | 17 | -3.1267 |
| 5 | 4 | 18 | -2.5747 |
| 5 | 4 | 19 | -1.8772 |
| 5 | 4 | 20 | -1.0229 |
| 5 | 5 | 1 | 0.0000 |
| 5 | 5 | 2 | -0.7234 |
| 5 | 5 | 3 | -1.3412 |
| 5 | 5 | 4 | -1.8590 |
| 5 | 5 | 5 | -2.2823 |
| 5 | 5 | 6 | -2.6194 |
| 5 | 5 | 7 | -2.8757 |
| 5 | 5 | 8 | -3.0566 |
| 5 | 5 | 9 | -3.1511 |
| 5 | 5 | 10 | -3.1658 |
| 5 | 5 | 11 | -3.1073 |
| 5 | 5 | 12 | -2.9823 |
| 5 | 5 | 13 | -2.7974 |
| 5 | 5 | 14 | -2.5594 |
| 5 | 5 | 15 | -2.2748 |
| 5 | 5 | 16 | -1.9503 |
| 5 | 5 | 17 | -1.5926 |
| 5 | 5 | 18 | -1.2133 |
| 5 | 5 | 19 | -0.8178 |
| 5 | 5 | 20 | -0.4116 |

Execution terminated : 0

C:\PONTEX>>PON4/R 4100

INTEGRACION LINEAS INFLUENCIA MF EN SECCIONES BASE

**********

| VANO | SECC | AREA(+) | AREA(-) | A.TOTAL | VOL(+) | VOL(-) | V.TOTAL |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1 | 2 | 23.860 | -5.330 | 18.530 | 334.046 | -74.624 | 259.422 |
| 1 | 3 | 44.998 | -10.661 | 34.338 | 629.977 | -149.248 | 480.729 |
| 1 | 4 | 63.414 | -15.991 | 47.423 | 887.793 | -223.872 | 663.921 |
| 1 | 5 | 79.107 | -21.321 | 57.785 | 1107.494 | -298.497 | 808.997 |
| 1 | 6 | 92.077 | -26.651 | 65.426 | 1289.080 | -373.121 | 915.959 |
| 1 | 7 | 102.325 | -31.982 | 70.343 | 1432.551 | -447.745 | 984.806 |
| 1 | 8 | 109.851 | -37.312 | 72.538 | 1537.907 | -522.369 | 1015.538 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 9 | 114.653 | -42.642 | 72.011 | 1605.148 | -596.993 | 1008.155 |
| 1 | 10 | 116.734 | -47.973 | 68.761 | 1634.274 | -671.618 | 962.656 |
| 1 | 11 | 116.092 | -53.303 | 62.789 | 1625.285 | -746.242 | 879.043 |
| 1 | 12 | 112.727 | -58.633 | 54.094 | 1578.181 | -820.866 | 757.315 |
| 1 | 13 | 106.640 | -63.964 | 42.677 | 1492.961 | -895.490 | 597.471 |
| 1 | 14 | 97.831 | -69.294 | 28.537 | 1369.628 | -970.114 | 399.513 |
| 1 | 15 | 86.298 | -74.624 | 11.674 | 1208.179 | -1044.738 | 163.441 |
| 1 | 16 | 72.044 | -79.954 | -7.911 | 1008.615 | -1119.363 | -110.748 |
| 1 | 17 | 55.100 | -85.318 | -30.218 | 771.405 | -1194.456 | -423.051 |
| 1 | 18 | 41.377 | -96.624 | -55.248 | 579.271 | -1352.740 | -773.469 |
| 1 | 19 | 33.380 | -116.380 | -83.000 | 467.315 | -1629.318 | -1162.003 |
| 1 | 20 | 29.656 | -143.131 | -113.475 | 415.183 | -2003.833 | -1588.650 |
| 1 | 21 | 29.532 | -176.204 | -146.672 | 413.448 | -2466.862 | -2053.414 |
| 2 | 1 | 29.532 | -176.204 | -146.672 | 413.448 | -2466.862 | -2053.414 |
| 2 | 2 | 25.371 | -130.426 | -105.055 | 355.200 | -1825.964 | -1470.764 |
| 2 | 3 | 26.665 | -94.512 | -67.847 | 373.314 | -1323.169 | -949.855 |
| 2 | 4 | 33.895 | -68.944 | -35.049 | 474.524 | -965.209 | -490.685 |
| 2 | 5 | 47.035 | -53.696 | -6.661 | 658.484 | -751.740 | -93.256 |
| 2 | 6 | 67.593 | -50.276 | 17.317 | 946.299 | -703.866 | 242.434 |
| 2 | 7 | 89.203 | -52.318 | 36.884 | 1248.835 | -732.453 | 516.383 |
| 2 | 8 | 106.402 | -54.360 | 52.042 | 1489.632 | -761.040 | 728.592 |
| 2 | 9 | 119.192 | -56.402 | 62.790 | 1668.689 | -789.627 | 879.062 |
| 2 | 10 | 127.572 | -58.444 | 69.128 | 1786.005 | -818.214 | 967.791 |
| 2 | 11 | 131.542 | -60.486 | 71.056 | 1841.582 | -846.801 | 994.781 |
| 2 | 12 | 131.101 | -62.528 | 68.574 | 1835.418 | -875.388 | 960.030 |
| 2 | 13 | 126.251 | -64.570 | 61.681 | 1767.515 | -903.975 | 863.539 |
| 2 | 14 | 116.991 | -66.612 | 50.379 | 1637.871 | -932.562 | 705.309 |
| 2 | 15 | 103.321 | -68.654 | 34.667 | 1446.488 | -961.149 | 485.338 |
| 2 | 16 | 85.240 | -70.695 | 14.545 | 1193.364 | -989.737 | 203.628 |
| 2 | 17 | 65.206 | -75.194 | -9.987 | 912.887 | -1052.710 | -139.823 |
| 2 | 18 | 51.401 | -90.331 | -38.930 | 719.617 | -1264.630 | -545.013 |
| 2 | 19 | 44.019 | -116.301 | -72.282 | 616.267 | -1628.212 | -1011.944 |
| 2 | 20 | 42.543 | -152.587 | -110.044 | 595.599 | -2136.213 | -1540.614 |
| 2 | 21 | 46.385 | -198.602 | -152.216 | 649.396 | -2780.420 | -2131.025 |
| 3 | 1 | 46.385 | -198.602 | -152.216 | 649.396 | -2780.420 | -2131.025 |
| 3 | 2 | 41.568 | -151.874 | -110.306 | 581.953 | -2126.234 | -1544.281 |
| 3 | 3 | 42.586 | -115.391 | -72.805 | 596.203 | -1615.481 | -1019.277 |
| 3 | 4 | 49.740 | -89.455 | -39.715 | 696.359 | -1252.372 | -556.012 |
| 3 | 5 | 62.923 | -73.958 | -11.035 | 880.918 | -1035.407 | -154.489 |
| 3 | 6 | 83.247 | -70.012 | 13.235 | 1165.465 | -980.169 | 185.295 |
| 3 | 7 | 102.848 | -69.752 | 33.096 | 1439.872 | -976.533 | 463.339 |
| 3 | 8 | 118.039 | -69.493 | 48.546 | 1652.539 | -972.896 | 679.643 |
| 3 | 9 | 128.819 | -69.233 | 59.586 | 1803.467 | -969.259 | 834.208 |
| 3 | 10 | 135.190 | -68.973 | 66.217 | 1892.654 | -965.622 | 927.032 |
| 3 | 11 | 137.150 | -68.713 | 68.437 | 1920.101 | -961.986 | 958.116 |
| 3 | 12 | 134.701 | -68.453 | 66.247 | 1885.808 | -958.349 | 927.460 |
| 3 | 13 | 127.841 | -68.194 | 59.647 | 1789.776 | -954.712 | 835.064 |
| 3 | 14 | 116.572 | -67.934 | 48.638 | 1632.003 | -951.075 | 680.927 |
| 3 | 15 | 100.892 | -67.674 | 33.218 | 1412.491 | -947.439 | 465.052 |
| 3 | 16 | 80.803 | -67.414 | 13.388 | 1131.238 | -943.802 | 187.436 |
| 3 | 17 | 60.161 | -71.013 | -10.851 | 842.260 | -994.180 | -151.920 |
| 3 | 18 | 47.742 | -87.243 | -39.501 | 668.391 | -1221.407 | -553.016 |
| 3 | 19 | 41.761 | -114.322 | -72.561 | 584.659 | -1600.511 | -1015.852 |
| 3 | 20 | 41.691 | -151.721 | -110.031 | 583.670 | -2124.097 | -1540.428 |
| 3 | 21 | 46.878 | -198.788 | -151.910 | 656.290 | -2783.033 | -2126.743 |
| 4 | 1 | 46.878 | -198.788 | -151.910 | 656.290 | -2783.033 | -2126.743 |
| 4 | 2 | 43.262 | -153.058 | -109.796 | 605.664 | -2142.814 | -1537.150 |
| 4 | 3 | 45.541 | -117.634 | -72.093 | 637.578 | -1646.874 | -1009.296 |
| 4 | 4 | 53.992 | -92.791 | -38.799 | 755.889 | -1299.071 | -543.182 |
| 4 | 5 | 68.379 | -78.294 | -9.915 | 957.311 | -1096.119 | -138.808 |
| 4 | 6 | 88.045 | -73.486 | 14.559 | 1232.631 | -1028.806 | 203.826 |
| 4 | 7 | 105.647 | -71.024 | 34.623 | 1479.062 | -994.342 | 484.720 |
| 4 | 8 | 118.839 | -68.563 | 50.277 | 1663.752 | -959.878 | 703.873 |
| 4 | 9 | 127.622 | -66.101 | 61.521 | 1786.702 | -925.414 | 861.288 |
| 4 | 10 | 131.994 | -63.639 | 68.354 | 1847.911 | -890.950 | 956.961 |
| 4 | 11 | 131.956 | -61.178 | 70.778 | 1847.382 | -856.486 | 990.895 |
| 4 | 12 | 127.508 | -58.716 | 68.792 | 1785.112 | -822.022 | 963.089 |
| 4 | 13 | 118.650 | -56.254 | 62.396 | 1661.101 | -787.558 | 873.543 |
| 4 | 14 | 105.382 | -53.792 | 51.590 | 1475.351 | -753.094 | 722.257 |
| 4 | 15 | 87.704 | -51.331 | 36.374 | 1227.862 | -718.630 | 509.231 |
| 4 | 16 | 65.617 | -48.869 | 16.747 | 918.632 | -684.167 | 234.465 |
| 4 | 17 | 44.808 | -52.096 | -7.289 | 627.309 | -729.350 | -102.041 |
| 4 | 18 | 32.531 | -68.266 | -35.735 | 455.440 | -955.727 | -500.287 |
| 4 | 19 | 26.434 | -95.025 | -68.591 | 370.071 | -1330.345 | -960.274 |
| 4 | 20 | 26.145 | -132.002 | -105.857 | 366.024 | -1848.023 | -1481.999 |
| 4 | 21 | 30.728 | -178.262 | -147.533 | 430.198 | -2495.664 | -2065.466 |
| 5 | 1 | 30.728 | -178.262 | -147.533 | 430.198 | -2495.664 | -2065.466 |
| 5 | 2 | 30.818 | -145.111 | -114.293 | 431.458 | -2031.558 | -1600.099 |
| 5 | 3 | 34.872 | -118.647 | -83.775 | 488.207 | -1661.056 | -1172.849 |
| 5 | 4 | 43.499 | -99.479 | -55.979 | 608.990 | -1392.703 | -783.713 |
| 5 | 5 | 57.872 | -88.778 | -30.907 | 810.203 | -1242.895 | -432.692 |
| 5 | 6 | 74.673 | -83.230 | -8.556 | 1045.427 | -1165.214 | -119.786 |
| 5 | 7 | 88.753 | -77.681 | 11.072 | 1242.537 | -1087.533 | 155.004 |
| 5 | 8 | 100.109 | -72.132 | 27.977 | 1401.532 | -1009.852 | 391.680 |
| 5 | 9 | 108.744 | -66.584 | 42.160 | 1522.412 | -932.171 | 590.241 |
| 5 | 10 | 114.655 | -61.035 | 53.620 | 1605.177 | -854.490 | 750.686 |
| 5 | 11 | 117.845 | -55.486 | 62.358 | 1649.826 | -776.809 | 873.017 |
| 5 | 12 | 118.312 | -49.938 | 68.374 | 1656.362 | -699.128 | 957.233 |
| 5 | 13 | 116.056 | -44.389 | 71.667 | 1624.781 | -621.447 | 1003.334 |
| 5 | 14 | 111.078 | -38.840 | 72.237 | 1555.086 | -543.766 | 1011.320 |
| 5 | 15 | 103.377 | -33.292 | 70.085 | 1447.276 | -466.086 | 981.190 |
| 5 | 16 | 92.954 | -27.743 | 65.210 | 1301.351 | -388.405 | 912.946 |
| 5 | 17 | 79.808 | -22.195 | 57.613 | 1117.311 | -310.724 | 806.587 |
| 5 | 18 | 63.940 | -16.646 | 47.294 | 895.155 | -233.043 | 662.113 |
| 5 | 19 | 45.349 | -11.097 | 34.252 | 634.885 | -155.362 | 479.523 |
| 5 | 20 | 24.036 | -5.549 | 18.487 | 336.500 | -77.681 | 258.819 |
| 5 | 21 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

Execution terminated : 0

C:\PONTEX>>PON5/R 4100

LEYES Y ENVOLVENTES DE FLECTORES,CORTANTES Y REACCIONES DEBIDOS A:
**********

PESO PROPIO.
C.PRMTE =18.30 T/ML.+ 0.00T/M2
SC REPARTIDA = 1.53T/M2.
TREN DE CARGA FORMADO POR 4 EJES:

| # | CARGA | DX |
|---|---|---|
| 1 | 30.10 | 0.00 |
| 2 | 30.10 | 1.60 |
| 3 | 30.10 | 1.60 |
| 4 | 30.10 | 1.60 |

COEF.AMPLIFIC.= 1.00(FLEXION) 1.00 (CORTANTE)

NUM.POS TREN =187.
POS.INICIAL X IZDA = 4.80
POS.FINAL X DCHA = 192.00

| VANO | SECC | MF.PP. | MF.CP | MF.MAX.SC | MF.MIN.SC. | V.SC.1 | V.SC.2 |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -259.1 |
| 1 | 2 | 459.0 | 339.1 | 677.5 | -137.2 | -392.9 | 83.1 |
| 1 | 3 | 840.8 | 628.4 | 1275.4 | -274.4 | -323.7 | 83.1 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 4 | 1145.3 | 867.8 | 1794.0 | -411.6 | -309.2 | 83.1 |
| 1 | 5 | 1372.7 | 1057.5 | 2226.9 | -548.8 | -213.6 | 83.1 |
| 1 | 6 | 1527.3 | 1197.3 | 2581.9 | -686.0 | -198.8 | 83.1 |
| 1 | 7 | 1618.0 | 1287.3 | 2865.5 | -823.2 | -129.6 | 83.1 |
| 1 | 8 | 1649.4 | 1327.5 | 3066.2 | -960.4 | -115.3 | 83.1 |
| 1 | 9 | 1621.3 | 1317.8 | 3186.4 | -1097.6 | -45.7 | 83.1 |
| 1 | 10 | 1533.9 | 1258.3 | 3234.4 | -1234.7 | -2.3 | 83.1 |
| 1 | 11 | 1387.0 | 1149.0 | 3201.0 | -1371.9 | 37.3 | 83.1 |
| 1 | 12 | 1180.8 | 989.9 | 3099.3 | -1509.1 | 76.7 | 83.1 |
| 1 | 13 | 915.1 | 781.0 | 2920.9 | -1646.3 | 119.4 | 83.1 |
| 1 | 14 | 590.1 | 522.2 | 2669.1 | -1783.5 | 188.6 | 83.1 |
| 1 | 15 | 205.6 | 213.6 | 2360.1 | -1920.7 | 200.2 | 83.1 |
| 1 | 16 | -238.2 | -144.8 | 1964.3 | -2057.9 | 242.0 | 83.1 |
| 1 | 17 | -744.1 | -553.0 | 1500.5 | -2195.8 | 246.5 | 92.0 |
| 1 | 18 | -1317.3 | -1011.0 | 1134.7 | -2461.4 | 191.2 | 212.9 |
| 1 | 19 | -1960.5 | -1518.9 | 849.4 | -2908.6 | 126.2 | 318.6 |
| 1 | 20 | -2673.6 | -2076.6 | 759.1 | -3506.2 | 11.2 | 413.2 |
| 1 | 21 | -3456.7 | -2684.1 | 762.8 | -4239.5 | -23.1 | 483.1 |
| 2 | 1 | -3456.7 | -2684.1 | 762.8 | -4239.5 | 80.0 | -590.9 |
| 2 | 2 | -2430.7 | -1922.5 | 645.1 | -3168.3 | 38.1 | -439.9 |
| 2 | 3 | -1518.0 | -1241.6 | 750.9 | -2371.5 | -96.9 | -323.7 |
| 2 | 4 | -718.7 | -641.4 | 1021.4 | -1797.0 | -142.2 | -228.3 |
| 2 | 5 | -35.6 | -121.9 | 1412.2 | -1444.2 | -225.5 | -122.0 |
| 2 | 6 | 525.3 | 316.9 | 1954.4 | -1345.7 | -305.3 | 9.0 |
| 2 | 7 | 961.2 | 675.0 | 2512.4 | -1364.5 | -224.0 | 9.0 |
| 2 | 8 | 1279.2 | 952.4 | 2946.1 | -1383.3 | -172.4 | 9.0 |
| 2 | 9 | 1493.8 | 1149.1 | 3267.6 | -1402.2 | -120.7 | 9.0 |
| 2 | 10 | 1612.1 | 1265.0 | 3475.9 | -1421.0 | -68.7 | 9.0 |
| 2 | 11 | 1634.3 | 1300.3 | 3570.2 | -1454.1 | -20.2 | 34.3 |
| 2 | 12 | 1560.2 | 1254.9 | 3552.4 | -1526.2 | 31.8 | 34.3 |
| 2 | 13 | 1389.9 | 1128.8 | 3416.9 | -1598.3 | 113.6 | 34.3 |
| 2 | 14 | 1123.4 | 921.9 | 3166.2 | -1670.4 | 165.5 | 34.3 |
| 2 | 15 | 760.7 | 634.4 | 2803.1 | -1742.5 | 190.1 | 34.3 |
| 2 | 16 | 301.8 | 266.2 | 2332.1 | -1814.7 | 241.4 | 34.3 |
| 2 | 17 | -257.6 | -182.8 | 1806.2 | -1939.6 | 213.4 | 113.2 |
| 2 | 18 | -926.1 | -712.4 | 1404.0 | -2293.1 | 144.6 | 232.5 |
| 2 | 19 | -1707.9 | -1322.8 | 1107.2 | -2879.4 | 99.8 | 327.7 |
| 2 | 20 | -2603.1 | -2013.8 | 1028.9 | -3687.5 | -25.2 | 443.9 |
| 2 | 21 | -3611.6 | -2785.6 | 1119.4 | -4721.1 | -67.1 | 595.7 |
| 3 | 1 | -3611.6 | -2785.6 | 1119.4 | -4721.1 | 87.9 | -540.0 |
| 3 | 2 | -2577.0 | -2018.6 | 1996.8 | -3687.8 | 36.2 | -453.0 |
| 3 | 3 | -1655.7 | -1332.3 | 1099.3 | -2874.7 | -88.1 | -337.1 |
| 3 | 4 | -847.8 | -726.8 | 1370.0 | -2288.2 | -159.2 | -216.0 |
| 3 | 5 | -156.2 | -201.9 | 1763.6 | -1926.1 | -228.3 | -123.7 |
| 3 | 6 | 413.3 | 242.2 | 2300.8 | -1812.2 | -284.3 | -16.5 |
| 3 | 7 | 857.8 | 605.7 | 2807.2 | -1777.6 | -232.9 | -16.5 |
| 3 | 8 | 1184.4 | 888.4 | 3204.8 | -1742.9 | -151.4 | -16.5 |
| 3 | 9 | 1407.5 | 1090.4 | 3482.0 | -1708.2 | -99.6 | -16.5 |
| 3 | 10 | 1534.4 | 1211.8 | 3645.8 | -1673.6 | -47.7 | -16.5 |
| 3 | 11 | 1565.2 | 1252.4 | 3695.8 | -1638.9 | 0.9 | -16.5 |
| 3 | 12 | 1499.7 | 1212.3 | 3633.5 | -1653.4 | 52.9 | 10.5 |
| 3 | 13 | 1338.0 | 1091.5 | 3456.8 | -1675.5 | 104.8 | 10.5 |
| 3 | 14 | 1080.1 | 890.1 | 3158.5 | -1697.7 | 186.5 | 10.5 |
| 3 | 15 | 725.9 | 607.9 | 2751.2 | -1719.8 | 211.0 | 10.5 |
| 3 | 16 | 275.6 | 245.0 | 2236.2 | -1741.9 | 262.2 | 10.5 |
| 3 | 17 | -275.3 | -198.6 | 1696.9 | -1847.0 | 201.9 | 121.7 |
| 3 | 18 | -935.2 | -722.9 | 1324.3 | -2223.5 | 131.9 | 242.1 |
| 3 | 19 | -1708.4 | -1327.9 | 1057.5 | -2833.2 | 86.7 | 337.7 |
| 3 | 20 | -2595.0 | -2013.6 | 995.5 | -3664.6 | -48.8 | 454.1 |
| 3 | 21 | -3594.9 | -2780.0 | 1136.1 | -4729.8 | -90.7 | 606.7 |
| 4 | 1 | -3594.9 | -2780.0 | 1136.1 | -4729.8 | 66.5 | -530.2 |
| 4 | 2 | -2556.6 | -2009.3 | 1050.0 | -3717.5 | 24.7 | -443.3 |
| 4 | 3 | -1631.6 | -1319.3 | 1163.8 | -2926.6 | -99.8 | -327.6 |
| 4 | 4 | -820.0 | -710.0 | 1462.4 | -2363.1 | -170.3 | -207.0 |
| 4 | 5 | -124.6 | -181.4 | 1881.8 | -2022.0 | -238.3 | -115.7 |
| 4 | 6 | 448.6 | 266.4 | 2404.4 | -1889.1 | -263.6 | -39.3 |
| 4 | 7 | 896.8 | 633.6 | 2867.1 | -1806.6 | -212.1 | -39.3 |
| 4 | 8 | 1227.1 | 920.1 | 3220.8 | -1724.1 | -130.5 | -39.3 |
| 4 | 9 | 1454.0 | 1125.8 | 3453.9 | -1641.6 | -78.7 | -39.3 |
| 4 | 10 | 1584.7 | 1250.9 | 3573.5 | -1559.1 | -26.7 | -39.3 |
| 4 | 11 | 1619.2 | 1295.2 | 3579.3 | -1476.5 | 21.8 | -39.3 |
| 4 | 12 | 1557.4 | 1258.9 | 3472.7 | -1420.1 | 73.8 | -13.7 |
| 4 | 13 | 1399.4 | 1141.8 | 3251.8 | -1391.2 | 125.7 | -13.7 |
| 4 | 14 | 1145.3 | 944.1 | 2909.3 | -1362.3 | 207.4 | -13.7 |
| 4 | 15 | 794.9 | 665.6 | 2458.5 | -1333.5 | 232.0 | -13.7 |
| 4 | 16 | 348.2 | 306.5 | 1900.4 | -1304.6 | 283.1 | -13.7 |
| 4 | 17 | -198.9 | -133.4 | 1357.7 | -1398.0 | 198.2 | 121.9 |
| 4 | 18 | -855.0 | -653.9 | 989.2 | -1769.5 | 140.8 | 229.7 |
| 4 | 19 | -1624.5 | -1255.2 | 721.0 | -2368.6 | 94.9 | 325.9 |
| 4 | 20 | -2507.4 | -1937.2 | 666.4 | -3187.2 | -41.4 | 442.7 |
| 4 | 21 | -3503.6 | -2699.9 | 794.5 | -4305.1 | -83.5 | 597.6 |
| 5 | 1 | -3503.6 | -2699.9 | 794.5 | -4305.1 | 24.1 | -485.0 |
| 5 | 2 | -2686.5 | -2091.6 | 789.8 | -3569.0 | -9.3 | -416.2 |
| 5 | 3 | -1939.4 | -1533.1 | 883.2 | -2976.5 | -96.4 | -321.8 |
| 5 | 4 | -1262.2 | -1024.4 | 1181.0 | -2540.9 | -188.9 | -216.8 |
| 5 | 5 | -656.9 | -565.6 | 1577.9 | -2287.2 | -308.7 | -86.6 |
| 5 | 6 | -126.9 | -156.6 | 2026.8 | -2144.3 | -240.0 | -86.6 |
| 5 | 7 | 325.8 | 202.6 | 2420.0 | -2001.3 | -198.2 | -86.6 |
| 5 | 8 | 705.8 | 512.0 | 2730.4 | -1858.4 | -186.5 | -86.6 |
| 5 | 9 | 1022.0 | 771.5 | 2973.2 | -1715.4 | -117.3 | -86.6 |
| 5 | 10 | 1278.7 | 981.3 | 3148.3 | -1572.5 | -74.6 | -86.6 |
| 5 | 11 | 1476.0 | 1141.2 | 3249.6 | -1429.5 | -61.3 | -86.6 |
| 5 | 12 | 1614.0 | 1251.2 | 3274.9 | -1286.6 | 4.2 | -86.6 |
| 5 | 13 | 1692.5 | 1311.5 | 3223.3 | -1143.6 | 47.6 | -86.6 |
| 5 | 14 | 1711.7 | 1321.9 | 3089.9 | -1000.7 | 116.8 | -86.6 |
| 5 | 15 | 1671.4 | 1282.6 | 2895.4 | -857.7 | 131.4 | -86.6 |
| 5 | 16 | 1571.8 | 1193.4 | 2602.7 | -714.8 | 200.6 | -86.6 |
| 5 | 17 | 1408.3 | 1054.3 | 2244.2 | -571.8 | 240.8 | -86.6 |
| 5 | 18 | 1172.0 | 865.5 | 1799.8 | -428.9 | 284.9 | -86.6 |
| 5 | 19 | 858.6 | 626.8 | 1287.0 | -285.9 | 325.3 | -86.6 |
| 5 | 20 | 467.9 | 338.3 | 680.3 | -143.0 | 394.6 | -86.6 |
| 5 | 21 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 258.5 |

| VANO | SECC | V.PP. | V.CP. | V.MAX.SC | V.MIN.SC. | MF.SC.1 | MF.SC.2 |
|---|---|---|---|---|---|---|---|
| 1 | 1 | -301.6 | -220.6 | 83.1 | -438.6 | 0.0 | 0.0 |
| 1 | 2 | -254.8 | -190.4 | 84.0 | -393.8 | -109.4 | 649.7 |
| 1 | 3 | -208.0 | -160.2 | 87.4 | -352.9 | -171.3 | 1164.7 |
| 1 | 4 | -161.2 | -130.0 | 92.9 | -319.0 | -196.7 | 1579.2 |
| 1 | 5 | -114.4 | -99.8 | 102.4 | -281.9 | 207.7 | 1860.3 |
| 1 | 6 | -73.0 | -69.6 | 121.1 | -248.0 | 382.4 | 2045.8 |
| 1 | 7 | -37.0 | -39.4 | 142.3 | -220.4 | 535.7 | 2182.2 |
| 1 | 8 | -1.0 | -9.2 | 161.1 | -190.8 | 584.5 | 2204.0 |
| 1 | 9 | 35.0 | 20.9 | 185.8 | -163.9 | 671.5 | 2162.8 |
| 1 | 10 | 71.0 | 51.1 | 213.0 | -142.7 | 699.5 | 2119.8 |
| 1 | 11 | 107.0 | 81.3 | 237.2 | -120.3 | 624.4 | 1984.8 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 13 | 143.0 | 111.5 | 267.3 | -100.0 | 541.7 | 1814.5 |
| 1 | 14 | 179.0 | 141.7 | 299.3 | -85.4 | 381.3 | 1691.4 |
| 1 | 15 | 215.0 | 171.9 | 328.6 | -69.3 | 111.7 | 1486.2 |
| 1 | 16 | 251.0 | 202.1 | 363.1 | -55.1 | -197.7 | 1273.4 |
| 1 | 17 | 287.0 | 232.3 | 395.2 | -46.5 | -623.7 | 1150.9 |
| 1 | 18 | 326.2 | 262.5 | 432.2 | -36.4 | -1102.6 | 959.8 |
| 1 | 19 | 368.6 | 292.7 | 470.1 | -28.7 | -1673.0 | 803.8 |
| 1 | 20 | 411.0 | 322.9 | 505.2 | -25.1 | -2348.7 | 745.4 |
| 1 | 21 | 453.4 | 353.1 | 544.8 | -23.6 | -3100.4 | 739.8 |
| 1 | 22 | 495.8 | 383.3 | 585.1 | -23.1 | -3946.3 | 762.8 |
| 2 | 1 | -515.6 | -381.9 | 80.0 | -628.1 | 762.8 | -3949.3 |
| 2 | 2 | -461.6 | -343.5 | 80.8 | -579.1 | 618.3 | -2800.1 |
| 2 | 3 | -407.6 | -305.0 | 83.2 | -531.2 | 517.8 | -1793.1 |
| 2 | 4 | -353.7 | -266.6 | 87.5 | -484.8 | 456.9 | -928.2 |
| 2 | 5 | -296.9 | -228.2 | 93.8 | -440.1 | 429.2 | -202.8 |
| 2 | 6 | -237.3 | -189.7 | 106.0 | -397.3 | 827.8 | 396.6 |
| 2 | 7 | -177.8 | -151.3 | 122.5 | -356.7 | 948.2 | 860.5 |
| 2 | 8 | -125.1 | -112.9 | 141.8 | -318.2 | 1058.3 | 1209.1 |
| 2 | 9 | -79.3 | -74.4 | 166.9 | -282.2 | 1210.1 | 1453.2 |
| 2 | 10 | -33.5 | -36.0 | 192.0 | -248.7 | 1253.6 | 1604.0 |
| 2 | 11 | 12.4 | 2.4 | 219.9 | -214.7 | 1244.4 | 1616.2 |
| 2 | 12 | 58.2 | 40.8 | 250.6 | -186.7 | 1168.5 | 1615.3 |
| 2 | 13 | 104.0 | 79.3 | 284.0 | -161.6 | 1011.8 | 1562.1 |
| 2 | 14 | 149.8 | 117.7 | 319.8 | -139.3 | 758.8 | 1471.5 |
| 2 | 15 | 195.6 | 156.1 | 358.3 | -120.0 | 400.9 | 1358.1 |
| 2 | 16 | 241.4 | 194.6 | 399.1 | -103.5 | -73.0 | 1235.8 |
| 2 | 17 | 291.3 | 233.0 | 441.9 | -89.7 | -671.3 | 1100.7 |
| 2 | 18 | 345.3 | 271.4 | 486.7 | -82.8 | -1401.3 | 831.0 |
| 2 | 19 | 399.3 | 309.9 | 533.1 | -78.5 | -2269.0 | 882.3 |
| 2 | 20 | 453.2 | 348.3 | 583.5 | -76.1 | -3250.6 | 972.9 |
| 2 | 21 | 507.2 | 386.7 | 632.4 | -75.3 | -4403.6 | 1107.4 |
| 3 | 1 | -519.6 | -384.4 | 87.9 | -641.5 | 1119.4 | -4398.7 |
| 3 | 2 | -465.7 | -346.0 | 88.7 | -589.9 | 959.2 | -3250.5 |
| 3 | 3 | -411.7 | -307.6 | 91.1 | -542.0 | 844.2 | -2220.5 |
| 3 | 4 | -357.7 | -269.1 | 95.5 | -495.6 | 769.4 | -1334.2 |
| 3 | 5 | -301.0 | -230.7 | 102.0 | -451.0 | 728.1 | -588.2 |
| 3 | 6 | -241.4 | -192.3 | 115.0 | -408.3 | 1123.7 | 23.6 |
| 3 | 7 | -181.9 | -153.9 | 131.7 | -367.9 | 1229.9 | 515.2 |
| 3 | 8 | -129.2 | -115.4 | 151.2 | -329.6 | 1324.7 | 884.2 |
| 3 | 9 | -83.4 | -77.0 | 173.5 | -293.8 | 1393.9 | 1149.2 |
| 3 | 10 | -37.5 | -38.6 | 201.8 | -260.5 | 1485.7 | 1321.7 |
| 3 | 11 | 8.3 | -0.1 | 229.9 | -229.9 | 1457.8 | 1414.5 |
| 3 | 12 | 54.1 | 38.3 | 260.8 | -199.0 | 1362.0 | 1378.9 |
| 3 | 13 | 99.9 | 76.7 | 294.4 | -174.1 | 1184.6 | 1350.2 |
| 3 | 14 | 145.7 | 115.2 | 330.5 | -152.0 | 912.8 | 1285.1 |
| 3 | 15 | 191.5 | 153.6 | 368.8 | -132.9 | 530.2 | 1198.2 |
| 3 | 16 | 237.4 | 192.0 | 409.7 | -116.6 | 33.9 | 1103.2 |
| 3 | 17 | 287.3 | 230.4 | 452.6 | -104.4 | -587.1 | 710.2 |
| 3 | 18 | 341.2 | 268.9 | 497.4 | -98.2 | -1339.8 | 761.6 |
| 3 | 19 | 395.2 | 307.3 | 543.8 | -93.9 | -2230.0 | 845.7 |
| 3 | 20 | 449.2 | 345.7 | 594.2 | -91.5 | -3233.8 | 969.0 |
| 3 | 21 | 503.1 | 384.2 | 643.0 | -90.7 | -4408.6 | 1136.1 |
| 4 | 1 | -521.4 | -386.2 | 74.0 | -631.5 | 1113.5 | -4401.8 |
| 4 | 2 | -467.5 | -347.8 | 74.8 | -579.8 | 982.4 | -3274.1 |
| 4 | 3 | -413.5 | -309.3 | 77.3 | -531.9 | 896.7 | -2265.2 |
| 4 | 4 | -359.5 | -270.9 | 81.8 | -485.5 | 851.3 | -1400.3 |
| 4 | 5 | -302.8 | -232.5 | 89.3 | -440.9 | 1134.3 | -675.8 |
| 4 | 6 | -243.2 | -194.1 | 103.3 | -398.2 | 1262.1 | -85.5 |
| 4 | 7 | -183.6 | -155.6 | 120.2 | -357.9 | 1392.5 | 384.9 |
| 4 | 8 | -131.0 | -117.2 | 139.9 | -319.7 | 1510.8 | 733.1 |
| 4 | 9 | -85.1 | -78.8 | 162.5 | -284.0 | 1602.5 | 977.7 |
| 4 | 10 | -39.3 | -40.3 | 191.0 | -250.8 | 1715.7 | 1130.6 |
| 4 | 11 | 6.5 | -1.9 | 219.3 | -220.4 | 1708.2 | 1204.7 |
| 4 | 12 | 52.3 | 36.5 | 250.4 | -189.7 | 1631.9 | 1151.3 |
| 4 | 13 | 98.1 | 75.0 | 284.2 | -165.0 | 1473.0 | 1106.0 |
| 4 | 14 | 143.9 | 113.4 | 320.5 | -143.2 | 1219.0 | 1025.5 |
| 4 | 15 | 189.8 | 151.8 | 359.1 | -124.3 | 853.7 | 924.5 |
| 4 | 16 | 235.6 | 190.2 | 400.1 | -108.2 | 374.3 | 816.5 |
| 4 | 17 | 285.5 | 228.7 | 443.2 | -96.8 | -229.7 | 421.7 |
| 4 | 18 | 339.4 | 267.1 | 488.0 | -90.7 | -964.9 | 460.7 |
| 4 | 19 | 393.4 | 305.5 | 534.4 | -86.5 | -1836.7 | 532.1 |
| 4 | 20 | 447.4 | 344.0 | 584.8 | -84.2 | -2819.7 | 642.0 |
| 4 | 21 | 501.4 | 382.4 | 633.6 | -83.5 | -3972.3 | 794.5 |
| 5 | 1 | -516.4 | -383.8 | 24.1 | -585.4 | 794.5 | -3931.9 |
| 5 | 2 | -474.0 | -353.6 | 24.6 | -546.6 | 770.4 | -3131.5 |
| 5 | 3 | -431.6 | -323.4 | 26.1 | -506.9 | 775.9 | -2375.5 |
| 5 | 4 | -389.2 | -293.2 | 30.8 | -471.3 | 863.9 | -1684.2 |
| 5 | 5 | -344.6 | -263.0 | 37.0 | -434.0 | 978.1 | -1126.3 |
| 5 | 6 | -297.8 | -232.8 | 47.3 | -397.2 | 1170.0 | -648.0 |
| 5 | 7 | -251.0 | -202.6 | 59.0 | -365.3 | 1363.6 | -223.7 |
| 5 | 8 | -209.6 | -172.4 | 70.5 | -330.9 | 1513.2 | 85.5 |
| 5 | 9 | -173.6 | -142.2 | 86.9 | -297.9 | 1719.8 | 312.6 |
| 5 | 10 | -137.6 | -112.0 | 104.8 | -270.0 | 1902.4 | 516.7 |
| 5 | 11 | -101.6 | -81.8 | 122.0 | -240.1 | 2012.2 | 601.1 |
| 5 | 12 | -65.6 | -51.6 | 144.5 | -211.8 | 2146.2 | 620.4 |
| 5 | 13 | -29.6 | -21.4 | 165.7 | -189.0 | 2186.6 | 653.7 |
| 5 | 14 | 6.4 | 8.8 | 192.7 | -164.4 | 2225.3 | 570.5 |
| 5 | 15 | 42.4 | 39.0 | 222.0 | -141.7 | 2197.4 | 445.3 |
| 5 | 16 | 78.4 | 69.2 | 249.9 | -124.6 | 2061.6 | 377.4 |
| 5 | 17 | 119.8 | 99.4 | 283.8 | -106.0 | 1873.0 | 201.8 |
| 5 | 18 | 166.6 | 129.6 | 320.0 | -96.6 | 1584.0 | -214.8 |
| 5 | 19 | 213.4 | 159.7 | 354.9 | -91.1 | 1171.0 | -183.5 |
| 5 | 20 | 260.2 | 189.9 | 395.7 | -87.7 | 652.8 | -115.5 |
| 5 | 21 | 307.0 | 220.1 | 438.7 | -86.6 | 0.0 | 0.0 |

| VANO | SECC | R.PP. | R.CP | R.MAX.SC | R.MIN.SC | R.MAX.TREN | R.MIN.TR |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 301.6 | 220.6 | 328.5 | -69.4 | 110.1 | -13.7 |
| 2 | 1 | 1011.4 | 765.2 | 984.4 | -85.8 | 120.6 | -17.3 |
| 3 | 1 | 1026.9 | 771.1 | 1043.6 | -138.0 | 120.0 | -17.0 |
| 4 | 1 | 1024.6 | 770.4 | 1044.1 | -139.5 | 119.9 | -17.8 |
| 5 | 1 | 1017.8 | 766.2 | 989.1 | -89.4 | 120.7 | -18.2 |
| 6 | 1 | 307.0 | 220.1 | 330.8 | -72.3 | 108.0 | -14.4 |

Execution terminated : 0

C:\PONTEX>>

C:\PONTEX>>

PUENTES - PRETE1/R 4100

NUM FAMILIAS CABLES:20

FAMILIA 1
SECCION 1 1ANCLAJE 0
SECCION 2 5ANCLAJE 1
TENSIONES ANCLAJE: 145. 145. KG/MM2
COEF ROZAM:0.20 DESVIACIONES:0.00600
PENETR.CUNA (MM) = 5.0

| VANO | SECC | YSUP | YINF | PDTE | EXCTR | T.INICIAL |
|---|---|---|---|---|---|---|
| A1,A2,A3,X1,X2 : | | 0.00000000 | -0.17363346 | -0.94758844 | -0.85 | 0.65 |
| A1,A2,A3,X1,X2 : | | 0.00691767 | -0.18262641 | -0.94466573 | 0.65 | 13.20 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | 0.00000000 | -2.15000010 | 13.20 | 13.20 |
| A1,A2,A3,X1,X2 : | | 0.01230905 | -0.32495901 | -0.00527060 | 13.20 | 22.10 |
| A1,A2,A3,X1,X2 : | | -0.01230905 | 0.76316124 | -12.02899837 | 22.10 | 31.00 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | 0.00000000 | -0.20000000 | 31.00 | 33.00 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | 0.00000000 | -0.20000000 | 0.00 | 4.09 |
| A1,A2,A3,X1,X2 : | | -0.02450427 | 0.20057231 | -0.61043113 | 4.09 | 8.50 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | -0.21600021 | 1.16000211 | 8.50 | 10.00 |
| 2.45 | -0.85 | 10.00 | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 1 | -0.948 | 2.152 | -0.174 | 0.402 | 118.0 |
| 1 | 2 | -1.227 | 1.873 | -0.160 | 0.123 | 118.6 |
| 1 | 3 | -1.472 | 1.628 | -0.137 | -0.122 | 119.3 |
| 1 | 4 | -1.679 | 1.421 | -0.114 | -0.329 | 120.1 |
| 1 | 5 | -1.849 | 1.251 | -0.091 | -0.499 | 120.9 |
| 1 | 6 | -1.980 | 1.120 | -0.068 | -0.821 | 121.7 |
| 1 | 7 | -2.075 | 1.025 | -0.046 | -0.915 | 122.5 |
| 1 | 8 | -2.131 | 0.969 | -0.023 | -0.971 | 123.3 |
| 1 | 9 | -2.150 | 0.950 | 0.000 | -0.990 | 124.1 |
| 1 | 10 | -2.116 | 0.984 | 0.041 | -0.956 | 125.4 |
| 1 | 11 | -2.016 | 1.084 | 0.081 | -0.856 | 126.6 |
| 1 | 12 | -1.848 | 1.252 | 0.122 | -0.688 | 127.9 |
| 1 | 13 | -1.614 | 1.486 | 0.162 | -0.454 | 129.2 |
| 1 | 14 | -1.312 | 1.788 | 0.203 | -0.152 | 130.5 |
| 1 | 15 | -0.968 | 2.132 | 0.194 | 0.192 | 130.9 |
| 1 | 16 | -0.681 | 2.419 | 0.154 | 0.479 | 132.2 |
| 1 | 17 | -0.460 | 2.640 | 0.113 | 0.870 | 133.6 |
| 1 | 18 | -0.307 | 2.793 | 0.073 | 1.023 | 134.9 |
| 1 | 19 | -0.221 | 2.879 | 0.032 | 1.109 | 136.3 |
| 1 | 20 | -0.200 | 2.900 | 0.000 | 1.130 | 134.6 |
| 1 | 21 | -0.200 | 2.900 | 0.000 | 1.130 | 134.2 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 2 | 1 | -0.200 | 2.900 | 0.000 | 1.130 | 134.2 |
| 2 | 2 | -0.200 | 2.900 | 0.000 | 1.130 | 133.7 |
| 2 | 3 | -0.200 | 2.900 | -0.005 | 1.130 | 132.9 |
| 2 | 4 | -0.319 | 2.781 | -0.108 | 1.011 | 128.4 |
| 2 | 5 | -0.655 | 2.445 | -0.211 | 0.695 | 124.1 |

LONG.CABLE = 44.09 M. ALARGAMIENTO = 264. MM.

ALARGAMIENTO(1) = 0. MM. ALARGAMIENTO(2) = 269. MM.

FAMILIA 2

SECCION 2 6ANCLAJE 0
SECCION 3 5ANCLAJE 1
TENSIONES ANCLAJE: 145. 145. KG/MM2
COEF ROZAM:0.20 DESVIACIONES:0.00600
PENETR.CUNA (MM) = 5.0

| VANO | SECC | YSUP | YINF | PDTE | EXCTR | T.INICIAL |
|---|---|---|---|---|---|---|
| A1,A2,A3,X1,X2 : | | 0.00000000 | -0.21599999 | 1.15999985 | 10.00 | 11.50 |
| A1,A2,A3,X1,X2 : | | 0.01136842 | -0.47747365 | 2.66347337 | 11.50 | 21.00 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | 0.00000000 | -2.34999990 | 21.00 | 21.00 |
| A1,A2,A3,X1,X2 : | | 0.01191136 | -0.50027698 | 2.90290856 | 21.00 | 30.50 |
| A1,A2,A3,X1,X2 : | | -0.01191136 | 0.95290852 | -19.25817108 | 30.50 | 40.00 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | 0.00000000 | -0.20000000 | 40.00 | 42.00 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | 0.00000000 | -0.20000000 | 0.00 | 4.09 |
| A1,A2,A3,X1,X2 : | | -0.02450427 | 0.20057231 | -0.61043113 | 4.09 | 8.50 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | -0.21600021 | 1.16000211 | 8.50 | 10.00 |
| 2.10 | 10.00 | 10.00 | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 2 | 6 | -1.108 | 1.992 | -0.216 | 0.242 | 117.3 |
| 2 | 7 | -1.548 | 1.552 | -0.191 | -0.198 | 118.2 |
| 2 | 8 | -1.899 | 1.201 | -0.143 | -0.739 | 119.6 |
| 2 | 9 | -2.149 | 0.951 | -0.095 | -0.989 | 121.0 |
| 2 | 10 | -2.300 | 0.800 | -0.048 | -1.140 | 122.5 |
| 2 | 11 | -2.350 | 0.750 | 0.000 | -1.190 | 124.0 |
| 2 | 12 | -2.297 | 0.803 | 0.050 | -1.137 | 125.5 |
| 2 | 13 | -2.140 | 0.960 | 0.100 | -0.980 | 127.1 |
| 2 | 14 | -1.877 | 1.223 | 0.150 | -0.717 | 128.7 |
| 2 | 15 | -1.510 | 1.590 | 0.200 | -0.350 | 130.3 |
| 2 | 16 | -1.061 | 2.039 | 0.202 | 0.099 | 130.6 |
| 2 | 17 | -0.688 | 2.412 | 0.152 | 0.642 | 132.3 |
| 2 | 18 | -0.420 | 2.680 | 0.102 | 0.910 | 133.9 |
| 2 | 19 | -0.258 | 2.842 | 0.052 | 1.072 | 135.6 |
| 2 | 20 | -0.200 | 2.900 | 0.002 | 1.130 | 134.8 |
| 2 | 21 | -0.200 | 2.900 | 0.000 | 1.130 | 134.2 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 3 | 1 | -0.200 | 2.900 | 0.000 | 1.130 | 134.2 |
| 3 | 2 | -0.200 | 2.900 | 0.000 | 1.130 | 133.7 |
| 3 | 3 | -0.200 | 2.900 | -0.005 | 1.130 | 132.9 |
| 3 | 4 | -0.319 | 2.781 | -0.108 | 1.011 | 128.4 |
| 3 | 5 | -0.655 | 2.445 | -0.211 | 0.695 | 124.1 |

LONG.CABLE = 42.28 M. ALARGAMIENTO = 256. MM.

ALARGAMIENTO(1) = 0. MM. ALARGAMIENTO(2) = 260. MM.

FAMILIA 3
SECCION 3 6ANCLAJE 0
SECCION 4 5ANCLAJE 1
TENSIONES ANCLAJE: 145. 145. KG/MM2
COEF ROZAM:0.20 DESVIACIONES:0.00600
PENETR.CUNA (MM) = 5.0

| VANO | SECC | YSUP | YINF | PDTE | EXCTR | T.INICIAL |
|---|---|---|---|---|---|---|
| A1,A2,A3,X1,X2 : | | 0.00000000 | -0.21599999 | 1.15999985 | 10.00 | 11.50 |
| A1,A2,A3,X1,X2 : | | 0.01136842 | -0.47747365 | 2.66347337 | 11.50 | 21.00 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | 0.00000000 | -2.34999990 | 21.00 | 21.00 |

```
A1,A2,A3,X1,X2 :   0.01191136  -0.50027698   2.90290856 21.00 30.50
A1,A2,A3,X1,X2 :  -0.01191136   0.95290852 -19.25817108 30.50 40.00
A1,A2,A3,X1,X2 :   0.00000000   0.00000000  -0.20000000 40.00 42.00
A1,A2,A3,X1,X2 :   0.00000000   0.00000000  -0.20000000  0.00  4.09
A1,A2,A3,X1,X2 :  -0.02450427   0.20057231  -0.61043113  4.09  8.50
A1,A2,A3,X1,X2 :   0.00000000  -0.21600021   1.16000211  8.50 10.00
     2.10      10.00      10.00
```

| | | | | | | |
|---|---|---|---|---|---|---|
| 3 | 6 | -1.108 | 1.992 | -0.216 | 0.242 | 117.3 |
| 3 | 7 | -1.548 | 1.552 | -0.191 | -0.198 | 118.2 |
| 3 | 8 | -1.899 | 1.201 | -0.143 | -0.739 | 119.6 |
| 3 | 9 | -2.149 | 0.951 | -0.095 | -0.989 | 121.0 |
| 3 | 10 | -2.300 | 0.800 | -0.048 | -1.140 | 122.5 |
| 3 | 11 | -2.350 | 0.750 | 0.000 | -1.190 | 124.0 |
| 3 | 12 | -2.297 | 0.803 | 0.050 | -1.137 | 125.5 |
| 3 | 13 | -2.140 | 0.960 | 0.100 | -0.980 | 127.1 |
| 3 | 14 | -1.877 | 1.223 | 0.150 | -0.717 | 128.7 |
| 3 | 15 | -1.510 | 1.590 | 0.200 | -0.350 | 130.3 |
| 3 | 16 | -1.061 | 2.039 | 0.202 | 0.099 | 130.6 |
| 3 | 17 | -0.688 | 2.412 | 0.152 | 0.642 | 132.3 |
| 3 | 18 | -0.420 | 2.680 | 0.102 | 0.910 | 133.9 |
| 3 | 19 | -0.258 | 2.842 | 0.052 | 1.072 | 135.6 |
| 3 | 20 | -0.200 | 2.900 | 0.002 | 1.130 | 134.8 |
| 3 | 21 | -0.200 | 2.900 | 0.000 | 1.130 | 134.2 |
| 4 | 1 | -0.200 | 2.900 | 0.000 | 1.130 | 134.2 |
| 4 | 2 | -0.200 | 2.900 | 0.000 | 1.130 | 133.7 |
| 4 | 3 | -0.200 | 2.900 | -0.005 | 1.130 | 132.9 |
| 4 | 4 | -0.319 | 2.781 | -0.108 | 1.011 | 128.4 |
| 4 | 5 | -0.655 | 2.445 | -0.211 | 0.695 | 124.1 |

LONG.CABLE = 42.28 M. ALARGAMIENTO = 256. MM.

ALARGAMIENTO(1) = 0. MM. ALARGAMIENTO(2) = 260. MM.

FAMILIA 4
SECCION 4 6ANCLAJE 0
SECCION 5 7ANCLAJE 1
TENSIONES ANCLAJE: 145. 145. KG/MM2
COEF ROZAM:0.20 DESVIACIONES:0.00600
PENETR.CUNA (MM) = 5.0

| VANO | SECC | YSUP | YINF | PDTE | EXCTR | T.INICIAL |
|---|---|---|---|---|---|---|

```
A1,A2,A3,X1,X2 :   0.00000000  -0.21599999   1.15999985 10.00 11.50
A1,A2,A3,X1,X2 :   0.01136842  -0.47747365   2.66347337 11.50 21.00
A1,A2,A3,X1,X2 :   0.00000000   0.00000000  -2.34999990 21.00 21.00
A1,A2,A3,X1,X2 :   0.01191136  -0.50027698   2.90290856 21.00 30.50
A1,A2,A3,X1,X2 :  -0.01191136   0.95290852 -19.25817108 30.50 40.00
A1,A2,A3,X1,X2 :   0.00000000   0.00000000  -0.20000000 40.00 42.00
A1,A2,A3,X1,X2 :  -0.02093635   0.15237896  -0.47726116  3.64  8.50
A1,A2,A3,X1,X2 :   0.00000000  -0.20353903   1.03539026  8.50 10.00
     0.60      10.00      10.00
```

| | | | | | | |
|---|---|---|---|---|---|---|
| 4 | 6 | -1.108 | 1.992 | -0.216 | 0.242 | 117.3 |
| 4 | 7 | -1.548 | 1.552 | -0.191 | -0.198 | 118.1 |
| 4 | 8 | -1.899 | 1.201 | -0.143 | -0.739 | 119.5 |
| 4 | 9 | -2.149 | 0.951 | -0.095 | -0.989 | 121.0 |
| 4 | 10 | -2.300 | 0.800 | -0.048 | -1.140 | 122.4 |
| 4 | 11 | -2.350 | 0.750 | 0.000 | -1.190 | 123.9 |
| 4 | 12 | -2.297 | 0.803 | 0.050 | -1.137 | 125.5 |
| 4 | 13 | -2.140 | 0.960 | 0.100 | -0.980 | 127.0 |
| 4 | 14 | -1.877 | 1.223 | 0.150 | -0.717 | 128.6 |
| 4 | 15 | -1.510 | 1.590 | 0.200 | -0.350 | 130.2 |
| 4 | 16 | -1.061 | 2.039 | 0.202 | 0.099 | 130.6 |
| 4 | 17 | -0.688 | 2.412 | 0.152 | 0.642 | 132.2 |
| 4 | 18 | -0.420 | 2.680 | 0.102 | 0.910 | 133.8 |
| 4 | 19 | -0.258 | 2.842 | 0.052 | 1.072 | 135.5 |
| 4 | 20 | -0.200 | 2.900 | 0.002 | 1.130 | 136.5 |
| 4 | 21 | -0.200 | 2.900 | 0.000 | 1.130 | 135.9 |
| 5 | 1 | -0.200 | 2.900 | 0.000 | 1.130 | 135.9 |
| 5 | 2 | -0.200 | 2.900 | 0.000 | 1.130 | 135.5 |
| 5 | 3 | -0.200 | 2.900 | 0.000 | 1.130 | 135.1 |
| 5 | 4 | -0.236 | 2.864 | -0.055 | 1.094 | 132.5 |
| 5 | 5 | -0.384 | 2.716 | -0.124 | 0.966 | 129.5 |
| 5 | 6 | -0.645 | 2.455 | -0.193 | 0.705 | 126.5 |
| 5 | 7 | -0.980 | 2.120 | -0.204 | 0.370 | 125.7 |

LONG.CABLE = 42.32 M. ALARGAMIENTO = 266. MM.

ALARGAMIENTO(1) = 0. MM. ALARGAMIENTO(2) = 271. MM.

FAMILIA 5
SECCION 5 8ANCLAJE 0
SECCION 5 21ANCLAJE 1
TENSIONES ANCLAJE: 145. 145. KG/MM2
COEF ROZAM:0.20 DESVIACIONES:0.00600
PENETR.CUNA (MM) = 5.0

| VANO | SECC | YSUP | YINF | PDTE | EXCTR | T.INICIAL |
|---|---|---|---|---|---|---|

```
A1,A2,A3,X1,X2 :   0.00000000  -0.20353983   1.03539836 10.00 11.50
A1,A2,A3,X1,X2 :   0.01226144  -0.48555282   2.65697265 11.50 19.80
A1,A2,A3,X1,X2 :   0.00000000   0.00000000  -2.15000010 19.80 19.80
A1,A2,A3,X1,X2 :   0.00691767  -0.27393961   0.56200188 19.80 32.35
A1,A2,A3,X1,X2 :   0.00000000   0.17363346  -6.67749214 32.35 33.85
     2.40      10.00      33.85
```

| | | | | | | |
|---|---|---|---|---|---|---|
| 5 | 8 | -1.315 | 1.785 | -0.202 | -0.155 | 131.2 |
| 5 | 9 | -1.616 | 1.484 | -0.162 | -0.456 | 132.5 |
| 5 | 10 | -1.850 | 1.250 | -0.121 | -0.690 | 133.8 |
| 5 | 11 | -2.016 | 1.084 | -0.081 | -0.856 | 135.2 |
| 5 | 12 | -2.117 | 0.983 | -0.040 | -0.957 | 136.5 |
| 5 | 13 | -2.150 | 0.950 | 0.000 | -0.990 | 137.0 |
| 5 | 14 | -2.131 | 0.969 | 0.023 | -0.971 | 135.7 |
| 5 | 15 | -2.075 | 1.025 | 0.046 | -0.915 | 134.3 |
| 5 | 16 | -1.981 | 1.119 | 0.068 | -0.821 | 133.0 |
| 5 | 17 | -1.849 | 1.251 | 0.091 | -0.499 | 131.7 |
| 5 | 18 | -1.679 | 1.421 | 0.114 | -0.329 | 130.5 |
| 5 | 19 | -1.472 | 1.628 | 0.137 | -0.122 | 129.2 |
| 5 | 20 | -1.227 | 1.873 | 0.160 | 0.123 | 128.0 |
| 5 | 21 | -0.948 | 2.152 | 0.174 | 0.402 | 127.1 |

LONG.CABLE = 23.98 M. ALARGAMIENTO = 142. MM.

ALARGAMIENTO(1) = 0. MM. ALARGAMIENTO(2) = 149. MM.

FAMILIA 6
SECCION 1 1ANCLAJE 0
SECCION 2 5ANCLAJE 1
TENSIONES ANCLAJE: 145. 145. KG/MM2
COEF ROZAM:0.20 DESVIACIONES:0.00600
PENETR.CUNA (MM) = 5.0

| VANO | SECC | YSUP | YINF | PDTE | EXCTR | T.INICIAL |
|---|---|---|---|---|---|---|
| A1,A2,A3,X1,X2 : | | 0.00000000 | -0.14147912 | -1.42025721 | -0.85 | 0.65 |
| A1,A2,A3,X1,X2 : | | 0.00563662 | -0.14880672 | -1.41787577 | 0.65 | 13.20 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | 0.00000000 | -2.40000010 | 13.20 | 15.20 |
| A1,A2,A3,X1,X2 : | | 0.01262467 | -0.38378996 | 0.51680356 | 15.20 | 24.10 |
| A1,A2,A3,X1,X2 : | | -0.01262467 | 0.83322817 | -14.14826393 | 24.10 | 33.00 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | 0.00000000 | -0.40000001 | 33.00 | 33.00 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | 0.00000000 | -0.40000001 | 0.00 | 0.00 |
| A1,A2,A3,X1,X2 : | | -0.01220574 | 0.00000000 | -0.40000001 | 0.00 | 6.86 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | -0.16738948 | 0.17389482 | 6.86 | 10.00 |
| 2.45 | -0.85 | 10.00 | | | | |
| 1 | 1 | -1.420 | 1.680 | -0.141 | -0.070 | 119.5 |
| 1 | 2 | -1.648 | 1.452 | -0.130 | -0.298 | 120.0 |
| 1 | 3 | -1.848 | 1.252 | -0.112 | -0.498 | 120.7 |
| 1 | 4 | -2.016 | 1.084 | -0.093 | -0.666 | 121.4 |
| 1 | 5 | -2.154 | 0.946 | -0.074 | -0.804 | 122.1 |
| 1 | 6 | -2.262 | 0.838 | -0.056 | -1.102 | 122.8 |
| 1 | 7 | -2.339 | 0.761 | -0.037 | -1.179 | 123.5 |
| 1 | 8 | -2.385 | 0.715 | -0.019 | -1.225 | 124.2 |
| 1 | 9 | -2.400 | 0.700 | 0.000 | -1.240 | 124.9 |
| 1 | 10 | -2.400 | 0.700 | 0.000 | -1.240 | 125.2 |
| 1 | 11 | -2.379 | 0.721 | 0.033 | -1.219 | 126.2 |
| 1 | 12 | -2.290 | 0.810 | 0.074 | -1.130 | 127.5 |
| 1 | 13 | -2.133 | 0.967 | 0.116 | -0.973 | 128.8 |
| 1 | 14 | -1.907 | 1.193 | 0.158 | -0.747 | 130.2 |
| 1 | 15 | -1.612 | 1.488 | 0.199 | -0.452 | 131.5 |
| 1 | 16 | -1.259 | 1.841 | 0.208 | -0.099 | 132.0 |
| 1 | 17 | -0.950 | 2.150 | 0.167 | 0.380 | 133.3 |
| 1 | 18 | -0.709 | 2.391 | 0.125 | 0.621 | 134.6 |
| 1 | 19 | -0.537 | 2.563 | 0.083 | 0.793 | 136.0 |
| 1 | 20 | -0.434 | 2.666 | 0.042 | 0.896 | 136.4 |
| 1 | 21 | -0.400 | 2.700 | 0.000 | 0.930 | 134.3 |
| 2 | 1 | -0.400 | 2.700 | 0.000 | 0.930 | 134.3 |
| 2 | 2 | -0.454 | 2.646 | -0.051 | 0.876 | 131.8 |
| 2 | 3 | -0.615 | 2.485 | -0.103 | 0.715 | 129.3 |
| 2 | 4 | -0.884 | 2.216 | -0.154 | 0.446 | 126.9 |
| 2 | 5 | -1.232 | 1.868 | -0.167 | 0.118 | 125.9 |

LONG.CABLE = 44.10 M. ALARGAMIENTO = 265. MM.

ALARGAMIENTO(1) = 0. MM. ALARGAMIENTO(2) = 270. MM.

FAMILIA 7
SECCION 2 6ANCLAJE 0
SECCION 3 5ANCLAJE 1

TENSIONES ANCLAJE: 145. 145. KG/MM2
COEF ROZAM:0.20 DESVIACIONES:0.00600
PENETR.CUNA (MM) = 5.0

| VANO | SECC | YSUP | YINF | PDTE | EXCTR | T.INICIAL |
|---|---|---|---|---|---|---|
| A1,A2,A3,X1,X2 : | | 0.00000000 | -0.16800000 | 0.17999998 | 10.00 | 11.50 |
| A1,A2,A3,X1,X2 : | | 0.00884211 | -0.37136841 | 1.34936833 | 11.50 | 21.00 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | 0.00000000 | -2.54999995 | 21.00 | 23.00 |
| A1,A2,A3,X1,X2 : | | 0.01191136 | -0.54792243 | 3.75110769 | 23.00 | 32.50 |
| A1,A2,A3,X1,X2 : | | -0.01191136 | 1.00055397 | -21.41163254 | 32.50 | 42.00 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | 0.00000000 | -0.40000001 | 42.00 | 42.00 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | 0.00000000 | -0.40000001 | 0.00 | 0.00 |
| A1,A2,A3,X1,X2 : | | -0.01220574 | 0.00000000 | -0.40000001 | 0.00 | 6.86 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | -0.16738948 | 0.17389482 | 6.86 | 10.00 |
| 2.10 | 10.00 | 10.00 | | | | |
| 2 | 6 | -1.584 | 1.516 | -0.168 | -0.234 | 119.4 |
| 2 | 7 | -1.926 | 1.174 | -0.149 | -0.576 | 120.2 |
| 2 | 8 | -2.199 | 0.901 | -0.111 | -1.039 | 121.3 |
| 2 | 9 | -2.394 | 0.706 | -0.074 | -1.234 | 122.5 |
| 2 | 10 | -2.511 | 0.589 | -0.037 | -1.351 | 123.8 |
| 2 | 11 | -2.550 | 0.550 | 0.000 | -1.390 | 125.0 |
| 2 | 12 | -2.550 | 0.550 | 0.002 | -1.390 | 125.4 |
| 2 | 13 | -2.492 | 0.608 | 0.052 | -1.332 | 127.0 |
| 2 | 14 | -2.330 | 0.770 | 0.102 | -1.170 | 128.6 |
| 2 | 15 | -2.062 | 1.038 | 0.152 | -0.902 | 130.2 |
| 2 | 16 | -1.689 | 1.411 | 0.202 | -0.529 | 131.8 |
| 2 | 17 | -1.240 | 1.860 | 0.200 | 0.090 | 132.1 |
| 2 | 18 | -0.873 | 2.227 | 0.150 | 0.457 | 133.8 |
| 2 | 19 | -0.610 | 2.490 | 0.100 | 0.720 | 135.4 |
| 2 | 20 | -0.453 | 2.647 | 0.050 | 0.877 | 136.9 |
| 2 | 21 | -0.400 | 2.700 | 0.000 | 0.930 | 134.3 |
| 3 | 1 | -0.400 | 2.700 | 0.000 | 0.930 | 134.3 |
| 3 | 2 | -0.454 | 2.646 | -0.051 | 0.876 | 131.8 |
| 3 | 3 | -0.615 | 2.485 | -0.103 | 0.715 | 129.3 |
| 3 | 4 | -0.884 | 2.216 | -0.154 | 0.446 | 126.9 |
| 3 | 5 | -1.232 | 1.868 | -0.167 | 0.118 | 125.9 |

LONG.CABLE = 42.27 M. ALARGAMIENTO = 256. MM.

ALARGAMIENTO(1) = 0. MM. ALARGAMIENTO(2) = 262. MM.

FAMILIA 8
SECCION 3 6ANCLAJE 0
SECCION 4 5ANCLAJE 1
TENSIONES ANCLAJE: 145. 145. KG/MM2
COEF ROZAM:0.20 DESVIACIONES:0.00600
PENETR.CUNA (MM) = 5.0

| VANO | SECC | YSUP | YINF | PDTE | EXCTR | T.INICIAL |
|---|---|---|---|---|---|---|
| A1,A2,A3,X1,X2 : | | 0.00000000 | -0.16800000 | 0.17999998 | 10.00 | 11.50 |
| A1,A2,A3,X1,X2 : | | 0.00884211 | -0.37136841 | 1.34936833 | 11.50 | 21.00 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | 0.00000000 | -2.54999995 | 21.00 | 23.00 |
| A1,A2,A3,X1,X2 : | | 0.01191136 | -0.54792243 | 3.75110769 | 23.00 | 32.50 |
| A1,A2,A3,X1,X2 : | | -0.01191136 | 1.00055397 | -21.41163254 | 32.50 | 42.00 |

```
A1,A2,A3,X1,X2 :    0.00000000    0.00000000   -0.40000001 42.00 42.00
A1,A2,A3,X1,X2 :    0.00000000    0.00000000   -0.40000001  0.00  0.00
A1,A2,A3,X1,X2 :   -0.01220574    0.00000000   -0.40000001  0.00  6.86
A1,A2,A3,X1,X2 :    0.00000000   -0.16738948    0.17389482  6.86 10.00
     2.10      10.00      10.00
```

| | | | | | | |
|---|---|---|---|---|---|---|
| 3 | 6 | -1.584 | 1.516 | -0.168 | -0.234 | 119.4 |
| 3 | 7 | -1.926 | 1.174 | -0.149 | -0.576 | 120.2 |
| 3 | 8 | -2.199 | 0.901 | -0.111 | -1.039 | 121.3 |
| 3 | 9 | -2.394 | 0.706 | -0.074 | -1.234 | 122.5 |
| 3 | 10 | -2.511 | 0.589 | -0.037 | -1.351 | 123.8 |
| 3 | 11 | -2.550 | 0.550 | 0.000 | -1.390 | 125.0 |
| 3 | 12 | -2.550 | 0.550 | 0.002 | -1.390 | 125.4 |
| 3 | 13 | -2.492 | 0.608 | 0.052 | -1.332 | 127.0 |
| 3 | 14 | -2.330 | 0.770 | 0.102 | -1.170 | 128.6 |
| 3 | 15 | -2.062 | 1.038 | 0.152 | -0.902 | 130.2 |
| 3 | 16 | -1.689 | 1.411 | 0.202 | -0.529 | 131.8 |
| 3 | 17 | -1.240 | 1.860 | 0.200 | 0.090 | 132.1 |
| 3 | 18 | -0.873 | 2.227 | 0.150 | 0.457 | 133.8 |
| 3 | 19 | -0.610 | 2.490 | 0.100 | 0.720 | 135.4 |
| 3 | 20 | -0.453 | 2.647 | 0.050 | 0.877 | 136.9 |
| 3 | 21 | -0.400 | 2.700 | 0.000 | 0.930 | 134.3 |
| 4 | 1 | -0.400 | 2.700 | 0.000 | 0.930 | 134.3 |
| 4 | 2 | -0.454 | 2.646 | -0.051 | 0.876 | 131.8 |
| 4 | 3 | -0.615 | 2.485 | -0.103 | 0.715 | 129.3 |
| 4 | 4 | -0.884 | 2.216 | -0.154 | 0.446 | 126.9 |
| 4 | 5 | -1.232 | 1.868 | -0.167 | 0.118 | 125.9 |

LONG.CABLE = 42.27 M. ALARGAMIENTO = 256. MM.

ALARGAMIENTO(1) = 0. MM. ALARGAMIENTO(2) = 262. MM.

FAMILIA 9
SECCION 4 6ANCLAJE 0
SECCION 5 7ANCLAJE 1
TENSIONES ANCLAJE: 145. 145. KG/MM2
COEF ROZAM:0.20 DESVIACIONES:0.00600
PENETR.CUNA (MM) = 5.0

| VANO | SECC | YSUP | YINF | PDTE | EXCTR | T.INICIAL |
|---|---|---|---|---|---|---|

```
A1,A2,A3,X1,X2 :    0.00000000   -0.16800000    0.17999998 10.00 11.50
A1,A2,A3,X1,X2 :    0.00884211   -0.37136841    1.34936833 11.50 21.00
A1,A2,A3,X1,X2 :    0.00000000    0.00000000   -2.54999995 21.00 23.00
A1,A2,A3,X1,X2 :    0.01191136   -0.54792243    3.75110769 23.00 32.50
A1,A2,A3,X1,X2 :   -0.01191136    1.00055397  -21.41163254 32.50 42.00
A1,A2,A3,X1,X2 :    0.00000000    0.00000000   -0.40000001 42.00 42.00
A1,A2,A3,X1,X2 :    0.00000000    0.00000000   -0.40000001  0.00  0.00
A1,A2,A3,X1,X2 :   -0.01286918    0.00000000   -0.40000001  0.00  6.19
A1,A2,A3,X1,X2 :    0.00000000   -0.15929216    0.09292161  6.19 10.00
     0.60      10.00      10.00
```

| | | | | | | |
|---|---|---|---|---|---|---|
| 4 | 6 | -1.584 | 1.516 | -0.168 | -0.234 | 119.4 |
| 4 | 7 | -1.926 | 1.174 | -0.149 | -0.576 | 120.1 |
| 4 | 8 | -2.199 | 0.901 | -0.111 | -1.039 | 121.3 |
| 4 | 9 | -2.394 | 0.706 | -0.074 | -1.234 | 122.5 |
| 4 | 10 | -2.511 | 0.589 | -0.037 | -1.351 | 123.7 |
| 4 | 11 | -2.550 | 0.550 | 0.000 | -1.390 | 125.0 |
| 4 | 12 | -2.550 | 0.550 | 0.002 | -1.390 | 125.4 |
| 4 | 13 | -2.492 | 0.608 | 0.052 | -1.332 | 126.9 |
| 4 | 14 | -2.330 | 0.770 | 0.102 | -1.170 | 128.5 |
| 4 | 15 | -2.062 | 1.038 | 0.152 | -0.902 | 130.1 |
| 4 | 16 | -1.689 | 1.411 | 0.202 | -0.529 | 131.7 |
| 4 | 17 | -1.240 | 1.860 | 0.200 | 0.090 | 132.1 |
| 4 | 18 | -0.873 | 2.227 | 0.150 | 0.457 | 133.7 |
| 4 | 19 | -0.610 | 2.490 | 0.100 | 0.720 | 135.4 |
| 4 | 20 | -0.453 | 2.647 | 0.050 | 0.877 | 137.1 |
| 4 | 21 | -0.400 | 2.700 | 0.000 | 0.930 | 135.9 |
| 5 | 1 | -0.400 | 2.700 | 0.000 | 0.930 | 135.9 |
| 5 | 2 | -0.435 | 2.665 | -0.042 | 0.895 | 133.8 |
| 5 | 3 | -0.540 | 2.560 | -0.085 | 0.790 | 131.7 |
| 5 | 4 | -0.715 | 2.385 | -0.127 | 0.615 | 129.7 |
| 5 | 5 | -0.958 | 2.142 | -0.159 | 0.392 | 128.1 |
| 5 | 6 | -1.221 | 1.879 | -0.159 | 0.129 | 127.7 |
| 5 | 7 | -1.484 | 1.616 | -0.159 | -0.134 | 127.3 |

LONG.CABLE = 42.29 M. ALARGAMIENTO = 266. MM.

ALARGAMIENTO(1) = 0. MM. ALARGAMIENTO(2) = 273. MM.

FAMILIA 10
SECCION 5 8ANCLAJE 0
SECCION 5 21ANCLAJE 1
TENSIONES ANCLAJE: 145. 145. KG/MM2
COEF ROZAM:0.20 DESVIACIONES:0.00600
PENETR.CUNA (MM) = 5.0

| VANO | SECC | YSUP | YINF | PDTE | EXCTR | T.INICIAL |
|---|---|---|---|---|---|---|

```
A1,A2,A3,X1,X2 :    0.00000000   -0.15929204    0.09292050 10.00 11.50
A1,A2,A3,X1,X2 :    0.00959591   -0.37999788    1.36197877 11.50 19.80
A1,A2,A3,X1,X2 :    0.00000000    0.00000000   -2.40000010 19.80 19.80
A1,A2,A3,X1,X2 :    0.00563662   -0.22321007   -0.19022053 19.80 32.35
A1,A2,A3,X1,X2 :    0.00000000    0.14147912   -6.08906794 32.35 33.85
     2.40      10.00      33.85
```

| | | | | | | |
|---|---|---|---|---|---|---|
| 5 | 8 | -1.747 | 1.353 | -0.158 | -0.587 | 133.2 |
| 5 | 9 | -1.982 | 1.118 | -0.127 | -0.822 | 134.2 |
| 5 | 10 | -2.165 | 0.935 | -0.095 | -1.005 | 135.4 |
| 5 | 11 | -2.296 | 0.804 | -0.063 | -1.136 | 136.5 |
| 5 | 12 | -2.374 | 0.726 | -0.032 | -1.214 | 137.6 |
| 5 | 13 | -2.400 | 0.700 | 0.000 | -1.240 | 137.1 |
| 5 | 14 | -2.385 | 0.715 | 0.019 | -1.225 | 136.0 |
| 5 | 15 | -2.339 | 0.761 | 0.037 | -1.179 | 134.8 |
| 5 | 16 | -2.262 | 0.838 | 0.056 | -1.102 | 133.7 |
| 5 | 17 | -2.154 | 0.946 | 0.074 | -0.804 | 132.5 |
| 5 | 18 | -2.016 | 1.084 | 0.093 | -0.666 | 131.4 |
| 5 | 19 | -1.848 | 1.252 | 0.112 | -0.498 | 130.3 |
| 5 | 20 | -1.648 | 1.452 | 0.130 | -0.298 | 129.2 |
| 5 | 21 | -1.420 | 1.680 | 0.141 | -0.070 | 128.4 |

LONG.CABLE = 23.93 M. ALARGAMIENTO = 144. MM.

ALARGAMIENTO(1) = 0. MM. ALARGAMIENTO(2) = 150. MM.

FAMILIA 11
SECCION 1  1ANCLAJE  0
SECCION 2  5ANCLAJE  1
TENSIONES ANCLAJE: 145. 145. KG/MM2
COEF ROZAM:0.20 DESVIACIONES:0.00600
PENETR.CUNA (MM) = 5.0

| VANO | SECC | YSUP | YINF | PDTE | EXCTR | T.INICIAL |
|---|---|---|---|---|---|---|
| A1,A2,A3,X1,X2 : | | 0.00000000 | -0.10932478 | -1.89292598 | -0.85 | 0.65 |
| A1,A2,A3,X1,X2 : | | 0.00435557 | -0.11498702 | -1.89108574 | 0.65 | 13.20 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | 0.00000000 | -2.65000010 | 13.20 | 17.20 |
| A1,A2,A3,X1,X2 : | | 0.01642365 | -0.56497359 | -2.20877290 | 17.20 | 25.10 |
| A1,A2,A3,X1,X2 : | | -0.01642365 | 1.08396101 | -18.48535728 | 25.10 | 33.00 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | 0.00000000 | -0.60000002 | 33.00 | 33.00 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | 0.00000000 | -0.60000002 | 0.00 | 0.00 |
| A1,A2,A3,X1,X2 : | | -0.02992388 | 0.00000000 | -0.60000002 | 0.00 | 4.25 |
| A1,A2,A3,X1,X2 : | | 0.01957094 | -0.42070594 | 0.29400015 | 4.25 | 8.50 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | -0.08799998 | -1.12000024 | 8.50 | 10.00 |
| 2.45 | -0.85 | 10.00 | | | | |
| | 1 | -1.893 | 1.207 | -0.109 | -0.543 | 113.1 |
| | 2 | -2.069 | 1.031 | -0.101 | -0.719 | 113.5 |
| | 3 | -2.223 | 0.877 | -0.086 | -0.873 | 114.0 |
| | 4 | -2.354 | 0.746 | -0.072 | -1.004 | 114.6 |
| | 5 | -2.460 | 0.640 | -0.057 | -1.110 | 115.1 |
| | 6 | -2.543 | 0.557 | -0.043 | -1.383 | 115.7 |
| | 7 | -2.603 | 0.497 | -0.029 | -1.443 | 116.3 |
| | 8 | -2.638 | 0.462 | -0.014 | -1.478 | 116.8 |
| | 9 | -2.650 | 0.450 | 0.000 | -1.490 | 117.4 |
| | 10 | -2.650 | 0.450 | 0.000 | -1.490 | 117.6 |
| | 11 | -2.650 | 0.450 | 0.000 | -1.490 | 117.9 |
| | 12 | -2.635 | 0.465 | 0.031 | -1.475 | 118.8 |
| | 13 | -2.539 | 0.561 | 0.085 | -1.379 | 120.4 |
| | 14 | -2.353 | 0.747 | 0.140 | -1.193 | 121.9 |
| | 15 | -2.078 | 1.022 | 0.194 | -0.918 | 123.4 |
| | 16 | -1.714 | 1.386 | 0.248 | -0.554 | 125.0 |
| | 17 | -1.315 | 1.785 | 0.217 | 0.015 | 125.9 |
| | 18 | -1.002 | 2.098 | 0.163 | 0.328 | 127.5 |
| | 19 | -0.779 | 2.321 | 0.108 | 0.551 | 129.1 |
| | 20 | -0.645 | 2.455 | 0.054 | 0.685 | 130.8 |
| | 21 | -0.600 | 2.500 | 0.000 | 0.730 | 132.5 |
| | 1 | -0.600 | 2.500 | 0.000 | 0.730 | 132.5 |
| | 2 | -0.732 | 2.368 | -0.126 | 0.598 | 129.3 |
| | 3 | -1.128 | 1.972 | -0.251 | 0.202 | 124.2 |
| | 4 | -1.580 | 1.520 | -0.174 | -0.250 | 121.1 |
| | 5 | -1.859 | 1.241 | -0.092 | -0.509 | 117.7 |

LONG.CABLE = 44.16 M.  ALARGAMIENTO = 251. MM.

ALARGAMIENTO(1) = 0. MM.  ALARGAMIENTO(2) = 257. MM.

FAMILIA 12
SECCION 2  6ANCLAJE  0
SECCION 3  5ANCLAJE  1
TENSIONES ANCLAJE: 145. 145. KG/MM2
COEF ROZAM:0.20 DESVIACIONES:0.00600
PENETR.CUNA (MM) = 5.0

| VANO | SECC | YSUP | YINF | PDTE | EXCTR | T.INICIAL |
|---|---|---|---|---|---|---|
| A1,A2,A3,X1,X2 : | | 0.00000000 | -0.12000000 | -0.80000001 | 10.00 | 11.50 |
| A1,A2,A3,X1,X2 : | | 0.00631579 | -0.26526317 | 0.03526324 | 11.50 | 21.00 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | 0.00000000 | -2.75000000 | 21.00 | 25.00 |
| A1,A2,A3,X1,X2 : | | 0.01487889 | -0.74394464 | 6.54930782 | 25.00 | 33.50 |
| A1,A2,A3,X1,X2 : | | -0.01487889 | 1.24982703 | -26.84636688 | 33.50 | 42.00 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | 0.00000000 | -0.60000002 | 42.00 | 42.00 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | 0.00000000 | -0.60000002 | 0.00 | 0.00 |
| A1,A2,A3,X1,X2 : | | -0.02992388 | 0.00000000 | -0.60000002 | 0.00 | 4.25 |
| A1,A2,A3,X1,X2 : | | 0.01957094 | -0.42070594 | 0.29400015 | 4.25 | 8.50 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | -0.08799998 | -1.12000024 | 8.50 | 10.00 |
| 2.10 | 10.00 | 10.00 | | | | |
| | 2 | -2.060 | 1.040 | -0.120 | -0.710 | 112.9 |
| | 6 | -2.304 | 0.796 | -0.106 | -0.954 | 113.5 |
| | 7 | -2.499 | 0.601 | -0.080 | -1.339 | 114.4 |
| | 8 | -2.639 | 0.461 | -0.053 | -1.479 | 115.3 |
| | 9 | -2.722 | 0.378 | -0.027 | -1.562 | 116.2 |
| | 10 | -2.750 | 0.350 | 0.000 | -1.590 | 117.1 |
| | 11 | -2.750 | 0.350 | 0.000 | -1.590 | 117.4 |
| | 12 | -2.749 | 0.351 | 0.006 | -1.589 | 117.9 |
| | 13 | -2.671 | 0.429 | 0.068 | -1.511 | 119.6 |
| | 14 | -2.462 | 0.638 | 0.131 | -1.302 | 121.4 |
| | 15 | -2.121 | 0.979 | 0.193 | -0.961 | 123.2 |
| | 16 | -1.650 | 1.450 | 0.250 | -0.320 | 124.9 |
| | 17 | -1.191 | 1.909 | 0.187 | 0.139 | 126.7 |
| | 18 | -0.862 | 2.238 | 0.125 | 0.468 | 128.6 |
| | 19 | -0.666 | 2.434 | 0.062 | 0.664 | 130.5 |
| | 20 | -0.600 | 2.500 | 0.000 | 0.730 | 132.5 |
| | 1 | -0.600 | 2.500 | 0.000 | 0.730 | 132.5 |
| | 2 | -0.732 | 2.368 | -0.126 | 0.598 | 129.3 |
| | 3 | -1.128 | 1.972 | -0.251 | 0.202 | 124.2 |
| | 4 | -1.580 | 1.520 | -0.174 | -0.250 | 121.1 |
| | 5 | -1.859 | 1.241 | -0.092 | -0.509 | 117.7 |

LONG.CABLE = 42.31 M.  ALARGAMIENTO = 242. MM.

ALARGAMIENTO(1) = 0. MM.  ALARGAMIENTO(2) = 249. MM.

FAMILIA 13
SECCION 3  6ANCLAJE  0
SECCION 4  5ANCLAJE  1
TENSIONES ANCLAJE: 145. 145. KG/MM2
COEF ROZAM:0.20 DESVIACIONES:0.00600
PENETR.CUNA (MM) = 5.0

| VANO | SECC | YSUP | YINF | PDTE | EXCTR | T.INICIAL |
|---|---|---|---|---|---|---|
| A1,A2,A3,X1,X2 : | | 0.00000000 | -0.12000000 | -0.80000001 | 10.00 | 11.50 |
| A1,A2,A3,X1,X2 : | | 0.00631579 | -0.26526317 | 0.03526324 | 11.50 | 21.00 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | 0.00000000 | -2.75000000 | 21.00 | 25.00 |
| A1,A2,A3,X1,X2 : | | 0.01487889 | -0.74394464 | 6.54930782 | 25.00 | 33.50 |
| A1,A2,A3,X1,X2 : | | -0.01487889 | 1.24982703 | -26.84636688 | 33.50 | 42.00 |

```
A1,A2,A3,X1,X2 :    0.00000000    0.00000000   -0.60000002 42.00 42.00
A1,A2,A3,X1,X2 :    0.00000000    0.00000000   -0.60000002  0.00  0.00
A1,A2,A3,X1,X2 :   -0.02992388    0.00000000   -0.60000002  0.00  4.25
A1,A2,A3,X1,X2 :    0.01957094   -0.42070594    0.29400015  4.25  8.50
A1,A2,A3,X1,X2 :    0.00000000   -0.08799998   -1.12000024  8.50 10.00
     2.10      10.00      10.00
```

| | | | | | | |
|---|---|---|---|---|---|---|
| 3 | 6 | -2.060 | 1.040 | -0.120 | -0.710 | 112.9 |
| 3 | 7 | -2.304 | 0.796 | -0.106 | -0.954 | 113.5 |
| 3 | 8 | -2.499 | 0.601 | -0.080 | -1.339 | 114.4 |
| 3 | 9 | -2.639 | 0.461 | -0.053 | -1.479 | 115.3 |
| 3 | 10 | -2.722 | 0.378 | -0.027 | -1.562 | 116.2 |
| 3 | 11 | -2.750 | 0.350 | 0.000 | -1.590 | 117.1 |
| 3 | 12 | -2.750 | 0.350 | 0.000 | -1.590 | 117.4 |
| 3 | 13 | -2.749 | 0.351 | 0.006 | -1.589 | 117.9 |
| 3 | 14 | -2.671 | 0.429 | 0.068 | -1.511 | 119.6 |
| 3 | 15 | -2.462 | 0.638 | 0.131 | -1.302 | 121.4 |
| 3 | 16 | -2.121 | 0.979 | 0.193 | -0.961 | 123.2 |
| 3 | 17 | -1.650 | 1.450 | 0.250 | -0.320 | 124.9 |
| 3 | 18 | -1.191 | 1.909 | 0.187 | 0.139 | 126.7 |
| 3 | 19 | -0.862 | 2.238 | 0.125 | 0.468 | 128.6 |
| 3 | 20 | -0.666 | 2.434 | 0.062 | 0.664 | 130.5 |
| 3 | 21 | -0.600 | 2.500 | 0.000 | 0.730 | 132.5 |
| 4 | 1 | -0.600 | 2.500 | 0.000 | 0.730 | 132.5 |
| 4 | 2 | -0.732 | 2.368 | -0.126 | 0.598 | 129.3 |
| 4 | 3 | -1.128 | 1.972 | -0.251 | 0.202 | 124.2 |
| 4 | 4 | -1.580 | 1.520 | -0.174 | -0.250 | 121.1 |
| 4 | 5 | -1.859 | 1.241 | -0.092 | -0.509 | 117.7 |

LONG.CABLE = 42.31 M. ALARGAMIENTO = 242. MM.

ALARGAMIENTO(1) = 0. MM. ALARGAMIENTO(2) = 249. MM.

FAMILIA 14
SECCION 4 6ANCLAJE 0
SECCION 5 7ANCLAJE 1
TENSIONES ANCLAJE: 145. 145. KG/MM2
COEF ROZAM:0.20 DESVIACIONES:0.00600
PENETR.CUNA (MM) = 5.0

| VANO | SECC | YSUP | YINF | PDTE | EXCTR | T.INICIAL |
|---|---|---|---|---|---|---|

```
A1,A2,A3,X1,X2 :    0.00000000   -0.12000000   -0.80000001 10.00 11.50
A1,A2,A3,X1,X2 :    0.00631579   -0.26526317    0.03526324 11.50 21.00
A1,A2,A3,X1,X2 :    0.00000000    0.00000000   -2.75000000 21.00 25.00
A1,A2,A3,X1,X2 :    0.01487889   -0.74394464    6.54930782 25.00 33.50
A1,A2,A3,X1,X2 :   -0.01487889    1.24982703  -26.84636688 33.50 42.00
A1,A2,A3,X1,X2 :    0.00000000    0.00000000   -0.60000002 42.00 42.00
A1,A2,A3,X1,X2 :    0.00000000    0.00000000   -0.60000002  0.00  0.00
A1,A2,A3,X1,X2 :   -0.02720784    0.00000000   -0.60000002  0.00  4.25
A1,A2,A3,X1,X2 :    0.01367058   -0.34746659    0.13836649  4.25  8.50
A1,A2,A3,X1,X2 :    0.00000000   -0.11506668   -0.84933317  8.50 10.00
     0.60      10.00      10.00
```

| | | | | | | |
|---|---|---|---|---|---|---|
| 4 | 6 | -2.060 | 1.040 | -0.120 | -0.710 | 114.9 |
| 4 | 7 | -2.304 | 0.796 | -0.106 | -0.954 | 115.6 |
| 4 | 8 | -2.499 | 0.601 | -0.080 | -1.339 | 116.5 |
| 4 | 9 | -2.639 | 0.461 | -0.053 | -1.479 | 117.4 |
| 4 | 10 | -2.722 | 0.378 | -0.027 | -1.562 | 118.3 |
| 4 | 11 | -2.750 | 0.350 | 0.000 | -1.590 | 119.2 |
| 4 | 12 | -2.750 | 0.350 | 0.000 | -1.590 | 119.5 |
| 4 | 13 | -2.749 | 0.351 | 0.006 | -1.589 | 120.0 |
| 4 | 14 | -2.671 | 0.429 | 0.068 | -1.511 | 121.8 |
| 4 | 15 | -2.462 | 0.638 | 0.131 | -1.302 | 123.6 |
| 4 | 16 | -2.121 | 0.979 | 0.193 | -0.961 | 125.4 |
| 4 | 17 | -1.650 | 1.450 | 0.250 | -0.320 | 127.1 |
| 4 | 18 | -1.191 | 1.909 | 0.187 | 0.139 | 129.0 |
| 4 | 19 | -0.862 | 2.238 | 0.125 | 0.468 | 130.9 |
| 4 | 20 | -0.666 | 2.434 | 0.062 | 0.664 | 132.8 |
| 4 | 21 | -0.600 | 2.500 | 0.000 | 0.730 | 134.8 |
| 5 | 1 | -0.600 | 2.500 | 0.000 | 0.730 | 134.8 |
| 5 | 2 | -0.674 | 2.426 | -0.090 | 0.656 | 132.4 |
| 5 | 3 | -0.896 | 2.204 | -0.180 | 0.434 | 128.6 |
| 5 | 4 | -1.247 | 1.853 | -0.212 | 0.083 | 127.0 |
| 5 | 5 | -1.559 | 1.541 | -0.167 | -0.209 | 125.0 |
| 5 | 6 | -1.798 | 1.302 | -0.122 | -0.448 | 123.0 |
| 5 | 7 | -1.988 | 1.112 | -0.115 | -0.638 | 122.4 |

LONG.CABLE = 42.32 M. ALARGAMIENTO = 256. MM.

ALARGAMIENTO(1) = 0. MM. ALARGAMIENTO(2) = 263. MM.

FAMILIA 15
SECCION 5 8ANCLAJE 0
SECCION 5 21ANCLAJE 1
TENSIONES ANCLAJE: 145. 145. KG/MM2
COEF ROZAM:0.20 DESVIACIONES:0.00600
PENETR.CUNA (MM) = 5.0

| VANO | SECC | YSUP | YINF | PDTE | EXCTR | T.INICIAL |
|---|---|---|---|---|---|---|

```
A1,A2,A3,X1,X2 :    0.00000000   -0.11504427   -0.84955740 10.00 11.50
A1,A2,A3,X1,X2 :    0.00693038   -0.27444294    0.06698482 11.50 19.80
A1,A2,A3,X1,X2 :    0.00000000    0.00000000   -2.65000010 19.80 19.80
A1,A2,A3,X1,X2 :    0.00435557   -0.17248052   -0.94244301 19.80 32.35
A1,A2,A3,X1,X2 :    0.00000000    0.10932478   -5.50064325 32.35 33.85
     2.40      10.00      33.85
```

| | | | | | | |
|---|---|---|---|---|---|---|
| 5 | 8 | -2.178 | 0.922 | -0.114 | -1.018 | 135.2 |
| 5 | 9 | -2.348 | 0.752 | -0.091 | -1.188 | 136.0 |
| 5 | 10 | -2.480 | 0.620 | -0.069 | -1.320 | 136.9 |
| 5 | 11 | -2.575 | 0.525 | -0.046 | -1.415 | 137.8 |
| 5 | 12 | -2.631 | 0.469 | -0.023 | -1.471 | 138.7 |
| 5 | 13 | -2.650 | 0.450 | 0.000 | -1.490 | 137.4 |
| 5 | 14 | -2.638 | 0.462 | 0.014 | -1.478 | 136.4 |
| 5 | 15 | -2.603 | 0.497 | 0.029 | -1.443 | 135.4 |
| 5 | 16 | -2.543 | 0.557 | 0.048 | -1.383 | 134.4 |
| 5 | 17 | -2.460 | 0.640 | 0.057 | -1.110 | 133.4 |
| 5 | 18 | -2.354 | 0.746 | 0.072 | -1.004 | 132.5 |
| 5 | 19 | -2.223 | 0.877 | 0.086 | -0.873 | 131.5 |
| 5 | 20 | -2.069 | 1.031 | 0.101 | -0.719 | 130.6 |
| 5 | 21 | -1.893 | 1.207 | 0.109 | -0.543 | 129.9 |

LONG.CABLE = 23.90 M. ALARGAMIENTO = 145. MM.

ALARGAMIENTO(1) = 0. MM. ALARGAMIENTO(2) = 151. MM.

FAMILIA 16
SECCION 1 1ANCLAJE 0
SECCION 2 5ANCLAJE 1
TENSIONES ANCLAJE: 145. 145. KG/MM2
COEF ROZAM:0.20 DESVIACIONES:0.00600
PENETR.CUNA (MM) = 5.0

| VANO | SECC | YSUP | YINF | PDTE | EXCTR | T.INICIAL |
|---|---|---|---|---|---|---|
| A1,A2,A3,X1,X2 : | | 0.00000000 | -0.07717044 | -2.36559486 | -0.85 | 0.65 |
| A1,A2,A3,X1,X2 : | | 0.00307452 | -0.08116731 | -2.36429572 | 0.65 | 13.20 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | 0.00000000 | -2.90000010 | 13.20 | 19.20 |
| A1,A2,A3,X1,X2 : | | 0.02205419 | -0.84688091 | 5.23005724 | 19.20 | 26.10 |
| A1,A2,A3,X1,X2 : | | -0.02205419 | 1.45557666 | -24.81701469 | 26.10 | 33.00 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | 0.00000000 | -0.80000001 | 33.00 | 33.00 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | 0.00000000 | -0.80000001 | 0.00 | 0.00 |
| A1,A2,A3,X1,X2 : | | -0.03983391 | 0.00000000 | -0.80000001 | 0.00 | 4.25 |
| A1,A2,A3,X1,X2 : | | 0.03136332 | -0.60517639 | 0.48599985 | 4.25 | 8.50 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | -0.07200003 | -1.77999973 | 8.50 | 10.00 |
| 2.45 | -0.85 | 10.00 | | | | |
| | 1 | -2.366 | 0.734 | -0.077 | -1.016 | 108.3 |
| | 2 | -2.490 | 0.610 | -0.071 | -1.140 | 108.6 |
| | 3 | -2.599 | 0.501 | -0.061 | -1.249 | 109.1 |
| | 4 | -2.691 | 0.409 | -0.051 | -1.341 | 109.5 |
| | 5 | -2.766 | 0.334 | -0.041 | -1.416 | 109.9 |
| | 6 | -2.825 | 0.275 | -0.030 | -1.665 | 110.4 |
| | 7 | -2.867 | 0.233 | -0.020 | -1.707 | 110.8 |
| | 8 | -2.892 | 0.208 | -0.010 | -1.732 | 111.3 |
| | 9 | -2.900 | 0.200 | 0.000 | -1.740 | 111.7 |
| | 10 | -2.900 | 0.200 | 0.000 | -1.740 | 111.9 |
| | 11 | -2.900 | 0.200 | 0.000 | -1.740 | 112.2 |
| | 12 | -2.900 | 0.200 | 0.000 | -1.740 | 112.4 |
| | 13 | -2.892 | 0.208 | 0.026 | -1.732 | 113.2 |
| | 14 | -2.788 | 0.312 | 0.099 | -1.628 | 115.1 |
| | 15 | -2.565 | 0.535 | -0.172 | -1.405 | 117.0 |
| | 16 | -2.221 | 0.879 | 0.245 | -1.061 | 118.9 |
| | 17 | -1.761 | 1.339 | 0.291 | -0.431 | 120.1 |
| | 18 | -1.340 | 1.760 | 0.218 | -0.010 | 122.0 |
| | 19 | -1.040 | 2.060 | 0.146 | 0.290 | 124.0 |
| | 20 | -0.860 | 2.240 | 0.073 | 0.470 | 126.0 |
| | 21 | -0.800 | 2.300 | 0.000 | 0.530 | 128.1 |
| | 1 | -0.800 | 2,300 | 0.000 | 0.530 | 128.1 |
| | 2 | -0.976 | 2.124 | -0.167 | 0.354 | 129.3 |
| | 3 | -1.503 | 1.597 | -0.335 | -0.173 | 122.9 |
| | 4 | -2.082 | 1.018 | -0.210 | -0.752 | 118.2 |
| | 5 | -2.384 | 0.716 | -0.078 | -1.034 | 113.3 |

LONG.CABLE = 44.24 M. ALARGAMIENTO = 241. MM.

ALARGAMIENTO(1) = 0. MM. ALARGAMIENTO(2) = 247. MM.

FAMILIA 17
SECCION 2 6ANCLAJE 0

SECCION 3 5ANCLAJE 1
TENSIONES ANCLAJE: 145. 145. KG/MM2
COEF ROZAM:0.20 DESVIACIONES:0.00600
PENETR.CUNA (MM) = 5.0

| VANO | SECC | YSUP | YINF | PDTE | EXCTR | T.INICIAL |
|---|---|---|---|---|---|---|
| A1,A2,A3,X1,X2 : | | 0.00000000 | -0.07200000 | -1.77999997 | 10.00 | 11.50 |
| A1,A2,A3,X1,X2 : | | 0.00378947 | -0.15915790 | -1.27884197 | 11.50 | 21.00 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | 0.00000000 | -2.95000005 | 21.00 | 27.00 |
| A1,A2,A3,X1,X2 : | | 0.01911111 | -1.03200006 | 10.98200035 | 27.00 | 34.50 |
| A1,A2,A3,X1,X2 : | | -0.01911111 | 1.60533333 | -34.51200104 | 34.50 | 42.00 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | 0.00000000 | -0.80000001 | 42.00 | 42.00 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | 0.00000000 | -0.80000001 | 0.00 | 0.00 |
| A1,A2,A3,X1,X2 : | | -0.03983391 | 0.00000000 | -0.80000001 | 0.00 | 4.25 |
| A1,A2,A3,X1,X2 : | | 0.03136332 | -0.60517639 | 0.48599985 | 4.25 | 8.50 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | -0.07200003 | -1.77999973 | 8.50 | 10.00 |
| 2.10 | 10.00 | 10.00 | | | | |
| | 2 | -2.536 | 0.564 | -0.072 | -1.186 | 110.2 |
| | 7 | -2.683 | 0.417 | -0.064 | -1.333 | 110.6 |
| | 8 | -2.800 | 0.300 | -0.048 | -1.640 | 111.3 |
| | 9 | -2.883 | 0.217 | -0.032 | -1.723 | 111.9 |
| | 10 | -2.933 | 0.167 | -0.016 | -1.773 | 112.5 |
| | 11 | -2.950 | 0.150 | 0.000 | -1.790 | 113.2 |
| | 12 | -2.950 | 0.150 | 0.000 | -1.790 | 113.5 |
| | 13 | -2.950 | 0.150 | 0.000 | -1.790 | 113.8 |
| | 14 | -2.948 | 0.152 | 0.011 | -1.788 | 114.3 |
| | 15 | -2.840 | 0.260 | 0.092 | -1.680 | 116.4 |
| | 16 | -2.563 | 0.537 | 0.172 | -1.403 | 118.6 |
| | 17 | -2.118 | 0.982 | 0.252 | -0.788 | 120.7 |
| | 18 | -1.559 | 1.541 | 0.241 | -0.229 | 121.3 |
| | 19 | -1.137 | 1.963 | 0.161 | 0.193 | 123.5 |
| | 20 | -0.884 | 2.216 | 0.080 | 0.446 | 125.8 |
| | 21 | -0.800 | 2.300 | 0.000 | 0.530 | 128.1 |
| | 1 | -0.800 | 2.300 | 0.000 | 0.530 | 128.1 |
| | 2 | -0.976 | 2.124 | -0.167 | 0.354 | 129.3 |
| | 3 | -1.503 | 1.597 | -0.335 | -0.173 | 122.9 |
| | 4 | -2.082 | 1.018 | -0.210 | -0.752 | 118.2 |
| | 5 | -2.384 | 0.716 | -0.078 | -1.034 | 113.3 |

LONG.CABLE = 42.38 M. ALARGAMIENTO = 235. MM.

ALARGAMIENTO(1) = 0. MM. ALARGAMIENTO(2) = 241. MM.

FAMILIA 18
SECCION 3 6ANCLAJE 0
SECCION 4 5ANCLAJE 1
TENSIONES ANCLAJE: 145. 145. KG/MM2
COEF ROZAM:0.20 DESVIACIONES:0.00600
PENETR.CUNA (MM) = 5.0

| VANO | SECC | YSUP | YINF | PDTE | EXCTR | T.INICIAL |
|---|---|---|---|---|---|---|
| A1,A2,A3,X1,X2 : | | 0.00000000 | -0.07200000 | -1.77999997 | 10.00 | 11.50 |
| A1,A2,A3,X1,X2 : | | 0.00378947 | -0.15915790 | -1.27884197 | 11.50 | 21.00 |
| A1,A2,A3,X1,X2 : | | 0.00000000 | 0.00000000 | -2.95000005 | 21.00 | 27.00 |

```
A1,A2,A3,X1,X2 :   0.01911111  -1.03200006  10.98200035 27.00 34.50
A1,A2,A3,X1,X2 :  -0.01911111   1.60533333 -34.51200104 34.50 42.00
A1,A2,A3,X1,X2 :   0.00000000   0.00000000  -0.80000001 42.00 42.00
A1,A2,A3,X1,X2 :   0.00000000   0.00000000  -0.80000001  0.00  0.00
A1,A2,A3,X1,X2 :  -0.03983391   0.00000000  -0.80000001  0.00  4.25
A1,A2,A3,X1,X2 :   0.03136332  -0.60517639   0.48599985  4.25  8.50
A1,A2,A3,X1,X2 :   0.00000000  -0.07200003  -1.77999973  8.50 10.00
     2.10      10.00      10.00

        3      6   -2.536    0.564   -0.072   -1.186    110.2
        3      7   -2.683    0.417   -0.064   -1.333    110.6
        3      8   -2.800    0.300   -0.048   -1.640    111.3
        3      9   -2.883    0.217   -0.032   -1.723    111.9
        3     10   -2.933    0.167   -0.016   -1.773    112.5
        3     11   -2.950    0.150    0.000   -1.790    113.2
        3     12   -2.950    0.150    0.000   -1.790    113.5
        3     13   -2.950    0.150    0.000   -1.790    113.8
        3     14   -2.948    0.152    0.011   -1.788    114.3
        3     15   -2.840    0.260    0.092   -1.680    116.4
        3     16   -2.563    0.537    0.172   -1.403    118.6
        3     17   -2.118    0.982    0.252   -0.788    120.7
        3     18   -1.559    1.541    0.241   -0.229    121.3
        3     19   -1.137    1.963    0.161    0.193    123.5
        3     20   -0.884    2.216    0.080    0.446    125.8
        3     21   -0.800    2.300    0.000    0.530    128.1


        4      1   -0.800    2.300    0.000    0.530    128.1
        4      2   -0.976    2.124   -0.167    0.354    129.3
        4      3   -1.503    1.597   -0.335   -0.173    122.9
        4      4   -2.082    1.018   -0.210   -0.752    118.2
        4      5   -2.384    0.716   -0.078   -1.034    113.3
```

```
LONG.CABLE =  42.38 M.       ALARGAMIENTO =   235. MM.

ALARGAMIENTO(1) =     0. MM.  ALARGAMIENTO(2) =   241. MM.


FAMILIA 19
SECCION 4    6ANCLAJE  0
SECCION 5    7ANCLAJE  1
TENSIONES ANCLAJE: 145. 145.  KG/MM2
COEF ROZAM:0.20  DESVIACIONES:0.00600
PENETR.CUNA (MM) =  5.0

  VANO  SECC     YSUP     YINF     PDTE    EXCTR  T.INICIAL
  ========================================================

A1,A2,A3,X1,X2 :   0.00000000  -0.07200000  -1.77999997 10.00 11.50
A1,A2,A3,X1,X2 :   0.00378947  -0.15915790  -1.27884197 11.50 21.00
A1,A2,A3,X1,X2 :   0.00000000   0.00000000  -2.95000005 21.00 27.00
A1,A2,A3,X1,X2 :   0.01911111  -1.03200006  10.98200035 27.00 34.50
A1,A2,A3,X1,X2 :  -0.01911111   1.60533333 -34.51200104 34.50 42.00
A1,A2,A3,X1,X2 :   0.00000000   0.00000000  -0.80000001 42.00 42.00
A1,A2,A3,X1,X2 :   0.00000000   0.00000000  -0.80000001  0.00  0.00
A1,A2,A3,X1,X2 :  -0.03995433   0.00000000  -0.80000001  0.00  4.25
A1,A2,A3,X1,X2 :   0.03162492  -0.60842359   0.49290010  4.25  8.50
A1,A2,A3,X1,X2 :   0.00000000  -0.07079998  -1.79200017  8.50 10.00
     0.60      10.00      10.00

        4      6   -2.536    0.564   -0.072   -1.186    111.4
        4      7   -2.683    0.417   -0.064   -1.333    111.9
        4      8   -2.800    0.300   -0.048   -1.640    112.5
        4      9   -2.883    0.217   -0.032   -1.723    113.1
        4     10   -2.933    0.167   -0.016   -1.773    113.8
        4     11   -2.950    0.150    0.000   -1.790    114.4
        4     12   -2.950    0.150    0.000   -1.790    114.7
        4     13   -2.950    0.150    0.000   -1.790    115.0
        4     14   -2.948    0.152    0.011   -1.788    115.6
        4     15   -2.840    0.260    0.092   -1.680    117.7
        4     16   -2.563    0.537    0.172   -1.403    119.9
        4     17   -2.118    0.982    0.252   -0.788    122.1
        4     18   -1.559    1.541    0.241   -0.229    122.6
        4     19   -1.137    1.963    0.161    0.193    124.9
        4     20   -0.884    2.216    0.080    0.446    127.2
        4     21   -0.800    2.300    0.000    0.530    129.6


        5      1   -0.800    2.300    0.000    0.530    129.6
        5      2   -0.909    2.191   -0.132    0.421    132.9
        5      3   -1.235    1.865   -0.264    0.095    127.5
        5      4   -1.744    1.356   -0.295   -0.414    126.0
        5      5   -2.145    0.955   -0.191   -0.795    122.0
        5      6   -2.374    0.726   -0.087   -1.024    118.0
        5      7   -2.493    0.607   -0.071   -1.143    117.1


LONG.CABLE =  42.39 M.       ALARGAMIENTO =   247. MM.

ALARGAMIENTO(1) =     0. MM.  ALARGAMIENTO(2) =   254. MM.


FAMILIA 20
SECCION 5    8ANCLAJE  0
SECCION 5   21ANCLAJE  1
TENSIONES ANCLAJE: 145. 145.  KG/MM2
COEF ROZAM:0.20  DESVIACIONES:0.00600
PENETR.CUNA (MM) =  5.0

  VANO  SECC     YSUP     YINF     PDTE    EXCTR  T.INICIAL
  ========================================================

A1,A2,A3,X1,X2 :   0.00000000  -0.07079647  -1.79203522 10.00 11.50
A1,A2,A3,X1,X2 :   0.00426485  -0.16888797  -1.22800922 11.50 19.80
A1,A2,A3,X1,X2 :   0.00000000   0.00000000  -2.90000010 19.80 19.80
A1,A2,A3,X1,X2 :   0.00307452  -0.12175096  -1.69466567 19.80 32.35
A1,A2,A3,X1,X2 :   0.00000000   0.07717044  -4.91221905 32.35 33.85
     2.40      10.00      33.85

        5      8   -2.610    0.490   -0.070   -1.450    137.2
        5      9   -2.714    0.386   -0.056   -1.554    137.9
        5     10   -2.796    0.304   -0.042   -1.636    138.5
        5     11   -2.854    0.246   -0.028   -1.694    139.2
        5     12   -2.888    0.212   -0.014   -1.728    138.8
        5     13   -2.900    0.200    0.000   -1.740    137.8
        5     14   -2.892    0.208    0.010   -1.732    137.0
        5     15   -2.867    0.233    0.020   -1.707    136.2
        5     16   -2.825    0.275    0.030   -1.665    135.4
        5     17   -2.766    0.334    0.041   -1.416    134.6
        5     18   -2.691    0.409    0.051   -1.341    133.8
        5     19   -2.599    0.501    0.061   -1.249    133.0
        5     20   -2.490    0.610    0.071   -1.140    132.2
        5     21   -2.366    0.734    0.077   -1.016    131.5
```

CABLE = 23.87 M. ALARGAMIENTO = 146. MM.

ALARGAMIENTO(1) = 0. MM. ALARGAMIENTO(2) = 152. MM.

**** Execution terminated : 0

C:\PONTEX--PERD1/R 4100

HORMIGON: R1BK= 350. KP/CM2. RETRACC= 0.30000E-03 COEF. FLU.= 3.

ACERO DURO: RPRK=190.0KP/MM2. RELAJ 1000H=0.05

FAM. 1 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 2 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 3 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 4 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 5 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 6 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 7 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 8 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 9 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 10 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 11 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 12 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 13 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 14 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 15 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 16 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 17 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 18 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 19 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 20 SECCION= 10592. MM2 4 VAINAS 10.0 CM

| | | | | |
|---|---|---|---|---|
| 1 | 1 | 42368.000 | 114.727 | -0.288 |
| 1 | 2 | 42368.000 | 115.182 | -0.492 |
| 1 | 3 | 42368.000 | 115.790 | -0.670 |
| 1 | 4 | 42368.000 | 116.403 | -0.821 |
| 1 | 5 | 42368.000 | 117.020 | -0.944 |
| 1 | 6 | 42368.000 | 117.642 | -1.230 |
| 1 | 7 | 42368.000 | 118.268 | -1.299 |
| 1 | 8 | 42368.000 | 118.898 | -1.340 |
| 1 | 9 | 42368.000 | 119.532 | -1.353 |
| 1 | 10 | 42368.000 | 120.022 | -1.344 |
| 1 | 11 | 42368.000 | 120.722 | -1.311 |
| 1 | 12 | 42368.000 | 121.665 | -1.239 |
| 1 | 13 | 42368.000 | 122.900 | -1.111 |
| 1 | 14 | 42368.000 | 124.402 | -0.904 |
| 1 | 15 | 42368.000 | 125.706 | -0.620 |
| 1 | 16 | 42368.000 | 127.003 | -0.285 |
| 1 | 17 | 42368.000 | 128.232 | 0.228 |
| 1 | 18 | 42368.000 | 129.776 | 0.505 |
| 1 | 19 | 42368.000 | 131.358 | 0.697 |
| 1 | 20 | 42368.000 | 131.954 | 0.802 |
| 1 | 21 | 42368.000 | 132.277 | 0.834 |
| 2 | 1 | 42368.000 | 132.277 | 0.834 |
| 2 | 2 | 42368.000 | 131.012 | 0.744 |
| 2 | 3 | 42368.000 | 127.334 | 0.484 |
| 2 | 4 | 42368.000 | 123.644 | 0.136 |
| 2 | 5 | 42368.000 | 120.266 | -0.158 |
| 2 | 6 | 42368.000 | 114.955 | -0.458 |
| 2 | 7 | 42368.000 | 115.624 | -0.753 |
| 2 | 8 | 42368.000 | 116.651 | -1.179 |
| 2 | 9 | 42368.000 | 117.694 | -1.347 |
| 2 | 10 | 42368.000 | 118.752 | -1.448 |
| 2 | 11 | 42368.000 | 119.821 | -1.482 |
| 2 | 12 | 42368.000 | 120.451 | -1.467 |
| 2 | 13 | 42368.000 | 121.420 | -1.410 |
| 2 | 14 | 42368.000 | 122.796 | -1.278 |
| 2 | 15 | 42368.000 | 124.575 | -1.037 |
| 2 | 16 | 42368.000 | 126.058 | -0.678 |
| 2 | 17 | 42368.000 | 127.505 | -0.075 |
| 2 | 18 | 42368.000 | 128.919 | 0.335 |
| 2 | 19 | 42368.000 | 130.774 | 0.625 |
| 2 | 20 | 42368.000 | 131.983 | 0.786 |
| 2 | 21 | 42368.000 | 132.277 | 0.834 |
| 3 | 1 | 42368.000 | 132.277 | 0.834 |
| 3 | 2 | 42368.000 | 131.012 | 0.744 |
| 3 | 3 | 42368.000 | 127.334 | 0.484 |
| 3 | 4 | 42368.000 | 123.644 | 0.136 |
| 3 | 5 | 42368.000 | 120.266 | -0.158 |
| 3 | 6 | 42368.000 | 114.955 | -0.458 |
| 3 | 7 | 42368.000 | 115.624 | -0.753 |
| 3 | 8 | 42368.000 | 116.651 | -1.179 |
| 3 | 9 | 42368.000 | 117.694 | -1.347 |
| 3 | 10 | 42368.000 | 118.752 | -1.448 |
| 3 | 11 | 42368.000 | 119.821 | -1.482 |
| 3 | 12 | 42368.000 | 120.451 | -1.467 |
| 3 | 13 | 42368.000 | 121.420 | -1.410 |
| 3 | 14 | 42368.000 | 122.796 | -1.278 |
| 3 | 15 | 42368.000 | 124.575 | -1.037 |
| 3 | 16 | 42368.000 | 126.058 | -0.678 |
| 3 | 17 | 42368.000 | 127.505 | -0.075 |
| 3 | 18 | 42368.000 | 128.919 | 0.335 |
| 3 | 19 | 42368.000 | 130.774 | 0.625 |
| 3 | 20 | 42368.000 | 131.983 | 0.786 |
| 3 | 21 | 42368.000 | 132.277 | 0.834 |
| 4 | 1 | 42368.000 | 132.277 | 0.834 |
| 4 | 2 | 42368.000 | 131.012 | 0.744 |
| 4 | 3 | 42368.000 | 127.334 | 0.484 |
| 4 | 4 | 42368.000 | 123.644 | 0.136 |
| 4 | 5 | 42368.000 | 120.266 | -0.158 |
| 4 | 6 | 42368.000 | 115.746 | -0.461 |
| 4 | 7 | 42368.000 | 116.419 | -0.756 |
| 4 | 8 | 42368.000 | 117.451 | -1.181 |
| 4 | 9 | 42368.000 | 118.500 | -1.349 |
| 4 | 10 | 42368.000 | 119.563 | -1.450 |

| | |
|---|---|
| 7.8 | -809.1 |
| 2.0 | -1038.3 |
| 3.7 | -1437.9 |
| 3.1 | -1372.1 |
| 5.5 | -870.8 |
| 5.7 | -591.3 |
| 7.8 | -320.7 |
| 5.0 | -198.3 |
| | |
| 5.0 | 265.2 |
| 3.2 | 492.2 |
| 7.7 | 810.2 |
| 5.4 | 811.8 |
| 3.3 | 700.1 |
| 5.0 | 685.0 |
| 3.9 | 837.5 |
| .7 | 697.4 |
| .9 | 337.7 |
| .2 | 188.4 |
| .3 | 52.9 |
| .5 | -52.5 |
| .8 | -179.9 |
| .0 | -394.7 |
| .1 | -686.9 |
| .9 | -1170.8 |
| .2 | -1270.0 |
| .2 | -901.4 |
| .0 | -594.3 |
| .1 | -277.2 |
| .2 | -123.4 |

| | |
|---|---|
| .2 | 258.7 |
| .8 | 485.8 |
| .6 | 803.8 |
| .8 | 805.3 |
| .4 | 693.5 |
| .9 | 678.4 |
| .9 | 830.7 |
| .2 | 690.6 |
| .4 | 331.1 |
| 9 | 181.9 |
| 5 | 46.5 |
| 2 | -58.9 |
| 1 | -186.3 |
| 9 | -401.1 |
| 6 | -693.3 |
| 9 | -1177.2 |
| 7 | -1276.5 |
| 5 | -907.9 |
| 0 | -600.8 |
| 8 | -283.7 |
| 5 | -129.9 |
| | |
| 5 | 242.6 |
| 0 | 469.7 |
| 8 | 787.7 |
| 9 | 789.1 |
| 4 | 684.6 |
| 7 | 671.1 |
| 1 | 819.0 |
| 2 | 678.2 |

DEFLECTABLE = 23.87 M. ALARGAMIENTO = 146. MM.

ALARGAMIENTO(1) = 0. MM. ALARGAMIENTO(2) = 152. MM.

**** Job terminated : 0

C:\PONTEX\PERD1/R 4100

HORMIGON: R1BK= 350. KP/CM2. RETRACC= 0.30000E-03 COEF. FLU.= 3.

ACERO DURO: RPRK=190.0KP/MM2. RELAJ 1000H=0.05

FAM. 1 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 2 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 3 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 4 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 5 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 6 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 7 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 8 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 9 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 10 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 11 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 12 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 13 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 14 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 15 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 16 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 17 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 18 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 19 SECCION= 10592. MM2 4 VAINAS 10.0 CM

FAM. 20 SECCION= 10592. MM2 4 VAINAS 10.0 CM

| | | | | |
|---|---|---|---|---|
| 1 | 1 | 42368.000 | 114.727 | -0.288 |
| 1 | 2 | 42368.000 | 115.182 | -0.492 |
| 1 | 3 | 42368.000 | 115.790 | -0.670 |
| 1 | 4 | 42368.000 | 116.403 | -0.821 |
| 1 | 5 | 42368.000 | 117.020 | -0.944 |
| 1 | 6 | 42368.000 | 117.642 | -1.230 |
| 1 | 7 | 42368.000 | 118.268 | -1.299 |
| 1 | 8 | 42368.000 | 118.898 | -1.340 |
| 1 | 9 | 42368.000 | 119.532 | -1.353 |
| 1 | 10 | 42368.000 | 120.022 | -1.344 |
| 1 | 11 | 42368.000 | 120.722 | -1.311 |
| 1 | 12 | 42368.000 | 121.665 | -1.239 |
| 1 | 13 | 42368.000 | 122.900 | -1.111 |
| 1 | 14 | 42368.000 | 124.402 | -0.904 |
| 1 | 15 | 42368.000 | 125.706 | -0.620 |
| 1 | 16 | 42368.000 | 127.003 | -0.285 |
| 1 | 17 | 42368.000 | 128.232 | 0.228 |
| 1 | 18 | 42368.000 | 129.776 | 0.505 |
| 1 | 19 | 42368.000 | 131.358 | 0.697 |
| 1 | 20 | 42368.000 | 131.954 | 0.802 |
| 1 | 21 | 42368.000 | 132.277 | 0.834 |
| 2 | 1 | 42368.000 | 132.277 | 0.834 |
| 2 | 2 | 42368.000 | 131.012 | 0.744 |
| 2 | 3 | 42368.000 | 127.334 | 0.484 |
| 2 | 4 | 42368.000 | 123.644 | 0.136 |
| 2 | 5 | 42368.000 | 120.266 | -0.158 |
| 2 | 6 | 42368.000 | 114.955 | -0.458 |
| 2 | 7 | 42368.000 | 115.624 | -0.753 |
| 2 | 8 | 42368.000 | 116.651 | -1.179 |
| 2 | 9 | 42368.000 | 117.694 | -1.347 |
| 2 | 10 | 42368.000 | 118.752 | -1.448 |
| 2 | 11 | 42368.000 | 119.821 | -1.482 |
| 2 | 12 | 42368.000 | 120.451 | -1.467 |
| 2 | 13 | 42368.000 | 121.420 | -1.410 |
| 2 | 14 | 42368.000 | 122.796 | -1.278 |
| 2 | 15 | 42368.000 | 124.575 | -1.037 |
| 2 | 16 | 42368.000 | 126.058 | -0.678 |
| 2 | 17 | 42368.000 | 127.505 | -0.075 |
| 2 | 18 | 42368.000 | 128.919 | 0.335 |
| 2 | 19 | 42368.000 | 130.774 | 0.625 |
| 2 | 20 | 42368.000 | 131.983 | 0.786 |
| 2 | 21 | 42368.000 | 132.277 | 0.834 |
| 3 | 1 | 42368.000 | 132.277 | 0.834 |
| 3 | 2 | 42368.000 | 131.012 | 0.744 |
| 3 | 3 | 42368.000 | 127.334 | 0.484 |
| 3 | 4 | 42368.000 | 123.644 | 0.136 |
| 3 | 5 | 42368.000 | 120.266 | -0.158 |
| 3 | 6 | 42368.000 | 114.955 | -0.458 |
| 3 | 7 | 42368.000 | 115.624 | -0.753 |
| 3 | 8 | 42368.000 | 116.651 | -1.179 |
| 3 | 9 | 42368.000 | 117.694 | -1.347 |
| 3 | 10 | 42368.000 | 118.752 | -1.448 |
| 3 | 11 | 42368.000 | 119.821 | -1.482 |
| 3 | 12 | 42368.000 | 120.451 | -1.467 |
| 3 | 13 | 42368.000 | 121.420 | -1.410 |
| 3 | 14 | 42368.000 | 122.796 | -1.278 |
| 3 | 15 | 42368.000 | 124.575 | -1.037 |
| 3 | 16 | 42368.000 | 126.058 | -0.678 |
| 3 | 17 | 42368.000 | 127.505 | -0.075 |
| 3 | 18 | 42368.000 | 128.919 | 0.335 |
| 3 | 19 | 42368.000 | 130.774 | 0.625 |
| 3 | 20 | 42368.000 | 131.983 | 0.786 |
| 3 | 21 | 42368.000 | 132.277 | 0.834 |
| 4 | 1 | 42368.000 | 132.277 | 0.834 |
| 4 | 2 | 42368.000 | 131.012 | 0.744 |
| 4 | 3 | 42368.000 | 127.334 | 0.484 |
| 4 | 4 | 42368.000 | 123.644 | 0.136 |
| 4 | 5 | 42368.000 | 120.266 | -0.158 |
| 4 | 6 | 42368.000 | 115.746 | -0.461 |
| 4 | 7 | 42368.000 | 116.419 | -0.756 |
| 4 | 8 | 42368.000 | 117.451 | -1.181 |
| 4 | 9 | 42368.000 | 118.500 | -1.349 |
| 4 | 10 | 42368.000 | 119.563 | -1.450 |

| | | | | |
|---|---|---|---|---|
| 4 | 13 | 42368.000 | 120.639 | -1.483 |
| 4 | 14 | 42368.000 | 121.270 | -1.469 |
| 4 | 15 | 42368.000 | 122.242 | -1.411 |
| 4 | 16 | 42368.000 | 123.627 | -1.281 |
| 4 | 17 | 42368.000 | 125.419 | -1.040 |
| 4 | 18 | 42368.000 | 126.917 | -0.681 |
| 4 | 19 | 42368.000 | 128.377 | -0.078 |
| 4 | 20 | 42368.000 | 129.800 | 0.333 |
| 4 | 21 | 42368.000 | 131.669 | 0.623 |
| 5 | 1 | 42368.000 | 133.418 | 0.786 |
| 5 | 2 | 42368.000 | 134.068 | 0.834 |
| 5 | 3 | 42368.000 | 134.068 | 0.834 |
| 5 | 4 | 42368.000 | 133.661 | 0.778 |
| 5 | 5 | 42368.000 | 130.747 | 0.621 |
| 5 | 6 | 42368.000 | 128.820 | 0.355 |
| 5 | 7 | 42368.000 | 126.139 | 0.103 |
| 5 | 8 | 42368.000 | 123.790 | -0.142 |
| 5 | 9 | 42368.000 | 123.127 | -0.370 |
| 5 | 10 | 42368.000 | 134.179 | -0.811 |
| 5 | 11 | 42368.000 | 135.161 | -1.011 |
| 5 | 12 | 42368.000 | 136.157 | -1.167 |
| 5 | 13 | 42368.000 | 137.165 | -1.278 |
| 5 | 14 | 42368.000 | 137.925 | -1.344 |
| 5 | 15 | 42368.000 | 137.341 | -1.366 |
| 5 | 16 | 42368.000 | 136.258 | -1.352 |
| 5 | 17 | 42368.000 | 135.185 | -1.312 |
| 5 | 18 | 42368.000 | 134.122 | -1.245 |
| 5 | 19 | 42368.000 | 133.068 | -0.960 |
| 5 | 20 | 42368.000 | 132.025 | -0.838 |
| 5 | 21 | 42368.000 | 130.993 | -0.690 |
| 5 | 21 | 42368.000 | 129.971 | -0.514 |
| 5 | 21 | 42368.000 | 129.206 | -0.313 |

MOM.HIPER.DE PRETENSADO INICIAL :

6680.36328125 8119.93066406 8166.24414062 7121.68261719

SECCION 2.1 : M.HIP.= 2710.9MTON.
SECCION 3.1 : M.HIP.= 2381.1MTON.
SECCION 4.1 : M.HIP.= 2325.5MTON.
SECCION 5.1 : M.HIP.= 2948.0MTON.

ACCION RESULT.DEL PRETENSADO INICIAL :
**********

| VANO | SECC | T.MEDIA | AXIL | MOMENTO | CORTANTE |
|---|---|---|---|---|---|
| 1 | 1 | 113.5 | 4809.0 | -1386.0 | 515.8 |
| 1 | 2 | 113.9 | 4823.6 | -2237.1 | 481.4 |
| 1 | 3 | 114.3 | 4843.6 | -2974.7 | 408.7 |
| 1 | 4 | 114.8 | 4863.3 | -3585.9 | 331.7 |
| 1 | 5 | 115.3 | 4883.2 | -4069.3 | 521.1 |
| 1 | 6 | 114.8 | 4863.2 | -5305.6 | 442.1 |
| 1 | 7 | 115.2 | 4882.5 | -5528.3 | 95.8 |
| 1 | 8 | 115.8 | 4904.1 | -5621.8 | 17.2 |
| 1 | 9 | 116.3 | 4928.1 | -5585.0 | -58.3 |
| 1 | 10 | 116.8 | 4948.2 | -5429.6 | -125.4 |
| 1 | 11 | 117.5 | 4979.0 | -5171.3 | -210.8 |
| 1 | 12 | 118.6 | 5023.6 | -4733.9 | -348.2 |
| 1 | 13 | 120.0 | 5085.7 | -4022.2 | -553.4 |
| 1 | 14 | 121.9 | 5164.7 | -2907.8 | -809.1 |
| 1 | 15 | 123.6 | 5237.7 | -1352.0 | -1038.3 |
| 1 | 16 | 125.2 | 5306.0 | 518.7 | -1437.9 |
| 1 | 17 | 126.8 | 5372.1 | 3393.1 | -1372.1 |
| 1 | 18 | 128.2 | 5431.7 | 5046.5 | -870.8 |
| 1 | 19 | 129.6 | 5493.0 | 6266.7 | -591.3 |
| 1 | 20 | 130.2 | 5517.0 | 6997.8 | -320.7 |
| 1 | 21 | 130.6 | 5534.1 | 7325.0 | -198.3 |
| 2 | 1 | 130.6 | 5534.1 | 7325.0 | 265.2 |
| 2 | 2 | 129.3 | 5479.1 | 6768.2 | 492.2 |
| 2 | 3 | 125.8 | 5331.1 | 5257.7 | 810.2 |
| 2 | 4 | 122.3 | 5180.8 | 3365.4 | 811.8 |
| 2 | 5 | 119.0 | 5043.5 | 1848.3 | 700.1 |
| 2 | 6 | 113.7 | 4815.5 | 425.0 | 685.0 |
| 2 | 7 | 114.1 | 4833.3 | -1028.9 | 837.5 |
| 2 | 8 | 113.9 | 4824.8 | -3092.7 | 697.4 |
| 2 | 9 | 114.5 | 4851.7 | -3957.9 | 337.7 |
| 2 | 10 | 115.3 | 4884.2 | -4511.2 | 188.4 |
| 2 | 11 | 116.2 | 4923.9 | -4749.3 | 52.9 |
| 2 | 12 | 116.8 | 4950.5 | -4733.5 | -52.5 |
| 2 | 13 | 117.9 | 4995.3 | -4528.8 | -179.9 |
| 2 | 14 | 119.5 | 5064.8 | -3978.0 | -394.7 |
| 2 | 15 | 121.8 | 5160.9 | -2871.1 | -686.9 |
| 2 | 16 | 123.9 | 5249.2 | -1092.9 | -1170.8 |
| 2 | 17 | 126.1 | 5342.2 | 2046.2 | -1270.0 |
| 2 | 18 | 127.4 | 5399.3 | 4241.2 | -901.4 |
| 2 | 19 | 129.1 | 5470.5 | 5832.0 | -594.3 |
| 2 | 20 | 130.3 | 5518.5 | 6737.1 | -277.2 |
| 2 | 21 | 130.6 | 5535.2 | 6996.2 | -123.4 |
| 3 | 1 | 130.6 | 5535.2 | 6996.2 | 258.7 |
| 3 | 2 | 129.3 | 5480.0 | 6452.8 | 485.8 |
| 3 | 3 | 125.8 | 5331.6 | 4955.6 | 803.8 |
| 3 | 4 | 122.3 | 5181.0 | 3076.8 | 805.3 |
| 3 | 5 | 119.0 | 5043.3 | 1573.4 | 693.5 |
| 3 | 6 | 113.6 | 4815.1 | 163.9 | 678.4 |
| 3 | 7 | 114.1 | 4832.6 | -1275.9 | 830.7 |
| 3 | 8 | 113.9 | 4823.7 | -3325.2 | 690.6 |
| 3 | 9 | 114.5 | 4850.5 | -4176.4 | 331.1 |
| 3 | 10 | 115.3 | 4883.1 | -4715.9 | 181.9 |
| 3 | 11 | 116.2 | 4922.9 | -4940.5 | 46.5 |
| 3 | 12 | 116.8 | 4949.6 | -4911.2 | -58.9 |
| 3 | 13 | 117.9 | 4994.6 | -4693.1 | -186.3 |
| 3 | 14 | 119.5 | 5064.2 | -4128.9 | -401.1 |
| 3 | 15 | 121.8 | 5160.5 | -3008.6 | -693.3 |
| 3 | 16 | 123.9 | 5249.0 | -1216.9 | -1177.2 |
| 3 | 17 | 126.1 | 5342.2 | 1935.7 | -1276.5 |
| 3 | 18 | 127.4 | 5399.4 | 4144.5 | -907.9 |
| 3 | 19 | 129.1 | 5470.5 | 5749.0 | -600.8 |
| 3 | 20 | 130.3 | 5518.5 | 6667.8 | -283.7 |
| 3 | 21 | 130.6 | 5535.1 | 6940.5 | -129.9 |
| 4 | 1 | 130.6 | 5535.1 | 6940.5 | 242.6 |
| 4 | 2 | 129.3 | 5479.9 | 6431.0 | 469.7 |
| 4 | 3 | 125.8 | 5331.5 | 4967.8 | 787.7 |
| 4 | 4 | 122.3 | 5181.0 | 3122.9 | 789.1 |
| 4 | 5 | 119.0 | 5043.4 | 1653.4 | 684.6 |
| 4 | 6 | 114.4 | 4848.3 | 247.7 | 671.1 |
| 4 | 7 | 114.8 | 4866.0 | -1165.1 | 819.0 |
| 4 | 8 | 114.6 | 4857.0 | -3192.2 | 678.2 |

| | | | | | |
|---|---|---|---|---|---|
| 4 | 9 | 115.3 | 4884.1 | -4013.7 | 316.6 |
| 4 | 10 | 116.1 | 4916.8 | -4522.1 | 166.7 |
| 4 | 11 | 117.0 | 4956.9 | -4714.0 | 30.7 |
| 4 | 12 | 117.6 | 4983.8 | -4651.0 | -74.9 |
| 4 | 13 | 118.7 | 5028.9 | -4399.2 | -202.6 |
| 4 | 14 | 120.3 | 5099.0 | -3800.2 | -418.6 |
| 4 | 15 | 122.6 | 5195.9 | -2641.1 | -713.1 |
| 4 | 16 | 124.7 | 5285.0 | -805.2 | -1201.2 |
| 4 | 17 | 127.0 | 5378.8 | 2403.7 | -1302.4 |
| 4 | 18 | 128.3 | 5436.1 | 4664.7 | -931.6 |
| 4 | 19 | 130.0 | 5507.5 | 6316.6 | -627.8 |
| 4 | 20 | 131.6 | 5577.7 | 7301.7 | -311.5 |
| 4 | 21 | 132.4 | 5609.1 | 7624.7 | -153.8 |
| | | | | | |
| 5 | 1 | 132.4 | 5609.1 | 7624.7 | 289.5 |
| 5 | 2 | 131.9 | 5589.5 | 7147.0 | 477.5 |
| 5 | 3 | 129.1 | 5470.7 | 6048.9 | 825.3 |
| 5 | 4 | 127.4 | 5395.7 | 4423.5 | 952.8 |
| 5 | 5 | 124.9 | 5291.0 | 2904.6 | 893.7 |
| 5 | 6 | 122.5 | 5191.4 | 1474.2 | 834.0 |
| 5 | 7 | 121.8 | 5159.8 | 152.3 | 1236.7 |
| 5 | 8 | 131.7 | 5579.7 | -2607.0 | 1227.3 |
| 5 | 9 | 132.3 | 5604.2 | -3897.8 | 710.0 |
| 5 | 10 | 132.9 | 5630.5 | -4949.9 | 565.0 |
| 5 | 11 | 133.6 | 5660.2 | -5762.3 | 413.7 |
| 5 | 12 | 134.2 | 5684.3 | -6315.3 | 238.1 |
| 5 | 13 | 133.6 | 5658.3 | -6548.0 | 75.2 |
| 5 | 14 | 132.6 | 5616.0 | -6563.5 | -34.8 |
| 5 | 15 | 131.6 | 5576.9 | -6433.0 | -122.6 |
| 5 | 16 | 130.8 | 5540.6 | -6159.0 | -513.2 |
| 5 | 17 | 131.0 | 5550.6 | -4739.4 | -599.4 |
| 5 | 18 | 130.1 | 5514.0 | -4181.1 | -380.4 |
| 5 | 19 | 129.3 | 5478.0 | -3484.0 | -463.8 |
| 5 | 20 | 128.4 | 5441.8 | -2650.7 | -541.5 |
| 5 | 21 | 127.8 | 5415.2 | -1697.1 | -577.9 |

MOM.HIPER.DE PRETENSADO PERMANENTE :

5508.97167969 6697.46337891 6728.35742187 5722.19726562

SECCION 2.1 : M.HIP.= 2237.0MTON.
SECCION 3.1 : M.HIP.= 1958.5MTON.
SECCION 4.1 : M.HIP.= 1938.1MTON.
SECCION 5.1 : M.HIP.= 2348.3MTON.

ACCION RESULT. DEL PRETENSADO PERMTE :
**********

| VANO | SECC | T.MEDIA | AXIL. | MOMENTO | CORTANTE |
|---|---|---|---|---|---|
| 1 | 1 | 96.8 | 4102.4 | -1182.3 | 438.5 |
| 1 | 2 | 96.8 | 4101.9 | -1905.8 | 407.7 |
| 1 | 3 | 96.9 | 4106.0 | -2527.8 | 343.4 |
| 1 | 4 | 97.0 | 4110.8 | -3039.2 | 276.5 |
| 1 | 5 | 97.2 | 4116.6 | -3440.1 | 389.4 |
| 1 | 6 | 93.7 | 3969.3 | -4324.2 | 318.3 |
| 1 | 7 | 93.8 | 3974.1 | -4490.5 | 69.4 |
| 1 | 8 | 94.0 | 3982.9 | -4553.4 | 6.8 |
| 1 | 9 | 94.3 | 3995.9 | -4513.0 | -52.6 |
| 1 | 10 | 94.6 | 4008.3 | -4379.7 | -106.4 |
| 1 | 11 | 95.1 | 4028.1 | -4161.8 | -174.5 |
| 1 | 12 | 95.9 | 4062.7 | -3803.8 | -281.3 |
| 1 | 13 | 97.2 | 4119.7 | -3233.6 | -442.0 |
| 1 | 14 | 99.2 | 4201.9 | -2345.3 | -648.7 |
| 1 | 15 | 101.2 | 4285.6 | -1093.0 | -842.9 |
| 1 | 16 | 102.7 | 4350.0 | 436.1 | -1178.5 |
| 1 | 17 | 104.2 | 4416.5 | 2796.2 | -1120.3 |
| 1 | 18 | 104.3 | 4420.4 | 4133.2 | -699.9 |
| 1 | 19 | 104.8 | 4438.6 | 5105.7 | -475.4 |
| 1 | 20 | 105.3 | 4462.2 | 5702.1 | -269.1 |
| 1 | 21 | 106.3 | 4505.7 | 5993.7 | -176.7 |
| | | | | | |
| 2 | 1 | 106.3 | 4505.7 | 5993.7 | 223.8 |
| 2 | 2 | 104.8 | 4439.3 | 5523.8 | 397.6 |
| 2 | 3 | 103.1 | 4369.8 | 4323.8 | 653.0 |
| 2 | 4 | 101.8 | 4312.6 | 2781.2 | 670.8 |
| 2 | 5 | 100.9 | 4273.1 | 1506.4 | 597.6 |
| 2 | 6 | 97.8 | 4143.6 | 271.4 | 590.8 |
| 2 | 7 | 98.0 | 4153.2 | -975.1 | 686.8 |
| 2 | 8 | 95.2 | 4031.4 | -2613.2 | 551.6 |
| 2 | 9 | 94.9 | 4021.0 | -3291.9 | 261.0 |
| 2 | 10 | 94.9 | 4019.5 | -3709.6 | 138.9 |
| 2 | 11 | 95.2 | 4031.5 | -3875.3 | 32.3 |
| 2 | 12 | 95.4 | 4041.3 | -3845.3 | -51.3 |
| 2 | 13 | 95.9 | 4064.4 | -3659.7 | -152.3 |
| 2 | 14 | 97.1 | 4115.9 | -3205.5 | -319.2 |
| 2 | 15 | 99.3 | 4205.9 | -2318.9 | -552.0 |
| 2 | 16 | 101.6 | 4302.5 | -886.9 | -952.7 |
| 2 | 17 | 104.3 | 4420.6 | 1682.5 | -1040.2 |
| 2 | 18 | 104.3 | 4418.2 | 3481.9 | -731.5 |
| 2 | 19 | 104.6 | 4431.1 | 4754.8 | -477.0 |
| 2 | 20 | 105.4 | 4467.2 | 5485.2 | -232.4 |
| 2 | 21 | 106.8 | 4524.6 | 5730.9 | -117.0 |
| | | | | | |
| 3 | 1 | 106.8 | 4524.6 | 5730.9 | 219.4 |
| 3 | 2 | 105.2 | 4455.4 | 5270.2 | 394.0 |
| 3 | 3 | 103.4 | 4380.0 | 4076.0 | 649.6 |
| 3 | 4 | 101.9 | 4315.4 | 2541.8 | 665.7 |
| 3 | 5 | 100.8 | 4270.2 | 1280.0 | 590.7 |
| 3 | 6 | 97.6 | 4135.5 | 61.0 | 582.6 |
| 3 | 7 | 97.7 | 4140.9 | -1166.9 | 675.6 |
| 3 | 8 | 94.7 | 4010.3 | -2776.6 | 540.7 |
| 3 | 9 | 94.4 | 3999.0 | -3437.6 | 253.4 |
| 3 | 10 | 94.4 | 3998.0 | -3840.9 | 132.7 |
| 3 | 11 | 94.7 | 4011.4 | -3995.1 | 27.3 |
| 3 | 12 | 95.0 | 4023.2 | -3955.4 | -55.7 |
| 3 | 13 | 95.6 | 4048.8 | -3761.3 | -156.1 |
| 3 | 14 | 96.8 | 4103.1 | -3299.9 | -322.4 |
| 3 | 15 | 99.1 | 4196.6 | -2407.1 | -555.2 |
| 3 | 16 | 101.4 | 4297.2 | -968.3 | -956.6 |
| 3 | 17 | 104.3 | 4420.1 | 1610.4 | -1045.6 |
| 3 | 18 | 104.3 | 4419.7 | 3423.2 | -738.0 |
| 3 | 19 | 104.6 | 4433.1 | 4709.8 | -483.3 |
| 3 | 20 | 105.5 | 4468.9 | 5453.2 | -238.4 |
| 3 | 21 | 106.8 | 4525.5 | 5711.2 | -122.9 |

| | | | | | |
|---|---|---|---|---|---|
| 4 | 1 | 106.8 | 4525.5 | 5711.2 | 209.6 |
| 4 | 2 | 105.2 | 4455.1 | 5271.0 | 384.1 |
| 4 | 3 | 103.4 | 4379.0 | 4098.2 | 639.3 |
| 4 | 4 | 101.8 | 4314.9 | 2585.9 | 655.4 |
| 4 | 5 | 100.8 | 4271.0 | 1345.5 | 586.0 |
| 4 | 6 | 98.2 | 4159.2 | 124.6 | 579.4 |
| 4 | 7 | 98.4 | 4167.0 | -1088.1 | 670.4 |
| 4 | 8 | 95.4 | 4041.6 | -2691.1 | 535.9 |
| 4 | 9 | 95.2 | 4033.7 | -3339.0 | 246.9 |
| 4 | 10 | 95.3 | 4035.9 | -3728.0 | 125.4 |
| 4 | 11 | 95.6 | 4052.1 | -3865.8 | 19.0 |
| 4 | 12 | 96.0 | 4066.3 | -3807.8 | -64.8 |
| 4 | 13 | 96.6r | | | |
| 4093.4 | | -3593.5 | -166.7 | | |
| 4 | 14 | 97.9 | 4148.0 | -3107.7 | -335.9 |
| 4 | 15 | 100.1 | 4239.5 | -2182.8 | -572.1 |
| 4 | 16 | 102.3 | 4334.4 | -704.7 | -976.7 |
| 4 | 17 | 104.9 | 4443.0 | 1919.5 | -1063.6 |
| 4 | 18 | 104.6 | 4432.2 | 3762.6 | -750.4 |
| 4 | 19 | 104.7 | 4437.1 | 5071.3 | -496.6 |
| 4 | 20 | 105.7 | 4478.4 | 5848.4 | -252.9 |
| 4 | 21 | 107.1 | 4539.6 | 6133.3 | -135.7 |
| | | | | | |
| 5 | 1 | 107.1 | 4539.6 | 6133.3 | 244.3 |
| 5 | 2 | 106.2 | 4500.1 | 5730.2 | 383.4 |
| 5 | 3 | 104.7 | 4437.7 | 4868.0 | 655.4 |
| 5 | 4 | 104.4 | 4421.3 | 3567.4 | 768.0 |
| 5 | 5 | 104.0 | 4405.4 | 2333.4 | 734.8 |
| 5 | 6 | 102.9 | 4358.7 | 1142.6 | 696.6 |
| 5 | 7 | 102.5 | 4343.7 | 34.8 | 978.2 |
| 5 | 8 | 105.2 | 4455.5 | -2085.5 | 940.9 |
| 5 | 9 | 104.6 | 4429.8 | -3070.2 | 534.7 |
| 5 | 10 | 104.0 | 4405.6 | -3850.1 | 414.0 |
| 5 | 11 | 103.6 | 4388.7 | -4436.5 | 297.0 |
| 5 | 12 | 103.4 | 4378.9 | -4830.2 | 174.7 |
| 5 | 13 | 102.9 | 4358.6 | -5012.9 | 65.5 |
| 5 | 14 | 102.4 | 4339.0 | -5046.3 | -12.8 |
| 5 | 15 | 102.1 | 4325.3 | -4970.8 | -78.8 |
| 5 | 16 | 101.9 | 4317.3 | -4786.4 | -342.8 |
| 5 | 17 | 105.9 | 4488.5 | -3839.7 | -419.0 |
| 5 | 18 | 105.7 | 4479.7 | -3403.8 | -299.9 |
| 5 | 19 | 105.6 | 4472.0 | -2850.1 | -371.3 |
| 5 | 20 | 105.4 | 4465.0 | -2178.4 | -439.8 |
| 5 | 21 | 105.4 | 4463.6 | -1398.9 | -472.4 |

Execution terminated : 0

C:\PONTEX>>TENSIO/R 4100

TENSIONES NORMALES DE (P.PR.+PRET.INICIAL) SOBRE SECC.NETAS :

**********

| VANO | SECC | M.PP | N.PI | M.PI | S.SUP | S.INF |
|---|---|---|---|---|---|---|
| 1 | 1 | 0.0 | 4809.0 | -1386.0 | 294. | 604. |
| 1 | 2 | 459.0 | 4823.6 | -2237.1 | 257. | 656. |
| 1 | 3 | 840.8 | 4843.6 | -2974.7 | 223. | 705. |
| 1 | 4 | 1145.3 | 4863.3 | -3585.9 | 195. | 747. |
| 1 | 5 | 1372.7 | 4883.2 | -4069.3 | 171. | 783. |
| 1 | 6 | 1527.3 | 4863.2 | -5305.6 | 170. | 1243. |
| 1 | 7 | 1618.0 | 4882.5 | -5528.3 | 158. | 1271. |
| 1 | 8 | 1649.4 | 4904.1 | -5621.8 | 154. | 1286. |
| 1 | 9 | 1621.3 | 4928.1 | -5585.0 | 157. | 1288. |
| 1 | 10 | 1533.9 | 4948.2 | -5429.6 | 167. | 1278. |
| 1 | 11 | 1387.0 | 4979.0 | -5171.3 | 182. | 1261. |
| 1 | 12 | 1180.8 | 5023.6 | -4733.9 | 212. | 1223. |
| 1 | 13 | 915.1 | 5085.7 | -4022.2 | 266. | 1148. |
| 1 | 14 | 590.1 | 5164.7 | -2907.8 | 357. | 1015. |
| 1 | 15 | 205.6 | 5237.7 | -1352.0 | 487. | 815. |
| 1 | 16 | -238.2 | 5306.0 | 518.7 | 643. | 573. |
| 1 | 17 | -744.1 | 5372.1 | 3393.1 | 790. | 183. |
| 1 | 18 | -1317.3 | 5431.7 | 5046.5 | 905. | 46. |
| 1 | 19 | -1960.5 | 5493.0 | 6266.7 | 971. | -25. |
| 1 | 20 | -2673.6 | 5517.0 | 6997.8 | 977. | -26. |
| 1 | 21 | -3078.7 | 5534.1 | 7325.0 | 971. | -15. |
| | | | | | | |
| 2 | 1 | -3067.6 | 5534.1 | 7325.0 | 972. | -16. |
| 2 | 2 | -2430.7 | 5479.1 | 6768.2 | 973. | -31. |
| 2 | 3 | -1518.0 | 5331.1 | 5257.7 | 896. | 35. |
| 2 | 4 | -718.7 | 5180.8 | 3365.4 | 770. | 165. |
| 2 | 5 | -35.6 | 5043.5 | 1848.3 | 623. | 225. |
| 2 | 6 | 525.3 | 4815.5 | 425.0 | 518. | 313. |
| 2 | 7 | 961.2 | 4833.3 | -1028.9 | 420. | 445. |
| 2 | 8 | 1279.2 | 4824.8 | -3092.7 | 367. | 893. |
| 2 | 9 | 1493.8 | 4851.7 | -3957.9 | 302. | 1014. |
| 2 | 10 | 1612.1 | 4884.2 | -4511.2 | 260. | 1098. |
| 2 | 11 | 1634.3 | 4923.9 | -4749.3 | 242. | 1142. |
| 2 | 12 | 1560.2 | 4950.5 | -4733.5 | 239. | 1155. |
| 2 | 13 | 1389.9 | 4995.3 | -4528.8 | 249. | 1153. |
| 2 | 14 | 1123.4 | 5064.8 | -3978.0 | 287. | 1107. |
| 2 | 15 | 760.7 | 5160.9 | -2871.1 | 377. | 981. |
| 2 | 16 | 301.8 | 5249.2 | -1092.9 | 524. | 756. |
| 2 | 17 | -257.6 | 5342.2 | 2046.2 | 700. | 294. |
| 2 | 18 | -926.1 | 5399.3 | 4241.2 | 859. | 98. |
| 2 | 19 | -1707.9 | 5470.5 | 5832.0 | 949. | -2. |
| 2 | 20 | -2603.1 | 5518.5 | 6737.1 | 958. | -1. |
| 2 | 21 | -3229.1 | 5535.2 | 6996.2 | 924. | 48. |
| | | | | | | |
| 3 | 1 | -3219.2 | 5535.2 | 6996.2 | 925. | 46. |
| 3 | 2 | -2577.0 | 5480.0 | 6452.8 | 928. | 29. |
| 3 | 3 | -1655.7 | 5331.6 | 4955.6 | 853. | 93. |
| 3 | 4 | -847.8 | 5181.0 | 3076.8 | 729. | 220. |
| 3 | 5 | -156.2 | 5043.3 | 1573.4 | 585. | 274. |
| 3 | 6 | 413.3 | 4815.1 | 163.9 | 482. | 360. |
| 3 | 7 | 857.8 | 4832.6 | -1275.9 | 387. | 489. |
| 3 | 8 | 1184.4 | 4823.7 | -3325.2 | 334. | 950. |
| 3 | 9 | 1407.5 | 4850.5 | -4176.4 | 271. | 1068. |
| 3 | 10 | 1534.4 | 4883.1 | -4715.9 | 231. | 1148. |
| 3 | 11 | 1565.2 | 4922.9 | -4940.5 | 215. | 1188. |
| 3 | 12 | 1499.7 | 4949.6 | -4911.2 | 215. | 1197. |
| 3 | 13 | 1338.0 | 4994.6 | -4693.1 | 226. | 1191. |
| 3 | 14 | 1080.1 | 5064.2 | -4128.9 | 267. | 1141. |
| 3 | 15 | 725.9 | 5160.5 | -3008.6 | 359. | 1011. |
| 3 | 16 | 275.6 | 5249.0 | -1216.9 | 509. | 782. |
| 3 | 17 | -275.3 | 5342.2 | 1935.7 | 688. | 311. |
| 3 | 18 | -935.2 | 5399.4 | 4144.5 | 849. | 112. |
| 3 | 19 | -1708.4 | 5470.5 | 5749.0 | 941. | 8. |
| 3 | 20 | -2595.0 | 5518.5 | 6667.8 | 952. | 7. |
| 3 | 21 | -3215.7 | 5535.1 | 6940.5 | 920. | 53. |

| | | | | | | |
|---|---|---|---|---|---|---|
| 4 | 1 | -3201.1 | 5535.1 | 6940.5 | 921. | 51. |
| 4 | 2 | -2556.6 | 5479.9 | 6431.0 | 928. | 29. |
| 4 | 3 | -1631.6 | 5331.5 | 4967.8 | 856. | 88. |
| 4 | 4 | -820.0 | 5181.0 | 3122.9 | 736. | 210. |
| 4 | 5 | -124.6 | 5043.4 | 1653.4 | 595. | 260. |
| 4 | 6 | 448.6 | 4848.3 | 247.7 | 497. | 348. |
| 4 | 7 | 896.8 | 4866.0 | -1165.1 | 404. | 473. |
| 4 | 8 | 1227.1 | 4857.0 | -3192.2 | 356. | 923. |
| 4 | 9 | 1454.0 | 4884.1 | -4013.7 | 296. | 1035. |
| 4 | 10 | 1584.7 | 4916.8 | -4522.1 | 260. | 1109. |
| 4 | 11 | 1619.2 | 4956.9 | -4714.0 | 248. | 1143. |
| 4 | 12 | 1557.4 | 4983.8 | -4651.0 | 251. | 1145. |
| 4 | 13 | 1399.4 | 5028.9 | -4399.2 | 267. | 1132. |
| 4 | 14 | 1145.3 | 5099.0 | -3800.2 | 312. | 1076. |
| 4 | 15 | 794.9 | 5195.9 | -2641.1 | 408. | 939. |
| 4 | 16 | 348.2 | 5285.0 | -805.2 | 563. | 703. |
| 4 | 17 | -198.9 | 5378.8 | 2403.7 | 744. | 244. |
| 4 | 18 | -855.0 | 5436.1 | 4664.7 | 911. | 38. |
| 4 | 19 | -1624.5 | 5507.5 | 6316.6 | 1009. | -73. |
| 4 | 20 | -2507.4 | 5577.7 | 7301.7 | 1029. | -81. |
| 4 | 21 | -3125.7 | 5609.1 | 7624.7 | 1004. | -40. |
| 5 | 1 | -3109.1 | 5609.1 | 7624.7 | 1006. | -43. |
| 5 | 2 | -2686.5 | 5589.5 | 7147.0 | 997. | -37. |
| 5 | 3 | -1939.4 | 5470.7 | 6048.9 | 948. | 0. |
| 5 | 4 | -1262.2 | 5395.7 | 4423.5 | 844. | 118. |
| 5 | 5 | -656.9 | 5291.0 | 2904.6 | 688. | 191. |
| 5 | 6 | -126.9 | 5191.4 | 1474.2 | 591. | 296. |
| 5 | 7 | 325.8 | 5159.8 | 152.3 | 504. | 403. |
| 5 | 8 | 705.8 | 5579.7 | -2607.0 | 449. | 989. |
| 5 | 9 | 1022.0 | 5604.2 | -3897.8 | 350. | 1166. |
| 5 | 10 | 1278.7 | 5630.5 | -4949.9 | 270. | 1313. |
| 5 | 11 | 1476.0 | 5660.2 | -5762.3 | 209. | 1428. |
| 5 | 12 | 1614.0 | 5684.3 | -6315.3 | 168. | 1507. |
| 5 | 13 | 1692.5 | 5658.3 | -6548.0 | 149. | 1532. |
| 5 | 14 | 1711.7 | 5616.0 | -6563.5 | 145. | 1526. |
| 5 | 15 | 1671.4 | 5576.9 | -6433.0 | 151. | 1503. |
| 5 | 16 | 1571.8 | 5540.6 | -6159.0 | 165. | 1465. |
| 5 | 17 | 1408.3 | 5550.6 | -4739.4 | 169. | 923. |
| 5 | 18 | 1172.0 | 5514.0 | -4181.1 | 198. | 877. |
| 5 | 19 | 858.6 | 5478.0 | -3484.0 | 232. | 824. |
| 5 | 20 | 467.9 | 5441.8 | -2650.7 | 273. | 762. |
| 5 | 21 | 0.0 | 5415.2 | -1697.1 | 318. | 697. |

TENSIONES NORMALES EN FASES PERMTE Y SERVICIO :
**********

COEF. EQUIVALENCIA ACERO-HORMIGON :
PARA C.PMTE Y PERDIDAS DIF.PRET.:10.0
PARA SOBRECARGA :

| SECC | D.NP | D.MP | M.CP | M.SC+ | M.SC- | SSUP | SINF | SSUP | SINF | SSUP | SINF |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | PERMANENTE | | SERVICIO(+) | | SERVICIO(- | |
| 1 | 1 | -706.6 | 203.7 | 0.0 | 0.0 | 0.0 | 253. | 519. | 253. | 519. | 253. 519. |
| 1 | 2 | -721.7 | 331.3 | 339.1 | 677.5 | -137.2 | 259. | 513. | 324. | 429. | 245. 530. |
| 1 | 3 | -737.6 | 446.9 | 628.4 | 1275.4 | -274.4 | 262. | 511. | 385. | 354. | 236. 545. |
| 1 | 4 | -752.5 | 546.7 | 867.8 | 1794.0 | -411.6 | 265. | 513. | 437. | 291. | 225. 563. |
| 1 | 5 | -766.6 | 629.2 | 1057.5 | 2226.9 | -548.8 | 265. | 516. | 479. | 242. | 213. 583. |
| 1 | 6 | -893.9 | 981.3 | 1197.3 | 2581.9 | -686.0 | 289. | 800. | 552. | 369. | 219. 914. |
| 1 | 7 | -908.5 | 1037.8 | 1287.3 | 2865.5 | -823.2 | 289. | 805. | 581. | 328. | 206. 942. |
| 1 | 8 | -921.2 | 1068.4 | 1327.5 | 3066.2 | -960.4 | 290. | 809. | 602. | 300. | 192. 968. |
| 1 | 9 | -932.2 | 1072.0 | 1317.8 | 3186.4 | -1097.6 | 291. | 811. | 615. | 282. | 180. 993. |
| 1 | 10 | -939.9 | 1049.8 | 1258.3 | 3234.4 | -1234.7 | 292. | 813. | 621. | 276. | 166.1018. |
| 1 | 11 | -950.9 | 1009.5 | 1149.0 | 3201.0 | -1371.9 | 291. | 818. | 617. | 286. | 152.1046. |
| 1 | 12 | -960.9 | 930.1 | 989.9 | 3099.3 | -1509.1 | 296. | 815. | 612. | 299. | 142.1066. |
| 1 | 13 | -966.0 | 788.6 | 781.0 | 2920.9 | -1646.3 | 315. | 793. | 613. | 305. | 147.1068. |
| 1 | 14 | -962.8 | 562.5 | 522.2 | 2669.1 | -1783.5 | 359. | 735. | 631. | 286. | 177.1034. |
| 1 | 15 | -952.1 | 259.0 | 213.6 | 2360.1 | -1920.7 | 428. | 634. | 670. | 235. | 232. 959. |
| 1 | 16 | -956.0 | -82.5 | -144.8 | 1964.3 | -2057.9 | 513. | 507. | 713. | 173. | 302. 857. |
| 1 | 17 | -955.7 | -596.9 | -553.0 | 1500.5 | -2195.8 | 588. | 242. | 735. | 47. | 374. 528. |
| 1 | 18 | -1011.3 | -913.3 | -1011.0 | 1134.7 | -2461.4 | 626. | 200. | 736. | 52. | 387. 520. |
| 1 | 19 | -1054.3 | -1161.0 | -1518.9 | 849.4 | -2908.6 | 618. | 222. | 700. | 111. | 336. 600. |
| 1 | 20 | -1054.8 | -1295.7 | -2076.6 | 759.1 | -3506.2 | 560. | 309. | 633. | 211. | 221. 765. |
| 1 | 21 | -1028.5 | -1331.4 | -2390.8 | 761.0 | -3885.5 | 524. | 368. | 598. | 269. | 149. 873. |
| 2 | 1 | -1028.5 | -1331.4 | -2395.2 | 718.2 | -3833.3 | 525. | 367. | 594. | 274. | 155. 865. |
| 2 | 2 | -1039.8 | -1244.4 | -1922.5 | 645.1 | -3168.3 | 576. | 280. | 638. | 196. | 270. 692. |
| 2 | 3 | -961.2 | -933.9 | -1241.6 | 750.9 | -2371.5 | 597. | 226. | 670. | 129. | 366. 535. |
| 2 | 4 | -868.2 | -584.1 | -641.4 | 1021.4 | -1797.0 | 569. | 243. | 668. | 110. | 393. 476. |
| 2 | 5 | -770.4 | -341.9 | -121.9 | 1412.2 | -1444.2 | 511. | 217. | 647. | 41. | 372. 396. |
| 2 | 6 | -671.9 | -153.6 | 316.9 | 1954.4 | -1345.7 | 475. | 237. | 663. | -6. | 346. 404. |
| 2 | 7 | -680.1 | 53.8 | 675.0 | 2512.4 | -1364.5 | 431. | 299. | 673. | -11. | 300. 468. |
| 2 | 8 | -793.4 | 479.4 | 952.4 | 2946.1 | -1383.3 | 422. | 579. | 722. | 87. | 281. 810. |
| 2 | 9 | -830.7 | 665.9 | 1149.1 | 3267.6 | -1402.2 | 390. | 639. | 722. | 97. | 247. 872. |
| 2 | 10 | -864.7 | 801.5 | 1265.0 | 3475.9 | -1421.0 | 368. | 683. | 721. | 108. | 224. 918. |
| 2 | 11 | -892.4 | 874.0 | 1300.3 | 3570.2 | -1454.1 | 357. | 708. | 719. | -118. | 210. 948. |
| 2 | 12 | -909.2 | 888.2 | 1254.9 | 3552.4 | -1526.2 | 350. | 724. | 710. | 137. | 195. 976. |
| 2 | 13 | -930.9 | 869.1 | 1128.8 | 3416.9 | -1598.3 | 343. | 740. | 690. | 174. | 180.1005. |
| 2 | 14 | -948.9 | 772.5 | 921.9 | 3166.2 | -1670.4 | 350. | 737. | 672. | 210. | 180.1015. |
| 2 | 15 | -955.0 | 552.2 | 634.4 | 2803.1 | -1742.5 | 389. | 688. | 675. | 218. | 211. 980. |
| 2 | 16 | -946.7 | 206.0 | 266.2 | 2332.1 | -1814.7 | 466. | 576. | 704. | 182. | 280. 883. |
| 2 | 17 | -921.7 | -363.7 | -182.8 | 1806.2 | -1939.6 | 559. | 278. | 736. | 44. | 370. 530. |
| 2 | 18 | -981.2 | -759.3 | -712.4 | 1404.0 | -2293.1 | 625. | 196. | 761. | 14. | 401. 495. |
| 2 | 19 | -1039.4 | -1077.2 | -1322.8 | 1107.2 | -2879.4 | 623. | 210. | 731. | 65. | 344. 584. |
| 2 | 20 | -1051.3 | -1251.9 | -2013.8 | 1028.9 | -3687.5 | 551. | 321. | 650. | 187. | 195. 800. |
| 2 | 21 | -1010.6 | -1265.2 | -2492.8 | 1085.1 | -4829.0 | 475. | 437. | 580. | 296. | 58. 999. |
| 3 | 1 | -1010.6 | -1265.2 | -2494.7 | 1072.9 | -4329.2 | 476. | 436. | 580. | 296. | 58. 998. |
| 3 | 2 | -1024.6 | -1182.7 | -2018.6 | 996.8 | -3687.8 | 529. | 346. | 625. | 216. | 172. 825. |
| 3 | 3 | -951.7 | -879.6 | -1332.3 | 1099.3 | -2874.7 | 551. | 289. | 658. | 146. | 272. 663. |
| 3 | 4 | -865.6 | -535.0 | -726.8 | 1370.0 | -2288.2 | 524. | 302. | 658. | 124. | 301. 599. |
| 3 | 5 | -773.2 | -293.5 | -201.9 | 1763.6 | -1926.1 | 470. | 270. | 640. | 50. | 285. 509. |
| 3 | 6 | -679.6 | -102.9 | 242.2 | 2300.8 | -1812.2 | 436. | 286. | 658. | 0. | 262. 510. |
| 3 | 7 | -691.8 | 109.0 | 605.7 | 2807.2 | -1777.6 | 395. | 344. | 665. | -3. | 224. 563. |
| 3 | 8 | -813.4 | 548.6 | 888.4 | 3204.8 | -1742.9 | 387. | 633. | 713. | 98. | 209. 924. |
| 3 | 9 | -851.6 | 738.8 | 1090.4 | 3482.0 | -1708.2 | 358. | 688. | 712. | 110. | 184. 972. |
| 3 | 10 | -885.1 | 875.1 | 1211.8 | 3645.8 | -1673.6 | 339. | 727. | 709. | 124. | 169.1004. |
| 3 | 11 | -911.5 | 945.4 | 1252.4 | 3695.8 | -1638.9 | 331. | 748. | 706. | 138. | 164.1019. |
| 3 | 12 | -926.4 | 955.8 | 1212.3 | 3633.5 | -1653.4 | 326. | 760. | 694. | 159. | 158.1034. |
| 3 | 13 | -945.8 | 931.8 | 1091.5 | 3456.8 | -1675.5 | 321. | 773. | 672. | 200. | 151.1050. |
| 3 | 14 | -961.2 | 828.9 | 890.1 | 3158.5 | -1697.7 | 331. | 766. | 652. | 240. | 158.1048. |

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 4  16  950.6  248.6   245.0  2236.2 -1741.9  452.  598.  681.  220. 274. 892.
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 4   1 1009.6-1229.2 -2487.6  1103.4 -4345.9  476.  435.  583.  292.  57.1000.
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 4  15  956.4  458.4   665.6  2458.5 -1333.5  413.  656.  664.  244. 277. 879.
 4  16 -950.6  100.5   306.5  1900.4 -1304.6  497.  533.  691.  212. 363. 753.
 4  17 -935.8 -484.2  -133.4  1357.7 -1398.0  595.  236.  728.   59. 459. 417.
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 4  19 1070.4-1245.3 -1255.2   721.0 -2368.6  671.  149.  740.   56. 441. 458.
 4  20 1099.3-1453.3 -1937.2   666.4 -3187.2  606.  252.  670.  166. 298. 667.
 4  21 1069.5-1491.4 -2410.6   746.0 -3881.1  536.  362.  608.  265. 162. 866.


 5   1-1069.5-1491.4 -2406.2   792.2 -3949.7  538.  359.  615.  256. 157. 872.
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 5   7 -816.1 -117.5   202.6  2420.0 -2001.3  441.  323.  674.   23. 248. 572.
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 5  13-1299.8 1535.1  1311.5  3223.3 -1143.6  287.  945.  615.  410. 171.1134.
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 5  15-1251.6 1462.3  1282.6  2895.4  -857.7  285.  935.  579.  453. 197.1077.
 5  16-1223.3 1372.6  1193.4  2602.7  -714.8  285.  926.  550.  492. 213.1045.
 5  17-1062.0  899.7  1054.3  2244.2  -571.8  263.  600.  478.  324. 208. 670.
 5  18-1034.4  777.3   865.5  1799.8  -428.9  265.  592.  438.  370. 223. 645.
 5  19-1006.0  634.0   626.8  1287.0  -285.9  266.  585.  390.  426. 238. 621.
 5  20 -976.8  472.3   338.3   680.3  -143.0  266.  580.  331.  496. 252. 598.
 5  21 -951.6  298.2     0.0     0.0     0.0  264.  579.  264.  579. 264. 579.


Execution terminated : 0

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C:\PONTEX>>
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# FRECUENCIAS Y MODOS DE VIBRACION

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STRUCTURE DATA
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NM = 160
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NS = 0
NRJ= 9
NL = 1
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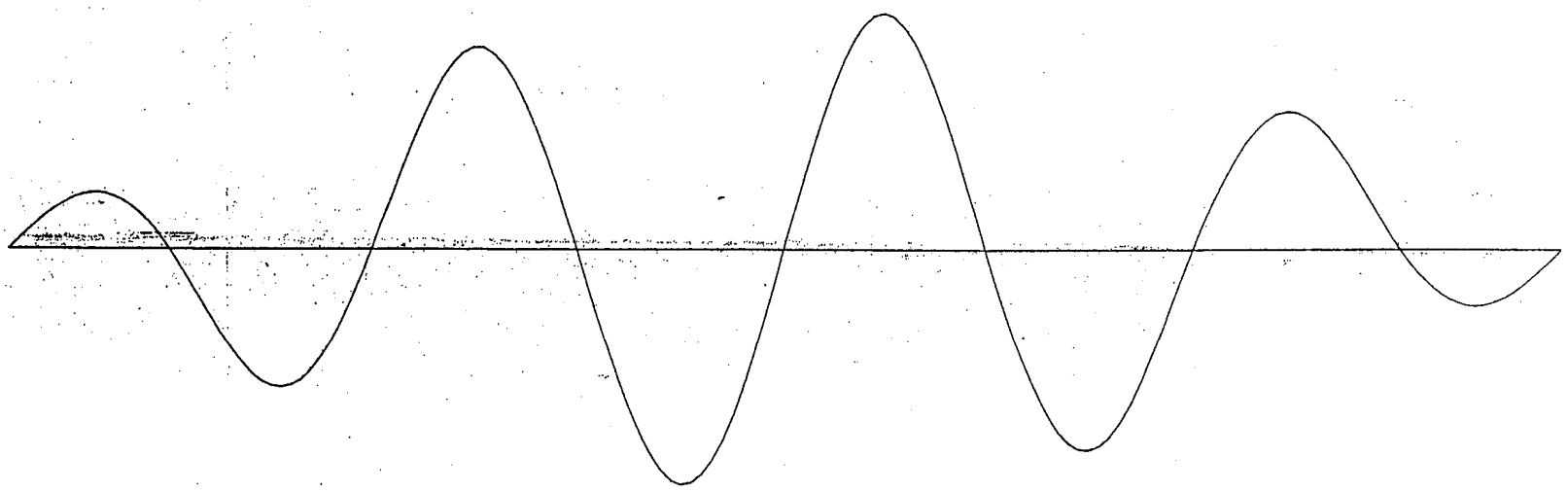
MN/ELEM
MODR LOAD= 1



Frequency= 2.93
J=161,M=160

UNIT MET MTO

S T A A D P O S T - P L O T (REV: 22.3 )
TITLE: VIADUCTO RIERUSA

DATE: OCT 22, 2003

User ID: Carlos Alonso Cobo

STRUCTURE DATA
TYPE = SPACE
NJ = 161
NM = 160
NE = 0
NS = 0
NRJ= 9
NL = 1
XMAX= 318.0
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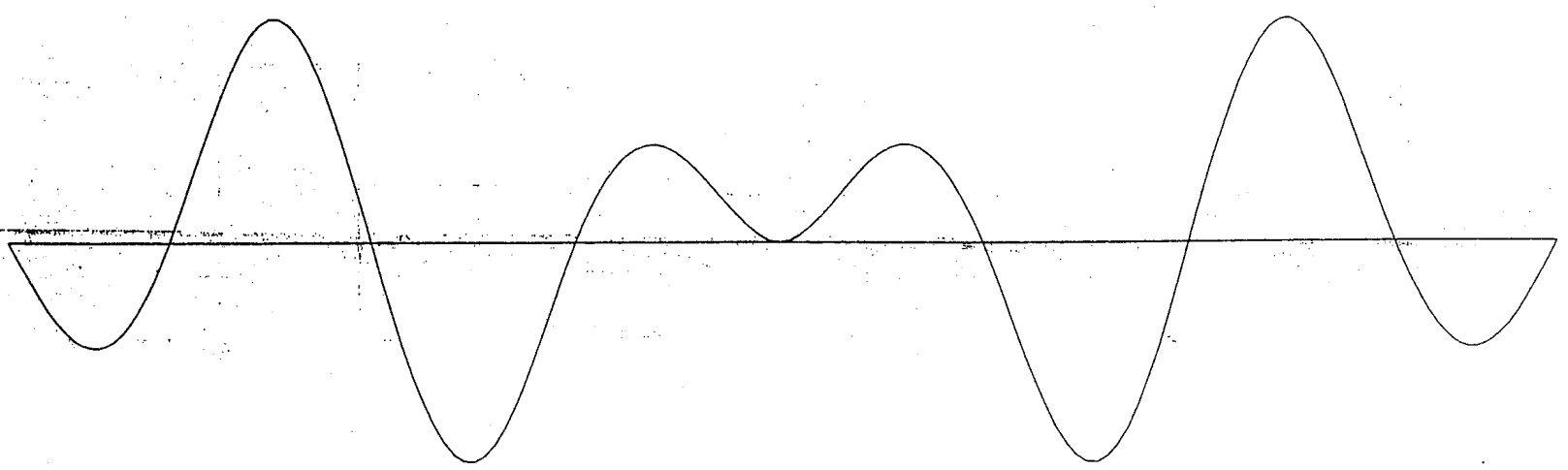
MN/ELEM
MODR LOAD= 2



Frequency= 3.29
J=161,M=160

UNIT MET MTO

S T A A D P O S T - P L O T (REV: 22.3 )
TITLE: VIADUCTO RIERUSA

DATE: OCT 22, 2003

User ID: Carlos Alonso Cobo

STRUCTURE DATA
TYPE = SPACE
NJ = 161
NM = 160
NE = 0
NS = 0
NRJ= 9
NL = 1
XMAX= 318.0
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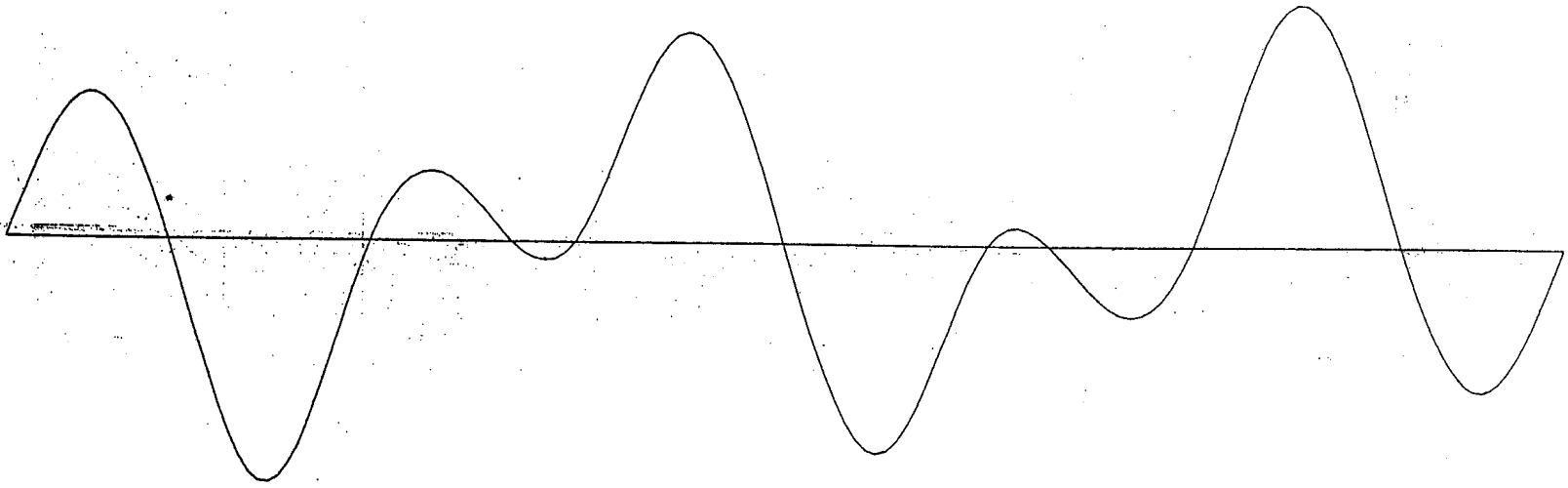

Frequency= 3.83
J=161,M=160

UNIT MET MTO

S T A A D P O S T - P L O T (REV: 22.3 )
TITLE: VIADUCTO RIERUSA

DATE: OCT 22, 2003

User ID: Carlos Alonso Cobo

STRUCTURE DATA
TYPE = SPACE
NJ = 161
NM = 160
NE = 0
NS = 0
NRJ= 9
NL = 1
XMAX= 318.0
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MN/ELEM
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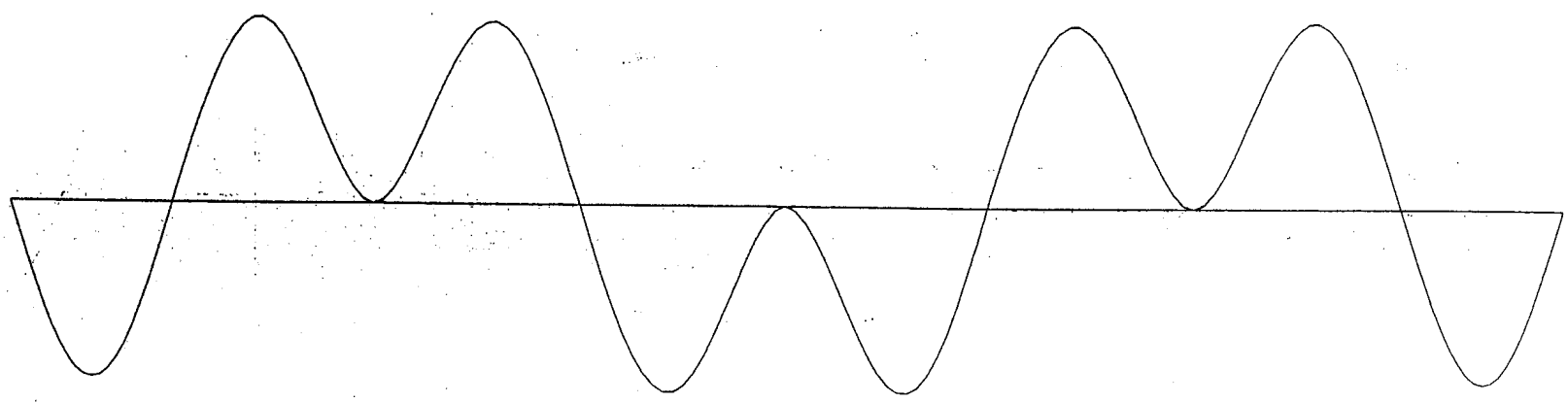

Frequency= 4.49
J=161,M=160

UNIT MET MTO

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TITLE: VIADUCTO RIERUSA

DATE: OCT 22, 2003

User ID: Carlos Alonso Cobo

STRUCTURE DATA

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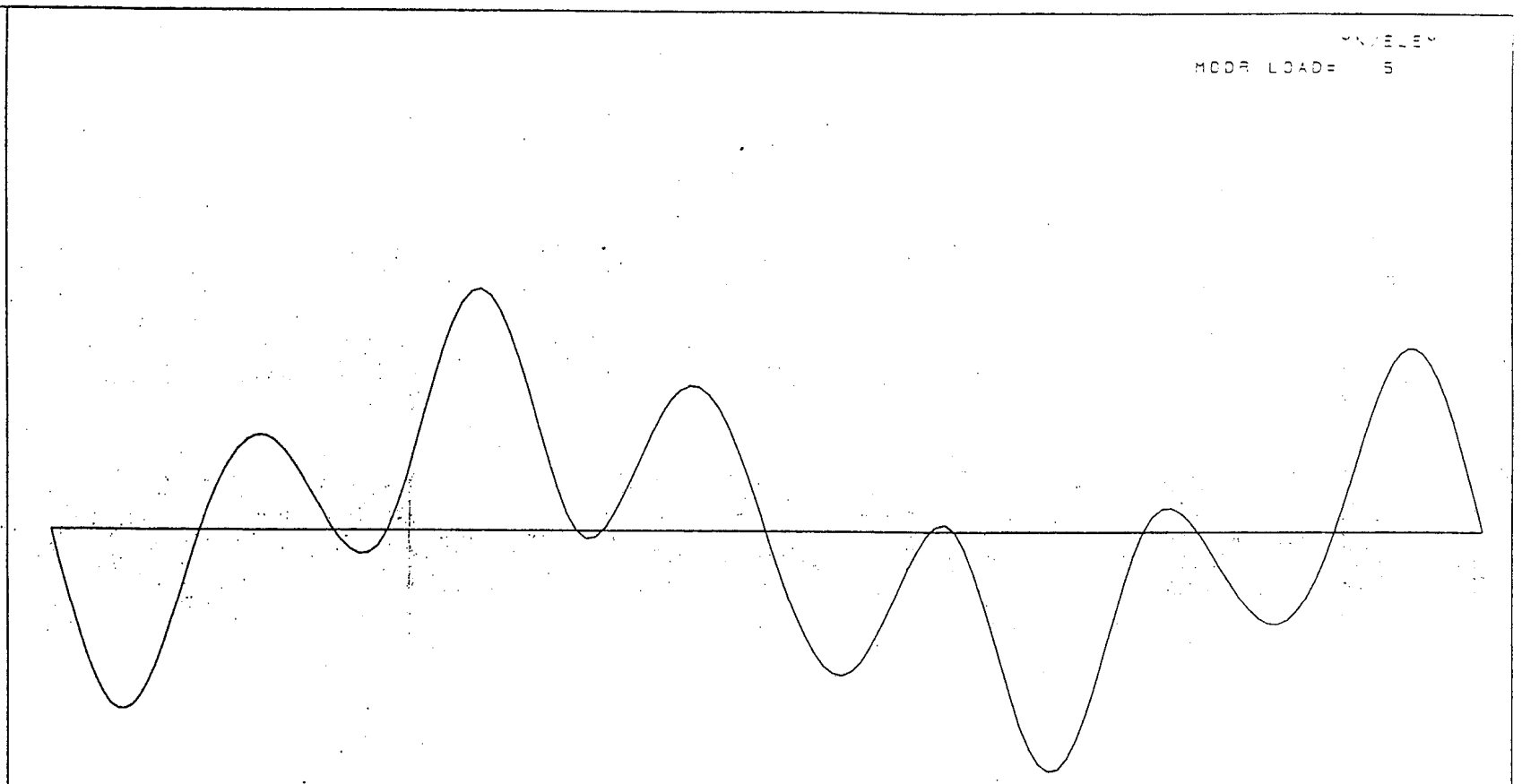
NM = 160
NE = 0
NS = 0
NRJ= 9
NL = 1
XMAX= 318.0
YMAX= .0
ZMAX= .0




Frequency= 5.22
J=161,M=160

UNIT MET MTO

S T A A D . P O S T - P L O T (REV: 22.3 )

TITLE: VIADUCTO RIERUSA

DATE: OCT 22, 2003

## Rigidez a torsión

$$J_t = \frac{4A^2}{\oint ds/t} \Rightarrow \frac{4 \times 16{,}775^2}{\frac{5{,}41}{0{,}3} + \frac{2{,}168 \times 2}{0{,}45} + \frac{6{,}85}{0{,}33}} = 22{,}20\ m^4$$

$h = 3{,}10$

$A = 20{,}3\ m^2$ $\quad A_c/_4 = 1.05\ m$ $\quad h/_6 = 52\ cms$

$u = 19{,}80$

| |
|---|
| $u_e = 17{,}64$ mts |
| $A_e = 9{,}30$ mts |

## Caracteristicas mecanicas tablero

**S. tipo**

$A = 8{,}727\ m^2$

$J_x = 11{,}3766\ m^4$

$J_y = 94{,}56\ m^4$

$V = 1{,}16\ m$

$V' = 1{,}94$ mts

**S. pila**

$A = 10{,}28\ m^2$

$J_x = 13{,}614\ m^4$

$J_y = 161{,}05\ m^4$

$V = 1{,}33\ m$

$V' = 1{,}77\ m$

**Estribo - Aceleradores**

$A = 11{,}344\ m^2$

$J_x = 14{,}045\ m^4$

$J_y = 108{,}03\ m^4$

$V = 1{,}35\ m$

$V' = 1{,}75\ m$

$CP = 18{,}3\ T/l$

Paxino con un 30% de la



**SC** $\quad 80\ KN/m \times 2\ vía \times 1{,}21 = 1{,}41\ T/m^2$

**Peso** $\quad 0{,}5 \times 1{,}75 \times 2 = 1{,}75\ T/ml\ /14_m = 0{,}125\ T/m^2$

$1{,}535\ T/m^2$

$L\phi = 1{,}5 \times 42 = 63$ mts

$\phi_2 = \frac{1{,}44}{\sqrt{L\phi} - 0{,}2} + 0{,}182 = 1{,}1$ $\quad \phi_2 = \frac{2{,}16}{\sqrt{L\phi} - 0{,}2} + 0{,}13 = 1$

**4 ejes** $\quad (230 \times 1{,}21 - 80 \times 1{,}6 \times 4{,}21) \times 2\ /_{9{,}81} = 30{,}10$ Ton

## Frenado y Arranque

$F = 1{,}21 \times 20 \times 300 = 740$ Ton (Riesgo)

Sobrecarga Ton $l = 150$ mts $\quad F = 1{,}21 \times 20 \times 150 \Rightarrow 370$ Ton

Riesgo $\Rightarrow l = 318$ mts $\quad$ Arranque $\Rightarrow 1{,}21 \times 33 \times 30 = 122$ Ton

$(F+A)$ Riesgo $\Rightarrow 862$ Ton $\quad (F+A)$ S. Tomo $\Rightarrow 492$ Ton

D Injerta — Rozets lleflón 5% (PP+CP)

$PP_{SJ} \Rightarrow (319 + 409\times2 + 329)\,2{,}5 \Rightarrow 3665\,Tn$

$CP_{SJ} \Rightarrow 150 \times 18{,}13 = 2745\,Tn$

$6411\,Tn \qquad H \Rightarrow 321\,Tn$

$PP_{Riu} \Rightarrow 25\times(317 + 409\times6 + 329) \Rightarrow 7755\,Tn$

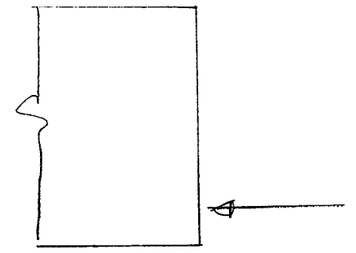
$CP_{Riu} \Rightarrow 318\times18{,}13 = 5819\,Tn$

$13574\,Tn \Rightarrow H = 679\,Tn$

$f_{cd} = 0{,}21\sqrt{f_{ck}^2} = 25\,kp/cm^2$ (400 kp/cm²)



$M^+_{SC} = 3570\,Tn \qquad M^+_{PP} = 1634\,Tn \qquad M_{CP}^+ = 1300\,Tn$




$M_{HP} = 2078\,Tn$

$M_{CP} + M_{HP} \Rightarrow 3875\,Tn$

$P_{00} = 4032\,Tn$

$e = 2{,}55 - 1{,}16 = 1{,}39\,cm$

$\sigma_{P00} = 951\,kp/cm^2$

$\sigma_{sup} \Rightarrow \frac{4032}{8727} + \frac{3875\;1{,}94}{11{,}376} \Rightarrow 112\,kp/cm^2 \rightarrow\leftarrow$

$\Delta\sigma_{sup}{}_{CP+PP} \Rightarrow \frac{(1634+1300)\times1{,}94}{11{,}376} \Rightarrow 50\,kp/cm^2 \leftarrow\rightarrow$

$\sigma_{sup\ estab\ port} \Rightarrow 62\,kp/cm^2 \rightarrow\leftarrow$ (Reste $7\,kp/cm^2$)

$\Delta\sigma_{sup\ SC} = 3570\times1{,}94/11{,}376 \Rightarrow 61\,kp/cm^2 \leftarrow\rightarrow$ (Reste $55\,kp/cm^2$)

$PP + CP + 0{,}15\,(SC) \Rightarrow 71 - 59/2 = 42\,kp/cm^2 \rightarrow\leftarrow$

$42 - \underset{DJ}{47} - \underset{\Delta T}{13{,}7} - 0{,}15\times9{,}9 \Rightarrow 19\,kp/cm^2 \rightarrow\leftarrow$

$71 - 59 - 47 - 13{,}7 - 9{,}9 \Rightarrow -16\,kp/cm^2 \leftarrow\rightarrow$ 100% SC

$f_{cd} = 72\,kp/cm^2$ Comp. Consol

$92\,kp/cm^2$ Tra.

$4\times76\times72\,kp/m^2 \Rightarrow 219\,Tn$

| | | |
|---|---|---|
| DJ suports | S. Joan | 321 Tn |
| 11 | Riells | 675 Tn |

Juta vía estab $\Rightarrow$ 219 Tn

Estado tensional en sección crítica

$A = 8{,}727\,m^2$

$J_X = 11{,}376\,m^4$

$v = 1{,}16\,m$

$v' = 1{,}94\,m$

$\Delta\sigma\,(DJ) \Rightarrow \frac{679\times3/5}{8727} \Rightarrow 47\,kp/cm^2 \leftarrow\rightarrow$

$\Delta\sigma\,(F+A) \Rightarrow \frac{740 + 122}{8727} = 9{,}9\,kp/cm^2 \leftarrow\rightarrow$

$\Delta\sigma\,(\Delta T\,6^\circ) \Rightarrow \frac{802\times1{,}94}{11{,}376} \Rightarrow 137\,kp/cm^2 \leftarrow\rightarrow$

$\Delta\sigma_{sup} \Rightarrow 2813\,kp/cm^2 \leftarrow\rightarrow$

CARGA PERMANENTE

Projecte:

| V Contenidor | hip 1 | hip 2 | |
|---|---|---|---|
| 1 0187 | (+30%) 14.13 | 7,61 | (-30%) |
| 1,28 | 1.28 | 1.28 | Traves y acabats |
| 0,5 | 0,80 | 0,80 | Muret |
| 0,6 | 0,6 | 0,6 | Conducte de clarke y pas |
| 1,45 | 1.45 | 1.45 | Imp + Barandilla |
| 14.70 | 17.96 | 11.44 | |

Projecte Modificat 18,80 T/ml (+30%)

Bolato 6,64 x 1,8 x 1,3 = 15,54 T/m

Vics y traves 1,31 T/ml

Barandilles 0,20 T/ml

Impost ∇ 1,36 T/ml → 19.16 T/ml

Asfalt 0,35

Muret ← 0,4

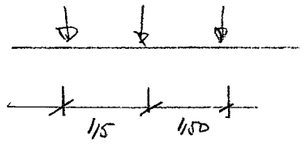
Caracteristiques mecàniques Secció hip.

| | Projecte | Modificat |
|---|---|---|
| Area | 8,82 m² | 8.727 m² |
| Ix | 11,76 m⁴ | 11,38 m⁴ |
| Iy | 87,36 m⁴ | 94,58 m⁴ |
| V | 1,212 m | 1.16 |
| V' | 1,888 | 1.94 |
| h | 3.10 m | 3.10 |

La geometria del Projecte Base s'ha modificat a escala

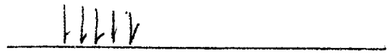
IPF-75

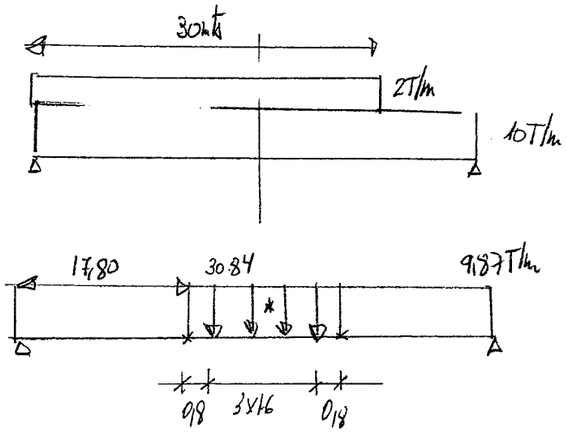
Tren Tipo (A)




Tren Tipo (B)

12T/m / 150'30mts → 10t/m



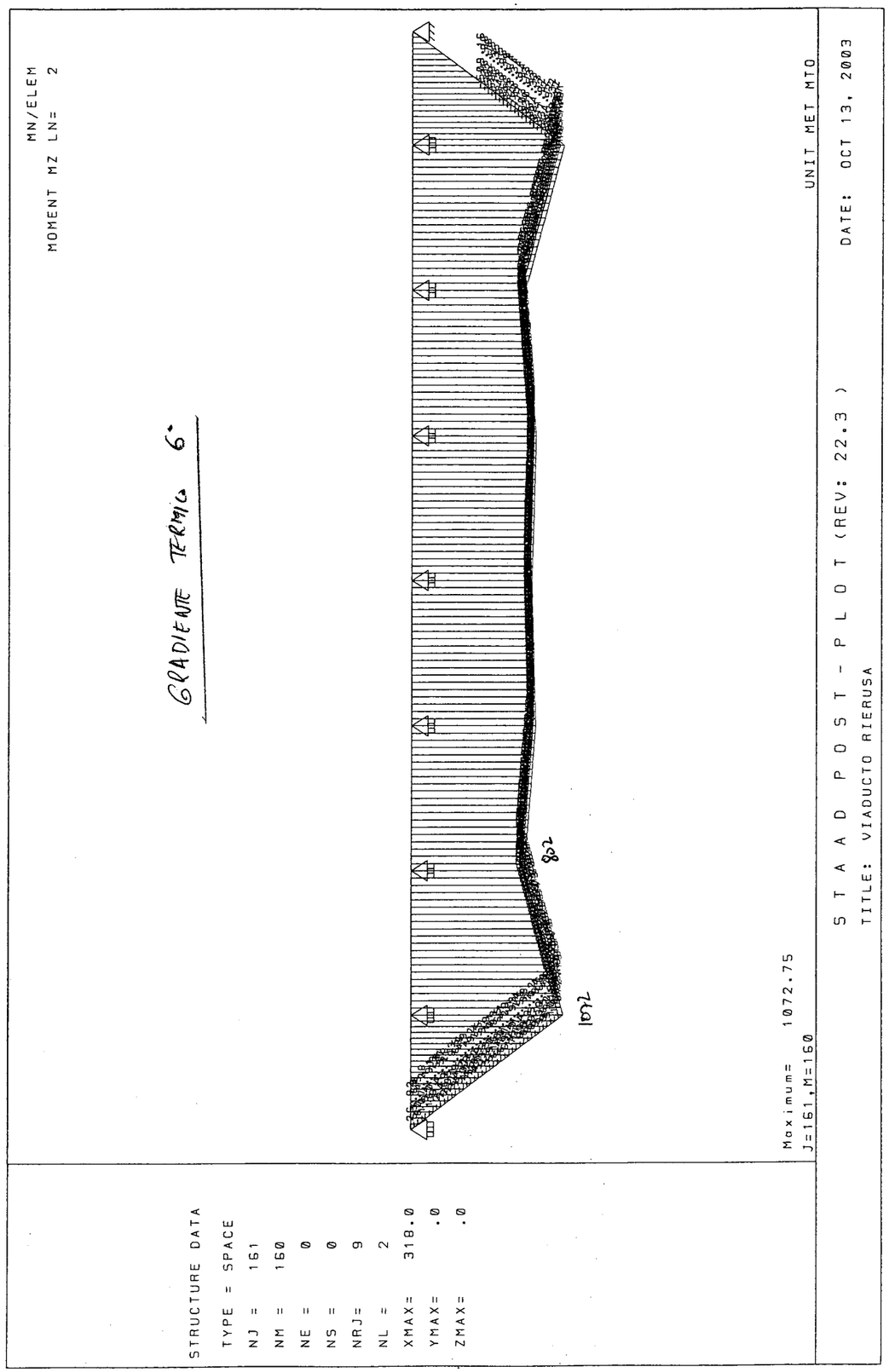



$M_{(2)} = 237{,}366 \times 21 - 17{,}80 \times 9{,}87 \left(\frac{17{,}80}{2} + 3{,}20\right)$

$- 30{,}84 \times (2{,}4 + 0{,}18) = 2760\ Tm$

$R_{42} = 30 \times 8{,}15 \qquad R_2 = 21{,}425 \qquad R_1 = 38{,}571$

$M_{(2)} = 10 \times 4{,}2^2/8 + 38{,}571 \times 2{,}1 - 2 \times 1{,}5 \times 7{,}5 = \underline{\underline{27{,}50\ Tm}}$




User ID: Carlos Alonso Cobo

## VERIFICACION A ROTURA EN FLEXION

1) Sección de apoyo en pila

| $b_{sup}$ | $h_s$ |
|---|---|
| $\phi$ | 0.14 |
| 14 | 0,19 |
| 14 | 0,60 |
| 10,65 | 0,01 |
| 10,543 | 0,1341 |
| 2,359 | 0,0955 |
| 1,245 | 2,0264 |
| 1,245 | $\phi$ |
| 6,075 | 0,80 |
| 5,80 | |
| | 3,10 |

F+A Rica

$N_d \Rightarrow 862 \times 1,5 + 675 \times 3/5 \Rightarrow 1700\,T$ a $\Rightarrow$

$\leftarrow$ 15719 Sc $\rightarrow$ Kpa

$M_d \Rightarrow (3612 + 2786)\,1.35 + 4721 \times 1,5 - 0,9 \times 1958 \Rightarrow$

Pp CP

$13957\,Tm.$

S. apoyo en pila

$A = 10,284\,m^2$

$J = 13.6144\,m^4$

$v = 1,33\,m$

$v' = 1,774$

Tensión a tos picnosis

$\sigma_{pp} = 10680\,kPa/m^2$ 16 (1980,64)

$A_{sup} = \underbrace{6\phi 20 + 8\phi 20 + 32\phi 20}_{\times 2} = 50\phi 20 = 15708\,cm^2$

e = 0,10 cts

| Pret | e(m) |
|---|---|
| 4(1980,64) | 0,20 |
| 11 | 0,40 |
| 11 | 0,60 |
| 11 | 0,80 |

Pretensado

Sección apoyo en pila

Arm pasiva eficaz $M \Rightarrow 6\phi 20 + 24\phi 16 \Rightarrow 66,85\,cm^2$

+Armpic

Axil $\Rightarrow$ Fracb + DItobla (Ricura)

$M_{ii} \Rightarrow 14418\,Tm$ Par en cxl de $N = 1700\,T \leftrightarrow$

(2)

Axil $\Rightarrow$ Fracb Ricura +Armpic

$M_{ii} \Rightarrow 14992\,Tm$ 11 $N = 862 \times 1.5 = 1293\,T$ $\leftrightarrow$ Fracb Ricura

(2)

Axil $\Rightarrow$ Fracb S.Jcon +Armpic

$M_{ii} \Rightarrow 15.759\,Tm$ 11 $N = 492 \times 1.5 = 738\,T$ $\leftrightarrow$ Fracb S.Jcon

Fisuración con todo lo SC

PP CP SC Mmf

$M_{ex} = 3612 + 2786 + 4721 - 0,9 \times 1958 = 9357\,Tm$ (2)

$N = 862 + 675 = 1541\,T$ $\leftrightarrow$ $M_{ii} = 10755\,Tm > 9357\,Tm$

S. apoyo en pila

```
  6   0.00100    6    6    0    1      1700.00      1700.00        10.00
  9  4000. 1.50 0.85  0.0035  0.0020    246.
     0.00000          0.14000
    14.00000          0.19000
    14.00000          0.00000
    10.65000          0.01000
    10.54300          0.13410
     2.35900          0.09950
     1.24500          2.02640
     1.24500          0.00000
     6.07500          0.50000
     5.80000
     6          Ep          fyk          Tpo      ys
 157.08   0.100   2100000.     5100.   1.000       0. 1.15
 105.92   0.200   2100000.    17100.   1.000   10680. 1.15
 105.92   0.400   2100000.    17100.   1.000   10680. 1.15
 105.92   0.600   2100000.    17100.   1.000   10680. 1.15
 105.92   0.800   2100000.    17100.   1.000   10680. 1.15
  66.85   3.050   2100000.     5100.   1.000       0. 1.15
    10.28000     13.61400      1.33000      1.77000      2.97000
CARAC. MEC. DE LA SECCION IDEAL
**********
AREA= 10.5257INERCIA=    13.93062115W1= 1.31582W2= 1.78418

EL MOMENTO DE FISURACION ES:              617.09381

LA CURVATURA ES:          0.0000131289

EL MOMENTO DE DESCOMPRESION ES:          -1271.94495

LA CURVATURA ES:         -0.0000270611

SITUACION DE ROTURA DE LA SECCION
---------------------------------
      AXIL(T)      MU(MT)   CU(M-1)     ECU        ES(U)          SS(U)   X(M)
-------------------------------------------------------------------------------
  1700.0000     844.3448  0.003638  0.001095  0.010000     4434.8     0.3011
SITUACION DE ROTURA DE LA SECCION
---------------------------------
      AXIL(T)      MU(MT)   CU(M-1)     ECU        ES(U)          SS(U)   X(M)
-------------------------------------------------------------------------------
  1700.0000   14418.2464  0.004008  0.002024  0.010000     4434.8     0.5050
Execution terminated : 0

C:\ROTURA>>
```

Pretensado

$M_d = 13957\,Tm$

$M_{ii} = 14418\,Tm > M_d$

1.) Sección E

$$Md \Rightarrow (1634 + 1300)\times 1{,}35 + 3570\times 1{,}5 + 1{,}1\times 2098 + 802(\Delta T) = 12425\ Tn$$

(PP CP MHP)

$Nd \Rightarrow$ 1700 Tn $\leftarrow\rightarrow$ (Frenado + Arrope + DJ) (Rieles)

| $b_{inf}$ | h |
|---|---|
| ϕ | 0.14 |
| 14 | 0.19 |
| 14 | 0,00 |
| 10.65 | 0,01 |
| 10,543 | 0,1341 |
| 2,1359 | 0,1273 |
| 0,1933 | 1,9986 |
| 0,1928 | 0,120 |
| 1,823 | ϕ |
| 5,9650 | 0,13 |
| 5,80 | |
| 310 | |

$\sigma_{fpo} = 95{,}2\ kg/cm^2$

$e = 2{,}35;\ 2{,}55;\ 2{,}75;\ 2{,}95\ mts$

$A = 8{,}727\ m^2$

$J = 11{,}37766\ m^4$

$V = 1.16\ m \rightarrow 3.10\ mts$

$V' = 1{,}94\ m$

$A_{sup} = (6\phi 16 + 3\phi 20)\times 2 + 32\phi 16 \Rightarrow 106{,}85\ cm^2$

$A_{inf} \Rightarrow 6\phi 20 + 24\phi 20 \Rightarrow 94{,}25\ cm^2$

$M_u = 14878\ Tn > 12425\ Tn$

$N = 1700\ T \leftarrow\rightarrow$

Fisuración con tal e SC

MHP Godoi

$M_{ux} = 1634 + 1300 + 3570 + 2098 + 802 \Rightarrow 9404\ Tn$

$N = 802 + 675 = 1541\ T \leftarrow\rightarrow$

↓ DJ(R)

FIA

$M_{ux} = 10486\ Tn > 9404\ Tn$

PP+CP+TODA SC + MHP + 6 meses

S. Curvas

```
  6   0.00100    6    6    0    1      1700.00      1700.00        10.00
 10   4000. 1.50 0.85  0.0035  0.0020    246.
      0.00000          0.14000
     14.00000          0.19000
     14.00000          0.00000
     10.65000          0.01000
     10.54300          0.13410
      2.35900          0.12730
      0.93300          1.99860
      0.93300          0.20000
      1.82300          0.00000
      5.96500          0.30000
      5.80000
      6
  106.85  0.100  2100000.     5100.  1.000      0. 1.15
  105.92  2.350  2100000.    17100.  1.000   9520. 1.15
  105.92  2.550  2100000.    17100.  1.000   9520. 1.15
  105.92  2.750  2100000.    17100.  1.000   9520. 1.15
  105.92  2.950  2100000.    17100.  1.000   9520. 1.15
   94.25  3.050  2100000.     5100.  1.000      0. 1.15
    10.28000     13.61400     1.33000     1.77000     2.97000
CARAC. MEC. DE LA SECCION IDEAL
**********************************
AREA= 10.5141INERCIA=    14.07081413W1= 1.34804W2= 1.75196

EL MOMENTO DE FISURACION ES:            617.09381

LA CURVATURA ES:          0.0000131289

EL MOMENTO DE DESCOMPRESION ES:         -1271.94495

LA CURVATURA ES:          -0.0000270611

SITUACION DE ROTURA DE LA SECCION
---------------------------------

      AXIL(T)      MU(MT)  CU(M-1)    ECU        ES(U)          SS(U)   X(M)
-------------------------------------------------------------------------------

  1700.0000  14878.2551  0.003703  0.001293  0.010000    4434.8     0.3492

SITUACION DE ROTURA DE LA SECCION
---------------------------------

      AXIL(T)      MU(MT)  CU(M-1)    ECU        ES(U)          SS(U)   X(M)
-------------------------------------------------------------------------------

  1700.0000    144.9036  0.003784  0.001351  0.010000    4434.8     0.3571

Execution terminated : 0

C:\ROTURA>>
```

$Md \Rightarrow (1621 + 1318)1.35 + 3186 \times 1.15 + 895 \times 1.1 + 429 \Rightarrow 10160\ Tn$

(PD, LP, Y, SC, MHP, ΔT)

$\sigma_{pd} = 9430\ kg/cm^2$

$Mu = 14090\ Tm$

| Perf | e(cm) |
|---|---|
| 41(19mm/6") | 2.15 |
| 11 | 2.40 |
| 11 | 2.65 |
| 11 | 2.90 |

$A_{scp} = 106.85\ cm^2$

$A_{scf} = 94.25\ cm^2$

$Nd \Rightarrow 1700\ Ton$ (Rieva)

Verificación en servicio

$Mcr \Rightarrow 1621 + 1318 + 318.6 + 895 + 429 \Rightarrow 7445\ Tm$

$N = 862 + 679 \Rightarrow 1541\ Tn \longleftrightarrow$ PI (Rieva)

F+A (Rieva)

$Mcr\ (fisura) \Rightarrow 9583\ Tn > 7445\ Tm.$

$PP + CP + TODA\ SC + M_{HP} + Grout$



```
  6   0.00100    6    6    0    1      1700.00      1700.00        10.00
 10   4000. 1.50 0.85  0.0035  0.0020    246.
      0.00000          0.14000
     14.00000          0.19000
     14.00000          0.00000
     10.65000          0.01000
     10.54300          0.13410
      2.35900          0.12730
      0.93300          1.99860
      0.93300          0.20000
      1.82300          0.00000
      5.96500          0.30000
      5.80000
     6
 106.85  0.100  2100000.     5100.  1.000      0. 1.15
 105.92  2.150  2100000.    17100.  1.000   9430. 1.15
 105.92  2.400  2100000.    17100.  1.000   9430. 1.15
 105.92  2.650  2100000.    17100.  1.000   9430. 1.15
 105.92  2.900  2100000.    17100.  1.000   9430. 1.15
  94.25  3.050  2100000.     5100.  1.000      0. 1.15
    10.28000    13.61400    1.33000    1.77000    2.97000
CARAC. MEC. DE LA SECCION IDEAL
**********
AREA= 10.5141INERCIA=    14.03363514W1= 1.34647W2= 1.75353

EL MOMENTO DE FISURACION ES:            617.09381

LA CURVATURA ES:          0.0000131289


EL MOMENTO DE DESCOMPRESION ES:          -1271.94495

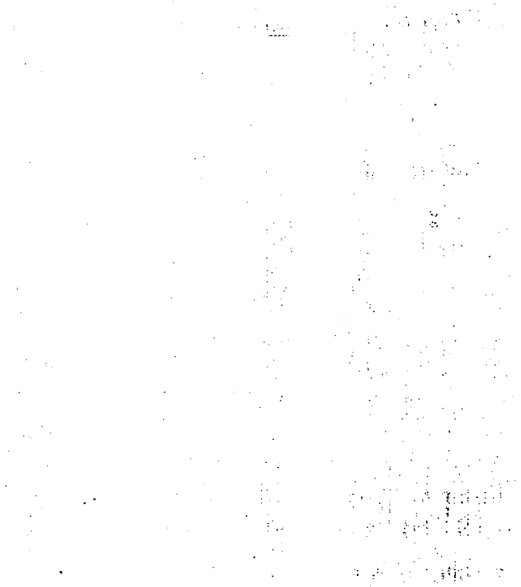
LA CURVATURA ES:         -0.0000270611

SITUACION DE ROTURA DE LA SECCION
---------------------------------
      AXIL(T)      MU(MT)   CU(M-1)    ECU        ES(U)          SS(U)   X(M)
 ----------------------------------------------------------------------------
  1700.0000  14090.7637  0.003703  0.001293  0.010000    4434.8     0.3492
SITUACION DE ROTURA DE LA SECCION
---------------------------------
      AXIL(T)      MU(MT)   CU(M-1)    ECU        ES(U)          SS(U)   X(M)
 ----------------------------------------------------------------------------
  1700.0000    897.7340  0.003824  0.001472  0.010000    4434.8     0.3849
Execution terminated : 0

C:\ROTURA>>
```

# APARATOS DE APOYO

## ANCLAJE DEL TABLERO AL ESTRIBO



- **Aparatos de apoyo del tablero en pilas y estribos**

Para definir los aparatos de apoyos se han tenido en cuenta las cargas máxima y mínimas sobre los mismos así como los desplazamientos tanto en servicio como durante el proceso constructivo.

En la tabla adjunta se indican las cargas máximas, permanentes y mínimas, acciones horizontales y desplazamientos hacia cada uno de los estribos para los diferentes apoyos:

**Estribo 2 (Riera de Rierussa):**

Apoyos de anclajes del tablero al estribo **2 Uds de 850x1250x109(75) Tipo 5.** Pretensado tablero a estribo 16 barras de diámetro 47 mm. tesadas a 100 Tm.

| Pila | Nmáx (Tn.) | Ncp | Nmin | Hviento+lazo | Acor. E-2 | Acor. E-1 |
|---|---|---|---|---|---|---|
| E-1 | 600 | 296 | 252 | 34<br>85 | | 300 |
| 1 | 1600 | 895 | 842 | 72<br>75 | | 270 |
| 2 | 1750 | 906 | 813 | 143<br>65 | | 230 |
| 3 | 1750 | 906 | 813 | 79<br>55 | | 190 |
| 4 | 1750 | 906 | 813 | 79<br>45 | | 150 |
| 5 | 1750 | 906 | 813 | 79<br>30 | | 110 |
| 6 | 1750 | 906 | 813 | 84<br>20 | | 70 |
| 7 | 1600 | 895 | 842 | 72<br>10 | | 30 |
| E-2 | 600 | 296 | 252 | 82<br>10 | | 10 |

El giro admisible será mayor de 10 milésimas de radián.

Tanto en pilas como en estribos se dispondrá un apoyo multidireccional y uno unidireccional

El desplazamiento de la bandeja en sentido longitudinal será el indicado en la tabla más 25 mm. en cada sentido.

El apoyo multidireccional se dimensionará para un desplazamiento transversal de +/- 10 mm.

Todos los apoyos deberán dimensionarse para permitir su sustitución.

Santander, Agosto del 2.003

Fdo: Carlos Alonso Cobo

Dr. Ing. De Caminos

Riez Rierux

DJ = 660 Ton

F/A = 862 Ton

Inter = 219 Ton

Σ 1741 Ton

Pao ≥ 1741 Ton

Nopyp = 2 x 1741 = 3482 Ton

800 x 1350 x 105 (75) Nux = 1620 Ton

12 ϕ 50 12 x 142 = 1704 Ton

# VERIFICACION A ROTURA
# CORTANTE TORSION

Verificación a cortante y torsión "Sección c/p en pk6

(S.3.1) $Vd = (520 + 384)\,1{,}35 + 642 \times 1{,}5 = 2183\ Ton \downarrow$

$\sigma_{p\infty} = 10680\ kp/cm^2$

$P_\infty = 4525\ Ton$

$M_{cs+hip} = 5731\ Tm$

$V_p = 219\ Tm$

$V_{rd} = 2183 - 215 \times 0{,}5 = 1986\ Tm \uparrow\downarrow$

$N_d = 4525 - 862 \times 1{,}5 - 679 \times 3{,}5 \Rightarrow 2825\ Ton \rightarrow\ \leftarrow 1700$

$b = 2 \times (0{,}60 - 0{,}16) = 1m$

$f_{ck} = 400\ kp/cm^2$ $\quad A_p = 26{,}48 \times 16 = 423{,}68\ cm^2$

$A_s = 5\text{Ø}20 = 157{,}08\ cm^2$

$A_{s/s} = 118\ cm^2/m$ $\quad A_{disp\,\perp} \ 2\,c\text{Ø}20/10 = 126\ cm^2/m$

(S.3.2)

$Vd = (466 + 340)\,1.35 + 590 \times 1{,}5 = 1981\ Ton \uparrow\downarrow$

$\sigma_{p\infty} = 10520\ kp/cm^2$

$P_\infty = 4455\ Ton$ $\quad Nd = 4455 - 1700 = 2755\ Ton \rightarrow\ \leftarrow$

$V_p = 394\ Ton$

$V_{rd} = 1981 - 394 \times 0{,}9 = 1626\ Tm$

$A_{s/s} \Rightarrow 94\ cm^2/m$ $\quad$ Cortante $21{,}35\ cm^2/Ton$ $\quad$ Flexión $3{,}14 - 2{,}135 = 0{,}179\ cm^2/m$

Atensión $\Rightarrow 94\ cm^2/m$

$94/4 + 1{,}32 = 24{,}82\ cm^2/m$ (+ Torsión)

GHc Torsor

$Flexión = 31{,}4 - 24{,}82 = 6{,}58\ cm^2/m$ (Flexión)

Armadura de Cortante.
Sección cpg. en pk6

## Comprobación a Cortante:

### Datos:

| | | |
|---|---|---|
| $F_{ck}$= | 400 Kg/cm². | |
| $F_{cd}$= | 267 Kg/cm². | |
| $A_c$= | 10.280 m². | |
| $N_d$= | -2825.000 T. | Compresión -vo. |
| $b_0$= | 1.000 m. | |
| d= | 3.000 m. | |
| $A_s$= | 157.080 cm². | |
| $A_p$= | 423.680 cm². | |
| $f_{yp}$= | 17100 Kg/cm². | |
| $Sp_{infinito}$= | 10680 Kg/cm². | |
| $S_{xd}$= | -27.481 Kg/cm². | Compresión -vo. |
| $F_{ctm}$= | 35.088 Kg/cm². | |
| $Cotg\text{Ø}_e$= | 1.335 | Sometido a Compresión Uniaxial. |
| Cotgø= | 1.335 | |
| Beta= | 1.000 | |
| K= | 1.000 | |
| $Cotg_{Alfa}$= | 0.000 | |
| $R_o$ = | 0.020 | |
| Chi= | 1.258 | |

### Resultados:

| | | |
|---|---|---|
| $V_{rd}$= | 1986.000 T. | |
| $V_{u1}$= | 2303.018 T. | |
| $V_{cu}$= | 286.305 T. | |
| $A_s$= | 117.855 cm²/m. | |
| $A_{smin}$= | 13.333 cm²/m. | |
| $V_{u2SinFeCort}$= | 318.833 | Necesita Armadura de Cortante. |

Armadura de Cortante.
Sección 3.2

## Comprobación a Cortante:

### Datos:

| | | | |
|---|---|---|---|
| $F_{ck}$= | 400 | Kg/cm$^2$. | |
| $F_{cd}$= | 267 | Kg/cm$^2$. | |
| $A_c$= | 10.280 | m$^2$. | |
| $N_d$= | -2755.000 | T. | Compresión -vo. |
| $b_0$= | 1.000 | m. | |
| d= | 3.000 | m. | |
| $A_s$= | 157.080 | cm$^2$. | |
| $A_p$= | 423.680 | cm$^2$. | |
| $f_{yp}$= | 17100 | Kg/cm$^2$. | |
| $Sp_{infinito}$= | 10520 | Kg/cm$^2$. | |
| $S_{xd}$= | -26.800 | Kg/cm$^2$. | Compresión -vo. |
| $F_{ctm}$= | 35.088 | Kg/cm$^2$. | |
| $Cotg\Ø_e$= | 1.328 | | Sometido a Compresión Uniaxial. |
| $Cotg\Ø$= | 1.328 | | |
| Beta= | 1.000 | | |
| K= | 1.000 | | |
| $Cotg_{Alfa}$= | 0.000 | | |
| $R_o$ = | 0.020 | | |
| Chi= | 1.258 | | |

### Resultados:

| | | | |
|---|---|---|---|
| $V_{rd}$= | 1626.000 | T. | |
| $V_{u1}$= | 2306.535 | T. | |
| $V_{cu}$= | 283.241 | T. | |
| $A_s$= | 93.617 | cm$^2$/m. | |
| $A_{smin}$= | 13.333 | cm$^2$/m. | |
| $V_{u2SinFeCort}$= | 315.769 | | Necesita Armadura de Cortante. |

Fuerza centrífuga y viento concomitante en la evaluación de la acción de torsión

por cada

Fc ⇒ $m_q$ = 2,126 x 1,80 = 4,07 KN m/m ⇒ 2,126 x 3,75 = 8,148 KN m/m

$m_q$ = 13,79 KN x 1,8/4 = 6,21 KN m/ejc ⇒ 13,75 x 3,75/4 = 12,93 KN·m/ejc

Viento con sobrecarga

H = 9,57 KN/m

M = 28,77 KN m/m

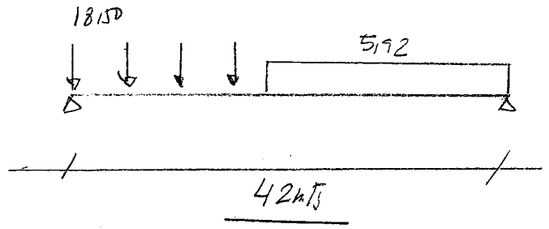
12,93

$M_{T\,viento}$ ⇒ 28,77 x 42/2 = 61 Tm

$M_{T42}$ = 1,293 x (42 + 40,4 + 38,80 + 37,2) + 0,848 x 36²/2 ⇒ $M_T$ = 18 Tm

$M_T$ = 18 + 61 = 79 Tm

# Esfuerzos de torsión en apoy. en pila




$80 \times 1{,}21 / 9{,}81 = 9{,}87$ T/m/vía  $9{,}87 \times 0{,}13 \times 2 \text{ vías} = 5{,}92$ Tn/m

$250/9{,}81 \times 1{,}21 = 30{,}84$ T/vía (4 ejes)  $30{,}84 \times 2 \times 0{,}13 = 18{,}10$ Tn/eje

$$M_{T\cdot 42} = 18{,}50\,(42 + 40{,}14 + 38{,}80 + 37{,}12) + 5{,}92 \times \frac{36{,}4^2}{2}$$ (158,40)

$M_T = 163{,}15$ Tn  $M_{Td} = 245$ Tn

Compatible con máximo 2C

| |
|---|
| $A_t/s_t = 1{,}32 \text{ cm}^2/\text{m}$ |
| $t/s_t \Rightarrow 2{,}33 \text{ cm}^2/\text{m}$ |

$M_T\ 42 = 30{,}84 \times (2{,}35 + 0{,}13)\,(158{,}40) + 9{,}87 \times 2{,}65 \times \frac{36{,}4^2}{2} \Rightarrow$

$M_T = 721$ Tn  $M_{Td} = 1081$ Tn (sin coeficientes)

## S. pila

$A = 20{,}34 \text{ m}^2$

$u = 19{,}54$

$h_e = 0{,}30$

$h_c = 18{,}30$

$A_e = 17{,}50 \text{ m}^2$

$\cot g\,\Theta = 1{,}33$ (Cortante)

$A_t/u = 1{,}04$ t/m

$M_T = 245$ Tn  $A_t/s_t = 1{,}32 \text{ cm}^2/\text{m}$

$A_t/s_t = 2{,}33 \text{ cm}^2/\text{m}$

TORSOR COMPATIBLE CON MAXIMO CORTANTE

Pila

## Comprobación a Torsión:

Datos:

| | | |
|---|---|---|
| $f_{ck}$= | 400 | Kg/cm². |
| $f_{cd}$= | 267 | Kg/cm². |
| Ae= | 17.500 | m². |
| he= | 0.300 | m. |
| ue= | 18.300 | m. |
| CotgØ= | 1.330 | |
| Alfa= | 1.5 | 1.2(estribos sólo perímetro exterior); 1.5(cerrados ambas caras pared sección hueca). |

Resultados:

| | | | | |
|---|---|---|---|---|
| $T_d$= | 245.000 | T. | | |
| $T_{u1}$= | 6052.223 | T. | O.K. | |
| $A_t/s_t$= | 1.316 | cm²/m. | | |
| $A_l/u_e$= | 2.328 | cm²/m. | $A_l$= | 42.593 cm². |

TORSOR COMPATIBLE CON MAXIMO CORTANTE

Cortante compatible con torsor máximo

Apoyo en pila  $Vrd = (520 + 384) \times 1{,}35 + 642 \times 1{,}5 \times 0{,}15 - 219 \times 0{,}19 \Rightarrow 1505\,Tm$ (1 vía)

$As/s = 84{,}50\ cm^2/m$

$Td_{máximo} \Rightarrow 1081\,Tm$  $As/s_t = 5{,}81\ cm^2/m$

$Al/s_L = 10{,}27\ cm^2/m$  Ø16/20

Cortante + Torsor

$84{,}50/4\,ramas + 5{,}81/2\,ramas \Rightarrow 26{,}93\ cm^2/m$ (Flexión Ø20/10 - 26,93 $\Rightarrow$ 44,84 cm²/m

As disp te Ø20/10

S.3.2

$Vrd = (466 + 346) 1{,}35 + 590 \times 1{,}5 \times 0{,}15 - 394 \times 0{,}19 \Rightarrow 1184\,Tm$ (1 vía)

$\sigma_{pd} = 10520\ kN/m^2$

$P_{pd} = 4455\,Tm$

$Vp = 394\,Tm$

$As/s = 62{,}24\ cm^2/m$

$62{,}24/4\,ramas + 5{,}81/2\,ramas = 21{,}37\ cm^2/m/rama$ (Flexión Ø20/10 - 21,37 $\Rightarrow$ 10 cm²/m

Cortante + Torsor

Resumen en la sección de pila dispuesto 2CØ20/10 en donde se dispone armadura por la TORSION y CORTANTES y queda 6,58 cm²/m por la flexión

↓ Cargado lado de vía  10 cm²/m (1 vía)

Ø25/20 + Ø20/20 = 40,26 cm²/m  24,82 - 40,26 = 15,44 (Flexión)

Armadura de Cortante.
Sección Cpoy. cap. 6 Cortt. Sc 1 V16

## Comprobación a Cortante:

### Datos:

| | | | |
|---|---|---|---|
| $F_{ck}$= | 400 | Kg/cm$^2$. | |
| $F_{cd}$= | 267 | Kg/cm$^2$. | |
| $A_c$= | 10.280 | m$^2$. | |
| $N_d$= | -2825.000 | T. | Compresión -vo. |
| $b_0$= | 1.000 | m. | |
| d= | 3.000 | m. | |
| $A_s$= | 157.080 | cm$^2$. | |
| $A_p$= | 423.680 | cm$^2$. | |
| $f_{yp}$= | 17100 | Kg/cm$^2$. | |
| $Sp_{infinito}$= | 10680 | Kg/cm$^2$. | |
| $S_{xd}$= | -27.481 | Kg/cm$^2$. | Compresión -vo. |
| $F_{ctm}$= | 35.088 | Kg/cm$^2$. | |
| $Cotg\Ø_e$= | 1.335 | | Sometido a Compresión Uniaxial. |
| $Cotg\Ø$= | 1.335 | | |
| Beta= | 1.000 | | |
| K= | 1.000 | | |
| $Cotg_{Alfa}$= | 0.000 | | |
| $R_o$ = | 0.020 | | |
| Chi= | 1.258 | | |

### Resultados:

| | | | |
|---|---|---|---|
| $V_{rd}$= | 1505.000 | T. | |
| $V_{u1}$= | 2303.018 | T. | |
| $V_{cu}$= | 286.305 | T. | |
| $A_s$= | 84.503 | cm$^2$/m. | |
| $A_{smin}$= | 13.333 | cm$^2$/m. | |
| $V_{u2SinFeCort}$= | 318.833 | | Necesita Armadura de Cortante. |

Armadura de Cortante.
Sección 3.2. Sc 1 V16

## Comprobación a Cortante:

### Datos:

| | | | |
|---|---|---|---|
| $F_{ck}$= | 400 | Kg/cm$^2$. | |
| $F_{cd}$= | 267 | Kg/cm$^2$. | |
| $A_c$= | 10.280 | m$^2$. | |
| $N_d$= | -2755.000 | T. | Compresión -vo. |
| $b_0$= | 1.000 | m. | |
| d= | 3.000 | m. | |
| $A_s$= | 157.080 | cm$^2$. | |
| $A_p$= | 423.680 | cm$^2$. | |
| $f_{yp}$= | 17100 | Kg/cm$^2$. | |
| $Sp_{infinito}$= | 10680 | Kg/cm$^2$. | |
| $S_{xd}$= | -26.800 | Kg/cm$^2$. | Compresión -vo. |
| $F_{ctm}$= | 35.088 | Kg/cm$^2$. | |
| $Cotg\Ø_e$= | 1.328 | | Sometido a Compresión Uniaxial. |
| $Cotg\Ø$= | 1.328 | | |
| Beta= | 1.000 | | |
| K= | 1.000 | | |
| $Cotg_{Alfa}$= | 0.000 | | |
| $R_o$ = | 0.020 | | |
| Chi= | 1.258 | | |

### Resultados:

| | | | |
|---|---|---|---|
| $V_{rd}$= | 1184.000 | T. | |
| $V_{u1}$= | 2306.535 | T. | |
| $V_{cu}$= | 283.241 | T. | |
| $A_s$= | 62.800 | cm$^2$/m. | |
| $A_{smin}$= | 13.333 | cm$^2$/m. | |
| $V_{u2SinFeCort}$= | 315.769 | | Necesita Armadura de Cortante. |

TORSOR MAXIMO PILA

## Comprobación a Torsión:

Datos:

| | | |
|---|---|---|
| $f_{yk}$= | 400 | Kg/cm². |
| $f_{cd}$= | 267 | Kg/cm². |
| Ac= | 17.500 | m². |
| he= | 0.300 | m. |
| ue= | 18.300 | m. |
| CotgØ= | 1.330 | |
| Alfa= | 1.5 | 1.2(estribos sólo perímetro exterior); 1.5(cerrados ambas caras pared sección hueca). |

Resultados:

| | | | | |
|---|---|---|---|---|
| $T_d$= | 1081.000 | T. | | |
| $T_{ul}$= | 6052.223 | T. | O.K. | |
| $A_t/s_t$= | 5.806 | cm²/m. | | |
| $A_l/u_e$= | 10.270 | cm²/m. | $A_l$= | 187.932 cm². |

Cortante S.3.5

$V_{rd}$= (412 + 308) 1.35 + 542 x 1,5 − 650 x 0,9 = 1200 Tn

b = 1m

$A_p$ = 423,684 a²

$\sigma_{pd}$ = 10340 a²

$A_s$ = 6x2 + 3x2 + 32 = 50 ϕ20

(28) (14) (16)

$N_d$ = 4380 − 1700 = 2680 Tn → ϕ

$A_s/s$ = 64,53 a²/m

64,53/4 + 1,32 = 17,45 a²/m  ϕ25/20 = 24,55 a²/m

$V_{rd}$ = (412 + 308) 1.35 + 542 x 1,5 x 0,5 − 650 x 0,9 ⇒ 794 Tn

1/2

$A_s/s$ = 36,1 a²/m

36,1/4 + 5,81 = 15 a²/m

Disponiendo ϕ25/20 queda 7,14 a²/m para el flexión

Cortante S.3.4

$V_{rd}$ = 991 Tn

$A_s/s$ = 49,87 a²/m

49,87/4 + 1,32 = 13,79 a²/m  ϕ25/20 = 24,55 a²/m

ϕ25/20  24,55 − 13,79 = 9,24 a²/m (Flexión)

ϕ16/10  31,42 − 13,75 = 17,63 a²/m (Flexión)

Armadura de Cortante. (33)

## Comprobación a Cortante:

### Datos:

| | | |
|---|---|---|
| $F_{ck}$= | 400 Kg/cm$^2$. | |
| $F_{cd}$= | 267 Kg/cm$^2$. | |
| $A_c$= | 10.280 m$^2$. | |
| $N_d$= | -2680.000 T. | Compresión -vo. |
| $b_0$= | 1.000 m. | |
| d= | 3.000 m. | |
| $A_s$= | 157.080 cm$^2$. | |
| $A_p$= | 423.680 cm$^2$. | |
| $f_{yp}$= | 17100 Kg/cm$^2$. | |
| $Sp_{infinito}$= | 10340 Kg/cm$^2$. | |
| $S_{xd}$= | -26.070 Kg/cm$^2$. | Compresión -vo. |
| $F_{ctm}$= | 35.088 Kg/cm$^2$. | |
| $Cotg\Ø_e$= | 1.320 | Sometido a Compresión Uniaxial. |
| $Cotg\Ø$= | 1.320 | |
| Beta= | 1.000 | |
| K= | 1.000 | |
| $Cotg_{Alfa}$= | 0.000 | |
| $R_o$ = | 0.020 | |
| Chi= | 1.258 | |

### Resultados:

| | | |
|---|---|---|
| $V_{rd}$= | 1200.000 T. | |
| $V_{u1}$= | 2310.280 T. | |
| $V_{cu}$= | 279.958 T. | |
| $A_s$= | 64.526 cm$^2$/m. | |
| $A_{smin}$= | 13.333 cm$^2$/m. | |
| $V_{u2SinFeCort}$= | 312.486 | Necesita Armadura de Cortante. |

S 2.17

$V_{rd} = (291+233)\,1.35 + 1.5 \times 442 - 0.9\ 1040 = 434\,Tm$

$\sigma_{pp} = 10430\,kg/cm^2$

$P_{pp} = 4421\,Tm$

$N_d = 4421 - 1700 = 2721\,Tm \rightarrow$ ⊲

F+DI
+A

$A_s = 44\Ø16 + 6\Ø20 = 104,85\,cm^2$

$b = (0.45 - 0.10)\,2 = 0.70\,m$

$A = 8127\,cm^2$

$A_s/s = 141953\,cm^2/m.$

$14,753/4 + 1.32 = 5105\,cm^2/m \Rightarrow \underline{\Ø16/20}$ (Cortante + Flexión)

S.2.14

$V_{rd} = (150+118)\,1.35 + 1.5 \times 320 - 0.9 \times 315 \Rightarrow 555\,Tm$

$A_s/s = 23.41\,cm^2/m$

$23.41/4 + 1.32 = 7.16\,cm^2/m$ $\underline{\Ø16/20}$ (Cortante y flexión)

$C\Ø20/20 = 15,71\,cm^2/m - 7.1 = 8.61\,cm^2/m$ (Flexión) $+\Ø20/20$ ▽

$\Rightarrow 24.32\,cm^2/m$ (Flexión)

S. Apoyo en pilas

$V_{rd} = (302+221)\,1.35 + 435 \times 1.5 - 439 \times 0.9 = 969\,Tm$

$\sigma_{pp} = 9680\,kg/cm^2$

$b = (0.85 - 0.10) \times 2 = 1.50$

$N_d = 4102 - 1700 = 2402\,Tm$ $\quad A = 11.349\,m^2$

$A_s = 24\Ø16 + 6\Ø20 = 64,85\,cm^2$

$A_s/s = 42,6\,cm^2/m$

$42,6/4 + 1,32 = 12\,cm^2/m$ $\underline{\Ø20/20}$

Armadura de Cortante. (2.17)

## Comprobación a Cortante:

### Datos:

| | | |
|---|---|---|
| $F_{ck}$= | 400 Kg/cm². | |
| $F_{cd}$= | 267 Kg/cm². | |
| $A_c$= | 8.727 m². | |
| $N_d$= | -2721.000 T. | Compresión -vo. |
| $b_0$= | 0.700 m. | |
| d= | 3.000 m. | |
| $A_s$= | 106.850 cm². | |
| $A_p$= | 423.680 cm². | |
| $f_{yp}$= | 17100 Kg/cm². | |
| $Sp_{infinito}$= | 10430 Kg/cm². | |
| $S_{xd}$= | -31.179 Kg/cm². | Compresión -vo. |
| $F_{ctm}$= | 35.088 Kg/cm². | |
| $CotgØ_e$= | 1.374 | Sometido a Compresión Uniaxial. |
| CotgØ= | 1.374 | |
| Beta= | 1.000 | |
| K= | 1.000 | |
| $Cotg_{Alfa}$= | 0.000 | |
| $R_o$ = | 0.020 | |
| Chi= | 1.258 | |

### Resultados:

| | | |
|---|---|---|
| $V_{rd}$= | 434.000 T. | |
| $V_{u1}$= | 1598.535 T. | |
| $V_{cu}$= | 212.064 T. | |
| $A_s$= | 14.953 cm²/m. | |
| $A_{smin}$= | 9.333 cm²/m. | |
| $V_{u2SinFeCort}$= | 234.834 | Necesita Armadura de Cortante. |

S.2.18

$V_{rd}$ = (345+271) 1.35 + 487 x 1.5 − 0,9 x 732 = 903 T.m

$A_s/s$ = 43,70 cm²/m → Cabte + Ba

43,70/4 + 1,32 = 12,25 cm²/m  cØ25/20 = 24,55 cm²/m

24,55 − 12,25 = 12,3 cm²/m (Floja)

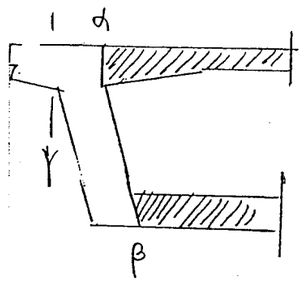
## Rasante sección de apoyo en pila

$A$ = 10,28 m²

$J$ = 13,014 m⁴

$V$ = 1,33 m.

$V'$ = 1,77 m.




(β) $m_p$ = 1.016 x 1,107 = 1,087 m³

(α) $m_c$ = 1,056 x 1,1162 = 1,179 m³ (f/h superior)

(β) $m_e$ ⇒ 2,3465 x 0,J x (1,77 − 0,25) ⇒ 1,783 m³ (f/h inferior)

$\gamma_e = V \cdot m_e / S$ ⇒ 0,087 V (f/h superior)

0,131 V (f/h inferior)

0,080 V (vuelo)

$V_{rd}$ = 1,626 Ton (3.2)

$R_{rasante}$ ⇒ 0,131 x 1626 = 213 Ton  RH ⇒ 63 T

$R^*$ = 213 − 53 = 160 T  $A_s/S$ = 2,04 cm²/m  Ø25/20 + Ø20/20

② Ø20/20  ⑥ Ø20/20

Separ ⑩ Ø20/20  ㉔ Ø20/20 ⇒ 31,4 cm²/m

⑪ Ø20/20

$R_{rasante(f-f)}$ = 1626 x 0108 = 130 T/m  $R_H$ = 427/m

Ø16/20 + Ø20/20 = 25,70 cm²/m  $A_s/s$ = 22 cm²/m

0,85 $f_{cd}$ ⇒ 0,85 x 4000 T/m² = 2267 T/m²

Md comp. con máximo cort/c ⇒ (3612 + 2786) x 1,35 + 4398 x 1,15 − 0,9 x 1,558

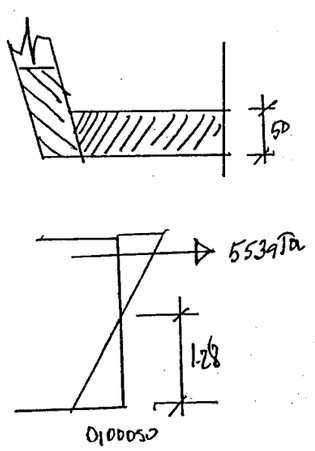
apoyo en pila ⇒ 13472 T.m

X = 1,28 m  Y = 0,8 x 1,28 = 1,02 m/t

$Z_i$ ⇒ 5539 Ton  $A_t$ = 3,16159 m²  $A_r$ = 1,173 m²

$Z_{cte}$ ⇒ 1797 Ton / 10,150 ⇒ 171 T/m

$A_s/s$ = 171/4 = 43 cm²/m




Armadura de rasante a disponer Ø25/20 + Ø20/20

S 33

$V_{rd} \Rightarrow (412+308)\,1.35 + 542\times1.5 - 650\times0.9 \Rightarrow 1200\,T_{on}$

$R_{cstc} \Rightarrow 0.1131\times1200 = 157T - 53 = 104\,T/m$

$A_{s/s} = 264\,cm^2/m \quad \Phi 20/10$

S. 2.18

$V_{rd} = (345+271)\,1.35 + 1.5\times487 - 0.9\times731 = 904\,T_{on}$

$R_{stc} = 118\,T/m \quad R^{*} = 65\,T/m$

$A_s \Rightarrow 164\,cm^2/m \quad \Phi 16/10$

S 2.17

$V_{rd} = (291+233)\,1.35 + 1.5\times442 - 0.9\,1640 \Rightarrow 434\,T_{on}$

$R_{stc} = 57\,T/m \quad A_{smin}\ \Phi 16/10$

S 2.14

$V_{rd} = (150+118)\,1.35 + 1.5\times220 - 0.9\,319 \Rightarrow 554\,T_{on}$

$R_{stc} = 78\,T/m \quad A_{smin}\ \Phi 16/10$

S. pile por Axil = $\phi$

```
  6   0.00100    5    5    1    1          0.00          0.00         10.00
  9  4000. 1.50 0.85  0.0035  0.0020   246.
     0.00000          0.14000
    14.00000          0.19000
    14.00000          0.00000
    10.65000          0.01000
    10.54300          0.13410
     2.35900          0.09950
     1.24500          2.02640
     1.24500          0.00000
     6.07500          0.50000
     5.80000
     6
157.08  0.100  2100000.      5100.  1.000       0. 1.15
105.92  0.200  2100000.     17100.  1.000   10680. 1.15
105.92  0.400  2100000.     17100.  1.000   10680. 1.15
105.92  0.600  2100000.     17100.  1.000   10680. 1.15
105.92  0.800  2100000.     17100.  1.000   10680. 1.15
 66.85  3.050  2100000.      5100.  1.000       0. 1.15
   10.28000    13.61400     1.33000     1.77000     2.97000
CARAC. MEC. DE LA SECCION IDEAL
**********************************
AREA= 10.5257INERCIA=    13.93062115W1= 1.31582W2= 1.78418

EL MOMENTO DE FISURACION ES:              1889.03870

LA CURVATURA ES:          0.0000401900



EL MOMENTO DE DESCOMPRESION ES:                0.00000

LA CURVATURA ES:          0.0000000000

SITUACION DE ROTURA DE LA SECCION
---------------------------------

      AXIL(T)      MU(MT)   CU(M-1)     ECU        ES(U)          SS(U)  X(M)
-------------------------------------------------------------------------------

     0.0000    2687.0150  0.003711  0.001320  0.006735  14143.5     0.3556

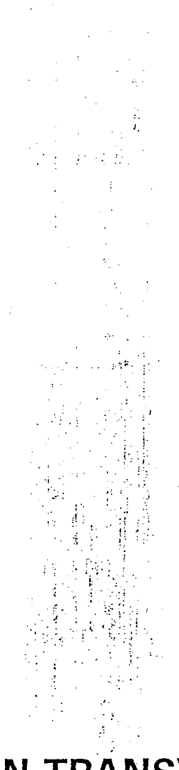
   MOM          CURV  DEFORMAD   TENSION       EC        ES(TOT)        X      SS(U
-------------------------------------------------------------------------------

-1964.18803 .000037    -0.0001     -1.24    0.000173  0.004942     4.62   103.7
 -272.58081 .000075     0.0000      0.05    0.000226  0.004920     3.02   103.3
  488.36464 .000112     0.0001      1.72    0.000261  0.004914     2.32   103.2
  772.68741 .000150     0.0002      3.63    0.000285  0.004921     1.90   103.3
  952.48287 .000187     0.0003      5.61    0.000304  0.004931     1.62   103.5
 1082.31084 .000225     0.0004      7.65    0.000322  0.004944     1.43   103.8
 1184.98254 .000262     0.0005      9.71    0.000338  0.004958     1.29   104.1
 1271.53305 .000300     0.0006     11.79    0.000353  0.004972     1.18   104.4
 1347.86776 .000337     0.0007     13.89    0.000367  0.004988     1.09   104.7
 1417.39775 .000375     0.0008     16.01    0.000381  0.005004     1.02   105.0
 1482.20681 .000412     0.0009     18.13    0.000395  0.005021     0.96   105.4
 1543.63139 .000450     0.0010     20.25    0.000408  0.005038     0.91   105.8
```

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| [illegible]6109 | .000487 | 0.0011 | 22.39 | 0.000420 | 0.005055 | 0.86 | 106.1 |
| [illegible].60722 | .000525 | 0.0012 | 24.52 | 0.000433 | 0.005073 | 0.83 | 106.5 |
| [illegible].20253 | .000562 | 0.0013 | 26.66 | 0.000445 | 0.005090 | 0.79 | 106.8 |
| [illegible].65831 | .000600 | 0.0014 | 28.81 | 0.000458 | 0.005108 | 0.76 | 107.2 |
| [illegible].20572 | .000637 | 0.0015 | 30.95 | 0.000470 | 0.005126 | 0.74 | 107.6 |
| 1876.01789 | .000675 | 0.0016 | 33.10 | 0.000482 | 0.005143 | 0.71 | 108.0 |
| 1928.22700 | .000712 | 0.0017 | 35.25 | 0.000494 | 0.005161 | 0.69 | 108.3 |
| 1979.93479 | .000750 | 0.0018 | 37.40 | 0.000506 | 0.005179 | 0.67 | 108.7 |
| 2031.22204 | .000787 | 0.0019 | 39.55 | 0.000518 | 0.005198 | 0.66 | 109.1 |
| 2082.15234 | .000825 | 0.0020 | 41.70 | 0.000530 | 0.005216 | 0.64 | 109.5 |
| 2132.77633 | .000862 | 0.0021 | 43.85 | 0.000542 | 0.005234 | 0.63 | 109.9 |
| 2183.51251 | .000900 | 0.0022 | 44.35 | 0.000553 | 0.005253 | 0.61 | 110.3 |
| 2163.80935 | .000937 | 0.0023 | 44.35 | 0.000563 | 0.005272 | 0.60 | 110.7 |
| 2172.88133 | .000975 | 0.0024 | 44.35 | 0.000574 | 0.005292 | 0.59 | 111.1 |
| 2182.75832 | .001012 | 0.0025 | 44.35 | 0.000584 | 0.005311 | 0.58 | 111.5 |
| 2192.46439 | .001050 | 0.0026 | 44.35 | 0.000595 | 0.005330 | 0.57 | 111.9 |
| 2202.01212 | .001087 | 0.0027 | 44.35 | 0.000606 | 0.005350 | 0.56 | 112.3 |
| 2211.40844 | .001125 | 0.0028 | 44.35 | 0.000616 | 0.005369 | 0.55 | 112.7 |
| 2220.66107 | .001162 | 0.0029 | 44.35 | 0.000627 | 0.005389 | 0.54 | 113.1 |
| 2229.77707 | .001200 | 0.0030 | 44.35 | 0.000637 | 0.005408 | 0.53 | 113.5 |
| 2238.76441 | .001237 | 0.0031 | 44.35 | 0.000648 | 0.005428 | 0.52 | 113.9 |
| 2247.63066 | .001275 | 0.0032 | 44.35 | 0.000658 | 0.005447 | 0.52 | 114.3 |
| 2256.38259 | .001312 | 0.0033 | 44.35 | 0.000669 | 0.005467 | 0.51 | 114.8 |
| 2265.02675 | .001350 | 0.0034 | 44.35 | 0.000679 | 0.005486 | 0.50 | 115.2 |
| 2273.56968 | .001387 | 0.0035 | 44.35 | 0.000689 | 0.005506 | 0.50 | 115.6 |
| 2282.01723 | .001425 | 0.0036 | 44.35 | 0.000700 | 0.005526 | 0.49 | 116.0 |
| 2290.37497 | .001462 | 0.0037 | 44.35 | 0.000710 | 0.005545 | 0.49 | 116.4 |
| 2298.64789 | .001500 | 0.0039 | 44.35 | 0.000721 | 0.005565 | 0.48 | 116.8 |
| 2306.84087 | .001537 | 0.0040 | 44.35 | 0.000731 | 0.005584 | 0.48 | 117.2 |
| 2314.95857 | .001575 | 0.0041 | 44.35 | 0.000741 | 0.005604 | 0.47 | 117.6 |
| 2323.00069 | .001612 | 0.0042 | 44.35 | 0.000752 | 0.005623 | 0.47 | 118.0 |
| 2330.96700 | .001650 | 0.0043 | 44.35 | 0.000762 | 0.005643 | 0.46 | 118.5 |
| 2338.85720 | .001687 | 0.0044 | 44.35 | 0.000773 | 0.005663 | 0.46 | 118.9 |
| 2346.67119 | .001724 | 0.0045 | 44.35 | 0.000783 | 0.005682 | 0.45 | 119.3 |
| 2354.40977 | .001762 | 0.0046 | 44.35 | 0.000793 | 0.005702 | 0.45 | 119.7 |
| 2362.07458 | .001799 | 0.0047 | 44.35 | 0.000804 | 0.005722 | 0.45 | 120.1 |
| 2369.66625 | .001837 | 0.0048 | 44.35 | 0.000814 | 0.005741 | 0.44 | 120.5 |
| 2377.18643 | .001874 | 0.0049 | 44.35 | 0.000824 | 0.005761 | 0.44 | 120.9 |
| 2384.63616 | .001912 | 0.0050 | 44.35 | 0.000835 | 0.005781 | 0.44 | 121.3 |
| 2392.01768 | .001949 | 0.0051 | 44.35 | 0.000845 | 0.005800 | 0.43 | 121.8 |
| 2399.33318 | .001987 | 0.0052 | 44.35 | 0.000855 | 0.005820 | 0.43 | 122.2 |
| 2406.58277 | .002024 | 0.0053 | 44.35 | 0.000866 | 0.005840 | 0.43 | 122.6 |
| 2413.76882 | .002062 | 0.0054 | 44.35 | 0.000876 | 0.005859 | 0.42 | 123.0 |
| 2420.89313 | .002099 | 0.0055 | 44.35 | 0.000886 | 0.005879 | 0.42 | 123.4 |
| 2427.95748 | .002137 | 0.0056 | 44.35 | 0.000896 | 0.005899 | 0.42 | 123.8 |
| 2434.96325 | .002174 | 0.0057 | 44.35 | 0.000907 | 0.005919 | 0.42 | 124.2 |
| 2441.91258 | .002212 | 0.0058 | 44.35 | 0.000917 | 0.005938 | 0.41 | 124.7 |
| 2448.80637 | .002249 | 0.0059 | 44.35 | 0.000927 | 0.005958 | 0.41 | 125.1 |
| 2455.64676 | .002287 | 0.0060 | 44.35 | 0.000937 | 0.005978 | 0.41 | 125.5 |
| 2462.43489 | .002324 | 0.0061 | 44.35 | 0.000947 | 0.005998 | 0.41 | 125.9 |
| 2469.17249 | .002362 | 0.0062 | 44.35 | 0.000958 | 0.006018 | 0.41 | 126.3 |
| 2475.86078 | .002399 | 0.0064 | 44.35 | 0.000968 | 0.006037 | 0.40 | 126.7 |
| 2482.50100 | .002437 | 0.0065 | 44.35 | 0.000978 | 0.006057 | 0.40 | 127.2 |
| 2489.09508 | .002474 | 0.0066 | 44.35 | 0.000988 | 0.006077 | 0.40 | 127.6 |
| 2495.64342 | .002512 | 0.0067 | 44.35 | 0.000998 | 0.006097 | 0.40 | 128.0 |
| 2502.14814 | .002549 | 0.0068 | 44.35 | 0.001008 | 0.006117 | 0.40 | 128.4 |
| 2508.60986 | .002587 | 0.0069 | 44.35 | 0.001018 | 0.006137 | 0.39 | 128.8 |
| 2515.02954 | .002624 | 0.0070 | 44.35 | 0.001029 | 0.006157 | 0.39 | 129.2 |
| 2521.40901 | .002662 | 0.0071 | 44.35 | 0.001039 | 0.006176 | 0.39 | 129.7 |
| 2527.74897 | .002699 | 0.0072 | 44.35 | 0.001049 | 0.006196 | 0.39 | 130.1 |
| 2534.05040 | .002737 | 0.0073 | 44.35 | 0.001059 | 0.006216 | 0.39 | 130.5 |
| 2540.31421 | .002774 | 0.0074 | 44.35 | 0.001069 | 0.006236 | 0.39 | 130.9 |
| 2546.54185 | .002812 | 0.0075 | 44.35 | 0.001079 | 0.006256 | 0.38 | 131.3 |
| 2552.73325 | .002849 | 0.0076 | 44.35 | 0.001089 | 0.006276 | 0.38 | 131.7 |
| 2558.89040 | .002887 | 0.0077 | 44.35 | 0.001099 | 0.006296 | 0.38 | 132.2 |
| 2565.01371 | .002924 | 0.0078 | 44.35 | 0.001109 | 0.006316 | 0.38 | 132.6 |
| 2571.10377 | .002962 | 0.0079 | 44.35 | 0.001119 | 0.006336 | 0.38 | 133.0 |
| 2577.16180 | .002999 | 0.0080 | 44.35 | 0.001129 | 0.006356 | 0.38 | 133.4 |
| 2583.18846 | .003037 | 0.0081 | 44.35 | 0.001139 | 0.006376 | 0.38 | 133.8 |
| 2589.18412 | .003074 | 0.0082 | 44.35 | 0.001149 | 0.006396 | 0.37 | 134.3 |
| 2595.14989 | .003112 | 0.0083 | 44.35 | 0.001160 | 0.006415 | 0.37 | 134.7 |
| 2601.08621 | .003149 | 0.0084 | 44.35 | 0.001170 | 0.006435 | 0.37 | 135.1 |
| 2606.99403 | .003187 | 0.0085 | 44.35 | 0.001180 | 0.006455 | 0.37 | 135.5 |
| 2612.87390 | .003224 | 0.0086 | 44.35 | 0.001190 | 0.006475 | 0.37 | 135.9 |
| 2618.72646 | .003262 | 0.0087 | 44.35 | 0.001200 | 0.006495 | 0.37 | 136.4 |
| 2624.55176 | .003299 | 0.0089 | 44.35 | 0.001210 | 0.006515 | 0.37 | 136.8 |
| 2630.35131 | .003337 | 0.0090 | 44.35 | 0.001220 | 0.006535 | 0.37 | 137.2 |
| 2636.12495 | .003374 | 0.0091 | 44.35 | 0.001230 | 0.006555 | 0.36 | 137.6 |
| 2641.87341 | .003412 | 0.0092 | 44.35 | 0.001240 | 0.006575 | 0.36 | 138.0 |
| 2647.59735 | .003449 | 0.0093 | 44.35 | 0.001250 | 0.006595 | 0.36 | 138.5 |
| 2653.29704 | .003486 | 0.0094 | 44.35 | 0.001260 | 0.006615 | 0.36 | 138.9 |
| 2658.97331 | .003524 | 0.0095 | 44.35 | 0.001270 | 0.006635 | 0.36 | 139.3 |
| 2664.62614 | .003561 | 0.0096 | 44.35 | 0.001280 | 0.006655 | 0.36 | 139.7 |
| 2670.25654 | .003599 | 0.0097 | 44.35 | 0.001290 | 0.006675 | 0.36 | 140.1 |
| 2675.86435 | .003636 | 0.0098 | 44.35 | 0.001300 | 0.006695 | 0.36 | 140.6 |
| 2681.45036 | .003674 | 0.0099 | 44.35 | 0.001310 | 0.006715 | 0.36 | 141.0 |
| 2687.01492 | .003711 | 0.0100 | 44.35 | 0.001320 | 0.006735 | 0.36 | 141.4 |

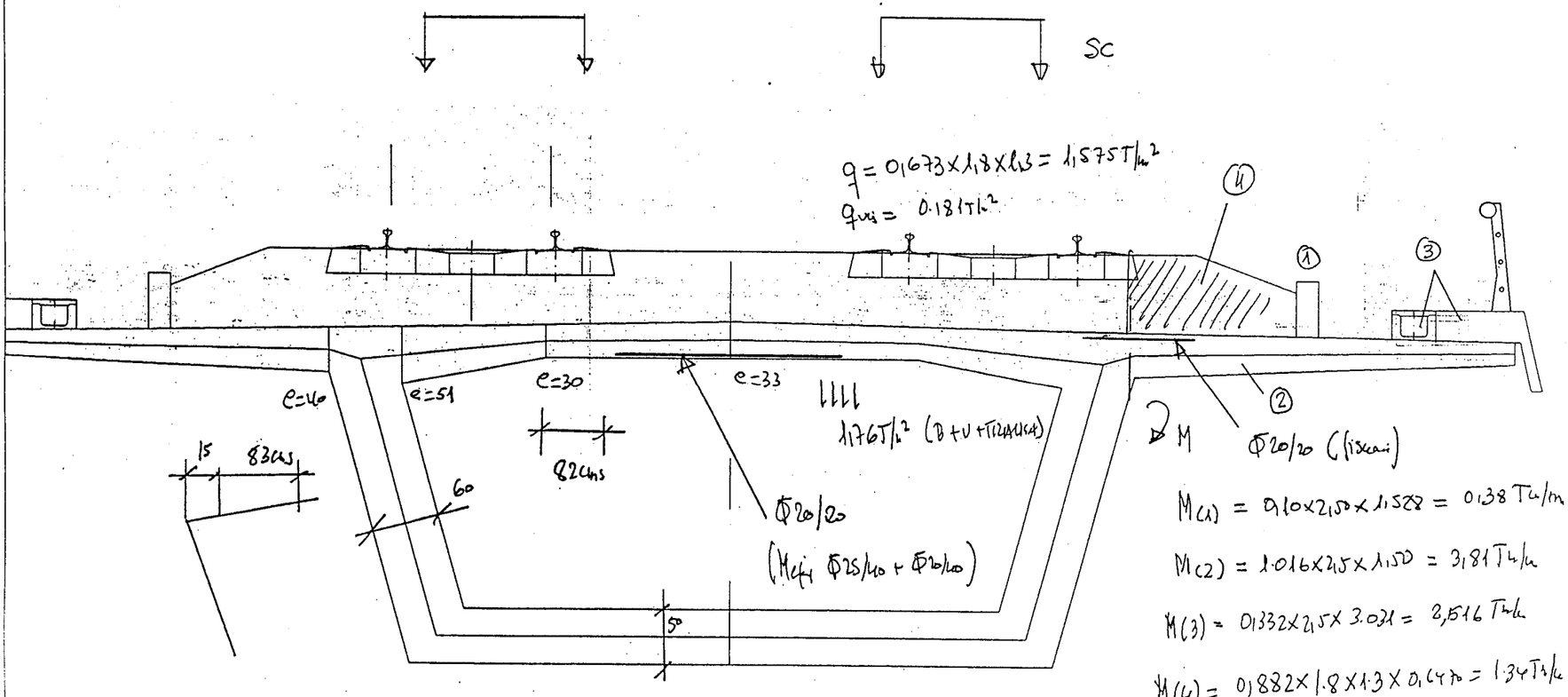
SITUACION DE ROTURA DE LA SECCION

| AXIL(T) | MU(MT) | CU(M-1) | ECU | ES(U) | SS(U) | X(M) | |
|---|---|---|---|---|---|---|---|
| 0.0000 | 16695.0210 | 0.004354 | 0.003061 | 0.014650 | 14869.6 | 0.7031 | |
| MOM | CURV | DEFORMAD | TENSION | EC | ES(TOT) | X | SS(U |
| 5530.31250 | .000044 | -0.0001 | -1.52 | 0.000204 | 0.005009 | 4.64 | 105.1 |
| 7355.98561 | .000088 | 0.0000 | -0.53 | 0.000289 | 0.005052 | 3.29 | 106.0 |
| 8954.66014 | .000132 | 0.0000 | 0.48 | 0.000373 | 0.005095 | 2.83 | 107.0 |
| 9631.01528 | .000176 | 0.0001 | 2.12 | 0.000427 | 0.005169 | 2.43 | 108.5 |
| 10085.46148 | .000220 | 0.0002 | 3.93 | 0.000472 | 0.005251 | 2.15 | 110.2 |
| 10471.97531 | .000264 | 0.0003 | 5.81 | 0.000515 | 0.005336 | 1.95 | 112.0 |
| 10819.46202 | .000308 | 0.0004 | 7.72 | 0.000556 | 0.005423 | 1.81 | 113.8 |
| 11142.37120 | .000352 | 0.0005 | 9.67 | 0.000595 | 0.005511 | 1.69 | 115.7 |
| 11448.65375 | .000396 | 0.0006 | 11.62 | 0.000634 | 0.005600 | 1.60 | 117.5 |
| 11742.99978 | .000440 | 0.0006 | 13.59 | 0.000672 | 0.005689 | 1.53 | 119.4 |
| 12028.32654 | .000484 | 0.0007 | 15.57 | 0.000710 | 0.005779 | 1.47 | 121.3 |
| 12306.52309 | .000528 | 0.0008 | 17.54 | 0.000748 | 0.005868 | 1.42 | 123.2 |
| 12578.85497 | .000572 | 0.0009 | 19.52 | 0.000786 | 0.005958 | 1.37 | 125.1 |
| 12846.18457 | .000616 | 0.0010 | 21.49 | 0.000824 | 0.006047 | 1.34 | 127.0 |
| 13109.11384 | .000660 | 0.0011 | 23.46 | 0.000862 | 0.006137 | 1.31 | 128.8 |
| 13368.06548 | .000704 | 0.0012 | 25.42 | 0.000900 | 0.006226 | 1.28 | 130.7 |
| 13623.33613 | .000748 | 0.0013 | 27.37 | 0.000939 | 0.006314 | 1.26 | 132.6 |
| 13875.13275 | .000792 | 0.0014 | 29.32 | 0.000979 | 0.006403 | 1.24 | 134.4 |
| 14123.59288 | .000836 | 0.0015 | 31.26 | 0.001018 | 0.006491 | 1.22 | 136.3 |
| 14368.80816 | .000880 | 0.0016 | 33.19 | 0.001058 | 0.006578 | 1.20 | 138.1 |
| 14610.82707 | .000924 | 0.0017 | 35.10 | 0.001099 | 0.006665 | 1.19 | 139.9 |
| 14849.66753 | .000967 | 0.0018 | 37.00 | 0.001140 | 0.006751 | 1.18 | 141.7 |
| 15085.32474 | .001011 | 0.0019 | 38.90 | 0.001182 | 0.006837 | 1.17 | 143.5 |
| 15317.76783 | .001055 | 0.0019 | 40.77 | 0.001225 | 0.006922 | 1.16 | 145.3 |
| 15546.95148 | .001099 | 0.0020 | 42.63 | 0.001268 | 0.007006 | 1.15 | 147.1 |
| 15764.04422 | .001143 | 0.0021 | 44.35 | 0.001311 | 0.007090 | 1.15 | 148.7 |



FLEXION TRANSVERSAL

Flexión flexural cabeza c/b SC




$M_{(1)} = 0,10 \times 2,50 \times 1,528 = 0,38\ Tn/m$

$M_{(2)} = 1,016 \times 2,5 \times 1,120 = 3,181\ Tn/m$

$M_{(3)} = 0,1332 \times 2,5 \times 3,031 = 2,516\ Tn/m$

$M_{(4)} = 0,1882 \times 1,8 \times 1,3 \times 0,1470 = 1,34\ Tn/m$

$8,05\ Tn/m$

$M_{SC\ PASOS} \Rightarrow 0,5 \times 1,75 \times 2,50 = 2,19\ Tn/m$

$10,24\ Tn/m$

$A_S = \Phi 20/20$ (Plano)

S. Zona apoyo en pila

Hexión flexural cabeza c/b SC

$P_i = P_e = 25 \times 1,25 \times 9,81 \quad 1/1,6 \quad 1/2 = 9,64\ T/cm.p$ (Sin Fc y Peso)

$q = 80 \times 1,21 / 9,81 \quad 1/2 = 4,93\ T/cm.p$ (Sin Fc y Peso)

$9,64 \times 1,28 / 0,83 = 1,371\ T/m.p$

Coeficiente de Impacto

$$\phi = \frac{1,414}{L\phi - 0,12} + 0,82 = 1,18$$

$L\phi = 3 \times 6 = 18$

Descuento de valores flectores

2 Carga de $0 \times 50 KN/m = 60,5\ KN/m$ en 6,40 mts

$1,15 \times 1,935 = 2,15\ Tn/ft$

1 carga de $4 \times 80 KN/m = 968\ KN$ en 2014

Momento último $= \frac{968}{9,81} \times 1,177Q = 1,162\ Tn/m$

M Portico = 8,05 Tn/m

M descuento = 1,162 Tn/m

$A_{nf} = \Phi 20/20 + \Phi 20/20$ $\quad M_U = 44,4\ Tn/m$ $(f'c = 25\ \ f_y = 4,215)$

$M_f = \Phi 12/20$

$M_d = 8,05 * 1,35 + 2,15 \times 1,5 = 14,18\ Tn/m$

$M_d = 8,05 + 11,62 = 19,62\ Tn/m$ $\quad \Phi 20/20$ $(A_{sp})$ $M_u = 22,15\ Tn/m$

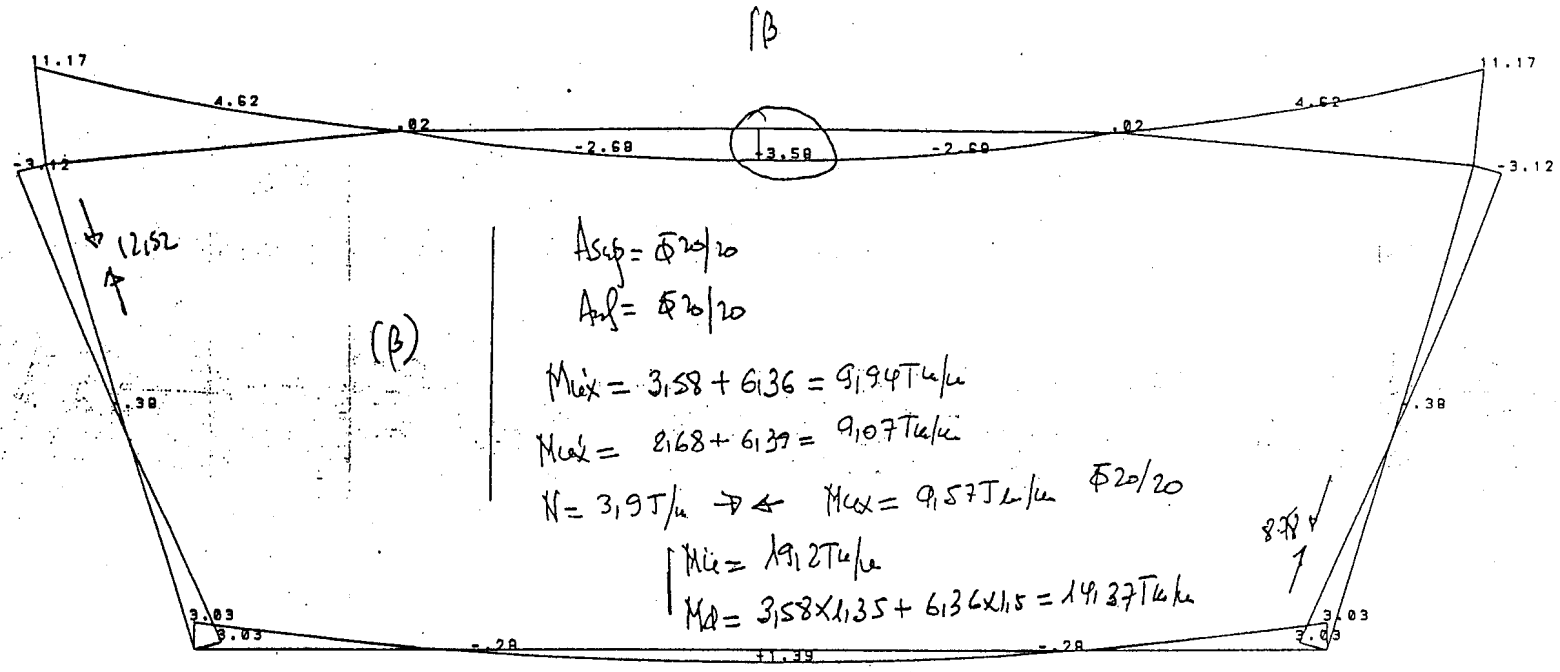
Am. refuerzo $\Phi 12/20$ (tensión) (+x)

User ID: Carlos Alonso Cobo

STRUCTURE DATA

TYPE = PLANE
NJ = 8
NM = 8
NE = 0
NS = 0
NRJ= 2
NL = 2
XMAX= 6.7
YMAX= 2.7
ZMAX= .0

MN/ELEM
MOMENT MZ LN= 1




(β)

Asup = Φ20/20
Ainf = Φ20/20

Mux = 3,58 + 6,36 = 9,94 Tm/m
Mux = 8,68 + 6,39 = 9,07 Tm/m
N = 3,9 T/m → ← Mux = 9,57 Tm/m Φ20/20

Mu = 19,2 Tm/m
Mu = 3,58 × 1,35 + 6,36 × 1,5 = 14,37 Tm/m

Φ25/40 + Φ20/40 Mux = 11.35 Tm/m > 9,94 Tm/m

Maximum= 11.17
J=8,M=8

UNIT MET MTO

S T A A D P O S T - P L O T (REV: 22.3 )
TITLE: FLEXION TRANSVERSAL

DATE: OCT 19, 2003

(δ) h = 60 cms. Φ20/20

h = 85 cms. Φ16/20

STRUCTURE DATA

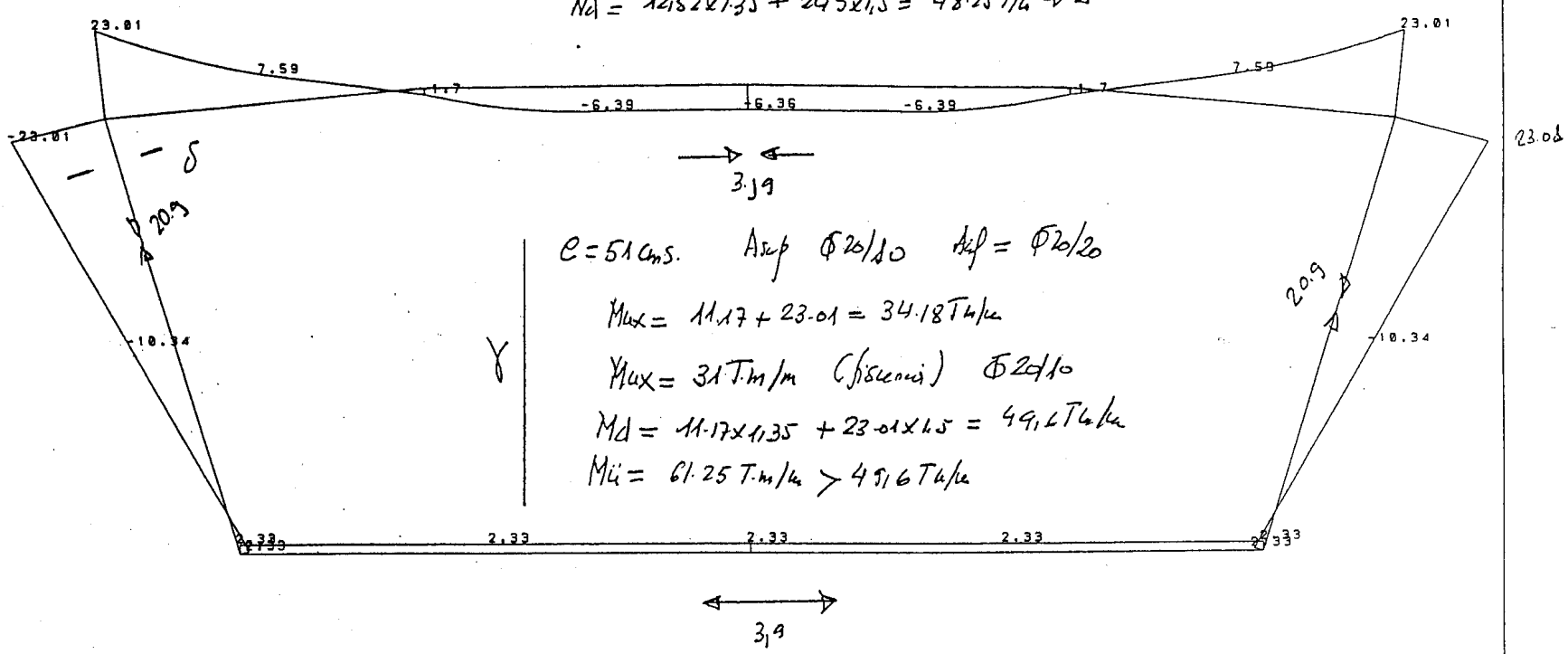
TYPE = PLANE
NJ = 8
NM = 8
NE = 0
NS = 0
NRJ= 2
NL = 2
XMAX= 6.7
YMAX= 2.7
ZMAX= .0

MN/ELEM
MOMENT MZ LN= 2

(δ) h=60cms.

Mux = 3.12 + 23.01 = 26.13 Tm
N = 12,52 + 2,93 = 33.42 T →
Md = 3.12 × 1.35 + 23.01 × 1.5 = 38.7 Tm/m
Nd = 12,52 × 1.35 + 2,93 × 1,5 = 48.25 T →

As = Φ20/20




γ

e = 51 cms. Asup Φ20/10 Ainf = Φ20/20

Mux = 11,17 + 23.01 = 34.18 Tm/m
Mux = 31 T.m/m (fisuras) Φ20/10
Md = 11.17 × 1,35 + 23.01 × 1,5 = 49,26 Tm/m
Mu = 61.25 T.m/m > 49,6 Tm/m

(γ) Mux = 39 T.m/m Φ25/2 + Φ20/20

Maximum= 23.01
J=8,M=8

UNIT MET MTO

S T A A D P O S T - P L O T (REV: 22.3 )
TITLE: FLEXION TRANSVERSAL

DATE: OCT 19, 2003

Rplank ⇒ 1180 mts

$$Q_{tk} = \alpha \frac{Q_{vk} v^2}{g r} f$$

$$q_{tk} = \alpha \frac{q_{vk} v^2}{g r} f$$

$\alpha = 1$ $q_{vik} = 80$ KN/m $Q_{vik} = (4 \times 250 - 1.6 \times 4 \times 80) = 488$ KN

V = 350 Km/h = 97,22 m/s  l = 1180 mts

$$f = 0.197 + 0.1803 \sqrt{\frac{2.88}{Lf}} = 0.1346$$

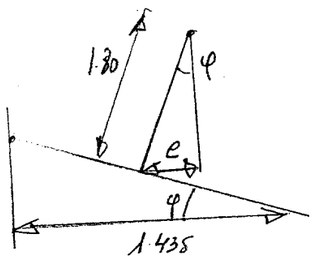
Lf = 42 x 2 = 84 mts

$$f = 1 - \left(\frac{350 - 120}{1000}\right)\left(\frac{814}{850} + 1.75\right)\left(1 - \sqrt{\frac{2.88}{4}}\right) = 0.236$$

4.076  0.815

Qtk = 13,79 KN (4 ejes)

q ⇒ 2,26 KN/m




e = 0.11 mts

q = 2,26 KN/m

Q = 13,79 Kn (4 ejes)  Σ4ejes = 488 KN

$m_q = 2{,}26 \times 1{,}80 = 4{,}07$ Kn.m/m

$m_Q = 13{,}79 \times 1{,}80/4 = 6{,}21$ Kn.m/eje

Q = 28126 Kn (4 ejes)  Σ4ejes = 1000 KN

$m_Q = 28126 \times 1{,}80/4 = 1272$ Kn.m/eje (2504n)

Peralte + Fc

$R_1 + R_2 = 250 \times 1.21 = 3025$ KN

$(R_1 - R_2)\ 1.435/2 \Rightarrow 250 \times 1.21 \times 0.11 + 1272$

$R_1 + R_2 = 3025$  $R_2 = 128$ KN

$R_1 - R_2 = 46$  $R_1 = 175$ KN

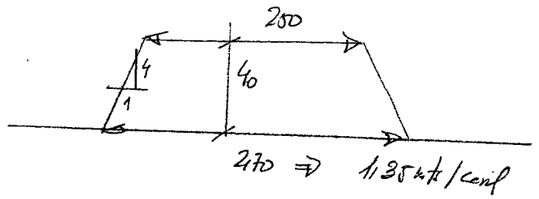
$R_2 = 128/9{,}81/1{,}60 \Rightarrow 8$ Ton

$R_1 = 175/9{,}81 \times 1.60 = 11$ Ton

$R_1 = R_2 = 9{,}164$ T/carril (sin Fc ; sin peralte)

$R_1 = 8$ Ton  $R_2 = 11$ Ton (Con Peralte y Fc)

Nota: Falta de considerar el confte de rapidez




## Coeficiente de Impacto

$$\Phi = \frac{1.4}{\sqrt{L\Phi} - 0.2} + 0.82 = 1.18$$

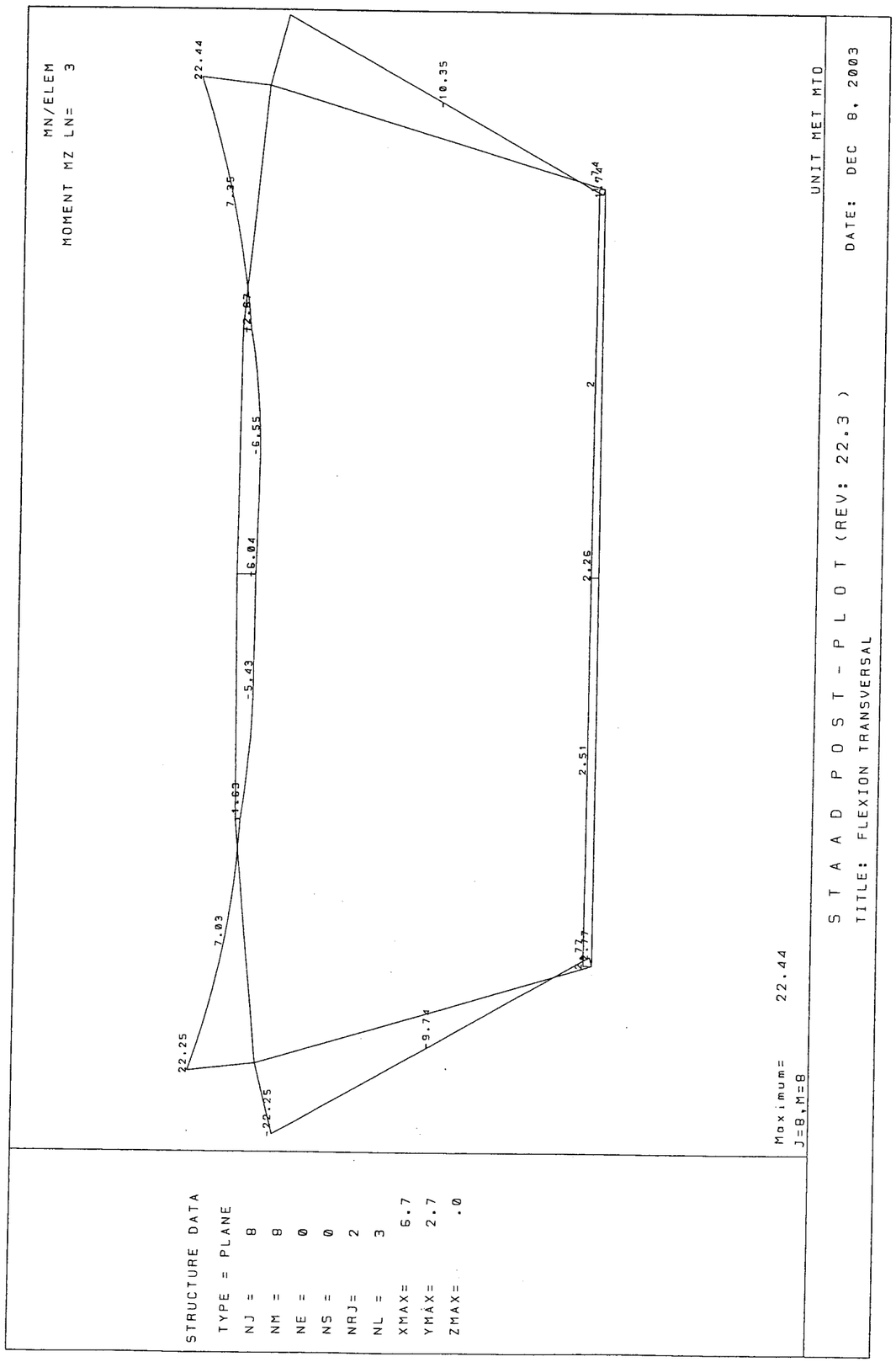
$L\Phi = 3 \times 6 = 18$ ft

$9.64/1.35 = 7.14\ T/ft^2$ $\quad 8/1.35 = 5.93\ T/ft^2$ $\quad 11/1.35 = 8.15\ T/ft^2$

0.375 ⇒ 1.669 ⟶ (7) $\quad 5.93\ T/ft^2 \times 1.18 = 7$

$\Phi$ ⇒ 0.375 $\quad 8.15\ T/ft^2 \times 1.18 = 9.62$

0.70 ⇒ 1.675

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## Diafragme de cpyo en pie

$R_{pp} = 1045$ Ton

$R_{cp} = 770$ Ton  $R_{cpyo\ (cabeza)} = 1508$ Ton

$R_{SC} = 1201$ Ton  $R_{ex} = 1750$ Ton

$0.95/1.77 = H/3126$  $H = 1141$ Ton  $As \geq 28.5\ cm^2$

$R_d = (1045+770)\,1.35/2 + 1201 \times 1.5/2 = 2126$ Ton

(52)

$9 \times 11\,\Phi 32 + 20\Phi 20 + 20\Phi 20 = 303\ cm^2$

$177\ cm^2$  $63$  $63$

## Ar encima de cpyo

$Z = 0.13 \times 1750\ (1 - 1.20/3) = 315$ Ton

$As \geq 29\,\Phi 25$

## Ar. m de suspensión

$R_d = 2126$ Ton

$As \geq \dfrac{2 \times 0.45}{3.05}\ 2126/4 = 226\ cm^2$

$12\Phi 25 + 4.91 \times 2 \times 10 + 3.14 \times 2 \times 10 = 220\ cm^2$

$59\ cm^2$  $98$  $63$

## Intraducción de pretensado (Acopladores)

$\nearrow 1354\ pla^2\ (2648\ m^2)$

$Z = 8 \times 357$ Ton $= 2856$ Ton

$Zv = 0.13 \times 2852\ (1 - 134/3.10) \Rightarrow 348$ Ton

$As \geq 15.84^2$  $32\Phi 25$  disp/fr $36\Phi 25$

$Zv = 0.13 \times 357 \times 2\ (1 - 70/85) = 38$ Ton  $17\ cm^2$  disp/fr $9\,c\Phi 20 b2o$

## Diafragma de cpyo en cabeza

$Z = 0.125 \times 600 = 150$ Ton

$As \geq 6.8\ cm^2$  $22\Phi 16$  $16\Phi 20$

$Rd = (302+221)/2 \times 1.35 + (329+110)/2 \times 1.5 = 682$ Ton

$0.81/1.75 = H/682$  $H = 316$ Ton  $As \geq 7.9\ cm^2$  $16\Phi 25$

Disp/fr $20\Phi 25$

## Suspensión

$As \geq 2 \times 0.31/3.05\ \ 631/4 = 9.0\ cm^2$  $2\Phi 20$

$10\,c\Phi 25/20$

Introducir de potencia (Escalera)

$\sigma_f = 705 T/m^2$

$N = 705 \times 2,087 m^2 = 1471 Ton$

$1471/4,125 m = 346 T/m$

$Z = 0,138 \times 1471/2 = 279 Ton \quad 12 cm^2 \quad 25 \phi 25$

$11\phi 25/20 + 9\phi 20 + 18\phi 20 = 138 cm^2$
(36) (41) 39

Introducir de potencia en zona de empalme

$\sigma_f \Rightarrow 260 T/m^2$

$N = 260 \times 2,087 = 543 Ton$

$Z = 0,138 \times 543/2 = 103 Ton \quad As > 1,47 cm^2 \quad 15\phi 20$

24 $\phi 25/20$ en ambos
6 $\phi 25/20$

Introducir a partir fin de empalme

$\sigma_f = 626 T/m^2$

$N = 626 \times 0,130 = 184 T/m$

$Z = 184 \times 3,38/6 = 104 T/m \quad As > 1,48 cm^2/m$

$\phi 16/20 + \phi 20/60 = 41 cm^2/m$
10 31

## *3.7. Cimbra autolanzable*

# *PRINCIPIO DE FUNCIONAMIENTO CIMBRA DE AVANCE*

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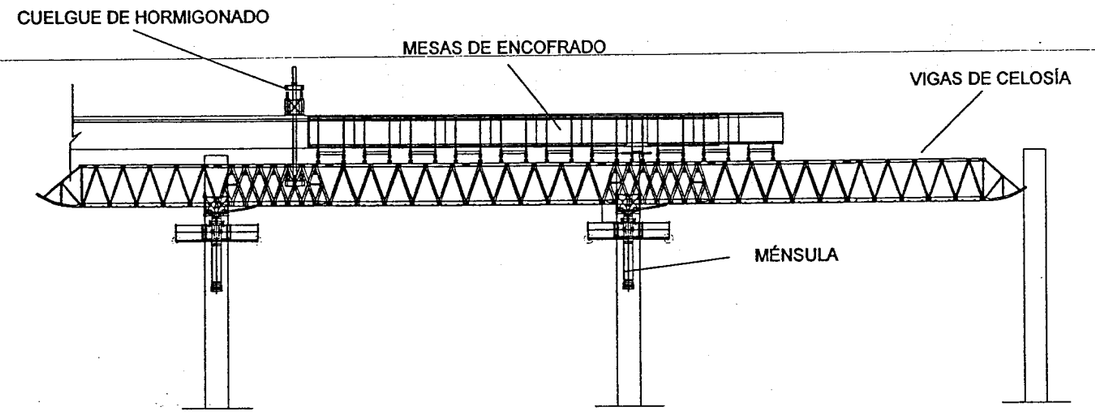
FERNANDEZ CONSTRUCTOR
L.A.V. TRAMO: GELIDA – ST. LLORENÇ
VIADUCTO DE RIERUSSA
CÁLCULOS ESTÁTICOS DE CIMBRA Y ENCOFRADO

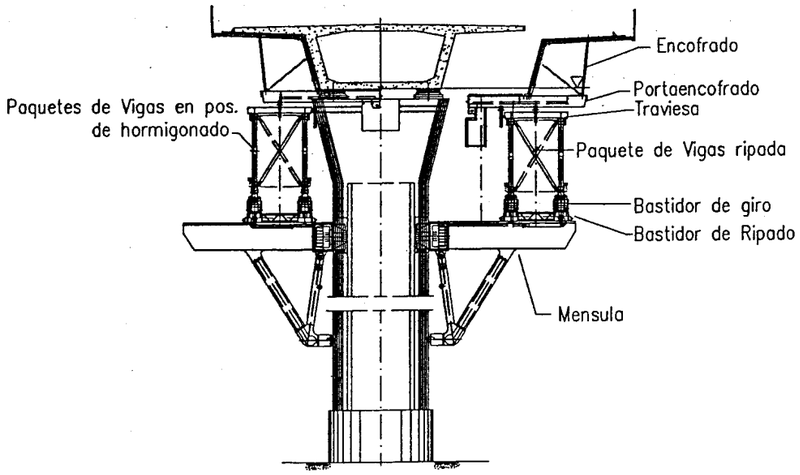
## *DESCRIPCIÓN GENERAL*

*La cimbra de avance diseñada por Mecanotubo consta de dos paquetes de vigas formados por dos vigas de celosía que sirven de soporte de los elementos de portaencofrado y encofrado, y éstas, a su vez, se apoyan en dos ménsulas metálicas fijadas a la pila del puente.*

*En las diferentes fases de los movimientos de la cimbra de avance será necesario disponer de cuelgues adicionales ya sean para el hormigonado o el desplazamiento de las ménsulas.*




*Mediante diferentes composiciones de vigas de celosía la cimbra de avance permite salvar vanos entre pilas de hasta 60m.*



## *PRINCIPIO DE FUNCIONAMIENTO*

### POSICIÓN DE HORMIGONADO

Se procede al hormigonado después de colgar del cuelgue de hormigonado en el punto cercano al extremo hormigonado en la fase anterior.

### POSICIÓN DE AVANCE

Depués de realizar el hormigonado se abre la cimbra y se avanza hasta que su centro de gravedad de la se encuentra en la pila intermedia.

### POSICIÓN DE AVANCE FINAL

Con las ménsulas en las pilas delantera e intermedia, se procede a avanzar la cimbra hasta llegar de nuevo a la posición de hormigonado.

## *COMPONENTES DEL SISTEMA*

*Podemos clasificar los diferentes elementos del sistema teniendo en cuenta su funcionalidad y posición.*

### *Vigas de celosía*

*Las vigas de la cimbra de avance están compuestas de diferentes perfiles en función de la posición y funcionalidad que desempeñan en la cimbra de avance. Así podemos diferenciar entre los siguientes tipos de vigas:*

- *Vigas tipo A : son vigas aligeradas, los cordones están compuestos por perfiles HEA y se sitúan en lugares donde la flexión y el cortante no son importantes.*
- *Vigas tipo N : son vigas de carga dónde los cordones están compuestos por perfiles HEM y las celosías por perfiles HEB-200*
- *Vigas tipo T: son vigas de transición, presentan un recrecido en un extremo para unir las vigas aligeradas con las de carga. Además permiten el cuelgue provisional zaguero de la cimbra.*
- *Vigas tipo E: son vigas de carga reforzadas a efectos de cortante, las celosías están formadas por perfiles HEB-240.*
- *Vigas tipo R: son vigas reforzadas donde el cordón inferior es una viga armada y la celosía una doble triangulación de perfiles HEB-220. Se utilizan en puntos importantes de entrada de carga como pueden ser los apoyos en las ménsulas y el cuelgue de hormigonado.*

*Las vigas se disponen longitudinalmente para completar la distancia entre tres pilas consecutivas de modo que puedan realizarse las maniobras de avance y hormigonado.*



FERNANDEZ CONSTRUCTOR
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VIADUCTO DE RIERUSSA
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### *Mesas de encofrado*

*El encofrado se distribuye mediante mesas de encofrado de 4m, 3m, y 2m de longitud.*

*Estas mesas de encofrado constan de diferentes elementos:*

- *Piel de encofrado: formada por una piel metálica integrada en el panel metálico ETP-083 o bien tablero de madera*
- *Vigas de encofrado: formadas por IPN y UPN en los paneles metálicos ETP-083*
- *Cerchas soporte: formadas por perfiles metálicos que transmiten la carga al portaencofrado.*
- *Portaencofrado: viga metálica que recibe la carga del encofrado y la transmite a la traviesa que se encuentra apoyada en el cordón superior del paquete de vigas de celosía.*

### *Elementos de apoyo*

*La transmisión de la carga desde los paquetes de vigas de celosía hasta los apoyos se realiza mediante los bastidores, que transmiten la carga hasta las ménsulas y éstas a su vez hacia la pila del puente.*

## *IDENTIFICACIÓN DE SECCIONES Y CARACTERÍSTICAS ESTÁTICAS.*

*La tabla siguiente define la composición de perfiles que corresponde a cada una de las vigas utilizadas en la cimbra de avance, además se definen las longitudes de pandeo de cálculo de cada uno de los cordones y de las diagonales.*

| VIGAS | COR. SUPERIOR | | COR. INFERIOR | | DIAGONALES | |
|---|---|---|---|---|---|---|
| | Perfil | Lpandeo | Perfil | Lpandeo | Perfil | Lpandeo |
| **4,8 A** | HEA-280 | 240 cm | HEA-360 | 240 cm | HEB-140 | 330 cm |
| **7,2 A** | HEA-280 | 240 cm | HEA-360 | 240 cm | HEB-140 | 330 cm |
| **12 AT** | HEA-280 | 240 cm | HEA-360 | 240 cm | HEB-140 | 330 cm |
| **12 N** | HEM-280 | 240 cm | HEM-360 | 240 cm | HEB-200 | 320 cm |
| **12 E** | HEM-280 | 240 cm | HEM-360 | 240 cm | HEB-240 | 320 cm |
| **9,6 R** | HEM-280 | 240 cm | Viga armada | 240 cm | HEB-220 | 240 cm * |

* Se ha disminuido la luz de pandeo en un 25% al cruzarse las diagonales a compresión con diagonales sometidas a tracción.

*A continuación se presentan las características estáticas y los materiales de las secciones de los perfiles utilizados en las vigas de celosía de la cimbra de avance.*

| MAT. | PERFIL | Area cm2 | Ix cm4 | Iy cm4 | ix cm | iy cm | Wx cm3 | Wy cm3 |
|---|---|---|---|---|---|---|---|---|
| A-42b | **HEA-280** | 97,3 | 13670 | 4760 | 11,9 | 7,00 | 1010 | 340 |
| A-52b | **HEM-280** | 240 | 39550 | 13160 | 12,8 | 7,40 | 2550 | 914 |
| A-42b | **HEA-360** | 143 | 33090 | 7890 | 15,2 | 7,43 | 1890 | 526 |
| A-52b | **HEM-360** | 319 | 84870 | 19520 | 16,3 | 7,83 | 4300 | 1270 |
| A-42b | **HEB-140** | 43 | 1510 | 550 | 5,93 | 3,58 | 216 | 78,5 |
| A-42b | **HEB-200** | 78,1 | 5700 | 2000 | 8,54 | 5,07 | 570 | 200 |
| A-42b | **HEB-220** | 91 | 8090 | 2840 | 9,43 | 5,59 | 736 | 258 |
| A-42b | **HEB-240** | 106 | 11260 | 3920 | 10,3 | 6,08 | 938 | 327 |
| A-52b | **C. inf 9,6 R** | 446 | 134469 | 24532 | 17,4 | 7,40 | 6043 | 1593 |

## *CARACTERÍSTICAS RESISTENTES.*

*Las siguientes tablas definen las características resistentes de las vigas de la cimbra de avance. Estos valores se han definido considerando que los cordones solo se encuentran sometidos a esfuerzo axil, limitando la capacidad resistente por pandeo en el plano más débil de los perfiles.*

*Los valores representados corresponden al cálculo en Estado Límite Último (E.L.U.) y valores admisibles considerando un factor de seguridad de 1,5.*

### *CARACTERÍSTICAS RESISTENTES POR CUCHILLO*

| POR VIGA | MOMENTO POSITIVO | | MOMENTO NEGATIVO | | CORTANTE | |
|---|---|---|---|---|---|---|
| | E.L.U. | Adm. Cs=1,5 | E.L.U. | Adm. Cs=1,5 | E.L.U. | Adm. Cs=1,5 |
| **4,8 A** | 812 m·Tn | 541 m·Tn | 852 m·Tn | 568 m·Tn | 58 Tn | 39 Tn |
| **7,2 A** | 812 m·Tn | 541 m·Tn | 852 m·Tn | 568 m·Tn | 58 Tn | 39 Tn |
| **12 AT** | 812 m·Tn | 541 m·Tn | 852 m·Tn | 568 m·Tn | 58 Tn | 39 Tn |
| **12 N** | 2688 m·Tn | 1792 m·Tn | 2877 m·Tn | 1918 m·Tn | 152 Tn | 101 Tn |
| **12 E** | 2688 m·Tn | 1792 m·Tn | 2877 m·Tn | 1918 m·Tn | 225 Tn | 150 Tn |
| **9,6 R** | 2688 m·Tn | 1792 m·Tn | 2877 m·Tn | 1918 m·Tn | 225 Tn * | 150 Tn * |

** Capacidad a cortante en el extremo de la viga. Se ha comprobado el agotamiento de los perfiles en el proyecto según la disposición de los apoyos.*





### *CARACTERÍSTICAS RESISTENTES POR PAQUETE*

| POR PAQUETE | MOMENTO POSITIVO | | MOMENTO NEGATIVO | | CORTANTE | |
|---|---|---|---|---|---|---|
| | E.L.U. | Adm. Cs=1,5 | E.L.U. | Adm. Cs=1,5 | E.L.U. | Adm. Cs=1,5 |
| **4,8 A** | 1624 m·Tn | 1082 m·Tn | 1704 m·Tn | 1136 m·Tn | 116 Tn | 78 Tn |
| **7,2 A** | 1624 m·Tn | 1082 m·Tn | 1704 m·Tn | 1136 m·Tn | 116 Tn | 78 Tn |
| **12 AT** | 1624 m·Tn | 1082 m·Tn | 1704 m·Tn | 1136 m·Tn | 116 Tn | 78 Tn |
| **12 N** | 5376 m·Tn | 3584 m·Tn | 5754 m·Tn | 3836 m·Tn | 304 Tn | 202 Tn |
| **12 E** | 5376 m·Tn | 3584 m·Tn | 5754 m·Tn | 3836 m·Tn | 450 Tn | 300 Tn |
| **9,6 R** | 5376 m·Tn | 3584 m·Tn | 5754 m·Tn | 3836 m·Tn | 450 Tn * | 300 Tn * |

** Capacidad a cortante en el extremo de la viga. Se ha comprobado el agotamiento de los perfiles en el proyecto según la disposición de los apoyos.*

## *FUNCIONAMIENTO DEL SISTEMA.*

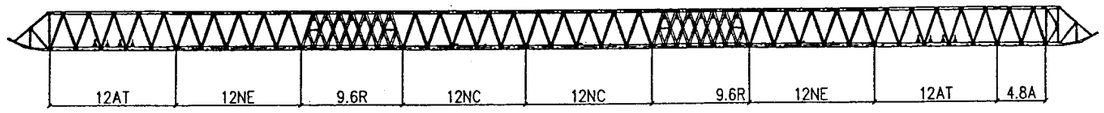
### *COMPOSICIÓN DE LAS VIGAS DE CELOSÍA*

*La composición de vigas de la cimbra de avance está formado por tres cuerpos diferenciados, un cuerpo central de carga, la nariz y la cola.*

*El cuerpo de carga se completa con vigas de carga tipo N y tipo R para la entrada de cargas en apoyos. Si es necesario en función de la distancia de vano a cubrir y la carga máxima en el vano se situarán vigas tipo E.*

*La nariz y cola están formadas por vigas aligeradas tipo A y se unen al cuerpo de carga mediante vigas de transición tipo AT.*

*Composición de vigas para una distancia entre pilas de 42m:*



| | |
|---|---|
| CLIENTE | ***FERNÁNDEZ CONSTRUCTOR*** |
| NOMBRE DEL PROYECTO | ***L.A.V. TRAMO: GELIDA- ST LLORENÇ VIADUCTO DE RIERUSSA*** |
| NUMERO DEL EXPEDIENTE | ***15.245*** |

| | ***NOMBRE*** | ***FECHA*** | ***FIRMA*** |
|---|---|---|---|
| ***PROYECTADO*** | A.Simancas | Marzo 2004 | |



FERNANDEZ CONSTRUCTOR
L.A.V. TRAMO: GELIDA – ST. LLORENÇ
VIADUCTO DE RIERUSSA
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ANTECEDENTES.....

DESCRIPCIÓN DE LA SOLUCIÓN.....

ACCIONES CONSIDERADAS.....

COEFICIENTES DE PONDERACIÓN Y COMBINACIÓN DE ACCIONES

MOVIMIENTO DE LAS MÉNSULAS.....

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HORMIGONADO EN DOS FASES.....

CALCULO DEL ENCOFRADO.....
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ENCOFRADO INTERIOR.....

CALCULO DE LA CIMBRA.....
PRIMER VANO.....
VANO TIPO.....
*CIMBRA EN POSICIÓN DE HORMIGONADO*.....
*CIMBRA EN POSICIÓN DE RIPADO TRANSVERSAL*.....
*CIMBRA POSICIÓN ADELANTADA*.....
*CIMBRA POSICIÓN ATRASADA*.....

CALCULO DEL CUELGUE.....
TRAVIESA SUPERIOR CUELGUE.....
VIGA DE CUELGUE.....

CÁLCULO DE LA MÉNSULA.....

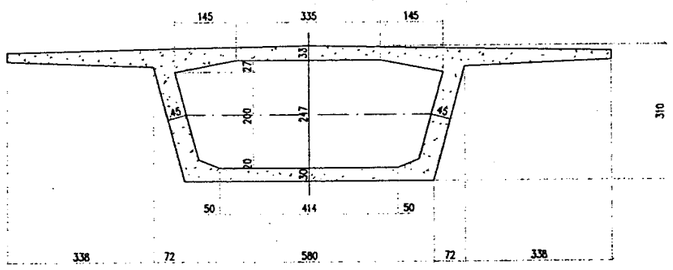
## ANTECEDENTES

El presente proyecto "Puente con cimbra de Avance en el Viaducto de Sant Joan" ha sido encargado por la empresa Fernández Constructor el 30/06/2003

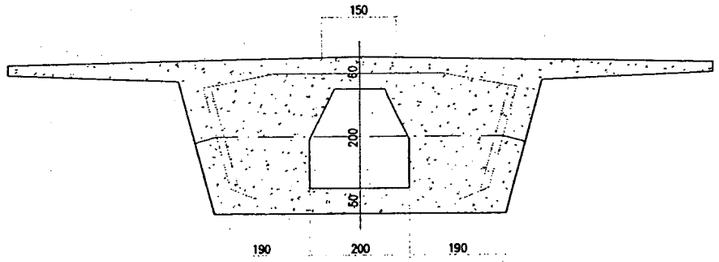
## DESCRIPCIÓN DE LA SOLUCIÓN

El viaducto esta formado por un tablero de una longitud total de 318 m.
Vanos: 1 x 33m + 6 x 42m + 1 x 33m
La sección del tablero tiene una ancho total de 14 m y una canto de 3,10 m.

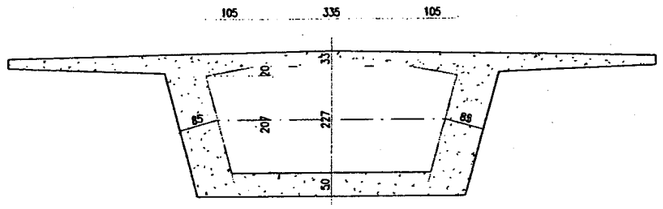
Sección Tipo I




Sección por Pila




Sección tipo II (hastial 60 y 85 cm)








## ACCIONES CONSIDERADAS

Los valores de cargas que se considerarán en los archivos de cálculo corresponderán a las acciones sobre un paquete de vigas de la cimbra de avance.

Un paquete de vigas está formado por dos vigas de celosía y sus correspondientes arriostrados.
La cimbra de avance está formada por dos paquetes y por consiguiente por cuatro vigas.

El cálculo se realizará para las diferentes posiciones de la cimbra de avance.

Las hipótesis de carga son las siguientes:

*HIPOTESIS DE PESO PROPIO:*

Vigas y arriostrados

El modelo de cálculo utilizado incorpora el peso de las barras.

Encofrado

El encofrado exterior pesa 5,5 t por mesa de 4,00 m

*SOBRECARGA DE HORMIGÓN:*

Se calcula con una densidad de 2.500 kg/m$^3$, las acciones que se transmiten a la cimbra se consideran siempre verticales, siendo el encofrado el encargado de absorber los esfuerzos horizontales derivados de los empujes del hormigón en estado fluido sobre el hastial del tablero.

La sección completa de hormigón tiene un área de 8,73 m$^2$

El hormigonado se realiza en dos fases;

Para el cálculo de la segunda fase de hormigonado se ha considerado que la primera fase colabora. Para ello se ha realizado un cálculo de rigideces tanto de la sección de la primera fase de hormigonado como de la cimbra.

RIGIDEZ HORMIGÓN
Tipo de hormigón tablero HP-50
$Eci = 10.000 ( f_{ck} + 8)^{1/3} = 387.088$ Kp/cm$^2$
s = 0,25
t = 2,5 días
$\beta_{cc}(t) = e^{s(1-(28/t)1/2)} = 0,556$
$\beta_E(t) = ( \beta_{cc}(t) )^{0,5} = 0,746$
$Eci(t) = \beta_E(t)\ Eci = 0,746 \cdot 387.088 =$ 288.681 Kp/cm$^2$
Inercia sección hormigón = 6,676 m$^4$
Rigidez hormigón = $E_H * I_H =$ $1,927 \cdot 10^{14}$ Kpcm$^2$

RIGIDEZ CIMBRA
$E_A =$ $2,1 \cdot 10^6$ Kp/cm$^2$
Inercía cimbra (2 paquetes de vigas) = 61.356.109 cm$^4$
Rigidez cimbra = $E_A * I_A =$ $1,288 \cdot 10^{14}$ Kpcm$^2$

Relación de rigideces Ac / Hor = 0,668

Ac + Hor = 1
Ac = 0,668 · Hor

Hor = 60 %
Ac = 40 %

Área primera fase = 5,664 $m^2$
Área segunda fase = 5,105 $m^2$

5,664 $m^2$ + 40% 5,105 $m^2$ = 5,664 + 2,043 = 7,707 $m^2$
**q** = 7,707 $m^2$ * 2,5 Tn/$m^2$ = 19,27 Tn/m

La sobrecarga de hormigón para el conjunto de la cimbra es de 19,27 t/m, resultando una sobrecarga de 4,82 t/m para cada viga.

Lo mismo se ha hecho para las diferentes secciones del tablero.

*SOBRECARGA DE PERSONAL/USO:*

Se considera una carga repartida de 150 kg/$m^2$ que actúa en el ámbito del encofrado repartidas sobre el fondo.

SC personal cimbra = 150 kg/$m^2$·5,6m = 840 kg/m
SC personal por viga = 840 kg/m / 4 = 210 kg/m

*SOBRECARGA DE VIENTO:*

Se considera una presión dinámica de 100 kg/$m^2$.

Para la estimación de las acciones transversales de viento se ha utilizado la IAP.

Se ha aplicado un coeficiente de arrastre para las vigas de celosía de 1,8 y para el encofrado se ha adoptado un valor de 1,3.

Las mesas de encofrado tienen una altura de 3,00m.

| PRESION VIENTO (Pw) | 100 kg/m2 |
|---|---|

| ENCOFRADO | ALTURA | Coef. Arrastre | F total cimbra | F por paquete |
|---|---|---|---|---|
| | 3,00 | 1,30 | 390 | 195,00 |

| ELEMENTO | AREA EXPUESTA (A) | COEFICIENTE DE ARRASTRE (Cd) | DISTANCIA ENTRE SUPERFICIES (d) | LONGITUD ELEMENTO OCULTADOR (L) | ALTURA ELEMENTO OCULTADOR (h) | AREA OCULTACION Ao=L·h | RELACION SOLIDEZ S=Ao/A | ESPACIAMIENTO RELATIVO E=d/h | COEFICIENTE DE OCULTAMIENTO n=f(S,E) | FUERZA VIGA A BARLOVENTO Fb=Cd·A·Pw | FUERZA VIGA A SOTAVENTO Fs=n·Cd·A·Pw | FUERZA TOTAL SOBRE PAQUETE F=Fb+Fs | FUERZA POR PLANO CORDON Fc=F/2 | FUERZA POR PLANO CORDON CON ENCOFRADO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | m2 | | m | m | m | m2 | | | | kg/m | kg/m | kg/m | kg/m | kg/m |
| Viga 12N | 14,739 | 1,8 | 2,4 | 12 | 3,69 | 44,28 | 0,33 | 0,65 | 0,37 | 221,09 | 81,80 | 302,89 | 151,44 | 346,44 |
| Viga 12E | 15,942 | 1,8 | 2,4 | 12 | 3,69 | 44,28 | 0,36 | 0,65 | 0,34 | 239,14 | 81,31 | 320,44 | 160,22 | 355,22 |
| Viga 12AT | 12,014 | 1,8 | 2,4 | 12 | 3,69 | 44,28 | 0,27 | 0,65 | 0,44 | 180,21 | 79,29 | 259,50 | 129,75 | 324,75 |
| Viga 9,6R | 16,927 | 1,8 | 2,4 | 9,6 | 3,69 | 35,424 | 0,48 | 0,65 | 0,2 | 317,38 | 63,48 | 380,86 | 190,43 | 385,43 |





Se ha repartido la acción del viento entre los dos cordones, de manera que al cordón superior le ha correspondido la carga tributaria de media superficie de viga y la correspondiente a las mesas de encofrado.

## COEFICIENTES DE PONDERACIÓN Y COMBINACIÓN DE ACCIONES

Los coeficientes de ponderación de acciones utilizados en el cálculo serán los definidos según la normativa NBE-EA-95.

CÁLCULO EN ESTADO LÍMITE ÚLTIMO

| | | |
|---|---|---|
| Coeficientes de ponderación: | Acciones constantes = | 1,33 |
| | Sobrecargas = | 1,50 – 1,33 |
| | Viento = | 1,50 – 1,33 |

CÁLCULO EN ESTADO LÍMITE DE SERVICIO

| | | |
|---|---|---|
| Coeficientes de ponderación: | Acciones constantes = | 1,00 |
| | Sobrecargas = | 1,00 |
| | Viento = | 1,00 |

## MOVIMIENTO DE LAS MÉNSULAS

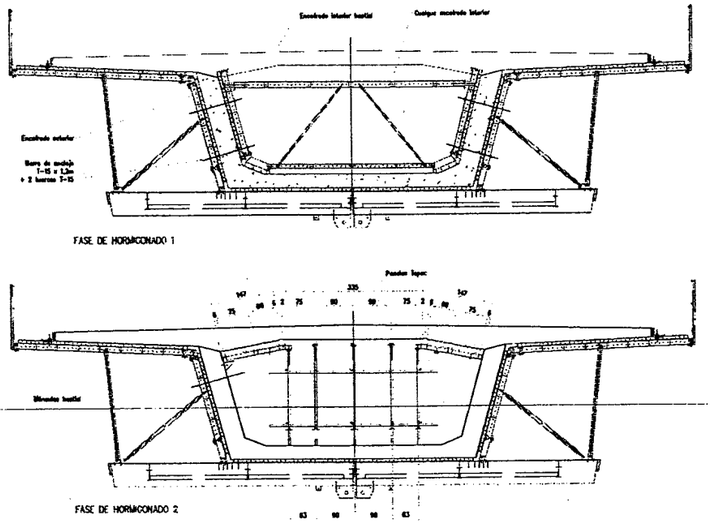
Para el avance de la cimbra después del hormigonado de una fase, se debe llevar siempre dos ménsulas por delante de la estructura. Este movimiento de las ménsulas de la pila que queda atrasada a la adelantado se realiza mediante grúa.
Se disponen de 6 ménsulas, 2 situadas en cada pila, y se realiza el avance de la cimbra en una fase hasta la nueva posición de hormigonado.

## POSICIÓN DE HORMIGONADO

Es esta posición, los paquetes de vigas, se encuentran apoyados en los cilindros de carga de la ménsula delantera y en el cuelgue de hormigonado.

## HORMIGONADO EN DOS FASES

El sistema de encofrado esta preparado para el hormigonado en dos fases: en la primera fase se hormigona la losa de fondo y los hastíales. En la segunda fase se hormigona la losa superior con las alas. Según el siguiente esquema:




La solución adoptada por MECANOTUBO consiste en dos encofrados exteriores partidos por la mitad en el fondo del tablero (para que se puedan ripar transversalmente). Un encofrado interior para los hastíales que se unen mediante barras al encofrado exterior y un encofrado de techo para la segunda fase de hormigonado.
Las cargas debidas al hormigonado son transmitidas al portaencofrado mediante unas cerchas (ala y hastial) y en el fondo del tablero van directamente al portaencofrado.

El encofrado esta compuesto por los siguientes elementos:

Paneles de encofrado EPT83 que incluyen una piel metálica de 3mm y dos carreras formadas por DUPN 140 todo esto va cogido al portaencofrado formando módulos de 4 y 2m.

Para el cálculo de la segunda fase de hormigonado se ha considerado que la primera fase colabora. Para ello se ha realizado un cálculo de rigideces tanto de la sección de la primera fase de hormigonado como de la cimbra.



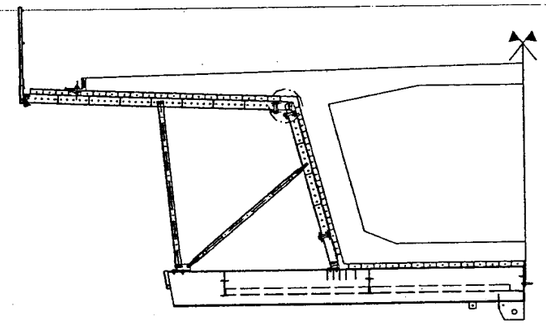


## CALCULO DEL ENCOFRADO

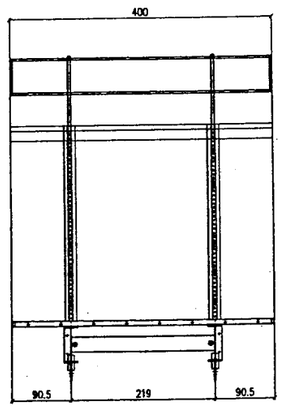
### ENCOFRADO EXTERIOR

MÓDULOS DE ALA

Los módulos de ala están formados por el encofrado ETP83 (paneles metálicos) y por los elementos metálicos encargados de sustentar los paneles, dar forma al encofrado y transmitir las cargas al portaencofrado. El esquema del módulo de encofrado de alas transversal y longitudinalmente es el siguiente:



Alzado transversal del módulo de encofrado de alas.




Alzado lateral del módulo genérico de 4,00 m

El cálculo del conjunto se ha realizado con el programa de cálculo CYPE.

Las cargas aplicadas a lo largo del tablero corresponde a la zona de influencia de cada cercha, por ser el caso genérico de dos cerchas en un módulo de 4 m, a cada cercha le corresponde una banda de carga de 2 m + 10 cm de tapajuntas entre Módulos = 2,10m.

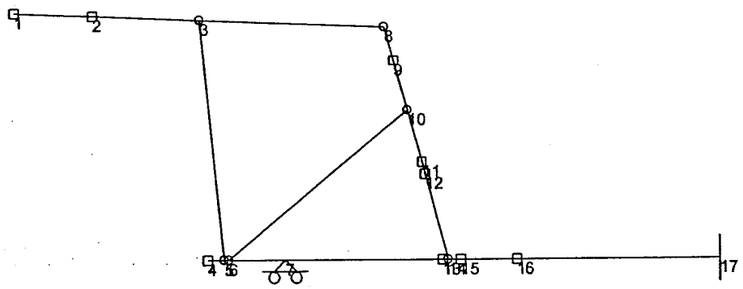
*MODULO TIPO 1 Ancho de Banda 2,10m*

*1ª Fase*

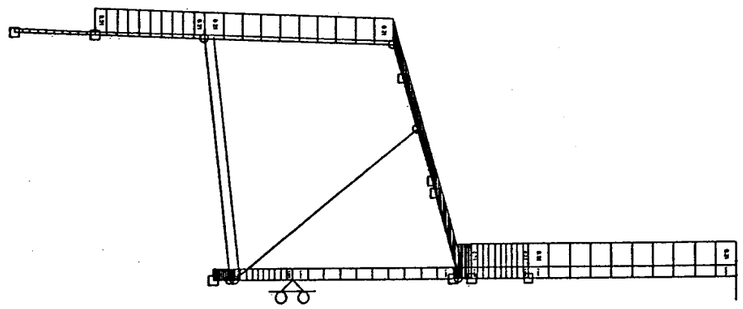
Encofrado de ala: Tablero de alas.

- Numeración de Nudos
- Cargas

Nudos



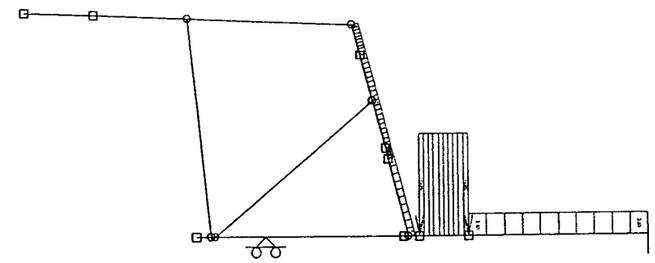

Peso Propio



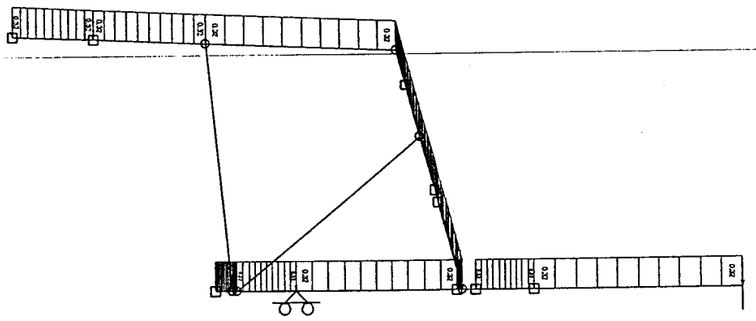




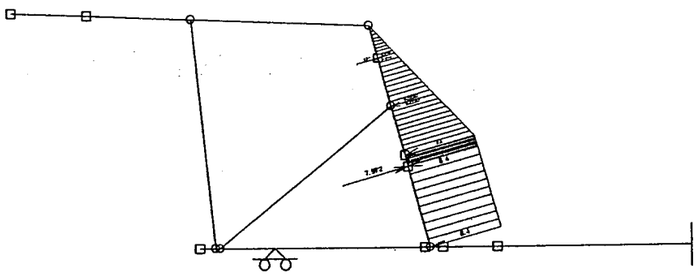
Hormigón



SCU



Presión



Tensión máxima: 3010 kp/cm$^2$ en portaencofrado S355

## Listado de Cype

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FICHERO:          R:\En Curso 2003\15245 AVE -Sant Llorenc -AVA\V.-Rierussa\Calculos\Encofrado\ab210\zeta_1_FASE.EM3
DESCRIPCION:      ZETA AB210
##########################################################
```

| NUDOS | | REACCIONES (EJES GENERALES) | | | | | |
|---|---|---|---|---|---|---|---|
| | | RX(Tn) | RY(Tn) | RZ(Tn) | MX(Tn·m) | MY(Tn·m) | MZ(Tn·m) |
| 7 | | | | | | | |
| | HIPOTESIS 1: PP 1 (Peso propio) | 0.0000 | 0.0000 | 2.7139 | 0.0000 | 0.0000 | 0.0000 |
| | HIPOTESIS 2: SC 1 (S.C.U.) | 0.0000 | 0.0000 | 3.9656 | 0.0000 | 0.0000 | 0.0000 |
| | HIPOTESIS 3: SC 2 (HORMIGON) | 0.0000 | 0.0000 | 14.3831 | 0.0000 | 0.0000 | 0.0000 |
| | HIPOTESIS 4: SC 3 (PRESION) | 0.0000 | 0.0000 | 1.3947 | 0.0000 | 0.0000 | 0.0000 |
| 17 | | | | | | | |
| | HIPOTESIS 1: PP 1 (Peso propio) | 0.0000 | 0.0000 | 0.0000 | 0.0000 | -3.7255 | 0.0000 |
| | HIPOTESIS 2: SC 1 (S.C.U.) | 0.0000 | 0.0000 | 0.0000 | 0.0000 | -3.5133 | 0.0000 |
| | HIPOTESIS 3: SC 2 (HORMIGON) | 2.0480 | 0.0000 | 0.0000 | 0.0000 | -38.1607 | 0.0000 |
| | HIPOTESIS 4: SC 3 (PRESION) | 5.0662 | 0.0000 | 0.0000 | 0.0000 | -0.4139 | 0.0000 |

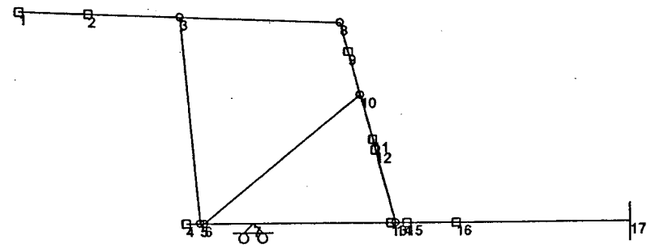
| BARRAS | TENSIÓN MÁXIMA | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | TENS.(Tn/cm2) | APROV.(%) | POS.(m) | N(Tn) | Ty(Tn) | Tz(Tn) | Mt(Tn·m) | My(Tn·m) | Mz(Tn·m) |
| 2/1 | 0.1214 | 4.67 | 0.000 | -0.0188 | 0.0000 | -0.4672 | 0.0000 | -0.2090 | 0.0000 |
| 3/2 | 0.7849 | 30.19 | 0.000 | -0.0571 | 0.0000 | -1.4327 | 0.0000 | -1.3537 | 0.0000 |
| 5/3 | 0.7668 | 29.49 | 0.996 | -2.9598 | 0.0000 | -0.0003 | 0.0000 | 0.0007 | 0.0000 |
| 8/3 | 0.7920 | 30.46 | 2.064 | 0.3642 | 0.0000 | 1.4827 | 0.0000 | -1.3537 | 0.0000 |
| 4/5 | 0.0034 | 0.09 | 0.182 | 0.0000 | 0.0000 | 0.1120 | 0.0000 | -0.0102 | 0.0000 |
| 5/6 | 0.0941 | 2.60 | 0.051 | -0.3050 | 0.0000 | 3.0959 | 0.0000 | -0.1673 | 0.0000 |
| 6/7 | 0.3071 | 8.48 | 0.627 | 4.2177 | 0.0000 | 7.2003 | 0.0000 | -4.5610 | 0.0000 |
| 6/10 | 1.4765 | 56.79 | 1.288 | -5.8482 | 0.0000 | 0.0000 | 0.0000 | 0.0055 | 0.0000 |
| 7/13 | 1.8112 | 50.00 | 1.750 | 4.2177 | 0.0000 | -24.9476 | 0.0000 | 40.0394 | 0.0000 |
| 9/8 | 0.2223 | 8.55 | 0.000 | -0.3677 | 0.0000 | -1.4746 | 0.0000 | -0.3086 | 0.0000 |
| 10/9 | 0.5856 | 22.52 | 0.000 | -0.8170 | 0.0000 | -1.6938 | 0.0000 | -0.9760 | 0.0000 |
| 11/10 | 0.6862 | 26.39 | 0.351 | 0.5644 | 0.0000 | 0.0406 | 0.0000 | 1.1623 | 0.0000 |
| 12/11 | 0.5900 | 22.69 | 0.000 | 0.4548 | 0.0000 | -5.6620 | 0.0000 | -0.1507 | 0.0000 |
| 14/12 | 0.9645 | 37.10 | 0.485 | 1.4452 | 0.0000 | 0.0484 | 0.0000 | 1.6060 | 0.0000 |
| 13/14 | 1.8693 | 51.61 | 0.064 | 4.2177 | 0.0000 | -24.9082 | 0.0000 | 41.6347 | 0.0000 |
| 14/15 | 2.0161 | 55.66 | 0.136 | 10.6713 | 0.0000 | -23.3238 | 0.0000 | 44.8106 | 0.0000 |
| 15/16 | 2.4736 | 68.29 | 0.630 | 10.6713 | 0.0000 | -10.9856 | 0.0000 | 55.6181 | 0.0000 |
| 16/17 | 3.0096 | 83.09 | 2.270 | 10.6713 | 0.0000 | 0.0000 | 0.0000 | 68.0868 | 0.0000 |

*2ª Fase*

Encofrado de ala: Tablero de alas.

- Numeración de Nudos
- Cargas

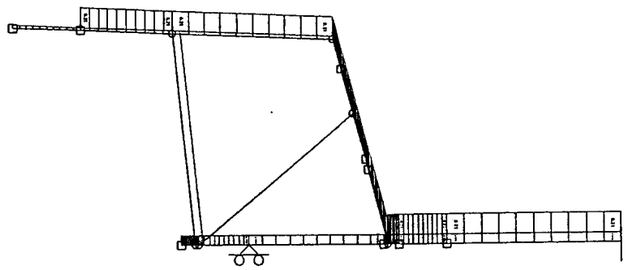
Nudos



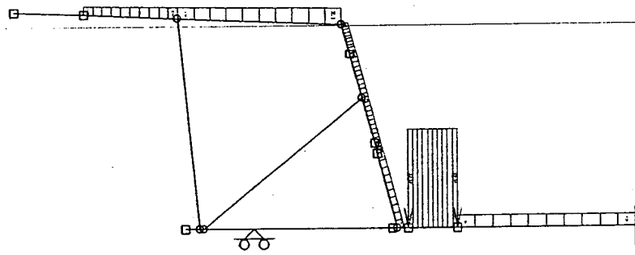




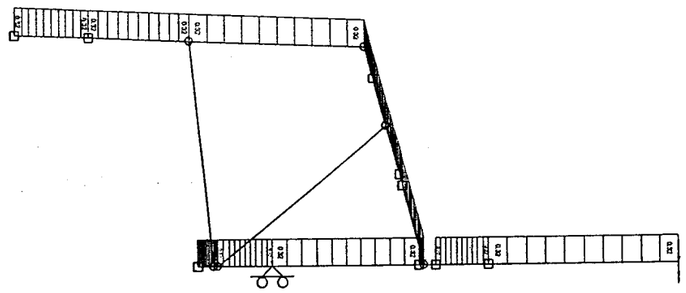

Peso Propio



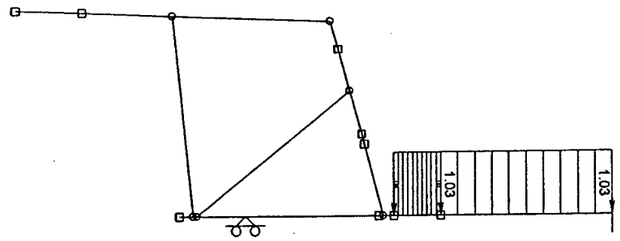
Hormigón



SCU



Losa Superior




Tensión máxima: 2865 kp/cm$^2$ en portaencofrado S355

## Listado de Cype

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DESCRIPCION:      ZETA AB210
##############################################################
```

| NUDOS | REACCIONES (EJES GENERALES) | | | | | |
|---|---|---|---|---|---|---|
| | RX(Tn) | RY(Tn) | RZ(Tn) | MX(Tn·m) | MY(Tn·m) | MZ(Tn·m) |
| 7 | | | | | | |
| HIPOTESIS 1: PP 1 (Peso propio) | 0.0000 | 0.0000 | 2.7139 | 0.0000 | 0.0000 | 0.0000 |
| HIPOTESIS 2: SC 1 (S.C.U.) | 0.0000 | 0.0000 | 3.1099 | 0.0000 | 0.0000 | 0.0000 |
| HIPOTESIS 3: SC 2 (HORMIGON) | 0.0000 | 0.0000 | 17.0970 | 0.0000 | 0.0000 | 0.0000 |
| HIPOTESIS 4: SC 3 (PRESION) | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HIPOTESIS 5: SC 4 (Losa Superior) | 0.0000 | 0.0000 | 2.9870 | 0.0000 | 0.0000 | 0.0000 |
| 17 | | | | | | |
| HIPOTESIS 1: PP 1 (Peso propio) | 0.0000 | 0.0000 | 0.0000 | 0.0000 | -3.7255 | 0.0000 |
| HIPOTESIS 2: SC 1 (S.C.U.) | 0.0000 | 0.0000 | 0.0000 | 0.0000 | -3.1051 | 0.0000 |
| HIPOTESIS 3: SC 2 (HORMIGON) | 2.0480 | 0.0000 | 0.0000 | 0.0000 | -27.4819 | 0.0000 |
| HIPOTESIS 4: SC 3 (PRESION) | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HIPOTESIS 5: SC 4 (Losa Superior) | 0.0000 | 0.0000 | 0.0000 | 0.0000 | -10.1558 | 0.0000 |

| BARRAS | TENSIÓN MÁXIMA | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | TENS.(Tn/cm2) | APROV.(%) | POS.(m) | N(Tn) | Ty(Tn) | Tz(Tn) | Mt(Tn·m) | My(Tn·m) | Mz(Tn·m) |
| 2/1 | 0.1214 | 4.67 | 0.000 | -0.0188 | 0.0000 | -0.4672 | 0.0000 | -0.2090 | 0.0000 |
| 3/2 | 1.5262 | 58.70 | 0.000 | -0.1460 | 0.0000 | -3.6631 | 0.0000 | -2.6303 | 0.0000 |
| 5/3 | 2.1696 | 83.45 | 0.996 | -8.4112 | 0.0000 | -0.0003 | 0.0000 | 0.0007 | 0.0000 |
| 8/3 | 1.5475 | 59.52 | 2.064 | 1.0529 | 0.0000 | 4.6479 | 0.0000 | -2.6303 | 0.0000 |
| 4/5 | 0.0007 | 0.02 | 0.182 | 0.0000 | 0.0000 | 0.0246 | 0.0000 | -0.0022 | 0.0000 |
| 5/6 | 0.2555 | 7.06 | 0.051 | -0.8674 | 0.0000 | 8.4064 | 0.0000 | -0.4308 | 0.0000 |
| 6/7 | 0.5084 | 14.04 | 0.627 | 3.5830 | 0.0000 | 12.1504 | 0.0000 | -8.0225 | 0.0000 |
| 7/13 | 1.7362 | 47.93 | 1.750 | 3.5830 | 0.0000 | -26.0133 | 0.0000 | 37.7078 | 0.0000 |
| 9/8 | 0.4475 | 17.21 | 0.000 | -2.3941 | 0.0000 | -2.0211 | 0.0000 | -0.6702 | 0.0000 |
| 10/9 | 1.2724 | 48.94 | 0.000 | -2.8458 | 0.0000 | -2.8331 | 0.0000 | -2.0730 | 0.0000 |
| 11/10 | 1.2126 | 46.64 | 0.585 | -0.5162 | 0.0000 | 2.4203 | 0.0000 | -2.0730 | 0.0000 |
| 12/11 | 0.5439 | 20.92 | 0.139 | -0.9704 | 0.0000 | 1.5929 | 0.0000 | -0.8990 | 0.0000 |
| 14/12 | 0.4301 | 16.54 | 0.970 | -1.0762 | 0.0000 | 1.3977 | 0.0000 | -0.6912 | 0.0000 |
| 13/14 | 1.7961 | 49.59 | 0.064 | 3.5830 | 0.0000 | -26.0047 | 0.0000 | 39.3724 | 0.0000 |
| 14/15 | 1.8909 | 52.21 | 0.136 | 3.0720 | 0.0000 | -24.1950 | 0.0000 | 42.6667 | 0.0000 |
| 15/16 | 2.3331 | 64.42 | 0.630 | 3.0720 | 0.0000 | -10.8835 | 0.0000 | 53.7165 | 0.0000 |
| 16/17 | 2.8642 | 79.08 | 2.270 | 3.0720 | 0.0000 | 0.0000 | 0.0000 | 66.0692 | 0.0000 |





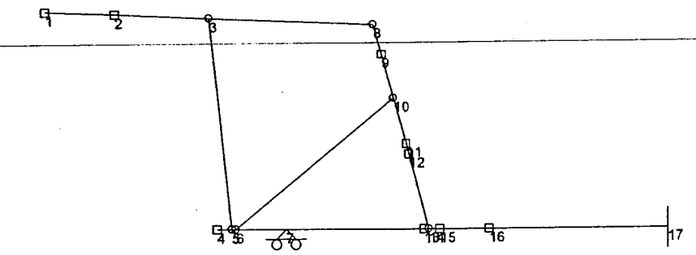
*MODULO TIPO 2 Ancho de Banda 1,25*

*1ª Fase*

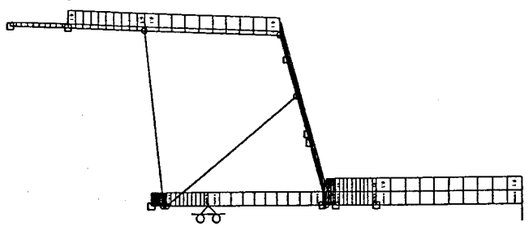
Encofrado de ala: Tablero de alas.

- Numeración de Nudos
- Cargas

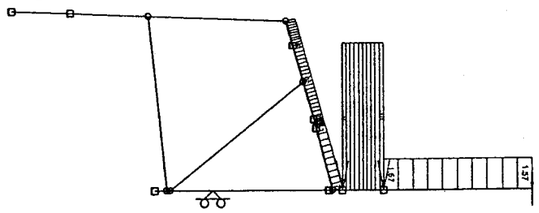
Nudos



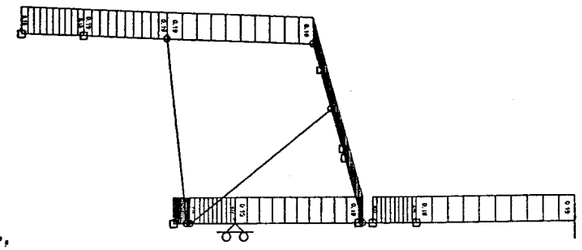

Peso Propio



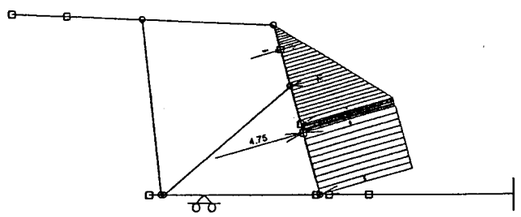
Hormigón



SCU



Presion




Tensión máxima: 3010 kp/cm$^2$ en portaencofrado S355

**Listado de Cype**

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FICHERO:        R:\En Curso 2003\15245 AVE -Sant Llorenc -AVA\V.-Rierussa\Calculos\Encofrado\ab125\zeta_1_FASE.EM3
DESCRIPCION:    ZETA AB210
##############################################################
```

| NUDOS | | REACCIONES (EJES GENERALES) | | | | | |
|---|---|---|---|---|---|---|---|
| | | RX(Tn) | RY(Tn) | RZ(Tn) | MX(Tn·m) | MY(Tn·m) | MZ(Tn·m) |
| 7 | | | | | | | |
| | HIPOTESIS 1: PP 1 (Peso propio) | 0.0000 | 0.0000 | 1.7284 | 0.0000 | 0.0000 | 0.0000 |
| | HIPOTESIS 2: SC 1 (S.C.U.) | 0.0000 | 0.0000 | 2.3545 | 0.0000 | 0.0000 | 0.0000 |
| | HIPOTESIS 3: SC 2 (HORMIGON) | 0.0000 | 0.0000 | 8.5764 | 0.0000 | 0.0000 | 0.0000 |
| | HIPOTESIS 4: SC 3 (PRESION) | 0.0000 | 0.0000 | 0.8279 | 0.0000 | 0.0000 | 0.0000 |
| 17 | | | | | | | |
| | HIPOTESIS 1: PP 1 (Peso propio) | 0.0000 | 0.0000 | 0.0000 | 0.0000 | -2.3738 | 0.0000 |
| | HIPOTESIS 2: SC 1 (S.C.U.) | 0.0000 | 0.0000 | 0.0000 | 0.0000 | -2.0860 | 0.0000 |
| | HIPOTESIS 3: SC 2 (HORMIGON) | 1.2288 | 0.0000 | 0.0000 | 0.0000 | -22.7490 | 0.0000 |
| | HIPOTESIS 4: SC 3 (PRESION) | 3.0073 | 0.0000 | 0.0000 | 0.0000 | -0.2563 | 0.0000 |

| BARRAS | TENSIÓN MÁXIMA | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | TENS.(Tn/cm2) | APROV.(%) | POS.(m) | N(Tn) | Ty(Tn) | Tz(Tn) | Mt(Tn·m) | My(Tn·m) | Mz(Tn·m) |
| 2/1 | 0.0761 | 2.93 | 0.000 | -0.0118 | 0.0000 | -0.2929 | 0.0000 | -0.1310 | 0.0000 |
| 3/2 | 0.4743 | 18.24 | 0.000 | -0.0338 | 0.0000 | -0.8474 | 0.0000 | -0.8180 | 0.0000 |
| 5/3 | 0.4557 | 17.53 | 0.996 | -1.7508 | 0.0000 | -0.0003 | 0.0000 | 0.0007 | 0.0000 |
| 8/3 | 0.4785 | 18.40 | 2.064 | 0.2151 | 0.0000 | 0.8713 | 0.0000 | -0.8180 | 0.0000 |
| 4/5 | 0.0023 | 0.06 | 0.182 | 0.0000 | 0.0000 | 0.0765 | 0.0000 | -0.0070 | 0.0000 |
| 5/6 | 0.0562 | 1.55 | 0.051 | -0.1803 | 0.0000 | 1.8479 | 0.0000 | -0.1007 | 0.0000 |
| 6/7 | 0.1836 | 5.07 | 0.627 | 2.4947 | 0.0000 | 4.3153 | 0.0000 | -2.7238 | 0.0000 |
| 6/10 | 0.8891 | 34.20 | 1.288 | -3.4590 | 0.0000 | 0.0000 | 0.0000 | 0.0055 | 0.0000 |
| 7/13 | 1.0835 | 29.91 | 1.750 | 2.4947 | 0.0000 | -14.8864 | 0.0000 | 23.9708 | 0.0000 |
| 9/8 | 0.1301 | 5.00 | 0.000 | -0.1907 | 0.0000 | -0.8686 | 0.0000 | -0.1806 | 0.0000 |
| 10/9 | 0.3439 | 13.23 | 0.000 | -0.4488 | 0.0000 | -1.0021 | 0.0000 | -0.5745 | 0.0000 |
| 11/10 | 0.4135 | 15.90 | 0.351 | 0.3514 | 0.0000 | 0.0118 | 0.0000 | 0.6998 | 0.0000 |
| 12/11 | 0.3522 | 13.55 | 0.000 | 0.2919 | 0.0000 | -3.3812 | 0.0000 | -0.0875 | 0.0000 |
| 14/12 | 0.5759 | 22.15 | 0.485 | 0.8923 | 0.0000 | 0.0260 | 0.0000 | 0.9576 | 0.0000 |
| 13/14 | 1.1182 | 30.87 | 0.064 | 2.4947 | 0.0000 | -14.8595 | 0.0000 | 24.9226 | 0.0000 |
| 14/15 | 1.2066 | 33.31 | 0.136 | 6.3541 | 0.0000 | -13.9620 | 0.0000 | 26.8239 | 0.0000 |
| 15/16 | 1.4808 | 40.88 | 0.630 | 6.3541 | 0.0000 | -6.6016 | 0.0000 | 33.3014 | 0.0000 |
| 16/17 | 1.8029 | 49.78 | 2.270 | 6.3541 | 0.0000 | 0.0000 | 0.0000 | 40.7942 | 0.0000 |



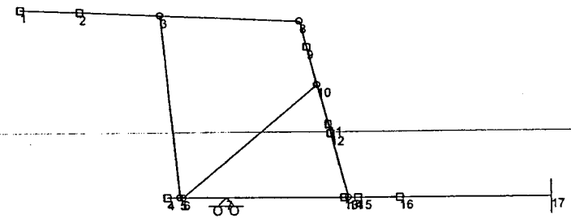


*2ª Fase*

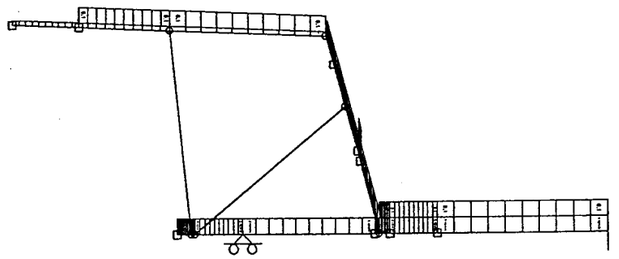
Encofrado de ala: Tablero de alas.

- Numeración de Nudos
- Cargas

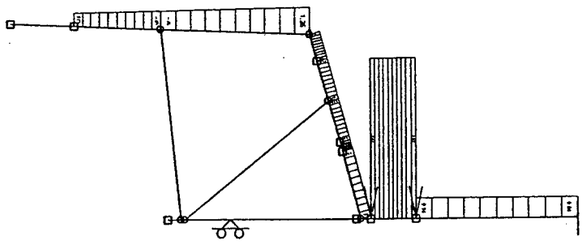
Nudos



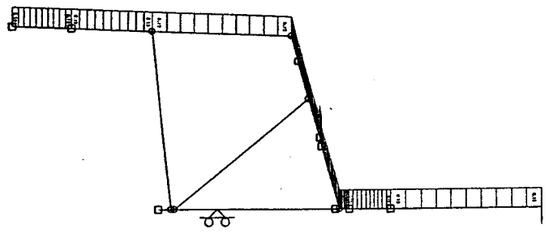

Peso Propio



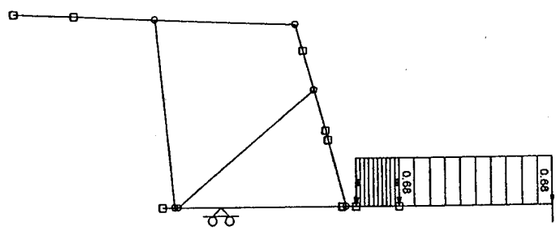
Hormigón



SCU



Losa Superior




Tensión máxima: 1765 kp/cm$^2$ en portaencofrado S355

## Listado de Cype

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                    15:15:48, 21/07/2003
FICHERO:            R:\En Curso 2003\15245 AVE -Sant Llorenc -AVA\V.-Rierussa\Calculos\Encofrado\ab125\zeta_2_fase.EM3
DESCRIPCION:        ZETA AB210
##############################################################
```

| NUDOS | | REACCIONES (EJES GENERALES) | | | | | |
|---|---|---|---|---|---|---|---|
| | | RX(Tn) | RY(Tn) | RZ(Tn) | MX(Tn·m) | MY(Tn·m) | MZ(Tn·m) |
| 7 | | | | | | | |
| | HIPOTESIS 1: PP 1 (Peso propio) | 0.0000 | 0.0000 | 1.7436 | 0.0000 | 0.0000 | 0.0000 |
| | HIPOTESIS 2: SC 1 (S.C.U.) | 0.0000 | 0.0000 | 1.8904 | 0.0000 | 0.0000 | 0.0000 |
| | HIPOTESIS 3: SC 2 (HORMIGON) | 0.0000 | 0.0000 | 10.2048 | 0.0000 | 0.0000 | 0.0000 |
| | HIPOTESIS 4: SC 3 (PRESION) | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| | HIPOTESIS 5: SC 4 (Losa Superior) | 0.0000 | 0.0000 | 1.9720 | 0.0000 | 0.0000 | 0.0000 |
| 17 | | | | | | | |
| | HIPOTESIS 1: PP 1 (Peso propio) | 0.0000 | 0.0000 | 0.0000 | 0.0000 | -2.3973 | 0.0000 |
| | HIPOTESIS 2: SC 1 (S.C.U.) | 0.0000 | 0.0000 | 0.0000 | 0.0000 | -1.9201 | 0.0000 |
| | HIPOTESIS 3: SC 2 (HORMIGON) | 1.2288 | 0.0000 | 0.0000 | 0.0000 | -16.3902 | 0.0000 |
| | HIPOTESIS 4: SC 3 (PRESION) | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| | HIPOTESIS 5: SC 4 (Losa Superior) | 0.0000 | 0.0000 | 0.0000 | 0.0000 | -6.7048 | 0.0000 |

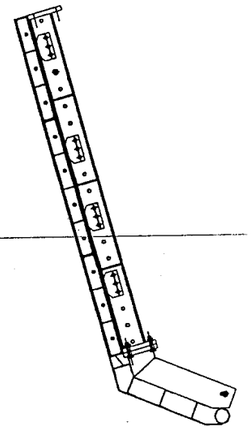
| BARRAS | TENSIÓN MÁXIMA | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | TENS.(Tn/cm2) | APROV.(%) | POS.(m) | N(Tn) | Ty(Tn) | Tz(Tn) | Mt(Tn·m) | My(Tn·m) | Mz(Tn·m) |
| 2/1 | 0.0761 | 2.93 | 0.000 | -0.0118 | 0.0000 | -0.2929 | 0.0000 | -0.1310 | 0.0000 |
| 3/2 | 0.9187 | 35.33 | 0.000 | -0.0871 | 0.0000 | -2.1839 | 0.0000 | -1.5833 | 0.0000 |
| 5/3 | 1.2949 | 49.80 | 0.996 | -5.0121 | 0.0000 | -0.0003 | 0.0000 | 0.0007 | 0.0000 |
| 8/3 | 0.9313 | 35.82 | 2.064 | 0.6270 | 0.0000 | 2.7628 | 0.0000 | -1.5833 | 0.0000 |
| 4/5 | 0.0007 | 0.02 | 0.182 | 0.0000 | 0.0000 | 0.0246 | 0.0000 | -0.0022 | 0.0000 |
| 5/6 | 0.1528 | 4.22 | 0.051 | -0.5167 | 0.0000 | 5.0254 | 0.0000 | -0.2584 | 0.0000 |
| 6/7 | 0.3048 | 8.42 | 0.627 | 2.1344 | 0.0000 | 7.2946 | 0.0000 | -4.8055 | 0.0000 |
| 6/10 | 0.8815 | 33.90 | 1.288 | -3.4281 | 0.0000 | 0.0000 | 0.0000 | 0.0055 | 0.0000 |
| 7/13 | 1.0664 | 29.44 | 1.750 | 2.1344 | 0.0000 | -15.8887 | 0.0000 | 23.2068 | 0.0000 |
| 9/8 | 0.2644 | 10.17 | 0.000 | -1.3963 | 0.0000 | -1.1977 | 0.0000 | -0.3968 | 0.0000 |
| 10/9 | 0.7535 | 28.98 | 0.000 | -1.6558 | 0.0000 | -1.6819 | 0.0000 | -1.2290 | 0.0000 |
| 11/10 | 0.7180 | 27.62 | 0.585 | -0.2723 | 0.0000 | 1.4465 | 0.0000 | -1.2290 | 0.0000 |
| 12/11 | 0.3180 | 12.23 | 0.139 | -0.5332 | 0.0000 | 0.9534 | 0.0000 | -0.5270 | 0.0000 |
| 14/12 | 0.2513 | 9.67 | 0.970 | -0.6397 | 0.0000 | 0.8243 | 0.0000 | -0.4034 | 0.0000 |
| 13/14 | 1.1030 | 30.45 | 0.064 | 2.1344 | 0.0000 | -15.8801 | 0.0000 | 24.2234 | 0.0000 |
| 14/15 | 1.1613 | 32.06 | 0.136 | 1.8432 | 0.0000 | -14.7748 | 0.0000 | 26.2379 | 0.0000 |
| 15/16 | 1.4341 | 39.59 | 0.630 | 1.8432 | 0.0000 | -6.7718 | 0.0000 | 33.0251 | 0.0000 |
| 16/17 | 1.7645 | 48.72 | 2.270 | 1.8432 | 0.0000 | 0.0000 | 0.0000 | 40.7111 | 0.0000 |





**ENCOFRADO INTERIOR**

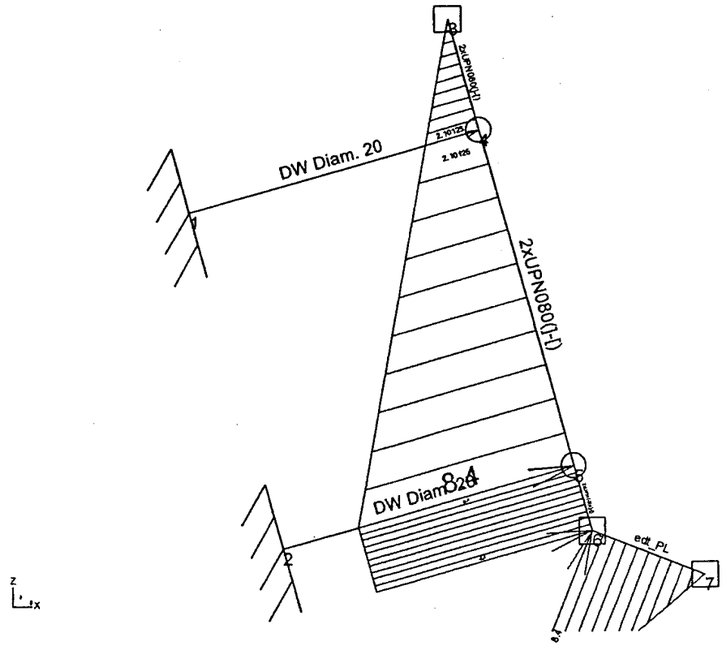
Los módulos de encofrado interior tienen una estructura similar a los módulos de encofrado exterior en cuanto a la disposición de los elementos, y son idénticos en cuanto a los materiales utilizados; paneles metalicos ETP 83 y carreras DUPN 140 .



Los cálculos por ordenador se realizan con el programa Metal 3D de Cype Ingenieros S.A.

Se han aplicado los factores de mayoración de cargas, minoración de materiales y combinación de acciones según EA-95.

## Cargas (Ancho de Banda 2,10m)



## Listado de Cype

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                08:34:56, 31/07/2003
FICHERO:        R:\En Curso 2003\15245 AVE -Sant Llorenc -AVA\V.-Rierussa\Calculos\Encofrado\ab210\int.210.EM3
DESCRIPCION:    Encofrado interior AB210
##########################################################
```

| BARRAS | TENSIÓN MÁXIMA | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | TENS.(Tn/cm2) | APROV.(%) | POS.(m) | N(Tn) | Ty(Tn) | Tz(Tn) | Mt(Tn·m) | My(Tn·m) | Mz(Tn·m) |
| 4/3 | 0.2145 | 8.25 | 0.000 | -0.0072 | 0.0000 | 0.6828 | 0.0000 | 0.0987 | 0.0000 |
| 5/4 | 2.5782 | 99.16 | 0.000 | -1.1568 | 0.0000 | 7.0593 | 0.0000 | 1.2808 | 0.0000 |
| 6/5 | 2.5224 | 97.02 | 0.251 | -2.2957 | 0.0000 | -4.9173 | 0.0000 | 1.2808 | 0.0000 |
| 7/6 | 1.2387 | 47.64 | 0.460 | 0.0020 | 0.0000 | -2.8928 | 0.0000 | 0.4431 | 0.0000 |





## CALCULO DE LA CIMBRA

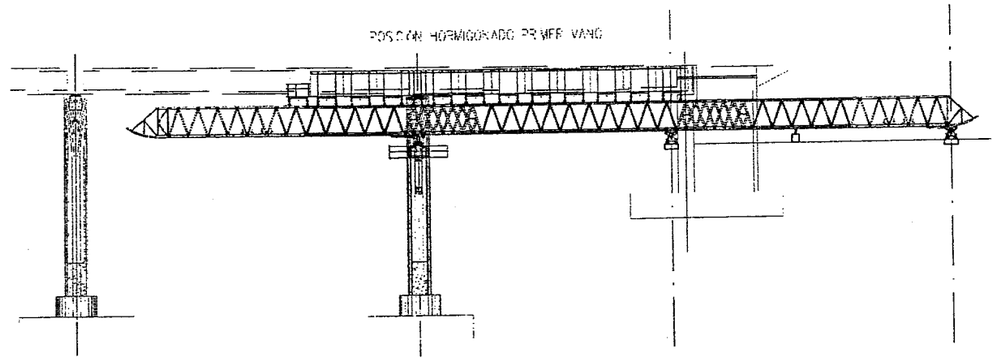
### PRIMER VANO

Para el montaje de la cimbra en este viaducto se ha contado con una explanada por detrás del estribo, por lo que la posición de la cimbra en el primer vano es igual que para la posición de hormigonado tipo, exceptuando la colocación de una mesa especial en la zona de estribo.

*Posición de hormigonado*: la cimbra apoya por detrás sobre los cilindros de carga que están en el mismo eje de estribo y el apoyo delantero sobre los cilindros que se encuentran en los bastidores de la pila.

*Posición de avance*: la cimbra apoya y avanza sobre los mismos bastidores de giro, el de detrás que se encuentra más adelantado que el eje de estribo y el de delante en la pila.

El esquema del vano 1 es el siguiente :



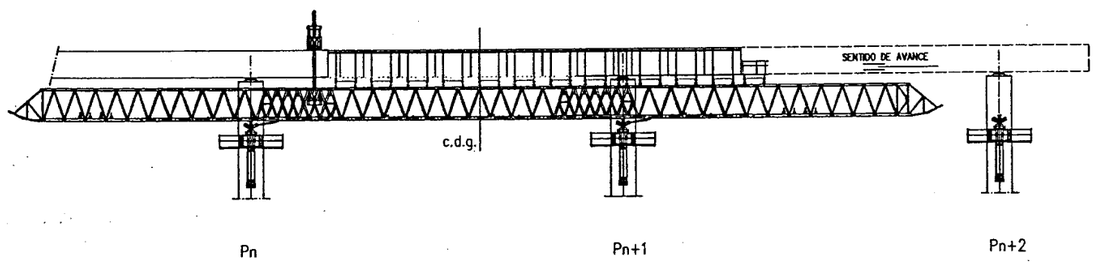
**VANO TIPO**

Es el vano genérico

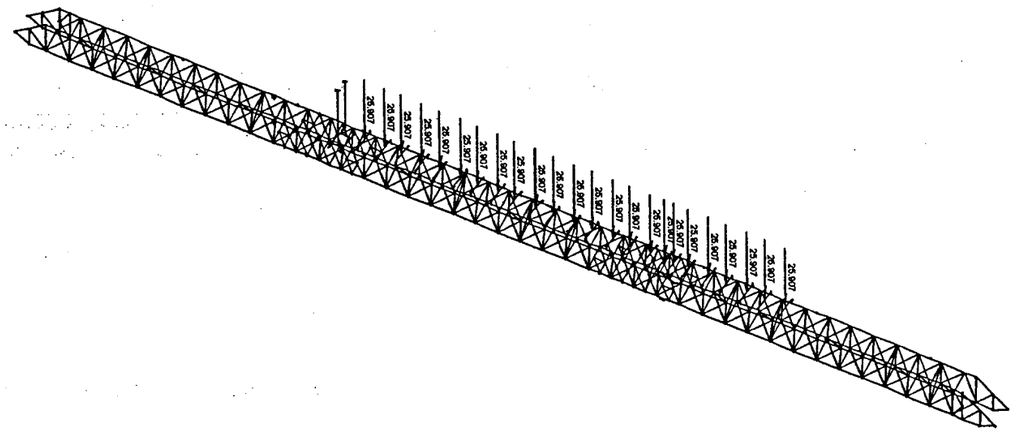
*Posición de hormigonado*: La cimbra de avance apoyada sobre los bastidores de giro que están apoyados sobre la ménsula que se haya en la pila pn+1 y se apoya en el tablero ya realizado mediante el cuelgue.

*Posición de avance*: La cimbra descansa en las ménsulas de las pilas Pn y Pn+1

El esquema del vano genérico es el siguiente :



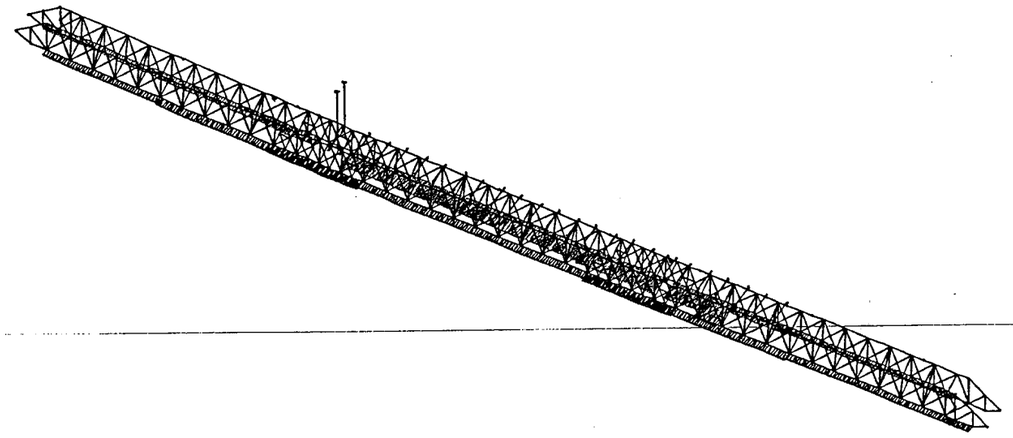

***CIMBRA EN POSICIÓN DE HORMIGONADO***



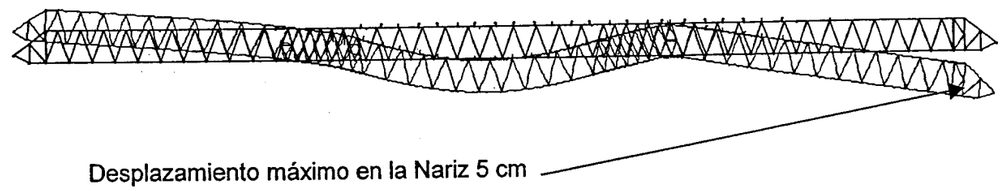





Cargas de Viento



Deformada




## Listado de Cype

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                  16:39:27, 23/07/2003
FICHERO:          R:\En Curso 2003\15245 AVE -Sant Llorenc -AVA\V.St.Joan\Calculos\CIMBRA\hormigon\3D_horm_a.EM3
DESCRIPCION:      Fernandez constructor
##############################################################
```

| NUDOS | | REACCIONES (EJES GENERALES) | | | | | |
|---|---|---|---|---|---|---|---|
| | | RX(Tn) | RY(Tn) | RZ(Tn) | MX(Tn·m) | MY(Tn·m) | MZ(Tn·m) |
| 52 | | | | | | | |
| | HIPOTESIS 1: PP 1 (Peso propio) | 0.0000 | -0.1033 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| | HIPOTESIS 2: SC 1 (hormigon) | 0.0000 | 0.0509 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| | HIPOTESIS 3: V 1 (Sobrecarga de viento 1) | 0.0000 | -7.0549 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 53 | | | | | | | |
| | HIPOTESIS 1: PP 1 (Peso propio) | 0.0000 | 0.1526 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| | HIPOTESIS 2: SC 1 (hormigon) | 0.0000 | 0.1639 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| | HIPOTESIS 3: V 1 (Sobrecarga de viento 1) | 0.0000 | -8.7038 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 94 | | | | | | | |
| | HIPOTESIS 1: PP 1 (Peso propio) | 0.0000 | 0.0025 | 34.0485 | 0.0176 | 0.0000 | 0.0000 |
| | HIPOTESIS 2: SC 1 (hormigon) | 0.0000 | 0.0112 | 85.7690 | 0.0781 | 0.0000 | 0.0000 |
| | HIPOTESIS 3: V 1 (Sobrecarga de viento 1) | 0.0000 | -0.1678 | -0.4441 | -1.1746 | 0.0001 | 0.0000 |
| 96 | | | | | | | |
| | HIPOTESIS 1: PP 1 (Peso propio) | 0.0000 | 0.0026 | 33.4722 | 0.0184 | 0.0000 | 0.0000 |
| | HIPOTESIS 2: SC 1 (hormigon) | 0.0000 | 0.0114 | 86.2520 | 0.0800 | 0.0000 | 0.0000 |
| | HIPOTESIS 3: V 1 (Sobrecarga de viento 1) | 0.0000 | -0.1678 | 0.4441 | -1.1747 | -0.0001 | 0.0000 |
| 268 | | | | | | | |
| | HIPOTESIS 1: PP 1 (Peso propio) | 0.0000 | 0.1566 | 32.1708 | 0.0000 | 0.0000 | 0.0000 |
| | HIPOTESIS 2: SC 1 (hormigon) | 0.0000 | 0.3278 | 224.5755 | 0.0000 | 0.0000 | 0.0000 |
| | HIPOTESIS 3: V 1 (Sobrecarga de viento 1) | 0.0000 | -4.2078 | -0.2395 | 0.0000 | 0.0000 | 0.0000 |
| 271 | | | | | | | |
| | HIPOTESIS 1: PP 1 (Peso propio) | 0.0000 | -1.0669 | 35.2206 | 0.0000 | 0.0000 | 0.0000 |
| | HIPOTESIS 2: SC 1 (hormigon) | 0.0000 | -0.7011 | 225.1716 | 0.0000 | 0.0000 | 0.0000 |
| | HIPOTESIS 3: V 1 (Sobrecarga de viento 1) | 0.0000 | -4.2879 | 0.2395 | 0.0000 | 0.0000 | 0.0000 |
| 273 | | | | | | | |
| | HIPOTESIS 1: PP 1 (Peso propio) | 0.0000 | 0.7248 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| | HIPOTESIS 2: SC 1 (hormigon) | 0.0000 | -0.4353 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| | HIPOTESIS 3: V 1 (Sobrecarga de viento 1) | 0.0000 | -7.4646 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 340 | | | | | | | |
| | HIPOTESIS 1: PP 1 (Peso propio) | 0.0000 | 0.1310 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| | HIPOTESIS 2: SC 1 (hormigon) | 0.0000 | 0.5712 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| | HIPOTESIS 3: V 1 (Sobrecarga de viento 1) | 0.0000 | -5.5133 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

| BARRAS | TENSIÓN MÁXIMA | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | TENS.(Tn/cm2) | APROV.(%) | POS.(m) | N(Tn) | Ty(Tn) | Tz(Tn) | Mt(Tn·m) | My(Tn·m) | Mz(Tn·m) |
| 3/1 | 0.0336 | 1.29 | 0.000 | -0.0681 | 0.0000 | -0.0401 | 0.0000 | -0.0145 | 0.0000 |
| 1/4 | 0.0520 | 2.00 | 2.011 | 0.0869 | 0.0000 | 0.0425 | 0.0000 | -0.0205 | 0.0000 |
| 5/2 | 0.0343 | 1.32 | 0.000 | -0.0695 | 0.0000 | -0.0407 | 0.0000 | -0.0148 | 0.0000 |
| 2/6 | 0.0465 | 1.79 | 2.011 | 0.0870 | 0.0000 | 0.0411 | 0.0000 | -0.0182 | 0.0000 |
| 3/4 | 0.0242 | 0.93 | 1.992 | 0.2212 | -0.0097 | 0.0000 | 0.0000 | 0.0000 | 0.0124 |
| 7/4 | 0.0645 | 2.48 | 2.669 | -0.2668 | 0.0000 | 0.0433 | 0.0000 | -0.0204 | 0.0000 |
| 4/8 | 0.0375 | 1.44 | 0.000 | 0.2773 | 0.0000 | -0.0374 | 0.0000 | -0.0124 | 0.0000 |
| 5/6 | 0.0155 | 0.60 | 1.992 | 0.2173 | -0.0054 | 0.0000 | 0.0000 | 0.0000 | 0.0066 |
| 9/6 | 0.0559 | 2.15 | 0.000 | -0.3341 | 0.0000 | -0.0348 | 0.0000 | -0.0132 | 0.0000 |
| 6/11 | 0.0475 | 1.83 | 2.226 | 0.3245 | 0.0000 | 0.0386 | 0.0000 | -0.0161 | 0.0000 |
| 7/8 | 0.0995 | 3.83 | 0.000 | -0.4720 | 0.0073 | 0.0006 | 0.0000 | 0.0014 | 0.0112 |
| 7/12 | 0.0419 | 1.49 | 0.000 | 1.0571 | -0.0005 | -0.0378 | 0.0000 | -0.0332 | -0.0015 |
| 7/13 | 0.1162 | 4.47 | 1.342 | -0.2425 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 7/15 | 0.0342 | 1.22 | 1.080 | -0.5364 | 0.0062 | -0.0099 | 0.0000 | 0.1422 | -0.1198 |
| 8/12 | 0.0183 | 0.65 | 1.200 | 0.2512 | -0.2334 | 0.1891 | 0.0006 | -0.0417 | 0.1397 |
| 9/10 | 0.0279 | 1.07 | 1.667 | 0.4519 | -0.0047 | 0.0000 | 0.0000 | 0.0000 | 0.0108 |
| 10/11 | 0.0279 | 1.07 | 0.000 | -0.3778 | -0.0049 | 0.0000 | 0.0000 | 0.0000 | -0.0067 |
| 13/10 | 0.0539 | 2.07 | 0.770 | -0.5745 | 0.0000 | -0.0024 | 0.0000 | 0.0088 | 0.0000 |
| 10/14 | 0.0383 | 1.47 | 0.000 | 0.5308 | 0.0000 | -0.0293 | 0.0000 | -0.0101 | 0.0000 |
| 11/14 | 0.0344 | 1.32 | 1.200 | 0.2308 | 0.0000 | 0.0008 | 0.0000 | 0.0328 | 0.0000 |
| 15/12 | 0.1065 | 3.80 | 3.542 | -1.7641 | 0.0006 | 0.0426 | 0.0000 | -0.0422 | -0.0009 |
| 12/16 | 0.2245 | 8.00 | 1.342 | -0.6083 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 12/17 | 0.0252 | 0.90 | 1.440 | 1.5550 | 0.0288 | 0.0549 | -0.0005 | 0.1867 | -0.1042 |
| 13/14 | 0.1409 | 5.42 | 0.000 | -0.6792 | 0.0102 | 0.0001 | 0.0000 | 0.0001 | 0.0158 |
| 15/13 | 0.0873 | 3.36 | 1.342 | 0.2659 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 13/16 | 0.0537 | 1.91 | 0.000 | 1.4959 | 0.0000 | -0.0422 | 0.0000 | -0.0406 | -0.0001 |
| 13/18 | 0.0222 | 0.79 | 1.500 | -1.3427 | 0.0210 | 0.0685 | 0.0000 | 0.1214 | -0.0314 |
| 14/16 | 0.0110 | 0.39 | 1.200 | 0.5748 | 0.0001 | 0.2579 | 0.0000 | -0.0779 | -0.0001 |
| 15/17 | 0.0790 | 2.82 | 0.000 | 2.3134 | 0.0001 | -0.0482 | 0.0000 | -0.0515 | 0.0010 |
| 15/18 | 0.2790 | 9.94 | 1.342 | -0.7991 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 15/19 | 0.0367 | 1.31 | 1.080 | -1.5264 | 0.0155 | 0.0138 | -0.0001 | 0.1621 | -0.0893 |
| 17/16 | 0.1426 | 5.08 | 1.342 | 0.6674 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 18/16 | 0.1347 | 4.80 | 3.542 | -2.2704 | 0.0000 | 0.0477 | 0.0000 | -0.0516 | -0.0002 |
| 16/20 | 0.0214 | 0.76 | 2.400 | 1.3503 | 0.0527 | 0.3154 | -0.0002 | -0.0490 | -0.1266 |
| 18/17 | 0.0340 | 1.31 | 2.054 | 0.1196 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 19/17 | 0.1874 | 6.68 | 3.542 | -3.2302 | -0.0003 | 0.0544 | 0.0000 | -0.0626 | 0.0009 |
| 17/20 | 0.3832 | 13.66 | 1.342 | -1.1637 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 17/21 | 0.0439 | 1.56 | 1.080 | 4.3482 | 0.0054 | 0.0403 | -0.0001 | 0.2073 | -0.1611 |
| 19/18 | 0.1478 | 5.27 | 1.342 | 0.7055 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 18/20 | 0.0956 | 3.41 | 0.000 | 2.9273 | -0.0001 | -0.0523 | 0.0000 | -0.0590 | -0.0001 |
| 18/22 | 0.0444 | 1.58 | 0.900 | -3.8065 | -0.0010 | 0.0042 | 0.0000 | 0.1330 | -0.0494 |
| 19/20 | 0.0387 | 1.49 | 2.054 | -0.1733 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 19/21 | 0.1268 | 4.52 | 0.000 | 3.9564 | 0.0002 | -0.0612 | 0.0000 | -0.0748 | 0.0001 |
| 19/22 | 0.3762 | 13.41 | 1.342 | -1.1392 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 19/23 | 0.0481 | 1.71 | 1.200 | -3.2552 | 0.0106 | 0.0868 | 0.0000 | 0.1273 | -0.0921 |
| 21/20 | 0.2157 | 7.69 | 1.342 | 1.1976 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 22/20 | 0.2153 | 7.67 | 3.542 | -3.7540 | -0.0001 | 0.0586 | 0.0000 | -0.0705 | 0.0000 |
| 20/24 | 0.0289 | 1.03 | 0.900 | 2.5180 | -0.0171 | -0.0163 | -0.0001 | 0.1640 | -0.1094 |
| 23/21 | 0.2723 | 9.70 | 3.542 | -4.7768 | -0.0001 | 0.0670 | 0.0000 | -0.0859 | -0.0001 |
| 21/24 | 0.5479 | 19.52 | 1.342 | -1.7397 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 21/25 | 0.0575 | 2.05 | 1.080 | 8.7408 | 0.0226 | 0.0517 | 0.0003 | 0.1583 | -0.1367 |
| 23/22 | 0.2074 | 7.39 | 1.342 | 1.1379 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 22/24 | 0.1378 | 4.91 | 0.000 | 4.3093 | -0.0004 | -0.0644 | 0.0000 | -0.0810 | 0.0000 |
| 22/26 | 0.0694 | 2.47 | 0.600 | -7.4712 | -0.0021 | -0.0169 | 0.0002 | 0.1101 | -0.0463 |
| 23/25 | 0.1705 | 6.08 | 0.000 | 5.3726 | 0.0001 | -0.0737 | 0.0000 | -0.0974 | -0.0003 |
| 23/26 | 0.5152 | 18.36 | 2.683 | -1.6395 | 0.0010 | 0.0124 | 0.0000 | -0.0061 | -0.0028 |
| 23/27 | 0.0642 | 2.29 | 1.080 | -5.5935 | 0.0131 | 0.0459 | 0.0000 | 0.1068 | -0.0921 |
| 25/24 | 0.2938 | 10.47 | 1.342 | 1.7648 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 26/24 | 0.2948 | 10.51 | 3.542 | -5.1293 | -0.0020 | 0.0707 | 0.0000 | -0.0928 | 0.0018 |
| 24/28 | 0.0403 | 1.44 | 2.400 | 7.7332 | 0.0040 | 0.3898 | -0.0001 | -0.1700 | -0.0088 |
| 27/25 | 0.3471 | 12.37 | 3.542 | -6.0899 | -0.0001 | 0.0799 | 0.0000 | -0.1091 | -0.0002 |
| 25/28 | 0.7036 | 25.08 | 1.342 | -2.2847 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 25/29 | 0.0781 | 2.78 | 2.400 | 14.5792 | -0.2376 | 0.4913 | 0.0005 | -0.4081 | 0.0118 |
| 27/26 | 0.2717 | 9.68 | 2.683 | 1.6422 | 0.0009 | 0.0124 | 0.0000 | -0.0061 | -0.0025 |
| 26/28 | 0.1870 | 6.66 | 0.000 | 5.7050 | 0.0021 | -0.0756 | 0.0000 | -0.1012 | 0.0058 |
| 26/30 | 0.1057 | 3.77 | 2.400 | -12.5308 | -0.0039 | 0.2522 | -0.0001 | -0.1236 | -0.0379 |
| 27/28 | 0.0364 | 1.40 | 2.054 | -0.1295 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 27/29 | 0.2084 | 7.43 | 0.000 | 6.5974 | 0.0002 | -0.0829 | 0.0000 | -0.1173 | -0.0005 |
| 27/30 | 0.6498 | 23.16 | 1.342 | -2.0966 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 27/31 | 0.1174 | 4.18 | 2.400 | -11.9508 | 0.0014 | 0.4500 | 0.0000 | -0.5516 | 0.0031 |
| 29/28 | 0.3743 | 13.34 | 1.342 | 2.3488 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 30/28 | 0.3696 | 13.17 | 3.542 | -6.4666 | 0.0003 | 0.0834 | 0.0000 | -0.1156 | -0.0011 |
| 28/33 | 0.0683 | 2.44 | 2.400 | 12.0483 | -0.0018 | 0.4950 | 0.0004 | -0.4489 | -0.0054 |
| 30/29 | 0.0335 | 1.29 | 2.054 | 0.1065 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 31/29 | 0.4195 | 14.95 | 3.542 | -7.5281 | 0.0003 | 0.0797 | 0.0000 | -0.1120 | -0.0010 |
| 29/32 | 0.1158 | 4.13 | 1.200 | 21.8680 | 0.0039 | 0.1864 | 0.0007 | -0.2582 | -0.1341 |
| 29/33 | 0.8816 | 31.42 | 1.342 | -2.9076 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 31/30 | 0.3376 | 12.03 | 1.342 | 2.0827 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 30/33 | 0.2127 | 7.58 | 0.000 | 6.7406 | 0.0002 | -0.0840 | 0.0000 | -0.1198 | 0.0003 |
| 30/35 | 0.1836 | 6.54 | 2.400 | -18.7869 | 0.0019 | 0.5059 | 0.0002 | -0.7148 | -0.0422 |
| 31/34 | 0.1327 | 4.73 | 3.100 | 8.6892 | 0.0013 | 0.0072 | 0.0000 | 0.1104 | -0.0041 |
| 31/35 | 0.8111 | 28.90 | 1.342 | -2.6607 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 31/37 | 0.1529 | 5.45 | 0.000 | -17.3051 | 0.0031 | -0.2192 | 0.0000 | -0.4788 | 0.0031 |
| 32/34 | 0.1208 | 4.30 | 1.200 | 21.8680 | -0.2841 | 0.4873 | 0.0007 | -0.6624 | 0.0340 |
| 34/33 | 0.4526 | 16.13 | 1.342 | 2.9168 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 35/33 | 0.4054 | 14.45 | 3.542 | -7.5524 | 0.0002 | 0.0496 | 0.0000 | -0.0802 | -0.0006 |
| 33/36 | 0.0844 | 3.01 | 1.200 | 17.0142 | -0.0052 | 0.1999 | 0.0003 | -0.3455 | 0.0005 |
| 37/34 | 0.2253 | 8.03 | 3.542 | -9.5124 | 0.0005 | 0.1958 | 0.0000 | -0.3113 | -0.0046 |
| 34/38 | 1.0589 | 37.74 | 1.342 | -3.5279 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 34/39 | 0.1621 | 5.78 | 2.400 | 31.0933 | -0.3127 | 0.4398 | 0.0008 | -0.5798 | 0.0902 |
| 37/35 | 0.4187 | 14.92 | 1.342 | 2.6709 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 35/38 | 0.1696 | 6.05 | 0.000 | 8.5313 | 0.0004 | -0.2160 | 0.0000 | -0.3443 | 0.0000 |
| 35/40 | 0.2302 | 8.20 | 2.400 | -26.6272 | 0.0101 | 0.1898 | 0.0001 | -0.4212 | -0.0664 |
| 36/38 | 0.1016 | 3.62 | 1.200 | 17.0142 | -0.0052 | 0.5008 | 0.0003 | -0.7659 | 0.0067 |
| 37/39 | 0.1799 | 6.41 | 0.000 | 9.8634 | -0.0003 | -0.1971 | -0.0001 | -0.2976 | -0.0028 |



FERNANDEZ CONSTRUCTOR
L.A.V. TRAMO: GELIDA – ST. LLORENÇ
VIADUCTO DE RIERUSSA
CÁLCULOS ESTÁTICOS DE CIMBRA Y ENCOFRADO

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 37/40 | 0.9988 | 35.60 | 1.342 | -3.3177 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 37/41 | 0.2080 | 7.41 | 2.400 | -24.0243 | 0.0009 | 0.4636 | 0.0000 | -0.5789 | -0.0060 |
| 39/38 | 0.5335 | 19.01 | 1.342 | 3.5041 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 40/38 | 0.2256 | 8.04 | 3.542 | -9.5159 | 0.0003 | 0.2024 | 0.0000 | -0.3212 | -0.0017 |
| 38/42 | 0.1233 | 4.39 | 2.400 | 23.5177 | -0.0004 | 0.4808 | 0.0002 | -0.6287 | 0.0066 |
| 40/39 | 0.0390 | 1.50 | 2.054 | -0.1793 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 41/39 | 0.2451 | 8.73 | 3.542 | -10.6055 | 0.0004 | 0.2067 | 0.0000 | -0.3209 | -0.0021 |
| 39/42 | 1.2333 | 43.95 | 1.342 | -4.1380 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 39/43 | 0.2073 | 7.39 | 2.280 | 41.8247 | -0.2050 | 0.5607 | 0.0004 | -0.6581 | -0.0675 |
| 41/40 | 0.5153 | 18.36 | 1.342 | 3.3721 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 40/42 | 0.1801 | 6.42 | 0.000 | 10.0653 | -0.0002 | -0.1921 | 0.0000 | -0.2904 | -0.0005 |
| 40/44 | 0.3086 | 11.00 | 2.400 | -36.4016 | -0.0450 | 0.4725 | 0.0000 | -0.6324 | 0.0429 |
| 41/43 | 0.2082 | 7.42 | 0.000 | 11.3112 | 0.0014 | -0.2282 | -0.0001 | -0.3592 | -0.0007 |
| 41/44 | 1.2025 | 42.86 | 1.342 | -4.0304 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 41/45 | 0.2707 | 9.65 | 2.400 | -31.6702 | -0.0055 | 0.4700 | 0.0000 | -0.6997 | 0.0070 |
| 43/42 | 0.6159 | 21.95 | 1.342 | 4.1018 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 44/42 | 0.2546 | 9.07 | 3.542 | -10.9074 | 0.0001 | 0.2215 | 0.0000 | -0.3501 | -0.0001 |
| 42/46 | 0.1622 | 5.78 | 2.400 | 31.0478 | 0.0085 | 0.6094 | 0.0000 | -0.8022 | -0.0138 |
| 45/43 | 0.2833 | 10.10 | 3.542 | -12.2281 | 0.0034 | 0.2279 | 0.0000 | -0.3655 | -0.0055 |
| 43/46 | 1.2823 | 45.70 | 1.342 | -4.3096 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 43/47 | 0.3438 | 12.25 | 2.400 | 53.9895 | -0.6260 | 0.6391 | 0.0006 | -0.8973 | 0.7662 |
| 45/44 | 0.6328 | 22.55 | 1.342 | 4.2250 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 44/46 | 0.2093 | 7.46 | 0.000 | 11.6070 | 0.0001 | -0.2192 | 0.0000 | -0.3453 | 0.0003 |
| 44/48 | 0.4422 | 15.76 | 2.400 | -47.9503 | 0.1297 | 0.4730 | -0.0002 | -0.7497 | -0.2673 |
| 45/47 | 0.2394 | 8.53 | 0.000 | 12.9497 | -0.0003 | -0.2506 | 0.0002 | -0.4027 | 0.0058 |
| 45/48 | 1.3348 | 47.57 | 1.342 | -4.4932 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 45/49 | 0.3843 | 13.69 | 2.400 | -25.7818 | -0.6093 | 0.4781 | -0.0006 | -0.7583 | 0.8136 |
| 47/46 | 0.7103 | 25.31 | 1.342 | 4.7871 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 48/46 | 0.2932 | 10.45 | 3.542 | -12.5583 | 0.0001 | 0.2479 | 0.0000 | -0.4034 | -0.0001 |
| 46/50 | 0.2099 | 7.48 | 2.400 | 39.7228 | -0.0346 | 0.6352 | -0.0001 | -0.9431 | 0.0691 |
| 48/47 | 0.0559 | 2.15 | 2.054 | -0.5032 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 49/47 | 0.3200 | 11.40 | 3.542 | -13.6909 | 0.0007 | 0.2675 | 0.0000 | -0.4402 | 0.0008 |
| 47/50 | 1.4950 | 53.28 | 1.342 | -5.0539 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 47/51 | 0.5110 | 18.21 | 2.400 | 67.8260 | -0.6746 | 0.6850 | -0.0015 | -1.0922 | 1.6979 |
| 49/48 | 0.5639 | 20.10 | 1.342 | 3.7250 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 48/50 | 0.2458 | 8.76 | 3.542 | 13.6696 | 0.0219 | -0.1217 | -0.0001 | 0.2529 | -0.0529 |
| 48/52 | 0.8352 | 29.76 | 2.400 | -60.7706 | -0.8665 | 0.5248 | -0.0005 | -0.9043 | 1.7952 |
| 49/50 | 0.0592 | 2.28 | 2.054 | -0.5663 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 49/51 | 0.2731 | 9.73 | 0.000 | 14.3313 | 0.0006 | -0.2767 | 0.0008 | -0.4606 | 0.0176 |
| 49/52 | 1.2479 | 44.47 | 1.342 | -4.1893 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 49/54 | 0.5421 | 19.32 | 2.400 | -32.2082 | -0.4418 | 0.8410 | -0.0001 | -1.5721 | 1.1706 |
| 51/50 | 0.6390 | 22.77 | 1.342 | -2.0585 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 52/50 | 0.3608 | 12.86 | 3.542 | -13.9181 | 0.0178 | 0.2945 | -0.0013 | -0.4918 | -0.0561 |
| 50/53 | 0.8787 | 31.32 | 1.200 | 27.4934 | -6.2898 | 0.4112 | -0.0015 | -0.5742 | 6.7492 |
| 54/51 | 0.3256 | 11.60 | 3.542 | -15.1162 | -0.0038 | 0.1315 | 0.0000 | -0.2925 | 0.0133 |
| 51/55 | 0.5263 | 18.76 | 0.000 | 77.2108 | 1.0630 | 0.2065 | -0.0032 | -0.4534 | 1.7084 |
| 51/56 | 0.0673 | 2.40 | 1.342 | 0.1207 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 54/52 | 1.7198 | 61.29 | 1.342 | -5.8402 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 52/56 | 0.2686 | 9.57 | 0.000 | 14.8086 | 0.0010 | -0.2640 | 0.0000 | -0.4413 | 0.0032 |
| 52/60 | 0.8621 | 30.72 | 0.000 | -70.1616 | 0.9198 | 0.3878 | 0.0005 | -0.1260 | 1.7908 |
| 53/56 | 0.8790 | 31.33 | 0.000 | 27.4934 | 6.5629 | 0.4112 | -0.0015 | -0.5742 | 6.7492 |
| 54/57 | 0.2197 | 7.83 | 0.000 | 15.3471 | 0.0005 | -0.1931 | 0.0003 | -0.3563 | 0.0067 |
| 54/58 | 0.2015 | 5.56 | 0.000 | -47.4226 | 0.8181 | 0.9584 | 0.0057 | -1.2161 | 1.1682 |
| 54/60 | 0.6608 | 23.55 | 1.342 | 4.4282 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 55/59 | 0.4224 | 11.66 | 0.000 | 77.2108 | 0.7750 | 0.5075 | -0.0032 | -0.8817 | 0.6056 |
| 59/56 | 2.2841 | 81.40 | 1.342 | -7.8149 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 60/56 | 0.3606 | 12.85 | 3.542 | -15.3187 | -0.0171 | 0.1440 | 0.0000 | -0.3369 | 0.0607 |
| 56/61 | 0.3161 | 11.27 | 0.000 | 41.4552 | -0.3168 | 0.0840 | -0.0019 | -0.6375 | -1.0835 |
| 58/57 | 0.1115 | 3.97 | 0.000 | -5.0776 | -0.0146 | 0.2034 | -0.0002 | 0.3219 | -0.0239 |
| 57/59 | 0.1942 | 6.92 | 1.771 | 10.1820 | 0.0137 | -0.4904 | -0.0002 | 0.5467 | -0.0205 |
| 57/62 | 0.1349 | 4.81 | 1.200 | 3.3969 | 0.0028 | 0.8712 | 0.0002 | -0.5808 | -0.0007 |
| 58/62 | 0.1213 | 4.32 | 0.000 | 6.6262 | 0.0050 | -0.1789 | -0.0002 | -0.3209 | -0.0124 |
| 58/64 | 0.1863 | 5.14 | 1.200 | -64.6176 | 0.0457 | 0.4829 | 0.0018 | -2.3346 | -0.0109 |
| 62/59 | 0.1944 | 6.93 | 1.771 | -11.0758 | -0.0054 | 0.3609 | -0.0001 | -0.4528 | -0.0140 |
| 59/65 | 0.3813 | 10.53 | 1.200 | 78.1505 | -0.0477 | 0.2580 | 0.0033 | -0.7994 | -0.2244 |
| 59/67 | 0.5810 | 20.70 | 1.342 | 8.0499 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 60/63 | 0.2184 | 7.78 | 0.000 | 15.7571 | 0.0032 | -0.1505 | 0.0000 | -0.3275 | 0.0018 |
| 64/60 | 1.6331 | 58.20 | 1.342 | -5.5369 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 60/66 | 0.2397 | 6.62 | 1.200 | -76.3465 | -0.1064 | 1.6728 | 0.0115 | -2.8793 | -0.2925 |
| 61/67 | 0.3373 | 9.31 | 1.200 | 60.1448 | 0.0899 | 0.7920 | 0.0009 | -1.7569 | -0.1650 |
| 64/62 | 0.1273 | 4.54 | 0.000 | -7.8447 | -0.0046 | 0.0837 | -0.0003 | 0.1814 | -0.0319 |
| 62/65 | 0.2174 | 7.75 | 1.771 | 11.4689 | 0.0048 | -0.5792 | -0.0004 | 0.5888 | -0.0293 |
| 66/63 | 0.1050 | 3.74 | 0.000 | -4.5543 | 0.0081 | 0.2141 | -0.0001 | 0.3299 | -0.0199 |
| 63/67 | 0.2146 | 7.65 | 1.771 | 10.9380 | 0.0279 | -0.5248 | -0.0005 | 0.5564 | -0.0484 |
| 63/69 | 0.1342 | 4.78 | 1.200 | 3.1990 | -0.0020 | 0.8750 | 0.0001 | -0.5908 | -0.0001 |
| 64/68 | 0.1636 | 5.83 | 0.000 | 8.8149 | 0.0043 | -0.2514 | -0.0004 | -0.4162 | -0.0262 |
| 64/70 | 0.2025 | 5.59 | 1.200 | -69.5997 | 0.0005 | 1.1373 | 0.0019 | -2.6390 | -0.0080 |
| 64/72 | 0.7609 | 27.12 | 1.342 | 5.1545 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 68/65 | 0.1725 | 6.15 | 0.000 | -10.8689 | -0.0045 | -0.0951 | -0.0002 | -0.2488 | -0.0351 |
| 65/71 | 0.4071 | 11.24 | 1.200 | 86.1473 | -0.4380 | 0.9826 | 0.0051 | -0.9820 | 0.0905 |
| 66/69 | 0.1191 | 4.24 | 0.000 | 6.3856 | 0.0006 | -0.1658 | -0.0003 | -0.3140 | -0.0161 |
| 66/72 | 0.2412 | 6.66 | 1.200 | -80.1012 | -0.1004 | 0.8845 | 0.0155 | -2.9717 | -0.1565 |
| 69/67 | 0.2132 | 7.60 | 1.771 | -11.6931 | -0.0029 | 0.3922 | -0.0003 | -0.4663 | -0.0395 |
| 71/67 | 0.9005 | 32.09 | 1.342 | -8.1536 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 67/73 | 0.3715 | 10.26 | 1.200 | 68.6870 | -0.5460 | 0.2660 | 0.0035 | -0.8539 | 0.4747 |
| 70/68 | 0.1797 | 6.40 | 0.000 | -10.8680 | 0.0039 | 0.2001 | -0.0003 | 0.3217 | -0.0281 |
| 68/71 | 0.1698 | 6.05 | 1.771 | 9.4787 | -0.0042 | -0.3073 | -0.0004 | 0.4077 | -0.0263 |
| 72/69 | 0.1419 | 5.06 | 0.000 | -9.2680 | 0.0001 | 0.1037 | -0.0002 | 0.1919 | -0.0236 |
| 69/73 | 0.2018 | 7.19 | 1.771 | 11.1910 | -0.0010 | -0.5499 | 0.0000 | 0.5627 | -0.0060 |
| 70/74 | 0.1674 | 5.97 | 0.000 | 9.4675 | -0.0029 | -0.2045 | -0.0004 | -0.3767 | -0.0314 |
| 70/76 | 0.3204 | 8.85 | 1.200 | -75.7977 | -0.0083 | 6.0398 | 0.0009 | -8.9355 | 0.0021 |
| 74/71 | 0.1647 | 5.87 | 1.771 | -10.4944 | 0.0065 | 0.0345 | -0.0003 | -0.2173 | -0.0373 |
| 71/77 | 0.4169 | 11.51 | 1.200 | 85.1989 | 0.0766 | -0.8492 | 0.0071 | 0.7428 | -0.3019 |
| 71/79 | 0.5566 | 19.84 | 0.000 | 7.2590 | -0.0072 | -0.0262 | 0.0000 | -0.0142 | -0.0193 |
| 72/75 | 0.1486 | 5.30 | 0.000 | 8.0234 | -0.0021 | -0.2099 | -0.0003 | -0.3724 | -0.0254 |
| 76/72 | 1.4764 | 52.61 | 1.342 | -4.9886 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 72/78 | 0.3437 | 9.49 | 1.200 | -80.1341 | 0.0461 | 5.7690 | 0.0060 | -9.0884 | -0.1763 |
| 75/73 | 0.1616 | 5.76 | 0.000 | -11.4323 | 0.0105 | -0.0784 | -0.0003 | -0.2085 | 0.0045 |
| 73/79 | 0.4781 | 13.20 | 1.200 | 76.4050 | -0.5616 | -0.7639 | -0.0009 | 0.8973 | 1.1404 |
| 76/74 | 0.1673 | 5.96 | 0.000 | -11.0456 | 0.0007 | 0.1200 | -0.0002 | 0.2257 | -0.0246 |
| 74/77 | 0.1951 | 6.95 | 1.771 | 6.6537 | 0.0162 | -0.5560 | -0.0005 | 0.7061 | -0.0669 |
| 78/75 | 0.1784 | 6.36 | 0.000 | -12.3471 | 0.0157 | -0.1746 | 0.0001 | -0.1739 | 0.0328 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 75/79 | 0.1682 | 5.99 | 1.771 | 4.7992 | -0.0181 | -0.5666 | 0.0007 | 0.7270 | 0.0427 |
| 76/80 | 0.3235 | 11.53 | 1.771 | 18.3056 | 0.0240 | -0.8216 | -0.0003 | 0.7320 | -0.0589 |
| 76/83 | 0.3623 | 10.00 | 1.200 | -83.2888 | 0.0363 | 0.9318 | 0.0186 | -9.1743 | -0.3351 |
| 76/88 | 0.6485 | 23.11 | 1.342 | 4.3384 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 80/77 | 0.1511 | 5.38 | 0.000 | 4.6740 | 0.0497 | -0.5039 | -0.0004 | -0.6112 | 0.0427 |
| 77/85 | 0.7012 | 19.36 | 1.200 | 86.4659 | 0.0531 | 7.4891 | 0.0162 | -7.5561 | -0.4110 |
| 78/81 | 0.3177 | 11.32 | 1.771 | 18.0337 | -0.0102 | -0.8400 | 0.0004 | 0.7610 | 0.0414 |
| 78/88 | 0.3875 | 10.70 | 1.200 | -90.8855 | 0.0769 | 1.4241 | -0.0056 | -9.8771 | -0.2763 |
| 81/79 | 0.1627 | 5.80 | 0.000 | 4.7774 | 0.0072 | -0.5568 | 0.0003 | -0.6696 | 0.0495 |
| 85/79 | 0.6958 | 24.80 | 2.683 | -6.0617 | -0.0068 | 0.0191 | 0.0000 | -0.0090 | 0.0183 |
| 79/90 | 0.8173 | 22.57 | 1.200 | 75.4342 | 2.8983 | 6.6357 | -0.0097 | -6.4016 | -2.2966 |
| 83/80 | 0.2164 | 7.71 | 1.771 | 8.8554 | -0.0353 | 0.4711 | -0.0001 | -0.7571 | 0.0416 |
| 80/85 | 0.5214 | 18.58 | 1.771 | 22.3361 | 0.1242 | 1.2327 | -0.0005 | -1.2744 | -0.2650 |
| 88/81 | 0.2207 | 7.87 | 1.771 | 8.8599 | -0.0277 | 0.4549 | 0.0004 | -0.7697 | 0.0482 |
| 81/90 | 0.3961 | 14.12 | 1.771 | 22.0613 | 0.0248 | 1.1271 | -0.0005 | -1.0849 | -0.0159 |
| 82/84 | 0.0012 | 0.05 | 0.165 | 0.0000 | 0.0000 | 0.0499 | 0.0000 | -0.0041 | 0.0000 |
| 83/92 | 0.2597 | 9.25 | 0.000 | -10.3137 | 0.0306 | 0.6879 | -0.0005 | 0.9468 | -0.0316 |
| 83/99 | 0.3971 | 10.96 | 1.200 | -80.6584 | -0.0374 | 2.7249 | 0.0159 | -12.8740 | -0.0093 |
| 84/85 | 0.9167 | 35.26 | 0.000 | -86.1377 | 1.3427 | 6.7660 | -0.0029 | 6.6566 | 0.0957 |
| 84/86 | 2.1534 | 82.82 | 0.500 | -6.6903 | 1.3919 | 86.4886 | -0.0969 | -36.5414 | -0.6932 |
| 92/85 | 0.7118 | 25.37 | 1.771 | 56.3941 | -0.0617 | 0.5517 | -0.0008 | -0.3145 | 0.1273 |
| 85/101 | 0.6263 | 17.29 | 0.000 | 69.2271 | -1.9785 | -3.8926 | 0.0060 | -7.3128 | -0.4642 |
| 85/106 | 0.9201 | 32.79 | 2.683 | 12.6966 | -0.0068 | 0.0264 | 0.0000 | -0.0149 | 0.0182 |
| 86/87 | 0.7110 | 27.35 | 0.000 | -6.7861 | -0.5653 | 0.0383 | 0.0434 | -36.4791 | -0.8145 |
| 86/93 | 2.5000 | 96.16 | 0.600 | -1.8724 | -0.0038 | 86.6905 | 0.0000 | -51.8728 | -0.0144 |
| 87/89 | 2.1311 | 81.97 | 0.000 | -6.6848 | -0.0461 | -86.2927 | 0.0434 | -36.8289 | -0.0231 |
| 87/95 | 2.5036 | 96.29 | 0.600 | 0.5192 | -0.1013 | -86.8779 | 0.0000 | -52.0896 | 0.0608 |
| 88/97 | 0.1659 | 5.91 | 0.000 | -4.1560 | 0.0193 | 0.5455 | -0.0003 | 0.8673 | 0.0004 |
| 99/88 | 1.3016 | 46.39 | 1.342 | -4.3772 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 88/104 | 0.3850 | 10.63 | 0.000 | -84.2785 | -0.0274 | -3.8468 | 0.0060 | -10.6468 | -0.2731 |
| 89/90 | 0.8980 | 34.54 | 0.000 | -86.0917 | 0.0461 | -6.6848 | 0.0000 | -6.2837 | 0.0434 |
| 89/91 | 0.0012 | 0.05 | 0.000 | 0.0000 | 0.0000 | -0.0499 | 0.0000 | -0.0041 | 0.0000 |
| 97/90 | 0.7426 | 26.47 | 0.000 | 60.2439 | -0.0215 | 0.4508 | 0.0003 | 0.4887 | -0.0365 |
| 90/106 | 0.7897 | 21.80 | 0.000 | 62.0643 | -3.7480 | -1.1300 | 0.0077 | -7.1093 | -2.2942 |
| 99/92 | 0.8473 | 30.20 | 0.000 | 54.4818 | -0.0205 | -1.1632 | -0.0004 | -1.7802 | -0.0169 |
| 92/101 | 0.4246 | 15.13 | 1.771 | -12.5499 | 0.0135 | 1.0281 | 0.0007 | -1.7246 | -0.1181 |
| 93/94 | 1.9044 | 73.24 | 7.000 | 173.3472 | 0.0000 | -0.2031 | 0.0000 | 1.4216 | 0.0001 |
| 93/102 | 2.4972 | 96.04 | 0.000 | -1.8724 | -0.0239 | -86.5165 | 0.0000 | -51.8728 | -0.0144 |
| 95/96 | 1.9153 | 73.67 | 7.000 | 174.4867 | 0.0000 | -0.2025 | 0.0000 | 1.4178 | -0.0001 |
| 95/103 | 2.5036 | 96.29 | 0.000 | 0.5191 | 0.1013 | -86.8779 | 0.0000 | -52.0896 | 0.0608 |
| 104/97 | 0.8339 | 29.72 | 0.000 | 60.5025 | 0.0238 | -0.6180 | -0.0002 | -1.2223 | 0.0073 |
| 97/106 | 0.3792 | 13.51 | 1.771 | -4.2407 | -0.0246 | 1.6702 | 0.0003 | -2.4066 | 0.0081 |
| 98/100 | 0.0012 | 0.05 | 0.165 | 0.0000 | 0.0000 | 0.0499 | 0.0000 | -0.0041 | 0.0000 |
| 99/108 | 0.7118 | 25.37 | 0.000 | -47.0251 | 0.0261 | 0.7869 | -0.0002 | 1.2073 | -0.0170 |
| 99/110 | 0.3698 | 10.21 | 0.000 | -44.9476 | 0.3070 | -4.1606 | 0.0146 | -15.8492 | -0.0841 |
| 99/112 | 0.5519 | 19.67 | 1.342 | 3.6376 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 100/101 | 0.8832 | 33.97 | 0.000 | -86.0047 | -1.4048 | 6.2767 | 0.0058 | 6.0894 | -0.0149 |
| 100/102 | 2.1212 | 81.59 | 0.500 | -6.0896 | -1.3860 | 86.3097 | -0.0130 | -37.0894 | 0.6878 |
| 108/101 | 1.4728 | 52.49 | 1.771 | 99.7205 | -0.0669 | -1.8683 | -0.0001 | 2.2510 | 0.1830 |
| 101/111 | 0.6481 | 17.89 | 0.000 | 27.9341 | 4.3105 | -6.1213 | -0.0119 | -8.1074 | 1.9295 |
| 102/103 | 0.7085 | 27.25 | 0.000 | -6.1136 | 0.4863 | -0.0831 | -0.0130 | -37.0894 | 0.6878 |
| 103/105 | 2.1208 | 81.57 | 0.000 | -5.9522 | -0.0159 | -86.1938 | 0.0149 | -37.4681 | -0.0079 |
| 104/109 | 1.0466 | 37.30 | 0.000 | -62.0988 | -0.0323 | 1.9356 | 0.0003 | 2.4136 | -0.0102 |
| 104/112 | 0.2808 | 7.75 | 0.000 | -86.5698 | 0.0140 | -0.4859 | 0.0064 | -4.1633 | -0.2387 |
| 105/106 | 0.8632 | 33.20 | 0.000 | -85.9178 | -0.0138 | -6.1239 | 0.0000 | -5.7565 | -0.0130 |
| 105/107 | 0.0012 | 0.05 | 0.000 | 0.0000 | 0.0000 | -0.0499 | 0.0000 | -0.0041 | 0.0000 |
| 109/106 | 1.0741 | 38.28 | 0.000 | 81.1773 | 0.0200 | 0.2883 | -0.0003 | 1.2342 | 0.0367 |
| 111/106 | 0.7534 | 26.85 | 0.000 | -6.1723 | -0.0244 | -0.0191 | -0.0014 | -0.0120 | -0.0348 |
| 106/113 | 0.7371 | 20.35 | 0.000 | 31.9868 | 3.0621 | -11.4677 | -0.0107 | -9.0486 | 2.2659 |
| 110/108 | 1.0057 | 35.84 | 0.000 | 57.5592 | -0.0263 | -1.8507 | -0.0003 | -2.6654 | -0.0279 |
| 108/111 | 1.5479 | 55.16 | 1.771 | -83.4031 | 0.0324 | 3.3076 | -0.0006 | -4.1149 | -0.0745 |
| 108/114 | 0.9168 | 32.67 | 0.000 | 28.9934 | -0.0469 | -5.6162 | 0.0003 | -3.6007 | -0.0309 |
| 112/109 | 1.2770 | 45.51 | 0.000 | 74.9264 | -0.0111 | -2.5597 | 0.0004 | -3.2902 | 0.0161 |
| 109/113 | 1.0135 | 36.12 | 1.771 | -68.2556 | -0.0013 | 0.3165 | 0.0001 | -1.5344 | 0.0506 |
| 110/114 | 0.8705 | 31.02 | 0.000 | -44.9324 | 0.0004 | 1.8131 | -0.0002 | 2.4938 | -0.0373 |
| 110/120 | 0.3017 | 8.33 | 0.000 | -6.9531 | -0.0049 | -15.4090 | 0.0013 | -16.3224 | -0.2523 |
| 114/111 | 1.4406 | 51.34 | 1.771 | 69.2009 | 0.0547 | -4.2291 | -0.0006 | 4.7926 | -0.0735 |
| 111/116 | 0.9591 | 26.48 | 0.000 | -55.7205 | -10.4538 | -19.2150 | 0.0004 | -9.4881 | -3.1617 |
| 111/123 | 1.0298 | 36.70 | 1.342 | 14.7471 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 112/115 | 0.9666 | 34.45 | 0.000 | -69.2882 | 0.0436 | 0.3665 | -0.0004 | 1.1589 | 0.0308 |
| 120/112 | 1.0953 | 39.04 | 1.342 | -3.6554 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 112/122 | 0.2760 | 7.62 | 0.000 | 33.7234 | -0.0583 | -5.7336 | 0.0029 | -11.0163 | -0.2887 |
| 115/113 | 1.3771 | 49.08 | 1.771 | 72.2366 | -0.0553 | -3.4171 | 0.0012 | 4.0913 | 0.0695 |
| 113/118 | 0.6869 | 18.96 | 0.620 | -38.5358 | 3.0800 | -8.3703 | 0.0067 | 4.2052 | -3.2880 |
| 120/114 | 1.3559 | 48.32 | 1.771 | 117.3472 | 0.0083 | 0.2804 | 0.0000 | -0.4461 | -0.0146 |
| 122/115 | 0.8035 | 28.63 | 0.000 | 42.5254 | 0.0129 | -1.4682 | -0.0002 | -2.4470 | -0.0089 |
| 115/123 | 1.5623 | 55.68 | 1.771 | -92.9602 | -0.0145 | 3.0551 | -0.0002 | -3.5745 | -0.0176 |
| 115/124 | 0.8240 | 29.36 | 0.000 | 22.4469 | -0.0100 | -5.2596 | 0.0003 | -3.4417 | -0.0036 |
| 116/117 | 0.6429 | 17.75 | 0.400 | -19.5643 | 0.0000 | -15.2137 | 0.0000 | 6.0855 | 0.0000 |
| 116/121 | 0.7076 | 19.54 | 0.000 | -53.3857 | 4.0058 | 0.4809 | 0.0002 | 2.3626 | 3.5678 |
| 117/119 | 2.1666 | 77.21 | 1.200 | -14.9360 | 0.0000 | -19.4303 | 0.0000 | 17.4024 | 0.0000 |
| 118/119 | 0.6429 | 17.75 | 0.400 | -19.5643 | 0.0000 | 15.2137 | 0.0000 | -6.0855 | 0.0000 |
| 118/123 | 0.7019 | 19.38 | 0.000 | -38.5358 | -12.0138 | 11.2362 | 0.0067 | 4.2052 | -3.2880 |
| 120/125 | 1.9330 | 74.34 | 0.000 | -128.6627 | 0.0207 | 2.4065 | -0.0005 | 4.4888 | -0.0012 |
| 120/126 | 0.4632 | 16.51 | 1.342 | 2.9941 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 120/132 | 0.5200 | 14.36 | 2.400 | 97.7411 | 0.0056 | -4.0979 | 0.0059 | 8.4420 | 0.0266 |
| 121/125 | 0.6658 | 18.38 | 1.200 | -55.7205 | 3.4701 | 0.8440 | 0.0004 | 1.1853 | -3.4983 |
| 122/124 | 0.7381 | 26.30 | 0.000 | -35.5718 | -0.0033 | 1.5751 | -0.0002 | 2.3662 | -0.0183 |
| 122/126 | 0.3026 | 8.36 | 0.000 | 62.1852 | -0.0425 | -11.8471 | -0.0055 | -9.0670 | -0.2096 |
| 124/123 | 1.3517 | 48.17 | 1.771 | 69.2932 | 0.0179 | -4.0309 | -0.0003 | 4.2632 | -0.0272 |
| 125/123 | 0.7097 | 25.29 | 1.342 | -6.3423 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 123/127 | 1.2144 | 33.53 | 0.000 | -98.3056 | 4.4802 | -10.8063 | -0.0017 | -9.9262 | 3.7374 |
| 126/124 | 1.2696 | 45.25 | 1.771 | 107.8256 | 0.0046 | 0.3671 | 0.0000 | -0.5996 | -0.0082 |
| 125/128 | 1.2574 | 34.72 | 0.000 | -140.6382 | -13.0749 | -21.8629 | 0.0005 | -6.9583 | -3.5479 |
| 132/125 | 1.4444 | 55.56 | 3.542 | 103.7645 | 0.0188 | -2.2175 | -0.0006 | 4.1557 | -0.0740 |
| 125/133 | 1.0232 | 36.46 | 1.342 | 14.6489 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 132/126 | 0.9135 | 32.55 | 1.342 | -3.0191 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 126/133 | 1.7777 | 68.37 | 0.000 | -117.0122 | 0.0002 | 2.1928 | -0.0001 | 4.2528 | 0.0061 |
| 126/139 | 0.6622 | 18.28 | 2.400 | 140.0559 | -0.0055 | -2.8968 | 0.0004 | 8.3938 | -0.1475 |
| 127/130 | 1.0749 | 29.68 | 0.410 | -98.3056 | 4.4802 | -10.5027 | -0.0017 | 7.2275 | -3.4758 |
| 128/129 | 0.6170 | 17.04 | 0.400 | -19.5643 | 0.0000 | -14.5672 | 0.0000 | 5.8269 | 0.0000 |
| 128/134 | 0.8866 | 24.48 | 0.000 | -140.6382 | 1.2090 | -2.1791 | 0.0005 | 1.9896 | 1.8516 |





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|---|---|---|---|---|---|---|---|---|---|
| 129/131 | 2.1840 | 77.83 | 1.200 | -14.3437 | 0.0000 | -19.4303 | 0.0000 | 17.6393 | 0.0000 |
| 130/131 | 0.6170 | 17.04 | 0.400 | -19.5643 | 0.0000 | 14.5672 | 0.0000 | -5.8269 | 0.0000 |
| 130/133 | 1.0821 | 29.88 | 0.000 | -98.3056 | -9.8635 | 9.1038 | -0.0017 | 7.2275 | -3.4758 |
| 132/138 | 1.5634 | 60.13 | 0.000 | -103.8278 | -0.0243 | 1.7930 | 0.0005 | 3.6163 | -0.0147 |
| 132/139 | 0.3786 | 13.49 | 1.342 | 2.3804 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 132/140 | 0.7479 | 20.65 | 2.400 | 169.9169 | 0.0128 | -2.7726 | -0.0014 | 8.4888 | 0.0037 |
| 133/136 | 1.4690 | 40.56 | 0.000 | -170.0955 | 8.2006 | -14.4192 | 0.0010 | -7.0840 | 4.3187 |
| 138/133 | 0.7287 | 25.97 | 1.342 | 10.2544 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 139/133 | 1.2427 | 47.80 | 3.542 | 91.1061 | -0.0074 | -1.8864 | 0.0001 | 3.5721 | 0.0084 |
| 134/135 | 0.6166 | 17.02 | 0.400 | -19.5643 | 0.0000 | -14.5563 | 0.0000 | 5.8225 | 0.0000 |
| 134/138 | 1.0205 | 28.18 | 0.000 | -140.6382 | 14.8474 | 17.7687 | 0.0005 | 5.6249 | 0.4193 |
| 135/137 | 2.1832 | 77.80 | 1.200 | -14.3726 | 0.0000 | -19.4303 | 0.0000 | 17.6278 | 0.0000 |
| 136/137 | 0.6166 | 17.02 | 0.400 | -19.5643 | 0.0000 | 14.5563 | 0.0000 | -5.8225 | 0.0000 |
| 136/141 | 1.4614 | 40.35 | 0.000 | -170.0955 | -6.1719 | 5.3796 | 0.0010 | 7.5255 | -4.0459 |
| 139/138 | 0.0416 | 1.60 | 2.054 | 0.3240 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 140/138 | 1.0657 | 40.99 | 3.542 | 78.2878 | -0.0305 | -1.5099 | 0.0005 | 2.8615 | 0.0724 |
| 138/141 | 0.8668 | 30.89 | 1.342 | 12.3145 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 138/142 | 1.3408 | 37.02 | 2.010 | -205.8645 | -2.3517 | -4.8181 | 0.0013 | 6.9044 | 1.6003 |
| 140/139 | 0.7130 | 25.41 | 1.342 | -2.3175 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 139/141 | 1.3830 | 53.19 | 0.000 | -90.3925 | -0.0168 | 1.6929 | 0.0002 | 3.3364 | -0.0189 |
| 139/147 | 0.8729 | 24.10 | 2.400 | 204.6844 | 0.0330 | -2.4165 | -0.0005 | 8.4235 | -0.2144 |
| 140/146 | 1.1972 | 46.05 | 0.000 | -77.9382 | -0.0083 | 1.4083 | -0.0001 | 2.8796 | -0.0309 |
| 140/147 | 0.2872 | 10.23 | 1.342 | 1.7164 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 140/148 | 0.9150 | 25.26 | 2.400 | 223.9651 | 0.0059 | -1.8824 | 0.0034 | 8.3003 | 0.0117 |
| 141/144 | 1.6562 | 45.73 | 0.000 | -224.3206 | 10.1357 | -16.0627 | 0.0000 | -5.6091 | 4.4968 |
| 146/141 | 0.6765 | 24.11 | 1.342 | 9.4758 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 147/141 | 0.9441 | 36.31 | 3.542 | 66.5656 | -0.0145 | -1.4255 | 0.0004 | 2.8521 | 0.0399 |
| 142/143 | 0.6107 | 16.86 | 0.400 | -19.5643 | 0.0000 | -14.4097 | 0.0000 | 5.7639 | 0.0000 |
| 142/146 | 1.3122 | 36.23 | 0.000 | -205.8645 | 11.9795 | 14.7883 | 0.0013 | 6.9044 | 1.6003 |
| 143/145 | 2.1880 | 77.98 | 1.200 | -14.2068 | 0.0000 | -19.4303 | 0.0000 | 17.6940 | 0.0000 |
| 144/145 | 0.6107 | 16.86 | 0.400 | -19.5643 | 0.0000 | 14.4097 | 0.0000 | -5.7639 | 0.0000 |
| 144/149 | 1.6530 | 45.64 | 0.000 | -224.3206 | -4.0711 | 3.6965 | 0.0000 | 7.3399 | -3.7132 |
| 148/146 | 0.7419 | 28.53 | 3.542 | 52.5594 | -0.0031 | -1.1110 | -0.0001 | 2.3006 | -0.0027 |
| 146/149 | 0.8228 | 29.32 | 1.342 | 11.6582 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 146/150 | 1.0353 | 50.67 | 1.520 | -252.9127 | -4.7684 | -7.9869 | 0.0005 | 9.0335 | 3.6771 |
| 148/147 | 0.5351 | 19.07 | 1.342 | -1.6950 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 147/149 | 1.0057 | 38.68 | 0.000 | -66.0598 | -0.0017 | 1.1230 | -0.0002 | 2.4057 | -0.0086 |
| 147/155 | 1.0268 | 28.35 | 2.400 | 251.7475 | 0.0440 | -1.6078 | 0.0023 | 8.3105 | -0.3133 |
| 148/154 | 0.8017 | 30.83 | 0.000 | -52.0996 | -0.0119 | 0.8568 | 0.0001 | 1.9495 | -0.0165 |
| 148/155 | 0.1933 | 6.89 | 1.342 | 1.0354 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 148/156 | 1.0327 | 28.51 | 2.400 | 260.1454 | 0.0915 | -1.0446 | 0.0006 | 7.8380 | -0.1977 |
| 149/152 | 1.4832 | 40.95 | 0.000 | -260.6274 | 12.5947 | -19.0519 | 0.0004 | -2.2289 | 2.7586 |
| 154/149 | 0.6665 | 23.75 | 1.342 | 9.3266 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 155/149 | 0.5785 | 22.25 | 3.542 | 40.7739 | -0.0047 | -0.8341 | 0.0001 | 1.8140 | -0.0017 |
| 150/151 | 0.6079 | 16.78 | 0.400 | -19.5643 | 0.0000 | -14.3381 | 0.0000 | 5.7353 | 0.0000 |
| 150/154 | 1.8209 | 50.27 | 0.000 | -252.9127 | 9.4971 | 11.6195 | 0.0005 | 9.0335 | 3.6771 |
| 151/153 | 2.1911 | 78.09 | 1.200 | -14.1768 | 0.0000 | -19.4303 | 0.0000 | 17.7260 | 0.0000 |
| 152/153 | 0.6079 | 16.78 | 0.400 | -19.5643 | 0.0000 | 14.3381 | 0.0000 | -5.7353 | 0.0000 |
| 152/157 | 1.4272 | 39.40 | 0.000 | -260.6274 | -1.5095 | 0.6149 | 0.0004 | 3.8581 | -1.2717 |
| 156/154 | 0.4141 | 15.93 | 3.542 | 28.1636 | -0.0107 | -0.5515 | 0.0002 | 1.3194 | 0.0256 |
| 154/157 | 0.7002 | 24.95 | 1.342 | 9.8292 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 154/158 | 1.9798 | 54.66 | 1.310 | -281.0729 | -6.7051 | -9.7734 | 0.0003 | 9.2039 | 3.9026 |
| 156/155 | 0.3517 | 12.53 | 1.342 | -1.0533 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 155/157 | 0.6406 | 24.64 | 0.000 | -40.5416 | -0.0292 | 0.7347 | 0.0004 | 1.6388 | -0.0251 |
| 155/163 | 1.0997 | 30.36 | 2.400 | 280.3686 | 0.0071 | -0.6107 | -0.0043 | 7.5829 | -0.3161 |
| 156/157 | 0.0837 | 3.22 | 2.054 | 1.4594 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 156/162 | 0.4444 | 17.09 | 0.000 | -28.5059 | -0.0124 | 0.3808 | 0.0001 | 1.0922 | -0.0190 |
| 156/163 | 0.2494 | 8.89 | 1.342 | -0.6956 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 156/168 | 1.0674 | 29.47 | 2.400 | 279.7403 | -0.0861 | -0.2573 | -0.0056 | 7.2980 | 0.0192 |
| 157/160 | 1.5045 | 41.54 | 0.110 | -279.3094 | 15.4083 | -22.4157 | -0.0014 | 2.3014 | 0.2254 |
| 162/157 | 0.6843 | 24.39 | 1.342 | 9.5917 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 163/157 | 0.2844 | 10.94 | 3.542 | 13.5639 | -0.0191 | -0.4428 | 0.0007 | 1.2489 | 0.0763 |
| 158/159 | 0.6046 | 16.69 | 0.400 | -19.5643 | 0.0000 | -14.2556 | 0.0000 | 5.7022 | 0.0000 |
| 158/162 | 1.9738 | 54.49 | 0.000 | -281.0729 | 7.4824 | 9.8331 | 0.0003 | 9.2039 | 3.9026 |
| 159/161 | 2.1945 | 78.21 | 1.200 | -14.0630 | 0.0000 | -19.4303 | 0.0000 | 17.7715 | 0.0000 |
| 160/161 | 0.6046 | 16.69 | 0.400 | -19.5643 | 0.0000 | 14.2556 | 0.0000 | -5.7022 | 0.0000 |
| 160/166 | 1.7360 | 47.93 | 1.810 | -279.3094 | 1.4133 | -2.4679 | -0.0014 | 7.0772 | -2.3328 |
| 162/164 | 1.8455 | 50.95 | 0.720 | -291.4950 | -9.6723 | -14.4056 | -0.0023 | 7.8215 | 2.8836 |
| 168/162 | 0.0792 | 3.05 | 3.542 | 1.6086 | -0.0063 | -0.0853 | 0.0000 | 0.5375 | 0.0222 |
| 162/170 | 0.6988 | 24.90 | 1.342 | 9.8079 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 168/163 | 0.1476 | 5.26 | 1.342 | 0.7037 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 163/170 | 0.1999 | 7.69 | 0.000 | -13.0136 | 0.0169 | -0.0113 | -0.0005 | 0.4671 | 0.0100 |
| 163/172 | 1.1068 | 30.56 | 1.200 | 288.7668 | -0.0391 | -0.0987 | -0.0026 | 6.9192 | -0.2757 |
| 164/165 | 0.5913 | 16.32 | 0.400 | -19.5643 | 0.0000 | -13.9227 | 0.0000 | 5.5691 | 0.0000 |
| 164/169 | 1.8390 | 50.77 | 0.000 | -291.4950 | 4.1848 | 5.2008 | -0.0023 | 7.8215 | 2.8836 |
| 165/167 | 2.2030 | 78.51 | 1.200 | -13.7716 | 0.0000 | -19.4303 | 0.0000 | 17.8881 | 0.0000 |
| 166/167 | 0.5913 | 16.32 | 0.400 | -19.5643 | 0.0000 | 13.9227 | 0.0000 | -5.5691 | 0.0000 |
| 166/170 | 1.7046 | 47.06 | 0.000 | -279.3094 | -12.2927 | 17.1385 | -0.0014 | 7.0772 | -2.3328 |
| 168/171 | 0.0494 | 1.90 | 2.214 | -1.0370 | 0.0154 | 0.0346 | -0.0003 | 0.2775 | -0.0265 |
| 168/172 | 0.3633 | 12.95 | 1.342 | -1.0939 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 168/178 | 1.0663 | 29.44 | 0.720 | 280.9750 | -0.0735 | 0.2334 | 0.0016 | 6.9311 | 0.0697 |
| 169/171 | 1.6604 | 45.84 | 1.200 | -291.4950 | 3.4095 | 5.5176 | -0.0023 | -1.1819 | -3.4956 |
| 171/170 | 0.6100 | 21.74 | 1.342 | 8.4827 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 172/170 | 0.1573 | 6.05 | 3.542 | -11.9901 | 0.0141 | 0.0328 | 0.0000 | 0.0608 | -0.0501 |
| 170/173 | 1.6009 | 44.20 | 0.000 | -278.6715 | 3.8418 | -5.0303 | -0.0019 | -0.9360 | 3.5336 |
| 171/174 | 1.7443 | 48.16 | 0.510 | -283.4339 | -11.7470 | -16.0846 | -0.0009 | 7.4642 | 2.4035 |
| 178/171 | 0.3668 | 14.11 | 0.000 | -23.2637 | 0.0159 | 0.2740 | -0.0003 | 0.9422 | 0.0111 |
| 171/179 | 0.6732 | 23.99 | 1.342 | 9.4264 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 178/172 | 0.1928 | 6.87 | 1.342 | 1.0315 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 172/179 | 0.2173 | 8.36 | 3.542 | 12.3919 | -0.0030 | -0.3072 | 0.0001 | 0.9052 | 0.0127 |
| 172/181 | 1.0813 | 29.85 | 0.000 | 279.3862 | -0.0789 | 0.4901 | -0.0005 | 7.2373 | -0.2295 |
| 173/176 | 1.7855 | 49.30 | 0.510 | -278.6715 | 3.8418 | -4.7079 | -0.0019 | 7.3902 | -3.0358 |
| 174/175 | 0.5979 | 16.51 | 0.400 | -19.5643 | 0.0000 | -14.0890 | 0.0000 | 5.6356 | 0.0000 |
| 174/180 | 1.7810 | 49.17 | 0.000 | -283.4339 | 2.2767 | 3.5218 | -0.0009 | 7.4642 | 2.4035 |
| 175/177 | 2.1975 | 78.31 | 1.200 | -13.9597 | 0.0000 | -19.4303 | 0.0000 | 17.8129 | 0.0000 |
| 176/177 | 0.5979 | 16.51 | 0.400 | -19.5643 | 0.0000 | 14.0890 | 0.0000 | -5.6356 | 0.0000 |
| 176/179 | 1.7916 | 49.46 | 0.000 | -278.6715 | -10.0526 | 14.8986 | -0.0019 | 7.3902 | -3.0358 |
| 178/180 | 0.3860 | 14.84 | 3.542 | 23.5532 | -0.0082 | -0.5703 | 0.0002 | 1.4321 | 0.0364 |
| 178/181 | 0.5639 | 20.10 | 1.342 | -1.7961 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 178/186 | 1.0497 | 28.98 | 0.000 | 265.1720 | 0.1300 | 1.0056 | -0.0017 | 7.9177 | 0.1868 |
| 180/179 | 0.7559 | 26.94 | 1.342 | 10.6603 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 181/179 | 0.5903 | 22.70 | 0.000 | -38.1633 | -0.0086 | 0.5857 | 0.0000 | 1.4480 | -0.0151 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 179/184 | 1.9229 | 53.09 | 1.220 | -260.7606 | 6.6870 | -8.2768 | 0.0008 | 9.0468 | -4.2480 |
| 181/180 | 0.1019 | 3.92 | 2.054 | 1.9517 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 180/182 | 1.3855 | 38.25 | 0.020 | -255.3750 | -14.4734 | -19.0083 | 0.0001 | 3.7200 | -0.7603 |
| 186/180 | 0.7771 | 29.89 | 0.000 | -50.1737 | -0.0131 | 0.8877 | 0.0003 | 1.9400 | -0.0106 |
| 180/187 | 0.6008 | 21.41 | 1.342 | 8.3460 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 186/181 | 0.2357 | 8.40 | 1.342 | 1.3429 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 181/187 | 0.5361 | 20.62 | 3.542 | 37.1040 | -0.0064 | -0.7769 | 0.0000 | 1.7146 | 0.0107 |
| 181/193 | 0.9974 | 27.54 | 0.000 | 251.7715 | 0.1201 | 1.3694 | 0.0004 | 8.0087 | -0.0319 |
| 182/183 | 0.6156 | 17.00 | 0.400 | -19.5643 | 0.0000 | -14.5318 | 0.0000 | 5.8127 | 0.0000 |
| 182/188 | 1.3492 | 37.25 | 0.000 | -255.3750 | -0.0078 | 0.5982 | 0.0001 | 3.7200 | -0.7603 |
| 183/185 | 2.1832 | 77.81 | 1.200 | -14.4464 | 0.0000 | -19.4303 | 0.0000 | 17.6182 | 0.0000 |
| 184/185 | 0.6156 | 17.00 | 0.400 | -19.5643 | 0.0000 | 14.5318 | 0.0000 | -5.8127 | 0.0000 |
| 184/187 | 1.9223 | 53.07 | 0.000 | -260.7606 | -7.6933 | 11.3297 | 0.0008 | 9.0468 | -4.2480 |
| 186/187 | 0.0927 | 3.57 | 2.054 | 1.7034 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 186/192 | 0.6852 | 26.35 | 3.542 | 49.2513 | 0.0023 | -0.9774 | -0.0001 | 2.0233 | -0.0162 |
| 186/193 | 0.7796 | 27.78 | 1.342 | -2.5507 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 186/194 | 0.9453 | 26.10 | 0.000 | 230.4415 | -0.0735 | 1.8516 | 0.0009 | 8.3560 | -0.1189 |
| 187/190 | 1.7604 | 48.60 | 1.010 | -226.3026 | 8.8330 | -10.0416 | -0.0003 | 9.1415 | -4.0880 |
| 192/187 | 0.8068 | 28.75 | 1.342 | 11.4202 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 193/187 | 0.9533 | 36.66 | 0.000 | -62.5388 | -0.0014 | 1.0638 | 0.0002 | 2.3000 | 0.0042 |
| 188/189 | 0.6082 | 16.79 | 0.400 | -19.5643 | 0.0000 | -14.3474 | 0.0000 | 5.7389 | 0.0000 |
| 188/192 | 1.3847 | 38.23 | 0.190 | -255.3750 | 13.1738 | 20.6534 | 0.0001 | -1.9629 | -2.1479 |
| 189/191 | 2.1895 | 78.03 | 1.200 | -14.2313 | 0.0000 | -19.4303 | 0.0000 | 17.7042 | 0.0000 |
| 190/191 | 0.6082 | 16.79 | 0.400 | -19.5643 | 0.0000 | 14.3474 | 0.0000 | -5.7389 | 0.0000 |
| 190/195 | 1.7674 | 48.80 | 0.000 | -226.3026 | -5.3309 | 9.5648 | -0.0003 | 9.1415 | -4.0880 |
| 194/192 | 1.1418 | 43.92 | 0.000 | -75.1346 | 0.0078 | 1.2793 | 0.0000 | 2.7057 | 0.0140 |
| 192/195 | 0.7212 | 25.70 | 1.342 | -10.1424 | -0.0000 | -0.0000 | -0.0000 | -0.0140 | -0.0000 |
| 192/196 | 1.5481 | 42.74 | 1.620 | -209.8724 | -3.8448 | -2.8575 | -0.0018 | 6.9019 | 3.4663 |
| 194/193 | 0.3772 | 13.44 | 1.342 | 2.3701 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 193/195 | 0.8819 | 33.92 | 3.542 | 62.8649 | 0.0013 | -1.3472 | -0.0002 | 2.7102 | -0.0001 |
| 193/201 | 0.8873 | 24.50 | 0.000 | 205.7503 | -0.0766 | 2.3414 | 0.0007 | 8.5271 | -0.3229 |
| 194/200 | 1.0668 | 41.03 | 3.542 | 75.6773 | -0.0128 | -1.6118 | 0.0004 | 3.1642 | 0.0512 |
| 194/201 | 0.9245 | 32.95 | 1.342 | -3.0575 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 194/202 | 0.7791 | 21.51 | 0.000 | 177.8802 | -0.0174 | 2.8441 | -0.0026 | 8.5778 | 0.0521 |
| 195/198 | 1.1975 | 33.06 | 0.420 | -172.7887 | 12.0978 | -14.2370 | 0.0015 | 7.0161 | -1.7616 |
| 200/195 | 0.9050 | 32.25 | 1.342 | 12.8848 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 201/195 | 1.3622 | 52.39 | 0.000 | -89.3155 | -0.0057 | 1.6335 | 0.0001 | 3.2575 | -0.0182 |
| 196/197 | 0.6080 | 16.79 | 0.400 | -19.5643 | 0.0000 | -14.3404 | 0.0000 | 5.7362 | 0.0000 |
| 196/200 | 1.6225 | 44.79 | 0.780 | -209.8724 | 10.0655 | 16.8961 | -0.0018 | -6.2196 | -4.5251 |
| 197/199 | 2.1909 | 78.08 | 1.200 | -14.1848 | 0.0000 | -19.4303 | 0.0000 | 17.7228 | 0.0000 |
| 198/199 | 0.6080 | 16.79 | 0.400 | -19.5643 | 0.0000 | 14.3404 | 0.0000 | -5.7362 | 0.0000 |
| 198/203 | 1.2180 | 33.63 | 0.000 | -172.7887 | -2.0169 | 5.3695 | 0.0015 | 7.0161 | -1.7616 |
| 202/200 | 1.5280 | 58.77 | 0.000 | -100.1192 | -0.0214 | 1.8818 | 0.0003 | 3.6563 | -0.0221 |
| 200/203 | 0.6729 | 23.98 | 2.683 | 9.1837 | 0.0003 | 0.0281 | 0.0000 | -0.0194 | -0.0009 |
| 200/204 | 1.3276 | 36.65 | 1.410 | -144.7005 | -6.2205 | -5.1169 | 0.0005 | 7.4563 | 3.8257 |
| 202/201 | 0.4808 | 17.13 | 1.342 | 3.1215 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 201/203 | 1.2095 | 46.52 | 3.542 | 89.5506 | -0.0224 | -1.7464 | 0.0004 | 3.2547 | 0.0584 |
| 201/209 | 0.6649 | 18.36 | 0.000 | 140.6725 | 0.0053 | 3.3382 | -0.0022 | 8.4937 | -0.1256 |
| 202/203 | 0.0560 | 2.15 | 2.054 | -0.5050 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 202/208 | 1.3969 | 53.73 | 3.542 | 101.7368 | -0.0040 | -2.1592 | 0.0000 | 4.0905 | -0.0039 |
| 202/209 | 1.0773 | 38.39 | 1.342 | -3.5922 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 202/214 | 0.5546 | 15.31 | 0.000 | 107.4230 | 0.0479 | 3.0537 | 0.0012 | 8.3464 | 0.1075 |
| 203/206 | 0.8958 | 24.73 | 0.210 | -102.2724 | 14.8197 | -17.0210 | 0.0015 | 6.0442 | -0.8160 |
| 208/203 | 1.0210 | 36.38 | 1.342 | 14.7095 | -0.0038 | 0.0017 | 0.0000 | 0.0118 | 0.0051 |
| 209/203 | 1.7164 | 66.02 | 0.000 | -114.2707 | -0.0279 | 1.9961 | 0.0005 | 3.9377 | -0.0171 |
| 204/205 | 0.6267 | 17.30 | 0.400 | -19.5643 | 0.0000 | -14.8088 | 0.0000 | 5.9235 | 0.0000 |
| 204/208 | 1.3639 | 37.65 | 0.990 | -144.7005 | 8.0537 | 14.6762 | 0.0005 | -6.9808 | -4.3736 |
| 205/207 | 2.1775 | 77.60 | 1.200 | -14.5647 | 0.0000 | -19.4303 | 0.0000 | 17.5509 | 0.0000 |
| 206/207 | 0.6267 | 17.30 | 0.400 | -19.5643 | 0.0000 | 14.8088 | 0.0000 | -5.9235 | 0.0000 |
| 206/212 | 0.7725 | 21.33 | 0.000 | -99.3329 | 0.2520 | 2.5940 | 0.0009 | 6.0611 | -0.9607 |
| 208/210 | 0.9527 | 26.30 | 0.920 | -61.4884 | -9.1014 | -7.8708 | -0.0010 | 6.5378 | 3.9470 |
| 214/208 | 1.6606 | 63.87 | 3.542 | -125.6066 | 0.0017 | 0.6996 | 0.0000 | -2.2430 | -0.0061 |
| 208/216 | 0.6935 | 24.72 | 1.342 | 9.7294 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 214/209 | 0.5538 | 21.30 | 1.342 | 3.6518 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 209/216 | 1.6272 | 62.59 | 3.542 | 115.5968 | 0.0222 | -2.5374 | -0.0007 | 4.7813 | -0.0886 |
| 209/220 | 0.3885 | 10.73 | 0.000 | 57.3327 | 0.0201 | 3.4409 | 0.0050 | 7.9746 | -0.1292 |
| 210/211 | 0.6380 | 17.61 | 0.400 | -19.5643 | 0.0000 | -15.0910 | 0.0000 | 6.0364 | 0.0000 |
| 210/215 | 0.9468 | 26.14 | 0.000 | -61.4884 | 5.7426 | 11.7357 | -0.0010 | 6.5378 | 3.9470 |
| 211/213 | 2.1693 | 77.31 | 1.200 | -14.8440 | 0.0000 | -19.4303 | 0.0000 | 17.4392 | 0.0000 |
| 212/213 | 0.6380 | 17.61 | 0.400 | -19.5643 | 0.0000 | 15.0910 | 0.0000 | -6.0364 | 0.0000 |
| 212/216 | 1.0538 | 29.10 | 0.280 | -102.2724 | -14.5890 | 22.6049 | 0.0015 | -5.5599 | 2.7819 |
| 214/217 | 1.6490 | 58.77 | 0.000 | 118.6615 | 0.0257 | -1.4082 | -0.0003 | -2.5038 | 0.0119 |
| 214/218 | 0.2422 | 6.69 | 1.200 | 22.7372 | -0.0332 | 11.2985 | 0.0126 | -10.5752 | -0.2584 |
| 214/220 | 1.2145 | 46.71 | 1.342 | -4.3058 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 215/219 | 1.1924 | 32.92 | 1.200 | -61.4884 | 5.7426 | 12.0147 | -0.0010 | -11.0375 | -4.5520 |
| 219/216 | 1.0777 | 38.41 | 1.342 | 15.4626 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 220/216 | 1.8791 | 72.27 | 3.542 | -137.8941 | 0.0246 | 0.8449 | 0.0000 | -2.7577 | -0.0870 |
| 216/221 | 0.4334 | 11.97 | 0.000 | -15.2753 | 2.5777 | 1.2743 | 0.0025 | 1.7934 | 2.7178 |
| 218/217 | 0.7744 | 27.60 | 0.000 | -36.3742 | 0.0056 | 1.6013 | -0.0003 | 2.5344 | -0.0293 |
| 217/219 | 1.5039 | 53.60 | 1.771 | 78.1546 | 0.0239 | -4.2892 | -0.0005 | 4.6408 | -0.0363 |
| 217/222 | 0.9296 | 33.13 | 1.200 | 24.8394 | -0.0039 | 6.0256 | 0.0006 | -3.8632 | -0.0222 |
| 218/222 | 0.9109 | 32.46 | 0.000 | 49.4005 | 0.0137 | -1.5421 | -0.0004 | -2.6317 | -0.0264 |
| 218/228 | 0.2041 | 5.63 | 0.180 | -68.6468 | -0.0454 | 0.1551 | -0.0044 | -1.8287 | -0.2818 |
| 222/219 | 1.6836 | 60.00 | 1.771 | -98.8092 | -0.0435 | 3.3570 | -0.0002 | -3.9650 | -0.0198 |
| 219/224 | 0.7242 | 19.99 | 0.000 | 25.7226 | -11.1722 | -7.5097 | 0.0133 | -2.7453 | -4.5213 |
| 219/231 | 0.8442 | 30.09 | 1.342 | -7.6192 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 220/223 | 1.8022 | 64.23 | 0.000 | 130.2252 | -0.0017 | -1.4496 | -0.0001 | -2.7153 | -0.0052 |
| 228/220 | 0.6383 | 24.55 | 1.342 | 4.2649 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 220/230 | 0.3585 | 9.90 | 1.200 | -54.7443 | 0.0008 | 12.6344 | 0.0001 | -13.5003 | -0.1690 |
| 221/226 | 0.3687 | 10.18 | 0.710 | -17.2674 | 2.6052 | 1.6427 | 0.0021 | -0.9760 | -2.3462 |
| 228/222 | 1.0811 | 38.53 | 0.000 | -71.7589 | 0.0442 | 0.8621 | -0.0005 | 1.8332 | 0.0162 |
| 222/229 | 1.4901 | 53.10 | 1.771 | 83.3694 | -0.0779 | -3.4783 | 0.0009 | 4.0721 | 0.0522 |
| 230/223 | 0.8393 | 29.91 | 0.000 | -39.9734 | 0.0019 | 1.7575 | 0.0000 | 2.7758 | 0.0051 |
| 223/231 | 1.6862 | 60.09 | 1.771 | 85.7445 | 0.0241 | -4.9079 | -0.0002 | 5.3381 | -0.0467 |
| 223/233 | 1.0226 | 36.44 | 1.200 | 27.0085 | -0.0278 | 6.6266 | -0.0001 | -4.2888 | 0.0347 |
| 224/225 | 0.6406 | 17.69 | 0.400 | -19.5643 | 0.0000 | -15.1574 | 0.0000 | 6.0630 | 0.0000 |
| 224/229 | 0.5958 | 16.45 | 0.000 | 25.7226 | 3.6208 | 12.3330 | 0.0133 | 2.5234 | 3.5403 |
| 225/227 | 2.1674 | 77.24 | 1.200 | -14.9070 | 0.0000 | -19.4303 | 0.0000 | 17.4140 | 0.0000 |
| 226/227 | 0.6406 | 17.69 | 0.400 | -19.5643 | 0.0000 | 15.1574 | 0.0000 | -6.0630 | 0.0000 |
| 226/231 | 0.9434 | 26.05 | 0.490 | -17.2674 | -12.4669 | 21.3415 | 0.0021 | -11.4107 | 3.7626 |
| 228/232 | 1.1874 | 42.32 | 0.000 | 70.0602 | -0.0240 | -1.8729 | 0.0004 | -3.0471 | -0.0082 |
| 228/234 | 0.2224 | 6.14 | 1.200 | -71.8215 | -0.0978 | 2.4113 | -0.0102 | -3.2082 | -0.0941 |



FERNANDEZ CONSTRUCTOR
L.A.V. TRAMO: GELIDA – ST. LLORENÇ
VIADUCTO DE RIERUSSA
CÁLCULOS ESTÁTICOS DE CIMBRA Y ENCOFRADO

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 228/236 | 1.4450 | 51.50 | 1.342 | -4.8789 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 232/229 | 1.3463 | 47.98 | 1.771 | -90.8126 | 0.0138 | 0.9414 | -0.0003 | -2.1440 | 0.0260 |
| 229/235 | 0.6812 | 18.81 | 0.000 | 83.8197 | 3.2523 | 4.5972 | -0.0100 | 2.6858 | 2.0600 |
| 230/233 | 0.9716 | 34.63 | 0.000 | 52.9841 | -0.0157 | -1.6344 | 0.0001 | -2.8605 | 0.0011 |
| 230/236 | 0.3582 | 9.89 | 1.200 | -89.4250 | 0.0185 | 0.9100 | -0.0038 | -6.6207 | -0.1935 |
| 233/231 | 1.8925 | 67.45 | 1.771 | -108.3931 | 0.0804 | 3.8247 | -0.0004 | -4.5726 | -0.0614 |
| 235/231 | 1.2684 | 45.20 | 1.342 | 18.3086 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 231/237 | 0.8121 | 22.42 | 1.200 | 74.3596 | 6.3886 | 0.2230 | -0.0111 | -1.9556 | -3.8507 |
| 234/232 | 1.4249 | 50.78 | 0.000 | -89.6448 | -0.0268 | 1.7389 | 0.0003 | 2.8896 | 0.0018 |
| 232/235 | 1.1575 | 41.25 | 1.771 | 72.1017 | 0.0166 | -1.5150 | -0.0001 | 2.6673 | 0.0064 |
| 236/233 | 1.1773 | 41.95 | 0.000 | -79.2559 | -0.0224 | 0.9087 | 0.0003 | 1.9179 | -0.0120 |
| 233/237 | 1.5772 | 56.21 | 1.771 | 89.4401 | 0.0615 | -3.7721 | -0.0006 | 4.2969 | -0.0259 |
| 234/242 | 1.3678 | 48.75 | 0.000 | 87.0864 | 0.0026 | -1.7571 | 0.0000 | -2.9925 | 0.0102 |
| 234/244 | 0.3785 | 10.45 | 1.200 | -134.8583 | -0.4290 | 5.3839 | -0.0040 | -3.4655 | 0.2304 |
| 235/238 | 0.9149 | 25.26 | 0.000 | 153.3939 | -14.8169 | -11.9235 | -0.0013 | 1.8490 | -1.6980 |
| 242/235 | 1.3451 | 47.94 | 1.771 | -89.8275 | -0.0078 | 0.9407 | 0.0003 | -2.2455 | 0.0164 |
| 235/247 | 1.0068 | 35.88 | 1.342 | -9.1626 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 236/243 | 1.3757 | 49.03 | 0.000 | 81.4685 | 0.0603 | -2.2507 | -0.0008 | -3.5058 | 0.0096 |
| 244/236 | 0.7008 | 24.98 | 1.342 | 4.7185 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 236/246 | 0.4077 | 11.26 | 0.000 | -150.6884 | -0.1722 | -0.6969 | 0.0170 | -3.1971 | -0.1922 |
| 237/240 | 1.3081 | 36.12 | 0.120 | 142.0625 | 6.5113 | -9.5755 | 0.0210 | 5.2523 | -4.6378 |
| 243/237 | 1.3844 | 49.34 | 1.771 | -98.8608 | -0.0605 | 0.4735 | 0.0008 | -1.7817 | 0.0124 |
| 238/239 | 0.6690 | 18.47 | 0.400 | -19.5643 | 0.0000 | -15.8668 | 0.0000 | 6.3467 | 0.0000 |
| 238/245 | 0.9197 | 25.39 | 1.080 | 153.3939 | 0.4338 | 8.0420 | -0.0013 | -5.2611 | -0.6842 |
| 239/241 | 2.1460 | 76.48 | 1.200 | -15.6372 | 0.0000 | -19.4303 | 0.0000 | 17.1219 | 0.0000 |
| 240/241 | 0.6690 | 18.47 | 0.400 | -19.5643 | 0.0000 | 15.8668 | 0.0000 | -6.3467 | 0.0000 |
| 240/247 | 1.4069 | 38.84 | 1.080 | 142.0625 | -9.2262 | 10.3600 | 0.0210 | -5.7903 | 5.3264 |
| 244/242 | 1.4784 | 52.69 | 0.000 | -88.4888 | -0.0097 | 2.1262 | 0.0000 | 3.3447 | -0.0144 |
| 242/245 | 1.3634 | 48.59 | 1.771 | 89.3417 | 0.0091 | -1.6138 | -0.0002 | 2.7891 | -0.0062 |
| 246/243 | 1.5764 | 56.18 | 0.000 | -95.7215 | 0.0546 | 2.3144 | -0.0007 | 3.4781 | 0.0059 |
| 243/247 | 1.3117 | 46.75 | 1.771 | 85.6942 | -0.0548 | -1.4401 | 0.0006 | 2.7096 | -0.0041 |
| 244/248 | 1.4329 | 51.07 | 0.000 | 94.0653 | 0.0144 | -1.4820 | -0.0002 | -2.9295 | 0.0023 |
| 244/254 | 0.5136 | 14.18 | 0.000 | -201.4952 | 0.1938 | -0.0866 | 0.0157 | 2.9661 | 0.0992 |
| 244/256 | 1.6156 | 57.58 | 1.342 | -5.4758 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 248/245 | 1.4215 | 50.66 | 1.771 | -90.4732 | -0.0093 | 1.4380 | 0.0002 | -2.7978 | 0.0006 |
| 245/250 | 1.2995 | 35.88 | 1.110 | 217.1097 | -0.1169 | 7.3072 | 0.0041 | -7.6567 | -0.8730 |
| 246/249 | 1.4391 | 51.29 | 0.000 | 94.1454 | -0.0527 | -1.4764 | 0.0005 | -2.8938 | -0.0286 |
| 246/256 | 0.5591 | 15.43 | 0.000 | -218.5770 | -0.0680 | 1.0059 | -0.0108 | 3.6644 | 0.0205 |
| 249/247 | 1.4568 | 51.92 | 1.771 | -90.6063 | 0.0670 | 1.5057 | -0.0011 | -2.9269 | -0.0425 |
| 247/252 | 1.5835 | 43.72 | 1.110 | 203.9877 | 8.5739 | 6.1803 | -0.0152 | -6.8867 | -4.2061 |
| 255/247 | 1.2973 | 49.90 | 1.342 | 18.7397 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 254/248 | 1.5768 | 56.19 | 0.000 | -89.4694 | -0.0164 | 2.4020 | -0.0002 | 3.8965 | -0.0456 |
| 248/255 | 1.3816 | 49.24 | 1.771 | 95.6042 | 0.0244 | -1.3901 | -0.0009 | 2.2257 | -0.0733 |
| 256/249 | 1.5637 | 55.73 | 0.000 | -89.7333 | -0.0402 | 2.4419 | 0.0004 | 3.9040 | 0.0013 |
| 249/257 | 1.3881 | 49.47 | 1.771 | 96.1014 | 0.0576 | -1.3989 | -0.0007 | 2.3464 | -0.0335 |
| 250/251 | 0.6922 | 19.11 | 0.400 | -19.5643 | 0.0000 | -16.4467 | 0.0000 | 6.5787 | 0.0000 |
| 250/255 | 1.5977 | 44.11 | 0.090 | 217.1097 | 16.2836 | 26.9944 | 0.0041 | -10.0852 | -2.3406 |
| 251/253 | 2.1267 | 75.79 | 1.200 | -16.2941 | 0.0000 | -19.4303 | 0.0000 | 16.8591 | 0.0000 |
| 252/253 | 0.6922 | 19.11 | 0.400 | -19.5643 | 0.0000 | 16.4467 | 0.0000 | -6.5787 | 0.0000 |
| 252/257 | 1.5970 | 44.09 | 0.090 | 203.9877 | -7.8277 | 25.8674 | -0.0152 | -9.2137 | -3.5017 |
| 254/257 | 0.0970 | 3.73 | 2.054 | 1.8210 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 254/258 | 0.8940 | 31.86 | 0.000 | 52.8910 | 0.0321 | -0.3018 | -0.0007 | -2.2071 | -0.0326 |
| 254/260 | 1.2078 | 33.35 | 1.200 | -246.3035 | -1.5021 | 34.0606 | 0.0216 | -32.1943 | 1.8287 |
| 258/255 | 1.9203 | 68.43 | 1.771 | -123.0263 | -0.0221 | 2.7247 | -0.0002 | -3.5880 | -0.0439 |
| 255/261 | 2.0535 | 56.70 | 1.200 | 300.5562 | -6.2387 | 2.5496 | 0.0202 | -7.2117 | 4.7310 |
| 255/263 | 0.9929 | 35.39 | 1.342 | 14.1972 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 256/259 | 1.0268 | 36.59 | 0.000 | 63.9346 | 0.0322 | -0.5095 | -0.0001 | -2.3557 | 0.0102 |
| 260/256 | 0.5480 | 19.53 | 1.342 | 3.6093 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 256/262 | 1.1453 | 31.62 | 1.200 | -276.9843 | -1.8829 | 25.7626 | -0.0022 | -22.1981 | 2.3573 |
| 259/257 | 1.8560 | 66.15 | 1.771 | -119.2863 | -0.0330 | 2.5755 | 0.0002 | -3.5516 | -0.0020 |
| 257/263 | 2.1489 | 59.33 | 1.200 | 280.4573 | -7.2719 | 6.0514 | 0.0118 | -10.4225 | 5.2156 |
| 260/258 | 1.8210 | 64.90 | 1.771 | -131.9403 | 0.0398 | -0.5546 | -0.0008 | 1.9990 | -0.0807 |
| 258/261 | 0.9567 | 34.10 | 1.771 | 44.4074 | -0.0297 | -3.2862 | 0.0003 | 3.3365 | -0.0389 |
| 262/259 | 1.7052 | 60.77 | 0.000 | -125.6641 | 0.0391 | 0.2418 | -0.0010 | 1.8730 | 0.0124 |
| 259/263 | 1.0207 | 36.38 | 1.771 | 57.3586 | -0.0694 | -2.5861 | 0.0014 | 2.6392 | 0.0814 |
| 260/268 | 3.4152 | 94.29 | 0.600 | -290.6866 | 0.7209 | 191.1372 | -0.0004 | -138.4968 | -0.1361 |
| 260/269 | 1.3302 | 47.41 | 0.000 | -32.5041 | -0.0830 | -5.9087 | 0.0017 | -6.9438 | -0.0311 |
| 260/280 | 0.5125 | 18.26 | 1.342 | -1.6160 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 262/261 | 0.2231 | 8.58 | 2.054 | -3.7008 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 261/264 | 2.1615 | 59.68 | 0.220 | 333.4799 | -4.7079 | -9.9754 | -0.0125 | -3.7317 | 5.7207 |
| 269/261 | 1.1117 | 39.62 | 0.000 | -54.7367 | 0.0893 | -3.0098 | -0.0012 | -3.3023 | 0.0849 |
| 262/271 | 3.4445 | 95.10 | 0.600 | -305.5529 | -3.5633 | 196.8770 | 0.0068 | -133.3538 | 4.4830 |
| 262/272 | 1.3115 | 46.74 | 0.000 | -53.5421 | -0.0148 | -3.6441 | 0.0007 | -5.0200 | 0.0335 |
| 263/266 | 2.2563 | 62.29 | 0.000 | 328.8247 | 19.7514 | -17.8355 | -0.0164 | -7.5902 | 5.2618 |
| 272/263 | 1.0906 | 38.87 | 0.000 | -81.8932 | 0.0173 | -0.4045 | 0.0000 | -0.8590 | 0.0816 |
| 279/263 | 1.2220 | 43.55 | 1.342 | 17.6162 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 264/265 | 0.5950 | 16.43 | 0.400 | -19.5643 | 0.0000 | -14.0150 | 0.0000 | 5.6060 | 0.0000 |
| 264/270 | 2.1639 | 59.74 | 0.000 | 333.4799 | 9.3070 | 9.6892 | -0.0125 | -3.7317 | 5.7207 |
| 265/267 | 2.2216 | 79.17 | 1.200 | -13.1402 | 0.0000 | -19.4303 | 0.0000 | 18.1407 | 0.0000 |
| 266/267 | 0.5950 | 16.43 | 0.400 | -19.5643 | 0.0000 | 14.0150 | 0.0000 | -5.6060 | 0.0000 |
| 266/273 | 1.7188 | 47.45 | 0.380 | 328.8247 | 6.6112 | 1.9795 | -0.0164 | -4.4066 | -1.5958 |
| 268/278 | 3.3922 | 93.65 | 0.000 | -290.6866 | 0.0210 | -188.5131 | -0.0004 | -138.4968 | -0.1361 |
| 278/269 | 1.6463 | 58.67 | 0.000 | -103.5095 | -0.0781 | -1.8486 | -0.0003 | -3.2293 | -0.0422 |
| 269/279 | 1.3121 | 46.76 | 1.771 | -83.4090 | 0.0352 | 2.3977 | 0.0001 | -2.5472 | -0.0158 |
| 269/282 | 0.7083 | 25.24 | 0.000 | 43.4522 | 0.0120 | -1.8078 | -0.0001 | -1.5538 | 0.0504 |
| 270/274 | 2.1647 | 59.77 | 0.520 | 315.6612 | 8.5509 | 9.9983 | -0.0134 | -12.4405 | -3.2902 |
| 271/280 | 3.3657 | 92.92 | 0.000 | -305.5529 | 4.6103 | -188.0422 | 0.0068 | -133.3538 | 4.4830 |
| 280/272 | 1.5710 | 55.99 | 0.000 | -83.0260 | -0.0517 | -3.4752 | -0.0009 | -4.3248 | -0.0716 |
| 272/281 | 0.8351 | 29.76 | 0.000 | -55.4055 | 0.0788 | -1.2804 | -0.0015 | -1.2745 | 0.0629 |
| 273/276 | 2.1182 | 58.48 | 0.520 | 328.8247 | 6.3002 | 2.1100 | -0.0164 | -5.4699 | -4.8719 |
| 274/275 | 0.6302 | 17.40 | 0.400 | -19.5643 | 0.0000 | -14.8961 | 0.0000 | 5.9584 | 0.0000 |
| 274/279 | 2.4665 | 68.10 | 0.080 | 333.4799 | 23.7000 | 29.5996 | -0.0125 | -14.9208 | -4.3454 |
| 275/277 | 2.2230 | 79.22 | 1.200 | -13.0944 | 0.0000 | -19.4303 | 0.0000 | 18.1590 | 0.0000 |
| 276/277 | 0.6302 | 17.40 | 0.400 | -19.5643 | 0.0000 | 14.8961 | 0.0000 | -5.9584 | 0.0000 |
| 276/281 | 2.1273 | 58.73 | 0.080 | 328.8247 | -6.7942 | 21.7946 | -0.0164 | -7.2127 | -4.3284 |
| 278/282 | 1.0500 | 37.42 | 0.000 | -71.4766 | 0.0342 | 0.4085 | 0.0001 | 1.6543 | 0.0071 |
| 278/284 | 1.3111 | 36.20 | 0.000 | -291.4214 | 1.8425 | -23.1130 | 0.0379 | -30.5931 | 2.2601 |
| 282/279 | 0.9435 | 33.62 | 1.771 | 37.0421 | -0.0093 | -4.1817 | -0.0001 | 3.8275 | 0.0046 |
| 279/285 | 2.5080 | 69.24 | 0.000 | 287.3506 | -6.0404 | -14.5884 | 0.0068 | -21.2955 | -4.3491 |
| 279/287 | 1.0926 | 38.94 | 1.342 | 15.6844 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 280/283 | 1.3605 | 48.49 | 1.771 | -100.0782 | 0.0468 | -0.4486 | -0.0007 | 1.2466 | -0.1023 |
| 284/280 | 0.8123 | 31.24 | 1.342 | -2.8180 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 280/286 | 1.2047 | 33.26 | 0.000 | -296.7563 | 0.8283 | -14.7158 | 0.0341 | -25.3486 | 1.7563 |
| 283/281 | 0.8656 | 30.85 | 0.000 | 31.6931 | -0.0600 | -3.5279 | 0.0001 | -3.4084 | -0.1391 |
| 281/287 | 2.0725 | 57.22 | 0.000 | 297.2055 | -6.6554 | -1.8080 | 0.0242 | -9.0595 | -4.3668 |
| 284/282 | 1.5099 | 53.81 | 1.771 | 107.8507 | 0.0369 | 1.2718 | 0.0000 | -2.2022 | -0.0653 |
| 286/283 | 0.4980 | 17.75 | 0.000 | 17.7289 | 0.0482 | -0.8178 | -0.0008 | -2.2293 | -0.0002 |
| 283/287 | 1.8076 | 64.42 | 1.771 | -108.7042 | -0.0611 | 3.5761 | -0.0004 | -3.9628 | -0.0468 |
| 283/292 | 0.7641 | 27.23 | 0.000 | 13.9890 | -0.0002 | -5.1314 | 0.0009 | -3.6513 | 0.0349 |
| 284/293 | 2.8547 | 101.74 | 3.542 | -128.4799 | -0.0059 | 1.8045 | -0.0002 | -3.2550 | -0.0184 |
| 284/294 | 0.6640 | 25.54 | 1.342 | 4.4512 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 284/296 | 1.9699 | 70.20 | 0.000 | -221.4895 | -0.1597 | -3.5977 | 0.0002 | -5.9406 | -0.1626 |
| 285/288 | 1.6959 | 60.44 | 0.230 | 287.3506 | -6.1585 | -14.2298 | 0.0068 | -0.6905 | 4.3022 |
| 286/292 | 0.6558 | 23.37 | 0.000 | -25.5941 | -0.0299 | 1.3801 | -0.0004 | 2.3576 | -0.1053 |
| 286/294 | 0.8966 | 24.75 | 0.000 | -280.6642 | 0.8618 | -7.0369 | -0.0521 | -12.5206 | 0.8100 |
| 287/290 | 1.9621 | 54.17 | 0.000 | 226.8318 | 14.4045 | -24.6463 | 0.0069 | -15.7602 | 3.5805 |
| 292/287 | 1.5971 | 56.92 | 1.771 | 84.5388 | 0.0484 | -4.8562 | -0.0009 | 4.7269 | -0.0654 |
| 293/287 | 1.2159 | 43.33 | 1.342 | 8.4566 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 288/289 | 0.6180 | 17.06 | 0.400 | -19.5643 | 0.0000 | -14.5905 | 0.0000 | 5.8362 | 0.0000 |
| 288/293 | 1.8351 | 65.40 | 0.970 | 287.3506 | 7.9340 | 5.6781 | 0.0068 | -6.0803 | -3.6353 |
| 289/291 | 2.1889 | 78.01 | 1.200 | -14.1783 | 0.0000 | -19.4303 | 0.0000 | 17.7055 | 0.0000 |
| 290/291 | 0.6180 | 17.06 | 0.400 | -19.5643 | 0.0000 | 14.5905 | 0.0000 | -5.8362 | 0.0000 |
| 290/295 | 1.3694 | 37.81 | 0.000 | 226.8318 | 0.1235 | -4.9240 | 0.0069 | -10.0982 | 0.2675 |
| 294/292 | 1.4699 | 52.39 | 1.771 | 112.5221 | 0.0183 | 0.9456 | 0.0000 | -1.6244 | -0.0324 |
| 296/293 | 1.9203 | 68.44 | 0.000 | 107.7804 | -0.0062 | -1.6510 | -0.0004 | -2.9657 | -0.0399 |
| 293/297 | 1.2512 | 44.59 | 1.342 | 8.7124 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 293/298 | 1.7183 | 61.24 | 0.000 | 203.0974 | -5.7130 | -13.4363 | 0.0074 | -12.0448 | -3.6480 |
| 296/294 | 1.5960 | 56.88 | 1.342 | -5.4071 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 294/297 | 2.4119 | 85.96 | 3.542 | -115.9116 | -0.1813 | -0.5754 | 0.0028 | -0.4377 | -0.5661 |
| 294/303 | 1.8316 | 65.27 | 0.000 | -201.2026 | -0.1058 | -3.3243 | -0.0003 | -5.8413 | -0.2457 |
| 295/297 | 1.1737 | 41.83 | 0.000 | 226.8318 | 0.1235 | -4.6808 | 0.0069 | -5.4398 | 0.1477 |
| 296/302 | 2.4330 | 86.71 | 3.542 | -108.3708 | -0.0021 | 1.5998 | -0.0003 | -2.8400 | -0.0324 |
| 296/303 | 0.6807 | 24.26 | 1.342 | 4.5726 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 296/308 | 1.2949 | 46.15 | 0.000 | -147.4832 | 0.1949 | -2.4164 | 0.0002 | -3.2095 | 0.2275 |
| 297/300 | 1.6934 | 60.35 | 0.000 | 154.2460 | 13.6813 | -23.0226 | 1.5679 | -0.4604 | 0.1842 |
| 302/297 | 1.0374 | 36.97 | 2.683 | 7.1142 | -0.0002 | 0.0130 | 0.0000 | -0.0077 | 0.0004 |
| 303/297 | 1.7833 | 63.55 | 3.542 | 96.0143 | -0.3821 | -0.4133 | 0.0008 | 0.0227 | 1.0997 |
| 298/299 | 0.5314 | 14.67 | 0.400 | -18.9000 | 0.0429 | -12.4544 | 0.0000 | 4.9818 | -0.0172 |
| 298/302 | 1.4126 | 50.34 | 0.000 | 203.0545 | 6.1654 | 5.8700 | 0.0074 | 4.1609 | 3.6732 |
| 299/301 | 2.1664 | 77.21 | 1.200 | -12.3717 | -0.0373 | -18.7769 | -0.0149 | 17.6641 | 0.0447 |
| 300/301 | 0.5961 | 16.46 | 0.400 | -20.2286 | -0.0429 | 12.4544 | -0.1029 | -6.5761 | 0.0172 |
| 300/306 | 1.0771 | 38.39 | 1.810 | 154.2832 | 1.3095 | -2.2458 | 0.0000 | 4.4757 | -2.3703 |
| 303/302 | 0.1653 | 6.36 | 2.054 | 3.6650 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 302/304 | 1.2477 | 44.47 | 0.000 | 135.0752 | -9.2998 | -17.3397 | 0.0027 | -8.1480 | -3.2975 |
| 308/302 | 1.4687 | 52.34 | 3.542 | 80.8072 | 0.0092 | -1.2998 | -0.0002 | 2.3677 | -0.0374 |
| 302/309 | 1.2529 | 44.65 | 1.342 | 8.7248 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 308/303 | 1.6136 | 57.51 | 1.342 | -5.4689 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 303/309 | 2.3337 | 83.17 | 0.000 | -100.0424 | -0.0668 | 1.3888 | 0.0004 | 2.4947 | -0.2498 |
| 303/311 | 1.1363 | 40.49 | 2.400 | -130.8965 | 0.1983 | -1.7431 | 0.0035 | 2.3434 | -0.2738 |
| 304/305 | 0.5747 | 15.87 | 0.400 | -19.5643 | 0.0000 | -13.5088 | 0.0000 | 5.4035 | 0.0000 |
| 304/310 | 0.9655 | 34.41 | 0.000 | 135.0752 | 3.7775 | 2.4829 | 0.0027 | 2.7263 | 2.6973 |
| 305/307 | 2.2199 | 79.11 | 1.200 | -13.1230 | 0.0000 | -19.4303 | 0.0000 | 18.1276 | 0.0000 |
| 306/307 | 0.5747 | 15.87 | 0.400 | -19.5643 | 0.0000 | 13.5088 | 0.0000 | -5.4035 | 0.0000 |
| 306/309 | 1.3476 | 48.02 | 0.570 | 154.2832 | -11.8905 | 17.5618 | 0.0000 | -5.4938 | 4.4073 |
| 308/309 | 0.1734 | 6.67 | 2.054 | 3.8835 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 308/310 | 1.8845 | 67.16 | 3.542 | -83.4495 | 0.0095 | 1.2532 | -0.0005 | -2.2103 | -0.0387 |
| 308/311 | 0.4659 | 16.61 | 1.342 | 3.0139 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 308/316 | 0.8406 | 29.96 | 0.000 | -92.5928 | -0.1965 | -2.0132 | -0.0002 | -2.1400 | -0.2533 |
| 310/309 | 0.8247 | 29.39 | 1.342 | 5.6177 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 311/309 | 1.3223 | 47.12 | 3.542 | 70.8964 | -0.0239 | -1.1282 | -0.0003 | 2.0889 | 0.0961 |
| 309/314 | 1.2860 | 45.83 | 0.000 | 95.2882 | 2.7741 | -6.4878 | 0.1031 | -10.1812 | 4.4355 |
| 310/312 | 0.9265 | 33.02 | 0.000 | 83.6427 | -8.9521 | -19.5876 | 0.0080 | -6.1169 | -2.9411 |
| 316/310 | 1.1008 | 39.23 | 3.542 | 59.3985 | -0.0013 | -0.9748 | -0.0003 | 1.8453 | -0.0330 |
| 310/317 | 1.1928 | 42.51 | 1.342 | 8.2884 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 316/311 | 0.9848 | 35.10 | 1.342 | -3.2688 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 311/317 | 1.4939 | 53.24 | 0.000 | -70.8924 | 0.0180 | 0.5967 | -0.0005 | 1.3359 | 0.0090 |
| 311/323 | 0.7226 | 25.75 | 2.400 | -81.1306 | -0.1905 | -0.9065 | 0.0014 | 1.7110 | 0.1943 |
| 312/313 | 0.4299 | 11.87 | 0.400 | -19.5188 | 0.0241 | -9.8743 | 0.0000 | 3.9497 | -0.0096 |
| 312/318 | 0.5218 | 18.60 | 0.000 | 83.6185 | 0.8329 | 0.1369 | 0.0080 | 2.0878 | 0.8375 |
| 313/315 | 2.3183 | 82.62 | 1.200 | -9.8599 | -0.0244 | -19.3873 | -0.0098 | 19.4012 | 0.0293 |
| 314/315 | 0.4538 | 12.53 | 0.400 | -19.6098 | -0.0241 | 9.8743 | -0.0579 | -4.0589 | 0.0096 |
| 314/317 | 1.4236 | 50.73 | 0.780 | 95.3126 | -7.0858 | 13.8216 | 0.0000 | -10.7046 | 5.5269 |
| 316/322 | 1.3028 | 46.43 | 0.000 | -59.4960 | -0.0014 | 0.6852 | -0.0004 | 1.3181 | -0.0366 |
| 316/323 | 0.3675 | 13.10 | 1.342 | 2.2992 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 316/324 | 0.5104 | 18.19 | 2.400 | -53.3607 | 0.1615 | -0.7855 | 0.0006 | 1.6631 | -0.1628 |
| 317/320 | 1.3197 | 47.03 | 0.000 | 56.6345 | 7.7887 | -14.4169 | 0.0021 | -12.2425 | 5.4895 |
| 322/317 | 1.3435 | 47.88 | 0.000 | 9.2755 | -0.0003 | -0.0134 | 0.0000 | -0.0088 | -0.0009 |
| 323/317 | 0.6875 | 24.50 | 0.000 | 40.2083 | 0.0139 | -0.4896 | -0.0005 | -0.9745 | -0.0035 |
| 318/319 | 0.5777 | 15.95 | 0.400 | -19.5643 | 0.0000 | -13.5840 | 0.0000 | 5.4336 | 0.0000 |
| 318/322 | 0.8737 | 31.14 | 0.000 | 83.6185 | 14.0104 | 20.2805 | 0.0080 | 1.3689 | -0.3651 |
| 319/321 | 2.2103 | 78.77 | 1.200 | -13.5235 | 0.0000 | -19.4303 | 0.0000 | 17.9873 | 0.0000 |
| 320/321 | 0.5777 | 15.95 | 0.400 | -19.5643 | 0.0000 | 13.5840 | 0.0000 | -5.4336 | 0.0000 |
| 320/325 | 0.8042 | 28.66 | 1.270 | 56.6345 | -5.7348 | 5.8496 | 0.0021 | -3.3381 | 3.9714 |
| 323/322 | 0.1484 | 5.71 | 2.054 | 3.2082 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 324/322 | 0.6023 | 21.46 | 0.000 | 31.0953 | -0.0013 | -0.6213 | -0.0004 | -1.0192 | -0.0506 |
| 322/325 | 1.1108 | 39.59 | 0.000 | 7.5673 | 0.0009 | -0.0136 | 0.0000 | -0.0092 | 0.0024 |
| 322/326 | 0.6638 | 23.66 | 2.120 | 53.0726 | -2.1122 | -2.7044 | 0.0093 | 3.9542 | 2.6237 |
| 324/323 | 1.1124 | 39.65 | 1.342 | -3.7152 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 323/325 | 0.9645 | 34.37 | 3.542 | -42.9832 | -0.0034 | 0.6679 | 0.0001 | -1.1351 | 0.0089 |
| 323/331 | 0.4590 | 16.36 | 2.400 | -51.7493 | 0.1608 | -0.2541 | 0.0016 | 0.8957 | -0.1681 |
| 324/325 | 0.1356 | 5.21 | 2.054 | 2.8610 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 324/330 | 0.7400 | 26.37 | 0.000 | -33.9216 | -0.0241 | 0.2923 | 0.0001 | 0.6475 | -0.0518 |
| 324/331 | 0.3239 | 11.54 | 1.342 | 1.9831 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 324/332 | 0.2967 | 10.57 | 2.400 | -34.5032 | -0.0074 | 0.2515 | 0.0000 | -0.8105 | 0.0038 |
| 325/328 | 0.8700 | 31.00 | 0.920 | 34.6594 | 8.7830 | -13.1954 | 0.0023 | 6.8903 | -4.1027 |
| 330/325 | 1.2115 | 43.18 | 1.342 | 8.4246 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 331/325 | 0.4137 | 14.74 | 3.542 | 19.8638 | -0.0095 | -0.4307 | 0.0001 | 0.8823 | 0.0091 |
| 326/327 | 0.5478 | 15.13 | 0.400 | -19.5643 | 0.0000 | -12.8351 | 0.0000 | 5.1340 | 0.0000 |
| 326/330 | 0.7392 | 26.34 | 0.000 | 53.0726 | 10.7229 | 16.9602 | 0.0093 | 3.9542 | 2.6237 |
| 327/329 | 2.2325 | 79.56 | 1.200 | -12.7703 | 0.0000 | -19.4303 | 0.0000 | 18.2886 | 0.0000 |
| 328/329 | 0.5478 | 15.13 | 0.400 | -19.5643 | 0.0000 | 12.8351 | 0.0000 | -5.1340 | 0.0000 |
| 328/334 | 0.8646 | 30.81 | 0.000 | 34.6594 | -3.9872 | 6.4692 | 0.0023 | 6.8903 | -4.1027 |
| 332/330 | 0.2562 | 9.13 | 3.542 | 15.3551 | 0.0134 | -0.0088 | 0.0000 | 0.2047 | -0.0473 |
| 330/333 | 0.2607 | 9.29 | 0.600 | 39.6878 | 0.2090 | -0.5700 | 0.0023 | -1.1095 | -0.4751 |



FERNANDEZ CONSTRUCTOR
L.A.V. TRAMO: GELIDA – ST. LLORENÇ
VIADUCTO DE RIERUSSA
CÁLCULOS ESTÁTICOS DE CIMBRA Y ENCOFRADO

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 330/334 | 0.7843 | 27.95 | 1.342 | 5.3243 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 332/331 | 0.6671 | 23.77 | 1.342 | -2.1570 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 331/334 | 0.4310 | 15.36 | 0.000 | -19.5849 | 0.0003 | 0.1488 | -0.0006 | 0.4102 | -0.0245 |
| 331/336 | 0.3318 | 11.83 | 0.000 | -39.2126 | 0.0361 | -0.3603 | 0.0017 | -0.7982 | 0.0101 |
| 332/335 | 0.7828 | 27.90 | 3.542 | -13.7854 | 0.0042 | 0.1262 | -0.0002 | -0.1993 | -0.0156 |
| 332/336 | 0.2678 | 9.54 | 1.342 | 1.5757 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 332/338 | 0.2476 | 8.82 | 0.000 | -26.9956 | 0.0034 | -0.5575 | 0.0000 | -0.9229 | 0.0038 |
| 333/335 | 0.2581 | 9.20 | 0.000 | 39.6878 | 0.0650 | -0.4196 | 0.0023 | -0.8126 | -0.5573 |
| 335/334 | 0.3792 | 13.52 | 1.342 | 2.3847 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 336/334 | 0.2796 | 9.96 | 3.542 | 10.1084 | 0.0071 | 0.0346 | 0.0000 | -0.0270 | -0.0251 |
| 334/337 | 0.4330 | 15.43 | 0.000 | 26.8374 | 0.8420 | -1.7046 | 0.0024 | -3.2220 | 1.7807 |
| 338/335 | 0.4080 | 14.54 | 0.000 | 12.6320 | 0.0002 | -0.1329 | -0.0002 | -0.2072 | -0.0143 |
| 335/339 | 0.6103 | 21.75 | 1.342 | -1.9584 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 335/340 | 0.3099 | 11.04 | 2.400 | 32.1372 | -0.8770 | -0.2757 | 0.0083 | 0.4773 | 1.4345 |
| 338/336 | 0.5520 | 19.67 | 1.342 | -1.7542 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 336/339 | 0.5318 | 20.45 | 3.542 | -9.8005 | -0.0001 | 0.1126 | 0.0000 | -0.1736 | 0.0004 |
| 336/341 | 0.3371 | 12.01 | 2.400 | -33.1414 | -0.1830 | 0.1880 | 0.0005 | -0.4707 | 0.3632 |
| 337/339 | 0.2495 | 8.89 | 0.000 | 26.8374 | 0.8420 | -1.4036 | 0.0024 | -1.3571 | 0.7703 |
| 338/340 | 0.7075 | 25.22 | 0.000 | -12.6629 | -0.0061 | 0.0699 | 0.0000 | 0.1568 | -0.0148 |
| 338/341 | 0.2134 | 7.61 | 1.342 | 1.1814 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 338/342 | 0.1733 | 6.18 | 0.000 | -20.4198 | -0.0039 | -0.3214 | 0.0000 | -0.3618 | -0.0229 |
| 340/339 | 0.3755 | 13.38 | 0.000 | 2.2100 | -0.0003 | -0.0137 | 0.0000 | -0.0096 | -0.0008 |
| 341/339 | 0.3064 | 10.92 | 0.000 | 9.8608 | -0.0003 | -0.1101 | 0.0001 | -0.1611 | 0.0019 |
| 339/343 | 0.1319 | 4.70 | 0.000 | 12.5082 | -0.0012 | -0.4057 | 0.0046 | -0.5741 | 0.5232 |
| 341/340 | 0.1755 | 6.75 | 2.054 | 3.9385 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 342/340 | 0.2988 | 10.65 | 3.542 | 9.0576 | 0.0063 | -0.0607 | -0.0001 | 0.1418 | -0.0176 |
| 340/343 | 0.3785 | 13.49 | 0.000 | 2.3456 | 0.0002 | -0.0129 | 0.0000 | -0.0075 | 0.0006 |
| 340/344 | 0.2651 | 9.45 | 0.000 | 24.6185 | 0.8751 | -0.2250 | 0.0008 | 0.1483 | 1.4307 |
| 342/341 | 0.9670 | 34.46 | 1.342 | -3.2064 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 341/343 | 0.5023 | 17.90 | 3.542 | -8.8799 | 0.0005 | 0.1023 | 0.0000 | -0.1513 | 0.0001 |
| 341/345 | 0.2982 | 10.63 | 0.000 | -26.1690 | 0.1860 | -0.4770 | 0.0006 | -0.6902 | 0.3664 |
| 342/344 | 0.4773 | 17.01 | 3.542 | -8.4173 | 0.0004 | 0.0976 | 0.0000 | -0.1390 | 0.0027 |
| 342/345 | 0.4106 | 14.63 | 1.342 | 2.6121 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 342/346 | 0.1245 | 4.44 | 0.000 | -14.6849 | -0.0064 | -0.3071 | 0.0000 | -0.2666 | -0.0141 |
| 344/343 | 0.6393 | 22.78 | 1.342 | -2.0598 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 345/343 | 0.2490 | 8.88 | 0.000 | 7.9747 | -0.0003 | -0.0949 | 0.0000 | -0.1368 | 0.0001 |
| 343/347 | 0.1155 | 4.12 | 0.000 | 8.8335 | 0.2377 | -0.5159 | 0.0007 | -0.5467 | 0.5231 |
| 346/344 | 0.2307 | 8.22 | 0.000 | 7.3569 | -0.0004 | -0.0904 | 0.0000 | -0.1284 | 0.0001 |
| 344/347 | 0.3698 | 13.18 | 1.342 | 2.3160 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 344/348 | 0.0943 | 3.36 | 0.120 | 17.1650 | 0.1487 | -0.4082 | -0.0002 | -0.2182 | -0.1300 |
| 346/345 | 0.8621 | 30.72 | 1.342 | -2.8394 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 345/347 | 0.4225 | 15.06 | 3.542 | -7.4439 | 0.0001 | 0.0909 | 0.0000 | -0.1297 | -0.0002 |
| 345/349 | 0.1620 | 5.77 | 0.000 | -18.5831 | -0.0295 | -0.2693 | -0.0001 | -0.2008 | -0.0793 |
| 346/348 | 0.3807 | 13.57 | 3.542 | -6.7249 | 0.0001 | 0.0834 | 0.0000 | -0.1155 | 0.0000 |
| 346/349 | 0.3813 | 13.59 | 1.342 | 2.3998 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 346/350 | 0.0818 | 2.91 | 0.000 | -9.8598 | 0.0027 | -0.2791 | 0.0000 | -0.1676 | 0.0013 |
| 348/347 | 0.7691 | 27.41 | 1.342 | -2.5138 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 349/347 | 0.2074 | 7.39 | 0.000 | 6.6197 | 0.0000 | -0.0834 | 0.0000 | -0.1154 | 0.0000 |
| 347/351 | 0.0511 | 1.82 | 0.000 | 10.0053 | -0.0004 | -0.4150 | 0.0000 | -0.2244 | 0.0054 |
| 350/348 | 0.1882 | 6.71 | 0.000 | 5.9492 | -0.0002 | -0.0784 | 0.0000 | -0.1058 | -0.0006 |
| 348/351 | 0.3132 | 11.16 | 1.342 | 1.9053 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 348/352 | 0.0640 | 2.28 | 1.320 | 10.7468 | -0.0082 | -0.0550 | -0.0002 | 0.1613 | -0.1186 |
| 350/349 | 0.7214 | 25.71 | 1.342 | -2.3471 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 349/351 | 0.3448 | 12.29 | 3.542 | -6.0649 | -0.0001 | 0.0785 | 0.0000 | -0.1068 | 0.0002 |
| 349/353 | 0.1036 | 3.69 | 2.400 | -12.1027 | 0.0195 | 0.0771 | 0.0000 | 0.0740 | -0.0574 |
| 350/351 | 0.0421 | 1.62 | 2.054 | -0.2399 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 350/352 | 0.3006 | 10.71 | 3.542 | -5.2277 | -0.0007 | 0.0714 | 0.0000 | -0.0939 | 0.0022 |
| 350/353 | 0.3197 | 11.39 | 1.342 | 1.9526 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 350/354 | 0.0501 | 1.79 | 0.000 | -5.9696 | -0.0020 | -0.2468 | 0.0000 | -0.0941 | -0.0047 |
| 352/351 | 0.5748 | 20.48 | 1.342 | -1.8340 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 353/351 | 0.1646 | 5.87 | 0.000 | 5.2256 | -0.0002 | -0.0702 | 0.0000 | -0.0916 | -0.0005 |
| 351/355 | 0.0375 | 1.33 | 0.000 | 3.9394 | -0.0376 | -0.3948 | 0.0003 | -0.1706 | -0.1313 |
| 353/352 | 0.0354 | 1.36 | 2.054 | -0.1099 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 354/352 | 0.1417 | 5.05 | 0.000 | 4.4090 | 0.0008 | -0.0660 | 0.0000 | -0.0837 | 0.0003 |
| 352/355 | 0.2388 | 8.51 | 1.342 | 1.3656 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 352/356 | 0.0499 | 1.78 | 1.320 | 5.9478 | 0.0020 | -0.0168 | -0.0035 | 0.1677 | -0.1691 |
| 354/353 | 0.6015 | 21.44 | 1.342 | -1.9274 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 353/355 | 0.2613 | 9.31 | 3.542 | -4.5642 | 0.0000 | 0.0661 | 0.0000 | -0.0841 | 0.0002 |
| 353/357 | 0.0656 | 2.34 | 0.000 | -6.9350 | -0.0196 | -0.2439 | 0.0000 | -0.0729 | -0.0570 |
| 354/356 | 0.2017 | 7.19 | 1.328 | -3.9343 | 0.0000 | -0.0067 | 0.0000 | 0.0224 | 0.0000 |
| 354/357 | 0.2380 | 8.48 | 1.342 | 1.3599 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 354/359 | 0.0459 | 1.64 | 1.440 | -1.2407 | 0.0014 | -0.0025 | -0.0002 | 0.1484 | -0.1524 |
| 356/355 | 0.4006 | 14.28 | 0.000 | -1.2769 | -0.0005 | -0.0120 | 0.0000 | -0.0048 | -0.0014 |
| 357/355 | 0.1210 | 4.31 | 0.000 | 3.7461 | -0.0001 | -0.0591 | 0.0000 | -0.0712 | -0.0006 |
| 355/358 | 0.0262 | 0.94 | 1.200 | 2.1934 | 0.0431 | -0.0586 | 0.0005 | 0.1773 | -0.0928 |
| 357/356 | 0.0298 | 1.15 | 2.054 | 0.0062 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 359/356 | 0.0827 | 2.95 | 1.771 | 3.0821 | 0.0000 | 0.0000 | 0.0000 | 0.0239 | 0.0000 |
| 356/360 | 0.1846 | 6.58 | 0.000 | 1.0882 | -0.0006 | -0.0119 | 0.0000 | -0.0047 | -0.0016 |
| 356/361 | 0.0778 | 2.77 | 2.400 | 2.5303 | -0.5101 | 0.3164 | 0.0050 | 0.0025 | 0.6076 |
| 359/357 | 0.4230 | 15.08 | 1.342 | -1.3030 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 357/360 | 0.1834 | 6.54 | 3.542 | -3.1367 | 0.0003 | 0.0540 | 0.0000 | -0.0624 | -0.0015 |
| 357/362 | 0.0465 | 1.66 | 2.400 | -3.3180 | 0.0343 | 0.1338 | 0.0002 | 0.0868 | -0.0921 |
| 358/360 | 0.0287 | 1.02 | 0.750 | 2.1858 | 0.0433 | 0.1298 | 0.0005 | 0.1503 | -0.1256 |
| 359/360 | 0.0327 | 1.26 | 2.054 | -0.0586 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 359/361 | 0.1467 | 5.23 | 3.542 | -2.3694 | -0.0032 | 0.0484 | 0.0001 | -0.0524 | 0.0056 |
| 359/362 | 0.2217 | 7.90 | 0.000 | 1.2835 | -0.0004 | -0.0124 | 0.0000 | -0.0060 | -0.0010 |
| 359/363 | 0.1626 | 5.80 | 2.400 | -0.5021 | -0.5994 | 0.1792 | -0.0003 | 0.0608 | 0.8159 |
| 361/360 | 0.3841 | 13.69 | 1.342 | -1.1666 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 362/360 | 0.0794 | 2.83 | 0.000 | 2.3433 | 0.0000 | -0.0474 | 0.0000 | -0.0504 | -0.0012 |
| 360/365 | 0.0221 | 0.79 | 0.600 | 1.2464 | -0.0611 | -0.1622 | 0.0009 | 0.1246 | -0.1093 |
| 362/361 | 0.0311 | 1.20 | 2.054 | 0.0402 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 363/361 | 0.0544 | 1.94 | 0.000 | 1.5146 | -0.0012 | -0.0425 | -0.0001 | -0.0410 | 0.0002 |
| 361/364 | 0.0723 | 2.58 | 0.000 | 0.5765 | 0.4690 | -0.2481 | 0.0038 | -0.0646 | 0.6110 |
| 361/365 | 0.0601 | 2.14 | 1.342 | 0.0690 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 363/362 | 0.4398 | 15.67 | 1.342 | -1.3616 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 362/365 | 0.1056 | 3.76 | 3.542 | -1.7616 | 0.0000 | 0.0427 | 0.0000 | -0.0425 | -0.0002 |
| 362/369 | 0.0238 | 0.85 | 0.300 | -0.6617 | -0.0380 | -0.1350 | 0.0000 | 0.0704 | -0.0798 |
| 363/364 | 0.1432 | 5.51 | 0.000 | -0.6849 | -0.0104 | 0.0039 | 0.0000 | 0.0014 | -0.0161 |
| 363/367 | 0.0567 | 2.18 | 1.027 | -0.5692 | 0.0028 | 0.0036 | 0.0000 | 0.0086 | -0.0028 |
| 363/369 | 0.0564 | 2.01 | 1.342 | 0.0421 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 367/364 | 0.0428 | 1.65 | 0.000 | 0.5332 | 0.0059 | -0.0295 | -0.0002 | -0.0102 | -0.0055 |
| 364/368 | 0.0804 | 3.09 | 0.000 | 0.2307 | 0.2330 | -0.0002 | 0.0011 | 0.0333 | 0.1781 |

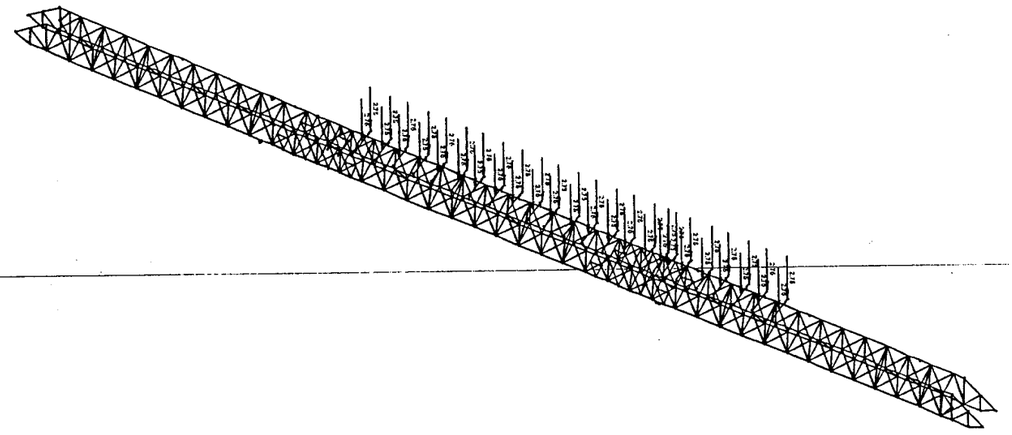
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 369/365 | 0.0409 | 1.46 | 0.000 | 1.0730 | 0.0002 | -0.0383 | 0.0000 | -0.0343 | 0.0000 |
| 365/370 | 0.0075 | 0.27 | 0.000 | 0.2434 | 0.0000 | -0.1840 | 0.0001 | -0.0409 | 0.0002 |
| 366/367 | 0.0289 | 1.11 | 0.000 | 0.3890 | 0.0050 | 0.0039 | -0.0002 | 0.0085 | -0.0026 |
| 366/372 | 0.0622 | 2.39 | 0.000 | -0.3338 | -0.0032 | -0.0348 | 0.0000 | -0.0133 | -0.0115 |
| 367/368 | 0.0694 | 2.67 | 1.667 | -0.3115 | 0.0049 | 0.0125 | -0.0002 | -0.0278 | -0.0016 |
| 372/368 | 0.0907 | 3.49 | 2.226 | 0.3243 | 0.0115 | 0.0386 | -0.0002 | -0.0161 | -0.0484 |
| 369/370 | 0.0705 | 2.71 | 3.333 | -0.3436 | -0.0023 | 0.0000 | 0.0000 | 0.0002 | 0.0077 |
| 369/374 | 0.0639 | 2.46 | 2.669 | -0.2608 | 0.0000 | 0.0432 | 0.0000 | -0.0204 | 0.0000 |
| 374/370 | 0.0374 | 1.44 | 0.000 | 0.2737 | 0.0000 | -0.0374 | 0.0000 | -0.0124 | -0.0001 |
| 371/372 | 0.0197 | 0.76 | 0.000 | 0.1371 | 0.0053 | 0.0018 | -0.0001 | 0.0071 | 0.0040 |
| 371/375 | 0.0471 | 1.81 | 0.000 | -0.0695 | -0.0101 | -0.0407 | 0.0000 | -0.0148 | -0.0180 |
| 375/372 | 0.0610 | 2.35 | 2.011 | 0.0870 | 0.0101 | 0.0411 | 0.0000 | -0.0182 | -0.0204 |
| 373/374 | 0.0234 | 0.90 | 1.992 | 0.2141 | 0.0088 | 0.0000 | 0.0000 | 0.0000 | -0.0120 |
| 373/376 | 0.0319 | 1.23 | 0.000 | -0.0682 | -0.0001 | -0.0396 | 0.0000 | -0.0138 | -0.0001 |
| 376/374 | 0.0527 | 2.03 | 2.011 | 0.0873 | 0.0001 | 0.0428 | 0.0000 | -0.0207 | -0.0001 |



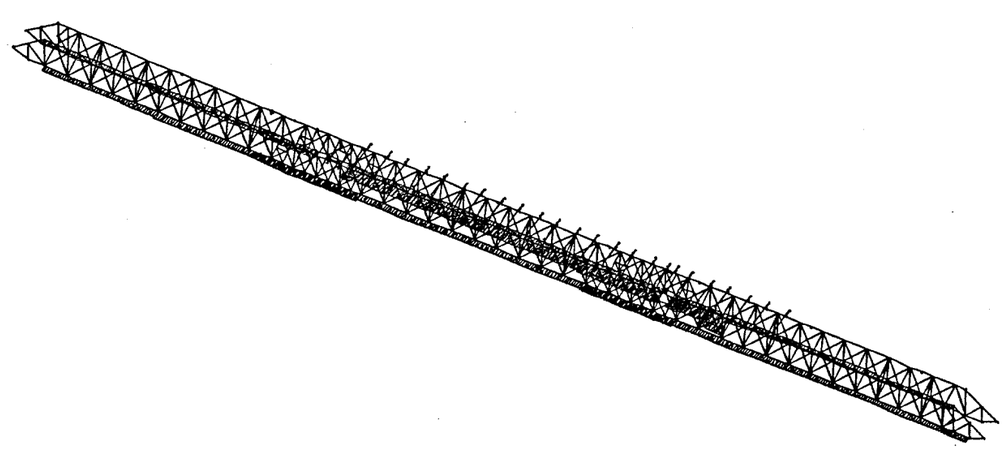


***CIMBRA EN POSICIÓN DE RIPADO TRANSVERSAL***

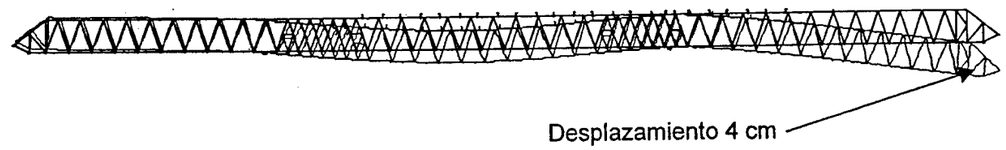
Cargas del encofrado



Cargas de Viento



Deformada



## Listado de Cype

17:56:09, 23/07/2003
FICHERO: R:\En Curso 2003\15245 AVE -Sant Llorenc -AVA\V.St.Joan\Calculos\CIMBRA\avance\3D_ava_a.EM3
DESCRIPCION: Fernandez constructor

| NUDOS | REACCIONES (EJES GENERALES) | | | | | |
|---|---|---|---|---|---|---|
| | RX(Tn) | RY(Tn) | RZ(Tn) | MX(Tn·m) | MY(Tn·m) | MZ(Tn·m) |
| 51 | | | | | | |
| HIPOTESIS 1: PP 1 (Peso propio) | 0.0000 | 0.0000 | 23.8775 | 0.0000 | 0.0000 | 0.0000 |
| HIPOTESIS 2: SC 1 (hormigon) | 0.0000 | 0.0000 | 5.0103 | 0.0000 | 0.0000 | 0.0000 |
| HIPOTESIS 3: V 1 (Sobrecarga de viento 1) | 0.0000 | 0.0000 | -0.6131 | 0.0000 | 0.0000 | 0.0000 |
| 53 | | | | | | |
| HIPOTESIS 1: PP 1 (Peso propio) | 0.0000 | -2.3086 | 30.6012 | 0.0000 | 0.0000 | 0.0000 |
| HIPOTESIS 2: SC 1 (hormigon) | 0.0000 | 1.3266 | 24.8227 | 0.0000 | 0.0000 | 0.0000 |
| HIPOTESIS 3: V 1 (Sobrecarga de viento 1) | 0.0000 | -7.3901 | 0.6131 | 0.0000 | 0.0000 | 0.0000 |
| 54 | | | | | | |
| HIPOTESIS 1: PP 1 (Peso propio) | 0.0000 | 2.3555 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HIPOTESIS 2: SC 1 (hormigon) | 0.0000 | -1.4674 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HIPOTESIS 3: V 1 (Sobrecarga de viento 1) | 0.0000 | -8.6343 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 284 | | | | | | |
| HIPOTESIS 1: PP 1 (Peso propio) | 0.0000 | 0.1526 | 38.4088 | 0.0000 | 0.0000 | 0.0000 |
| HIPOTESIS 2: SC 1 (hormigon) | 0.0000 | 2.6698 | 23.5651 | 0.0000 | 0.0000 | 0.0000 |
| HIPOTESIS 3: V 1 (Sobrecarga de viento 1) | 0.0000 | -4.2258 | -0.2717 | 0.0000 | 0.0000 | 0.0000 |
| 287 | | | | | | |
| HIPOTESIS 1: PP 1 (Peso propio) | 0.0000 | -1.1364 | 41.8932 | 0.0000 | 0.0000 | 0.0000 |
| HIPOTESIS 2: SC 1 (hormigon) | 0.0000 | 2.3225 | 78.6020 | 0.0000 | 0.0000 | 0.0000 |
| HIPOTESIS 3: V 1 (Sobrecarga de viento 1) | 0.0000 | -4.3074 | 0.2717 | 0.0000 | 0.0000 | 0.0000 |
| 289 | | | | | | |
| HIPOTESIS 1: PP 1 (Peso propio) | 0.0000 | 0.8219 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HIPOTESIS 2: SC 1 (hormigon) | 0.0000 | -4.5066 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HIPOTESIS 3: V 1 (Sobrecarga de viento 1) | 0.0000 | -7.5175 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 363 | | | | | | |
| HIPOTESIS 1: PP 1 (Peso propio) | 0.0000 | 0.1149 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HIPOTESIS 2: SC 1 (hormigon) | 0.0000 | -0.3448 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HIPOTESIS 3: V 1 (Sobrecarga de viento 1) | 0.0000 | -5.4927 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

| BARRAS | TENSIÓN MÁXIMA | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | TENS.(Tn/cm2) | APROV.(%) | POS.(m) | N(Tn) | Ty(Tn) | Tz(Tn) | Mt(Tn·m) | My(Tn·m) | Mz(Tn·m) |
| 3/1 | 0.0336 | 1.29 | 0.000 | -0.0681 | 0.0000 | -0.0401 | 0.0000 | -0.0145 | 0.0000 |
| 1/4 | 0.0520 | 2.00 | 2.011 | 0.0869 | 0.0000 | 0.0425 | 0.0000 | -0.0205 | 0.0000 |
| 5/2 | 0.0343 | 1.32 | 0.000 | -0.0695 | 0.0000 | -0.0407 | 0.0000 | -0.0148 | 0.0000 |
| 2/6 | 0.0465 | 1.79 | 2.011 | 0.0870 | 0.0000 | 0.0411 | 0.0000 | -0.0182 | 0.0000 |
| 3/4 | 0.0242 | 0.93 | 1.992 | 0.2212 | -0.0097 | 0.0000 | 0.0000 | 0.0000 | 0.0124 |
| 7/4 | 0.0645 | 2.48 | 2.669 | -0.2668 | 0.0000 | 0.0433 | 0.0000 | -0.0204 | 0.0000 |
| 4/8 | 0.0375 | 1.44 | 0.000 | 0.2773 | 0.0000 | -0.0374 | 0.0000 | -0.0125 | 0.0000 |
| 5/6 | 0.0155 | 0.60 | 1.992 | 0.2173 | -0.0054 | 0.0000 | 0.0000 | 0.0000 | 0.0066 |
| 9/6 | 0.0559 | 2.15 | 0.000 | -0.3341 | 0.0000 | -0.0348 | 0.0000 | -0.0132 | 0.0000 |
| 6/11 | 0.0477 | 1.83 | 2.226 | 0.3246 | 0.0000 | 0.0387 | 0.0000 | -0.0161 | 0.0000 |
| 7/8 | 0.1003 | 3.86 | 0.000 | -0.4752 | 0.0073 | 0.0010 | 0.0000 | 0.0020 | 0.0112 |
| 7/12 | 0.0426 | 1.52 | 0.000 | 1.0551 | -0.0003 | -0.0378 | 0.0000 | -0.0333 | -0.0021 |
| 7/13 | 0.1176 | 4.52 | 1.342 | -0.2478 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 7/15 | 0.0348 | 1.24 | 1.080 | -0.5334 | 0.0104 | -0.0054 | 0.0001 | 0.1374 | -0.1241 |
| 8/12 | 0.0183 | 0.65 | 1.200 | 0.2512 | -0.2334 | 0.1893 | 0.0005 | -0.0419 | 0.1397 |
| 9/10 | 0.0280 | 1.08 | 1.667 | 0.4518 | -0.0048 | 0.0000 | 0.0000 | 0.0000 | 0.0109 |
| 10/11 | 0.0279 | 1.07 | 0.000 | -0.3777 | -0.0049 | 0.0000 | 0.0000 | 0.0000 | -0.0067 |
| 13/10 | 0.0540 | 2.08 | 0.770 | -0.5752 | 0.0000 | -0.0024 | 0.0000 | 0.0088 | 0.0000 |
| 10/14 | 0.0386 | 1.49 | 0.000 | 0.5313 | 0.0001 | -0.0295 | 0.0000 | -0.0102 | 0.0000 |
| 11/14 | 0.0355 | 1.36 | 1.200 | 0.2308 | -0.0001 | -0.0001 | 0.0000 | 0.0337 | 0.0001 |
| 15/12 | 0.1069 | 3.81 | 3.542 | -1.7418 | 0.0006 | 0.0424 | 0.0000 | -0.0421 | -0.0021 |
| 12/16 | 0.2251 | 8.02 | 1.342 | -0.6104 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 12/17 | 0.0256 | 0.91 | 1.440 | 1.5567 | 0.0306 | 0.0534 | -0.0005 | 0.1885 | -0.1067 |
| 13/14 | 0.1426 | 5.48 | 0.000 | -0.6889 | 0.0103 | 0.0004 | 0.0000 | 0.0007 | 0.0158 |
| 15/13 | 0.0900 | 3.46 | 1.342 | 0.2858 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 13/16 | 0.0551 | 1.96 | 0.000 | 1.5217 | 0.0001 | -0.0424 | 0.0000 | -0.0407 | -0.0006 |
| 13/18 | 0.0277 | 0.99 | 1.800 | -1.3402 | 0.0334 | 0.0982 | 0.0001 | 0.1214 | -0.0599 |
| 14/16 | 0.0111 | 0.39 | 1.200 | 0.5747 | 0.0000 | 0.2587 | 0.0000 | -0.0790 | 0.0000 |
| 15/17 | 0.0792 | 2.82 | 0.000 | 2.3152 | 0.0002 | -0.0482 | 0.0000 | -0.0516 | 0.0011 |
| 15/18 | 0.2846 | 10.14 | 1.342 | -0.8188 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 15/19 | 0.0384 | 1.37 | 1.200 | -1.4904 | -0.0035 | 0.0335 | 0.0000 | 0.1446 | -0.1042 |
| 17/16 | 0.1431 | 5.10 | 1.342 | 0.6709 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 18/16 | 0.1378 | 4.91 | 3.542 | -2.2893 | 0.0003 | 0.0488 | 0.0000 | -0.0532 | -0.0014 |
| 16/20 | 0.0218 | 0.78 | 2.400 | 1.3465 | 0.0540 | 0.3157 | -0.0003 | -0.0509 | -0.1295 |
| 18/17 | 0.0509 | 1.96 | 2.054 | -0.4083 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 19/17 | 0.1886 | 6.72 | 3.542 | -3.2509 | -0.0003 | 0.0545 | 0.0000 | -0.0628 | 0.0010 |
| 17/20 | 0.3879 | 13.82 | 1.342 | -1.1801 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 17/21 | 0.0443 | 1.58 | 1.080 | 4.3666 | 0.0037 | 0.0421 | -0.0001 | 0.2091 | -0.1634 |
| 19/18 | 0.1721 | 6.13 | 1.342 | 0.8813 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 18/20 | 0.1036 | 3.69 | 0.000 | 3.1913 | -0.0005 | -0.0539 | 0.0000 | -0.0617 | -0.0006 |
| 18/22 | 0.0510 | 1.82 | 0.300 | -3.9994 | -0.0141 | -0.0688 | 0.0000 | 0.1371 | -0.0759 |
| 19/20 | 0.0391 | 1.50 | 2.054 | -0.1821 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 19/21 | 0.1276 | 4.55 | 0.000 | 3.9832 | 0.0002 | -0.0614 | 0.0000 | -0.0751 | 0.0001 |
| 19/22 | 0.4395 | 15.66 | 1.342 | -1.3606 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 19/23 | 0.0483 | 1.72 | 1.200 | -3.2911 | 0.0116 | 0.0882 | 0.0000 | 0.1277 | -0.0915 |
| 21/20 | 0.2183 | 7.78 | 1.342 | 1.2168 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 22/20 | 0.2337 | 8.33 | 3.542 | -4.0886 | 0.0002 | 0.0611 | 0.0000 | -0.0747 | -0.0001 |
| 20/24 | 0.0309 | 1.10 | 0.600 | 4.8096 | 0.0200 | -0.0532 | -0.0008 | 0.1918 | 0.0309 |
| 23/21 | 0.2739 | 9.76 | 3.542 | -4.8049 | -0.0001 | 0.0673 | 0.0000 | -0.0863 | -0.0002 |
| 21/24 | 0.5539 | 19.74 | 1.342 | -1.7610 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 21/25 | 0.0578 | 2.06 | 1.080 | 8.7963 | 0.0226 | 0.0523 | 0.0003 | 0.1579 | -0.1368 |



FERNANDEZ CONSTRUCTOR
L.A.V. TRAMO: GELIDA – ST. LLORENÇ
VIADUCTO DE RIERUSSA
CÁLCULOS ESTÁTICOS DE CIMBRA Y ENCOFRADO

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 23/22 | 0.2398 | 8.55 | 1.342 | 1.3729 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 22/24 | 0.1491 | 5.32 | 0.000 | 4.6572 | -0.0004 | -0.0674 | 0.0000 | -0.0862 | 0.0007 |
| 22/26 | 0.0735 | 2.62 | 0.600 | -8.0748 | -0.0027 | -0.0112 | 0.0002 | 0.1091 | -0.0448 |
| 23/25 | 0.1715 | 6.11 | 0.000 | 5.4027 | 0.0001 | -0.0739 | 0.0000 | -0.0979 | -0.0004 |
| 23/26 | 0.5912 | 21.07 | 2.683 | -1.8956 | 0.0012 | 0.0125 | 0.0000 | -0.0063 | -0.0032 |
| 23/27 | 0.0647 | 2.31 | 1.080 | -5.6698 | 0.0123 | 0.0455 | 0.0001 | 0.1069 | -0.0918 |
| 25/24 | 0.2971 | 10.59 | 1.342 | 1.7887 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 26/24 | 0.3164 | 11.27 | 3.542 | -5.5030 | -0.0020 | 0.0739 | 0.0000 | -0.0985 | 0.0024 |
| 24/28 | 0.0443 | 1.58 | 2.400 | 8.6878 | -0.0076 | 0.3858 | -0.0007 | -0.1668 | 0.0148 |
| 27/25 | 0.3489 | 12.43 | 3.542 | -6.1202 | -0.0001 | 0.0802 | 0.0000 | -0.1096 | -0.0003 |
| 25/28 | 0.7108 | 25.33 | 1.342 | -2.3100 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 25/29 | 0.0781 | 2.78 | 2.400 | 14.6777 | -0.2364 | 0.4915 | 0.0006 | -0.4088 | 0.0086 |
| 27/26 | 0.3101 | 11.05 | 2.683 | 1.9078 | 0.0011 | 0.0124 | 0.0000 | -0.0060 | -0.0030 |
| 26/28 | 0.1995 | 7.11 | 0.000 | 6.0893 | 0.0020 | -0.0791 | 0.0000 | -0.1073 | 0.0064 |
| 26/30 | 0.1166 | 4.16 | 2.400 | -13.5981 | 0.0040 | 0.2494 | -0.0002 | -0.1182 | -0.0557 |
| 27/28 | 0.0369 | 1.42 | 2.054 | -0.1397 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 27/29 | 0.2096 | 7.47 | 0.000 | 6.6333 | 0.0002 | -0.0832 | 0.0000 | -0.1178 | -0.0006 |
| 27/30 | 0.7404 | 26.39 | 1.342 | -2.4134 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 27/31 | 0.1184 | 4.22 | 2.400 | -12.0695 | 0.0023 | 0.4525 | 0.0000 | -0.5560 | 0.0023 |
| 29/28 | 0.3784 | 13.49 | 1.342 | 2.3788 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 30/28 | 0.3946 | 14.06 | 3.542 | -6.9237 | 0.0006 | 0.0877 | 0.0000 | -0.1233 | -0.0005 |
| 28/33 | 0.0758 | 2.70 | 2.400 | 13.5982 | 0.0063 | 0.5183 | -0.0007 | -0.4879 | -0.0008 |
| 30/29 | 0.0396 | 1.52 | 2.054 | -0.1906 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 31/29 | 0.4224 | 15.05 | 3.542 | -7.5803 | 0.0003 | 0.0800 | 0.0000 | -0.1126 | -0.0012 |
| 29/32 | 0.1166 | 4.15 | 1.200 | 22.0279 | 0.0014 | 0.1881 | 0.0008 | -0.2599 | -0.1343 |
| 29/33 | 0.8929 | 31.82 | 1.342 | -2.9469 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 31/30 | 0.3955 | 14.09 | 1.342 | 2.5023 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 30/33 | 0.2320 | 8.27 | 0.000 | 7.3468 | 0.0000 | -0.0884 | 0.0000 | -0.1278 | 0.0015 |
| 30/35 | 0.1960 | 6.99 | 2.400 | -20.5055 | -0.0143 | 0.5430 | -0.0001 | -0.7847 | -0.0216 |
| 31/34 | 0.1338 | 4.77 | 3.100 | 8.7455 | 0.0015 | 0.0069 | 0.0000 | 0.1113 | -0.0046 |
| 31/35 | 0.9332 | 33.26 | 1.342 | -3.0882 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 31/37 | 0.1543 | 5.50 | 0.000 | -17.4948 | 0.0013 | -0.2203 | 0.0001 | -0.4827 | 0.0023 |
| 32/34 | 0.1219 | 4.35 | 1.200 | 22.0279 | -0.2866 | 0.4891 | 0.0008 | -0.6663 | 0.0369 |
| 34/33 | 0.4582 | 16.33 | 1.342 | 2.9575 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 35/33 | 0.4384 | 15.62 | 3.542 | -8.1663 | -0.0004 | 0.0510 | 0.0000 | -0.0851 | 0.0013 |
| 33/36 | 0.0975 | 3.47 | 1.200 | 19.4130 | -0.0103 | 0.2149 | -0.0007 | -0.3903 | 0.0125 |
| 37/34 | 0.2268 | 8.08 | 3.542 | -9.5613 | 0.0005 | 0.1970 | 0.0000 | -0.3137 | -0.0051 |
| 34/38 | 1.0725 | 38.22 | 1.342 | -3.5756 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 34/39 | 0.1632 | 5.82 | 2.400 | 31.3299 | -0.3088 | 0.4489 | 0.0009 | -0.6021 | 0.0834 |
| 37/35 | 0.4839 | 17.25 | 1.342 | 3.1445 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 35/38 | 0.1829 | 6.52 | 0.000 | 9.2156 | -0.0015 | -0.2292 | 0.0001 | -0.3696 | 0.0001 |
| 35/40 | 0.2570 | 9.16 | 2.400 | -29.1448 | 0.0363 | 0.1721 | 0.0000 | -0.4266 | -0.1087 |
| 36/38 | 0.1160 | 4.13 | 1.200 | 19.4130 | -0.0103 | 0.5158 | -0.0007 | -0.8288 | 0.0249 |
| 37/39 | 0.1810 | 6.45 | 0.000 | 9.9138 | -0.0003 | -0.1970 | -0.0001 | -0.2982 | -0.0034 |
| 37/40 | 1.1345 | 40.43 | 1.342 | -3.7922 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 37/41 | 0.2115 | 7.54 | 2.400 | -24.2798 | 0.0073 | 0.4600 | 0.0000 | -0.5691 | -0.0174 |
| 39/38 | 0.5390 | 19.21 | 1.342 | 3.5440 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 40/38 | 0.2440 | 8.69 | 3.542 | -10.1963 | 0.0008 | 0.2171 | 0.0001 | -0.3490 | 0.0045 |
| 38/42 | 0.1437 | 5.12 | 2.400 | 26.9013 | -0.0060 | 0.5001 | -0.0017 | -0.6889 | 0.0428 |
| 40/39 | 0.0700 | 2.69 | 2.054 | -0.7728 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 41/39 | 0.2486 | 8.86 | 3.542 | -10.7758 | 0.0005 | 0.2079 | 0.0000 | -0.3215 | -0.0029 |
| 39/42 | 1.2491 | 44.52 | 1.342 | -4.1935 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 39/43 | 0.2027 | 7.22 | 2.040 | 42.1797 | -0.1572 | 0.4354 | 0.0005 | -0.4207 | -0.0971 |
| 41/40 | 0.6156 | 21.94 | 1.342 | 4.1000 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 40/42 | 0.2017 | 7.19 | 0.000 | 11.1412 | -0.0012 | -0.2054 | 0.0001 | -0.3161 | 0.0072 |
| 40/44 | 0.3600 | 12.83 | 2.400 | -39.9969 | -0.0980 | 0.5654 | -0.0003 | -0.8164 | 0.1229 |
| 41/43 | 0.2112 | 7.53 | 0.000 | 11.3307 | 0.0009 | -0.2386 | -0.0001 | -0.3735 | -0.0012 |
| 41/44 | 1.4053 | 50.08 | 1.342 | -4.7399 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 41/45 | 0.2898 | 10.33 | 2.400 | -32.0667 | -0.0061 | 0.6158 | -0.0001 | -1.0221 | -0.0028 |
| 43/42 | 0.6247 | 22.26 | 1.342 | 4.1659 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 44/42 | 0.2840 | 10.12 | 3.542 | -12.0373 | -0.0008 | 0.2310 | 0.0001 | -0.3740 | 0.0105 |
| 42/46 | 0.1809 | 6.45 | 2.400 | 35.9553 | 0.0122 | 0.5767 | -0.0025 | -0.7384 | 0.0211 |
| 45/43 | 0.2749 | 9.80 | 3.542 | -11.7737 | 0.0043 | 0.2146 | 0.0000 | -0.3627 | -0.0057 |
| 43/46 | 1.2679 | 45.18 | 1.342 | -4.2590 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 43/47 | 0.4083 | 14.55 | 2.400 | 48.3920 | -0.8520 | 1.0742 | -0.0030 | -1.7120 | 1.2758 |
| 45/44 | 0.7702 | 27.45 | 1.342 | 5.2223 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 44/46 | 0.2380 | 8.48 | 0.000 | 13.2152 | -0.0019 | -0.2385 | 0.0001 | -0.3702 | 0.0076 |
| 44/48 | 0.5245 | 18.69 | 2.400 | -53.1566 | 0.3353 | 0.1295 | -0.0006 | -0.0818 | -0.6846 |
| 45/47 | 0.2389 | 8.51 | 0.000 | 14.1735 | -0.0049 | -0.1896 | 0.0004 | -0.3027 | 0.0085 |
| 45/48 | 1.6749 | 59.69 | 1.342 | -5.6831 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 45/49 | 0.4978 | 17.74 | 2.400 | -33.5395 | 0.1863 | -1.3973 | -0.0011 | 3.1872 | -0.4376 |
| 47/46 | 0.6541 | 23.31 | 1.342 | 4.4704 | 0.0000 | 0.0000 | 0.0000 | 0.0051 | 0.0000 |
| 48/46 | 0.3468 | 12.36 | 0.000 | -13.0376 | 0.0145 | 0.2456 | 0.0005 | 0.4900 | 0.0601 |
| 46/50 | 0.4116 | 14.67 | 2.400 | 46.5971 | -0.3273 | 1.7037 | -0.0083 | -3.2751 | 0.8147 |
| 48/47 | 0.1737 | 6.68 | 2.054 | -2.7570 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 49/47 | 0.4155 | 14.81 | 0.000 | -14.4283 | 0.0056 | 0.3524 | 0.0003 | 0.8216 | 0.0318 |
| 47/50 | 1.2513 | 44.59 | 1.342 | -4.2451 | 0.0000 | 0.0000 | 0.0000 | 0.0051 | 0.0000 |
| 47/52 | 0.5341 | 19.04 | 2.400 | 68.0098 | -0.4808 | 0.8179 | -0.0084 | -2.1209 | 1.5333 |
| 49/48 | 0.8540 | 30.43 | 1.342 | 5.8300 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 48/50 | 0.2577 | 9.18 | 0.000 | 12.7886 | 0.0047 | -0.1616 | 0.0006 | -0.3717 | 0.0575 |
| 48/53 | 1.1732 | 41.81 | 2.400 | -67.3901 | -1.1298 | 2.8706 | -0.0031 | -5.6923 | 1.9849 |
| 49/50 | 0.2184 | 8.40 | 2.054 | 5.0987 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 49/51 | 1.3940 | 49.68 | 1.200 | -31.3685 | -0.3325 | 17.7069 | -0.0042 | -16.1727 | -0.0824 |
| 49/52 | 0.3979 | 14.18 | 0.000 | -11.2935 | -0.0155 | -0.3602 | 0.0016 | -0.9054 | 0.0781 |
| 49/53 | 2.6558 | 94.65 | 1.342 | -9.1155 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 52/50 | 1.8802 | 67.01 | 1.342 | -6.4017 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 53/50 | 0.4902 | 17.47 | 0.000 | -19.9505 | 0.0196 | -0.2361 | -0.0003 | -0.5098 | 0.0951 |
| 50/54 | 0.9717 | 34.63 | 1.200 | 38.0765 | -5.2574 | -0.2557 | -0.0206 | -2.7916 | 6.4030 |
| 51/55 | 1.5505 | 55.26 | 0.000 | -31.3685 | -0.3325 | -21.5655 | -0.0042 | -16.1727 | -0.0824 |
| 55/52 | 0.1928 | 6.87 | 3.542 | 8.4768 | -0.0370 | 0.0187 | 0.0000 | 0.1071 | 0.1310 |
| 52/56 | 0.5106 | 18.20 | 0.000 | 63.7366 | 1.0895 | -1.2642 | -0.0069 | -1.8640 | 1.5711 |
| 52/57 | 0.6655 | 23.72 | 1.342 | 4.4621 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 55/53 | 1.8121 | 64.58 | 1.342 | -6.1633 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 53/57 | 1.2103 | 43.13 | 3.542 | -55.5611 | -0.0137 | 0.4496 | 0.0022 | -0.8803 | 0.1444 |
| 53/61 | 1.1493 | 40.96 | 0.000 | -58.9172 | 0.9940 | -4.2154 | -0.0029 | -6.6435 | 1.9218 |
| 54/57 | 0.9731 | 34.68 | 0.000 | 38.0765 | 6.5129 | -0.2557 | -0.0206 | -2.7916 | 6.4030 |
| 55/58 | 0.5693 | 20.29 | 0.000 | -33.7534 | -0.0560 | 0.7632 | 0.0009 | 1.2621 | -0.0242 |
| 55/59 | 0.2466 | 6.81 | 0.000 | -20.9417 | 0.9701 | 2.0726 | 0.0039 | 6.0865 | 1.5634 |
| 55/61 | 1.3172 | 46.94 | 1.342 | -4.4316 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 56/60 | 0.3384 | 9.34 | 1.200 | 49.7928 | 0.7860 | -1.0180 | -0.0180 | 1.1102 | -0.7930 |
| 60/57 | 3.4406 | 122.62 | 1.342 | -11.9055 | 0.0000 | 0.0000 | 0.0000 | 0.0051 | 0.0000 |
| 61/57 | 0.8077 | 28.79 | 3.542 | 51.3835 | -0.0429 | -0.0699 | 0.0000 | 0.4208 | 0.1519 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 57/62 | 0.3434 | 12.24 | 0.000 | 12.0388 | -0.2850 | -3.7789 | -0.0140 | -4.0460 | -1.2282 |
| 59/58 | 0.2096 | 7.47 | 0.000 | 9.6347 | -0.0097 | -0.3421 | 0.0005 | -0.5757 | 0.0656 |
| 58/60 | 0.4463 | 15.91 | 1.771 | -22.2316 | -0.0897 | 0.9658 | 0.0015 | -0.9720 | 0.1505 |
| 58/63 | 0.2269 | 8.09 | 0.000 | -7.2980 | 0.0434 | -1.4551 | -0.0010 | -0.8083 | 0.0562 |
| 59/63 | 0.2004 | 7.14 | 0.000 | -8.0495 | -0.0071 | 0.3542 | 0.0008 | 0.6485 | 0.0505 |
| 59/65 | 0.1239 | 3.42 | 0.000 | -29.9618 | 0.1654 | 1.1502 | 0.0042 | 2.5126 | 0.2248 |
| 63/60 | 0.4168 | 14.85 | 1.771 | 22.4484 | -0.0409 | -0.7250 | 0.0011 | 0.8208 | 0.1510 |
| 60/66 | 0.2515 | 6.94 | 0.000 | 45.4761 | 0.1307 | -0.7656 | 0.0030 | -0.6952 | -0.3194 |
| 60/68 | 0.8936 | 31.85 | 1.342 | 12.7158 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 61/64 | 0.7765 | 27.67 | 0.000 | -51.8069 | -0.0292 | 0.7333 | 0.0003 | 1.2839 | -0.0154 |
| 65/61 | 1.6834 | 59.99 | 1.342 | -5.7128 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 61/67 | 0.1646 | 4.54 | 1.200 | -24.5892 | -0.1607 | -2.8109 | -0.0141 | 5.5496 | -0.2670 |
| 62/68 | 0.3122 | 8.62 | 1.200 | 28.0345 | 0.0213 | -3.0928 | -0.0118 | 4.1793 | -0.2887 |
| 65/63 | 0.2025 | 7.22 | 0.000 | 13.5199 | -0.0069 | -0.0557 | 0.0007 | -0.2220 | 0.0613 |
| 63/66 | 0.3424 | 12.20 | 1.771 | -17.6029 | 0.0023 | 0.7873 | 0.0007 | -0.8440 | 0.0649 |
| 67/64 | 0.3208 | 11.43 | 0.000 | 14.9911 | 0.0036 | -0.6445 | 0.0004 | -1.0058 | 0.0498 |
| 64/68 | 0.6994 | 24.92 | 1.771 | -34.0029 | -0.0755 | 1.7814 | 0.0012 | -1.9104 | 0.1249 |
| 64/70 | 0.3719 | 13.25 | 1.200 | -10.6131 | 0.0293 | -2.3272 | -0.0007 | 1.5094 | -0.0060 |
| 65/69 | 0.2441 | 8.70 | 0.000 | -11.9033 | 0.0017 | 0.3933 | 0.0006 | 0.6165 | 0.0602 |
| 65/71 | 0.0673 | 1.86 | 0.000 | 19.9897 | 0.3639 | 0.1433 | -0.0267 | 1.0216 | 0.0773 |
| 65/73 | 1.2730 | 45.37 | 1.342 | -4.2771 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 69/66 | 0.2500 | 8.91 | 1.771 | 16.3661 | -0.0051 | -0.0823 | 0.0007 | 0.3151 | 0.0703 |
| 66/72 | 0.2170 | 5.99 | 0.000 | 38.1373 | -0.2030 | -0.9188 | 0.0067 | -0.6592 | -0.2944 |
| 67/70 | 0.3704 | 13.20 | 0.000 | -18.5325 | -0.0092 | 0.5950 | 0.0005 | 1.0568 | 0.0347 |
| 67/73 | 0.1219 | 3.37 | 0.000 | -36.4173 | -0.1607 | -0.0119 | 0.0126 | 1.1044 | -0.3302 |
| 70/68 | 0.6790 | 24.20 | 1.771 | 37.2137 | -0.0315 | -1.4075 | 0.0008 | 1.6822 | 0.1066 |
| 72/68 | 1.3631 | 48.58 | 1.342 | -12.5445 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 68/74 | 0.1242 | 3.43 | 0.000 | -11.0136 | -0.1759 | -0.2135 | -0.0105 | 0.6640 | -0.4680 |
| 71/69 | 0.2614 | 9.32 | 0.000 | 15.3758 | 0.0002 | -0.3503 | 0.0006 | -0.5033 | 0.0619 |
| 69/72 | 0.2161 | 7.70 | 1.771 | -12.2039 | -0.0036 | 0.1965 | 0.0006 | -0.3760 | 0.0633 |
| 73/70 | 0.3755 | 13.38 | 0.000 | 24.8013 | -0.0016 | -0.2573 | 0.0006 | -0.5714 | 0.0653 |
| 70/74 | 0.5855 | 20.87 | 1.771 | -32.3983 | -0.0027 | 1.2841 | 0.0004 | -1.4309 | 0.0470 |
| 71/75 | 0.2268 | 8.08 | 0.000 | -12.7565 | -0.0009 | 0.2046 | 0.0007 | 0.4191 | 0.0594 |
| 71/77 | 0.0895 | 2.47 | 1.200 | 28.2326 | -0.2385 | -0.8954 | -0.0312 | 1.1695 | -0.0999 |
| 75/72 | 0.2168 | 7.73 | 1.771 | 12.7319 | 0.0086 | -0.1975 | 0.0006 | 0.4217 | 0.0504 |
| 72/78 | 0.1326 | 3.66 | 0.000 | 26.2837 | 0.3048 | -0.3919 | 0.0063 | -0.1806 | 0.1445 |
| 72/80 | 0.8435 | 30.06 | 0.000 | 11.4025 | -0.0100 | -0.0191 | 0.0000 | -0.0091 | -0.0268 |
| 73/76 | 0.4457 | 15.88 | 0.000 | -24.0815 | 0.0019 | 0.6953 | 0.0004 | 1.1120 | 0.0449 |
| 77/73 | 1.5350 | 54.70 | 1.342 | -5.1938 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 73/79 | 0.0722 | 1.99 | 0.900 | -25.6272 | 0.0611 | 0.2643 | 0.0179 | 0.1713 | -0.1742 |
| 76/74 | 0.4348 | 15.50 | 1.771 | 29.0489 | -0.0012 | -0.2419 | 0.0007 | 0.6503 | 0.0701 |
| 74/80 | 0.2010 | 5.55 | 0.000 | -31.5339 | -0.1768 | -2.1181 | -0.0071 | -1.1077 | -0.2214 |
| 77/75 | 0.2200 | 7.84 | 0.000 | 12.3860 | 0.0019 | -0.2697 | 0.0007 | -0.4207 | 0.0689 |
| 75/78 | 0.2175 | 7.75 | 1.771 | -12.4356 | 0.0058 | 0.2678 | 0.0007 | -0.4027 | 0.0508 |
| 79/76 | 0.4562 | 16.26 | 0.000 | 27.8591 | -0.0037 | -0.6031 | 0.0007 | -0.9286 | 0.0614 |
| 76/80 | 0.4061 | 14.47 | 1.771 | -24.6320 | 0.0017 | 0.4471 | 0.0004 | -0.7933 | 0.0383 |
| 77/81 | 0.2205 | 7.86 | 0.000 | -11.9922 | 0.0035 | 0.2021 | 0.0008 | 0.4168 | 0.0668 |
| 77/84 | 0.1240 | 3.42 | 1.200 | 35.4129 | -0.0233 | -0.7090 | -0.0346 | 1.5778 | -0.2883 |
| 77/89 | 1.2780 | 45.54 | 1.342 | -4.2944 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 81/78 | 0.1975 | 7.04 | 1.771 | 11.9429 | 0.0168 | -0.1304 | 0.0006 | 0.3370 | 0.0528 |
| 78/86 | 0.1545 | 4.27 | 1.200 | -31.2979 | 0.0576 | -0.3914 | -0.0089 | 0.5373 | -0.0101 |
| 79/82 | 0.4237 | 15.10 | 0.000 | -25.1610 | -0.0012 | 0.4577 | 0.0005 | 0.8631 | 0.0436 |
| 79/89 | 0.1185 | 3.27 | 1.200 | 31.6748 | 0.0122 | -1.7653 | -0.0356 | 2.1185 | -0.1919 |
| 82/80 | 0.4071 | 14.51 | 1.771 | 24.8813 | -0.0012 | -0.3913 | 0.0006 | 0.7942 | 0.0663 |
| 86/80 | 1.2618 | 44.97 | 2.683 | -11.1742 | -0.0106 | 0.0187 | 0.0000 | -0.0080 | 0.0286 |
| 80/91 | 0.2099 | 5.79 | 1.200 | -38.0489 | 0.0057 | -0.9697 | -0.0080 | 1.1302 | 0.0437 |
| 84/81 | 0.2033 | 7.25 | 0.000 | 11.5593 | -0.0113 | -0.2551 | 0.0007 | -0.3836 | 0.0623 |
| 81/86 | 0.1916 | 6.83 | 1.771 | -11.7338 | 0.0316 | 0.2817 | 0.0007 | -0.4022 | 0.0049 |
| 89/82 | 0.4099 | 14.61 | 0.000 | 24.8494 | 0.0030 | -0.5224 | 0.0006 | -0.8481 | 0.0555 |
| 82/91 | 0.4148 | 14.78 | 1.771 | -24.9685 | -0.0033 | 0.4974 | 0.0006 | -0.7918 | 0.0514 |
| 83/85 | 0.0012 | 0.05 | 0.165 | 0.0000 | 0.0000 | 0.0499 | 0.0000 | -0.0041 | 0.0000 |
| 84/93 | 0.2151 | 7.67 | 0.000 | -11.7057 | 0.0112 | 0.2007 | 0.0006 | 0.4026 | 0.0664 |
| 84/98 | 0.1323 | 3.65 | 0.360 | 42.3246 | -0.1163 | -0.4262 | -0.0377 | 1.1027 | -0.2976 |
| 85/86 | 0.0329 | 1.26 | 0.940 | 0.6349 | -0.1168 | -0.1558 | 0.0003 | 0.2287 | 0.1045 |
| 85/87 | 0.0161 | 0.62 | 0.000 | 0.2801 | 0.0249 | -0.4826 | 0.0118 | -0.1537 | -0.0034 |
| 93/86 | 0.2013 | 7.17 | 1.771 | 10.4332 | -0.0282 | -0.0828 | 0.0007 | 0.2933 | 0.1206 |
| 86/100 | 0.2201 | 6.08 | 1.200 | -41.9456 | 0.1135 | -0.5531 | -0.0129 | 0.8222 | -0.0956 |
| 86/105 | 0.8265 | 29.45 | 2.683 | 10.8259 | -0.0100 | 0.0289 | 0.0000 | -0.0214 | 0.0268 |
| 87/88 | 0.0415 | 1.60 | 0.000 | 0.0776 | -0.1462 | -0.2076 | 0.0483 | -0.0138 | -0.2304 |
| 87/94 | 0.0086 | 0.33 | 0.000 | -0.1666 | 0.1810 | -0.0612 | 0.0000 | 0.0383 | 0.2172 |
| 88/90 | 0.0364 | 1.40 | 0.000 | 0.0776 | -0.0514 | 0.2036 | 0.0483 | 0.0541 | -0.0257 |
| 88/95 | 0.0027 | 0.11 | 0.000 | 0.0895 | 0.0000 | -0.1238 | 0.0000 | 0.0000 | 0.0000 |
| 89/96 | 0.4117 | 14.67 | 0.000 | -24.1277 | -0.0030 | 0.4344 | 0.0005 | 0.8444 | 0.0498 |
| 98/89 | 1.3609 | 48.50 | 1.342 | -4.5846 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 89/103 | 0.1707 | 4.71 | 1.200 | 47.6724 | -0.0176 | -1.8721 | -0.0407 | 3.0436 | -0.2086 |
| 90/91 | 0.0160 | 0.61 | 0.000 | 0.5131 | 0.0471 | 0.1143 | 0.0000 | 0.1074 | 0.0443 |
| 90/92 | 0.0012 | 0.05 | 0.000 | 0.0000 | 0.0000 | -0.0499 | 0.0000 | -0.0041 | 0.0000 |
| 96/91 | 0.3779 | 13.47 | 1.771 | 23.9995 | 0.0065 | -0.3047 | 0.0006 | 0.6953 | 0.0507 |
| 91/105 | 0.2681 | 7.40 | 1.200 | -54.1338 | 0.0937 | -0.8595 | -0.0089 | 0.9147 | -0.0318 |
| 98/93 | 0.1849 | 6.59 | 0.000 | 9.8796 | -0.0071 | -0.2860 | 0.0006 | -0.3950 | 0.0582 |
| 93/100 | 0.2037 | 7.26 | 1.771 | -11.1844 | -0.0248 | 0.2253 | 0.0007 | -0.3168 | 0.0824 |
| 94/101 | 0.0065 | 0.25 | 0.000 | -0.1430 | 0.1793 | 0.0305 | 0.0000 | 0.0555 | 0.1076 |
| 95/102 | 0.0027 | 0.11 | 0.600 | 0.0895 | 0.0000 | 0.1238 | 0.0000 | 0.0000 | 0.0000 |
| 103/96 | 0.3881 | 13.83 | 0.000 | 23.6485 | -0.0005 | -0.4727 | 0.0007 | -0.7684 | 0.0612 |
| 96/105 | 0.4082 | 14.55 | 1.771 | -23.8719 | 0.0040 | 0.5682 | 0.0006 | -0.8447 | 0.0483 |
| 97/99 | 0.0012 | 0.05 | 0.165 | 0.0000 | 0.0000 | 0.0499 | 0.0000 | -0.0041 | 0.0000 |
| 98/107 | 0.1725 | 6.15 | 0.000 | -9.7546 | 0.0083 | 0.0931 | 0.0006 | 0.2699 | 0.0607 |
| 98/109 | 0.1380 | 3.81 | 0.720 | 48.7274 | 0.0616 | 0.2022 | -0.0407 | 0.7224 | -0.2610 |
| 98/111 | 1.2735 | 45.38 | 1.342 | -4.2787 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 99/100 | 0.0234 | 0.90 | 0.940 | 0.6207 | 0.0699 | -0.0766 | 0.0000 | 0.1727 | -0.0649 |
| 99/101 | 0.0306 | 1.18 | 0.500 | 0.0615 | -0.1136 | -0.2325 | 0.0393 | 0.0214 | 0.0533 |
| 107/100 | 0.2095 | 7.47 | 1.771 | 11.1788 | -0.0067 | -0.2641 | 0.0008 | 0.4031 | 0.0821 |
| 100/110 | 0.2244 | 6.19 | 1.200 | -49.2330 | -0.0559 | -0.0989 | -0.0117 | 0.3482 | 0.0237 |
| 101/102 | 0.0301 | 1.16 | 0.000 | 0.2425 | 0.0530 | -0.1075 | 0.0393 | 0.0214 | 0.0533 |
| 102/104 | 0.0299 | 1.15 | 0.500 | 0.2425 | -0.0418 | 0.4173 | 0.0393 | -0.2310 | 0.0000 |
| 103/108 | 0.4254 | 15.16 | 0.000 | -24.7907 | -0.0021 | 0.4852 | 0.0006 | 0.8693 | 0.0567 |
| 103/111 | 0.1942 | 5.36 | 1.200 | 63.9447 | -0.0145 | -0.3370 | -0.0450 | 2.1625 | -0.2334 |
| 104/105 | 0.0228 | 0.88 | 0.000 | 0.6048 | 0.0416 | 0.2598 | 0.0000 | 0.2443 | 0.0391 |
| 104/106 | 0.0012 | 0.05 | 0.000 | 0.0000 | 0.0000 | -0.0499 | 0.0000 | -0.0041 | 0.0000 |
| 108/105 | 0.3521 | 12.55 | 1.771 | 22.0706 | -0.0025 | -0.1958 | 0.0007 | 0.6048 | 0.0705 |
| 110/105 | 1.3402 | 47.76 | 2.683 | -11.0746 | -0.0436 | 0.0138 | 0.0034 | 0.0008 | 0.0586 |
| 105/112 | 0.3102 | 8.56 | 1.200 | -59.7641 | 0.1389 | -1.3248 | -0.0109 | 1.2665 | -0.0728 |





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|---|---|---|---|---|---|---|---|---|---|
| 109/107 | 0.1505 | 5.37 | 0.000 | 6.9999 | 0.0023 | -0.2726 | 0.0006 | -0.3682 | 0.0608 |
| 107/110 | 0.2601 | 9.27 | 1.771 | -12.5542 | -0.0221 | 0.5295 | 0.0008 | -0.5712 | 0.0980 |
| 107/113 | 0.1123 | 4.00 | 0.000 | 2.7666 | 0.0215 | -0.7754 | -0.0007 | -0.4408 | -0.0093 |
| 111/108 | 0.3759 | 13.40 | 0.000 | 21.1660 | 0.0008 | -0.6027 | 0.0008 | -0.8616 | 0.0675 |
| 108/112 | 0.4159 | 14.82 | 1.771 | -25.1138 | -0.0053 | 0.4501 | 0.0007 | -0.7352 | 0.0698 |
| 109/113 | 0.1119 | 3.99 | 0.000 | -4.5848 | -0.0085 | 0.1889 | 0.0005 | 0.3289 | 0.0373 |
| 109/120 | 0.1505 | 4.15 | 1.080 | 52.3944 | -0.3068 | -1.1790 | -0.0664 | 1.4741 | -0.1162 |
| 113/110 | 0.2343 | 8.35 | 1.771 | 10.3674 | -0.0486 | -0.5343 | 0.0010 | 0.6102 | 0.0965 |
| 110/115 | 0.3145 | 8.68 | 0.000 | -63.5280 | 0.4649 | -2.0599 | -0.0095 | -0.7829 | 0.1654 |
| 110/123 | 0.7418 | 26.44 | 1.342 | 10.4495 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 111/114 | 0.3436 | 12.24 | 0.000 | -21.0829 | 0.0097 | 0.2161 | 0.0005 | 0.5518 | 0.0670 |
| 120/111 | 1.1394 | 40.61 | 1.342 | -3.8095 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 111/122 | 0.2053 | 5.67 | 0.150 | 77.4182 | -0.0339 | -0.1142 | -0.0452 | 0.8488 | -0.2763 |
| 114/112 | 0.4151 | 14.79 | 1.771 | 22.5816 | 0.0076 | -0.7511 | 0.0009 | 1.0345 | 0.0677 |
| 112/117 | 0.4042 | 11.16 | 0.620 | -76.0548 | 0.0501 | -3.7008 | -0.0131 | 1.8963 | 0.0128 |
| 120/113 | 0.1925 | 6.86 | 1.771 | 15.0224 | -0.0356 | 0.0407 | 0.0000 | -0.0217 | 0.0631 |
| 122/114 | 0.2800 | 9.98 | 0.000 | 13.8206 | 0.0083 | -0.5109 | 0.0007 | -0.7456 | 0.0689 |
| 114/123 | 0.5074 | 18.08 | 1.771 | -27.6661 | -0.0138 | 0.9903 | 0.0008 | -1.1048 | 0.1005 |
| 114/124 | 0.2335 | 8.32 | 0.000 | 6.1523 | 0.0229 | -1.5568 | -0.0008 | -0.9355 | -0.0184 |
| 115/116 | 0.0126 | 0.35 | 0.400 | -1.2259 | 0.0000 | -0.2491 | 0.0000 | 0.0997 | 0.0000 |
| 115/121 | 0.3092 | 8.54 | 0.580 | -63.8629 | 0.0733 | -0.2386 | -0.0095 | 0.6356 | -0.1595 |
| 116/118 | 0.2359 | 8.41 | 2.400 | -0.2300 | 0.0000 | 3.0269 | 0.0000 | -2.0849 | 0.0000 |
| 117/118 | 0.0340 | 0.94 | 0.400 | -7.2055 | 0.0000 | 0.2300 | 0.0000 | -0.0920 | 0.0000 |
| 117/123 | 0.4034 | 11.14 | 0.000 | -76.3694 | -0.0101 | 3.5953 | -0.0133 | 1.8780 | 0.0169 |
| 118/119 | 0.2455 | 8.75 | 0.000 | 0.0000 | 0.0000 | -4.1786 | 0.0000 | -1.9929 | 0.0000 |
| 120/125 | 0.2624 | 10.09 | 3.542 | -15.0063 | -0.0179 | 0.4035 | 0.0011 | -0.5509 | 0.1113 |
| 120/126 | 1.2688 | 45.22 | 1.342 | -4.2624 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 120/133 | 0.2810 | 7.76 | 2.400 | 67.4529 | -0.0921 | -0.0319 | -0.0182 | 2.0135 | 0.2239 |
| 121/125 | 0.3148 | 8.69 | 0.300 | -63.8629 | -0.0652 | -0.1821 | -0.0095 | 0.6987 | -0.1608 |
| 122/124 | 0.2236 | 7.97 | 0.000 | -9.8662 | -0.0142 | 0.4241 | 0.0005 | 0.6859 | 0.0433 |
| 122/126 | 0.2598 | 7.17 | 1.200 | 85.8347 | -0.0126 | -2.8082 | -0.0683 | 3.0191 | -0.2670 |
| 124/123 | 0.4264 | 15.20 | 1.771 | 19.6541 | -0.0530 | -1.1374 | 0.0011 | 1.2523 | 0.1035 |
| 125/123 | 1.1177 | 39.83 | 1.342 | -10.2150 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 123/127 | 0.4894 | 13.51 | 0.000 | -89.6885 | 0.0774 | -3.7539 | -0.0103 | -2.5426 | 0.0999 |
| 126/124 | 0.3700 | 13.18 | 1.771 | 30.1106 | -0.0443 | 0.0647 | 0.0000 | -0.0641 | 0.0784 |
| 125/128 | 0.3699 | 10.21 | 0.410 | -81.3375 | 0.3374 | -1.9986 | -0.0108 | 0.7029 | -0.0200 |
| 133/125 | 0.2038 | 7.84 | 3.542 | 12.6429 | -0.0062 | -0.1795 | 0.0009 | 0.4766 | 0.1100 |
| 125/134 | 0.6420 | 22.88 | 1.342 | 8.9602 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 133/126 | 0.9140 | 32.57 | 1.342 | -3.0208 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 126/134 | 0.5093 | 19.59 | 0.000 | -32.0764 | -0.0164 | 0.5578 | 0.0010 | 1.2230 | 0.0536 |
| 126/141 | 0.4399 | 12.15 | 2.400 | 106.1477 | -0.2502 | -0.1895 | -0.0181 | 3.2006 | 0.3145 |
| 127/130 | 0.5013 | 13.84 | 0.410 | -89.6885 | 0.0774 | -3.3501 | -0.0103 | 3.1761 | -0.0246 |
| 128/129 | 0.0103 | 0.28 | 0.400 | -1.2259 | 0.0000 | -0.1867 | 0.0000 | 0.0747 | 0.0000 |
| 128/135 | 0.4285 | 11.83 | 1.267 | -81.3375 | -0.0780 | -0.2143 | -0.0108 | 1.1758 | -0.2917 |
| 129/131 | 0.2326 | 8.29 | 2.400 | -0.1694 | 0.0000 | 3.0269 | 0.0000 | -2.0606 | 0.0000 |
| 130/131 | 0.0328 | 0.91 | 0.400 | -7.2055 | 0.0000 | 0.1694 | 0.0000 | -0.0677 | 0.0000 |
| 130/134 | 0.5029 | 13.88 | 0.000 | -89.6885 | 0.0366 | 3.9558 | -0.0103 | 3.1761 | -0.0246 |
| 131/132 | 0.2455 | 8.75 | 0.000 | 0.0000 | 0.0000 | -4.1786 | 0.0000 | -1.9929 | 0.0000 |
| 133/140 | 0.2006 | 7.71 | 0.000 | -11.4444 | 0.0047 | 0.1313 | 0.0008 | 0.4083 | 0.0904 |
| 133/141 | 1.2170 | 43.37 | 1.342 | -4.0811 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 133/142 | 0.3200 | 8.83 | 2.400 | 79.5186 | -0.0300 | 0.0605 | -0.0160 | 2.0152 | 0.2339 |
| 134/137 | 0.5815 | 16.05 | 1.020 | -104.3774 | 0.1446 | -4.9644 | -0.0091 | 3.2911 | -0.1227 |
| 140/134 | 0.9557 | 34.06 | 1.342 | -8.6778 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 141/134 | 0.3391 | 13.04 | 3.542 | 21.6247 | -0.0119 | -0.4270 | 0.0009 | 0.9435 | 0.1128 |
| 135/136 | 0.0146 | 0.40 | 0.400 | -1.3662 | 0.0000 | -0.2921 | 0.0000 | 0.1169 | 0.0000 |
| 135/140 | 0.4079 | 11.26 | 0.000 | -81.3375 | -0.0364 | 1.3884 | -0.0108 | 1.2552 | -0.1813 |
| 136/138 | 0.2396 | 8.54 | 2.400 | -0.2921 | 0.0000 | 3.0269 | 0.0000 | -2.1097 | 0.0000 |
| 137/138 | 0.0355 | 0.98 | 0.400 | -7.2055 | 0.0000 | 0.2921 | 0.0000 | -0.1169 | 0.0000 |
| 137/143 | 0.5854 | 16.16 | 0.000 | -104.3774 | -0.0550 | 2.3414 | -0.0091 | 3.2911 | -0.1227 |
| 138/139 | 0.2455 | 8.75 | 0.000 | 0.0000 | 0.0000 | -4.1786 | 0.0000 | -1.9929 | 0.0000 |
| 141/140 | 0.1517 | 5.83 | 2.054 | 3.2968 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 142/140 | 0.1076 | 4.14 | 3.542 | 5.9225 | -0.0070 | -0.0581 | 0.0007 | 0.2611 | 0.0781 |
| 140/143 | 0.4572 | 16.29 | 1.342 | 6.2033 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 140/144 | 0.4796 | 13.24 | 1.206 | -93.4759 | -0.1220 | -0.2858 | -0.0068 | 1.0261 | -0.3019 |
| 142/141 | 0.6488 | 23.12 | 1.342 | -2.1368 | 0.0000 | 0.0000 | 0.0000 | 0.0051 | 0.0000 |
| 141/143 | 0.3674 | 14.13 | 0.000 | -22.6950 | 0.0067 | 0.3478 | 0.0006 | 0.8201 | 0.0767 |
| 141/150 | 0.4840 | 13.36 | 2.400 | 120.8574 | 0.2124 | -0.3302 | -0.0122 | 3.3182 | -0.2466 |
| 142/149 | 0.0992 | 3.82 | 0.000 | -4.9305 | 0.0017 | 0.0386 | 0.0006 | 0.2422 | 0.0577 |
| 142/150 | 0.8125 | 28.96 | 1.342 | -2.6659 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 142/151 | 0.3263 | 9.01 | 0.360 | 85.5982 | 0.1058 | -0.3352 | -0.0117 | 1.7349 | 0.1571 |
| 143/146 | 0.6188 | 17.08 | 0.810 | -114.3119 | -0.0407 | -5.6596 | -0.0058 | 3.2255 | 0.0225 |
| 149/143 | 0.6763 | 24.10 | 1.342 | -6.0259 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 150/143 | 0.2115 | 8.13 | 3.542 | 13.1184 | -0.0019 | -0.2530 | 0.0006 | 0.6612 | 0.0563 |
| 144/145 | 0.0088 | 0.24 | 0.400 | -1.2259 | 0.0000 | -0.1444 | 0.0000 | 0.0578 | 0.0000 |
| 144/149 | 0.4419 | 12.20 | 0.000 | -93.4759 | -0.3681 | 1.3823 | -0.0068 | 1.1749 | -0.0546 |
| 145/147 | 0.2304 | 8.21 | 2.400 | -0.1250 | 0.0000 | 3.0269 | 0.0000 | -2.0429 | 0.0000 |
| 146/147 | 0.0320 | 0.88 | 0.400 | -7.2055 | 0.0000 | 0.1250 | 0.0000 | -0.0500 | 0.0000 |
| 146/152 | 0.6173 | 17.04 | 0.000 | -114.3119 | -0.0422 | 1.6462 | -0.0058 | 3.2255 | 0.0225 |
| 147/148 | 0.2455 | 8.75 | 0.000 | 0.0000 | 0.0000 | -4.1786 | 0.0000 | -1.9929 | 0.0000 |
| 151/149 | 0.0465 | 1.79 | 2.657 | 1.8617 | 0.0020 | 0.0039 | 0.0005 | 0.1172 | 0.0536 |
| 149/152 | 0.3526 | 12.57 | 1.342 | 4.6419 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 149/153 | 0.5072 | 14.00 | 1.520 | -100.1073 | -0.0984 | -0.4689 | -0.0064 | 1.4320 | -0.2228 |
| 151/150 | 0.4623 | 16.48 | 1.342 | -1.4845 | 0.0000 | 0.0000 | 0.0000 | 0.0051 | 0.0000 |
| 150/152 | 0.2029 | 7.80 | 0.000 | -12.3608 | -0.0012 | 0.1225 | 0.0004 | 0.4483 | 0.0504 |
| 150/159 | 0.4905 | 13.54 | 0.300 | 129.0061 | -0.1402 | -0.4874 | -0.0113 | 2.5606 | -0.2394 |
| 151/158 | 0.0386 | 1.49 | 0.886 | -0.8070 | 0.0021 | -0.0084 | 0.0006 | 0.1132 | 0.0568 |
| 151/159 | 0.5469 | 19.49 | 1.342 | -1.7365 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 151/160 | 0.3835 | 10.59 | 2.400 | 88.1465 | -0.3377 | 0.2638 | -0.0109 | 1.9678 | 0.7106 |
| 152/155 | 0.6087 | 16.81 | 0.320 | -117.0208 | 0.1059 | -6.7161 | -0.0052 | 2.0336 | 0.0938 |
| 158/152 | 0.4940 | 17.61 | 1.342 | -4.2953 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 159/152 | 0.0700 | 2.69 | 3.542 | 2.7507 | -0.0034 | -0.0433 | 0.0006 | 0.2572 | 0.0543 |
| 153/154 | 0.0091 | 0.25 | 0.400 | -0.1287 | 0.0000 | -0.2202 | 0.0000 | 0.0881 | 0.0000 |
| 153/158 | 0.5005 | 13.82 | 0.000 | -100.1073 | -0.0208 | 0.9976 | -0.0064 | 1.4320 | -0.2228 |
| 154/156 | 0.2281 | 8.13 | 2.400 | -0.0776 | 0.0000 | 3.0269 | 0.0000 | -2.0239 | 0.0000 |
| 155/156 | 0.0314 | 0.87 | 0.400 | -7.2055 | 0.0000 | -0.0843 | 0.0000 | 0.0337 | 0.0000 |
| 155/161 | 0.6004 | 16.58 | 0.000 | -117.0208 | 0.1903 | 0.5898 | -0.0052 | 2.0336 | 0.0938 |
| 156/157 | 0.2455 | 8.75 | 0.000 | 0.0000 | 0.0000 | -4.1786 | 0.0000 | -1.9929 | 0.0000 |
| 160/158 | 0.0656 | 2.52 | 0.000 | -2.9989 | -0.0107 | 0.0391 | 0.0004 | 0.2471 | 0.0174 |
| 158/161 | 0.2502 | 8.91 | 1.342 | 3.1131 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 158/162 | 0.5371 | 14.83 | 1.310 | -102.3318 | 0.0122 | -0.5275 | -0.0025 | 1.5252 | -0.4008 |
| 160/159 | 0.3156 | 11.25 | 1.342 | 1.9228 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 159/161 | 0.0567 | 2.18 | 0.000 | -2.0591 | 0.0087 | 0.0069 | 0.0002 | 0.1722 | 0.0491 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 159/168 | 0.4806 | 13.27 | 0.900 | 129.5104 | -0.0021 | 0.0016 | -0.0049 | 2.7795 | 0.0243 |
| 160/161 | 0.2537 | 9.76 | 2.054 | -4.2857 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 160/167 | 0.0982 | 3.78 | 3.542 | 6.9878 | 0.0134 | -0.0426 | 0.0002 | 0.2539 | -0.0171 |
| 160/168 | 0.1170 | 4.17 | 1.342 | -0.2323 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 160/174 | 0.3827 | 10.57 | 0.000 | 85.6979 | 0.3203 | -0.0344 | 0.0021 | 2.3057 | 0.6942 |
| 161/164 | 0.6028 | 16.64 | 0.110 | -114.2048 | -0.4790 | -8.3226 | 0.0002 | 1.1584 | -0.2348 |
| 167/161 | 0.1764 | 6.29 | 1.342 | -1.2807 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 168/161 | 0.1010 | 3.89 | 0.000 | -6.3553 | -0.0085 | 0.0064 | 0.0001 | 0.2551 | -0.0066 |
| 162/163 | 0.0158 | 0.44 | 0.400 | -1.3343 | 0.0000 | 0.3273 | 0.0000 | -0.1309 | 0.0000 |
| 162/167 | 0.5347 | 14.76 | 0.000 | -102.3318 | -0.1146 | 0.9390 | -0.0025 | 1.5252 | -0.4008 |
| 163/165 | 0.2209 | 7.87 | 2.400 | 0.1268 | 0.0000 | 3.0269 | 0.0000 | -1.9421 | 0.0000 |
| 164/165 | 0.0361 | 1.00 | 0.400 | -7.1576 | 0.0000 | -0.3273 | 0.0000 | 0.1309 | 0.0000 |
| 164/171 | 0.5996 | 16.55 | 1.810 | -114.2048 | -0.1606 | -0.5629 | 0.0002 | 2.5879 | 0.0559 |
| 165/166 | 0.2455 | 8.75 | 0.000 | 0.0000 | 0.0000 | -4.1786 | 0.0000 | -1.9929 | 0.0000 |
| 167/169 | 0.4840 | 13.36 | 0.720 | -96.9379 | 0.1134 | -0.8509 | 0.0010 | 1.4110 | -0.2108 |
| 174/167 | 0.1268 | 4.88 | 3.542 | -9.6410 | 0.0028 | 0.1057 | 0.0000 | -0.1392 | -0.0098 |
| 167/176 | 0.0555 | 1.98 | 1.342 | 0.2082 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 174/168 | 0.0957 | 3.41 | 1.342 | -0.2018 | 0.0000 | 0.0000 | 0.0000 | 0.0051 | 0.0000 |
| 168/176 | 0.1315 | 5.06 | 3.542 | 7.5839 | 0.0039 | -0.1615 | 0.0000 | 0.5247 | -0.0131 |
| 168/178 | 0.4763 | 13.15 | 1.500 | 124.9651 | 0.1132 | 0.3200 | 0.0020 | 2.8147 | -0.1418 |
| 169/170 | 0.0091 | 0.25 | 0.400 | -0.1287 | 0.0000 | -0.2208 | 0.0000 | 0.0883 | 0.0000 |
| 169/175 | 0.4828 | 13.33 | 0.000 | -96.9379 | 0.1929 | 0.6156 | 0.0010 | 1.4110 | -0.2108 |
| 170/172 | 0.2282 | 8.13 | 2.400 | -0.0795 | 0.0000 | 3.0269 | 0.0000 | -2.0247 | 0.0000 |
| 171/172 | 0.0313 | 0.86 | 0.400 | -7.2055 | 0.0000 | 0.0795 | 0.0000 | -0.0318 | 0.0000 |
| 171/176 | 0.6136 | 16.94 | 0.000 | -114.2048 | -0.0892 | 6.7430 | 0.0002 | 2.5879 | 0.0559 |
| 172/173 | 0.2455 | 8.75 | 0.000 | 0.0000 | 0.0000 | -4.1786 | 0.0000 | -1.9929 | 0.0000 |
| 174/177 | 0.1529 | 5.88 | 3.542 | 11.1987 | 0.0030 | -0.1521 | -0.0001 | 0.4098 | -0.0116 |
| 174/178 | 0.2466 | 8.79 | 1.342 | -0.6855 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 174/185 | 0.2983 | 8.24 | 0.000 | 78.3127 | -0.0856 | -0.0874 | 0.0012 | 1.8027 | -0.0742 |
| 175/177 | 0.4794 | 13.23 | 0.000 | -96.9379 | -0.0286 | 0.7360 | 0.0010 | 1.0866 | -0.2502 |
| 177/176 | 0.0692 | 2.46 | 1.342 | 0.4124 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 178/176 | 0.2190 | 8.42 | 3.542 | -16.7235 | 0.0035 | 0.1358 | 0.0000 | -0.2457 | -0.0125 |
| 176/179 | 0.5282 | 14.58 | 1.200 | -105.8555 | 0.0410 | -1.4018 | 0.0008 | 1.9556 | 0.0408 |
| 177/180 | 0.4312 | 11.91 | 0.510 | -88.0735 | 0.2914 | -0.9858 | 0.0015 | 1.3517 | -0.0973 |
| 185/177 | 0.2250 | 8.65 | 0.000 | -14.1831 | 0.0004 | 0.2277 | 0.0000 | 0.5797 | -0.0095 |
| 177/186 | 0.2221 | 7.91 | 1.342 | -1.7138 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 185/178 | 0.2876 | 10.25 | 1.342 | -0.8730 | 0.0000 | 0.0000 | 0.0000 | 0.0051 | 0.0000 |
| 178/186 | 0.2570 | 9.88 | 3.542 | 17.7202 | 0.0036 | -0.3545 | -0.0002 | 0.8070 | -0.0124 |
| 178/188 | 0.4546 | 12.55 | 0.000 | 114.0476 | -0.2047 | 0.4116 | 0.0027 | 3.0132 | -0.2441 |
| 179/182 | 0.5476 | 15.12 | 0.510 | -105.9626 | 0.0364 | -1.3390 | 0.0009 | 2.6227 | 0.0231 |
| 180/181 | 0.0106 | 0.29 | 0.400 | -1.2259 | 0.0000 | -0.1956 | 0.0000 | 0.0783 | 0.0000 |
| 180/187 | 0.4536 | 12.52 | 0.567 | -88.0735 | 0.1892 | 0.5308 | 0.0015 | 1.0811 | -0.2788 |
| 181/183 | 0.2330 | 8.30 | 2.400 | -0.1766 | 0.0000 | 3.0269 | 0.0000 | -2.0635 | 0.0000 |
| 182/183 | 0.0329 | 0.91 | 0.400 | -7.2055 | 0.0000 | 0.1766 | 0.0000 | -0.0706 | 0.0000 |
| 182/186 | 0.5731 | 15.82 | 0.000 | -105.8555 | -0.0061 | 6.0319 | 0.0008 | 2.6379 | 0.0199 |
| 183/184 | 0.2455 | 8.75 | 0.000 | 0.0000 | 0.0000 | -4.1786 | 0.0000 | -1.9929 | 0.0000 |
| 185/187 | 0.2159 | 8.31 | 3.542 | 15.0579 | 0.0076 | -0.2533 | -0.0002 | 0.6043 | -0.0310 |
| 185/188 | 0.4346 | 15.49 | 1.342 | -1.3433 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 185/194 | 0.2859 | 7.89 | 1.440 | 68.9338 | -0.1628 | 0.5176 | 0.0067 | 1.5640 | 0.3702 |
| 187/186 | 0.1772 | 6.31 | 1.342 | 2.0240 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 188/186 | 0.4334 | 16.67 | 0.000 | -28.0467 | -0.0087 | 0.4352 | -0.0003 | 0.9799 | -0.0389 |
| 186/191 | 0.5327 | 14.71 | 1.220 | -91.6745 | 0.1285 | -2.6350 | 0.0041 | 3.3015 | -0.1457 |
| 188/187 | 0.1219 | 4.69 | 2.054 | 2.4918 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 187/189 | 0.3797 | 10.48 | 0.020 | -74.7139 | 0.2624 | -1.0593 | 0.0065 | 1.3310 | -0.1496 |
| 194/187 | 0.3263 | 12.55 | 0.000 | -19.8944 | -0.0116 | 0.3363 | -0.0005 | 0.7611 | -0.0664 |
| 187/195 | 0.4696 | 16.74 | 1.342 | -4.0632 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 194/188 | 0.6279 | 22.38 | 1.342 | -2.0638 | 0.0000 | 0.0000 | 0.0000 | 0.0051 | 0.0000 |
| 188/195 | 0.3915 | 15.06 | 3.542 | 27.2160 | 0.0110 | -0.5180 | -0.0006 | 1.0802 | -0.0642 |
| 188/202 | 0.4031 | 11.13 | 0.000 | 96.6083 | 0.1611 | 0.6148 | 0.0131 | 3.0780 | 0.2693 |
| 189/190 | 0.0117 | 0.32 | 0.400 | -1.3662 | 0.0000 | -0.2136 | 0.0000 | 0.0854 | 0.0000 |
| 189/196 | 0.4073 | 11.25 | 0.657 | -74.7139 | 0.1494 | 0.4743 | 0.0065 | 1.0601 | -0.3474 |
| 190/192 | 0.2349 | 8.37 | 2.400 | -0.2136 | 0.0000 | 3.0269 | 0.0000 | -2.0783 | 0.0000 |
| 191/192 | 0.0337 | 0.93 | 0.400 | -7.2055 | 0.0000 | 0.2136 | 0.0000 | -0.0854 | 0.0000 |
| 191/195 | 0.5323 | 14.70 | 0.000 | -91.6745 | 0.0240 | 4.5980 | 0.0041 | 3.3015 | -0.1457 |
| 192/193 | 0.2455 | 8.75 | 0.000 | 0.0000 | 0.0000 | -4.1786 | 0.0000 | -1.9929 | 0.0000 |
| 194/195 | 0.1427 | 5.49 | 2.054 | -2.1638 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 194/201 | 0.3219 | 12.38 | 3.542 | 22.6308 | 0.0085 | -0.3625 | -0.0006 | 0.7738 | -0.0849 |
| 194/202 | 0.6790 | 24.20 | 1.342 | -2.1987 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 194/203 | 0.2703 | 7.46 | 0.000 | 53.5768 | 0.2776 | 0.5882 | 0.0176 | 2.2601 | 0.5693 |
| 195/198 | 0.4499 | 12.42 | 1.010 | -73.7422 | -0.1456 | -3.5079 | 0.0096 | 3.3574 | -0.0739 |
| 201/195 | 0.3977 | 14.17 | 1.342 | 5.3155 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 202/195 | 0.5601 | 21.54 | 0.000 | -35.0215 | -0.0068 | 0.6115 | -0.0008 | 1.2886 | -0.0881 |
| 196/197 | 0.0102 | 0.28 | 0.400 | -0.1287 | 0.0000 | -0.2495 | 0.0000 | 0.0998 | 0.0000 |
| 196/201 | 0.3323 | 9.17 | 0.190 | -74.7139 | -0.5224 | 2.2088 | 0.0065 | -0.3048 | 0.0568 |
| 197/199 | 0.2318 | 8.26 | 2.400 | -0.1529 | 0.0000 | 3.0269 | 0.0000 | -2.0540 | 0.0000 |
| 198/199 | 0.0325 | 0.90 | 0.400 | -7.2055 | 0.0000 | 0.1529 | 0.0000 | -0.0612 | 0.0000 |
| 198/204 | 0.4528 | 12.50 | 0.000 | -73.7422 | -0.1531 | 3.7252 | 0.0096 | 3.3574 | -0.0739 |
| 199/200 | 0.2455 | 8.75 | 0.000 | 0.0000 | 0.0000 | -4.1786 | 0.0000 | -1.9929 | 0.0000 |
| 203/201 | 0.4146 | 15.95 | 0.000 | -25.5599 | -0.0012 | 0.4387 | -0.0009 | 0.9327 | -0.0860 |
| 201/204 | 0.7184 | 25.60 | 1.342 | -6.4252 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 201/205 | 0.2953 | 8.15 | 0.810 | -54.7389 | 0.0911 | 0.2725 | 0.0093 | 0.9332 | -0.2236 |
| 203/202 | 0.9442 | 33.65 | 1.342 | -3.1704 | 0.0000 | 0.0000 | 0.0000 | 0.0051 | 0.0000 |
| 202/204 | 0.5208 | 20.03 | 3.542 | 36.1442 | 0.0020 | -0.7293 | -0.0009 | 1.4465 | -0.0838 |
| 202/211 | 0.3226 | 8.91 | 0.000 | 74.5103 | -0.0001 | 1.0061 | 0.0182 | 3.3089 | -0.0616 |
| 203/210 | 0.3829 | 14.73 | 3.542 | 26.8997 | 0.0012 | -0.4785 | -0.0009 | 0.9576 | -0.0884 |
| 203/211 | 0.8753 | 31.19 | 1.342 | -2.8854 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 203/212 | 0.1562 | 4.31 | 0.000 | 34.2930 | -0.1625 | 0.5218 | 0.0194 | 1.7938 | -0.0370 |
| 204/207 | 0.3527 | 9.74 | 0.420 | -49.8422 | 0.1861 | -4.9647 | 0.0111 | 2.7821 | -0.0006 |
| 210/204 | 0.5117 | 18.24 | 1.342 | 7.0161 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 211/204 | 0.7270 | 27.96 | 0.000 | -46.4787 | -0.0022 | 0.8181 | -0.0008 | 1.6344 | -0.0898 |
| 205/206 | 0.0164 | 0.45 | 0.400 | -1.2259 | 0.0000 | -0.3501 | 0.0000 | 0.1401 | 0.0000 |
| 205/210 | 0.2708 | 7.48 | 0.000 | -54.7389 | 0.0132 | 1.8349 | 0.0093 | 0.6506 | -0.1459 |
| 206/208 | 0.2421 | 8.63 | 2.400 | -0.3333 | 0.0000 | 3.0269 | 0.0000 | -2.1262 | 0.0000 |
| 207/208 | 0.0365 | 1.01 | 0.400 | -7.2055 | 0.0000 | 0.3333 | 0.0000 | -0.1333 | 0.0000 |
| 207/213 | 0.3256 | 8.99 | 0.000 | -49.8422 | 0.0457 | 2.2684 | 0.0111 | 2.7821 | -0.0006 |
| 208/209 | 0.2455 | 8.75 | 0.000 | 0.0000 | 0.0000 | -4.1786 | 0.0000 | -1.9929 | 0.0000 |
| 212/210 | 0.4839 | 18.61 | 0.000 | -29.7362 | -0.0054 | 0.5381 | -0.0010 | 1.0874 | -0.1043 |
| 210/213 | 0.9137 | 32.56 | 2.683 | -8.0189 | 0.0087 | 0.0167 | 0.0000 | -0.0025 | -0.0233 |
| 210/214 | 0.1938 | 5.35 | 0.846 | -30.7969 | 0.0362 | 0.1318 | 0.0126 | 0.8471 | -0.2700 |
| 212/211 | 1.0683 | 38.07 | 1.342 | -3.6049 | 0.0000 | 0.0000 | 0.0000 | 0.0051 | 0.0000 |
| 211/213 | 0.6577 | 25.30 | 3.542 | 47.3449 | 0.0076 | -0.8854 | -0.0011 | 1.6574 | -0.1125 |
| 211/220 | 0.2229 | 6.15 | 0.000 | 44.9063 | 0.0376 | 1.3914 | 0.0225 | 3.2569 | 0.0005 |





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|---|---|---|---|---|---|---|---|---|---|
| 212/213 | 0.1501 | 5.77 | 2.054 | -2.3056 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 212/219 | 0.4827 | 18.57 | 3.542 | 32.8602 | 0.0201 | -0.5986 | -0.0011 | 1.1657 | -0.1584 |
| 212/220 | 1.0700 | 38.13 | 1.342 | -3.5667 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 212/226 | 0.1763 | 4.87 | 2.400 | -41.0925 | -0.2871 | 0.9933 | -0.0030 | -1.2734 | -0.0930 |
| 213/216 | 0.2881 | 7.95 | 0.210 | -19.9176 | -0.0115 | -6.1656 | 0.0149 | 2.3278 | -0.1836 |
| 219/213 | 0.7105 | 25.32 | 2.683 | 9.4848 | 0.0076 | 0.0266 | 0.0000 | -0.0152 | -0.0205 |
| 220/213 | 0.8689 | 33.42 | 0.000 | -55.6407 | -0.0086 | 0.9669 | -0.0010 | 1.9075 | -0.1201 |
| 214/215 | 0.0159 | 0.44 | 0.400 | -1.2259 | 0.0000 | -0.3370 | 0.0000 | 0.1348 | 0.0000 |
| 214/219 | 0.1826 | 5.04 | 0.000 | -30.7969 | 0.0380 | 1.6478 | 0.0126 | 0.7428 | -0.2170 |
| 215/217 | 0.2407 | 8.58 | 2.400 | -0.3101 | 0.0000 | 3.0269 | 0.0000 | -2.1169 | 0.0000 |
| 216/217 | 0.0359 | 0.99 | 0.400 | -7.2055 | 0.0000 | 0.3101 | 0.0000 | -0.1241 | 0.0000 |
| 216/223 | 0.2109 | 5.82 | 1.910 | 39.7209 | 0.0033 | 0.7464 | -0.0013 | -0.6626 | -0.1789 |
| 217/218 | 0.2455 | 8.75 | 0.000 | 0.0000 | 0.0000 | -4.1786 | 0.0000 | -1.9929 | 0.0000 |
| 219/221 | 0.1963 | 5.42 | 0.920 | 41.6097 | -0.0975 | 0.4831 | -0.0008 | -0.2174 | -0.1330 |
| 226/219 | 0.5202 | 20.01 | 3.542 | -34.7652 | 0.0449 | 0.2744 | 0.0000 | -0.7367 | -0.1592 |
| 219/228 | 1.1230 | 40.02 | 1.342 | -10.2655 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 226/220 | 1.2874 | 49.51 | 1.342 | -4.6220 | 0.0000 | 0.0000 | 0.0000 | 0.0051 | 0.0000 |
| 220/228 | 0.8279 | 31.84 | 3.542 | 57.0080 | 0.0147 | -1.2009 | -0.0013 | 2.2661 | -0.1586 |
| 220/232 | 0.1848 | 5.10 | 2.400 | -43.9280 | -0.0089 | 1.0565 | -0.0003 | -1.4589 | 0.0224 |
| 221/222 | 0.0253 | 0.70 | 0.400 | -1.3662 | 0.0000 | -0.5701 | 0.0000 | 0.2280 | 0.0000 |
| 221/227 | 0.2123 | 5.86 | 0.280 | 41.6097 | 0.1801 | 0.7823 | -0.0008 | -0.4267 | -0.2038 |
| 222/224 | 0.2562 | 9.13 | 2.400 | -0.5701 | 0.0000 | 3.0269 | 0.0000 | -2.2209 | 0.0000 |
| 223/224 | 0.0431 | 1.19 | 0.400 | -7.2055 | 0.0000 | 0.5701 | 0.0000 | -0.2280 | 0.0000 |
| 223/228 | 0.3764 | 10.39 | 0.280 | -19.9176 | -0.4532 | 8.7135 | 0.0149 | -2.4874 | 0.1486 |
| 224/225 | 0.2455 | 8.75 | 0.000 | 0.0000 | 0.0000 | -4.1786 | 0.0000 | -1.9929 | 0.0000 |
| 226/229 | 0.4712 | 16.79 | 0.000 | 33.8695 | 0.0459 | -0.4045 | -0.0008 | -0.7226 | 0.0020 |
| 226/230 | 0.1768 | 4.88 | 1.200 | -49.6724 | -0.0114 | 1.8331 | -0.0003 | -2.7683 | -0.2865 |
| 226/232 | 1.2044 | 46.32 | 1.342 | -4.2685 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 227/231 | 0.2461 | 6.80 | 1.200 | 42.2082 | 0.1006 | 1.0986 | -0.0003 | -1.5567 | -0.0859 |
| 231/228 | 0.7880 | 28.08 | 1.342 | 11.1386 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 232/228 | 0.9341 | 35.93 | 3.542 | -65.4221 | 0.0453 | 0.4517 | 0.0000 | -1.3650 | -0.1606 |
| 228/233 | 0.2341 | 6.46 | 1.200 | 47.5152 | 0.0755 | 0.7286 | -0.0006 | -0.5183 | -0.1461 |
| 230/229 | 0.2434 | 8.68 | 0.000 | -10.0503 | -0.0015 | 0.4404 | -0.0006 | 0.7047 | -0.0826 |
| 229/231 | 0.4747 | 16.92 | 1.771 | 23.0653 | 0.0806 | -1.1276 | -0.0014 | 1.2236 | -0.1415 |
| 229/234 | 0.2647 | 9.43 | 1.200 | 6.7985 | -0.0332 | 1.7223 | 0.0011 | -1.1051 | -0.0145 |
| 230/234 | 0.2768 | 9.86 | 0.000 | 13.9600 | 0.0079 | -0.4306 | -0.0009 | -0.7264 | -0.0634 |
| 230/241 | 0.1756 | 4.85 | 0.000 | -54.4369 | 0.0016 | -0.0492 | -0.0052 | -2.0315 | -0.2893 |
| 234/231 | 0.4933 | 17.58 | 1.771 | -25.8322 | 0.0165 | 0.9052 | -0.0011 | -1.0571 | -0.1352 |
| 231/236 | 0.2650 | 7.32 | 0.604 | 57.3840 | -0.0312 | 0.0918 | -0.0012 | -0.4326 | -0.0839 |
| 231/244 | 1.2823 | 45.70 | 1.342 | -11.7783 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 232/235 | 0.8660 | 30.86 | 0.000 | 62.4623 | 0.0478 | -0.7049 | -0.0009 | -1.3154 | 0.0020 |
| 241/232 | 1.3536 | 52.06 | 1.342 | -4.8672 | 0.0000 | 0.0000 | 0.0000 | 0.0051 | 0.0000 |
| 232/243 | 0.2310 | 6.38 | 1.200 | -44.8913 | 0.0111 | 6.0689 | 0.0375 | -6.9835 | -0.2098 |
| 233/238 | 0.2627 | 7.25 | 0.710 | 47.5152 | 0.0755 | 0.9066 | -0.0006 | -1.0989 | -0.1996 |
| 241/234 | 0.3150 | 11.23 | 0.000 | -18.7139 | -0.0034 | 0.2206 | -0.0008 | 0.4720 | -0.0918 |
| 234/242 | 0.4404 | 15.70 | 1.771 | 23.5650 | -0.0054 | -0.9507 | -0.0011 | 1.0800 | -0.0893 |
| 243/235 | 0.4309 | 15.36 | 0.000 | -19.0415 | -0.0032 | 0.8309 | -0.0007 | 1.3162 | -0.0848 |
| 235/244 | 0.8474 | 30.20 | 1.771 | 41.5294 | 0.0785 | -2.2810 | -0.0014 | 2.4817 | -0.1383 |
| 235/246 | 0.4933 | 17.58 | 1.200 | 12.8510 | -0.0320 | 3.1955 | 0.0011 | -2.0687 | -0.0179 |
| 236/237 | 0.0306 | 0.84 | 0.400 | -1.3662 | 0.0000 | -0.7034 | 0.0000 | 0.2814 | 0.0000 |
| 236/242 | 0.2847 | 7.86 | 0.490 | 57.3840 | 0.0841 | 0.4704 | -0.0012 | -0.6442 | -0.1880 |
| 237/239 | 0.2642 | 9.41 | 2.400 | -0.7034 | 0.0000 | 3.0269 | 0.0000 | -2.2742 | 0.0000 |
| 238/239 | 0.0472 | 1.30 | 0.400 | -7.2055 | 0.0000 | 0.7034 | 0.0000 | -0.2814 | 0.0000 |
| 238/244 | 0.4446 | 12.27 | 0.490 | 27.7131 | -0.4830 | 8.7653 | 0.0122 | -5.4825 | 0.1769 |
| 239/240 | 0.2455 | 8.75 | 0.000 | 0.0000 | 0.0000 | -4.1786 | 0.0000 | -1.9929 | 0.0000 |
| 241/245 | 0.3549 | 12.65 | 0.000 | 19.0528 | 0.0022 | -0.5166 | -0.0010 | -0.8293 | -0.0845 |
| 241/247 | 0.1717 | 4.74 | 1.200 | -57.4042 | -0.1070 | 0.4813 | -0.0038 | -1.8535 | -0.1669 |
| 241/249 | 1.4580 | 51.96 | 1.342 | -4.9244 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 245/242 | 0.3713 | 13.23 | 1.771 | -23.2818 | 0.0005 | 0.1839 | -0.0010 | -0.4961 | -0.0928 |
| 242/248 | 0.3255 | 8.99 | 1.200 | 66.3631 | -0.6108 | 1.0329 | -0.0003 | -0.8821 | 0.1331 |
| 243/246 | 0.4892 | 17.43 | 0.000 | 25.4680 | 0.0049 | -0.7815 | -0.0009 | -1.3606 | -0.0627 |
| 243/249 | 0.2281 | 6.30 | 1.200 | -61.4969 | 0.0076 | 0.5827 | 0.0541 | -4.6635 | -0.1690 |
| 246/244 | 0.9240 | 32.93 | 1.771 | -50.7033 | 0.0167 | 1.7856 | -0.0010 | -2.1274 | -0.1328 |
| 248/244 | 0.8885 | 31.66 | 1.342 | 12.6387 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 244/250 | 0.3024 | 8.35 | 1.200 | 58.4013 | 0.1860 | 0.3027 | 0.0174 | -1.0956 | -0.1452 |
| 247/245 | 0.4045 | 14.41 | 0.000 | -23.1212 | 0.0013 | 0.4694 | -0.0009 | 0.7625 | -0.0898 |
| 245/248 | 0.3506 | 12.49 | 1.771 | 19.9920 | 0.0014 | -0.4062 | -0.0010 | 0.7038 | -0.0908 |
| 249/246 | 0.5850 | 20.85 | 0.000 | -37.0406 | -0.0088 | 0.4289 | -0.0007 | 0.9015 | -0.0937 |
| 246/250 | 0.7901 | 28.16 | 1.771 | 42.9556 | 0.0006 | -1.8261 | -0.0012 | 2.0598 | -0.0980 |
| 247/256 | 0.3840 | 13.69 | 0.000 | 22.4584 | 0.0016 | -0.4287 | -0.0010 | -0.7574 | -0.0884 |
| 247/258 | 0.2012 | 5.56 | 1.200 | -68.6214 | 0.1005 | 1.8244 | 0.0637 | -2.0561 | -0.1653 |
| 248/251 | 0.3642 | 10.06 | 0.000 | 82.1584 | 0.1988 | 0.3225 | -0.0012 | -0.1859 | 0.1362 |
| 256/248 | 0.3703 | 13.20 | 1.771 | -22.0253 | -0.0006 | 0.2553 | -0.0009 | -0.6011 | -0.0906 |
| 248/261 | 1.4245 | 50.77 | 1.342 | -13.1275 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 249/257 | 0.6796 | 24.22 | 0.000 | 38.3757 | 0.0070 | -1.0599 | -0.0011 | -1.6556 | -0.0846 |
| 258/249 | 1.3365 | 47.63 | 1.342 | -4.5433 | 0.0000 | 0.0000 | 0.0000 | 0.0051 | 0.0000 |
| 249/260 | 0.2422 | 6.69 | 0.000 | -87.9572 | -0.0109 | -0.4394 | 0.0628 | -2.1064 | -0.1070 |
| 250/253 | 0.4862 | 13.42 | 0.120 | 90.3912 | 0.1895 | -2.9505 | 0.0163 | 2.1375 | -0.2367 |
| 257/250 | 0.6808 | 24.26 | 1.771 | -46.0431 | -0.0022 | 0.2200 | -0.0009 | -0.8394 | -0.0953 |
| 251/252 | 0.0363 | 1.00 | 0.400 | -1.3662 | 0.0000 | -0.8476 | 0.0000 | 0.3390 | 0.0000 |
| 251/259 | 0.4211 | 11.63 | 1.080 | 81.3491 | -0.0195 | 1.4790 | 0.0119 | -1.3518 | -0.2685 |
| 252/254 | 0.2728 | 9.72 | 2.400 | -0.8476 | 0.0000 | 3.0269 | 0.0000 | -2.3319 | 0.0000 |
| 253/254 | 0.0519 | 1.43 | 0.400 | -7.2055 | 0.0000 | 0.8476 | 0.0000 | -0.3390 | 0.0000 |
| 253/261 | 0.5196 | 14.34 | 1.080 | 90.3912 | -0.5288 | 4.6262 | 0.0163 | -2.7125 | 0.3344 |
| 254/255 | 0.2455 | 8.75 | 0.000 | 0.0000 | 0.0000 | -4.1786 | 0.0000 | -1.9929 | 0.0000 |
| 258/256 | 0.4006 | 14.28 | 0.000 | -22.1374 | 0.0007 | 0.5053 | -0.0009 | 0.8151 | -0.0906 |
| 256/259 | 0.3939 | 14.04 | 1.771 | 22.9864 | 0.0048 | -0.4893 | -0.0011 | 0.7683 | -0.0951 |
| 260/257 | 0.7687 | 27.40 | 0.000 | -44.8386 | 0.0071 | 1.0644 | -0.0010 | 1.6136 | -0.0863 |
| 257/261 | 0.6589 | 23.48 | 1.771 | 40.4754 | -0.0023 | -0.7147 | -0.0010 | 1.3096 | -0.0932 |
| 258/262 | 0.4073 | 14.51 | 0.000 | 24.3160 | 0.0039 | -0.4068 | -0.0010 | -0.7751 | -0.0894 |
| 258/269 | 0.2230 | 6.16 | 1.200 | -81.3910 | -0.3717 | 0.6032 | 0.0555 | -1.1079 | 0.3002 |
| 258/271 | 1.5315 | 54.58 | 1.342 | -5.1815 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 262/259 | 0.3839 | 13.68 | 1.771 | -22.5727 | -0.0011 | 0.2967 | -0.0009 | -0.6542 | -0.0909 |
| 259/264 | 0.4972 | 13.73 | 1.110 | 96.6194 | -0.6548 | 2.1781 | 0.0151 | -2.2919 | 0.0436 |
| 260/263 | 0.7136 | 25.43 | 0.000 | 44.4405 | -0.0018 | -0.7318 | -0.0010 | -1.3897 | -0.0936 |
| 260/271 | 0.2930 | 8.09 | 0.000 | -119.8997 | -0.0052 | 0.3141 | 0.0611 | 1.0779 | -0.0330 |
| 263/261 | 0.7083 | 25.24 | 1.771 | -42.3554 | 0.0062 | 0.6828 | -0.0010 | -1.3534 | -0.0954 |
| 261/266 | 0.6765 | 18.68 | 1.110 | 115.2262 | 0.7157 | 3.2666 | 0.0135 | -3.5492 | -0.5252 |
| 270/261 | 1.0047 | 38.64 | 1.342 | 14.3730 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 269/262 | 0.4286 | 15.27 | 0.000 | -22.4624 | -0.0007 | 0.6235 | -0.0010 | 0.9830 | -0.0942 |
| 262/270 | 0.3974 | 14.16 | 1.771 | 24.7452 | 0.0064 | -0.3936 | -0.0011 | 0.5960 | -0.1147 |
| 271/263 | 0.7653 | 27.28 | 0.000 | -42.0178 | -0.0004 | 1.1530 | -0.0009 | 1.8295 | -0.0856 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 263/272 | 0.6907 | 24.62 | 1.771 | 45.6999 | 0.0080 | -0.6367 | -0.0011 | 1.0891 | -0.1044 |
| 264/265 | 0.0244 | 0.67 | 0.400 | -1.3662 | 0.0000 | -0.5478 | 0.0000 | 0.2191 | 0.0000 |
| 264/270 | 0.5108 | 14.10 | 0.090 | 96.6194 | -0.1651 | 3.5269 | 0.0151 | -2.6083 | 0.0561 |
| 265/267 | 0.2549 | 9.08 | 2.400 | -0.5478 | 0.0000 | 3.0269 | 0.0000 | -2.2120 | 0.0000 |
| 266/267 | 0.0424 | 1.17 | 0.400 | -7.2055 | 0.0000 | 0.5478 | 0.0000 | -0.2191 | 0.0000 |
| 266/272 | 0.7434 | 20.53 | 0.090 | 115.2262 | 0.2120 | 10.5951 | 0.0135 | -4.5017 | -0.5443 |
| 267/268 | 0.2455 | 8.75 | 0.000 | 0.0000 | 0.0000 | -4.1786 | 0.0000 | -1.9929 | 0.0000 |
| 269/272 | 0.1053 | 4.05 | 2.054 | -1.4487 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 269/273 | 0.2856 | 10.18 | 0.000 | 15.4197 | 0.0028 | -0.1009 | -0.0011 | -0.5776 | -0.0970 |
| 269/275 | 0.4434 | 12.24 | 1.200 | -102.7976 | 0.8172 | 8.5620 | 0.0623 | -8.8936 | -0.9855 |
| 273/270 | 0.4891 | 17.43 | 1.771 | -28.9941 | 0.0025 | 0.6101 | -0.0010 | -0.8550 | -0.1013 |
| 270/276 | 0.8571 | 23.67 | 1.200 | 126.6217 | -2.2697 | 0.7397 | 0.0165 | -2.0041 | 2.2898 |
| 270/278 | 1.4032 | 50.01 | 1.342 | -13.0234 | 0.0000 | 0.0000 | 0.0000 | 0.0105 | 0.0000 |
| 271/274 | 0.5213 | 18.58 | 0.000 | 30.8114 | 0.0188 | -0.2506 | -0.0010 | -1.1046 | -0.0840 |
| 275/271 | 1.0818 | 38.55 | 1.342 | -3.6520 | 0.0000 | 0.0000 | 0.0000 | 0.0051 | 0.0000 |
| 271/277 | 0.6003 | 16.57 | 1.200 | -138.1273 | 1.1205 | 11.9594 | 0.0635 | -10.9472 | -1.6638 |
| 274/272 | 0.8851 | 31.54 | 1.771 | -54.0990 | 0.0041 | 1.1860 | -0.0010 | -1.6499 | -0.0990 |
| 272/278 | 0.8309 | 22.94 | 1.200 | 150.5053 | -0.6316 | 2.6578 | 0.0161 | -4.7980 | 0.1461 |
| 275/273 | 0.4513 | 16.08 | 1.771 | -31.2317 | 0.0238 | -0.0418 | -0.0008 | 0.4012 | -0.0967 |
| 273/276 | 0.2988 | 10.65 | 1.771 | 13.7551 | -0.0185 | -0.8540 | -0.0007 | 0.8877 | -0.0694 |
| 277/274 | 0.8132 | 28.98 | 0.000 | -57.1897 | 0.0043 | 0.1431 | -0.0012 | 0.9008 | -0.0845 |
| 274/278 | 0.5401 | 19.25 | 1.771 | 28.3986 | 0.0186 | -1.1891 | -0.0013 | 1.2488 | -0.1502 |
| 275/284 | 0.9698 | 26.77 | 0.600 | -115.2371 | 2.8389 | 43.3532 | 0.0284 | -32.9067 | -2.6379 |
| 275/285 | 0.3145 | 11.21 | 0.000 | -5.1489 | -0.0517 | -1.3733 | 0.0003 | -1.6445 | -0.0817 |
| 275/297 | 0.3834 | 13.66 | 1.342 | -1.1643 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 277/276 | 0.2328 | 8.95 | 2.054 | -3.8871 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 276/279 | 0.8754 | 24.17 | 0.220 | 134.1511 | -0.3058 | 0.2052 | 0.0029 | -1.6607 | 2.3020 |
| 285/276 | 0.2707 | 9.65 | 0.000 | -10.7185 | 0.0107 | -0.8096 | -0.0018 | -0.9202 | -0.0571 |
| 277/287 | 1.6004 | 44.18 | 0.600 | -159.3913 | -2.1561 | 89.1774 | 0.0372 | -60.6122 | 1.6859 |
| 277/288 | 0.6158 | 21.95 | 0.000 | -22.8569 | -0.0356 | -1.6738 | -0.0009 | -2.3085 | -0.1005 |
| 278/281 | 0.8754 | 24.17 | 0.220 | 151.7835 | -7.9701 | -6.5106 | 0.0134 | -1.8901 | 1.4883 |
| 288/278 | 0.5256 | 18.73 | 0.000 | -38.0746 | 0.0363 | -0.1380 | -0.0023 | -0.3800 | -0.0923 |
| 296/278 | 0.2843 | 10.13 | 1.342 | 3.6229 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 279/280 | 0.0835 | 2.31 | 0.400 | -1.3662 | 0.0000 | -2.0242 | 0.0000 | 0.8097 | 0.0000 |
| 279/286 | 0.8757 | 24.18 | 0.000 | 134.1511 | 1.7036 | 1.5315 | 0.0029 | -1.6607 | 2.3020 |
| 280/282 | 0.3431 | 12.23 | 2.400 | -2.0242 | 0.0000 | 3.0269 | 0.0000 | -2.8025 | 0.0000 |
| 281/282 | 0.0952 | 2.63 | 0.400 | -7.2055 | 0.0000 | 2.0242 | 0.0000 | -0.8097 | 0.0000 |
| 281/289 | 1.3035 | 35.99 | 0.380 | 151.7835 | -9.9943 | 0.8906 | 0.0134 | -2.2104 | 5.2861 |
| 282/283 | 0.2455 | 8.75 | 0.000 | 0.0000 | 0.0000 | -4.1786 | 0.0000 | -1.9929 | 0.0000 |
| 284/295 | 0.9695 | 26.77 | 0.000 | -115.2371 | -1.3688 | -43.0781 | 0.0284 | -32.9067 | -2.6379 |
| 295/285 | 0.3802 | 13.55 | 0.000 | -23.7566 | 0.0458 | -0.3845 | 0.0002 | -0.6849 | 0.0356 |
| 285/296 | 0.2719 | 9.69 | 1.771 | -16.5133 | -0.0487 | 0.4943 | 0.0003 | -0.5282 | 0.0261 |
| 285/299 | 0.1907 | 6.80 | 0.000 | 9.7210 | 0.0265 | -0.5197 | 0.0002 | -0.4385 | 0.0626 |
| 286/290 | 0.8329 | 23.00 | 0.000 | 134.1511 | 1.4835 | 1.6268 | 0.0029 | -2.2608 | 1.6964 |
| 287/297 | 1.5622 | 43.13 | 0.000 | -159.3913 | 1.6004 | -84.8048 | 0.0372 | -60.6122 | 1.6859 |
| 297/288 | 0.7106 | 25.33 | 0.000 | -37.3827 | 0.0371 | -1.5866 | 0.0000 | -1.9701 | 0.0327 |
| 288/298 | 0.3697 | 13.17 | 0.000 | -23.5723 | -0.0357 | -0.6305 | 0.0003 | -0.6177 | -0.0374 |
| 289/292 | 1.2992 | 35.87 | 0.000 | 151.7835 | 5.6706 | 0.8906 | 0.0134 | -2.2104 | 5.2861 |
| 290/291 | 0.1497 | 4.13 | 0.400 | -1.2259 | 0.0000 | -3.6731 | 0.0000 | 1.4693 | 0.0000 |
| 290/296 | 0.7937 | 21.91 | 0.000 | 134.1511 | 4.8556 | 3.0834 | 0.0029 | -3.1406 | 1.0033 |
| 291/293 | 0.4391 | 15.65 | 2.400 | -3.6300 | 0.0000 | 3.0269 | 0.0000 | -3.4449 | 0.0000 |
| 292/293 | 0.1583 | 4.37 | 0.400 | -6.4108 | 0.0000 | 3.6731 | 0.0000 | -1.4693 | 0.0000 |
| 292/298 | 1.0026 | 27.68 | 0.080 | 151.7835 | 2.0406 | 8.3469 | 0.0134 | -3.3743 | 2.1741 |
| 293/294 | 0.2455 | 8.75 | 0.000 | 0.0000 | 0.0000 | -4.1786 | 0.0000 | -1.9929 | 0.0000 |
| 295/299 | 0.2569 | 9.15 | 0.000 | -16.5428 | -0.0024 | 0.1102 | -0.0001 | 0.3915 | -0.0344 |
| 295/301 | 0.5174 | 14.28 | 0.000 | -117.5861 | -1.2838 | -5.7238 | -0.0232 | -8.1775 | -1.8223 |
| 299/296 | 0.2323 | 8.28 | 1.771 | 10.5263 | -0.0075 | -0.8840 | 0.0000 | 0.8037 | 0.0189 |
| 296/302 | 0.7724 | 21.32 | 0.000 | 124.7330 | -0.0381 | -2.2671 | -0.0024 | -4.6927 | 0.6322 |
| 296/304 | 0.1595 | 5.69 | 1.342 | 1.7611 | 0.0000 | 0.0000 | 0.0000 | 0.0140 | 0.0000 |
| 297/300 | 0.5867 | 20.91 | 1.771 | -44.1108 | -0.0131 | -0.1854 | 0.0000 | 0.5335 | 0.0173 |
| 301/297 | 0.7568 | 29.11 | 1.342 | -2.6125 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 297/303 | 0.5949 | 16.42 | 0.000 | -155.0325 | 0.3516 | -6.9710 | -0.0081 | -11.8748 | 0.7295 |
| 300/298 | 0.3925 | 13.99 | 0.000 | 14.3291 | 0.0206 | -1.6436 | 0.0002 | -1.5920 | 0.0479 |
| 298/304 | 0.9808 | 27.08 | 0.000 | 139.1087 | 1.9742 | -0.8960 | -0.0099 | -4.0995 | 2.1980 |
| 301/299 | 0.3786 | 13.49 | 1.771 | 26.6463 | 0.0139 | 0.3453 | 0.0000 | -0.5610 | -0.0245 |
| 303/300 | 0.2396 | 8.54 | 0.000 | 8.1448 | 0.0072 | -0.3621 | 0.0004 | -0.9856 | 0.0416 |
| 300/304 | 0.8094 | 28.84 | 1.771 | -47.6322 | -0.0165 | 1.5685 | 0.0005 | -1.7359 | 0.0654 |
| 300/310 | 0.3452 | 12.30 | 0.000 | 6.1438 | 0.0168 | -2.3289 | -0.0005 | -1.6555 | -0.0132 |
| 301/311 | 0.7097 | 25.29 | 3.542 | -30.7702 | -0.0089 | 0.4719 | 0.0003 | -0.8565 | 0.0294 |
| 301/312 | 0.6187 | 23.80 | 1.342 | 4.1227 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 301/314 | 0.9011 | 32.12 | 0.000 | -98.9780 | -0.1623 | -1.0775 | -0.0015 | -2.2679 | -0.2899 |
| 302/305 | 0.6787 | 24.19 | 0.000 | 124.9658 | -0.0843 | -2.0657 | -0.0034 | -2.1919 | 0.6628 |
| 303/310 | 0.2818 | 10.04 | 0.000 | -11.3721 | -0.0157 | 0.6094 | 0.0003 | 1.0480 | 0.0219 |
| 303/312 | 0.4538 | 12.53 | 0.000 | -139.4924 | -0.2507 | -3.6269 | -0.0334 | -6.0549 | -0.5769 |
| 304/307 | 0.8337 | 23.02 | 0.000 | 125.4577 | 0.8802 | -9.8788 | 0.0009 | -7.1336 | 0.0702 |
| 310/304 | 0.7266 | 25.89 | 1.771 | 37.9038 | -0.0356 | -2.1221 | 0.0007 | 2.0695 | 0.0740 |
| 311/304 | 0.8787 | 31.32 | 1.342 | -2.8975 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 305/306 | 0.0525 | 1.45 | 0.400 | -1.3662 | 0.0000 | -1.2519 | 0.0000 | 0.5008 | 0.0000 |
| 305/311 | 0.6641 | 23.67 | 0.000 | 124.9658 | 1.0496 | -0.5415 | -0.0034 | -1.7234 | 0.6958 |
| 306/308 | 0.2970 | 10.58 | 2.400 | -1.2519 | 0.0000 | 3.0269 | 0.0000 | -2.4936 | 0.0000 |
| 307/308 | 0.0662 | 1.83 | 0.400 | -7.2055 | 0.0000 | 1.2519 | 0.0000 | -0.5008 | 0.0000 |
| 307/313 | 0.7276 | 20.09 | 0.000 | 125.4577 | -0.0603 | -2.5152 | 0.0009 | -4.8681 | -0.1323 |
| 308/309 | 0.2455 | 8.75 | 0.000 | 0.0000 | 0.0000 | -4.1786 | 0.0000 | -1.9929 | 0.0000 |
| 312/310 | 0.6765 | 24.11 | 1.771 | 50.1260 | -0.0344 | 0.4523 | 0.0000 | -0.7507 | 0.0610 |
| 314/311 | 0.5197 | 18.52 | 0.000 | 28.6843 | -0.0040 | -0.4648 | 0.0002 | -0.8273 | 0.0145 |
| 311/315 | 0.4759 | 16.96 | 1.342 | 3.0864 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 311/316 | 0.5390 | 19.21 | 0.000 | 101.3272 | 0.2596 | -1.9492 | -0.0042 | -2.8186 | -0.0607 |
| 314/312 | 1.4502 | 51.68 | 1.342 | -4.8969 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 312/315 | 1.1937 | 42.54 | 3.542 | -51.3893 | -0.0043 | 0.7956 | 0.0004 | -1.4788 | 0.0491 |
| 312/322 | 1.0072 | 35.89 | 0.000 | -112.8094 | -0.0352 | -1.7408 | -0.0005 | -3.0176 | -0.1055 |
| 313/315 | 0.6302 | 22.46 | 0.000 | 125.4577 | -0.0603 | -2.2720 | 0.0009 | -2.5463 | -0.0738 |
| 314/321 | 0.6572 | 23.42 | 3.542 | -28.3450 | 0.0011 | 0.4873 | 0.0001 | -0.8555 | 0.0106 |
| 314/322 | 0.6508 | 23.19 | 1.342 | 4.3552 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 314/328 | 0.6722 | 23.96 | 0.000 | -79.1021 | 0.0082 | -0.7962 | -0.0013 | -1.4912 | 0.0687 |
| 315/318 | 0.6060 | 21.60 | 0.000 | 93.2868 | 0.7484 | -9.8230 | -0.0084 | -2.6999 | 0.0310 |
| 321/315 | 0.5777 | 20.59 | 2.683 | -1.9054 | -0.0013 | 0.0087 | 0.0000 | -0.0028 | 0.0036 |
| 322/315 | 0.7950 | 28.33 | 0.000 | 42.7018 | 0.0006 | -0.7591 | 0.0005 | -1.2946 | 0.0422 |
| 316/317 | 0.0316 | 0.87 | 0.400 | -1.3662 | 0.0000 | -0.7289 | 0.0000 | 0.2915 | 0.0000 |
| 316/321 | 0.4667 | 16.63 | 0.885 | 101.3272 | -0.0054 | 0.0452 | -0.0042 | -0.5690 | -0.2061 |
| 317/319 | 0.2657 | 9.47 | 2.400 | -0.7289 | 0.0000 | 3.0269 | 0.0000 | -2.2844 | 0.0000 |
| 318/319 | 0.0480 | 1.33 | 0.400 | -7.2055 | 0.0000 | 0.7289 | 0.0000 | -0.2915 | 0.0000 |
| 318/325 | 0.4883 | 17.40 | 0.000 | 93.2868 | 0.1247 | -2.5121 | -0.0084 | -2.5035 | 0.0161 |



FERNANDEZ CONSTRUCTOR
L.A.V. TRAMO: GELIDA – ST. LLORENÇ
VIADUCTO DE RIERUSSA
CÁLCULOS ESTÁTICOS DE CIMBRA Y ENCOFRADO

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 319/320 | 0.2455 | 8.75 | 0.000 | 0.0000 | 0.0000 | -4.1786 | 0.0000 | -1.9929 | 0.0000 |
| 322/321 | 0.0722 | 2.78 | 2.054 | -0.8155 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 321/323 | 0.4357 | 15.53 | 0.000 | 80.4902 | 0.1518 | -2.0933 | -0.0011 | -2.0766 | -0.1754 |
| 328/321 | 0.4651 | 16.58 | 0.000 | 25.8623 | -0.0027 | -0.4382 | 0.0002 | -0.7511 | 0.0045 |
| 321/329 | 0.2893 | 10.31 | 1.342 | 1.7318 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 328/322 | 1.1845 | 42.21 | 1.342 | -3.9674 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 322/329 | 0.9762 | 34.79 | 3.542 | -43.1319 | 0.0039 | 0.6603 | 0.0004 | -1.1302 | 0.0286 |
| 322/331 | 0.6881 | 24.52 | 0.000 | -82.6128 | 0.0051 | -1.0422 | -0.0003 | -1.4432 | -0.0304 |
| 323/324 | 0.0378 | 1.04 | 0.400 | -1.3662 | 0.0000 | -0.8840 | 0.0000 | 0.3536 | 0.0000 |
| 323/330 | 0.4057 | 14.46 | 0.708 | 81.0449 | 0.1180 | -0.3208 | 0.0004 | -0.5472 | -0.4279 |
| 324/326 | 0.2750 | 9.80 | 2.400 | -0.8840 | 0.0000 | 3.0269 | 0.0000 | -2.3465 | 0.0000 |
| 325/326 | 0.0532 | 1.47 | 0.400 | -7.2055 | 0.0000 | 0.8840 | 0.0000 | -0.3536 | 0.0000 |
| 325/329 | 0.4843 | 17.26 | 0.000 | 93.2868 | -0.4755 | 5.2476 | -0.0084 | 1.6327 | -0.2096 |
| 326/327 | 0.2455 | 8.75 | 0.000 | 0.0000 | 0.0000 | -4.1786 | 0.0000 | -1.9929 | 0.0000 |
| 328/329 | 0.0547 | 2.11 | 2.054 | 0.6787 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 328/330 | 0.5824 | 20.76 | 3.542 | -25.2467 | 0.0031 | 0.4347 | -0.0001 | -0.7540 | -0.0064 |
| 328/331 | 0.4606 | 16.42 | 1.342 | 2.9753 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 328/337 | 0.5239 | 18.67 | 0.000 | -61.9640 | -0.0005 | -0.7000 | -0.0009 | -1.2087 | 0.0283 |
| 330/329 | 0.2838 | 10.11 | 1.342 | -0.8158 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 331/329 | 0.6098 | 21.73 | 0.000 | 33.4753 | -0.0006 | -0.5562 | 0.0003 | -0.9516 | 0.0285 |
| 329/334 | 0.4208 | 15.00 | 0.000 | 67.1303 | 0.1651 | -3.4360 | -0.0063 | -3.3747 | 0.0823 |
| 330/332 | 0.3441 | 12.26 | 0.000 | 63.7201 | -0.2603 | -2.1217 | 0.0024 | -1.6577 | -0.1260 |
| 337/330 | 0.4099 | 14.61 | 0.000 | 22.4752 | 0.0000 | -0.3961 | -0.0001 | -0.6651 | -0.0108 |
| 330/338 | 0.2215 | 7.89 | 1.342 | -0.6417 | 0.0000 | 0.0000 | 0.0000 | 0.0051 | 0.0000 |
| 337/331 | 0.8936 | 31.84 | 1.342 | -2.9494 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 331/338 | 0.7514 | 26.78 | 3.542 | -33.0350 | 0.0013 | 0.5204 | 0.0003 | -0.8807 | 0.0241 |
| 331/345 | 0.5016 | 17.87 | 0.000 | -60.5197 | -0.0427 | -0.7412 | 0.0003 | -0.9146 | -0.0485 |
| 332/333 | 0.0300 | 0.83 | 0.400 | -1.3662 | 0.0000 | -0.6888 | 0.0000 | 0.2755 | 0.0000 |
| 332/339 | 0.2975 | 10.60 | 0.478 | 63.7201 | 0.2019 | -0.5704 | 0.0024 | -0.4878 | -0.1193 |
| 333/335 | 0.2633 | 9.38 | 2.400 | -0.6888 | 0.0000 | 3.0269 | 0.0000 | -2.2684 | 0.0000 |
| 334/335 | 0.0467 | 1.29 | 0.400 | -7.2055 | 0.0000 | 0.6888 | 0.0000 | -0.2755 | 0.0000 |
| 334/338 | 0.3760 | 13.40 | 0.000 | 67.1303 | -0.3598 | 4.2761 | -0.0063 | 1.8625 | -0.1852 |
| 335/336 | 0.2455 | 8.75 | 0.000 | 0.0000 | 0.0000 | -4.1786 | 0.0000 | -1.9929 | 0.0000 |
| 337/344 | 0.5004 | 17.83 | 3.542 | -21.7729 | 0.0008 | 0.3688 | -0.0002 | -0.6168 | -0.0134 |
| 337/345 | 0.4049 | 14.43 | 1.342 | -1.2397 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 337/346 | 0.4015 | 14.31 | 0.000 | -47.4679 | -0.0342 | -0.6696 | -0.0006 | -0.9571 | 0.0142 |
| 338/341 | 0.3474 | 12.38 | 0.000 | 48.0304 | 0.3231 | -4.7411 | -0.0040 | -3.0790 | 0.1132 |
| 344/338 | 0.1983 | 7.07 | 0.000 | 1.0217 | 0.0009 | -0.0130 | 0.0000 | -0.0077 | 0.0024 |
| 345/338 | 0.4254 | 15.16 | 0.000 | 22.8847 | -0.0025 | -0.4310 | 0.0002 | -0.7042 | 0.0178 |
| 339/340 | 0.0236 | 0.65 | 0.400 | -1.3662 | 0.0000 | -0.5278 | 0.0000 | 0.2111 | 0.0000 |
| 339/344 | 0.2860 | 10.19 | 0.070 | 63.7201 | 0.3392 | 1.1327 | 0.0024 | -0.0067 | -0.1867 |
| 340/342 | 0.2537 | 9.04 | 2.400 | -0.5278 | 0.0000 | 3.0269 | 0.0000 | -2.2040 | 0.0000 |
| 341/342 | 0.0418 | 1.15 | 0.400 | -7.2055 | 0.0000 | 0.5278 | 0.0000 | -0.2111 | 0.0000 |
| 341/347 | 0.3106 | 11.07 | 0.000 | 48.0304 | -0.1870 | 2.8481 | -0.0040 | 2.1184 | -0.2519 |
| 342/343 | 0.2455 | 8.75 | 0.000 | 0.0000 | 0.0000 | -4.1786 | 0.0000 | -1.9929 | 0.0000 |
| 345/344 | 0.0606 | 2.33 | 2.054 | 0.8360 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 346/344 | 0.3467 | 12.35 | 0.000 | 18.8499 | -0.0011 | -0.3248 | -0.0002 | -0.5284 | -0.0252 |
| 344/347 | 0.4087 | 14.57 | 0.000 | -1.3337 | 0.0006 | -0.0090 | 0.0000 | -0.0036 | 0.0016 |
| 344/348 | 0.2721 | 9.70 | 0.000 | 49.9393 | 0.1491 | -0.7108 | 0.0071 | -1.0727 | -0.2015 |
| 346/345 | 0.7090 | 25.27 | 1.342 | -2.3038 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 345/347 | 0.5211 | 18.57 | 3.542 | -23.1852 | 0.0032 | 0.3719 | 0.0002 | -0.6107 | 0.0070 |
| 345/354 | 0.3853 | 13.73 | 0.000 | -47.0219 | 0.0045 | -0.3647 | 0.0013 | -0.7223 | -0.0111 |
| 346/347 | 0.0925 | 3.56 | 2.054 | -1.2026 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 346/353 | 0.4360 | 15.54 | 3.542 | -17.8784 | 0.0057 | 0.3253 | -0.0003 | -0.5546 | -0.0445 |
| 346/354 | 0.3062 | 10.91 | 1.342 | 1.8544 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 346/355 | 0.3139 | 11.19 | 2.400 | -36.3858 | 0.0453 | 0.2917 | -0.0001 | -0.8213 | -0.0188 |
| 347/350 | 0.3075 | 10.96 | 0.000 | 34.8946 | 0.2166 | -5.3058 | -0.0007 | -2.7533 | -0.0083 |
| 353/347 | 0.3236 | 11.53 | 1.342 | 1.9809 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 354/347 | 0.2747 | 9.79 | 0.000 | 14.3865 | -0.0024 | -0.3177 | 0.0001 | -0.5104 | 0.0019 |
| 348/349 | 0.0214 | 0.59 | 0.400 | -1.3662 | 0.0000 | -0.4704 | 0.0000 | 0.1882 | 0.0000 |
| 348/353 | 0.2276 | 8.11 | 0.280 | 49.9393 | 0.0289 | 1.2173 | 0.0071 | -0.4603 | 0.0043 |
| 349/351 | 0.2503 | 8.92 | 2.400 | -0.4704 | 0.0000 | 3.0269 | 0.0000 | -2.1810 | 0.0000 |
| 350/351 | 0.0401 | 1.11 | 0.400 | -7.2055 | 0.0000 | 0.4704 | 0.0000 | -0.1882 | 0.0000 |
| 350/357 | 0.2472 | 8.81 | 0.000 | 34.8946 | -0.1842 | 2.2308 | -0.0007 | 2.0219 | -0.2076 |
| 351/352 | 0.2455 | 8.75 | 0.000 | 0.0000 | 0.0000 | -4.1786 | 0.0000 | -1.9929 | 0.0000 |
| 355/353 | 0.2618 | 9.33 | 3.542 | 15.8346 | 0.0124 | -0.0107 | 0.0000 | 0.2112 | -0.0440 |
| 353/356 | 0.2218 | 7.91 | 0.660 | 40.1183 | 0.1508 | -0.4132 | 0.0075 | -0.8988 | -0.1779 |
| 353/357 | 0.7095 | 25.29 | 1.342 | -2.3494 | 0.0000 | 0.0000 | 0.0000 | 0.0051 | 0.0000 |
| 355/354 | 0.5717 | 20.37 | 1.342 | -1.8231 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 354/357 | 0.3153 | 11.24 | 3.542 | -13.8830 | 0.0006 | 0.2613 | 0.0000 | -0.3958 | -0.0002 |
| 354/359 | 0.3312 | 11.80 | 0.000 | -39.1402 | 0.0356 | -0.3631 | 0.0016 | -0.8022 | 0.0086 |
| 355/358 | 0.8067 | 28.75 | 3.542 | -14.2139 | 0.0042 | 0.1299 | -0.0002 | -0.2060 | -0.0155 |
| 355/359 | 0.2366 | 8.43 | 1.342 | 1.3497 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 355/361 | 0.2598 | 9.26 | 0.000 | -28.1377 | -0.0137 | -0.5730 | 0.0000 | -0.9411 | -0.0188 |
| 356/358 | 0.2196 | 7.82 | 0.000 | 40.1183 | 0.0212 | -0.2778 | 0.0075 | -0.7122 | -0.2243 |
| 358/357 | 0.3749 | 13.36 | 1.342 | 2.3529 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 359/357 | 0.2613 | 9.31 | 2.657 | 10.4407 | -0.0001 | 0.0056 | 0.0000 | 0.0388 | 0.0004 |
| 357/360 | 0.1949 | 6.95 | 0.000 | 26.6825 | 0.0237 | -1.1117 | -0.0004 | -1.9563 | 0.0651 |
| 361/358 | 0.4198 | 14.96 | 0.000 | 13.0319 | 0.0001 | -0.1360 | -0.0002 | -0.2125 | -0.0143 |
| 358/362 | 0.6504 | 23.18 | 1.342 | -2.0984 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 358/363 | 0.3198 | 11.40 | 2.400 | 32.6293 | -0.9043 | -0.3098 | 0.0082 | 0.5267 | 1.4885 |
| 361/359 | 0.5078 | 18.10 | 1.342 | -1.5994 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 359/362 | 0.5306 | 20.41 | 3.542 | -9.7771 | -0.0001 | 0.1125 | 0.0000 | -0.1734 | 0.0005 |
| 359/364 | 0.3421 | 12.19 | 2.400 | -32.4143 | -0.2029 | 0.2435 | 0.0004 | -0.5309 | 0.4006 |
| 360/362 | 0.1501 | 5.35 | 1.200 | 18.7754 | -0.2266 | -0.0140 | 0.0084 | -0.3542 | 0.5283 |
| 361/363 | 0.7295 | 26.00 | 0.000 | -13.0719 | -0.0062 | 0.0723 | 0.0000 | 0.1613 | -0.0148 |
| 361/364 | 0.1891 | 6.74 | 1.342 | 1.0045 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 361/365 | 0.1723 | 6.14 | 0.000 | -20.9975 | 0.0005 | -0.3046 | 0.0000 | -0.2930 | 0.0147 |
| 363/362 | 0.3955 | 14.09 | 0.000 | 2.3400 | -0.0003 | -0.0138 | 0.0000 | -0.0098 | -0.0007 |
| 364/362 | 0.2928 | 10.43 | 0.000 | 9.4162 | -0.0001 | -0.1070 | 0.0000 | -0.1583 | 0.0003 |
| 362/366 | 0.1315 | 4.69 | 0.000 | 12.4600 | -0.0011 | -0.4054 | 0.0046 | -0.5730 | 0.5224 |
| 364/363 | 0.1910 | 7.35 | 2.054 | 4.3583 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 365/363 | 0.3031 | 10.80 | 3.542 | 9.1618 | 0.0065 | -0.0627 | -0.0001 | 0.1455 | -0.0177 |
| 363/366 | 0.3790 | 13.51 | 0.000 | 2.3352 | 0.0003 | -0.0130 | 0.0000 | -0.0077 | 0.0009 |
| 363/367 | 0.2741 | 9.77 | 0.000 | 24.9728 | 0.8992 | -0.2049 | 0.0005 | 0.1899 | 1.4847 |
| 365/364 | 0.9566 | 34.09 | 1.342 | -3.1698 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 364/366 | 0.4987 | 17.77 | 3.542 | -8.8037 | 0.0000 | 0.1025 | 0.0000 | -0.1513 | 0.0002 |
| 364/368 | 0.3052 | 10.87 | 0.000 | -25.7800 | 0.2045 | -0.5020 | 0.0006 | -0.7419 | 0.4037 |
| 365/367 | 0.4840 | 17.25 | 3.542 | -8.5319 | 0.0004 | 0.0987 | 0.0001 | -0.1406 | 0.0029 |
| 365/368 | 0.4055 | 14.45 | 1.342 | 2.5752 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 365/369 | 0.1256 | 4.48 | 0.000 | -15.0291 | 0.0060 | -0.2975 | -0.0001 | -0.2457 | 0.0125 |
| 367/366 | 0.6379 | 22.73 | 1.342 | -2.0549 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |

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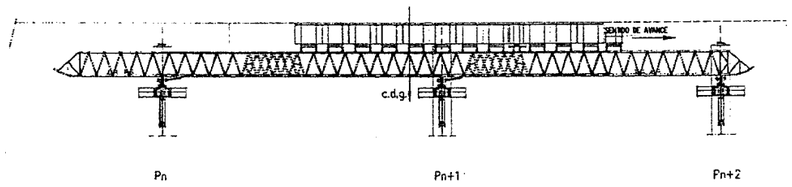
|---|---|---|---|---|---|---|---|---|---|
| 368/366 | 0.2485 | 8.86 | 0.000 | 7.9638 | 0.0000 | -0.0944 | 0.0000 | -0.1359 | 0.0002 |
| 366/370 | 0.1173 | 4.18 | 0.000 | 8.5319 | 0.2459 | -0.5236 | 0.0005 | -0.5628 | 0.5453 |
| 369/367 | 0.2335 | 8.32 | 0.000 | 7.4449 | -0.0005 | -0.0911 | 0.0000 | -0.1296 | 0.0003 |
| 367/370 | 0.3740 | 13.33 | 1.342 | 2.3466 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 367/371 | 0.0956 | 3.41 | 0.120 | 17.4138 | 0.1478 | -0.4136 | -0.0005 | -0.2275 | -0.1294 |
| 369/368 | 0.8563 | 30.52 | 1.342 | -2.8191 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 368/370 | 0.4206 | 14.99 | 3.542 | -7.4119 | 0.0000 | 0.0906 | 0.0000 | -0.1292 | 0.0001 |
| 368/372 | 0.1618 | 5.77 | 0.000 | -18.5537 | -0.0296 | -0.2690 | -0.0001 | -0.2003 | -0.0795 |
| 369/371 | 0.3853 | 13.73 | 3.542 | -6.7997 | 0.0001 | 0.0842 | 0.0000 | -0.1170 | 0.0003 |
| 369/372 | 0.3793 | 13.52 | 1.342 | 2.3854 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 369/373 | 0.0835 | 2.97 | 0.000 | -10.0554 | -0.0017 | -0.2845 | 0.0000 | -0.1728 | -0.0021 |
| 371/370 | 0.7870 | 28.05 | 1.342 | -2.5764 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 372/370 | 0.2070 | 7.38 | 0.000 | 6.5963 | 0.0000 | -0.0832 | 0.0000 | -0.1151 | 0.0002 |
| 370/374 | 0.0510 | 1.82 | 0.000 | 9.9979 | -0.0016 | -0.4120 | -0.0001 | -0.2213 | -0.0011 |
| 373/371 | 0.1903 | 6.78 | 0.000 | 6.0307 | -0.0002 | -0.0789 | 0.0000 | -0.1067 | -0.0004 |
| 371/374 | 0.3213 | 11.45 | 1.342 | 1.9643 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 371/375 | 0.0649 | 2.31 | 1.320 | 10.8822 | -0.0064 | -0.0567 | -0.0003 | 0.1629 | -0.1209 |
| 373/372 | 0.7166 | 25.54 | 1.342 | -2.3301 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 372/374 | 0.3437 | 12.25 | 3.542 | -6.0443 | 0.0000 | 0.0784 | 0.0000 | -0.1066 | 0.0002 |
| 372/376 | 0.1032 | 3.68 | 2.400 | -12.1003 | 0.0195 | 0.0777 | 0.0000 | 0.0723 | -0.0559 |
| 373/374 | 0.0444 | 1.71 | 2.054 | -0.2822 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 373/375 | 0.3036 | 10.82 | 3.542 | -5.2786 | -0.0007 | 0.0719 | 0.0000 | -0.0949 | 0.0022 |
| 373/376 | 0.3190 | 11.37 | 1.342 | 1.9476 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 373/377 | 0.0505 | 1.80 | 0.000 | -6.0567 | 0.0010 | -0.2446 | 0.0000 | -0.0886 | 0.0021 |
| 375/374 | 0.5851 | 20.85 | 1.342 | -1.8699 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 376/374 | 0.1644 | 5.86 | 0.000 | 5.2192 | -0.0002 | -0.0701 | 0.0000 | -0.0915 | -0.0005 |
| 374/378 | 0.0379 | 1.35 | 0.000 | 3.8389 | -0.0406 | -0.3959 | 0.0002 | -0.1734 | -0.1378 |
| 376/375 | 0.0350 | 1.35 | 2.054 | -0.1031 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 377/375 | 0.1428 | 5.09 | 0.000 | 4.4461 | 0.0007 | -0.0663 | 0.0000 | -0.0843 | 0.0003 |
| 375/378 | 0.2431 | 8.66 | 1.342 | 1.3969 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 375/379 | 0.0505 | 1.80 | 1.320 | 6.0190 | 0.0005 | -0.0159 | -0.0035 | 0.1683 | -0.1712 |
| 377/376 | 0.6002 | 21.39 | 1.342 | -1.9229 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 376/378 | 0.2611 | 9.30 | 3.542 | -4.5608 | 0.0000 | 0.0661 | 0.0000 | -0.0841 | 0.0002 |
| 376/380 | 0.0654 | 2.33 | 0.000 | -6.9367 | -0.0189 | -0.2446 | 0.0000 | -0.0745 | -0.0556 |
| 377/379 | 0.2035 | 7.25 | 1.328 | -3.9692 | 0.0000 | -0.0067 | 0.0000 | 0.0224 | 0.0000 |
| 377/380 | 0.2375 | 8.46 | 1.342 | 1.3558 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 377/382 | 0.0460 | 1.64 | 1.440 | -1.2780 | 0.0003 | -0.0036 | -0.0002 | 0.1494 | -0.1513 |
| 379/378 | 0.4077 | 14.53 | 0.000 | -1.3016 | -0.0005 | -0.0120 | 0.0000 | -0.0048 | -0.0015 |
| 380/378 | 0.1208 | 4.30 | 0.000 | 3.7408 | -0.0001 | -0.0590 | 0.0000 | -0.0711 | -0.0006 |
| 378/381 | 0.0262 | 0.94 | 1.200 | 2.1869 | 0.0434 | -0.0584 | 0.0005 | 0.1772 | -0.0931 |
| 380/379 | 0.0298 | 1.15 | 2.054 | 0.0063 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 382/379 | 0.0834 | 2.97 | 1.771 | 3.1126 | 0.0000 | 0.0000 | 0.0000 | 0.0239 | 0.0000 |
| 379/383 | 0.1877 | 6.69 | 0.000 | 1.1097 | -0.0006 | -0.0119 | 0.0000 | -0.0047 | -0.0016 |
| 379/384 | 0.0780 | 2.78 | 2.400 | 2.5492 | -0.5101 | 0.3146 | 0.0050 | 0.0063 | 0.6077 |
| 382/380 | 0.4220 | 15.04 | 1.342 | -1.2994 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 380/383 | 0.1832 | 6.53 | 3.542 | -3.1320 | 0.0003 | 0.0539 | 0.0000 | -0.0623 | -0.0015 |
| 380/385 | 0.0463 | 1.65 | 2.400 | -3.3148 | 0.0341 | 0.1340 | 0.0002 | 0.0863 | -0.0916 |
| 381/383 | 0.0288 | 1.03 | 0.750 | 2.1478 | 0.0450 | 0.1313 | 0.0004 | 0.1484 | -0.1284 |
| 382/383 | 0.0331 | 1.27 | 2.054 | -0.0670 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 382/384 | 0.1478 | 5.27 | 3.542 | -2.3918 | -0.0032 | 0.0486 | 0.0001 | -0.0526 | 0.0056 |
| 382/385 | 0.2213 | 7.89 | 0.000 | 1.2805 | -0.0004 | -0.0124 | 0.0000 | -0.0060 | -0.0010 |
| 382/386 | 0.1626 | 5.80 | 2.400 | -0.5053 | -0.5985 | 0.1797 | -0.0003 | 0.0612 | 0.8159 |
| 384/383 | 0.3897 | 13.89 | 1.342 | -1.1865 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 385/383 | 0.0793 | 2.83 | 0.000 | 2.3395 | 0.0000 | -0.0474 | 0.0000 | -0.0504 | -0.0012 |
| 383/388 | 0.0224 | 0.80 | 0.000 | 1.2442 | -0.0627 | -0.3129 | 0.0009 | -0.0199 | -0.1495 |
| 385/384 | 0.0322 | 1.24 | 2.054 | 0.0688 | 0.0000 | 0.0000 | 0.0000 | 0.0347 | 0.0000 |
| 386/384 | 0.0546 | 1.95 | 0.000 | 1.5179 | -0.0010 | -0.0426 | -0.0001 | -0.0412 | 0.0002 |
| 384/387 | 0.0723 | 2.58 | 0.000 | 0.5765 | 0.4690 | -0.2477 | 0.0038 | -0.0640 | 0.6110 |
| 384/388 | 0.0604 | 2.15 | 1.342 | 0.0708 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 386/385 | 0.4397 | 15.67 | 1.342 | -1.3612 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 385/388 | 0.1056 | 3.76 | 3.542 | -1.7600 | 0.0001 | 0.0426 | 0.0000 | -0.0423 | -0.0003 |
| 385/392 | 0.0237 | 0.84 | 0.300 | -0.6614 | -0.0377 | -0.1352 | 0.0000 | 0.0700 | -0.0794 |
| 386/387 | 0.1438 | 5.53 | 0.000 | -0.6875 | -0.0104 | 0.0039 | 0.0000 | 0.0014 | -0.0161 |
| 386/390 | 0.0567 | 2.18 | 1.027 | -0.5695 | 0.0028 | 0.0036 | 0.0000 | 0.0086 | -0.0028 |
| 386/392 | 0.0564 | 2.01 | 1.342 | 0.0418 | 0.0000 | 0.0000 | 0.0000 | 0.0068 | 0.0000 |
| 390/387 | 0.0429 | 1.65 | 0.000 | 0.5333 | 0.0059 | -0.0295 | -0.0002 | -0.0102 | -0.0056 |
| 387/391 | 0.0804 | 3.09 | 0.000 | 0.2307 | 0.2330 | -0.0001 | 0.0011 | 0.0335 | 0.1781 |
| 392/388 | 0.0409 | 1.46 | 0.000 | 1.0726 | 0.0002 | -0.0383 | 0.0000 | -0.0343 | 0.0000 |
| 388/393 | 0.0075 | 0.27 | 0.000 | 0.2434 | 0.0001 | -0.1850 | 0.0002 | -0.0421 | 0.0005 |
| 389/390 | 0.0289 | 1.11 | 0.000 | 0.3892 | 0.0051 | 0.0039 | -0.0002 | 0.0085 | -0.0026 |
| 389/395 | 0.0622 | 2.39 | 0.000 | -0.3338 | -0.0032 | -0.0348 | 0.0000 | -0.0133 | -0.0116 |
| 390/391 | 0.0695 | 2.67 | 1.667 | -0.3116 | 0.0049 | 0.0125 | -0.0002 | -0.0279 | -0.0016 |
| 395/391 | 0.0908 | 3.49 | 2.226 | 0.3243 | 0.0115 | 0.0386 | -0.0002 | -0.0161 | -0.0484 |
| 392/393 | 0.0705 | 2.71 | 3.333 | -0.3435 | -0.0023 | 0.0000 | 0.0000 | 0.0001 | 0.0077 |
| 392/397 | 0.0639 | 2.46 | 2.669 | -0.2608 | 0.0000 | 0.0432 | 0.0000 | -0.0204 | -0.0001 |
| 397/393 | 0.0374 | 1.44 | 0.000 | 0.2738 | 0.0001 | -0.0374 | 0.0000 | -0.0124 | -0.0003 |
| 394/395 | 0.0197 | 0.76 | 0.000 | 0.1371 | 0.0053 | 0.0018 | -0.0001 | 0.0071 | 0.0040 |
| 394/398 | 0.0471 | 1.81 | 0.000 | -0.0695 | -0.0101 | -0.0407 | 0.0000 | -0.0148 | -0.0180 |
| 398/395 | 0.0610 | 2.35 | 2.011 | 0.0870 | 0.0101 | 0.0411 | 0.0000 | -0.0182 | -0.0204 |
| 396/397 | 0.0234 | 0.90 | 1.992 | 0.2141 | 0.0088 | 0.0000 | 0.0000 | 0.0000 | -0.0120 |
| 396/399 | 0.0320 | 1.23 | 0.000 | -0.0682 | -0.0001 | -0.0396 | 0.0000 | -0.0138 | -0.0002 |
| 399/397 | 0.0527 | 2.03 | 2.011 | 0.0873 | 0.0001 | 0.0428 | 0.0000 | -0.0207 | -0.0002 |



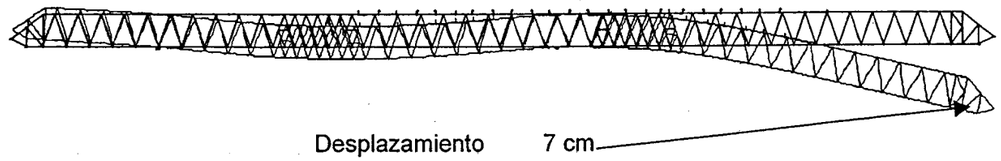


***CIMBRA POSICIÓN ADELANTADA***

Las cargas son las mismas que en la posición de Avance. Lo que cambian son la disposición de los apoyos, respecto a la viga

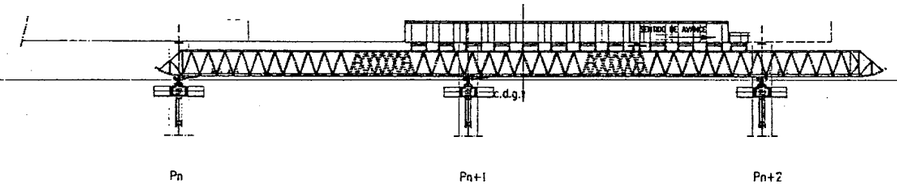



Desplazamientos

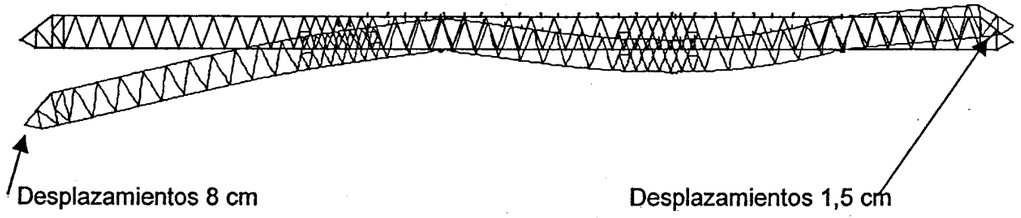


***CIMBRA POSICIÓN ATRASADA***

Las cargas son las mismas que en la posición de Avance. Lo que cambian son la disposición de los apoyos, respecto a la viga




Desplazamientos

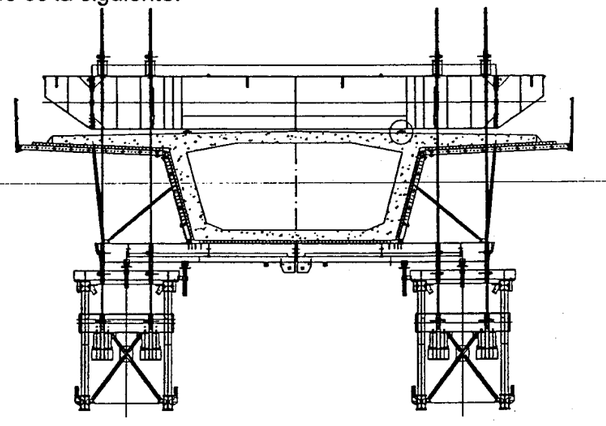






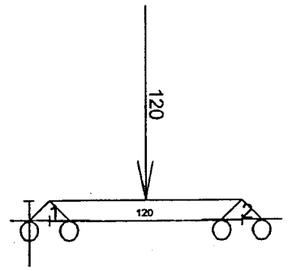

## CALCULO DEL CUELGUE

Para acortar la luz de carga en la Cimbra de Avance , éstas se apoyan mediante un cuelgue realizado en el quinto del vano hormigonado, de esta forma el momento flector de las vigas se reduce considerablemente, y se elimina la deformación entre la fase nueva y la hormigonada. La sección del cuelgue es la siguiente:



## TRAVIESA SUPERIOR CUELGUE

### Cargas




### Resultado de Cype

```
##############################################################
                    09:16:09, 28/07/2003
FICHERO:            R:\En Curso 2003\15245 AVE -Sant Llorenc -AVA\V.St.Joan\Calculos\CUELGUE\CUELGUEa.EM3
DESCRIPCION:        ST. JOAN
##############################################################
```

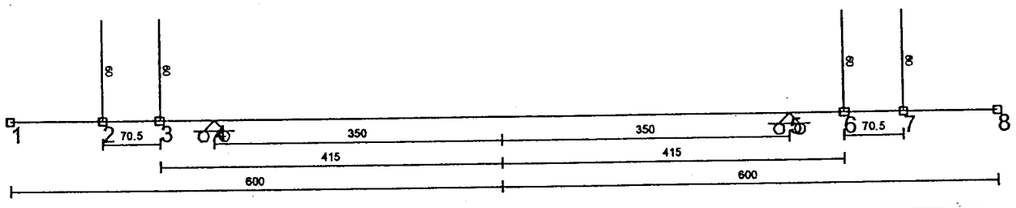
| NUDOS | | REACCIONES (EJES GENERALES) | | | | | |
|---|---|---|---|---|---|---|---|
| | | RX(Tn) | RY(Tn) | RZ(Tn) | MX(Tn·m) | MY(Tn·m) | MZ(Tn·m) |
| 1 | | | | | | | |
| | HIPOTESIS 1: PP 1 (Peso propio) | 0.0000 | 0.0000 | 0.0922 | 0.0000 | 0.0000 | 0.0000 |
| | HIPOTESIS 2: SC 1 (Sobrecarga de uso 1) | 0.0000 | 0.0000 | 60.0000 | 0.0000 | 0.0000 | 0.0000 |
| 2 | | | | | | | |
| | HIPOTESIS 1: PP 1 (Peso propio) | 0.0000 | 0.0000 | 0.0922 | 0.0000 | 0.0000 | 0.0000 |
| | HIPOTESIS 2: SC 1 (Sobrecarga de uso 1) | 0.0000 | 0.0000 | 60.0000 | 0.0000 | 0.0000 | 0.0000 |

| BARRAS | TENSIÓN MÁXIMA | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | TENS.(Tn/cm2) | APROV.(%) | POS.(m) | N(Tn) | Ty(Tn) | Tz(Tn) | Mt(Tn·m) | My(Tn·m) | Mz(Tn·m) |
| 1/2 | 2.7080 | 96.51 | 0.600 | 0.0000 | 0.0000 | -90.0000 | 0.0000 | 54.0368 | 0.0000 |

"

## VIGA DE CUELGUE

### Cargas




### Resultado de Cype

**********
09:30:40, 28/07/2003
FICHERO: R:\En Curso 2003\15245 AVE -Sant Llorenc -AVA\V.St.Joan\Calculos\CUELGUE\v_CUELGUE.EM3
DESCRIPCION: ST. JOAN
**********

| NUDOS | REACCIONES (EJES GENERALES) | | | | | |
|---|---|---|---|---|---|---|
| | RX(Tn) | RY(Tn) | RZ(Tn) | MX(Tn·m) | MY(Tn·m) | MZ(Tn·m) |
| 4 | | | | | | |
| HIPOTESIS 1: PP 1 (Peso propio) | 0.0000 | 0.0000 | 1.6485 | 0.0000 | 0.0000 | 0.0000 |
| HIPOTESIS 2: SC 1 (Sobrecarga de uso 1) | 0.0000 | 0.0000 | 120.0000 | 0.0000 | 0.0000 | 0.0000 |
| 5 | | | | | | |
| HIPOTESIS 1: PP 1 (Peso propio) | 0.0000 | 0.0000 | 1.6485 | 0.0000 | 0.0000 | 0.0000 |
| HIPOTESIS 2: SC 1 (Sobrecarga de uso 1) | 0.0000 | 0.0000 | 120.0000 | 0.0000 | 0.0000 | 0.0000 |

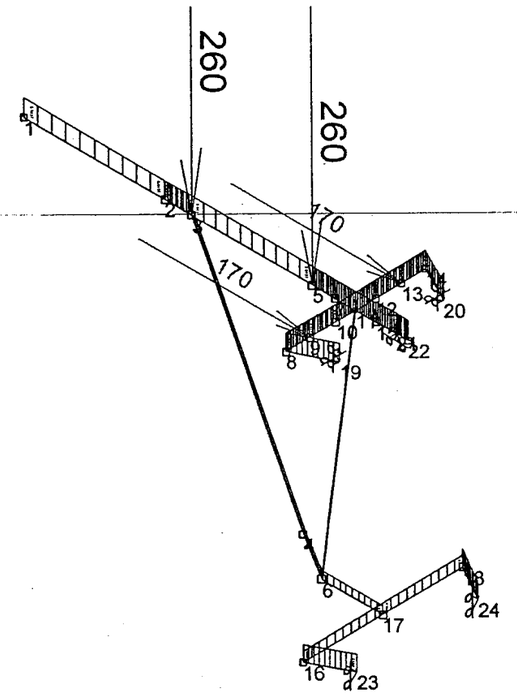
| BARRAS | TENSIÓN MÁXIMA | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | TENS.(Tn/cm2) | APROV.(%) | POS.(m) | N(Tn) | Ty(Tn) | Tz(Tn) | Mt(Tn·m) | My(Tn·m) | Mz(Tn·m) |
| 1/2 | 0.0052 | C.14 | 1.145 | 0.0000 | 0.0000 | 0.4184 | 0.0000 | -0.2395 | 0.0000 |
| 2/3 | 1.1350 | 31.34 | 0.705 | 0.0000 | 0.0000 | 90.6760 | 0.0000 | -64.0753 | 0.0000 |
| 3/4 | 2.3653 | 65.30 | 0.650 | 0.0000 | 0.0000 | 180.9135 | 0.0000 | -181.5919 | 0.0000 |
| 4/5 | 0.9947 | 27.46 | 0.000 | 0.0000 | 0.0000 | -1.2790 | 0.0000 | -181.5919 | 0.0000 |
| 5/6 | 2.3653 | 65.30 | 0.000 | 0.0000 | 0.0000 | -180.9135 | 0.0000 | -181.5919 | 0.0000 |
| 6/7 | 1.1350 | 31.34 | 0.000 | 0.0000 | 0.0000 | -90.6760 | 0.0000 | -64.0753 | 0.0000 |
| 7/8 | 0.0052 | 0.14 | 0.000 | 0.0000 | 0.0000 | -0.4184 | 0.0000 | -0.2395 | 0.0000 |





## CÁLCULO DE LA MÉNSULA

### Cargas



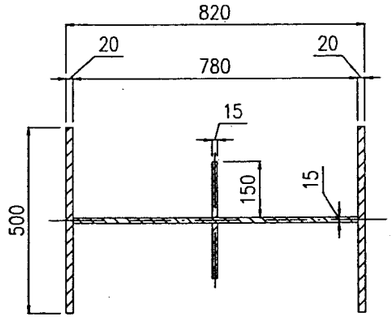

### Listado de Cype

**********
12:00:29, 29/07/2003
FICHERO: R:\En Curso 2003\15245 AVE -Sant Llorenc -AVA\V.St.Joan\Calculos\MENSULA\Men-horm_a.EM3
DESCRIPCION: MENSULA POS.HORMIGONADO
**********

| NUDOS | REACCIONES (EJES GENERALES) | | | | | |
|---|---|---|---|---|---|---|
| | RX(Tn) | RY(Tn) | RZ(Tn) | MX(Tn·m) | MY(Tn·m) | MZ(Tn·m) |
| 19 | | | | | | |
| HIPOTESIS 1: PP 1 (Peso propio) | 2.5827 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HIPOTESIS 2: SC 1 (Sobrecarga de uso 1) | 152.2955 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HIPOTESIS 3: SC 2 (Pretensado barras) | -170.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 20 | | | | | | |
| HIPOTESIS 1: PP 1 (Peso propio) | 2.5807 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HIPOTESIS 2: SC 1 (Sobrecarga de uso 1) | 152.2759 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HIPOTESIS 3: SC 2 (Pretensado barras) | -170.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 21 | | | | | | |
| HIPOTESIS 1: PP 1 (Peso propio) | 0.0000 | -0.0014 | 12.8351 | 0.0000 | 0.0000 | 0.0000 |
| HIPOTESIS 2: SC 1 (Sobrecarga de uso 1) | 0.0000 | 0.0000 | 520.0000 | 0.0000 | 0.0000 | 0.0000 |
| HIPOTESIS 3: SC 2 (Pretensado barras) | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 23 | | | | | | |
| HIPOTESIS 1: PP 1 (Peso propio) | -2.5401 | 0.0082 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HIPOTESIS 2: SC 1 (Sobrecarga de uso 1) | -149.7770 | 0.4457 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HIPOTESIS 3: SC 2 (Pretensado barras) | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 24 | | | | | | |
| HIPOTESIS 1: PP 1 (Peso propio) | -2.6233 | -0.0069 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HIPOTESIS 2: SC 1 (Sobrecarga de uso 1) | -154.7944 | -0.4457 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| HIPOTESIS 3: SC 2 (Pretensado barras) | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

| BARRAS | TENSIÓN MÁXIMA | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | TENS.(Tn/cm2) | APROV.(%) | POS.(m) | N(Tn) | Ty(Tn) | Tz(Tn) | Mt(Tn·m) | My(Tn·m) | Mz(Tn·m) |
| 1/2 | 0.0145 | 0.40 | 2.809 | 0.0000 | 0.0000 | 2.4048 | 0.0000 | -3.3776 | 0.0000 |
| 2/3 | 0.0193 | 0.54 | 0.530 | 0.0000 | 0.0000 | 2.8587 | 0.0000 | -4.7727 | 0.0000 |
| 3/5 | 3.0856 | 85.71 | 2.400 | 363.6165 | -0.0096 | -289.9720 | 0.0000 | 724.0113 | 0.0236 |
| 5/7 | 2.9195 | 81.10 | 0.000 | 363.6165 | -0.0096 | 100.0279 | 0.0000 | 724.0113 | 0.0236 |
| 6/11 | 2.9750 | 82.64 | 0.000 | 693.6160 | -1.4923 | -0.0081 | 0.0000 | -0.0402 | -6.9747 |
| 7/11 | 2.7648 | 76.80 | 0.000 | 363.6165 | -0.0096 | 100.4218 | 0.0000 | 677.9078 | 0.0280 |
| 8/9 | 1.4573 | 40.48 | 0.000 | 0.0000 | -252.4173 | 0.5055 | -0.1820 | 0.0910 | -90.8702 |
| 8/19 | 0.9245 | 25.68 | 0.000 | -225.7689 | 112.8845 | -0.5055 | 0.0000 | -0.2035 | 90.8702 |
| 9/10 | 1.4437 | 40.10 | 0.520 | 0.0000 | 231.8783 | 1.5076 | -0.2420 | -0.9690 | -148.4021 |
| 10/11 | 1.6675 | 46.32 | 0.400 | 0.0000 | 231.8783 | 1.8417 | -0.2420 | -1.6388 | -241.1534 |
| 11/12 | 1.6673 | 46.31 | 0.000 | 0.0000 | -231.8462 | -1.8417 | 0.2420 | -1.6388 | -241.1200 |
| 11/15 | 3.6324 | 100.90 | 0.000 | 0.0000 | -0.0018 | 796.1205 | 0.0000 | 637.1471 | -0.0014 |
| 12/13 | 1.4435 | 40.10 | 0.000 | 0.0000 | -231.8462 | -1.5076 | 0.2420 | -0.9690 | -148.3815 |
| 13/14 | 1.4573 | 40.48 | 0.480 | 0.0000 | 252.4193 | -0.5055 | 0.1820 | 0.0910 | -90.8710 |
| 20/14 | 0.9245 | 25.68 | 0.805 | -225.7707 | -112.8854 | 0.5055 | 0.0000 | -0.2035 | 90.8710 |
| 15/21 | 2.3230 | 64.53 | 0.000 | 0.0000 | -0.0018 | 796.4716 | 0.0000 | 310.6657 | -0.0007 |
| 16/17 | 3.1830 | 87.88 | 1.590 | -0.6795 | 1.4718 | 228.0439 | -0.2258 | -280.0183 | -1.5669 |
| 16/23 | 1.0925 | 30.16 | 0.000 | -202.4859 | -0.6451 | -104.8997 | 0.0000 | -82.5715 | -0.2539 |
| 17/18 | 3.2171 | 88.82 | 0.000 | -0.6777 | -1.4875 | -235.6805 | 0.2313 | -279.9854 | -1.5757 |
| 24/18 | 1.2133 | 33.50 | 0.806 | -204.2917 | 0.6608 | 117.5187 | 0.0000 | -94.7466 | -0.2664 |
| 21/22 | 0.0006 | 0.02 | 0.000 | 0.0000 | 0.0000 | -0.2343 | 0.0000 | -0.0294 | 0.0000 |

**BARRA 3-4**
***SECCIÓN DIAGONAL 1***

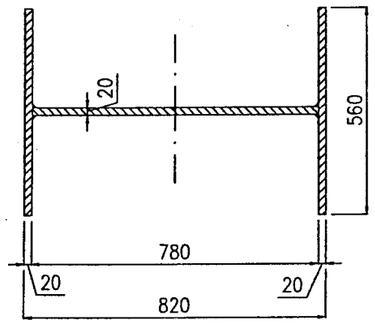



$I_x = 42532\ cm^4$
$W_x = 1701\ cm^3$
$A = 317\ cm^2$
$i_x = 11.58\ cm$

Dado que este elemento está básicamente comprimido se puede encontrar el axil admisible.
L = 386 cm
$\lambda = L / i = 386 / 11.58 = 33.33 \rightarrow w = 1.07$
$N_{adm} = (\sigma_{adm} * A) / (1.5 * w) = 3600 * 317 / (1.5 * 1.07) = 711028\ kp$

$N_{adm} = 711\ Tn > 520\ Tn$ CUMPLE!

**BARRA 6-17**
***SECCIÓN DEL TOPE INFERIOR***




$I_x = 58591\ cm^4$
$W_x = 2093\ cm^3$
$A = 380\ cm^2$
$i_x = 12.42\ cm$

Dado que este elemento está básicamente comprimido se puede encontrar el axil admisible.
L = 61.5 cm
$\lambda = L / i = 61.5 / 12.42 = 4.95 \rightarrow w = 1$
$N_{adm} = (\sigma_{adm} * A) / (1.5 * w) = 3600 * 380 / (1.5 * 1) = 912000\ kp$

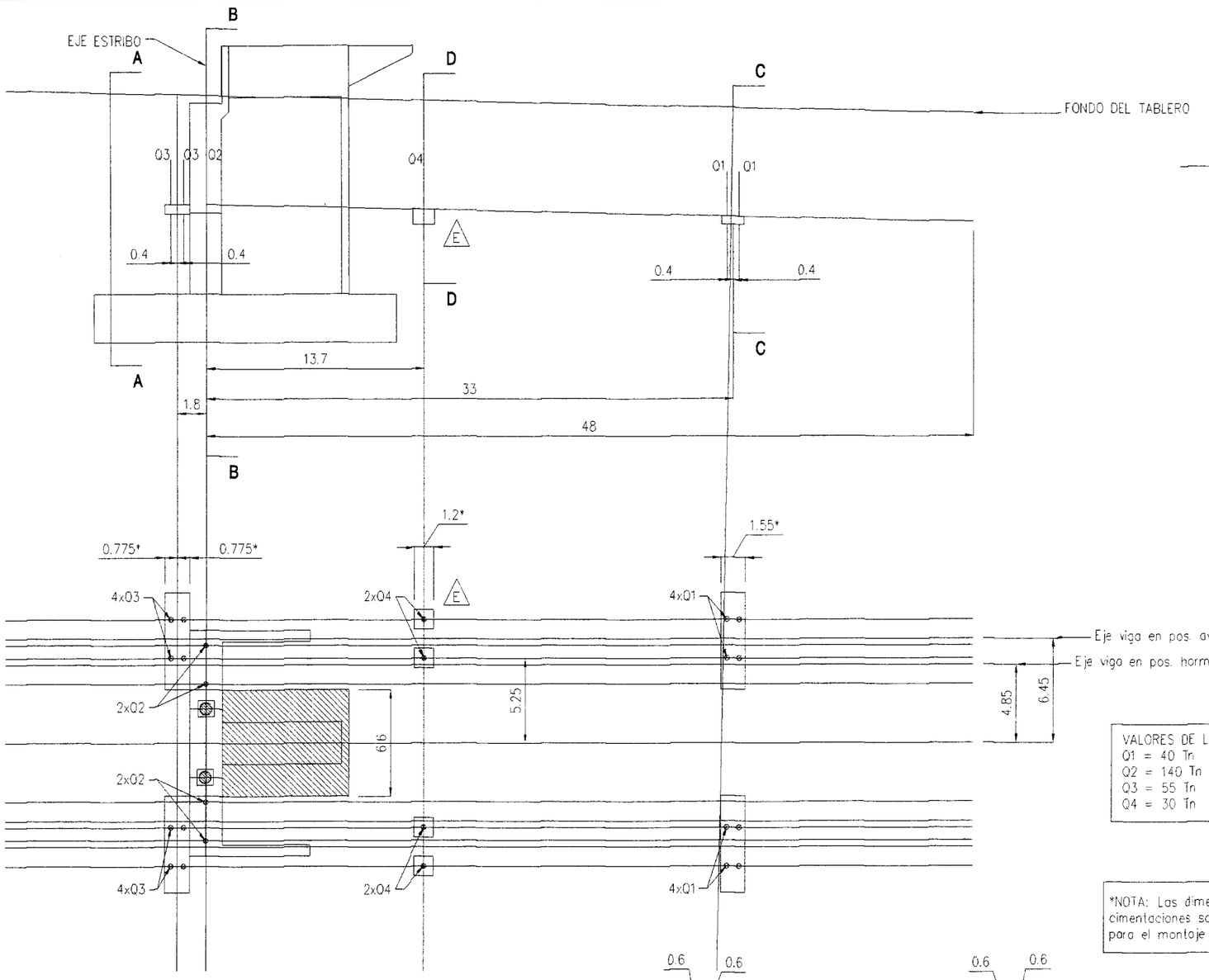
$N_{adm} = 912\ Tn < 310\ Tn$ CUMPLE!

# ANEJO DE PLANOS

# INDICE DE PLANOS CIMBRA AVANCE

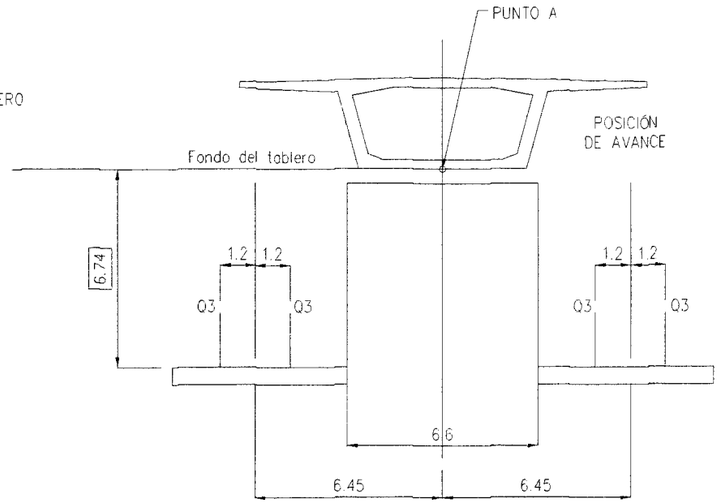

| | | |
|---|---|---|
| 2.9.2.8.B | 1 de 25 | CIMENTACIONES EXPLANADA ENTRADA |
| 2.9.2.8.B | 2 de 25 | FASES MONTAJE CIMBRA RIERUSSA |
| 2.9.2.8.B | 3 de 25 | FASES CIMBRA RIERUSSA |
| 2.9.2.8.B | 4 de 25 | REPL.TRAVIESAS Y MODULOS EN SECCION TIPO |
| 2.9.2.8.B | 5 de 25 | SEC.HORMIGONADO Y AVANCE |
| 2.9.2.8.B | 6 de 25 | CONTRAFLECHAS VANO TIPO |
| 2.9.2.8.B | 7 de 25 | VENTANAS-PILAS |
| 2.9.2.8.B | 8 de 25 | CAJEADO CUELGUE |
| 2.9.2.8.B | 9 de 25 | REPL. TRAVIESAS Y MODULOS EN FASE 1 |
| 2.9.2.8.B | 10 de 25 | REPLANTEO ENCOFRADO INTERIOR |
| 2.9.2.8.B | 11 de 25 | FASE DE HORMIGONADO 1 Y 2 |
| 2.9.2.8.B | 12 de 25 | SECCIONES HORMIGONADO Y AVANCE |
| 2.9.2.8.B | 13 de 25 | MONTAJE MENSULA |
| 2.9.2.8.B | 14 de 25 | MONTAJE MESA DE 4 m |
| 2.9.2.8.B | 15 de 25 | MONTAJE MESA PILA ESPECIAL DE 2 MTS |
| 2.9.2.8.B | 16 de 25 | MONTAJE MESA DE TRABAJO |
| 2.9.2.8.B | 17 de 25 | MONTAJE DE MESA DE 2.5 M |
| 2.9.2.8.B | 18 de 25 | INSTALACION RÍGIDA |
| 2.9.2.8.B | 19 de 25 | MONTAJE PASILLOS |
| 2.9.2.8.B | 20 de 25 | MONTAJE CUELGUE |
| 2.9.2.8.B | 21 de 25 | RETENCION MENSULA EN PILA |
| 2.9.2.8.B | 22 de 25 | MONTAJE TAPAJUNTAS |
| 2.9.2.8.B | 23 de 25 | OREJAS MENSULA TRANSPORTE |
| 2.9.2.8.B | 24 de 25 | INSTALACION HIDRAULICA ELEVACION-AVANCE-RIPADO |
| 2.9.2.8.B | 25 de 25 | MONTAJE CUÑA DE CARGA |


FERNANDEZ
CONSTRUCTOR
GRUPO BRUESA

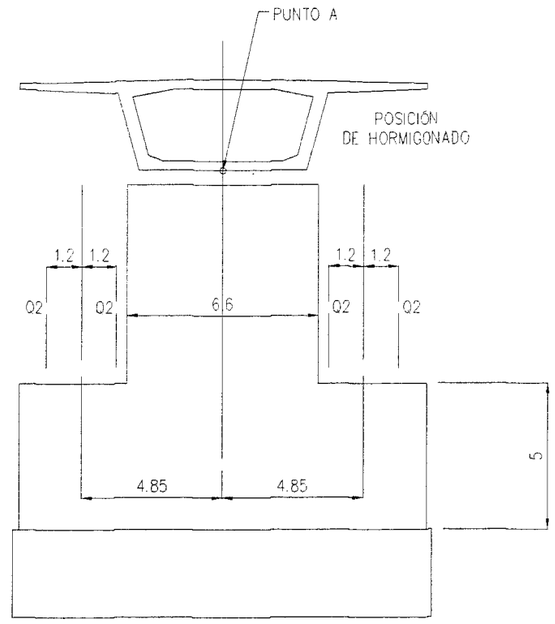


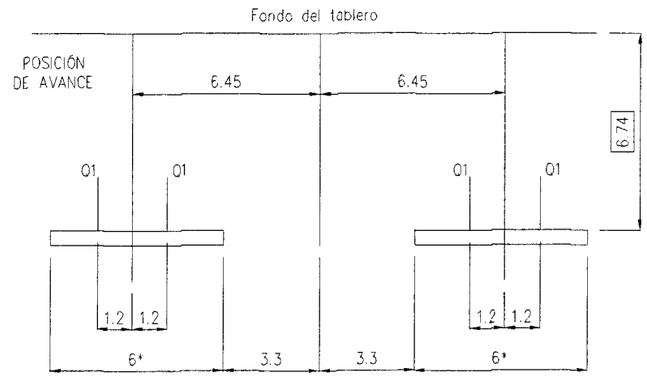

VALORES DE LAS CARGAS
Q1 = 40 Tn
Q2 = 140 Tn
Q3 = 55 Tn
Q4 = 30 Tn

*NOTA: Las dimensiones de las cimentaciones son las mínimas para el montaje de la cimbra.

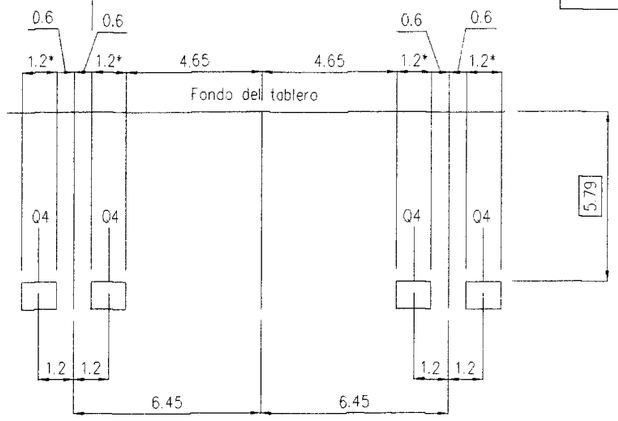



**SECCION A-A**
E 1:200



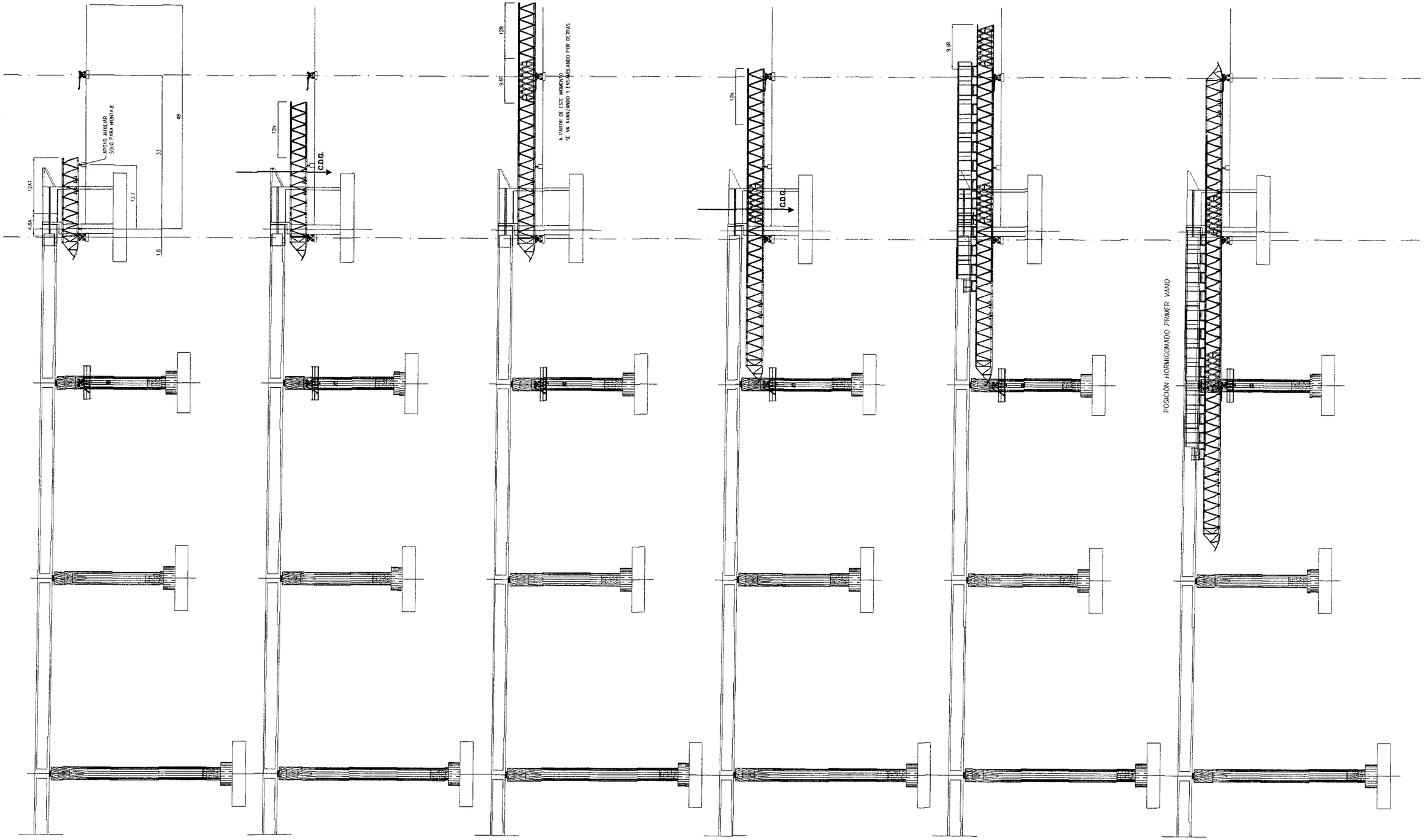




**SECCION C-C**
E 1:200




**SECCION D-D**
E 1:200

| | | | | | |
|---|---|---|---|---|---|
| GIF Gestor de Infraestructuras Ferroviarias | TÍTULO: PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA TRAMO:GELIDA-SANT LLORENÇ D'HORTONS | AUTOR: FERNANDEZ CONSTRUCTOR Fdo: MANUEL COSTA PEREZ | ESCALA: UNE A-3 ORIGINALES; Gráfica 0 50m | FECHA: MARZO-04 | TÍTULO DEL PLANO: VIADUCTO DE RIERUSSA CIMENTACIONES EXPLANADA CIMBRA | Nº DE PLANO: 2.9.2.8.B Hoja 1 de 25 |

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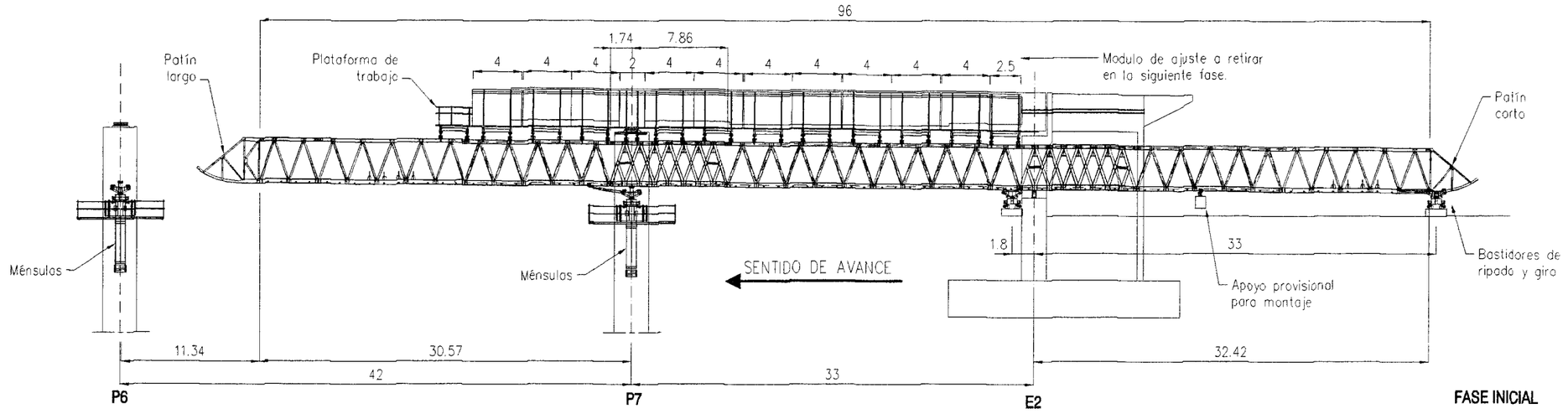
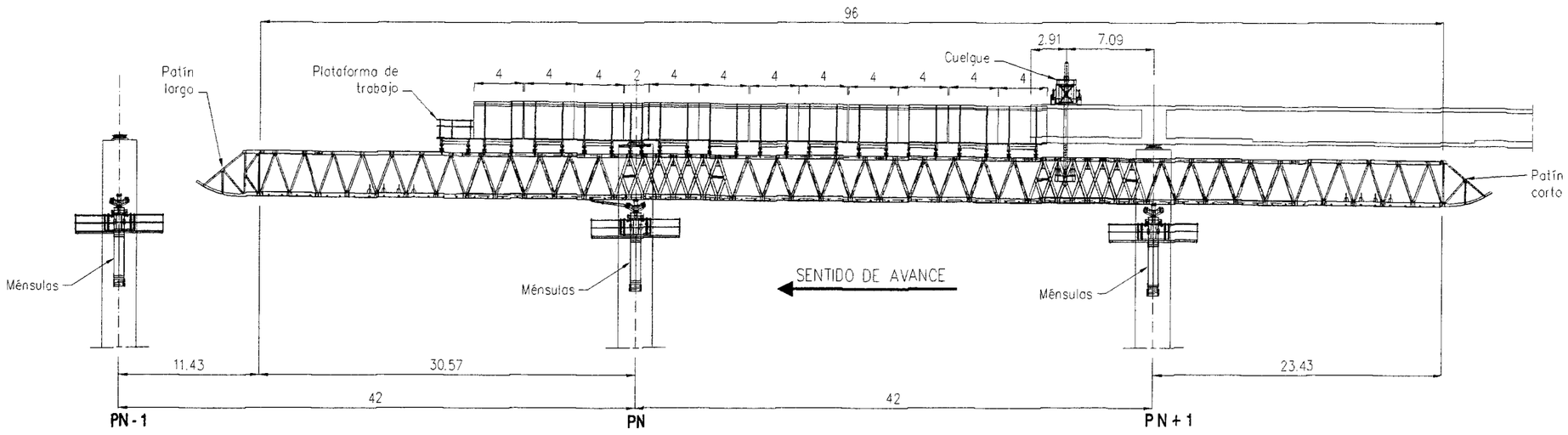
|---|---|---|---|---|---|---|
| GIF Gestor de Infraestructuras Ferroviarias | TITULO<br>PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA<br>L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA<br>TRAMO:GELIDA-SANT LLORENÇ D'HORTONS | AUTOR<br>FERNANDEZ CONSTRUCTOR<br>Fdo: MANUEL COSTA PEREZ | ESCALA<br>UNE A-3 ORIGINALES<br>Gráfica<br>0 50m | FECHA<br>MARZO-04 | TITULO DEL PLANO<br>VIADUCTO DE RIERUSSA<br>FASE MONTAJE CIMBRA | Nº DE PLANO<br>2.9.2.8.B<br>Hoja 2 de 25 |




FASE INICIAL




FASE TIPO

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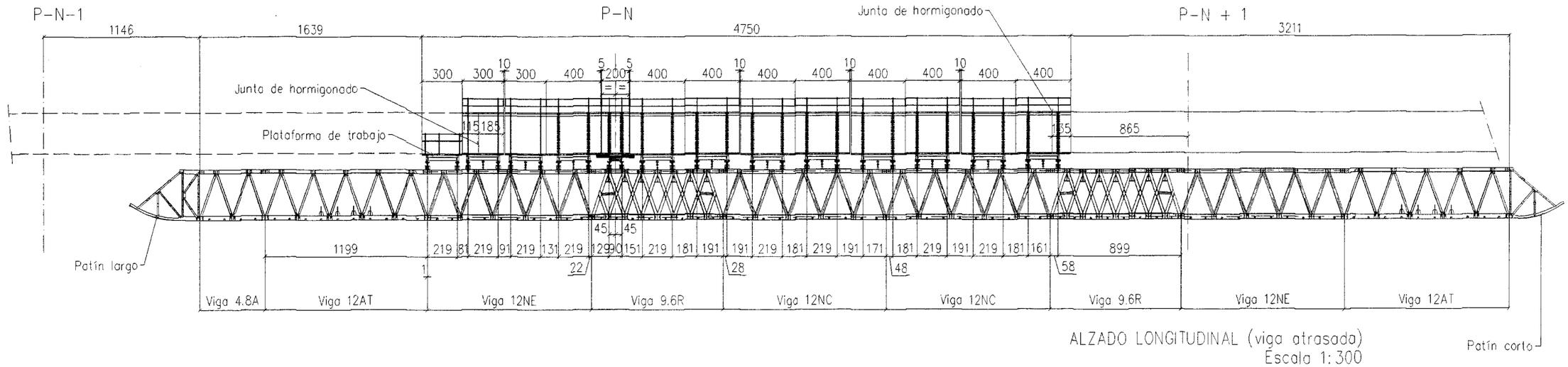
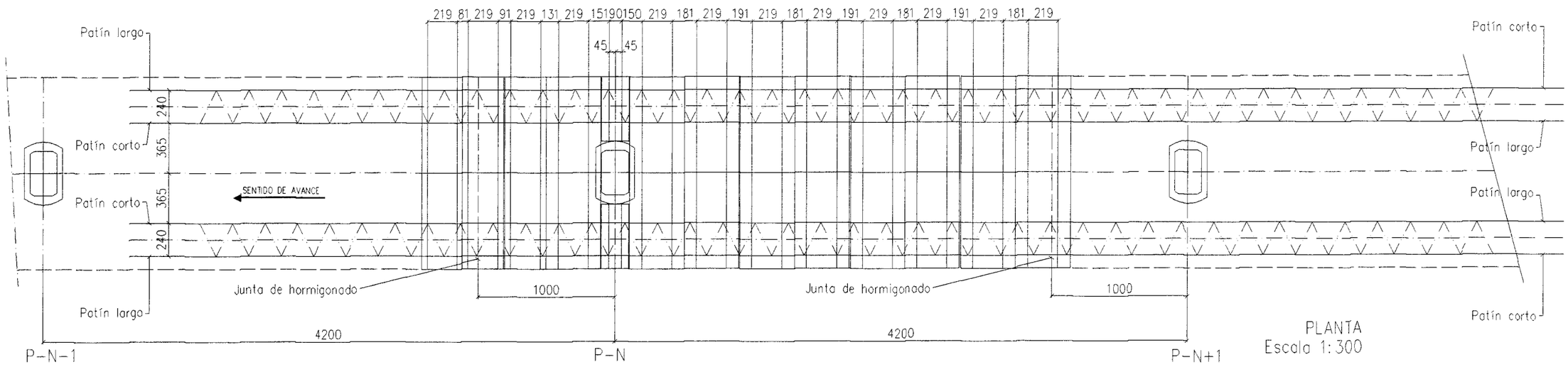
| | | | | | | |
|---|---|---|---|---|---|---|
| GIF Gestor de Infraestructuras Ferroviarias | TÍTULO<br>PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA<br>L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA<br>TRAMO:GELIDA-SANT LLORENÇ D'HORTONS | AUTOR<br>FERNANDEZ CONSTRUCTOR Fdo: MANUEL COSTA PEREZ | ESCALA<br>UNE A-3 ORIGINALES<br>Gráfico 0 50m | FECHA<br>MARZO-04 | TÍTULO DEL PLANO<br>VIADUCTO DE RIERUSSA<br>VENTANAS DE PILAS | Nº DE PLANO<br>2.9.2.8.B<br>Hoja 3 de 25 |




ALZADO LONGITUDINAL (viga atrasada)
Escala 1:300




PLANTA
Escala 1:300

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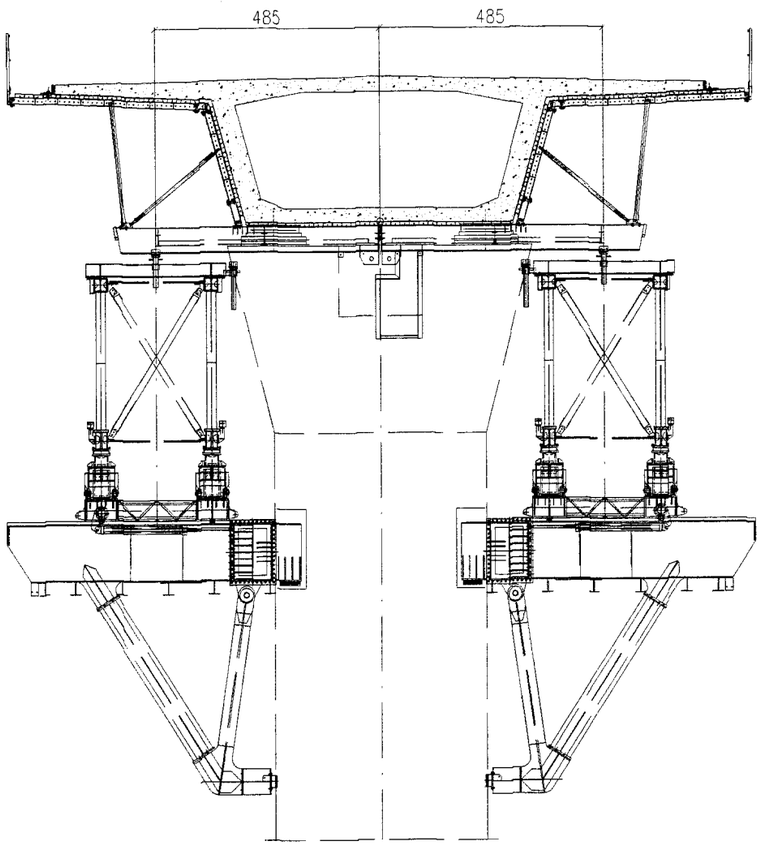
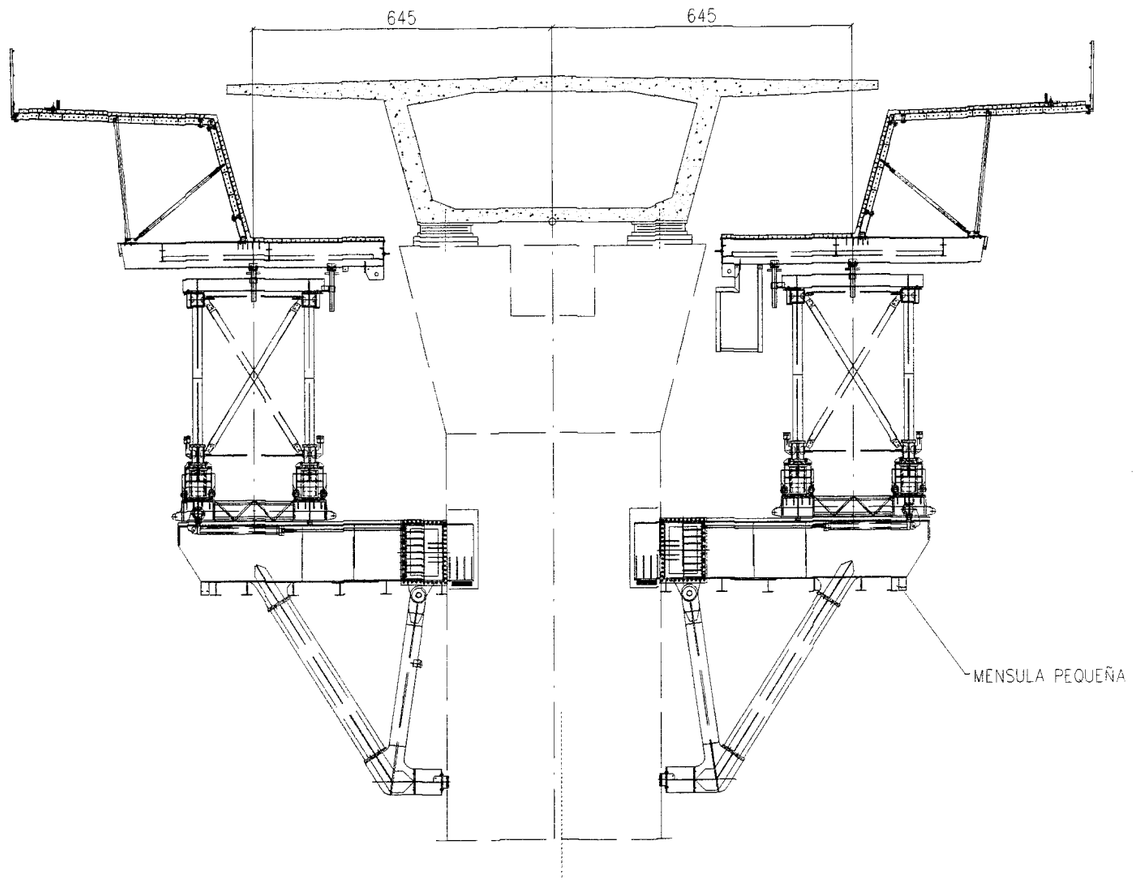
|---|---|---|---|---|---|---|
| GIF Gestor de Infraestructuras Ferroviarias | TÍTULO<br>PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA<br>L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA<br>TRAMO:GELIDA-SANT LLORENÇ D'HORTONS | AUTOR<br>FERNANDEZ CONSTRUCTOR<br>Fdo: MANUEL COSTA PEREZ | ESCALA<br>UNE A-3 ORIGINALES<br>Gráfica<br>0 50m | FECHA<br>MARZO 2004 | TÍTULO DEL PLANO<br>VIADUCTO DE RIERUSSA<br>REPL. TRAVIESAS SECCION TIPO | Nº DE PLANO<br>2.9.2.8.B<br>Hoja 4 de 25 |




SECCION POSICIÓN DE HORMIGONADO




SECCION: POSICIÓN DE AVANCE CON MENSULA PEQUEÑA

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GIF Gestor de Infraestructuras Ferroviarias

TÍTULO
PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO:GELIDA-SANT LLORENÇ D?HORTONS

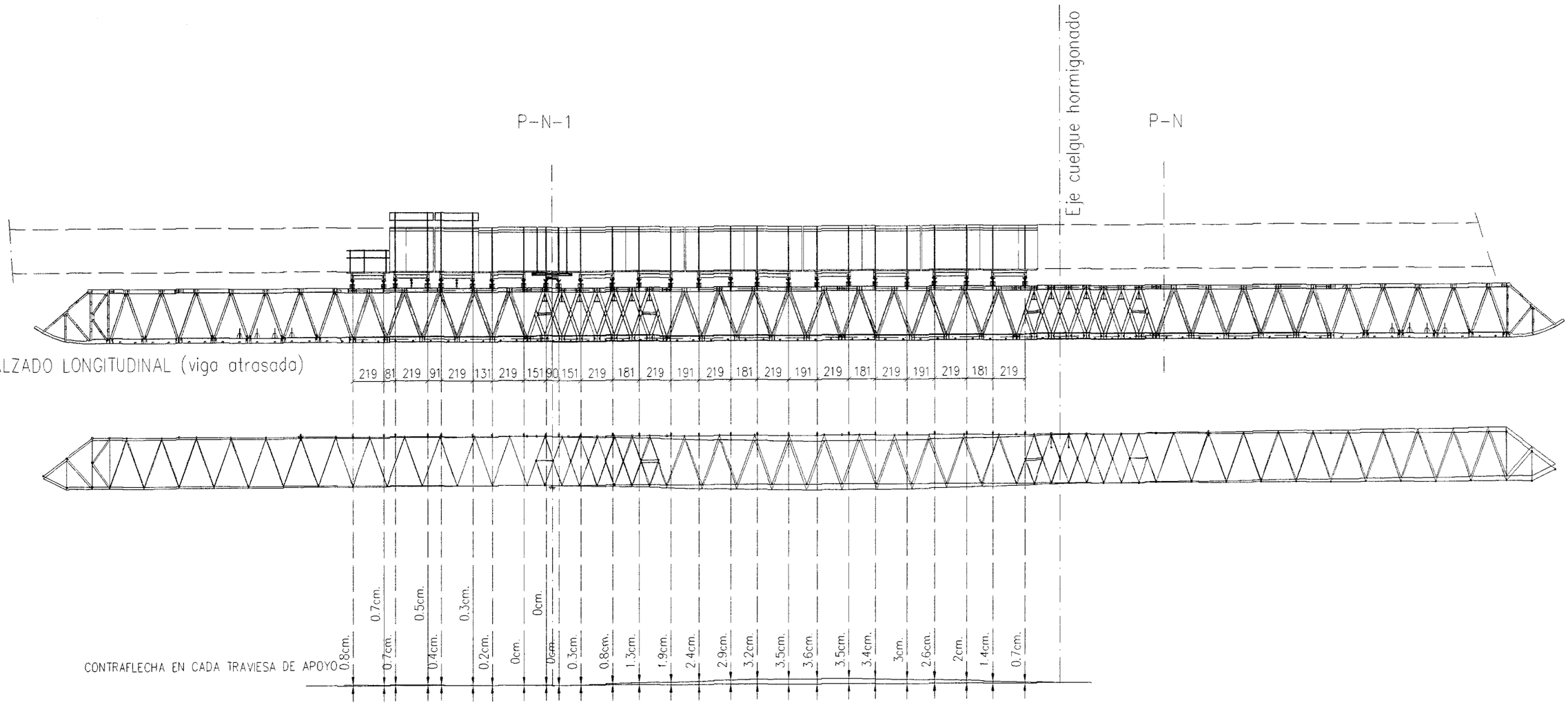
AUTOR
FERNANDEZ CONSTRUCTOR
Fdo: MANUEL COSTA PEREZ

ESCALA
UNE A-3 ORIGINALES
Gráfica 0 50m

FECHA
MARZO 2004

TÍTULO DEL PLANO
VIADUCTO DE RIERUSSA
SEC. HORMIGONADO Y AVANCE

Nº DE PLANO
2.9.2.8.B
Hoja 5 de 25




ALZADO LONGITUDINAL (viga atrasada)

CONTRAFLECHA EN CADA TRAVIESA DE APOYO

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GIF Gestor de Infraestructuras Ferroviarias

TÍTULO
PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO:GELIDA-SANT LLORENÇ D'HORTONS

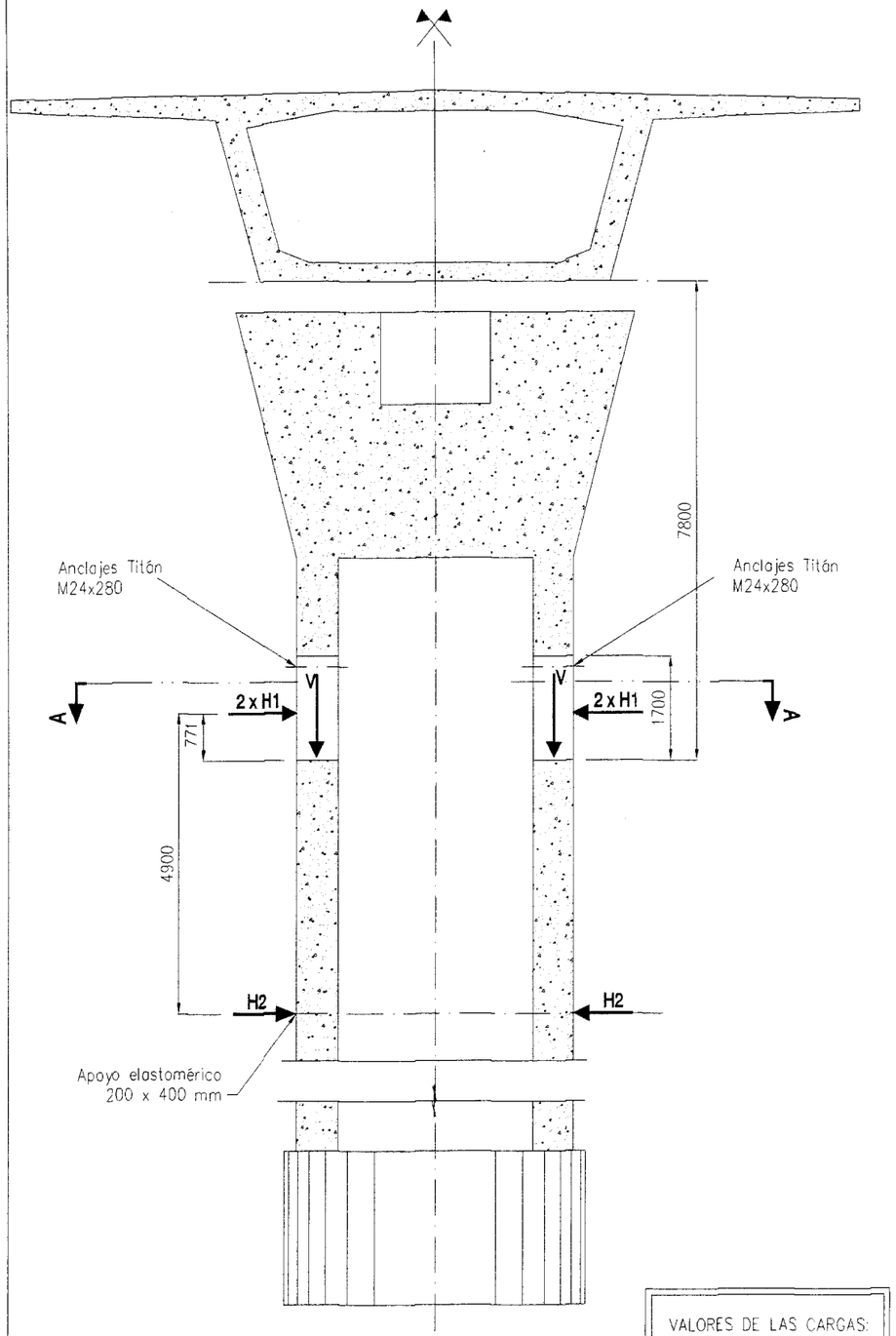
AUTOR
FERNANDEZ CONSTRUCTOR
Fdo: MANUEL COSTA PEREZ

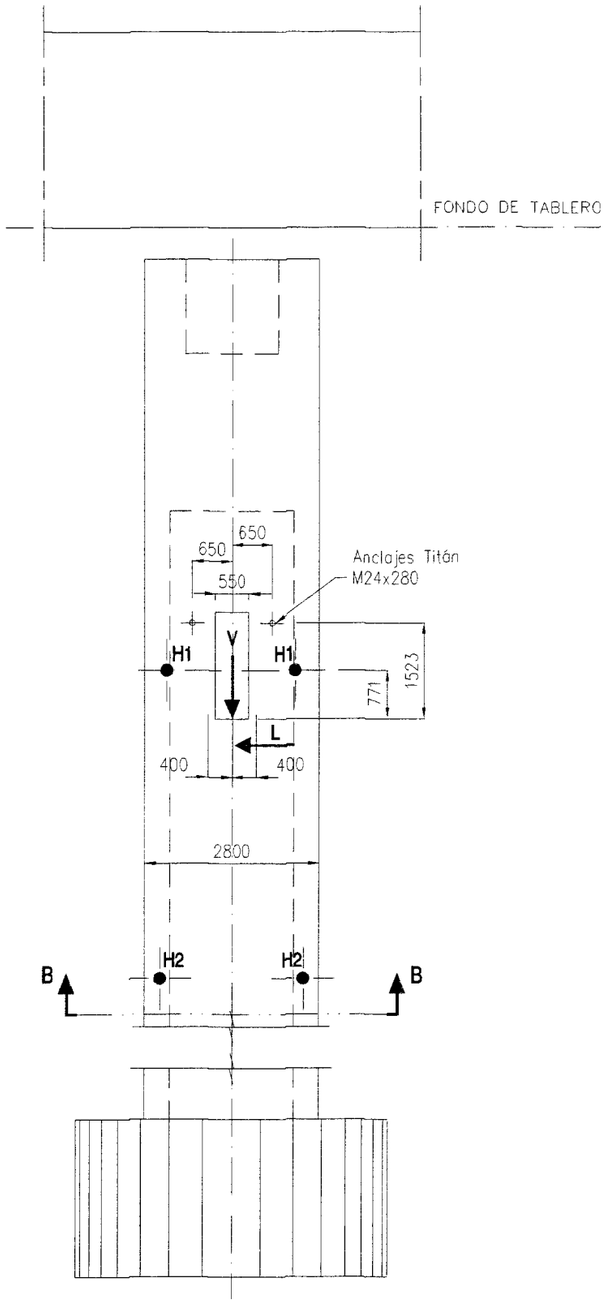
ESCALA
UNE A-3 ORIGINALES
Gráfica
0 50m

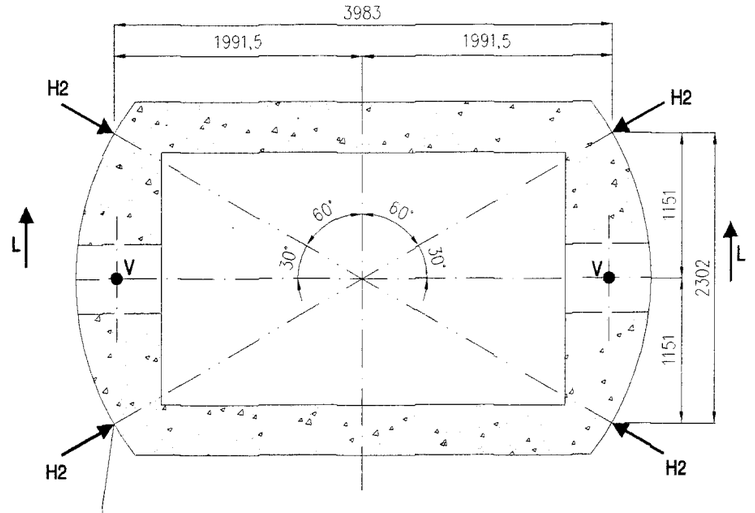
FECHA
MARZO-2004

TÍTULO DEL PLANO
VIADUCTO DE RIERUSSA
CONTRAFLECHAS VANO TIPO

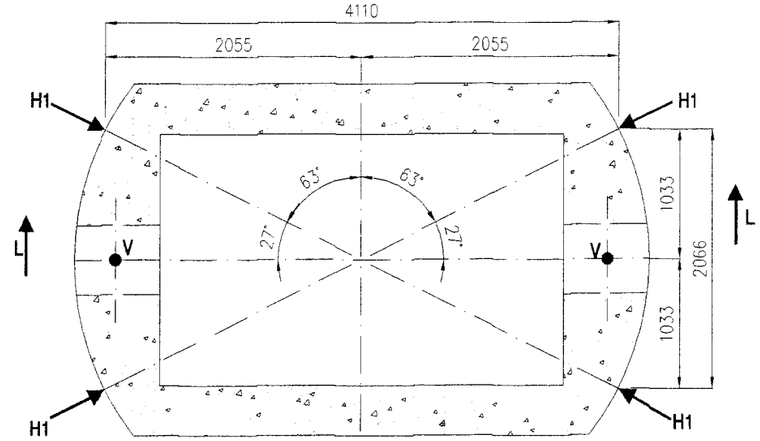
Nº DE PLANO
2.9.2.8.B
Hoja 6 de 25 338




**SECCION B - B**
ESCALA 1:2




**SECCION A - A**
ESCALA 1:2

VALORES DE LAS CARGAS:
V = 540Tn
H1 = 2x 150 Tn
H2 = 2 x 170 Tn
L = 10 Tn

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GIF Gestor de Infraestructuras Ferroviarias

TÍTULO
PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO:GELIDA-SANT LLORENÇ D'HORTONS

AUTOR
FERNANDEZ CONSTRUCTOR
Fdo: MANUEL COSTA PEREZ

ESCALA
UNE A-3 ORIGINALES
Gráfico 0 50m

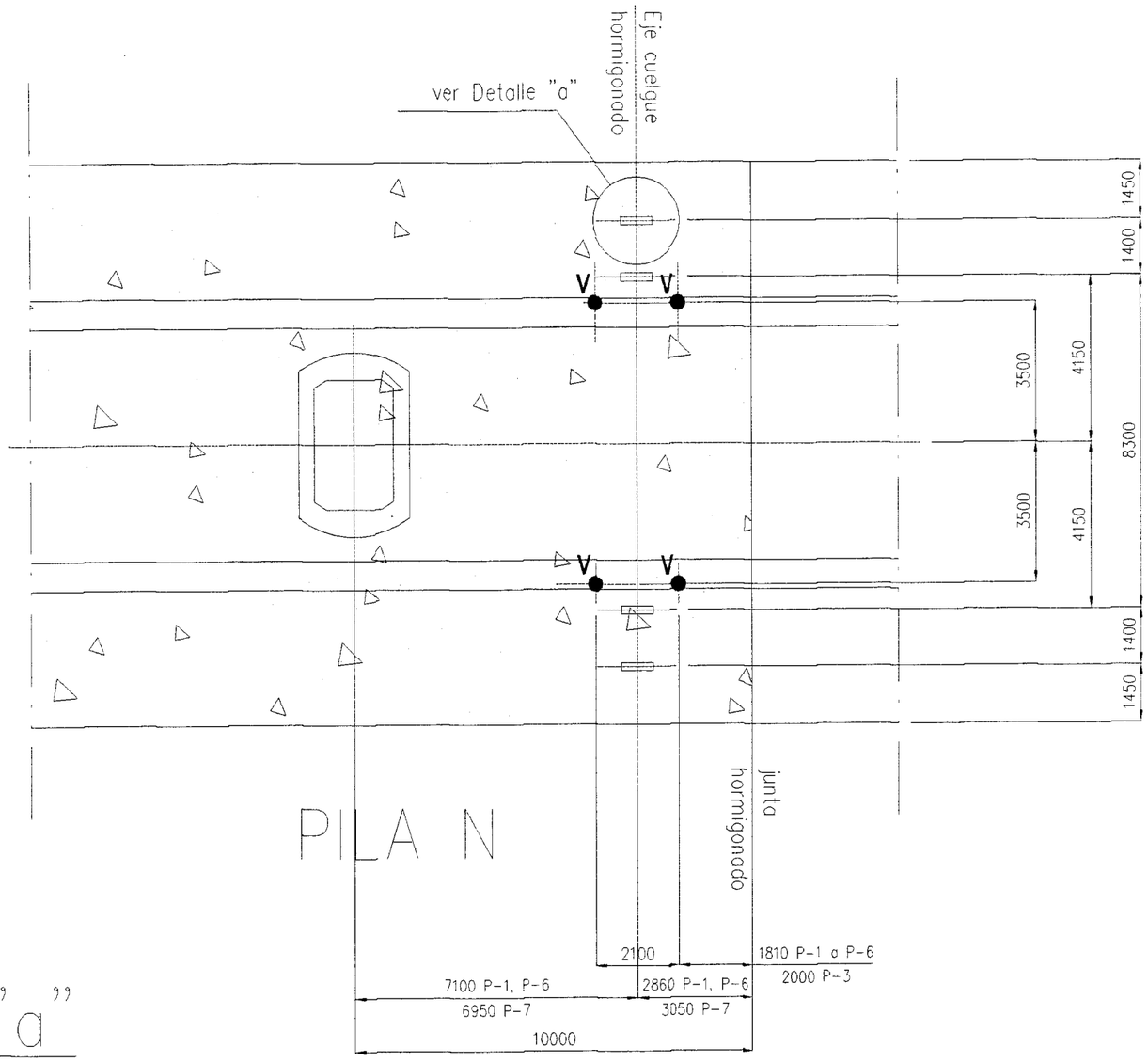
FECHA
MARZO-2004

TÍTULO DEL PLANO
VIADUCTO DE RIERUSSA
VENTANAS DE PILAS

Nº DE PLANO
2.9.2.8.B
Hoja 7 de 25

# Planta

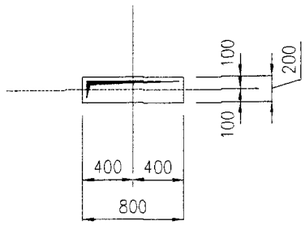
1:150




PILA N

## Detalle "a"

1:50




VALORES DE LAS CARGAS:
V = 70 Tn

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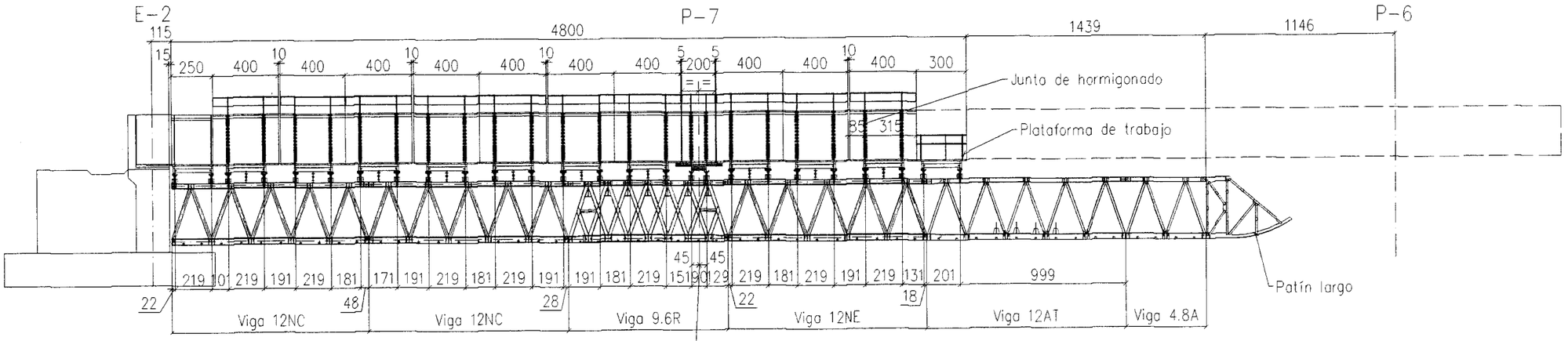
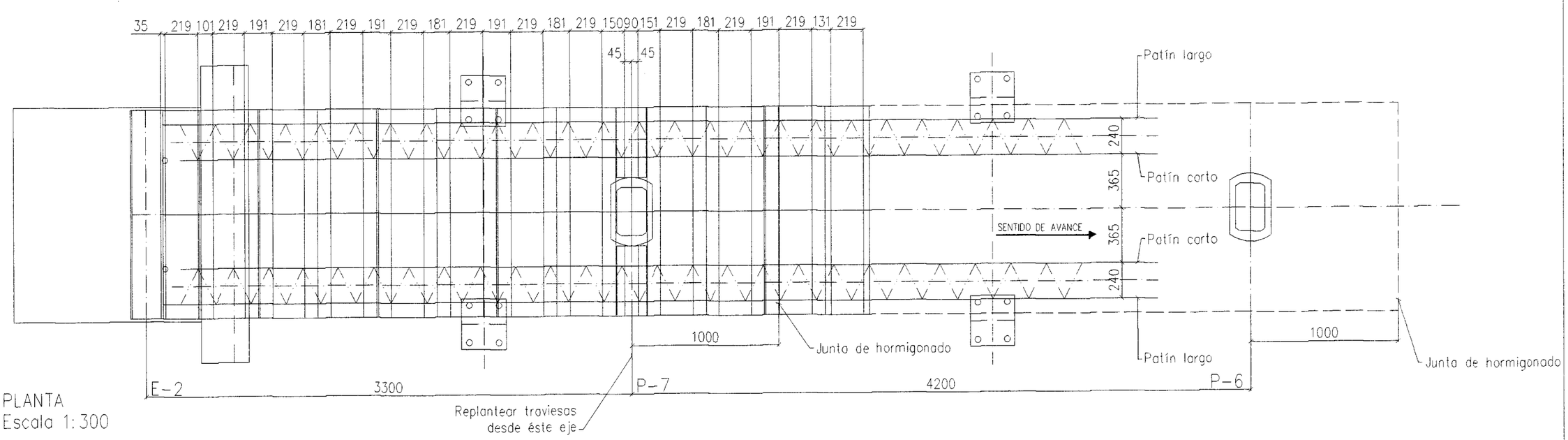
| | | | | | | |
|---|---|---|---|---|---|---|
| GIF Gestor de Infraestructuras Ferroviarias | TÍTULO<br>PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA<br>L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA<br>TRAMO:GELIDA-SANT LLORENÇ D'HORTONS | AUTOR<br>FERNANDEZ CONSTRUCTOR<br>Fdo: MANUEL COSTA PEREZ | ESCALA<br>UNE A-3 ORIGINALES<br>Gráfica<br>0 50m | FECHA<br>MARZO-2004 | TÍTULO DEL PLANO<br>VIADUCTO DE RIERUSSA<br>CAJEADO CUELGUE | Nº DE PLANO<br>2.9.2.8.B<br>Hoja 8 de 25 |




ALZADO LONGITUDINAL (viga atrasada)
Escala 1:300




PLANTA
Escala 1:300

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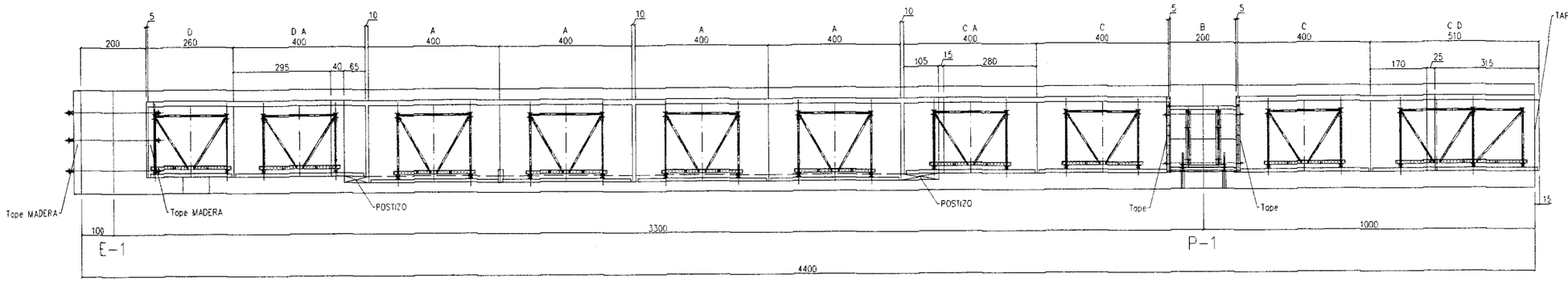
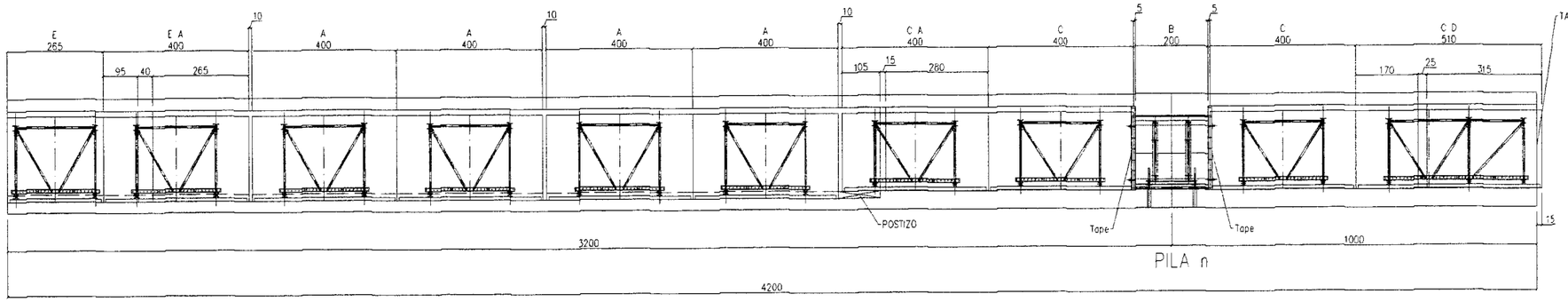
| | | | | | | |
|---|---|---|---|---|---|---|
| GIF Gestor de Infraestructuras Ferroviarias | TÍTULO<br>PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA<br>L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA<br>TRAMO:GELIDA-SANT LLORENÇ D'HORTONS | AUTOR<br>FERNANDEZ CONSTRUCTOR<br>Fdo: MANUEL COSTA PEREZ | ESCALA<br>UNE A-3 ORIGINALES<br>Gráfico<br>0 50m | FECHA<br>MARZO 03 | TÍTULO DEL PLANO<br>VIADUCTO DE RIERUSSA<br>REPL. TRAVIESAS (1) | Nº DE PLANO<br>2.9.2.8.B<br>Hoja 9 de 25 |



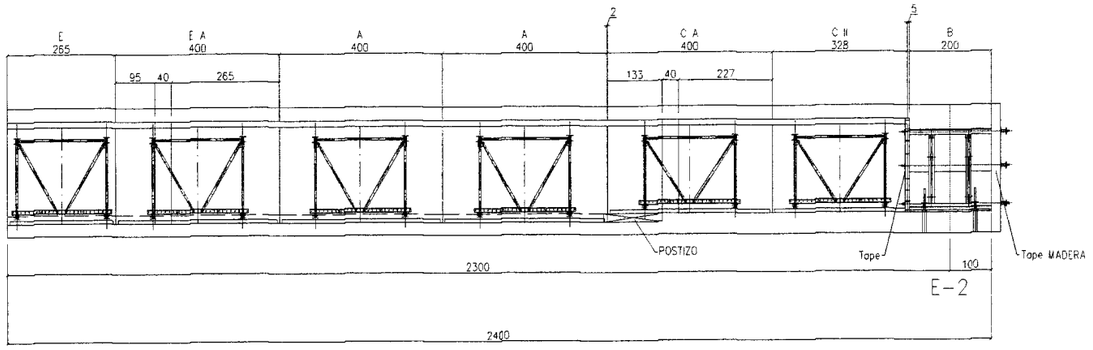

| TIPO | UDS. |
|---|---|
| A | 8 |
| B | 2 |
| C | 4 |
| C A | 2 |
| C D | 2 |
| D | 2 |
| D A | 2 |
| TAPE | 2 |
| TAPE PRET. | 2 |
| TAPE MADERA | 2 |

SECCION LONGITUDINAL FASE 1



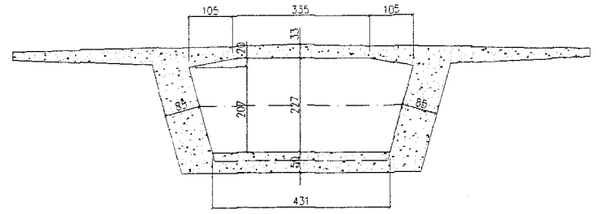

| TIPO | UDS. |
|---|---|
| A | 8 |
| B | 2 |
| C | 4 |
| C A | 2 |
| C D | 2 |
| E | 2 |
| E A | 2 |
| TAPE | 2 |
| TAPE PRET. | 2 |

SECCION LONGITUDINAL FASE TIPO

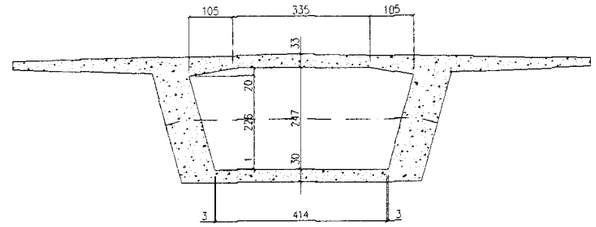



| TIPO | UDS. |
|---|---|
| A | 8 |
| B | 2 |
| C II | 2 |
| C A | 2 |
| E | 2 |
| E A | 2 |
| TAPE | 1 |
| TAPE MADERA | 1 |

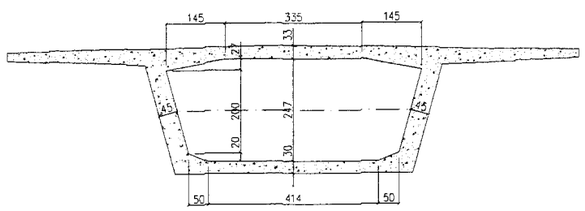
SECCION LONGITUDINAL FASE FINAL



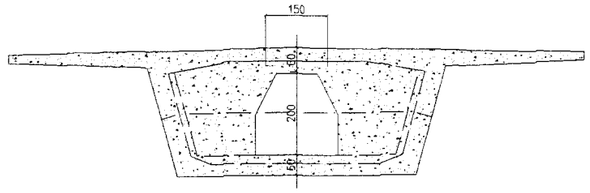

SECCION D-D



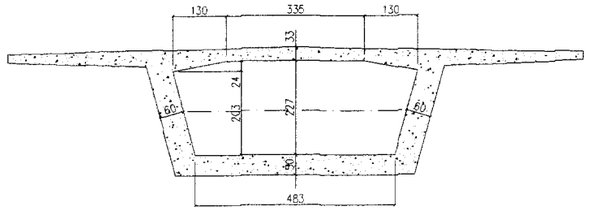

SECCION E-E




SECCION A-A




SECCION B-B




SECCION C-C

| | | | | | | |
|---|---|---|---|---|---|---|
| GIF Gestor de Infraestructuras Ferroviarias | TITULO: PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA TRAMO:GELIDA-SANT LLORENÇ D'HORTONS | AUTOR: FERNANDEZ CONSTRUCTOR Fdo: MANUEL COSTA PEREZ | ESCALA: UNE A-3 ORIGINALES / Gráfica 0 50m | FECHA: MARZO-2004 | TITULO DEL PLANO: VIADUCTO DE RIERUSSA REPLANTEO ENCOF. INT. | Nº DE PLANO: 2.9.2.8.B Hoja 10 de 25 |

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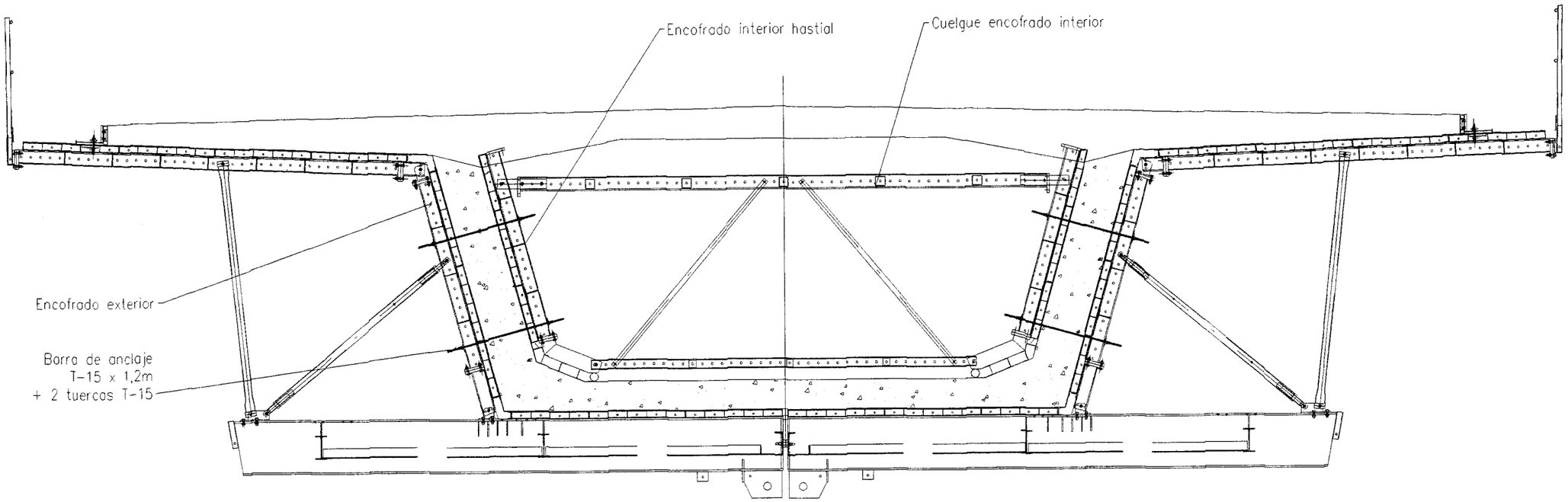
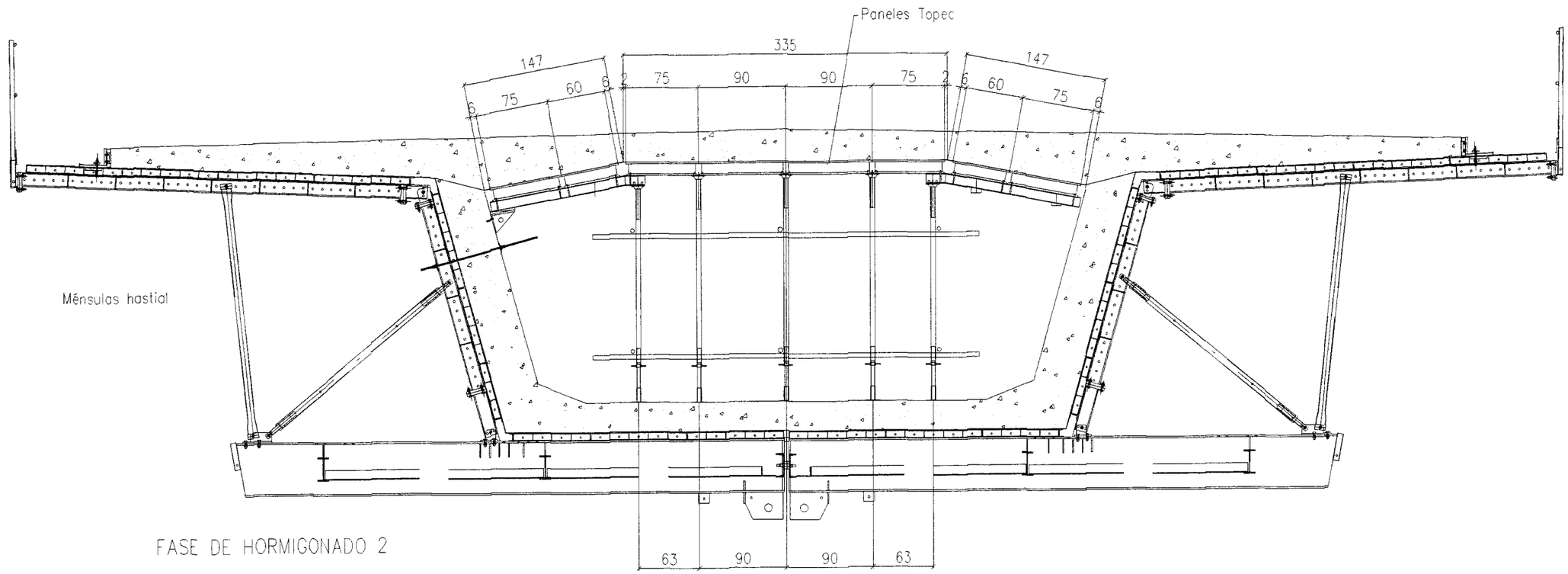



FASE DE HORMIGONADO 1




FASE DE HORMIGONADO 2

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GIF Gestor de Infraestructuras Ferroviarias

TÍTULO
PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO GELIDA-SANT LLORENÇ D'HORTONS

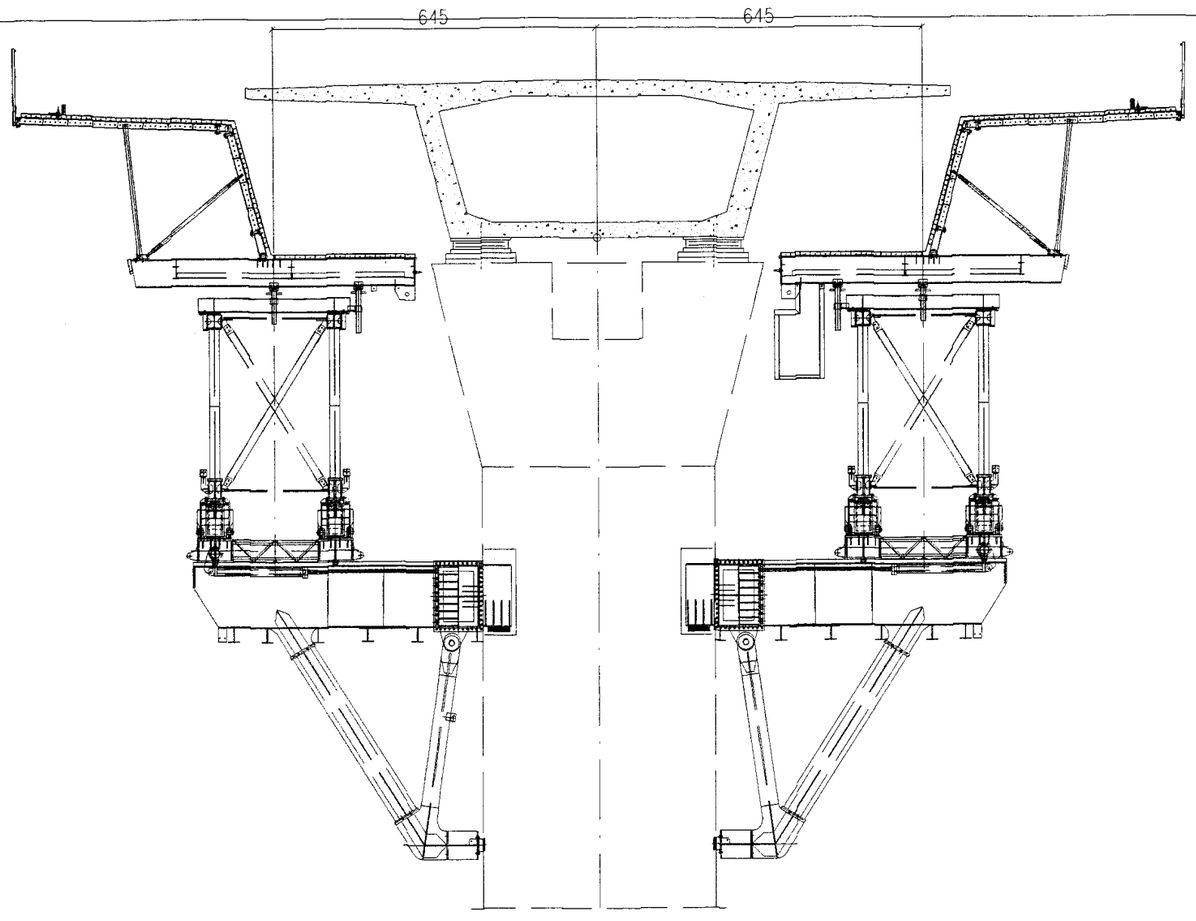
AUTOR
FERNANDEZ CONSTRUCTOR
Fdo: MANUEL COSTA PEREZ

ESCALA
UNE A-3 ORIGINALES
Gráfico 0 50m

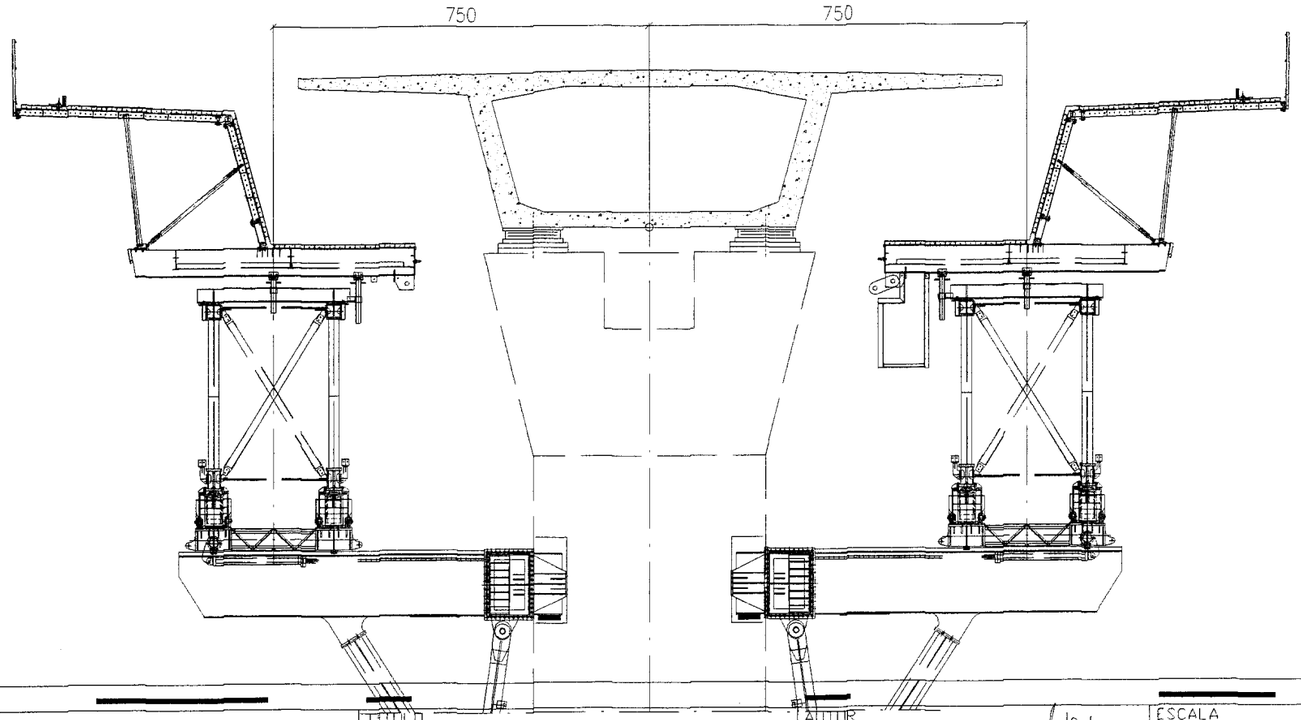
FECHA
MARZO 2004

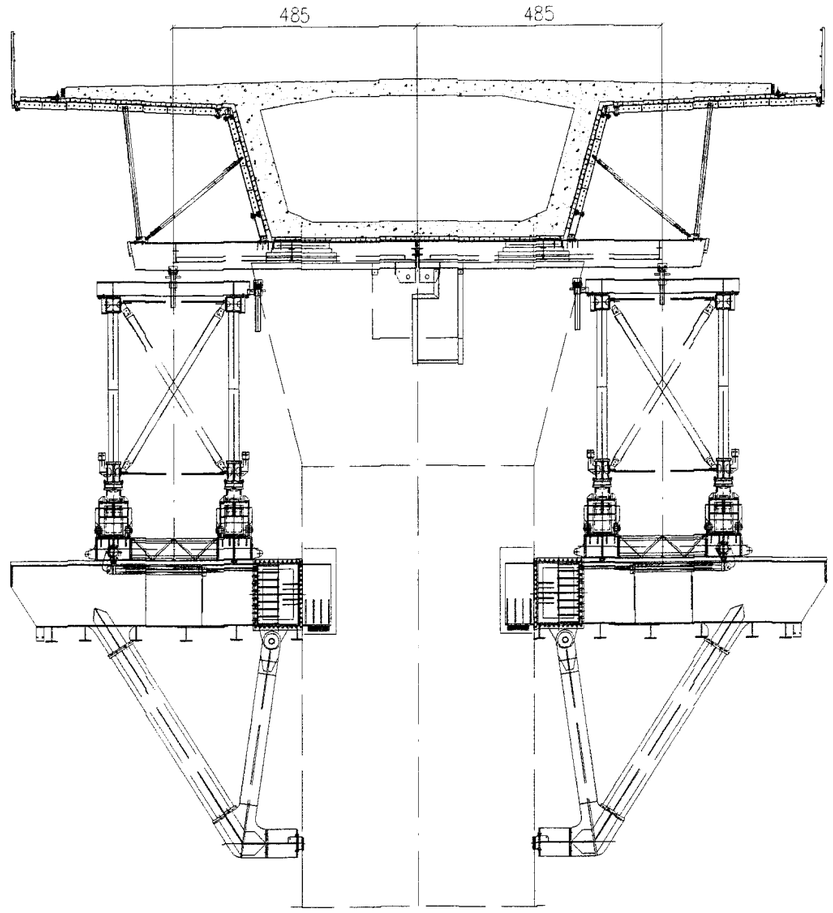
TÍTULO DEL PLANO
VIADUCTO DE RIERUSSA
FASES DE HORMIGONADO

Nº DE PLANO
2.9.2.8.B
Hoja 11 de 23




SECCION: POSICIÓN DE AVANCE CON MENSULA PEQUEÑA




SECCION POSICIÓN DE HORMIGONADO

NOTA – En el primer vano se utilizaran ménsulas grandes.

C:\GELIDA\PROD\PESTRUCTURAS\RIERUSSA\MODIFICADO\plots\rierussa002-15245-SEC-A-secciones hormigonado y avance.dwg

GIF Gestor de Infraestructuras Ferroviarias

TÍTULO: PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA. TRAMO GELIDA-SANT LLORENÇ D'HORTONS

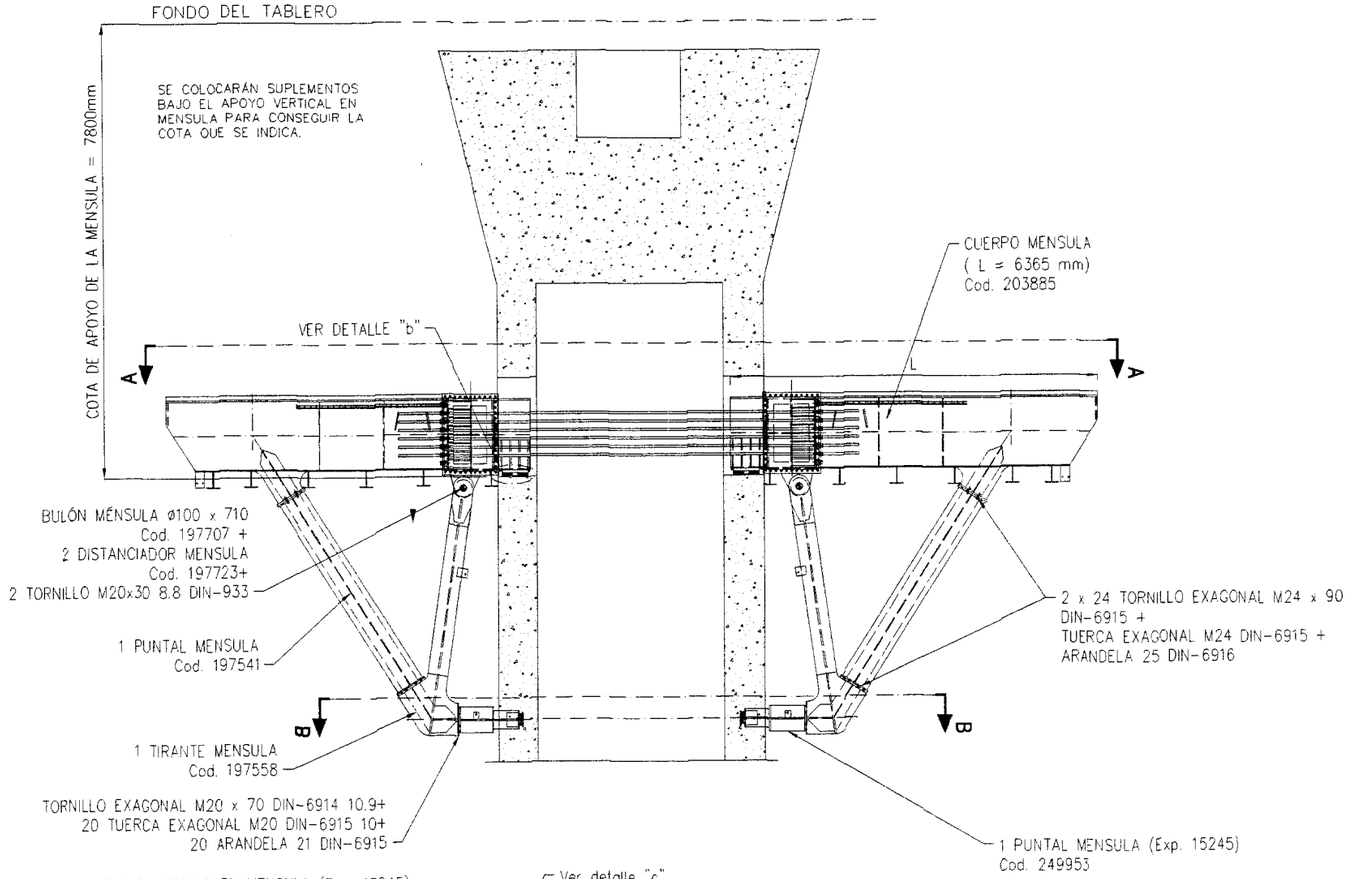
AUTOR: FERNANDEZ CONSTRUCTOR Fdo: MANUEL COSTA PEREZ

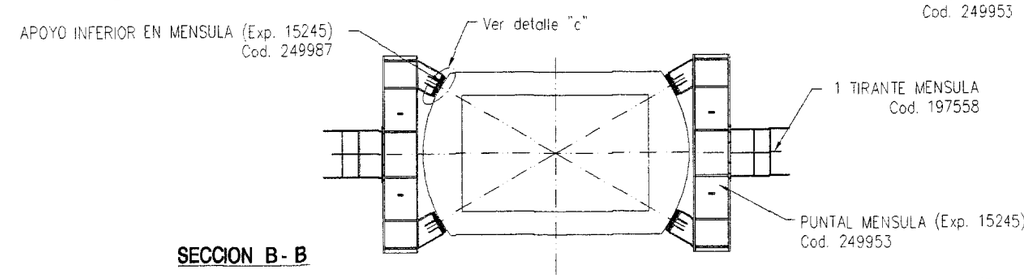
ESCALA: UNE A-3 ORIGINALES | Gráfica 0 50m

FECHA: MARZO-2004

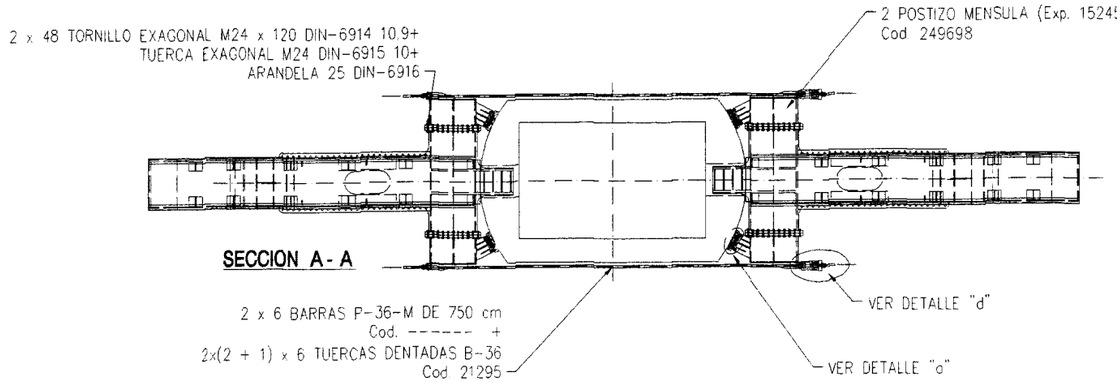
TÍTULO DEL PLANO: VIADUCTO DE RIERUSSA SEC. HORMIGONADO Y AVANCE B

Nº DE PLANO: 2.9.2.8.B Hoja 12 de 25

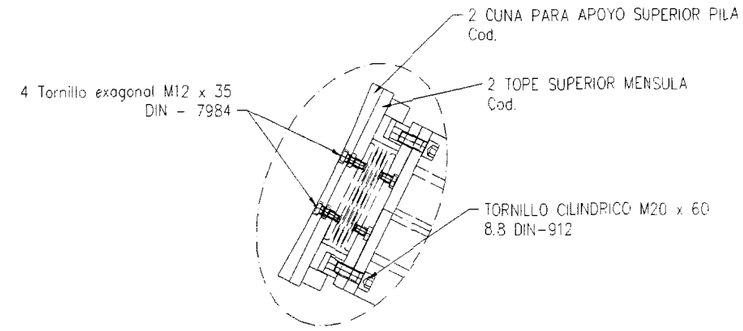


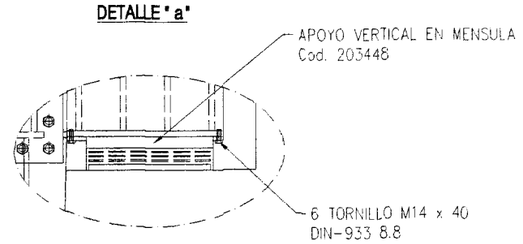

**SECCION B- B**



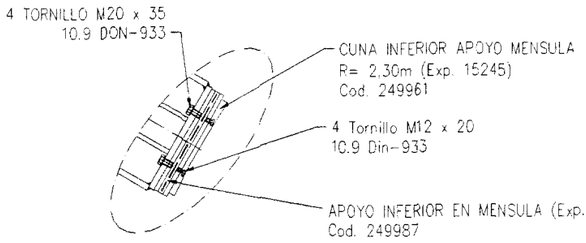

**SECCION A- A**



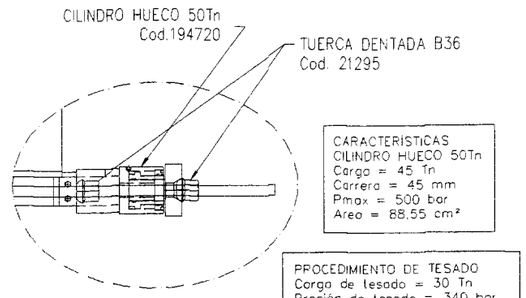

**DETALLE " a"**




**DETALLE " b"**




**DETALLE " c"**




**DETALLE " d"**

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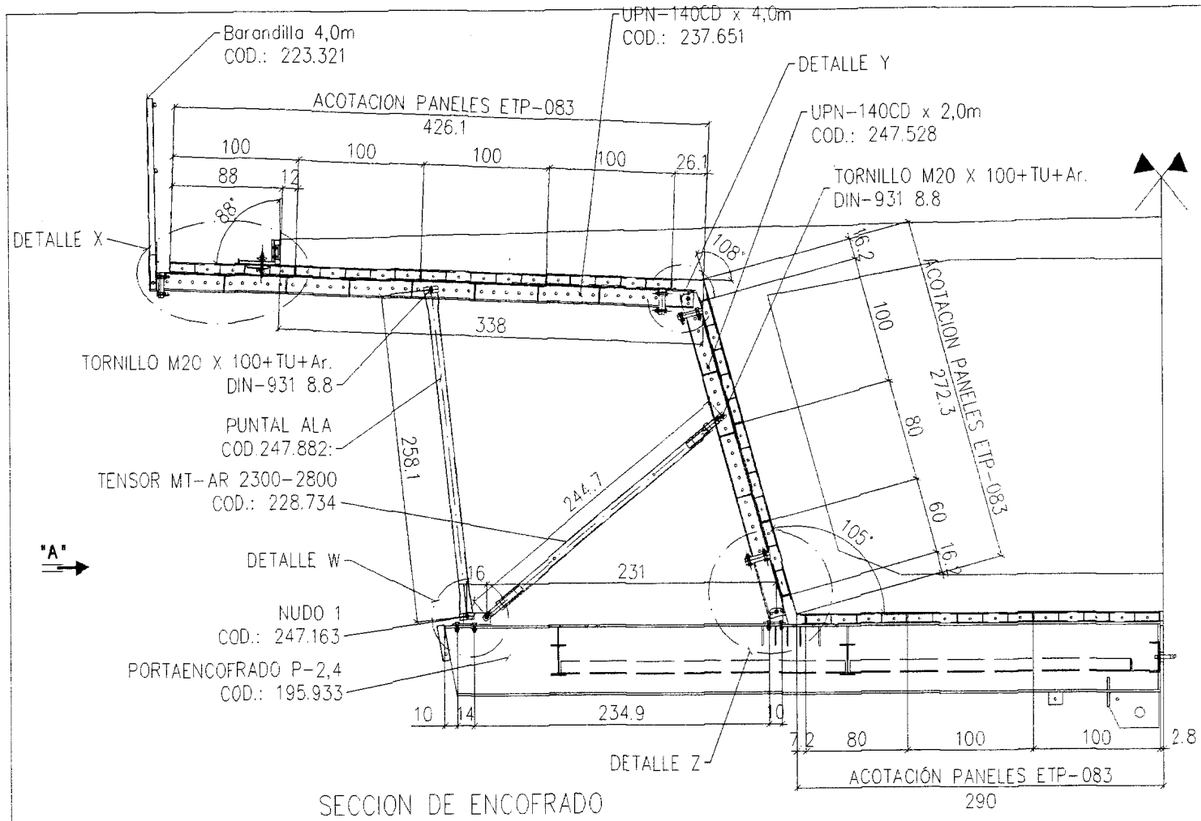
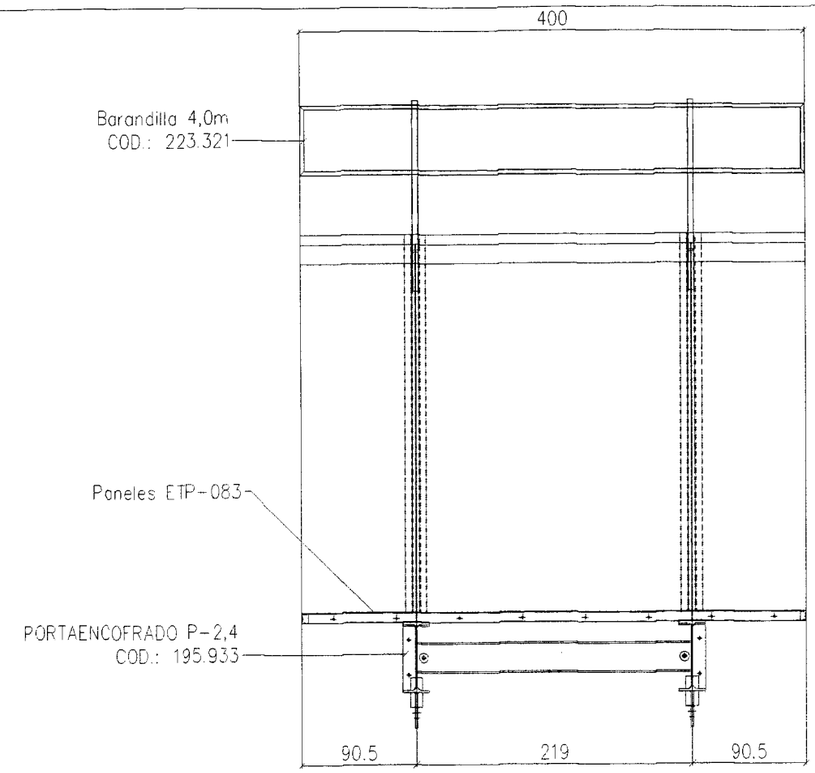
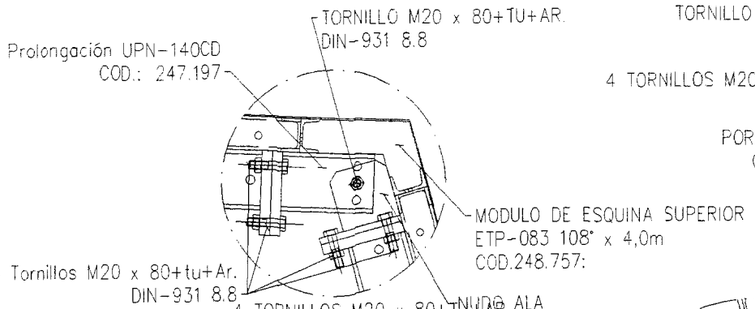
| | | | | | | |
|---|---|---|---|---|---|---|
| GIF Gestor de Infraestructuras Ferroviarias | TITULO: PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA TRAMO:GELIDA-SANT LLORENÇ D'HORTONS | AUTOR: FERNANDEZ CONSTRUCTOR Fdo: MANUEL COSTA PEREZ | ESCALA: UNE A-3 ORIGINALES — Gráfica 0 50m | FECHA: MARZO-2004 | TITULO DEL PLANO: VIADUCTO DE RIERUSSA MONTAJE DE MENSULAS | Nº DE PLANO: 2.9.2.8.B Hoja 13 de 23 |



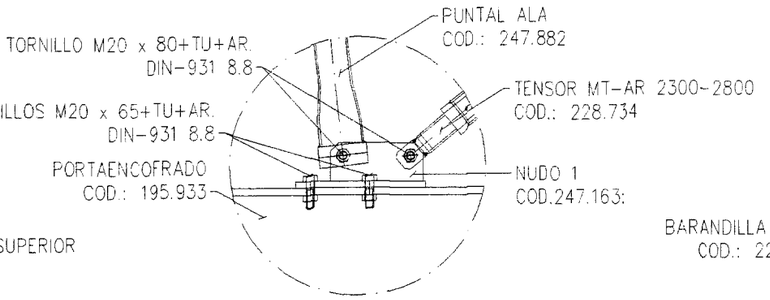

SECCION DE ENCOFRADO



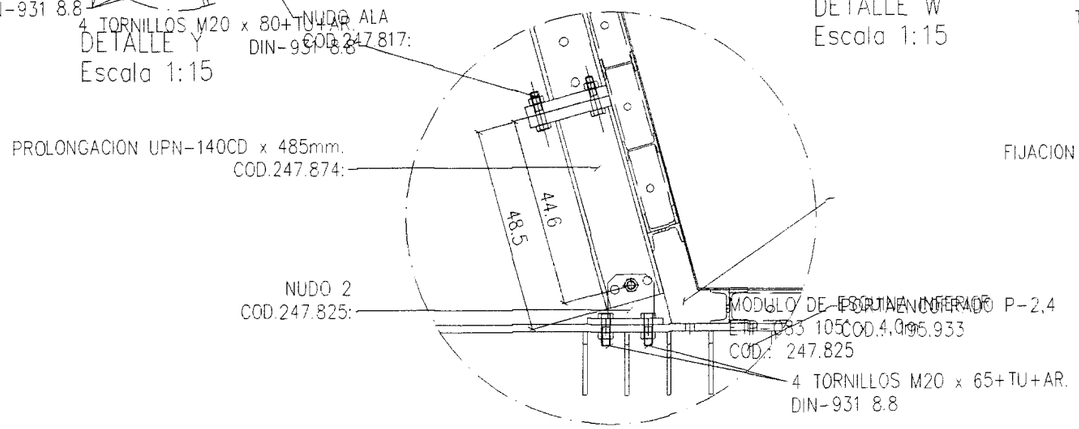

VISTA POR "A"



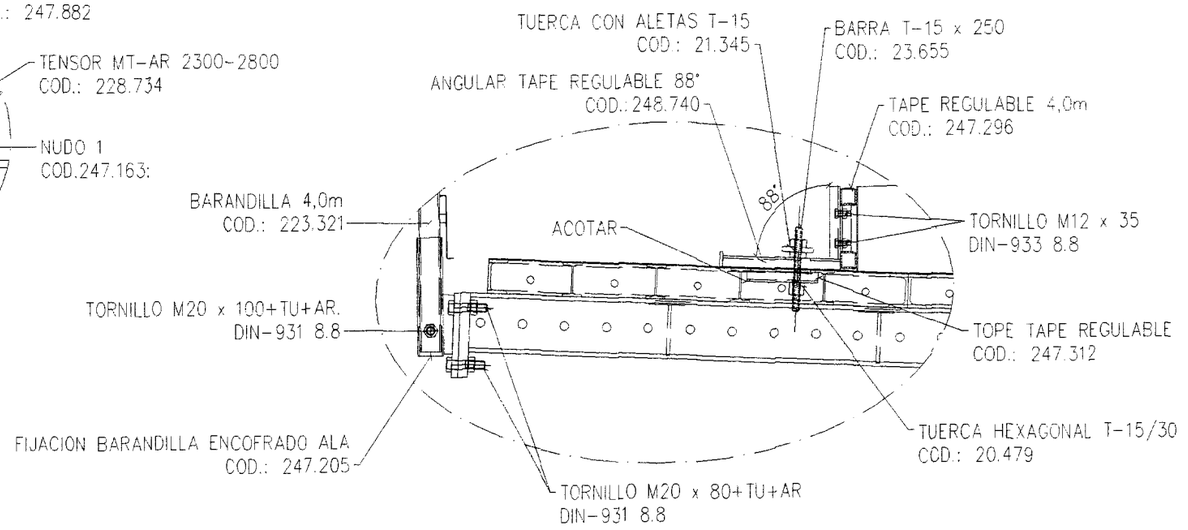

DETALLE Y
Escala 1:15




DETALLE W
Escala 1:15




DETALLE Z
Escala 1:15




DETALLE X
Escala 1:15

| PANEL ETP-083 | CODIGO |
|---|---|
| PANEL 4000 x 1000 | 204511 |
| PANEL 4000 x 800 | 204578 |
| PANEL 4000 x 600 | 204560 |

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GIF Gestor de Infraestructuras Ferroviarias

TÍTULO
PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO:GELIDA-SANT LLORENÇ D?HORTONS

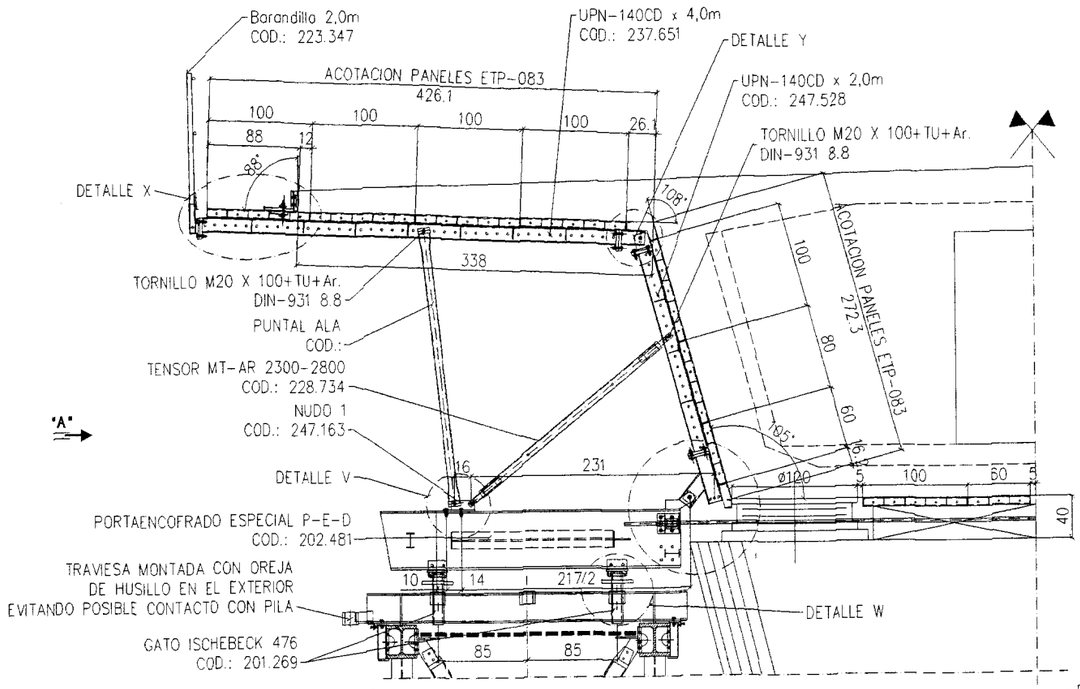
AUTOR
FERNANDEZ CONSTRUCTOR
Fdo: MANUEL COSTA PEREZ

ESCALA
UNE A-3 ORIGINALES
Gráfica 0 50m

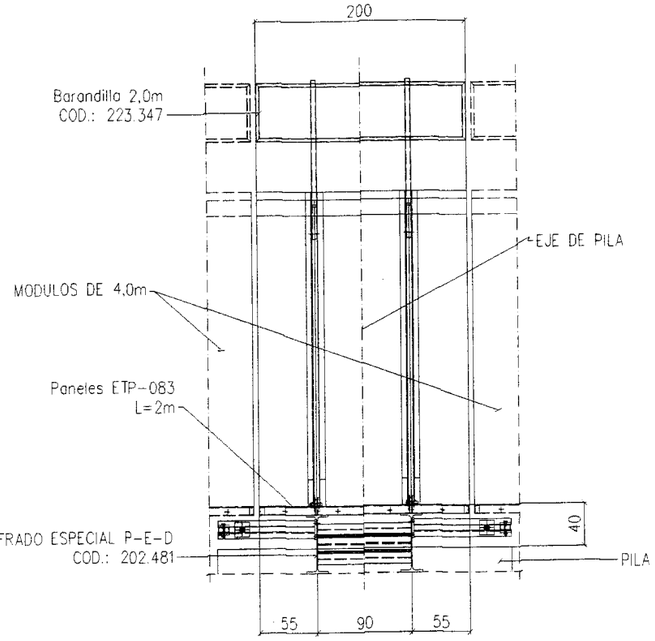
FECHA
MARZO-2004

TÍTULO DEL PLANO
VIADUCTO DE RIERUSSA
MONTAJE MESA 4 MTS.

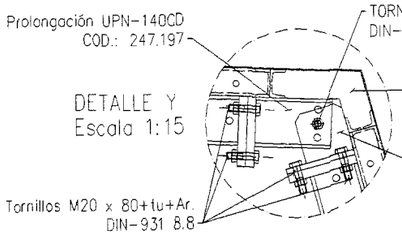
Nº DE PLANO
2.9.2.8.B
Hoja 14 de 34



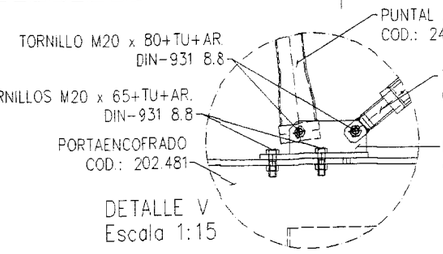

SECCION DE ENCOFRADO



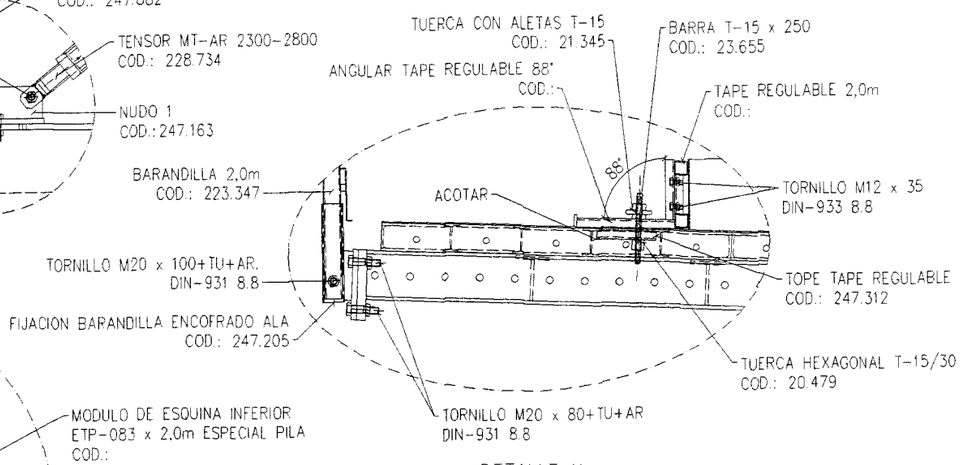

VISTA POR "A"



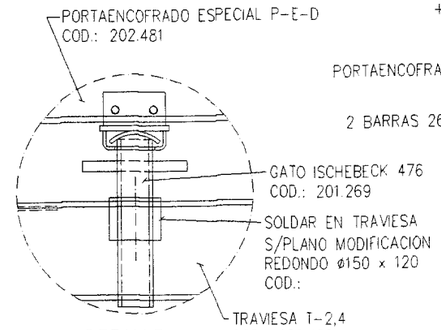

DETALLE Y
Escala 1:15



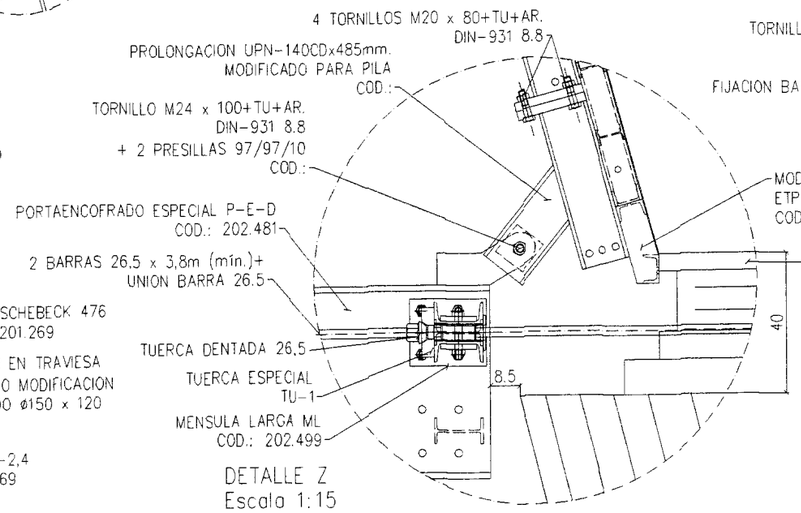

DETALLE V
Escala 1:15




DETALLE X
Escala 1:15




DETALLE W
Escala 1:15




DETALLE Z
Escala 1:15

| PANEL ETP-083 | CODIGO |
|---|---|
| PANEL 2000 x 1000 | 204552 |
| PANEL 2000 x 800 | 204495 |
| PANEL 2000 x 600 | xxxxxx |

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GIF Gestor de Infraestructuras Ferroviarias

TÍTULO
PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO:GELIDA-SANT LLORENÇ D'HORTONS

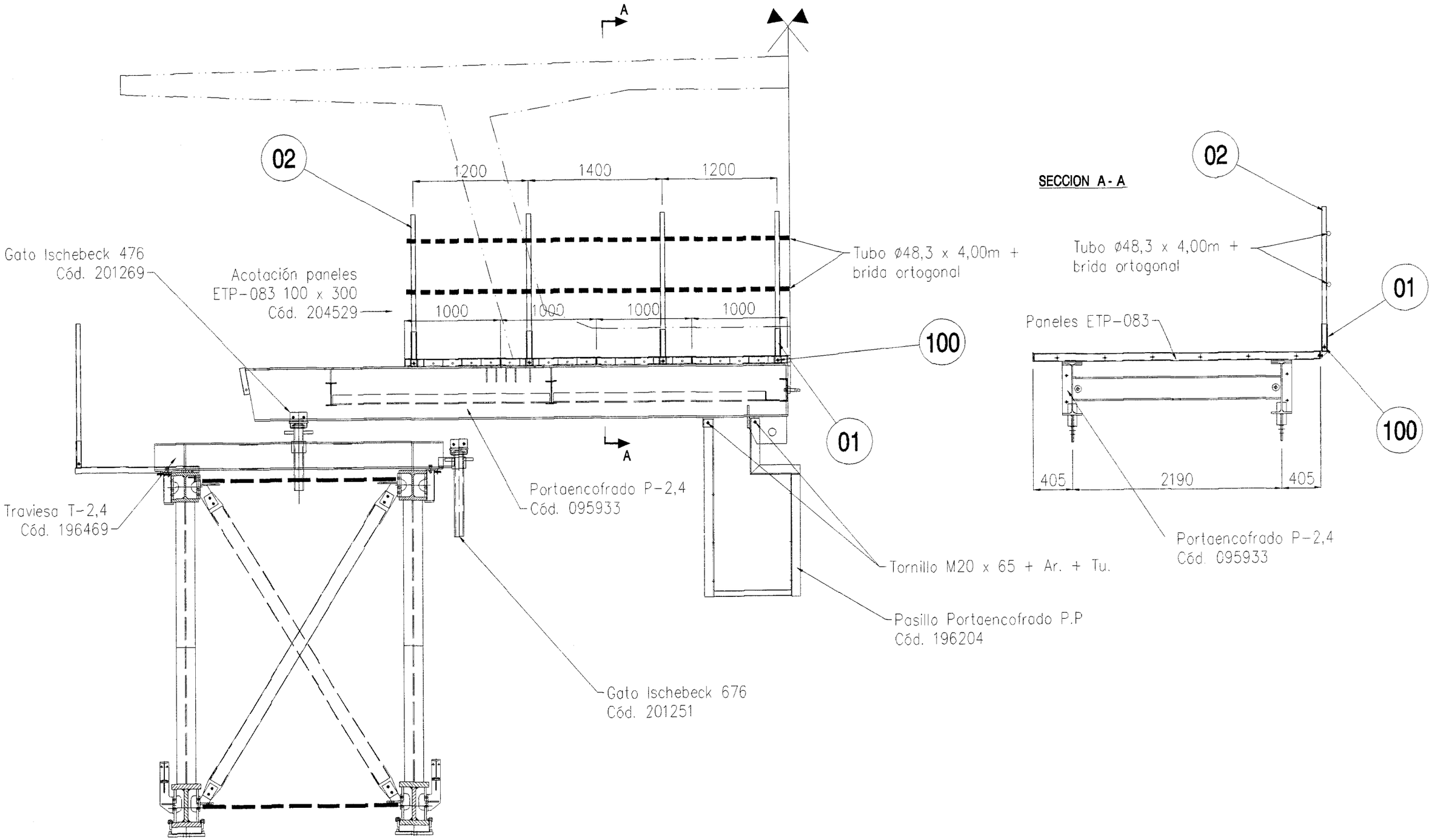
AUTOR
FERNANDEZ CONSTRUCTOR
Fdo: MANUEL COSTA PEREZ

ESCALA
UNE A-3 ORIGINALES
Gráfica 0 50m

FECHA
MARZO-2004

TÍTULO DEL PLANO
VIADUCTO DE RIERUSSA
MONTAJE MESA PILAS

Nº DE PLANO
2.9.2.8.B
Hoja 15 de 34

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GIF Gestor de Infraestructuras Ferroviarias

TÍTULO
PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO:GELIDA-SANT LLORENÇ D?HORTONS

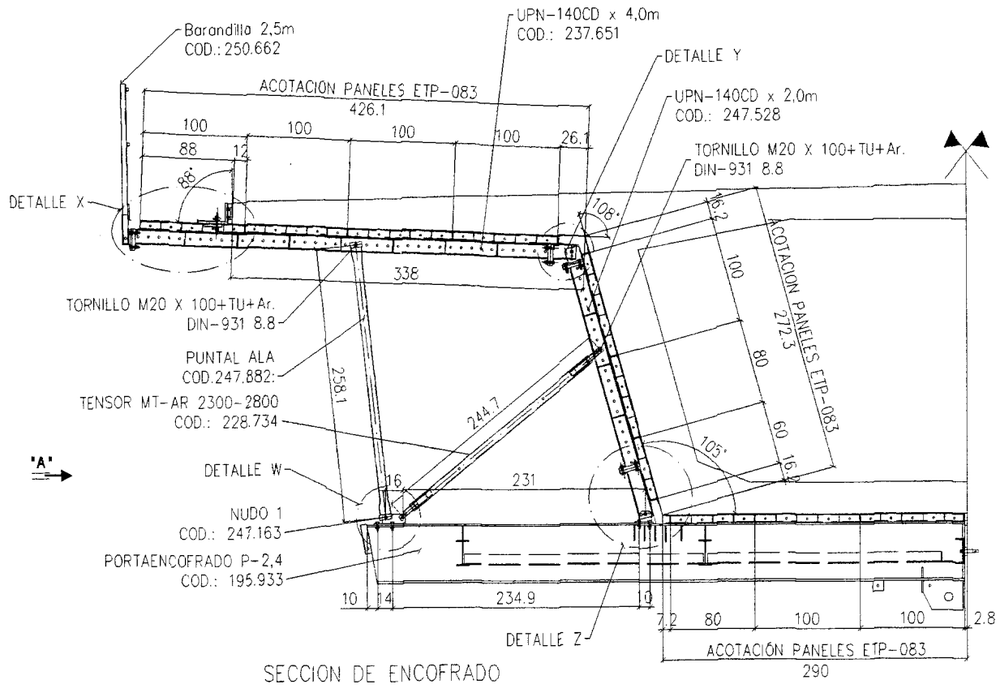
AUTOR
FERNANDEZ CONSTRUCTOR
Fdo: MANUEL COSTA PEREZ

ESCALA
UNE A-3 ORIGINALES
Gráfica
0 50m

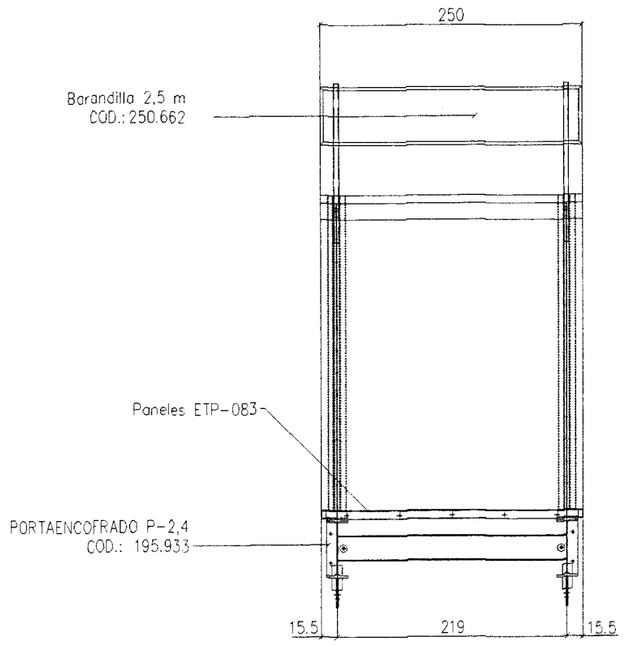
FECHA
MARZO-2004

TÍTULO DEL PLANO
VIADUCTO DE RIERUSSA
MONTAJE MESA TRABAJO

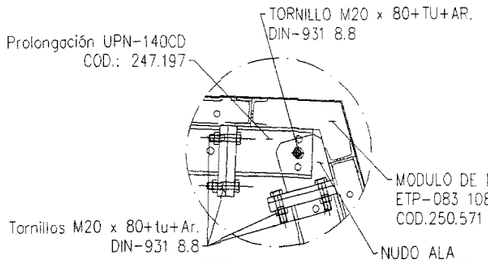
Nº DE PLANO
2.9.2.8.B
Hoja 16 de 348



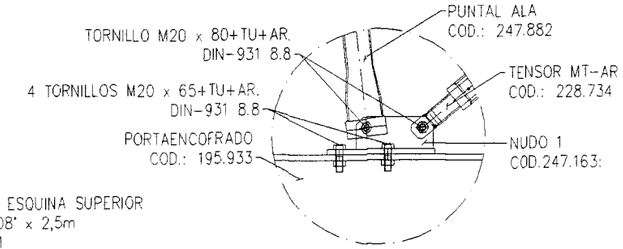

SECCION DE ENCOFRADO



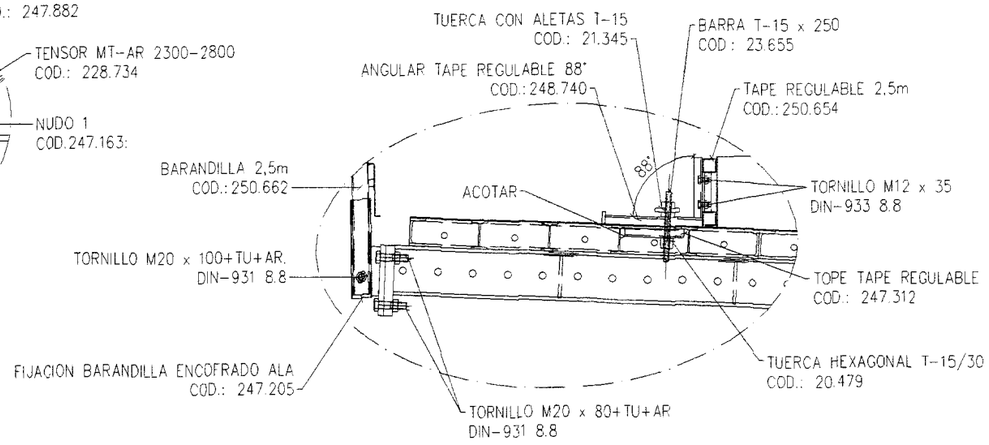

VISTA POR "A"



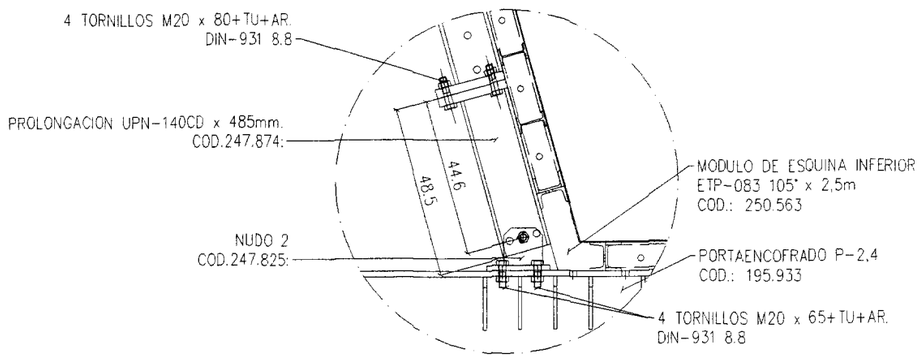

DETALLE Y
Escala 1:15




DETALLE W
Escala 1:15




DETALLE X
Escala 1:15




DETALLE Z
Escala 1:15

| PANEL ETP-083 | CODIGO |
|---|---|
| PANEL 2500 x 1000 | 250530 |
| PANEL 2500 x 800 | 250555 |
| PANEL 2500 x 600 | 250548 |

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| | | | | | | |
|---|---|---|---|---|---|---|
| GIF Gestor de Infraestructuras Ferroviarias | TITULO: PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA TRAMO:GELIDA-SANT LLORENÇ D'HORTONS | AUTOR: FERNANDEZ CONSTRUCTOR Fdo: MANUEL COSTA PEREZ | ESCALA: UNE A-3 ORIGINALES; Gráfico 0 50m | FECHA: MARZO-2004 | TITULO DEL PLANO: VIADUCTO DE RIERUSSA MONTAJE MESA 2.5 MTS | Nº DE PLANO: 2.9.2.8.B Hoja 17 de 349 |

CENTRAL DE ENCOFRADO
Cod:197244
CARACTERISTICAS
Caudal = 11l/min
P = 200bar
Pot = 5,0 Kw
Cos = 0,82

Macho de ovalillo ½ – Hembra ½ (GE15LR⅜EDA3C)
+ Macho ½ – Hembra ⅜ (SM-251-6FB)
+ Enchufe rápido hembra ⅜ (SM-252-6FB)

Macho de ovalillo ½ – Hembra ½ (GE15LR⅜EDA3C)
+ Macho ½ – Hembra ⅜ (SM-251-6FB)
+ Tapón ⅜

9.6 R | 12 NC | 12 NC | 9.6R | 12 NC | 12 AT

0,7m | 1,9m | 2,3m | 4m | 4m | 1,1m | 2,3m | 4m | 4m | 1,1m | 2,3m | 4m | 2,3m | 2,3m | 4m | 4m | 1,1m | 2,3m | 4m | 4m | 1,1m

CUCHILLO INTERIOR

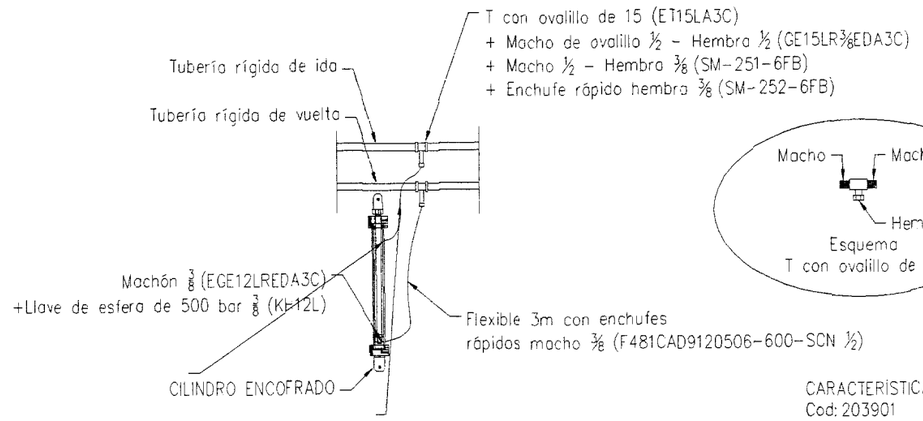
CUCHILLO EXTERIOR

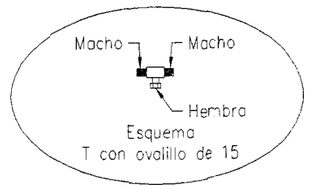
Flexible 3m con enchufes
rápidos macho ⅜ (F481CAD9120506-600-SCN ½)

EJES DE LOS CILINDROS DE ENCOFRADO

SENTIDO DE AVANCE

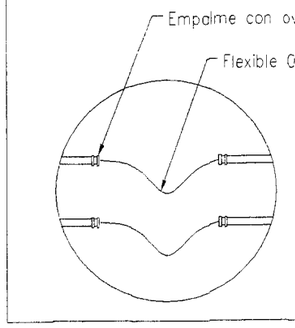
DETALLE DE LA CONEXIÓN DEL CILINDRO DE ENCOFRADO A LAS TUBERIAS RÍGIDAS



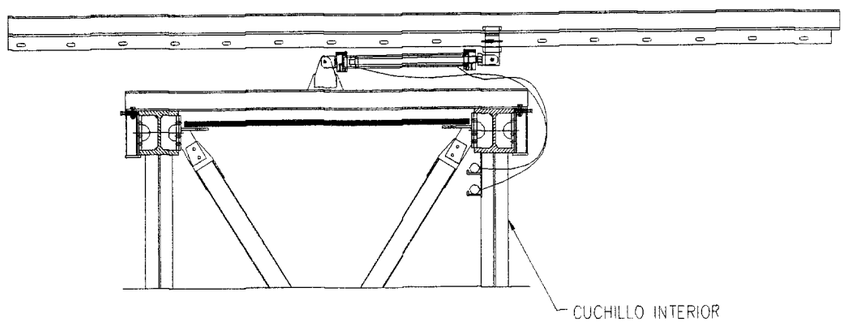




CARACTERÍSTICAS CILINDRO ENCOFRADO
Cod: 203901
Doble efecto
Carrera = 750 mm
Pmax = 200 bar
Favance = 7,7 Tn (Aavance=38,4cm2)
Fretroceso = 5,2 Tn (Aretroceso=25,9cm2)

UNIÓN DE LAS TUBERIAS RIGIDAS
ENTRE VIGA Y VIGA




INSTALACIÓN RIGIDA POR EL LATERAL DE LA VIGA




NOTA:
Las referencias que se indican entre paréntesis corresponden al proveedor COHIDREM.

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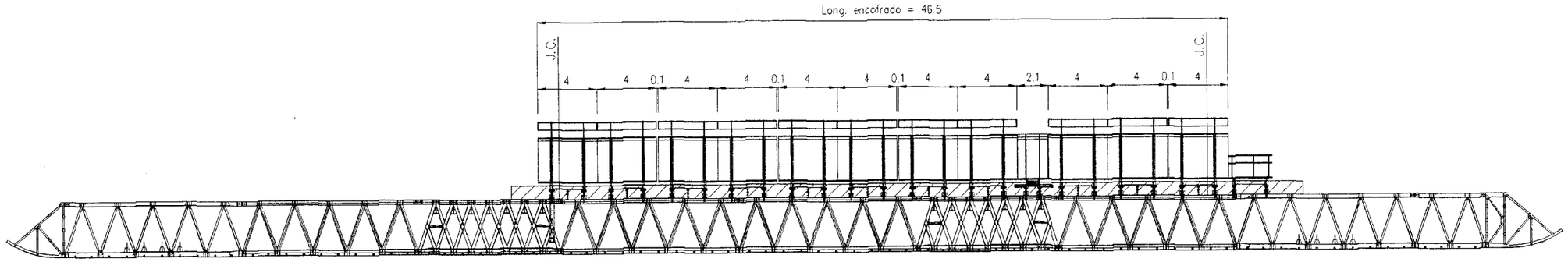
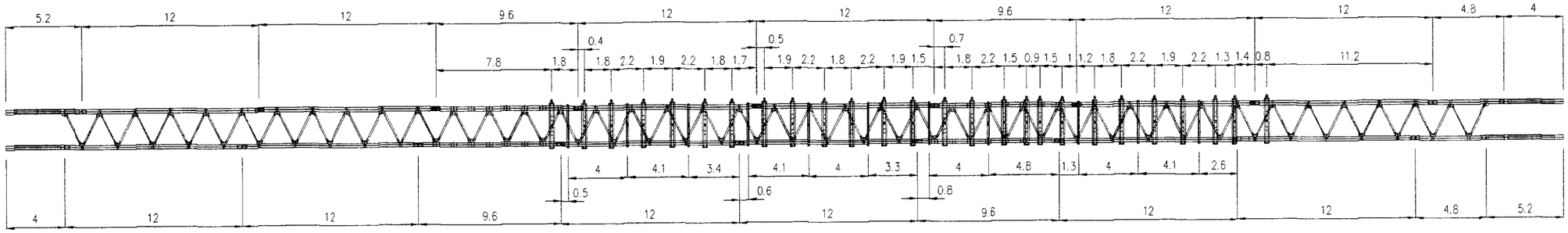
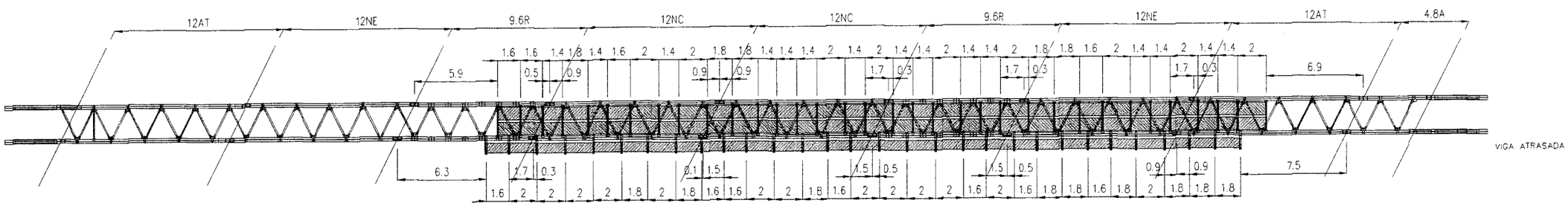
| | | | | | |
|---|---|---|---|---|---|
| GIF Gestor de Infraestructuras Ferroviarias | TÍTULO: PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA TRAMO:GELIDA-SANT LLORENÇ D'HORTONS | AUTOR: FERNANDEZ CONSTRUCTOR Fdo: MANUEL COSTA PEREZ | ESCALA: UNE A-3 ORIGINALES; Gráfica 0 50m | FECHA: MARZO-2004 | TÍTULO DEL PLANO: VIADUCTO DE RIERUSSA INSTALACION RIGIDA (1) | Nº DE PLANO: 2.9.2.9.B Hoja 18 de 350 |



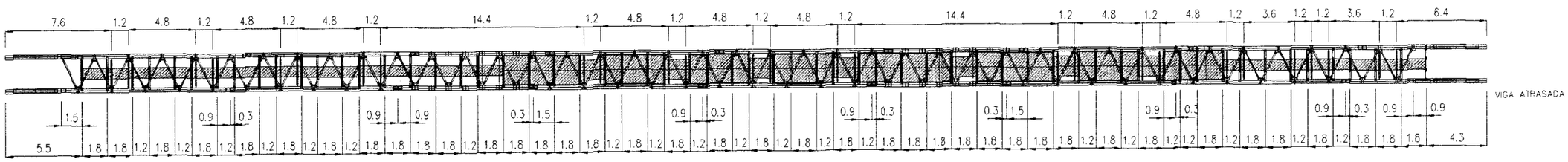

REPLANTEO TRAVIESAS APOYO PORTAENCOFRADO




REPLANTEO PASILLOS INTERIORES Y EXTERIORES
EN EL CORDÓN SUPERIOR DE LAS VIGAS




REPLANTEO PASILLOS INTERIORES EN
EL CORDÓN INFERIOR DE LAS VIGAS

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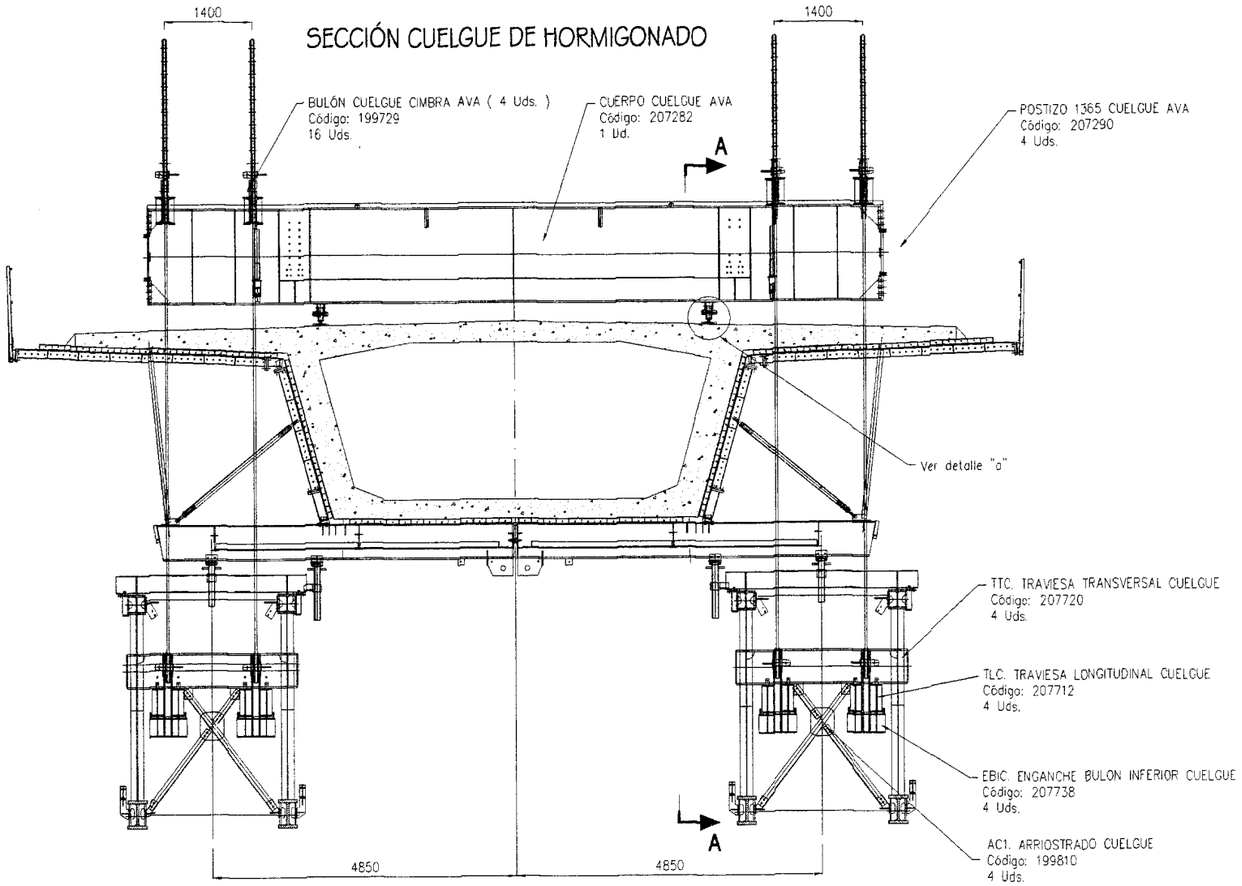
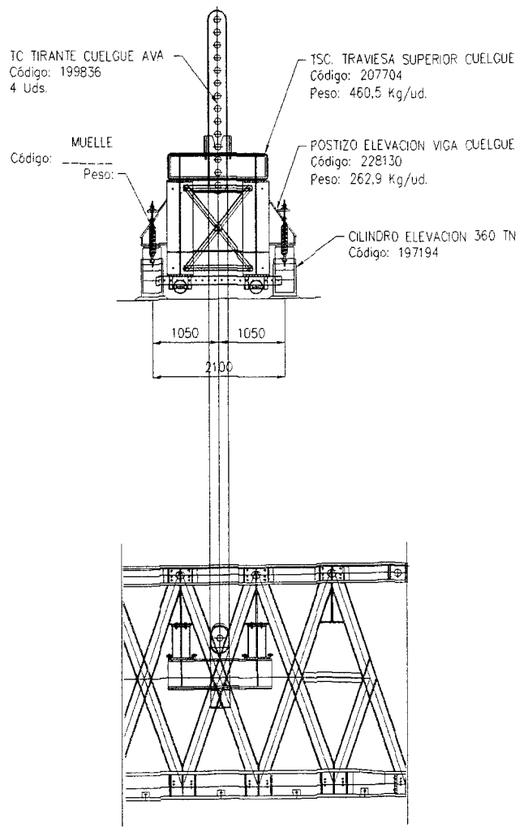
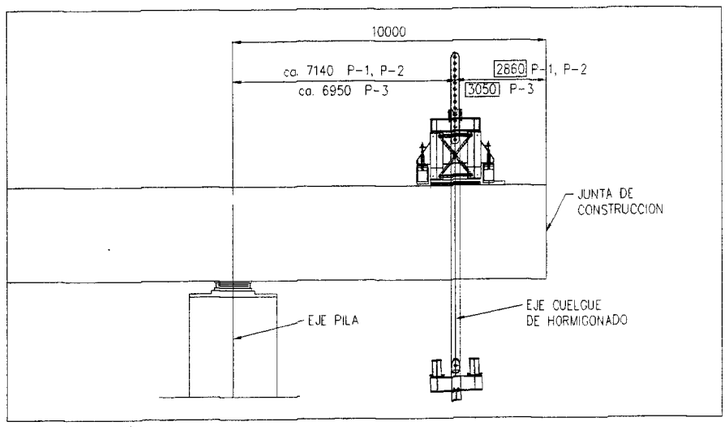
| | | | | | | |
|---|---|---|---|---|---|---|
| GIF Gestor de Infraestructuras Ferroviarias | TÍTULO<br>PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA<br>L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA<br>TRAMO:GELIDA-SANT LLORENÇ D'HORTONS | AUTOR<br>FERNANDEZ CONSTRUCTOR<br>Fdo: MANUEL COSTA PEREZ | ESCALA<br>UNE A-3 ORIGINALES<br>Gráfico<br>0 50m | FECHA<br>MARZO-2004 | TÍTULO DEL PLANO<br>VIADUCTO DE RIERUSSA<br>MONTAJE PASILLO | Nº DE PLANO<br>2.9.2.8.B<br>Hoja 19 de 25 |

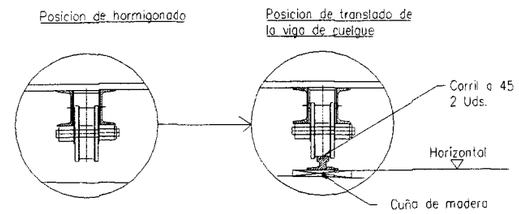
# SECCIÓN CUELGUE DE HORMIGONADO




## SECCION A - A




**DETALLE "a"**
1:15

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GIF Gestor de Infraestructuras Ferroviarias

TÍTULO
PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO:GELIDA-SANT LLORENÇ D?HORTONS

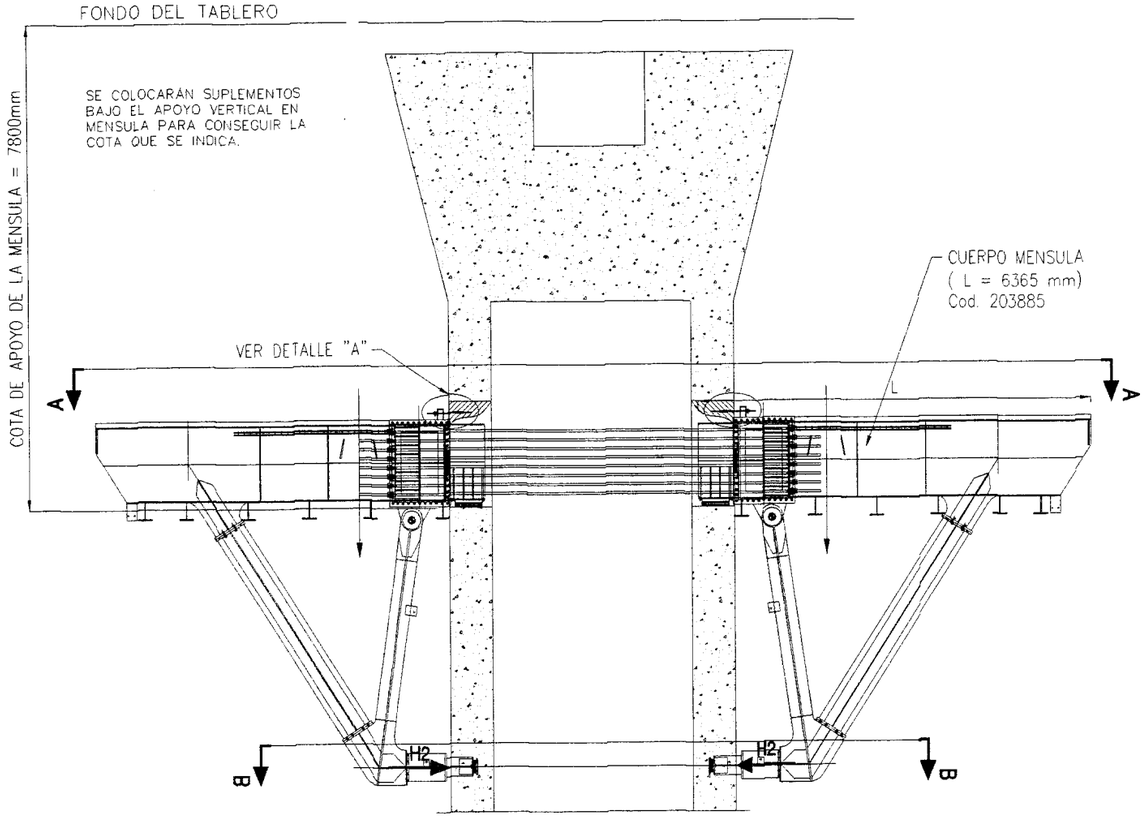
AUTOR
FERNANDEZ CONSTRUCTOR
Fdo: MANUEL COSTA PEREZ

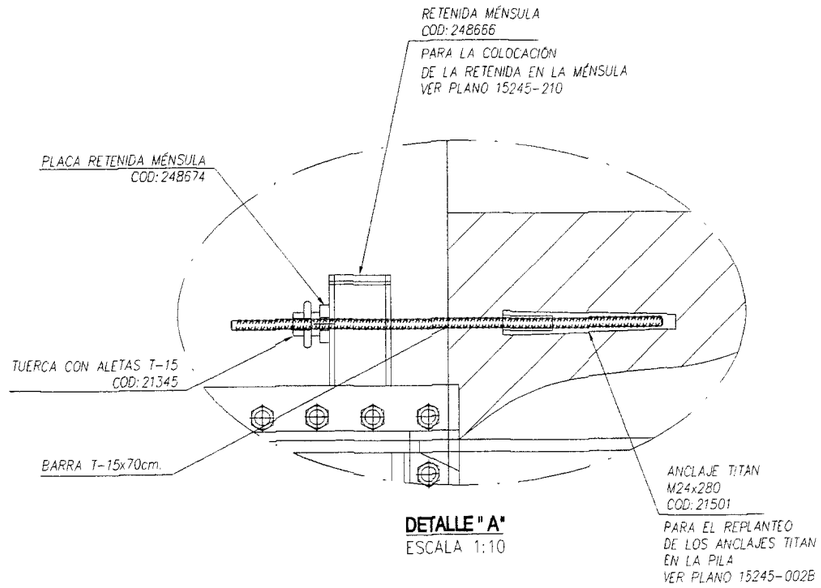
ESCALA
UNE A-3 ORIGINALES
Gráfica
0 50m

FECHA
MARZO-2004

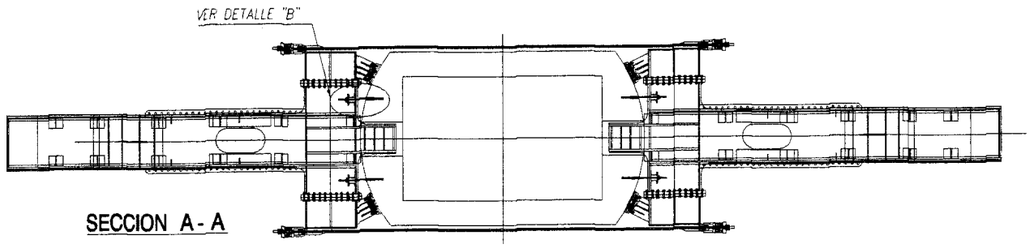
TÍTULO DEL PLANO
VIADUCTO DE RIERUSSA
MONTAJE CUELGUE

Nº DE PLANO
2.9.2.8.B
Hoja 20 de 25

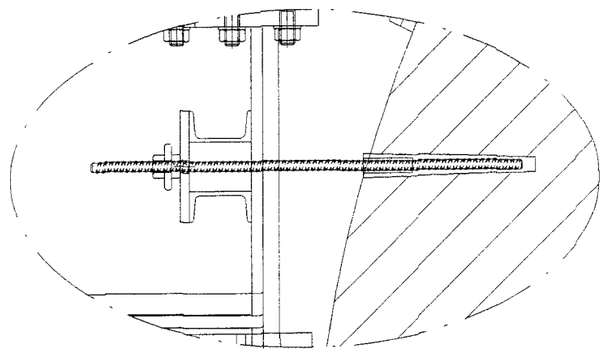



**DETALLE "A"**
ESCALA 1:10




**SECCION A-A**



**DETALLE "B"**
ESCALA 1:10

| | | | | | |
|---|---|---|---|---|---|
| GIF Gestor de Infraestructuras Ferroviarias | TÍTULO: PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA TRAMO GELIDA-SANT LLORENÇ D'HORTONS | AUTOR: FERNANDEZ CONSTRUCTOR Fdo: MANUEL COSTA PEREZ | ESCALA: UNE A-3 ORIGINALES; Gráfica 0 50m | FECHA: MARZO-2004 | TÍTULO DEL PLANO: VIADUCTO DE RIERUSSA RETENCION MESULA EN PILA | Nº DE PLANO: 2.9.2.9.B; Hoja 21 de 25 |

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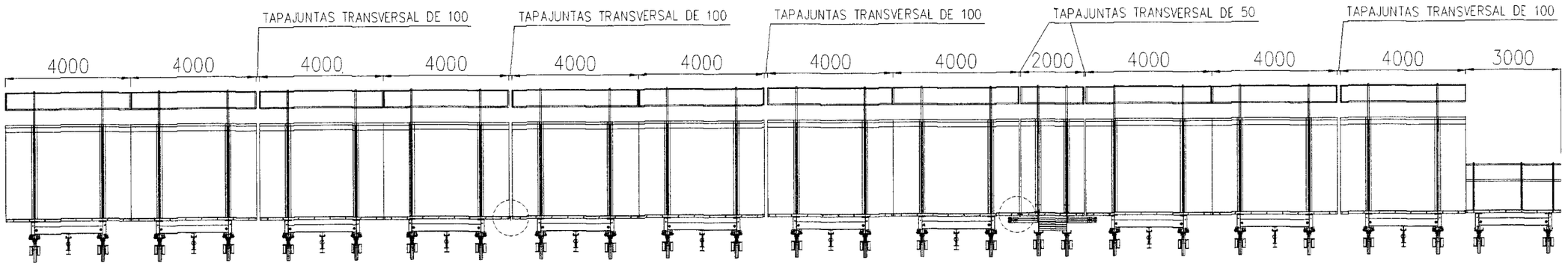
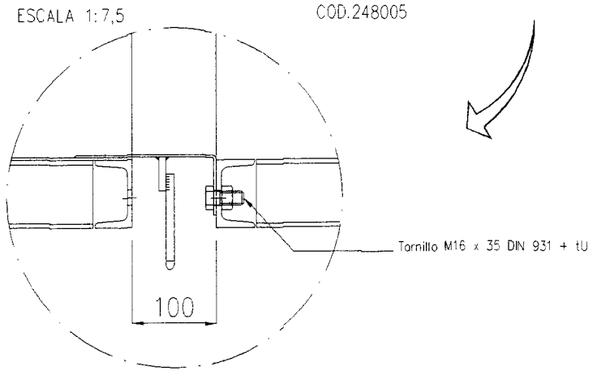
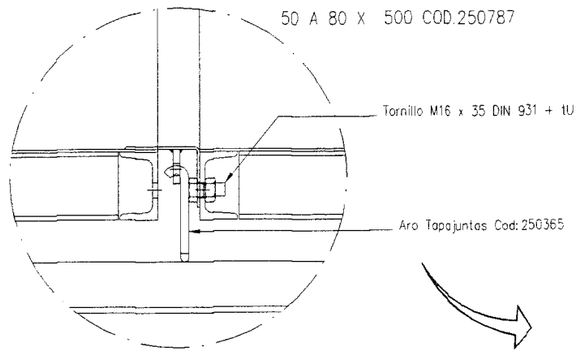
# PLANO GENÉRICO



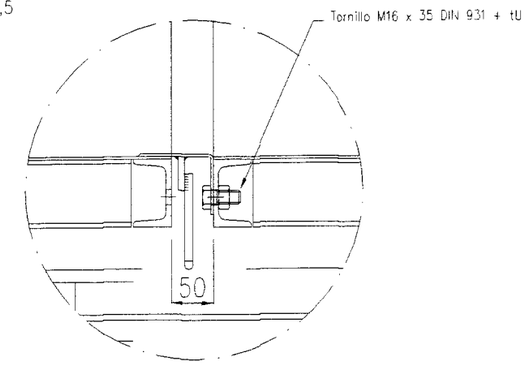

TAPAJUNTAS TRANSVERSAL DE 80 A 160 X 2000 COD.248005
ESCALA 1:7,5



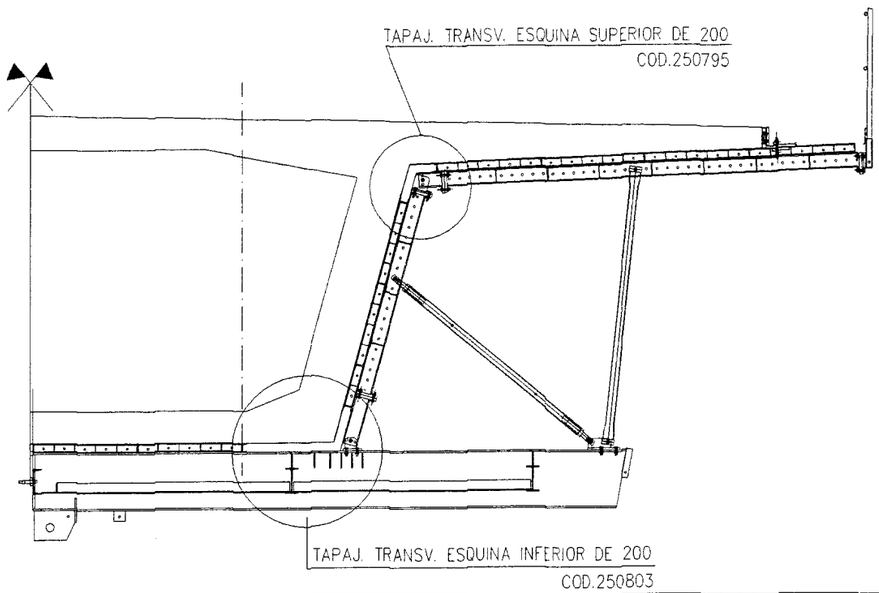

TAPAJUNTAS LONGITUDINAL DE 50 A 80 X 2000 COD.250373
50 A 80 X 1000 COD.250761
50 A 80 X 500 COD.250787
ESCALA 1:7,5




TAPAJUNTAS TRANSVERSAL A 50 X 80 X 2000 COD.250779
ESCALA 1:7,5



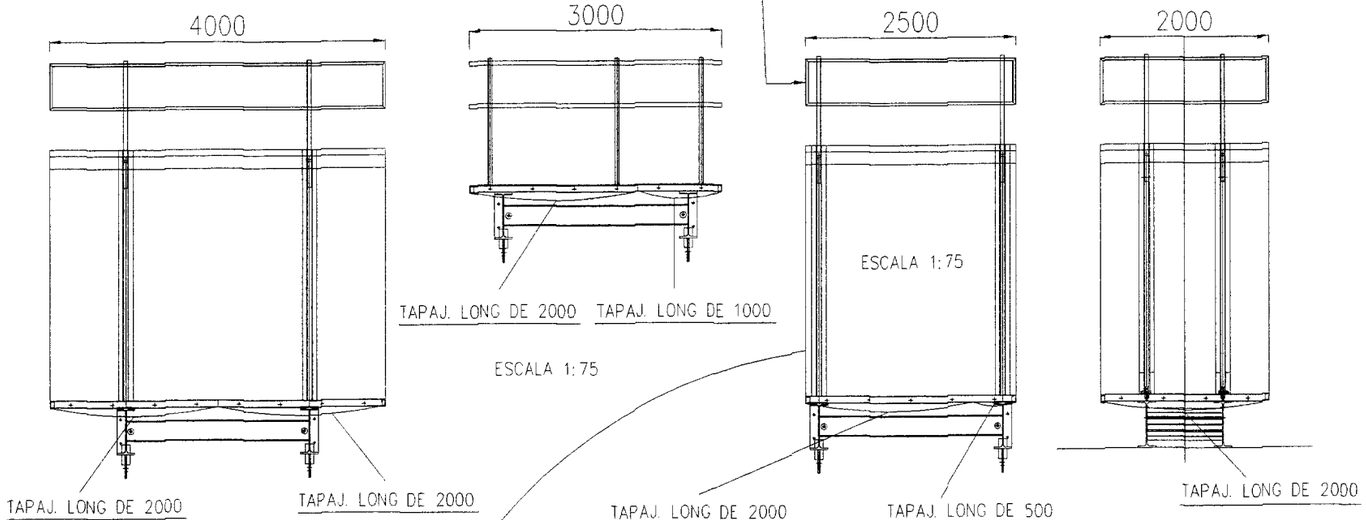

TAPAJUNTAS TRANSVERSALES ESQUINAS




ESCALA -:-

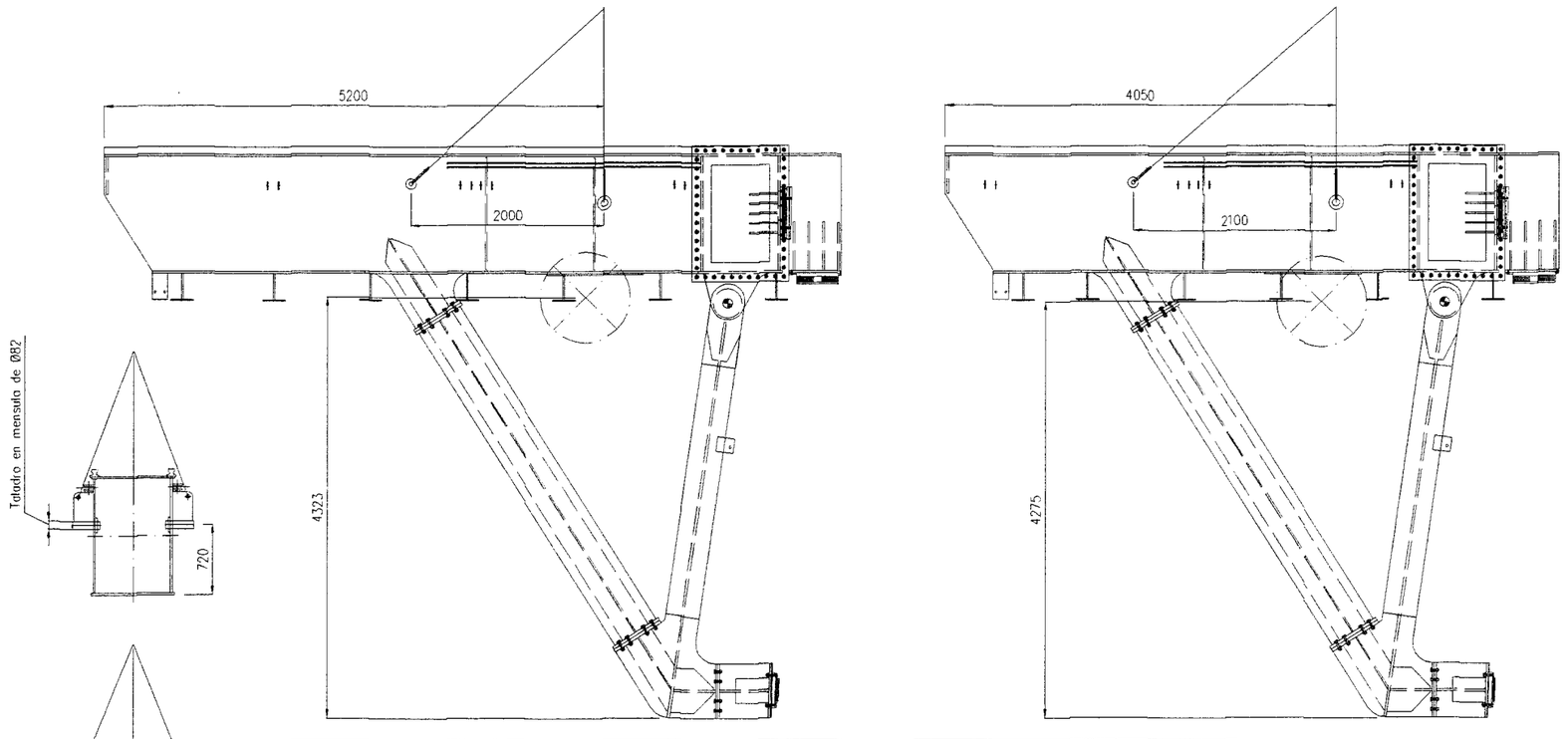
## TIPOS DE MESAS

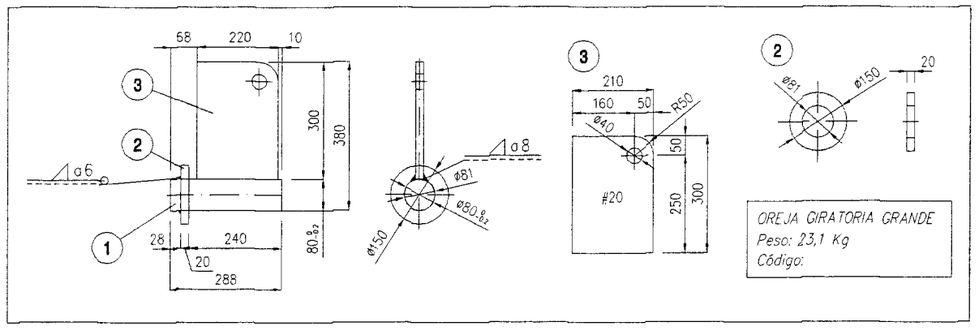
ESCALA 1:75



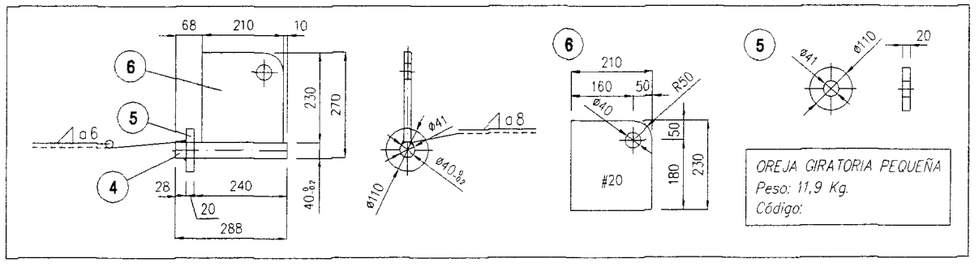

NOTA
Esta Mesa se útiliza en el Vano de arranque

| | | | | | |
|---|---|---|---|---|---|
| GIF Gestor de Infraestructuras Ferroviarias | TÍTULO: PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA TRAMO:GELIDA-SANT LLORENÇ D'HORTONS | AUTOR: FERNANDEZ CONSTRUCTOR | ESCALA: UNE A-3 ORIGINAL 50m 0 Gráfico | FECHA: MARZO-2004 | TÍTULO DEL PLANO: VIADUCTO DE RIERUSSA MONTAJE TAPAJUNTAS | Nº DE PLANO: 2.9.2.8.B Hoja 22 de 25 |




OREJA GIRATORIA GRANDE
Peso: 23,1 Kg
Código:




OREJA GIRATORIA PEQUEÑA
Peso: 11,9 Kg.
Código:

NOTA: Soldar posición 02 y 05 en obra.

| ESPECIFICACIONES DE EJECUCIÓN | | | |
|---|---|---|---|
| SOLDADURAS | UNE a 2 (excepto las indicadas) | | |
| PREPARACIÓN SUPERFICIAL | desengrasado | | |
| | chorreado | | |
| | granallado | | |
| ACUERDOS | lijados (excepto indicados) | | |
| ACABADO SUPERFICIAL | cincado electrolítico | | |
| | galvanizado en caliente s/ UNE 37-508-88 | | |
| | | | |
| | pintado | | |

RÓTULO ≥ 60 m-m. x 95
BRAZO ≥ 70 c-m

ESPECIFIC. PARA LA PINTURA:
GENERAL:
tipo: imprimación EPOXY
color/RAL: Rojo / 3001
nºcapas/espesor: 1/60 µm
otros:
S/INDICACIÓN:
tipo:
color/RAL:
nºcapas/espesor: µm
otros:

| TOLERANCIAS LINEALES | |
|---|---|
| Cotas Básicas (Señaladas con □) | ± 0.5 |
| Tolerancias no especificadas | ± 1 |
| Tolerancias agujeros no especificadas | ± 0.2 |

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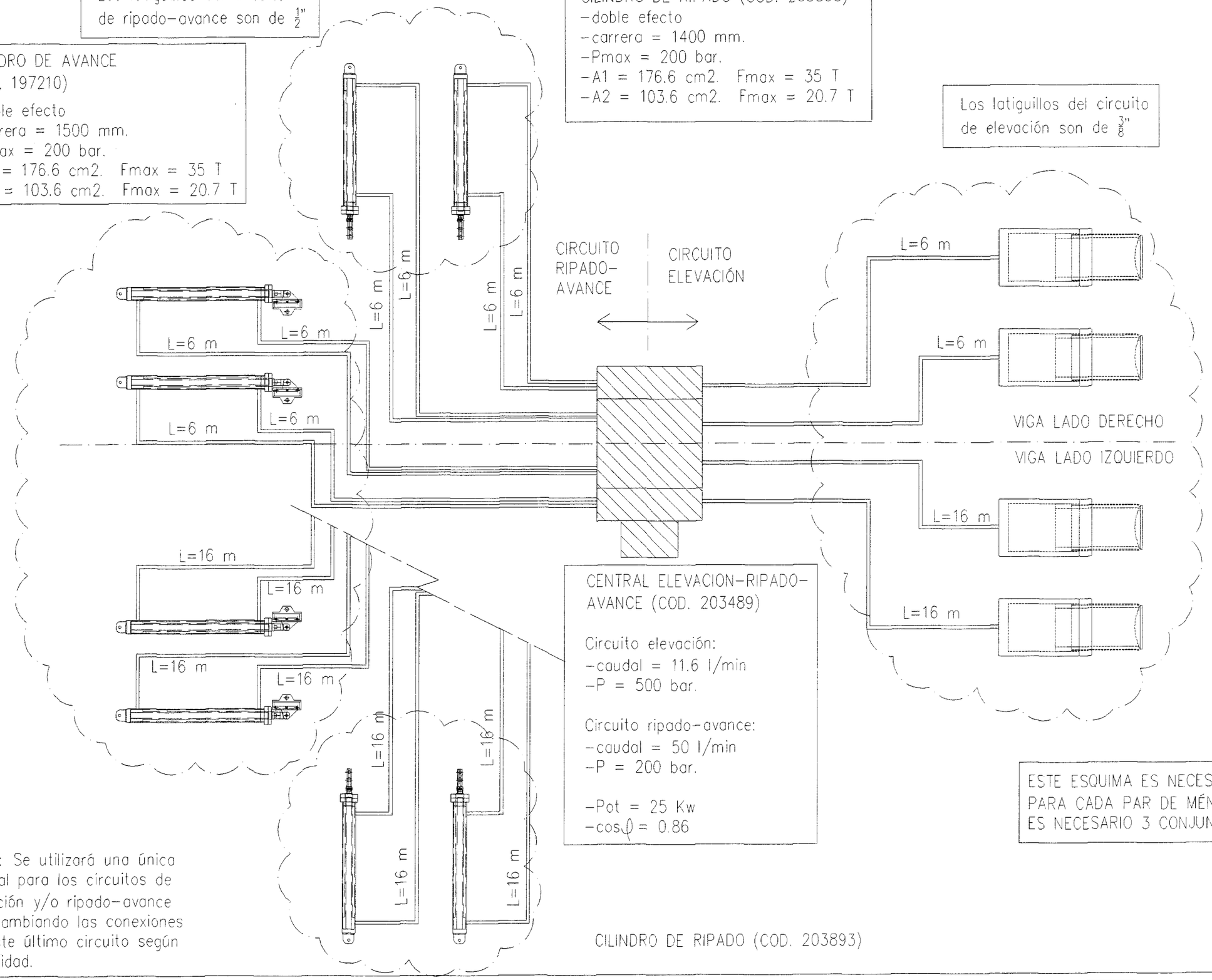
| | | | | | | |
|---|---|---|---|---|---|---|
| GIF Gestor de Infraestructuras Ferroviarias | TÍTULO: PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA TRAMO:GELIDA-SANT LLORENÇ D'HORTONS | AUTOR: FERNANDEZ CONSTRUCTOR Fdo. MANUEL COSTA PEREZ | ESCALA: UNE A-3 ORIGINALES / Gráfico 0 50m | FECHA: MARZO-2004 | TÍTULO DEL PLANO: VIADUCTO DE RIERUSSA OREJAS MENSULA TRANSPORTE | Nº DE PLANO: 2.9.2.9.B Hoja 23 de 25 |

Los latiguillos del circuito de ripado–avance son de $\frac{1}{2}$"

CILINDRO DE AVANCE
(COD. 197210)
- doble efecto
- carrera = 1500 mm.
- Pmax = 200 bar.
- A1 = 176.6 cm2. Fmax = 35 T
- A2 = 103.6 cm2. Fmax = 20.7 T

CILINDRO DE RIPADO (COD. 203893)
- doble efecto
- carrera = 1400 mm.
- Pmax = 200 bar.
- A1 = 176.6 cm2. Fmax = 35 T
- A2 = 103.6 cm2. Fmax = 20.7 T

Los latiguillos del circuito de elevación son de $\frac{3}{8}$"




CILINDRO DE ELEVACION
(COD. 197194)
- simple efecto
- carrera = 350 mm.
- Pmax = 500 bar.
- Fmax = 350 T
- A = 706 cm2

CENTRAL ELEVACION–RIPADO–AVANCE (COD. 203489)

Circuito elevación:
- caudal = 11.6 l/min
- P = 500 bar.

Circuito ripado–avance:
- caudal = 50 l/min
- P = 200 bar.

- Pot = 25 Kw
- $\cos\varphi$ = 0.86

ESTE ESQUIMA ES NECESARIO PARA CADA PAR DE MÉNSULAS.
ES NECESARIO 3 CONJUNTOS COMO PLANO

NOTA: Se utilizará una única central para los circuitos de elevación y/o ripado–avance intercambiando las conexiones de este último circuito según necesidad.

CILINDRO DE RIPADO (COD. 203893)

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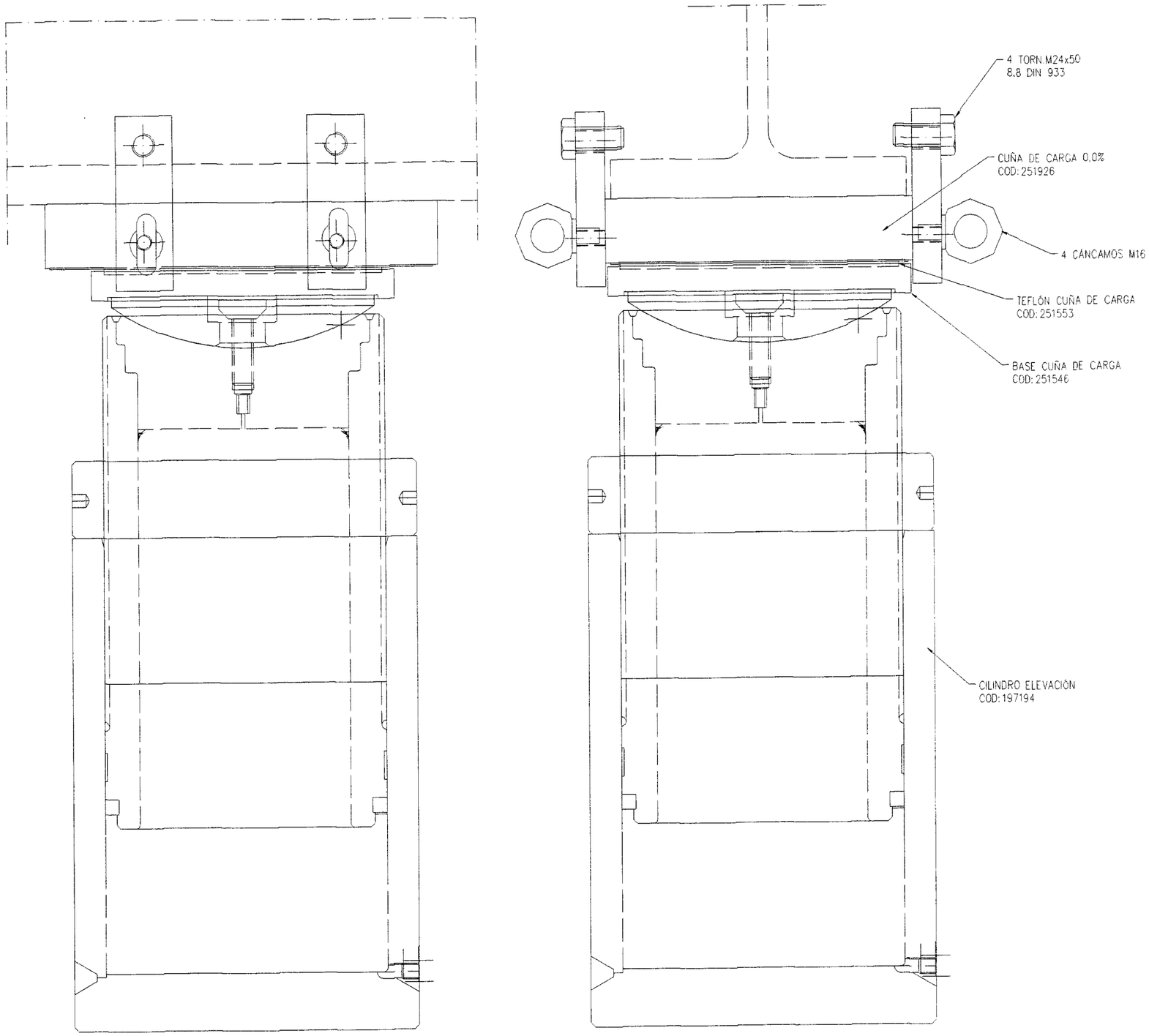
| | | | | | | |
|---|---|---|---|---|---|---|
| GIF Gestor de Infraestructuras Ferroviarias | TÍTULO: PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA L.A.V. MADRID–ZARAGOZA–BARCELONA–FRONTERA FRANCESA TRAMO:GELIDA–SANT LLORENÇ D'HORTONS | AUTOR: FERNANDEZ CONSTRUCTOR Fdo: MANUEL COSTA PEREZ | ESCALA: UNE A–3 ORIGINALES; Gráfica; 0 50m | FECHA: MARZO–2004 | TÍTULO DEL PLANO: VIADUCTO DE RIERUSSA INSTALACION HIDRAULICA AVANCE | Nº DE PLANO: 2.9.2.9.B Hoja 24 de 25 |

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GIF Gestor de Infraestructuras Ferroviarias

TÍTULO
PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO:GELIDA-SANT LLORENÇ D'HORTONS

AUTOR
FERNANDEZ CONSTRUCTOR
Fdo. MANUEL COSTA PEREZ

ESCALA
UNE A-3 ORIGINALES
Gráfica
0 50m

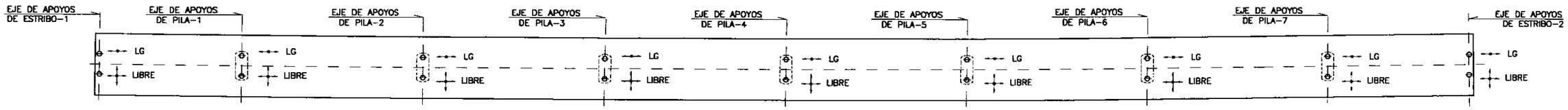
FECHA
MARZO-2004

TÍTULO DEL PLANO
VIADUCTO DE RIERUSSA
MONTAJE CUÑA DE CARGA

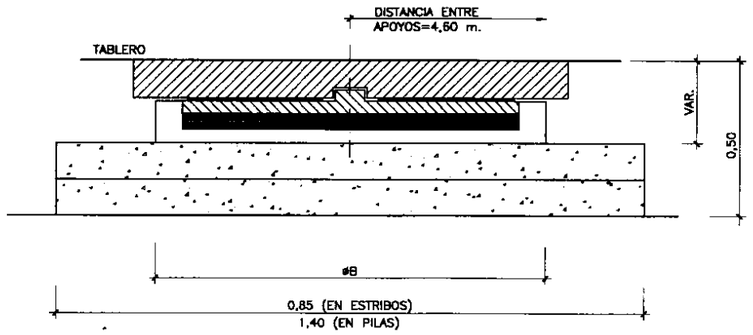
Nº DE PLANO
2.9.2.9.B
Hoja 25 de 357

# 4. APOYOS

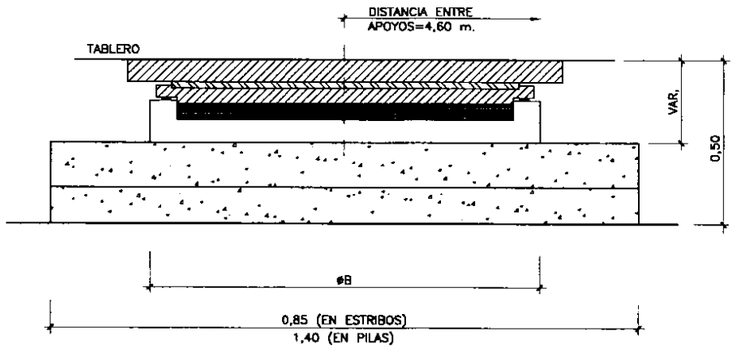
## 4.1. Definición




## PLANTA DISPOSICION DE APOYOS
ESCALA 1:1000




## DETALLE DE APOYO TIPO "POT" GUIADO EN PILAS Y ESTRIBOS
S/E




## DETALLE DE APOYO TIPO "POT" LIBRE EN PILAS Y ESTRIBOS
S/E

| UBICACION | TIPO | MAX. CARGA VERTICAL (kN) | MAX. CARGA HORIZONTAL (E.L.S.) (kN) | | MOVIMIENTO (mm) | | DIMENSION (mm) |
|---|---|---|---|---|---|---|---|
| | | | LONGITUDINAL | TRANSVERSAL | LONGITUDINAL | TRANSVERSAL | øB |
| E-1 | L.G. | 6000 | - | 600 | -300/+120 | - | 733 |
| | LIBRE | 6000 | - | - | -300/+120 | 10 | 619 |
| P-1 | L.G. | 15000 | - | 700 | -270/+100 | - | 1011 |
| | LIBRE | 15000 | - | - | -270/+100 | 10 | 978 |
| P-2 | L.G. | 17500 | - | 1300 | -230/+90 | - | 1097 |
| | LIBRE | 17500 | - | - | -230/+90 | 10 | 1056 |
| P-3 | L.G. | 17500 | - | 1300 | -190/+70 | - | 1097 |
| | LIBRE | 17500 | - | - | -190/+70 | 10 | 1056 |
| P-4 | L.G. | 17500 | - | 1300 | -150/+60 | - | 1097 |
| | LIBRE | 17500 | - | - | -150/+60 | 10 | 1056 |
| P-5 | L.G. | 17500 | - | 1300 | -110/+40 | - | 1097 |
| | LIBRE | 17500 | - | - | -110/+40 | 10 | 1056 |
| P-6 | L.G. | 17500 | - | 1300 | -80/+30 | - | 1097 |
| | LIBRE | 17500 | - | - | -80/+30 | 10 | 1056 |
| P-7 | L.G. | 15000 | - | 700 | -40/+15 | - | 1011 |
| | LIBRE | 15000 | - | - | -40/+15 | 10 | 978 |
| E-2 | L.G. | 6000 | - | 600 | -10/+10 | - | 733 |
| | LIBRE | 6000 | - | - | -10/+10 | 10 | 619 |

NOTA: VALORES NEGATIVOS INDICAN ACORTAMIENTO DE TABLERO

APOYOS-RIERUSSA

GIF Gestor de Infraestructuras Ferroviarias

TÍTULO
PROYECTO DE CONSTRUCCIÓN DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO: GELIDA-SANT LLORENÇ D'HORTONS

AUTOR
Eptisa
Fdo: FÉLIX ZAPATA PARRA

ESCALA
VARIAS
UNE A-3 ORIGINALES
Gráfica

FECHA
MARZO 2002

TÍTULO DEL PLANO

Nº DE PLANO
Hoja de

# APOYOS - Rierussa

| | Tipo - Qadm (kN) | $\phi_B$ (mm) | (kN) MAX. CARGA HOR. (ELS) LONG | TRANS. | MOVTO. (mm) LONG | TRANS |
|---|---|---|---|---|---|---|
| E-1 | LG - 6000 | 733 | – | 600 | -300/+120 | – |
| | L - 6000 | 619 | – | – | -300/+120 | 10 |
| P-1 | LG - 15000 | 1011 | – | 700 | -270/+100 | – |
| | L - 15000 | 978 | – | – | -270/+100 | 10 |
| P-2 | LG - 17500 | 1097 | – | 1300 | -230/+90 | – |
| | L - 17500 | 1056 | – | – | -230/+90 | 10 |
| P-3 | LG - 17500 | 1097 | – | 1300 | -190/+70 | – |
| | L - 17500 | 1056 | – | – | -190/+70 | 10 |
| P-4 | LG - 17500 | 1097 | – | 1300 | -150/+60 | – |
| | L - 17500 | 1056 | – | – | -150/+60 | 10 |
| P-5 | LG - 17500 | 1097 | – | 1300 | -110/+40 | – |
| | L - 17500 | 1056 | – | – | -110/+40 | 10 |
| P-6 | LG - 17500 | 1097 | – | 1300 | -80/+30 | – |
| | L - 17500 | 1056 | – | – | -80/+30 | 10 |
| P-7 | LG - 15000 | 1011 | – | 700 | -40/+15 | – |
| | L - 15000 | 978 | – | – | -40/+15 | 10 |
| E-2 | LG - 6000 | 733 | – | 600 | -10/+10 | – |
| | L - 6000 | 619 | – | – | -10/+10 | 10 |

## 4.2. Dimensionamiento

## DIMENSIONAMIENTO DE APOYOS

**PROYECTO:** LAV. Gelida Rierussa / S. Joan

**APOYO:** Estribos

**DATOS:**

| | | | | |
|---|---|---|---|---|
| Nº Apoyos | 2 | ud | F(nf) = | 1.00 |
| Distancia entre apoyos | 4.60 | m | | |
| Esviaje | 100.000 | g | | |
| Desplazamiento aprox. | 95 | mm | | |

| | RT (kN) | M (mkN) | R1 (kN) | Rnf (kN) |
|---|---|---|---|---|
| (1) Nmax | 9943.88 | 2056.70 | 5419.05 | 4524.83 |
| (2) Nmin | 3798.26 | 556.70 | 2020.15 | 1778.11 |
| (3) Mmax | 7536.84 | 8714.50 | 5662.88 | 1873.96 |

**RESULTADOS:**

| | | |
|---|---|---|
| Rmax = | 5663 | 4525 |
| Rmin = | 2020 | 1778 |

**Apoyo dispuesto:** **POT de 6000 kN**

## DIMENSIONAMIENTO DE APOYOS

**PROYECTO:** LAV. Gelida Rierussa / S. Joan

**APOYO:** Pilas Extrema

**DATOS:**

| | | | | |
|---|---|---|---|---|
| Nº Apoyos | 2 | ud | F(nf) = | 1.00 |
| Distancia entre apoyos | 4.60 | m | | |
| Esviaje | 100.000 | g | | |
| Desplazamiento aprox. | 75 | mm | | |

| | RT (kN) | M (mkN) | R1 (kN) | Rnf (kN) |
|---|---|---|---|---|
| (1) Nmax | 27478.20 | 3047.50 | 14401.60 | 13076.60 |
| (2) Nmin | 11815.35 | 467.70 | 6009.35 | 5806.00 |
| (3) Mmax | 21161.43 | 12642.80 | 13329.15 | 7832.28 |

**RESULTADOS:**

| | | |
|---|---|---|
| Rmax = | 14402 | 13077 |
| Rmin = | 6009 | 5806 |

**Apoyo dispuesto: POT de 15000 kN**

## PREDIMENSIONAMIENTO DE APOYOS

**PROYECTO:** LAV. Gelida Rierussa / S. Joan

**APOYO:** Pila Intermedia

**DATOS:**

| | | | | |
|---|---|---|---|---|
| Nº Apoyos | 2 | ud | F(nf) = | 1.00 |
| Distancia entre apoyos | 4.60 | m | | |
| Esviaje | 100.000 | g | | |
| Desplazamiento aprox. | 53 | mm | | |

| | RT (kN) | M (mkN) | R1 (kN) | Rnf (kN) |
|---|---|---|---|---|
| (1) Nmax | 28662.01 | 3423.60 | 15075.27 | 13586.74 |
| (2) Nmin | 12715.63 | 470.60 | 6460.12 | 6255.51 |
| (3) Mmax | 22266.90 | 13481.90 | 14064.30 | 8202.60 |

**RESULTADOS:**

| | | |
|---|---|---|
| Rmax = | 15075 | 13587 |
| Rmin = | 6460 | 6256 |

**Apoyo dispuesto: POT de 17500 kN**

## 4.3. Descarrilamiento

**DESCARRILAMIENTO.**

a) Situación de Proyecto II

Se considera que los trenes descarrilan en la zona del voladizo. Hay que comprobar la estabilidad general del tablero y que el voladizo pueda aguantar esta carga. Se introducen una carga lineal de valor:

$$q = 1.21 * 80 \text{ kN/m} = 96.80 \text{ kN/ml}$$

en una longitud de 20 metros.

### 4.3.1. Cargas Consideradas

## Cargas

| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 1 | sobrecarga uniforme | 1A9 | PZ=-96.8000(kN/m) |
| 1 | momento repartido | 1A9 | MX=445.2800(kNm/m) local |
| 1 | carga trapezoidal | 10 | PZ2=-96.8000(kN/m) PZ1=-96.8000(kN/m) X2=1.7000(m) X1=0.0(m) global no proyectadas absolutos |
| 1 | fuerza sobre barra | 10 | CX=756.9800(kNm) X=0.8500(m) local |
| 2 | sobrecarga uniforme | 1A9 | PZ=-96.8000(kN/m) |
| 2 | momento repartido | 1A9 | MX=-445.2800(kNm/m) local |
| 2 | carga trapezoidal | 10 | PZ2=-96.8000(kN/m) PZ1=-96.8000(kN/m) X2=1.7000(m) X1=0.0(m) global no proyectadas absolutos |
| 2 | fuerza sobre barra | 10 | CX=-756.9800(kNm) X=0.8500(m) local |
| 3 | fuerza sobre barra | 21 | CX=712.4500(kNm) X=0.8000(m) local |
| 3 | carga trapezoidal | 21 | PZ2=-96.8000(kN/m) PZ1=-96.8000(kN/m) X2=1.6000(m) X1=0.0(m) global no proyectadas absolutos |
| 3 | momento repartido | 13A20 | MX=445.2800(kNm/m) local |
| 3 | sobrecarga uniforme | 13A20 | PZ=-96.8000(kN/m) |
| 3 | fuerza sobre barra | 12 | CX=712.4500(kNm) X=1.3000(m) local |
| 3 | carga trapezoidal | 12 | PZ2=-96.8000(kN/m) PZ1=-96.8000(kN/m) X2=2.1000(m) X1=0.5000(m) global no proyectadas absolutos |
| 4 | carga trapezoidal | 12 | PZ2=-96.8000(kN/m) PZ1=-96.8000(kN/m) X2=2.1000(m) X1=0.5000(m) global no proyectadas absolutos |
| 4 | fuerza sobre barra | 12 | CX=-712.4500(kNm) X=1.3000(m) local |
| 4 | sobrecarga uniforme | 13A20 | PZ=-96.8000(kN/m) |
| 4 | momento repartido | 13A20 | MX=-445.2800(kNm/m) local |
| 4 | carga trapezoidal | 21 | PZ2=-96.8000(kN/m) PZ1=-96.8000(kN/m) X2=1.6000(m) X1=0.0(m) global no proyectadas absolutos |
| 4 | fuerza sobre barra | 21 | CX=-712.4500(kNm) X=0.8000(m) local |
| 5 | fuerza sobre barra | 41 | CX=712.4500(kNm) X=0.8000(m) local |
| 5 | carga trapezoidal | 41 | PZ2=-96.8000(kN/m) PZ1=-96.8000(kN/m) X2=1.6000(m) X1=0.0(m) global no proyectadas absolutos |
| 5 | momento repartido | 33A40 | MX=445.2800(kNm/m) local |
| 5 | sobrecarga uniforme | 33A40 | PZ=-96.8000(kN/m) |
| 5 | fuerza sobre barra | 32 | CX=712.4500(kNm) X=1.3000(m) local |
| 5 | carga trapezoidal | 32 | PZ2=-96.8000(kN/m) PZ1=-96.8000(kN/m) X2=2.1000(m) X1=0.5000(m) global no proyectadas absolutos |
| 6 | carga trapezoidal | 32 | PZ2=-96.8000(kN/m) PZ1=-96.8000(kN/m) X2=2.1000(m) X1=0.5000(m) global no proyectadas absolutos |
| 6 | fuerza sobre barra | 32 | CX=-712.4500(kNm) X=1.3000(m) local |
| 6 | sobrecarga uniforme | 33A40 | PZ=-96.8000(kN/m) |
| 6 | momento repartido | 33A40 | MX=-445.2800(kNm/m) local |



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Autor :
Dirección :

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Archivo :
Proyecto : DESCARRILAMIENTO

| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 6 | carga trapezoidal | 41 | PZ2=-96.8000(kN/m) PZ1=-96.8000(kN/m) X2=1.6000(m) X1=0.0(m) global no proyectadas absolutos |
| 6 | fuerza sobre barra | 41 | CX=-712.4500(kNm) X=0.8000(m) local |
| 7 | fuerza sobre barra | 61 | CX=712.4500(kNm) X=0.8000(m) local |
| 7 | carga trapezoidal | 61 | PZ2=-96.8000(kN/m) PZ1=-96.8000(kN/m) X2=1.6000(m) X1=0.0(m) global no proyectadas absolutos |
| 7 | momento repartido | 53A60 | MX=445.2800(kNm/m) local |
| 7 | sobrecarga uniforme | 53A60 | PZ=-96.8000(kN/m) |
| 7 | fuerza sobre barra | 52 | CX=712.4500(kNm) X=1.3000(m) local |
| 7 | carga trapezoidal | 52 | PZ2=-96.8000(kN/m) PZ1=-96.8000(kN/m) X2=2.1000(m) X1=0.5000(m) global no proyectadas absolutos |
| 8 | fuerza sobre barra | 61 | CX=-712.4500(kNm) X=0.8000(m) local |
| 8 | carga trapezoidal | 61 | PZ2=-96.8000(kN/m) PZ1=-96.8000(kN/m) X2=1.6000(m) X1=0.0(m) global no proyectadas absolutos |
| 8 | momento repartido | 53A60 | MX=-445.2800(kNm/m) local |
| 8 | sobrecarga uniforme | 53A60 | PZ=-96.8000(kN/m) |
| 8 | fuerza sobre barra | 52 | CX=-712.4500(kNm) X=1.3000(m) local |
| 8 | carga trapezoidal | 52 | PZ2=-96.8000(kN/m) PZ1=-96.8000(kN/m) X2=2.1000(m) X1=0.5000(m) global no proyectadas absolutos |
| 9 | carga trapezoidal | 72 | PZ2=-96.8000(kN/m) PZ1=-96.8000(kN/m) X2=2.1000(m) X1=0.5000(m) global no proyectadas absolutos |
| 9 | fuerza sobre barra | 72 | CX=712.4500(kNm) X=1.3000(m) local |
| 9 | sobrecarga uniforme | 73A80 | PZ=-96.8000(kN/m) |
| 9 | momento repartido | 73A80 | MX=445.2800(kNm/m) local |
| 9 | carga trapezoidal | 81 | PZ2=-96.8000(kN/m) PZ1=-96.8000(kN/m) X2=1.6000(m) X1=0.0(m) global no proyectadas absolutos |
| 9 | fuerza sobre barra | 81 | CX=712.4500(kNm) X=0.8000(m) local |
| 10 | fuerza sobre barra | 81 | CX=-712.4500(kNm) X=0.8000(m) local |
| 10 | carga trapezoidal | 81 | PZ2=-96.8000(kN/m) PZ1=-96.8000(kN/m) X2=1.6000(m) X1=0.0(m) global no proyectadas absolutos |
| 10 | momento repartido | 73A80 | MX=-445.2800(kNm/m) local |
| 10 | sobrecarga uniforme | 73A80 | PZ=-96.8000(kN/m) |
| 10 | fuerza sobre barra | 72 | CX=-712.4500(kNm) X=1.3000(m) local |
| 10 | carga trapezoidal | 72 | PZ2=-96.8000(kN/m) PZ1=-96.8000(kN/m) X2=2.1000(m) X1=0.5000(m) global no proyectadas absolutos |
| 11 | fuerza sobre barra | 101 | CX=712.4500(kNm) X=0.8000(m) local |
| 11 | carga trapezoidal | 101 | PZ2=-96.8000(kN/m) PZ1=-96.8000(kN/m) X2=1.6000(m) X1=0.0(m) global no proyectadas absolutos |
| 11 | momento repartido | 93A100 | MX=445.2800(kNm/m) local |
| 11 | sobrecarga uniforme | 93A100 | PZ=-96.8000(kN/m) |
| 11 | fuerza sobre barra | 92 | CX=712.4500(kNm) X=1.3000(m) local |
| 11 | carga trapezoidal | 92 | PZ2=-96.8000(kN/m) PZ1=-96.8000(kN/m) X2=2.1000(m) X1=0.5000(m) global no proyectadas absolutos |

| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 12 | fuerza sobre barra | 101 | CX=-712.4500(kNm) X=0.8000(m) local |
| 12 | carga trapezoidal | 101 | PZ2=-96.8000(kN/m) PZ1=-96.8000(kN/m) X2=1.6000(m) X1=0.0(m) global no proyectadas absolutos |
| 12 | momento repartido | 93A100 | MX=-445.2800(kNm/m) local |
| 12 | sobrecarga uniforme | 93A100 | PZ=-96.8000(kN/m) |
| 12 | fuerza sobre barra | 92 | CX=-712.4500(kNm) X=1.3000(m) local |
| 12 | carga trapezoidal | 92 | PZ2=-96.8000(kN/m) PZ1=-96.8000(kN/m) X2=2.1000(m) X1=0.5000(m) global no proyectadas absolutos |
| 13 | carga trapezoidal | 103 | PZ2=-96.8000(kN/m) PZ1=-96.8000(kN/m) X2=2.1000(m) X1=0.4000(m) global no proyectadas absolutos |
| 13 | fuerza sobre barra | 103 | CX=756.9800(kNm) X=1.2500(m) local |
| 13 | sobrecarga uniforme | 104A112 | PZ=-96.8000(kN/m) |
| 13 | momento repartido | 104A112 | MX=445.2800(kNm/m) local |
| 14 | carga trapezoidal | 103 | PZ2=-96.8000(kN/m) PZ1=-96.8000(kN/m) X2=2.1000(m) X1=0.4000(m) global no proyectadas absolutos |
| 14 | fuerza sobre barra | 103 | CX=-756.9800(kNm) X=1.2500(m) local |
| 14 | sobrecarga uniforme | 104A112 | PZ=-96.8000(kN/m) |
| 14 | momento repartido | 104A112 | MX=-445.2800(kNm/m) local |





## 4.3.2. Esfuerzos Obtenidos

TITULO
=======
LAV-Gelida. DESCARRILAMIENTO:1.00*G+1.0*LEV+1.00*P+1.0*DESC+0.6*GT

FICHERO DE GEOMETRIA COMPLETA
==============================
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
================================
2

| Fich | Num. Nudos | Num. barras | Num. hipotesis | NOMBRE FICHERO |
|---|---|---|---|---|
| 1 | 120 | 119 | 57 | ESFipfPI.TXT |
| 2 | 120 | 119 | 14 | ESFDESC.TXT |

| Fich | Hipotesis | Caracter | Coeficiente |
|---|---|---|---|
| 1 | 1 | 1 | 1.0 |
| 1 | 2 | 1 | 1.0 |
| 1 | 3 | 1 | 1.0 |
| 1 | 4 | 3 | 1.0 |
| 1 | 5 | 3 | 1.0 |
| 1 | 6 | 3 | 1.0 |
| 1 | 7 | 2 | 0.0 |
| 1 | 8 | 2 | 0.0 |
| 1 | 9 | 2 | 0.0 |
| 1 | 10 | 2 | 0.0 |
| 1 | 11 | 2 | 0.0 |
| 1 | 12 | 2 | 0.0 |
| 1 | 13 | 2 | 0.0 |
| 1 | 14 | 2 | 0.0 |
| 1 | 15 | 2 | 0.0 |
| 1 | 16 | 2 | 0.0 |
| 1 | 17 | 2 | 0.0 |
| 1 | 18 | 2 | 0.0 |
| 1 | 19 | 4 | 0.0 |
| 1 | 20 | 5 | 0.0 |
| 1 | 21 | 4 | 0.0 |
| 1 | 22 | 5 | 0.0 |
| 1 | 23 | 4 | 0.0 |
| 1 | 24 | 5 | 0.0 |
| 1 | 25 | 4 | 0.0 |
| 1 | 26 | 5 | 0.0 |
| 1 | 27 | 4 | 0.0 |
| 1 | 28 | 5 | 0.0 |
| 1 | 29 | 4 | 0.0 |
| 1 | 30 | 5 | 0.0 |
| 1 | 31 | 4 | 0.0 |
| 1 | 32 | 5 | 0.0 |
| 1 | 33 | 4 | 0.0 |
| 1 | 34 | 5 | 0.0 |
| 1 | 35 | 4 | 0.0 |
| 1 | 36 | 5 | 0.0 |
| 1 | 37 | 2 | 0.6 |
| 1 | 38 | 1 | 20.433 |
| 1 | 39 | 1 | 2.919 |
| 1 | 40 | 1 | 2.919 |
| 1 | 41 | 1 | 11.676 |
| 1 | 42 | 1 | 2.919 |
| 1 | 43 | 1 | 2.919 |
| 1 | 44 | 1 | 6.464 |
| 1 | 45 | 1 | 6.464 |
| 1 | 46 | 1 | 6.464 |
| 1 | 47 | 1 | 6.464 |
| 1 | 48 | 1 | 6.464 |
| 1 | 49 | 1 | 6.464 |
| 1 | 50 | 1 | 6.464 |
| 1 | 51 | 1 | 6.464 |
| 1 | 52 | 1 | 6.464 |
| 1 | 53 | 1 | 6.464 |
| 1 | 54 | 1 | 6.464 |
| 1 | 55 | 1 | 6.464 |
| 1 | 56 | 1 | 6.464 |
| 1 | 57 | 1 | 6.464 |
| 2 | 1 | 9 | 1.0 |
| 2 | 2 | 9 | 1.0 |
| 2 | 3 | 9 | 1.0 |
| 2 | 4 | 9 | 1.0 |
| 2 | 5 | 9 | 1.0 |
| 2 | 6 | 9 | 1.0 |
| 2 | 7 | 9 | 1.0 |
| 2 | 8 | 9 | 1.0 |
| 2 | 9 | 9 | 1.0 |
| 2 | 10 | 9 | 1.0 |
| 2 | 11 | 9 | 1.0 |
| 2 | 12 | 9 | 1.0 |
| 2 | 13 | 9 | 1.0 |
| 2 | 14 | 9 | 1.0 |

LAV-Gelida. DESCARRILAMIENTO:1.00*G+1.0*LEV+1.00*P+1.0*DESC+0.6*GT

| BARRA 201 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 201 | 7066.43>> | 32.71 | 0.01 | 0.0 | -0.1 | 7660.7 |
| 201 | 4554.26<< | -34.42 | 0.00 | 0.0 | 0.0 | 132.3 |
| 201 | 5852.04 | 115.13>> | 0.00 | 0.0 | 0.0 | 3083.5 |
| 201 | 4581.13 | -112.79<< | 0.00 | 0.0 | 0.0 | -2451.6 |
| 201 | 6670.31 | 31.94 | 0.01>> | 0.0 | -0.1 | 7551.6 |
| 201 | 6412.74 | -50.37 | -0.01<< | 0.0 | 0.1 | -6254.9 |
| 201 | 5387.27 | 1.51 | 0.00 | 0.0>> | 0.0 | 329.1 |
| 201 | 5227.53 | 1.45 | 0.00 | 0.0<< | 0.0 | 324.1 |
| 201 | 5386.67 | 1.65 | -0.01 | 0.0 | 0.1>> | 327.3 |
| 201 | 5226.96 | 1.77 | 0.01 | 0.0 | -0.1<< | 327.9 |
| 201 | 7066.43 | 32.71 | 0.01 | 0.0 | -0.1 | 7660.7>> |
| 201 | 5752.55 | -51.65 | -0.01 | 0.0 | 0.1 | -6436.5<< |
| 1 | 7066.43>> | 32.71 | 0.01 | 0.0 | 0.0 | 7345.4 |
| 1 | 4554.26<< | -34.42 | 0.00 | 0.0 | 0.0 | 463.4 |
| 1 | 5852.04 | 115.13>> | 0.00 | 0.0 | 0.0 | 1974.4 |
| 1 | 4581.13 | -112.79<< | 0.00 | 0.0 | 0.0 | -1365.7 |
| 1 | 6670.31 | 31.94 | 0.01>> | 0.0 | 0.0 | 7243.8 |
| 1 | 6412.74 | -50.37 | -0.01<< | 0.0 | 0.0 | -5770.2 |
| 1 | 5387.27 | 1.51 | 0.00 | 0.0>> | 0.0 | 314.3 |
| 1 | 5227.53 | 1.45 | 0.00 | 0.0<< | 0.0 | 309.9 |
| 1 | 5387.27 | 1.51 | 0.00 | 0.0 | 0.0>> | 314.3 |
| 1 | 5227.53 | 1.45 | 0.00 | 0.0 | 0.0<< | 309.9 |
| 1 | 7066.43 | 32.71 | 0.01 | 0.0 | 0.0 | 7345.4>> |
| 1 | 5752.55 | -51.65 | -0.01 | 0.0 | 0.0 | -5939.5<< |

| BARRA 202 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 202 | 18472.05>> | 209.95 | 0.00 | 0.0 | 0.0 | -1916.8 |
| 202 | 12772.39<< | 16.42 | 0.00 | 0.0 | 0.0 | 816.7 |
| 202 | 14853.92 | 214.83>> | 0.00 | 0.0 | 0.0 | -2249.7 |
| 202 | 18258.12 | -224.53<< | 0.00 | 0.0 | 0.0 | 3148.1 |
| 202 | 15058.20 | -5.32 | 0.00>> | 0.0 | 0.0 | 510.4 |
| 202 | 15250.26 | -5.17 | 0.00<< | 0.0 | 0.0 | 500.6 |
| 202 | 15058.20 | -5.32 | 0.00 | 0.0>> | 0.0 | 510.4 |
| 202 | 15250.26 | -5.17 | 0.00 | 0.0<< | 0.0 | 500.6 |
| 202 | 15058.20 | -5.32 | 0.00 | 0.0 | 0.0>> | 510.4 |
| 202 | 15250.26 | -5.17 | 0.00 | 0.0 | 0.0<< | 500.6 |
| 202 | 16487.95 | 114.13 | 0.00 | 0.0 | 0.0 | 3724.5>> |
| 202 | 13022.68 | -125.67 | 0.00 | 0.0 | 0.0 | -2778.3<< |
| 17 | 18472.05>> | 209.95 | 0.00 | 0.0 | 0.0 | -5825.3 |
| 17 | 12772.39<< | 16.42 | 0.00 | 0.0 | 0.0 | 513.6 |
| 17 | 14853.92 | 214.83>> | 0.00 | 0.0 | 0.0 | -6249.2 |
| 17 | 18258.12 | -224.53<< | 0.00 | 0.0 | 0.0 | 7333.8 |
| 17 | 15058.20 | -5.32 | 0.00>> | 0.0 | 0.0 | 612.2 |
| 17 | 15250.26 | -5.17 | 0.00<< | 0.0 | 0.0 | 599.7 |
| 17 | 15058.20 | -5.32 | 0.00 | 0.0>> | 0.0 | 612.2 |
| 17 | 15250.26 | -5.17 | 0.00 | 0.0<< | 0.0 | 599.7 |
| 17 | 15058.20 | -5.32 | 0.00 | 0.0 | 0.0>> | 612.2 |
| 17 | 15250.26 | -5.17 | 0.00 | 0.0 | 0.0<< | 599.7 |
| 17 | 18258.12 | -224.53 | 0.00 | 0.0 | 0.0 | 7333.8>> |
| 17 | 14853.92 | 214.83 | 0.00 | 0.0 | 0.0 | -6249.2<< |

LAV-Gelida. DESCARRILAMIENTO:1.00*G+1.0*LEV+1.00*P+1.0*DESC+0.6*GT

| BARRA 203 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 203 | 19244.54>> | -113.13 | 0.00 | 0.0 | 0.0 | 5389.2 |
| 203 | 13498.66<< | -49.21 | 0.00 | 0.0 | 0.0 | -537.0 |
| 203 | 19242.28 | 146.24>> | 0.00 | 0.0 | 0.0 | -2960.1 |
| 203 | 15504.23 | -122.51<< | 0.00 | 0.0 | 0.0 | 4709.7 |
| 203 | 16001.19 | 12.87 | 0.00>> | 0.0 | 0.0 | 960.8 |
| 203 | 15958.09 | 12.60 | 0.00<< | 0.0 | 0.0 | 941.3 |
| 203 | 16001.19 | 12.87 | 0.00 | 0.0>> | 0.0 | 960.8 |
| 203 | 15958.09 | 12.60 | 0.00 | 0.0<< | 0.0 | 941.3 |
| 203 | 16001.19 | 12.87 | 0.00 | 0.0 | 0.0>> | 960.8 |
| 203 | 15958.09 | 12.60 | 0.00 | 0.0 | 0.0<< | 941.3 |
| 203 | 19244.54 | -113.13 | 0.00 | 0.0 | 0.0 | 5389.2>> |
| 203 | 15501.97 | 136.86 | 0.00 | 0.0 | 0.0 | -3639.6<< |
| 37 | 19244.54>> | -113.13 | 0.00 | 0.0 | 0.0 | 7667.6 |
| 37 | 13498.66<< | -49.21 | 0.00 | 0.0 | 0.0 | 454.6 |
| 37 | 19242.28 | 146.24>> | 0.00 | 0.0 | 0.0 | -5902.9 |
| 37 | 15504.23 | -122.51<< | 0.00 | 0.0 | 0.0 | 7176.9 |
| 37 | 16001.19 | 12.87 | 0.00>> | 0.0 | 0.0 | 702.8 |
| 37 | 15958.09 | 12.60 | 0.00<< | 0.0 | 0.0 | 688.7 |
| 37 | 16001.19 | 12.87 | 0.00 | 0.0>> | 0.0 | 702.8 |
| 37 | 15958.09 | 12.60 | 0.00 | 0.0<< | 0.0 | 688.7 |
| 37 | 16001.19 | 12.87 | 0.00 | 0.0 | 0.0>> | 702.8 |
| 37 | 15958.09 | 12.60 | 0.00 | 0.0 | 0.0<< | 688.7 |
| 37 | 19244.54 | -113.13 | 0.00 | 0.0 | 0.0 | 7667.6>> |
| 37 | 15501.97 | 136.86 | 0.00 | 0.0 | 0.0 | -6393.6<< |

| BARRA 204 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 204 | 18906.40>> | -221.22 | 0.00 | 0.0 | 0.0 | -1872.7 |
| 204 | 13414.20<< | -9.72 | 0.00 | 0.0 | 0.0 | 189.6 |
| 204 | 15294.58 | 190.48>> | 0.00 | 0.0 | 0.0 | 1874.4 |
| 204 | 18884.96 | -221.56<< | 0.00 | 0.0 | 0.0 | -1872.5 |
| 204 | 15690.47 | -17.14 | 0.00>> | 0.0 | 0.0 | 2.3 |
| 204 | 15711.91 | -16.80 | 0.00<< | 0.0 | 0.0 | 2.1 |
| 204 | 15690.47 | -17.14 | 0.00 | 0.0>> | 0.0 | 2.3 |
| 204 | 15711.91 | -16.80 | 0.00 | 0.0<< | 0.0 | 2.1 |
| 204 | 15690.47 | -17.14 | 0.00 | 0.0 | 0.0>> | 2.3 |
| 204 | 15711.91 | -16.80 | 0.00 | 0.0 | 0.0<< | 2.1 |
| 204 | 18884.30 | 178.46 | 0.00 | 0.0 | 0.0 | 1880.7>> |
| 204 | 15295.23 | -209.54 | 0.00 | 0.0 | 0.0 | -1878.8<< |
| 57 | 18906.40>> | -221.22 | 0.00 | 0.0 | 0.0 | 7777.4 |
| 57 | 13414.20<< | -9.72 | 0.00 | 0.0 | 0.0 | 612.1 |
| 57 | 15294.58 | 190.48>> | 0.00 | 0.0 | 0.0 | -6437.7 |
| 57 | 18884.96 | -221.56<< | 0.00 | 0.0 | 0.0 | 7792.5 |
| 57 | 15690.47 | -17.14 | 0.00>> | 0.0 | 0.0 | 748.5 |
| 57 | 15711.91 | -16.80 | 0.00<< | 0.0 | 0.0 | 733.4 |
| 57 | 15690.47 | -17.14 | 0.00 | 0.0>> | 0.0 | 748.5 |
| 57 | 15711.91 | -16.80 | 0.00 | 0.0<< | 0.0 | 733.4 |
| 57 | 15690.47 | -17.14 | 0.00 | 0.0 | 0.0>> | 748.5 |
| 57 | 15711.91 | -16.80 | 0.00 | 0.0 | 0.0<< | 733.4 |
| 57 | 18884.96 | -221.56 | 0.00 | 0.0 | 0.0 | 7792.5>> |
| 57 | 15294.58 | 190.48 | 0.00 | 0.0 | 0.0 | -6437.7<< |

LAV-Gelida. DESCARRILAMIENTO:1.00*G+1.0*LEV+1.00*P+1.0*DESC+0.6*GT

| BARRA 205 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 205 | 19624.44>> | 133.78 | 0.00 | 0.0 | 0.0 | -3012.6 |
| 205 | 13878.14<< | 66.23 | 0.00 | 0.0 | 0.0 | 1690.6 |
| 205 | 19624.44 | 133.78>> | 0.00 | 0.0 | 0.0 | -3012.6 |
| 205 | 15880.11 | -110.04<< | 0.00 | 0.0 | 0.0 | 4675.8 |
| 205 | 16381.42 | 13.46 | 0.00>> | 0.0 | 0.0 | 932.4 |
| 205 | 16338.61 | 13.19 | 0.00<< | 0.0 | 0.0 | 912.8 |
| 205 | 16381.42 | 13.46 | 0.00 | 0.0>> | 0.0 | 932.4 |
| 205 | 16338.61 | 13.19 | 0.00 | 0.0<< | 0.0 | 912.8 |
| 205 | 16381.42 | 13.46 | 0.00 | 0.0 | 0.0>> | 932.4 |
| 205 | 16338.61 | 13.19 | 0.00 | 0.0 | 0.0<< | 912.8 |
| 205 | 19623.24 | -100.72 | 0.00 | 0.0 | 0.0 | 5360.5>> |
| 205 | 15881.32 | 124.47 | 0.00 | 0.0 | 0.0 | -3697.3<< |
| 77 | 19624.44>> | 133.78 | 0.00 | 0.0 | 0.0 | -5907.2 |
| 77 | 13878.14<< | 66.23 | 0.00 | 0.0 | 0.0 | 257.0 |
| 77 | 19624.44 | 133.78>> | 0.00 | 0.0 | 0.0 | -5907.2 |
| 77 | 15880.11 | -110.04<< | 0.00 | 0.0 | 0.0 | 7054.9 |
| 77 | 16381.42 | 13.46 | 0.00>> | 0.0 | 0.0 | 640.2 |
| 77 | 16338.61 | 13.19 | 0.00<< | 0.0 | 0.0 | 626.4 |
| 77 | 16381.42 | 13.46 | 0.00 | 0.0>> | 0.0 | 640.2 |
| 77 | 16338.61 | 13.19 | 0.00 | 0.0<< | 0.0 | 626.4 |
| 77 | 16381.42 | 13.46 | 0.00 | 0.0 | 0.0>> | 640.2 |
| 77 | 16338.61 | 13.19 | 0.00 | 0.0 | 0.0<< | 626.4 |
| 77 | 19623.24 | -100.72 | 0.00 | 0.0 | 0.0 | 7538.2>> |
| 77 | 15881.32 | 124.47 | 0.00 | 0.0 | 0.0 | -6390.5<< |

LAV-Gelida. DESCARRILAMIENTO:1.00*G+1.0*LEV+1.00*P+1.0*DESC+0.6*GT

| BARRA 207 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 207 | 6686.99>> | -28.36 | 0.00 | 0.0 | 0.0 | -6771.9 |
| 207 | 4171.54<< | 12.22 | 0.00 | 0.0 | 0.0 | -33.7 |
| 207 | 5416.58 | 131.87>> | 0.00 | 0.0 | 0.0 | 3552.4 |
| 207 | 4255.46 | -124.30<< | 0.00 | 0.0 | 0.0 | -2837.8 |
| 207 | 5005.48 | 4.16 | 0.00>> | 0.0 | 0.0 | 426.5 |
| 207 | 4845.91 | 4.04 | 0.00<< | 0.0 | 0.0 | 420.5 |
| 207 | 5005.48 | 4.16 | 0.00 | 0.0>> | 0.0 | 426.5 |
| 207 | 4845.91 | 4.04 | 0.00 | 0.0<< | 0.0 | 420.5 |
| 207 | 5005.48 | 4.16 | 0.00 | 0.0 | 0.0>> | 426.5 |
| 207 | 4845.91 | 4.04 | 0.00 | 0.0 | 0.0<< | 420.5 |
| 207 | 6587.29 | 62.26 | 0.00 | 0.0 | 0.0 | 7300.2>> |
| 207 | 5468.92 | -32.68 | 0.00 | 0.0 | 0.0 | -7104.2<< |
| 113 | 6686.99>> | -28.36 | 0.00 | 0.0 | 0.0 | -6442.8 |
| 113 | 4171.54<< | 12.22 | 0.00 | 0.0 | 0.0 | -176.5 |
| 113 | 5416.58 | 131.87>> | 0.00 | 0.0 | 0.0 | 2018.0 |
| 113 | 4255.46 | -124.30<< | 0.00 | 0.0 | 0.0 | -1392.9 |
| 113 | 5005.48 | 4.16 | 0.00>> | 0.0 | 0.0 | 377.4 |
| 113 | 4845.91 | 4.04 | 0.00<< | 0.0 | 0.0 | 372.7 |
| 113 | 5005.48 | 4.16 | 0.00 | 0.0>> | 0.0 | 377.4 |
| 113 | 4845.91 | 4.04 | 0.00 | 0.0<< | 0.0 | 372.7 |
| 113 | 5005.48 | 4.16 | 0.00 | 0.0 | 0.0>> | 377.4 |
| 113 | 4845.91 | 4.04 | 0.00 | 0.0 | 0.0<< | 372.7 |
| 113 | 6587.29 | 62.26 | 0.00 | 0.0 | 0.0 | 6575.4>> |
| 113 | 5468.92 | -32.68 | 0.00 | 0.0 | 0.0 | -6724.9<< |

| BARRA 206 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 206 | 18810.15>> | -251.02 | 0.00 | 0.0 | 0.0 | 1342.9 |
| 206 | 13117.05<< | -22.72 | 0.00 | 0.0 | 0.0 | -383.2 |
| 206 | 15171.86 | 234.22>> | 0.00 | 0.0 | 0.0 | -719.0 |
| 206 | 18618.44 | -251.24<< | 0.00 | 0.0 | 0.0 | 1349.7 |
| 206 | 15400.11 | -9.56 | 0.00>> | 0.0 | 0.0 | 336.1 |
| 206 | 15591.82 | -9.33 | 0.00<< | 0.0 | 0.0 | 329.3 |
| 206 | 15400.11 | -9.56 | 0.00 | 0.0>> | 0.0 | 336.1 |
| 206 | 15591.82 | -9.33 | 0.00 | 0.0<< | 0.0 | 329.3 |
| 206 | 15400.11 | -9.56 | 0.00 | 0.0 | 0.0>> | 336.1 |
| 206 | 15591.82 | -9.33 | 0.00 | 0.0 | 0.0<< | 329.3 |
| 206 | 16790.07 | 71.00 | 0.00 | 0.0 | 0.0 | 3130.5>> |
| 206 | 13406.63 | -85.40 | 0.00 | 0.0 | 0.0 | -2527.2<< |
| 97 | 18810.15>> | -251.02 | 0.00 | 0.0 | 0.0 | 7273.5 |
| 97 | 13117.05<< | -22.72 | 0.00 | 0.0 | 0.0 | 152.6 |
| 97 | 15171.86 | 234.22>> | 0.00 | 0.0 | 0.0 | -6254.7 |
| 97 | 18618.44 | -251.24<< | 0.00 | 0.0 | 0.0 | 7285.7 |
| 97 | 15400.11 | -9.56 | 0.00>> | 0.0 | 0.0 | 561.0 |
| 97 | 15591.82 | -9.33 | 0.00<< | 0.0 | 0.0 | 548.8 |
| 97 | 15400.11 | -9.56 | 0.00 | 0.0>> | 0.0 | 561.0 |
| 97 | 15591.82 | -9.33 | 0.00 | 0.0<< | 0.0 | 548.8 |
| 97 | 15400.11 | -9.56 | 0.00 | 0.0 | 0.0>> | 561.0 |
| 97 | 15591.82 | -9.33 | 0.00 | 0.0 | 0.0<< | 548.8 |
| 97 | 18618.44 | -251.24 | 0.00 | 0.0 | 0.0 | 7285.7>> |
| 97 | 15171.86 | 234.22 | 0.00 | 0.0 | 0.0 | -6254.7<< |

## 4.3.3. Comprobación de Estabilidad

### Descarrilamiento: Comprobación de estabilidad

PROYECTO GELIDA

**APOYO:** Estribos Nudo 1

**DATOS:**

| | | | | |
|---|---|---|---|---|
| Nº Apoyos | 2 | ud | F(nf) = | 1.00 |
| Distancia entre apoyos | 4.60 | m | | |
| Esviaje | 100.000 | g | | |
| Desplazamiento aprox | 95 | mm | | |

| | RT (kN) | M (mkN) | R1 (kN) | Rnf (kN) |
|---|---|---|---|---|
| (1) Hipótesis 1 | 7066.43 | 7660.70 | 5198.58 | 1867.85 |
| (2) Hipótesis 2 | 5468.92 | 7104.20 | 4278.85 | 1190.07 |

**RESULTADOS:**

| | | |
|---|---|---|
| Rmax = | 5199 | 1868 |
| Rmin = | 4279 | 1190 |

**REACCION MINIMA EN APOYO:** 1190

## Descarrilamiento: Comprobación de estabilidad

**PROYECTO** GELIDA

**APOYO:** Pilas Extremas

**DATOS:**

| | | | | |
|---|---|---|---|---|
| Nº Apoyos | 2 | ud | F(nf) = | 1.00 |
| Distancia entre apoyos | 4.60 | m | | |
| Esviaje | 100.000 | g | | |
| Desplazamiento aprox | 75 | mm | | |

| | RT (kN) | M (mkN) | R1 (kN) | Rnf (kN) |
|---|---|---|---|---|
| (1) Hipótesis 1 | 13878.14 | 1690.60 | 7306.59 | 6571.55 |
| (2) Hipótesis 2 | 19244.54 | 5389.20 | 10793.84 | 8450.70 |

**RESULTADOS:**

| | | |
|---|---|---|
| Rmax = | 10794 | 8451 |
| Rmin = | 7307 | 6572 |

**REACCIÓN MÍNIMA EN APOYO:** 6572

## Descarrilamiento: Comprobación de estabilidad

**PROYECTO** GELIDA

**APOYO:** Pilas centrales

**DATOS:**

| | | | | |
|---|---|---|---|---|
| Nº Apoyos | 2 | ud | F(nf) = | 1.00 |
| Distancia entre apoyos | 4.60 | m | | |
| Esviaje | 100.000 | g | | |
| Desplazamiento aprox | 53 | mm | | |

| | RT (kN) | M (mkN) | R1 (kN) | Rnf (kN) |
|---|---|---|---|---|
| (1) Hipótesis 1 | 13878.14 | 1690.60 | 7306.59 | 6571.55 |
| (2) Hipótesis 2 | 19623.24 | 5360.50 | 10976.95 | 8646.29 |

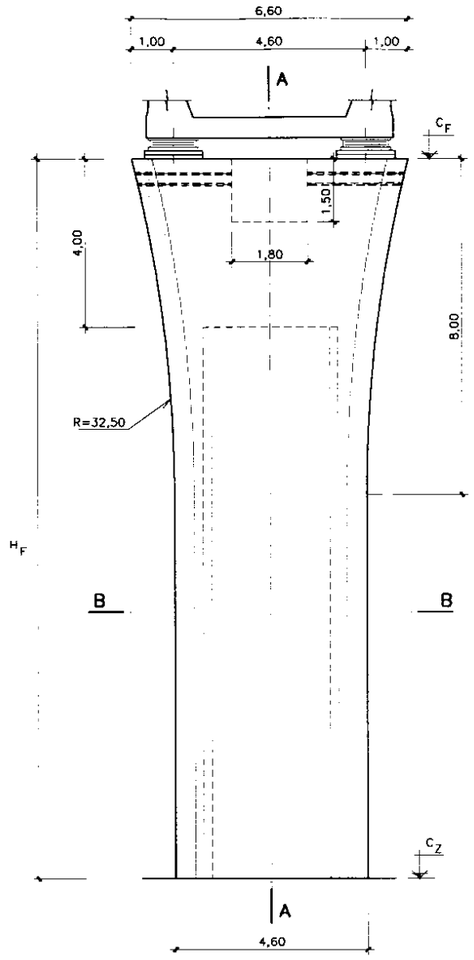
**RESULTADOS:**

| | | |
|---|---|---|
| Rmax = | 10977 | 8646 |
| Rmin = | 7307 | 6572 |

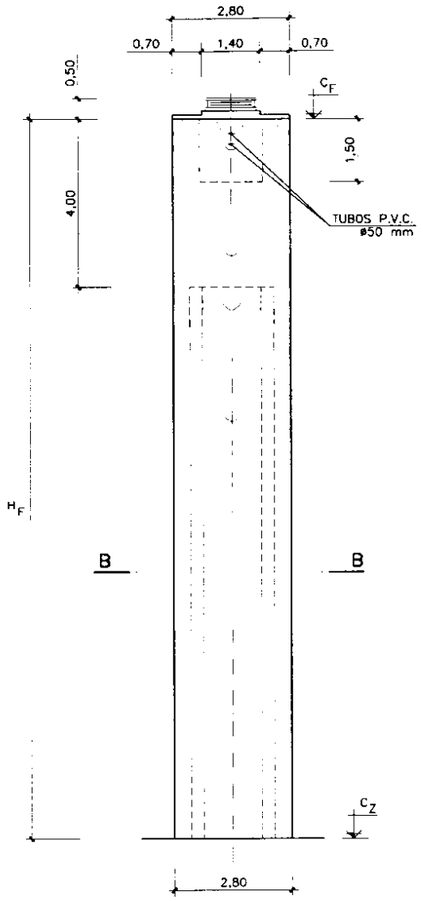
**REACCIÓN MÍNIMA EN APOYO:** 6572

# 5. PILAS

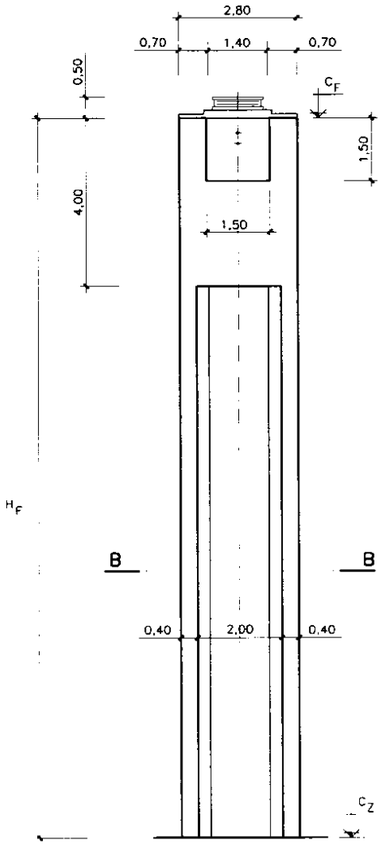
## 5.1. Definición



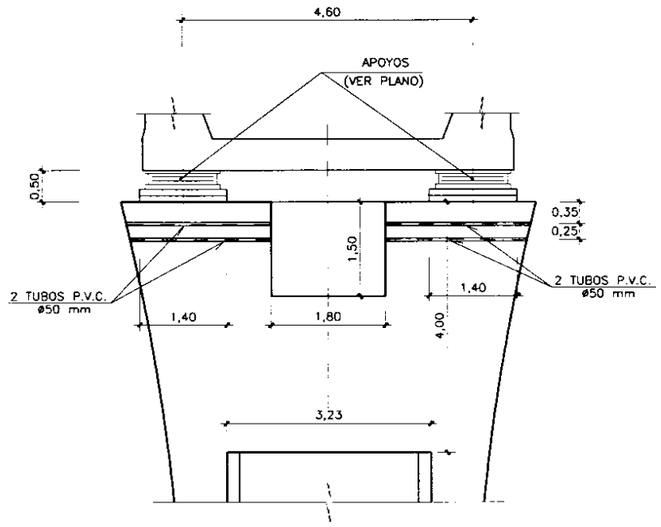

ALZADO FRONTAL DE PILAS 1 Y 2
ESCALA 1:150



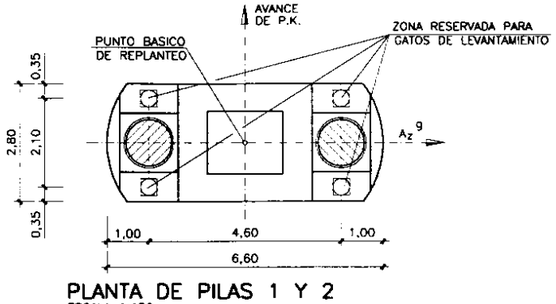

ALZADO LATERAL DE PILAS 1 Y 2
ESCALA 1:150




SECCION A–A
ESCALA 1:150




DETALLE–1
ESCALA 1:100



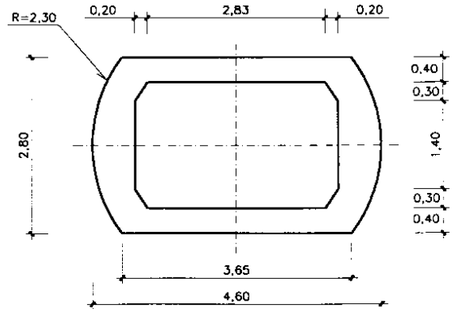

PLANTA DE PILAS 1 Y 2
ESCALA 1:150

PUNTO BASICO DE REPLANTEO

| PILA | X | Y | $Az^g$ |
|---|---|---|---|
| PILA–1 | 404.527,909 | 4.590.572,823 | 158,4908 |
| PILA–2 | 404.561,247 | 4.590.598,369 | 158,2580 |

DIMENSIONES Y COTAS DE ALTURA

| PILA | $C_F$ | $C_Z$ | $H_F$ |
|---|---|---|---|
| PILA–1 | 129,369 | 113,00 | 16,369 |
| PILA–2 | 128,941 | 110,80 | 18,141 |




SECCION B–B
ESCALA 1:100

NOTA DE MATERIALES

NIVELES DE CONTROL Y COEFICIENTES DE SEGURIDAD:

- Acero para armar, control normal ($\delta$ = 1,15)
- Hormigon control estadistico ($\delta$ = 1,50)
- Ejecucion (Tablero y Pilas) nivel intenso
- Ejecucion (Resto obra) nivel intenso
- Los coeficientes de seguridad de las acciones son los correspondientes a la IAP–98 y EC–1

ACERO (ARMADURAS):

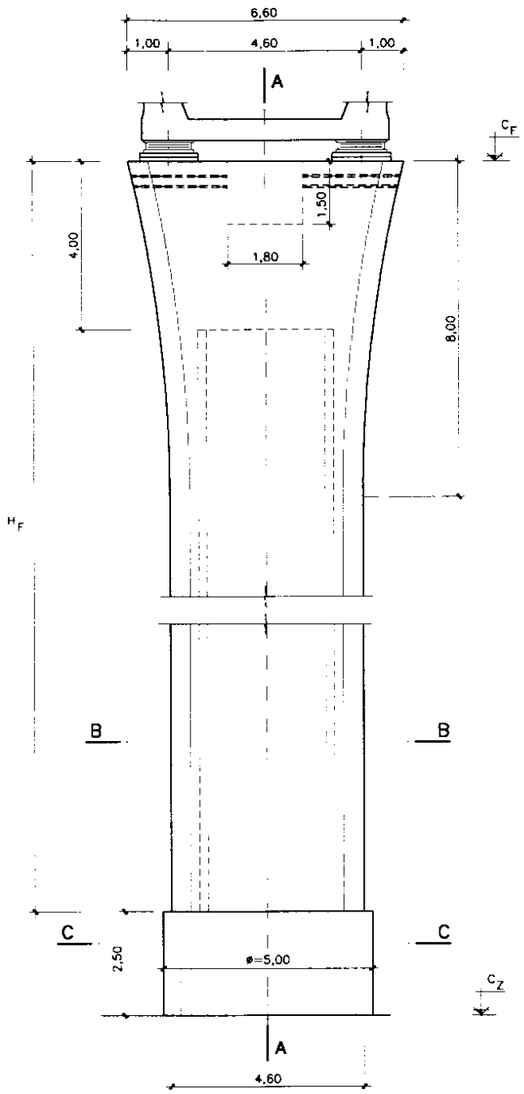
- B500S fy = 500 N/mm2

PARA ANCLAJES Y SOLAPES, SE SEGUIRAN LAS PRESCRIPCIONES CONTENIDAS EN EL ARTICULO 66 DE LA INSTRUCCION EHE
LOS RECUBRIMIENTOS NOMINALES SE DETERMINARAN SEGUN EL ARTICULO 37 DE LA INSTRUCCION EHE PARA UN AMBIENTE IIb y IIa.

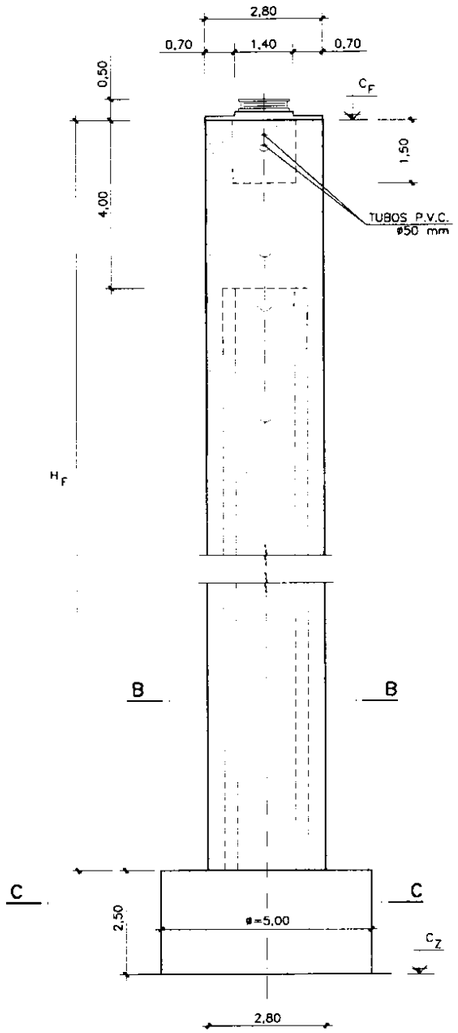
HORMIGONES:

| HORMIGON TIPO | fck (N/mm2) | ELEMENTO ESTRUCTURAL | RECUBRIMIENTO NOMINAL |
|---|---|---|---|
| HP–40 B 20 IIb | 40 | Tablero | 3,5 cm. |
| HA–30 B 20 IIb | 30 | Alzados de Pilas | 3,5 cm. |
| HA–25 B 20 IIb | 25 | Alzados de Estribos | 3,5 cm. |
| HA–25 B 20 IIa | 25 | Zapatas, Encepados y Pilotes | 3,5 cm. |
| HM–15 | 15 | Capas de regularizacion | |

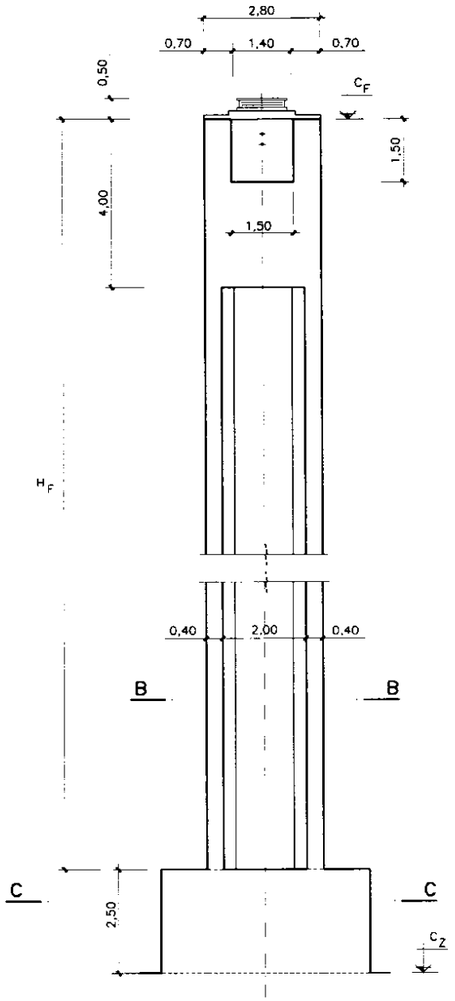
.PIL12DEF–RIERUSSA



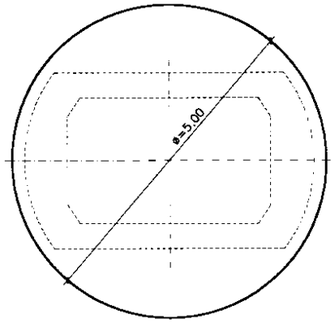

ALZADO FRONTAL DE PILAS 3 Y 4
ESCALA 1:150



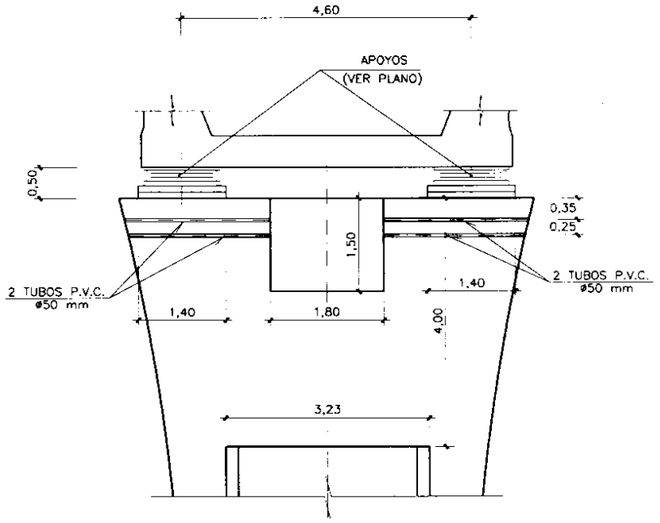

ALZADO LATERAL DE PILAS 3 Y 4
ESCALA 1:150



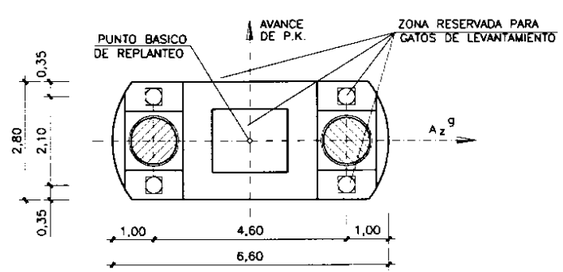

SECCION A-A
ESCALA 1:150




SECCION C-C
ESCALA 1:100




DETALLE-1
ESCALA 1:100



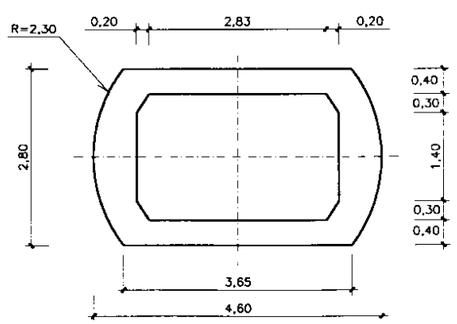

PLANTA DE PILAS 3 Y 4
ESCALA 1:150

PUNTO BASICO DE REPLANTEO

| PILA | X | Y | $Az^g$ |
|---|---|---|---|
| PILA-3 | 404.594,490 | 4.590.624,037 | 158,0252 |
| PILA-4 | 404.627,640 | 4.590.649,827 | 157,7924 |

DIMENSIONES Y COTAS DE ALTURA

| PILA | $C_F$ | $C_Z$ | $H_F$ |
|---|---|---|---|
| PILA-3 | 128,557 | 87,00 | 39,057 |
| PILA-4 | 128,213 | 87,00 | 38,713 |




SECCION B-B
ESCALA 1:100

NOTA DE MATERIALES

NIVELES DE CONTROL Y COEFICIENTES DE SEGURIDAD:

- Acero para armar, control normal ($\delta$ = 1,15)
- Hormigon control estadistico ($\delta$ = 1,50)
- Ejecucion (Tablero y Pilas) nivel intenso
- Ejecucion (Resto obra) nivel intenso
- Los coeficientes de seguridad de las acciones son los correspondientes a la IAP-98 y EC-1

ACERO (ARMADURAS):

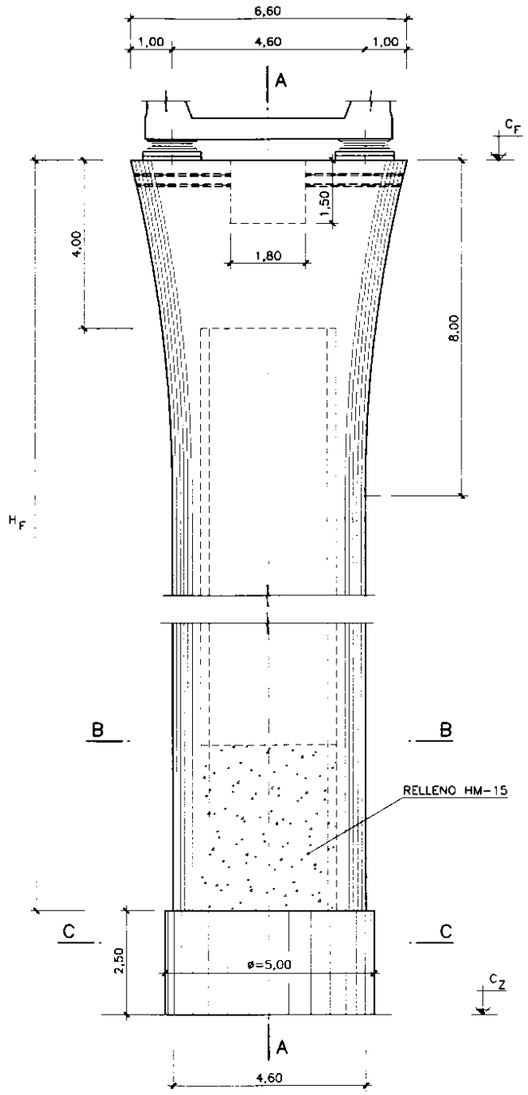
- B500S fy = 500 N/mm2

PARA ANCLAJES Y SOLAPES, SE SEGUIRAN LAS PRESCRIPCIONES CONTENIDAS EN EL ARTICULO 66 DE LA INSTRUCCION EHE
LOS RECUBRIMIENTOS NOMINALES SE DETERMINARAN SEGUN EL ARTICULO 37 DE LA INSTRUCCION EHE PARA UN AMBIENTE IIb y IIa.

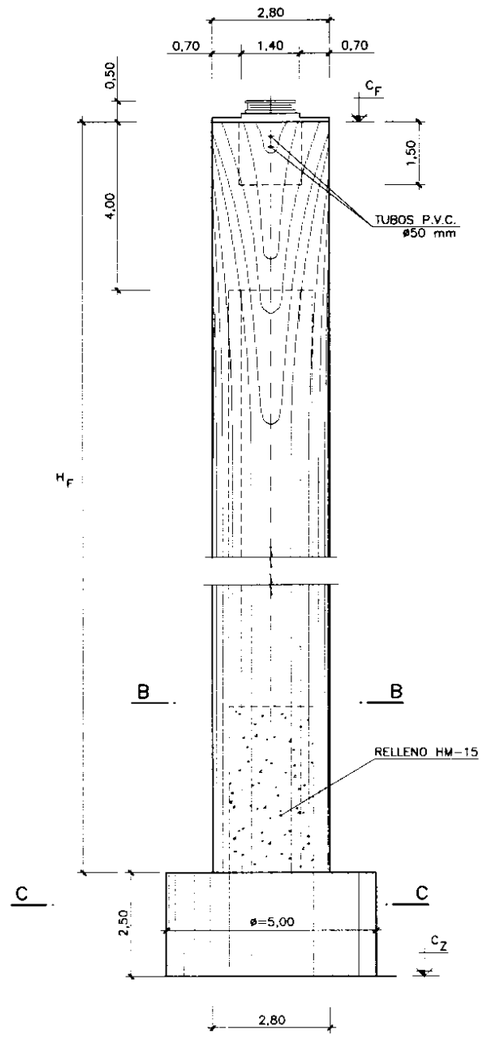
HORMIGONES:

| HORMIGON TIPO | fck (N/mm2) | ELEMENTO ESTRUCTURAL | RECUBRIMIENTO NOMINAL |
|---|---|---|---|
| HP-40 B 20 IIb | 40 | Tablero | 3,5 cm. |
| HA-30 B 20 IIb | 30 | Alzados de Pilas | 3,5 cm. |
| HA-25 B 20 IIb | 25 | Alzados de Estribos | 3,5 cm. |
| HA-25 B 20 IIa | 25 | Zapatas, Encepados y Pilotes | 3,5 cm. |
| HM-15 | 15 | Capas de regularizacion | |

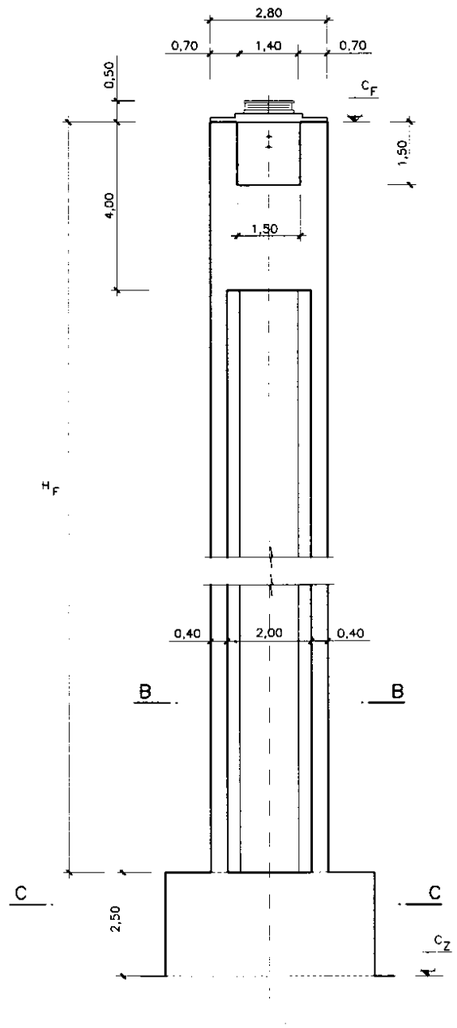
.PIL34DEF-RIERUSSA



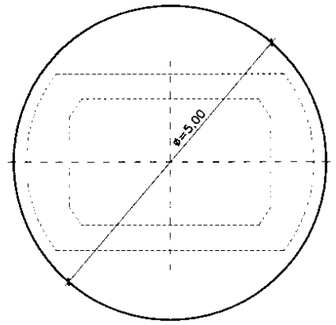

ALZADO FRONTAL DE PILAS 5 ,6 Y 7
ESCALA 1:150



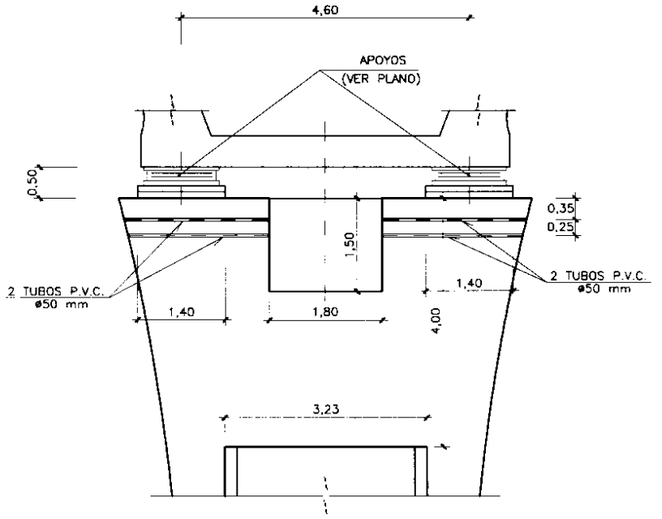

ALZADO LATERAL DE PILAS 5,6 Y 7
ESCALA 1:150



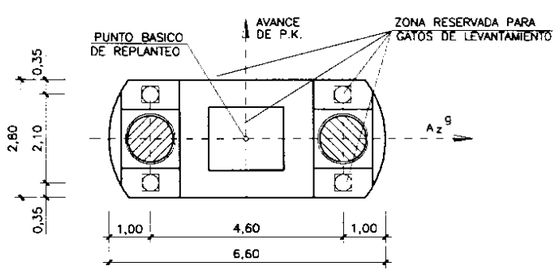

SECCION A–A
ESCALA 1:150




SECCION C–C
ESCALA 1:100




DETALLE–1
ESCALA 1:100



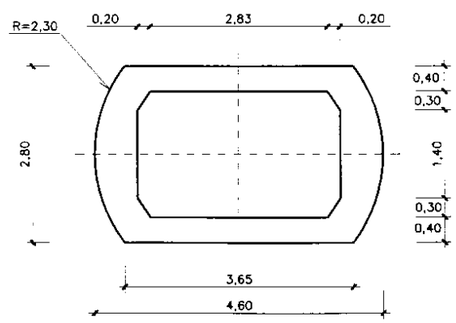

PLANTA DE PILAS 5,6 Y 7
ESCALA 1:150

PUNTO BASICO DE REPLANTEO

| PILA | X | Y | $Az^g$ |
|---|---|---|---|
| PILA–5 | 404.660,695 | 4.590.675,738 | 157,5597 |
| PILA–6 | 404.693,655 | 4.590.701,769 | 157,3269 |
| PILA–7 | 404.726,520 | 4.590.727,921 | 157,0941 |

DIMENSIONES Y COTAS DE ALTURA

| PILA | $C_F$ | $C_Z$ | $H_F$ |
|---|---|---|---|
| PILA–5 | 127,877 | 88,50 | 36,877 |
| PILA–6 | 127,541 | 101,30 | 24,04 |
| PILA–7 | 127,205 | 101,00 | 23,705 |




SECCION B–B
ESCALA 1:100

NOTA DE MATERIALES

NIVELES DE CONTROL Y COEFICIENTES DE SEGURIDAD:

- Acero para armar, control normal ($\delta$ = 1,15)
- Hormigon control estadistico ($\delta$ = 1,50)
- Ejecucion (Tablero y Pilas) nivel intenso
- Ejecucion (Resto obra) nivel intenso
- Los coeficientes de seguridad de las acciones son los correspondientes a la IAP–98 y EC–1

ACERO (ARMADURAS):

- B500S fy = 500 N/mm2

PARA ANCLAJES Y SOLAPES, SE SEGUIRAN LAS PRESCRIPCIONES CONTENIDAS EN EL ARTICULO 66 DE LA INSTRUCCION EHE

LOS RECUBRIMIENTOS NOMINALES SE DETERMINARAN SEGUN EL ARTICULO 37 DE LA INSTRUCCION EHE PARA UN AMBIENTE IIb y IIa.

HORMIGONES:

| HORMIGON TIPO | fck (N/mm2) | ELEMENTO ESTRUCTURAL | RECUBRIMIENTO NOMINAL |
|---|---|---|---|
| HP–40 B 20 IIb | 40 | Tablero | 3,5 cm. |
| HA–30 B 20 IIb | 30 | Alzados de Pilas | 3,5 cm. |
| HA–25 B 20 IIb | 25 | Alzados de Estribos | 3,5 cm. |
| HA–25 B 20 IIa | 25 | Zapatas, Encepados y Pilotes | 3,5 cm. |
| HM–15 | 15 | Capas de regularizacion | |

.PIL567DEF–RIERUSSA

Seccion: PGELI

Numero de contornos poligonales: 2
Numero aligeramientos circulares: 0

Contorno 1 (exterior):

| vertice | x | y |
|---|---|---|
| 1 | 1.8250 | 1.4000 |
| 2 | 2.1780 | 0.7390 |
| 3 | 2.3000 | 0.0000 |
| 4 | 2.1780 | -0.7390 |
| 5 | 1.8250 | -1.4000 |
| 6 | -1.8250 | -1.4000 |
| 7 | -2.1780 | -0.7390 |
| 8 | -2.3000 | 0.0000 |
| 9 | -2.1780 | 0.7390 |
| 10 | -1.8250 | 1.4000 |

Contorno 2 (interior):

| vertice | x | y |
|---|---|---|
| 1 | 1.4160 | 1.0000 |
| 2 | 1.6160 | 0.7000 |
| 3 | 1.6160 | -0.7000 |
| 4 | 1.4160 | -1.0000 |
| 5 | -1.4160 | -1.0000 |
| 6 | -1.6160 | -0.7000 |
| 7 | -1.6160 | 0.7000 |
| 8 | -1.4160 | 1.0000 |

********** Resultados **********

Caracteristicas mecanicas respecto a los ejes de referencia

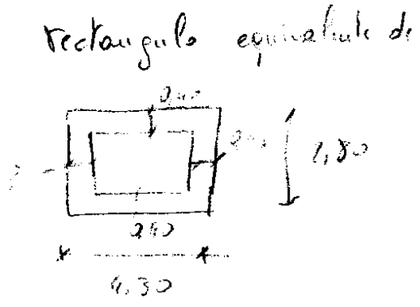
| | | | | |
|---|---|---|---|---|
| Area | Area= | 5.5665 | | |
| centro de grav. | Yg= | 0.0000 | Xg= | -0.0000 |
| dist. a fibra | Vsup= | 1.4000 | Vder= | 2.3000 |
| | Vinf= | 1.4000 | Vizq= | 2.3000 |
| mod. resistente | Wsup= | 3.7624 | Wder= | 5.5874 |
| | Winf= | 3.7624 | Wizq= | 5.5874 |
| nucleo central | Csup= | 0.6759 | Cder= | 1.0038 |
| | Cinf= | 0.6759 | Cizq= | 1.0038 |
| Momtos estaticos | Mxx= | 0.0000 | Myy= | -0.0000 |

Momentos de inercia en ejes paralelos en el c.d.g.

Ixxg= 5.26737
Iyyg= 12.85096
Ixyg= 0.00000

Ejes principales y momentos de inercia

angulo= 0.0000º
Imax= 12.85096
Imin= 5.26737



## 5.2. Cargas en cabeza de pilas

Discretización: (6 vanos)

CASOS DE CARGA RIERUSSA

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Fichero 1: Cargas según IPF

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CASo # 1 PESO PROPIO
CASo # 2 LEVANTAMIENTO DE APOYOS
CASo # 3 CARGA PERMANENTE CARACTERISTICA
CASo # 4 VALOR MAXIMO DEL BALASTO
CASo # 5 VALOR MINIMO DEL BALASTO
CASo # 6 DESBALASTADO 50 POR CIENTO
CASo # 7 SC PASEOS VANO 1 DERECHA
CASo # 8 SC PASEOS VANO 2 DERECHA
CASo # 9 SC PASEOS VANO 3 DERECHA
CASo # 10 SC PASEOS VANO 4 DERECHA
CASo # 11 SC PASEOS VANO 5 DERECHA
CASo # 12 SC PASEOS VANO 6 DERECHA
CASo # 13 SC PASEOS VANO 1 IZQUIERDA
CASo # 14 SC PASEOS VANO 2 IZQUIERDA
CASo # 15 SC PASEOS VANO 3 IZQUIERDA
CASo # 16 SC PASEOS VANO 4 IZQUIERDA
CASo # 17 SC PASEOS VANO 5 IZQUIERDA
CASo # 18 SC PASEOS VANO 6 IZQUIERDA
CASo # 19 TREN B POS. 1 DERECHA
CASo # 20 TREN B POS. 1 IZQUIERDA
CASo # 21 TREN B POS. 2 DERECHA
CASo # 22 TREN B POS. 2 IZQUIERDA
CASo # 23 TREN B POS. 3 DERECHA
CASo # 24 TREN B POS. 3 IZQUIERDA
CASo # 25 TREN B POS. 4 DERECHA
CASo # 26 TREN B POS. 4 IZQUIERDA
CASo # 27 TREN B POS. 5 DERECHA
CASo # 28 TREN B POS. 5 IZQUIERDA
CASo # 29 TREN B POS. 6 DERECHA
CASo # 30 TREN B POS. 6 IZQUIERDA
CASo # 31 TREN B POS. 7 DERECHA
CASo # 32 TREN B POS. 7 IZQUIERDA
CASo # 33 TREN B POS. 8 DERECHA
CASo # 34 TREN B POS. 8 IZQUIERDA
CASo # 35 TREN B POS. 9 DERECHA
CASo # 36 TREN B POS. 9 IZQUIERDA
CASo # 37 GRAD.(5.8 C)
CASo # 38 LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Superior. Est B
CASo # 39 LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Superior 8. Est B
CASo # 40 LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Superior 9. Est B
CASo # 41 LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Inferior. Est B
CASo # 42 LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Inferior 5. Est B
CASo # 43 LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Inferior 6. Est B
CASo # 44 LAV GELIDA. V-Riera de la Rierussa. Tendon 1 (Servicio). Est C
CASo # 45 LAV GELIDA. V-Riera de la Rierussa. Tendon 2 (Servicio). Est B
CASo # 46 LAV GELIDA. V-Riera de la Rierussa. Tendon 3 (Servicio). Est C
CASo # 47 LAV GELIDA. V-Riera de la Rierussa. Tendon 4 (Servicio). Est C
CASo # 48 LAV GELIDA. V-Riera de la Rierussa. Tendon 5 (Servicio). Est C
CASo # 49 LAV GELIDA. V-Riera de la Rierussa. Tendon 6 (Servicio). Est C
CASo # 50 LAV GELIDA. V-Riera de la Rierussa. Tendon 7 (Servicio). Est C
CASo # 51 LAV GELIDA. V-Riera de la Rierussa. Tendon 8 (Servicio). Est C
CASo # 52 LAV GELIDA. V-Riera de la Rierussa. Tendon 9 (Servicio). Est C
CASo # 53 LAV GELIDA. V-Riera de la Rierussa. Tendon 10 (Servicio). Est C
CASo # 54 LAV GELIDA. V-Riera de la Rierussa. Tendon 11 (Servicio). Est C
CASo # 55 LAV GELIDA. V-Riera de la Rierussa. Tendon 12 (Servicio). Est C
CASo # 56 LAV GELIDA. V-Riera de la Rierussa. Tendon 13 (Servicio). Est C
CASo # 57 LAV GELIDA. V-Riera de la Rierussa. Tendon 14 (Servicio). Est C

Fichero 2: Cargas según EC

==========

CASo # 1 PESO PROPIO
CASo # 2 LEVANTAMIENTO DE APOYOS
CASo # 3 CARGA PERMANENTE CARACTERISTICA
CASo # 4 VALOR MAXIMO DEL BALASTO
CASo # 5 VALOR MINIMO DEL BALASTO
CASo # 6 DESBALASTADO 50 POR CIENTO
CASo # 7 SC PASEOS VANO 1 DERECHA
CASo # 8 SC PASEOS VANO 2 DERECHA
CASo # 9 SC PASEOS VANO 3 DERECHA
CASo # 10 SC PASEOS VANO 4 DERECHA
CASo # 11 SC PASEOS VANO 5 DERECHA
CASo # 12 SC PASEOS VANO 6 DERECHA
CASo # 13 SC PASEOS VANO 1 IZQUIERDA
CASo # 14 SC PASEOS VANO 2 IZQUIERDA
CASo # 15 SC PASEOS VANO 3 IZQUIERDA
CASo # 16 SC PASEOS VANO 4 IZQUIERDA
CASo # 17 SC PASEOS VANO 5 IZQUIERDA
CASo # 18 SC PASEOS VANO 6 IZQUIERDA
CASo # 19 TREN 71 SC UNIFORME POS. 1 DERECHA
CASo # 20 TREN 71 SC UNIFORME POS. 1 IZQUIERDA
CASo # 21 TREN 71 SC UNIFORME POS. 2 DERECHA
CASo # 22 TREN 71 SC UNIFORME POS. 2 IZQUIERDA
CASo # 23 TREN 71 SC UNIFORME POS. 3 DERECHA
CASo # 24 TREN 71 SC UNIFORME POS. 3 IZQUIERDA
CASo # 25 TREN 71 SC UNIFORME POS. 4 DERECHA
CASo # 26 TREN 71 SC UNIFORME POS. 4 IZQUIERDA
CASo # 27 TREN 71 SC UNIFORME POS. 5 DERECHA
CASo # 28 TREN 71 SC UNIFORME POS. 5 IZQUIERDA
CASo # 29 TREN 71 SC UNIFORME POS. 6 DERECHA
CASo # 30 TREN 71 SC UNIFORME POS. 6 IZQUIERDA
CASo # 31 TREN 71 SC UNIFORME POS. 7 DERECHA
CASo # 32 TREN 71 SC UNIFORME POS. 7 IZQUIERDA
CASo # 33 TREN 71 SC UNIFORME POS. 8 DERECHA
CASo # 34 TREN 71 SC UNIFORME POS. 8 IZQUIERDA
CASo # 35 TREN 71 SC UNIFORME POS. 9 DERECHA
CASo # 36 TREN 71 SC UNIFORME POS. 9 IZQUIERDA
CASo # 37 TREN 71 SC UNIFORME POS. 10 DERECHA
CASo # 38 TREN 71 SC UNIFORME POS. 10 IZQUIERDA
CASo # 39 TREN 71 SC UNIFORME POS. 11 DERECHA
CASo # 40 TREN 71 SC UNIFORME POS. 11 IZQUIERDA
CASo # 41 CARRO TREN 71 POSICION 1 DERECHA 300 km/h
CASo # 42 CARRO TREN 71 POSICION 1 IZQUIERDA 300 km/h
CASo # 43 CARRO TREN 71 POSICION 2 DERECHA 300 km/h
CASo # 44 CARRO TREN 71 POSICION 2 IZQUIERDA 300 km/h
CASo # 45 CARRO TREN 71 POSICION 3 DERECHA 300 km/h
CASo # 46 CARRO TREN 71 POSICION 3 IZQUIERDA 300 km/h
CASo # 47 CARRO TREN 71 POSICION 4 DERECHA 300 km/h
CASo # 48 CARRO TREN 71 POSICION 4 IZQUIERDA 300 km/h
CASo # 49 CARRO TREN 71 POSICION 5 DERECHA 300 km/h
CASo # 50 CARRO TREN 71 POSICION 5 IZQUIERDA 300 km/h
CASo # 51 CARRO TREN 71 POSICION 6 DERECHA 300 km/h
CASo # 52 CARRO TREN 71 POSICION 6 IZQUIERDA 300 km/h
CASo # 53 CARRO TREN 71 POSICION 7 DERECHA 300 km/h
CASo # 54 CARRO TREN 71 POSICION 7 IZQUIERDA 300 km/h
CASo # 55 CARRO TREN 71 POSICION 8 DERECHA 300 km/h
CASo # 56 CARRO TREN 71 POSICION 8 IZQUIERDA 300 km/h
CASo # 57 CARRO TREN 71 POSICION 9 DERECHA 300 km/h
CASo # 58 CARRO TREN 71 POSICION 9 IZQUIERDA 300 km/h
CASo # 59 CARRO TREN 71 POSICION 10 DERECHA 300 km/h
CASo # 60 CARRO TREN 71 POSICION 10 IZQUIERDA 300 km/h
CASo # 61 CARRO TREN 71 POSICION 11 DERECHA 300 km/h

CASo # 62 CARRO TREN 71 POSICION 11 IZQUIERDA 300 km/h
CASo # 63 CARRO TREN 71 POSICION 12 DERECHA 300 km/h
CASo # 64 CARRO TREN 71 POSICION 12 IZQUIERDA 300 km/h
CASo # 65 CARRO TREN 71 POSICION 13 DERECHA 300 km/h
CASo # 66 CARRO TREN 71 POSICION 13 IZQUIERDA 300 km/h
CASo # 67 CARRO TREN 71 POSICION 14 DERECHA 300 km/h
CASo # 68 CARRO TREN 71 POSICION 14 IZQUIERDA 300 km/h
CASo # 69 CARRO TREN 71 POSICION 15 DERECHA 300 km/h
CASo # 70 CARRO TREN 71 POSICION 15 IZQUIERDA 300 km/h
CASo # 71 CARRO TREN 71 POSICION 16 DERECHA 300 km/h
CASo # 72 CARRO TREN 71 POSICION 16 IZQUIERDA 300 km/h
CASo # 73 CARRO TREN 71 POSICION 17 DERECHA 300 km/h
CASo # 74 CARRO TREN 71 POSICION 17 IZQUIERDA 300 km/h
CASo # 75 CARRO TREN 71 POSICION 18 DERECHA 300 km/h
CASo # 76 CARRO TREN 71 POSICION 18 IZQUIERDA 300 km/h
CASo # 77 CARRO TREN 71 POSICION 19 DERECHA 300 km/h
CASo # 78 CARRO TREN 71 POSICION 19 IZQUIERDA 300 km/h
CASo # 79 CARRO TREN 71 POSICION 20 DERECHA 300 km/h
CASo # 80 CARRO TREN 71 POSICION 20 IZQUIERDA 300 km/h
CASo # 81 CARRO TREN 71 POSICION 21 DERECHA 300 km/h
CASo # 82 CARRO TREN 71 POSICION 21 IZQUIERDA 300 km/h
CASo # 83 CARRO TREN 71 POSICION 22 DERECHA 300 km/h
CASo # 84 CARRO TREN 71 POSICION 22 IZQUIERDA 300 km/h
CASo # 85 CARRO TREN 71 POSICION 23 DERECHA 300 km/h
CASo # 86 CARRO TREN 71 POSICION 23 IZQUIERDA 300 km/h
CASo # 87 CARRO TREN 71 POSICION 24 DERECHA 300 km/h
CASo # 88 CARRO TREN 71 POSICION 24 IZQUIERDA 300 km/h
CASo # 89 CARRO TREN 71 POSICION 25 DERECHA 300 km/h
CASo # 90 CARRO TREN 71 POSICION 25 IZQUIERDA 300 km/h
CASo # 91 CARRO TREN 71 POSICION 26 DERECHA 300 km/h
CASo # 92 CARRO TREN 71 POSICION 26 IZQUIERDA 300 km/h
CASo # 93 CARRO TREN 71 POSICION 27 DERECHA 300 km/h
CASo # 94 CARRO TREN 71 POSICION 27 IZQUIERDA 300 km/h
CASo # 95 CARRO TREN 71 POSICION 28 DERECHA 300 km/h
CASo # 96 CARRO TREN 71 POSICION 28 IZQUIERDA 300 km/h
CASo # 97 TREN SW0 POSICION 1 DERECHA 80 km/h
CASo # 98 TREN SW0 POSICION 1 IZQUIERDA 80 km/h
CASo # 99 TREN SW0 POSICION 2 DERECHA 80 km/h
CASo # 100 TREN SW0 POSICION 2 IZQUIERDA 80 km/h
CASo # 101 TREN SW0 POSICION 3 DERECHA 80 km/h
CASo # 102 TREN SW0 POSICION 3 IZQUIERDA 80 km/h
CASo # 103 TREN SW0 POSICION 4 DERECHA 80 km/h
CASo # 104 TREN SW0 POSICION 4 IZQUIERDA 80 km/h
CASo # 105 TREN SW0 POSICION 5 DERECHA 80 km/h
CASo # 106 TREN SW0 POSICION 5 IZQUIERDA 80 km/h
CASo # 107 TREN SW0 POSICION 6 DERECHA 80 km/h
CASo # 108 TREN SW0 POSICION 6 IZQUIERDA 80 km/h
CASo # 109 TREN SW0 POSICION 7 DERECHA 80 km/h
CASo # 110 TREN SW0 POSICION 7 IZQUIERDA 80 km/h
CASo # 111 TREN SW0 POSICION 8 DERECHA 80 km/h
CASo # 112 TREN SW0 POSICION 8 IZQUIERDA 80 km/h
CASo # 113 TREN SW0 POSICION 9 DERECHA 80 km/h
CASo # 114 TREN SW0 POSICION 9 IZQUIERDA 80 km/h
CASo # 115 TREN SW0 POSICION 10 DERECHA 80 km/h
CASo # 116 TREN SW0 POSICION 10 IZQUIERDA 80 km/h
CASo # 117 TREN SW0 POSICION 11 DERECHA 80 km/h
CASo # 118 TREN SW0 POSICION 11 IZQUIERDA 80 km/h
CASo # 119 TREN SW2 POSICION 1 DERECHA 80 km/h
CASo # 120 TREN SW2 POSICION 1 IZQUIERDA 80 km/h
CASo # 121 TREN SW2 POSICION 2 DERECHA 80 km/h
CASo # 122 TREN SW2 POSICION 2 IZQUIERDA 80 km/h
CASo # 123 TREN SW2 POSICION 3 DERECHA 80 km/h
CASo # 124 TREN SW2 POSICION 3 IZQUIERDA 80 km/h
CASo # 125 TREN SW2 POSICION 4 DERECHA 80 km/h
CASo # 126 TREN SW2 POSICION 4 IZQUIERDA 80 km/h
CASo # 127 TREN SW2 POSICION 5 DERECHA 80 km/h
CASo # 128 TREN SW2 POSICION 5 IZQUIERDA 80 km/h
CASo # 129 TREN SW2 POSICION 6 DERECHA 80 km/h
CASo # 130 TREN SW2 POSICION 6 IZQUIERDA 80 km/h
CASo # 131 TREN SW2 POSICION 7 DERECHA 80 km/h
CASo # 132 TREN SW2 POSICION 7 IZQUIERDA 80 km/h
CASo # 133 TREN SW2 POSICION 8 DERECHA 80 km/h
CASo # 134 TREN SW2 POSICION 8 IZQUIERDA 80 km/h
CASo # 135 TREN SW2 POSICION 9 DERECHA 80 km/h
CASo # 136 TREN SW2 POSICION 9 IZQUIERDA 80 km/h
CASo # 137 TREN SW2 POSICION 10 DERECHA 80 km/h
CASo # 138 TREN SW2 POSICION 10 IZQUIERDA 80 km/h
CASo # 139 TREN SW2 POSICION 11 DERECHA 80 km/h
CASo # 140 TREN SW2 POSICION 11 IZQUIERDA 80 km/h
CASo # 141 GRAD.(5.8 C)
CASo # 142 LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Superior. Est B
CASo # 143 LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Superior 8. Est B
CASo # 144 LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Superior 9. Est B
CASo # 145 LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Inferior. Est B
CASo # 146 LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Inferior 5. Est B
CASo # 147 LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Inferior 6. Est B
CASo # 148 LAV GELIDA. V-Riera de la Rierussa. Tendon 1 (Servicio). Est C
CASo # 149 LAV GELIDA. V-Riera de la Rierussa. Tendon 2 (Servicio). Est B
CASo # 150 LAV GELIDA. V-Riera de la Rierussa. Tendon 3 (Servicio). Est C
CASo # 151 LAV GELIDA. V-Riera de la Rierussa. Tendon 4 (Servicio). Est C
CASo # 152 LAV GELIDA. V-Riera de la Rierussa. Tendon 5 (Servicio). Est C
CASo # 153 LAV GELIDA. V-Riera de la Rierussa. Tendon 6 (Servicio). Est C
CASo # 154 LAV GELIDA. V-Riera de la Rierussa. Tendon 7 (Servicio). Est C
CASo # 155 LAV GELIDA. V-Riera de la Rierussa. Tendon 8 (Servicio). Est C
CASo # 156 LAV GELIDA. V-Riera de la Rierussa. Tendon 9 (Servicio). Est C
CASo # 157 LAV GELIDA. V-Riera de la Rierussa. Tendon 10 (Servicio). Est C
CASo # 158 LAV GELIDA. V-Riera de la Rierussa. Tendon 11 (Servicio). Est C
CASo # 159 LAV GELIDA. V-Riera de la Rierussa. Tendon 12 (Servicio). Est C
CASo # 160 LAV GELIDA. V-Riera de la Rierussa. Tendon 13 (Servicio). Est C
CASo # 161 LAV GELIDA. V-Riera de la Rierussa. Tendon 14 (Servicio). Est C

TITULO
=======
LAV-Gelida. V.Rierussa. ELU CP(1.35*G)

FICHERO DE GEOMETRIA COMPLETA
==============================
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
================================
1

| Fich | Num. Nudos | Num. barras | Num. hipotesis | NOMBRE FICHERO |
|---|---|---|---|---|
| 1 | 120 | 119 | 57 | ESFipfPI.TXT |

| Fich | Hipotesis | Caracter | Coeficiente |
|---|---|---|---|
| 1 | 1 | 1 | 1.35 |
| 1 | 2 | 1 | 0.00 |
| 1 | 3 | 1 | 1.35 |
| 1 | 4 | 1 | 1.35 |
| 1 | 5 | 3 | 0.00 |
| 1 | 6 | 3 | 0.00 |
| 1 | 7 | 2 | 0.00 |
| 1 | 8 | 2 | 0.00 |
| 1 | 9 | 2 | 0.00 |
| 1 | 10 | 2 | 0.00 |
| 1 | 11 | 2 | 0.00 |
| 1 | 12 | 2 | 0.00 |
| 1 | 13 | 2 | 0.00 |
| 1 | 14 | 2 | 0.00 |
| 1 | 15 | 2 | 0.00 |
| 1 | 16 | 2 | 0.00 |
| 1 | 17 | 2 | 0.00 |
| 1 | 18 | 2 | 0.00 |
| 1 | 19 | 4 | 0.00 |
| 1 | 20 | 5 | 0.00 |
| 1 | 21 | 4 | 0.00 |
| 1 | 22 | 5 | 0.00 |
| 1 | 23 | 4 | 0.00 |
| 1 | 24 | 5 | 0.00 |
| 1 | 25 | 4 | 0.00 |
| 1 | 26 | 5 | 0.00 |
| 1 | 27 | 4 | 0.00 |
| 1 | 28 | 5 | 0.00 |
| 1 | 29 | 4 | 0.00 |
| 1 | 30 | 5 | 0.00 |
| 1 | 31 | 4 | 0.00 |
| 1 | 32 | 5 | 0.00 |
| 1 | 33 | 4 | 0.00 |
| 1 | 34 | 5 | 0.00 |
| 1 | 35 | 4 | 0.00 |
| 1 | 36 | 5 | 0.00 |
| 1 | 37 | 2 | 0.00 |
| 1 | 38 | 1 | 0.00 |
| 1 | 39 | 1 | 0.00 |
| 1 | 40 | 1 | 0.00 |
| 1 | 41 | 1 | 0.00 |
| 1 | 42 | 1 | 0.00 |
| 1 | 43 | 1 | 0.00 |
| 1 | 44 | 1 | 0.00 |
| 1 | 45 | 1 | 0.00 |
| 1 | 46 | 1 | 0.00 |
| 1 | 47 | 1 | 0.00 |
| 1 | 48 | 1 | 0.00 |
| 1 | 49 | 1 | 0.00 |
| 1 | 50 | 1 | 0.00 |
| 1 | 51 | 1 | 0.00 |
| 1 | 52 | 1 | 0.00 |
| 1 | 53 | 1 | 0.00 |
| 1 | 54 | 1 | 0.00 |
| 1 | 55 | 1 | 0.00 |
| 1 | 56 | 1 | 0.00 |
| 1 | 57 | 1 | 0.00 |

LAV-Gelida. V.Rierussa. ELU CP(1.35*G)

| BAR. | NUDO | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| 202 | 202 | 23203.00 | -10.79 | 0.00 | 0.00 | 0.00 | 725.50 |
| 202 | 17 | 23203.00 | -10.79 | 0.00 | 0.00 | 0.00 | 926.33 |
| 203 | 203 | 23701.77 | 20.06 | 0.00 | 0.00 | 0.00 | 1438.52 |
| 203 | 37 | 23701.77 | 20.06 | 0.00 | 0.00 | 0.00 | 1034.56 |
| 204 | 204 | 23154.83 | -25.65 | 0.00 | 0.00 | 0.00 | 10.48 |
| 204 | 57 | 23154.83 | -25.65 | 0.00 | 0.00 | 0.00 | 1129.49 |
| 205 | 205 | 23721.62 | 19.97 | 0.00 | 0.00 | 0.00 | 1452.02 |
| 205 | 77 | 23721.62 | 19.97 | 0.00 | 0.00 | 0.00 | 1020.47 |
| 206 | 206 | 23174.17 | -17.35 | 0.00 | 0.00 | 0.00 | 510.38 |
| 206 | 97 | 23174.17 | -17.35 | 0.00 | 0.00 | 0.00 | 920.32 |

TITULO
=======
LAV-Gelida. V.Rierussa. ELU IPF(t=inf)(1.35*G+0.54*LEV+1.00*P+1.5*SC+0.9*GT)

FICHERO DE GEOMETRIA COMPLETA
==============================
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
================================
1

| Fich | Num. Nudos | Num. barras | Num. hipotesis | NOMBRE FICHERO |
|---|---|---|---|---|
| 1 | 120 | 119 | 57 | ESFipf.TXT |

| Fich | Hipotesis | Caracter | Coeficiente |
|---|---|---|---|
| 1 | 1 | 1 | 1.35 |
| 1 | 2 | 1 | 0.54 |
| 1 | 3 | 1 | 1.35 |
| 1 | 4 | 3 | 1.35 |
| 1 | 5 | 3 | 1.35 |
| 1 | 6 | 3 | 1.35 |
| 1 | 7 | 2 | 0.75 |
| 1 | 8 | 2 | 0.75 |
| 1 | 9 | 2 | 0.75 |
| 1 | 10 | 2 | 0.75 |
| 1 | 11 | 2 | 0.75 |
| 1 | 12 | 2 | 0.75 |
| 1 | 13 | 2 | 0.75 |
| 1 | 14 | 2 | 0.75 |
| 1 | 15 | 2 | 0.75 |
| 1 | 16 | 2 | 0.75 |
| 1 | 17 | 2 | 0.75 |
| 1 | 18 | 2 | 0.75 |
| 1 | 19 | 4 | 1.50 |
| 1 | 20 | 5 | 1.50 |
| 1 | 21 | 4 | 1.50 |
| 1 | 22 | 5 | 1.50 |
| 1 | 23 | 4 | 1.50 |
| 1 | 24 | 5 | 1.50 |
| 1 | 25 | 4 | 1.50 |
| 1 | 26 | 5 | 1.50 |
| 1 | 27 | 4 | 1.50 |
| 1 | 28 | 5 | 1.50 |
| 1 | 29 | 4 | 1.50 |
| 1 | 30 | 5 | 1.50 |
| 1 | 31 | 4 | 1.50 |
| 1 | 32 | 5 | 1.50 |
| 1 | 33 | 4 | 1.50 |
| 1 | 34 | 5 | 1.50 |
| 1 | 35 | 4 | 1.50 |
| 1 | 36 | 5 | 1.50 |
| 1 | 37 | 2 | 0.90 |
| 1 | 38 | 1 | 20.433 |
| 1 | 39 | 1 | 2.919 |
| 1 | 40 | 1 | 2.919 |
| 1 | 41 | 1 | 11.676 |
| 1 | 42 | 1 | 2.919 |
| 1 | 43 | 1 | 2.919 |
| 1 | 44 | 1 | 6.464 |
| 1 | 45 | 1 | 6.464 |
| 1 | 46 | 1 | 6.464 |

| | | | |
|---|---|---|---|
| 1 | 47 | 1 | 6.464 |
| 1 | 48 | 1 | 6.464 |
| 1 | 49 | 1 | 6.464 |
| 1 | 50 | 1 | 6.464 |
| 1 | 51 | 1 | 6.464 |
| 1 | 52 | 1 | 6.464 |
| 1 | 53 | 1 | 6.464 |
| 1 | 54 | 1 | 6.464 |
| 1 | 55 | 1 | 6.464 |
| 1 | 56 | 1 | 6.464 |
| 1 | 57 | 1 | 6.464 |

TITULO
=======
LAV-Gelida. V.Rierussa. ELU EC71-71(t=i)(1.35*G+0.54*LEV+1.00*P+1.45*SC+0.9*GT)

FICHERO DE GEOMETRIA COMPLETA
==============================
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
================================
1

| Fich | Num. Nudos | Num. barras | Num. hipotesis | NOMBRE FICHERO |
|---|---|---|---|---|
| 1 | 120 | 119 | 161 | ESFec.TXT |

| Fich | Hipotesis | Caracter | Coeficiente |
|---|---|---|---|
| 1 | 1 | 1 | 1.35 |
| 1 | 2 | 1 | 0.54 |
| 1 | 3 | 1 | 1.35 |
| 1 | 4 | 3 | 1.35 |
| 1 | 5 | 3 | 1.35 |
| 1 | 6 | 3 | 1.35 |
| 1 | 7 | 2 | 0.75 |
| 1 | 8 | 2 | 0.75 |
| 1 | 9 | 2 | 0.75 |
| 1 | 10 | 2 | 0.75 |
| 1 | 11 | 2 | 0.75 |
| 1 | 12 | 2 | 0.75 |
| 1 | 13 | 2 | 0.75 |
| 1 | 14 | 2 | 0.75 |
| 1 | 15 | 2 | 0.75 |
| 1 | 16 | 2 | 0.75 |
| 1 | 17 | 2 | 0.75 |
| 1 | 18 | 2 | 0.75 |
| 1 | 19 | 4 | 1.45 |
| 1 | 20 | 5 | 1.45 |
| 1 | 21 | 4 | 1.45 |
| 1 | 22 | 5 | 1.45 |
| 1 | 23 | 4 | 1.45 |
| 1 | 24 | 5 | 1.45 |
| 1 | 25 | 4 | 1.45 |
| 1 | 26 | 5 | 1.45 |
| 1 | 27 | 4 | 1.45 |
| 1 | 28 | 5 | 1.45 |
| 1 | 29 | 4 | 1.45 |
| 1 | 30 | 5 | 1.45 |
| 1 | 31 | 4 | 1.45 |
| 1 | 32 | 5 | 1.45 |
| 1 | 33 | 4 | 1.45 |
| 1 | 34 | 5 | 1.45 |
| 1 | 35 | 4 | 1.45 |
| 1 | 36 | 5 | 1.45 |
| 1 | 37 | 4 | 1.45 |
| 1 | 38 | 5 | 1.45 |
| 1 | 39 | 4 | 1.45 |
| 1 | 40 | 5 | 1.45 |
| 1 | 41 | 6 | 1.45 |
| 1 | 42 | 7 | 1.45 |
| 1 | 43 | 6 | 1.45 |
| 1 | 44 | 7 | 1.45 |
| 1 | 45 | 6 | 1.45 |
| 1 | 46 | 7 | 1.45 |

| | | | |
|---|---|---|---|
| 1 | 47 | 6 | 1.45 |
| 1 | 48 | 7 | 1.45 |
| 1 | 49 | 6 | 1.45 |
| 1 | 50 | 7 | 1.45 |
| 1 | 51 | 6 | 1.45 |
| 1 | 52 | 7 | 1.45 |
| 1 | 53 | 6 | 1.45 |
| 1 | 54 | 7 | 1.45 |
| 1 | 55 | 6 | 1.45 |
| 1 | 56 | 7 | 1.45 |
| 1 | 57 | 6 | 1.45 |
| 1 | 58 | 7 | 1.45 |
| 1 | 59 | 6 | 1.45 |
| 1 | 60 | 7 | 1.45 |
| 1 | 61 | 6 | 1.45 |
| 1 | 62 | 7 | 1.45 |
| 1 | 63 | 6 | 1.45 |
| 1 | 64 | 7 | 1.45 |
| 1 | 65 | 6 | 1.45 |
| 1 | 66 | 7 | 1.45 |
| 1 | 67 | 6 | 1.45 |
| 1 | 68 | 7 | 1.45 |
| 1 | 69 | 6 | 1.45 |
| 1 | 70 | 7 | 1.45 |
| 1 | 71 | 6 | 1.45 |
| 1 | 72 | 7 | 1.45 |
| 1 | 73 | 6 | 1.45 |
| 1 | 74 | 7 | 1.45 |
| 1 | 75 | 6 | 1.45 |
| 1 | 76 | 7 | 1.45 |
| 1 | 77 | 6 | 1.45 |
| 1 | 78 | 7 | 1.45 |
| 1 | 79 | 6 | 1.45 |
| 1 | 80 | 7 | 1.45 |
| 1 | 81 | 6 | 1.45 |
| 1 | 82 | 7 | 1.45 |
| 1 | 83 | 6 | 1.45 |
| 1 | 84 | 7 | 1.45 |
| 1 | 85 | 6 | 1.45 |
| 1 | 86 | 7 | 1.45 |
| 1 | 87 | 6 | 1.45 |
| 1 | 88 | 7 | 1.45 |
| 1 | 89 | 6 | 1.45 |
| 1 | 90 | 7 | 1.45 |
| 1 | 91 | 6 | 1.45 |
| 1 | 92 | 7 | 1.45 |
| 1 | 93 | 6 | 1.45 |
| 1 | 94 | 7 | 1.45 |
| 1 | 95 | 6 | 1.45 |
| 1 | 96 | 7 | 1.45 |
| 1 | 97 | 8 | 0.0 |
| 1 | 98 | 9 | 0.0 |
| 1 | 99 | 8 | 0.0 |
| 1 | 100 | 9 | 0.0 |
| 1 | 101 | 8 | 0.0 |
| 1 | 102 | 9 | 0.0 |
| 1 | 103 | 8 | 0.0 |
| 1 | 104 | 9 | 0.0 |
| 1 | 105 | 8 | 0.0 |
| 1 | 106 | 9 | 0.0 |
| 1 | 107 | 8 | 0.0 |
| 1 | 108 | 9 | 0.0 |
| 1 | 109 | 8 | 0.0 |
| 1 | 110 | 9 | 0.0 |
| 1 | 111 | 8 | 0.0 |
| 1 | 112 | 9 | 0.0 |
| 1 | 113 | 8 | 0.0 |
| 1 | 114 | 9 | 0.0 |
| 1 | 115 | 8 | 0.0 |
| 1 | 116 | 9 | 0.0 |
| 1 | 117 | 8 | 0.0 |
| 1 | 118 | 9 | 0.0 |
| 1 | 119 | 10 | 0.0 |
| 1 | 120 | 10 | 0.0 |
| 1 | 121 | 10 | 0.0 |
| 1 | 122 | 10 | 0.0 |
| 1 | 123 | 10 | 0.0 |
| 1 | 124 | 10 | 0.0 |
| 1 | 125 | 10 | 0.0 |
| 1 | 126 | 10 | 0.0 |
| 1 | 127 | 10 | 0.0 |
| 1 | 128 | 10 | 0.0 |
| 1 | 129 | 10 | 0.0 |
| 1 | 130 | 10 | 0.0 |
| 1 | 131 | 10 | 0.0 |
| 1 | 132 | 10 | 0.0 |
| 1 | 133 | 10 | 0.0 |
| 1 | 134 | 10 | 0.0 |
| 1 | 135 | 10 | 0.0 |
| 1 | 136 | 10 | 0.0 |
| 1 | 137 | 10 | 0.0 |
| 1 | 138 | 10 | 0.0 |
| 1 | 139 | 10 | 0.0 |
| 1 | 140 | 10 | 0.0 |
| 1 | 141 | 2 | 0.9 |
| 1 | 142 | 1 | 20.433 |
| 1 | 143 | 1 | 2.919 |
| 1 | 144 | 1 | 2.919 |
| 1 | 145 | 1 | 11.676 |
| 1 | 146 | 1 | 2.919 |
| 1 | 147 | 1 | 2.919 |
| 1 | 148 | 1 | 6.464 |
| 1 | 149 | 1 | 6.464 |
| 1 | 150 | 1 | 6.464 |
| 1 | 151 | 1 | 6.464 |
| 1 | 152 | 1 | 6.464 |
| 1 | 153 | 1 | 6.464 |
| 1 | 154 | 1 | 6.464 |
| 1 | 155 | 1 | 6.464 |
| 1 | 156 | 1 | 6.464 |
| 1 | 157 | 1 | 6.464 |
| 1 | 158 | 1 | 6.464 |
| 1 | 159 | 1 | 6.464 |
| 1 | 160 | 1 | 6.464 |
| 1 | 161 | 1 | 6.464 |

TITULO
=======
LAV-Gelida. V.Rierussa. ELU ECSW-71(t=i)(1.35*G+0.54*LEV+1.00*P+(1.45*SW0o71 o 1.20*SW2)+0.9*GT)

FICHERO DE GEOMETRIA COMPLETA
==============================
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
================================
1

| Fich | Num. Nudos | Num. barras | Num. hipotesis | NOMBRE FICHERO |
|---|---|---|---|---|
| 1 | 120 | 119 | 161 | ESFec.TXT |

| Fich | Hipotesis | Caracter | Coeficiente |
|---|---|---|---|
| 1 | 1 | 1 | 1.35 |
| 1 | 2 | 1 | 0.54 |
| 1 | 3 | 1 | 1.35 |
| 1 | 4 | 3 | 1.35 |
| 1 | 5 | 3 | 1.35 |
| 1 | 6 | 3 | 1.35 |
| 1 | 7 | 2 | 0.75 |
| 1 | 8 | 2 | 0.75 |
| 1 | 9 | 2 | 0.75 |
| 1 | 10 | 2 | 0.75 |
| 1 | 11 | 2 | 0.75 |
| 1 | 12 | 2 | 0.75 |
| 1 | 13 | 2 | 0.75 |
| 1 | 14 | 2 | 0.75 |
| 1 | 15 | 2 | 0.75 |
| 1 | 16 | 2 | 0.75 |
| 1 | 17 | 2 | 0.75 |
| 1 | 18 | 2 | 0.75 |
| 1 | 19 | 4 | 0.0 |
| 1 | 20 | 5 | 1.45 |
| 1 | 21 | 4 | 0.0 |
| 1 | 22 | 5 | 1.45 |
| 1 | 23 | 4 | 0.0 |
| 1 | 24 | 5 | 1.45 |
| 1 | 25 | 4 | 0.0 |
| 1 | 26 | 5 | 1.45 |
| 1 | 27 | 4 | 0.0 |
| 1 | 28 | 5 | 1.45 |
| 1 | 29 | 4 | 0.0 |
| 1 | 30 | 5 | 1.45 |
| 1 | 31 | 4 | 0.0 |
| 1 | 32 | 5 | 1.45 |
| 1 | 33 | 4 | 0.0 |
| 1 | 34 | 5 | 1.45 |
| 1 | 35 | 4 | 0.0 |
| 1 | 36 | 5 | 1.45 |
| 1 | 37 | 4 | 0.0 |
| 1 | 38 | 5 | 1.45 |
| 1 | 39 | 4 | 0.0 |
| 1 | 40 | 5 | 1.45 |
| 1 | 41 | 6 | 0.0 |
| 1 | 42 | 7 | 1.45 |
| 1 | 43 | 6 | 0.0 |
| 1 | 44 | 7 | 1.45 |
| 1 | 45 | 6 | 0.0 |
| 1 | 46 | 7 | 1.45 |
| 1 | 47 | 6 | 0.0 |
| 1 | 48 | 7 | 1.45 |
| 1 | 49 | 6 | 0.0 |
| 1 | 50 | 7 | 1.45 |
| 1 | 51 | 6 | 0.0 |
| 1 | 52 | 7 | 1.45 |
| 1 | 53 | 6 | 0.0 |
| 1 | 54 | 7 | 1.45 |
| 1 | 55 | 6 | 0.0 |
| 1 | 56 | 7 | 1.45 |
| 1 | 57 | 6 | 0.0 |
| 1 | 58 | 7 | 1.45 |
| 1 | 59 | 6 | 0.0 |
| 1 | 60 | 7 | 1.45 |
| 1 | 61 | 6 | 0.0 |
| 1 | 62 | 7 | 1.45 |
| 1 | 63 | 6 | 0.0 |
| 1 | 64 | 7 | 1.45 |
| 1 | 65 | 6 | 0.0 |
| 1 | 66 | 7 | 1.45 |
| 1 | 67 | 6 | 0.0 |
| 1 | 68 | 7 | 1.45 |
| 1 | 69 | 6 | 0.0 |
| 1 | 70 | 7 | 1.45 |
| 1 | 71 | 6 | 0.0 |
| 1 | 72 | 7 | 1.45 |
| 1 | 73 | 6 | 0.0 |
| 1 | 74 | 7 | 1.45 |
| 1 | 75 | 6 | 0.0 |
| 1 | 76 | 7 | 1.45 |
| 1 | 77 | 6 | 0.0 |
| 1 | 78 | 7 | 1.45 |
| 1 | 79 | 6 | 0.0 |
| 1 | 80 | 7 | 1.45 |
| 1 | 81 | 6 | 0.0 |
| 1 | 82 | 7 | 1.45 |
| 1 | 83 | 6 | 0.0 |
| 1 | 84 | 7 | 1.45 |
| 1 | 85 | 6 | 0.0 |
| 1 | 86 | 7 | 1.45 |
| 1 | 87 | 6 | 0.0 |
| 1 | 88 | 7 | 1.45 |
| 1 | 89 | 6 | 0.0 |
| 1 | 90 | 7 | 1.45 |
| 1 | 91 | 6 | 0.0 |
| 1 | 92 | 7 | 1.45 |
| 1 | 93 | 6 | 0.0 |
| 1 | 94 | 7 | 1.45 |
| 1 | 95 | 6 | 0.0 |
| 1 | 96 | 7 | 1.45 |
| 1 | 97 | 8 | 1.45 |
| 1 | 98 | 9 | 0.0 |
| 1 | 99 | 8 | 1.45 |
| 1 | 100 | 9 | 0.0 |
| 1 | 101 | 8 | 1.45 |
| 1 | 102 | 9 | 0.0 |
| 1 | 103 | 8 | 1.45 |
| 1 | 104 | 9 | 0.0 |
| 1 | 105 | 8 | 1.45 |
| 1 | 106 | 9 | 0.0 |
| 1 | 107 | 8 | 1.45 |
| 1 | 108 | 9 | 0.0 |
| 1 | 109 | 8 | 1.45 |
| 1 | 110 | 9 | 0.0 |

| | | | |
|---|---|---|---|
| 1 | 111 | 8 | 1.45 |
| 1 | 112 | 9 | 0.0 |
| 1 | 113 | 8 | 1.45 |
| 1 | 114 | 9 | 0.0 |
| 1 | 115 | 8 | 1.45 |
| 1 | 116 | 9 | 0.0 |
| 1 | 117 | 8 | 1.45 |
| 1 | 118 | 9 | 0.0 |
| 1 | 119 | 8 | 1.20 |
| 1 | 120 | 10 | 0.0 |
| 1 | 121 | 8 | 1.20 |
| 1 | 122 | 10 | 0.0 |
| 1 | 123 | 8 | 1.20 |
| 1 | 124 | 10 | 0.0 |
| 1 | 125 | 8 | 1.20 |
| 1 | 126 | 10 | 0.0 |
| 1 | 127 | 8 | 1.20 |
| 1 | 128 | 10 | 0.0 |
| 1 | 129 | 8 | 1.20 |
| 1 | 130 | 10 | 0.0 |
| 1 | 131 | 8 | 1.20 |
| 1 | 132 | 10 | 0.0 |
| 1 | 133 | 8 | 1.20 |
| 1 | 134 | 10 | 0.0 |
| 1 | 135 | 8 | 1.20 |
| 1 | 136 | 10 | 0.0 |
| 1 | 137 | 8 | 1.20 |
| 1 | 138 | 10 | 0.0 |
| 1 | 139 | 8 | 1.20 |
| 1 | 140 | 10 | 0.0 |
| 1 | 141 | 2 | 0.9 |
| 1 | 142 | 1 | 20.433 |
| 1 | 143 | 1 | 2.919 |
| 1 | 144 | 1 | 2.919 |
| 1 | 145 | 1 | 11.676 |
| 1 | 146 | 1 | 2.919 |
| 1 | 147 | 1 | 2.919 |
| 1 | 148 | 1 | 6.464 |
| 1 | 149 | 1 | 6.464 |
| 1 | 150 | 1 | 6.464 |
| 1 | 151 | 1 | 6.464 |
| 1 | 152 | 1 | 6.464 |
| 1 | 153 | 1 | 6.464 |
| 1 | 154 | 1 | 6.464 |
| 1 | 155 | 1 | 6.464 |
| 1 | 156 | 1 | 6.464 |
| 1 | 157 | 1 | 6.464 |
| 1 | 158 | 1 | 6.464 |
| 1 | 159 | 1 | 6.464 |
| 1 | 160 | 1 | 6.464 |
| 1 | 161 | 1 | 6.464 |

TITULO
=======
LAV-Gelida. V.Rierussa. ELU ECSW-SW(t=i)(1.35*G+0.54*LEV+1.00*P+(1.45*SW0 o 1.20*SW2)+0.9*GT)

FICHERO DE GEOMETRIA COMPLETA
==============================
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
================================
1

| Fich | Num. Nudos | Num. barras | Num. hipotesis | NOMBRE FICHERO |
|---|---|---|---|---|
| 1 | 120 | 119 | 161 | ESFec.TXT |

| Fich | Hipotesis | Caracter | Coeficiente |
|---|---|---|---|
| 1 | 1 | 1 | 1.35 |
| 1 | 2 | 1 | 0.54 |
| 1 | 3 | 1 | 1.35 |
| 1 | 4 | 3 | 1.35 |
| 1 | 5 | 3 | 1.35 |
| 1 | 6 | 3 | 1.35 |
| 1 | 7 | 2 | 0.75 |
| 1 | 8 | 2 | 0.75 |
| 1 | 9 | 2 | 0.75 |
| 1 | 10 | 2 | 0.75 |
| 1 | 11 | 2 | 0.75 |
| 1 | 12 | 2 | 0.75 |
| 1 | 13 | 2 | 0.75 |
| 1 | 14 | 2 | 0.75 |
| 1 | 15 | 2 | 0.75 |
| 1 | 16 | 2 | 0.75 |
| 1 | 17 | 2 | 0.75 |
| 1 | 18 | 2 | 0.75 |
| 1 | 19 | 4 | 0.0 |
| 1 | 20 | 5 | 0.0 |
| 1 | 21 | 4 | 0.0 |
| 1 | 22 | 5 | 0.0 |
| 1 | 23 | 4 | 0.0 |
| 1 | 24 | 5 | 0.0 |
| 1 | 25 | 4 | 0.0 |
| 1 | 26 | 5 | 0.0 |
| 1 | 27 | 4 | 0.0 |
| 1 | 28 | 5 | 0.0 |
| 1 | 29 | 4 | 0.0 |
| 1 | 30 | 5 | 0.0 |
| 1 | 31 | 4 | 0.0 |
| 1 | 32 | 5 | 0.0 |
| 1 | 33 | 4 | 0.0 |
| 1 | 34 | 5 | 0.0 |
| 1 | 35 | 4 | 0.0 |
| 1 | 36 | 5 | 0.0 |
| 1 | 37 | 4 | 0.0 |
| 1 | 38 | 5 | 0.0 |
| 1 | 39 | 4 | 0.0 |
| 1 | 40 | 5 | 0.0 |
| 1 | 41 | 6 | 0.0 |
| 1 | 42 | 7 | 0.0 |
| 1 | 43 | 6 | 0.0 |
| 1 | 44 | 7 | 0.0 |
| 1 | 45 | 6 | 0.0 |
| 1 | 46 | 7 | 0.0 |

| | | | |
|---|---|---|---|
| 1 | 47 | 6 | 0.0 |
| 1 | 48 | 7 | 0.0 |
| 1 | 49 | 6 | 0.0 |
| 1 | 50 | 7 | 0.0 |
| 1 | 51 | 6 | 0.0 |
| 1 | 52 | 7 | 0.0 |
| 1 | 53 | 6 | 0.0 |
| 1 | 54 | 7 | 0.0 |
| 1 | 55 | 6 | 0.0 |
| 1 | 56 | 7 | 0.0 |
| 1 | 57 | 6 | 0.0 |
| 1 | 58 | 7 | 0.0 |
| 1 | 59 | 6 | 0.0 |
| 1 | 60 | 7 | 0.0 |
| 1 | 61 | 6 | 0.0 |
| 1 | 62 | 7 | 0.0 |
| 1 | 63 | 6 | 0.0 |
| 1 | 64 | 7 | 0.0 |
| 1 | 65 | 6 | 0.0 |
| 1 | 66 | 7 | 0.0 |
| 1 | 67 | 6 | 0.0 |
| 1 | 68 | 7 | 0.0 |
| 1 | 69 | 6 | 0.0 |
| 1 | 70 | 7 | 0.0 |
| 1 | 71 | 6 | 0.0 |
| 1 | 72 | 7 | 0.0 |
| 1 | 73 | 6 | 0.0 |
| 1 | 74 | 7 | 0.0 |
| 1 | 75 | 6 | 0.0 |
| 1 | 76 | 7 | 0.0 |
| 1 | 77 | 6 | 0.0 |
| 1 | 78 | 7 | 0.0 |
| 1 | 79 | 6 | 0.0 |
| 1 | 80 | 7 | 0.0 |
| 1 | 81 | 6 | 0.0 |
| 1 | 82 | 7 | 0.0 |
| 1 | 83 | 6 | 0.0 |
| 1 | 84 | 7 | 0.0 |
| 1 | 85 | 6 | 0.0 |
| 1 | 86 | 7 | 0.0 |
| 1 | 87 | 6 | 0.0 |
| 1 | 88 | 7 | 0.0 |
| 1 | 89 | 6 | 0.0 |
| 1 | 90 | 7 | 0.0 |
| 1 | 91 | 6 | 0.0 |
| 1 | 92 | 7 | 0.0 |
| 1 | 93 | 6 | 0.0 |
| 1 | 94 | 7 | 0.0 |
| 1 | 95 | 6 | 0.0 |
| 1 | 96 | 7 | 0.0 |
| 1 | 97 | 8 | 1.45 |
| 1 | 98 | 9 | 1.45 |
| 1 | 99 | 8 | 1.45 |
| 1 | 100 | 9 | 1.45 |
| 1 | 101 | 8 | 1.45 |
| 1 | 102 | 9 | 1.45 |
| 1 | 103 | 8 | 1.45 |
| 1 | 104 | 9 | 1.45 |
| 1 | 105 | 8 | 1.45 |
| 1 | 106 | 9 | 1.45 |
| 1 | 107 | 8 | 1.45 |
| 1 | 108 | 9 | 1.45 |
| 1 | 109 | 8 | 1.45 |
| 1 | 110 | 9 | 1.45 |
| 1 | 111 | 8 | 1.45 |
| 1 | 112 | 9 | 1.45 |
| 1 | 113 | 8 | 1.45 |
| 1 | 114 | 9 | 1.45 |
| 1 | 115 | 8 | 1.45 |
| 1 | 116 | 9 | 1.45 |
| 1 | 117 | 8 | 1.45 |
| 1 | 118 | 9 | 1.45 |
| 1 | 119 | 8 | 1.20 |
| 1 | 120 | 9 | 1.20 |
| 1 | 121 | 8 | 1.20 |
| 1 | 122 | 9 | 1.20 |
| 1 | 123 | 8 | 1.20 |
| 1 | 124 | 9 | 1.20 |
| 1 | 125 | 8 | 1.20 |
| 1 | 126 | 9 | 1.20 |
| 1 | 127 | 8 | 1.20 |
| 1 | 128 | 9 | 1.20 |
| 1 | 129 | 8 | 1.20 |
| 1 | 130 | 9 | 1.20 |
| 1 | 131 | 8 | 1.20 |
| 1 | 132 | 9 | 1.20 |
| 1 | 133 | 8 | 1.20 |
| 1 | 134 | 9 | 1.20 |
| 1 | 135 | 8 | 1.20 |
| 1 | 136 | 9 | 1.20 |
| 1 | 137 | 8 | 1.20 |
| 1 | 138 | 9 | 1.20 |
| 1 | 139 | 8 | 1.20 |
| 1 | 140 | 9 | 1.20 |
| 1 | 141 | 2 | 0.9 |
| 1 | 142 | 1 | 20.433 |
| 1 | 143 | 1 | 2.919 |
| 1 | 144 | 1 | 2.919 |
| 1 | 145 | 1 | 11.676 |
| 1 | 146 | 1 | 2.919 |
| 1 | 147 | 1 | 2.919 |
| 1 | 148 | 1 | 6.464 |
| 1 | 149 | 1 | 6.464 |
| 1 | 150 | 1 | 6.464 |
| 1 | 151 | 1 | 6.464 |
| 1 | 152 | 1 | 6.464 |
| 1 | 153 | 1 | 6.464 |
| 1 | 154 | 1 | 6.464 |
| 1 | 155 | 1 | 6.464 |
| 1 | 156 | 1 | 6.464 |
| 1 | 157 | 1 | 6.464 |
| 1 | 158 | 1 | 6.464 |
| 1 | 159 | 1 | 6.464 |
| 1 | 160 | 1 | 6.464 |
| 1 | 161 | 1 | 6.464 |

TITULO
=======
LAV-Gelida. V.Rierussa. ELU Comb Rara.IPF(1.35*G+1.35*LEV+1.00*P+1.50*SC+0.9*GT)

FICHERO DE GEOMETRIA COMPLETA
==============================
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
================================
1

| Fich | Num. Nudos | Num. barras | Num. hipotesis | NOMBRE FICHERO |
|---|---|---|---|---|
| 1 | 120 | 119 | 57 | ESFipfPI.TXT |

| Fich | Hipotesis | Caracter | Coeficiente |
|---|---|---|---|
| 1 | 1 | 1 | 1.35 |
| 1 | 2 | 1 | 1.35 |
| 1 | 3 | 1 | 1.35 |
| 1 | 4 | 3 | 1.35 |
| 1 | 5 | 3 | 1.35 |
| 1 | 6 | 3 | 1.35 |
| 1 | 7 | 2 | 0.75 |
| 1 | 8 | 2 | 0.75 |
| 1 | 9 | 2 | 0.75 |
| 1 | 10 | 2 | 0.75 |
| 1 | 11 | 2 | 0.75 |
| 1 | 12 | 2 | 0.75 |
| 1 | 13 | 2 | 0.75 |
| 1 | 14 | 2 | 0.75 |
| 1 | 15 | 2 | 0.75 |
| 1 | 16 | 2 | 0.75 |
| 1 | 17 | 2 | 0.75 |
| 1 | 18 | 2 | 0.75 |
| 1 | 19 | 4 | 1.50 |
| 1 | 20 | 5 | 1.50 |
| 1 | 21 | 4 | 1.50 |
| 1 | 22 | 5 | 1.50 |
| 1 | 23 | 4 | 1.50 |
| 1 | 24 | 5 | 1.50 |
| 1 | 25 | 4 | 1.50 |
| 1 | 26 | 5 | 1.50 |
| 1 | 27 | 4 | 1.50 |
| 1 | 28 | 5 | 1.50 |
| 1 | 29 | 4 | 1.50 |
| 1 | 30 | 5 | 1.50 |
| 1 | 31 | 4 | 1.50 |
| 1 | 32 | 5 | 1.50 |
| 1 | 33 | 4 | 1.50 |
| 1 | 34 | 5 | 1.50 |
| 1 | 35 | 4 | 1.50 |
| 1 | 36 | 5 | 1.50 |
| 1 | 37 | 2 | 0.90 |
| 1 | 38 | 1 | 20.433 |
| 1 | 39 | 1 | 2.919 |
| 1 | 40 | 1 | 2.919 |
| 1 | 41 | 1 | 11.676 |
| 1 | 42 | 1 | 2.919 |
| 1 | 43 | 1 | 2.919 |
| 1 | 44 | 1 | 6.464 |
| 1 | 45 | 1 | 6.464 |
| 1 | 46 | 1 | 6.464 |
| 1 | 47 | 1 | 6.464 |
| 1 | 48 | 1 | 6.464 |
| 1 | 49 | 1 | 6.464 |
| 1 | 50 | 1 | 6.464 |
| 1 | 51 | 1 | 6.464 |
| 1 | 52 | 1 | 6.464 |
| 1 | 53 | 1 | 6.464 |
| 1 | 54 | 1 | 6.464 |
| 1 | 55 | 1 | 6.464 |
| 1 | 56 | 1 | 6.464 |
| 1 | 57 | 1 | 6.464 |

| BARRA 202 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 202 | 37863.45>> | 305.65 | 0.00 | 0.0 | 0.0 | 12524.3 |
| 202 | 16092.47<< | 93.91 | 0.00 | 0.0 | 0.0 | 2842.0 |
| 202 | 28607.77 | 658.08>> | 0.00 | 0.0 | 0.0 | 11088.9 |
| 202 | 29277.66 | -233.28<< | 0.00 | 0.0 | 0.0 | 13280.8 |
| 202 | 20913.04 | -7.68 | 0.00>> | 0.0 | 0.0 | 672.3 |
| 202 | 20655.06 | -7.45 | 0.00<< | 0.0 | 0.0 | 657.8 |
| 202 | 20913.04 | -7.68 | 0.00 | 0.0>> | 0.0 | 672.3 |
| 202 | 20655.06 | -7.45 | 0.00 | 0.0<< | 0.0 | 657.8 |
| 202 | 20913.04 | -7.68 | 0.00 | 0.0 | 0.0>> | 672.3 |
| 202 | 20655.06 | -7.45 | 0.00 | 0.0 | 0.0<< | 657.8 |
| 202 | 29318.29 | 8.12 | 0.00 | 0.0 | 0.0 | 18962.5>> |
| 202 | 24720.56 | 381.65 | 0.00 | 0.0 | 0.0 | -3863.1<< |
| | | | | | | |
| 17 | 37863.45>> | 305.65 | 0.00 | 0.0 | 0.0 | 6832.6 |
| 17 | 16092.47<< | 93.91 | 0.00 | 0.0 | 0.0 | 1095.5 |
| 17 | 28607.77 | 658.08>> | 0.00 | 0.0 | 0.0 | -1168.4 |
| 17 | 29277.66 | -233.28<< | 0.00 | 0.0 | 0.0 | 17629.5 |
| 17 | 20913.04 | -7.68 | 0.00>> | 0.0 | 0.0 | 818.1 |
| 17 | 20655.06 | -7.45 | 0.00<< | 0.0 | 0.0 | 799.5 |
| 17 | 20913.04 | -7.68 | 0.00 | 0.0>> | 0.0 | 818.1 |
| 17 | 20655.06 | -7.45 | 0.00 | 0.0<< | 0.0 | 799.5 |
| 17 | 20913.04 | -7.68 | 0.00 | 0.0 | 0.0>> | 818.1 |
| 17 | 20655.06 | -7.45 | 0.00 | 0.0 | 0.0<< | 799.5 |
| 17 | 29318.28 | 3.83 | 0.00 | 0.0 | 0.0 | 18840.3>> |
| 17 | 24720.56 | 385.94 | 0.00 | 0.0 | 0.0 | -10996.7<< |

LAV-Gelida. V.Rierussa. ELU Comb Rara.IPF(1.35*G+1.35*LEV+1.00*P+1.50*SC+0.9*GT)

| BARRA 203 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 203 | 38653.17>> | 719.77 | 0.00 | 0.0 | 0.0 | 21443.5 |
| 203 | 18449.85<< | 9.10 | 0.00 | 0.0 | 0.0 | 692.9 |
| 203 | 37383.32 | 1160.80>> | 0.00 | 0.0 | 0.0 | 29702.4 |
| 203 | 18810.03 | -30.77<< | 0.00 | 0.0 | 0.0 | 1274.0 |
| 203 | 22273.07 | 17.18 | 0.00>> | 0.0 | 0.0 | 1278.6 |
| 203 | 21650.40 | 16.78 | 0.00<< | 0.0 | 0.0 | 1249.7 |
| 203 | 22273.07 | 17.18 | 0.00 | 0.0>> | 0.0 | 1278.6 |
| 203 | 21650.40 | 16.78 | 0.00 | 0.0<< | 0.0 | 1249.7 |
| 203 | 22273.07 | 17.18 | 0.00 | 0.0 | 0.0>> | 1278.6 |
| 203 | 21650.40 | 16.78 | 0.00 | 0.0 | 0.0<< | 1249.7 |
| 203 | 30170.56 | 837.12 | 0.00 | 0.0 | 0.0 | 36507.3>> |
| 203 | 25114.27 | 203.35 | 0.00 | 0.0 | 0.0 | -7793.6<< |
| | | | | | | |
| 37 | 38653.17>> | 719.77 | 0.00 | 0.0 | 0.0 | 6955.6 |
| 37 | 18449.85<< | 9.10 | 0.00 | 0.0 | 0.0 | 510.8 |
| 37 | 37383.32 | 1160.80>> | 0.00 | 0.0 | 0.0 | 6336.6 |
| 37 | 18810.03 | -30.77<< | 0.00 | 0.0 | 0.0 | 1894.4 |
| 37 | 22273.07 | 17.18 | 0.00>> | 0.0 | 0.0 | 933.6 |
| 37 | 21650.40 | 16.78 | 0.00<< | 0.0 | 0.0 | 912.9 |
| 37 | 22273.07 | 17.18 | 0.00 | 0.0>> | 0.0 | 933.6 |
| 37 | 21650.40 | 16.78 | 0.00 | 0.0<< | 0.0 | 912.9 |
| 37 | 22273.07 | 17.18 | 0.00 | 0.0 | 0.0>> | 933.6 |
| 37 | 21650.40 | 16.78 | 0.00 | 0.0 | 0.0<< | 912.9 |
| 37 | 30170.56 | 836.82 | 0.00 | 0.0 | 0.0 | 19663.1>> |
| 37 | 25114.27 | 203.65 | 0.00 | 0.0 | 0.0 | -11891.9<< |

| BARRA 204 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 204 | 38057.84>> | -103.33 | 0.00 | 0.0 | 0.0 | 3773.2 |
| 204 | 17960.84<< | -13.00 | 0.00 | 0.0 | 0.0 | -2.4 |
| 204 | 25587.07 | 345.64>> | 0.00 | 0.0 | 0.0 | 3831.2 |
| 204 | 30431.61 | -461.97<< | 0.00 | 0.0 | 0.0 | -60.4 |
| 204 | 21646.22 | -22.85 | 0.00>> | 0.0 | 0.0 | 2.7 |
| 204 | 21133.34 | -22.34 | 0.00<< | 0.0 | 0.0 | 2.4 |
| 204 | 21646.22 | -22.85 | 0.00 | 0.0>> | 0.0 | 2.7 |
| 204 | 21133.34 | -22.34 | 0.00 | 0.0<< | 0.0 | 2.4 |
| 204 | 21646.22 | -22.85 | 0.00 | 0.0 | 0.0>> | 2.7 |
| 204 | 21133.34 | -22.34 | 0.00 | 0.0 | 0.0<< | 2.4 |
| 204 | 36678.41 | -38.68 | 0.00 | 0.0 | 0.0 | 6781.2>> |
| 204 | 18359.09 | -53.06 | 0.00 | 0.0 | 0.0 | -436.2<< |
| | | | | | | |
| 57 | 38057.84>> | -103.33 | 0.00 | 0.0 | 0.0 | 8279.8 |
| 57 | 17960.84<< | -13.00 | 0.00 | 0.0 | 0.0 | 563.1 |
| 57 | 25587.07 | 345.64>> | 0.00 | 0.0 | 0.0 | -11250.6 |
| 57 | 30431.61 | -461.97<< | 0.00 | 0.0 | 0.0 | 20093.4 |
| 57 | 21646.22 | -22.85 | 0.00>> | 0.0 | 0.0 | 998.0 |
| 57 | 21133.34 | -22.34 | 0.00<< | 0.0 | 0.0 | 975.5 |
| 57 | 21646.22 | -22.85 | 0.00 | 0.0>> | 0.0 | 998.0 |
| 57 | 21133.34 | -22.34 | 0.00 | 0.0<< | 0.0 | 975.5 |
| 57 | 21646.22 | -22.85 | 0.00 | 0.0 | 0.0>> | 998.0 |
| 57 | 21133.34 | -22.34 | 0.00 | 0.0 | 0.0<< | 975.5 |
| 57 | 29450.27 | -433.51 | 0.00 | 0.0 | 0.0 | 21858.1>> |
| 57 | 24607.30 | 334.09 | 0.00 | 0.0 | 0.0 | -12101.2<< |

LAV-Gelida. V.Rierussa. ELU Comb Rara.IPF(1.35*G+1.35*LEV+1.00*P+1.50*SC+0.9*GT)

| BARRA 205 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 205 | 39106.86>> | 731.41 | 0.00 | 0.0 | 0.0 | 22450.5 |
| 205 | 18898.68<< | 9.86 | 0.00 | 0.0 | 0.0 | 651.3 |
| 205 | 37840.71 | 1158.24>> | 0.00 | 0.0 | 0.0 | 30976.9 |
| 205 | 19258.63 | -25.66<< | 0.00 | 0.0 | 0.0 | 1256.1 |
| 205 | 22724.09 | 17.89 | 0.00>> | 0.0 | 0.0 | 1241.5 |
| 205 | 22101.38 | 17.50 | 0.00<< | 0.0 | 0.0 | 1212.4 |
| 205 | 22724.09 | 17.89 | 0.00 | 0.0>> | 0.0 | 1241.5 |
| 205 | 22101.38 | 17.50 | 0.00 | 0.0<< | 0.0 | 1212.4 |
| 205 | 22724.09 | 17.89 | 0.00 | 0.0 | 0.0>> | 1241.5 |
| 205 | 22101.38 | 17.50 | 0.00 | 0.0 | 0.0<< | 1212.4 |
| 205 | 30627.21 | 843.09 | 0.00 | 0.0 | 0.0 | 37395.6>> |
| 205 | 25567.06 | 211.28 | 0.00 | 0.0 | 0.0 | -7309.4<< |
| 77 | 39106.86>> | 731.41 | 0.00 | 0.0 | 0.0 | 6628.9 |
| 77 | 18898.68<< | 9.86 | 0.00 | 0.0 | 0.0 | 436.9 |
| 77 | 37840.71 | 1158.24>> | 0.00 | 0.0 | 0.0 | 5923.1 |
| 77 | 19258.63 | -25.66<< | 0.00 | 0.0 | 0.0 | 1810.0 |
| 77 | 22724.09 | 17.89 | 0.00>> | 0.0 | 0.0 | 853.4 |
| 77 | 22101.38 | 17.50 | 0.00<< | 0.0 | 0.0 | 832.9 |
| 77 | 22724.09 | 17.89 | 0.00 | 0.0>> | 0.0 | 853.4 |
| 77 | 22101.38 | 17.50 | 0.00 | 0.0<< | 0.0 | 832.9 |
| 77 | 22724.09 | 17.89 | 0.00 | 0.0 | 0.0>> | 853.4 |
| 77 | 22101.38 | 17.50 | 0.00 | 0.0 | 0.0<< | 832.9 |
| 77 | 30627.21 | 842.35 | 0.00 | 0.0 | 0.0 | 19163.9>> |
| 77 | 25567.06 | 212.02 | 0.00 | 0.0 | 0.0 | -11885.7<< |

| BARRA 206 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 206 | 38320.16>> | 158.89 | 0.00 | 0.0 | 0.0 | 10389.1 |
| 206 | 16566.57<< | 82.73 | 0.00 | 0.0 | 0.0 | 2898.6 |
| 206 | 25146.43 | 605.19>> | 0.00 | 0.0 | 0.0 | 4488.7 |
| 206 | 29740.31 | -363.57<< | 0.00 | 0.0 | 0.0 | 8799.0 |
| 206 | 21376.86 | -13.10 | 0.00>> | 0.0 | 0.0 | 442.6 |
| 206 | 21119.01 | -12.76 | 0.00<< | 0.0 | 0.0 | 432.4 |
| 206 | 21376.86 | -13.10 | 0.00 | 0.0>> | 0.0 | 442.6 |
| 206 | 21119.01 | -12.76 | 0.00 | 0.0<< | 0.0 | 432.4 |
| 206 | 21376.86 | -13.10 | 0.00 | 0.0 | 0.0>> | 442.6 |
| 206 | 21119.01 | -12.76 | 0.00 | 0.0 | 0.0<< | 432.4 |
| 206 | 37166.54 | 255.13 | 0.00 | 0.0 | 0.0 | 14717.6>> |
| 206 | 21684.68 | 196.82 | 0.00 | 0.0 | 0.0 | -2003.9<< |
| 97 | 38320.16>> | 158.89 | 0.00 | 0.0 | 0.0 | 6633.8 |
| 97 | 16566.57<< | 82.73 | 0.00 | 0.0 | 0.0 | 942.6 |
| 97 | 25146.43 | 605.19>> | 0.00 | 0.0 | 0.0 | -9813.1 |
| 97 | 29740.31 | -363.57<< | 0.00 | 0.0 | 0.0 | 17389.5 |
| 97 | 21376.86 | -13.10 | 0.00>> | 0.0 | 0.0 | 751.4 |
| 97 | 21119.01 | -12.76 | 0.00<< | 0.0 | 0.0 | 733.0 |
| 97 | 21376.86 | -13.10 | 0.00 | 0.0>> | 0.0 | 751.4 |
| 97 | 21119.01 | -12.76 | 0.00 | 0.0<< | 0.0 | 733.0 |
| 97 | 21376.86 | -13.10 | 0.00 | 0.0 | 0.0>> | 751.4 |
| 97 | 21119.01 | -12.76 | 0.00 | 0.0 | 0.0<< | 733.0 |
| 97 | 29780.76 | -176.70 | 0.00 | 0.0 | 0.0 | 18516.1>> |
| 97 | 25188.52 | 408.84 | 0.00 | 0.0 | 0.0 | -11013.5<< |

TITULO
=======
LAV-Gelida. V.Rierussa. ELU. EC71-71(1.35*G+1.35*LEV+1.00*P+1.45*SC+0.9*GT)

FICHERO DE GEOMETRIA COMPLETA
==============================
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
================================
1

| Fich | Num. Nudos | Num. barras | Num. hipotesis | NOMBRE FICHERO |
|---|---|---|---|---|
| 1 | 120 | 119 | 161 | ESFec.TXT |

| Fich | Hipotesis | Caracter | Coeficiente |
|---|---|---|---|
| 1 | 1 | 1 | 1.35 |
| 1 | 2 | 1 | 1.35 |
| 1 | 3 | 1 | 1.35 |
| 1 | 4 | 3 | 1.35 |
| 1 | 5 | 3 | 1.35 |
| 1 | 6 | 3 | 1.35 |
| 1 | 7 | 2 | 0.75 |
| 1 | 8 | 2 | 0.75 |
| 1 | 9 | 2 | 0.75 |
| 1 | 10 | 2 | 0.75 |
| 1 | 11 | 2 | 0.75 |
| 1 | 12 | 2 | 0.75 |
| 1 | 13 | 2 | 0.75 |
| 1 | 14 | 2 | 0.75 |
| 1 | 15 | 2 | 0.75 |
| 1 | 16 | 2 | 0.75 |
| 1 | 17 | 2 | 0.75 |
| 1 | 18 | 2 | 0.75 |
| 1 | 19 | 4 | 1.45 |
| 1 | 20 | 5 | 1.45 |
| 1 | 21 | 4 | 1.45 |
| 1 | 22 | 5 | 1.45 |
| 1 | 23 | 4 | 1.45 |
| 1 | 24 | 5 | 1.45 |
| 1 | 25 | 4 | 1.45 |
| 1 | 26 | 5 | 1.45 |
| 1 | 27 | 4 | 1.45 |
| 1 | 28 | 5 | 1.45 |
| 1 | 29 | 4 | 1.45 |
| 1 | 30 | 5 | 1.45 |
| 1 | 31 | 4 | 1.45 |
| 1 | 32 | 5 | 1.45 |
| 1 | 33 | 4 | 1.45 |
| 1 | 34 | 5 | 1.45 |
| 1 | 35 | 4 | 1.45 |
| 1 | 36 | 5 | 1.45 |
| 1 | 37 | 4 | 1.45 |
| 1 | 38 | 5 | 1.45 |
| 1 | 39 | 4 | 1.45 |
| 1 | 40 | 5 | 1.45 |
| 1 | 41 | 6 | 1.45 |
| 1 | 42 | 7 | 1.45 |
| 1 | 43 | 6 | 1.45 |
| 1 | 44 | 7 | 1.45 |
| 1 | 45 | 6 | 1.45 |
| 1 | 46 | 7 | 1.45 |

| | | | |
|---|---|---|---|
| 1 | 47 | 6 | 1.45 |
| 1 | 48 | 7 | 1.45 |
| 1 | 49 | 6 | 1.45 |
| 1 | 50 | 7 | 1.45 |
| 1 | 51 | 6 | 1.45 |
| 1 | 52 | 7 | 1.45 |
| 1 | 53 | 6 | 1.45 |
| 1 | 54 | 7 | 1.45 |
| 1 | 55 | 6 | 1.45 |
| 1 | 56 | 7 | 1.45 |
| 1 | 57 | 6 | 1.45 |
| 1 | 58 | 7 | 1.45 |
| 1 | 59 | 6 | 1.45 |
| 1 | 60 | 7 | 1.45 |
| 1 | 61 | 6 | 1.45 |
| 1 | 62 | 7 | 1.45 |
| 1 | 63 | 6 | 1.45 |
| 1 | 64 | 7 | 1.45 |
| 1 | 65 | 6 | 1.45 |
| 1 | 66 | 7 | 1.45 |
| 1 | 67 | 6 | 1.45 |
| 1 | 68 | 7 | 1.45 |
| 1 | 69 | 6 | 1.45 |
| 1 | 70 | 7 | 1.45 |
| 1 | 71 | 6 | 1.45 |
| 1 | 72 | 7 | 1.45 |
| 1 | 73 | 6 | 1.45 |
| 1 | 74 | 7 | 1.45 |
| 1 | 75 | 6 | 1.45 |
| 1 | 76 | 7 | 1.45 |
| 1 | 77 | 6 | 1.45 |
| 1 | 78 | 7 | 1.45 |
| 1 | 79 | 6 | 1.45 |
| 1 | 80 | 7 | 1.45 |
| 1 | 81 | 6 | 1.45 |
| 1 | 82 | 7 | 1.45 |
| 1 | 83 | 6 | 1.45 |
| 1 | 84 | 7 | 1.45 |
| 1 | 85 | 6 | 1.45 |
| 1 | 86 | 7 | 1.45 |
| 1 | 87 | 6 | 1.45 |
| 1 | 88 | 7 | 1.45 |
| 1 | 89 | 6 | 1.45 |
| 1 | 90 | 7 | 1.45 |
| 1 | 91 | 6 | 1.45 |
| 1 | 92 | 7 | 1.45 |
| 1 | 93 | 6 | 1.45 |
| 1 | 94 | 7 | 1.45 |
| 1 | 95 | 6 | 1.45 |
| 1 | 96 | 7 | 1.45 |
| 1 | 97 | 8 | 0.0 |
| 1 | 98 | 9 | 0.0 |
| 1 | 99 | 8 | 0.0 |
| 1 | 100 | 9 | 0.0 |
| 1 | 101 | 8 | 0.0 |
| 1 | 102 | 9 | 0.0 |
| 1 | 103 | 8 | 0.0 |
| 1 | 104 | 9 | 0.0 |
| 1 | 105 | 8 | 0.0 |
| 1 | 106 | 9 | 0.0 |
| 1 | 107 | 8 | 0.0 |
| 1 | 108 | 9 | 0.0 |
| 1 | 109 | 8 | 0.0 |
| 1 | 110 | 9 | 0.0 |
| 1 | 111 | 8 | 0.0 |
| 1 | 112 | 9 | 0.0 |
| 1 | 113 | 8 | 0.0 |
| 1 | 114 | 9 | 0.0 |
| 1 | 115 | 8 | 0.0 |
| 1 | 116 | 9 | 0.0 |
| 1 | 117 | 8 | 0.0 |
| 1 | 118 | 9 | 0.0 |
| 1 | 119 | 10 | 0.0 |
| 1 | 120 | 10 | 0.0 |
| 1 | 121 | 10 | 0.0 |
| 1 | 122 | 10 | 0.0 |
| 1 | 123 | 10 | 0.0 |
| 1 | 124 | 10 | 0.0 |
| 1 | 125 | 10 | 0.0 |
| 1 | 126 | 10 | 0.0 |
| 1 | 127 | 10 | 0.0 |
| 1 | 128 | 10 | 0.0 |
| 1 | 129 | 10 | 0.0 |
| 1 | 130 | 10 | 0.0 |
| 1 | 131 | 10 | 0.0 |
| 1 | 132 | 10 | 0.0 |
| 1 | 133 | 10 | 0.0 |
| 1 | 134 | 10 | 0.0 |
| 1 | 135 | 10 | 0.0 |
| 1 | 136 | 10 | 0.0 |
| 1 | 137 | 10 | 0.0 |
| 1 | 138 | 10 | 0.0 |
| 1 | 139 | 10 | 0.0 |
| 1 | 140 | 10 | 0.0 |
| 1 | 141 | 2 | 0.9 |
| 1 | 142 | 1 | 20.433 |
| 1 | 143 | 1 | 2.919 |
| 1 | 144 | 1 | 2.919 |
| 1 | 145 | 1 | 11.676 |
| 1 | 146 | 1 | 2.919 |
| 1 | 147 | 1 | 2.919 |
| 1 | 148 | 1 | 6.464 |
| 1 | 149 | 1 | 6.464 |
| 1 | 150 | 1 | 6.464 |
| 1 | 151 | 1 | 6.464 |
| 1 | 152 | 1 | 6.464 |
| 1 | 153 | 1 | 6.464 |
| 1 | 154 | 1 | 6.464 |
| 1 | 155 | 1 | 6.464 |
| 1 | 156 | 1 | 6.464 |
| 1 | 157 | 1 | 6.464 |
| 1 | 158 | 1 | 6.464 |
| 1 | 159 | 1 | 6.464 |
| 1 | 160 | 1 | 6.464 |
| 1 | 161 | 1 | 6.464 |

| BARRA 202 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 202 | 37312.91>> | 184.46 | 0.00 | 0.0 | 0.0 | 8929.7 |
| 202 | 15952.65<< | 97.35 | 0.00 | 0.0 | 0.0 | 2674.2 |
| 202 | 24512.83 | 607.04>> | 0.00 | 0.0 | 0.0 | 1682.0 |
| 202 | 29053.21 | -321.80<< | 0.00 | 0.0 | 0.0 | 9945.2 |
| 202 | 20913.04 | -7.68 | 0.00>> | 0.0 | 0.0 | 672.3 |
| 202 | 20655.06 | -7.45 | 0.00<< | 0.0 | 0.0 | 657.8 |
| 202 | 20913.04 | -7.68 | 0.00 | 0.0>> | 0.0 | 672.3 |
| 202 | 20655.06 | -7.45 | 0.00 | 0.0<< | 0.0 | 657.8 |
| 202 | 20913.04 | -7.68 | 0.00 | 0.0 | 0.0>> | 672.3 |
| 202 | 20655.06 | -7.45 | 0.00 | 0.0 | 0.0<< | 657.8 |
| 202 | 28907.17 | -27.06 | 0.00 | 0.0 | 0.0 | 16703.1>> |
| 202 | 24088.77 | 243.32 | 0.00 | 0.0 | 0.0 | -5776.2<< |
| 17 | 37312.91>> | 184.46 | 0.00 | 0.0 | 0.0 | 5495.8 |
| 17 | 15952.65<< | 97.35 | 0.00 | 0.0 | 0.0 | 863.5 |
| 17 | 24512.83 | 607.04>> | 0.00 | 0.0 | 0.0 | -9624.3 |
| 17 | 29053.21 | -321.80<< | 0.00 | 0.0 | 0.0 | 15943.0 |
| 17 | 20913.04 | -7.68 | 0.00>> | 0.0 | 0.0 | 818.1 |
| 17 | 20655.06 | -7.45 | 0.00<< | 0.0 | 0.0 | 799.5 |
| 17 | 20913.04 | -7.68 | 0.00 | 0.0>> | 0.0 | 818.1 |
| 17 | 20655.06 | -7.45 | 0.00 | 0.0<< | 0.0 | 799.5 |
| 17 | 20913.04 | -7.68 | 0.00 | 0.0 | 0.0>> | 818.1 |
| 17 | 20655.06 | -7.45 | 0.00 | 0.0 | 0.0<< | 799.5 |
| 17 | 29145.48 | -67.82 | 0.00 | 0.0 | 0.0 | 17574.0>> |
| 17 | 24547.91 | 307.13 | 0.00 | 0.0 | 0.0 | -10908.6<< |

LAV-Gelida. V.Rierussa. ELU. EC71-71(1.35*G+1.35*LEV+1.00*P+1.45*SC+0.9*GT)

| BARRA 203 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 203 | 39306.52>> | 445.37 | 0.00 | 0.0 | 0.0 | 15176.8 |
| 203 | 17237.43<< | 208.69 | 0.00 | 0.0 | 0.0 | 4844.5 |
| 203 | 37337.43 | 950.65>> | 0.00 | 0.0 | 0.0 | 23578.8 |
| 203 | 19250.65 | -156.50<< | 0.00 | 0.0 | 0.0 | -340.2 |
| 203 | 22273.07 | 17.18 | 0.00>> | 0.0 | 0.0 | 1278.6 |
| 203 | 21650.40 | 16.78 | 0.00<< | 0.0 | 0.0 | 1249.7 |
| 203 | 22273.07 | 17.18 | 0.00 | 0.0>> | 0.0 | 1278.6 |
| 203 | 21650.40 | 16.78 | 0.00 | 0.0<< | 0.0 | 1249.7 |
| 203 | 22273.07 | 17.18 | 0.00 | 0.0 | 0.0>> | 1278.6 |
| 203 | 21650.40 | 16.78 | 0.00 | 0.0 | 0.0<< | 1249.7 |
| 203 | 30460.52 | 636.71 | 0.00 | 0.0 | 0.0 | 32032.6>> |
| 203 | 25166.08 | 71.89 | 0.00 | 0.0 | 0.0 | -10555.7<< |
| 37 | 39306.52>> | 445.37 | 0.00 | 0.0 | 0.0 | 6212.3 |
| 37 | 17237.43<< | 208.69 | 0.00 | 0.0 | 0.0 | 644.5 |
| 37 | 37337.43 | 950.65>> | 0.00 | 0.0 | 0.0 | 4443.1 |
| 37 | 19250.65 | -156.50<< | 0.00 | 0.0 | 0.0 | 2811.1 |
| 37 | 22273.07 | 17.18 | 0.00>> | 0.0 | 0.0 | 933.6 |
| 37 | 21650.40 | 16.78 | 0.00<< | 0.0 | 0.0 | 912.9 |
| 37 | 22273.07 | 17.18 | 0.00 | 0.0>> | 0.0 | 933.6 |
| 37 | 21650.40 | 16.78 | 0.00 | 0.0<< | 0.0 | 912.9 |
| 37 | 22273.07 | 17.18 | 0.00 | 0.0 | 0.0>> | 933.6 |
| 37 | 21650.40 | 16.78 | 0.00 | 0.0 | 0.0<< | 912.9 |
| 37 | 30670.99 | 617.70 | 0.00 | 0.0 | 0.0 | 19497.1>> |
| 37 | 25614.54 | 99.48 | 0.00 | 0.0 | 0.0 | -12418.8<< |

| BARRA 204 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 204 | 38548.77>> | -109.09 | 0.00 | 0.0 | 0.0 | 2266.9 |
| 204 | 16728.31<< | -4.39 | 0.00 | 0.0 | 0.0 | 835.0 |
| 204 | 25291.81 | 367.17>> | 0.00 | 0.0 | 0.0 | 5179.6 |
| 204 | 30137.18 | -479.44<< | 0.00 | 0.0 | 0.0 | -2032.2 |
| 204 | 21646.22 | -22.85 | 0.00>> | 0.0 | 0.0 | 2.7 |
| 204 | 21133.34 | -22.34 | 0.00<< | 0.0 | 0.0 | 2.4 |
| 204 | 21646.22 | -22.85 | 0.00 | 0.0>> | 0.0 | 2.7 |
| 204 | 21133.34 | -22.34 | 0.00 | 0.0<< | 0.0 | 2.4 |
| 204 | 21646.22 | -22.85 | 0.00 | 0.0 | 0.0>> | 2.7 |
| 204 | 21133.34 | -22.34 | 0.00 | 0.0 | 0.0<< | 2.4 |
| 204 | 36464.78 | -10.75 | 0.00 | 0.0 | 0.0 | 5807.8>> |
| 204 | 25385.56 | -461.97 | 0.00 | 0.0 | 0.0 | -2115.7<< |
| 57 | 38548.77>> | -109.09 | 0.00 | 0.0 | 0.0 | 7025.4 |
| 57 | 16728.31<< | -4.39 | 0.00 | 0.0 | 0.0 | 1024.2 |
| 57 | 25291.81 | 367.17>> | 0.00 | 0.0 | 0.0 | -10841.0 |
| 57 | 30137.18 | -479.44<< | 0.00 | 0.0 | 0.0 | 18884.3 |
| 57 | 21646.22 | -22.85 | 0.00>> | 0.0 | 0.0 | 998.0 |
| 57 | 21133.34 | -22.34 | 0.00<< | 0.0 | 0.0 | 975.5 |
| 57 | 21646.22 | -22.85 | 0.00 | 0.0>> | 0.0 | 998.0 |
| 57 | 21133.34 | -22.34 | 0.00 | 0.0<< | 0.0 | 975.5 |
| 57 | 21646.22 | -22.85 | 0.00 | 0.0 | 0.0>> | 998.0 |
| 57 | 21133.34 | -22.34 | 0.00 | 0.0 | 0.0<< | 975.5 |
| 57 | 29861.49 | -451.02 | 0.00 | 0.0 | 0.0 | 21379.3>> |
| 57 | 25018.56 | 338.78 | 0.00 | 0.0 | 0.0 | -12850.5<< |

LAV-Gelida. V.Rierussa. ELU. EC71-71(1.35*G+1.35*LEV+1.00*P+1.45*SC+0.9*GT)

| BARRA 205 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 205 | 39757.69>> | 460.93 | 0.00 | 0.0 | 0.0 | 15983.1 |
| 205 | 17688.91<< | 189.82 | 0.00 | 0.0 | 0.0 | 4653.5 |
| 205 | 37794.34 | 934.69>> | 0.00 | 0.0 | 0.0 | 24338.2 |
| 205 | 19677.58 | -139.87<< | 0.00 | 0.0 | 0.0 | -253.6 |
| 205 | 22724.09 | 17.89 | 0.00>> | 0.0 | 0.0 | 1241.5 |
| 205 | 22101.38 | 17.50 | 0.00<< | 0.0 | 0.0 | 1212.4 |
| 205 | 22724.09 | 17.89 | 0.00 | 0.0>> | 0.0 | 1241.5 |
| 205 | 22101.38 | 17.50 | 0.00 | 0.0<< | 0.0 | 1212.4 |
| 205 | 22724.09 | 17.89 | 0.00 | 0.0 | 0.0>> | 1241.5 |
| 205 | 22101.38 | 17.50 | 0.00 | 0.0 | 0.0<< | 1212.4 |
| 205 | 30888.40 | 638.79 | 0.00 | 0.0 | 0.0 | 32617.8>> |
| 205 | 25601.65 | 70.54 | 0.00 | 0.0 | 0.0 | -10376.2<< |
| 77 | 39757.69>> | 460.93 | 0.00 | 0.0 | 0.0 | 6012.2 |
| 77 | 17688.91<< | 189.82 | 0.00 | 0.0 | 0.0 | 546.3 |
| 77 | 37794.34 | 934.69>> | 0.00 | 0.0 | 0.0 | 4119.9 |
| 77 | 19677.58 | -139.87<< | 0.00 | 0.0 | 0.0 | 2770.9 |
| 77 | 22724.09 | 17.89 | 0.00>> | 0.0 | 0.0 | 853.4 |
| 77 | 22101.38 | 17.50 | 0.00<< | 0.0 | 0.0 | 832.9 |
| 77 | 22724.09 | 17.89 | 0.00 | 0.0>> | 0.0 | 853.4 |
| 77 | 22101.38 | 17.50 | 0.00 | 0.0<< | 0.0 | 832.9 |
| 77 | 22724.09 | 17.89 | 0.00 | 0.0 | 0.0>> | 853.4 |
| 77 | 22101.38 | 17.50 | 0.00 | 0.0 | 0.0<< | 832.9 |
| 77 | 31128.64 | 620.85 | 0.00 | 0.0 | 0.0 | 19062.5>> |
| 77 | 26068.33 | 104.57 | 0.00 | 0.0 | 0.0 | -12378.6<< |

| BARRA 206 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 206 | 37748.64>> | 68.83 | 0.00 | 0.0 | 0.0 | 7033.5 |
| 206 | 16427.06<< | 76.61 | 0.00 | 0.0 | 0.0 | 2562.4 |
| 206 | 25001.25 | 580.36>> | 0.00 | 0.0 | 0.0 | 4287.3 |
| 206 | 29594.84 | -429.91<< | 0.00 | 0.0 | 0.0 | 5623.4 |
| 206 | 21376.86 | -13.10 | 0.00>> | 0.0 | 0.0 | 442.6 |
| 206 | 21119.01 | -12.76 | 0.00<< | 0.0 | 0.0 | 432.4 |
| 206 | 21376.86 | -13.10 | 0.00 | 0.0>> | 0.0 | 442.6 |
| 206 | 21119.01 | -12.76 | 0.00 | 0.0<< | 0.0 | 432.4 |
| 206 | 21376.86 | -13.10 | 0.00 | 0.0 | 0.0>> | 442.6 |
| 206 | 21119.01 | -12.76 | 0.00 | 0.0 | 0.0<< | 432.4 |
| 206 | 29987.13 | -131.53 | 0.00 | 0.0 | 0.0 | 12633.7>> |
| 206 | 21126.64 | 104.20 | 0.00 | 0.0 | 0.0 | -3500.4<< |
| 97 | 37748.64>> | 68.83 | 0.00 | 0.0 | 0.0 | 5406.2 |
| 97 | 16427.06<< | 76.61 | 0.00 | 0.0 | 0.0 | 751.2 |
| 97 | 25001.25 | 580.36>> | 0.00 | 0.0 | 0.0 | -9427.4 |
| 97 | 29594.84 | -429.91<< | 0.00 | 0.0 | 0.0 | 15781.8 |
| 97 | 21376.86 | -13.10 | 0.00>> | 0.0 | 0.0 | 751.4 |
| 97 | 21119.01 | -12.76 | 0.00<< | 0.0 | 0.0 | 733.0 |
| 97 | 21376.86 | -13.10 | 0.00 | 0.0>> | 0.0 | 751.4 |
| 97 | 21119.01 | -12.76 | 0.00 | 0.0<< | 0.0 | 733.0 |
| 97 | 21376.86 | -13.10 | 0.00 | 0.0 | 0.0>> | 751.4 |
| 97 | 21119.01 | -12.76 | 0.00 | 0.0 | 0.0<< | 733.0 |
| 97 | 29606.80 | -220.01 | 0.00 | 0.0 | 0.0 | 17292.3>> |
| 97 | 25014.71 | 346.12 | 0.00 | 0.0 | 0.0 | -10904.2<< |

TITULO
=======
LAV-Gelida. V.Rierussa. ELU. ECSW-71(1.35*G+1.35*LEV+1.00*P+((1.45*SW0 o 71) o 1.20*SW2)+0.9*GT)

FICHERO DE GEOMETRIA COMPLETA
==============================
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
================================
1

| Fich | Num. Nudos | Num. barras | Num. hipotesis | NOMBRE FICHERO |
|---|---|---|---|---|
| 1 | 120 | 119 | 161 | ESFec.TXT |

| Fich | Hipotesis | Caracter | Coeficiente |
|---|---|---|---|
| 1 | 1 | 1 | 1.35 |
| 1 | 2 | 1 | 1.35 |
| 1 | 3 | 1 | 1.35 |
| 1 | 4 | 3 | 1.35 |
| 1 | 5 | 3 | 1.35 |
| 1 | 6 | 3 | 1.35 |
| 1 | 7 | 2 | 0.75 |
| 1 | 8 | 2 | 0.75 |
| 1 | 9 | 2 | 0.75 |
| 1 | 10 | 2 | 0.75 |
| 1 | 11 | 2 | 0.75 |
| 1 | 12 | 2 | 0.75 |
| 1 | 13 | 2 | 0.75 |
| 1 | 14 | 2 | 0.75 |
| 1 | 15 | 2 | 0.75 |
| 1 | 16 | 2 | 0.75 |
| 1 | 17 | 2 | 0.75 |
| 1 | 18 | 2 | 0.75 |
| 1 | 19 | 4 | 0.0 |
| 1 | 20 | 5 | 1.45 |
| 1 | 21 | 4 | 0.0 |
| 1 | 22 | 5 | 1.45 |
| 1 | 23 | 4 | 0.0 |
| 1 | 24 | 5 | 1.45 |
| 1 | 25 | 4 | 0.0 |
| 1 | 26 | 5 | 1.45 |
| 1 | 27 | 4 | 0.0 |
| 1 | 28 | 5 | 1.45 |
| 1 | 29 | 4 | 0.0 |
| 1 | 30 | 5 | 1.45 |
| 1 | 31 | 4 | 0.0 |
| 1 | 32 | 5 | 1.45 |
| 1 | 33 | 4 | 0.0 |
| 1 | 34 | 5 | 1.45 |
| 1 | 35 | 4 | 0.0 |
| 1 | 36 | 5 | 1.45 |
| 1 | 37 | 4 | 0.0 |
| 1 | 38 | 5 | 1.45 |
| 1 | 39 | 4 | 0.0 |
| 1 | 40 | 5 | 1.45 |
| 1 | 41 | 6 | 0.0 |
| 1 | 42 | 7 | 1.45 |
| 1 | 43 | 6 | 0.0 |
| 1 | 44 | 7 | 1.45 |
| 1 | 45 | 6 | 0.0 |
| 1 | 46 | 7 | 1.45 |

| | | | |
|---|---|---|---|
| 1 | 47 | 6 | 0.0 |
| 1 | 48 | 7 | 1.45 |
| 1 | 49 | 6 | 0.0 |
| 1 | 50 | 7 | 1.45 |
| 1 | 51 | 6 | 0.0 |
| 1 | 52 | 7 | 1.45 |
| 1 | 53 | 6 | 0.0 |
| 1 | 54 | 7 | 1.45 |
| 1 | 55 | 6 | 0.0 |
| 1 | 56 | 7 | 1.45 |
| 1 | 57 | 6 | 0.0 |
| 1 | 58 | 7 | 1.45 |
| 1 | 59 | 6 | 0.0 |
| 1 | 60 | 7 | 1.45 |
| 1 | 61 | 6 | 0.0 |
| 1 | 62 | 7 | 1.45 |
| 1 | 63 | 6 | 0.0 |
| 1 | 64 | 7 | 1.45 |
| 1 | 65 | 6 | 0.0 |
| 1 | 66 | 7 | 1.45 |
| 1 | 67 | 6 | 0.0 |
| 1 | 68 | 7 | 1.45 |
| 1 | 69 | 6 | 0.0 |
| 1 | 70 | 7 | 1.45 |
| 1 | 71 | 6 | 0.0 |
| 1 | 72 | 7 | 1.45 |
| 1 | 73 | 6 | 0.0 |
| 1 | 74 | 7 | 1.45 |
| 1 | 75 | 6 | 0.0 |
| 1 | 76 | 7 | 1.45 |
| 1 | 77 | 6 | 0.0 |
| 1 | 78 | 7 | 1.45 |
| 1 | 79 | 6 | 0.0 |
| 1 | 80 | 7 | 1.45 |
| 1 | 81 | 6 | 0.0 |
| 1 | 82 | 7 | 1.45 |
| 1 | 83 | 6 | 0.0 |
| 1 | 84 | 7 | 1.45 |
| 1 | 85 | 6 | 0.0 |
| 1 | 86 | 7 | 1.45 |
| 1 | 87 | 6 | 0.0 |
| 1 | 88 | 7 | 1.45 |
| 1 | 89 | 6 | 0.0 |
| 1 | 90 | 7 | 1.45 |
| 1 | 91 | 6 | 0.0 |
| 1 | 92 | 7 | 1.45 |
| 1 | 93 | 6 | 0.0 |
| 1 | 94 | 7 | 1.45 |
| 1 | 95 | 6 | 0.0 |
| 1 | 96 | 7 | 1.45 |
| 1 | 97 | 8 | 1.45 |
| 1 | 98 | 9 | 0.0 |
| 1 | 99 | 8 | 1.45 |
| 1 | 100 | 9 | 0.0 |
| 1 | 101 | 8 | 1.45 |
| 1 | 102 | 9 | 0.0 |
| 1 | 103 | 8 | 1.45 |
| 1 | 104 | 9 | 0.0 |
| 1 | 105 | 8 | 1.45 |
| 1 | 106 | 9 | 0.0 |
| 1 | 107 | 8 | 1.45 |
| 1 | 108 | 9 | 0.0 |
| 1 | 109 | 8 | 1.45 |
| 1 | 110 | 9 | 0.0 |
| 1 | 111 | 8 | 1.45 |
| 1 | 112 | 9 | 0.0 |
| 1 | 113 | 8 | 1.45 |
| 1 | 114 | 9 | 0.0 |
| 1 | 115 | 8 | 1.45 |
| 1 | 116 | 9 | 0.0 |
| 1 | 117 | 8 | 1.45 |
| 1 | 118 | 9 | 0.0 |
| 1 | 119 | 8 | 1.20 |
| 1 | 120 | 10 | 0.0 |
| 1 | 121 | 8 | 1.20 |
| 1 | 122 | 10 | 0.0 |
| 1 | 123 | 8 | 1.20 |
| 1 | 124 | 10 | 0.0 |
| 1 | 125 | 8 | 1.20 |
| 1 | 126 | 10 | 0.0 |
| 1 | 127 | 8 | 1.20 |
| 1 | 128 | 10 | 0.0 |
| 1 | 129 | 8 | 1.20 |
| 1 | 130 | 10 | 0.0 |
| 1 | 131 | 8 | 1.20 |
| 1 | 132 | 10 | 0.0 |
| 1 | 133 | 8 | 1.20 |
| 1 | 134 | 10 | 0.0 |
| 1 | 135 | 8 | 1.20 |
| 1 | 136 | 10 | 0.0 |
| 1 | 137 | 8 | 1.20 |
| 1 | 138 | 10 | 0.0 |
| 1 | 139 | 8 | 1.20 |
| 1 | 140 | 10 | 0.0 |
| 1 | 141 | 2 | 0.9 |
| 1 | 142 | 1 | 20.433 |
| 1 | 143 | 1 | 2.919 |
| 1 | 144 | 1 | 2.919 |
| 1 | 145 | 1 | 11.676 |
| 1 | 146 | 1 | 2.919 |
| 1 | 147 | 1 | 2.919 |
| 1 | 148 | 1 | 6.464 |
| 1 | 149 | 1 | 6.464 |
| 1 | 150 | 1 | 6.464 |
| 1 | 151 | 1 | 6.464 |
| 1 | 152 | 1 | 6.464 |
| 1 | 153 | 1 | 6.464 |
| 1 | 154 | 1 | 6.464 |
| 1 | 155 | 1 | 6.464 |
| 1 | 156 | 1 | 6.464 |
| 1 | 157 | 1 | 6.464 |
| 1 | 158 | 1 | 6.464 |
| 1 | 159 | 1 | 6.464 |
| 1 | 160 | 1 | 6.464 |
| 1 | 161 | 1 | 6.464 |

| BARRA 202 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 202 | 36482.45>> | 69.64 | 0.00 | 0.0 | 0.0 | 4513.1 |
| 202 | 15920.91<< | 75.13 | 0.00 | 0.0 | 0.0 | 2174.4 |
| 202 | 24605.88 | 615.02>> | 0.00 | 0.0 | 0.0 | 2113.2 |
| 202 | 28007.88 | -475.87<< | 0.00 | 0.0 | 0.0 | 4532.8 |
| 202 | 20913.04 | -7.68 | 0.00>> | 0.0 | 0.0 | 672.3 |
| 202 | 20655.06 | -7.45 | 0.00<< | 0.0 | 0.0 | 657.8 |
| 202 | 20913.04 | -7.68 | 0.00 | 0.0>> | 0.0 | 672.3 |
| 202 | 20655.06 | -7.45 | 0.00 | 0.0<< | 0.0 | 657.8 |
| 202 | 20913.04 | -7.68 | 0.00 | 0.0 | 0.0>> | 672.3 |
| 202 | 20655.06 | -7.45 | 0.00 | 0.0 | 0.0<< | 657.8 |
| 202 | 27250.94 | -115.36 | 0.00 | 0.0 | 0.0 | 10358.0>> |
| 202 | 24102.37 | 245.54 | 0.00 | 0.0 | 0.0 | -5718.6<< |
| 17 | 36482.45>> | 69.64 | 0.00 | 0.0 | 0.0 | 3218.3 |
| 17 | 15920.91<< | 75.13 | 0.00 | 0.0 | 0.0 | 777.6 |
| 17 | 24605.88 | 615.02>> | 0.00 | 0.0 | 0.0 | -9341.5 |
| 17 | 28007.88 | -475.87<< | 0.00 | 0.0 | 0.0 | 13401.2 |
| 17 | 20913.04 | -7.68 | 0.00>> | 0.0 | 0.0 | 818.1 |
| 17 | 20655.06 | -7.45 | 0.00<< | 0.0 | 0.0 | 799.5 |
| 17 | 20913.04 | -7.68 | 0.00 | 0.0>> | 0.0 | 818.1 |
| 17 | 20655.06 | -7.45 | 0.00 | 0.0<< | 0.0 | 799.5 |
| 17 | 20913.04 | -7.68 | 0.00 | 0.0 | 0.0>> | 818.1 |
| 17 | 20655.06 | -7.45 | 0.00 | 0.0 | 0.0<< | 799.5 |
| 17 | 28755.70 | -308.05 | 0.00 | 0.0 | 0.0 | 14069.2>> |
| 17 | 24547.91 | 307.13 | 0.00 | 0.0 | 0.0 | -10908.6<< |

LAV-Gelida. V.Rierussa. ELU. ECSW-71(1.35*G+1.35*LEV+1.00*P+((1.45*SW0 o 71) o 1.20*SW2)+0.9*GT)

| BARRA 203 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 203 | 38275.20>> | 199.03 | 0.00 | 0.0 | 0.0 | 7373.1 |
| 203 | 17207.29<< | 153.08 | 0.00 | 0.0 | 0.0 | 3736.3 |
| 203 | 31083.18 | 612.43>> | 0.00 | 0.0 | 0.0 | 2139.9 |
| 203 | 24525.64 | -313.57<< | 0.00 | 0.0 | 0.0 | 7418.1 |
| 203 | 22273.07 | 17.18 | 0.00>> | 0.0 | 0.0 | 1278.6 |
| 203 | 21650.40 | 16.78 | 0.00<< | 0.0 | 0.0 | 1249.7 |
| 203 | 22273.07 | 17.18 | 0.00 | 0.0>> | 0.0 | 1278.6 |
| 203 | 21650.40 | 16.78 | 0.00 | 0.0<< | 0.0 | 1249.7 |
| 203 | 22273.07 | 17.18 | 0.00 | 0.0 | 0.0>> | 1278.6 |
| 203 | 21650.40 | 16.78 | 0.00 | 0.0 | 0.0<< | 1249.7 |
| 203 | 30375.60 | -46.98 | 0.00 | 0.0 | 0.0 | 14753.8>> |
| 203 | 25144.11 | 70.71 | 0.00 | 0.0 | 0.0 | -10558.3<< |
| 37 | 38275.20>> | 199.03 | 0.00 | 0.0 | 0.0 | 3367.6 |
| 37 | 17207.29<< | 153.08 | 0.00 | 0.0 | 0.0 | 655.8 |
| 37 | 31083.18 | 612.43>> | 0.00 | 0.0 | 0.0 | -10187.4 |
| 37 | 24525.64 | -313.57<< | 0.00 | 0.0 | 0.0 | 13731.1 |
| 37 | 22273.07 | 17.18 | 0.00>> | 0.0 | 0.0 | 933.6 |
| 37 | 21650.40 | 16.78 | 0.00<< | 0.0 | 0.0 | 912.9 |
| 37 | 22273.07 | 17.18 | 0.00 | 0.0>> | 0.0 | 933.6 |
| 37 | 21650.40 | 16.78 | 0.00 | 0.0<< | 0.0 | 912.9 |
| 37 | 22273.07 | 17.18 | 0.00 | 0.0 | 0.0>> | 933.6 |
| 37 | 21650.40 | 16.78 | 0.00 | 0.0 | 0.0<< | 912.9 |
| 37 | 30375.60 | -47.28 | 0.00 | 0.0 | 0.0 | 15706.5>> |
| 37 | 25614.54 | 99.48 | 0.00 | 0.0 | 0.0 | -12418.8<< |

| BARRA 204 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 204 | 37532.46>> | -64.18 | 0.00 | 0.0 | 0.0 | 859.8 |
| 204 | 16698.97<< | -6.75 | 0.00 | 0.0 | 0.0 | 643.0 |
| 204 | 25186.48 | 363.44>> | 0.00 | 0.0 | 0.0 | 4933.9 |
| 204 | 29120.88 | -434.53<< | 0.00 | 0.0 | 0.0 | -3439.3 |
| 204 | 21646.22 | -22.85 | 0.00>> | 0.0 | 0.0 | 2.7 |
| 204 | 21133.34 | -22.34 | 0.00<< | 0.0 | 0.0 | 2.4 |
| 204 | 21646.22 | -22.85 | 0.00 | 0.0>> | 0.0 | 2.7 |
| 204 | 21133.34 | -22.34 | 0.00 | 0.0<< | 0.0 | 2.4 |
| 204 | 21646.22 | -22.85 | 0.00 | 0.0 | 0.0>> | 2.7 |
| 204 | 21133.34 | -22.34 | 0.00 | 0.0 | 0.0<< | 2.4 |
| 204 | 30332.83 | 342.68 | 0.00 | 0.0 | 0.0 | 5259.1>> |
| 204 | 23973.93 | -408.37 | 0.00 | 0.0 | 0.0 | -4006.7<< |
| 57 | 37532.46>> | -64.18 | 0.00 | 0.0 | 0.0 | 3659.1 |
| 57 | 16698.97<< | -6.75 | 0.00 | 0.0 | 0.0 | 935.3 |
| 57 | 25186.48 | 363.44>> | 0.00 | 0.0 | 0.0 | -10924.6 |
| 57 | 29120.88 | -434.53<< | 0.00 | 0.0 | 0.0 | 15517.9 |
| 57 | 21646.22 | -22.85 | 0.00>> | 0.0 | 0.0 | 998.0 |
| 57 | 21133.34 | -22.34 | 0.00<< | 0.0 | 0.0 | 975.5 |
| 57 | 21646.22 | -22.85 | 0.00 | 0.0>> | 0.0 | 998.0 |
| 57 | 21133.34 | -22.34 | 0.00 | 0.0<< | 0.0 | 975.5 |
| 57 | 21646.22 | -22.85 | 0.00 | 0.0 | 0.0>> | 998.0 |
| 57 | 21133.34 | -22.34 | 0.00 | 0.0 | 0.0<< | 975.5 |
| 57 | 29660.64 | -424.37 | 0.00 | 0.0 | 0.0 | 16201.4>> |
| 57 | 25018.56 | 338.78 | 0.00 | 0.0 | 0.0 | -12850.5<< |

LAV-Gelida. V.Rierussa. ELU. ECSW-71(1.35*G+1.35*LEV+1.00*P+((1.45*SW0 o 71) o 1.20*SW2)+0.9*GT)

| BARRA 205 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 205 | 38725.30>> | 211.88 | 0.00 | 0.0 | 0.0 | 7715.1 |
| 205 | 17658.94<< | 139.16 | 0.00 | 0.0 | 0.0 | 3572.1 |
| 205 | 31534.86 | 571.74>> | 0.00 | 0.0 | 0.0 | 2123.0 |
| 205 | 24974.46 | -272.78<< | 0.00 | 0.0 | 0.0 | 7648.7 |
| 205 | 22724.09 | 17.89 | 0.00>> | 0.0 | 0.0 | 1241.5 |
| 205 | 22101.38 | 17.50 | 0.00<< | 0.0 | 0.0 | 1212.4 |
| 205 | 22724.09 | 17.89 | 0.00 | 0.0>> | 0.0 | 1241.5 |
| 205 | 22101.38 | 17.50 | 0.00 | 0.0<< | 0.0 | 1212.4 |
| 205 | 22724.09 | 17.89 | 0.00 | 0.0 | 0.0>> | 1241.5 |
| 205 | 22101.38 | 17.50 | 0.00 | 0.0 | 0.0<< | 1212.4 |
| 205 | 30799.00 | -22.29 | 0.00 | 0.0 | 0.0 | 14951.2>> |
| 205 | 25599.17 | 70.83 | 0.00 | 0.0 | 0.0 | -10366.5<< |
| 77 | 38725.30>> | 211.88 | 0.00 | 0.0 | 0.0 | 3131.2 |
| 77 | 17658.94<< | 139.16 | 0.00 | 0.0 | 0.0 | 560.7 |
| 77 | 31534.86 | 571.74>> | 0.00 | 0.0 | 0.0 | -10244.6 |
| 77 | 24974.46 | -272.78<< | 0.00 | 0.0 | 0.0 | 13548.0 |
| 77 | 22724.09 | 17.89 | 0.00>> | 0.0 | 0.0 | 853.4 |
| 77 | 22101.38 | 17.50 | 0.00<< | 0.0 | 0.0 | 832.9 |
| 77 | 22724.09 | 17.89 | 0.00 | 0.0>> | 0.0 | 853.4 |
| 77 | 22101.38 | 17.50 | 0.00 | 0.0<< | 0.0 | 832.9 |
| 77 | 22724.09 | 17.89 | 0.00 | 0.0 | 0.0>> | 853.4 |
| 77 | 22101.38 | 17.50 | 0.00 | 0.0 | 0.0<< | 832.9 |
| 77 | 30826.42 | -24.71 | 0.00 | 0.0 | 0.0 | 15455.2>> |
| 77 | 26068.33 | 104.57 | 0.00 | 0.0 | 0.0 | -12378.6<< |

| BARRA 206 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 206 | 36923.05>> | 18.33 | 0.00 | 0.0 | 0.0 | 3476.3 |
| 206 | 16395.55<< | 56.22 | 0.00 | 0.0 | 0.0 | 2006.3 |
| 206 | 25071.13 | 577.49>> | 0.00 | 0.0 | 0.0 | 4224.1 |
| 206 | 28542.94 | -513.70<< | 0.00 | 0.0 | 0.0 | 1132.0 |
| 206 | 21376.86 | -13.10 | 0.00>> | 0.0 | 0.0 | 442.6 |
| 206 | 21119.01 | -12.76 | 0.00<< | 0.0 | 0.0 | 432.4 |
| 206 | 21376.86 | -13.10 | 0.00 | 0.0>> | 0.0 | 442.6 |
| 206 | 21119.01 | -12.76 | 0.00 | 0.0<< | 0.0 | 432.4 |
| 206 | 21376.86 | -13.10 | 0.00 | 0.0 | 0.0>> | 442.6 |
| 206 | 21119.01 | -12.76 | 0.00 | 0.0 | 0.0<< | 432.4 |
| 206 | 25236.79 | 71.66 | 0.00 | 0.0 | 0.0 | 7455.7>> |
| 206 | 21139.88 | 105.66 | 0.00 | 0.0 | 0.0 | -3447.6<< |
| 97 | 36923.05>> | 18.33 | 0.00 | 0.0 | 0.0 | 3042.4 |
| 97 | 16395.55<< | 56.22 | 0.00 | 0.0 | 0.0 | 676.5 |
| 97 | 25071.13 | 577.49>> | 0.00 | 0.0 | 0.0 | -9423.0 |
| 97 | 28542.94 | -513.70<< | 0.00 | 0.0 | 0.0 | 13269.8 |
| 97 | 21376.86 | -13.10 | 0.00>> | 0.0 | 0.0 | 751.4 |
| 97 | 21119.01 | -12.76 | 0.00<< | 0.0 | 0.0 | 733.0 |
| 97 | 21376.86 | -13.10 | 0.00 | 0.0>> | 0.0 | 751.4 |
| 97 | 21119.01 | -12.76 | 0.00 | 0.0<< | 0.0 | 733.0 |
| 97 | 21376.86 | -13.10 | 0.00 | 0.0 | 0.0>> | 751.4 |
| 97 | 21119.01 | -12.76 | 0.00 | 0.0 | 0.0<< | 733.0 |
| 97 | 29209.93 | -388.79 | 0.00 | 0.0 | 0.0 | 13938.2>> |
| 97 | 25014.71 | 346.12 | 0.00 | 0.0 | 0.0 | -10904.2<< |

TITULO
=======
LAV-Gelida. V.Rierussa. ELU. ECSW-SW(1.35*G+1.35*LEV+1.00*P+(1.45*SW0 o 1.20*SW2)+0.9*GT)

FICHERO DE GEOMETRIA COMPLETA
==========
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
==========
1

| Fich | Num. Nudos | Num. barras | Num. hipotesis | NOMBRE FICHERO |
|---|---|---|---|---|
| 1 | 120 | 119 | 161 | ESFec.TXT |

| Fich | Hipotesis | Caracter | Coeficiente |
|---|---|---|---|
| 1 | 1 | 1 | 1.35 |
| 1 | 2 | 1 | 1.35 |
| 1 | 3 | 1 | 1.35 |
| 1 | 4 | 3 | 1.35 |
| 1 | 5 | 3 | 1.35 |
| 1 | 6 | 3 | 1.35 |
| 1 | 7 | 2 | 0.75 |
| 1 | 8 | 2 | 0.75 |
| 1 | 9 | 2 | 0.75 |
| 1 | 10 | 2 | 0.75 |
| 1 | 11 | 2 | 0.75 |
| 1 | 12 | 2 | 0.75 |
| 1 | 13 | 2 | 0.75 |
| 1 | 14 | 2 | 0.75 |
| 1 | 15 | 2 | 0.75 |
| 1 | 16 | 2 | 0.75 |
| 1 | 17 | 2 | 0.75 |
| 1 | 18 | 2 | 0.75 |
| 1 | 19 | 4 | 0.0 |
| 1 | 20 | 5 | 0.0 |
| 1 | 21 | 4 | 0.0 |
| 1 | 22 | 5 | 0.0 |
| 1 | 23 | 4 | 0.0 |
| 1 | 24 | 5 | 0.0 |
| 1 | 25 | 4 | 0.0 |
| 1 | 26 | 5 | 0.0 |
| 1 | 27 | 4 | 0.0 |
| 1 | 28 | 5 | 0.0 |
| 1 | 29 | 4 | 0.0 |
| 1 | 30 | 5 | 0.0 |
| 1 | 31 | 4 | 0.0 |
| 1 | 32 | 5 | 0.0 |
| 1 | 33 | 4 | 0.0 |
| 1 | 34 | 5 | 0.0 |
| 1 | 35 | 4 | 0.0 |
| 1 | 36 | 5 | 0.0 |
| 1 | 37 | 4 | 0.0 |
| 1 | 38 | 5 | 0.0 |
| 1 | 39 | 4 | 0.0 |
| 1 | 40 | 5 | 0.0 |
| 1 | 41 | 6 | 0.0 |
| 1 | 42 | 7 | 0.0 |
| 1 | 43 | 6 | 0.0 |
| 1 | 44 | 7 | 0.0 |
| 1 | 45 | 6 | 0.0 |
| 1 | 46 | 7 | 0.0 |

| | | | |
|---|---|---|---|
| 1 | 47 | 6 | 0.0 |
| 1 | 48 | 7 | 0.0 |
| 1 | 49 | 6 | 0.0 |
| 1 | 50 | 7 | 0.0 |
| 1 | 51 | 6 | 0.0 |
| 1 | 52 | 7 | 0.0 |
| 1 | 53 | 6 | 0.0 |
| 1 | 54 | 7 | 0.0 |
| 1 | 55 | 6 | 0.0 |
| 1 | 56 | 7 | 0.0 |
| 1 | 57 | 6 | 0.0 |
| 1 | 58 | 7 | 0.0 |
| 1 | 59 | 6 | 0.0 |
| 1 | 60 | 7 | 0.0 |
| 1 | 61 | 6 | 0.0 |
| 1 | 62 | 7 | 0.0 |
| 1 | 63 | 6 | 0.0 |
| 1 | 64 | 7 | 0.0 |
| 1 | 65 | 6 | 0.0 |
| 1 | 66 | 7 | 0.0 |
| 1 | 67 | 6 | 0.0 |
| 1 | 68 | 7 | 0.0 |
| 1 | 69 | 6 | 0.0 |
| 1 | 70 | 7 | 0.0 |
| 1 | 71 | 6 | 0.0 |
| 1 | 72 | 7 | 0.0 |
| 1 | 73 | 6 | 0.0 |
| 1 | 74 | 7 | 0.0 |
| 1 | 75 | 6 | 0.0 |
| 1 | 76 | 7 | 0.0 |
| 1 | 77 | 6 | 0.0 |
| 1 | 78 | 7 | 0.0 |
| 1 | 79 | 6 | 0.0 |
| 1 | 80 | 7 | 0.0 |
| 1 | 81 | 6 | 0.0 |
| 1 | 82 | 7 | 0.0 |
| 1 | 83 | 6 | 0.0 |
| 1 | 84 | 7 | 0.0 |
| 1 | 85 | 6 | 0.0 |
| 1 | 86 | 7 | 0.0 |
| 1 | 87 | 6 | 0.0 |
| 1 | 88 | 7 | 0.0 |
| 1 | 89 | 6 | 0.0 |
| 1 | 90 | 7 | 0.0 |
| 1 | 91 | 6 | 0.0 |
| 1 | 92 | 7 | 0.0 |
| 1 | 93 | 6 | 0.0 |
| 1 | 94 | 7 | 0.0 |
| 1 | 95 | 6 | 0.0 |
| 1 | 96 | 7 | 0.0 |
| 1 | 97 | 8 | 1.45 |
| 1 | 98 | 9 | 1.45 |
| 1 | 99 | 8 | 1.45 |
| 1 | 100 | 9 | 1.45 |
| 1 | 101 | 8 | 1.45 |
| 1 | 102 | 9 | 1.45 |
| 1 | 103 | 8 | 1.45 |
| 1 | 104 | 9 | 1.45 |
| 1 | 105 | 8 | 1.45 |
| 1 | 106 | 9 | 1.45 |
| 1 | 107 | 8 | 1.45 |
| 1 | 108 | 9 | 1.45 |
| 1 | 109 | 8 | 1.45 |
| 1 | 110 | 9 | 1.45 |
| 1 | 111 | 8 | 1.45 |
| 1 | 112 | 9 | 1.45 |
| 1 | 113 | 8 | 1.45 |
| 1 | 114 | 9 | 1.45 |
| 1 | 115 | 8 | 1.45 |
| 1 | 116 | 9 | 1.45 |
| 1 | 117 | 8 | 1.45 |
| 1 | 118 | 9 | 1.45 |
| 1 | 119 | 8 | 1.20 |
| 1 | 120 | 9 | 1.20 |
| 1 | 121 | 8 | 1.20 |
| 1 | 122 | 9 | 1.20 |
| 1 | 123 | 8 | 1.20 |
| 1 | 124 | 9 | 1.20 |
| 1 | 125 | 8 | 1.20 |
| 1 | 126 | 9 | 1.20 |
| 1 | 127 | 8 | 1.20 |
| 1 | 128 | 9 | 1.20 |
| 1 | 129 | 8 | 1.20 |
| 1 | 130 | 9 | 1.20 |
| 1 | 131 | 8 | 1.20 |
| 1 | 132 | 9 | 1.20 |
| 1 | 133 | 8 | 1.20 |
| 1 | 134 | 9 | 1.20 |
| 1 | 135 | 8 | 1.20 |
| 1 | 136 | 9 | 1.20 |
| 1 | 137 | 8 | 1.20 |
| 1 | 138 | 9 | 1.20 |
| 1 | 139 | 8 | 1.20 |
| 1 | 140 | 9 | 1.20 |
| 1 | 141 | 2 | 0.9 |
| 1 | 142 | 1 | 20.433 |
| 1 | 143 | 1 | 2.919 |
| 1 | 144 | 1 | 2.919 |
| 1 | 145 | 1 | 11.676 |
| 1 | 146 | 1 | 2.919 |
| 1 | 147 | 1 | 2.919 |
| 1 | 148 | 1 | 6.464 |
| 1 | 149 | 1 | 6.464 |
| 1 | 150 | 1 | 6.464 |
| 1 | 151 | 1 | 6.464 |
| 1 | 152 | 1 | 6.464 |
| 1 | 153 | 1 | 6.464 |
| 1 | 154 | 1 | 6.464 |
| 1 | 155 | 1 | 6.464 |
| 1 | 156 | 1 | 6.464 |
| 1 | 157 | 1 | 6.464 |
| 1 | 158 | 1 | 6.464 |
| 1 | 159 | 1 | 6.464 |
| 1 | 160 | 1 | 6.464 |
| 1 | 161 | 1 | 6.464 |

| BARRA 202 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 202 | 35651.94>> | -34.58 | 0.00 | 0.0 | 0.0 | 3113.7 |
| 202 | 15889.20<< | 42.81 | 0.00 | 0.0 | 0.0 | 1430.0 |
| 202 | 23560.62 | 532.95>> | 0.00 | 0.0 | 0.0 | 1299.4 |
| 202 | 28159.70 | -531.16<< | 0.00 | 0.0 | 0.0 | 3179.1 |
| 202 | 20913.04 | -7.68 | 0.00>> | 0.0 | 0.0 | 672.3 |
| 202 | 20655.06 | -7.45 | 0.00<< | 0.0 | 0.0 | 657.8 |
| 202 | 20913.04 | -7.68 | 0.00 | 0.0>> | 0.0 | 672.3 |
| 202 | 20655.06 | -7.45 | 0.00 | 0.0<< | 0.0 | 657.8 |
| 202 | 20913.04 | -7.68 | 0.00 | 0.0 | 0.0>> | 672.3 |
| 202 | 20655.06 | -7.45 | 0.00 | 0.0 | 0.0<< | 657.8 |
| 202 | 27264.53 | -108.94 | 0.00 | 0.0 | 0.0 | 10426.3>> |
| 202 | 22666.98 | 105.14 | 0.00 | 0.0 | 0.0 | -6558.0<< |
| 17 | 35651.94>> | -34.58 | 0.00 | 0.0 | 0.0 | 3760.7 |
| 17 | 15889.20<< | 42.81 | 0.00 | 0.0 | 0.0 | 635.3 |
| 17 | 23560.62 | 532.95>> | 0.00 | 0.0 | 0.0 | -8626.6 |
| 17 | 28159.70 | -531.16<< | 0.00 | 0.0 | 0.0 | 13077.5 |
| 17 | 20913.04 | -7.68 | 0.00>> | 0.0 | 0.0 | 818.1 |
| 17 | 20655.06 | -7.45 | 0.00<< | 0.0 | 0.0 | 799.5 |
| 17 | 20913.04 | -7.68 | 0.00 | 0.0>> | 0.0 | 818.1 |
| 17 | 20655.06 | -7.45 | 0.00 | 0.0<< | 0.0 | 799.5 |
| 17 | 20913.04 | -7.68 | 0.00 | 0.0 | 0.0>> | 818.1 |
| 17 | 20655.06 | -7.45 | 0.00 | 0.0 | 0.0<< | 799.5 |
| 17 | 28755.70 | -308.05 | 0.00 | 0.0 | 0.0 | 14069.2>> |
| 17 | 24157.32 | 269.91 | 0.00 | 0.0 | 0.0 | -9847.8<< |

LAV-Gelida. V.Rierussa. ELU. ECSW-SW(1.35*G+1.35*LEV+1.00*P+(1.45*SW0 o 1.20*SW2)+0.9*GT)

| BARRA 203 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 203 | 37243.81>> | 57.61 | 0.00 | 0.0 | 0.0 | 5384.3 |
| 203 | 17177.20<< | 79.71 | 0.00 | 0.0 | 0.0 | 2230.1 |
| 203 | 29655.38 | 503.33>> | 0.00 | 0.0 | 0.0 | 1445.0 |
| 203 | 24601.92 | -375.78<< | 0.00 | 0.0 | 0.0 | 5865.3 |
| 203 | 22273.07 | 17.18 | 0.00>> | 0.0 | 0.0 | 1278.6 |
| 203 | 21650.40 | 16.78 | 0.00<< | 0.0 | 0.0 | 1249.7 |
| 203 | 22273.07 | 17.18 | 0.00 | 0.0>> | 0.0 | 1278.6 |
| 203 | 21650.40 | 16.78 | 0.00 | 0.0<< | 0.0 | 1249.7 |
| 203 | 22273.07 | 17.18 | 0.00 | 0.0 | 0.0>> | 1278.6 |
| 203 | 21650.40 | 16.78 | 0.00 | 0.0 | 0.0<< | 1249.7 |
| 203 | 30375.60 | -46.98 | 0.00 | 0.0 | 0.0 | 14753.8>> |
| 203 | 25289.23 | 111.99 | 0.00 | 0.0 | 0.0 | -8683.3<< |
| 37 | 37243.81>> | 57.61 | 0.00 | 0.0 | 0.0 | 4225.7 |
| 37 | 17177.20<< | 79.71 | 0.00 | 0.0 | 0.0 | 626.4 |
| 37 | 29655.38 | 503.33>> | 0.00 | 0.0 | 0.0 | -8685.8 |
| 37 | 24601.92 | -375.78<< | 0.00 | 0.0 | 0.0 | 13430.8 |
| 37 | 22273.07 | 17.18 | 0.00>> | 0.0 | 0.0 | 933.6 |
| 37 | 21650.40 | 16.78 | 0.00<< | 0.0 | 0.0 | 912.9 |
| 37 | 22273.07 | 17.18 | 0.00 | 0.0>> | 0.0 | 933.6 |
| 37 | 21650.40 | 16.78 | 0.00 | 0.0<< | 0.0 | 912.9 |
| 37 | 22273.07 | 17.18 | 0.00 | 0.0 | 0.0>> | 933.6 |
| 37 | 21650.40 | 16.78 | 0.00 | 0.0 | 0.0<< | 912.9 |
| 37 | 30375.60 | -47.28 | 0.00 | 0.0 | 0.0 | 15706.5>> |
| 37 | 25318.06 | 113.98 | 0.00 | 0.0 | 0.0 | -10969.9<< |

| BARRA 204 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 204 | 36516.04>> | -104.79 | 0.00 | 0.0 | 0.0 | -135.6 |
| 204 | 16669.70<< | -9.46 | 0.00 | 0.0 | 0.0 | 368.6 |
| 204 | 24170.06 | 322.84>> | 0.00 | 0.0 | 0.0 | 3938.5 |
| 204 | 29015.69 | -437.09<< | 0.00 | 0.0 | 0.0 | -3705.5 |
| 204 | 21646.22 | -22.85 | 0.00>> | 0.0 | 0.0 | 2.7 |
| 204 | 21133.34 | -22.34 | 0.00<< | 0.0 | 0.0 | 2.4 |
| 204 | 21646.22 | -22.85 | 0.00 | 0.0>> | 0.0 | 2.7 |
| 204 | 21133.34 | -22.34 | 0.00 | 0.0<< | 0.0 | 2.4 |
| 204 | 21646.22 | -22.85 | 0.00 | 0.0 | 0.0>> | 2.7 |
| 204 | 21133.34 | -22.34 | 0.00 | 0.0 | 0.0<< | 2.4 |
| 204 | 28921.14 | 293.57 | 0.00 | 0.0 | 0.0 | 4514.5>> |
| 204 | 24080.72 | -407.71 | 0.00 | 0.0 | 0.0 | -4395.6<< |
| 57 | 36516.04>> | -104.79 | 0.00 | 0.0 | 0.0 | 4435.0 |
| 57 | 16669.70<< | -9.46 | 0.00 | 0.0 | 0.0 | 779.2 |
| 57 | 24170.06 | 322.84>> | 0.00 | 0.0 | 0.0 | -10148.7 |
| 57 | 29015.69 | -437.09<< | 0.00 | 0.0 | 0.0 | 15362.9 |
| 57 | 21646.22 | -22.85 | 0.00>> | 0.0 | 0.0 | 998.0 |
| 57 | 21133.34 | -22.34 | 0.00<< | 0.0 | 0.0 | 975.5 |
| 57 | 21646.22 | -22.85 | 0.00 | 0.0>> | 0.0 | 998.0 |
| 57 | 21133.34 | -22.34 | 0.00 | 0.0<< | 0.0 | 975.5 |
| 57 | 21646.22 | -22.85 | 0.00 | 0.0 | 0.0>> | 998.0 |
| 57 | 21133.34 | -22.34 | 0.00 | 0.0 | 0.0<< | 975.5 |
| 57 | 29660.64 | -424.37 | 0.00 | 0.0 | 0.0 | 16201.4>> |
| 57 | 24816.24 | 306.58 | 0.00 | 0.0 | 0.0 | -11203.3<< |

LAV-Gelida. V.Rierussa. ELU. ECSW-SW(1.35*G+1.35*LEV+1.00*P+(1.45*SW0 o 1.20*SW2)+0.9*GT)

| BARRA 205 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 205 | 37692.84>> | 64.36 | 0.00 | 0.0 | 0.0 | 5489.8 |
| 205 | 17629.01<< | 73.59 | 0.00 | 0.0 | 0.0 | 2135.2 |
| 205 | 30103.77 | 458.04>> | 0.00 | 0.0 | 0.0 | 1184.3 |
| 205 | 25046.59 | -332.73<< | 0.00 | 0.0 | 0.0 | 6065.4 |
| 205 | 22724.09 | 17.89 | 0.00>> | 0.0 | 0.0 | 1241.5 |
| 205 | 22101.38 | 17.50 | 0.00<< | 0.0 | 0.0 | 1212.4 |
| 205 | 22724.09 | 17.89 | 0.00 | 0.0>> | 0.0 | 1241.5 |
| 205 | 22101.38 | 17.50 | 0.00 | 0.0<< | 0.0 | 1212.4 |
| 205 | 22724.09 | 17.89 | 0.00 | 0.0 | 0.0>> | 1241.5 |
| 205 | 22101.38 | 17.50 | 0.00 | 0.0 | 0.0<< | 1212.4 |
| 205 | 30796.52 | -20.20 | 0.00 | 0.0 | 0.0 | 14983.4>> |
| 205 | 25735.15 | 92.68 | 0.00 | 0.0 | 0.0 | -8868.4<< |
| 77 | 37692.84>> | 64.36 | 0.00 | 0.0 | 0.0 | 4096.7 |
| 77 | 17629.01<< | 73.59 | 0.00 | 0.0 | 0.0 | 542.2 |
| 77 | 30103.77 | 458.04>> | 0.00 | 0.0 | 0.0 | -8724.3 |
| 77 | 25046.59 | -332.73<< | 0.00 | 0.0 | 0.0 | 13261.4 |
| 77 | 22724.09 | 17.89 | 0.00>> | 0.0 | 0.0 | 853.4 |
| 77 | 22101.38 | 17.50 | 0.00<< | 0.0 | 0.0 | 832.9 |
| 77 | 22724.09 | 17.89 | 0.00 | 0.0>> | 0.0 | 853.4 |
| 77 | 22101.38 | 17.50 | 0.00 | 0.0<< | 0.0 | 832.9 |
| 77 | 22724.09 | 17.89 | 0.00 | 0.0 | 0.0>> | 853.4 |
| 77 | 22101.38 | 17.50 | 0.00 | 0.0 | 0.0<< | 832.9 |
| 77 | 30826.42 | -24.71 | 0.00 | 0.0 | 0.0 | 15455.2>> |
| 77 | 25765.10 | 98.94 | 0.00 | 0.0 | 0.0 | -10921.6<< |

| BARRA 206 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 206 | 36097.39>> | -68.15 | 0.00 | 0.0 | 0.0 | 2067.9 |
| 206 | 16364.10<< | 29.46 | 0.00 | 0.0 | 0.0 | 1250.2 |
| 206 | 24019.33 | 509.02>> | 0.00 | 0.0 | 0.0 | 3339.8 |
| 206 | 28612.84 | -552.01<< | 0.00 | 0.0 | 0.0 | -72.0 |
| 206 | 21376.86 | -13.10 | 0.00>> | 0.0 | 0.0 | 442.6 |
| 206 | 21119.01 | -12.76 | 0.00<< | 0.0 | 0.0 | 432.4 |
| 206 | 21376.86 | -13.10 | 0.00 | 0.0>> | 0.0 | 442.6 |
| 206 | 21119.01 | -12.76 | 0.00 | 0.0<< | 0.0 | 432.4 |
| 206 | 21376.86 | -13.10 | 0.00 | 0.0 | 0.0>> | 442.6 |
| 206 | 21119.01 | -12.76 | 0.00 | 0.0 | 0.0<< | 432.4 |
| 206 | 24401.88 | 31.17 | 0.00 | 0.0 | 0.0 | 7345.5>> |
| 206 | 19811.00 | -21.92 | 0.00 | 0.0 | 0.0 | -4673.3<< |
| 97 | 36097.39>> | -68.15 | 0.00 | 0.0 | 0.0 | 3677.7 |
| 97 | 16364.10<< | 29.46 | 0.00 | 0.0 | 0.0 | 553.0 |
| 97 | 24019.33 | 509.02>> | 0.00 | 0.0 | 0.0 | -8689.2 |
| 97 | 28612.84 | -552.01<< | 0.00 | 0.0 | 0.0 | 12970.8 |
| 97 | 21376.86 | -13.10 | 0.00>> | 0.0 | 0.0 | 751.4 |
| 97 | 21119.01 | -12.76 | 0.00<< | 0.0 | 0.0 | 733.0 |
| 97 | 21376.86 | -13.10 | 0.00 | 0.0>> | 0.0 | 751.4 |
| 97 | 21119.01 | -12.76 | 0.00 | 0.0<< | 0.0 | 733.0 |
| 97 | 21376.86 | -13.10 | 0.00 | 0.0 | 0.0>> | 751.4 |
| 97 | 21119.01 | -12.76 | 0.00 | 0.0 | 0.0<< | 733.0 |
| 97 | 29209.93 | -388.79 | 0.00 | 0.0 | 0.0 | 13938.2>> |
| 97 | 24617.07 | 314.15 | 0.00 | 0.0 | 0.0 | -9863.0<< |

ROBOT v 14.5.0
Autor: **EIPSA**
Dirección:

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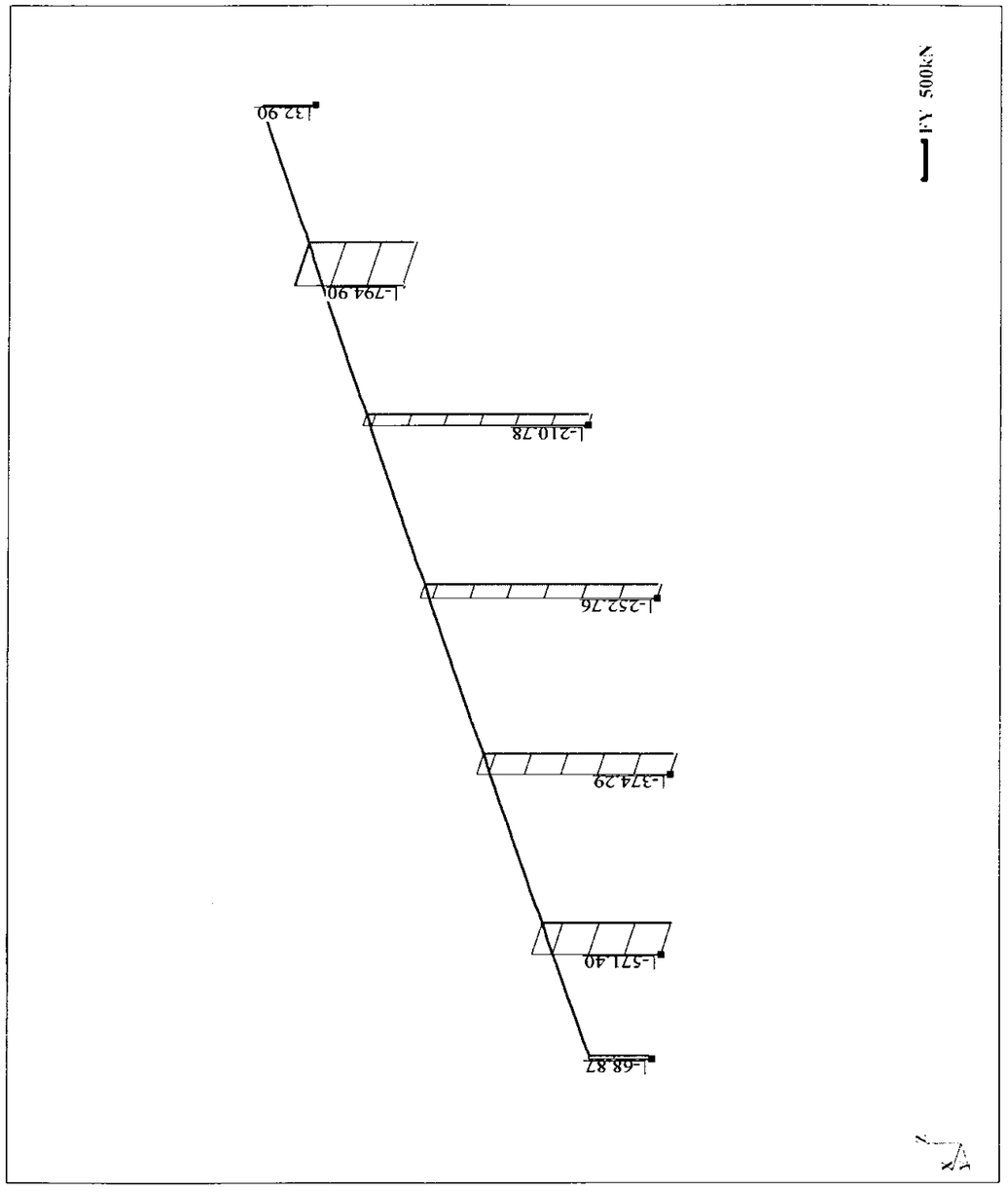
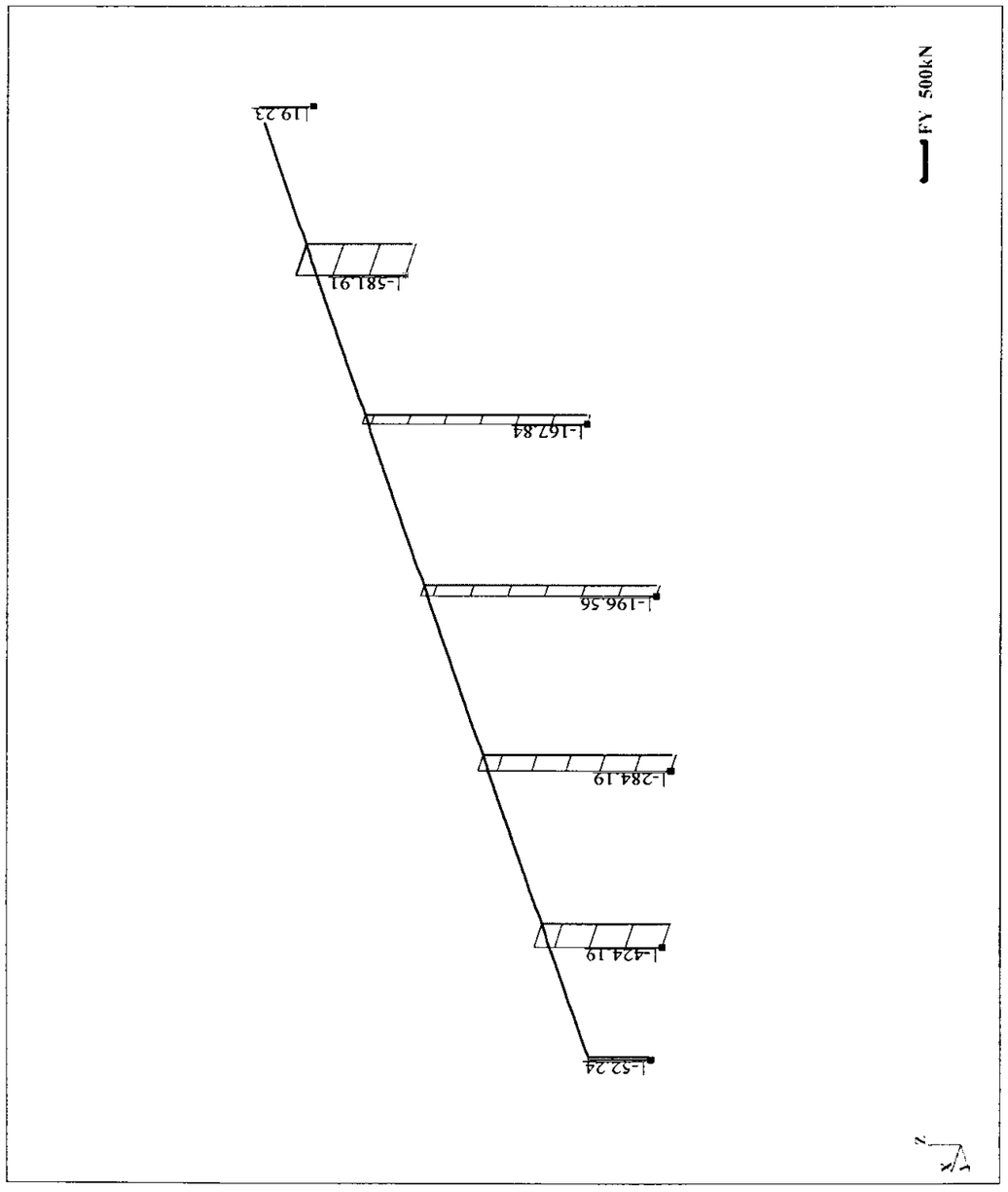
Archivo: **Gelsipi2.rtd**
Proyecto: Gelsipi2

## Vista - FY, casos: 58 (VIENTO CONCOMITANTE +)




Fecha : 28/02/02 Página : 1

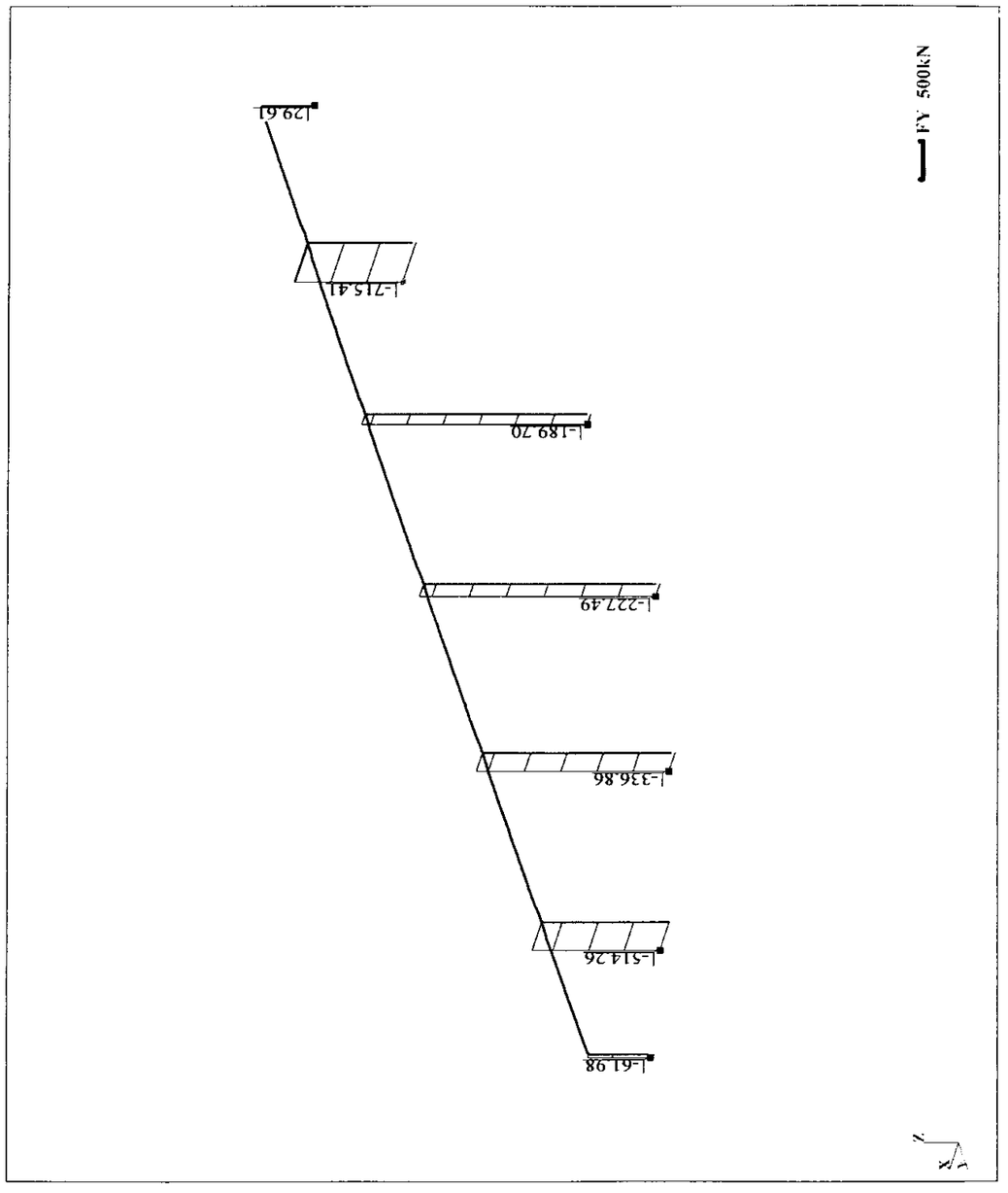
## Vista - FY, casos: 59 (VIENTO DOMINANTE +)



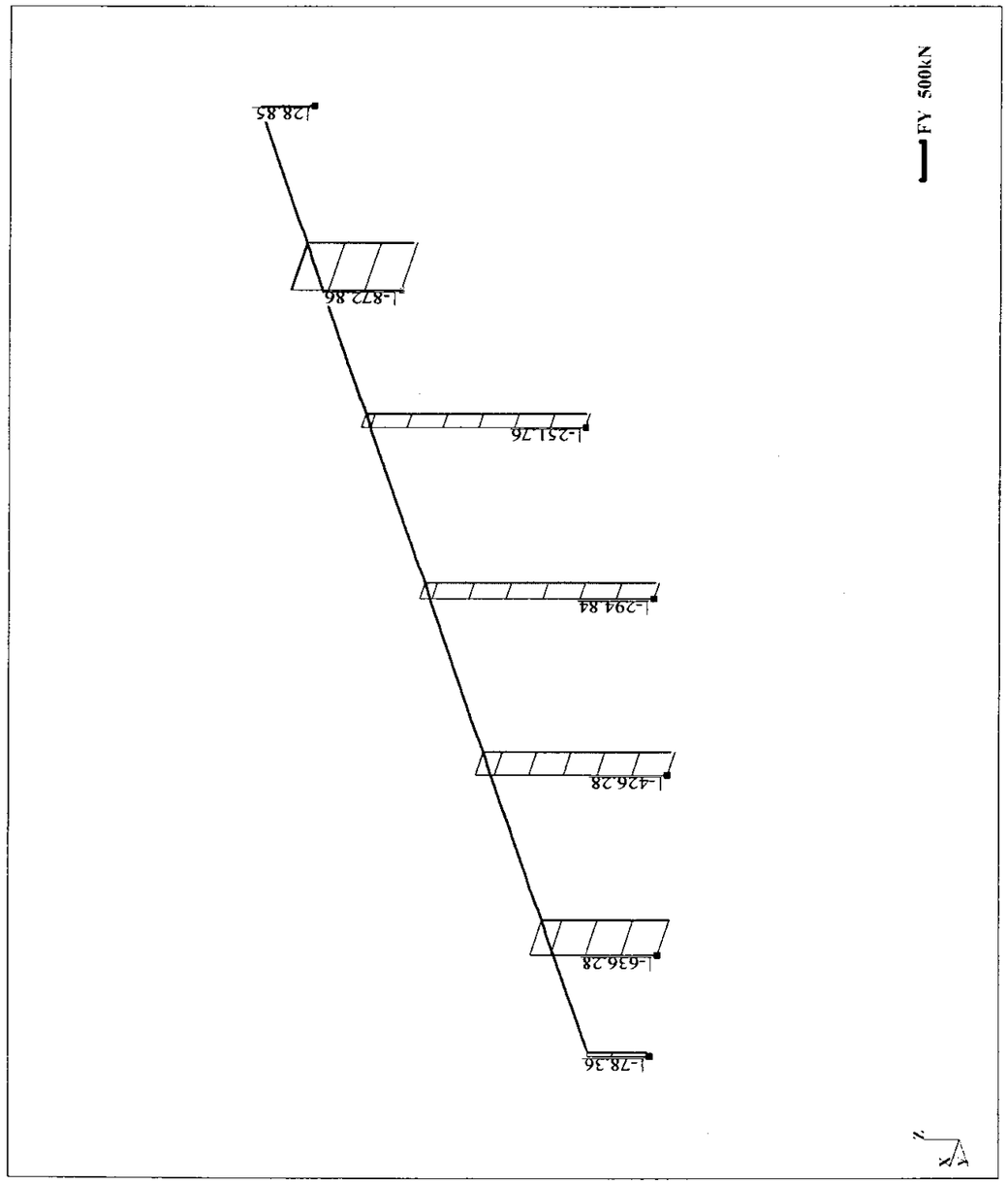





## Vista - FY, casos: 60 (0.90*VIENTO CONCOMITANTE)



## Vista - FY, casos: 61 (1.50*VIENTO DOMINANTE)








## Esfuerzos -Viento Pilas Altas

**- Casos: 58A61**

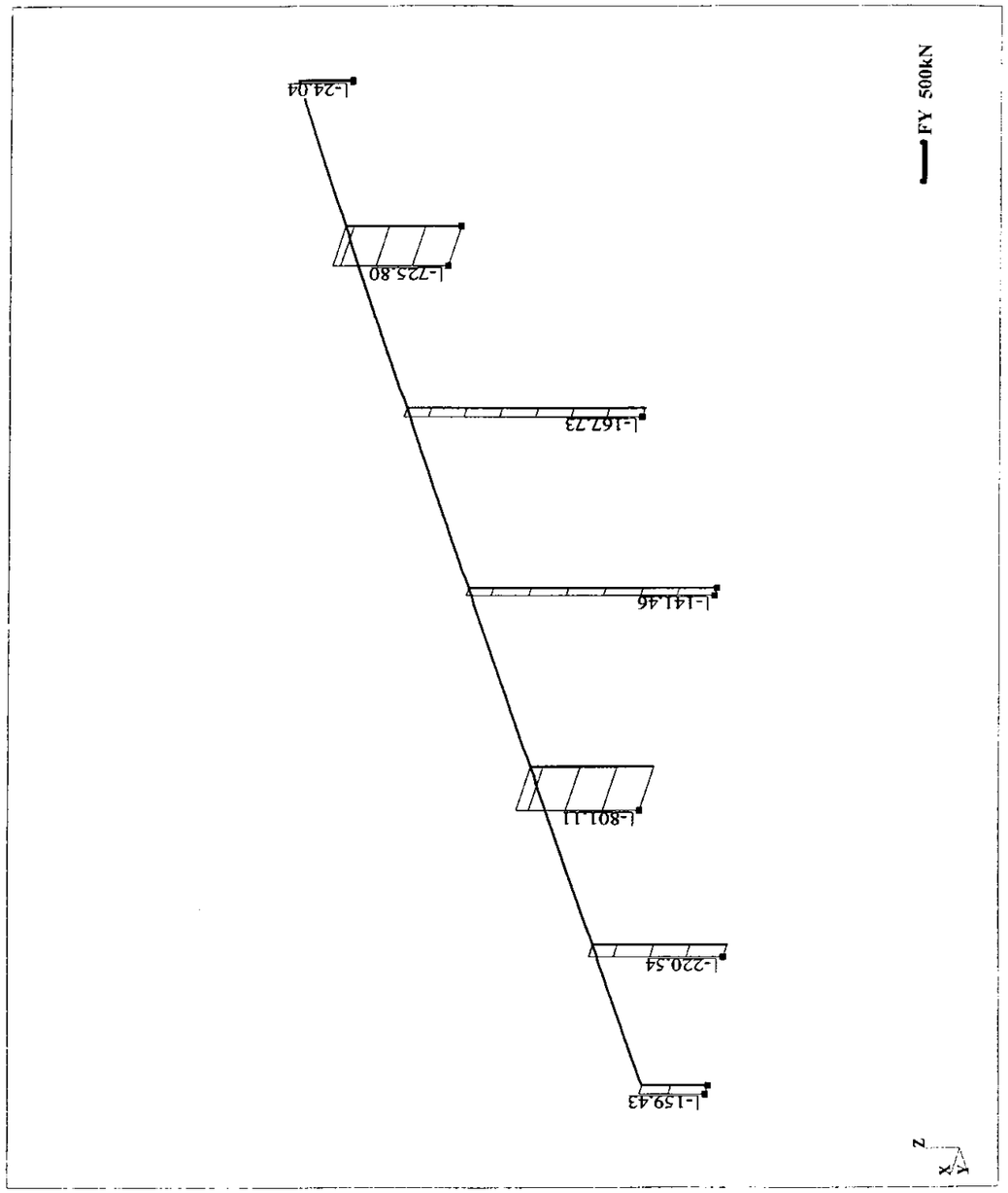
| Barra/Nudo/Caso | Nombre del caso | FY (kN) | MZ (kNm) |
|---|---|---|---|
| 201/ 201/ 58 | VIENTO CONCOMITANTE + | 32.90 | -1711.81 |
| 201/ 201/ 59 | VIENTO DOMINANTE + | 19.23 | -920.92 |
| 201/ 201/ 60 (C) | 0.90*VIENTO CONCOMITANTE | 29.61 | -1540.63 |
| 201/ 201/ 61 (C) | 1.50*VIENTO DOMINANTE | 28.85 | -1381.38 |
| 201/ 1/ 58 | VIENTO CONCOMITANTE + | 32.90 | -2028.62 |
| 201/ 1/ 59 | VIENTO DOMINANTE + | 19.23 | -1106.11 |
| 201/ 1/ 60 (C) | 0.90*VIENTO CONCOMITANTE | 29.61 | -1825.76 |
| 201/ 1/ 61 (C) | 1.50*VIENTO DOMINANTE | 28.85 | -1659.17 |
| 202/ 202/ 58 | VIENTO CONCOMITANTE + | -794.90 | -16146.90 |
| 202/ 202/ 59 | VIENTO DOMINANTE + | -581.91 | -11259.46 |
| 202/ 202/ 60 (C) | 0.90*VIENTO CONCOMITANTE | -715.41 | -14532.21 |
| 202/ 202/ 61 (C) | 1.50*VIENTO DOMINANTE | -872.86 | -16889.19 |
| 202/ 17/ 58 | VIENTO CONCOMITANTE + | -794.90 | -145.58 |
| 202/ 17/ 59 | VIENTO DOMINANTE + | -581.91 | 454.30 |
| 202/ 17/ 60 (C) | 0.90*VIENTO CONCOMITANTE | -715.41 | -131.02 |
| 202/ 17/ 61 (C) | 1.50*VIENTO DOMINANTE | -872.86 | 681.46 |
| 203/ 203/ 58 | VIENTO CONCOMITANTE + | -210.78 | -9856.30 |
| 203/ 203/ 59 | VIENTO DOMINANTE + | -167.84 | -7103.86 |
| 203/ 203/ 60 (C) | 0.90*VIENTO CONCOMITANTE | -189.70 | -8870.67 |
| 203/ 203/ 61 (C) | 1.50*VIENTO DOMINANTE | -251.76 | -10655.79 |
| 203/ 37/ 58 | VIENTO CONCOMITANTE + | -210.78 | -1081.45 |
| 203/ 37/ 59 | VIENTO DOMINANTE + | -167.84 | -116.68 |
| 203/ 37/ 60 (C) | 0.90*VIENTO CONCOMITANTE | -189.70 | -973.31 |
| 203/ 37/ 61 (C) | 1.50*VIENTO DOMINANTE | -251.76 | -175.03 |
| 204/ 204/ 58 | VIENTO CONCOMITANTE + | -252.76 | -11793.64 |
| 204/ 204/ 59 | VIENTO DOMINANTE + | -196.56 | -8462.57 |
| 204/ 204/ 60 (C) | 0.90*VIENTO CONCOMITANTE | -227.49 | -10614.28 |
| 204/ 204/ 61 (C) | 1.50*VIENTO DOMINANTE | -294.84 | -12693.86 |
| 204/ 57/ 58 | VIENTO CONCOMITANTE + | -252.76 | -765.58 |
| 204/ 57/ 59 | VIENTO DOMINANTE + | -196.56 | 113.29 |
| 204/ 57/ 60 (C) | 0.90*VIENTO CONCOMITANTE | -227.49 | -689.02 |
| 204/ 57/ 61 (C) | 1.50*VIENTO DOMINANTE | -294.84 | 169.94 |
| 205/ 205/ 58 | VIENTO CONCOMITANTE + | -374.29 | -13976.49 |
| 205/ 205/ 59 | VIENTO DOMINANTE + | -284.19 | -9929.37 |
| 205/ 205/ 60 (C) | 0.90*VIENTO CONCOMITANTE | -336.86 | -12578.84 |
| 205/ 205/ 61 (C) | 1.50*VIENTO DOMINANTE | -426.28 | -14894.05 |
| 205/ 77/ 58 | VIENTO CONCOMITANTE + | -374.29 | -640.40 |
| 205/ 77/ 59 | VIENTO DOMINANTE + | -284.19 | 196.31 |
| 205/ 77/ 60 (C) | 0.90*VIENTO CONCOMITANTE | -336.86 | -576.36 |
| 205/ 77/ 61 (C) | 1.50*VIENTO DOMINANTE | -426.28 | 294.47 |
| 206/ 206/ 58 | VIENTO CONCOMITANTE + | -571.40 | -13806.08 |
| 206/ 206/ 59 | VIENTO DOMINANTE + | -424.19 | -9684.78 |
| 206/ 206/ 60 (C) | 0.90*VIENTO CONCOMITANTE | -514.26 | -12425.47 |
| 206/ 206/ 61 (C) | 1.50*VIENTO DOMINANTE | -636.28 | -14527.17 |
| 206/ 97/ 58 | VIENTO CONCOMITANTE + | -571.40 | -303.84 |
| 206/ 97/ 59 | VIENTO DOMINANTE + | -424.19 | 338.79 |
| 206/ 97/ 60 (C) | 0.90*VIENTO CONCOMITANTE | -514.26 | -273.46 |
| 206/ 97/ 61 (C) | 1.50*VIENTO DOMINANTE | -636.28 | 508.18 |
| 207/ 207/ 58 | VIENTO CONCOMITANTE + | -68.87 | -2871.51 |

| Barra/Nudo/Caso | Nombre del caso | FY (kN) | MZ (kNm) |
|---|---|---|---|
| **207/ 207/ 59** | VIENTO DOMINANTE + | -52.24 | -1741.30 |
| **207/ 207/ 60 (C)** | 0.90*VIENTO CONCOMITANTE | -61.98 | -2584.36 |
| **207/ 207/ 61 (C)** | 1.50*VIENTO DOMINANTE | -78.36 | -2611.94 |
| **207/ 113/ 58** | VIENTO CONCOMITANTE + | -68.87 | -2070.55 |
| **207/ 113/ 59** | VIENTO DOMINANTE + | -52.24 | -1133.74 |
| **207/ 113/ 60 (C)** | 0.90*VIENTO CONCOMITANTE | -61.98 | -1863.49 |
| **207/ 113/ 61 (C)** | 1.50*VIENTO DOMINANTE | -78.36 | -1700.61 |

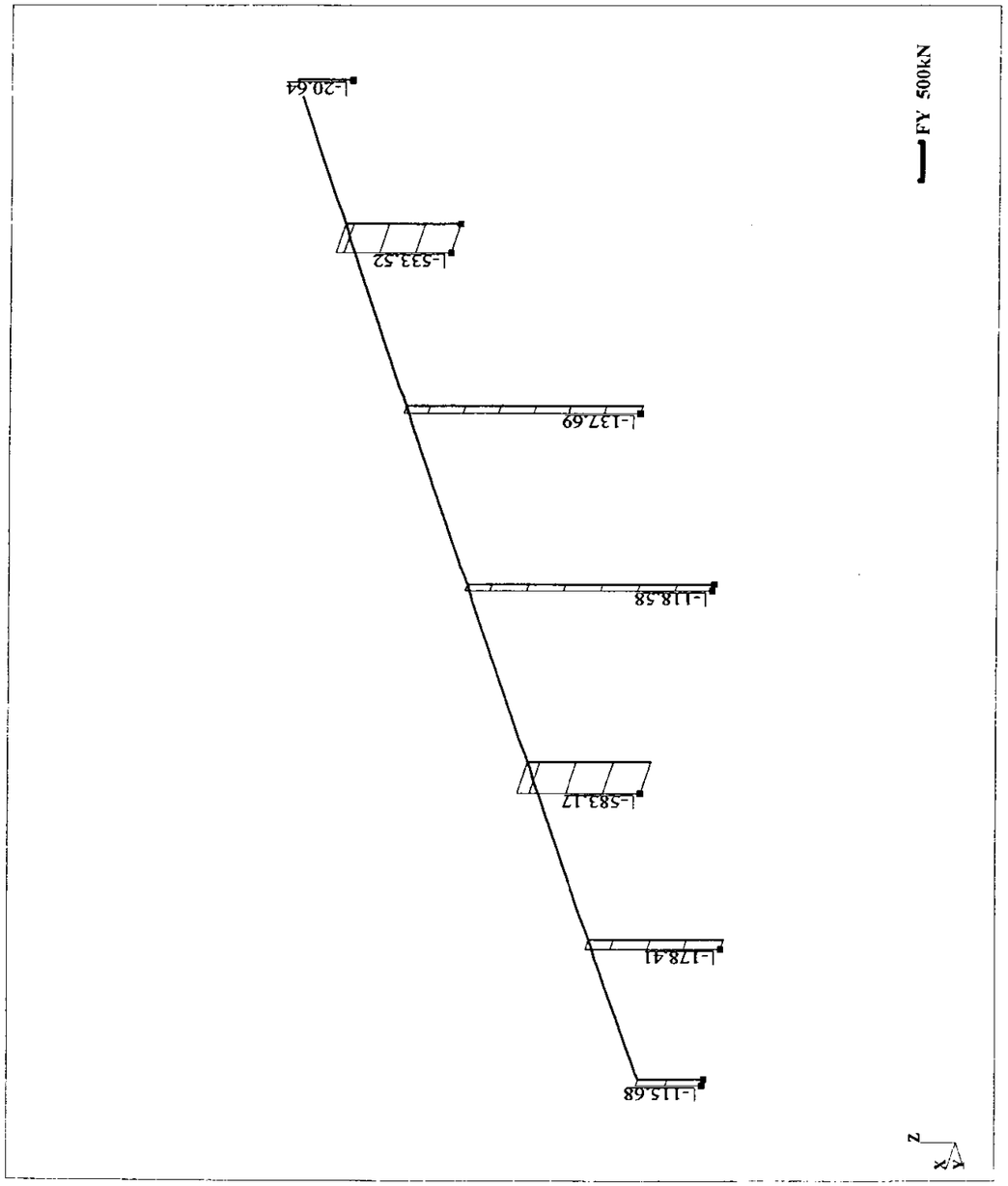




## Vista - FY, casos: 58 (VIENTO CONCOMITANTE +)



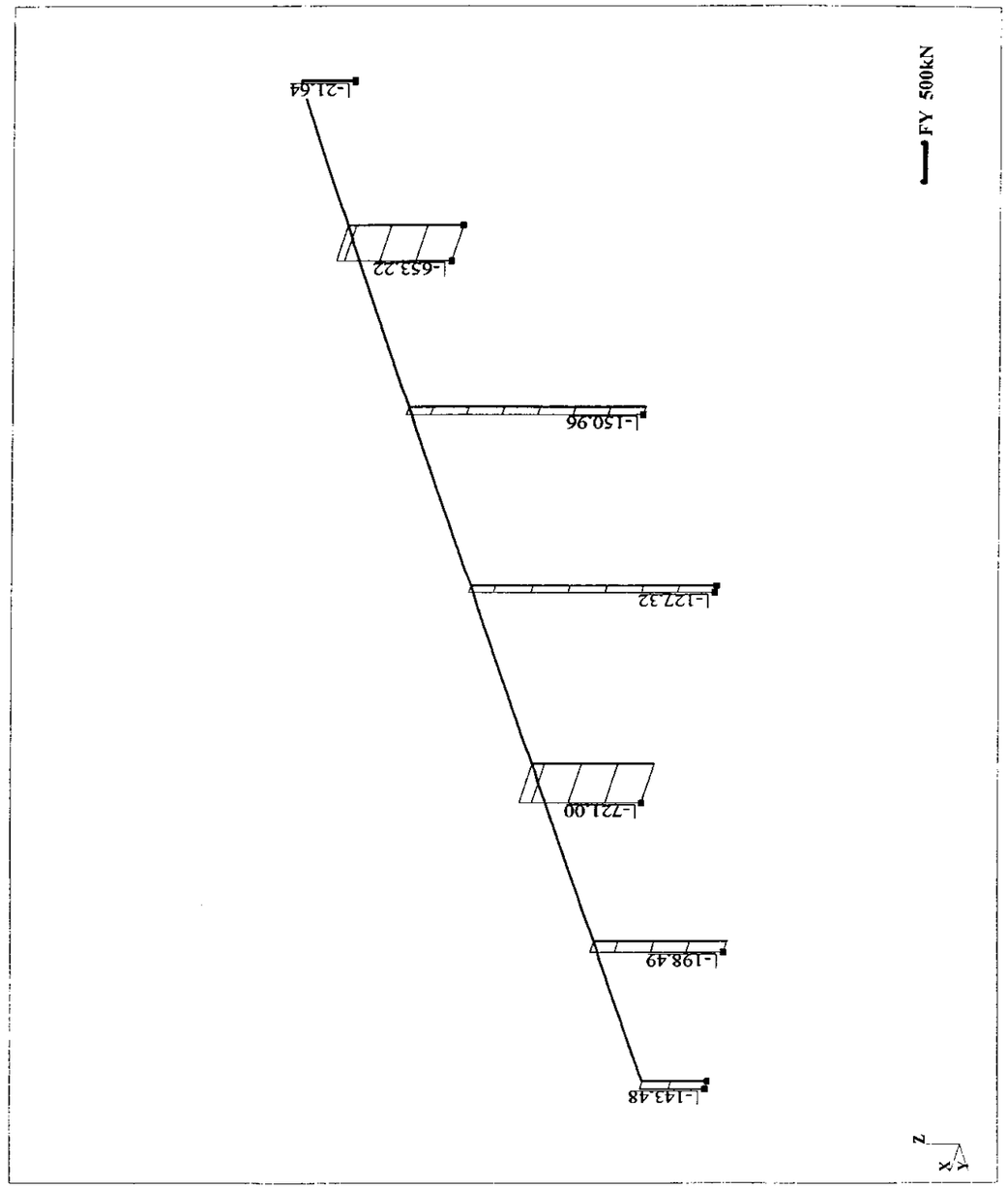
## Vista - FY, casos: 59 (VIENTO DOMINANTE +)



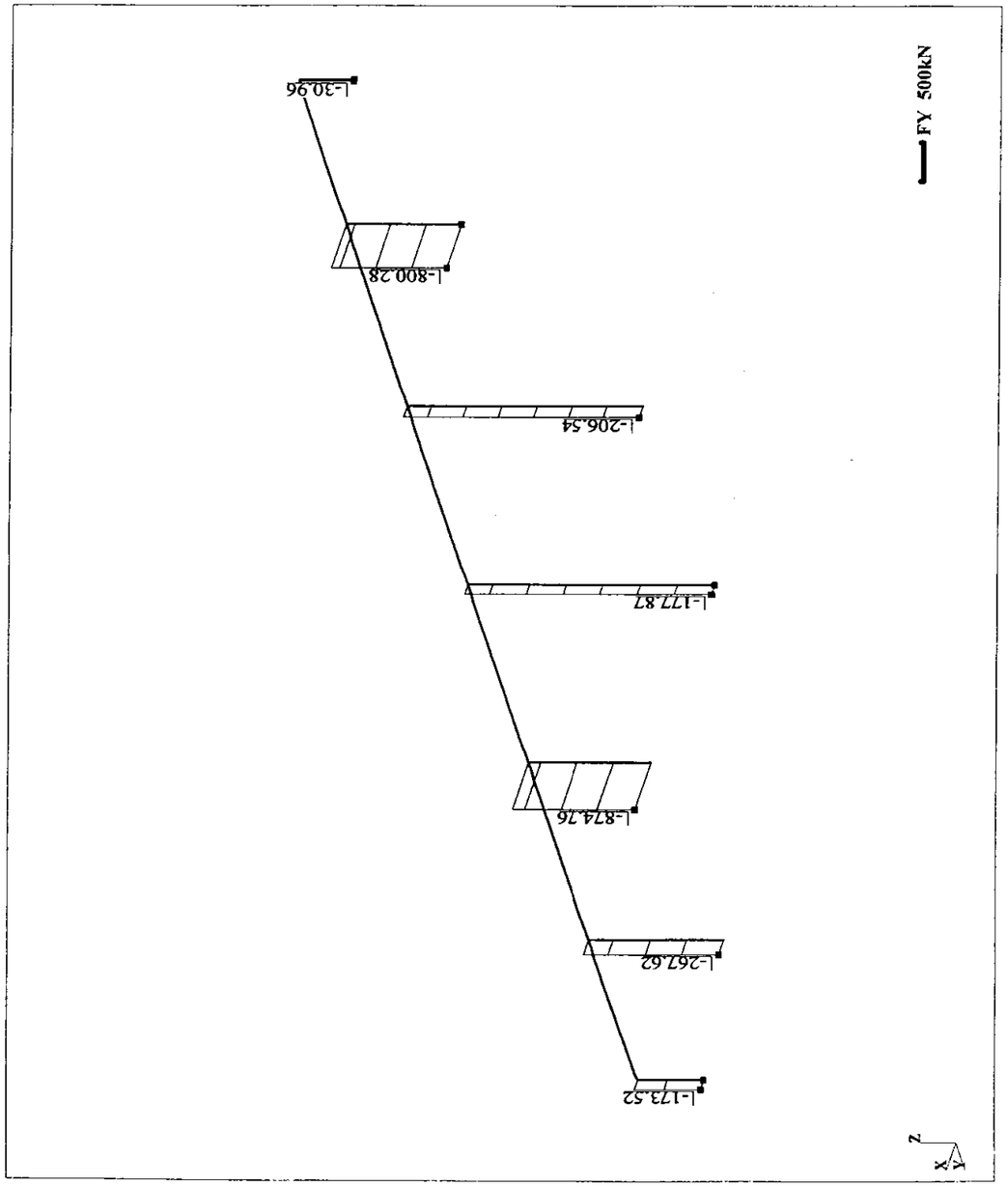





## Vista - FY, casos: 60 (0.90*VIENTO CONCOMITANTE)



## Vista - FY, casos: 61 (1.50*VIENTO DOMINANTE)








## Esfuerzos - VIENTO PILAS ALTAS

**- Casos: 58A61**

| Barra/Nudo/Caso | Nombre del caso | FY (kN) | MZ (kNm) |
|---|---|---|---|
| 203/ 203/ 58 | VIENTO CONCOMITANTE + | -167.73 | -7934.60 |
| 203/ 203/ 59 | VIENTO DOMINANTE + | -137.69 | -5758.10 |
| 203/ 203/ 60 (C) | 0.90*VIENTO CONCOMITANTE | -150.96 | -7141.14 |
| 203/ 203/ 61 (C) | 1.50*VIENTO DOMINANTE | -206.54 | -8637.16 |
| 203/ 37/ 58 | VIENTO CONCOMITANTE + | -167.73 | -951.90 |
| 203/ 37/ 59 | VIENTO DOMINANTE + | -137.69 | -26.02 |
| 203/ 37/ 60 (C) | 0.90*VIENTO CONCOMITANTE | -150.96 | -856.71 |
| 203/ 37/ 61 (C) | 1.50*VIENTO DOMINANTE | -206.54 | -39.03 |
| 204/ 204/ 58 | VIENTO CONCOMITANTE + | -141.46 | -7408.34 |
| 204/ 204/ 59 | VIENTO DOMINANTE + | -118.58 | -5390.94 |
| 204/ 204/ 60 (C) | 0.90*VIENTO CONCOMITANTE | -127.32 | -6667.51 |
| 204/ 204/ 61 (C) | 1.50*VIENTO DOMINANTE | -177.87 | -8086.41 |
| 204/ 57/ 58 | VIENTO CONCOMITANTE + | -141.46 | -1236.31 |
| 204/ 57/ 59 | VIENTO DOMINANTE + | -118.58 | -217.39 |
| 204/ 57/ 60 (C) | 0.90*VIENTO CONCOMITANTE | -127.32 | -1112.68 |
| 204/ 57/ 61 (C) | 1.50*VIENTO DOMINANTE | -177.87 | -326.08 |

## 5.3. Verificación de fustes

LAV. Gelida. V-Rierussa. Pila 2. 2-03-02

| MATERIALES: | HORMIGON | ACERO |
|---|---|---|
| "RESIST. CARACT. (kp/cm2):" | 300 | 5100 |
| "COEFICIENTE MINOR. GAMMA:" | 1.5 | 1.15 |

"ALTURA DE LA PILA (m):" 20.50

DIMENSIONES Y ARMADURAS DE LAS SECCIONES:

| SECCION: | BASE | | CABEZA | | RECUBR. |
|---|---|---|---|---|---|
| DIRECCION R/EJE PUENTE: | LONG.(x) | TRAN.(y) | LONG.(x) | TRAN.(y) | (cm) |
| "DIMENSION EXTERIOR (cm):" | 280 | 430 | 280 | 430 | |
| "ESPESOR DE LA PARED(cm):" | 40 | 45 | 40 | 45 | |

"ARMADURA EXTERIOR: Recubrimiento r (cm):" 4

ARMADURAS TOTALES (cm2) EN 11 SECCIONES A DECIMOS DE LA ALTURA:

| Sección: | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| "Aex:" | 83.5 | 83.5 | 83.5 | 83.5 | 83.5 | 83.5 | 83.5 | 83.5 | 83.5 | 83.5 | 83.5 |
| "Aey:" | 122.8 | 122.8 | 122.8 | 122.8 | 122.8 | 122.8 | 122.8 | 122.8 | 122.8 | 122.8 | 122.8 |

"ARMADURA INTERIOR: Recubrimiento r (cm):" 4

ARMADURAS TOTALES (cm2) EN 11 SECCIONES A DECIMOS DE LA ALTURA:

| Sección: | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| "Aix:" | 68.7 | 68.7 | 68.7 | 68.7 | 68.7 | 68.7 | 68.7 | 68.7 | 68.7 | 68.7 | 68.7 |
| "Aiy:" | 93.3 | 93.3 | 93.3 | 93.3 | 93.3 | 93.3 | 93.3 | 93.3 | 93.3 | 93.3 | 93.3 |

"NUM. DE HIPOTESIS DE CARGA:" 5

ACCIONES MAYORADAS EN LAS DISTINTAS HIPOTESIS:

| | FUERZAS Y MOMENTOS EN LA CABEZA | | | | | FUERZAS EN EL FUSTE (t/m) | | | | COEF. |
|---|---|---|---|---|---|---|---|---|---|---|
| | FUERZAS (t) | | | MOMENTOS (mt) | | SEC.BASE | | SEC.CABEZA | | GAMMA |
| HIP. | Fx | Fy | Fz | Mx | My | fx0 | fy0 | fx1 | fy1 | PP |
| 1 | 118.51 | 111.30 | 3930.70 | 696.80 | 000.00 | 0 | 0.302 | 0 | 0.302 | 1.35 |
| 2 | 118.51 | 102.00 | 1723.70 | 72.41 | 000.00 | 0 | 1.01 | 0 | 1.01 | 1.00 |
| 3 | 118.51 | 161.90 | 3733.70 | 519.90 | 000.00 | 0 | 0.302 | 0 | 0.302 | 1.35 |
| 4 | 118.51 | 128.60 | 3067.10 | 2025.30 | 000.00 | 0 | 0.302 | 0 | 0.302 | 1.35 |
| 5 | 55.87 | 81.10 | 1117.40 | 7.91 | 000.00 | 0 | 1.01 | 0 | 1.01 | 1.00 |

LAV. Gelida. V-Rierussa. Pila 2. 2-03-02

HIPOTESIS NUM. 1

| Sec. | flch.x | flch.y | Mom.x | Mom.y | Axil | curv.x | curv.y |
|---|---|---|---|---|---|---|---|
| 0 | 0.000 | 0.000 | 3211.34 | 3334.09 | 4293.24 | 3.425 | 6.895 |
| 1 | 0.001 | 0.001 | 2968.04 | 3084.95 | 4256.99 | 2.771 | 5.707 |
| 2 | 0.005 | 0.003 | 2721.10 | 2825.69 | 4220.73 | 2.272 | 4.778 |
| 3 | 0.011 | 0.005 | 2471.48 | 2558.14 | 4184.48 | 1.881 | 4.027 |
| 4 | 0.019 | 0.009 | 2219.94 | 2283.75 | 4148.23 | 1.573 | 3.410 |
| 5 | 0.028 | 0.013 | 1967.07 | 2003.71 | 4111.97 | 1.333 | 2.895 |
| 6 | 0.038 | 0.018 | 1713.34 | 1719.02 | 4075.72 | 1.137 | 2.442 |
| 7 | 0.049 | 0.024 | 1459.10 | 1430.53 | 4039.46 | 0.960 | 2.015 |
| 8 | 0.061 | 0.029 | 1204.71 | 1139.05 | 4003.21 | 0.787 | 1.592 |
| 9 | 0.074 | 0.035 | 950.48 | 845.34 | 3966.95 | 0.617 | 1.174 |
| 10 | 0.087 | 0.042 | 696.71 | 550.14 | 3930.70 | 0.450 | 0.760 |

Exc. totales result. cabeza 0.13996 0.17725
Exc. reales 1er ord. cabeza 0.14000 0.17727

Convergencia del equilibrio sin agotamiento

Cortantes en sección base: Fx = 118.510 t; Fy = 117.491 t

LAV. Gelida. V-Rierussa. Pila 2. 2-03-02

HIPOTESIS NUM. 2

| Sec. | flch.x | flch.y | Mom.x | Mom.y | Axil | curv.x | curv.y |
|---|---|---|---|---|---|---|---|
| 0 | 0.000 | 0.000 | 2746.41 | 2566.07 | 1992.25 | 3.525 | 6.978 |
| 1 | 0.001 | 0.001 | 2495.52 | 2320.22 | 1965.39 | 2.911 | 5.647 |
| 2 | 0.005 | 0.003 | 2246.50 | 2069.78 | 1938.54 | 2.339 | 4.413 |
| 3 | 0.011 | 0.006 | 1999.89 | 1815.87 | 1911.68 | 1.817 | 3.341 |
| 4 | 0.018 | 0.009 | 1756.16 | 1559.45 | 1884.83 | 1.366 | 2.470 |
| 5 | 0.026 | 0.014 | 1515.69 | 1301.28 | 1857.97 | 1.008 | 1.795 |
| 6 | 0.035 | 0.018 | 1278.81 | 1041.93 | 1831.12 | 0.750 | 1.295 |
| 7 | 0.045 | 0.023 | 1045.72 | 781.84 | 1804.26 | 0.578 | 0.925 |
| 8 | 0.054 | 0.029 | 816.58 | 521.30 | 1777.41 | 0.449 | 0.613 |
| 9 | 0.064 | 0.034 | 591.49 | 260.57 | 1750.55 | 0.324 | 0.306 |
| 10 | 0.075 | 0.040 | 370.55 | -0.11 | 1723.70 | 0.203 | 0.306 |

Exc. totales result. cabeza -0.00006 0.21497
Exc. reales 1er ord. cabeza 0.00000 0.21500

Convergencia del equilibrio sin agotamiento

Cortantes en sección base: Fx = 118.510 t; Fy = 122.705 t

LAV. Gelida. V-Rierussa. Pila 2. 2-03-02

HIPOTESIS NUM. 3

| Sec. | flch.x | flch.y | Mom.x | Mom.y | Axil | curv.x | curv.y |
|---|---|---|---|---|---|---|---|
| 0 | 0.000 | 0.000 | 4400.05 | 2696.10 | 4096.24 | 4.725 | 6.236 |
| 1 | 0.001 | 0.001 | 4052.04 | 2447.81 | 4059.99 | 3.742 | 4.875 |
| 2 | 0.005 | 0.004 | 3698.99 | 2191.28 | 4023.73 | 3.026 | 3.868 |
| 3 | 0.010 | 0.007 | 3342.21 | 1928.37 | 3987.48 | 2.479 | 3.085 |
| 4 | 0.016 | 0.012 | 2982.70 | 1660.49 | 3951.22 | 2.058 | 2.464 |
| 5 | 0.023 | 0.018 | 2621.23 | 1388.77 | 3914.97 | 1.732 | 1.968 |
| 6 | 0.031 | 0.024 | 2258.41 | 1114.09 | 3878.72 | 1.467 | 1.549 |
| 7 | 0.040 | 0.032 | 1894.71 | 837.19 | 3842.46 | 1.221 | 1.155 |
| 8 | 0.049 | 0.039 | 1530.57 | 558.75 | 3806.21 | 0.980 | 0.766 |
| 9 | 0.059 | 0.047 | 1166.41 | 279.43 | 3769.95 | 0.743 | 0.381 |
| 10 | 0.069 | 0.056 | 802.65 | -0.14 | 3733.70 | 0.509 | 0.381 |

Exc. totales result. cabeza -0.00004 0.21497
Exc. reales 1er ord. cabeza 0.00000 0.21500

Convergencia del equilibrio sin agotamiento

Cortantes en sección base: Fx = 118.510 t; Fy = 168.091 t

LAV. Gelida. V-Rierussa. Pila 2. 2-03-02

HIPOTESIS NUM. 4

| Sec. | flch.x | flch.y | Mom.x | Mom.y | Axil | curv.x | curv.y |
|---|---|---|---|---|---|---|---|
| 0 | 0.000 | 0.000 | 4988.22 | 2709.88 | 3429.64 | 6.822 | 8.223 |
| 1 | 0.002 | 0.001 | 4707.64 | 2461.04 | 3393.39 | 5.494 | 6.402 |
| 2 | 0.006 | 0.005 | 4420.59 | 2203.18 | 3357.13 | 4.508 | 5.039 |
| 3 | 0.013 | 0.011 | 4128.62 | 1938.40 | 3320.88 | 3.715 | 3.934 |
| 4 | 0.021 | 0.018 | 3832.97 | 1668.41 | 3284.63 | 3.068 | 3.022 |
| 5 | 0.030 | 0.026 | 3534.63 | 1394.56 | 3248.37 | 2.549 | 2.269 |
| 6 | 0.041 | 0.036 | 3234.42 | 1117.98 | 3212.12 | 2.143 | 1.651 |
| 7 | 0.052 | 0.047 | 2932.94 | 839.55 | 3175.86 | 1.835 | 1.147 |
| 8 | 0.063 | 0.058 | 2630.67 | 560.01 | 3139.61 | 1.606 | 0.733 |
| 9 | 0.075 | 0.070 | 2327.98 | 279.93 | 3103.35 | 1.412 | 0.363 |
| 10 | 0.087 | 0.082 | 2025.15 | -0.19 | 3067.10 | 1.223 | 0.363 |

Exc. totales result. cabeza -0.00006 0.66028
Exc. reales 1er ord. cabeza 0.00000 0.66033

Convergencia del equilibrio sin agotamiento

Cortantes en sección base: Fx = 118.510 t; Fy = 134.791 t

LAV. Gelida. V-Rierussa. Pila 2. 2-03-02

HIPOTESIS NUM. 5

| Sec. | flch.x | flch.y | Mom.x | Mom.y | Axil | curv.x | curv.y |
|---|---|---|---|---|---|---|---|
| 0 | 0.000 | 0.000 | 2143.91 | 1179.18 | 1385.95 | 2.065 | 2.459 |
| 1 | 0.001 | 0.000 | 1936.73 | 1063.94 | 1359.09 | 1.689 | 2.019 |
| 2 | 0.002 | 0.002 | 1732.86 | 947.57 | 1332.24 | 1.357 | 1.619 |
| 3 | 0.004 | 0.003 | 1532.51 | 830.33 | 1305.38 | 1.070 | 1.266 |
| 4 | 0.007 | 0.005 | 1335.87 | 712.47 | 1278.53 | 0.835 | 0.970 |
| 5 | 0.009 | 0.008 | 1143.09 | 594.16 | 1251.67 | 0.652 | 0.733 |
| 6 | 0.013 | 0.011 | 954.28 | 475.55 | 1224.82 | 0.514 | 0.550 |
| 7 | 0.016 | 0.014 | 769.53 | 356.75 | 1197.96 | 0.408 | 0.405 |
| 8 | 0.020 | 0.017 | 588.90 | 237.83 | 1171.11 | 0.312 | 0.270 |
| 9 | 0.024 | 0.020 | 412.45 | 118.89 | 1144.26 | 0.218 | 0.134 |
| 10 | 0.028 | 0.024 | 240.23 | -0.01 | 1117.40 | 0.127 | 0.134 |

Exc. totales result. cabeza -0.00001 0.21499
Exc. reales 1er ord. cabeza 0.00000 0.21500

Convergencia del equilibrio sin agotamiento

Cortantes en sección base: Fx = 55.870 t; Fy = 101.805 t

LAV. Gelida. V-Rierussa. Pila 4. 1-03-02

| MATERIALES: | HORMIGON | ACERO |
|---|---|---|
| "RESIST. CARACT. (kp/cm2):" | 300 | 5100 |
| "COEFICIENTE MINOR. GAMMA:" | 1.5 | 1.15 |

"ALTURA DE LA PILA (m):" 39.00

DIMENSIONES Y ARMADURAS DE LAS SECCIONES:

| SECCION: | BASE | | CABEZA | | RECUBR. |
|---|---|---|---|---|---|
| DIRECCION R/EJE PUENTE: | LONG.(x) | TRAN.(y) | LONG.(x) | TRAN.(y) | (cm) |
| "DIMENSION EXTERIOR (cm):" | 280 | 430 | 280 | 430 | |
| "ESPESOR DE LA PARED(cm):" | 40 | 45 | 40 | 45 | |

"ARMADURA EXTERIOR: Recubrimiento r (cm):" 4

ARMADURAS TOTALES (cm2) EN 11 SECCIONES A DECIMOS DE LA ALTURA:

| Sección: | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| "Aex:" | 321.7 | 321.7 | 321.7 | 321.7 | 321.7 | 136.7 | 136.7 | 83.5 | 83.5 | 83.5 | 83.5 |
| "Aey:" | 482.5 | 482.5 | 482.5 | 482.5 | 482.5 | 201.1 | 201.1 | 122.8 | 122.8 | 122.8 | 122.8 |

"ARMADURA INTERIOR: Recubrimiento r (cm):" 4

ARMADURAS TOTALES (cm2) EN 11 SECCIONES A DECIMOS DE LA ALTURA:

| Sección: | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| "Aix:" | 273.4 | 273.4 | 273.4 | 273.4 | 273.4 | 112.6 | 112.6 | 68.7 | 68.7 | 68.7 | 68.7 |
| "Aiy:" | 369.9 | 369.9 | 369.9 | 369.9 | 369.9 | 152.8 | 152.8 | 93.3 | 93.3 | 93.3 | 93.3 |

"NUM. DE HIPOTESIS DE CARGA:" 5

ACCIONES MAYORADAS EN LAS DISTINTAS HIPOTESIS:

| | FUERZAS (t) | | | MOMENTOS (mt) | | SEC.BASE | | SEC.CABEZA | | GAMMA |
|---|---|---|---|---|---|---|---|---|---|---|
| HIP. | Fx | Fy | Fz | Mx | My | fx0 | fy0 | fx1 | fy1 | PP |
| 1 | 118.51 | 48.60 | 3854.88 | 771.44 | 000.00 | 0 | 0.302 | 0 | 0.302 | 1.35 |
| 2 | 118.51 | 29.84 | 1672.83 | 119.42 | 000.00 | 0 | 1.01 | 0 | 1.01 | 1.00 |
| 3 | 118.51 | 85.64 | 3013.72 | 1957.33 | 000.00 | 0 | 0.302 | 0 | 0.302 | 1.35 |
| 4 | 118.51 | 82.80 | 2986.15 | 2206.83 | 000.00 | 0 | 0.302 | 0 | 0.302 | 1.35 |
| 5 | 55.87 | 71.30 | 1117.40 | 51.60 | 000.00 | 0 | 1.01 | 0 | 1.01 | 1.00 |

LAV. Gelida. V-Rierussa. Pila 4. 1-03-02

HIPOTESIS NUM. 1

| Sec. | flch.x | flch.y | Mom.x | Mom.y | Axil | curv.x | curv.y |
|---|---|---|---|---|---|---|---|
| 0 | 0.000 | 0.000 | 3524.31 | 7644.58 | 4544.60 | 2.950 | 11.764 |
| 1 | 0.009 | 0.002 | 3281.00 | 7141.99 | 4475.62 | 2.565 | 10.442 |
| 2 | 0.034 | 0.008 | 3025.12 | 6569.47 | 4406.65 | 2.229 | 9.119 |
| 3 | 0.072 | 0.018 | 2759.42 | 5938.02 | 4337.68 | 1.910 | 7.759 |
| 4 | 0.123 | 0.030 | 2486.49 | 5258.46 | 4268.71 | 1.601 | 6.385 |
| 5 | 0.183 | 0.045 | 2208.69 | 4541.27 | 4199.74 | 2.115 | 7.764 |
| 6 | 0.255 | 0.063 | 1923.11 | 3779.05 | 4130.77 | 1.464 | 5.278 |
| 7 | 0.335 | 0.084 | 1634.26 | 2988.92 | 4061.79 | 1.098 | 4.005 |
| 8 | 0.421 | 0.106 | 1344.67 | 2179.79 | 3992.82 | 0.785 | 2.717 |
| 9 | 0.512 | 0.129 | 1056.47 | 1360.25 | 3923.85 | 0.605 | 1.668 |
| 10 | 0.604 | 0.153 | 770.89 | 537.07 | 3854.88 | 0.437 | 0.652 |

Exc. totales result. cabeza 0.13932 0.19998
Exc. reales 1er ord. cabeza 0.14000 0.20012

Convergencia del equilibrio sin agotamiento

Cortantes en sección base: Fx = 118.510 t; Fy = 60.378 t

LAV. Gelida. V-Rierussa. Pila 4. 1-03-02

HIPOTESIS NUM. 2

| Sec. | flch.x | flch.y | Mom.x | Mom.y | Axil | curv.x | curv.y |
|---|---|---|---|---|---|---|---|
| 0 | 0.000 | 0.000 | 2458.31 | 5381.91 | 2183.73 | 1.807 | 8.135 |
| 1 | 0.006 | 0.001 | 2193.03 | 4906.35 | 2132.64 | 1.565 | 7.204 |
| 2 | 0.023 | 0.005 | 1938.16 | 4408.02 | 2081.55 | 1.337 | 6.249 |
| 3 | 0.050 | 0.011 | 1694.67 | 3891.03 | 2030.46 | 1.124 | 5.278 |
| 4 | 0.085 | 0.018 | 1463.40 | 3359.30 | 1979.37 | 0.925 | 4.301 |
| 5 | 0.126 | 0.027 | 1245.13 | 2816.56 | 1928.28 | 1.146 | 5.299 |
| 6 | 0.175 | 0.038 | 1039.36 | 2260.59 | 1877.19 | 0.812 | 3.448 |
| 7 | 0.230 | 0.050 | 847.21 | 1697.43 | 1826.10 | 0.569 | 2.137 |
| 8 | 0.287 | 0.063 | 669.47 | 1131.21 | 1775.01 | 0.338 | 1.209 |
| 9 | 0.347 | 0.076 | 506.85 | 564.72 | 1723.92 | 0.250 | 0.596 |
| 10 | 0.408 | 0.090 | 359.62 | -0.26 | 1672.83 | 0.177 | 0.596 |

Exc. totales result. cabeza -0.00015 0.21497
Exc. reales 1er ord. cabeza 0.00000 0.21500

Convergencia del equilibrio sin agotamiento

Cortantes en sección base: Fx = 118.510 t; Fy = 69.230 t

LAV. Gelida. V-Rierussa. Pila 4. 1-03-02

HIPOTESIS NUM. 3

| Sec. | flch.x | flch.y | Mom.x | Mom.y | Axil | curv.x | curv.y |
|---|---|---|---|---|---|---|---|
| 0 | 0.000 | 0.000 | 6452.08 | 6271.15 | 3703.43 | 5.148 | 10.026 |
| 1 | 0.008 | 0.004 | 6060.07 | 5780.96 | 3634.46 | 4.548 | 8.760 |
| 2 | 0.029 | 0.015 | 5648.02 | 5243.33 | 3565.49 | 4.024 | 7.574 |
| 3 | 0.061 | 0.032 | 5219.70 | 4666.46 | 3496.52 | 3.516 | 6.398 |
| 4 | 0.103 | 0.054 | 4778.63 | 4058.15 | 3427.55 | 3.016 | 5.246 |
| 5 | 0.153 | 0.081 | 4328.13 | 3425.67 | 3358.58 | 4.108 | 6.671 |
| 6 | 0.214 | 0.114 | 3863.30 | 2762.93 | 3289.61 | 3.043 | 4.555 |
| 7 | 0.281 | 0.152 | 3390.30 | 2081.81 | 3220.63 | 2.483 | 3.278 |
| 8 | 0.353 | 0.193 | 2912.46 | 1389.43 | 3151.66 | 1.721 | 1.792 |
| 9 | 0.428 | 0.237 | 2433.92 | 693.55 | 3082.69 | 1.315 | 0.803 |
| 10 | 0.504 | 0.284 | 1956.92 | -0.88 | 3013.72 | 1.048 | 0.803 |

Exc. totales result. cabeza -0.00029 0.64934
Exc. reales 1er ord. cabeza 0.00000 0.64947

Convergencia del equilibrio sin agotamiento

Cortantes en sección base: Fx = 118.510 t; Fy = 97.418 t

LAV. Gelida. V-Rierussa. Pila 4. 1-03-02

HIPOTESIS NUM. 4

| Sec. | flch.x | flch.y | Mom.x | Mom.y | Axil | curv.x | curv.y |
|---|---|---|---|---|---|---|---|
| 0 | 0.000 | 0.000 | 6637.42 | 6299.37 | 3675.86 | 5.369 | 10.229 |
| 1 | 0.008 | 0.004 | 6255.98 | 5808.83 | 3606.89 | 4.740 | 8.912 |
| 2 | 0.029 | 0.015 | 5853.67 | 5270.40 | 3537.92 | 4.206 | 7.708 |
| 3 | 0.062 | 0.033 | 5434.31 | 4692.37 | 3468.95 | 3.696 | 6.527 |
| 4 | 0.105 | 0.056 | 5001.46 | 4082.53 | 3399.98 | 3.194 | 5.367 |
| 5 | 0.156 | 0.085 | 4558.46 | 3448.17 | 3331.01 | 4.466 | 6.992 |
| 6 | 0.218 | 0.120 | 4099.60 | 2782.29 | 3262.04 | 3.349 | 4.800 |
| 7 | 0.287 | 0.160 | 3631.31 | 2097.11 | 3193.06 | 2.800 | 3.514 |
| 8 | 0.362 | 0.204 | 3156.93 | 1399.81 | 3124.09 | 1.932 | 1.894 |
| 9 | 0.439 | 0.251 | 2681.12 | 698.75 | 3055.12 | 1.455 | 0.818 |
| 10 | 0.517 | 0.301 | 2206.48 | -0.73 | 2986.15 | 1.181 | 0.818 |

Exc. totales result. cabeza -0.00025 0.73890
Exc. reales 1er ord. cabeza 0.00000 0.73902

Convergencia del equilibrio sin agotamiento

Cortantes en sección base: Fx = 118.510 t; Fy = 94.578 t

LAV. Gelida. V-Rierussa. Pila 4. 1-03-02

HIPOTESIS NUM. 5

| Sec. | flch.x | flch.y | Mom.x | Mom.y | Axil | curv.x | curv.y |
|---|---|---|---|---|---|---|---|
| 0 | 0.000 | 0.000 | 3949.00 | 2390.75 | 1628.30 | 2.564 | 3.306 |
| 1 | 0.003 | 0.002 | 3521.86 | 2168.82 | 1577.21 | 2.215 | 2.906 |
| 2 | 0.009 | 0.007 | 3104.96 | 1940.17 | 1526.12 | 1.881 | 2.505 |
| 3 | 0.020 | 0.015 | 2699.39 | 1706.15 | 1475.03 | 1.563 | 2.105 |
| 4 | 0.034 | 0.026 | 2306.16 | 1468.04 | 1423.94 | 1.262 | 1.711 |
| 5 | 0.051 | 0.038 | 1926.15 | 1227.00 | 1372.85 | 1.393 | 1.896 |
| 6 | 0.070 | 0.053 | 1559.28 | 982.92 | 1321.76 | 0.956 | 1.290 |
| 7 | 0.092 | 0.069 | 1206.64 | 737.30 | 1270.67 | 0.666 | 0.874 |
| 8 | 0.114 | 0.086 | 868.92 | 491.11 | 1219.58 | 0.420 | 0.509 |
| 9 | 0.138 | 0.104 | 546.66 | 245.16 | 1168.49 | 0.261 | 0.251 |
| 10 | 0.162 | 0.122 | 240.22 | -0.03 | 1117.40 | 0.115 | 0.251 |

Exc. totales result. cabeza -0.00002 0.21498
Exc. reales 1er ord. cabeza 0.00000 0.21500

Convergencia del equilibrio sin agotamiento

Cortantes en sección base: Fx = 55.870 t; Fy = 110.690 t

LAV. Gelida. V-Rierussa. Pila 6. 1-03-02

| MATERIALES: | HORMIGON | ACERO |
|---|---|---|
| "RESIST. CARACT. (kp/cm2):" | 300 | 5100 |
| "COEFICIENTE MINOR. GAMMA:" | 1.5 | 1.15 |

"ALTURA DE LA PILA (m):" 24.00

DIMENSIONES Y ARMADURAS DE LAS SECCIONES:

| SECCION: | BASE | | CABEZA | | RECUBR. |
|---|---|---|---|---|---|
| DIRECCION R/EJE PUENTE: | LONG.(x) | TRAN.(y) | LONG.(x) | TRAN.(y) | (cm) |
| "DIMENSION EXTERIOR (cm):" | 280 | 430 | 280 | 430 | |
| "ESPESOR DE LA PARED(cm):" | 40 | 45 | 40 | 45 | |

"ARMADURA EXTERIOR: Recubrimiento r (cm):" 4

ARMADURAS TOTALES (cm2) EN 11 SECCIONES A DECIMOS DE LA ALTURA:

| Sección: | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| "Aex:" | 136.7 | 136.7 | 136.7 | 136.7 | 83.5 | 83.5 | 83.5 | 83.5 | 83.5 | 83.5 | 83.5 |
| "Aey:" | 201.1 | 201.1 | 201.1 | 201.1 | 122.8 | 122.8 | 122.8 | 122.8 | 122.8 | 122.8 | 122.8 |

"ARMADURA INTERIOR: Recubrimiento r (cm):" 4

ARMADURAS TOTALES (cm2) EN 11 SECCIONES A DECIMOS DE LA ALTURA:

| Sección: | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| "Aix:" | 112.6 | 112.6 | 112.6 | 112.6 | 68.7 | 68.7 | 68.7 | 68.7 | 68.7 | 68.7 | 68.7 |
| "Aiy:" | 152.8 | 152.8 | 152.8 | 152.8 | 93.3 | 93.3 | 93.3 | 93.3 | 93.3 | 93.3 | 93.3 |

"NUM. DE HIPOTESIS DE CARGA:" 5

ACCIONES MAYORADAS EN LAS DISTINTAS HIPOTESIS:

| | FUERZAS Y MOMENTOS EN LA CABEZA | | | | | FUERZAS EN EL FUSTE (t/m) | | | | COEF. |
|---|---|---|---|---|---|---|---|---|---|---|
| | FUERZAS (t) | | | MOMENTOS (mt) | | SEC.BASE | | SEC.CABEZA | | GAMMA |
| HIP. | Fx | Fy | Fz | Mx | My | fx0 | fy0 | fx1 | fy1 | PP |
| 1 | 118.61 | 127.90 | 3975.77 | 676.80 | 000.00 | 0 | 0.302 | 0 | 0.302 | 1.35 |
| 2 | 118.61 | 115.10 | 1768.89 | 149.50 | 000.00 | 0 | 1.01 | 0 | 1.01 | 1.00 |
| 3 | 118.61 | 175.30 | 3779.43 | 487.60 | 000.00 | 0 | 0.302 | 0 | 0.302 | 1.35 |
| 4 | 118.61 | 143.90 | 3112.86 | 1981.80 | 000.00 | 0 | 0.302 | 0 | 0.302 | 1.35 |
| 5 | 55.87 | 81.10 | 1117.40 | 94.90 | 000.00 | 0 | 1.01 | 0 | 1.01 | 1.00 |

LAV. Gelida. V-Rierussa. Pila 6. 1-03-02

HIPOTESIS NUM. 1

| Sec. | flch.x | flch.y | Mom.x | Mom.y | Axil | curv.x | curv.y |
|---|---|---|---|---|---|---|---|
| 0 | 0.000 | 0.000 | 4155.10 | 4031.20 | 4400.21 | 4.837 | 9.054 |
| 1 | 0.003 | 0.001 | 3825.52 | 3735.12 | 4357.77 | 3.823 | 7.309 |
| 2 | 0.009 | 0.005 | 3488.18 | 3420.88 | 4315.32 | 3.072 | 5.987 |
| 3 | 0.020 | 0.010 | 3145.13 | 3092.13 | 4272.88 | 2.471 | 4.910 |
| 4 | 0.033 | 0.017 | 2798.00 | 2751.79 | 4230.43 | 2.311 | 4.637 |
| 5 | 0.049 | 0.025 | 2447.29 | 2400.76 | 4187.99 | 1.802 | 3.697 |
| 6 | 0.066 | 0.034 | 2094.35 | 2041.53 | 4145.55 | 1.434 | 2.976 |
| 7 | 0.086 | 0.044 | 1740.13 | 1675.99 | 4103.10 | 1.158 | 2.386 |
| 8 | 0.107 | 0.055 | 1385.34 | 1305.68 | 4060.66 | 0.912 | 1.839 |
| 9 | 0.129 | 0.066 | 1030.63 | 931.97 | 4018.21 | 0.672 | 1.301 |
| 10 | 0.152 | 0.078 | 676.59 | 556.21 | 3975.77 | 0.438 | 0.771 |

Exc. totales result. cabeza 0.13990 0.17018
Exc. reales 1er ord. cabeza 0.14000 0.17023

Convergencia del equilibrio sin agotamiento

Cortantes en sección base: Fx = 118.610 t; Fy = 135.148 t

LAV. Gelida. V-Rierussa. Pila 6. 1-03-02

HIPOTESIS NUM. 2

| Sec. | flch.x | flch.y | Mom.x | Mom.y | Axil | curv.x | curv.y |
|---|---|---|---|---|---|---|---|
| 0 | 0.000 | 0.000 | 3562.98 | 3075.52 | 2083.29 | 4.075 | 7.438 |
| 1 | 0.002 | 0.001 | 3229.04 | 2786.42 | 2051.85 | 3.454 | 6.263 |
| 2 | 0.008 | 0.004 | 2896.91 | 2490.04 | 2020.41 | 2.867 | 5.130 |
| 3 | 0.017 | 0.009 | 2567.38 | 2187.92 | 1988.97 | 2.313 | 4.062 |
| 4 | 0.028 | 0.015 | 2241.20 | 1881.45 | 1957.53 | 2.135 | 3.677 |
| 5 | 0.041 | 0.023 | 1918.63 | 1571.23 | 1926.09 | 1.520 | 2.562 |
| 6 | 0.055 | 0.031 | 1600.45 | 1258.59 | 1894.65 | 1.050 | 1.729 |
| 7 | 0.071 | 0.040 | 1287.20 | 944.55 | 1863.21 | 0.737 | 1.153 |
| 8 | 0.087 | 0.049 | 979.27 | 629.77 | 1831.77 | 0.540 | 0.744 |
| 9 | 0.104 | 0.059 | 676.88 | 314.72 | 1800.33 | 0.372 | 0.371 |
| 10 | 0.121 | 0.068 | 380.23 | -0.17 | 1768.89 | 0.209 | 0.371 |

Exc. totales result. cabeza -0.00010 0.21495
Exc. reales 1er ord. cabeza 0.00000 0.21500

Convergencia del equilibrio sin agotamiento

Cortantes en sección base: Fx = 118.610 t; Fy = 139.340 t

LAV. Gelida. V-Rierussa. Pila 6. 1-03-02

HIPOTESIS NUM. 3

| Sec. | flch.x | flch.y | Mom.x | Mom.y | Axil | curv.x | curv.y |
|---|---|---|---|---|---|---|---|
| 0 | 0.000 | 0.000 | 5504.67 | 3346.84 | 4203.87 | 6.453 | 8.468 |
| 1 | 0.002 | 0.002 | 5059.64 | 3051.97 | 4161.43 | 5.023 | 6.541 |
| 2 | 0.009 | 0.007 | 4604.46 | 2741.60 | 4118.98 | 3.986 | 5.128 |
| 3 | 0.018 | 0.014 | 4141.81 | 2419.40 | 4076.54 | 3.181 | 4.017 |
| 4 | 0.029 | 0.023 | 3673.77 | 2088.20 | 4034.09 | 2.924 | 3.602 |
| 5 | 0.043 | 0.033 | 3201.08 | 1749.16 | 3991.65 | 2.275 | 2.684 |
| 6 | 0.058 | 0.045 | 2725.38 | 1404.57 | 3949.21 | 1.814 | 2.006 |
| 7 | 0.074 | 0.058 | 2247.82 | 1056.07 | 3906.76 | 1.464 | 1.472 |
| 8 | 0.091 | 0.072 | 1769.27 | 704.98 | 3864.32 | 1.141 | 0.973 |
| 9 | 0.109 | 0.086 | 1290.52 | 352.45 | 3821.87 | 0.826 | 0.483 |
| 10 | 0.127 | 0.101 | 812.32 | -0.38 | 3779.43 | 0.517 | 0.483 |

Exc. totales result. cabeza -0.00010 0.21493
Exc. reales 1er ord. cabeza 0.00000 0.21500

Convergencia del equilibrio sin agotamiento

Cortantes en sección base: Fx = 118.610 t; Fy = 182.548 t

LAV. Gelida. V-Rierussa. Pila 6. 1-03-02

HIPOTESIS NUM. 4

| Sec. | flch.x | flch.y | Mom.x | Mom.y | Axil | curv.x | curv.y |
|---|---|---|---|---|---|---|---|
| 0 | 0.000 | 0.000 | 5963.75 | 3339.22 | 3537.30 | 7.929 | 9.770 |
| 1 | 0.003 | 0.002 | 5593.83 | 3044.66 | 3494.86 | 6.359 | 7.631 |
| 2 | 0.010 | 0.008 | 5213.03 | 2734.94 | 3452.41 | 5.252 | 6.100 |
| 3 | 0.021 | 0.017 | 4823.83 | 2413.48 | 3409.97 | 4.353 | 4.852 |
| 4 | 0.034 | 0.029 | 4428.26 | 2083.01 | 3367.52 | 4.362 | 4.647 |
| 5 | 0.050 | 0.043 | 4026.51 | 1744.15 | 3325.08 | 3.378 | 3.328 |
| 6 | 0.069 | 0.059 | 3620.67 | 1399.64 | 3282.64 | 2.638 | 2.310 |
| 7 | 0.088 | 0.076 | 3212.29 | 1051.57 | 3240.19 | 2.102 | 1.529 |
| 8 | 0.108 | 0.095 | 2802.49 | 701.49 | 3197.75 | 1.731 | 0.935 |
| 9 | 0.129 | 0.114 | 2392.05 | 350.55 | 3155.30 | 1.458 | 0.457 |
| 10 | 0.150 | 0.135 | 1981.56 | -0.32 | 3112.86 | 1.201 | 0.457 |

Exc. totales result. cabeza -0.00010 0.63657
Exc. reales 1er ord. cabeza 0.00000 0.63665

Convergencia del equilibrio sin agotamiento

Cortantes en sección base: Fx = 118.610 t; Fy = 151.148 t

LAV. Gelida. V-Rierussa. Pila 6. 1-03-02

HIPOTESIS NUM. 5

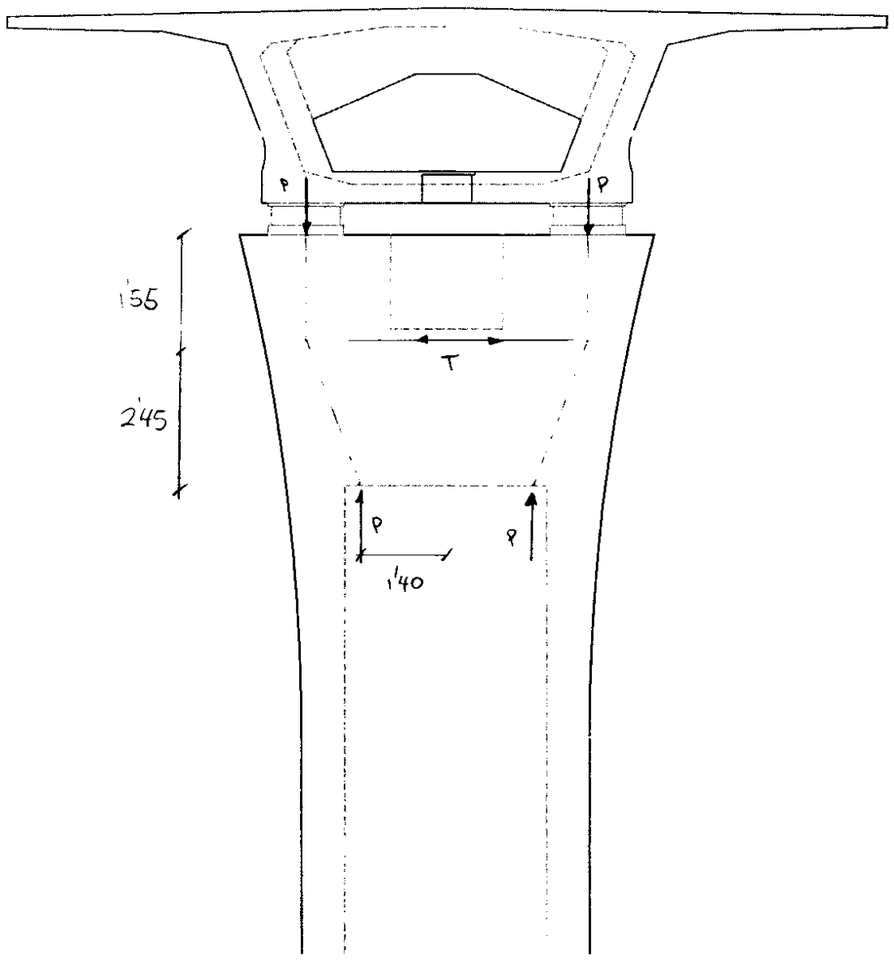
| Sec. | flch.x | flch.y | Mom.x | Mom.y | Axil | curv.x | curv.y |
|---|---|---|---|---|---|---|---|
| 0 | 0.000 | 0.000 | 2524.08 | 1396.12 | 1431.80 | 2.270 | 2.705 |
| 1 | 0.001 | 0.001 | 2273.25 | 1260.92 | 1400.36 | 1.906 | 2.287 |
| 2 | 0.003 | 0.002 | 2026.73 | 1123.93 | 1368.92 | 1.567 | 1.887 |
| 3 | 0.006 | 0.005 | 1784.87 | 985.53 | 1337.48 | 1.257 | 1.509 |
| 4 | 0.010 | 0.008 | 1547.95 | 846.09 | 1306.04 | 1.095 | 1.306 |
| 5 | 0.015 | 0.012 | 1316.14 | 705.80 | 1274.60 | 0.817 | 0.953 |
| 6 | 0.020 | 0.017 | 1089.68 | 564.97 | 1243.16 | 0.610 | 0.683 |
| 7 | 0.026 | 0.022 | 868.75 | 423.83 | 1211.72 | 0.463 | 0.484 |
| 8 | 0.032 | 0.027 | 653.47 | 282.53 | 1180.28 | 0.346 | 0.320 |
| 9 | 0.038 | 0.032 | 443.93 | 141.21 | 1148.84 | 0.235 | 0.160 |
| 10 | 0.045 | 0.038 | 240.23 | -0.02 | 1117.40 | 0.127 | 0.160 |

Exc. totales result. cabeza -0.00001 0.21499
Exc. reales 1er ord. cabeza 0.00000 0.21500

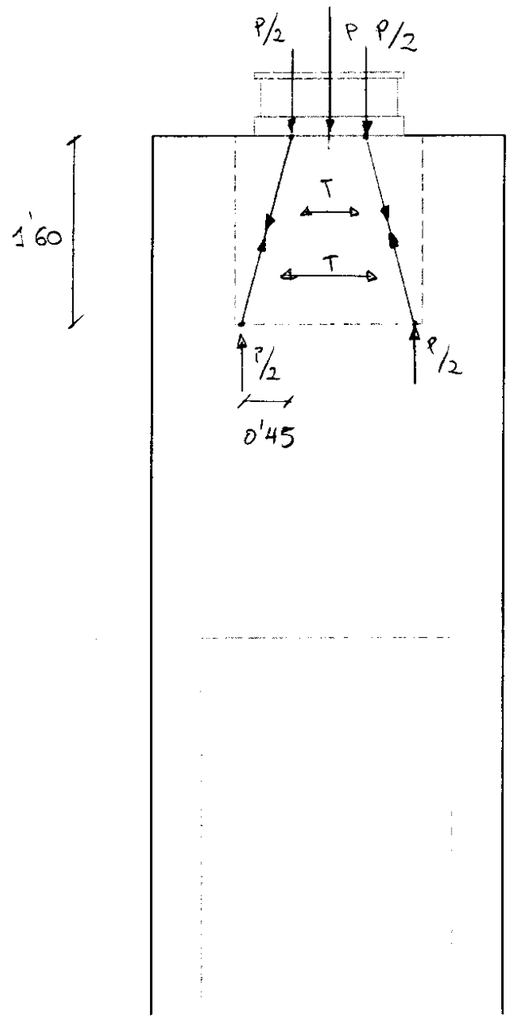
Convergencia del equilibrio sin agotamiento

Cortantes en sección base: Fx = 55.870 t; Fy = 105.340 t

## 5.4. Cabeza de pilas




1/100




1/50

$P = 15080 \cdot 1'45 = 21866\ kN$

$T = \frac{0'50 \cdot 0'45}{1'60} \cdot 21766 = 3075\ kN$

$A_s > 69\ cm^2 \rightarrow$ 8 capas de 8 ϕ16

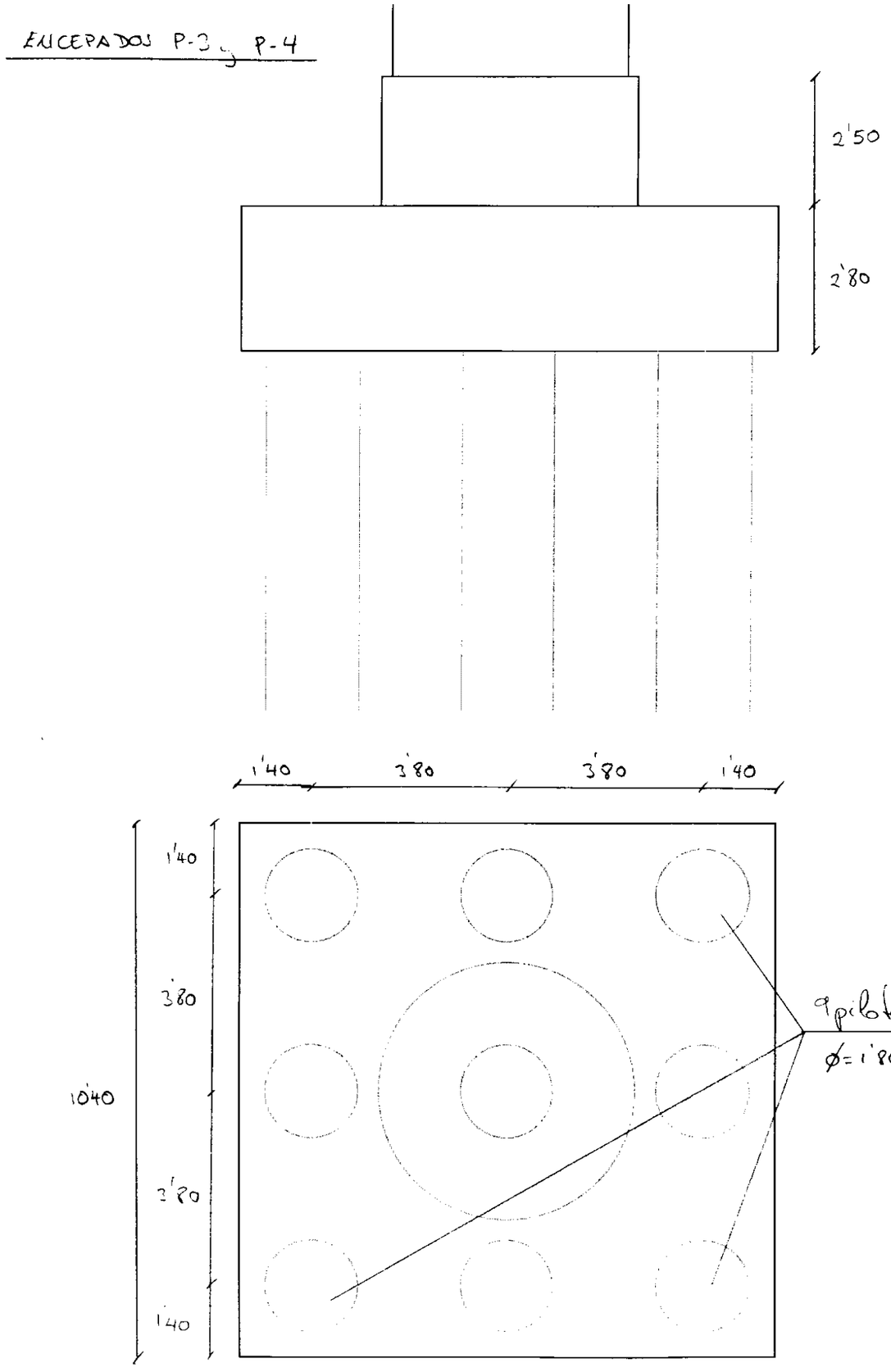
en 1'20m bajo apoyo en horquilla. (4 horquilla)

$P = 15080 \cdot 1'45 = 21866\ kN$

$T = \frac{0'90}{2'45} \cdot 21866 = 8032\ kN \rightarrow A_s > 181\ cm^2$ en 2'80m → 4 × 8 Hora ϕ20

## 5.5. Cimentaciones

ENCEPADOS P-3 y P-4




CIMENTACION CON PILOTES

DENOMINACION : LAV Gelida. Rierussa. P-4.

DIMENSIONES DEL ENCEPADO : Lx: 10.400 m.
Ly: 10.400 m.
Ht: 2.750 m.
ESQUINA SUP. DCHA. FUSTE coorX: 2.200 m.
coorY: 2.200 m.
DIAMETRO DE LOS PILOTES : 1.800 m.
EXISTE UN PILOTE EN EL CENTRO DEL ENCEPADO
NUMERO DE PILOTES EN PRIMER CUADRANTE : 3
COORDENADAS PILOTES DE PRIMER CUADRANTE (m.):

| X | Y |
|---|---|
| 3.8 | 0 |
| 3.8 | 3.8 |
| 0 | 3.8 |

ALTURA DE TIERRAS SOBRE PARAMENTO SUP. ENCEPADO : 1 m.
PESO ESPECIFICO DE TIERRAS (Tn/m3) : 2

HORMIGON: Fck(Kg/cm2) : 250
ACERO: Fyk(Kg/cm2) : 5100

ESFUERZOS MAYORADOS EN PARAMENTO SUPERIOR ENCEPADO :
(Mx TIENE POR EJE X-X)
Nº de hipotesis: 3

| N | Mx | My | Hx | Hy | Gamma |
|---|---|---|---|---|---|
| 4588.81 | 3789.67 | 8586.23 | 118.51 | 61.13 | 1.40 |
| 3747.65 | 6808.48 | 6853.52 | 118.51 | 98.17 | 1.40 |
| 3720.08 | 6991.13 | 6884.96 | 118.51 | 95.33 | 1.40 |

********** RESULTADOS **********

SE CUMPLE 0.5*H<=V<=1.5*H ENCEPADO TIPO I
Vx= 1.60 m. Vy= 1.60 m.

CARGAS EN PILOTES (SIN MAYORAR).

| No. HIPOT. | Nmax | Nmin |
|---|---|---|
| 1 | 869.74 | 63.35 |
| 2 | 846.46 | -46.89 |
| 3 | 850.74 | -55.54 |

Nmax= 869.74 t en HIPOT. No: 1
Nmin= -55.54 t en HIPOT. No: 3

MAXIMOS MOMENTOS FLECTORES (MAYORADOS) EN TODA LA SECCION DE REFERENCIA:

Md(X)= 6213.16 mt EN HIP. No.: 1
Md(Y)= 5065.43 mt EN HIP. No.: 3

DIMENSIONAMIENTO A FLEXION

SE CUMPLE Md<=0.35*Uc*H PARA X e Y
NO ES NECESARIA ARMADURA A COMPRESION

0.35*Ucx*H = 42603.16 mt 0.35*Ucy*H = 42603.16 mt

ARMADURAS PRINCIPALES TOTALES (DE CALCULO) EN PARAMENTO INF. DE ENCEPADO:
Asx = 542.91 cm2 (Paralela al eje X-X) → 181 cm²/pasillo → 2 capas de 12Ø22 en 2'0 m
Asy = 440.38 cm2 (Paralela al eje Y-Y) → 147 cm²/pasillo → 2 capas de 10Ø22 en 2'0 m

VERIFICACION A CORTANTE

ESFUERZOS CORTANTES MAXIMOS (MAYORADOS) EN TODA LA SECCION DE REFERENCIA:

Vd(X)= 2856.31 t EN HIPOT. No. 1:
Vd(Y)= 2348.47 t EN HIPOT. No. 3:

NO ES NECESARIA ARMADURA A CORTANTE EN SECCION DE REFERENCIA
Vcux= 3180.98 t Vcuy= 3180.98 t

NO ES NECESARIA ARMADURA A CORTANTE EN ESQUINA
Nd= 1260.70 t Vcu= 1294.04 t

NO ES NECESARIA ARMADURA A PUNZONAMIENTO.
Nd= 1260.70 t Vcu= 4782.78 t

* Entre pasillos: 1/4 Aprincipal

45 cm² en 1'80 → 10 Ø25
27 cm² en 1'80 → 8 Ø25

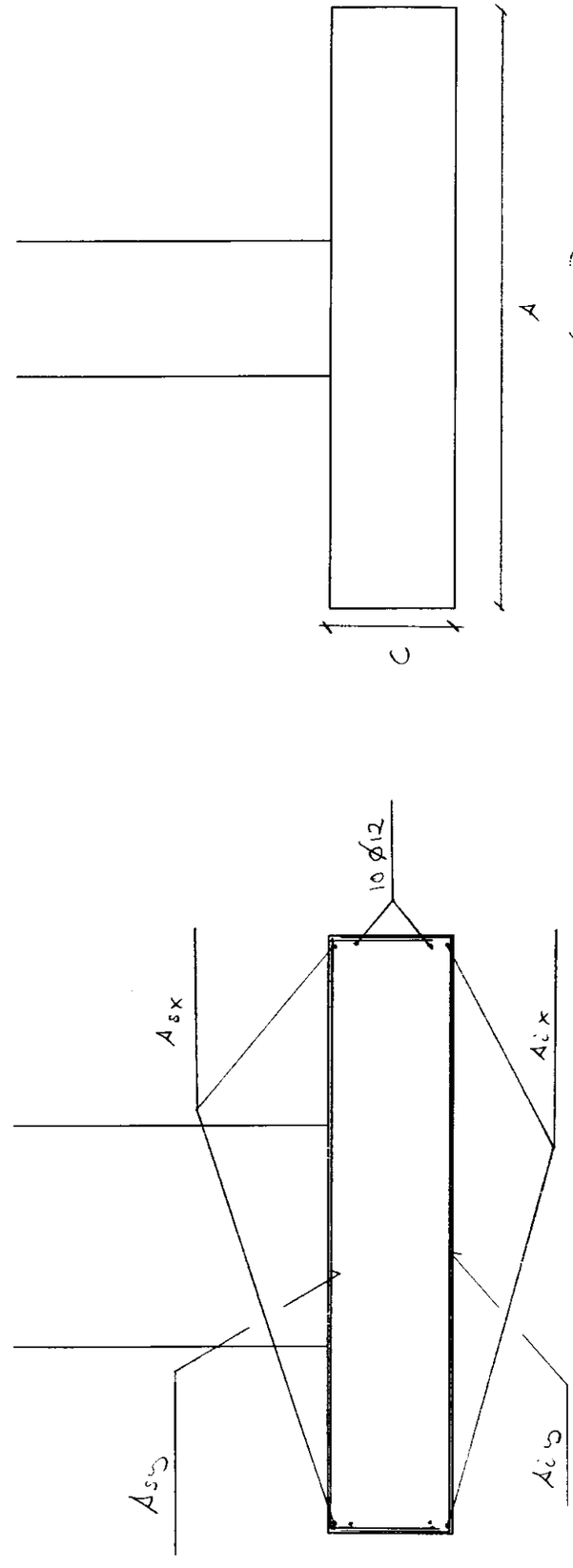
* En extremos: 3 Ø25

* Cercos cortantes: 4589 / 5.9 = 340'0 t → 77 cm² en 2'0 m
4 c Ø12/0.20 entre pilotes

* Armadura superior: 62Ø16 ≥ 52Ø16 (> 1/10 A(-))
* Armadura pilotes: 34 Ø 20 long + c Ø12/0.20

c Ø12/0.15 en 3m superiores

Zapatas de Pilas Rígidas




| | A | B | C | Asx | Asy | Aix | Aiy | Sadm (N/mm²) |
|---|---|---|---|---|---|---|---|---|
| P-1 | 1'15 | 1'15 | 2'60 | Ø16/0.15 | Ø16/0.20 | 2×Ø25/0.20 | 2×Ø25/0.15 | 0'4 |
| P-2 | 1'25 | 1'25 | 2'60 | Ø16/0.15 | Ø16/0.15 | 2×Ø25/0.15 | (Ø25+Ø20)/0.15 | 0'4 |
| P-5 | 1'40 | 1'40 | 2'80 | Ø16/0.15 | Ø16/0.15 | 2×Ø25/0.15 | 2×Ø25/0.15 | 0'4 |
| P-6 | 1'40 | 1'40 | 2'80 | Ø16/0.15 | Ø16/0.15 | 2×Ø25/0.15 | (Ø25+Ø20)/0.15 | 0'4 |
| P-7 | 1'65 | 1'30 | 2'80 | Ø16/0.20 | Ø16/0.15 | 2×Ø25/0.20 | 2×Ø25/0.15 | 0'5 |

LAV-GELIDA Rierussa. Zapata de P-1. 2-03-2002

| DIMENSIONES DE LA ZAPATA | | DIMENS.FUSTE Y RETRANQUEOS SEC.FLEX. | |
|---|---|---|---|
| "Dimensión longitud. Ax(m):" | 11.50 | "Dimensión longitud. ax(m):" | 2.80 |
| "Dimensión transver. Ay(m):" | 11.50 | "Dimensión transver. ay(m):" | 4.30 |
| "Canto total zapata H (m):" | 2.60 | "Retranqueo longitu. rx(m):" | 0.42 |
| "Recubrimiento mecán. r (m):" | 0.05 | "Retranqueo transve. ry(m):" | 0.65 |

| DATOS DEL TERRENO | | NUMERO DE HIPOTESIS DE CARGA | |
|---|---|---|---|
| "Altura de tierras h (m):" | 1.50 | "Hipót. mayoradas s/sismo N1:" | 3 |
| "Peso específico P (t/m3):" | 1.80 | "Hipótesis con sismo N2:" | 0 |
| "Tensión admisible σ (t/m²):" | 40.00 | "Hipót. s/mayorar s/sismo N3:" | 0 |

| RESISTENCIAS DE LOS MATERIALES | | COEFICIENTES MINORACION RESISTENCIA | |
|---|---|---|---|
| "R.caract. hón. fck (kp/cm²):" | 250 | "Coef. gamma hormigón Yc:" | 1.5 |
| "Lím.elás.acero fyk (kp/cm²):" | 5100 | "Coef. gamma acero Ys:" | 1.15 |

HIPOTESIS MAYORADAS SIN SISMO: SOLICITACIONES Y COEFICIENTE Yf

| | HIP 1 | HIP 2 | HIP 3 | HIP 4 | HIP 5 |
|---|---|---|---|---|---|
| "Esf.Axil Nd (t) :" | 4265.80 | 4069.46 | 3402.89 | | |
| "Momento Mxd (mt):" | 2881.13 | 3809.56 | 4476.87 | | |
| "Momento Myd (mt):" | 2630.10 | 2030.48 | 2025.20 | | |
| "F.longit. Hxd (t) :" | 118.61 | 118.61 | 118.61 | | |
| "F.transv. Hyd (t) :" | 132.85 | 180.25 | 148.85 | | |
| "Coef.may. Yf :" | 1.35 | 1.35 | 1.35 | | |

HIPOTESIS CON SISMO: SOLICITACIONES Y COEFICIENTE Yf

| | HIP 1 | HIP 2 | HIP 3 | HIP 4 |
|---|---|---|---|---|
| "Esf.Axil Nd (t) :" | | | | |
| "Momento Mxd (mt):" | | | | |
| "Momento Myd (mt):" | | | | |
| "F.longit. Hxd (t) :" | | | | |
| "F.transv. Hyd (t) :" | | | | |
| "Coef.may. Yf :" | | | | |

HIPOTESIS SIN MAYOR.SIN SISMO: SOLICITACIONES Y COEFICIENTE Yf

| | HIP 1 | HIP 2 | HIP 3 | HIP 4 |
|---|---|---|---|---|
| "Esf.Axil Nk (t) :" | | | | |
| "Momento Mxk (mt):" | | | | |
| "Momento Myk (mt):" | | | | |
| "F.longit. Hxk (t) :" | | | | |
| "F.transv. Hyk (t) :" | | | | |
| "Coef.may. Yf :" | | | | |

LAV-GELIDA Rierussa. Zapata de P-1. 2-03-2002

HIPOTESIS MAYORADAS SIN SISMO

| | | HIP 1 | HIP 2 | HIP 3 | Adm./mín. |
|---|---|---|---|---|---|
| Esfzo.axil | N (t) | 4344.04 | 4198.61 | 3704.85 | |
| Momento | Mx (mt) | 2390.03 | 3169.04 | 3602.87 | |
| Momento | My (mt) | 2176.66 | 1732.49 | 1728.58 | |
| Zona diagrama tens. | | D | D | D | |
| Tens. Coba. (t/m²) | | 39.79 | 39.37 | 36.69 | 40.00 |
| Tens. Punta (t/m²) | | 50.87 | 51.10 | 49.04 | 53.33 |
| Ct-Pz:Caso y Vd/Vu | | Rig. | Rig. | Rig. | 1.00 |
| Arm.cálc.Ax(cm²/m) | | 56.70 | 57.63 | 54.67 | 39.00 |
| Arm.cálc.Ay(cm²/m) | | 44.72 | 44.27 | 41.54 | 39.00 |

DIMENSIONES DE LA ZAPATA

| | | | |
|---|---|---|---|
| "Dimensión longitud. | Ax(m):" | 14.00 | |
| "Dimensión transver. | Ay(m):" | 14.00 | |
| "Canto total zapata | H (m):" | 2.80 | |
| "Recubrimiento mecán. | r (m):" | 0.05 | |

DIMENS.FUSTE Y RETRANQUEOS SEC.FLEX.

| | | |
|---|---|---|
| "Dimensión longitud. | ax(m):" | 4.43 |
| "Dimensión transver. | ay(m):" | 4.43 |
| "Retranqueo longitu. | rx(m):" | 0.66 |
| "Retranqueo transve. | ry(m):" | 0.66 |

DATOS DEL TERRENO

| | | |
|---|---|---|
| "Altura de tierras | h (m):" | 4.00 |
| "Peso específico | P (t/m3):" | 1.80 |
| "Tensión admisible | σ (t/m²):" | 40.00 |

NUMERO DE HIPOTESIS DE CARGA

| | | |
|---|---|---|
| "Hipót. mayoradas s/sismo | N1:" | 3 |
| "Hipótesis con sismo | N2:" | 0 |
| "Hipót. s/mayorar s/sismo | N3:" | 0 |

RESISTENCIAS DE LOS MATERIALES

| | | |
|---|---|---|
| "R.caract. hón. fck (kp/cm²):" | | 250 |
| "Lím.elás.acero fyk (kp/cm²):" | | 5100 |

COEFICIENTES MINORACION RESISTENCIA

| | | |
|---|---|---|
| "Coef. gamma hormigón | Yc:" | 1.5 |
| "Coef. gamma acero | Ys:" | 1.15 |

HIPOTESIS MAYORADAS SIN SISMO: SOLICITACIONES Y COEFICIENTE Yf

| | | HIP 1 | HIP 2 | HIP 3 | HIP 4 | HIP 5 |
|---|---|---|---|---|---|---|
| "Esf.Axil | Nd (t) :" | 4553.44 | 3712.28 | 3684.71 | | |
| "Momento | Mxd (mt):" | 3571.77 | 6502.61 | 6688.13 | | |
| "Momento | Myd (mt):" | 7839.90 | 6342.83 | 6371.20 | | |
| "F.longit. | Hxd (t) :" | 118.51 | 118.51 | 118.51 | | |
| "F.transv. | Hyd (t) :" | 60.53 | 97.57 | 94.73 | | |
| "Coef.may. | Yf :" | 1.35 | 1.35 | 1.35 | | |

HIPOTESIS CON SISMO: SOLICITACIONES Y COEFICIENTE Yf

| | | HIP 1 | HIP 2 | HIP 3 | HIP 4 |
|---|---|---|---|---|---|
| "Esf.Axil | Nd (t) :" | | | | |
| "Momento | Mxd (mt):" | | | | |
| "Momento | Myd (mt):" | | | | |
| "F.longit. | Hxd (t) :" | | | | |
| "F.transv. | Hyd (t) :" | | | | |
| "Coef.may. | Yf :" | | | | |

HIPOTESIS SIN MAYOR.SIN SISMO: SOLICITACIONES Y COEFICIENTE Yf

| | | HIP 1 | HIP 2 | HIP 3 | HIP 4 |
|---|---|---|---|---|---|
| "Esf.Axil | Nk (t) :" | | | | |
| "Momento | Mxk (mt):" | | | | |
| "Momento | Myk (mt):" | | | | |
| "F.longit. | Hxk (t) :" | | | | |
| "F.transv. | Hyk (t) :" | | | | |
| "Coef.may. | Yf :" | | | | |

LAV-GELIDA Rierussa. Zapata de P-5. 2-03-2002

HIPOTESIS MAYORADAS SIN SISMO

| | | HIP 1 | HIP 2 | HIP 3 | Adm./mín. |
|---|---|---|---|---|---|
| Esfzo.axil | N (t) | 6014.82 | 5391.74 | 5371.32 | |
| Momento | Mx (mt) | 2771.30 | 5019.12 | 5150.65 | |
| Momento | My (mt) | 6053.13 | 4944.19 | 4965.21 | |
| Zona diagrama tens. | | D | D | D | |
| Tens. Coba. (t/m²) | | 38.37 | 36.51 | 36.59 | 40.00 |
| Tens. Punta (t/m²) | | 50.00 | 49.31 | 49.53 | 53.33 |
| Ct-Pz:Caso y Vd/Vu | | Rig. | Rig. | Rig. | 1.00 |
| Arm.cálc.Ax(cm²/m) | | 58.00 | 57.69 | 58.05 | 42.00 |
| Arm.cálc.Ay(cm²/m) | | 60.58 | 57.55 | 57.91 | 42.00 |

| DIMENSIONES DE LA ZAPATA | | DIMENS.FUSTE Y RETRANQUEOS SEC.FLEX. | |
|---|---|---|---|
| "Dimensión longitud. | Ax(m):" 14.00 | "Dimensión longitud. | ax(m):" 4.43 |
| "Dimensión transver. | Ay(m):" 14.00 | "Dimensión transver. | ay(m):" 4.43 |
| "Canto total zapata | H (m):" 2.80 | "Retranqueo longitu. | rx(m):" 0.66 |
| "Recubrimiento mecán. | r (m):" 0.05 | "Retranqueo transve. | ry(m):" 0.66 |

| DATOS DEL TERRENO | | NUMERO DE HIPOTESIS DE CARGA | |
|---|---|---|---|
| "Altura de tierras | h (m):" 6.00 | "Hipót. mayoradas s/sismo | N1:" 3 |
| "Peso específico | P (t/m3):" 1.80 | "Hipótesis con sismo | N2:" 0 |
| "Tensión admisible | σ (t/m²):" 40.00 | "Hipót. s/mayorar s/sismo | N3:" 0 |

| RESISTENCIAS DE LOS MATERIALES | | COEFICIENTES MINORACION RESISTENCIA | |
|---|---|---|---|
| "R.caract. hón. fck | (kp/cm²):" 250 | "Coef. gamma hormigón | Yc:" 1.5 |
| "Lím.elás.acero fyk | (kp/cm²):" 5100 | "Coef. gamma acero | Ys:" 1.15 |

HIPOTESIS MAYORADAS SIN SISMO: SOLICITACIONES Y COEFICIENTE Yf

| | | HIP 1 | HIP 2 | HIP 3 | HIP 4 | HIP 5 |
|---|---|---|---|---|---|---|
| "Esf.Axil | Nd (t) :" | 4435.58 | 4239.24 | 3572.67 | | |
| "Momento | Mxd (mt):" | 4448.27 | 5901.84 | 6300.08 | | |
| "Momento | Myd (mt):" | 4317.95 | 3633.19 | 3627.00 | | |
| "F.longit. | Hxd (t) :" | 118.61 | 118.61 | 118.61 | | |
| "F.transv. | Hyd (t) :" | 135.75 | 183.15 | 151.75 | | |
| "Coef.may. | Yf :" | 1.40 | 1.40 | 1.40 | | |

HIPOTESIS CON SISMO: SOLICITACIONES Y COEFICIENTE Yf

| | | HIP 1 | HIP 2 | HIP 3 | HIP 4 |
|---|---|---|---|---|---|
| "Esf.Axil | Nd (t) :" | | | | |
| "Momento | Mxd (mt):" | | | | |
| "Momento | Myd (mt):" | | | | |
| "F.longit. | Hxd (t) :" | | | | |
| "F.transv. | Hyd (t) :" | | | | |
| "Coef.may. | Yf :" | | | | |

HIPOTESIS SIN MAYOR.SIN SISMO: SOLICITACIONES Y COEFICIENTE Yf

| | | HIP 1 | HIP 2 | HIP 3 | HIP 4 |
|---|---|---|---|---|---|
| "Esf.Axil | Nk (t) :" | | | | |
| "Momento | Mxk (mt):" | | | | |
| "Momento | Myk (mt):" | | | | |
| "F.longit. | Hxk (t) :" | | | | |
| "F.transv. | Hyk (t) :" | | | | |
| "Coef.may. | Yf :" | | | | |

LAV-GELIDA Rierussa. Zapata de P-6. 2-03-2002



HIPOTESIS MAYORADAS SIN SISMO

| | | HIP 1 | HIP 2 | HIP 3 | Adm./mín. |
|---|---|---|---|---|---|
| Esfzo.axil | N (t) | 6445.12 | 6304.88 | 5828.76 | |
| Momento | Mx (mt) | 3448.84 | 4581.90 | 4803.56 | |
| Momento | My (mt) | 3321.47 | 2832.36 | 2827.93 | |
| Zona diagrama tens. | | D | D | D | |
| Tens. Coba. (t/m²) | | 38.43 | 38.36 | 36.22 | 40.00 |
| Tens. Punta (t/m²) | | 47.69 | 48.37 | 46.42 | 53.33 |
| Ct-Pz:Caso y Vd/Vu | | Rig. | Rig. | Rig. | 1.00 |
| Arm.cálc.Ax(cm²/m) | | 52.56 | 54.15 | 50.63 | 42.00 |
| Arm.cálc.Ay(cm²/m) | | 52.39 | 52.83 | 49.11 | 42.00 |

LAV-GELIDA Rierussa. Zapata de P-7. 2-03-2002

| DIMENSIONES DE LA ZAPATA | | | DIMENS.FUSTE Y RETRANQUEOS SEC.FLEX. | | |
|---|---|---|---|---|---|
| "Dimensión longitud. | Ax(m):" | 11.00 | "Dimensión longitud. | ax(m):" | 4.43 |
| "Dimensión transver. | Ay(m):" | 12.50 | "Dimensión transver. | ay(m):" | 4.43 |
| "Canto total zapata | H (m):" | 2.80 | "Retranqueo longitu. | rx(m):" | 0.66 |
| "Recubrimiento mecán. | r (m):" | 0.05 | "Retranqueo transve. | ry(m):" | 0.66 |

| DATOS DEL TERRENO | | | NUMERO DE HIPOTESIS DE CARGA | | |
|---|---|---|---|---|---|
| "Altura de tierras | h (m):" | 5.50 | "Hipót. mayoradas s/sismo | N1:" | 3 |
| "Peso específico | P (t/m3):" | 1.80 | "Hipótesis con sismo | N2:" | 0 |
| "Tensión admisible σ | (t/m²):" | 50.00 | "Hipót. s/mayorar s/sismo | N3:" | 0 |

| RESISTENCIAS DE LOS MATERIALES | | | COEFICIENTES MINORACION RESISTENCIA | | |
|---|---|---|---|---|---|
| "R.caract. hón. fck | (kp/cm²):" | 250 | "Coef. gamma hormigón | Yc:" | 1.5 |
| "Lím.elás.acero fyk | (kp/cm²):" | 5100 | "Coef. gamma acero | Ys:" | 1.15 |

HIPOTESIS MAYORADAS SIN SISMO: SOLICITACIONES Y COEFICIENTE Yf

| | | HIP 1 | HIP 2 | HIP 3 | HIP 4 | HIP 5 |
|---|---|---|---|---|---|---|
| "Esf.Axil | Nd (t) :" | 4435.58 | 4239.24 | 3572.67 | | |
| "Momento | Mxd (mt):" | 4448.27 | 5901.84 | 6300.08 | | |
| "Momento | Myd (mt):" | 4317.95 | 3633.19 | 3627.00 | | |
| "F.longit. | Hxd (t) :" | 118.61 | 118.61 | 118.61 | | |
| "F.transv. | Hyd (t) :" | 135.75 | 183.15 | 151.75 | | |
| "Coef.may. | Yf :" | 1.40 | 1.40 | 1.40 | | |

HIPOTESIS CON SISMO: SOLICITACIONES Y COEFICIENTE Yf

| | | HIP 1 | HIP 2 | HIP 3 | HIP 4 |
|---|---|---|---|---|---|
| "Esf.Axil | Nd (t) :" | | | | |
| "Momento | Mxd (mt):" | | | | |
| "Momento | Myd (mt):" | | | | |
| "F.longit. | Hxd (t) :" | | | | |
| "F.transv. | Hyd (t) :" | | | | |
| "Coef.may. | Yf :" | | | | |

HIPOTESIS SIN MAYOR.SIN SISMO: SOLICITACIONES Y COEFICIENTE Yf

| | | HIP 1 | HIP 2 | HIP 3 | HIP 4 |
|---|---|---|---|---|---|
| "Esf.Axil | Nk (t) :" | | | | |
| "Momento | Mxk (mt):" | | | | |
| "Momento | Myk (mt):" | | | | |
| "F.longit. | Hxk (t) :" | | | | |
| "F.transv. | Hyk (t) :" | | | | |
| "Coef.may. | Yf :" | | | | |

LAV-GELIDA Rierussa. Zapata de P-7. 2-03-2002

HIPOTESIS MAYORADAS SIN SISMO

| | | HIP 1 | HIP 2 | HIP 3 | Adm./mín. |
|---|---|---|---|---|---|
| Esfzo.axil | N (t) | 5297.73 | 5157.49 | 4681.37 | |
| Momento | Mx (mt) | 3448.84 | 4581.90 | 4803.56 | |
| Momento | My (mt) | 3321.47 | 2832.36 | 2827.93 | |
| Zona diagrama tens. | | D | D | D | |
| Tens. Coba. (t/m²) | | 48.54 | 48.57 | 45.76 | 50.00 |
| Tens. Punta (t/m²) | | 63.76 | 64.76 | 62.02 | 66.67 |
| Ct-Pz:Caso y Vd/Vu | | Rig. | Rig. | Rig. | 1.00 |
| Arm.cálc.Ax(cm²/m) | | 42.37 | 43.64 | 41.11 | 42.00 |
| Arm.cálc.Ay(cm²/m) | | 60.62 | 60.83 | 57.07 | 42.00 |

LAV-GELIDA S. Joan. Zapata de P-1. 2-03-2002

| DIMENSIONES DE LA ZAPATA | | DIMENS.FUSTE Y RETRANQUEOS SEC.FLEX. | |
|---|---|---|---|
| "Dimensión longitud. | Ax(m):" 12.50 | "Dimensión longitud. | ax(m):" 2.80 |
| "Dimensión transver. | Ay(m):" 12.50 | "Dimensión transver. | ay(m):" 4.30 |
| "Canto total zapata | H (m):" 2.60 | "Retranqueo longitu. | rx(m):" 0.42 |
| "Recubrimiento mecán. | r (m):" 0.05 | "Retranqueo transve. | ry(m):" 0.65 |

| DATOS DEL TERRENO | | NUMERO DE HIPOTESIS DE CARGA | |
|---|---|---|---|
| "Altura de tierras | h (m):" 3.00 | "Hipót. mayoradas s/sismo | N1:" 3 |
| "Peso específico | P (t/m3):" 1.80 | "Hipótesis con sismo | N2:" 0 |
| "Tensión admisible σ | (t/m²):" 40.00 | "Hipót. s/mayorar s/sismo | N3:" 0 |

| RESISTENCIAS DE LOS MATERIALES | | COEFICIENTES MINORACION RESISTENCIA | |
|---|---|---|---|
| "R.caract. hón. fck | (kp/cm²):" 250 | "Coef. gamma hormigón | Yc:" 1.5 |
| "Lím.elás.acero fyk | (kp/cm²):" 5100 | "Coef. gamma acero | Ys:" 1.15 |

HIPOTESIS MAYORADAS SIN SISMO: SOLICITACIONES Y COEFICIENTE Yf

| | | HIP 1 | HIP 2 | HIP 3 | HIP 4 | HIP 5 |
|---|---|---|---|---|---|---|
| "Esf.Axil | Nd (t) :" | 4338.31 | 4141.97 | 3475.40 | | |
| "Momento | Mxd (mt):" | 3497.32 | 4637.53 | 5187.54 | | |
| "Momento | Myd (mt):" | 3251.47 | 2623.85 | 2619.57 | | |
| "F.longit. | Hxd (t) :" | 118.61 | 118.61 | 118.61 | | |
| "F.transv. | Hyd (t) :" | 134.09 | 181.49 | 150.09 | | |
| "Coef.may. | Yf :" | 1.35 | 1.35 | 1.35 | | |

HIPOTESIS CON SISMO: SOLICITACIONES Y COEFICIENTE Yf

| | | HIP 1 | HIP 2 | HIP 3 | HIP 4 |
|---|---|---|---|---|---|
| "Esf.Axil | Nd (t) :" | | | | |
| "Momento | Mxd (mt):" | | | | |
| "Momento | Myd (mt):" | | | | |
| "F.longit. | Hxd (t) :" | | | | |
| "F.transv. | Hyd (t) :" | | | | |
| "Coef.may. | Yf :" | | | | |

HIPOTESIS SIN MAYOR.SIN SISMO: SOLICITACIONES Y COEFICIENTE Yf

| | | HIP 1 | HIP 2 | HIP 3 | HIP 4 |
|---|---|---|---|---|---|
| "Esf.Axil | Nk (t) :" | | | | |
| "Momento | Mxk (mt):" | | | | |
| "Momento | Myk (mt):" | | | | |
| "F.longit. | Hxk (t) :" | | | | |
| "F.transv. | Hyk (t) :" | | | | |
| "Coef.may. | Yf :" | | | | |

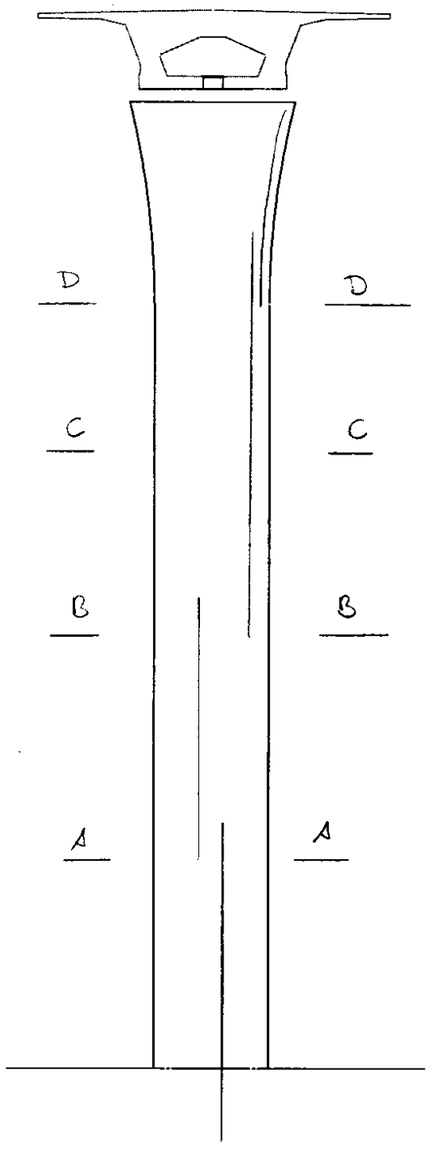
LAV-GELIDA S. Joan. Zapata de P-1. 2-03-2002

HIPOTESIS MAYORADAS SIN SISMO

| | | HIP 1 | HIP 2 | HIP 3 | Adm./mín. |
|---|---|---|---|---|---|
| Esfzo.axil | N (t) | 5007.92 | 4862.48 | 4368.73 | |
| Momento | Mx (mt) | 2848.85 | 3784.74 | 4131.68 | |
| Momento | My (mt) | 2636.93 | 2172.03 | 2168.86 | |
| Zona diagrama tens. | | D | D | D | |
| Tens. Coba. (t/m²) | | 38.50 | 38.28 | 35.79 | 40.00 |
| Tens. Punta (t/m²) | | 48.91 | 49.41 | 47.33 | 53.33 |
| Ct-Pz:Caso y Vd/Vu | | Rig. | Rig. | Rig. | 1.00 |
| Arm.cálc.Ax(cm²/m) | | 61.93 | 63.44 | 59.66 | 39.00 |
| Arm.cálc.Ay(cm²/m) | | 49.99 | 49.93 | 46.54 | 39.00 |

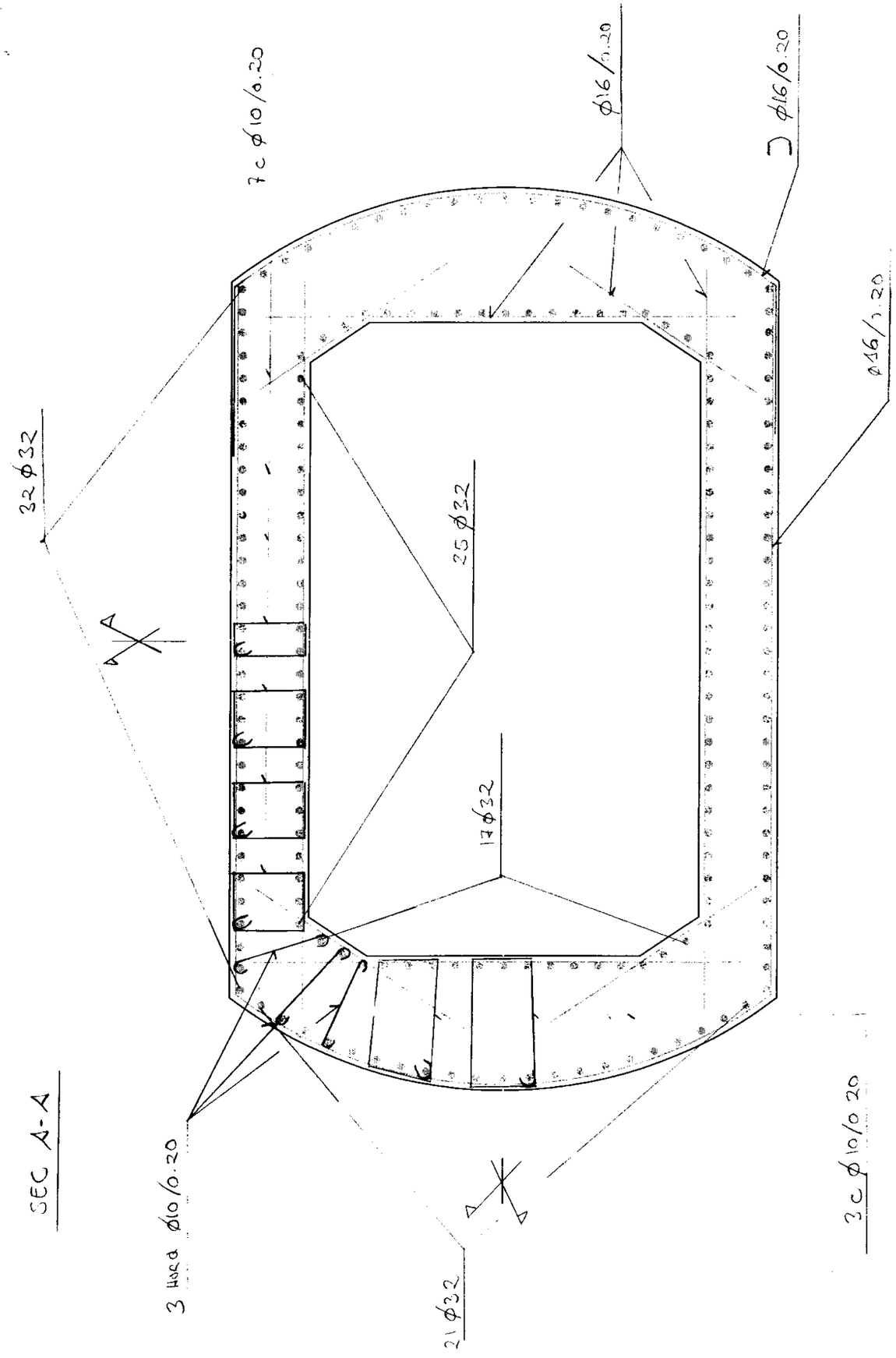
## 5.6. Esquemas de armado

# Armadura de Pilas (Riera Sec)

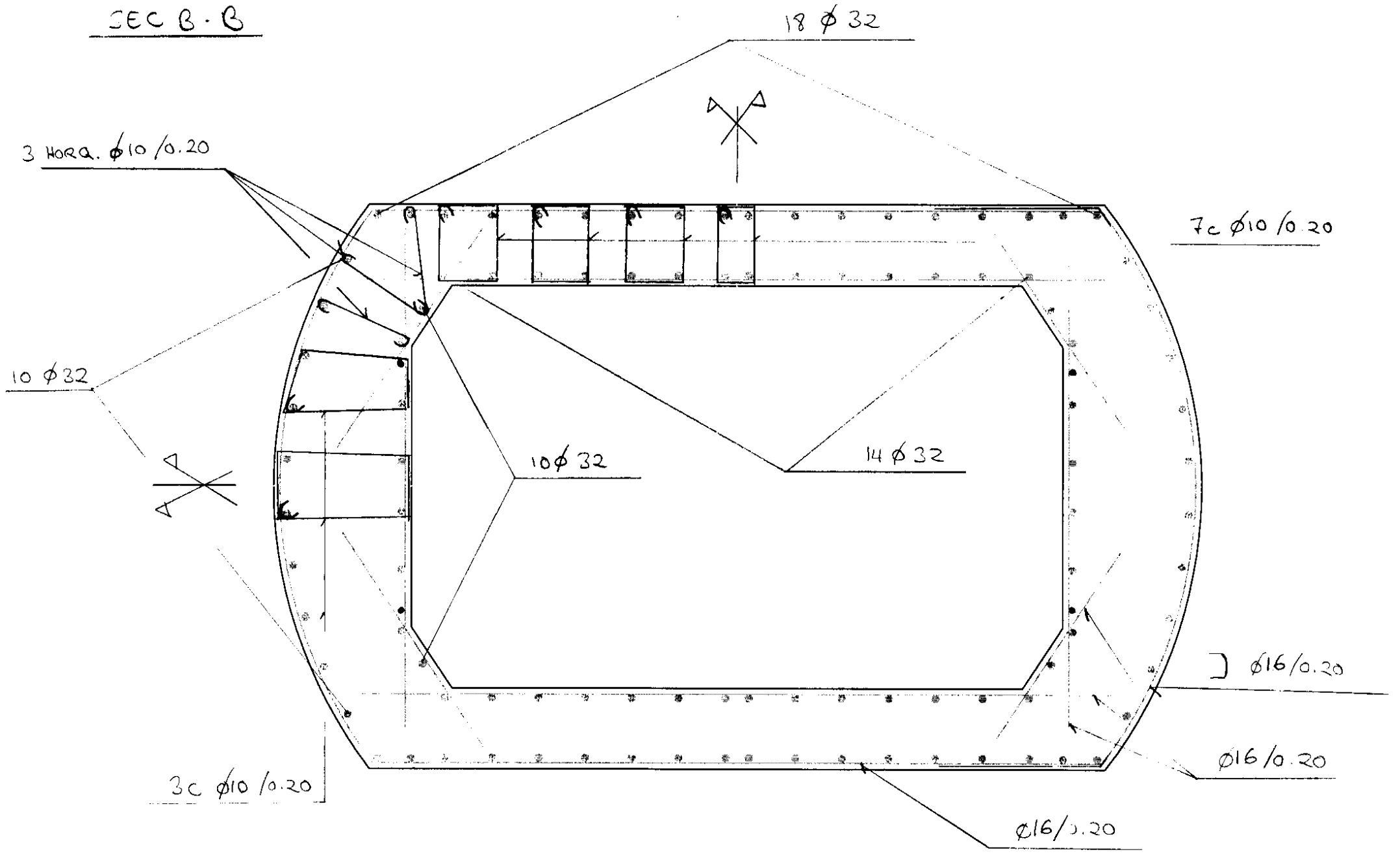



| | $L_A$ | $L_B$ | $L_C$ | $L_D$ |
|---|---|---|---|---|
| P-1 | - | - | 9'40 | 8'0 |
| P-2 | - | - | 11'15 | 8'0 |
| P-3 | 21'0 | 9'50 | Resto | 8'0 |
| P-4 | 21'0 | 9'50 | Resto | 8'0 |
| P-5 | 21'0 | 9'50 | Resto | 8'0 |
| P-6 | - | 11'0 | Resto | 8'0 |
| P-7 | - | 11'0 | Resto | 8'0 |

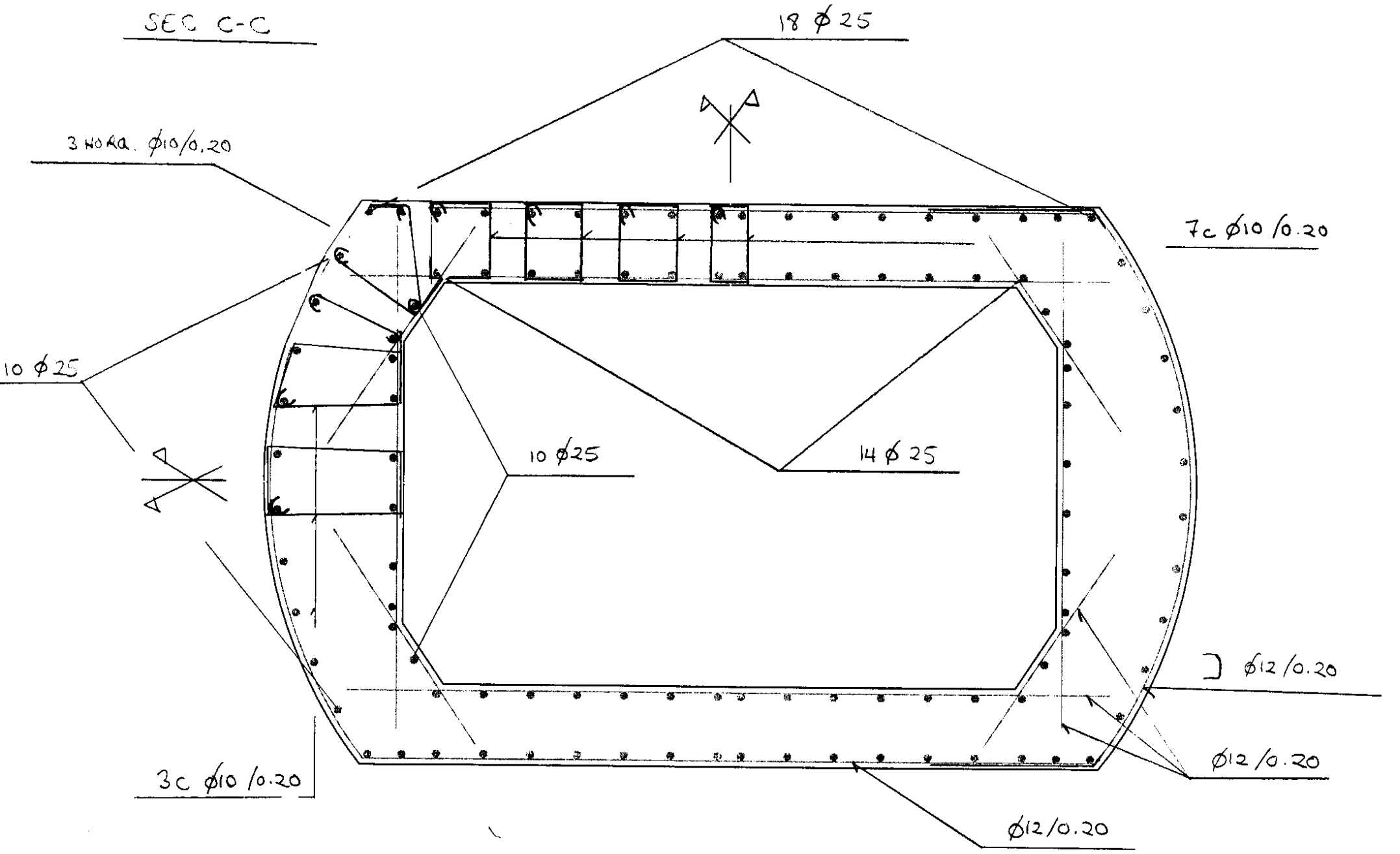
$L_i$ : Longitud barras de sec. i-i, desde paramento superior de zapata o plinto.



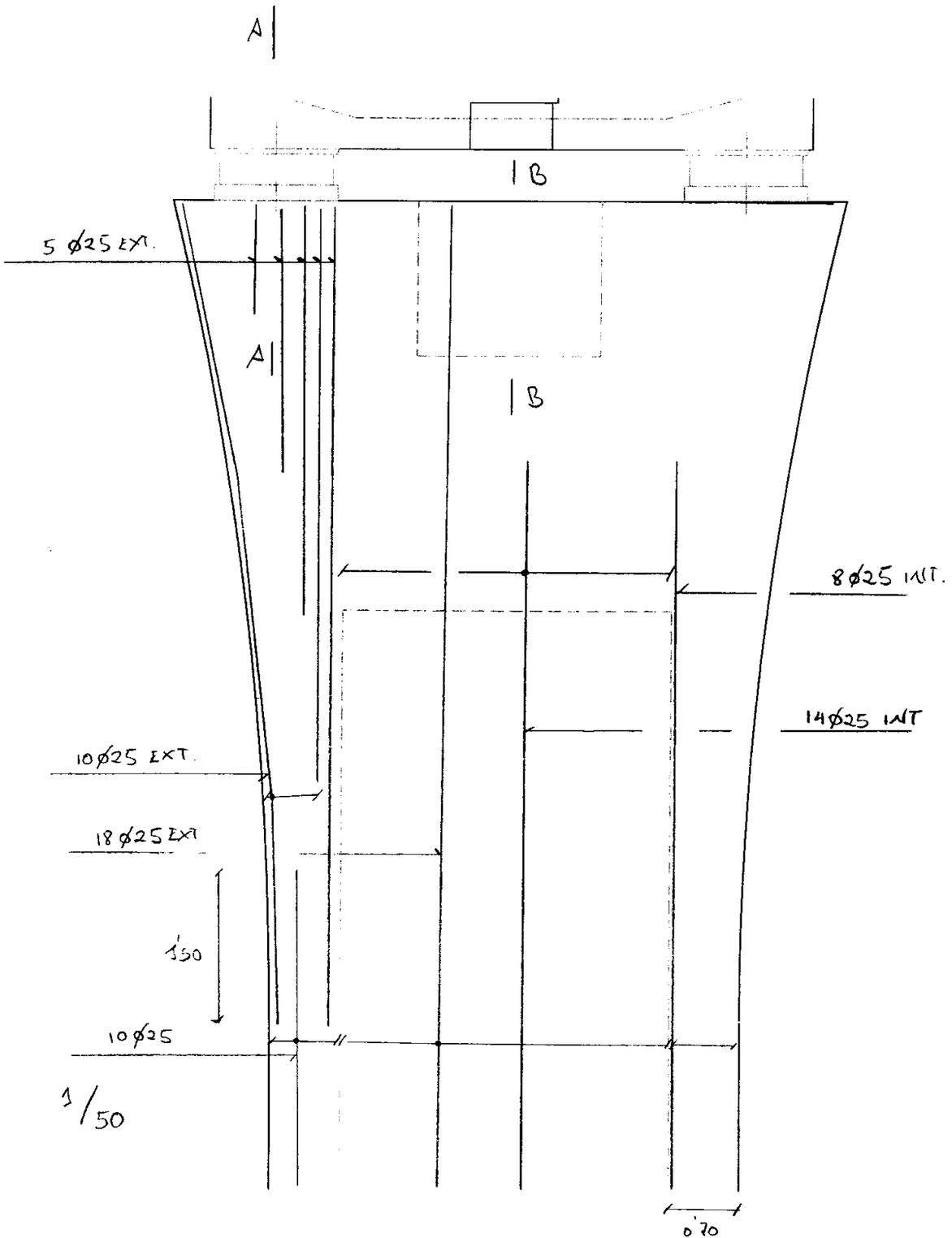
SEC B-B


18 ϕ 32
3 HORQ. ϕ10 /0.20
7c ϕ10 /0.20
10 ϕ 32
10ϕ 32
14 ϕ 32
] ϕ16/0.20
ϕ16/0.20
3c ϕ10 /0.20
ϕ16/0.20

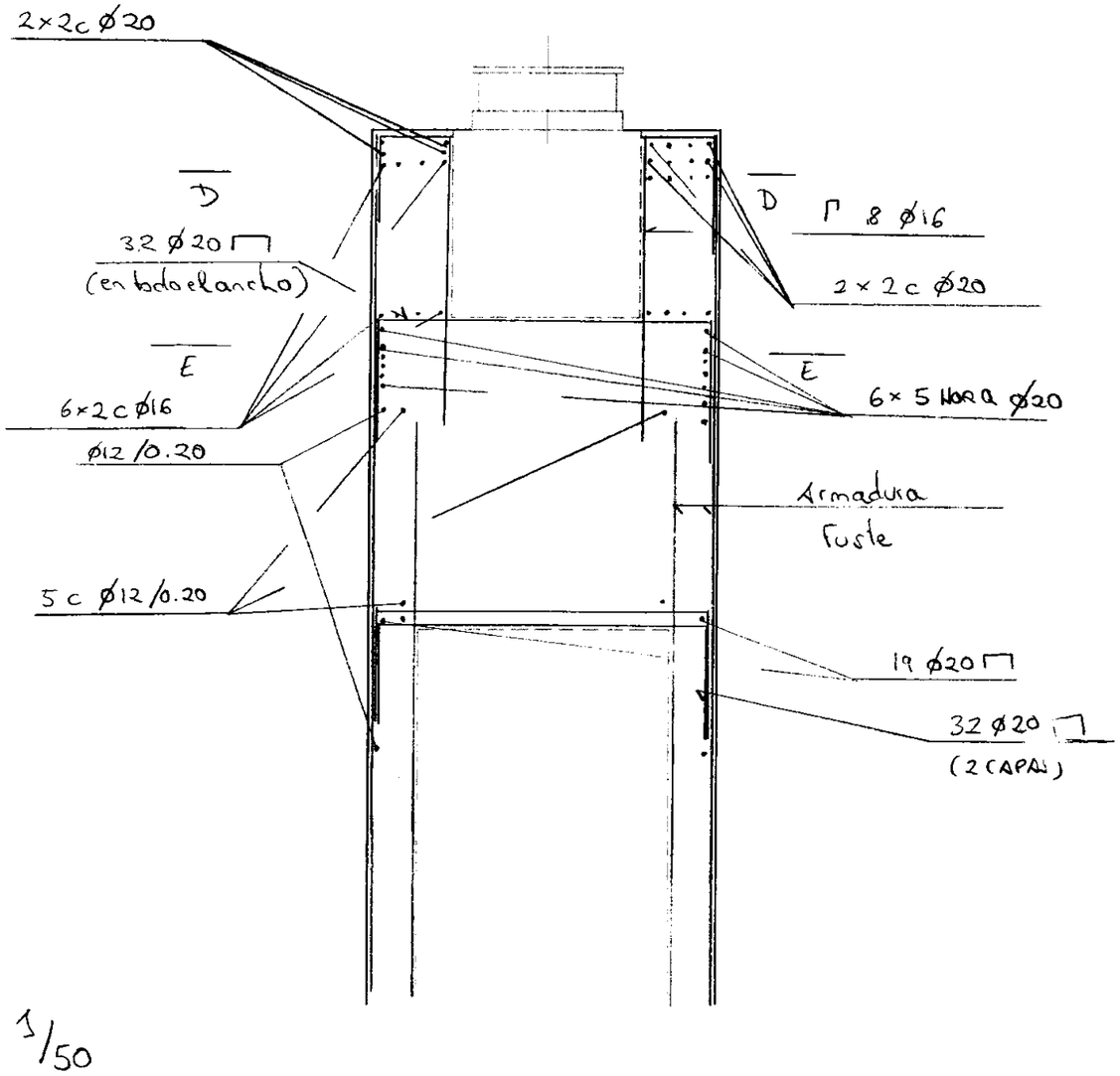
SEC C-C


18 ϕ 25
3 NO RQ. ϕ10/0,20
7c ϕ10 /0.20
10 ϕ 25
10 ϕ25
14 ϕ 25
] ϕ12 /0.20
ϕ12 /0.20
3c ϕ10 /0.20
ϕ12/0.20

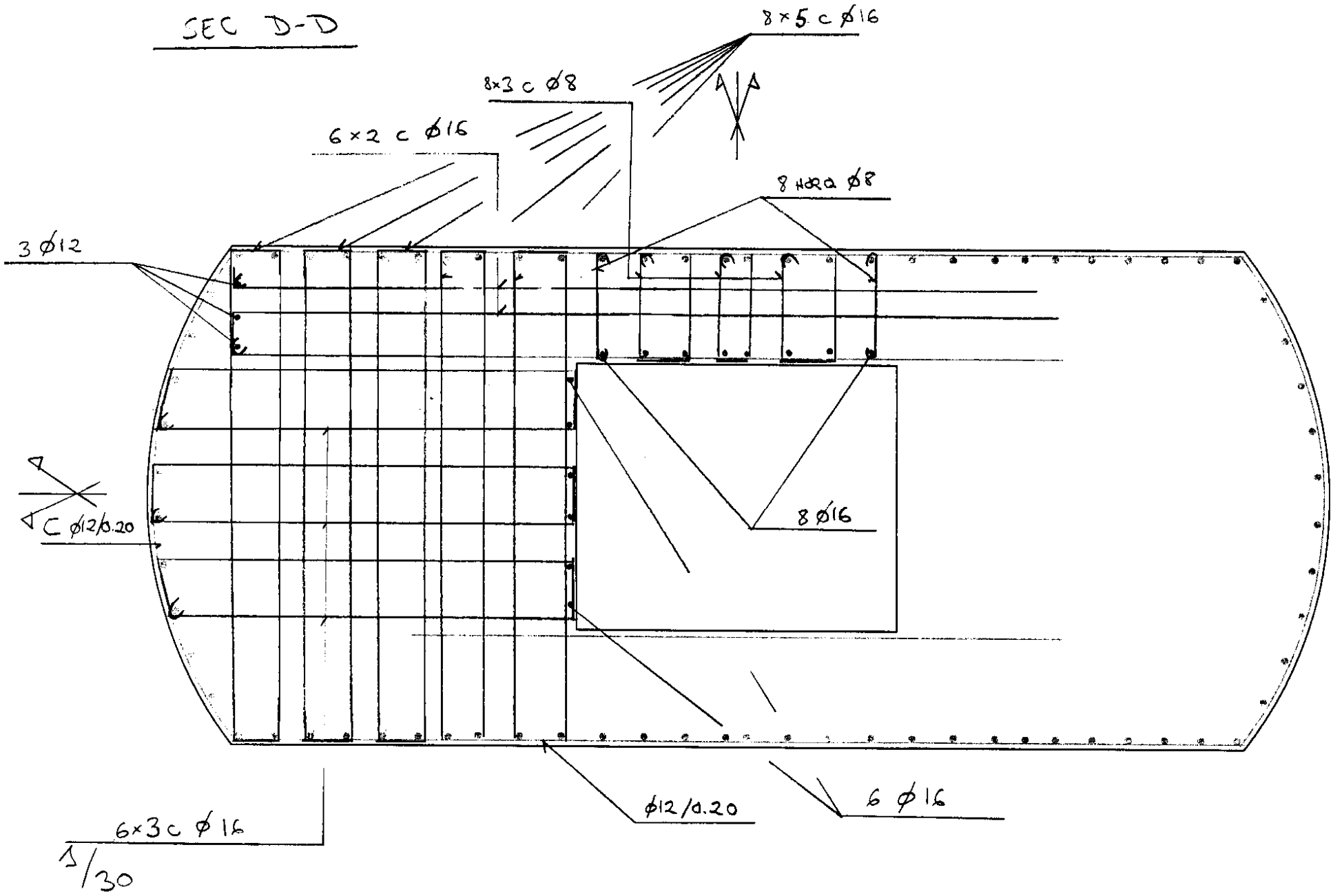
# Armadura de cabeza de Pila



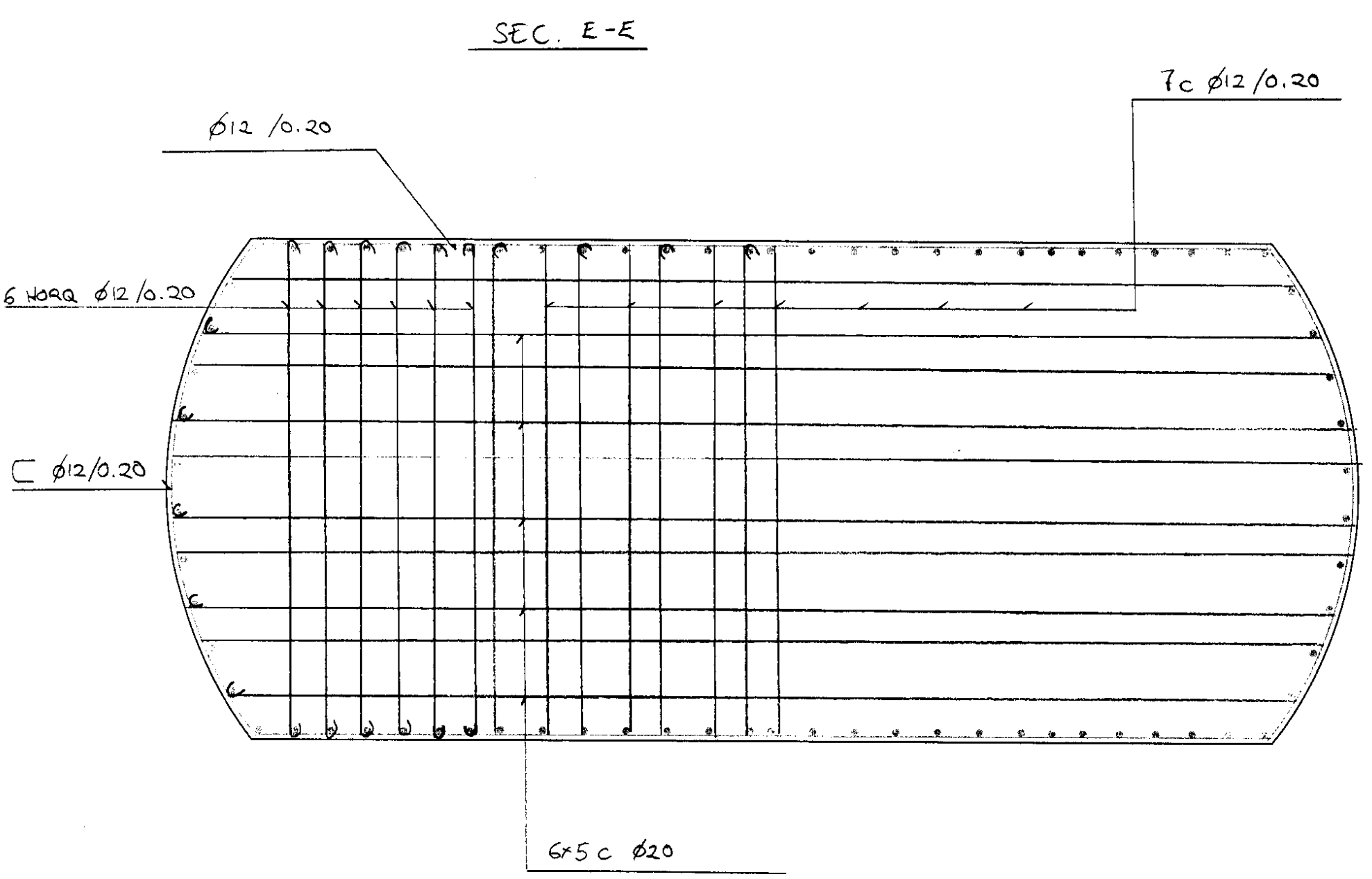

## SEC. B-B



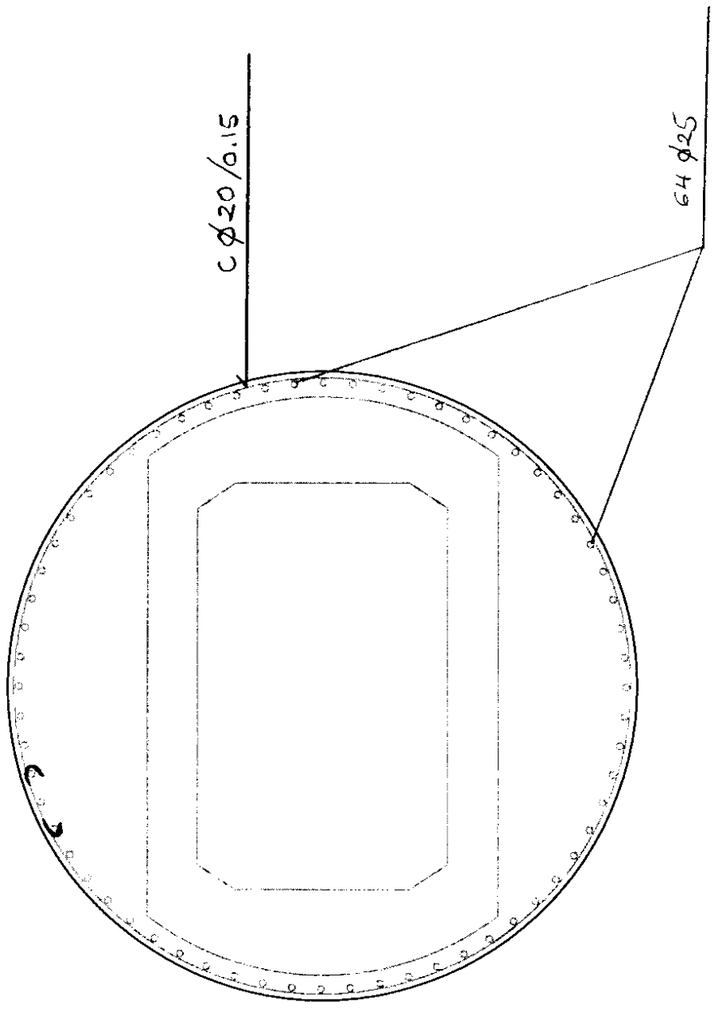
SEC D-D


8×5 c ø16
8×3 c ø8
6×2 c ø16
8 HORQ ø8
3 ø12
C ø12/0.20
8 ø16
ø12/0.20
6 ø16
6×3c ø16
1/30

SEC. E-E

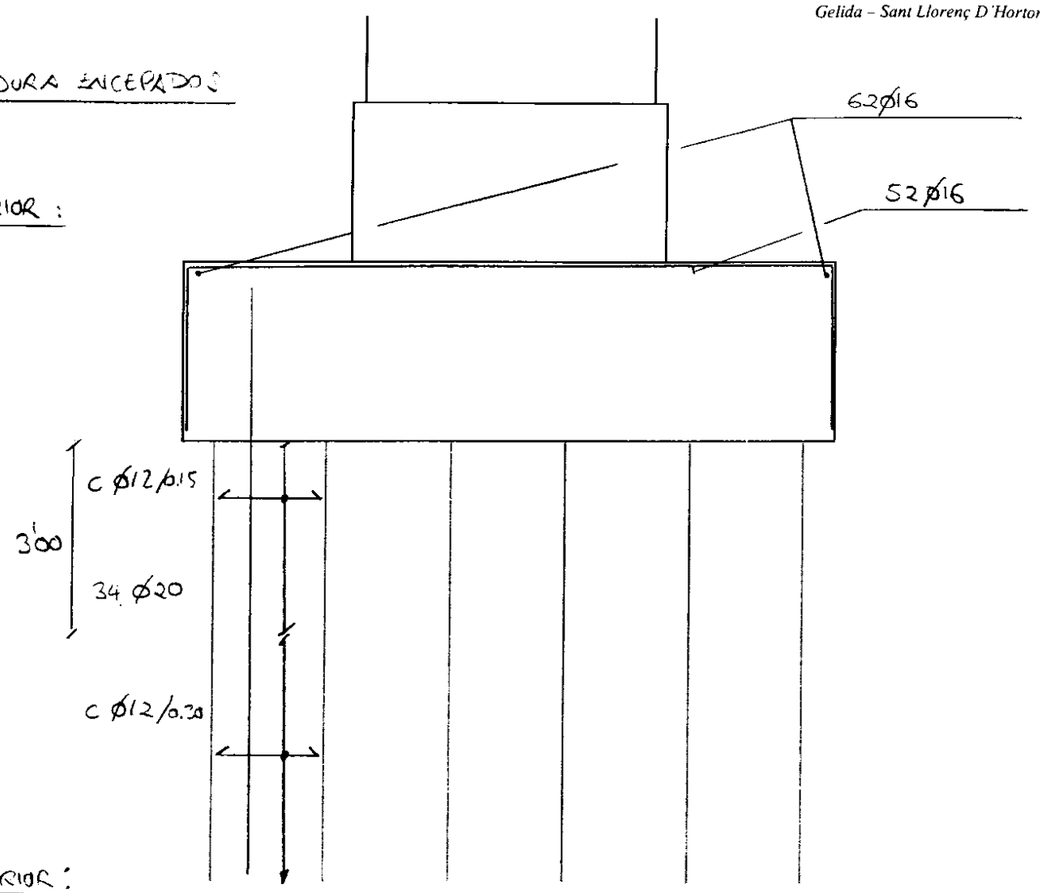

ø12 /0.20
7c ø12/0.20
6 HORQ ø12/0.20
C ø12/0.20
6×5 c ø20

ARMADURAS de PILOTO

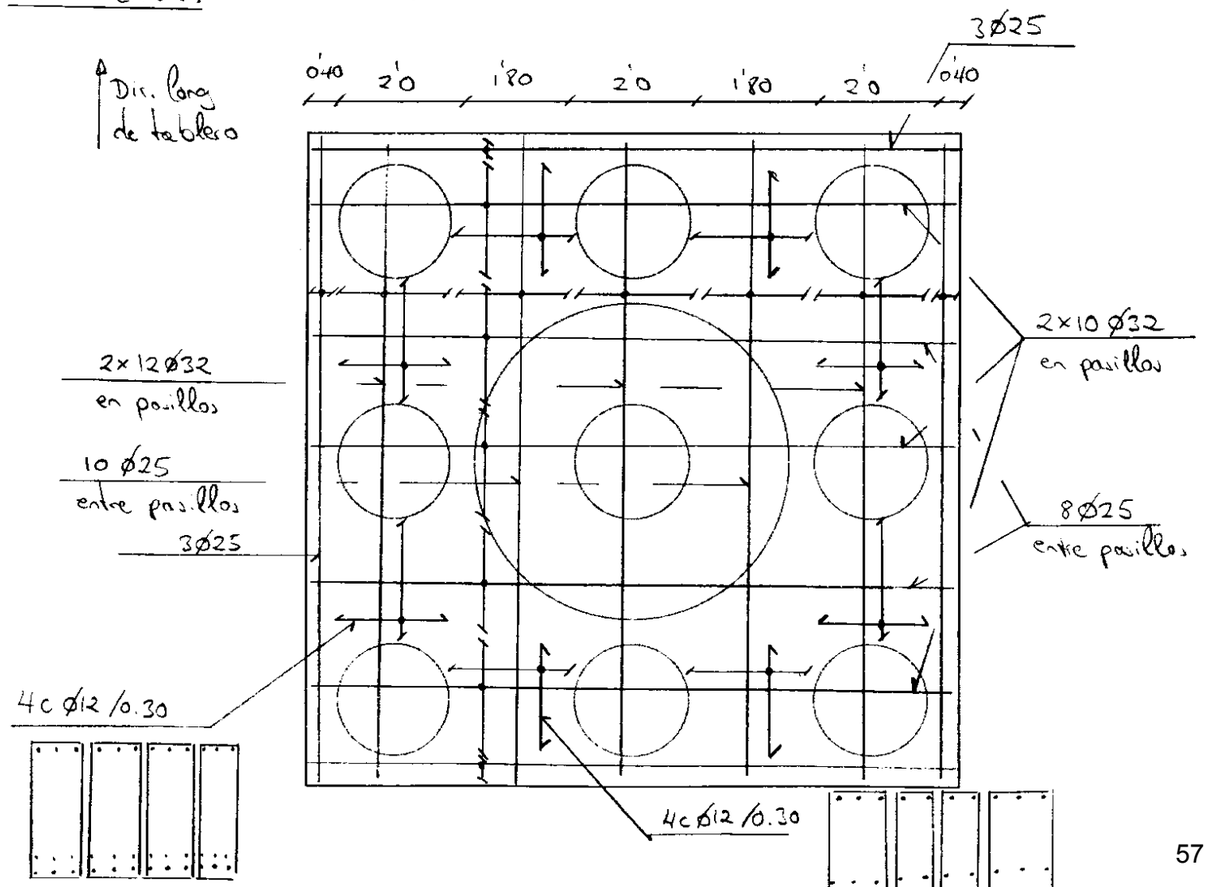



ARMADURA ENCEPADO:

A. SUPERIOR:




A. INFERIOR:



# 6. ESTRIBOS

## 6.1. ESTRIBO 1

LAV-Gelida. ELS Comb Rara.ECSW-SW(1.00*G+1.00*P+1.0*SC+0.6*GT)

| BARRA 207 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 207 | 9549.81>> | 60.73 | 0.00 | 0.0 | 0.0 | 2832.1 |
| 207 | 3398.94<< | 25.47 | 0.00 | 0.0 | 0.0 | 756.8 |
| 207 | 6683.89 | 242.24>> | 0.00 | 0.0 | 0.0 | 9856.7 |
| 207 | 5467.04 | -177.70<< | 0.00 | 0.0 | 0.0 | -6777.4 |
| 207 | 5109.96 | 4.41 | 0.00>> | 0.0 | 0.0 | 429.0 |
| 207 | 4843.87 | 4.29 | 0.00<< | 0.0 | 0.0 | 422.5 |
| 207 | 5109.96 | 4.41 | 0.00 | 0.0>> | 0.0 | 429.0 |
| 207 | 4843.87 | 4.29 | 0.00 | 0.0<< | 0.0 | 422.5 |
| 207 | 5109.96 | 4.41 | 0.00 | 0.0 | 0.0>> | 429.0 |
| 207 | 4843.87 | 4.29 | 0.00 | 0.0 | 0.0<< | 422.5 |
| 207 | 6610.52 | 237.82 | 0.00 | 0.0 | 0.0 | 9922.4>> |
| 207 | 5393.65 | -170.02 | 0.00 | 0.0 | 0.0 | -6855.4<< |
| | | | | | | |
| 113 | 9549.81>> | 60.73 | 0.00 | 0.0 | 0.0 | 2125.3 |
| 113 | 3398.94<< | 25.47 | 0.00 | 0.0 | 0.0 | 460.0 |
| 113 | 6683.89 | 242.24>> | 0.00 | 0.0 | 0.0 | 7038.9 |
| 113 | 5467.04 | -177.70<< | 0.00 | 0.0 | 0.0 | -4711.1 |
| 113 | 5109.96 | 4.41 | 0.00>> | 0.0 | 0.0 | 377.1 |
| 113 | 4843.87 | 4.29 | 0.00<< | 0.0 | 0.0 | 372.0 |
| 113 | 5109.96 | 4.41 | 0.00 | 0.0>> | 0.0 | 377.1 |
| 113 | 4843.87 | 4.29 | 0.00 | 0.0<< | 0.0 | 372.0 |
| 113 | 5109.96 | 4.41 | 0.00 | 0.0 | 0.0>> | 377.1 |
| 113 | 4843.87 | 4.29 | 0.00 | 0.0 | 0.0<< | 372.0 |
| 113 | 7464.80 | 145.13 | 0.00 | 0.0 | 0.0 | 7759.9>> |
| 113 | 6247.38 | -84.18 | 0.00 | 0.0 | 0.0 | -5438.6<< |

**Esfuerzos transmitidos por el tablero**

9549.81 / 14.00 = 682,13

3398.94 / 14.00 = 242.78

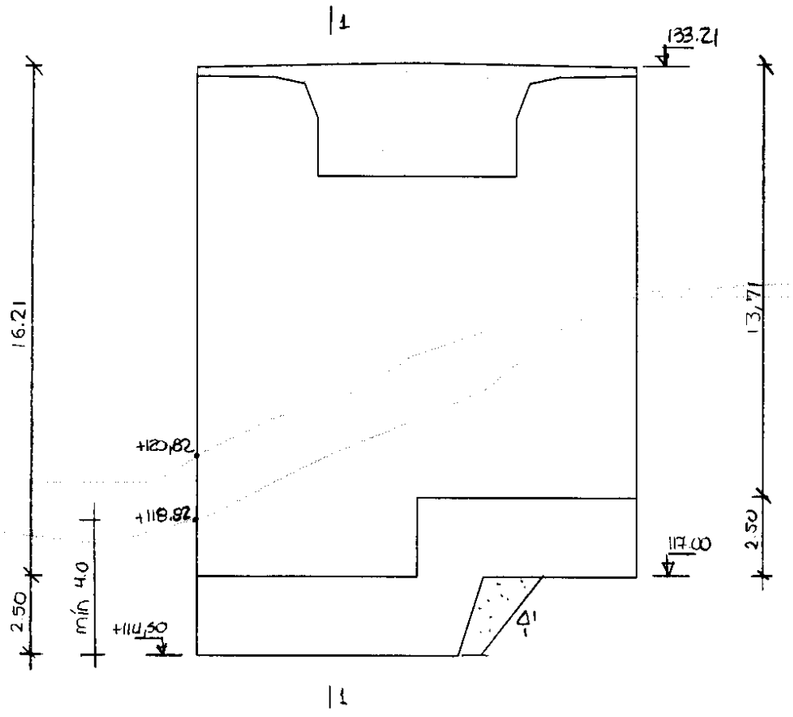
LAV-Gelida. . ELS CP(1.00*G)

| BAR. | NUDO | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| 201 | 201 | 4956.68 | 3.34 | 0.00 | 0.00 | 0.00 | 486.38 |
| 201 | 1 | 4956.68 | 3.34 | 0.00 | 0.00 | 0.00 | 454.29 |
| 202 | 202 | 17187.41 | -7.99 | 0.00 | 0.00 | 0.00 | 537.41 |
| 202 | 17 | 17187.41 | -7.99 | 0.00 | 0.00 | 0.00 | 686.17 |
| 203 | 203 | 17556.87 | 14.86 | 0.00 | 0.00 | 0.00 | 1065.57 |
| 203 | 37 | 17556.87 | 14.86 | 0.00 | 0.00 | 0.00 | 766.34 |
| 204 | 204 | 17151.73 | -19.00 | 0.00 | 0.00 | 0.00 | 7.76 |
| 204 | 57 | 17151.73 | -19.00 | 0.00 | 0.00 | 0.00 | 836.66 |
| 205 | 205 | 17571.57 | 14.79 | 0.00 | 0.00 | 0.00 | 1075.57 |
| 205 | 77 | 17571.57 | 14.79 | 0.00 | 0.00 | 0.00 | 755.90 |
| 206 | 206 | 17166.05 | -12.85 | 0.00 | 0.00 | 0.00 | 378.06 |
| 206 | 97 | 17166.05 | -12.85 | 0.00 | 0.00 | 0.00 | 681.72 |
| 207 | 207 | 4967.04 | 6.86 | 0.00 | 0.00 | 0.00 | 545.51 |
| 207 | 113 | 4967.04 | 6.86 | 0.00 | 0.00 | 0.00 | 465.77 |

$\frac{4967.04}{14.00} = 354.78$

$F_H = 354.78 * 0.05 = 17.74$ kN

**Estribo**

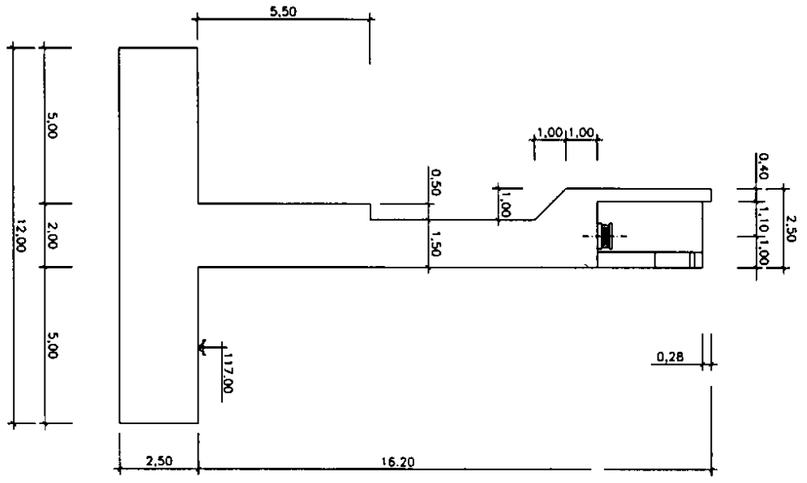



Perfil por el eje

Puntera a 5.00 m

+110

E-1 RIERUSSA




SECCIÓN 1

LAV GELIDA RIERUSSA ESTRIBO 1 H=18.70 01-03-02

"ALTURA TOT. DEL ESTRIBO z1(m):" 18.70 "NUM. HIP. CARGA Nhip:" 3

| DATOS DEL MURETE DE PROTECCION | | | CARGADERO HORIZONTAL | | |
|---|---|---|---|---|---|
| "Longitud | L1(m):" | 1.00 | "Longitud | L2(m):" | 1.00 |
| "Ancho | b1(m):" | 0.40 | "Ancho total | b2(m):" | 2.00 |
| "Canto | h1(m):" | 3.60 | "Canto | h2(m):" | 0.00 |
| "Penetrac. en cargadero | d (m):" | 0.00 | "Dist.apoyo-paramto | bm(m):" | 0.60 |

| DATOS DE LOS TABIQUES VERTICALES | | | ZAPATA DEL ESTRIBO | | |
|---|---|---|---|---|---|
| "Num. de tabiques n | :" | 1 | "Longitud | L3(m):" | 1.00 |
| "Ancho de tabique | Ln(m):" | 1.00 | "Ancho | b3(m):" | 12.0 |
| "Separac. de tab. | st(m):" | 0.00 | "Canto | h3(m):" | 2.50 |
| "Acartel. traser. | bt(m):" | 0.00 | "Vuelo punt. | bp(m):" | 5.00 |
| "Acartel. delant. | bd(m):" | 0.00 | "Vuelo talón | bs(m):" | 5.00 |

| DERRAME DELANTERO DE TIERRAS | | | DATOS DEL TERRENO | | |
|---|---|---|---|---|---|
| "Alt.s/extr.zapata | zB(m):" | 3.50 | "Peso específ.g(t/m3):" | | 2.00 |
| "Alt.vacío tierras | zC(m):" | 0.00 | "Angulo roz.int. | φ(°):" | 30 |
| | | | "Angulo de talud | ß(°):" | 0 |

| RESISTENCIAS MATERIALES | | | COEFICIENTES SEGURIDAD | | |
|---|---|---|---|---|---|
| "Hormigón alz. fck(k/cm²):" | | 250 | "Gamma hormigón | gc:" | 1.5 |
| "Hormigón zap. fck(k/cm²):" | | 250 | "Gamma acero | gs:" | 1.15 |
| "Acero armado fyk(k/cm²):" | | 5100 | | | |

| CARGAS ACTUANTES S/ESTRIBO | | HIP 1 | HIP 2 | HIP 3 | HIP 4 | HIP 5 |
|---|---|---|---|---|---|---|
| "Vert.unif. s/ relleno | q(t/m²):" | 3.00 | 3.00 | 1.00 | | |
| "Vert.total del tabl. | Vtab (t):" | 68.21 | 24.27 | 0.00 | | |
| "Hor. total del tabl. | Htab (t):" | 1.77 | 1.77 | 0.00 | | |
| "Coef. de mayor. de cargas | gf:" | 1.50 | 1.50 | 1.50 | | |
| "Coef. de mayor. de empujes | ge:" | 1.00 | 1.00 | 1.00 | | |

LAV GELIDA RIERUSSA ESTRIBO 1 H=18.70 01-03-02

| Hipótesis núm. = | | 1 | 2 | 3 |
|---|---|---|---|---|
| **EMPUJE TOTAL ACTIVO** | | | | |
| Valor total empuje activo (t): | Hemp = | 113.37 | 113.37 | 102.92 |
| Altura s/fondo de zapata (m): | Yemp = | 6.66 | 6.66 | 6.39 |
| **CARGA VERTICAL TOTAL** | | | | |
| Carga vert. total s/trrno (t): | Vtot = | 421.81 | 377.87 | 343.60 |
| Dist. al borde ant. zapata(m): | Xtot = | 5.33 | 5.25 | 5.44 |
| **RESULTANTE HORIZONTAL TOTAL** | | | | |
| Resultante horizont.total (t): | Htot = | 115.14 | 115.14 | 102.92 |
| **COEFS. SEGURIDAD VUELCO Y DESLIZAMIENTO** | | | | |
| Coef. de seguridad al vuelco : | g.vue= | 3.87 | 3.54 | 3.84 |
| Coef. de seguridad al desliz.: | g.des= | 2.11 | 1.89 | 1.93 |
| **TENSIONES TERRENO BAJO ZAPATA** | | | | |
| Tensión trrno puntera (t/m²): | σ pun= | 46.92 | 43.25 | 36.67 |
| Tensión trrno talón (t/m²): | σ tal= | 23.39 | 19.72 | 20.59 |
| Tensión cobaricéntrica (t/m²): | σ cob= | 39.57 | 35.97 | 31.59 |
| **ARMADURAS LONGITUDINALES ZAPATA** | | | | |
| Momento zapata sec. 1 (mt/m): | m1 = | -246.03 | -323.17 | -288.72 |
| Momento zapata sec. 2 (mt/m): | m2 = | 719.38 | 642.24 | 522.57 |
| Armadura zapata sec.1 (cm²/m): | As1 = | -22.87 | -29.94 | -26.79 |
| Armadura zapata sec.2 (cm²/m): | As2 = | 70.27 | 62.45 | 50.47 |
| Armadura mínima zapat.(cm²/m): | Amin = | 43.92 | 43.92 | 43.92 |
| **ARMADURAS HORIZONTALES DE TABIQUE** | | | | |
| Arm.tot.cu.mín.sec.sup(cm²/m): | Amin = | 32.00 | 32.00 | 32.00 |
| Arm.tot.cu.mín.sec.inf(cm²/m): | Amin = | 32.00 | 32.00 | 32.00 |
| **ARMADURAS VERTICALES DE TABIQUE** | | | | |
| Momto.secc.sup. tabique (mt) : | Mst = | 10.34 | 10.34 | 4.91 |
| Axil .secc.sup. tabique ( t) : | Nst = | 107.71 | 41.81 | 5.40 |
| Arm/cara sec.sup.tabique(cm²): | Ast = | -17.09 | -12.40 | -10.46 |
| Arm.tot.cuan.mín.sec.sup(cm²): | Amin = | 18.00 | 18.00 | 18.00 |
| Momto.secc.inf. tabique (mt) : | Mit = | 788.01 | 788.01 | 644.57 |
| Axil .secc.inf. tabique ( t) : | Nit = | 202.21 | 136.31 | 99.90 |
| Arm/cara sec.inf.tabique(cm²): | Ait = | 69.18 | 74.05 | 59.53 |
| Arm.tot.cuan.mín.sec.inf(cm²): | Amin = | 18.00 | 18.00 | 18.00 |

LAV GELIDA RIERUSSA ESTRIBO 1 H=16.20 01-03-02

"ALTURA TOT. DEL ESTRIBO z1(m):" 16.20 "NUM. HIP. CARGA Nhip:" 3

| DATOS DEL MURETE DE PROTECCION | | | CARGADERO HORIZONTAL | | |
|---|---|---|---|---|---|
| "Longitud | L1(m):" | 1.00 | "Longitud | L2(m):" | 1.00 |
| "Ancho | b1(m):" | 0.40 | "Ancho total | b2(m):" | 2.00 |
| "Canto | h1(m):" | 3.60 | "Canto | h2(m):" | 0.00 |
| "Penetrac. en cargadero | d (m):" | 0.00 | "Dist.apoyo-paramto | bm(m):" | 0.60 |

| DATOS DE LOS TABIQUES VERTICALES | | | ZAPATA DEL ESTRIBO | | |
|---|---|---|---|---|---|
| "Num. de tabiques | n :" | 1 | "Longitud | L3(m):" | 1.00 |
| "Ancho de tabique | Ln(m):" | 1.00 | "Ancho | b3(m):" | 12.0 |
| "Separac. de tab. | st(m):" | 0.00 | "Canto | h3(m):" | 2.50 |
| "Acartel. traser. | bt(m):" | 0.00 | "Vuelo punt. | bp(m):" | 5.00 |
| "Acartel. delant. | bd(m):" | 0.00 | "Vuelo talón | bs(m):" | 5.00 |

| DERRAME DELANTERO DE TIERRAS | | | DATOS DEL TERRENO | | |
|---|---|---|---|---|---|
| "Alt.s/extr.zapata | zB(m):" | 5.50 | "Peso específ.g(t/m3):" | | 2.00 |
| "Alt.vacío tierras | zC(m):" | 0.00 | "Angulo roz.int. ϕ(°):" | | 30 |
| | | | "Angulo de talud | B(°):" | 0 |

| RESISTENCIAS MATERIALES | | | COEFICIENTES SEGURIDAD | | |
|---|---|---|---|---|---|
| "Hormigón alz. fck(k/cm²):" | | 250 | "Gamma hormigón | gc:" | 1.5 |
| "Hormigón zap. fck(k/cm²):" | | 250 | "Gamma acero | gs:" | 1.15 |
| "Acero armado fyk(k/cm²):" | | 5100 | | | |

| CARGAS ACTUANTES S/ESTRIBO | HIP 1 | HIP 2 | HIP 3 | HIP 4 | HIP 5 |
|---|---|---|---|---|---|
| "Vert.unif. s/ relleno q(t/m²):" | 3.00 | 3.00 | 1.00 | | |
| "Vert.total del tabl. Vtab (t):" | 68.21 | 24.27 | 0.00 | | |
| "Hor. total del tabl. Htab (t):" | 1.77 | 1.77 | 0.00 | | |
| "Coef. de mayor. de cargas gf:" | 1.50 | 1.50 | 1.50 | | |
| "Coef. de mayor. de empujes ge:" | 1.00 | 1.00 | 1.00 | | |

LAV GELIDA RIERUSSA ESTRIBO 1 H=16.20 01-03-02

| Hipótesis núm. = | 1 | 2 | 3 |
|---|---|---|---|
| **EMPUJE TOTAL ACTIVO** | | | |
| Valor total empuje activo (t): Hemp = | 86.90 | 86.90 | 77.85 |
| Altura s/fondo de zapata (m): Yemp = | 5.82 | 5.82 | 5.56 |
| **CARGA VERTICAL TOTAL** | | | |
| Carga vert. total s/trrno (t): Vtot = | 404.31 | 360.37 | 326.10 |
| Dist. al borde ant. zapata(m): Xtot = | 5.54 | 5.48 | 5.62 |
| **RESULTANTE HORIZONTAL TOTAL** | | | |
| Resultante horizont.total (t): Htot = | 88.67 | 88.67 | 77.85 |
| **COEFS. SEGURIDAD VUELCO Y DESLIZAMIENTO** | | | |
| Coef. de seguridad al vuelco : g.vue= | 5.24 | 4.74 | 5.23 |
| Coef. de seguridad al desliz.: g.des= | 2.63 | 2.35 | 2.42 |
| **TENSIONES TERRENO BAJO ZAPATA** | | | |
| Tensión trrno puntera (t/m²): σ pun= | 41.44 | 37.77 | 32.39 |
| Tensión trrno talón (t/m²): σ tal= | 25.95 | 22.29 | 21.96 |
| Tensión cobaricéntrica (t/m²): σ cob= | 36.49 | 32.85 | 29.03 |
| **ARMADURAS LONGITUDINALES ZAPATA** | | | |
| Momento zapata sec. 1 (mt/m): m1 = | -110.64 | -187.78 | -171.16 |
| Momento zapata sec. 2 (mt/m): m2 = | 540.10 | 462.96 | 361.12 |
| Armadura zapata sec.1 (cm²/m): As1 = | -10.35 | -17.50 | -15.96 |
| Armadura zapata sec.2 (cm²/m): As2 = | 52.21 | 44.56 | 34.57 |
| Armadura mínima zapat.(cm²/m): Amin = | 43.92 | 43.92 | 43.92 |
| **ARMADURAS HORIZONTALES DE TABIQUE** | | | |
| Arm.tot.cu.mín.sec.sup(cm²/m): Amin = | 32.00 | 32.00 | 32.00 |
| Arm.tot.cu.mín.sec.inf(cm²/m): Amin = | 32.00 | 32.00 | 32.00 |
| **ARMADURAS VERTICALES DE TABIQUE** | | | |
| Momto.secc.sup. tabique (mt) : Mst = | 10.34 | 10.34 | 4.91 |
| Axil .secc.sup. tabique ( t) : Nst = | 107.71 | 41.81 | 5.40 |
| Arm/cara sec.sup.tabique(cm²): Ast = | -17.09 | -12.40 | -10.46 |
| Arm.tot.cuan.mín.sec.sup(cm²): Amin = | 18.00 | 18.00 | 18.00 |
| Momto.secc.inf. tabique (mt) : Mit = | 499.68 | 499.68 | 394.21 |
| Axil .secc.inf. tabique ( t) : Nit = | 183.46 | 117.56 | 81.15 |
| Arm/cara sec.inf.tabique(cm²): Ait = | 36.06 | 40.87 | 30.86 |
| Arm.tot.cuan.mín.sec.inf(cm²): Amin = | 18.00 | 18.00 | 18.00 |

LAV GELIDA RIERUSSA ESTRIBO 1 ZONA SUPERIOR 01-03-02

"ALTURA TOT. DEL ESTRIBO z1(m):" 13.20 "NUM. HIP. CARGA Nhip:" 3

| DATOS DEL MURETE DE PROTECCION | | | CARGADERO HORIZONTAL | | |
|---|---|---|---|---|---|
| "Longitud | L1(m):" | 1.00 | "Longitud | L2(m):" | 1.00 |
| "Ancho | b1(m):" | 0.40 | "Ancho total | b2(m):" | 1.50 |
| "Canto | h1(m):" | 3.60 | "Canto | h2(m):" | 0.00 |
| "Penetrac. en cargadero | d (m):" | 0.00 | "Dist.apoyo-paramto | bm(m):" | 0.70 |

| DATOS DE LOS TABIQUES VERTICALES | | | ZAPATA DEL ESTRIBO | | |
|---|---|---|---|---|---|
| "Num. de tabiques | n :" | 1 | "Longitud | L3(m):" | 1.00 |
| "Ancho de tabique | Ln(m):" | 1.00 | "Ancho | b3(m):" | 12.0 |
| "Separac. de tab. | st(m):" | 0.00 | "Canto | h3(m):" | 2.50 |
| "Acartel. traser. | bt(m):" | 0.00 | "Vuelo punt. | bp(m):" | 5.00 |
| "Acartel. delant. | bd(m):" | 0.00 | "Vuelo talón | bs(m):" | 5.50 |

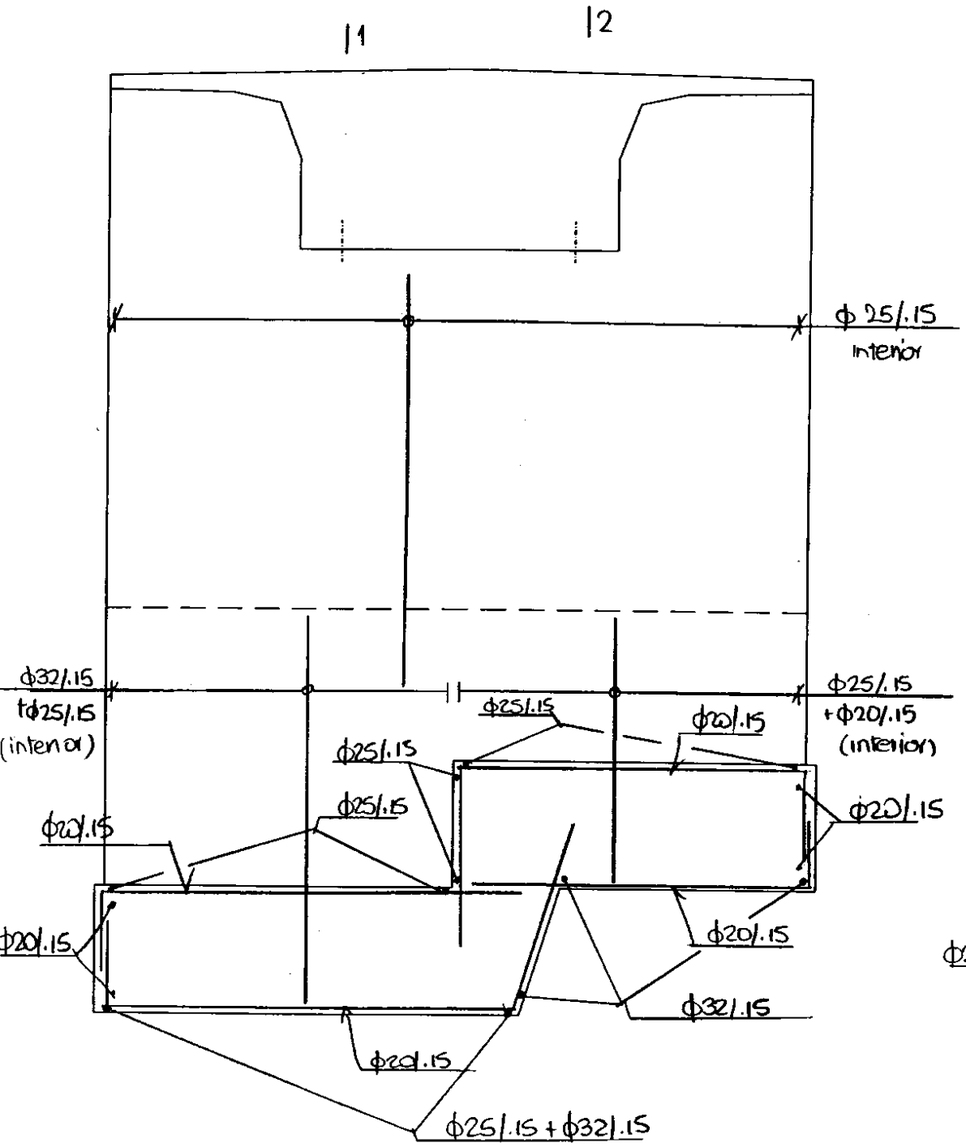
| DERRAME DELANTERO DE TIERRAS | | | DATOS DEL TERRENO | | |
|---|---|---|---|---|---|
| "Alt.s/extr.zapata | zB(m):" | 3.50 | "Peso específ.g(t/m3):" | | 2.00 |
| "Alt.vacío tierras | zC(m):" | 0.00 | "Angulo roz.int. ϕ(°):" | | 30 |
| | | | "Angulo de talud ß(°):" | | 0 |

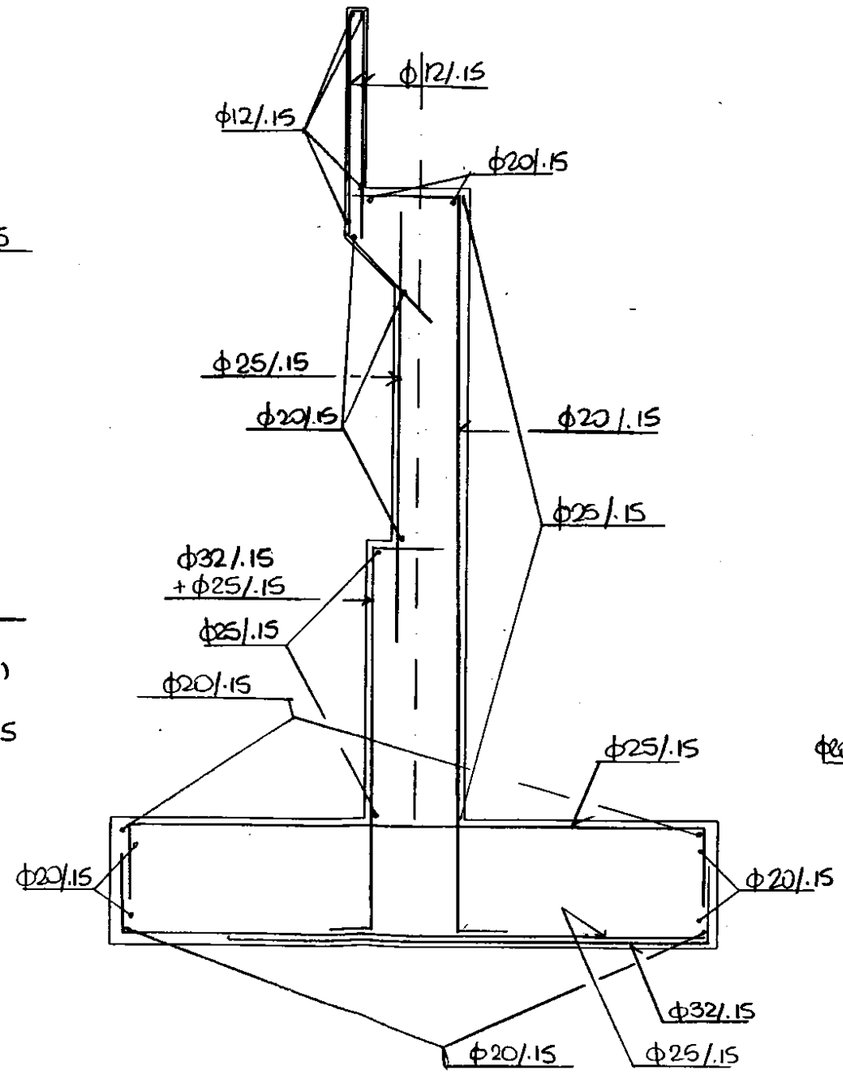
| RESISTENCIAS MATERIALES | | | COEFICIENTES SEGURIDAD | | |
|---|---|---|---|---|---|
| "Hormigón alz. fck(k/cm²):" | | 250 | "Gamma hormigón | gc:" | 1.5 |
| "Hormigón zap. fck(k/cm²):" | | 250 | "Gamma acero | gs:" | 1.15 |
| "Acero armado fyk(k/cm²):" | | 5100 | | | |

| CARGAS ACTUANTES S/ESTRIBO | HIP 1 | HIP 2 | HIP 3 | HIP 4 | HIP 5 |
|---|---|---|---|---|---|
| "Vert.unif. s/ relleno q(t/m²):" | 3.00 | 3.00 | 1.00 | | |
| "Vert.total del tabl. Vtab (t):" | 68.21 | 24.27 | 0.00 | | |
| "Hor. total del tabl. Htab (t):" | 1.77 | 1.77 | 0.00 | | |
| "Coef. de mayor. de cargas gf:" | 1.50 | 1.50 | 1.50 | | |
| "Coef. de mayor. de empujes ge:" | 1.00 | 1.00 | 1.00 | | |

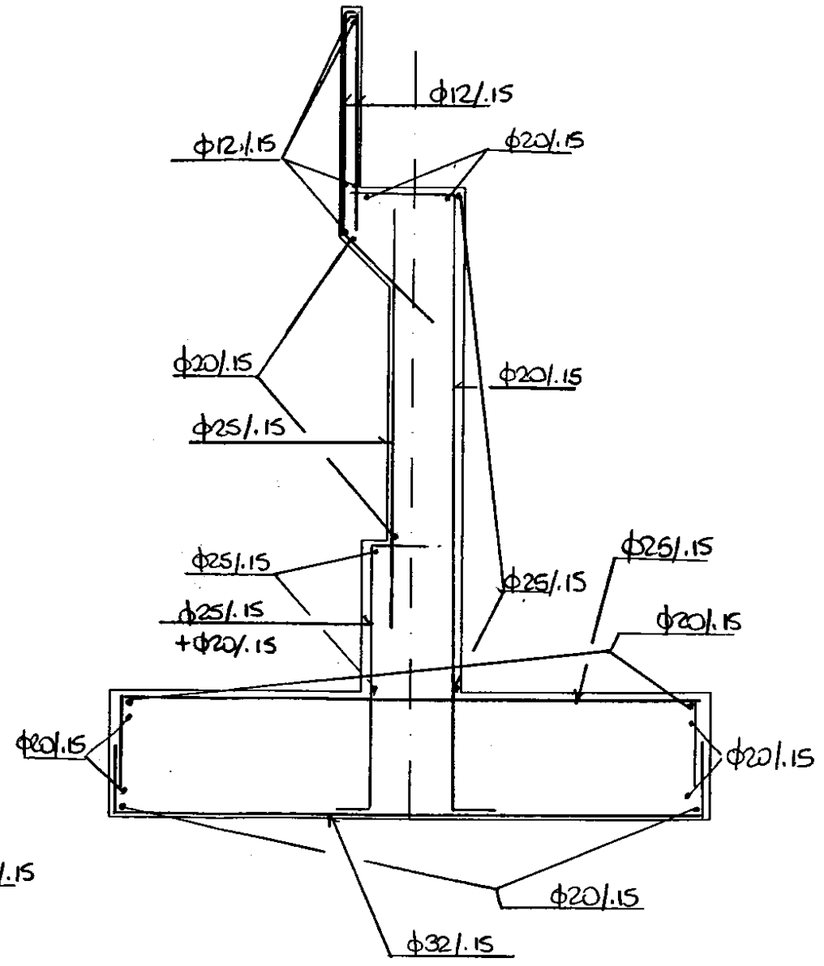
LAV GELIDA RIERUSSA ESTRIBO 1 ZONA SUPERIOR 01-03-02

| Hipótesis núm. = | 1 | 2 | 3 |
|---|---|---|---|
| EMPUJE TOTAL ACTIVO | | | |
| Valor total empuje activo (t): Hemp = | 59.74 | 59.74 | 52.37 |
| Altura s/fondo de zapata (m): Yemp = | 4.81 | 4.81 | 4.55 |
| CARGA VERTICAL TOTAL | | | |
| Carga vert. total s/trrno (t): Vtot = | 342.64 | 298.70 | 263.42 |
| Dist. al borde ant. zapata(m): Xtot = | 5.89 | 5.96 | 6.13 |
| RESULTANTE HORIZONTAL TOTAL | | | |
| Resultante horizont.total (t): Htot = | 61.51 | 61.51 | 52.37 |
| COEFS. SEGURIDAD VUELCO Y DESLIZAMIENTO | | | |
| Coef. de seguridad al vuelco : g.vue= | 7.64 | 6.86 | 7.77 |
| Coef. de seguridad al desliz.: g.des= | 3.21 | 2.80 | 2.90 |
| TENSIONES TERRENO BAJO ZAPATA | | | |
| Tensión trrno puntera (t/m²): σ pun= | 30.10 | 25.34 | 20.54 |
| Tensión trrno talón (t/m²): σ tal= | 27.01 | 24.45 | 23.36 |
| Tensión cobaricéntrica (t/m²): σ cob= | 29.08 | 25.04 | 22.43 |
| ARMADURAS LONGITUDINALES ZAPATA | | | |
| Momento zapata sec. 1 (mt/m): m1 = | -43.32 | -114.91 | -108.59 |
| Momento zapata sec. 2 (mt/m): m2 = | 380.31 | 289.37 | 199.38 |
| Armadura zapata sec.1 (cm²/m): As1 = | -4.06 | -10.75 | -10.16 |
| Armadura zapata sec.2 (cm²/m): As2 = | 36.44 | 27.60 | 18.93 |
| Armadura mínima zapat.(cm²/m): Amin = | 43.92 | 43.92 | 43.92 |
| ARMADURAS HORIZONTALES DE TABIQUE | | | |
| Arm.tot.cu.mín.sec.sup(cm²/m): Amin = | 24.00 | 24.00 | 24.00 |
| Arm.tot.cu.mín.sec.inf(cm²/m): Amin = | 24.00 | 24.00 | 24.00 |
| ARMADURAS VERTICALES DE TABIQUE | | | |
| Momto.secc.sup. tabique (mt) : Mst = | 47.50 | 24.44 | 6.26 |
| Axil .secc.sup. tabique ( t) : Nst = | 107.71 | 41.81 | 5.40 |
| Arm/cara sec.sup.tabique(cm²): Ast = | -8.22 | -7.18 | -7.51 |
| Arm.tot.cuan.mín.sec.sup(cm²): Amin = | 13.50 | 13.50 | 13.50 |
| Momto.secc.inf. tabique (mt) : Mit = | 294.79 | 271.72 | 192.15 |
| Axil .secc.inf. tabique ( t) : Nit = | 147.65 | 81.74 | 45.34 |
| Arm/cara sec.inf.tabique(cm²): Ait = | 29.00 | 30.14 | 19.88 |
| Arm.tot.cuan.mín.sec.inf(cm²): Amin = | 13.50 | 13.50 | 13.50 |



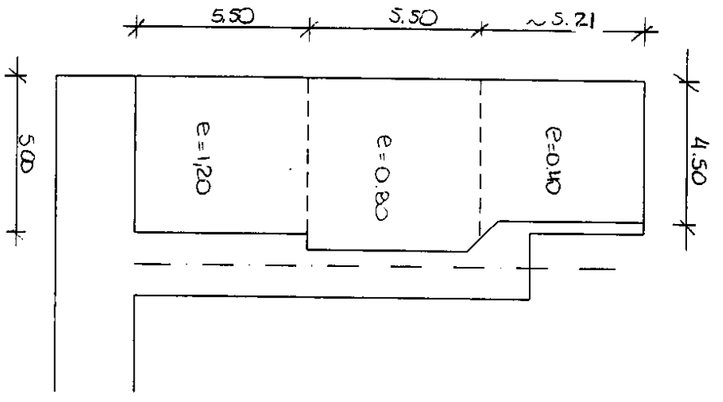




Sección 1




Sección 2

## Muro de acompañamiento




Muro de acompañamiento

ROBOT v 14.5.0
Autor : **eipsa-eipsa**
Dirección :

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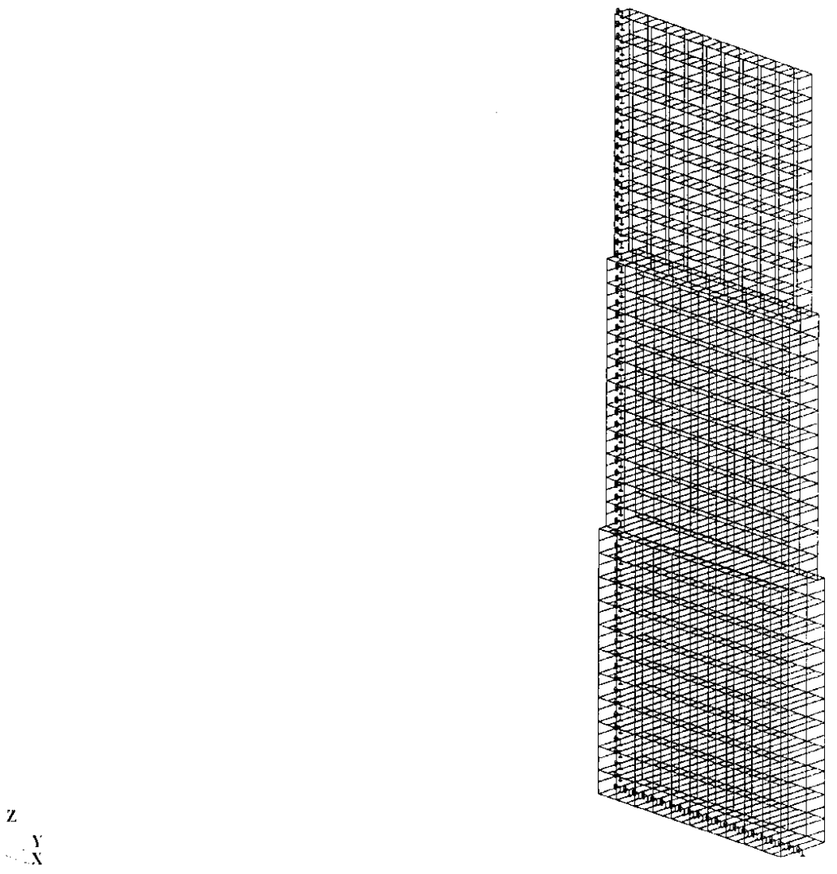
Archivo : **aleta2.rtd**
Proyecto : aleta2

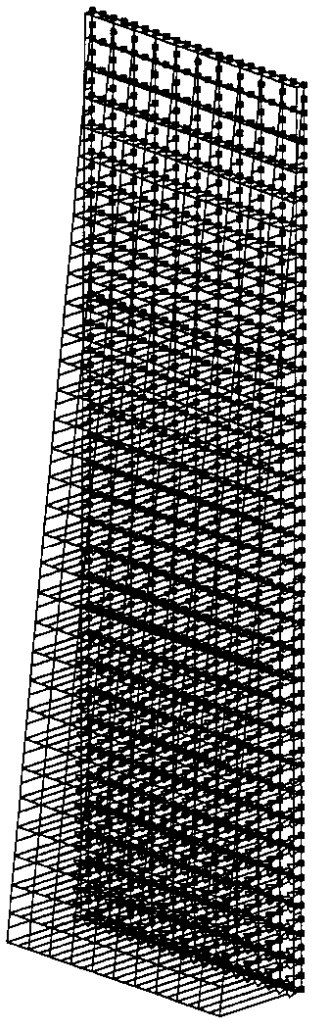



Esquema general del modelo

Fecha : 03/03/02

Página : 1

## Emouje (tierras+sobrecarga)




Acciones

* SC = 30 kN/m²

Ka = 0.33

$(Empuje)_{SC}$ = 30 * 0.33 = 9.9 kN/m

* Empúje de tierras

γ H Ka = 20 * 16.20 * 0.33
= 106.92 kN/m

Combinación de acciones

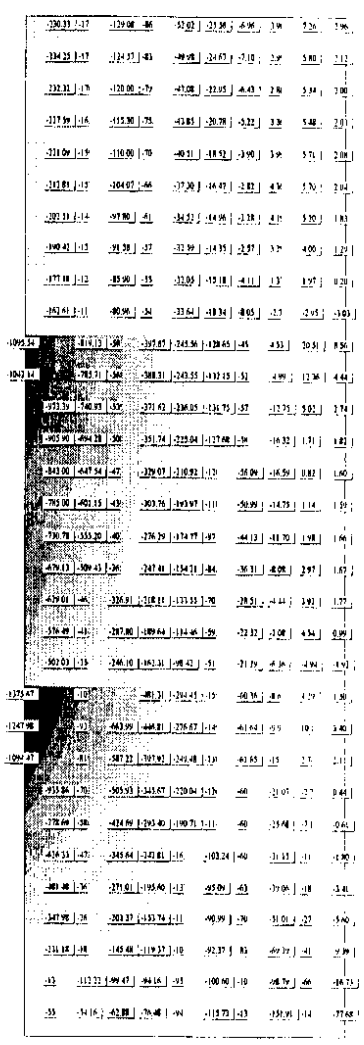
E.L.U. 1,50 ($E_{SC}$ + $E_T$)

kPa
-PZ kN

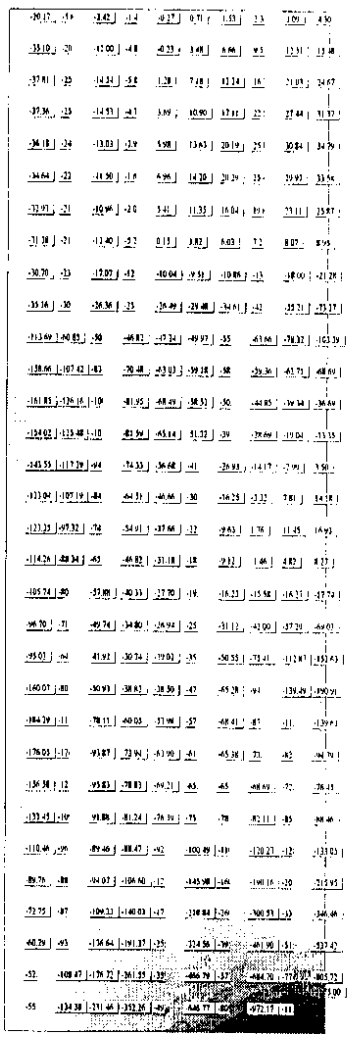




## MXX (kNm/m)



## MYY (kNm/m)

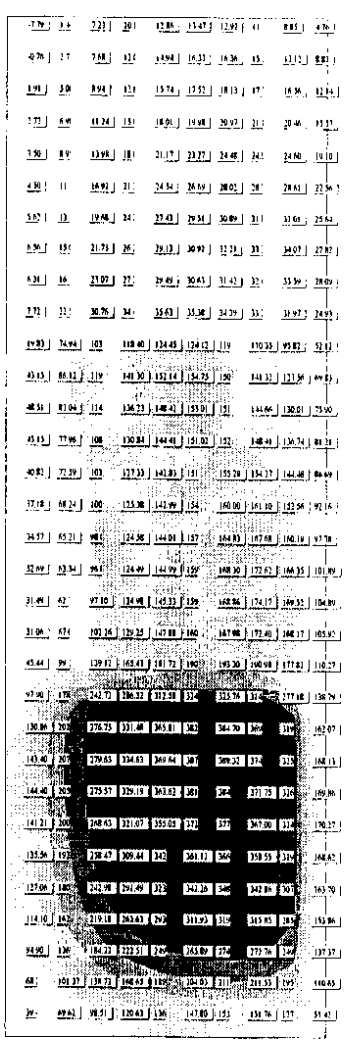


Z
Y X





## MXY (kNm/m)



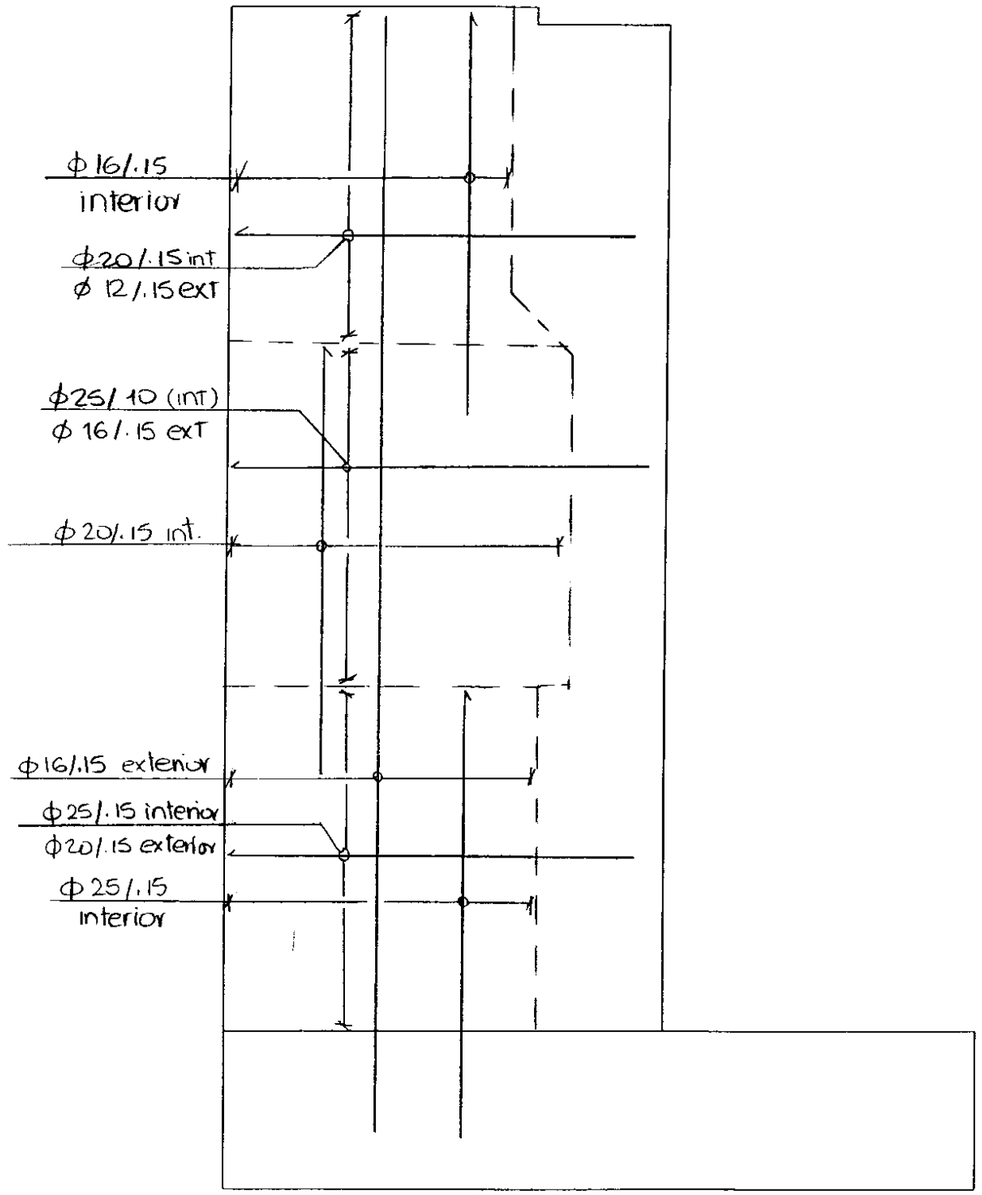
Z
Y X

Muro de acompañamiento

Riera Rierusa E-1

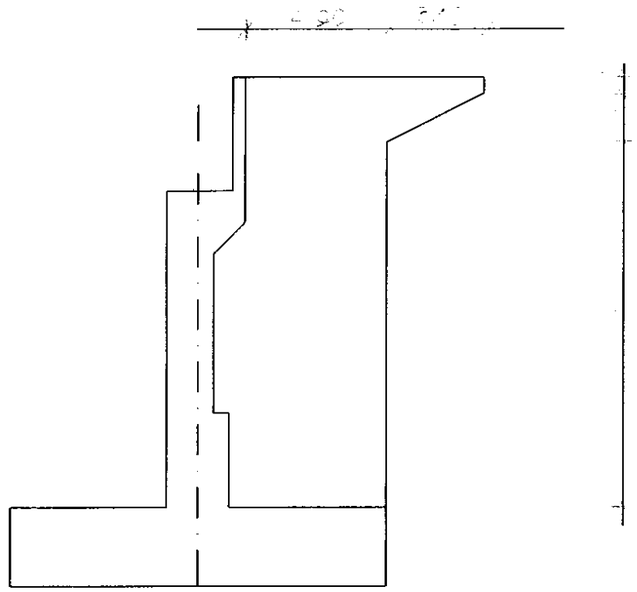
| | | | | | |
|---|---|---|---|---|---|
| e = 1,20 | Mxx = | 1376 m·kN | Myy = | 1175 m kN |
| | Mxy = | 98 m kN | Mxy = | 127 m kN |
| | Md = | 1474 m kN | Md = | 1302 m kN |
| e = 0,80 | Mxx = | 1095 | | |
| | Mxy = | 20 | | |
| | Md | 1115 | | |
| e = 0,40 | Mxx = | 234 | | |
| | Mxy = | 2 | | |
| | Md = | 236. | | |

| | Asx | Mu | Asy | Mu |
|---|---|---|---|---|
| e = 1,20 | ϕ25/.15 | 1560.2 | ϕ25/.15 | 1560.2 |
| e = 0,80 | ϕ 25/.10 | 1474.8 | | |
| e = 0,40 | ϕ20/.15 | 289.1 | | |



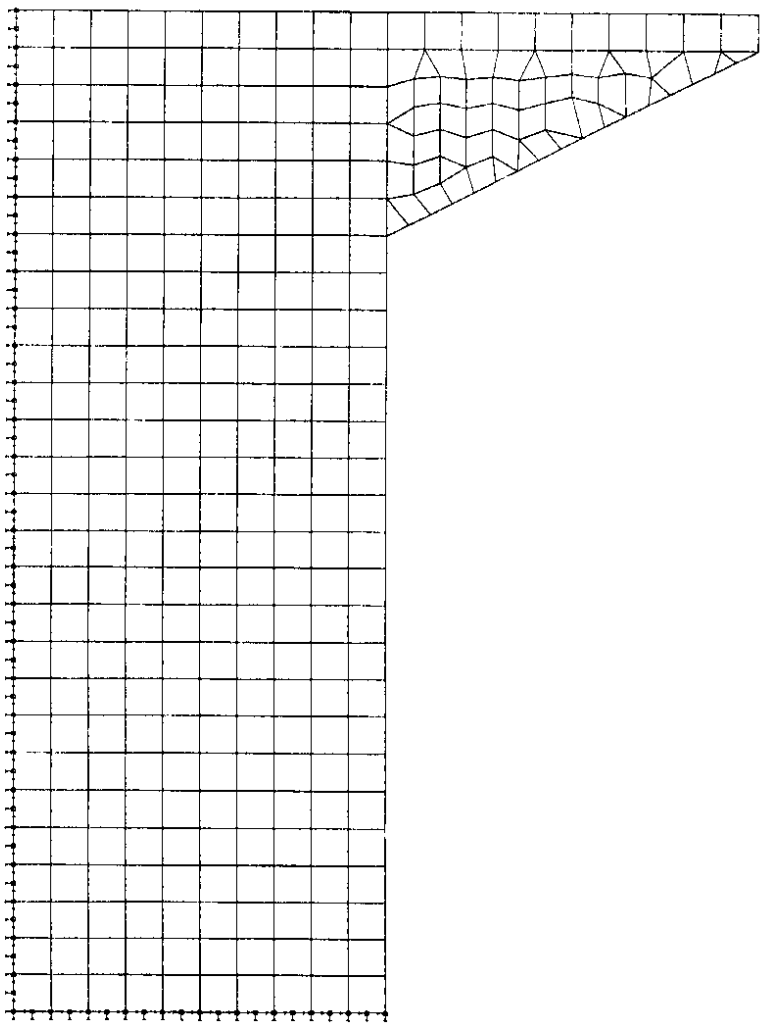

MURO DE ACOMPAÑAMIENTO

**Muro de acompañamiento y aleta**



**Muro de acompañamiento y aleta**

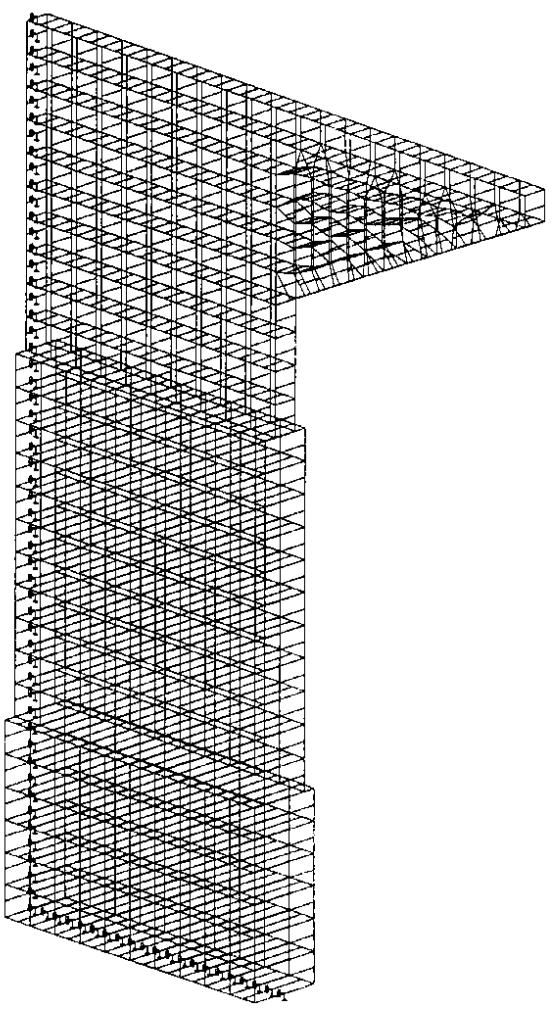
## Esquema general.



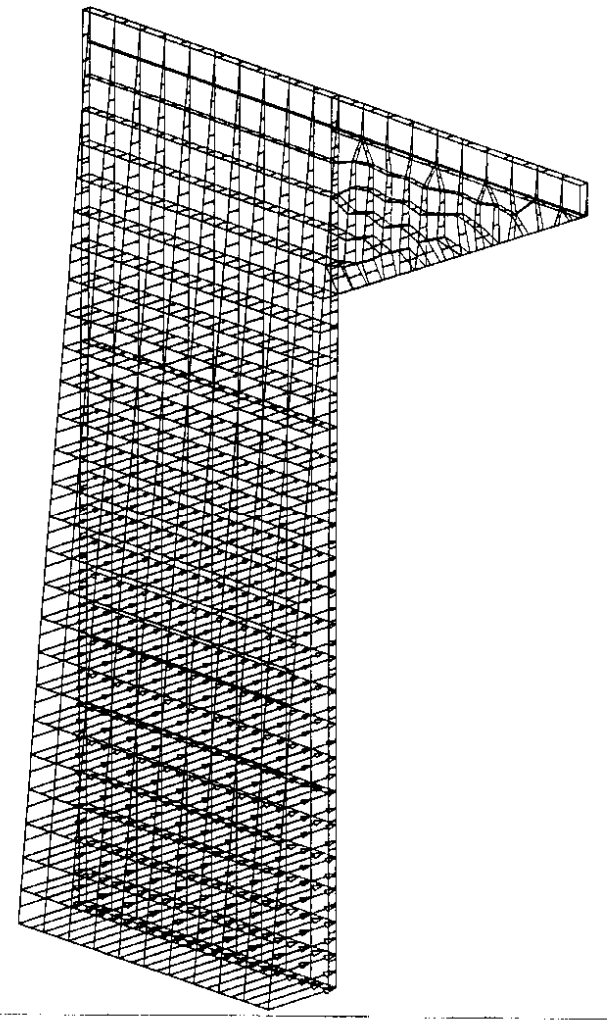





## Discretización. Espesores



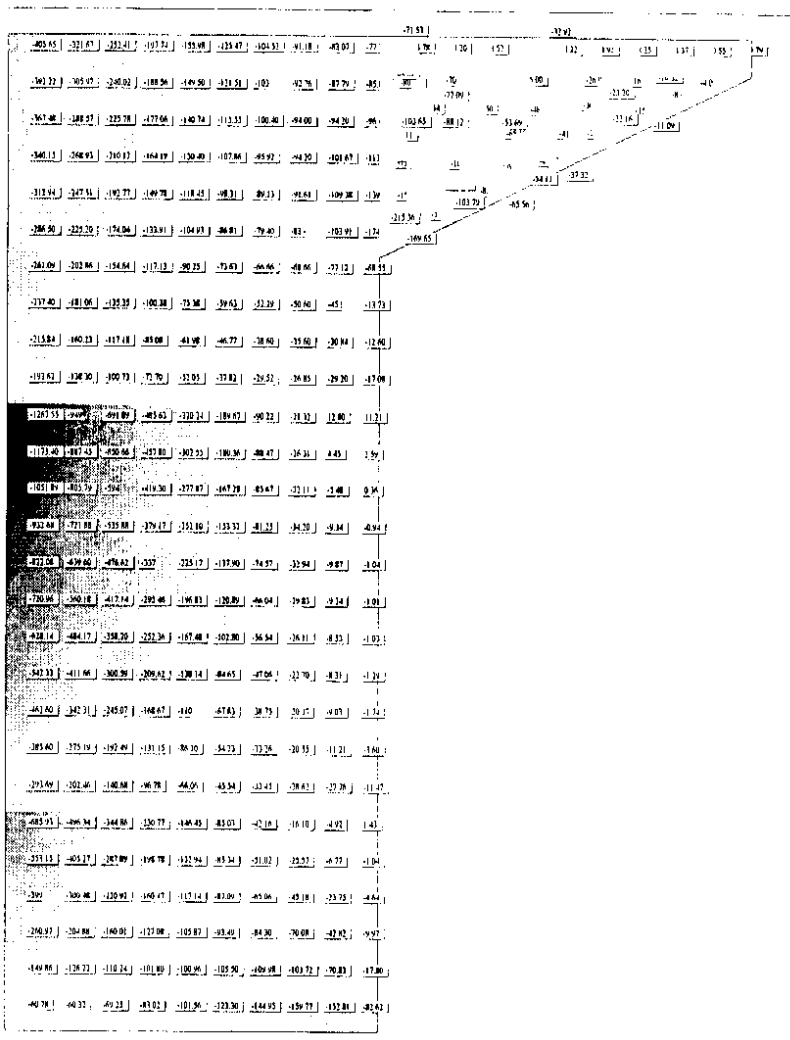
## (COMB1). 1.5*(Et+Esc)



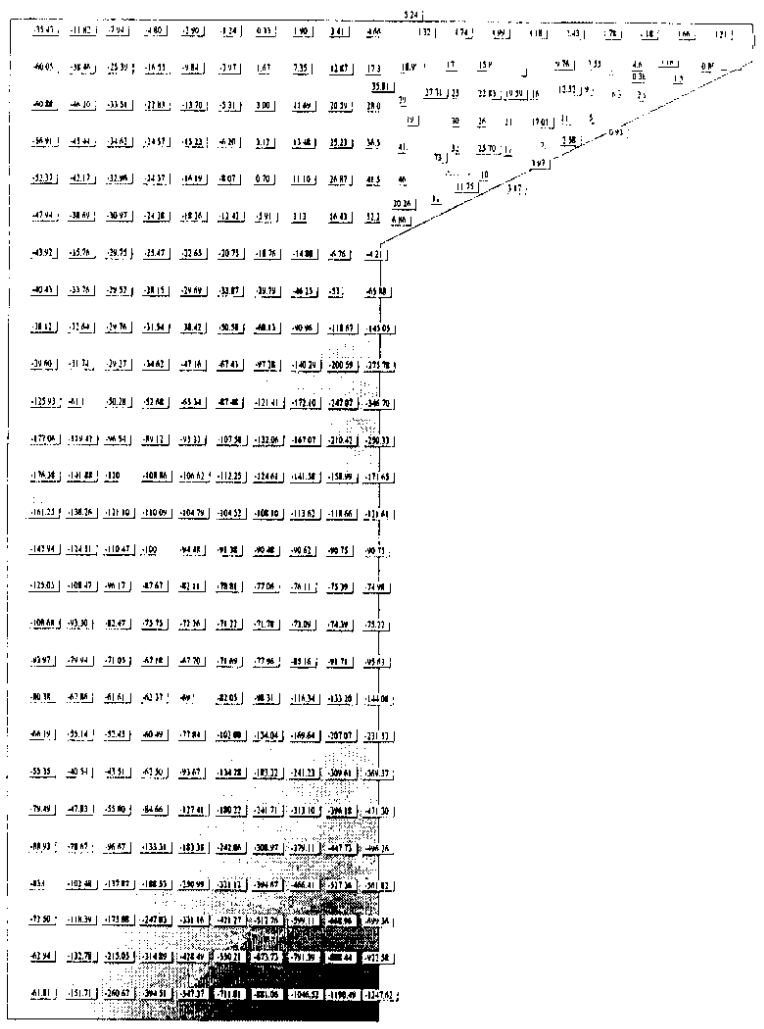





## MXX (kNm/m) casos: 3 (COMB1)



## MYY (kNm/m) casos: 3 (COMB1)



Z
Y X



ROBOT v 14.5.0
Autor : **eipsa-eipsa**
Dirección :

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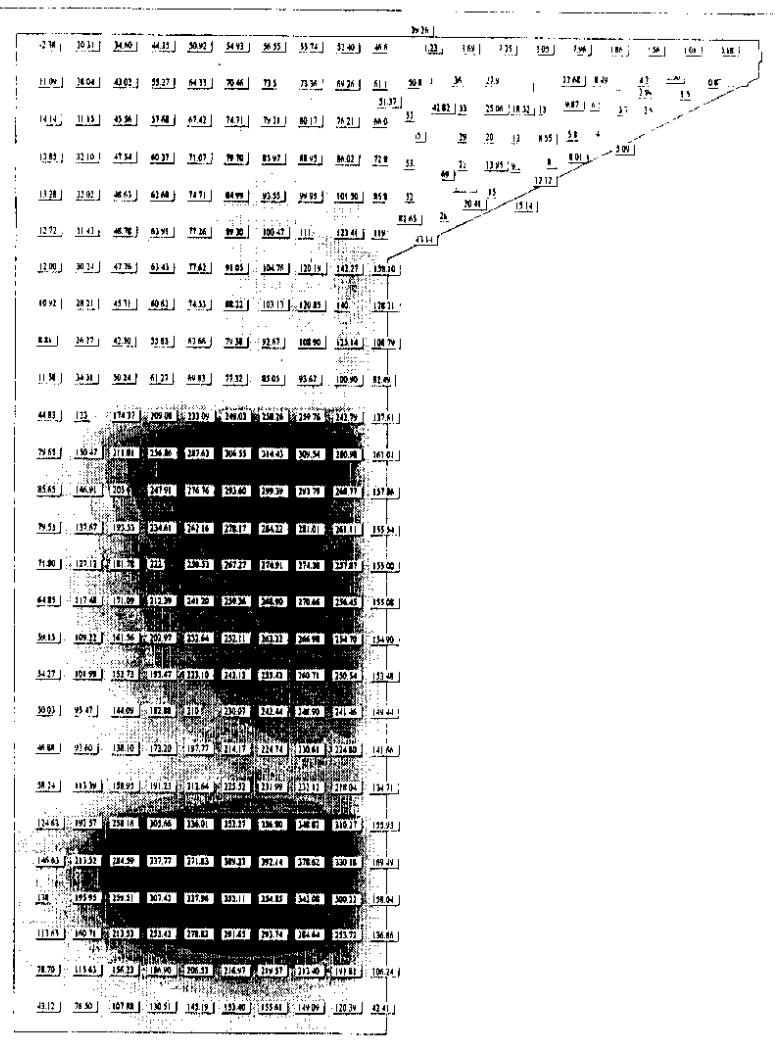
Archivo : **aleta4.rtd**
Proyecto : aleta4

## MXY (kNm/m) casos: 3 (COMB1)



Z
Y X

ALETA

Armadura Vertical:

$M_{yy}$ = 1247.62 m-kN

$M_{xy}$ = 42,41 m-kN

$M_d$ = 1290.00 con h = 1,20

Con As = ϕ25/.15 $M_u$ = 1560,20

Armadura Horizontal:

$M_{xx}$ = 1267.55

$M_{xy}$ = 44.83

$M_d$ = 1312.38

Con As = ϕ25/.10 $M_u$ = 1474.8 m-kN

Armadura mínima horizontal 3.2 ‰

| | | |
|---|---|---|
| h= 1,20 | 38,4 cm² | ϕ 20/.15 ext |
| h= 0,80 | 25,6 cm² | ϕ 16/.15 ext |
| h= 0,40 | 12,8 cm² | ϕ 12/.15 ext |

NOTE BOOK

**Muro derecho L=10.10 m**

"ALTURA TOT. DEL ESTRIBO z1(m):" 18.03 ✓ "NUM. HIP. CARGA Nhip:" 1
"PROF. FREATICA TRASDOS zt(m):" 18.03 ✓ "ID. INTRADOS zd(m):" 18.03 ✓

DATOS DEL MURETE DE PROTECCION
"Longitud L1(m):" 1.00
"Ancho b1(m):" 0.00
"Canto h1(m):" 0.00
"Penetrac. en cargadero d (m):" 0.00

CARGADERO HORIZONTAL
"Longitud L2(m):" 1.00 ✓
"Ancho total b2(m):" 0.40 ✓
"Canto h2(m):" 0.00
"Dist.apoyo-paramto bm(m):" 0.00

DATOS DE LOS TABIQUES VERTICALES
"Num. de tabiques n :" 1
"Ancho de tabique Ln(m):" 1.00 ✓
"Separac. de tab. st(m):" 0.00
"Acartel. traser. bt(m):" 1.62 ✓
"Acartel. delant. bd(m):" 0.00

ZAPATA DEL ESTRIBO
"Longitud L3(m):" 1.00
"Ancho b3(m):" 11.00 ✓
"Canto h3(m):" 2.50 ✓
"Vuelo punt. bp(m):" 3.50 ✓
"Vuelo talón bs(m):" 5.48 ✓
"Pdte.c.sup.pz(tg):" 0.00

DERRAME DELANTERO DE TIERRAS
"Alt.s/extr.zapata zB(m):" 1.50 ✓
"Alt.vacío tierras zC(m):" 0.00

DATOS DEL TERRENO
"Peso específ.g(t/m3):" 2.00
"Angulo roz.int. ϕ(°):" 28
"Angulo de talud ß(°):" 0

RESISTENCIAS MATERIALES
"Hormigón tab. fck(k/cm²):" 250 ✓
"Hormigón zap. fck(k/cm²):" 250 ✓
"Acero armado fyk(k/cm²):" 5100 ✓

COEFICIENTES SEGURIDAD
"Gamma hormigón gc:" 1.5
"Gamma acero gs:" 1.15

CARGAS ACTUANTES S/ESTRIBO HIP 1 HIP 2 HIP 3 HIP 4 HIP 5
"Vert.unif. s/ relleno q(t/m²):" 3.00 ✓
"Vert.total del tabl. Vtab (t):" 0.00
"Hor. total del tabl. Htab (t):" 0.00
"Coef. de mayor. de cargas gf:" 1.50
"Coef. de mayor. de empujes ge:" 1.00

LAV GELIDA R Riercsso E-1 MURO 02-03-02



Hipótesis núm. = 1

EMPUJE TOTAL ACTIVO

Valor total empuje activo (t): Hemp = 115.42
Altura s/fondo de zapata (m): Yemp = 6.44

CARGA VERTICAL TOTAL

Carga vert. total s/trrno (t): Vtot = 342.90
Dist. al borde ant. zapata(m): Xtot = 4.49

RESULTANTE HORIZONTAL TOTAL

Resultante horizont.total (t): Htot = 115.42

COEFS. SEGURIDAD VUELCO, DESLIZAMIENTO Y CORTANTE

Coef. de seguridad al vuelco : g.vue= 3.07 ✓
Coef. de seguridad al desliz.: g.des= 1.71 ✓

TENSIONES TERRENO BAJO ZAPATA

Tensión trrno puntera (t/m²): σ pun= 48.31
Tensión trrno talón (t/m²): σ tal= 14.04
Tensión cobaricéntrica (t/m²): σ cob= 38.17 < 40

ARMADURAS LONGITUDINALES ZAPATA

Momento zapata sec. 1 (mt/m): m1 = -542.71
Momento zapata sec. 2 (mt/m): m2 = 379.27
Armadura zapata sec.1 (cm²/m): As1 = 52.47 sup Φ32/.15
Armadura zapata sec.2 (cm²/m): As2 = 36.34 Inf Φ32/.15
Armadura mínima zapat.(cm²/m): Amin = 43.92

ARMADURAS HORIZONTALES DE TABIQUE

Arm.tot.cu.mín.sec.sup(cm²/m): Amin = 6.40
Arm.tot.cu.mín.sec.inf(cm²/m): Amin = 32.32

ARMADURAS VERTICALES DEL MURO

Momto.secc.sup. tabique (mt) : Mst = 0.00
Axil .secc.sup. tabique ( t) : Nst = 0.00
Arm/cara sec.sup.tabique(cm²): Ast = 0.00
Arm.tot.cuan.mín.sec.sup(cm²): Amin = 3.60

Momto.secc. 1 tabique (mt) : Mit = 2.33
Axil .secc. 1 tabique ( t) : Nit = 2.80
Arm/cara sec 1 tabique (cm²): Ait = 0.71
Arm.tot.sec. 1 mínima (cm²): Amin = 5.06

Momto.secc. 2 tabique (mt) : Mit = 11.65
Axil .secc. 2 tabique ( t) : Nit = 6.55
Arm/cara sec 2 tabique (cm²): Ait = 3.23
Arm.tot.sec. 2 mínima (cm²): Amin = 6.52

Momto.secc. 3 tabique (mt) : Mit = 31.45
Axil .secc. 3 tabique ( t) : Nit = 11.23
Arm/cara sec 3 tabique (cm²): Ait = 7.48

```
Arm.tot.sec. 3  mínima  (cm²): Amin =    7.97

Momto.secc.  4  tabique (mt) : Mit  =   65.24
Axil .secc.  4  tabique ( t) : Nit  =   16.87
Arm/cara sec 4  tabique (cm²): Ait  =   13.45
Arm.tot.sec. 4  mínima  (cm²): Amin =    9.43

Momto.secc.  5  tabique (mt) : Mit  =  116.50
Axil .secc.  5  tabique ( t) : Nit  =   23.44
Arm/cara sec 5  tabique (cm²): Ait  =   21.20
Arm.tot.sec. 5  mínima  (cm²): Amin =   10.89

Momto.secc.  6  tabique (mt) : Mit  =  188.74
Axil .secc.  6  tabique ( t) : Nit  =   30.96
Arm/cara sec 6  tabique (cm²): Ait  =   30.75
Arm.tot.sec. 6  mínima  (cm²): Amin =   12.35

Momto.secc.  7  tabique (mt) : Mit  =  285.46
Axil .secc.  7  tabique ( t) : Nit  =   39.42
Arm/cara sec 7  tabique (cm²): Ait  =   42.20
Arm.tot.sec. 7  mínima  (cm²): Amin =   13.81

Momto.secc.  8  tabique (mt) : Mit  =  410.14
Axil .secc.  8  tabique ( t) : Nit  =   48.83
Arm/cara sec 8  tabique (cm²): Ait  =   55.60
Arm.tot.sec. 8  mínima  (cm²): Amin =   15.26

Momto.secc.  9  tabique (mt) : Mit  =  566.29
Axil .secc.  9  tabique ( t) : Nit  =   59.18
Arm/cara sec 9  tabique (cm²): Ait  =   71.05
Arm.tot.sec. 9  mínima  (cm²): Amin =   16.72

Momto.secc.  10  tabique (mt) : Mit  =  757.40
Axil .secc.  10  tabique ( t) : Nit  =   70.47
Arm/cara sec 10  tabique (cm²): Ait  =   88.66
Arm.tot.sec. 10  mínima  (cm²): Amin =   18.18
```

Φ25/.15

Φ32/.15

Φ32/.15 2 filas → 107.23 cm²

H=7.765

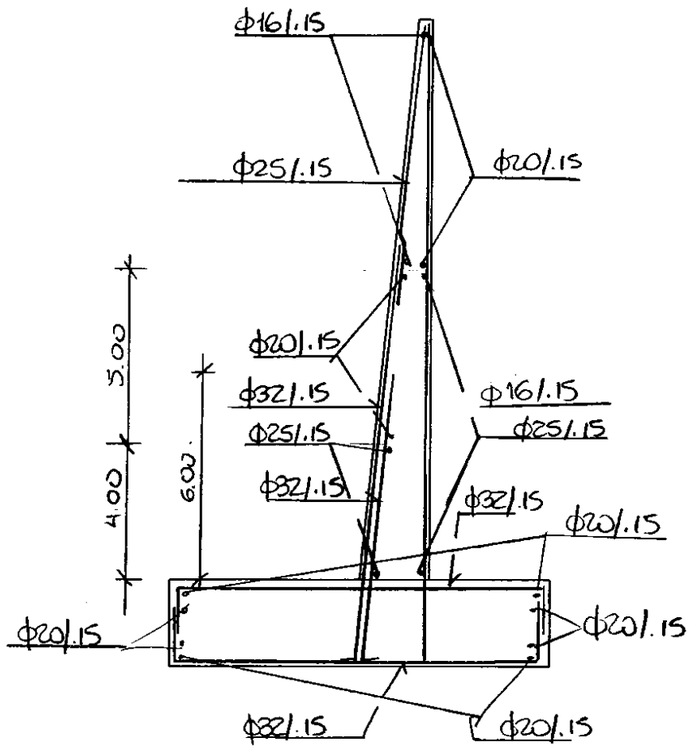
H= 6.212

H=4659

H= 3.106

H=1,553

H=0



## 6.2. ESTRIBO 2

LAV-Gelida. V.Sant Joan. ELS CP(1.00*G)

| BAR. | NUDO | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| 201 | 201 | 4956.68 | 3.34 | 0.00 | 0.00 | 0.00 | 486.38 |
| 201 | 1 | 4956.68 | 3.34 | 0.00 | 0.00 | 0.00 | 454.29 |
| 202 | 202 | 17187.41 | -7.99 | 0.00 | 0.00 | 0.00 | 537.41 |
| 202 | 17 | 17187.41 | -7.99 | 0.00 | 0.00 | 0.00 | 686.17 |
| 203 | 203 | 17556.87 | 14.86 | 0.00 | 0.00 | 0.00 | 1065.57 |
| 203 | 37 | 17556.87 | 14.86 | 0.00 | 0.00 | 0.00 | 766.34 |
| 204 | 204 | 17151.73 | -19.00 | 0.00 | 0.00 | 0.00 | 7.76 |
| 204 | 57 | 17151.73 | -19.00 | 0.00 | 0.00 | 0.00 | 836.66 |
| 205 | 205 | 17571.57 | 14.79 | 0.00 | 0.00 | 0.00 | 1075.57 |
| 205 | 77 | 17571.57 | 14.79 | 0.00 | 0.00 | 0.00 | 755.90 |
| 206 | 206 | 17166.05 | -12.85 | 0.00 | 0.00 | 0.00 | 378.06 |
| 206 | 97 | 17166.05 | -12.85 | 0.00 | 0.00 | 0.00 | 681.72 |
| 207 | 207 | 4967.04 | 6.86 | 0.00 | 0.00 | 0.00 | 545.51 |
| 207 | 113 | 4967.04 | 6.86 | 0.00 | 0.00 | 0.00 | 465.77 |

Rotura →

Fu: 4967'04 + 17166'05 + 17151'73 + 17187'41 = 56472'23 kN

: 12590'43 kN

Hd: Fu cot: 6295'21 kN

Sant Joan →

Fu = 4967'04 + 17166'05 + 17151'73 + 17187'41 = 56472'23 kN

Hd = 28236'1 kN

Rotura [illegible] = [illegible] kN

Rozamiento por peso propio = 6295'21 kN

- Fluencia: 6000 - 1000 = 7000 kN

- Retracción y fluencia 75'2 = 1500 kN

Total: 14795'21 kN

12 barras Redibar ϕ30

Cargas al pilar: 12 1414'30 = 16986 kN

Carga a 1:00 16986 0'2 = 17627'12 kN

Apoyo de neopreno

Hd 31512'47 kN

Amin: Hd/σ = 1'04 m²

Aproximado 1350 x 500 x 56 (4 t)

LAV-Gelida. V.Rierussa. ELS PP

| BAR. | NUDO | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| 201 | 201 | 2774.93 | 0.01 | 0.00 | 0.00 | 0.00 | 12.02 |
| 201 | 1 | 2774.93 | 0.01 | 0.00 | 0.00 | 0.00 | 11.95 |
| 202 | 202 | 9714.41 | -0.05 | 0.00 | 0.00 | 0.00 | -3.02 |
| 202 | 17 | 9714.41 | -0.05 | 0.00 | 0.00 | 0.00 | -2.11 |
| 203 | 203 | 9920.51 | 0.05 | 0.00 | 0.00 | 0.00 | -5.86 |
| 203 | 37 | 9920.51 | 0.05 | 0.00 | 0.00 | 0.00 | -6.89 |
| 204 | 204 | 9693.10 | -0.02 | 0.00 | 0.00 | 0.00 | -1.84 |
| 204 | 57 | 9693.10 | -0.02 | 0.00 | 0.00 | 0.00 | -1.06 |
| 205 | 205 | 9928.83 | 0.07 | 0.00 | 0.00 | 0.00 | -4.45 |
| 205 | 77 | 9928.83 | 0.07 | 0.00 | 0.00 | 0.00 | -5.86 |
| 206 | 206 | 9702.34 | -0.09 | 0.00 | 0.00 | 0.00 | -1.98 |
| 206 | 97 | 9702.34 | -0.09 | 0.00 | 0.00 | 0.00 | 0.12 |
| 207 | 207 | 2780.80 | 0.03 | 0.00 | 0.00 | 0.00 | 13.07 |
| 207 | 113 | 2780.80 | 0.03 | 0.00 | 0.00 | 0.00 | 12.70 |

Rierussa

$P_T = 2774'93 + 9714'41 + 9920'51 + 3 \cdot 9693'10 + 9928'83 +$

$+ 9702'34 + 2780'80 = 73901'12$ kN

$H_d = 369506$ kN

TITULO
=======
LAV-Gelida. V.Rierussa. ELS PP

FICHERO DE GEOMETRIA COMPLETA
==============================
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
================================
1

| Fich | Num. Nudos | Num. barras | Num. hipotesis | NOMBRE FICHERO |
|---|---|---|---|---|
| 1 | 120 | 119 | 57 | ESFipf.TXT |

| Fich | Hipotesis | Caracter | Coeficiente |
|---|---|---|---|
| 1 | 1 | 1 | 1.0 |
| 1 | 2 | 1 | 0.0 |
| 1 | 3 | 1 | 0.0 |
| 1 | 4 | 3 | 0.0 |
| 1 | 5 | 3 | 0.0 |
| 1 | 6 | 3 | 0.0 |
| 1 | 7 | 2 | 0.0 |
| 1 | 8 | 2 | 0.0 |
| 1 | 9 | 2 | 0.0 |
| 1 | 10 | 2 | 0.0 |
| 1 | 11 | 2 | 0.0 |
| 1 | 12 | 2 | 0.0 |
| 1 | 13 | 2 | 0.0 |
| 1 | 14 | 2 | 0.0 |
| 1 | 15 | 2 | 0.0 |
| 1 | 16 | 2 | 0.0 |
| 1 | 17 | 2 | 0.0 |
| 1 | 18 | 2 | 0.0 |
| 1 | 19 | 4 | 0.0 |
| 1 | 20 | 5 | 0.0 |
| 1 | 21 | 4 | 0.0 |
| 1 | 22 | 5 | 0.0 |
| 1 | 23 | 4 | 0.0 |
| 1 | 24 | 5 | 0.0 |
| 1 | 25 | 4 | 0.0 |
| 1 | 26 | 5 | 0.0 |
| 1 | 27 | 4 | 0.0 |
| 1 | 28 | 5 | 0.0 |
| 1 | 29 | 4 | 0.0 |
| 1 | 30 | 5 | 0.0 |
| 1 | 31 | 4 | 0.0 |
| 1 | 32 | 5 | 0.0 |
| 1 | 33 | 4 | 0.0 |
| 1 | 34 | 5 | 0.0 |
| 1 | 35 | 4 | 0.0 |
| 1 | 36 | 5 | 0.0 |
| 1 | 37 | 2 | 0.0 |
| 1 | 38 | 1 | 0.0 |
| 1 | 39 | 1 | 0.0 |
| 1 | 40 | 1 | 0.0 |
| 1 | 41 | 1 | 0.0 |
| 1 | 42 | 1 | 0.0 |
| 1 | 43 | 1 | 0.0 |
| 1 | 44 | 1 | 0.0 |
| 1 | 45 | 1 | 0.0 |
| 1 | 46 | 1 | 0.0 |

| | | | |
|---|---|---|---|
| 1 | 47 | 1 | 0.0 |
| 1 | 48 | 1 | 0.0 |
| 1 | 49 | 1 | 0.0 |
| 1 | 50 | 1 | 0.0 |
| 1 | 51 | 1 | 0.0 |
| 1 | 52 | 1 | 0.0 |
| 1 | 53 | 1 | 0.0 |
| 1 | 54 | 1 | 0.0 |
| 1 | 55 | 1 | 0.0 |
| 1 | 56 | 1 | 0.0 |
| 1 | 57 | 1 | 0.0 |

LAV-Gelida. V.Rierussa. ELS Comb Rara.ECSW-SW(1.00*G+1.00*LEV+1.00*P+1.0*SC+0.6*GT)

| BARRA 201 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) | |
|---|---|---|---|---|---|---|---|
| 201 | 9943.88>> | 52.14 | 0.00 | 0.0 | 0.0 | 2559.2 | |
| 201 | 3780.11<< | 14.12 | 0.00 | 0.0 | 0.0 | 516.5 | |
| 201 | 7078.06 | 227.16>> | 0.00 | 0.0 | 0.0 | 8986.7 | |
| 201 | 5863.11 | -188.85<< | 0.00 | 0.0 | 0.0 | -6383.1 | |
| 201 | 5493.56 | 1.50 | 0.00>> | 0.0 | 0.0 | 329.6 | |
| 201 | 5227.53 | 1.45 | 0.00<< | 0.0 | 0.0 | 324.1 | |
| 201 | 5493.56 | 1.50 | 0.00 | 0.0>> | 0.0 | 329.6 | |
| 201 | 5227.53 | 1.45 | 0.00 | 0.0<< | 0.0 | 324.1 | |
| 201 | 7505.47 | -61.69 | 0.00 | 0.0 | 0.0>> | -5333.9 | |
| 201 | 5227.53 | 1.45 | 0.00 | 0.0 | 0.0<< | 324.1 | |
| 201 | 7908.40 | 172.24 | 0.00 | 0.0 | 0.0 | 9150.3>> | |
| 201 | 6692.91 | -138.97 | 0.00 | 0.0 | 0.0 | -6575.4<< | |
| 1 | 9943.88>> | 52.14 | 0.00 | 0.0 | 0.0 | 2056.7 | Vmáx |
| 1 | 3780.11<< | 14.12 | 0.00 | 0.0 | 0.0 | 380.1 | Vmín |
| 1 | 7078.06 | 227.16>> | 0.00 | 0.0 | 0.0 | 6798.8 | |
| 1 | 5863.11 | -188.85<< | 0.00 | 0.0 | 0.0 | -4564.8 | |
| 1 | 5493.56 | 1.50 | 0.00>> | 0.0 | 0.0 | 314.7 | |
| 1 | 5227.53 | 1.45 | 0.00<< | 0.0 | 0.0 | 309.9 | |
| 1 | 5493.56 | 1.50 | 0.00 | 0.0>> | 0.0 | 314.7 | |
| 1 | 5227.53 | 1.45 | 0.00 | 0.0<< | 0.0 | 309.9 | |
| 1 | 5493.56 | 1.50 | 0.00 | 0.0 | 0.0>> | 314.7 | |
| 1 | 5227.53 | 1.45 | 0.00 | 0.0 | 0.0<< | 309.9 | |
| 1 | 7853.50 | 130.24 | 0.00 | 0.0 | 0.0 | 7685.0>> | |
| 1 | 6638.05 | -81.71 | 0.00 | 0.0 | 0.0 | -5491.8<< | |

| BARRA 202 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 202 | 27478.20>> | -27.55 | 0.00 | 0.0 | 0.0 | 2531.5 |
| 202 | 11815.35<< | 29.71 | 0.00 | 0.0 | 0.0 | 1018.5 |
| 202 | 18095.92 | 416.20>> | 0.00 | 0.0 | 0.0 | 652.8 |
| 202 | 21524.32 | -395.03<< | 0.00 | 0.0 | 0.0 | 3366.4 |
| 202 | 15422.25 | -5.32 | 0.00>> | 0.0 | 0.0 | 510.2 |
| 202 | 15250.26 | -5.17 | 0.00<< | 0.0 | 0.0 | 500.6 |
| 202 | 15422.25 | -5.32 | 0.00 | 0.0>> | 0.0 | 510.2 |
| 202 | 15250.26 | -5.17 | 0.00 | 0.0<< | 0.0 | 500.6 |
| 202 | 15422.25 | -5.32 | 0.00 | 0.0 | 0.0>> | 510.2 |
| 202 | 15250.26 | -5.17 | 0.00 | 0.0 | 0.0<< | 500.6 |
| 202 | 20591.05 | -87.59 | 0.00 | 0.0 | 0.0 | 8435.5>> |
| 202 | 17164.03 | 86.40 | 0.00 | 0.0 | 0.0 | -5299.1<< |
| 17 | 27478.20>> | -27.55 | 0.00 | 0.0 | 0.0 | 3047.5 |
| 17 | 11815.35<< | 29.71 | 0.00 | 0.0 | 0.0 | 467.7 |
| 17 | 18095.92 | 416.20>> | 0.00 | 0.0 | 0.0 | -7098.0 |
| 17 | 21524.32 | -395.03<< | 0.00 | 0.0 | 0.0 | 10728.6 |
| 17 | 15422.25 | -5.32 | 0.00>> | 0.0 | 0.0 | 612.1 |
| 17 | 15250.26 | -5.17 | 0.00<< | 0.0 | 0.0 | 599.7 |
| 17 | 15422.25 | -5.32 | 0.00 | 0.0>> | 0.0 | 612.1 |
| 17 | 15250.26 | -5.17 | 0.00 | 0.0<< | 0.0 | 599.7 |
| 17 | 15422.25 | -5.32 | 0.00 | 0.0 | 0.0>> | 612.1 |
| 17 | 15250.26 | -5.17 | 0.00 | 0.0 | 0.0<< | 599.7 |
| 17 | 21833.70 | -252.80 | 0.00 | 0.0 | 0.0 | 11407.9>> |
| 17 | 18405.99 | 222.99 | 0.00 | 0.0 | 0.0 | -8013.0<< |

LAV-Gelida. V.Rierussa. ELS Comb Rara.IPF(1.00*G+1.0*LEV+1.00*P+1.0*SC+0.6*GT)

| BARRA 201 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 201 | 9162.25>> | 165.10 | 0.00 | 0.0 | 0.0 | 4743.2 |
| 201 | 3905.35<< | -4.75 | 0.00 | 0.0 | 0.1 | 725.6 |
| 201 | 8684.05 | 275.25>> | -0.01 | 0.0 | 0.1 | 6988.0 |
| 201 | 4388.77 | -117.43<< | 0.00 | 0.0 | 0.0 | -1653.2 |
| 201 | 5493.56 | 1.50 | 0.00>> | 0.0 | 0.0 | 329.6 |
| 201 | 6477.44 | 197.36 | -0.01<< | 0.0 | 0.1 | 9182.3 |
| 201 | 5493.56 | 1.50 | 0.00 | 0.0>> | 0.0 | 329.6 |
| 201 | 5227.53 | 1.45 | 0.00 | 0.0<< | 0.0 | 324.1 |
| 201 | 6427.01 | 172.12 | -0.01 | 0.0 | 0.1>> | 8526.5 |
| 201 | 6849.83 | 57.98 | 0.00 | 0.0 | -0.0<< | -2694.0 |
| 201 | 7171.09 | 234.18 | -0.01 | 0.0 | 0.1 | 10064.9>> |
| 201 | 5956.18 | -75.78 | 0.00 | 0.0 | 0.0 | -4673.9<< |
| 1 | 9162.25>> | 165.10 | 0.00 | 0.0 | 0.0 | 3153.1 |
| 1 | 3905.35<< | -4.75 | 0.00 | 0.0 | 0.0 | 771.0 |
| 1 | 8684.05 | 275.25>> | -0.01 | 0.0 | 0.0 | 4336.9 |
| 1 | 4388.77 | -117.43<< | 0.00 | 0.0 | 0.0 | -522.7 |
| 1 | 5493.56 | 1.50 | 0.00>> | 0.0 | 0.0 | 314.7 |
| 1 | 6477.44 | 197.36 | -0.01<< | 0.0 | 0.0 | 7281.4 |
| 1 | 5493.56 | 1.50 | 0.00 | 0.0>> | 0.0 | 314.7 |
| 1 | 5227.53 | 1.45 | 0.00 | 0.0<< | 0.0 | 309.9 |
| 1 | 5493.56 | 1.50 | 0.00 | 0.0 | 0.0>> | 314.7 |
| 1 | 5227.53 | 1.45 | 0.00 | 0.0 | 0.0<< | 309.9 |
| 1 | 7165.10 | 139.06 | -0.01 | 0.0 | 0.0 | 8204.8>> |
| 1 | 5950.19 | 26.63 | 0.00 | 0.0 | 0.0 | -4359.6<< |

| BARRA 202 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 202 | 26858.20>> | 203.38 | 0.00 | 0.0 | 0.0 | 8424.1 |
| 202 | 11982.40<< | 62.71 | 0.00 | 0.0 | 0.0 | 1935.9 |
| 202 | 20325.94 | 438.83>> | 0.00 | 0.0 | 0.0 | 7433.9 |
| 202 | 21134.35 | -155.90<< | 0.00 | 0.0 | 0.0 | 8928.4 |
| 202 | 15422.25 | -5.32 | 0.00>> | 0.0 | 0.0 | 510.2 |
| 202 | 15250.26 | -5.17 | 0.00<< | 0.0 | 0.0 | 500.6 |
| 202 | 15422.25 | -5.32 | 0.00 | 0.0>> | 0.0 | 510.2 |
| 202 | 15250.26 | -5.17 | 0.00 | 0.0<< | 0.0 | 500.6 |
| 202 | 15422.25 | -5.32 | 0.00 | 0.0 | 0.0>> | 510.2 |
| 202 | 15250.26 | -5.17 | 0.00 | 0.0 | 0.0<< | 500.6 |
| 202 | 21161.43 | 5.03 | 0.00 | 0.0 | 0.0 | 12716.2>> |
| 202 | 17734.46 | 254.54 | 0.00 | 0.0 | 0.0 | -2534.2<< |
| 17 | 26858.20>> | 203.38 | 0.00 | 0.0 | 0.0 | 4637.7 |
| 17 | 11982.40<< | 62.71 | 0.00 | 0.0 | 0.0 | 770.5 |
| 17 | 20325.94 | 438.83>> | 0.00 | 0.0 | 0.0 | -738.7 |
| 17 | 21134.35 | -155.90<< | 0.00 | 0.0 | 0.0 | 11835.6 |
| 17 | 15422.25 | -5.32 | 0.00>> | 0.0 | 0.0 | 612.1 |
| 17 | 15250.26 | -5.17 | 0.00<< | 0.0 | 0.0 | 599.7 |
| 17 | 15422.25 | -5.32 | 0.00 | 0.0>> | 0.0 | 612.1 |
| 17 | 15250.26 | -5.17 | 0.00 | 0.0<< | 0.0 | 599.7 |
| 17 | 15422.25 | -5.32 | 0.00 | 0.0 | 0.0>> | 612.1 |
| 17 | 15250.26 | -5.17 | 0.00 | 0.0 | 0.0<< | 599.7 |
| 17 | 21161.43 | 2.17 | 0.00 | 0.0 | 0.0 | 12642.8>> |
| 17 | 17734.47 | 257.40 | 0.00 | 0.0 | 0.0 | -7290.9<< |

LAV-Gelida. V.Rierussa. ELS Comb Rara.EC71-71(1.00*G+1.00*LEV+1.00*P+1.0*SC+0.6*GT)

| BARRA 201 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 201 | 9768.43>> | 169.41 | -0.01 | 0.0 | 0.1 | 4432.1 |
| 201 | 3814.45<< | 23.59 | 0.00 | 0.0 | 0.0 | 884.4 |
| 201 | 7833.45 | 258.29>> | -0.01 | 0.0 | 0.1 | 9287.0 |
| 201 | 4381.07 | -147.06<< | 0.00 | 0.0 | 0.0 | -1978.0 |
| 201 | 5458.98 | 21.29 | 0.02>> | 0.0 | -0.1 | 624.7 |
| 201 | 5783.30 | 34.88 | -0.02<< | 0.0 | 0.2 | -163.8 |
| 201 | 5493.56 | 1.50 | 0.00 | 0.0>> | 0.0 | 329.6 |
| 201 | 5227.53 | 1.45 | 0.00 | 0.0<< | 0.0 | 324.1 |
| 201 | 8336.39 | 99.64 | -0.02 | 0.0 | 0.2>> | 3037.4 |
| 201 | 5287.90 | -30.74 | 0.02 | 0.0 | -0.2<< | 400.2 |
| 201 | 7523.20 | 243.68 | 0.00 | 0.0 | 0.0 | 10599.4>> |
| 201 | 6326.93 | -112.73 | -0.01 | 0.0 | 0.1 | -5765.9<< |
| 1 | 9768.43>> | 169.41 | -0.01 | 0.0 | 0.0 | 2800.4 |
| 1 | 3814.45<< | 23.59 | 0.00 | 0.0 | 0.0 | 656.9 |
| 1 | 7833.45 | 258.29>> | -0.01 | 0.0 | 0.0 | 6799.2 |
| 1 | 4381.07 | -147.06<< | 0.00 | 0.0 | 0.0 | -562.0 |
| 1 | 5458.98 | 21.29 | 0.02>> | 0.0 | 0.0 | 419.2 |
| 1 | 5783.30 | 34.88 | -0.02<< | 0.0 | 0.0 | -500.0 |
| 1 | 5493.56 | 1.50 | 0.00 | 0.0>> | 0.0 | 314.7 |
| 1 | 5227.53 | 1.45 | 0.00 | 0.0<< | 0.0 | 309.9 |
| 1 | 5493.56 | 1.50 | 0.00 | 0.0 | 0.0>> | 314.7 |
| 1 | 5227.53 | 1.45 | 0.00 | 0.0 | 0.0<< | 309.9 |
| 1 | 7536.84 | 118.40 | 0.00 | 0.0 | 0.0 | 8714.5>> |
| 1 | 6321.83 | 9.87 | -0.01 | 0.0 | 0.0 | -5185.0<< |

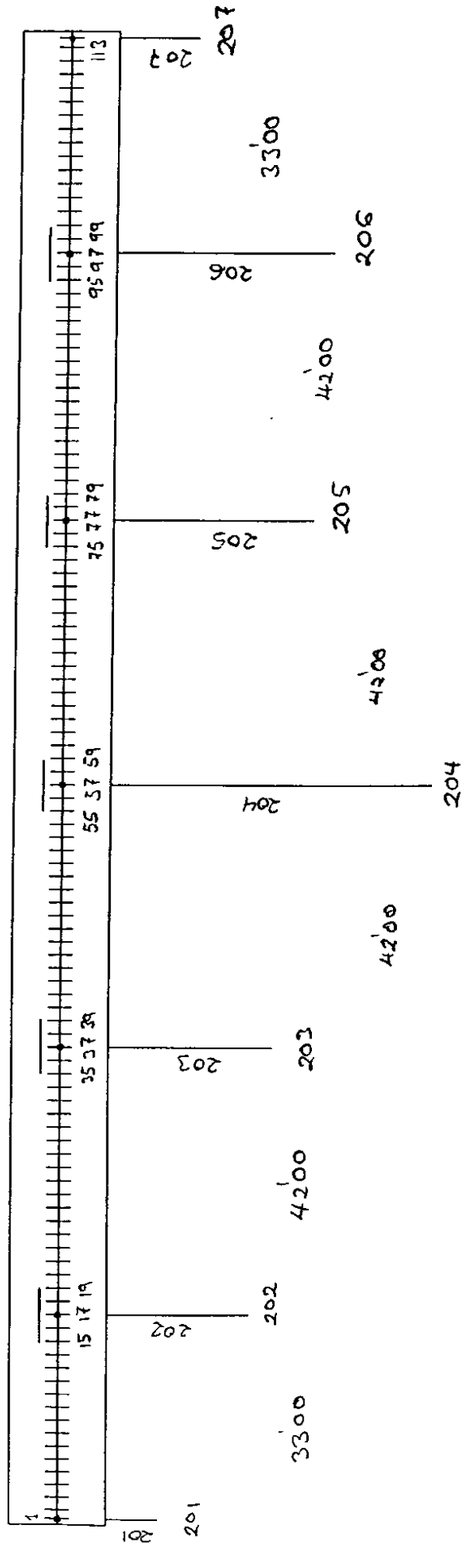
| BARRA 202 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 202 | 26818.23>> | 127.06 | 0.00 | 0.0 | 0.0 | 6213.9 |
| 202 | 11859.11<< | 67.32 | 0.00 | 0.0 | 0.0 | 1876.5 |
| 202 | 17748.57 | 417.80>> | 0.00 | 0.0 | 0.0 | 1202.2 |
| 202 | 21136.01 | -221.04<< | 0.00 | 0.0 | 0.0 | 6904.3 |
| 202 | 15422.25 | -5.32 | 0.00>> | 0.0 | 0.0 | 510.2 |
| 202 | 15250.26 | -5.17 | 0.00<< | 0.0 | 0.0 | 500.6 |
| 202 | 15422.25 | -5.32 | 0.00 | 0.0>> | 0.0 | 510.2 |
| 202 | 15250.26 | -5.17 | 0.00 | 0.0<< | 0.0 | 500.6 |
| 202 | 15422.25 | -5.32 | 0.00 | 0.0 | 0.0>> | 510.2 |
| 202 | 15250.26 | -5.17 | 0.00 | 0.0 | 0.0<< | 500.6 |
| 202 | 21035.29 | -18.55 | 0.00 | 0.0 | 0.0 | 11548.7>> |
| 202 | 17456.11 | 167.73 | 0.00 | 0.0 | 0.0 | -3925.2<< |
| 17 | 26818.23>> | 127.06 | 0.00 | 0.0 | 0.0 | 3849.5 |
| 17 | 11859.11<< | 67.32 | 0.00 | 0.0 | 0.0 | 625.2 |
| 17 | 17748.57 | 417.80>> | 0.00 | 0.0 | 0.0 | -6578.5 |
| 17 | 21136.01 | -221.04<< | 0.00 | 0.0 | 0.0 | 11025.1 |
| 17 | 15422.25 | -5.32 | 0.00>> | 0.0 | 0.0 | 612.1 |
| 17 | 15250.26 | -5.17 | 0.00<< | 0.0 | 0.0 | 599.7 |
| 17 | 15422.25 | -5.32 | 0.00 | 0.0>> | 0.0 | 612.1 |
| 17 | 15250.26 | -5.17 | 0.00 | 0.0<< | 0.0 | 599.7 |
| 17 | 15422.25 | -5.32 | 0.00 | 0.0 | 0.0>> | 612.1 |
| 17 | 15250.26 | -5.17 | 0.00 | 0.0 | 0.0<< | 599.7 |
| 17 | 21199.65 | -46.56 | 0.00 | 0.0 | 0.0 | 12147.5>> |
| 17 | 17772.76 | 211.64 | 0.00 | 0.0 | 0.0 | -7461.8<< |

LAV-Gelida. V.Rierussa. ELS Comb Rara.ECSW-71(1.00*G+1.00*LEV+1.00*P+1.0*SC+0.6*GT)

| BARRA 201 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 201 | 9856.08>> | 141.59 | -0.01 | 0.0 | 0.1 | 4306.8 |
| 201 | 3797.26<< | 18.84 | 0.00 | 0.0 | 0.0 | 738.5 |
| 201 | 7591.38 | 217.85>> | -0.01 | 0.0 | 0.1 | 8077.8 |
| 201 | 4368.91 | -134.31<< | 0.00 | 0.0 | 0.0 | -1750.6 |
| 201 | 5483.01 | 3.53 | 0.01>> | 0.0 | -0.1 | 330.9 |
| 201 | 5747.17 | 15.65 | -0.01<< | 0.0 | 0.1 | -528.3 |
| 201 | 5493.56 | 1.50 | 0.00 | 0.0>> | 0.0 | 329.6 |
| 201 | 5227.53 | 1.45 | 0.00 | 0.0<< | 0.0 | 324.1 |
| 201 | 7123.79 | -6.22 | -0.01 | 0.0 | 0.1>> | -4361.7 |
| 201 | 5232.20 | 5.93 | 0.01 | 0.0 | -0.1<< | 370.4 |
| 201 | 7905.30 | 161.79 | 0.00 | 0.0 | 0.0 | 9052.9>> |
| 201 | 6311.23 | -83.50 | -0.01 | 0.0 | 0.1 | -5603.1<< |
| 1 | 9856.08>> | 141.59 | -0.01 | 0.0 | 0.0 | 2943.0 |
| 1 | 3797.26<< | 18.84 | 0.00 | 0.0 | 0.0 | 556.7 |
| 1 | 7591.38 | 217.85>> | -0.01 | 0.0 | 0.0 | 5979.6 |
| 1 | 4368.91 | -134.31<< | 0.00 | 0.0 | 0.0 | -457.5 |
| 1 | 5483.01 | 3.53 | 0.01>> | 0.0 | 0.0 | 296.4 |
| 1 | 5747.17 | 15.65 | -0.01<< | 0.0 | 0.0 | -679.3 |
| 1 | 5493.56 | 1.50 | 0.00 | 0.0>> | 0.0 | 314.7 |
| 1 | 5227.53 | 1.45 | 0.00 | 0.0<< | 0.0 | 309.9 |
| 1 | 5493.56 | 1.50 | 0.00 | 0.0 | 0.0>> | 314.7 |
| 1 | 5227.53 | 1.45 | 0.00 | 0.0 | 0.0<< | 309.9 |
| 1 | 7854.55 | 125.33 | 0.00 | 0.0 | 0.0 | 7682.1>> |
| 1 | 6320.78 | 5.49 | -0.01 | 0.0 | 0.0 | -5182.7<< |

| BARRA 202 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 202 | 27148.38>> | 7.31 | 0.00 | 0.0 | 0.0 | 4089.8 |
| 202 | 11837.22<< | 52.00 | 0.00 | 0.0 | 0.0 | 1531.8 |
| 202 | 17759.29 | 453.23>> | 0.00 | 0.0 | 0.0 | 2203.1 |
| 202 | 21472.96 | -335.76<< | 0.00 | 0.0 | 0.0 | 4799.1 |
| 202 | 15422.25 | -5.32 | 0.00>> | 0.0 | 0.0 | 510.2 |
| 202 | 15250.26 | -5.17 | 0.00<< | 0.0 | 0.0 | 500.6 |
| 202 | 15422.25 | -5.32 | 0.00 | 0.0>> | 0.0 | 510.2 |
| 202 | 15250.26 | -5.17 | 0.00 | 0.0<< | 0.0 | 500.6 |
| 202 | 15422.25 | -5.32 | 0.00 | 0.0 | 0.0>> | 510.2 |
| 202 | 15250.26 | -5.17 | 0.00 | 0.0 | 0.0<< | 500.6 |
| 202 | 20585.13 | -94.64 | 0.00 | 0.0 | 0.0 | 8358.5>> |
| 202 | 17462.02 | 165.50 | 0.00 | 0.0 | 0.0 | -3928.7<< |
| 17 | 27148.38>> | 7.31 | 0.00 | 0.0 | 0.0 | 3956.2 |
| 17 | 11837.22<< | 52.00 | 0.00 | 0.0 | 0.0 | 565.9 |
| 17 | 17759.29 | 453.23>> | 0.00 | 0.0 | 0.0 | -6237.6 |
| 17 | 21472.96 | -335.76<< | 0.00 | 0.0 | 0.0 | 11057.1 |
| 17 | 15422.25 | -5.32 | 0.00>> | 0.0 | 0.0 | 612.1 |
| 17 | 15250.26 | -5.17 | 0.00<< | 0.0 | 0.0 | 599.7 |
| 17 | 15422.25 | -5.32 | 0.00 | 0.0>> | 0.0 | 612.1 |
| 17 | 15250.26 | -5.17 | 0.00 | 0.0<< | 0.0 | 599.7 |
| 17 | 15422.25 | -5.32 | 0.00 | 0.0 | 0.0>> | 612.1 |
| 17 | 15250.26 | -5.17 | 0.00 | 0.0 | 0.0<< | 599.7 |
| 17 | 21833.70 | -252.80 | 0.00 | 0.0 | 0.0 | 11407.9>> |
| 17 | 17772.76 | 211.64 | 0.00 | 0.0 | 0.0 | -7461.8<< |

Discretització: (6 vanos)



LAV GELIDA RIERA DE RIERUSSA
CARGAS SOBRE BASE DE CADA TABIQUE DE CONTRAFUERTES
ESTRIBO 2

1) Empuje de tierras

| | |
|---|---|
| Altura del muro | 14.80 m |
| Ancho | 14.00 m |
| Coeficiente Activo | 0.33 |
| Momento | 4992.36 mt |
| Esfuerzo Horizontal | 1011.96 t |

2) Sobrecarga sobre el terreno

| | |
|---|---|
| Altura del muro | 14.80 m |
| Sobrecarga | 3.00 t/m |
| Coeficiente Activo | 0.33 |
| Ancho | 14.00 m |
| Momento | 1517.95 mt |
| Esfuerzo Horizontal | 205.13 t |

3) Cargas Verticales Tablero

| | |
|---|---|
| Máxima | 994.39 t |
| Momento | 2600.32 mt |
| Mínima | 378.01 t |
| Momento | 988.50 mt |

4) Carga Horizontal en el sentido del empuje de tierras

| | |
|---|---|
| Esfuerzo Horizontal | 1479.52 t |
| Altura | 13.60 m |
| Momento | 20121.49 mt |

5) Carga Horizontal contraria al sentido del empuje de tierras

| | |
|---|---|
| Esfuerzo Horizontal | 1479.52 t |
| Altura | 13.60 m |
| Momento | 20121.49 mt |

6) Peso Propio Estribo

| | |
|---|---|
| Carga Vertical | 1846.28 t |

COMBINACIONES

1) (1.5 (1+2+3max+4)+1.35(6))/2

| | |
|---|---|
| Vd | 1420.33 t |
| Hd | 2022.46 t |
| Md | 21924.09 mt |

2) (1.5 (1+2+3min+4)+1.35(6))/2

| | |
|---|---|
| Vd | 1112.14 t |
| Hd | 2022.46 t |
| Md | 20715.22 mt |

3) (1.5 (1+2+3max+5)+1.35(6))/2

| | |
|---|---|
| Vd | 1420.33 t |
| Hd | -501.09 t |
| Md | -10535.80 mt |

4) (1.5 (1+2+3min+5)+1.35(6))/2

| | |
|---|---|
| Vd | 1112.14 t |
| Hd | -501.09 t |
| Md | -11341.71 mt |

CALCULO DE ESFUERZOS ULTIMOS EN SECCIONES DE HORMIGON
ARMADO Y PRETENSADO

Nombre de la sección: ESTRIBO 2 M POSITIVO

NUMERO DE TRAMOS DE HORMIGON: 2

| Trap. | Altura | Asup | Ainf |
|---|---|---|---|
| 1 | 200.0 | 730.0 | 730.0 |
| 2 | 800.0 | 200.0 | 200.0 |

NUMERO DE CAPAS DE ACERO PASIVO: 5

| Capa | Area | Profund. |
|---|---|---|
| 1 | 65.4 | 5.0 |
| 2 | 112.6 | 959.0 |
| 3 | 112.6 | 971.0 |
| 4 | 112.6 | 983.0 |
| 5 | 112.6 | 995.0 |

CARACTERISTICAS DE LOS MATERIALES:

Resistencia característica del hormigón..(Kp/cm²): 250
Coeficiente de minoración del hormigón.....: 1.5
Resistencia característica del pasivo....(Kp/cm²): 5100
Coeficiente de minoración del pasivo.....: 1.15

CONTROL DEL DIAGRAMA:

Se ha introducido el diagrama de interacción completo:

Profundidad mínima de la fibra neutra: -1000
Profundidad máxima de la fibra neutra: 3000
Número de divisiones ( < 50 ): 50

CARACTERISTICAS MECANICAS DE LA SECCION:

Canto total de la sección (cm.): 1000

Profundidad del centro de gravedad de la sección bruta (cm.): 361.4379
Area total de la sección bruta (cm2.): 306000
Inercia de la sección bruta (cm4.): 2.810497E+10

Profundidad del centro de gravedad de la sección neta (cm.): 360.6068
Area total de la sección neta (cm2.): 305484.2
Inercia de la sección neta (cm4.): 2.792571E+10

Profundidad del centro de gravedad de la sección hom. (cm.): 366.3585
Area total de la sección hom. (cm2.): 309089.8
Inercia de la sección hom. (cm4.): 2.915991E+10

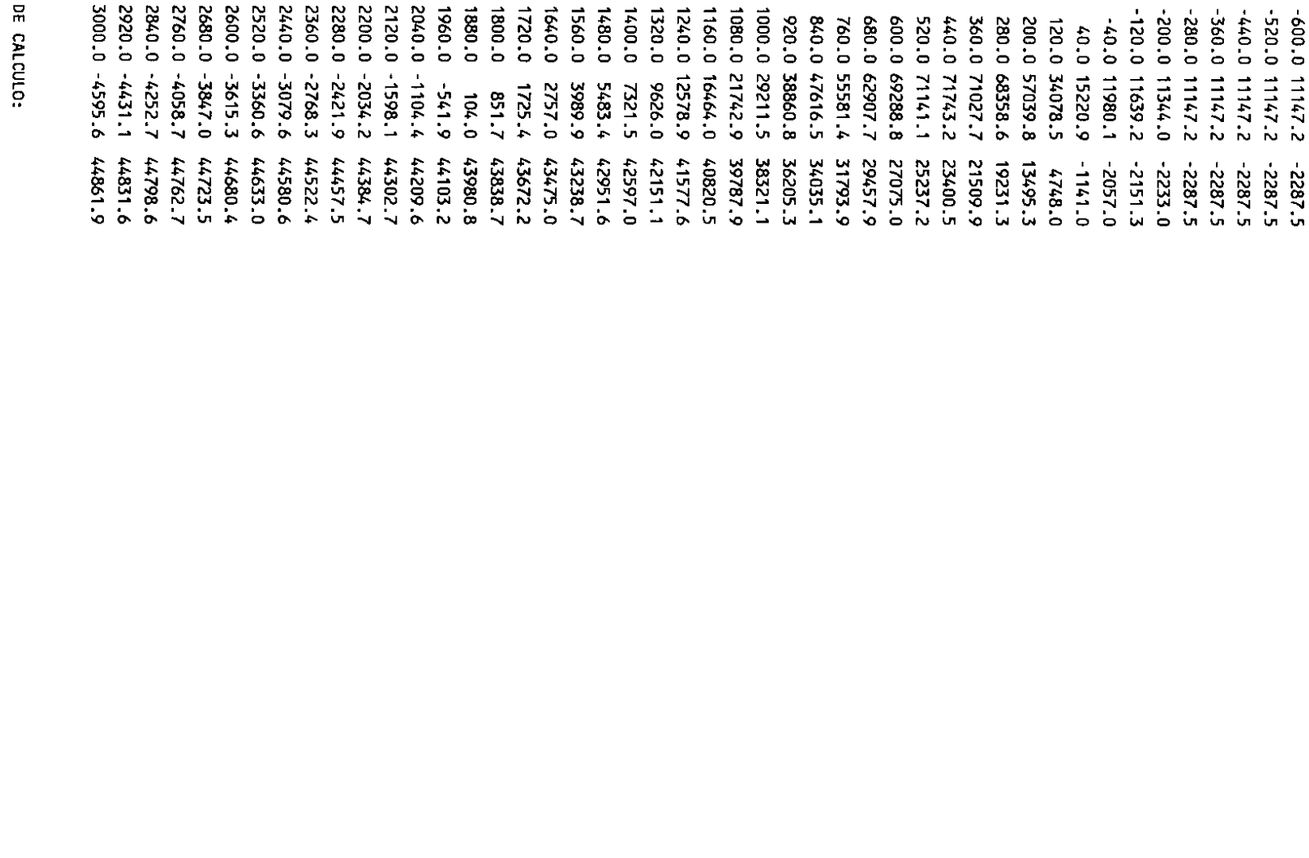
DIAGRAMA DE INTERACCION:

| XF | Mult. | Nult. |
|---|---|---|

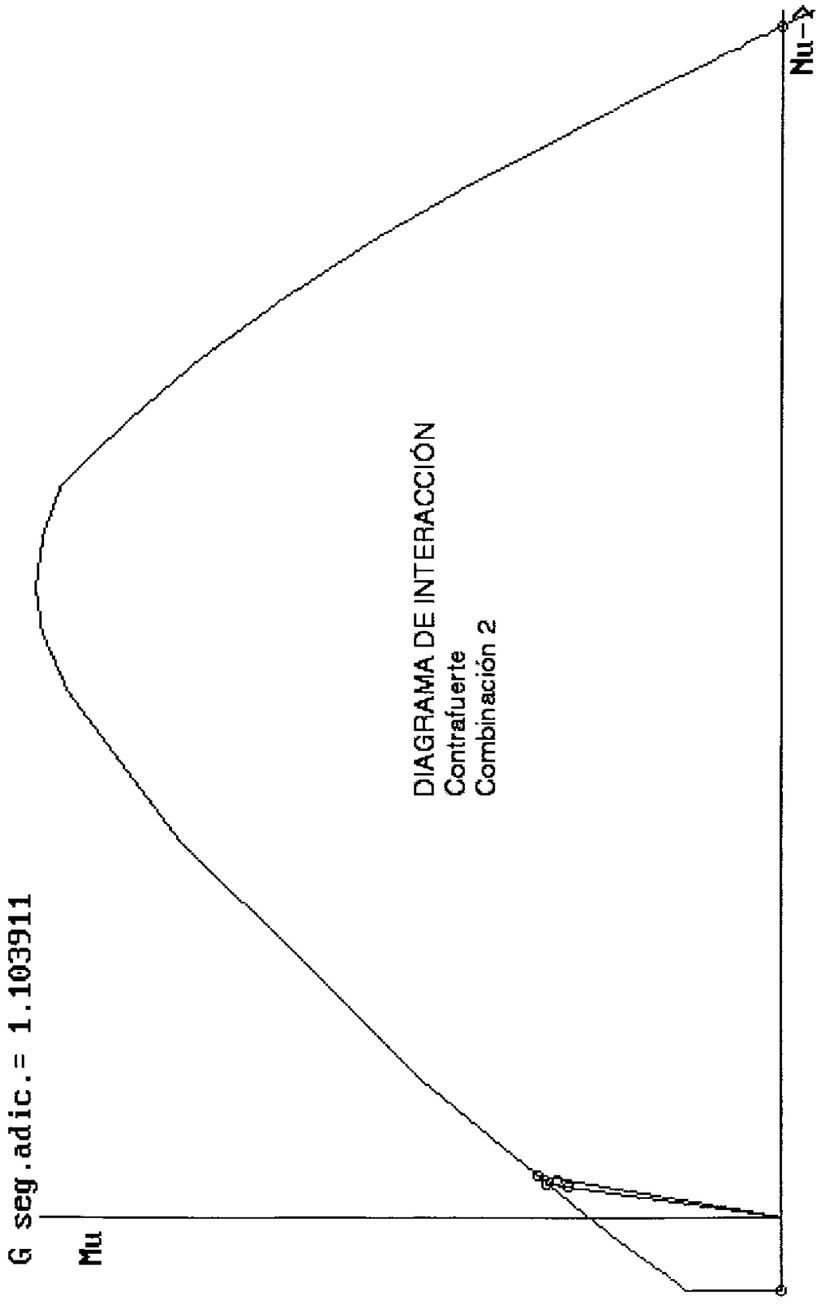
| (m.) | (mT.) | (T.) |
|---|---|---|
| %- 1000.0 | 0.0 | -2287.5 |
| -920.0 | 11147.2 | -2287.5 |
| -840.0 | 11147.2 | -2287.5 |
| -760.0 | 11147.2 | -2287.5 |
| -680.0 | 11147.2 | -2287.5 |
| -600.0 | 11147.2 | -2287.5 |
| -520.0 | 11147.2 | -2287.5 |
| -440.0 | 11147.2 | -2287.5 |
| -360.0 | 11147.2 | -2287.5 |
| -280.0 | 11147.2 | -2287.5 |
| -200.0 | 11344.0 | -2233.0 |
| -120.0 | 11639.2 | -2151.3 |
| -40.0 | 11980.1 | -2057.0 |
| 40.0 | 15220.9 | -1141.0 |
| 120.0 | 34078.5 | 4748.0 |
| 200.0 | 57039.8 | 13495.3 |
| 280.0 | 68358.6 | 19231.3 |
| 360.0 | 71027.7 | 21509.9 |
| 440.0 | 71743.2 | 23400.5 |
| 520.0 | 71141.1 | 25237.2 |
| 600.0 | 69288.8 | 27075.0 |
| 680.0 | 62907.7 | 29457.9 |
| 760.0 | 55581.4 | 31793.9 |
| 840.0 | 47616.5 | 34035.1 |
| 920.0 | 38860.8 | 36205.3 |
| 1000.0 | 29211.5 | 38321.1 |
| 1080.0 | 21742.9 | 39787.9 |
| 1160.0 | 16464.0 | 40820.5 |
| 1240.0 | 12578.9 | 41577.6 |
| 1320.0 | 9626.0 | 42151.1 |
| 1400.0 | 7321.5 | 42597.0 |
| 1480.0 | 5483.4 | 42951.6 |
| 1560.0 | 3989.9 | 43238.7 |
| 1640.0 | 2757.0 | 43475.0 |
| 1720.0 | 1725.4 | 43672.2 |
| 1800.0 | 851.7 | 43838.7 |
| 1880.0 | 104.0 | 43980.8 |
| 1960.0 | -541.9 | 44103.2 |
| 2040.0 | -1104.4 | 44209.6 |
| 2120.0 | -1598.1 | 44302.7 |
| 2200.0 | -2034.2 | 44384.7 |
| 2280.0 | -2421.9 | 44457.5 |
| 2360.0 | -2768.3 | 44522.4 |
| 2440.0 | -3079.6 | 44580.6 |
| 2520.0 | -3360.6 | 44633.0 |
| 2600.0 | -3615.3 | 44680.4 |
| 2680.0 | -3847.0 | 44723.5 |
| 2760.0 | -4058.7 | 44762.7 |
| 2840.0 | -4252.7 | 44798.6 |
| 2920.0 | -4431.1 | 44831.6 |
| 3000.0 | -4595.6 | 44861.9 |

ESFUERZOS DE CALCULO:

Axil de cálculo : 1420.000 / Momento de cálculo : 21924.00 / Coef. seg. adicional : 1.086
Axil de cálculo : 1112.000 / Momento de cálculo : 20715.00 / Coef. seg. adicional : 1.100




INTRODUZCA Nd,Md (0,0)=SALIR :1420,21924




CALCULO DE ESFUERZOS ULTIMOS EN SECCIONES DE HORMIGON ARMADO Y PRETENSADO

Nombre de la sección: ESTRIBO 2 M NEGATIVO

NUMERO DE TRAMOS DE HORMIGON: 2

| Trap. | Altura | Asup | Ainf |
|---|---|---|---|
| 1 | 800.0 | 200.0 | 200.0 |
| 2 | 200.0 | 200.0 | 200.0 |

NUMERO DE CAPAS DE ACERO PASIVO: 5

| Capa | Area | Profund. |
|---|---|---|
| 1 | 112.6 | 5.0 |
| 2 | 112.6 | 17.0 |
| 3 | 112.6 | 29.0 |
| 4 | 112.6 | 31.0 |
| 5 | 181.3 | 995.0 |

CARACTERISTICAS DE LOS MATERIALES:

Resistencia característica del hormigón..(Kp/cm²): 250
Coeficiente de minoración del hormigón.....: 1.5
Resistencia característica del pasivo....(Kp/cm²): 5100
Coeficiente de minoración del pasivo.....: 1.15

CONTROL DEL DIAGRAMA:

Se ha introducido el diagrama de interacción completo:

Profundidad mínima de la fibra neutra: -1000
Profundidad máxima de la fibra neutra: 3000
Número de divisiones ( < 50 ): 50

CARACTERISTICAS MECANICAS DE LA SECCION:

Canto total de la sección (cm.): 1000

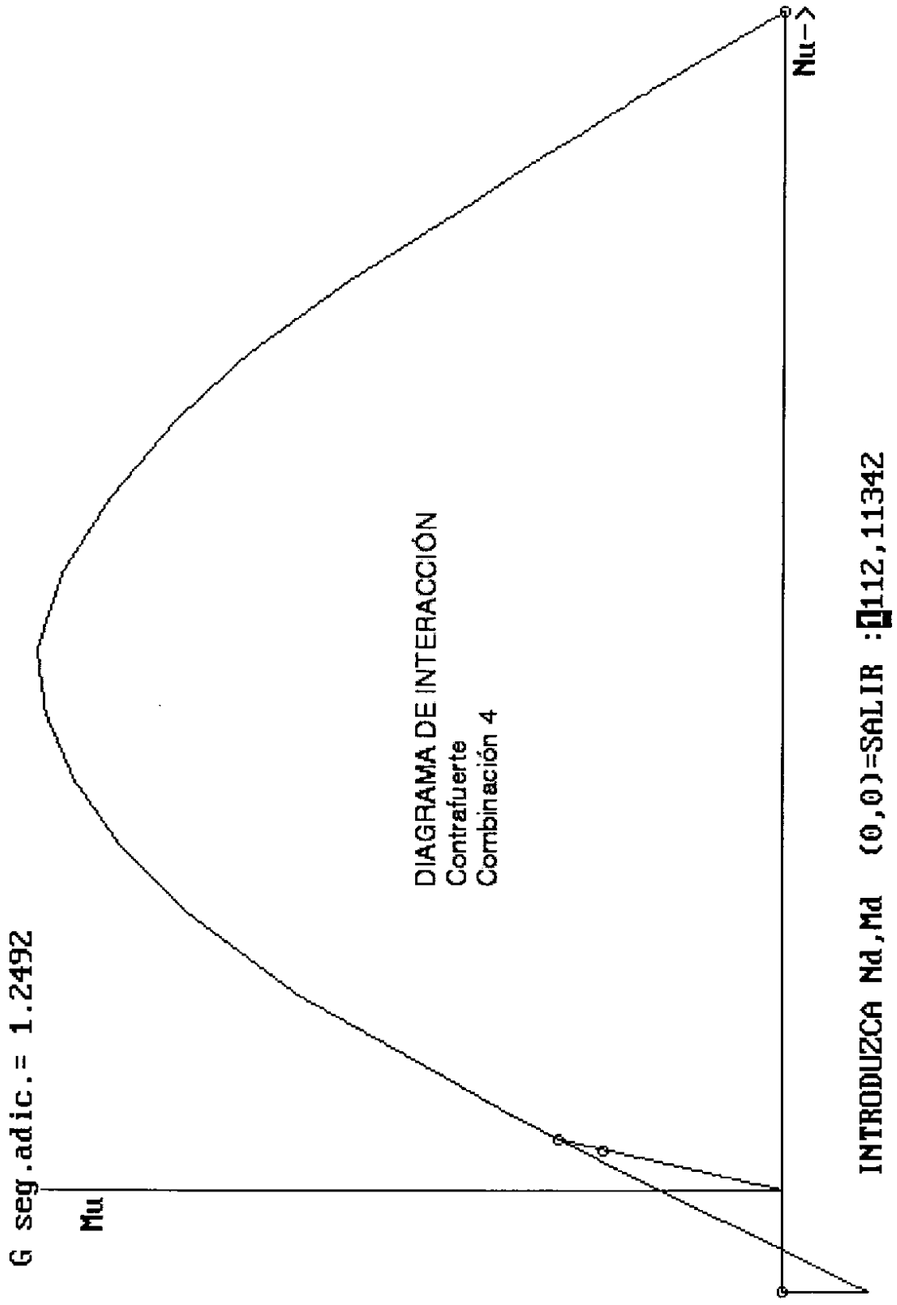
Profundidad del centro de gravedad de la sección bruta (cm.): 500
Area total de la sección bruta (cm2.): 200000
Inercia de la sección bruta (cm4.): 1.666667E+10

Profundidad del centro de gravedad de la sección neta (cm.): 500.633
Area total de la sección neta (cm2.): 199368.3
Inercia de la sección neta (cm4.): 1.651857E+10

Profundidad del centro de gravedad de la sección hom. (cm.): 496.2904
Area total de la sección hom. (cm2.): 203783.9
Inercia de la sección hom. (cm4.): 1.75468E+10

ESFUERZOS DE CALCULO:

Axil de cálculo : 1112.000 / Momento de cálculo : 11342.00 / Coef. seg. adicional : 1.249




## ARMADURA DE CORTANTE
### EHE Art. 44

**PROYECTO :** LAV GELIDA
Riera de Rierussa
Estribo 2

**DATOS :**

SECCIÓN

| | | | | |
|---|---|---|---|---|
| Canto | h = | 10.00 | m | |
| Ancho | b = | 2.00 | m | |
| Ancho mínimo | $b_o$ = | 2.00 | m | |
| Área (Sec. Rect.) | A = | 20.00 | m | |
| Recubrimiento | r = | 0.05 | m | |
| A. long. pasiva | $A_s$ = | 450.35 | cm2 | Armadura longitudinal traccionada anclada a |
| A. long. activa | $A_p$ = | 0.00 | cm2 | una distancia > d a patir de la sección en estudio |

MATERIALES

| | | | | |
|---|---|---|---|---|
| Hormigón | $F_{ck}$ = | 25.00 | N/mm2 | |
| | $\gamma_c$ = | 1.50 | | |
| Acero pasivo | $F_{yk}$ = | 500.00 | N/mm2 | |
| | $\gamma_s$ = | 1.15 | | |
| Acero activo | $F_{yp}$ = | 0.00 | N/mm2 | |
| | $\gamma_p$ = | 1.00 | | |

ESFUERZOS

| | | | | |
|---|---|---|---|---|
| Cortante de cálculo | $V_d$ = | 20224.60 | KN | |
| Cortante pretensado | $V_{pd}$ = | 0.00 | KN | |
| C. Sección variable | $V_{cd}$ = | 0.00 | KN | |
| Axil de cálculo | $N_d$ = | 0.00 | KN | Tracción positiva |
| Ángulo bielas | $\theta$ = | 45.00 | ° | 0.5 < cotg $\theta$ < 2.0 |
| Tensión long. | $\sigma_x$ = | 0.00 | N/mm2 | Tensión a nivel del cdg |
| Tensión transv. | $\sigma_y$ = | 0.00 | N/mm2 | Tensión a nivel del cdg |

ARMADURA

| | | | |
|---|---|---|---|
| Ángulo estribos | $\alpha$ = | 90.00 | ° |

**CÁLCULOS PREVIOS:**

| | | | |
|---|---|---|---|
| Cortante reducido | $V_{rd}$ = | 20224.60 | KN |
| Canto útil | d = | 9.95 | m |
| Brazo mecánico | z = | 8.96 | m |
| Compr. hormigón | $f_{1cd}$ = | 10.00 | N/mm2 |
| Tracción hormigón | $f_{ct,m}$ = | 2.56 | N/mm2 |
| Coef. reducción | K = | 1.00 | |
| | $\sigma'_{cd}$ = | 0.00 | N/mm2 |
| Cuantía mecánica arm. | $\rho_1$ = | 0.00 | |
| | $\xi$ = | 1.14 | |
| | cotg $\theta$ = | 1.00 | |
| Inclinación fisuras | cotg $\theta_e$ = | 1.00 | |
| | $\beta$ = | 1.00 | |

**RESULTADOS:**

AGOTAMIENTO POR COMPRESIÓN

$V_{u1}$ = 99500.00 KN >= $V_{rd}$ CUMPLE

AGOTAMIENTO POR TRACCIÓN

| | | |
|---|---|---|
| $V_{cu}$ = | 4048.68 | KN |
| $V_{su}$ = | 16175.92 | KN |

$A_\alpha$ = 45.16 cm2/m

# ARMADURA DE CORTANTE

## EHE Art. 44

**PROYECTO :** LAV GELIDA
Riera de Rierussa Murete
Estribo 2

**DATOS :**

SECCIÓN

| | | | |
|---|---|---|---|
| Canto | h = | 3.40 m | |
| Ancho | b = | 2.00 m | |
| Ancho mínimo | $b_o$ = | 2.00 m | |
| Área (Sec. Rect.) | A = | 6.80 m | |
| Recubrimiento | r = | 0.05 m | |
| A. long. pasiva | $A_s$ = | 225.18 cm2 | Armadura longitudinal traccionada anclada a |
| A. long. activa | $A_p$ = | 0.00 cm2 | una distancia > d a patir de la sección en estudio |

MATERIALES

| | | | |
|---|---|---|---|
| Hormigón | $F_{ck}$ = | 25.00 N/mm2 | |
| | $\gamma_c$ = | 1.50 | |
| Acero pasivo | $F_{yk}$ = | 500.00 N/mm2 | |
| | $\gamma_s$ = | 1.15 | |
| Acero activo | $F_{yp}$ = | 0.00 N/mm2 | |
| | $\gamma_p$ = | 1.00 | |

ESFUERZOS

| | | | |
|---|---|---|---|
| Cortante de cálculo | $V_d$ = | 11096.40 KN | |
| Cortante pretensado | $V_{pd}$ = | 0.00 KN | |
| C. Sección variable | $V_{cd}$ = | 0.00 KN | |
| Axil de cálculo | $N_d$ = | 0.00 KN | Tracción positiva |
| Ángulo bielas | $\theta$ = | 45.00 ° | 0.5 < cotg $\theta$ < 2.0 |
| Tensión long. | $\sigma_x$ = | 0.00 N/mm2 | Tensión a nivel del cdg |
| Tensión transv. | $\sigma_y$ = | 0.00 N/mm2 | Tensión a nivel del cdg |

ARMADURA

| | | |
|---|---|---|
| Ángulo estribos | $\alpha$ = | 90.00 ° |

**CÁLCULOS PREVIOS:**

| | | |
|---|---|---|
| Cortante reducido | $V_{rd}$ = | 11096.40 KN |
| Canto útil | d = | 3.35 m |
| Brazo mecánico | z = | 3.02 m |
| Compr. hormigón | $f_{1cd}$ = | 10.00 N/mm2 |
| Tracción hormigón | $f_{ct,m}$ = | 2.56 N/mm2 |
| Coef. reducción | K = | 1.00 |
| | $\sigma'_{cd}$ = | 0.00 N/mm2 |
| Cuantía mecánica arm. | $\rho_1$ = | 0.00 |
| | $\xi$ = | 1.24 |
| | cotg $\theta$ = | 1.00 |
| Inclinación fisuras | cotg $\theta_e$ = | 1.00 |
| | $\beta$ = | 1.00 |

**RESULTADOS:**

AGOTAMIENTO POR COMPRESIÓN

$V_{u1}$ = 33500.00 KN >= $V_{rd}$ CUMPLE

AGOTAMIENTO POR TRACCIÓN

| | | |
|---|---|---|
| $V_{cu}$ = | 1694.89 KN | |
| $V_{su}$ = | 9401.51 KN | |

**$A_\alpha$ = 77.96 cm2/m**

GELIDA. RIERUSSA.E-2 13-10-00

"ALTURA TOT. DEL ESTRIBO z1(m):" 17.80 "NUM. HIP. CARGA Nhip:" 3

| DATOS DEL MURETE DE PROTECCION | | | CARGADERO HORIZONTAL | | |
|---|---|---|---|---|---|
| "Longitud | L1(m):" | 14.00 | "Longitud | L2(m):" | 14.00 |
| "Ancho | b1(m):" | 0.001 | "Ancho total | b2(m):" | 10.00 |
| "Canto | h1(m):" | 1.20 | "Canto | h2(m):" | 0.00 |
| "Penetrac. en cargadero | d (m):" | 0.00 | "Dist.apoyo-paramto | bm(m):" | 16.00 |

| DATOS DE LOS TABIQUES VERTICALES | | | ZAPATA DEL ESTRIBO | | |
|---|---|---|---|---|---|
| "Num. de tabiques | n :" | 1 | "Longitud | L3(m):" | 14.20 |
| "Ancho de tabique | Ln(m):" | 14.00 | "Ancho | b3(m):" | 19.00 |
| "Separac. de tab. | st(m):" | 0.00 | "Canto | h3(m):" | 3.00 |
| "Acartel. traser. | bt(m):" | 0.00 | "Vuelo punt. | bp(m):" | 6.00 |
| "Acartel. delant. | bd(m):" | 0.00 | "Vuelo talón | bs(m):" | 3.00 |

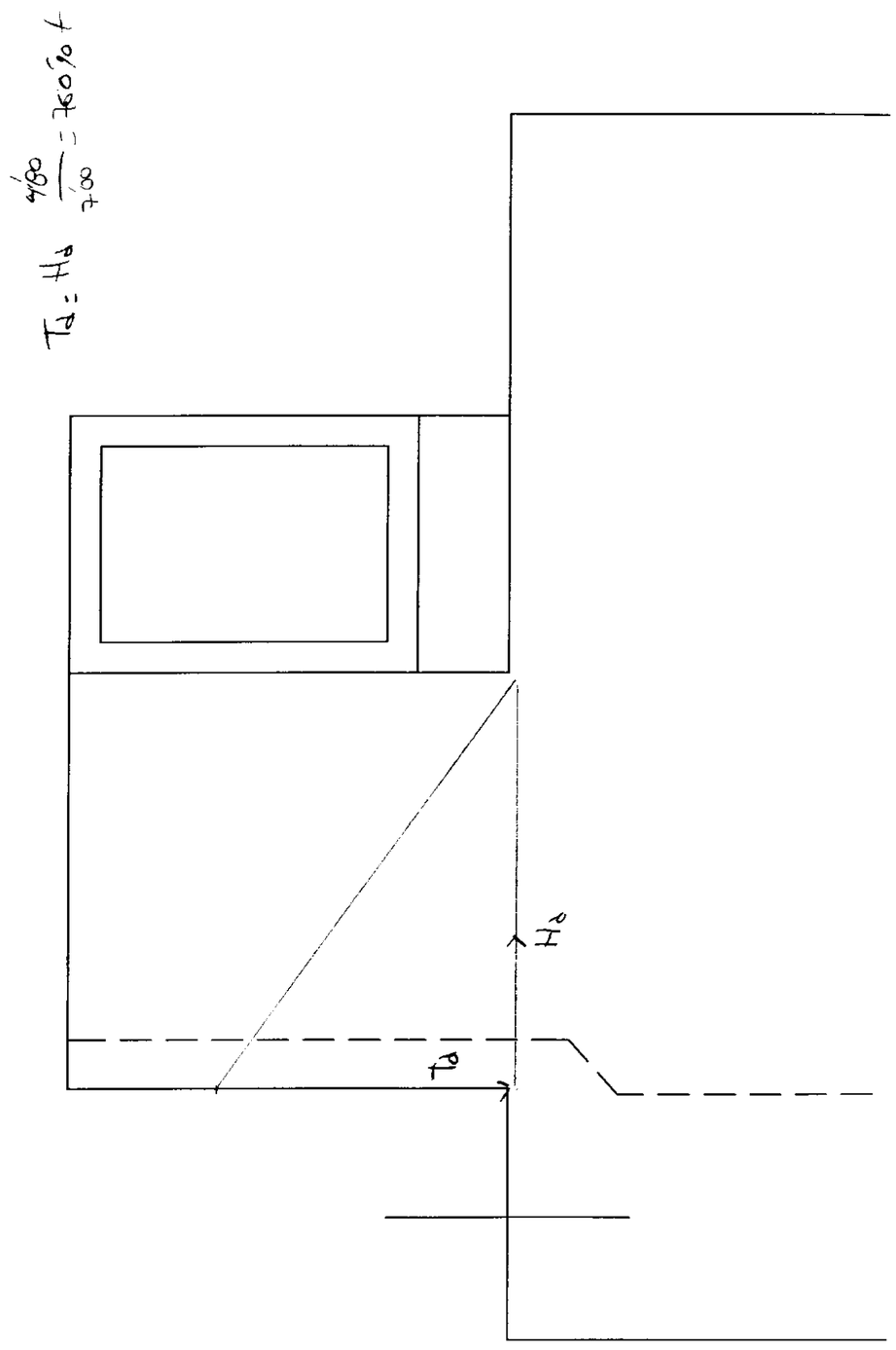
| DERRAME DELANTERO DE TIERRAS | | | DATOS DEL TERRENO | | |
|---|---|---|---|---|---|
| "Alt.s/extr.zapata | zB(m):" | 2.00 | "Peso especif.g(t/m3):" | | 2.00 |
| "Alt.vacío tierras | zC(m):" | 0.00 | "Angulo roz.int. $\phi$(°):" | | 30 |
| | | | "Angulo de talud $\beta$(°):" | | 0 |

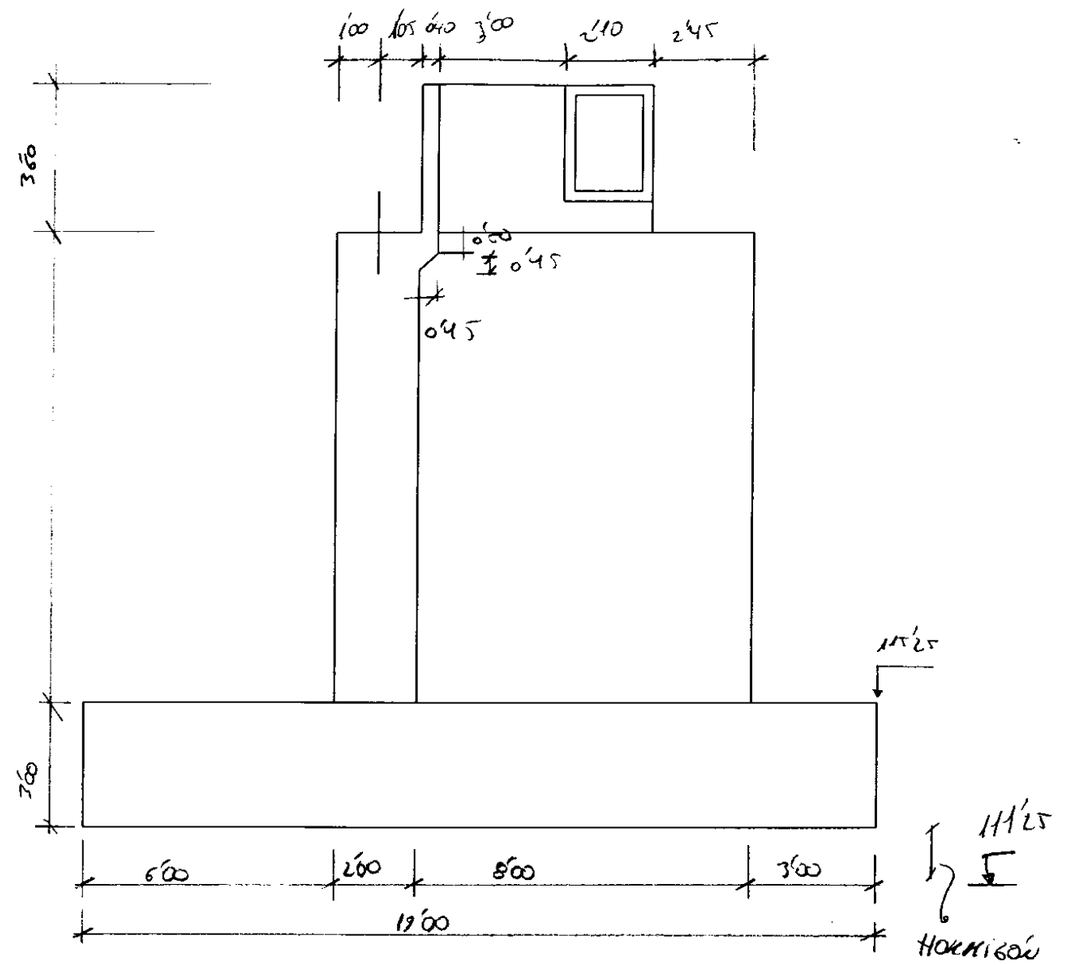
| RESISTENCIAS MATERIALES | | | COEFICIENTES SEGURIDAD | | |
|---|---|---|---|---|---|
| "Hormigón alz. fck(k/cm²):" | | 250 | "Gamma hormigón | gc:" | 1.5 |
| "Hormigón zap. fck(k/cm²):" | | 250 | "Gamma acero | gs:" | 1.15 |
| "Acero armado fyk(k/cm²):" | | 5100 | | | |

| CARGAS ACTUANTES S/ESTRIBO | HIP 1 | HIP 2 | HIP 3 | HIP 4 | HIP 5 |
|---|---|---|---|---|---|
| "Vert.unif. s/ relleno q(t/m²):" | 1.00 | 3.00 | 3.00 | | |
| "Vert.total del tabl. Vtab (t):" | -578.00 | 416.39 | -200.00 | | |
| "Hor. total del tabl. Htab (t):" | 0.00 | 1479.52 | 1479.52 | | |
| "Coef. de mayor. de cargas gf:" | 1.50 | 1.50 | 1.50 | | |
| "Coef. de mayor. de empujes ge:" | 1.00 | 1.00 | 1.00 | | |

GELIDA. RIERUSSA.E-2 13-10-00

| Hipótesis núm. = | 1 | 2 | 3 |
|---|---|---|---|
| **EMPUJE TOTAL ACTIVO** | | | |
| Valor total empuje activo (t): Hemp = | 1314.53 | 1454.11 | 1454.11 |
| Altura s/fondo de zapata (m): Yemp = | 6.07 | 6.34 | 6.34 |
| **CARGA VERTICAL TOTAL** | | | |
| Carga vert. total s/trrno (t): Vtot = | 7904.30 | 8983.89 | 8367.50 |
| Dist. al borde ant. zapata(m): Xtot = | 11.14 | 7.09 | 7.62 |
| **RESULTANTE HORIZONTAL TOTAL** | | | |
| Resultante horizont.total (t): Htot = | 1314.53 | 2933.63 | 2933.63 |
| **COEFS. SEGURIDAD VUELCO Y DESLIZAMIENTO** | | | |
| Coef. de seguridad al vuelco : g.vue= | 12.03 | 2.89 | 2.89 |
| Coef. de seguridad al desliz.: g.des= | 3.47 | 1.77 | 1.65 |
| **TENSIONES TERRENO BAJO ZAPATA** | | | |
| Tensión trrno puntera (t/m²): σ pun= | 14.14 | 58.60 | 49.46 |
| Tensión trrno talón (t/m²): σ tal= | 44.45 | 7.99 | 12.56 |
| Tensión cobaricéntrica (t/m²): σ cob= | 35.40 | 44.60 | 38.69 |
| **ARMADURAS LONGITUDINALES ZAPATA** | | | |
| Momento zapata sec. 1 (mt/m): m1 = | 305.04 | -166.63 | -113.66 |
| Momento zapata sec. 2 (mt/m): m2 = | 484.71 | 1922.65 | 1613.19 |
| Armadura zapata sec.1 (cm²/m): As1 = | 24.05 | -12.93 | -8.84 |
| Armadura zapata sec.2 (cm²/m): As2 = | 38.45 | 162.25 | 134.09 |
| Armadura mínima zapat.(cm²/m): Amin = | 52.92 | 52.92 | 52.92 |

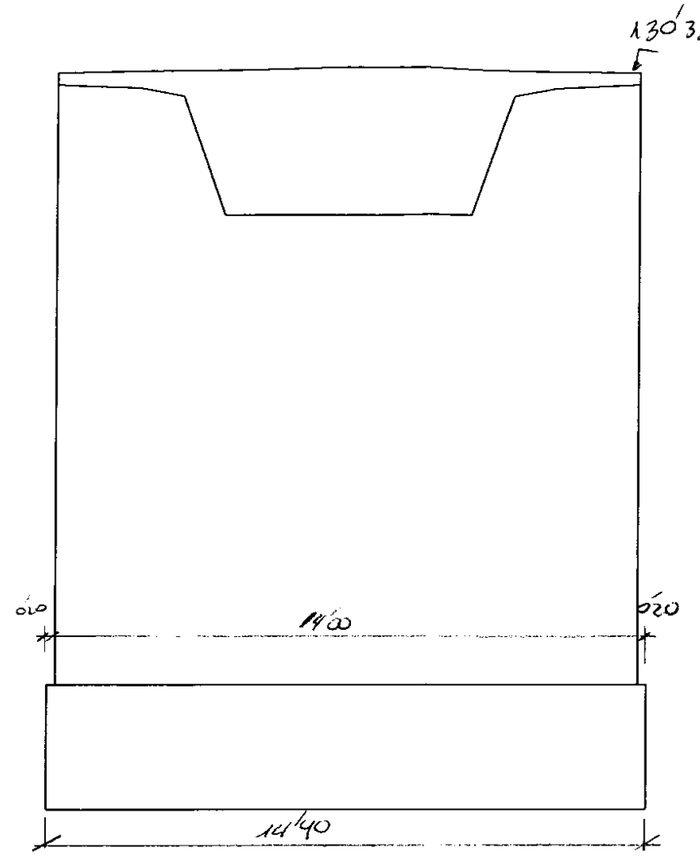


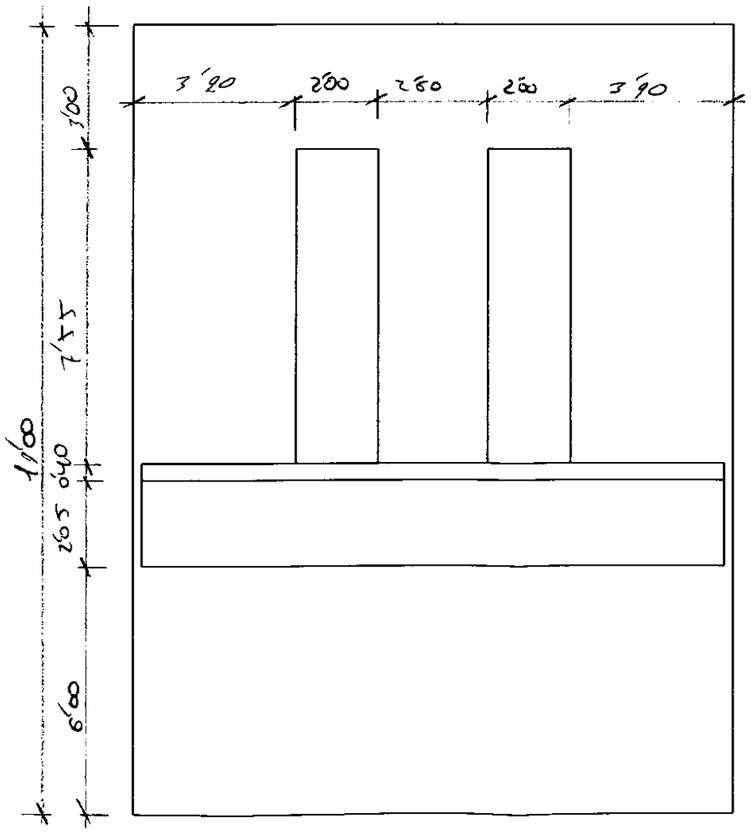


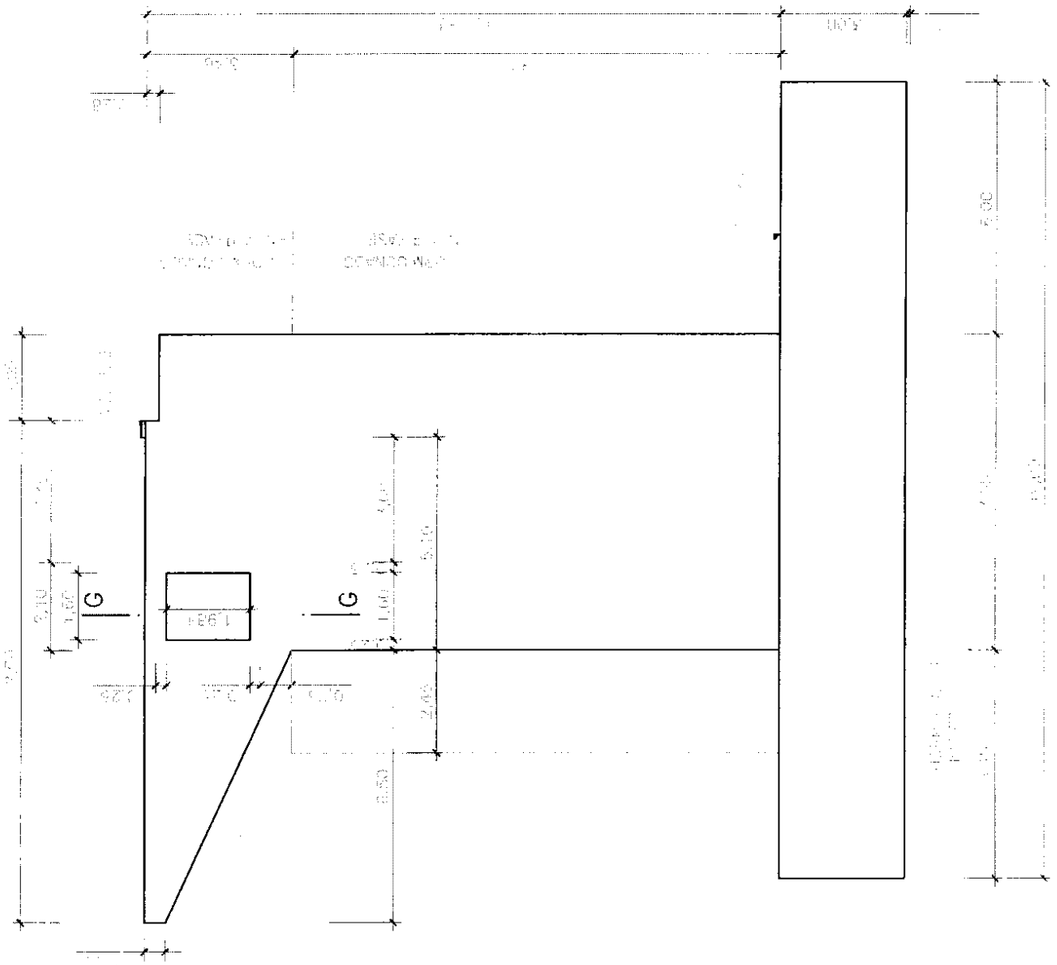

ESTRIBO 2

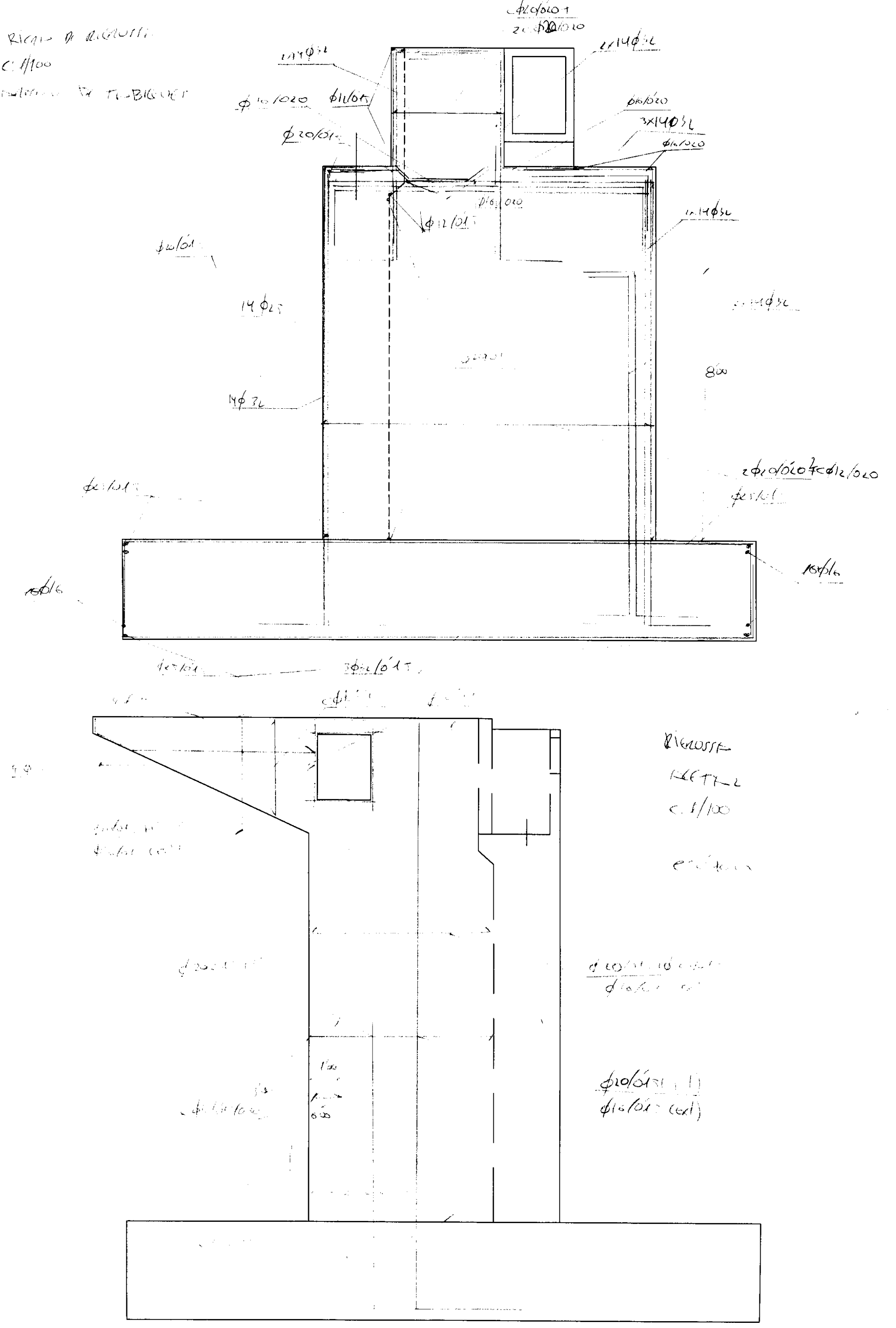
RIEGO DE RIEGOLLS

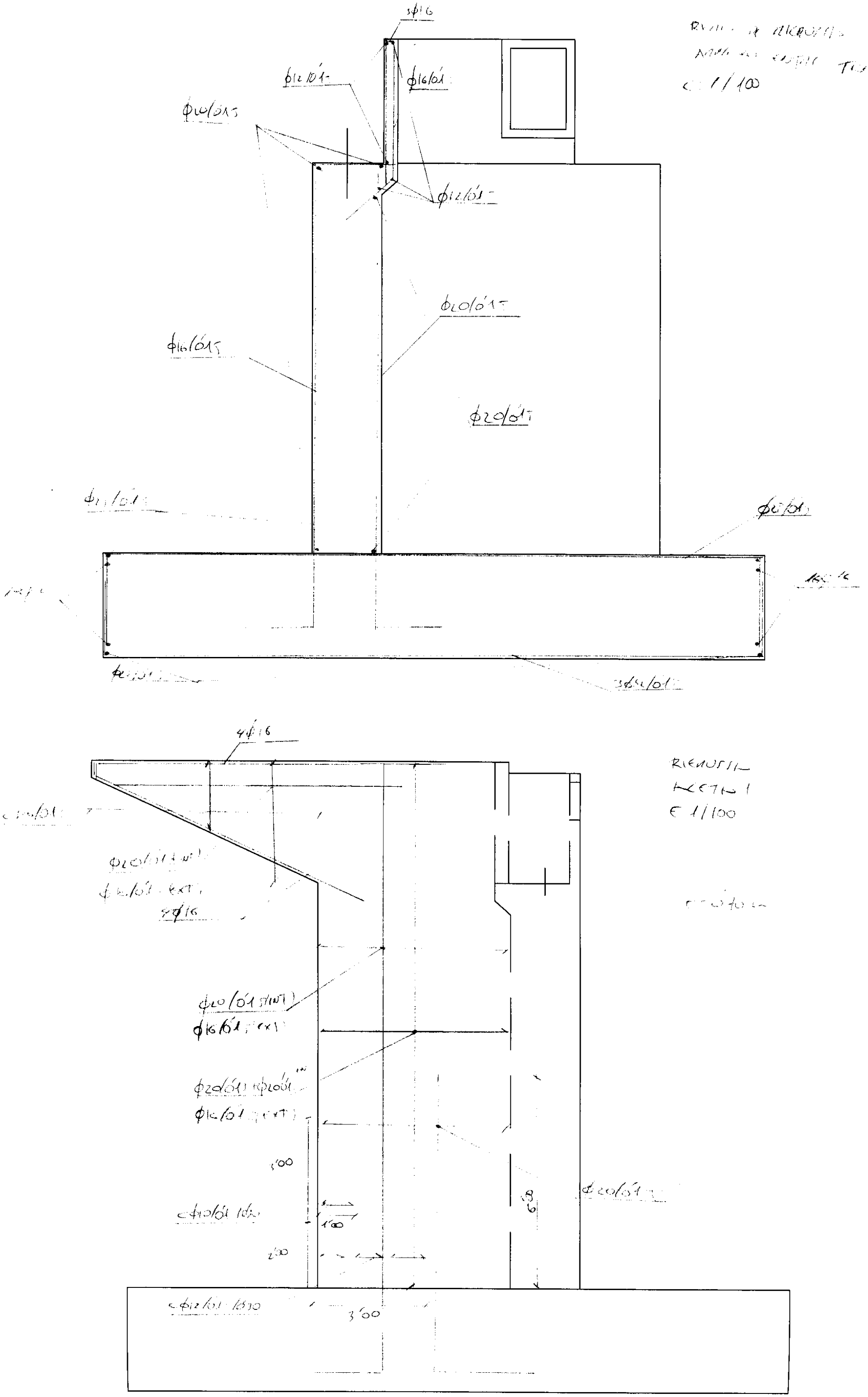
E: 1/150



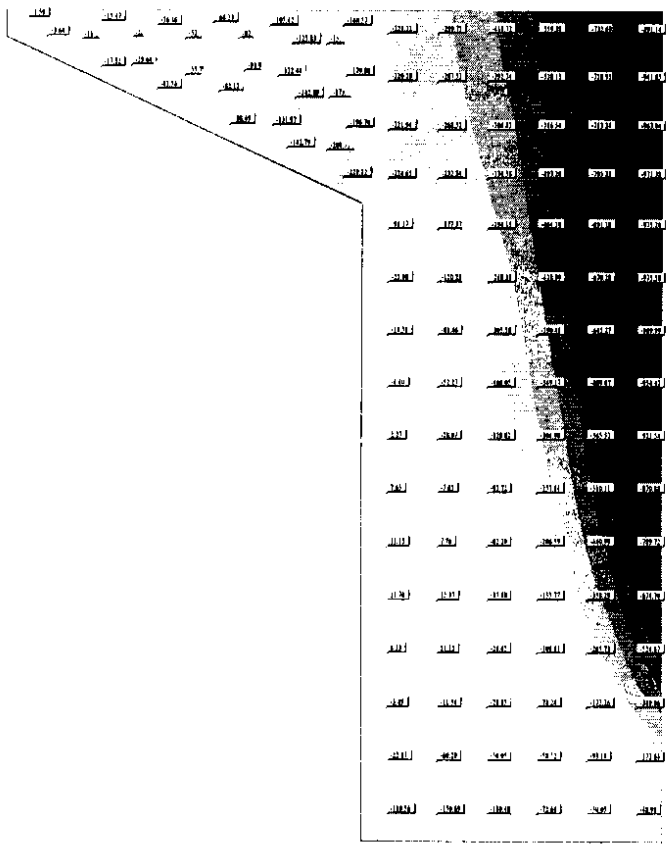








sφ16
φ12/01
φ16/01
φ10/015
φ12/01
φ16/015
φ20/01
φ20/01
φ12/01
φ20/01
4φ16
φ20/01 (INT)
φ16/01 (INT)
φ20/01 (INT)
φ12/01 (INT)
100
150
300
600
300

## MXX (kNm/m)




$M_d = 975'58 \cdot 1'91 = 1867'32\ kN$

$e = 0'70\ m$

$h_s = 37'70\ cm$ $\phi 20/15 + \phi 20/30$



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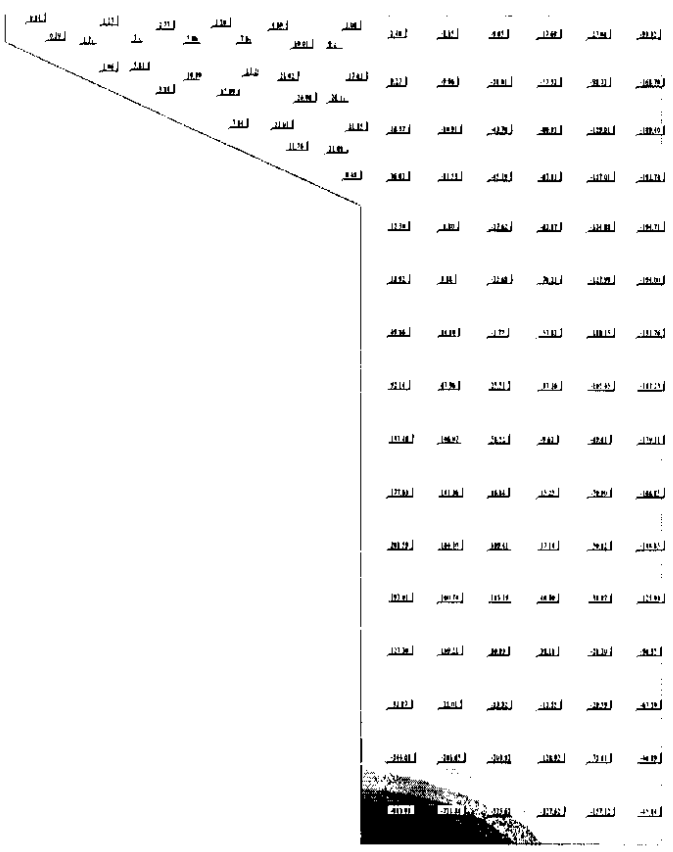
Proyecto: RIERUSSA. E2 ALETAS

## MYY (kNm/m)



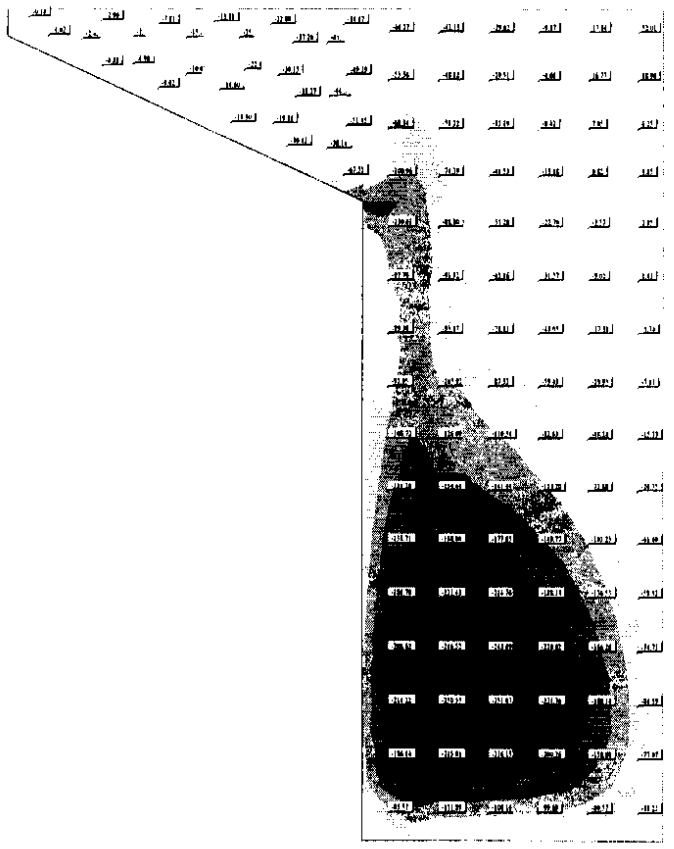

$M_d = 915'75 \cdot 1'91 = 1748'78\ kN$

$e = 0'70\ m$

$h_s = 38'10\ cm$

$\phi 20/15 + \phi 20/30$

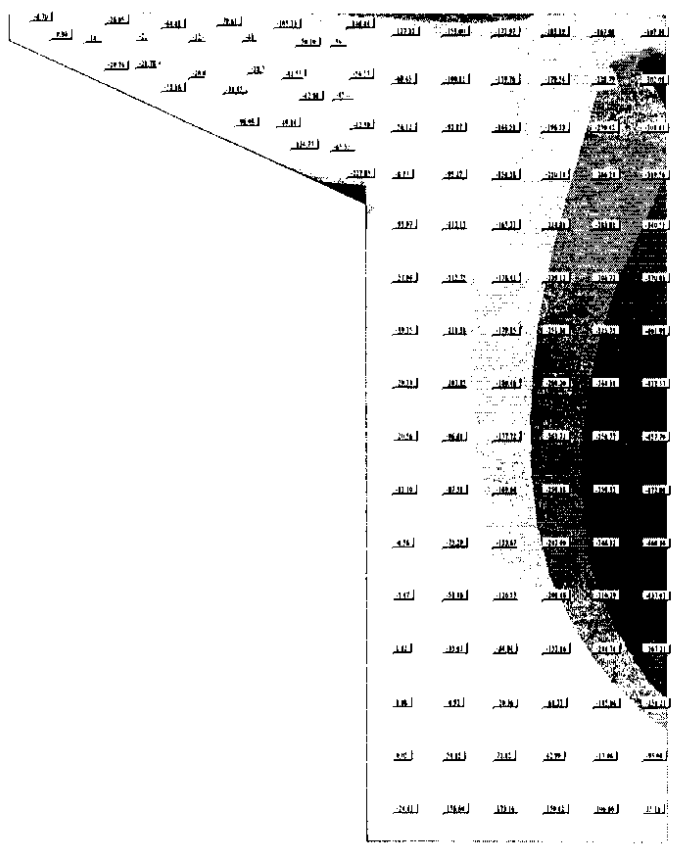
## MXY (kNm/m)



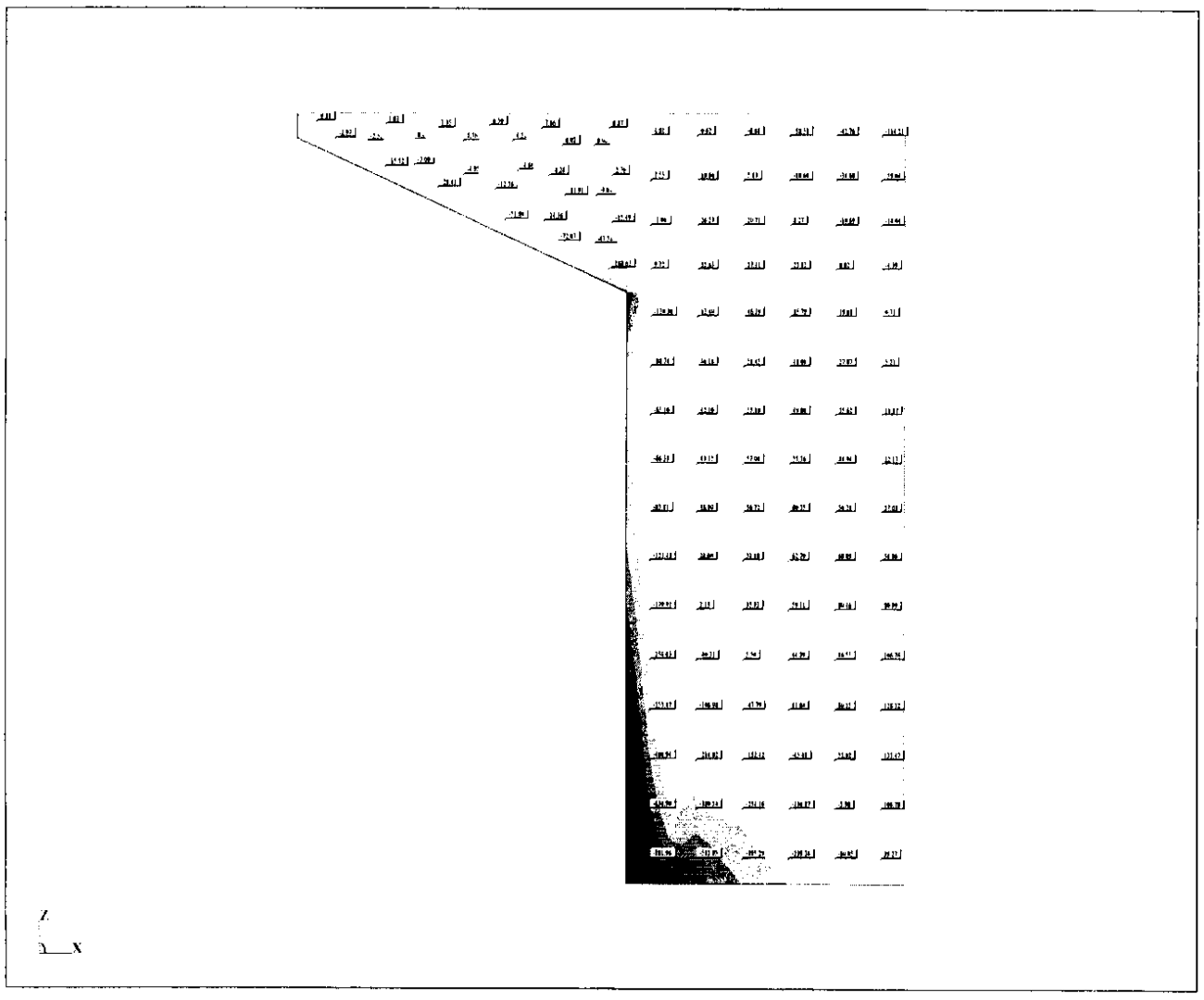




## QXX (kN/m)



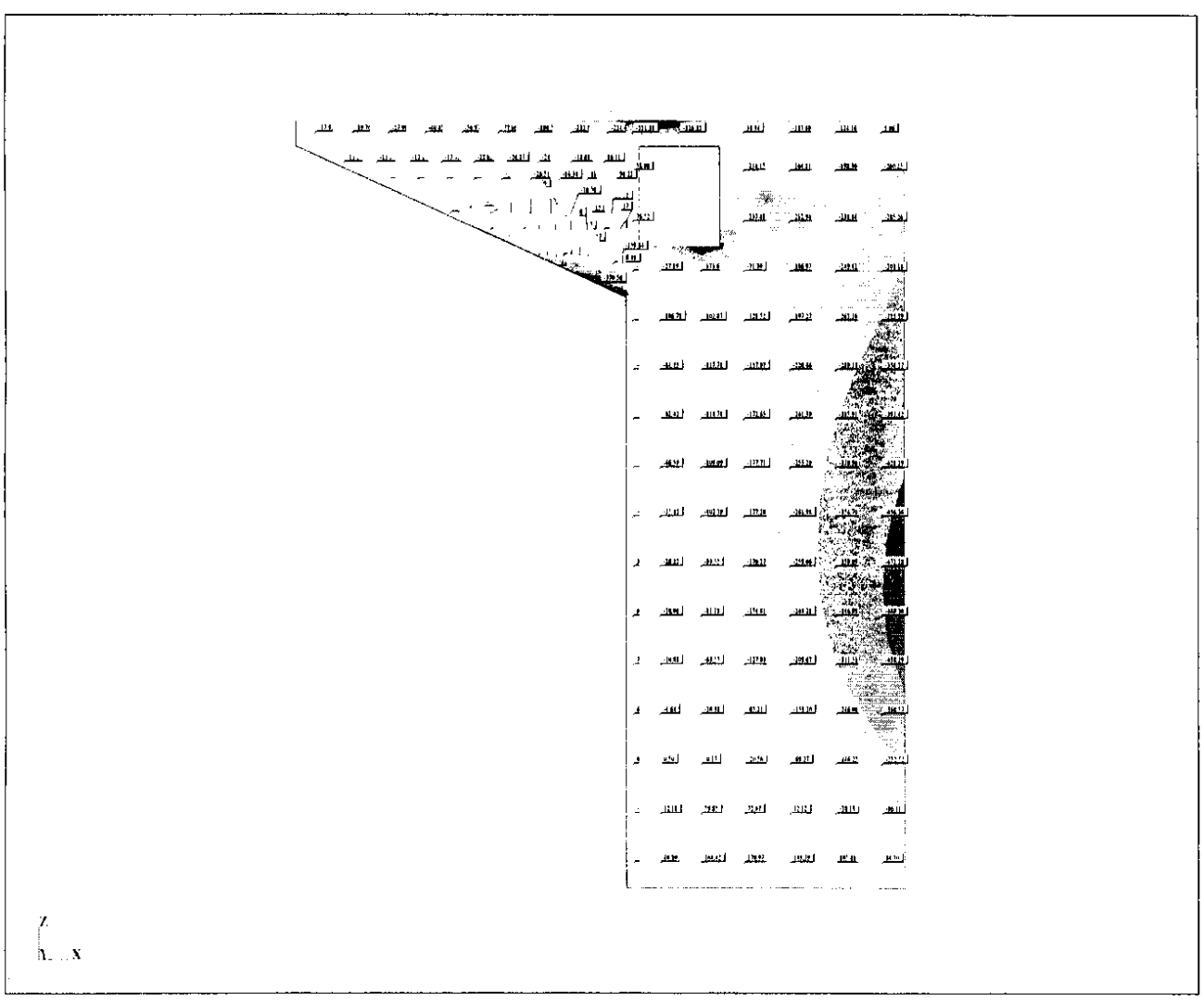
## QYY (kN/m)








## QXX (kN/m)



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Proyecto: RIERUSSA.E2 ALETA 2
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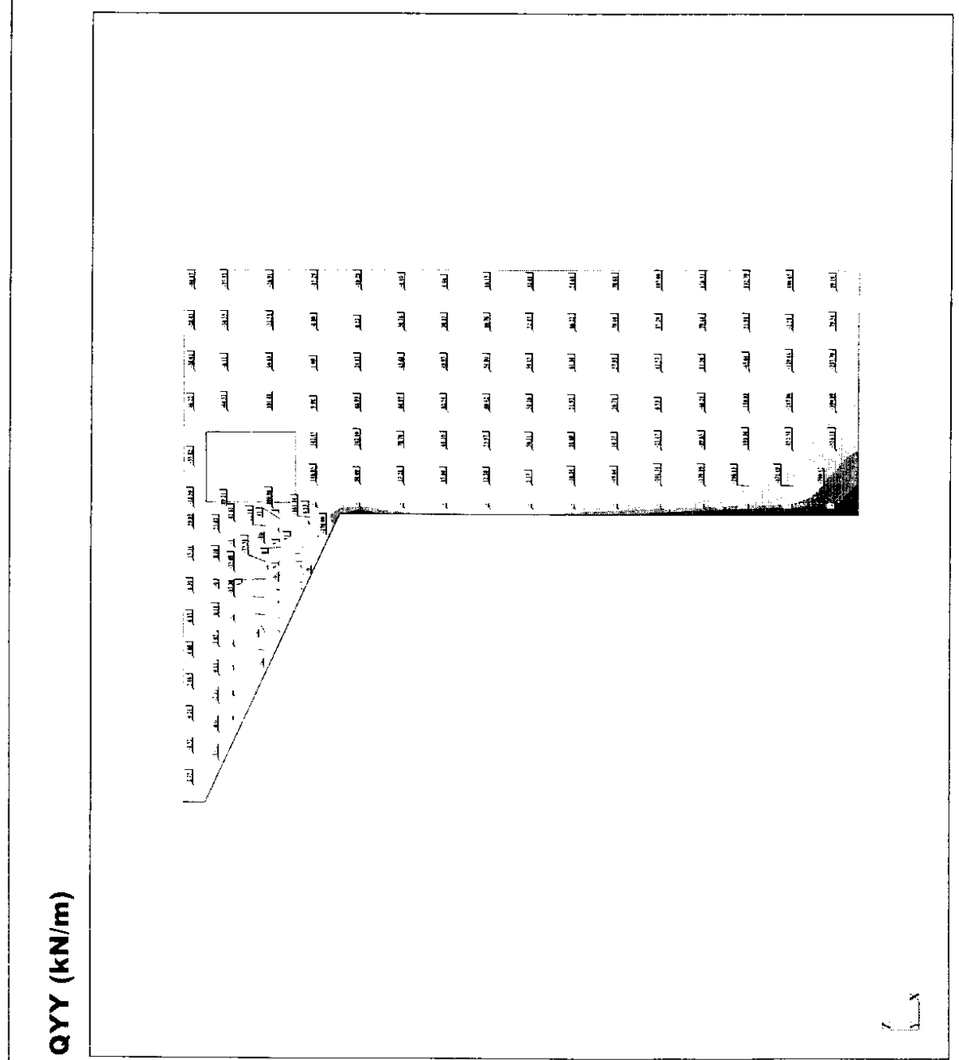
Dirección:






## ARMADURA DE CORTANTE
### EHE Art. 44

**PROYECTO :** LAV GELIDA Rierussa E2 Aletas Muro

**DATOS :**

SECCIÓN

| | | | | |
|---|---|---|---|---|
| Canto | h = | 0.70 | m | |
| Ancho | b = | 1.00 | m | |
| Ancho mínimo | $b_o$ = | 1.00 | m | |
| Área (Sec. Rect.) | A = | 0.70 | m | |
| Recubrimiento | r = | 0.05 | m | |
| A. long. pasiva | $A_s$ = | 41.89 | cm2 | Armadura longitudinal traccionada anclada a |
| A. long. activa | $A_p$ = | 0.00 | cm2 | una distancia > d a patir de la sección en estudio |

MATERIALES

| | | | | |
|---|---|---|---|---|
| Hormigón | $F_{ck}$ = | 25.00 | N/mm2 | |
| | $\gamma_c$ = | 1.50 | | |
| Acero pasivo | $F_{yk}$ = | 500.00 | N/mm2 | |
| | $\gamma_s$ = | 1.15 | | |
| Acero activo | $F_{yp}$ = | 0.00 | N/mm2 | |
| | $\gamma_p$ = | 1.00 | | |

ESFUERZOS

| | | | | |
|---|---|---|---|---|
| Cortante de cálculo | $V_d$ = | 882.00 | KN | |
| Cortante pretensado | $V_{pd}$ = | 0.00 | KN | |
| C. Sección variable | $V_{cd}$ = | 0.00 | KN | |
| Axil de cálculo | $N_d$ = | 0.00 | KN | Tracción positiva |
| Ángulo bielas | $\theta$ = | 45.00 | º | $0.5 < \cot g\ \theta < 2.0$ |
| Tensión long. | $\sigma_x$ = | 0.00 | N/mm2 | Tensión a nivel del cdg |
| Tensión transv. | $\sigma_y$ = | 0.00 | N/mm2 | Tensión a nivel del cdg |

ARMADURA

| | | | |
|---|---|---|---|
| Ángulo estribos | $\alpha$ = | 90.00 | º |

**CÁLCULOS PREVIOS:**

| | | | |
|---|---|---|---|
| Cortante reducido | $V_{rd}$ = | 882.00 | KN |
| Canto útil | d = | 0.65 | m |
| Brazo mecánico | z = | 0.59 | m |
| Compr. hormigón | $f_{1cd}$ = | 10.00 | N/mm2 |
| Tracción hormigón | $f_{ct,m}$ = | 2.56 | N/mm2 |
| Coef. reducción | K = | 1.00 | |
| | $\sigma'_{cd}$ = | 0.00 | N/mm2 |
| Cuantía mecánica arm. | $\rho_l$ = | 0.01 | |
| | $\xi$ = | 1.55 | |
| | $\cot g\ \theta$ = | 1.00 | |
| Inclinación fisuras | $\cot g\ \theta_e$ = | 1.00 | |
| | $\beta$ = | 1.00 | |

**RESULTADOS:**

AGOTAMIENTO POR COMPRESIÓN

$V_{u1}$ = 3250.00 KN >= $V_{rd}$ CUMPLE

AGOTAMIENTO POR TRACCIÓN

$V_{cu}$ = 255.23 KN
$V_{su}$ = 626.77 KN

$A_\alpha$ = 26.79 cm2/m

# ARMADURA DE CORTANTE

## EHE Art. 44

**PROYECTO :** LAV GELIDA Rierussa E2 Aletas

**DATOS :**

SECCIÓN

| | | | |
|---|---|---|---|
| Canto | h = | 0.70 | m |
| Ancho | b = | 1.00 | m |
| Ancho mínimo | $b_o$ = | 1.00 | m |
| Área (Sec. Rect.) | A = | 0.70 | m |
| Recubrimiento | r = | 0.05 | m |
| A. long. pasiva | $A_s$ = | 41.89 | cm2 |
| A. long. activa | $A_p$ = | 0.00 | cm2 |

Armadura longitudinal traccionada anclada a una distancia > d a patir de la sección en estudio

MATERIALES

| | | | |
|---|---|---|---|
| Hormigón | $F_{ck}$ = | 25.00 | N/mm2 |
| | $\gamma_c$ = | 1.50 | |
| Acero pasivo | $F_{yk}$ = | 500.00 | N/mm2 |
| | $\gamma_s$ = | 1.15 | |
| Acero activo | $F_{yp}$ = | 0.00 | N/mm2 |
| | $\gamma_p$ = | 1.00 | |

ESFUERZOS

| | | | | |
|---|---|---|---|---|
| Cortante de cálculo | $V_d$ = | 273.00 | KN | |
| Cortante pretensado | $V_{pd}$ = | 0.00 | KN | |
| C. Sección variable | $V_{cd}$ = | 0.00 | KN | |
| Axil de cálculo | $N_d$ = | 0.00 | KN | Tracción positiva |
| Ángulo bielas | $\theta$ = | 45.00 | ° | 0.5 < cotg $\theta$ < 2.0 |
| Tensión long. | $\sigma_x$ = | 0.00 | N/mm2 | Tensión a nivel del cdg |
| Tensión transv. | $\sigma_y$ = | 0.00 | N/mm2 | Tensión a nivel del cdg |

ARMADURA

| | | | |
|---|---|---|---|
| Ángulo estribos | $\alpha$ = | 90.00 | ° |

**CÁLCULOS PREVIOS:**

| | | | |
|---|---|---|---|
| Cortante reducido | $V_{rd}$ = | 273.00 | KN |
| Canto útil | d = | 0.65 | m |
| Brazo mecánico | z = | 0.59 | m |
| Compr. hormigón | $f_{1cd}$ = | 10.00 | N/mm2 |
| Tracción hormigón | $f_{ct,m}$ = | 2.56 | N/mm2 |
| Coef. reducción | K = | 1.00 | |
| | $\sigma'_{cd}$ = | 0.00 | N/mm2 |
| Cuantía mecánica arm. | $\rho_l$ = | 0.01 | |
| | $\xi$ = | 1.55 | |
| | cotg $\theta$ = | 1.00 | |
| Inclinación fisuras | cotg $\theta_e$ = | 1.00 | |
| | $\beta$ = | 1.00 | |

**RESULTADOS:**

AGOTAMIENTO POR COMPRESIÓN

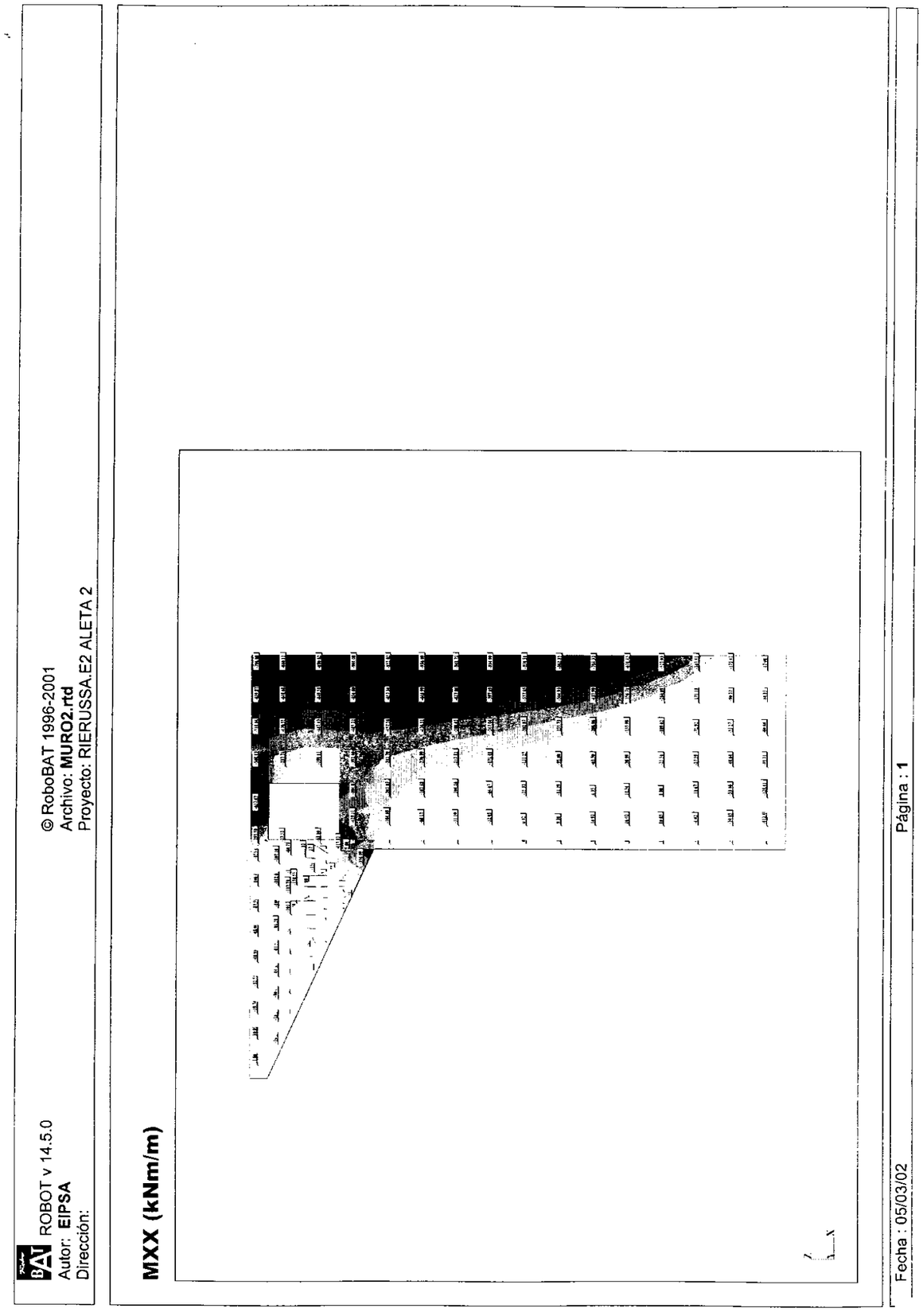
| | | | | | |
|---|---|---|---|---|---|
| | $V_{u1}$ = | 3250.00 | KN >= | $V_{rd}$ | CUMPLE |

AGOTAMIENTO POR TRACCIÓN

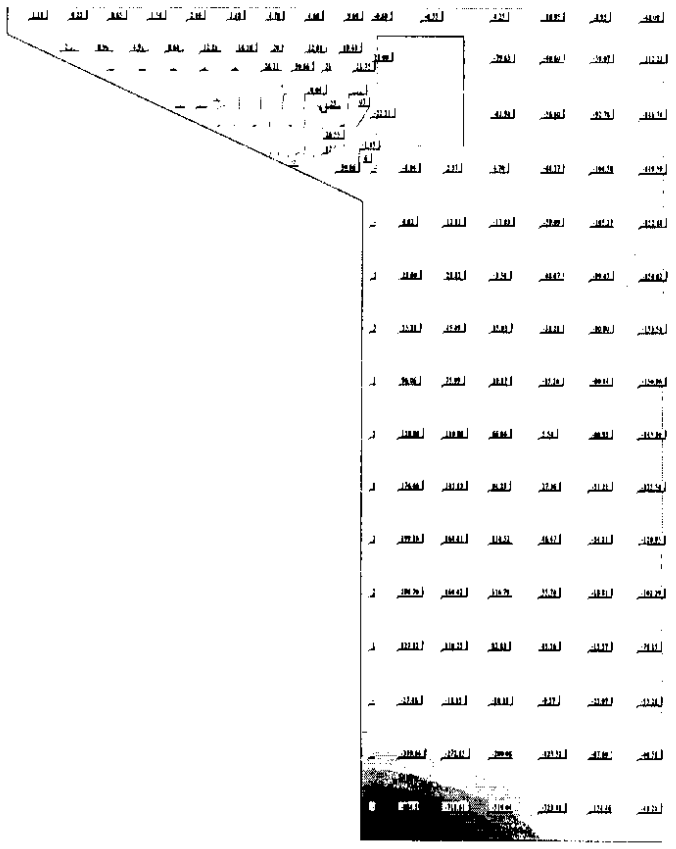
| | | | |
|---|---|---|---|
| | $V_{cu}$ = | 306.28 | KN |
| | $V_{su}$ = | 0.00 | KN |

NO HACE FALTA ARMAR A CORTANTE

| | | |
|---|---|---|
| $A_\alpha$ = | 0.00 | cm2/m |



## MYY (kNm/m)



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Proyecto: RIERUSSA.E2 ALETA 2

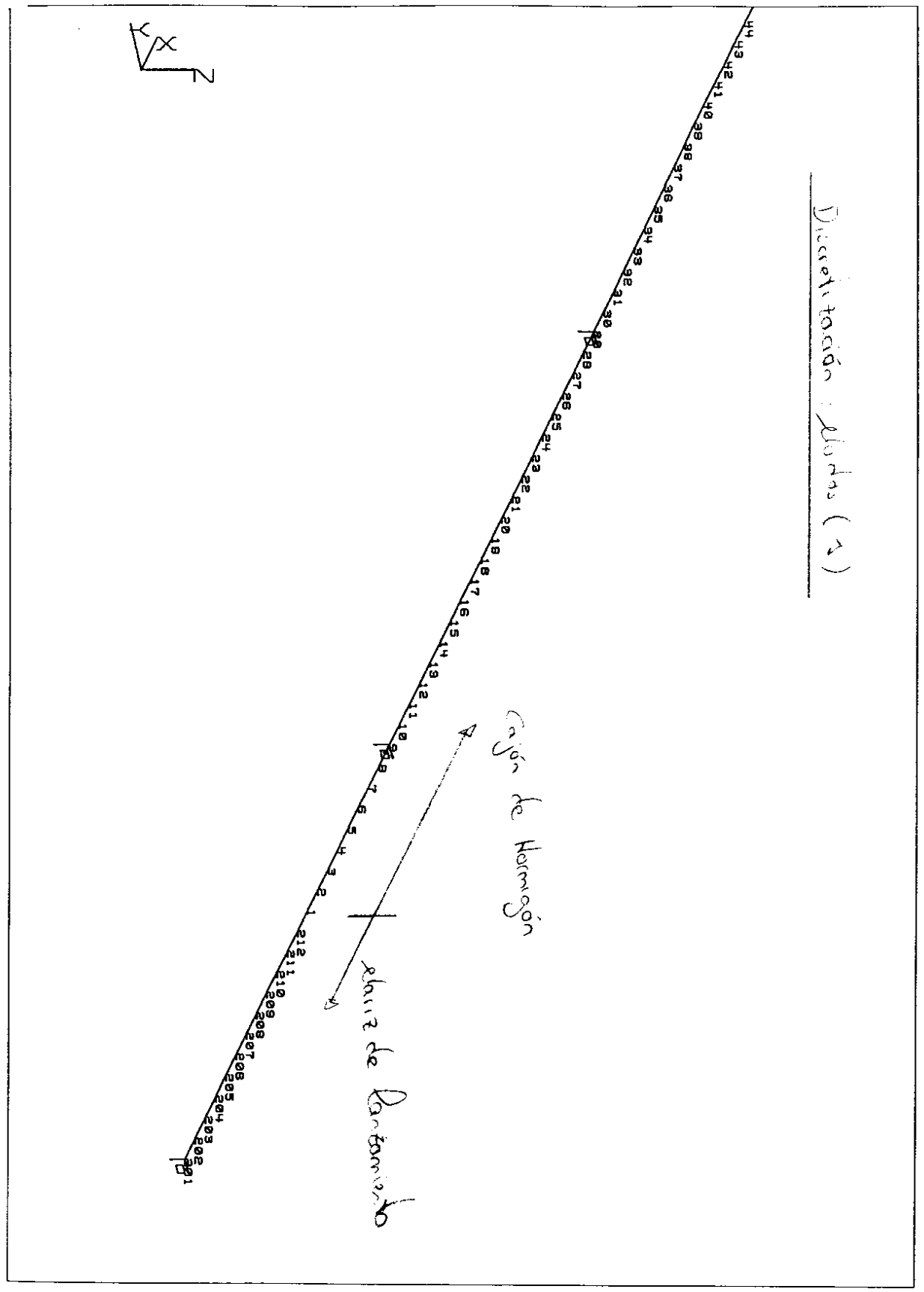
## MXY (kNm/m)

# 7. ANEJOS: LISTADOS

## 7.1. MODELO DE CÁLCULO

### 7.1.1. Modelo para cálculo de empuje: Discretización:

**Nudos, Barras, Apoyos, Características Mecánicas y Cargas**

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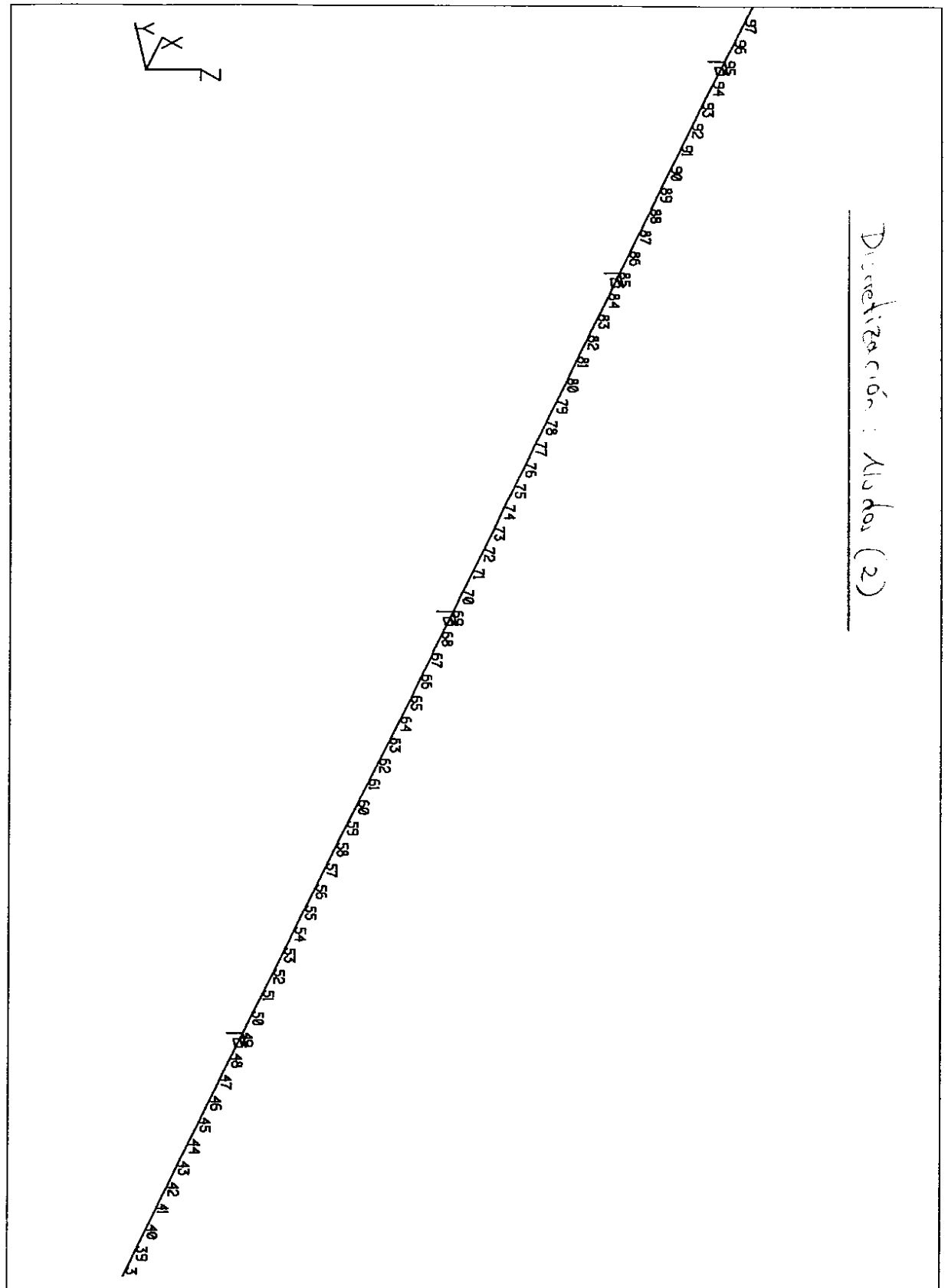
PORTICO ESPACIAL: , Escala= 1:340

Caso : #2 : CASOS CARGA ACTIVOS: 1 201 301 ...

Discretización: Nudos (2)



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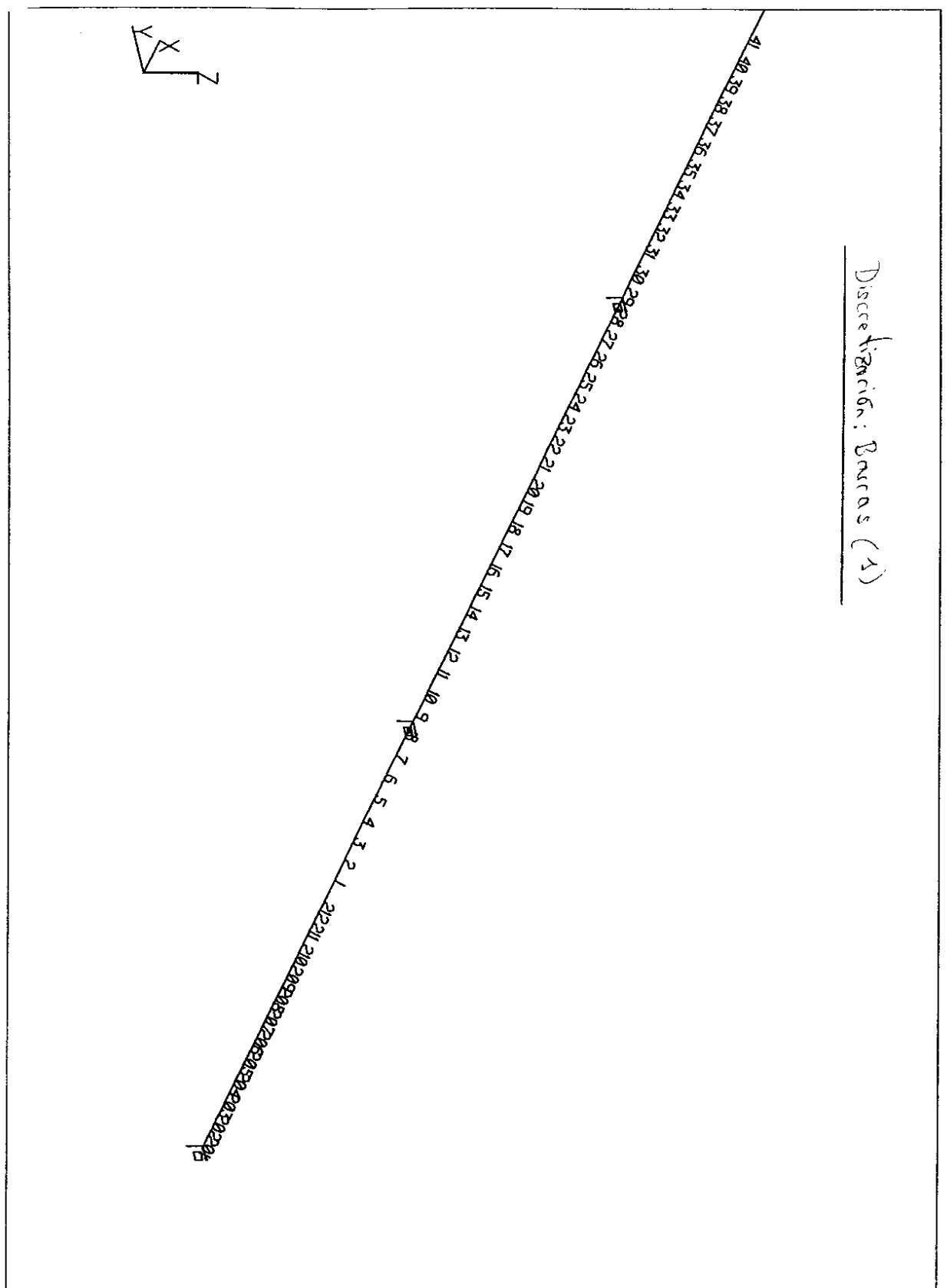
Caso : #2 : CASOS CARGA ACTIVOS: 1 201 301 ...

Discretización: Barras (1)



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PORTICO ESPACIAL: , Escala= 1:340

Caso : #2 : CASOS CARGA ACTIVOS: 1 201 301 ...

Especificación de nudos

Nudo todo
1A212

| Nudo | X (m) | Y (m) | Z (m) |
|---|---|---|---|
| 1 | -0.6000 | 0.0 | 0.0 |
| 2 | 1.5000 | 0.0 | 0.0 |
| 3 | 3.6000 | 0.0 | 0.0 |
| 4 | 5.7000 | 0.0 | 0.0 |
| 5 | 7.8000 | 0.0 | 0.0 |
| 6 | 9.9000 | 0.0 | 0.0 |
| 7 | 12.0000 | 0.0 | 0.0 |
| 8 | 14.1000 | 0.0 | 0.0 |
| 9 | 16.2000 | 0.0 | 0.0 |
| 10 | 18.3000 | 0.0 | 0.0 |
| 11 | 20.4000 | 0.0 | 0.0 |
| 12 | 22.5000 | 0.0 | 0.0 |
| 13 | 24.6000 | 0.0 | 0.0 |
| 14 | 26.7000 | 0.0 | 0.0 |
| 15 | 28.8000 | 0.0 | 0.0 |
| 16 | 30.9000 | 0.0 | 0.0 |
| 17 | 33.0000 | 0.0 | 0.0 |
| 18 | 35.1000 | 0.0 | 0.0 |
| 19 | 37.2000 | 0.0 | 0.0 |
| 20 | 39.3000 | 0.0 | 0.0 |
| 21 | 41.4000 | 0.0 | 0.0 |
| 22 | 43.5000 | 0.0 | 0.0 |
| 23 | 45.6000 | 0.0 | 0.0 |
| 24 | 47.7000 | 0.0 | 0.0 |
| 25 | 49.8000 | 0.0 | 0.0 |
| 26 | 51.9000 | 0.0 | 0.0 |
| 27 | 54.0000 | 0.0 | 0.0 |
| 28 | 56.1000 | 0.0 | 0.0 |
| 29 | 58.2000 | 0.0 | 0.0 |
| 30 | 60.3000 | 0.0 | 0.0 |
| 31 | 62.4000 | 0.0 | 0.0 |
| 32 | 64.5000 | 0.0 | 0.0 |
| 33 | 66.6000 | 0.0 | 0.0 |
| 34 | 68.7000 | 0.0 | 0.0 |
| 35 | 70.8000 | 0.0 | 0.0 |
| 36 | 72.9000 | 0.0 | 0.0 |
| 37 | 75.0000 | 0.0 | 0.0 |
| 38 | 77.1000 | 0.0 | 0.0 |
| 39 | 79.2000 | 0.0 | 0.0 |
| 40 | 81.3000 | 0.0 | 0.0 |
| 41 | 83.4000 | 0.0 | 0.0 |
| 42 | 85.5000 | 0.0 | 0.0 |
| 43 | 87.6000 | 0.0 | 0.0 |
| 44 | 89.7000 | 0.0 | 0.0 |
| 45 | 91.8000 | 0.0 | 0.0 |
| 46 | 93.9000 | 0.0 | 0.0 |
| 47 | 96.0000 | 0.0 | 0.0 |
| 48 | 98.1000 | 0.0 | 0.0 |
| 49 | 100.2000 | 0.0 | 0.0 |
| 50 | 102.3000 | 0.0 | 0.0 |
| 51 | 104.4000 | 0.0 | 0.0 |
| 52 | 106.5000 | 0.0 | 0.0 |
| 53 | 108.6000 | 0.0 | 0.0 |
| 54 | 110.7000 | 0.0 | 0.0 |
| 55 | 112.8000 | 0.0 | 0.0 |
| 56 | 114.9000 | 0.0 | 0.0 |
| 57 | 117.0000 | 0.0 | 0.0 |
| 58 | 119.1000 | 0.0 | 0.0 |
| 59 | 121.2000 | 0.0 | 0.0 |
| 60 | 123.3000 | 0.0 | 0.0 |
| 61 | 125.4000 | 0.0 | 0.0 |
| 62 | 127.5000 | 0.0 | 0.0 |

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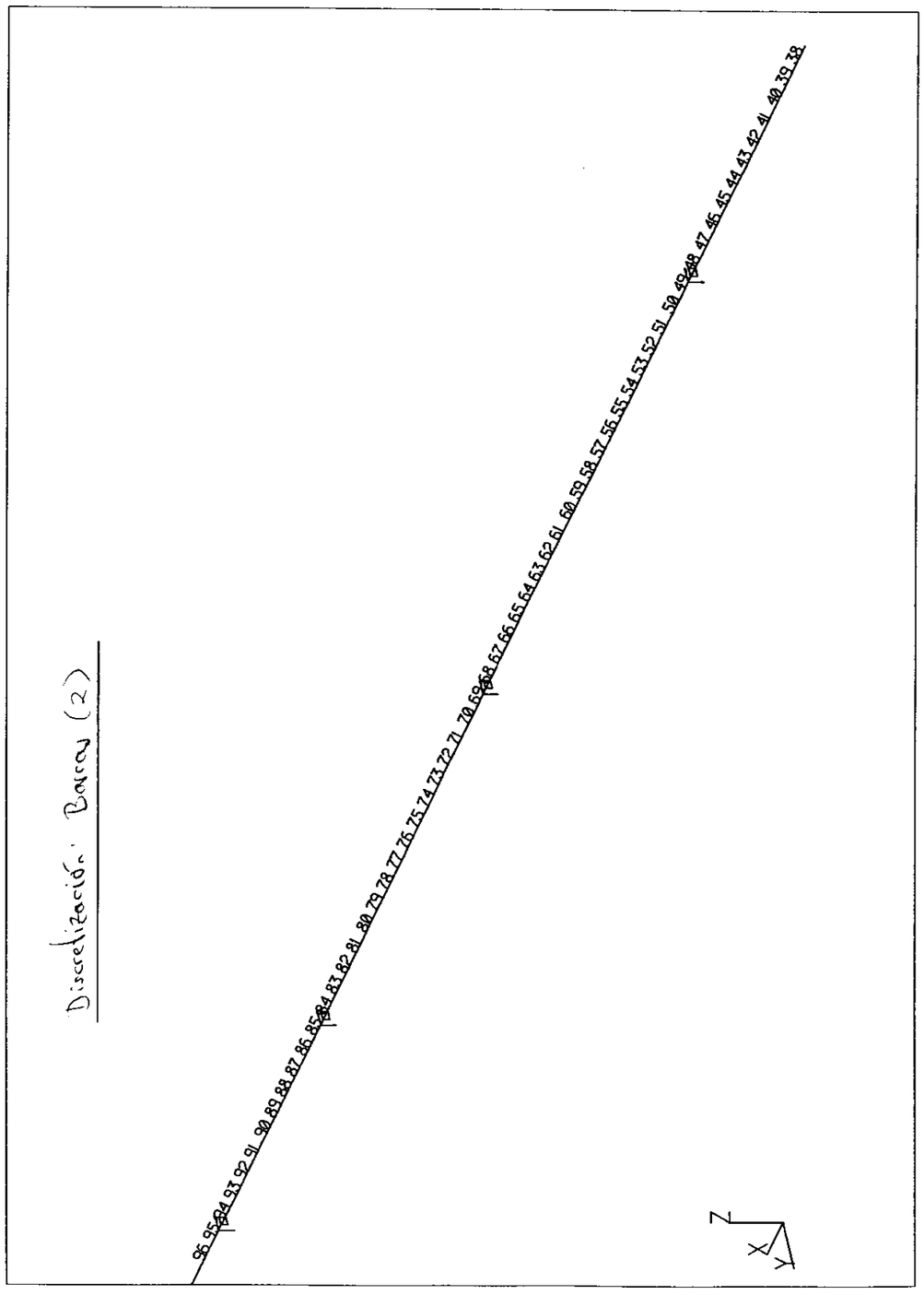
Caso : #2 : CASOS CARGA ACTIVOS: 1 201 301 ...



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Proyecto: | modificación de carga: 5-02-2002 | Hora: 19:54:43

Especificación de nudos

| Nudo | X (m) | Y (m) | Z (m) |
|---|---|---|---|
| 63 | 129.6000 | 0.0 | 0.0 |
| 64 | 131.7000 | 0.0 | 0.0 |
| 65 | 133.8000 | 0.0 | 0.0 |
| 66 | 135.9000 | 0.0 | 0.0 |
| 67 | 138.0000 | 0.0 | 0.0 |
| 68 | 140.1000 | 0.0 | 0.0 |
| 69 | 142.2000 | 0.0 | 0.0 |
| 70 | 144.3000 | 0.0 | 0.0 |
| 71 | 146.4000 | 0.0 | 0.0 |
| 72 | 148.5000 | 0.0 | 0.0 |
| 73 | 150.6000 | 0.0 | 0.0 |
| 74 | 152.7000 | 0.0 | 0.0 |
| 75 | 154.8000 | 0.0 | 0.0 |
| 76 | 156.9000 | 0.0 | 0.0 |
| 77 | 159.0000 | 0.0 | 0.0 |
| 78 | 161.1000 | 0.0 | 0.0 |
| 79 | 163.2000 | 0.0 | 0.0 |
| 80 | 165.3000 | 0.0 | 0.0 |
| 81 | 167.4000 | 0.0 | 0.0 |
| 82 | 169.5000 | 0.0 | 0.0 |
| 83 | 171.6000 | 0.0 | 0.0 |
| 84 | 173.7000 | 0.0 | 0.0 |
| 85 | 175.8000 | 0.0 | 0.0 |
| 86 | 177.9000 | 0.0 | 0.0 |
| 87 | 180.0000 | 0.0 | 0.0 |
| 88 | 182.1000 | 0.0 | 0.0 |
| 89 | 184.2000 | 0.0 | 0.0 |
| 90 | 186.3000 | 0.0 | 0.0 |
| 91 | 188.4000 | 0.0 | 0.0 |
| 92 | 190.5000 | 0.0 | 0.0 |
| 93 | 192.6000 | 0.0 | 0.0 |
| 94 | 194.7000 | 0.0 | 0.0 |
| 95 | 196.8000 | 0.0 | 0.0 |
| 96 | 198.9000 | 0.0 | 0.0 |
| 97 | 201.0000 | 0.0 | 0.0 |
| 98 | 203.1000 | 0.0 | 0.0 |
| 99 | 205.2000 | 0.0 | 0.0 |
| 100 | 207.3000 | 0.0 | 0.0 |
| 101 | 209.4000 | 0.0 | 0.0 |
| 102 | 211.5000 | 0.0 | 0.0 |
| 103 | 213.6000 | 0.0 | 0.0 |
| 104 | 215.7000 | 0.0 | 0.0 |
| 105 | 217.8000 | 0.0 | 0.0 |
| 201 | -25.8000 | 0.0 | 0.0 |
| 202 | -23.7000 | 0.0 | 0.0 |
| 203 | -21.6000 | 0.0 | 0.0 |
| 204 | -19.5000 | 0.0 | 0.0 |
| 205 | -17.4000 | 0.0 | 0.0 |
| 206 | -15.3000 | 0.0 | 0.0 |
| 207 | -13.2000 | 0.0 | 0.0 |
| 208 | -11.1000 | 0.0 | 0.0 |
| 209 | -9.0000 | 0.0 | 0.0 |
| 210 | -6.9000 | 0.0 | 0.0 |
| 211 | -4.8000 | 0.0 | 0.0 |
| 212 | -2.7000 | 0.0 | 0.0 |

+ Nadir

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Especificación de elementos

Elemento todo
1A212

| Elem. | Nudos1 | Nudos2 | Longitud (m) | Sección trans. |
|---|---|---|---|---|
| 1 | 1 | 2 | 2.1000 | NS_01 14 |
| 2 | 2 | 3 | 2.1000 | NS_02 11.7 |
| 3 | 3 | 4 | 2.1000 | NS_02 11.7 |
| 4 | 4 | 5 | 2.1000 | NS_02 11.7 |
| 5 | 5 | 6 | 2.1000 | NS_02 11.7 |
| 6 | 6 | 7 | 2.1000 | NS_02 11.7 |
| 7 | 7 | 8 | 2.1000 | NS_02 11.7 |
| 8 | 8 | 9 | 2.1000 | NS_02 11.7 |
| 9 | 9 | 10 | 2.1000 | NS_02 11.7 |
| 10 | 10 | 11 | 2.1000 | NS_02 11.7 |
| 11 | 11 | 12 | 2.1000 | NS_02 11.7 |
| 12 | 12 | 13 | 2.1000 | NS_02 11.7 |
| 13 | 13 | 14 | 2.1000 | NS_02 11.7 |
| 14 | 14 | 15 | 2.1000 | NS_02 11.7 |
| 15 | 15 | 16 | 2.1000 | NS_01 14 |
| 16 | 16 | 17 | 2.1000 | NS_01 14 |
| 17 | 17 | 18 | 2.1000 | NS_01 14 |
| 18 | 18 | 19 | 2.1000 | NS_01 14 |
| 19 | 19 | 20 | 2.1000 | NS_02 11.7 |
| 20 | 20 | 21 | 2.1000 | NS_02 11.7 |
| 21 | 21 | 22 | 2.1000 | NS_02 11.7 |
| 22 | 22 | 23 | 2.1000 | NS_02 11.7 |
| 23 | 23 | 24 | 2.1000 | NS_02 11.7 |
| 24 | 24 | 25 | 2.1000 | NS_02 11.7 |
| 25 | 25 | 26 | 2.1000 | NS_02 11.7 |
| 26 | 26 | 27 | 2.1000 | NS_02 11.7 |
| 27 | 27 | 28 | 2.1000 | NS_02 11.7 |
| 28 | 28 | 29 | 2.1000 | NS_02 11.7 |
| 29 | 29 | 30 | 2.1000 | NS_02 11.7 |
| 30 | 30 | 31 | 2.1000 | NS_02 11.7 |
| 31 | 31 | 32 | 2.1000 | NS_02 11.7 |
| 32 | 32 | 33 | 2.1000 | NS_02 11.7 |
| 33 | 33 | 34 | 2.1000 | NS_02 11.7 |
| 34 | 34 | 35 | 2.1000 | NS_02 11.7 |
| 35 | 35 | 36 | 2.1000 | NS_01 14 |
| 36 | 36 | 37 | 2.1000 | NS_01 14 |
| 37 | 37 | 38 | 2.1000 | NS_01 14 |
| 38 | 38 | 39 | 2.1000 | NS_01 14 |
| 39 | 39 | 40 | 2.1000 | NS_02 11.7 |
| 40 | 40 | 41 | 2.1000 | NS_02 11.7 |
| 41 | 41 | 42 | 2.1000 | NS_02 11.7 |
| 42 | 42 | 43 | 2.1000 | NS_02 11.7 |
| 43 | 43 | 44 | 2.1000 | NS_02 11.7 |
| 44 | 44 | 45 | 2.1000 | NS_02 11.7 |
| 45 | 45 | 46 | 2.1000 | NS_02 11.7 |
| 46 | 46 | 47 | 2.1000 | NS_02 11.7 |
| 47 | 47 | 48 | 2.1000 | NS_02 11.7 |
| 48 | 48 | 49 | 2.1000 | NS_02 11.7 |
| 49 | 49 | 50 | 2.1000 | NS_02 11.7 |
| 50 | 50 | 51 | 2.1000 | NS_02 11.7 |
| 51 | 51 | 52 | 2.1000 | NS_02 11.7 |
| 52 | 52 | 53 | 2.1000 | NS_02 11.7 |
| 53 | 53 | 54 | 2.1000 | NS_02 11.7 |
| 54 | 54 | 55 | 2.1000 | NS_02 11.7 |
| 55 | 55 | 56 | 2.1000 | NS_01 14 |
| 56 | 56 | 57 | 2.1000 | NS_01 14 |
| 57 | 57 | 58 | 2.1000 | NS_01 14 |
| 58 | 58 | 59 | 2.1000 | NS_01 14 |
| 59 | 59 | 60 | 2.1000 | NS_02 11.7 |
| 60 | 60 | 61 | 2.1000 | NS_02 11.7 |
| 61 | 61 | 62 | 2.1000 | NS_02 11.7 |
| 62 | 62 | 63 | 2.1000 | NS_02 11.7 |

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Proyecto: | modificación de carga: 5-02-2002 | Hora: 19:58:35

Especificación de elementos

| Elem. | Nudos1 | Nudos2 | Longitud (m) | Sección trans. |
|---|---|---|---|---|
| 63 | 63 | 64 | 2.1000 | NS_02 11.7 |
| 64 | 64 | 65 | 2.1000 | NS_02 11.7 |
| 65 | 65 | 66 | 2.1000 | NS_02 11.7 |
| 66 | 66 | 67 | 2.1000 | NS_02 11.7 |
| 67 | 67 | 68 | 2.1000 | NS_02 11.7 |
| 68 | 68 | 69 | 2.1000 | NS_02 11.7 |
| 69 | 69 | 70 | 2.1000 | NS_02 11.7 |
| 70 | 70 | 71 | 2.1000 | NS_02 11.7 |
| 71 | 71 | 72 | 2.1000 | NS_02 11.7 |
| 72 | 72 | 73 | 2.1000 | NS_02 11.7 |
| 73 | 73 | 74 | 2.1000 | NS_02 11.7 |
| 74 | 74 | 75 | 2.1000 | NS_02 11.7 |
| 75 | 75 | 76 | 2.1000 | NS_01 14 |
| 76 | 76 | 77 | 2.1000 | NS_01 14 |
| 77 | 77 | 78 | 2.1000 | NS_01 14 |
| 78 | 78 | 79 | 2.1000 | NS_01 14 |
| 79 | 79 | 80 | 2.1000 | NS_02 11.7 |
| 80 | 80 | 81 | 2.1000 | NS_02 11.7 |
| 81 | 81 | 82 | 2.1000 | NS_02 11.7 |
| 82 | 82 | 83 | 2.1000 | NS_02 11.7 |
| 83 | 83 | 84 | 2.1000 | NS_02 11.7 |
| 84 | 84 | 85 | 2.1000 | NS_02 11.7 |
| 85 | 85 | 86 | 2.1000 | NS_02 11.7 |
| 86 | 86 | 87 | 2.1000 | NS_02 11.7 |
| 87 | 87 | 88 | 2.1000 | NS_02 11.7 |
| 88 | 88 | 89 | 2.1000 | NS_02 11.7 |
| 89 | 89 | 90 | 2.1000 | NS_02 11.7 |
| 90 | 90 | 91 | 2.1000 | NS_02 11.7 |
| 91 | 91 | 92 | 2.1000 | NS_02 11.7 |
| 92 | 92 | 93 | 2.1000 | NS_02 11.7 |
| 93 | 93 | 94 | 2.1000 | NS_02 11.7 |
| 94 | 94 | 95 | 2.1000 | NS_02 11.7 |
| 95 | 95 | 96 | 2.1000 | NS_01 14 |
| 96 | 96 | 97 | 2.1000 | NS_01 14 |
| 97 | 97 | 98 | 2.1000 | NS_01 14 |
| 98 | 98 | 99 | 2.1000 | NS_01 14 |
| 99 | 99 | 100 | 2.1000 | NS_02 11.7 |
| 100 | 100 | 101 | 2.1000 | NS_02 11.7 |
| 101 | 101 | 102 | 2.1000 | NS_02 11.7 |
| 102 | 102 | 103 | 2.1000 | NS_02 11.7 |
| 103 | 103 | 104 | 2.1000 | NS_02 11.7 |
| 104 | 104 | 105 | 2.1000 | NS_02 11.7 |
| 201 | 201 | 202 | 2.1000 | NS_03 .062 |
| 202 | 202 | 203 | 2.1000 | NS_04 .070 |
| 203 | 203 | 204 | 2.1000 | NS_05 .078 |
| 204 | 204 | 205 | 2.1000 | NS_06 .096 |
| 205 | 205 | 206 | 2.1000 | NS_07 .107 |
| 206 | 206 | 207 | 2.1000 | NS_08 .118 |
| 207 | 207 | 208 | 2.1000 | NS_09 .135 |
| 208 | 208 | 209 | 2.1000 | NS_10 .148 |
| 209 | 209 | 210 | 2.1000 | NS_11 .162 |
| 210 | 210 | 211 | 2.1000 | NS_12 .177 |
| 211 | 211 | 212 | 2.1000 | NS_13 .207 |
| 212 | 212 | 1 | 2.1000 | NS_14 .251 |

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Características de secciones

Sección

| Sección | SX (m2) | IX (m4) | IY (m4) | IZ (m4) | HY (m) | HZ (m) |
|---|---|---|---|---|---|---|
| NS_01 14 | 11.4070 | 1.0000 | 14.0330 | 99.2380 | 14.0000 | 3.1000 |
| NS_02 11.7 | 8.8170 | 1.0000 | 11.7630 | 87.3700 | 14.0000 | 3.1000 |
| NS_03 .062 | 0.1070 | 0.1389 | 0.0620 | 0.4754 | 4.7000 | 2.0520 |
| NS_04 .070 | 0.1106 | 0.1389 | 0.0696 | 0.4930 | 4.7000 | 2.1560 |
| NS_05 .078 | 0.1142 | 0.1389 | 0.0778 | 0.5132 | 4.7000 | 2.2604 |
| NS_06 .096 | 0.1334 | 0.1389 | 0.0963 | 0.5317 | 4.7000 | 2.3640 |
| NS_07 .107 | 0.1376 | 0.1389 | 0.1067 | 0.5510 | 4.7000 | 2.4690 |
| NS_08 .118 | 0.1418 | 0.1389 | 0.1177 | 0.5695 | 4.7000 | 2.5730 |
| NS_09 .135 | 0.1564 | 0.1389 | 0.1355 | 0.5880 | 4.7000 | 2.6770 |
| NS_10 .148 | 0.1608 | 0.1389 | 0.1485 | 0.6073 | 4.7000 | 2.7813 |
| NS_11 .162 | 0.1654 | 0.1389 | 0.1623 | 0.6258 | 4.7000 | 2.8854 |
| NS_12 .177 | 0.1698 | 0.1389 | 0.1768 | 0.6452 | 4.7000 | 2.9896 |
| NS_13 .207 | 0.1800 | 0.1389 | 0.2070 | 0.6890 | 4.7000 | 3.0940 |
| NS_14 .251 | 0.2226 | 0.1389 | 0.2510 | 0.8420 | 4.7000 | 3.1980 |

| Sección | VY (m) | VZ (m) | VPY (m) | VPZ (m) |
|---|---|---|---|---|
| NS_01 14 | 7.0000 | 1.3700 | 7.0000 | 1.7300 |
| NS_02 11.7 | 7.0000 | 1.2120 | 7.0000 | 1.8880 |
| NS_03 .062 | 2.3500 | 1.1069 | 2.3500 | 0.9451 |
| NS_04 .070 | 2.3500 | 1.1663 | 2.3500 | 0.9897 |
| NS_05 .078 | 2.3500 | 1.2258 | 2.3500 | 1.0346 |
| NS_06 .096 | 2.3500 | 1.3884 | 2.3500 | 0.9756 |
| NS_07 .107 | 2.3500 | 1.4515 | 2.3500 | 1.0175 |
| NS_08 .118 | 2.3500 | 1.5140 | 2.3500 | 1.0590 |
| NS_09 .135 | 2.3500 | 1.5304 | 2.3500 | 1.1466 |
| NS_10 .148 | 2.3500 | 1.5903 | 2.3500 | 1.1910 |
| NS_11 .162 | 2.3500 | 1.6499 | 2.3500 | 1.2355 |
| NS_12 .177 | 2.3500 | 1.7094 | 2.3500 | 1.2802 |
| NS_13 .207 | 2.3500 | 1.7123 | 2.3500 | 1.3817 |
| NS_14 .251 | 2.3500 | 1.6353 | 2.3500 | 1.5627 |

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Proyecto:

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c:\a\gelempu
modificación de carga: 5-02-2002

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Hora: 19:59:50

Características de materiales

Material

| Material | E (N/mm2) | G (N/mm2) | NI | LX (1/°C) | RO (kN/m3) | Re (kN/m2) |
|---|---|---|---|---|---|---|
| HORMIGÓN | 3.089E+04 | 1.210E+04 | 3.000E-01 | 1.200E-05 | 25.000 | 2.550E+05 |
| ACERO | 2.100E+05 | 8.080E+04 | 3.000E-01 | 1.200E-05 | 78.500 | 2.550E+05 |

Carga considerada en el empuje

- Peso Propio Tablero: se añade una carga de 7'3 kN/m para tener en cuenta el peso de la cartelería, iluminación, barandilla. Se toma un área de la sección de una viga para un pórtico de dimensiones muy generales.

- Peso Propio Capa de hormigón: se añaden como cargas puntuales los pesos de las riostras de pila y de estribo.

- Sobrecarga uso: [illegible] para carga extensión [illegible] tuberías.

Especificación de cargas

Caso todo
1A2001CA200 301A2101CA200
Tipo de carga

| Caso | Tipo de carga | Valor de carga |
|---|---|---|
| Nombre del caso | | EMPUJE POS. 1 |
| 1 | Peso propio | PZ Menos |
| | en los elementos: | 1A212 |
| 1 | Uniforme-barras | PZ=-7.500(kN/m) |
| | en los elementos: | 201A212 |
| 1 | Fuerza nodal | FZ=-403.000(kN) |
| | en los nudos: | 1 |
| 1 | Fuerza nodal | FZ=-116.000(kN) |
| | en los nudos: | 17A97CA20 |
| 1 | Desplazamiento impuesto | UZ=0.1460(m) |
| | en los nudos: | 201 |
| 1 | Desplazamiento impuesto | UZ=0.0540(m) |
| | en los nudos: | 9 |
| 1 | Desplazamiento impuesto | UZ=0.0070(m) |
| | en los nudos: | 29 |
| Nombre del caso | | (Fase 2) - EMPUJE POS. 2 |
| 201 | Peso propio | PZ Menos |
| | en los elementos: | 1A212 |
| 201 | Uniforme-barras | PZ=-7.500(kN/m) |
| | en los elementos: | 201A212 |
| 201 | Fuerza nodal | FZ=-403.000(kN) |
| | en los nudos: | 1 |
| 201 | Fuerza nodal | FZ=-116.000(kN) |
| | en los nudos: | 17A97CA20 |
| 201 | Desplazamiento impuesto | UZ=0.1460(m) |
| | en los nudos: | 202 |
| 201 | Desplazamiento impuesto | UZ=0.0540(m) |
| | en los nudos: | 10 |
| 201 | Desplazamiento impuesto | UZ=0.0070(m) |
| | en los nudos: | 30 |
| Nombre del caso | | (Fase 3) - EMPUJE POS. 3 |
| 301 | Peso propio | PZ Menos |
| | en los elementos: | 1A212 |
| 301 | Uniforme-barras | PZ=-7.500(kN/m) |
| | en los elementos: | 201A212 |
| 301 | Fuerza nodal | FZ=-403.000(kN) |
| | en los nudos: | 1 |
| 301 | Fuerza nodal | FZ=-116.000(kN) |
| | en los nudos: | 17A97CA20 |
| 301 | Desplazamiento impuesto | UZ=0.1460(m) |
| | en los nudos: | 203 |
| 301 | Desplazamiento impuesto | UZ=0.0540(m) |
| | en los nudos: | 11 |
| 301 | Desplazamiento impuesto | UZ=0.0070(m) |
| | en los nudos: | 31 |
| Nombre del caso | | (Fase 4) - EMPUJE POS. 4 |
| 401 | Peso propio | PZ Menos |
| | en los elementos: | 1A212 |
| 401 | Uniforme-barras | PZ=-7.500(kN/m) |
| | en los elementos: | 201A212 |
| 401 | Fuerza nodal | FZ=-403.000(kN) |
| | en los nudos: | 1 |
| 401 | Fuerza nodal | FZ=-116.000(kN) |
| | en los nudos: | 17A97CA20 |
| 401 | Desplazamiento impuesto | UZ=0.1460(m) |
| | en los nudos: | 204 |



Especificación de cargas

| Caso | Tipo de carga | Valor de carga |
|---|---|---|
| 401 | Desplazamiento impuesto | UZ=0.0540(m) |
| | en los nudos: | 12 |
| 401 | Desplazamiento impuesto | UZ=0.0070(m) |
| | en los nudos: | 32 |
| Nombre del caso | | (Fase 5) - EMPUJE POS. 5 |
| 501 | Peso propio | PZ Menos |
| | en los elementos: | 1A212 |
| 501 | Uniforme-barras | PZ=-7.500(kN/m) |
| | en los elementos: | 201A212 |
| 501 | Fuerza nodal | FZ=-403.000(kN) |
| | en los nudos: | 1 |
| 501 | Fuerza nodal | FZ=-116.000(kN) |
| | en los nudos: | 17A97CA20 |
| 501 | Desplazamiento impuesto | UZ=0.1460(m) |
| | en los nudos: | 205 |
| 501 | Desplazamiento impuesto | UZ=0.0540(m) |
| | en los nudos: | 13 |
| 501 | Desplazamiento impuesto | UZ=0.0070(m) |
| | en los nudos: | 33 |
| Nombre del caso | | (Fase 6) - EMPUJE POS. 6 |
| 601 | Peso propio | PZ Menos |
| | en los elementos: | 1A212 |
| 601 | Uniforme-barras | PZ=-7.500(kN/m) |
| | en los elementos: | 201A212 |
| 601 | Fuerza nodal | FZ=-403.000(kN) |
| | en los nudos: | 1 |
| 601 | Fuerza nodal | FZ=-116.000(kN) |
| | en los nudos: | 17A97CA20 |
| 601 | Desplazamiento impuesto | UZ=0.1460(m) |
| | en los nudos: | 206 |
| 601 | Desplazamiento impuesto | UZ=0.0540(m) |
| | en los nudos: | 14 |
| 601 | Desplazamiento impuesto | UZ=0.0070(m) |
| | en los nudos: | 34 |
| Nombre del caso | | (Fase 7) - EMPUJE POS. 7 |
| 701 | Peso propio | PZ Menos |
| | en los elementos: | 1A212 |
| 701 | Uniforme-barras | PZ=-7.500(kN/m) |
| | en los elementos: | 201A212 |
| 701 | Fuerza nodal | FZ=-403.000(kN) |
| | en los nudos: | 1 |
| 701 | Fuerza nodal | FZ=-116.000(kN) |
| | en los nudos: | 17A97CA20 |
| 701 | Desplazamiento impuesto | UZ=0.1460(m) |
| | en los nudos: | 207 |
| 701 | Desplazamiento impuesto | UZ=0.0540(m) |
| | en los nudos: | 15 |
| 701 | Desplazamiento impuesto | UZ=0.0070(m) |
| | en los nudos: | 35 |
| Nombre del caso | | (Fase 8) - EMPUJE POS. 8 |
| 801 | Peso propio | PZ Menos |
| | en los elementos: | 1A212 |
| 801 | Uniforme-barras | PZ=-7.500(kN/m) |
| | en los elementos: | 201A212 |
| 801 | Fuerza nodal | FZ=-403.000(kN) |
| | en los nudos: | 1 |
| 801 | Fuerza nodal | FZ=-116.000(kN) |
| | en los nudos: | 17A97CA20 |
| 801 | Desplazamiento impuesto | UZ=0.1460(m) |
| | en los nudos: | 208 |
| 801 | Desplazamiento impuesto | UZ=0.0540(m) |

Especificación de cargas

| Caso | Tipo de carga | Valor de carga |
|---|---|---|
| | en los nudos: | 16 |
| 801 | Desplazamiento impuesto | UZ=0.0070(m) |
| | en los nudos: | 36 |
| Nombre del caso | | (Fase 9) - EMPUJE POS. 9 |
| 901 | Peso propio | PZ Menos |
| | en los elementos: | 1A212 |
| 901 | Uniforme-barras | PZ=-7.500(kN/m) |
| | en los elementos: | 201A212 |
| 901 | Fuerza nodal | FZ=-403.000(kN) |
| | en los nudos: | 1 |
| 901 | Fuerza nodal | FZ=-116.000(kN) |
| | en los nudos: | 17A97CA20 |
| 901 | Desplazamiento impuesto | UZ=0.1460(m) |
| | en los nudos: | 209 |
| 901 | Desplazamiento impuesto | UZ=0.0540(m) |
| | en los nudos: | 17 |
| 901 | Desplazamiento impuesto | UZ=0.0070(m) |
| | en los nudos: | 37 |
| Nombre del caso | | (Fase 10) - EMPUJE POS. 10 |
| 1001 | Peso propio | PZ Menos |
| | en los elementos: | 1A212 |
| 1001 | Uniforme-barras | PZ=-7.500(kN/m) |
| | en los elementos: | 201A212 |
| 1001 | Fuerza nodal | FZ=-403.000(kN) |
| | en los nudos: | 1 |
| 1001 | Fuerza nodal | FZ=-116.000(kN) |
| | en los nudos: | 17A97CA20 |
| 1001 | Desplazamiento impuesto | UZ=0.1460(m) |
| | en los nudos: | 210 |
| 1001 | Desplazamiento impuesto | UZ=0.0540(m) |
| | en los nudos: | 18 |
| 1001 | Desplazamiento impuesto | UZ=0.0070(m) |
| | en los nudos: | 38 |
| Nombre del caso | | (Fase 11) - EMPUJE POS. 11 |
| 1101 | Peso propio | PZ Menos |
| | en los elementos: | 1A212 |
| 1101 | Uniforme-barras | PZ=-7.500(kN/m) |
| | en los elementos: | 201A212 |
| 1101 | Fuerza nodal | FZ=-403.000(kN) |
| | en los nudos: | 1 |
| 1101 | Fuerza nodal | FZ=-116.000(kN) |
| | en los nudos: | 17A97CA20 |
| 1101 | Desplazamiento impuesto | UZ=0.1460(m) |
| | en los nudos: | 211 |
| 1101 | Desplazamiento impuesto | UZ=0.0540(m) |
| | en los nudos: | 19 |
| 1101 | Desplazamiento impuesto | UZ=0.0070(m) |
| | en los nudos: | 39 |
| Nombre del caso | | (Fase 12) - EMPUJE POS. 12 |
| 1201 | Peso propio | PZ Menos |
| | en los elementos: | 1A212 |
| 1201 | Uniforme-barras | PZ=-7.500(kN/m) |
| | en los elementos: | 201A212 |
| 1201 | Fuerza nodal | FZ=-403.000(kN) |
| | en los nudos: | 1 |
| 1201 | Fuerza nodal | FZ=-116.000(kN) |
| | en los nudos: | 17A97CA20 |
| 1201 | Desplazamiento impuesto | UZ=0.1460(m) |
| | en los nudos: | 212 |
| 1201 | Desplazamiento impuesto | UZ=0.0540(m) |
| | en los nudos: | 20 |



Especificación de cargas

| Caso | Tipo de carga | Valor de carga |
|---|---|---|
| 1201 | Desplazamiento impuesto | UZ=0.0070(m) |
| | en los nudos: | 40 |
| Nombre del caso | | (Fase 13) - EMPUJE POS. 13 |
| 1301 | Peso propio | PZ Menos |
| | en los elementos: | 1A212 |
| 1301 | Uniforme-barras | PZ=-7.500(kN/m) |
| | en los elementos: | 201A212 |
| 1301 | Fuerza nodal | FZ=-403.000(kN) |
| | en los nudos: | 1 |
| 1301 | Fuerza nodal | FZ=-116.000(kN) |
| | en los nudos: | 17A97CA20 |
| 1301 | Desplazamiento impuesto | UZ=0.1460(m) |
| | en los nudos: | 1 |
| 1301 | Desplazamiento impuesto | UZ=0.0540(m) |
| | en los nudos: | 21 |
| 1301 | Desplazamiento impuesto | UZ=0.0070(m) |
| | en los nudos: | 41 |
| Nombre del caso | | (Fase 14) - EMPUJE POS. 14 |
| 1401 | Peso propio | PZ Menos |
| | en los elementos: | 1A212 |
| 1401 | Uniforme-barras | PZ=-7.500(kN/m) |
| | en los elementos: | 201A212 |
| 1401 | Fuerza nodal | FZ=-403.000(kN) |
| | en los nudos: | 1 |
| 1401 | Fuerza nodal | FZ=-116.000(kN) |
| | en los nudos: | 17A97CA20 |
| 1401 | Desplazamiento impuesto | UZ=0.1460(m) |
| | en los nudos: | 2 |
| 1401 | Desplazamiento impuesto | UZ=0.0540(m) |
| | en los nudos: | 22 |
| 1401 | Desplazamiento impuesto | UZ=0.0070(m) |
| | en los nudos: | 42 |
| Nombre del caso | | (Fase 15) - EMPUJE POS. 15 |
| 1501 | Peso propio | PZ Menos |
| | en los elementos: | 1A212 |
| 1501 | Uniforme-barras | PZ=-7.500(kN/m) |
| | en los elementos: | 201A212 |
| 1501 | Fuerza nodal | FZ=-403.000(kN) |
| | en los nudos: | 1 |
| 1501 | Fuerza nodal | FZ=-116.000(kN) |
| | en los nudos: | 17A97CA20 |
| 1501 | Desplazamiento impuesto | UZ=0.1460(m) |
| | en los nudos: | 3 |
| 1501 | Desplazamiento impuesto | UZ=0.0540(m) |
| | en los nudos: | 23 |
| 1501 | Desplazamiento impuesto | UZ=0.0070(m) |
| | en los nudos: | 43 |
| Nombre del caso | | (Fase 16) - EMPUJE POS. 16 |
| 1601 | Peso propio | PZ Menos |
| | en los elementos: | 1A212 |
| 1601 | Uniforme-barras | PZ=-7.500(kN/m) |
| | en los elementos: | 201A212 |
| 1601 | Fuerza nodal | FZ=-403.000(kN) |
| | en los nudos: | 1 |
| 1601 | Fuerza nodal | FZ=-116.000(kN) |
| | en los nudos: | 17A97CA20 |
| 1601 | Desplazamiento impuesto | UZ=0.1460(m) |
| | en los nudos: | 4 |
| 1601 | Desplazamiento impuesto | UZ=0.0540(m) |
| | en los nudos: | 24 |
| 1601 | Desplazamiento impuesto | UZ=0.0070(m) |

Especificación de cargas

| Caso | Tipo de carga | Valor de carga |
|---|---|---|
| | en los nudos: | 44 |
| Nombre del caso | | (Fase 17) - EMPUJE POS. 17 |
| 1701 | Peso propio | PZ Menos |
| | en los elementos: | 1A212 |
| 1701 | Uniforme-barras | PZ=-7.500(kN/m) |
| | en los elementos: | 201A212 |
| 1701 | Fuerza nodal | FZ=-403.000(kN) |
| | en los nudos: | 1 |
| 1701 | Fuerza nodal | FZ=-116.000(kN) |
| | en los nudos: | 17A97CA20 |
| 1701 | Desplazamiento impuesto | UZ=0.1460(m) |
| | en los nudos: | 5 |
| 1701 | Desplazamiento impuesto | UZ=0.0540(m) |
| | en los nudos: | 25 |
| 1701 | Desplazamiento impuesto | UZ=0.0070(m) |
| | en los nudos: | 45 |
| Nombre del caso | | (Fase 18) - EMPUJE POS. 18 |
| 1801 | Peso propio | PZ Menos |
| | en los elementos: | 1A212 |
| 1801 | Uniforme-barras | PZ=-7.500(kN/m) |
| | en los elementos: | 201A212 |
| 1801 | Fuerza nodal | FZ=-403.000(kN) |
| | en los nudos: | 1 |
| 1801 | Fuerza nodal | FZ=-116.000(kN) |
| | en los nudos: | 17A97CA20 |
| 1801 | Desplazamiento impuesto | UZ=0.1460(m) |
| | en los nudos: | 6 |
| 1801 | Desplazamiento impuesto | UZ=0.0540(m) |
| | en los nudos: | 26 |
| 1801 | Desplazamiento impuesto | UZ=0.0070(m) |
| | en los nudos: | 46 |
| Nombre del caso | | (Fase 19) - EMPUJE POS. 19 |
| 1901 | Peso propio | PZ Menos |
| | en los elementos: | 1A212 |
| 1901 | Uniforme-barras | PZ=-7.500(kN/m) |
| | en los elementos: | 201A212 |
| 1901 | Fuerza nodal | FZ=-403.000(kN) |
| | en los nudos: | 1 |
| 1901 | Fuerza nodal | FZ=-116.000(kN) |
| | en los nudos: | 17A97CA20 |
| 1901 | Desplazamiento impuesto | UZ=0.1460(m) |
| | en los nudos: | 7 |
| 1901 | Desplazamiento impuesto | UZ=0.0540(m) |
| | en los nudos: | 27 |
| 1901 | Desplazamiento impuesto | UZ=0.0070(m) |
| | en los nudos: | 47 |
| Nombre del caso | | (Fase 20) - EMPUJE POS. 20 |
| 2001 | Peso propio | PZ Menos |
| | en los elementos: | 1A212 |
| 2001 | Uniforme-barras | PZ=-7.500(kN/m) |
| | en los elementos: | 201A212 |
| 2001 | Fuerza nodal | FZ=-403.000(kN) |
| | en los nudos: | 1 |
| 2001 | Fuerza nodal | FZ=-116.000(kN) |
| | en los nudos: | 17A97CA20 |
| 2001 | Desplazamiento impuesto | UZ=0.1460(m) |
| | en los nudos: | 8 |
| 2001 | Desplazamiento impuesto | UZ=0.0540(m) |
| | en los nudos: | 28 |
| 2001 | Desplazamiento impuesto | UZ=0.0070(m) |
| | en los nudos: | 48 |



Especificación de cargas

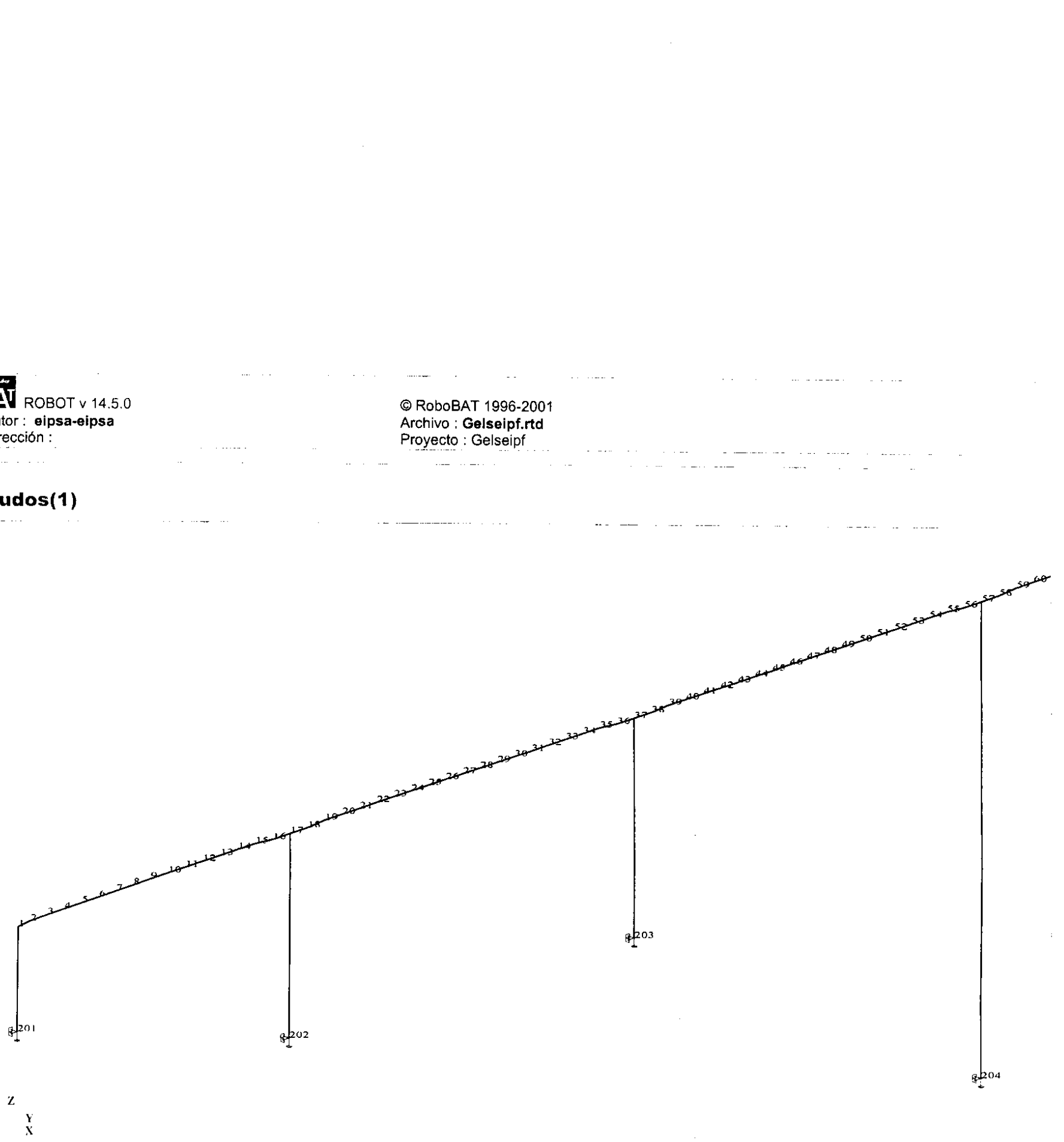
| Caso | Tipo de carga | Valor de carga |
|---|---|---|
| Nombre del caso | | (Fase 21) - EMPUJE POS. 21 |
| 2101 | Peso propio | PZ Menos |
| | en los elementos: | 1A212 |
| 2101 | Uniforme-barras | PZ=-7.500(kN/m) |
| | en los elementos: | 201A212 |
| 2101 | Fuerza nodal | FZ=-403.000(kN) |
| | en los nudos: | 1 |
| 2101 | Fuerza nodal | FZ=-116.000(kN) |
| | en los nudos: | 17A97CA20 |
| 2101 | Desplazamiento impuesto | UZ=0.1460(m) |
| | en los nudos: | 9 |
| 2101 | Desplazamiento impuesto | UZ=0.0540(m) |
| | en los nudos: | 29 |
| 2101 | Desplazamiento impuesto | UZ=0.0070(m) |
| | en los nudos: | 49 |

### 7.1.2. Modelo para cálculo en servicio:

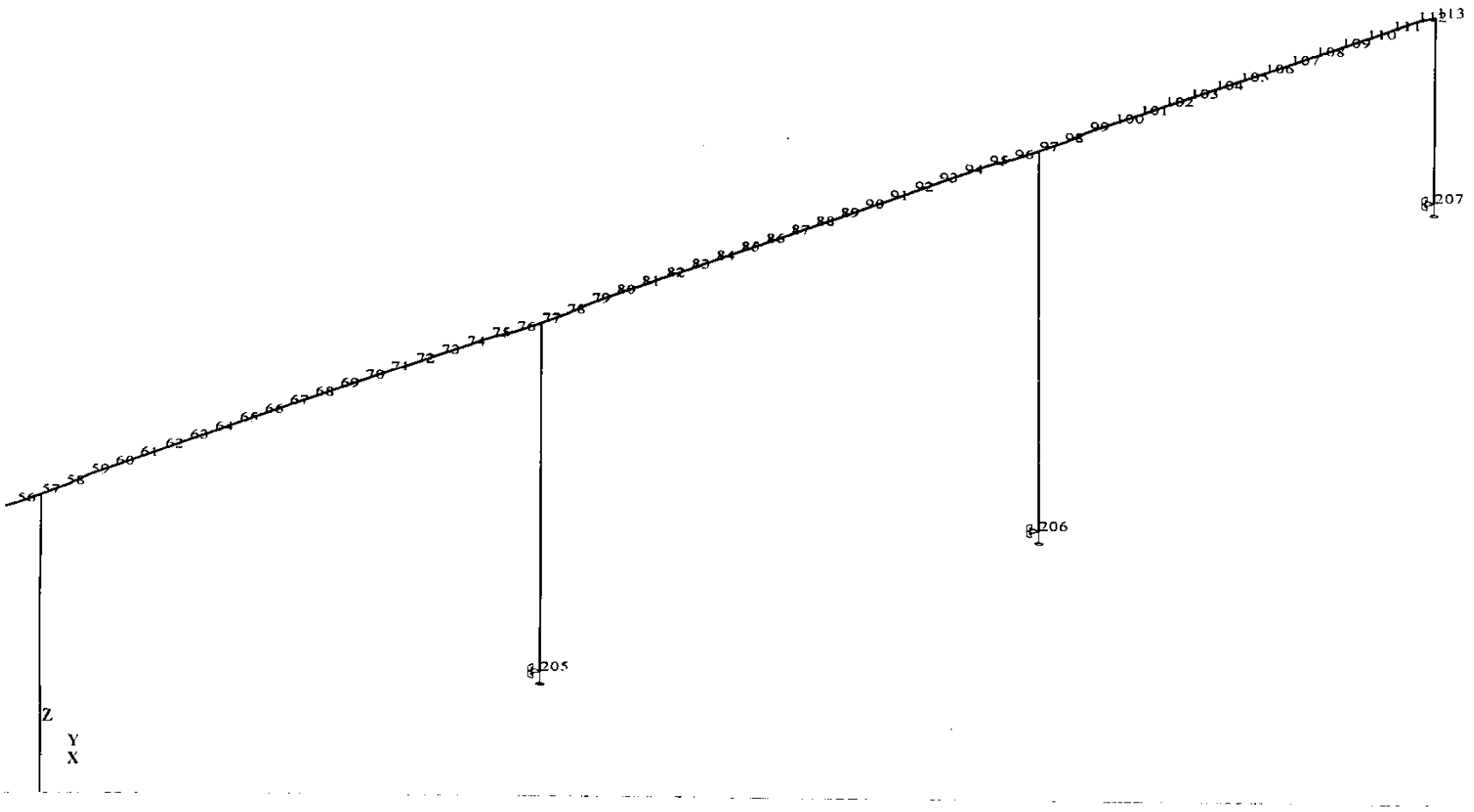
**Discretización: Nudos, Barras, Apoyos,**

**Características Mecánicas y Cargas**

## Nudos(1)



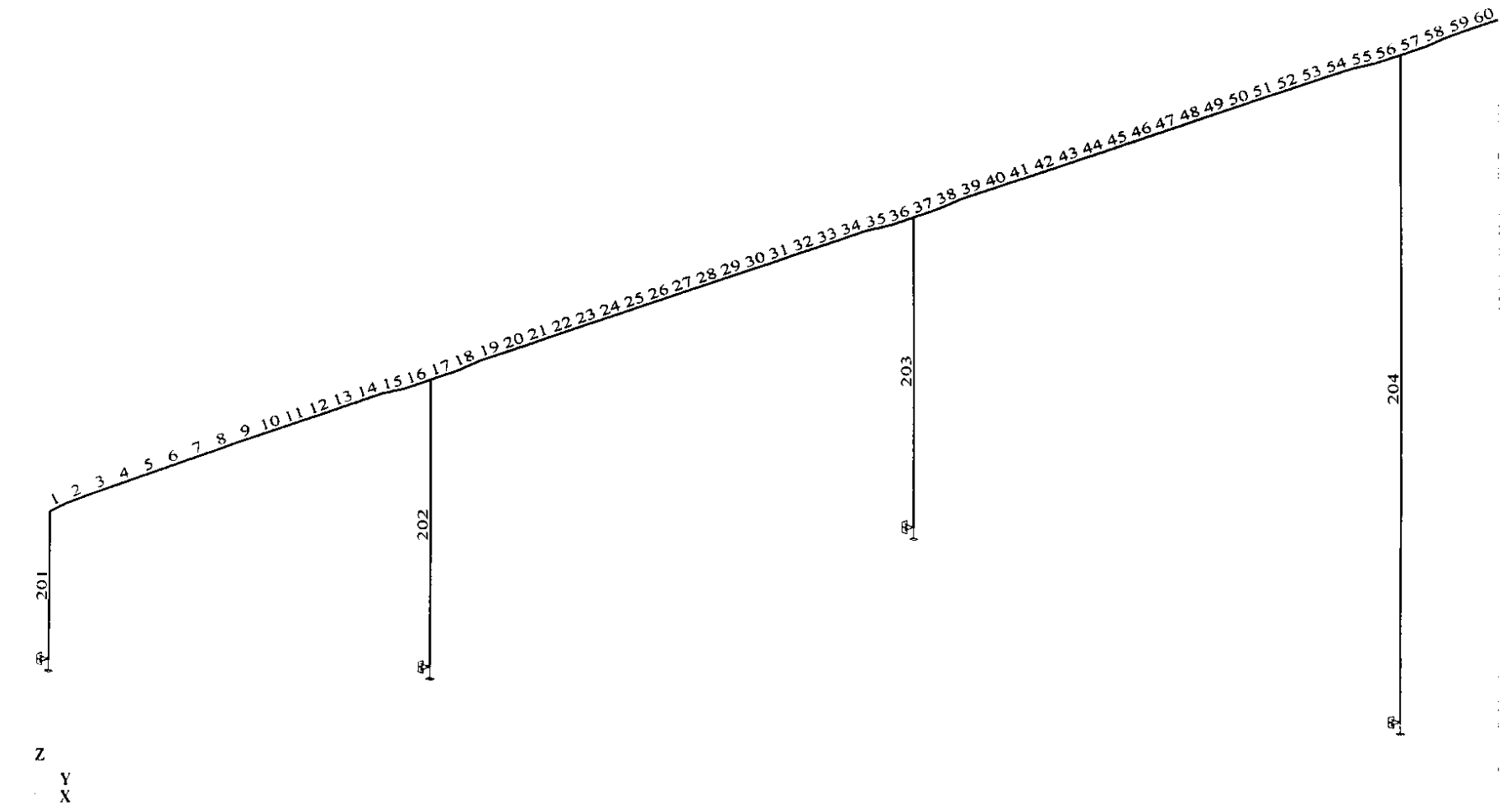
## Nudos (2)



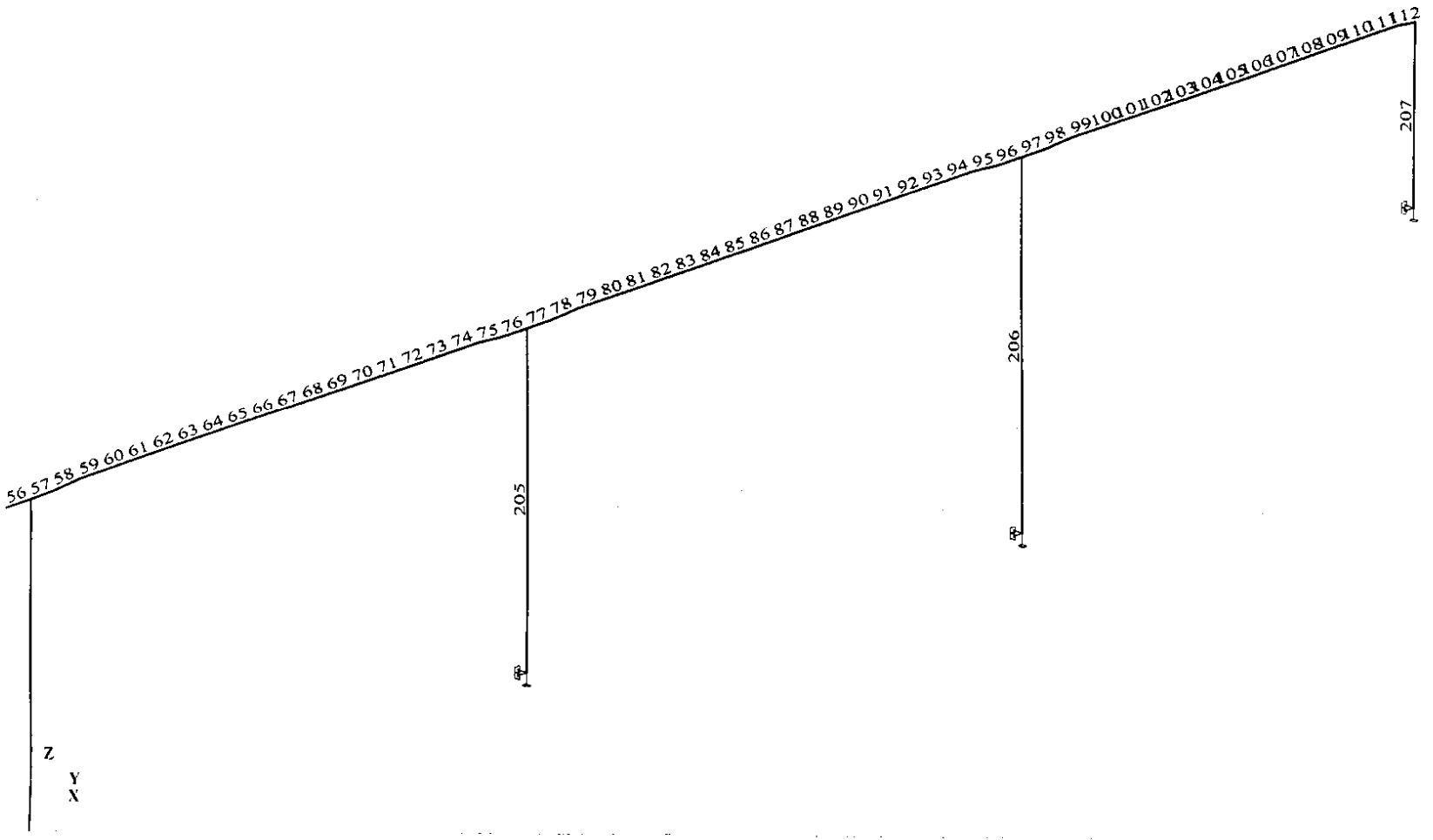





## Barras(1)



## Barras(2)








## Características: Barras:

| | Nombre de la sección | Lista de barras | SX (m^2) | SY (m^2) | SZ (m^2) | IX (m^4) | IY (m^4) | IZ (m^4) | HY (m) | HZ (m) | VY (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | NS 1 | 2A14 19A34 39A54 59A74 79A94 99A111 | 8.8170 | 0.0 | 0.0 | 19.6230 | 11.7630 | 87.3700 | 14.000 | 3.100 | 7.000 |
| | NS 2 | 1 15A18 35A38 55A58 75A78 95A98 112 | 11.4070 | 0.0 | 0.0 | 21.9360 | 14.0330 | 99.2380 | 14.000 | 3.100 | 7.000 |
| | RE 1 | 201 207 | 16.8000 | 14.0000 | 14.0000 | 7.6284 | 2.0160 | 274.4000 | 14.000 | 1.200 | 7.000 |
| | RE 2 | 202A206 | 6.9300 | 5.7750 | 5.7750 | 18.9678 | 6.7000 | 28.0078 | 6.000 | 2.600 | 3.000 |

| | VZ (m) | VPY (m) | VPZ (m) | E (N/mm^2) |
|---|---|---|---|---|
| | 1.212 | 7.000 | 1.888 | 30891.00 |
| | 1.370 | 7.000 | 1.730 | 30891.00 |
| | 0.600 | 7.000 | 0.600 | 30891.00 |
| | 1.300 | 3.000 | 1.300 | 30891.00 |

## Nudos: Valores:

| Nudo | X (m) | Y (m) | Z (m) | Apoyo - código | Apoyo |
|---|---|---|---|---|---|
| 1 | 0.0 | 0.0 | -1.370 | | |
| 2 | 0.0 | 1.500 | -1.212 | | |
| 3 | -0.001 | 3.600 | -1.212 | | |
| 4 | -0.001 | 5.700 | -1.212 | | |
| 5 | -0.003 | 7.800 | -1.212 | | |
| 6 | -0.004 | 9.900 | -1.212 | | |
| 7 | -0.006 | 12.000 | -1.212 | | |
| 8 | -0.008 | 14.100 | -1.212 | | |
| 9 | -0.011 | 16.200 | -1.212 | | |
| 10 | -0.014 | 18.300 | -1.212 | | |
| 11 | -0.018 | 20.400 | -1.212 | | |
| 12 | -0.021 | 22.500 | -1.212 | | |
| 13 | -0.026 | 24.600 | -1.212 | | |
| 14 | -0.030 | 26.700 | -1.212 | | |
| 15 | -0.035 | 28.800 | -1.212 | | |
| 16 | -0.040 | 30.900 | -1.370 | | |
| 17 | -0.046 | 33.000 | -1.370 | | |
| 18 | -0.052 | 35.100 | -1.370 | | |
| 19 | -0.059 | 37.200 | -1.212 | | |
| 20 | -0.065 | 39.300 | -1.212 | | |
| 21 | -0.073 | 41.400 | -1.212 | | |
| 22 | -0.080 | 43.500 | -1.212 | | |
| 23 | -0.088 | 45.600 | -1.212 | | |
| 24 | -0.096 | 47.700 | -1.212 | | |
| 25 | -0.105 | 49.800 | -1.212 | | |
| 26 | -0.114 | 51.900 | -1.212 | | |
| 27 | -0.124 | 54.000 | -1.212 | | |
| 28 | -0.133 | 56.100 | -1.212 | | |
| 29 | -0.144 | 58.200 | -1.212 | | |
| 30 | -0.154 | 60.300 | -1.212 | | |
| 31 | -0.165 | 62.400 | -1.212 | | |
| 32 | -0.176 | 64.500 | -1.212 | | |
| 33 | -0.188 | 66.600 | -1.212 | | |
| 34 | -0.200 | 68.700 | -1.212 | | |
| 35 | -0.212 | 70.800 | -1.212 | | |
| 36 | -0.225 | 72.900 | -1.370 | | |
| 37 | -0.238 | 74.999 | -1.370 | | |
| 38 | -0.252 | 77.099 | -1.370 | | |
| 39 | -0.266 | 79.199 | -1.212 | | |
| 40 | -0.280 | 81.299 | -1.212 | | |
| 41 | -0.295 | 83.399 | -1.212 | | |
| 42 | -0.310 | 85.499 | -1.212 | | |
| 43 | -0.325 | 87.599 | -1.212 | | |
| 44 | -0.341 | 89.699 | -1.212 | | |
| 45 | -0.357 | 91.799 | -1.212 | | |
| 46 | -0.374 | 93.899 | -1.212 | | |
| 47 | -0.391 | 95.999 | -1.212 | | |
| 48 | -0.408 | 98.099 | -1.212 | | |
| 49 | -0.425 | 100.199 | -1.212 | | |
| 50 | -0.443 | 102.299 | -1.212 | | |





| Nudo | X (m) | Y (m) | Z (m) | Apoyo - código | Apoyo |
|---|---|---|---|---|---|
| 51 | -0.462 | 104.399 | -1.212 | | |
| 52 | -0.481 | 106.499 | -1.212 | | |
| 53 | -0.500 | 108.598 | -1.212 | | |
| 54 | -0.519 | 110.698 | -1.212 | | |
| 55 | -0.539 | 112.798 | -1.212 | | |
| 56 | -0.559 | 114.898 | -1.370 | | |
| 57 | -0.580 | 116.998 | -1.370 | | |
| 58 | -0.601 | 119.098 | -1.370 | | |
| 59 | -0.622 | 121.198 | -1.212 | | |
| 60 | -0.644 | 123.298 | -1.212 | | |
| 61 | -0.666 | 125.398 | -1.212 | | |
| 62 | -0.689 | 127.498 | -1.212 | | |
| 63 | -0.712 | 129.597 | -1.212 | | |
| 64 | -0.735 | 131.697 | -1.212 | | |
| 65 | -0.759 | 133.797 | -1.212 | | |
| 66 | -0.783 | 135.897 | -1.212 | | |
| 67 | -0.807 | 137.997 | -1.212 | | |
| 68 | -0.832 | 140.097 | -1.212 | | |
| 69 | -0.857 | 142.197 | -1.212 | | |
| 70 | -0.882 | 144.296 | -1.212 | | |
| 71 | -0.908 | 146.396 | -1.212 | | |
| 72 | -0.934 | 148.496 | -1.212 | | |
| 73 | -0.961 | 150.596 | -1.212 | | |
| 74 | -0.988 | 152.696 | -1.212 | | |
| 75 | -1.015 | 154.796 | -1.212 | | |
| 76 | -1.043 | 156.895 | -1.370 | | |
| 77 | -1.071 | 158.995 | -1.370 | | |
| 78 | -1.100 | 161.095 | -1.370 | | |
| 79 | -1.129 | 163.195 | -1.212 | | |
| 80 | -1.158 | 165.295 | -1.212 | | |
| 81 | -1.187 | 167.394 | -1.212 | | |
| 82 | -1.217 | 169.494 | -1.212 | | |
| 83 | -1.248 | 171.594 | -1.212 | | |
| 84 | -1.278 | 173.694 | -1.212 | | |
| 85 | -1.310 | 175.793 | -1.212 | | |
| 86 | -1.341 | 177.893 | -1.212 | | |
| 87 | -1.373 | 179.993 | -1.212 | | |
| 88 | -1.405 | 182.093 | -1.212 | | |
| 89 | -1.438 | 184.193 | -1.212 | | |
| 90 | -1.471 | 186.292 | -1.212 | | |
| 91 | -1.504 | 188.392 | -1.212 | | |
| 92 | -1.538 | 190.492 | -1.212 | | |
| 93 | -1.572 | 192.591 | -1.212 | | |
| 94 | -1.606 | 194.691 | -1.212 | | |
| 95 | -1.641 | 196.791 | -1.212 | | |
| 96 | -1.676 | 198.891 | -1.370 | | |
| 97 | -1.712 | 200.990 | -1.370 | | |
| 98 | -1.748 | 203.090 | -1.370 | | |
| 99 | -1.784 | 205.190 | -1.212 | | |
| 100 | -1.821 | 207.289 | -1.212 | | |
| 101 | -1.858 | 209.389 | -1.212 | | |
| 102 | -1.895 | 211.489 | -1.212 | | |

| Nudo | X (m) | Y (m) | Z (m) | Apoyo - código | Apoyo |
|---|---|---|---|---|---|
| 103 | -1.933 | 213.588 | -1.212 | | |
| 104 | -1.971 | 215.688 | -1.212 | | |
| 105 | -2.010 | 217.788 | -1.212 | | |
| 106 | -2.049 | 219.887 | -1.212 | | |
| 107 | -2.088 | 221.987 | -1.212 | | |
| 108 | -2.128 | 224.087 | -1.212 | | |
| 109 | -2.168 | 226.186 | -1.212 | | |
| 110 | -2.208 | 228.286 | -1.212 | | |
| 111 | -2.249 | 230.385 | -1.212 | | |
| 112 | -2.290 | 232.485 | -1.212 | | |
| 113 | -2.320 | 233.985 | -1.370 | | |
| 201 | 0.0 | 0.0 | -11.000 | ffffff | Gelseipf_APO 1 |
| 202 | -0.046 | 33.000 | -20.000 | ffffff | Gelseipf_APO 1 |
| 203 | -0.238 | 74.999 | -21.500 | ffffff | Gelseipf_APO 1 |
| 204 | -0.580 | 116.998 | -45.000 | ffffff | Gelseipf_APO 1 |
| 205 | -1.071 | 158.995 | -23.000 | ffffff | Gelseipf_APO 1 |
| 206 | -1.712 | 200.990 | -25.000 | ffffff | Gelseipf_APO 1 |
| 207 | -2.320 | 233.985 | -13.000 | ffffff | Gelseipf_APO 1 |





## Barras:

| Barra | Nudos | Nudo 2 | Sección | Material | Longitud (m) | Gama (Grad) | Relajación - código |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 2 | NS 2 | *HORMIGON* | 1.508 | 0.0 | |
| 2 | 2 | 3 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 3 | 3 | 4 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 4 | 4 | 5 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 5 | 5 | 6 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 6 | 6 | 7 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 7 | 7 | 8 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 8 | 8 | 9 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 9 | 9 | 10 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 10 | 10 | 11 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 11 | 11 | 12 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 12 | 12 | 13 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 13 | 13 | 14 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 14 | 14 | 15 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 15 | 15 | 16 | NS 2 | *HORMIGON* | 2.106 | 0.0 | |
| 16 | 16 | 17 | NS 2 | *HORMIGON* | 2.100 | 0.0 | |
| 17 | 17 | 18 | NS 2 | *HORMIGON* | 2.100 | 0.0 | |
| 18 | 18 | 19 | NS 2 | *HORMIGON* | 2.106 | 0.0 | |
| 19 | 19 | 20 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 20 | 20 | 21 | NS 1 | *HORMIGON* | 2.100 | 0 0 | |
| 21 | 21 | 22 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 22 | 22 | 23 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 23 | 23 | 24 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 24 | 24 | 25 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 25 | 25 | 26 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 26 | 26 | 27 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 27 | 27 | 28 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 28 | 28 | 29 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 29 | 29 | 30 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 30 | 30 | 31 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 31 | 31 | 32 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 32 | 32 | 33 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 33 | 33 | 34 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 34 | 34 | 35 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 35 | 35 | 36 | NS 2 | *HORMIGON* | 2.106 | 0.0 | |
| 36 | 36 | 37 | NS 2 | *HORMIGON* | 2.099 | 0.0 | |
| 37 | 37 | 38 | NS 2 | *HORMIGON* | 2.100 | 0.0 | |
| 38 | 38 | 39 | NS 2 | *HORMIGON* | 2.106 | 0.0 | |
| 39 | 39 | 40 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 40 | 40 | 41 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 41 | 41 | 42 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 42 | 42 | 43 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 43 | 43 | 44 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 44 | 44 | 45 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 45 | 45 | 46 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 46 | 46 | 47 | NS 1 | *HORMIGON* | 2 100 | 0.0 | |
| 47 | 47 | 48 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 48 | 48 | 49 | NS 1 | *HORMIGON* | 2.100 | 0 0 | |
| 49 | 49 | 50 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| 50 | 50 | 51 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |

| Barra | Nudos | Nudo 2 | Sección | Material | Longitud (m) | Gama (Grad) | Relajación - código |
|---|---|---|---|---|---|---|---|
| **51** | 51 | 52 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **52** | 52 | 53 | NS 1 | *HORMIGON* | 2.099 | 0.0 | |
| **53** | 53 | 54 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **54** | 54 | 55 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **55** | 55 | 56 | NS 2 | *HORMIGON* | 2.106 | 0.0 | |
| **56** | 56 | 57 | NS 2 | *HORMIGON* | 2.100 | 0.0 | |
| **57** | 57 | 58 | NS 2 | *HORMIGON* | 2.100 | 0.0 | |
| **58** | 58 | 59 | NS 2 | *HORMIGON* | 2.106 | 0.0 | |
| **59** | 59 | 60 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **60** | 60 | 61 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **61** | 61 | 62 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **62** | 62 | 63 | NS 1 | *HORMIGON* | 2.099 | 0.0 | |
| **63** | 63 | 64 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **64** | 64 | 65 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **65** | 65 | 66 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **66** | 66 | 67 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **67** | 67 | 68 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **68** | 68 | 69 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **69** | 69 | 70 | NS 1 | *HORMIGON* | 2.099 | 0.0 | |
| **70** | 70 | 71 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **71** | 71 | 72 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **72** | 72 | 73 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **73** | 73 | 74 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **74** | 74 | 75 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **75** | 75 | 76 | NS 2 | *HORMIGON* | 2.105 | 0.0 | |
| **76** | 76 | 77 | NS 2 | *HORMIGON* | 2.100 | 0.0 | |
| **77** | 77 | 78 | NS 2 | *HORMIGON* | 2.100 | 0.0 | |
| **78** | 78 | 79 | NS 2 | *HORMIGON* | 2.106 | 0.0 | |
| **79** | 79 | 80 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **80** | 80 | 81 | NS 1 | *HORMIGON* | 2.099 | 0.0 | |
| **81** | 81 | 82 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **82** | 82 | 83 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **83** | 83 | 84 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **84** | 84 | 85 | NS 1 | *HORMIGON* | 2.099 | 0.0 | |
| **85** | 85 | 86 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **86** | 86 | 87 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **87** | 87 | 88 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **88** | 88 | 89 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **89** | 89 | 90 | NS 1 | *HORMIGON* | 2.099 | 0.0 | |
| **90** | 90 | 91 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **91** | 91 | 92 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **92** | 92 | 93 | NS 1 | *HORMIGON* | 2.099 | 0.0 | |
| **93** | 93 | 94 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **94** | 94 | 95 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **95** | 95 | 96 | NS 2 | *HORMIGON* | 2.106 | 0.0 | |
| **96** | 96 | 97 | NS 2 | *HORMIGON* | 2.099 | 0.0 | |
| **97** | 97 | 98 | NS 2 | *HORMIGON* | 2.100 | 0.0 | |
| **98** | 98 | 99 | NS 2 | *HORMIGON* | 2.106 | 0.0 | |
| **99** | 99 | 100 | NS 1 | *HORMIGON* | 2.099 | 0.0 | |
| **100** | 100 | 101 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **101** | 101 | 102 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **102** | 102 | 103 | NS 1 | *HORMIGON* | 2.099 | 0.0 | |





| Barra | Nudos | Nudo 2 | Sección | Material | Longitud (m) | Gama (Grad) | Relajación - código |
|---|---|---|---|---|---|---|---|
| **103** | 103 | 104 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **104** | 104 | 105 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **105** | 105 | 106 | NS 1 | *HORMIGON* | 2.099 | 0.0 | |
| **106** | 106 | 107 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **107** | 107 | 108 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **108** | 108 | 109 | NS 1 | *HORMIGON* | 2.099 | 0.0 | |
| **109** | 109 | 110 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **110** | 110 | 111 | NS 1 | *HORMIGON* | 2.099 | 0.0 | |
| **111** | 111 | 112 | NS 1 | *HORMIGON* | 2.100 | 0.0 | |
| **112** | 112 | 113 | NS 2 | *HORMIGON* | 1.509 | 0.0 | |
| **201** | 201 | 1 | RE 1 | *HORMIGON 1* | 9.630 | 100.000 | ffffff fffiif |
| **202** | 202 | 17 | RE 2 | *HORMIGON 1* | 18.630 | 100.178 | ffffff fffiif |
| **203** | 203 | 37 | RE 2 | *HORMIGON 1* | 20.130 | 100.405 | ffffff fffiif |
| **204** | 204 | 57 | RE 2 | *HORMIGON 1* | 43.630 | 100.631 | ffffff fffiif |
| **205** | 205 | 77 | RE 2 | *HORMIGON 1* | 21.630 | 100.858 | ffffff fffiif |
| **206** | 206 | 97 | RE 2 | *HORMIGON 1* | 23.630 | 101.084 | ffffff fffiif |
| **207** | 207 | 113 | RE 1 | *HORMIGON 1* | 11.630 | 101.263 | ffffff fffiif |

## Cargas - Casos: 1A57 :

| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 1 | peso propio | 1A112 | PZ Menos |
| 2 | desplazamiento impuesto | 201 | UZ=0.25(m) |
| 2 | desplazamiento impuesto | 202 | UZ=0.15(m) |
| 2 | desplazamiento impuesto | 203 | UZ=0.05(m) |
| 2 | desplazamiento impuesto | 204 | UZ=0.01(m) |
| 3 | sobrecarga uniforme | 1A112 | PZ=-147.00(kN/m) |
| 3 | momento repartido | 1A112 | MX=15.22(kNm/m) local |
| 4 | sobrecarga uniforme | 1A112 | PZ=-32.61(kN/m) |
| 4 | momento repartido | 1A112 | MX=4.57(kNm/m) local |
| 5 | momento repartido | 1A112 | MX=-4.57(kNm/m) local |
| 5 | sobrecarga uniforme | 1A112 | PZ=32.61(kN/m) |
| 6 | sobrecarga uniforme | 1A112 | PZ=54.35(kN/m) |
| 6 | momento repartido | 1A112 | MX=-7.61(kNm/m) local |
| 7 | sobrecarga uniforme | 1A16 | PZ=-8.75(kN/m) |
| 7 | momento repartido | 1A16 | MX=52.06(kNm/m) local |
| 8 | sobrecarga uniforme | 17A36 | PZ=-8.75(kN/m) |
| 8 | momento repartido | 17A36 | MX=52.06(kNm/m) local |
| 9 | momento repartido | 37A56 | MX=52.06(kNm/m) local |
| 9 | sobrecarga uniforme | 37A56 | PZ=-8.75(kN/m) |
| 10 | sobrecarga uniforme | 57A76 | PZ=-8.75(kN/m) |
| 10 | momento repartido | 57A76 | MX=52.06(kNm/m) local |
| 11 | sobrecarga uniforme | 77A96 | PZ=-8.75(kN/m) |
| 11 | momento repartido | 77A96 | MX=52.06(kNm/m) local |
| 12 | sobrecarga uniforme | 97A112 | PZ=-8.75(kN/m) |
| 12 | momento repartido | 97A112 | MX=52.06(kNm/m) local |
| 13 | sobrecarga uniforme | 1A16 | PZ=-8.75(kN/m) |
| 13 | momento repartido | 1A16 | MX=-52.06(kNm/m) local |
| 14 | sobrecarga uniforme | 17A36 | PZ=-8.75(kN/m) |
| 14 | momento repartido | 17A36 | MX=-52.06(kNm/m) local |
| 15 | sobrecarga uniforme | 37A56 | PZ=-8.75(kN/m) |



ROBOT v 14.5.0
Autor : **eipsa-eipsa**
Dirección :

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Archivo : **Gelseipf.rtd**
Proyecto : Gelseipf

| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 15 | momento repartido | 37A56 | MX=-52.06(kNm/m) local |
| 16 | sobrecarga uniforme | 57A76 | PZ=-8.75(kN/m) |
| 16 | momento repartido | 57A76 | MX=-52.06(kNm/m) local |
| 17 | momento repartido | 77A96 | MX=-52.06(kNm/m) local |
| 17 | sobrecarga uniforme | 77A96 | PZ=-8.75(kN/m) |
| 18 | sobrecarga uniforme | 97A112 | PZ=-8.75(kN/m) |
| 18 | momento repartido | 97A112 | MX=-52.06(kNm/m) local |
| 19 | momento repartido | 17A36 57A76 | MX=1.65(kNm/m) local |
| 19 | sobrecarga uniforme | 17A36 57A76 | PY=-0.44(kN/m) local |
| 19 | momento repartido | 17A36 57A76 | MX=32.80(kNm/m) local |
| 19 | sobrecarga uniforme | 17A36 57A76 | PZ=-11.90(kN/m) |
| 19 | momento repartido | 37A56 77A96 | MX=16.50(kNm/m) local |
| 19 | sobrecarga uniforme | 37A56 77A96 | PY=-4.40(kN/m) local |
| 19 | momento repartido | 37A56 77A96 | MX=16.50(kNm/m) local |
| 19 | sobrecarga uniforme | 37A56 77A96 | PY=-4.40(kN/m) local |
| 19 | momento repartido | 37A56 77A96 | MX=328.40(kNm/m) local |
| 19 | sobrecarga uniforme | 37A56 77A96 | PZ=-119.00(kN/m) |
| 19 | momento repartido | 2A16 | MX=19.80(kNm/m) local |
| 19 | sobrecarga uniforme | 2A16 | PY=-5.30(kN/m) local |
| 19 | momento repartido | 2A16 | MX=394.10(kNm/m) local |
| 19 | sobrecarga uniforme | 2A16 | PZ=-142.80(kN/m) |
| 20 | momento repartido | 17A36 57A76 | MX=1.65(kNm/m) local |
| 20 | sobrecarga uniforme | 17A36 57A76 | PY=-0.44(kN/m) local |
| 20 | momento repartido | 17A36 57A76 | MX=-23.10(kNm/m) local |
| 20 | sobrecarga uniforme | 17A36 57A76 | PZ=-11.90(kN/m) |
| 20 | momento repartido | 37A56 77A96 | MX=16.50(kNm/m) local |
| 20 | sobrecarga uniforme | 37A56 77A96 | PY=-4.40(kN/m) local |
| 20 | momento repartido | 37A56 77A96 | MX=-230.80(kNm/m) local |
| 20 | sobrecarga uniforme | 37A56 77A96 | PZ=-119.00(kN/m) |
| 20 | momento repartido | 2A16 | MX=19.80(kNm/m) local |
| 20 | sobrecarga uniforme | 2A16 | PY=-5.30(kN/m) local |
| 20 | momento repartido | 2A16 | MX=-277.00(kNm/m) local |

| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 20 | sobrecarga uniforme | 2A16 | PZ=-142.80(kN/m) |
| 21 | momento repartido | 37A56 77A96 | MX=1.65(kNm/m) local |
| 21 | sobrecarga uniforme | 37A56 77A96 | PY=-0.44(kN/m) local |
| 21 | momento repartido | 37A56 77A96 | MX=32.80(kNm/m) local |
| 21 | sobrecarga uniforme | 37A56 77A96 | PZ=-11.90(kN/m) |
| 21 | momento repartido | 17A36 57A76 | MX=16.50(kNm/m) local |
| 21 | sobrecarga uniforme | 17A36 57A76 | PY=-4.40(kN/m) local |
| 21 | momento repartido | 17A36 57A76 | MX=328.40(kNm/m) local |
| 21 | sobrecarga uniforme | 17A36 57A76 | PZ=-119.00(kN/m) |
| 21 | momento repartido | 97A112 | MX=19.80(kNm/m) local |
| 21 | sobrecarga uniforme | 97A112 | PY=-5.30(kN/m) local |
| 21 | momento repartido | 97A112 | MX=394.10(kNm/m) local |
| 21 | sobrecarga uniforme | 97A112 | PZ=-142.80(kN/m) |
| 22 | momento repartido | 37A56 77A96 | MX=1.65(kNm/m) local |
| 22 | sobrecarga uniforme | 37A56 77A96 | PY=-0.44(kN/m) local |
| 22 | momento repartido | 37A56 77A96 | MX=-23.10(kNm/m) local |
| 22 | sobrecarga uniforme | 37A56 77A96 | PZ=-11.90(kN/m) |
| 22 | momento repartido | 17A36 57A76 | MX=16.50(kNm/m) local |
| 22 | sobrecarga uniforme | 17A36 57A76 | PY=-4.40(kN/m) local |
| 22 | momento repartido | 17A36 57A76 | MX=-230.80(kNm/m) local |
| 22 | sobrecarga uniforme | 17A36 57A76 | PZ=-119.00(kN/m) |
| 22 | momento repartido | 97A112 | MX=19.80(kNm/m) local |
| 22 | sobrecarga uniforme | 97A112 | PY=-5.30(kN/m) local |
| 22 | momento repartido | 97A112 | MX=-277.00(kNm/m) local |
| 22 | sobrecarga uniforme | 97A112 | PZ=-142.80(kN/m) |
| 23 | momento repartido | 37A56 | MX=1.65(kNm/m) local |
| 23 | sobrecarga uniforme | 37A56 | PY=-0.44(kN/m) local |
| 23 | momento repartido | 37A56 | MX=32.80(kNm/m) local |
| 23 | sobrecarga uniforme | 37A56 | PZ=-11.90(kN/m) |
| 23 | momento repartido | 17A36 57A76 | MX=16.50(kNm/m) local |
| 23 | sobrecarga uniforme | 17A36 57A76 | PY=-4.40(kN/m) local |
| 23 | momento repartido | 17A36 57A76 | MX=328.40(kNm/m) local |



ROBOT v 14.5.0
Autor : **eipsa-eipsa**
Dirección :

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Archivo : **Gelseipf.rtd**
Proyecto : Gelseipf

| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 23 | sobrecarga uniforme | 17A36 57A76 | PZ=-119.00(kN/m) |
| 23 | momento repartido | 2A16 | MX=19.80(kNm/m) local |
| 23 | sobrecarga uniforme | 2A16 | PY=-5.30(kN/m) local |
| 23 | momento repartido | 2A16 | MX=394.10(kNm/m) local |
| 23 | sobrecarga uniforme | 2A16 | PZ=-142.80(kN/m) |
| 24 | momento repartido | 37A56 | MX=1.65(kNm/m) local |
| 24 | sobrecarga uniforme | 37A56 | PY=-0.44(kN/m) local |
| 24 | momento repartido | 37A56 | MX=-23.10(kNm/m) local |
| 24 | sobrecarga uniforme | 37A56 | PZ=-11.90(kN/m) |
| 24 | momento repartido | 17A36 57A76 | MX=16.50(kNm/m) local |
| 24 | sobrecarga uniforme | 17A36 57A76 | PY=-4.40(kN/m) local |
| 24 | momento repartido | 17A36 57A76 | MX=-230.80(kNm/m) local |
| 24 | sobrecarga uniforme | 17A36 57A76 | PZ=-119.00(kN/m) |
| 24 | momento repartido | 2A16 | MX=19.80(kNm/m) local |
| 24 | sobrecarga uniforme | 2A16 | PY=-5.30(kN/m) local |
| 24 | momento repartido | 2A16 | MX=-277.00(kNm/m) local |
| 24 | sobrecarga uniforme | 2A16 | PZ=-142.80(kN/m) |
| 25 | momento repartido | 1A16 57A76 | MX=1.65(kNm/m) local |
| 25 | sobrecarga uniforme | 1A16 57A76 | PY=-0.44(kN/m) local |
| 25 | momento repartido | 1A16 57A76 | MX=32.80(kNm/m) local |
| 25 | sobrecarga uniforme | 1A16 57A76 | PZ=-11.90(kN/m) |
| 25 | momento repartido | 17A56 77A96 | MX=16.50(kNm/m) local |
| 25 | sobrecarga uniforme | 17A56 77A96 | PY=-4.40(kN/m) local |
| 25 | momento repartido | 17A56 77A96 | MX=328.40(kNm/m) local |
| 25 | sobrecarga uniforme | 17A56 77A96 | PZ=-119.00(kN/m) |
| 26 | momento repartido | 1A16 57A76 | MX=1.65(kNm/m) local |
| 26 | sobrecarga uniforme | 1A16 57A76 | PY=-0.44(kN/m) local |
| 26 | momento repartido | 1A16 57A76 | MX=-23.10(kNm/m) local |
| 26 | sobrecarga uniforme | 1A16 57A76 | PZ=-11.90(kN/m) |
| 26 | momento repartido | 17A56 77A96 | MX=16.50(kNm/m) local |
| 26 | sobrecarga uniforme | 17A56 77A96 | PY=-4.40(kN/m) local |
| 26 | momento repartido | 17A56 77A96 | MX=-230.80(kNm/m) local |

| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 26 | sobrecarga uniforme | 17A56 77A96 | PZ=-119.00(kN/m) |
| 27 | momento repartido | 17A36 77A96 | MX=1.65(kNm/m) local |
| 27 | sobrecarga uniforme | 17A36 77A96 | PY=-0.44(kN/m) local |
| 27 | momento repartido | 17A36 77A96 | MX=32.80(kNm/m) local |
| 27 | sobrecarga uniforme | 17A36 77A96 | PZ=-11.90(kN/m) |
| 27 | momento repartido | 37A76 | MX=16.50(kNm/m) local |
| 27 | sobrecarga uniforme | 37A76 | PY=-4.40(kN/m) local |
| 27 | momento repartido | 37A76 | MX=328.40(kNm/m) local |
| 27 | sobrecarga uniforme | 37A76 | PZ=-119.00(kN/m) |
| 27 | momento repartido | 2A16 97A112 | MX=19.80(kNm/m) local |
| 27 | sobrecarga uniforme | 2A16 97A112 | PY=-5.30(kN/m) local |
| 27 | momento repartido | 2A16 97A112 | MX=394.10(kNm/m) local |
| 27 | sobrecarga uniforme | 2A16 97A112 | PZ=-142.80(kN/m) |
| 28 | momento repartido | 17A36 77A96 | MX=1.65(kNm/m) local |
| 28 | sobrecarga uniforme | 17A36 77A96 | PY=-0.44(kN/m) local |
| 28 | momento repartido | 17A36 77A96 | MX=-23.10(kNm/m) local |
| 28 | sobrecarga uniforme | 17A36 77A96 | PZ=-11.90(kN/m) |
| 28 | momento repartido | 37A76 | MX=16.50(kNm/m) local |
| 28 | sobrecarga uniforme | 37A76 | PY=-4.40(kN/m) local |
| 28 | momento repartido | 37A76 | MX=-230.80(kNm/m) local |
| 28 | sobrecarga uniforme | 37A76 | PZ=-119.00(kN/m) |
| 28 | momento repartido | 2A16 97A112 | MX=19.80(kNm/m) local |
| 28 | sobrecarga uniforme | 2A16 97A112 | PY=-5.30(kN/m) local |
| 28 | momento repartido | 2A16 97A112 | MX=-277.00(kNm/m) local |
| 28 | sobrecarga uniforme | 2A16 97A112 | PZ=-142.80(kN/m) |
| 29 | momento repartido | 37A56 97A112 | MX=1.65(kNm/m) local |
| 29 | sobrecarga uniforme | 37A56 97A112 | PY=-0.44(kN/m) local |
| 29 | momento repartido | 37A56 97A112 | MX=32.80(kNm/m) local |
| 29 | sobrecarga uniforme | 37A56 97A112 | PZ=-11.90(kN/m) |
| 29 | momento repartido | 17A36 57A96 | MX=16.50(kNm/m) local |
| 29 | sobrecarga uniforme | 17A36 57A96 | PY=-4.40(kN/m) local |
| 29 | momento repartido | 17A36 57A96 | MX=328.40(kNm/m) local |



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| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 29 | sobrecarga uniforme | 17A36 57A96 | PZ=-119.00(kN/m) |
| 30 | momento repartido | 37A56 97A112 | MX=1.65(kNm/m) local |
| 30 | sobrecarga uniforme | 37A56 97A112 | PY=-0.44(kN/m) local |
| 30 | momento repartido | 37A56 97A112 | MX=-23.10(kNm/m) local |
| 30 | sobrecarga uniforme | 37A56 97A112 | PZ=-11.90(kN/m) |
| 30 | momento repartido | 17A36 57A96 | MX=16.50(kNm/m) local |
| 30 | sobrecarga uniforme | 17A36 57A96 | PY=-4.40(kN/m) local |
| 30 | momento repartido | 17A36 57A96 | MX=-230.80(kNm/m) local |
| 30 | sobrecarga uniforme | 17A36 57A96 | PZ=-119.00(kN/m) |
| 31 | momento repartido | 57A76 | MX=1.65(kNm/m) local |
| 31 | sobrecarga uniforme | 57A76 | PY=-0.44(kN/m) local |
| 31 | momento repartido | 57A76 | MX=32.80(kNm/m) local |
| 31 | sobrecarga uniforme | 57A76 | PZ=-11.90(kN/m) |
| 31 | momento repartido | 37A56 77A96 | MX=16.50(kNm/m) local |
| 31 | sobrecarga uniforme | 37A56 77A96 | PY=-4.40(kN/m) local |
| 31 | momento repartido | 37A56 77A96 | MX=328.40(kNm/m) local |
| 31 | sobrecarga uniforme | 37A56 77A96 | PZ=-119.00(kN/m) |
| 31 | momento repartido | 97A112 | MX=19.80(kNm/m) local |
| 31 | sobrecarga uniforme | 97A112 | PY=-5.30(kN/m) local |
| 31 | momento repartido | 97A112 | MX=394.10(kNm/m) local |
| 31 | sobrecarga uniforme | 97A112 | PZ=-142.80(kN/m) |
| 32 | momento repartido | 57A76 | MX=1.65(kNm/m) local |
| 32 | sobrecarga uniforme | 57A76 | PY=-0.44(kN/m) local |
| 32 | momento repartido | 57A76 | MX=-23.10(kNm/m) local |
| 32 | sobrecarga uniforme | 57A76 | PZ=-11.90(kN/m) |
| 32 | momento repartido | 37A56 77A96 | MX=16.50(kNm/m) local |
| 32 | sobrecarga uniforme | 37A56 77A96 | PY=-4.40(kN/m) local |
| 32 | momento repartido | 37A56 77A96 | MX=-230.80(kNm/m) local |
| 32 | sobrecarga uniforme | 37A56 77A96 | PZ=-119.00(kN/m) |
| 32 | momento repartido | 97A112 | MX=19.80(kNm/m) local |
| 32 | sobrecarga uniforme | 97A112 | PY=-5.30(kN/m) local |
| 32 | momento repartido | 97A112 | MX=-277.00(kNm/m) local |

| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 32 | sobrecarga uniforme | 97A112 | PZ=-142.80(kN/m) |
| 33 | momento repartido | 17A112 | MX=16.50(kNm/m) local |
| 33 | sobrecarga uniforme | 17A112 | PY=-4.40(kN/m) local |
| 33 | momento repartido | 17A112 | MX=328.40(kNm/m) local |
| 33 | sobrecarga uniforme | 17A112 | PZ=-119.00(kN/m) |
| 33 | momento repartido | 2A16 | MX=19.80(kNm/m) local |
| 33 | sobrecarga uniforme | 2A16 | PY=-5.30(kN/m) local |
| 33 | momento repartido | 2A16 | MX=394.10(kNm/m) local |
| 33 | sobrecarga uniforme | 2A16 | PZ=-142.80(kN/m) |
| 34 | sobrecarga uniforme | 2A16 | PZ=-142.80(kN/m) |
| 34 | momento repartido | 2A16 | MX=-277.00(kNm/m) local |
| 34 | sobrecarga uniforme | 2A16 | PY=-5.30(kN/m) local |
| 34 | momento repartido | 2A16 | MX=19.80(kNm/m) local |
| 34 | sobrecarga uniforme | 17A112 | PZ=-119.00(kN/m) |
| 34 | momento repartido | 17A112 | MX=-230.80(kNm/m) local |
| 34 | sobrecarga uniforme | 17A112 | PY=-4.40(kN/m) local |
| 34 | momento repartido | 17A112 | MX=16.50(kNm/m) local |
| 35 | momento repartido | 1A96 | MX=16.50(kNm/m) local |
| 35 | sobrecarga uniforme | 1A96 | PY=-4.40(kN/m) local |
| 35 | momento repartido | 1A96 | MX=328.40(kNm/m) local |
| 35 | sobrecarga uniforme | 1A96 | PZ=-119.00(kN/m) |
| 35 | momento repartido | 97A112 | MX=19.80(kNm/m) local |
| 35 | sobrecarga uniforme | 97A112 | PY=-5.30(kN/m) local |
| 35 | momento repartido | 97A112 | MX=394.10(kNm/m) local |
| 35 | sobrecarga uniforme | 97A112 | PZ=-142.80(kN/m) |
| 36 | momento repartido | 1A96 | MX=16.50(kNm/m) local |
| 36 | sobrecarga uniforme | 1A96 | PY=-4.40(kN/m) local |
| 36 | momento repartido | 1A96 | MX=-230.80(kNm/m) local |
| 36 | sobrecarga uniforme | 1A96 | PZ=-119.00(kN/m) |
| 36 | momento repartido | 97A112 | MX=19.80(kNm/m) local |
| 36 | sobrecarga uniforme | 97A112 | PY=-5.30(kN/m) local |
| 36 | momento repartido | 97A112 | MX=-277.00(kNm/m) local |



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| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 36 | sobrecarga uniforme | 97A112 | PZ=-142.80(kN/m) |
| 37 | temperatura | 1A112 | TZ=5.80(°C) |
| 38 | fuerza nodal | 90 | FX=0.01(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| 38 | fuerza nodal | 89 | FX=-0.01(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| 38 | fuerza nodal | 88 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| 38 | fuerza nodal | 86 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| 38 | fuerza nodal | 85 | FX=0.48(kN) FY=0.01(kN) CX=-0.01(kNm) CY=0.49(kNm) |
| 38 | fuerza nodal | 84 | FX=-0.96(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.97(kNm) |
| 38 | fuerza nodal | 83 | FX=0.48(kN) FY=0.01(kN) CX=-0.01(kNm) CY=0.48(kNm) |
| 38 | fuerza nodal | 82 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| 38 | fuerza nodal | 81 | FX=-0.47(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.47(kNm) |
| 38 | fuerza nodal | 80 | FX=-0.01(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| 38 | fuerza nodal | 77 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.56(kNm) |
| 38 | fuerza nodal | 76 | FX=0.01(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| 38 | fuerza nodal | 75 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.49(kNm) |
| 38 | fuerza nodal | 72 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| 38 | fuerza nodal | 70 | FX=-0.47(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| 38 | fuerza nodal | 69 | FX=-0.01(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| 38 | fuerza nodal | 67 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| 38 | fuerza nodal | 64 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| 38 | fuerza nodal | 63 | FX=0.01(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| 38 | fuerza nodal | 62 | FX=-0.01(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| 38 | fuerza nodal | 113 | FX=20.00(kN) FY=-999.80(kN) CX=1167.77(kNm) CY=23.36(kNm) |
| 38 | fuerza nodal | 112 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| 38 | fuerza nodal | 111 | FX=0.01(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| 38 | fuerza nodal | 110 | FX=-0.49(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.49(kNm) |
| 38 | fuerza nodal | 109 | FX=0.01(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| 38 | fuerza nodal | 108 | FX=-0.01(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| 38 | fuerza nodal | 107 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| 38 | fuerza nodal | 106 | FX=0.01(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| 38 | fuerza nodal | 105 | FX=-0.01(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| 38 | fuerza nodal | 104 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 38 | fuerza nodal | 103 | FX=0.01(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| | 38 | fuerza nodal | 102 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.49(kNm) |
| | 38 | fuerza nodal | 100 | FX=0.01(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| | 38 | fuerza nodal | 99 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.49(kNm) |
| | 38 | fuerza nodal | 97 | FX=0.01(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| | 38 | fuerza nodal | 96 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.57(kNm) |
| | 38 | fuerza nodal | 94 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| | 38 | fuerza nodal | 93 | FX=0.01(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| | 38 | fuerza nodal | 92 | FX=-0.01(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| | 38 | fuerza nodal | 91 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| | 38 | fuerza nodal | 26 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 38 | fuerza nodal | 24 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 38 | fuerza nodal | 22 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 38 | fuerza nodal | 21 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 38 | fuerza nodal | 20 | FX=-0.95(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.96(kNm) |
| | 38 | fuerza nodal | 19 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 38 | fuerza nodal | 18 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.56(kNm) |
| | 38 | fuerza nodal | 16 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.56(kNm) |
| | 38 | fuerza nodal | 14 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 38 | fuerza nodal | 13 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 38 | fuerza nodal | 12 | FX=-0.95(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.96(kNm) |
| | 38 | fuerza nodal | 11 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 38 | fuerza nodal | 10 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 38 | fuerza nodal | 8 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 38 | fuerza nodal | 6 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 38 | fuerza nodal | 5 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 38 | fuerza nodal | 4 | FX=-0.95(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.96(kNm) |
| | 38 | fuerza nodal | 3 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 38 | fuerza nodal | 2 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 38 | fuerza nodal | 1 | FY=1000.00(kN) CX=-1168.00(kNm) |
| | 38 | fuerza nodal | 61 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| | 38 | fuerza nodal | 60 | FX=-10.48(kN) FY=999.95(kN) CX=-1009.94(kNm) CY=-10.58(kNm) |





| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 38 | fuerza nodal | 60 | FX=10.48(kN) FY=-999.95(kN) CX=1009.94(kNm) CY=10.58(kNm) |
| | 38 | fuerza nodal | 59 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 38 | fuerza nodal | 56 | FX=-0.48(kN) FY=-0.00(kN) CX=0.01(kNm) CY=-0.56(kNm) |
| | 38 | fuerza nodal | 54 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 38 | fuerza nodal | 53 | FX=0.00(kN) CY=0.00(kNm) |
| | 38 | fuerza nodal | 52 | FX=-0.00(kN) CY=-0.00(kNm) |
| | 38 | fuerza nodal | 50 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 38 | fuerza nodal | 49 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 38 | fuerza nodal | 27 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 38 | fuerza nodal | 28 | FX=-0.95(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.96(kNm) |
| | 38 | fuerza nodal | 29 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 38 | fuerza nodal | 30 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 38 | fuerza nodal | 32 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 38 | fuerza nodal | 35 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 38 | fuerza nodal | 36 | FX=-0.00(kN) CY=-0.00(kNm) |
| | 38 | fuerza nodal | 37 | FX=-0.47(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.55(kNm) |
| | 38 | fuerza nodal | 40 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 38 | fuerza nodal | 43 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 38 | fuerza nodal | 45 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 39 | fuerza nodal | 22 | FX=3.33(kN) FY=-999.99(kN) CX=1009.99(kNm) CY=3.37(kNm) |
| | 39 | fuerza nodal | 21 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 39 | fuerza nodal | 20 | FX=-0.95(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.96(kNm) |
| | 39 | fuerza nodal | 19 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 39 | fuerza nodal | 18 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.56(kNm) |
| | 39 | fuerza nodal | 16 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.56(kNm) |
| | 39 | fuerza nodal | 14 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 39 | fuerza nodal | 13 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 39 | fuerza nodal | 12 | FX=-0.95(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.96(kNm) |
| | 39 | fuerza nodal | 11 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 39 | fuerza nodal | 10 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 39 | fuerza nodal | 8 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 39 | fuerza nodal | 6 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 39 | fuerza nodal | 5 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 39 | fuerza nodal | 4 | FX=-0.95(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.96(kNm) |
| | 39 | fuerza nodal | 3 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 39 | fuerza nodal | 2 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 39 | fuerza nodal | 1 | FY=1000.00(kN) CX=-1168.00(kNm) |
| | 40 | fuerza nodal | 12 | FX=1.43(kN) FY=-1000.00(kN) CX=1010.00(kNm) CY=1.44(kNm) |
| | 40 | fuerza nodal | 11 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 40 | fuerza nodal | 10 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 40 | fuerza nodal | 8 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 40 | fuerza nodal | 6 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 40 | fuerza nodal | 5 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 40 | fuerza nodal | 4 | FX=-0.95(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.96(kNm) |
| | 40 | fuerza nodal | 3 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 40 | fuerza nodal | 2 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 40 | fuerza nodal | 1 | FY=1000.00(kN) CX=-1168.00(kNm) |
| | 41 | fuerza nodal | 90 | FX=0.01(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| | 41 | fuerza nodal | 89 | FX=-0.01(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| | 41 | fuerza nodal | 88 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.01(kNm) CY=0.83(kNm) |
| | 41 | fuerza nodal | 86 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.01(kNm) CY=0.83(kNm) |
| | 41 | fuerza nodal | 85 | FX=0.48(kN) FY=0.01(kN) CX=0.01(kNm) CY=-0.84(kNm) |
| | 41 | fuerza nodal | 84 | FX=-0.96(kN) FY=-0.01(kN) CX=-0.02(kNm) CY=1.67(kNm) |
| | 41 | fuerza nodal | 83 | FX=0.48(kN) FY=0.01(kN) CX=0.01(kNm) CY=-0.83(kNm) |
| | 41 | fuerza nodal | 82 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.01(kNm) CY=0.83(kNm) |
| | 41 | fuerza nodal | 81 | FX=-0.47(kN) FY=-0.01(kN) CX=-0.01(kNm) CY=0.82(kNm) |
| | 41 | fuerza nodal | 80 | FX=-0.01(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| | 41 | fuerza nodal | 77 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.01(kNm) CY=0.75(kNm) |
| | 41 | fuerza nodal | 76 | FX=0.01(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| | 41 | fuerza nodal | 75 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.01(kNm) CY=0.84(kNm) |
| | 41 | fuerza nodal | 72 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.01(kNm) CY=0.83(kNm) |
| | 41 | fuerza nodal | 70 | FX=-0.47(kN) FY=-0.01(kN) CX=-0.01(kNm) CY=0.82(kNm) |
| | 41 | fuerza nodal | 69 | FX=-0.01(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| | 41 | fuerza nodal | 67 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.01(kNm) CY=0.83(kNm) |



ROBOT v 14.5.0
Autor : **eipsa-eipsa**
Dirección :

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Archivo : **Gelseipf.rtd**
Proyecto : Gelseipf

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 41 | fuerza nodal | 64 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.01(kNm) CY=0.83(kNm) |
| | 41 | fuerza nodal | 63 | FX=0.01(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| | 41 | fuerza nodal | 62 | FX=-0.01(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| | 41 | fuerza nodal | 113 | FX=20.00(kN) FY=-999.80(kN) CX=-1579.68(kNm) CY=-31.59(kNm) |
| | 41 | fuerza nodal | 112 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.02(kNm) CY=0.83(kNm) |
| | 41 | fuerza nodal | 111 | FX=0.01(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.02(kNm) |
| | 41 | fuerza nodal | 110 | FX=-0.49(kN) FY=-0.01(kN) CX=-0.02(kNm) CY=0.84(kNm) |
| | 41 | fuerza nodal | 109 | FX=0.01(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.02(kNm) |
| | 41 | fuerza nodal | 108 | FX=-0.01(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.02(kNm) |
| | 41 | fuerza nodal | 107 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.02(kNm) CY=0.83(kNm) |
| | 41 | fuerza nodal | 106 | FX=0.01(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.02(kNm) |
| | 41 | fuerza nodal | 105 | FX=-0.01(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.02(kNm) |
| | 41 | fuerza nodal | 104 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.02(kNm) CY=0.83(kNm) |
| | 41 | fuerza nodal | 103 | FX=0.01(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| | 41 | fuerza nodal | 102 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.01(kNm) CY=0.84(kNm) |
| | 41 | fuerza nodal | 100 | FX=0.01(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| | 41 | fuerza nodal | 99 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.01(kNm) CY=0.84(kNm) |
| | 41 | fuerza nodal | 97 | FX=0.01(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| | 41 | fuerza nodal | 96 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.01(kNm) CY=0.77(kNm) |
| | 41 | fuerza nodal | 94 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.01(kNm) CY=0.83(kNm) |
| | 41 | fuerza nodal | 93 | FX=0.01(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| | 41 | fuerza nodal | 92 | FX=-0.01(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| | 41 | fuerza nodal | 91 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.01(kNm) CY=0.83(kNm) |
| | 41 | fuerza nodal | 26 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 41 | fuerza nodal | 24 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 41 | fuerza nodal | 22 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 41 | fuerza nodal | 21 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| | 41 | fuerza nodal | 20 | FX=-0.95(kN) FY=-0.00(kN) CX=-0.01(kNm) CY=1.66(kNm) |
| | 41 | fuerza nodal | 19 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| | 41 | fuerza nodal | 18 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.75(kNm) |
| | 41 | fuerza nodal | 16 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.75(kNm) |
| | 41 | fuerza nodal | 14 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 41 | fuerza nodal | 13 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| | 41 | fuerza nodal | 12 | FX=-0.95(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=1.66(kNm) |
| | 41 | fuerza nodal | 11 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| | 41 | fuerza nodal | 10 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 41 | fuerza nodal | 8 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 41 | fuerza nodal | 6 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 41 | fuerza nodal | 5 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| | 41 | fuerza nodal | 4 | FX=-0.95(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=1.66(kNm) |
| | 41 | fuerza nodal | 3 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| | 41 | fuerza nodal | 2 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 41 | fuerza nodal | 1 | FY=1000.00(kN) CX=1580.00(kNm) |
| | 41 | fuerza nodal | 61 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.01(kNm) CY=0.83(kNm) |
| | 41 | fuerza nodal | 60 | FX=-10.48(kN) FY=999.95(kN) CX=1737.90(kNm) CY=18.21(kNm) |
| | 41 | fuerza nodal | 60 | FX=10.48(kN) FY=-999.95(kN) CX=-1737.90(kNm) CY=-18.21(kNm) |
| | 41 | fuerza nodal | 59 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.01(kNm) CY=0.83(kNm) |
| | 41 | fuerza nodal | 56 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.01(kNm) CY=0.75(kNm) |
| | 41 | fuerza nodal | 54 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.01(kNm) CY=0.83(kNm) |
| | 41 | fuerza nodal | 53 | FX=0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| | 41 | fuerza nodal | 52 | FX=-0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| | 41 | fuerza nodal | 50 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.01(kNm) CY=0.83(kNm) |
| | 41 | fuerza nodal | 49 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.01(kNm) CY=0.83(kNm) |
| | 41 | fuerza nodal | 45 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.01(kNm) CY=0.83(kNm) |
| | 41 | fuerza nodal | 43 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.01(kNm) CY=0.83(kNm) |
| | 41 | fuerza nodal | 40 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.01(kNm) CY=0.83(kNm) |
| | 41 | fuerza nodal | 37 | FX=-0.47(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.75(kNm) |
| | 41 | fuerza nodal | 36 | FX=-0.00(kN) CY=0.00(kNm) |
| | 41 | fuerza nodal | 35 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 41 | fuerza nodal | 32 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 41 | fuerza nodal | 30 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 41 | fuerza nodal | 29 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| | 41 | fuerza nodal | 28 | FX=-0.95(kN) FY=-0.00(kN) CX=-0.01(kNm) CY=1.66(kNm) |
| | 41 | fuerza nodal | 27 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |





| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 42 | fuerza nodal | 12 | FX=1.43(kN) FY=-1000.00(kN) CX=-1738.00(kNm) CY=-2.48(kNm) |
| | 42 | fuerza nodal | 11 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| | 42 | fuerza nodal | 10 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 42 | fuerza nodal | 8 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 42 | fuerza nodal | 6 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 42 | fuerza nodal | 5 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| | 42 | fuerza nodal | 4 | FX=-0.95(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=1.66(kNm) |
| | 42 | fuerza nodal | 3 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| | 42 | fuerza nodal | 2 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 42 | fuerza nodal | 1 | FY=1000.00(kN) CX=1580.00(kNm) |
| | 43 | fuerza nodal | 20 | FX=-0.95(kN) FY=-0.00(kN) CX=-0.01(kNm) CY=1.66(kNm) |
| | 43 | fuerza nodal | 21 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| | 43 | fuerza nodal | 22 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 43 | fuerza nodal | 24 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 43 | fuerza nodal | 26 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 43 | fuerza nodal | 27 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| | 43 | fuerza nodal | 28 | FX=-0.95(kN) FY=-0.00(kN) CX=-0.01(kNm) CY=1.66(kNm) |
| | 43 | fuerza nodal | 29 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| | 43 | fuerza nodal | 30 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 43 | fuerza nodal | 32 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 43 | fuerza nodal | 35 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 43 | fuerza nodal | 36 | FX=-0.00(kN) CY=0.00(kNm) |
| | 43 | fuerza nodal | 37 | FX=-0.47(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.75(kNm) |
| | 43 | fuerza nodal | 40 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.01(kNm) CY=0.83(kNm) |
| | 43 | fuerza nodal | 42 | FX=7.14(kN) FY=-999.97(kN) CX=-1737.96(kNm) CY=-12.41(kNm) |
| | 43 | fuerza nodal | 1 | FY=1000.00(kN) CX=1580.00(kNm) |
| | 43 | fuerza nodal | 2 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 43 | fuerza nodal | 3 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| | 43 | fuerza nodal | 4 | FX=-0.95(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=1.66(kNm) |
| | 43 | fuerza nodal | 5 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| | 43 | fuerza nodal | 6 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 43 | fuerza nodal | 8 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 43 | fuerza nodal | 10 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 43 | fuerza nodal | 11 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| | 43 | fuerza nodal | 12 | FX=-0.95(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=1.66(kNm) |
| | 43 | fuerza nodal | 13 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| | 43 | fuerza nodal | 14 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 43 | fuerza nodal | 16 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.75(kNm) |
| | 43 | fuerza nodal | 18 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.75(kNm) |
| | 43 | fuerza nodal | 19 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| | 44 | fuerza nodal | 11 | FX=0.46(kN) FY=-8.90(kN) FZ=20.76(kN) CX=-4.44(kNm) CY=-0.23(kNm) |
| | 44 | fuerza nodal | 12 | FX=-0.86(kN) FY=-9.28(kN) FZ=20.32(kN) CX=-3.05(kNm) CY=0.28(kNm) |
| | 44 | fuerza nodal | 13 | FX=0.46(kN) FY=-9.78(kN) FZ=20.27(kN) CX=-1.09(kNm) CY=-0.05(kNm) |
| | 44 | fuerza nodal | 14 | FX=-0.41(kN) FY=-10.12(kN) FZ=19.76(kN) CX=1.58(kNm) CY=-0.06(kNm) |
| | 44 | fuerza nodal | 15 | FX=-0.00(kN) FY=1.76(kN) FZ=-25.98(kN) CX=-0.83(kNm) CY=-0.00(kNm) |
| | 44 | fuerza nodal | 16 | FX=-0.39(kN) FY=-12.72(kN) FZ=-73.67(kN) CX=11.26(kNm) CY=-0.35(kNm) |
| | 44 | fuerza nodal | 17 | FX=0.08(kN) FY=-28.46(kN) FZ=-103.01(kN) CX=27.60(kNm) CY=0.08(kNm) |
| | 44 | fuerza nodal | 18 | FX=-0.23(kN) FY=-53.11(kN) FZ=-120.75(kN) CX=42.86(kNm) CY=-0.19(kNm) |
| | 44 | fuerza nodal | 19 | FX=2.70(kN) FY=-809.38(kN) FZ=187.70(kN) CX=131.12(kNm) CY=0.44(kNm) |
| | 44 | fuerza nodal | 1 | FY=908.08(kN) FZ=-88.99(kN) CX=-154.37(kNm) |
| | 44 | fuerza nodal | 2 | FX=-0.44(kN) FY=6.08(kN) FZ=11.51(kN) CX=0.82(kNm) CY=0.06(kNm) |
| | 44 | fuerza nodal | 3 | FX=0.44(kN) FY=7.35(kN) FZ=13.42(kN) CX=2.30(kNm) CY=-0.14(kNm) |
| | 44 | fuerza nodal | 4 | FX=-0.88(kN) FY=7.24(kN) FZ=14.09(kN) CX=3.32(kNm) CY=0.41(kNm) |
| | 44 | fuerza nodal | 5 | FX=0.44(kN) FY=6.87(kN) FZ=13.89(kN) CX=3.93(kNm) CY=-0.25(kNm) |
| | 44 | fuerza nodal | 6 | FX=-0.45(kN) FY=6.62(kN) FZ=14.10(kN) CX=4.32(kNm) CY=0.29(kNm) |
| | 44 | fuerza nodal | 7 | FX=-0.01(kN) FY=6.46(kN) FZ=14.76(kN) CX=4.54(kNm) CY=0.00(kNm) |
| | 44 | fuerza nodal | 8 | FX=-0.46(kN) FY=6.83(kN) FZ=18.15(kN) CX=4.91(kNm) CY=0.33(kNm) |
| | 44 | fuerza nodal | 9 | FX=0.01(kN) FY=-6.92(kN) FZ=22.05(kN) CX=-4.80(kNm) CY=-0.01(kNm) |
| | 44 | fuerza nodal | 10 | FX=-0.44(kN) FY=-8.62(kN) FZ=21.63(kN) CX=-5.35(kNm) CY=0.27(kNm) |
| | 45 | fuerza nodal | 19 | FX=2.67(kN) FY=-800.78(kN) FZ=202.86(kN) CX=-190.59(kNm) CY=-0.64(kNm) |
| | 45 | fuerza nodal | 18 | FX=-0.21(kN) FY=-59.11(kN) FZ=-129.98(kN) CX=26.72(kNm) CY=-0.10(kNm) |
| | 45 | fuerza nodal | 17 | FX=0.09(kN) FY=-30.27(kN) FZ=-108.92(kN) CX=19.07(kNm) CY=0.05(kNm) |
| | 45 | fuerza nodal | 16 | FX=-0.39(kN) FY=-12.65(kN) FZ=-73.60(kN) CX=6.89(kNm) CY=-0.21(kNm) |
| | 45 | fuerza nodal | 15 | FX=-0.01(kN) FY=4.64(kN) FZ=-25.53(kN) CX=-0.61(kNm) CY=-0.00(kNm) |





| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 45 | fuerza nodal | 14 | FX=-0.44(kN) FY=4.31(kN) FZ=21.51(kN) CX=0.79(kNm) CY=0.08(kNm) |
| | 45 | fuerza nodal | 13 | FX=0.41(kN) FY=4.77(kN) FZ=21.35(kN) CX=2.15(kNm) CY=-0.19(kNm) |
| | 45 | fuerza nodal | 12 | FX=-0.85(kN) FY=5.17(kN) FZ=20.74(kN) CX=3.46(kNm) CY=0.57(kNm) |
| | 45 | fuerza nodal | 11 | FX=0.41(kN) FY=5.60(kN) FZ=20.53(kN) CX=4.70(kNm) CY=-0.34(kNm) |
| | 45 | fuerza nodal | 1 | FY=825.68(kN) FZ=-74.31(kN) CX=189.91(kNm) |
| | 45 | fuerza nodal | 2 | FX=-0.40(kN) FY=5.61(kN) FZ=9.79(kN) CX=2.93(kNm) CY=0.21(kNm) |
| | 45 | fuerza nodal | 3 | FX=0.40(kN) FY=5.85(kN) FZ=11.11(kN) CX=4.01(kNm) CY=-0.27(kNm) |
| | 45 | fuerza nodal | 4 | FX=-0.80(kN) FY=5.84(kN) FZ=11.67(kN) CX=4.79(kNm) CY=0.66(kNm) |
| | 45 | fuerza nodal | 5 | FX=0.40(kN) FY=5.61(kN) FZ=11.44(kN) CX=5.19(kNm) CY=-0.37(kNm) |
| | 45 | fuerza nodal | 6 | FX=-0.41(kN) FY=5.68(kN) FZ=12.41(kN) CX=5.67(kNm) CY=0.41(kNm) |
| | 45 | fuerza nodal | 7 | FX=-0.01(kN) FY=5.35(kN) FZ=11.76(kN) CX=5.58(kNm) CY=0.01(kNm) |
| | 45 | fuerza nodal | 8 | FX=-0.42(kN) FY=6.05(kN) FZ=16.03(kN) CX=6.40(kNm) CY=0.44(kNm) |
| | 45 | fuerza nodal | 9 | FX=-0.01(kN) FY=6.53(kN) FZ=20.43(kN) CX=6.75(kNm) CY=0.01(kNm) |
| | 45 | fuerza nodal | 10 | FX=-0.43(kN) FY=6.10(kN) FZ=20.71(kN) CX=5.86(kNm) CY=0.41(kNm) |
| | 46 | fuerza nodal | 21 | FX=0.40(kN) FY=-3.78(kN) FZ=21.87(kN) CX=-1.56(kNm) CY=-0.17(kNm) |
| | 46 | fuerza nodal | 22 | FX=-0.38(kN) FY=-0.61(kN) FZ=20.54(kN) CX=-0.43(kNm) CY=0.27(kNm) |
| | 46 | fuerza nodal | 23 | FX=-0.03(kN) FY=8.93(kN) FZ=19.65(kN) CX=8.47(kNm) CY=0.03(kNm) |
| | 46 | fuerza nodal | 24 | FX=-0.43(kN) FY=8.63(kN) FZ=20.52(kN) CX=9.82(kNm) CY=0.49(kNm) |
| | 46 | fuerza nodal | 25 | FX=-0.04(kN) FY=8.19(kN) FZ=20.98(kN) CX=10.41(kNm) CY=0.04(kNm) |
| | 46 | fuerza nodal | 26 | FX=-0.43(kN) FY=7.63(kN) FZ=21.00(kN) CX=10.31(kNm) CY=0.59(kNm) |
| | 46 | fuerza nodal | 27 | FX=0.37(kN) FY=7.25(kN) FZ=21.79(kN) CX=9.99(kNm) CY=-0.51(kNm) |
| | 46 | fuerza nodal | 28 | FX=-0.85(kN) FY=6.81(kN) FZ=22.55(kN) CX=9.20(kNm) CY=1.14(kNm) |
| | 46 | fuerza nodal | 29 | FX=0.38(kN) FY=6.27(kN) FZ=22.87(kN) CX=7.96(kNm) CY=-0.48(kNm) |
| | 46 | fuerza nodal | 30 | FX=-0.44(kN) FY=5.71(kN) FZ=23.15(kN) CX=6.47(kNm) CY=0.50(kNm) |
| | 46 | fuerza nodal | 31 | FX=-0.03(kN) FY=5.11(kN) FZ=22.96(kN) CX=4.81(kNm) CY=0.03(kNm) |
| | 46 | fuerza nodal | 32 | FX=-0.44(kN) FY=4.59(kN) FZ=23.57(kN) CX=3.19(kNm) CY=0.31(kNm) |
| | 46 | fuerza nodal | 33 | FX=-0.02(kN) FY=4.02(kN) FZ=23.72(kN) CX=1.58(kNm) CY=0.01(kNm) |
| | 46 | fuerza nodal | 34 | FX=-0.02(kN) FY=3.46(kN) FZ=23.82(kN) CX=0.13(kNm) CY=0.00(kNm) |
| | 46 | fuerza nodal | 35 | FX=-0.52(kN) FY=15.00(kN) FZ=-32.71(kN) CX=-5.61(kNm) CY=-0.19(kNm) |
| | 46 | fuerza nodal | 36 | FX=0.08(kN) FY=-13.14(kN) FZ=-94.30(kN) CX=11.30(kNm) CY=0.07(kNm) |
| | 46 | fuerza nodal | 37 | FX=-0.22(kN) FY=-30.30(kN) FZ=-113.21(kN) CX=29.39(kNm) CY=-0.21(kNm) |
| | 46 | fuerza nodal | 38 | FX=0.35(kN) FY=-53.01(kN) FZ=-120.16(kN) CX=42.78(kNm) CY=0.29(kNm) |

| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 46 | fuerza nodal | 39 | FX=5.37(kN) FY=-805.48(kN) FZ=186.79(kN) CX=130.49(kNm) CY=0.87(kNm) |
| 46 | fuerza nodal | 1 | FY=914.49(kN) FZ=-68.89(kN) CX=-155.46(kNm) |
| 46 | fuerza nodal | 2 | FX=-0.44(kN) FY=5.12(kN) FZ=9.34(kN) CX=0.52(kNm) CY=0.04(kNm) |
| 46 | fuerza nodal | 3 | FX=0.44(kN) FY=6.12(kN) FZ=10.18(kN) CX=1.45(kNm) CY=-0.10(kNm) |
| 46 | fuerza nodal | 4 | FX=-0.89(kN) FY=6.10(kN) FZ=10.77(kN) CX=2.13(kNm) CY=0.31(kNm) |
| 46 | fuerza nodal | 5 | FX=0.44(kN) FY=5.94(kN) FZ=10.92(kN) CX=2.59(kNm) CY=-0.19(kNm) |
| 46 | fuerza nodal | 6 | FX=-0.45(kN) FY=5.67(kN) FZ=10.61(kN) CX=2.83(kNm) CY=0.23(kNm) |
| 46 | fuerza nodal | 7 | FX=-0.01(kN) FY=5.72(kN) FZ=11.65(kN) CX=3.07(kNm) CY=0.00(kNm) |
| 46 | fuerza nodal | 8 | FX=-0.46(kN) FY=6.47(kN) FZ=16.35(kN) CX=3.54(kNm) CY=0.25(kNm) |
| 46 | fuerza nodal | 9 | FX=0.00(kN) FY=-2.53(kN) FZ=22.21(kN) CX=-1.33(kNm) CY=-0.00(kNm) |
| 46 | fuerza nodal | 10 | FX=-0.44(kN) FY=-8.66(kN) FZ=21.74(kN) CX=-3.90(kNm) CY=0.20(kNm) |
| 46 | fuerza nodal | 20 | FX=-0.77(kN) FY=-3.25(kN) FZ=21.18(kN) CX=-0.21(kNm) CY=0.05(kNm) |
| 46 | fuerza nodal | 19 | FX=0.40(kN) FY=-2.77(kN) FZ=18.12(kN) CX=0.93(kNm) CY=0.13(kNm) |
| 46 | fuerza nodal | 18 | FX=-0.28(kN) FY=-37.95(kN) FZ=-93.74(kN) CX=35.74(kNm) CY=-0.27(kNm) |
| 46 | fuerza nodal | 17 | FX=0.09(kN) FY=-30.58(kN) FZ=-116.96(kN) CX=34.86(kNm) CY=0.10(kNm) |
| 46 | fuerza nodal | 16 | FX=-0.39(kN) FY=-12.14(kN) FZ=-73.46(kN) CX=12.80(kNm) CY=-0.42(kNm) |
| 46 | fuerza nodal | 15 | FX=0.01(kN) FY=-4.79(kN) FZ=-26.90(kN) CX=3.07(kNm) CY=0.01(kNm) |
| 46 | fuerza nodal | 14 | FX=-0.41(kN) FY=-10.17(kN) FZ=19.85(kN) CX=3.32(kNm) CY=-0.13(kNm) |
| 46 | fuerza nodal | 13 | FX=0.46(kN) FY=-9.82(kN) FZ=20.36(kN) CX=0.58(kNm) CY=0.03(kNm) |
| 46 | fuerza nodal | 12 | FX=-0.87(kN) FY=-9.33(kN) FZ=20.41(kN) CX=-1.48(kNm) CY=0.14(kNm) |
| 46 | fuerza nodal | 11 | FX=0.46(kN) FY=-8.94(kN) FZ=20.86(kN) CX=-2.94(kNm) CY=-0.15(kNm) |
| 47 | fuerza nodal | 21 | FX=0.40(kN) FY=-3.79(kN) FZ=21.90(kN) CX=-2.85(kNm) CY=-0.30(kNm) |
| 47 | fuerza nodal | 22 | FX=-0.37(kN) FY=-4.24(kN) FZ=20.99(kN) CX=-4.45(kNm) CY=0.39(kNm) |
| 47 | fuerza nodal | 23 | FX=-0.03(kN) FY=7.71(kN) FZ=19.70(kN) CX=9.94(kNm) CY=0.04(kNm) |
| 47 | fuerza nodal | 24 | FX=-0.43(kN) FY=8.60(kN) FZ=20.43(kN) CX=12.70(kNm) CY=0.63(kNm) |
| 47 | fuerza nodal | 25 | FX=-0.04(kN) FY=8.16(kN) FZ=20.89(kN) CX=13.14(kNm) CY=0.06(kNm) |
| 47 | fuerza nodal | 26 | FX=-0.43(kN) FY=7.60(kN) FZ=20.91(kN) CX=12.85(kNm) CY=0.73(kNm) |
| 47 | fuerza nodal | 27 | FX=0.37(kN) FY=7.22(kN) FZ=21.70(kN) CX=12.40(kNm) CY=-0.63(kNm) |
| 47 | fuerza nodal | 28 | FX=-0.84(kN) FY=6.78(kN) FZ=22.46(kN) CX=11.46(kNm) CY=1.42(kNm) |
| 47 | fuerza nodal | 29 | FX=0.38(kN) FY=6.24(kN) FZ=22.78(kN) CX=10.05(kNm) CY=-0.61(kNm) |
| 47 | fuerza nodal | 30 | FX=-0.44(kN) FY=5.69(kN) FZ=23.05(kN) CX=8.37(kNm) CY=0.65(kNm) |
| 47 | fuerza nodal | 31 | FX=-0.03(kN) FY=5.09(kN) FZ=22.87(kN) CX=6.52(kNm) CY=0.03(kNm) |



ROBOT v 14.5.0
Autor : **eipsa-eipsa**
Dirección :

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Archivo : **Gelseipf.rtd**
Proyecto : Gelseipf

| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 47 | fuerza nodal | 32 | FX=-0.44(kN) FY=4.57(kN) FZ=23.47(kN) CX=4.73(kNm) CY=0.46(kNm) |
| 47 | fuerza nodal | 33 | FX=-0.02(kN) FY=4.01(kN) FZ=23.61(kN) CX=2.94(kNm) CY=0.02(kNm) |
| 47 | fuerza nodal | 34 | FX=-0.02(kN) FY=3.44(kN) FZ=23.71(kN) CX=1.30(kNm) CY=0.01(kNm) |
| 47 | fuerza nodal | 35 | FX=-0.53(kN) FY=18.15(kN) FZ=-31.64(kN) CX=-0.62(kNm) CY=-0.02(kNm) |
| 47 | fuerza nodal | 36 | FX=0.08(kN) FY=-13.14(kN) FZ=-95.08(kN) CX=6.85(kNm) CY=0.04(kNm) |
| 47 | fuerza nodal | 37 | FX=-0.21(kN) FY=-32.03(kN) FZ=-118.69(kN) CX=20.18(kNm) CY=-0.13(kNm) |
| 47 | fuerza nodal | 38 | FX=0.39(kN) FY=-59.01(kN) FZ=-129.37(kN) CX=26.67(kNm) CY=0.18(kNm) |
| 47 | fuerza nodal | 39 | FX=5.31(kN) FY=-797.12(kN) FZ=201.94(kN) CX=-189.72(kNm) CY=-1.26(kNm) |
| 47 | fuerza nodal | 1 | FY=916.72(kN) FZ=-61.73(kN) CX=210.85(kNm) |
| 47 | fuerza nodal | 2 | FX=-0.44(kN) FY=4.70(kN) FZ=8.20(kN) CX=2.30(kNm) CY=0.21(kNm) |
| 47 | fuerza nodal | 3 | FX=0.44(kN) FY=5.82(kN) FZ=9.38(kN) CX=3.55(kNm) CY=-0.27(kNm) |
| 47 | fuerza nodal | 4 | FX=-0.89(kN) FY=5.81(kN) FZ=9.94(kN) CX=4.13(kNm) CY=0.63(kNm) |
| 47 | fuerza nodal | 5 | FX=0.44(kN) FY=5.45(kN) FZ=9.19(kN) CX=4.30(kNm) CY=-0.35(kNm) |
| 47 | fuerza nodal | 6 | FX=-0.45(kN) FY=5.55(kN) FZ=10.19(kN) CX=4.68(kNm) CY=0.38(kNm) |
| 47 | fuerza nodal | 7 | FX=-0.01(kN) FY=5.30(kN) FZ=9.86(kN) CX=4.65(kNm) CY=0.00(kNm) |
| 47 | fuerza nodal | 8 | FX=-0.46(kN) FY=6.38(kN) FZ=15.90(kN) CX=5.66(kNm) CY=0.41(kNm) |
| 47 | fuerza nodal | 9 | FX=0.00(kN) FY=-1.04(kN) FZ=22.26(kN) CX=-0.89(kNm) CY=-0.00(kNm) |
| 47 | fuerza nodal | 10 | FX=-0.44(kN) FY=-8.67(kN) FZ=21.77(kN) CX=-6.86(kNm) CY=0.35(kNm) |
| 47 | fuerza nodal | 11 | FX=0.46(kN) FY=-8.96(kN) FZ=20.90(kN) CX=-5.99(kNm) CY=-0.31(kNm) |
| 47 | fuerza nodal | 12 | FX=-0.87(kN) FY=-9.34(kN) FZ=20.45(kN) CX=-4.66(kNm) CY=0.43(kNm) |
| 47 | fuerza nodal | 13 | FX=0.46(kN) FY=-9.84(kN) FZ=20.40(kN) CX=-2.76(kNm) CY=-0.13(kNm) |
| 47 | fuerza nodal | 14 | FX=-0.41(kN) FY=-10.19(kN) FZ=19.88(kN) CX=-0.14(kNm) CY=0.01(kNm) |
| 47 | fuerza nodal | 15 | FX=0.01(kN) FY=-4.80(kN) FZ=-26.95(kN) CX=1.45(kNm) CY=0.00(kNm) |
| 47 | fuerza nodal | 16 | FX=-0.40(kN) FY=-12.16(kN) FZ=-73.58(kN) CX=8.69(kNm) CY=-0.28(kNm) |
| 47 | fuerza nodal | 17 | FX=0.09(kN) FY=-30.63(kN) FZ=-117.15(kN) CX=24.51(kNm) CY=0.07(kNm) |
| 47 | fuerza nodal | 18 | FX=-0.28(kN) FY=-38.01(kN) FZ=-93.89(kN) CX=22.88(kNm) CY=-0.17(kNm) |
| 47 | fuerza nodal | 19 | FX=0.40(kN) FY=-2.78(kN) FZ=18.15(kN) CX=-0.01(kNm) CY=-0.00(kNm) |
| 47 | fuerza nodal | 20 | FX=-0.77(kN) FY=-3.25(kN) FZ=21.22(kN) CX=-1.32(kNm) CY=0.31(kNm) |
| 48 | fuerza nodal | 48 | FX=-0.06(kN) FY=6.81(kN) FZ=22.55(kN) CX=9.20(kNm) CY=0.07(kNm) |
| 48 | fuerza nodal | 47 | FX=-0.06(kN) FY=7.24(kN) FZ=21.79(kN) CX=9.98(kNm) CY=0.08(kNm) |
| 48 | fuerza nodal | 46 | FX=-0.06(kN) FY=7.63(kN) FZ=21.00(kN) CX=10.31(kNm) CY=0.08(kNm) |
| 48 | fuerza nodal | 45 | FX=-0.46(kN) FY=8.19(kN) FZ=20.98(kN) CX=10.41(kNm) CY=0.59(kNm) |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 48 | fuerza nodal | 44 | FX=-0.07(kN) FY=8.63(kN) FZ=20.52(kN) CX=9.82(kNm) CY=0.07(kNm) |
| | 48 | fuerza nodal | 43 | FX=-0.45(kN) FY=8.93(kN) FZ=19.65(kN) CX=8.47(kNm) CY=0.43(kNm) |
| | 48 | fuerza nodal | 42 | FX=-0.07(kN) FY=9.30(kN) FZ=19.15(kN) CX=6.59(kNm) CY=0.05(kNm) |
| | 48 | fuerza nodal | 41 | FX=-0.07(kN) FY=9.93(kN) FZ=19.33(kN) CX=4.11(kNm) CY=0.03(kNm) |
| | 48 | fuerza nodal | 40 | FX=-0.44(kN) FY=9.98(kN) FZ=18.05(kN) CX=0.65(kNm) CY=0.03(kNm) |
| | 48 | fuerza nodal | 39 | FX=-0.06(kN) FY=9.08(kN) FZ=14.81(kN) CX=-3.06(kNm) CY=-0.02(kNm) |
| | 48 | fuerza nodal | 38 | FX=-0.05(kN) FY=7.52(kN) FZ=-92.25(kN) CX=-7.09(kNm) CY=-0.05(kNm) |
| | 48 | fuerza nodal | 49 | FX=-0.46(kN) FY=6.26(kN) FZ=22.87(kN) CX=7.95(kNm) CY=0.59(kNm) |
| | 48 | fuerza nodal | 50 | FX=-0.46(kN) FY=5.71(kN) FZ=23.15(kN) CX=6.46(kNm) CY=0.52(kNm) |
| | 48 | fuerza nodal | 51 | FX=-0.05(kN) FY=5.11(kN) FZ=22.96(kN) CX=4.81(kNm) CY=0.04(kNm) |
| | 48 | fuerza nodal | 52 | FX=-0.05(kN) FY=4.60(kN) FZ=23.63(kN) CX=3.19(kNm) CY=0.03(kNm) |
| | 48 | fuerza nodal | 53 | FX=-0.03(kN) FY=4.02(kN) FZ=23.65(kN) CX=1.58(kNm) CY=0.01(kNm) |
| | 48 | fuerza nodal | 54 | FX=-0.45(kN) FY=3.45(kN) FZ=23.81(kN) CX=0.13(kNm) CY=0.02(kNm) |
| | 48 | fuerza nodal | 55 | FX=-0.14(kN) FY=15.01(kN) FZ=-32.71(kN) CX=-5.61(kNm) CY=-0.05(kNm) |
| | 48 | fuerza nodal | 56 | FX=-0.30(kN) FY=-13.14(kN) FZ=-94.32(kN) CX=11.30(kNm) CY=-0.26(kNm) |
| | 48 | fuerza nodal | 57 | FX=0.30(kN) FY=-30.29(kN) FZ=-113.19(kN) CX=29.39(kNm) CY=0.29(kNm) |
| | 48 | fuerza nodal | 58 | FX=0.53(kN) FY=-53.01(kN) FZ=-120.16(kN) CX=42.78(kNm) CY=0.43(kNm) |
| | 48 | fuerza nodal | 59 | FX=8.05(kN) FY=-805.47(kN) FZ=186.79(kN) CX=130.49(kNm) CY=1.30(kNm) |
| | 48 | fuerza nodal | 15 | FX=-1.92(kN) FY=805.50(kN) FZ=186.80(kN) CX=-267.43(kNm) CY=-0.64(kNm) |
| | 48 | fuerza nodal | 16 | FX=-0.54(kN) FY=53.01(kN) FZ=-120.16(kN) CX=-51.79(kNm) CY=-0.52(kNm) |
| | 48 | fuerza nodal | 17 | FX=-0.09(kN) FY=30.30(kN) FZ=-113.19(kN) CX=-34.54(kNm) CY=-0.10(kNm) |
| | 48 | fuerza nodal | 18 | FX=-0.47(kN) FY=13.14(kN) FZ=-94.32(kN) CX=-13.53(kNm) CY=-0.48(kNm) |
| | 48 | fuerza nodal | 19 | FX=0.47(kN) FY=-15.01(kN) FZ=-32.71(kN) CX=8.17(kNm) CY=0.26(kNm) |
| | 48 | fuerza nodal | 20 | FX=-0.83(kN) FY=-3.46(kN) FZ=23.82(kN) CX=0.46(kNm) CY=-0.11(kNm) |
| | 48 | fuerza nodal | 21 | FX=0.43(kN) FY=-4.02(kN) FZ=23.72(kN) CX=-0.90(kNm) CY=-0.10(kNm) |
| | 48 | fuerza nodal | 22 | FX=-0.40(kN) FY=-4.60(kN) FZ=23.57(kN) CX=-2.41(kNm) CY=0.21(kNm) |
| | 48 | fuerza nodal | 23 | FX=0.02(kN) FY=-5.11(kN) FZ=22.96(kN) CX=-3.94(kNm) CY=-0.01(kNm) |
| | 48 | fuerza nodal | 24 | FX=-0.39(kN) FY=-5.72(kN) FZ=23.15(kN) CX=-5.50(kNm) CY=0.37(kNm) |
| | 48 | fuerza nodal | 25 | FX=0.03(kN) FY=-6.27(kN) FZ=22.87(kN) CX=-6.89(kNm) CY=-0.03(kNm) |
| | 48 | fuerza nodal | 37 | FX=-0.36(kN) FY=-0.94(kN) FZ=-112.20(kN) CX=1.07(kNm) CY=-0.41(kNm) |
| | 48 | fuerza nodal | 36 | FX=0.06(kN) FY=-10.83(kN) FZ=-81.13(kN) CX=11.16(kNm) CY=0.07(kNm) |
| | 48 | fuerza nodal | 35 | FX=-0.35(kN) FY=-3.52(kN) FZ=-31.37(kN) CX=1.91(kNm) CY=-0.19(kNm) |





| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 48 | fuerza nodal | 34 | FX=0.06(kN) FY=-10.32(kN) FZ=18.67(kN) CX=1.37(kNm) CY=0.01(kNm) |
| | 48 | fuerza nodal | 33 | FX=0.06(kN) FY=-9.98(kN) FZ=19.26(kN) CX=-2.23(kNm) CY=-0.01(kNm) |
| | 48 | fuerza nodal | 32 | FX=-0.33(kN) FY=-9.61(kN) FZ=19.83(kN) CX=-5.03(kNm) CY=0.17(kNm) |
| | 48 | fuerza nodal | 31 | FX=0.05(kN) FY=-9.08(kN) FZ=19.99(kN) CX=-7.00(kNm) CY=-0.04(kNm) |
| | 48 | fuerza nodal | 30 | FX=-0.35(kN) FY=-8.78(kN) FZ=20.87(kN) CX=-8.45(kNm) CY=0.33(kNm) |
| | 48 | fuerza nodal | 29 | FX=0.44(kN) FY=-8.31(kN) FZ=21.35(kN) CX=-9.14(kNm) CY=-0.48(kNm) |
| | 48 | fuerza nodal | 28 | FX=-0.76(kN) FY=-7.84(kN) FZ=21.79(kN) CX=-9.26(kNm) CY=0.90(kNm) |
| | 48 | fuerza nodal | 27 | FX=0.44(kN) FY=-7.24(kN) FZ=21.79(kN) CX=-8.75(kNm) CY=-0.53(kNm) |
| | 48 | fuerza nodal | 26 | FX=-0.38(kN) FY=-6.81(kN) FZ=22.55(kN) CX=-8.04(kNm) CY=0.44(kNm) |
| | 49 | fuerza nodal | 48 | FX=-0.05(kN) FY=6.78(kN) FZ=22.46(kN) CX=11.46(kNm) CY=0.09(kNm) |
| | 49 | fuerza nodal | 47 | FX=-0.06(kN) FY=7.21(kN) FZ=21.70(kN) CX=12.39(kNm) CY=0.10(kNm) |
| | 49 | fuerza nodal | 46 | FX=-0.06(kN) FY=7.60(kN) FZ=20.91(kN) CX=12.85(kNm) CY=0.10(kNm) |
| | 49 | fuerza nodal | 45 | FX=-0.46(kN) FY=8.15(kN) FZ=20.89(kN) CX=13.13(kNm) CY=0.74(kNm) |
| | 49 | fuerza nodal | 44 | FX=-0.07(kN) FY=8.60(kN) FZ=20.43(kN) CX=12.70(kNm) CY=0.10(kNm) |
| | 49 | fuerza nodal | 43 | FX=-0.45(kN) FY=8.89(kN) FZ=19.57(kN) CX=11.46(kNm) CY=0.58(kNm) |
| | 49 | fuerza nodal | 42 | FX=-0.07(kN) FY=9.26(kN) FZ=19.07(kN) CX=9.71(kNm) CY=0.07(kNm) |
| | 49 | fuerza nodal | 41 | FX=-0.07(kN) FY=9.89(kN) FZ=19.25(kN) CX=7.45(kNm) CY=0.05(kNm) |
| | 49 | fuerza nodal | 40 | FX=-0.44(kN) FY=9.94(kN) FZ=17.98(kN) CX=4.03(kNm) CY=0.18(kNm) |
| | 49 | fuerza nodal | 39 | FX=-0.06(kN) FY=9.04(kN) FZ=14.74(kN) CX=0.03(kNm) CY=0.00(kNm) |
| | 49 | fuerza nodal | 38 | FX=-0.05(kN) FY=7.49(kN) FZ=-91.86(kN) CX=-4.51(kNm) CY=-0.03(kNm) |
| | 49 | fuerza nodal | 49 | FX=-0.46(kN) FY=6.24(kN) FZ=22.78(kN) CX=10.04(kNm) CY=0.74(kNm) |
| | 49 | fuerza nodal | 50 | FX=-0.46(kN) FY=5.69(kN) FZ=23.05(kN) CX=8.37(kNm) CY=0.68(kNm) |
| | 49 | fuerza nodal | 51 | FX=-0.05(kN) FY=5.09(kN) FZ=22.87(kN) CX=6.52(kNm) CY=0.06(kNm) |
| | 49 | fuerza nodal | 52 | FX=-0.05(kN) FY=4.58(kN) FZ=23.53(kN) CX=4.73(kNm) CY=0.05(kNm) |
| | 49 | fuerza nodal | 53 | FX=-0.03(kN) FY=4.00(kN) FZ=23.55(kN) CX=2.93(kNm) CY=0.02(kNm) |
| | 49 | fuerza nodal | 54 | FX=-0.45(kN) FY=3.44(kN) FZ=23.71(kN) CX=1.30(kNm) CY=0.17(kNm) |
| | 49 | fuerza nodal | 55 | FX=-0.17(kN) FY=18.16(kN) FZ=-31.64(kN) CX=-0.62(kNm) CY=-0.01(kNm) |
| | 49 | fuerza nodal | 56 | FX=-0.30(kN) FY=-13.15(kN) FZ=-95.10(kN) CX=6.85(kNm) CY=-0.16(kNm) |
| | 49 | fuerza nodal | 57 | FX=0.32(kN) FY=-32.02(kN) FZ=-118.67(kN) CX=20.18(kNm) CY=0.20(kNm) |
| | 49 | fuerza nodal | 58 | FX=0.59(kN) FY=-59.00(kN) FZ=-129.37(kN) CX=26.67(kNm) CY=0.27(kNm) |
| | 49 | fuerza nodal | 59 | FX=7.97(kN) FY=-797.12(kN) FZ=201.94(kN) CX=-189.71(kNm) CY=-1.90(kNm) |
| | 49 | fuerza nodal | 15 | FX=-1.90(kN) FY=797.14(kN) FZ=201.94(kN) CX=54.21(kNm) CY=0.13(kNm) |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 49 | fuerza nodal | 16 | FX=-0.55(kN) FY=59.01(kN) FZ=-129.37(kN) CX=-36.70(kNm) CY=-0.34(kNm) |
| | 49 | fuerza nodal | 17 | FX=-0.09(kN) FY=32.03(kN) FZ=-118.67(kN) CX=-25.62(kNm) CY=-0.07(kNm) |
| | 49 | fuerza nodal | 18 | FX=-0.47(kN) FY=13.14(kN) FZ=-95.11(kN) CX=-9.08(kNm) CY=-0.32(kNm) |
| | 49 | fuerza nodal | 19 | FX=0.48(kN) FY=-18.16(kN) FZ=-31.64(kN) CX=3.70(kNm) CY=0.10(kNm) |
| | 49 | fuerza nodal | 20 | FX=-0.83(kN) FY=-3.45(kN) FZ=23.71(kN) CX=-0.71(kNm) CY=0.17(kNm) |
| | 49 | fuerza nodal | 21 | FX=0.43(kN) FY=-4.01(kN) FZ=23.61(kN) CX=-2.26(kNm) CY=-0.24(kNm) |
| | 49 | fuerza nodal | 22 | FX=-0.40(kN) FY=-4.58(kN) FZ=23.47(kN) CX=-3.95(kNm) CY=0.35(kNm) |
| | 49 | fuerza nodal | 23 | FX=0.02(kN) FY=-5.09(kN) FZ=22.87(kN) CX=-5.65(kNm) CY=-0.02(kNm) |
| | 49 | fuerza nodal | 24 | FX=-0.39(kN) FY=-5.69(kN) FZ=23.05(kN) CX=-7.41(kNm) CY=0.51(kNm) |
| | 49 | fuerza nodal | 25 | FX=0.03(kN) FY=-6.24(kN) FZ=22.78(kN) CX=-8.98(kNm) CY=-0.04(kNm) |
| | 49 | fuerza nodal | 37 | FX=-0.35(kN) FY=-0.88(kN) FZ=-111.35(kN) CX=0.70(kNm) CY=-0.28(kNm) |
| | 49 | fuerza nodal | 36 | FX=0.07(kN) FY=-10.86(kN) FZ=-81.52(kN) CX=7.50(kNm) CY=0.04(kNm) |
| | 49 | fuerza nodal | 35 | FX=-0.35(kN) FY=-3.48(kN) FZ=-30.87(kN) CX=0.71(kNm) CY=-0.07(kNm) |
| | 49 | fuerza nodal | 34 | FX=0.06(kN) FY=-10.27(kN) FZ=18.59(kN) CX=-2.13(kNm) CY=-0.01(kNm) |
| | 49 | fuerza nodal | 33 | FX=0.06(kN) FY=-9.93(kN) FZ=19.18(kN) CX=-5.59(kNm) CY=-0.03(kNm) |
| | 49 | fuerza nodal | 32 | FX=-0.33(kN) FY=-9.57(kN) FZ=19.74(kN) CX=-8.27(kNm) CY=0.28(kNm) |
| | 49 | fuerza nodal | 31 | FX=0.05(kN) FY=-9.05(kN) FZ=19.91(kN) CX=-10.04(kNm) CY=-0.05(kNm) |
| | 49 | fuerza nodal | 30 | FX=-0.35(kN) FY=-8.74(kN) FZ=20.78(kN) CX=-11.38(kNm) CY=0.45(kNm) |
| | 49 | fuerza nodal | 29 | FX=0.44(kN) FY=-8.28(kN) FZ=21.26(kN) CX=-11.91(kNm) CY=-0.63(kNm) |
| | 49 | fuerza nodal | 28 | FX=-0.76(kN) FY=-7.80(kN) FZ=21.70(kN) CX=-11.87(kNm) CY=1.15(kNm) |
| | 49 | fuerza nodal | 27 | FX=0.43(kN) FY=-7.21(kN) FZ=21.70(kN) CX=-11.17(kNm) CY=-0.67(kNm) |
| | 49 | fuerza nodal | 26 | FX=-0.37(kN) FY=-6.78(kN) FZ=22.46(kN) CX=-10.32(kNm) CY=0.57(kNm) |
| | 50 | fuerza nodal | 68 | FX=-0.08(kN) FY=6.81(kN) FZ=22.55(kN) CX=9.20(kNm) CY=0.11(kNm) |
| | 50 | fuerza nodal | 67 | FX=-0.49(kN) FY=7.24(kN) FZ=21.79(kN) CX=9.98(kNm) CY=0.67(kNm) |
| | 50 | fuerza nodal | 66 | FX=-0.09(kN) FY=7.63(kN) FZ=21.00(kN) CX=10.31(kNm) CY=0.12(kNm) |
| | 50 | fuerza nodal | 65 | FX=-0.09(kN) FY=8.19(kN) FZ=20.98(kN) CX=10.41(kNm) CY=0.12(kNm) |
| | 50 | fuerza nodal | 64 | FX=-0.49(kN) FY=8.63(kN) FZ=20.52(kN) CX=9.81(kNm) CY=0.56(kNm) |
| | 50 | fuerza nodal | 63 | FX=-0.09(kN) FY=8.94(kN) FZ=19.69(kN) CX=8.49(kNm) CY=0.09(kNm) |
| | 50 | fuerza nodal | 62 | FX=-0.11(kN) FY=9.29(kN) FZ=19.11(kN) CX=6.58(kNm) CY=0.07(kNm) |
| | 50 | fuerza nodal | 61 | FX=-0.49(kN) FY=9.92(kN) FZ=19.33(kN) CX=4.11(kNm) CY=0.20(kNm) |
| | 50 | fuerza nodal | 60 | FX=-0.10(kN) FY=9.98(kN) FZ=18.05(kN) CX=0.65(kNm) CY=0.01(kNm) |
| | 50 | fuerza nodal | 59 | FX=-0.46(kN) FY=9.08(kN) FZ=14.81(kN) CX=-3.06(kNm) CY=-0.16(kNm) |



ROBOT v 14.5.0
Autor : **elpsa-elpsa**
Dirección :

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Archivo : **Gelseipf.rtd**
Proyecto : Gelseipf

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 50 | fuerza nodal | 58 | FX=-0.08(kN) FY=7.52(kN) FZ=-92.25(kN) CX=-7.09(kNm) CY=-0.07(kNm) |
| | 50 | fuerza nodal | 69 | FX=-0.08(kN) FY=6.27(kN) FZ=22.90(kN) CX=7.96(kNm) CY=0.10(kNm) |
| | 50 | fuerza nodal | 70 | FX=-0.48(kN) FY=5.71(kN) FZ=23.12(kN) CX=6.46(kNm) CY=0.54(kNm) |
| | 50 | fuerza nodal | 71 | FX=-0.06(kN) FY=5.11(kN) FZ=22.96(kN) CX=4.81(kNm) CY=0.06(kNm) |
| | 50 | fuerza nodal | 72 | FX=-0.48(kN) FY=4.59(kN) FZ=23.57(kN) CX=3.18(kNm) CY=0.33(kNm) |
| | 50 | fuerza nodal | 73 | FX=-0.05(kN) FY=4.02(kN) FZ=23.71(kN) CX=1.58(kNm) CY=0.02(kNm) |
| | 50 | fuerza nodal | 74 | FX=-0.04(kN) FY=3.46(kN) FZ=23.81(kN) CX=0.13(kNm) CY=0.00(kNm) |
| | 50 | fuerza nodal | 75 | FX=-0.63(kN) FY=15.00(kN) FZ=-32.64(kN) CX=-5.61(kNm) CY=-0.23(kNm) |
| | 50 | fuerza nodal | 76 | FX=0.18(kN) FY=-13.14(kN) FZ=-94.38(kN) CX=11.30(kNm) CY=0.16(kNm) |
| | 50 | fuerza nodal | 77 | FX=-0.00(kN) FY=-30.30(kN) FZ=-113.18(kN) CX=29.39(kNm) CY=-0.00(kNm) |
| | 50 | fuerza nodal | 78 | FX=0.73(kN) FY=-53.00(kN) FZ=-120.15(kN) CX=42.77(kNm) CY=0.59(kNm) |
| | 50 | fuerza nodal | 79 | FX=11.12(kN) FY=-805.44(kN) FZ=186.78(kN) CX=130.48(kNm) CY=1.80(kNm) |
| | 50 | fuerza nodal | 35 | FX=-4.99(kN) FY=805.48(kN) FZ=186.80(kN) CX=-267.42(kNm) CY=-1.66(kNm) |
| | 50 | fuerza nodal | 36 | FX=-0.33(kN) FY=53.00(kN) FZ=-120.13(kN) CX=-51.78(kNm) CY=-0.32(kNm) |
| | 50 | fuerza nodal | 37 | FX=-0.61(kN) FY=30.30(kN) FZ=-113.22(kN) CX=-34.54(kNm) CY=-0.69(kNm) |
| | 50 | fuerza nodal | 38 | FX=-0.09(kN) FY=13.14(kN) FZ=-94.32(kN) CX=-13.54(kNm) CY=-0.09(kNm) |
| | 50 | fuerza nodal | 39 | FX=0.10(kN) FY=-15.00(kN) FZ=-32.71(kN) CX=8.16(kNm) CY=0.05(kNm) |
| | 50 | fuerza nodal | 40 | FX=-0.40(kN) FY=-3.46(kN) FZ=23.82(kN) CX=0.46(kNm) CY=-0.05(kNm) |
| | 50 | fuerza nodal | 41 | FX=0.03(kN) FY=-4.02(kN) FZ=23.72(kN) CX=-0.90(kNm) CY=-0.01(kNm) |
| | 50 | fuerza nodal | 42 | FX=0.03(kN) FY=-4.59(kN) FZ=23.57(kN) CX=-2.41(kNm) CY=-0.02(kNm) |
| | 50 | fuerza nodal | 43 | FX=-0.38(kN) FY=-5.12(kN) FZ=22.96(kN) CX=-3.94(kNm) CY=0.29(kNm) |
| | 50 | fuerza nodal | 44 | FX=0.04(kN) FY=-5.71(kN) FZ=23.15(kN) CX=-5.50(kNm) CY=-0.04(kNm) |
| | 50 | fuerza nodal | 45 | FX=-0.36(kN) FY=-6.27(kN) FZ=22.87(kN) CX=-6.89(kNm) CY=0.40(kNm) |
| | 50 | fuerza nodal | 57 | FX=0.01(kN) FY=-0.94(kN) FZ=-112.17(kN) CX=1.08(kNm) CY=0.01(kNm) |
| | 50 | fuerza nodal | 56 | FX=-0.26(kN) FY=-10.84(kN) FZ=-81.15(kN) CX=11.16(kNm) CY=-0.27(kNm) |
| | 50 | fuerza nodal | 55 | FX=0.03(kN) FY=-3.51(kN) FZ=-31.37(kN) CX=1.91(kNm) CY=0.02(kNm) |
| | 50 | fuerza nodal | 54 | FX=-0.28(kN) FY=-10.32(kN) FZ=18.67(kN) CX=1.37(kNm) CY=-0.04(kNm) |
| | 50 | fuerza nodal | 53 | FX=0.09(kN) FY=-9.96(kN) FZ=19.21(kN) CX=-2.22(kNm) CY=-0.02(kNm) |
| | 50 | fuerza nodal | 52 | FX=0.08(kN) FY=-9.62(kN) FZ=19.88(kN) CX=-5.04(kNm) CY=-0.04(kNm) |
| | 50 | fuerza nodal | 51 | FX=0.08(kN) FY=-9.08(kN) FZ=19.99(kN) CX=-6.99(kNm) CY=-0.06(kNm) |
| | 50 | fuerza nodal | 50 | FX=-0.31(kN) FY=-8.78(kN) FZ=20.87(kN) CX=-8.45(kNm) CY=0.30(kNm) |
| | 50 | fuerza nodal | 49 | FX=-0.33(kN) FY=-8.32(kN) FZ=21.35(kN) CX=-9.14(kNm) CY=0.36(kNm) |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 50 | fuerza nodal | 48 | FX=0.06(kN) FY=-7.83(kN) FZ=21.79(kN) CX=-9.25(kNm) CY=-0.07(kNm) |
| | 50 | fuerza nodal | 47 | FX=0.06(kN) FY=-7.24(kN) FZ=21.79(kN) CX=-8.75(kNm) CY=-0.07(kNm) |
| | 50 | fuerza nodal | 46 | FX=0.06(kN) FY=-6.81(kN) FZ=22.55(kN) CX=-8.04(kNm) CY=-0.07(kNm) |
| | 51 | fuerza nodal | 68 | FX=-0.08(kN) FY=6.78(kN) FZ=22.46(kN) CX=11.46(kNm) CY=0.14(kNm) |
| | 51 | fuerza nodal | 67 | FX=-0.49(kN) FY=7.21(kN) FZ=21.69(kN) CX=12.39(kNm) CY=0.83(kNm) |
| | 51 | fuerza nodal | 66 | FX=-0.09(kN) FY=7.60(kN) FZ=20.91(kN) CX=12.85(kNm) CY=0.15(kNm) |
| | 51 | fuerza nodal | 65 | FX=-0.09(kN) FY=8.15(kN) FZ=20.89(kN) CX=13.14(kNm) CY=0.15(kNm) |
| | 51 | fuerza nodal | 64 | FX=-0.49(kN) FY=8.59(kN) FZ=20.43(kN) CX=12.69(kNm) CY=0.72(kNm) |
| | 51 | fuerza nodal | 63 | FX=-0.09(kN) FY=8.90(kN) FZ=19.61(kN) CX=11.48(kNm) CY=0.12(kNm) |
| | 51 | fuerza nodal | 62 | FX=-0.11(kN) FY=9.25(kN) FZ=19.02(kN) CX=9.69(kNm) CY=0.11(kNm) |
| | 51 | fuerza nodal | 61 | FX=-0.48(kN) FY=9.88(kN) FZ=19.25(kN) CX=7.45(kNm) CY=0.36(kNm) |
| | 51 | fuerza nodal | 60 | FX=-0.10(kN) FY=9.94(kN) FZ=17.98(kN) CX=4.03(kNm) CY=0.04(kNm) |
| | 51 | fuerza nodal | 59 | FX=-0.46(kN) FY=9.04(kN) FZ=14.74(kN) CX=0.03(kNm) CY=0.00(kNm) |
| | 51 | fuerza nodal | 58 | FX=-0.07(kN) FY=7.49(kN) FZ=-91.85(kN) CX=-4.51(kNm) CY=-0.05(kNm) |
| | 51 | fuerza nodal | 69 | FX=-0.08(kN) FY=6.24(kN) FZ=22.80(kN) CX=10.04(kNm) CY=0.13(kNm) |
| | 51 | fuerza nodal | 70 | FX=-0.48(kN) FY=5.68(kN) FZ=23.02(kN) CX=8.36(kNm) CY=0.70(kNm) |
| | 51 | fuerza nodal | 71 | FX=-0.06(kN) FY=5.09(kN) FZ=22.86(kN) CX=6.52(kNm) CY=0.08(kNm) |
| | 51 | fuerza nodal | 72 | FX=-0.47(kN) FY=4.57(kN) FZ=23.47(kN) CX=4.72(kNm) CY=0.49(kNm) |
| | 51 | fuerza nodal | 73 | FX=-0.05(kN) FY=4.01(kN) FZ=23.61(kN) CX=2.94(kNm) CY=0.04(kNm) |
| | 51 | fuerza nodal | 74 | FX=-0.04(kN) FY=3.44(kN) FZ=23.71(kN) CX=1.30(kNm) CY=0.02(kNm) |
| | 51 | fuerza nodal | 75 | FX=-0.67(kN) FY=18.15(kN) FZ=-31.57(kN) CX=-0.62(kNm) CY=-0.02(kNm) |
| | 51 | fuerza nodal | 76 | FX=0.18(kN) FY=-13.15(kN) FZ=-95.17(kN) CX=6.85(kNm) CY=0.09(kNm) |
| | 51 | fuerza nodal | 77 | FX=0.02(kN) FY=-32.03(kN) FZ=-118.66(kN) CX=20.18(kNm) CY=0.01(kNm) |
| | 51 | fuerza nodal | 78 | FX=0.81(kN) FY=-59.00(kN) FZ=-129.36(kN) CX=26.67(kNm) CY=0.37(kNm) |
| | 51 | fuerza nodal | 79 | FX=11.01(kN) FY=-797.08(kN) FZ=201.93(kN) CX=-189.71(kNm) CY=-2.62(kNm) |
| | 51 | fuerza nodal | 35 | FX=-4.93(kN) FY=797.13(kN) FZ=201.94(kN) CX=54.20(kNm) CY=0.34(kNm) |
| | 51 | fuerza nodal | 36 | FX=-0.37(kN) FY=59.00(kN) FZ=-129.34(kN) CX=-36.70(kNm) CY=-0.23(kNm) |
| | 51 | fuerza nodal | 37 | FX=-0.62(kN) FY=32.03(kN) FZ=-118.70(kN) CX=-25.63(kNm) CY=-0.50(kNm) |
| | 51 | fuerza nodal | 38 | FX=-0.09(kN) FY=13.14(kN) FZ=-95.10(kN) CX=-9.08(kNm) CY=-0.06(kNm) |
| | 51 | fuerza nodal | 39 | FX=0.12(kN) FY=-18.15(kN) FZ=-31.64(kN) CX=3.70(kNm) CY=0.02(kNm) |
| | 51 | fuerza nodal | 40 | FX=-0.40(kN) FY=-3.45(kN) FZ=23.71(kN) CX=-0.71(kNm) CY=0.08(kNm) |
| | 51 | fuerza nodal | 41 | FX=0.03(kN) FY=-4.01(kN) FZ=23.61(kN) CX=-2.26(kNm) CY=-0.02(kNm) |



ROBOT v 14.5.0
Autor : **eipsa-eipsa**
Dirección :

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Proyecto : Gelseipf

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 51 | fuerza nodal | 42 | FX=0.03(kN) FY=-4.57(kN) FZ=23.47(kN) CX=-3.95(kNm) CY=-0.03(kNm) |
| | 51 | fuerza nodal | 43 | FX=-0.38(kN) FY=-5.09(kN) FZ=22.87(kN) CX=-5.65(kNm) CY=0.42(kNm) |
| | 51 | fuerza nodal | 44 | FX=0.04(kN) FY=-5.69(kN) FZ=23.05(kN) CX=-7.41(kNm) CY=-0.06(kNm) |
| | 51 | fuerza nodal | 45 | FX=-0.36(kN) FY=-6.24(kN) FZ=22.78(kN) CX=-8.99(kNm) CY=0.52(kNm) |
| | 51 | fuerza nodal | 57 | FX=0.01(kN) FY=-0.88(kN) FZ=-111.33(kN) CX=0.71(kNm) CY=0.01(kNm) |
| | 51 | fuerza nodal | 56 | FX=-0.26(kN) FY=-10.87(kN) FZ=-81.54(kN) CX=7.51(kNm) CY=-0.18(kNm) |
| | 51 | fuerza nodal | 55 | FX=0.03(kN) FY=-3.48(kN) FZ=-30.86(kN) CX=0.71(kNm) CY=0.01(kNm) |
| | 51 | fuerza nodal | 54 | FX=-0.28(kN) FY=-10.28(kN) FZ=18.59(kN) CX=-2.13(kNm) CY=0.06(kNm) |
| | 51 | fuerza nodal | 53 | FX=0.09(kN) FY=-9.91(kN) FZ=19.13(kN) CX=-5.58(kNm) CY=-0.05(kNm) |
| | 51 | fuerza nodal | 52 | FX=0.08(kN) FY=-9.58(kN) FZ=19.80(kN) CX=-8.28(kNm) CY=-0.07(kNm) |
| | 51 | fuerza nodal | 51 | FX=0.08(kN) FY=-9.05(kN) FZ=19.90(kN) CX=-10.04(kNm) CY=-0.09(kNm) |
| | 51 | fuerza nodal | 50 | FX=-0.31(kN) FY=-8.74(kN) FZ=20.78(kN) CX=-11.38(kNm) CY=0.41(kNm) |
| | 51 | fuerza nodal | 49 | FX=-0.33(kN) FY=-8.28(kN) FZ=21.26(kN) CX=-11.92(kNm) CY=0.47(kNm) |
| | 51 | fuerza nodal | 48 | FX=0.06(kN) FY=-7.80(kN) FZ=21.70(kN) CX=-11.86(kNm) CY=-0.10(kNm) |
| | 51 | fuerza nodal | 47 | FX=0.06(kN) FY=-7.21(kN) FZ=21.70(kN) CX=-11.17(kNm) CY=-0.09(kNm) |
| | 51 | fuerza nodal | 46 | FX=0.05(kN) FY=-6.78(kN) FZ=22.46(kN) CX=-10.31(kNm) CY=-0.08(kNm) |
| | 52 | fuerza nodal | 88 | FX=-0.51(kN) FY=6.80(kN) FZ=22.55(kN) CX=9.19(kNm) CY=0.69(kNm) |
| | 52 | fuerza nodal | 87 | FX=-0.11(kN) FY=7.24(kN) FZ=21.79(kN) CX=9.98(kNm) CY=0.15(kNm) |
| | 52 | fuerza nodal | 86 | FX=-0.51(kN) FY=7.63(kN) FZ=21.00(kN) CX=10.31(kNm) CY=0.69(kNm) |
| | 52 | fuerza nodal | 85 | FX=0.28(kN) FY=8.20(kN) FZ=21.00(kN) CX=10.43(kNm) CY=-0.35(kNm) |
| | 52 | fuerza nodal | 84 | FX=-0.92(kN) FY=8.62(kN) FZ=20.49(kN) CX=9.80(kNm) CY=1.04(kNm) |
| | 52 | fuerza nodal | 83 | FX=0.26(kN) FY=8.93(kN) FZ=19.65(kN) CX=8.48(kNm) CY=-0.25(kNm) |
| | 52 | fuerza nodal | 82 | FX=-0.52(kN) FY=9.30(kN) FZ=19.15(kN) CX=6.58(kNm) CY=0.37(kNm) |
| | 52 | fuerza nodal | 81 | FX=-0.51(kN) FY=9.95(kN) FZ=19.39(kN) CX=4.12(kNm) CY=0.21(kNm) |
| | 52 | fuerza nodal | 80 | FX=-0.14(kN) FY=9.96(kN) FZ=17.99(kN) CX=0.65(kNm) CY=0.01(kNm) |
| | 52 | fuerza nodal | 79 | FX=-0.13(kN) FY=9.08(kN) FZ=14.80(kN) CX=-3.06(kNm) CY=-0.04(kNm) |
| | 52 | fuerza nodal | 78 | FX=-0.10(kN) FY=7.52(kN) FZ=-92.24(kN) CX=-7.09(kNm) CY=-0.10(kNm) |
| | 52 | fuerza nodal | 89 | FX=-0.11(kN) FY=6.27(kN) FZ=22.90(kN) CX=7.96(kNm) CY=0.13(kNm) |
| | 52 | fuerza nodal | 90 | FX=-0.08(kN) FY=5.71(kN) FZ=23.12(kN) CX=6.46(kNm) CY=0.09(kNm) |
| | 52 | fuerza nodal | 91 | FX=-0.50(kN) FY=5.11(kN) FZ=22.96(kN) CX=4.80(kNm) CY=0.47(kNm) |
| | 52 | fuerza nodal | 92 | FX=-0.08(kN) FY=4.60(kN) FZ=23.63(kN) CX=3.19(kNm) CY=0.06(kNm) |
| | 52 | fuerza nodal | 93 | FX=-0.06(kN) FY=4.02(kN) FZ=23.65(kN) CX=1.58(kNm) CY=0.02(kNm) |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 52 | fuerza nodal | 94 | FX=-0.48(kN) FY=3.45(kN) FZ=23.81(kN) CX=0.13(kNm) CY=0.02(kNm) |
| | 52 | fuerza nodal | 95 | FX=-0.25(kN) FY=15.00(kN) FZ=-32.71(kN) CX=-5.61(kNm) CY=-0.09(kNm) |
| | 52 | fuerza nodal | 96 | FX=-0.21(kN) FY=-13.14(kN) FZ=-94.29(kN) CX=11.30(kNm) CY=-0.18(kNm) |
| | 52 | fuerza nodal | 97 | FX=0.53(kN) FY=-30.29(kN) FZ=-113.20(kN) CX=29.38(kNm) CY=0.51(kNm) |
| | 52 | fuerza nodal | 98 | FX=0.91(kN) FY=-53.00(kN) FZ=-120.15(kN) CX=42.77(kNm) CY=0.73(kNm) |
| | 52 | fuerza nodal | 99 | FX=13.81(kN) FY=-805.40(kN) FZ=186.78(kN) CX=130.48(kNm) CY=2.24(kNm) |
| | 52 | fuerza nodal | 55 | FX=-7.67(kN) FY=805.47(kN) FZ=186.79(kN) CX=-267.42(kNm) CY=-2.55(kNm) |
| | 52 | fuerza nodal | 56 | FX=-0.91(kN) FY=53.01(kN) FZ=-120.16(kN) CX=-51.79(kNm) CY=-0.89(kNm) |
| | 52 | fuerza nodal | 57 | FX=-0.30(kN) FY=30.29(kN) FZ=-113.19(kN) CX=-34.54(kNm) CY=-0.35(kNm) |
| | 52 | fuerza nodal | 58 | FX=-0.13(kN) FY=13.14(kN) FZ=-94.32(kN) CX=-13.53(kNm) CY=-0.14(kNm) |
| | 52 | fuerza nodal | 59 | FX=-0.27(kN) FY=-15.01(kN) FZ=-32.71(kN) CX=8.17(kNm) CY=-0.15(kNm) |
| | 52 | fuerza nodal | 60 | FX=0.04(kN) FY=-3.46(kN) FZ=23.81(kN) CX=0.46(kNm) CY=0.00(kNm) |
| | 52 | fuerza nodal | 61 | FX=-0.38(kN) FY=-4.03(kN) FZ=23.72(kN) CX=-0.90(kNm) CY=0.08(kNm) |
| | 52 | fuerza nodal | 62 | FX=0.05(kN) FY=-4.59(kN) FZ=23.52(kN) CX=-2.40(kNm) CY=-0.02(kNm) |
| | 52 | fuerza nodal | 63 | FX=0.06(kN) FY=-5.12(kN) FZ=23.01(kN) CX=-3.94(kNm) CY=-0.05(kNm) |
| | 52 | fuerza nodal | 64 | FX=-0.35(kN) FY=-5.72(kN) FZ=23.15(kN) CX=-5.50(kNm) CY=0.34(kNm) |
| | 52 | fuerza nodal | 65 | FX=0.07(kN) FY=-6.27(kN) FZ=22.87(kN) CX=-6.89(kNm) CY=-0.08(kNm) |
| | 52 | fuerza nodal | 77 | FX=-0.35(kN) FY=-0.95(kN) FZ=-112.17(kN) CX=1.08(kNm) CY=-0.40(kNm) |
| | 52 | fuerza nodal | 76 | FX=0.15(kN) FY=-10.84(kN) FZ=-81.21(kN) CX=11.16(kNm) CY=0.15(kNm) |
| | 52 | fuerza nodal | 75 | FX=-0.33(kN) FY=-3.52(kN) FZ=-31.31(kN) CX=1.91(kNm) CY=-0.18(kNm) |
| | 52 | fuerza nodal | 74 | FX=0.13(kN) FY=-10.32(kN) FZ=18.67(kN) CX=1.37(kNm) CY=0.02(kNm) |
| | 52 | fuerza nodal | 73 | FX=0.13(kN) FY=-9.98(kN) FZ=19.26(kN) CX=-2.22(kNm) CY=-0.03(kNm) |
| | 52 | fuerza nodal | 72 | FX=-0.26(kN) FY=-9.61(kN) FZ=19.83(kN) CX=-5.04(kNm) CY=0.14(kNm) |
| | 52 | fuerza nodal | 71 | FX=0.11(kN) FY=-9.08(kN) FZ=19.99(kN) CX=-6.99(kNm) CY=-0.09(kNm) |
| | 52 | fuerza nodal | 70 | FX=-0.28(kN) FY=-8.77(kN) FZ=20.85(kN) CX=-8.44(kNm) CY=0.27(kNm) |
| | 52 | fuerza nodal | 69 | FX=0.09(kN) FY=-8.32(kN) FZ=21.37(kN) CX=-9.15(kNm) CY=-0.10(kNm) |
| | 52 | fuerza nodal | 68 | FX=0.09(kN) FY=-7.83(kN) FZ=21.79(kN) CX=-9.25(kNm) CY=-0.11(kNm) |
| | 52 | fuerza nodal | 67 | FX=-0.32(kN) FY=-7.25(kN) FZ=21.79(kN) CX=-8.76(kNm) CY=0.39(kNm) |
| | 52 | fuerza nodal | 66 | FX=0.08(kN) FY=-6.81(kN) FZ=22.55(kN) CX=-8.04(kNm) CY=-0.09(kNm) |
| | 53 | fuerza nodal | 88 | FX=-0.51(kN) FY=6.77(kN) FZ=22.45(kN) CX=11.45(kNm) CY=0.86(kNm) |
| | 53 | fuerza nodal | 87 | FX=-0.11(kN) FY=7.21(kN) FZ=21.69(kN) CX=12.39(kNm) CY=0.19(kNm) |
| | 53 | fuerza nodal | 86 | FX=-0.51(kN) FY=7.60(kN) FZ=20.91(kN) CX=12.84(kNm) CY=0.87(kNm) |



ROBOT v 14.5.0
Autor : **eipsa-eipsa**
Dirección :

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Archivo : **Gelseipf.rtd**
Proyecto : Gelseipf

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 53 | fuerza nodal | 85 | FX=0.28(kN) FY=8.17(kN) FZ=20.91(kN) CX=13.16(kNm) CY=-0.45(kNm) |
| | 53 | fuerza nodal | 84 | FX=-0.91(kN) FY=8.58(kN) FZ=20.40(kN) CX=12.67(kNm) CY=1.35(kNm) |
| | 53 | fuerza nodal | 83 | FX=0.26(kN) FY=8.90(kN) FZ=19.57(kN) CX=11.47(kNm) CY=-0.33(kNm) |
| | 53 | fuerza nodal | 82 | FX=-0.52(kN) FY=9.26(kN) FZ=19.07(kN) CX=9.70(kNm) CY=0.54(kNm) |
| | 53 | fuerza nodal | 81 | FX=-0.51(kN) FY=9.90(kN) FZ=19.30(kN) CX=7.47(kNm) CY=0.39(kNm) |
| | 53 | fuerza nodal | 80 | FX=-0.14(kN) FY=9.92(kN) FZ=17.92(kN) CX=4.02(kNm) CY=0.06(kNm) |
| | 53 | fuerza nodal | 79 | FX=-0.12(kN) FY=9.04(kN) FZ=14.74(kN) CX=0.03(kNm) CY=0.00(kNm) |
| | 53 | fuerza nodal | 78 | FX=-0.10(kN) FY=7.49(kN) FZ=-91.85(kN) CX=-4.51(kNm) CY=-0.06(kNm) |
| | 53 | fuerza nodal | 89 | FX=-0.10(kN) FY=6.24(kN) FZ=22.80(kN) CX=10.04(kNm) CY=0.17(kNm) |
| | 53 | fuerza nodal | 90 | FX=-0.08(kN) FY=5.68(kN) FZ=23.02(kN) CX=8.37(kNm) CY=0.12(kNm) |
| | 53 | fuerza nodal | 91 | FX=-0.49(kN) FY=5.08(kN) FZ=22.86(kN) CX=6.51(kNm) CY=0.63(kNm) |
| | 53 | fuerza nodal | 92 | FX=-0.08(kN) FY=4.58(kN) FZ=23.53(kN) CX=4.73(kNm) CY=0.08(kNm) |
| | 53 | fuerza nodal | 93 | FX=-0.06(kN) FY=4.00(kN) FZ=23.55(kN) CX=2.93(kNm) CY=0.04(kNm) |
| | 53 | fuerza nodal | 94 | FX=-0.48(kN) FY=3.44(kN) FZ=23.71(kN) CX=1.30(kNm) CY=0.18(kNm) |
| | 53 | fuerza nodal | 95 | FX=-0.30(kN) FY=18.15(kN) FZ=-31.64(kN) CX=-0.62(kNm) CY=-0.01(kNm) |
| | 53 | fuerza nodal | 96 | FX=-0.21(kN) FY=-13.15(kN) FZ=-95.07(kN) CX=6.85(kNm) CY=-0.11(kNm) |
| | 53 | fuerza nodal | 97 | FX=0.56(kN) FY=-32.02(kN) FZ=-118.68(kN) CX=20.17(kNm) CY=0.35(kNm) |
| | 53 | fuerza nodal | 98 | FX=1.01(kN) FY=-58.99(kN) FZ=-129.36(kN) CX=26.66(kNm) CY=0.46(kNm) |
| | 53 | fuerza nodal | 99 | FX=13.66(kN) FY=-797.05(kN) FZ=201.92(kN) CX=-189.70(kNm) CY=-3.25(kNm) |
| | 53 | fuerza nodal | 55 | FX=-7.59(kN) FY=797.12(kN) FZ=201.94(kN) CX=54.20(kNm) CY=0.52(kNm) |
| | 53 | fuerza nodal | 56 | FX=-0.97(kN) FY=59.00(kN) FZ=-129.37(kN) CX=-36.70(kNm) CY=-0.60(kNm) |
| | 53 | fuerza nodal | 57 | FX=-0.32(kN) FY=32.02(kN) FZ=-118.67(kN) CX=-25.62(kNm) CY=-0.26(kNm) |
| | 53 | fuerza nodal | 58 | FX=-0.13(kN) FY=13.14(kN) FZ=-95.10(kN) CX=-9.08(kNm) CY=-0.09(kNm) |
| | 53 | fuerza nodal | 59 | FX=-0.24(kN) FY=-18.16(kN) FZ=-31.64(kN) CX=3.71(kNm) CY=-0.05(kNm) |
| | 53 | fuerza nodal | 60 | FX=0.04(kN) FY=-3.44(kN) FZ=23.71(kN) CX=-0.71(kNm) CY=-0.01(kNm) |
| | 53 | fuerza nodal | 61 | FX=-0.38(kN) FY=-4.01(kN) FZ=23.61(kN) CX=-2.26(kNm) CY=0.21(kNm) |
| | 53 | fuerza nodal | 62 | FX=0.05(kN) FY=-4.57(kN) FZ=23.42(kN) CX=-3.95(kNm) CY=-0.04(kNm) |
| | 53 | fuerza nodal | 63 | FX=0.06(kN) FY=-5.09(kN) FZ=22.91(kN) CX=-5.65(kNm) CY=-0.07(kNm) |
| | 53 | fuerza nodal | 64 | FX=-0.35(kN) FY=-5.69(kN) FZ=23.05(kN) CX=-7.41(kNm) CY=0.45(kNm) |
| | 53 | fuerza nodal | 65 | FX=0.07(kN) FY=-6.24(kN) FZ=22.78(kN) CX=-8.98(kNm) CY=-0.10(kNm) |
| | 53 | fuerza nodal | 77 | FX=-0.35(kN) FY=-0.89(kN) FZ=-111.33(kN) CX=0.71(kNm) CY=-0.28(kNm) |
| | 53 | fuerza nodal | 76 | FX=0.15(kN) FY=-10.87(kN) FZ=-81.60(kN) CX=7.51(kNm) CY=0.10(kNm) |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 53 | fuerza nodal | 75 | FX=-0.33(kN) FY=-3.48(kN) FZ=-30.81(kN) CX=0.71(kNm) CY=-0.07(kNm) |
| | 53 | fuerza nodal | 74 | FX=0.13(kN) FY=-10.27(kN) FZ=18.59(kN) CX=-2.13(kNm) CY=-0.03(kNm) |
| | 53 | fuerza nodal | 73 | FX=0.13(kN) FY=-9.93(kN) FZ=19.18(kN) CX=-5.59(kNm) CY=-0.07(kNm) |
| | 53 | fuerza nodal | 72 | FX=-0.26(kN) FY=-9.57(kN) FZ=19.74(kN) CX=-8.27(kNm) CY=0.23(kNm) |
| | 53 | fuerza nodal | 71 | FX=0.11(kN) FY=-9.04(kN) FZ=19.90(kN) CX=-10.04(kNm) CY=-0.12(kNm) |
| | 53 | fuerza nodal | 70 | FX=-0.28(kN) FY=-8.74(kN) FZ=20.76(kN) CX=-11.37(kNm) CY=0.36(kNm) |
| | 53 | fuerza nodal | 69 | FX=0.09(kN) FY=-8.29(kN) FZ=21.28(kN) CX=-11.93(kNm) CY=-0.14(kNm) |
| | 53 | fuerza nodal | 68 | FX=0.09(kN) FY=-7.80(kN) FZ=21.70(kN) CX=-11.86(kNm) CY=-0.14(kNm) |
| | 53 | fuerza nodal | 67 | FX=-0.32(kN) FY=-7.22(kN) FZ=21.69(kN) CX=-11.17(kNm) CY=0.49(kNm) |
| | 53 | fuerza nodal | 66 | FX=0.08(kN) FY=-6.78(kN) FZ=22.46(kN) CX=-10.31(kNm) CY=-0.12(kNm) |
| | 54 | fuerza nodal | 95 | FX=-0.25(kN) FY=15.07(kN) FZ=-30.49(kN) CX=-8.20(kNm) CY=-0.14(kNm) |
| | 54 | fuerza nodal | 96 | FX=-0.93(kN) FY=30.45(kN) FZ=-86.21(kN) CX=-31.37(kNm) CY=-0.96(kNm) |
| | 54 | fuerza nodal | 97 | FX=-0.44(kN) FY=26.15(kN) FZ=-120.30(kN) CX=-29.82(kNm) CY=-0.50(kNm) |
| | 54 | fuerza nodal | 98 | FX=-0.16(kN) FY=9.34(kN) FZ=-77.64(kN) CX=-9.03(kNm) CY=-0.15(kNm) |
| | 54 | fuerza nodal | 99 | FX=-0.62(kN) FY=10.06(kN) FZ=18.46(kN) CX=-4.62(kNm) CY=-0.28(kNm) |
| | 54 | fuerza nodal | 100 | FX=-0.17(kN) FY=9.82(kN) FZ=19.05(kN) CX=-1.52(kNm) CY=-0.03(kNm) |
| | 54 | fuerza nodal | 101 | FX=-0.17(kN) FY=9.62(kN) FZ=19.89(kN) CX=0.99(kNm) CY=0.02(kNm) |
| | 54 | fuerza nodal | 102 | FX=-0.63(kN) FY=9.39(kN) FZ=20.76(kN) CX=2.95(kNm) CY=0.20(kNm) |
| | 54 | fuerza nodal | 103 | FX=-0.15(kN) FY=8.79(kN) FZ=20.37(kN) CX=4.19(kNm) CY=0.07(kNm) |
| | 54 | fuerza nodal | 104 | FX=-0.53(kN) FY=3.68(kN) FZ=20.90(kN) CX=2.19(kNm) CY=0.31(kNm) |
| | 54 | fuerza nodal | 105 | FX=0.13(kN) FY=-7.23(kN) FZ=22.09(kN) CX=-4.81(kNm) CY=-0.08(kNm) |
| | 54 | fuerza nodal | 106 | FX=0.11(kN) FY=-5.28(kN) FZ=10.48(kN) CX=-3.63(kNm) CY=-0.07(kNm) |
| | 54 | fuerza nodal | 107 | FX=-0.39(kN) FY=-3.20(kN) CX=-2.20(kNm) CY=0.27(kNm) |
| | 54 | fuerza nodal | 108 | FX=0.05(kN) FY=-3.11(kN) CX=-2.14(kNm) CY=-0.03(kNm) |
| | 54 | fuerza nodal | 109 | FX=0.07(kN) FY=-3.12(kN) CX=-2.15(kNm) CY=-0.05(kNm) |
| | 54 | fuerza nodal | 110 | FX=-0.39(kN) FY=-3.24(kN) CX=-2.23(kNm) CY=0.27(kNm) |
| | 54 | fuerza nodal | 111 | FX=0.07(kN) FY=-3.14(kN) CX=-2.16(kNm) CY=-0.05(kNm) |
| | 54 | fuerza nodal | 112 | FX=-0.40(kN) FY=-2.36(kN) CX=-1.62(kNm) CY=0.27(kNm) |
| | 54 | fuerza nodal | 113 | FX=18.65(kN) FY=-932.68(kN) CX=-494.32(kNm) CY=-9.89(kNm) |
| | 54 | fuerza nodal | 75 | FX=-10.74(kN) FY=805.38(kN) FZ=186.86(kN) CX=-267.39(kNm) CY=-3.57(kNm) |
| | 54 | fuerza nodal | 76 | FX=-0.70(kN) FY=53.04(kN) FZ=-120.23(kN) CX=-51.82(kNm) CY=-0.69(kNm) |
| | 54 | fuerza nodal | 77 | FX=-0.83(kN) FY=30.29(kN) FZ=-113.18(kN) CX=-34.53(kNm) CY=-0.94(kNm) |



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Dirección :

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Proyecto : Gelseipf

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 54 | fuerza nodal | 78 | FX=-0.18(kN) FY=13.14(kN) FZ=-94.31(kN) CX=-13.53(kNm) CY=-0.19(kNm) |
| | 54 | fuerza nodal | 79 | FX=0.21(kN) FY=-15.00(kN) FZ=-32.71(kN) CX=8.16(kNm) CY=0.11(kNm) |
| | 54 | fuerza nodal | 80 | FX=0.04(kN) FY=-3.45(kN) FZ=23.74(kN) CX=0.46(kNm) CY=0.01(kNm) |
| | 54 | fuerza nodal | 81 | FX=-0.36(kN) FY=-4.03(kN) FZ=23.79(kN) CX=-0.90(kNm) CY=0.08(kNm) |
| | 54 | fuerza nodal | 82 | FX=-0.35(kN) FY=-4.60(kN) FZ=23.57(kN) CX=-2.41(kNm) CY=0.18(kNm) |
| | 54 | fuerza nodal | 83 | FX=0.49(kN) FY=-5.11(kN) FZ=22.96(kN) CX=-3.93(kNm) CY=-0.38(kNm) |
| | 54 | fuerza nodal | 84 | FX=-0.75(kN) FY=-5.72(kN) FZ=23.12(kN) CX=-5.51(kNm) CY=0.72(kNm) |
| | 54 | fuerza nodal | 94 | FX=-0.45(kN) FY=3.23(kN) FZ=22.31(kN) CX=-0.43(kNm) CY=-0.06(kNm) |
| | 54 | fuerza nodal | 93 | FX=-0.05(kN) FY=3.77(kN) FZ=22.16(kN) CX=0.84(kNm) CY=0.01(kNm) |
| | 54 | fuerza nodal | 92 | FX=-0.08(kN) FY=4.31(kN) FZ=22.14(kN) CX=2.26(kNm) CY=0.04(kNm) |
| | 54 | fuerza nodal | 91 | FX=-0.41(kN) FY=0.98(kN) FZ=21.17(kN) CX=0.75(kNm) CY=0.31(kNm) |
| | 54 | fuerza nodal | 90 | FX=0.14(kN) FY=-8.77(kN) FZ=20.84(kN) CX=-8.43(kNm) CY=-0.14(kNm) |
| | 54 | fuerza nodal | 89 | FX=0.12(kN) FY=-8.32(kN) FZ=21.37(kN) CX=-9.15(kNm) CY=-0.14(kNm) |
| | 54 | fuerza nodal | 88 | FX=-0.28(kN) FY=-7.84(kN) FZ=21.79(kN) CX=-9.26(kNm) CY=0.33(kNm) |
| | 54 | fuerza nodal | 87 | FX=0.11(kN) FY=-7.24(kN) FZ=21.79(kN) CX=-8.75(kNm) CY=-0.13(kNm) |
| | 54 | fuerza nodal | 86 | FX=-0.30(kN) FY=-6.81(kN) FZ=22.55(kN) CX=-8.05(kNm) CY=0.36(kNm) |
| | 54 | fuerza nodal | 85 | FX=0.51(kN) FY=-6.26(kN) FZ=22.90(kN) CX=-6.88(kNm) CY=-0.56(kNm) |
| | 55 | fuerza nodal | 95 | FX=-0.24(kN) FY=14.66(kN) FZ=-29.55(kN) CX=-2.99(kNm) CY=-0.05(kNm) |
| | 55 | fuerza nodal | 96 | FX=-0.92(kN) FY=30.14(kN) FZ=-85.40(kN) CX=-20.83(kNm) CY=-0.64(kNm) |
| | 55 | fuerza nodal | 97 | FX=-0.47(kN) FY=27.91(kN) FZ=-138.17(kN) CX=-22.33(kNm) CY=-0.38(kNm) |
| | 55 | fuerza nodal | 98 | FX=-0.13(kN) FY=7.67(kN) FZ=-96.81(kN) CX=-4.44(kNm) CY=-0.08(kNm) |
| | 55 | fuerza nodal | 99 | FX=-0.66(kN) FY=12.65(kN) FZ=22.33(kN) CX=0.32(kNm) CY=0.02(kNm) |
| | 55 | fuerza nodal | 100 | FX=-0.21(kN) FY=12.45(kN) FZ=23.66(kN) CX=5.14(kNm) CY=0.09(kNm) |
| | 55 | fuerza nodal | 101 | FX=-0.22(kN) FY=12.24(kN) FZ=25.19(kN) CX=9.08(kNm) CY=0.16(kNm) |
| | 55 | fuerza nodal | 102 | FX=-0.66(kN) FY=11.38(kN) FZ=25.05(kN) CX=11.49(kNm) CY=0.67(kNm) |
| | 55 | fuerza nodal | 103 | FX=-0.19(kN) FY=10.84(kN) FZ=25.81(kN) CX=13.22(kNm) CY=0.23(kNm) |
| | 55 | fuerza nodal | 104 | FX=-0.60(kN) FY=8.01(kN) FZ=27.42(kN) CX=10.96(kNm) CY=0.83(kNm) |
| | 55 | fuerza nodal | 105 | FX=0.14(kN) FY=-8.02(kN) FZ=27.18(kN) CX=-11.69(kNm) CY=-0.20(kNm) |
| | 55 | fuerza nodal | 106 | FX=0.12(kN) FY=-5.92(kN) FZ=13.66(kN) CX=-8.81(kNm) CY=-0.18(kNm) |
| | 55 | fuerza nodal | 107 | FX=-0.39(kN) FY=-3.20(kN) CX=-4.77(kNm) CY=0.58(kNm) |
| | 55 | fuerza nodal | 108 | FX=0.05(kN) FY=-3.11(kN) CX=-4.63(kNm) CY=-0.08(kNm) |
| | 55 | fuerza nodal | 109 | FX=0.07(kN) FY=-3.12(kN) CX=-4.64(kNm) CY=-0.10(kNm) |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 55 | fuerza nodal | 110 | FX=-0.39(kN) FY=-3.24(kN) CX=-4.82(kNm) CY=0.59(kNm) |
| | 55 | fuerza nodal | 111 | FX=0.07(kN) FY=-3.14(kN) CX=-4.67(kNm) CY=-0.10(kNm) |
| | 55 | fuerza nodal | 112 | FX=-0.40(kN) FY=-2.36(kN) CX=-3.51(kNm) CY=0.59(kNm) |
| | 55 | fuerza nodal | 113 | FX=18.63(kN) FY=-931.48(kN) CX=-1238.87(kNm) CY=-24.78(kNm) |
| | 55 | fuerza nodal | 75 | FX=-10.63(kN) FY=797.02(kN) FZ=202.01(kN) CX=54.20(kNm) CY=0.72(kNm) |
| | 55 | fuerza nodal | 76 | FX=-0.78(kN) FY=59.04(kN) FZ=-129.45(kN) CX=-36.72(kNm) CY=-0.49(kNm) |
| | 55 | fuerza nodal | 77 | FX=-0.85(kN) FY=32.02(kN) FZ=-118.66(kN) CX=-25.61(kNm) CY=-0.68(kNm) |
| | 55 | fuerza nodal | 78 | FX=-0.18(kN) FY=13.14(kN) FZ=-95.10(kN) CX=-9.08(kNm) CY=-0.13(kNm) |
| | 55 | fuerza nodal | 79 | FX=0.25(kN) FY=-18.15(kN) FZ=-31.64(kN) CX=3.70(kNm) CY=0.05(kNm) |
| | 55 | fuerza nodal | 80 | FX=0.04(kN) FY=-3.44(kN) FZ=23.64(kN) CX=-0.71(kNm) CY=-0.01(kNm) |
| | 55 | fuerza nodal | 81 | FX=-0.36(kN) FY=-4.01(kN) FZ=23.68(kN) CX=-2.26(kNm) CY=0.20(kNm) |
| | 55 | fuerza nodal | 82 | FX=-0.35(kN) FY=-4.58(kN) FZ=23.47(kN) CX=-3.96(kNm) CY=0.30(kNm) |
| | 55 | fuerza nodal | 83 | FX=0.49(kN) FY=-5.09(kN) FZ=22.86(kN) CX=-5.64(kNm) CY=-0.54(kNm) |
| | 55 | fuerza nodal | 84 | FX=-0.74(kN) FY=-5.70(kN) FZ=23.02(kN) CX=-7.42(kNm) CY=0.97(kNm) |
| | 55 | fuerza nodal | 94 | FX=-0.44(kN) FY=3.17(kN) FZ=21.90(kN) CX=0.66(kNm) CY=0.09(kNm) |
| | 55 | fuerza nodal | 93 | FX=-0.05(kN) FY=3.70(kN) FZ=21.75(kN) CX=2.08(kNm) CY=0.03(kNm) |
| | 55 | fuerza nodal | 92 | FX=-0.05(kN) FY=2.62(kN) FZ=21.54(kN) CX=2.27(kNm) CY=0.04(kNm) |
| | 55 | fuerza nodal | 91 | FX=-0.24(kN) FY=-9.05(kN) FZ=19.90(kN) CX=-10.05(kNm) CY=0.27(kNm) |
| | 55 | fuerza nodal | 90 | FX=0.14(kN) FY=-8.73(kN) FZ=20.76(kN) CX=-11.36(kNm) CY=-0.19(kNm) |
| | 55 | fuerza nodal | 89 | FX=0.12(kN) FY=-8.29(kN) FZ=21.28(kN) CX=-11.92(kNm) CY=-0.18(kNm) |
| | 55 | fuerza nodal | 88 | FX=-0.28(kN) FY=-7.80(kN) FZ=21.70(kN) CX=-11.87(kNm) CY=0.42(kNm) |
| | 55 | fuerza nodal | 87 | FX=0.11(kN) FY=-7.21(kN) FZ=21.69(kN) CX=-11.17(kNm) CY=-0.17(kNm) |
| | 55 | fuerza nodal | 86 | FX=-0.30(kN) FY=-6.79(kN) FZ=22.45(kN) CX=-10.32(kNm) CY=0.46(kNm) |
| | 55 | fuerza nodal | 85 | FX=0.51(kN) FY=-6.24(kN) FZ=22.80(kN) CX=-8.97(kNm) CY=-0.73(kNm) |
| | 56 | fuerza nodal | 113 | FX=17.93(kN) FY=-896.54(kN) FZ=-123.72(kN) CX=600.68(kNm) CY=12.01(kNm) |
| | 56 | fuerza nodal | 112 | FX=-0.27(kN) FY=-7.99(kN) FZ=15.18(kN) CX=2.44(kNm) CY=-0.08(kNm) |
| | 56 | fuerza nodal | 111 | FX=0.20(kN) FY=-9.87(kN) FZ=19.24(kN) CX=0.52(kNm) CY=0.01(kNm) |
| | 56 | fuerza nodal | 110 | FX=-0.27(kN) FY=-9.19(kN) FZ=18.94(kN) CX=-1.40(kNm) CY=0.04(kNm) |
| | 56 | fuerza nodal | 109 | FX=0.17(kN) FY=-8.72(kN) FZ=19.29(kN) CX=-2.72(kNm) CY=-0.05(kNm) |
| | 56 | fuerza nodal | 108 | FX=0.15(kN) FY=-8.50(kN) FZ=20.61(kN) CX=-3.63(kNm) CY=-0.07(kNm) |
| | 56 | fuerza nodal | 107 | FX=-0.30(kN) FY=-7.79(kN) FZ=20.07(kN) CX=-3.86(kNm) CY=0.15(kNm) |
| | 56 | fuerza nodal | 106 | FX=0.01(kN) FY=-0.12(kN) FZ=21.24(kN) CX=-0.06(kNm) CY=-0.01(kNm) |



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Autor : **elpsa-elpsa**
Dirección :

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Archivo : **Gelseipf.rtd**
Proyecto : Gelseipf

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 56 | fuerza nodal | 105 | FX=-0.15(kN) FY=7.89(kN) FZ=20.96(kN) CX=3.90(kNm) CY=0.08(kNm) |
| | 56 | fuerza nodal | 95 | FX=-13.49(kN) FY=809.56(kN) FZ=187.74(kN) CX=-268.77(kNm) CY=-4.48(kNm) |
| | 56 | fuerza nodal | 96 | FX=-1.30(kN) FY=53.08(kN) FZ=-120.75(kN) CX=-51.86(kNm) CY=-1.27(kNm) |
| | 56 | fuerza nodal | 97 | FX=-0.48(kN) FY=28.31(kN) FZ=-102.20(kN) CX=-32.27(kNm) CY=-0.55(kNm) |
| | 56 | fuerza nodal | 98 | FX=-0.22(kN) FY=12.67(kN) FZ=-72.36(kN) CX=-13.40(kNm) CY=-0.23(kNm) |
| | 56 | fuerza nodal | 99 | FX=-0.42(kN) FY=-0.85(kN) FZ=-25.75(kN) CX=0.55(kNm) CY=-0.27(kNm) |
| | 56 | fuerza nodal | 100 | FX=-0.03(kN) FY=2.31(kN) FZ=20.41(kN) CX=-0.78(kNm) CY=-0.01(kNm) |
| | 56 | fuerza nodal | 101 | FX=-0.17(kN) FY=9.52(kN) FZ=19.72(kN) CX=-0.73(kNm) CY=-0.01(kNm) |
| | 56 | fuerza nodal | 102 | FX=-0.61(kN) FY=9.02(kN) FZ=19.72(kN) CX=1.24(kNm) CY=0.08(kNm) |
| | 56 | fuerza nodal | 103 | FX=-0.15(kN) FY=8.81(kN) FZ=20.65(kN) CX=2.68(kNm) CY=0.05(kNm) |
| | 56 | fuerza nodal | 104 | FX=-0.60(kN) FY=8.40(kN) FZ=21.03(kN) CX=3.55(kNm) CY=0.25(kNm) |
| | 57 | fuerza nodal | 113 | FX=18.64(kN) FY=-931.93(kN) CX=-866.70(kNm) CY=-17.33(kNm) |
| | 57 | fuerza nodal | 112 | FX=-0.40(kN) FY=-2.36(kN) CX=-2.56(kNm) CY=0.43(kNm) |
| | 57 | fuerza nodal | 111 | FX=0.07(kN) FY=-3.14(kN) CX=-3.42(kNm) CY=-0.08(kNm) |
| | 57 | fuerza nodal | 110 | FX=-0.39(kN) FY=-3.24(kN) CX=-3.52(kNm) CY=0.43(kNm) |
| | 57 | fuerza nodal | 109 | FX=0.07(kN) FY=-3.12(kN) CX=-3.39(kNm) CY=-0.07(kNm) |
| | 57 | fuerza nodal | 108 | FX=0.05(kN) FY=-3.11(kN) CX=-3.38(kNm) CY=-0.06(kNm) |
| | 57 | fuerza nodal | 107 | FX=-0.39(kN) FY=-3.20(kN) CX=-3.49(kNm) CY=0.43(kNm) |
| | 57 | fuerza nodal | 106 | FX=0.11(kN) FY=-5.65(kN) FZ=12.29(kN) CX=-6.15(kNm) CY=-0.12(kNm) |
| | 57 | fuerza nodal | 105 | FX=0.14(kN) FY=-7.82(kN) FZ=25.79(kN) CX=-8.30(kNm) CY=-0.15(kNm) |
| | 57 | fuerza nodal | 104 | FX=-0.57(kN) FY=6.35(kN) FZ=24.36(kN) CX=6.21(kNm) CY=0.56(kNm) |
| | 57 | fuerza nodal | 103 | FX=-0.18(kN) FY=10.16(kN) FZ=24.18(kN) CX=8.55(kNm) CY=0.15(kNm) |
| | 57 | fuerza nodal | 102 | FX=-0.65(kN) FY=10.77(kN) FZ=23.94(kN) CX=6.99(kNm) CY=0.42(kNm) |
| | 57 | fuerza nodal | 101 | FX=-0.19(kN) FY=10.97(kN) FZ=22.50(kN) CX=4.40(kNm) CY=0.08(kNm) |
| | 57 | fuerza nodal | 100 | FX=-0.20(kN) FY=11.58(kN) FZ=22.34(kN) CX=1.15(kNm) CY=0.02(kNm) |
| | 57 | fuerza nodal | 99 | FX=-0.52(kN) FY=4.56(kN) FZ=-30.72(kN) CX=-1.18(kNm) CY=-0.13(kNm) |
| | 57 | fuerza nodal | 98 | FX=-0.22(kN) FY=12.58(kN) FZ=-83.70(kN) CX=-8.86(kNm) CY=-0.15(kNm) |
| | 57 | fuerza nodal | 97 | FX=-0.49(kN) FY=29.15(kN) FZ=-114.55(kN) CX=-23.32(kNm) CY=-0.39(kNm) |
| | 57 | fuerza nodal | 96 | FX=-1.56(kN) FY=68.37(kN) FZ=-128.87(kN) CX=-42.53(kNm) CY=-0.97(kNm) |
| | 57 | fuerza nodal | 95 | FX=-13.32(kN) FY=799.07(kN) FZ=202.43(kN) CX=54.34(kNm) CY=0.91(kNm) |

## Cargas - Casos: 1A50 :

| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 1 | peso propio | 1A112 | PZ Menos |
| 2 | desplazamiento impuesto | 201 | UZ=0.25(m) |
| 2 | desplazamiento impuesto | 202 | UZ=0.15(m) |
| 2 | desplazamiento impuesto | 203 | UZ=0.05(m) |
| 2 | desplazamiento impuesto | 204 | UZ=0.01(m) |
| 3 | sobrecarga uniforme | 1A112 | PZ=-147.00(kN/m) |
| 3 | momento repartido | 1A112 | MX=15.22(kNm/m) local |
| 4 | sobrecarga uniforme | 1A112 | PZ=-32.61(kN/m) |
| 4 | momento repartido | 1A112 | MX=4.57(kNm/m) local |
| 5 | sobrecarga uniforme | 1A112 | PZ=32.61(kN/m) |
| 5 | momento repartido | 1A112 | MX=-4.57(kNm/m) local |
| 6 | sobrecarga uniforme | 1A112 | PZ=54.35(kN/m) |
| 6 | momento repartido | 1A112 | MX=-7.61(kNm/m) local |
| 7 | sobrecarga uniforme | 1A16 | PZ=-8.75(kN/m) |
| 7 | momento repartido | 1A16 | MX=52.06(kNm/m) local |
| 8 | momento repartido | 17A36 | MX=52.06(kNm/m) local |
| 8 | sobrecarga uniforme | 17A36 | PZ=-8.75(kN/m) |
| 9 | sobrecarga uniforme | 37A56 | PZ=-8.75(kN/m) |
| 9 | momento repartido | 37A56 | MX=52.06(kNm/m) local |
| 10 | sobrecarga uniforme | 57A76 | PZ=-8.75(kN/m) |
| 10 | momento repartido | 57A76 | MX=52.06(kNm/m) local |
| 11 | sobrecarga uniforme | 77A96 | PZ=-8.75(kN/m) |
| 11 | momento repartido | 77A96 | MX=52.06(kNm/m) local |
| 12 | sobrecarga uniforme | 97A112 | PZ=-8.75(kN/m) |
| 12 | momento repartido | 97A112 | MX=52.06(kNm/m) local |
| 13 | sobrecarga uniforme | 1A16 | PZ=-8.75(kN/m) |
| 13 | momento repartido | 1A16 | MX=-52.06(kNm/m) local |
| 14 | sobrecarga uniforme | 17A36 | PZ=-8.75(kN/m) |
| 14 | momento repartido | 17A36 | MX=-52.06(kNm/m) local |
| 15 | momento repartido | 37A56 | MX=-52.06(kNm/m) local |



ROBOT v 14.5.0
Autor : **eipsa-eipsa**
Dirección :

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Proyecto : Gelserec

## Cargas - Casos: 1A50 :

| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 1 | peso propio | 1A112 | PZ Menos |
| 2 | desplazamiento impuesto | 201 | UZ=0.25(m) |
| 2 | desplazamiento impuesto | 202 | UZ=0.15(m) |
| 2 | desplazamiento impuesto | 203 | UZ=0.05(m) |
| 2 | desplazamiento impuesto | 204 | UZ=0.01(m) |
| 3 | sobrecarga uniforme | 1A112 | PZ=-147.00(kN/m) |
| 3 | momento repartido | 1A112 | MX=15.22(kNm/m) local |
| 4 | sobrecarga uniforme | 1A112 | PZ=-32.61(kN/m) |
| 4 | momento repartido | 1A112 | MX=4.57(kNm/m) local |
| 5 | sobrecarga uniforme | 1A112 | PZ=32.61(kN/m) |
| 5 | momento repartido | 1A112 | MX=-4.57(kNm/m) local |
| 6 | sobrecarga uniforme | 1A112 | PZ=54.35(kN/m) |
| 6 | momento repartido | 1A112 | MX=-7.61(kNm/m) local |
| 7 | sobrecarga uniforme | 1A16 | PZ=-8.75(kN/m) |
| 7 | momento repartido | 1A16 | MX=52.06(kNm/m) local |
| 8 | momento repartido | 17A36 | MX=52.06(kNm/m) local |
| 8 | sobrecarga uniforme | 17A36 | PZ=-8.75(kN/m) |
| 9 | sobrecarga uniforme | 37A56 | PZ=-8.75(kN/m) |
| 9 | momento repartido | 37A56 | MX=52.06(kNm/m) local |
| 10 | sobrecarga uniforme | 57A76 | PZ=-8.75(kN/m) |
| 10 | momento repartido | 57A76 | MX=52.06(kNm/m) local |
| 11 | sobrecarga uniforme | 77A96 | PZ=-8.75(kN/m) |
| 11 | momento repartido | 77A96 | MX=52.06(kNm/m) local |
| 12 | sobrecarga uniforme | 97A112 | PZ=-8.75(kN/m) |
| 12 | momento repartido | 97A112 | MX=52.06(kNm/m) local |
| 13 | sobrecarga uniforme | 1A16 | PZ=-8.75(kN/m) |
| 13 | momento repartido | 1A16 | MX=-52.06(kNm/m) local |
| 14 | sobrecarga uniforme | 17A36 | PZ=-8.75(kN/m) |
| 14 | momento repartido | 17A36 | MX=-52.06(kNm/m) local |
| 15 | momento repartido | 37A56 | MX=-52.06(kNm/m) local |

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| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 15 | sobrecarga uniforme | 37A56 | PZ=-8.75(kN/m) |
| 16 | sobrecarga uniforme | 57A76 | PZ=-8.75(kN/m) |
| 16 | momento repartido | 57A76 | MX=-52.06(kNm/m) local |
| 17 | sobrecarga uniforme | 77A96 | PZ=-8.75(kN/m) |
| 17 | momento repartido | 77A96 | MX=-52.06(kNm/m) local |
| 18 | sobrecarga uniforme | 97A112 | PZ=-8.75(kN/m) |
| 18 | momento repartido | 97A112 | MX=-52.06(kNm/m) local |
| 19 | sobrecarga uniforme | 1A16 | PZ=-96.80(kN/m) |
| 19 | momento repartido | 1A16 | MX=264.30(kNm/m) local |
| 19 | sobrecarga uniforme | 1A16 | PY=-2.93(kN/m) local |
| 19 | momento repartido | 1A16 | MX=11.00(kNm/m) local |
| 20 | momento repartido | 1A16 | MX=11.00(kNm/m) local |
| 20 | sobrecarga uniforme | 1A16 | PY=-2.93(kN/m) local |
| 20 | momento repartido | 1A16 | MX=-190.70(kNm/m) local |
| 20 | sobrecarga uniforme | 1A16 | PZ=-96.80(kN/m) |
| 21 | sobrecarga uniforme | 1A36 | PZ=-96.80(kN/m) |
| 21 | momento repartido | 1A36 | MX=264.30(kNm/m) local |
| 21 | sobrecarga uniforme | 1A36 | PY=-2.93(kN/m) local |
| 21 | momento repartido | 1A36 | MX=11.00(kNm/m) local |
| 22 | sobrecarga uniforme | 1A36 | PZ=-96.80(kN/m) |
| 22 | momento repartido | 1A36 | MX=-190.70(kNm/m) local |
| 22 | sobrecarga uniforme | 1A36 | PY=-2.93(kN/m) local |
| 22 | momento repartido | 1A36 | MX=11.00(kNm/m) local |
| 23 | sobrecarga uniforme | 17A36 | PZ=-96.80(kN/m) |
| 23 | momento repartido | 17A36 | MX=264.30(kNm/m) local |
| 23 | sobrecarga uniforme | 17A36 | PY=-2.93(kN/m) local |
| 23 | momento repartido | 17A36 | MX=11.00(kNm/m) local |
| 24 | momento repartido | 17A36 | MX=11.00(kNm/m) local |
| 24 | sobrecarga uniforme | 17A36 | PY=-2.93(kN/m) local |
| 24 | momento repartido | 17A36 | MX=-190.70(kNm/m) local |
| 24 | sobrecarga uniforme | 17A36 | PZ=-96.80(kN/m) |
| 25 | sobrecarga uniforme | 17A56 | PZ=-96.80(kN/m) |



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| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 25 | momento repartido | 17A56 | MX=264.30(kNm/m) local |
| 25 | sobrecarga uniforme | 17A56 | PY=-2.93(kN/m) local |
| 25 | momento repartido | 17A56 | MX=11.00(kNm/m) local |
| 26 | sobrecarga uniforme | 17A56 | PZ=-96.80(kN/m) |
| 26 | momento repartido | 17A56 | MX=-190.70(kNm/m) local |
| 26 | sobrecarga uniforme | 17A56 | PY=-2.93(kN/m) local |
| 26 | momento repartido | 17A56 | MX=11.00(kNm/m) local |
| 27 | sobrecarga uniforme | 37A56 | PZ=-96.80(kN/m) |
| 27 | momento repartido | 37A56 | MX=264.30(kNm/m) local |
| 27 | sobrecarga uniforme | 37A56 | PY=-2.93(kN/m) local |
| 27 | momento repartido | 37A56 | MX=11.00(kNm/m) local |
| 28 | momento repartido | 37A56 | MX=11.00(kNm/m) local |
| 28 | sobrecarga uniforme | 37A56 | PY=-2.93(kN/m) local |
| 28 | momento repartido | 37A56 | MX=-190.70(kNm/m) local |
| 28 | sobrecarga uniforme | 37A56 | PZ=-96.80(kN/m) |
| 29 | sobrecarga uniforme | 37A76 | PZ=-96.80(kN/m) |
| 29 | momento repartido | 37A76 | MX=264.30(kNm/m) local |
| 29 | sobrecarga uniforme | 37A76 | PY=-2.93(kN/m) local |
| 29 | momento repartido | 37A76 | MX=11.00(kNm/m) local |
| 30 | sobrecarga uniforme | 37A76 | PZ=-96.80(kN/m) |
| 30 | momento repartido | 37A76 | MX=-190.70(kNm/m) local |
| 30 | sobrecarga uniforme | 37A76 | PY=-2.93(kN/m) local |
| 30 | momento repartido | 37A76 | MX=11.00(kNm/m) local |
| 31 | sobrecarga uniforme | 57A76 | PZ=-96.80(kN/m) |
| 31 | momento repartido | 57A76 | MX=264.30(kNm/m) local |
| 31 | sobrecarga uniforme | 57A76 | PY=-2.93(kN/m) local |
| 31 | momento repartido | 57A76 | MX=11.00(kNm/m) local |
| 32 | momento repartido | 57A76 | MX=11.00(kNm/m) local |
| 32 | sobrecarga uniforme | 57A76 | PY=-2.93(kN/m) local |
| 32 | momento repartido | 57A76 | MX=-190.70(kNm/m) local |
| 32 | sobrecarga uniforme | 57A76 | PZ=-96.80(kN/m) |
| 33 | sobrecarga uniforme | 57A96 | PZ=-96.80(kN/m) |

| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 33 | momento repartido | 57A96 | MX=264.30(kNm/m) local |
| 33 | sobrecarga uniforme | 57A96 | PY=-2.93(kN/m) local |
| 33 | momento repartido | 57A96 | MX=11.00(kNm/m) local |
| 34 | sobrecarga uniforme | 57A96 | PZ=-96.80(kN/m) |
| 34 | momento repartido | 57A96 | MX=-190.70(kNm/m) local |
| 34 | sobrecarga uniforme | 57A96 | PY=-2.93(kN/m) local |
| 34 | momento repartido | 57A96 | MX=11.00(kNm/m) local |
| 35 | sobrecarga uniforme | 77A96 | PZ=-96.80(kN/m) |
| 35 | momento repartido | 77A96 | MX=264.30(kNm/m) local |
| 35 | sobrecarga uniforme | 77A96 | PY=-2.93(kN/m) local |
| 35 | momento repartido | 77A96 | MX=11.00(kNm/m) local |
| 36 | momento repartido | 77A96 | MX=11.00(kNm/m) local |
| 36 | sobrecarga uniforme | 77A96 | PY=-2.93(kN/m) local |
| 36 | momento repartido | 77A96 | MX=-190.70(kNm/m) local |
| 36 | sobrecarga uniforme | 77A96 | PZ=-96.80(kN/m) |
| 37 | sobrecarga uniforme | 77A112 | PZ=-96.80(kN/m) |
| 37 | momento repartido | 77A112 | MX=264.30(kNm/m) local |
| 37 | sobrecarga uniforme | 77A112 | PY=-2.93(kN/m) local |
| 37 | momento repartido | 77A112 | MX=11.00(kNm/m) local |
| 38 | sobrecarga uniforme | 77A112 | PZ=-96.80(kN/m) |
| 38 | momento repartido | 77A112 | MX=-190.70(kNm/m) local |
| 38 | sobrecarga uniforme | 77A112 | PY=-2.93(kN/m) local |
| 38 | momento repartido | 77A112 | MX=11.00(kNm/m) local |
| 39 | momento repartido | 1A112 | MX=11.00(kNm/m) local |
| 39 | sobrecarga uniforme | 1A112 | PY=-2.93(kN/m) local |
| 39 | momento repartido | 1A112 | MX=264.30(kNm/m) local |
| 39 | sobrecarga uniforme | 1A112 | PZ=-96.80(kN/m) |
| 40 | sobrecarga uniforme | 1A112 | PZ=-96.80(kN/m) |
| 40 | momento repartido | 1A112 | MX=-190.70(kNm/m) local |
| 40 | sobrecarga uniforme | 1A112 | PY=-2.93(kN/m) local |
| 40 | momento repartido | 1A112 | MX=11.00(kNm/m) local |
| 41 | sobrecarga uniforme | 1 | PY=2.93(kN/m) local |



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| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 41 | momento repartido | 1 | MX=-11.00(kNm/m) local |
| 41 | sobrecarga uniforme | 2 | PY=2.93(kN/m) local |
| 41 | momento repartido | 2 | MX=-11.00(kNm/m) local |
| 41 | sobrecarga uniforme | 3 | PY=2.93(kN/m) local |
| 41 | momento repartido | 3 | MX=-11.00(kNm/m) local |
| 41 | carga trapezoidal | 4 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=0.690(m) X1=0.0(m) local no proyectadas absolutos |
| 41 | fuerza sobre barra | 4 | CX=-7.61(kNm) X=0.350(m) local |
| 41 | fuerza sobre barra | 1 | FY=-9.16(kN) X=0.800(m) local |
| 41 | fuerza sobre barra | 1 | CX=34.38(kNm) X=0.800(m) local |
| 41 | fuerza sobre barra | 2 | FY=-9.16(kN) X=0.890(m) local |
| 41 | fuerza sobre barra | 2 | CX=34.38(kNm) X=0.890(m) local |
| 41 | fuerza sobre barra | 3 | FY=-9.16(kN) X=0.390(m) local |
| 41 | fuerza sobre barra | 3 | CX=34.38(kNm) X=0.390(m) local |
| 41 | fuerza sobre barra | 3 | FY=-9.16(kN) X=1.990(m) local |
| 41 | fuerza sobre barra | 3 | CX=34.38(kNm) X=1.990(m) local |
| 41 | sobrecarga uniforme | 1 | PZ=96.80(kN/m) |
| 41 | momento repartido | 1 | MX=-264.26(kNm/m) local |
| 41 | sobrecarga uniforme | 2 | PZ=96.80(kN/m) |
| 41 | momento repartido | 2 | MX=-264.26(kNm/m) local |
| 41 | sobrecarga uniforme | 3 | PZ=96.80(kN/m) |
| 41 | momento repartido | 3 | MX=-264.26(kNm/m) local |
| 41 | carga trapezoidal | 4 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=0.690(m) X1=0.0(m) global no proyectadas absolutos |
| 41 | fuerza sobre barra | 4 | CX=-182.87(kNm) X=0.350(m) local |
| 41 | fuerza sobre barra | 1 | FZ=-302.50(kN) X=0.800(m) |
| 41 | fuerza sobre barra | 1 | CX=825.83(kNm) X=0.800(m) local |
| 41 | fuerza sobre barra | 2 | FZ=-302.50(kN) X=0.890(m) |
| 41 | fuerza sobre barra | 2 | CX=825.83(kNm) X=0.890(m) local |
| 41 | fuerza sobre barra | 3 | FZ=-302.50(kN) X=0.390(m) |
| 41 | fuerza sobre barra | 3 | CX=825.83(kNm) X=0.390(m) local |
| 41 | fuerza sobre barra | 3 | FZ=-302.50(kN) X=1.990(m) |
| 41 | fuerza sobre barra | 3 | CX=825.83(kNm) X=1.990(m) local |
| 42 | sobrecarga uniforme | 1 | PY=2.93(kN/m) local |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 42 | momento repartido | 1 | MX=-11.00(kNm/m) local |
| | 42 | sobrecarga uniforme | 2 | PY=2.93(kN/m) local |
| | 42 | momento repartido | 2 | MX=-11.00(kNm/m) local |
| | 42 | sobrecarga uniforme | 3 | PY=2.93(kN/m) local |
| | 42 | momento repartido | 3 | MX=-11.00(kNm/m) local |
| | 42 | carga trapezoidal | 4 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=0.690(m) X1=0.0(m) local no proyectadas absolutos |
| | 42 | fuerza sobre barra | 4 | CX=-7.61(kNm) X=0.350(m) local |
| | 42 | fuerza sobre barra | 1 | FY=-9.16(kN) X=0.800(m) local |
| | 42 | fuerza sobre barra | 1 | CX=34.38(kNm) X=0.800(m) local |
| | 42 | fuerza sobre barra | 2 | FY=-9.16(kN) X=0.890(m) local |
| | 42 | fuerza sobre barra | 2 | CX=34.38(kNm) X=0.890(m) local |
| | 42 | fuerza sobre barra | 3 | FY=-9.16(kN) X=0.390(m) local |
| | 42 | fuerza sobre barra | 3 | CX=34.38(kNm) X=0.390(m) local |
| | 42 | fuerza sobre barra | 3 | FY=-9.16(kN) X=1.990(m) local |
| | 42 | fuerza sobre barra | 3 | CX=34.38(kNm) X=1.990(m) local |
| | 42 | sobrecarga uniforme | 1 | PZ=96.80(kN/m) |
| | 42 | momento repartido | 1 | MX=190.70(kNm/m) local |
| | 42 | sobrecarga uniforme | 2 | PZ=96.80(kN/m) |
| | 42 | momento repartido | 2 | MX=190.70(kNm/m) local |
| | 42 | sobrecarga uniforme | 3 | PZ=96.80(kN/m) |
| | 42 | momento repartido | 3 | MX=190.70(kNm/m) local |
| | 42 | carga trapezoidal | 4 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=0.690(m) X1=0.0(m) global no proyectadas absolutos |
| | 42 | fuerza sobre barra | 4 | CX=131.96(kNm) X=0.350(m) local |
| | 42 | fuerza sobre barra | 1 | FZ=-302.50(kN) X=0.800(m) |
| | 42 | fuerza sobre barra | 1 | CX=-595.92(kNm) X=0.800(m) local |
| | 42 | fuerza sobre barra | 2 | FZ=-302.50(kN) X=0.890(m) |
| | 42 | fuerza sobre barra | 2 | CX=-595.92(kNm) X=0.890(m) local |
| | 42 | fuerza sobre barra | 3 | FZ=-302.50(kN) X=0.390(m) |
| | 42 | fuerza sobre barra | 3 | CX=-595.92(kNm) X=0.390(m) local |
| | 42 | fuerza sobre barra | 3 | FZ=-302.50(kN) X=1.990(m) |
| | 42 | fuerza sobre barra | 3 | CX=-595.92(kNm) X=1.990(m) local |
| | 43 | carga trapezoidal | 13 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=1.990(m) local no proyectadas absolutos |





| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 43 | fuerza sobre barra | 13 | CX=-23.10(kNm) X=2.050(m) local |
| | 43 | sobrecarga uniforme | 14 | PY=2.93(kN/m) local |
| | 43 | momento repartido | 14 | MX=-11.00(kNm/m) local |
| | 43 | sobrecarga uniforme | 15 | PY=2.93(kN/m) local |
| | 43 | momento repartido | 15 | MX=-11.00(kNm/m) local |
| | 43 | carga trapezoidal | 16 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.090(m) X1=0.0(m) local no proyectadas absolutos |
| | 43 | momento repartido | 15 | MX=-11.00(kNm/m) local |
| | 43 | carga trapezoidal | 16 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.090(m) X1=0.0(m) local no proyectadas absolutos |
| | 43 | fuerza sobre barra | 16 | CX=-22.95(kNm) X=1.040(m) local |
| | 43 | fuerza sobre barra | 14 | FY=-9.16(kN) X=0.690(m) local |
| | 43 | fuerza sobre barra | 14 | CX=34.38(kNm) X=0.690(m) local |
| | 43 | fuerza sobre barra | 15 | FY=-9.16(kN) X=0.190(m) local |
| | 43 | fuerza sobre barra | 15 | CX=34.38(kNm) X=0.190(m) local |
| | 43 | fuerza sobre barra | 15 | FY=-9.16(kN) X=1.790(m) local |
| | 43 | fuerza sobre barra | 15 | CX=34.38(kNm) X=1.790(m) local |
| | 43 | fuerza sobre barra | 16 | FY=-9.16(kN) X=1.290(m) local |
| | 43 | fuerza sobre barra | 16 | CX=34.38(kNm) X=1.290(m) local |
| | 43 | carga trapezoidal | 13 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=1.990(m) global no proyectadas absolutos |
| | 43 | fuerza sobre barra | 13 | CX=-554.95(kNm) X=2.050(m) local |
| | 43 | sobrecarga uniforme | 14 | PZ=96.80(kN/m) |
| | 43 | momento repartido | 14 | MX=-264.26(kNm/m) local |
| | 43 | sobrecarga uniforme | 15 | PZ=96.80(kN/m) |
| | 43 | momento repartido | 15 | MX=-264.26(kNm/m) local |
| | 43 | carga trapezoidal | 16 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.090(m) X1=0.0(m) global no proyectadas absolutos |
| | 43 | fuerza sobre barra | 16 | CX=-551.25(kNm) X=1.040(m) local |
| | 43 | fuerza sobre barra | 14 | FZ=-302.50(kN) X=0.690(m) |
| | 43 | fuerza sobre barra | 14 | CX=825.83(kNm) X=0.690(m) local |
| | 43 | fuerza sobre barra | 15 | FZ=-302.50(kN) X=0.190(m) |
| | 43 | fuerza sobre barra | 15 | CX=825.83(kNm) X=0.190(m) local |
| | 43 | fuerza sobre barra | 15 | FZ=-302.50(kN) X=1.790(m) |
| | 43 | fuerza sobre barra | 15 | CX=825.83(kNm) X=1.790(m) local |
| | 43 | fuerza sobre barra | 16 | FZ=-302.50(kN) X=1.290(m) |
| | 43 | fuerza sobre barra | 16 | CX=825.83(kNm) X=1.290(m) local |
| | 44 | carga trapezoidal | 13 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=1.990(m) local no proyectadas absolutos |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 44 | fuerza sobre barra | 13 | CX=-23.10(kNm) X=2.050(m) local |
| | 44 | sobrecarga uniforme | 14 | PY=2.93(kN/m) local |
| | 44 | momento repartido | 14 | MX=-11.00(kNm/m) local |
| | 44 | sobrecarga uniforme | 15 | PY=2.93(kN/m) local |
| | 44 | momento repartido | 15 | MX=-11.00(kNm/m) local |
| | 44 | carga trapezoidal | 16 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.090(m) X1=0.0(m) local no proyectadas absolutos |
| | 44 | fuerza sobre barra | 16 | CX=-22.95(kNm) X=1.040(m) local |
| | 44 | fuerza sobre barra | 14 | FY=-9.16(kN) X=0.690(m) local |
| | 44 | fuerza sobre barra | 14 | CX=34.38(kNm) X=0.690(m) local |
| | 44 | fuerza sobre barra | 15 | FY=-9.16(kN) X=0.190(m) local |
| | 44 | fuerza sobre barra | 15 | CX=34.38(kNm) X=0.190(m) local |
| | 44 | fuerza sobre barra | 15 | FY=-9.16(kN) X=1.790(m) local |
| | 44 | fuerza sobre barra | 15 | CX=34.38(kNm) X=1.790(m) local |
| | 44 | fuerza sobre barra | 16 | FY=-9.16(kN) X=1.290(m) local |
| | 44 | fuerza sobre barra | 16 | CX=34.38(kNm) X=1.290(m) local |
| | 44 | carga trapezoidal | 13 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=1.990(m) global no proyectadas absolutos |
| | 44 | fuerza sobre barra | 13 | CX=400.46(kNm) X=2.050(m) local |
| | 44 | sobrecarga uniforme | 14 | PZ=96.80(kN/m) |
| | 44 | momento repartido | 14 | MX=190.70(kNm/m) local |
| | 44 | sobrecarga uniforme | 15 | PZ=96.80(kN/m) |
| | 44 | momento repartido | 15 | MX=190.70(kNm/m) local |
| | 44 | carga trapezoidal | 16 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.090(m) X1=0.0(m) global no proyectadas absolutos |
| | 44 | fuerza sobre barra | 16 | CX=397.79(kNm) X=1.040(m) local |
| | 44 | fuerza sobre barra | 14 | FZ=-302.50(kN) X=0.690(m) |
| | 44 | fuerza sobre barra | 14 | CX=-595.92(kNm) X=0.690(m) local |
| | 44 | fuerza sobre barra | 15 | FZ=-302.50(kN) X=0.190(m) |
| | 44 | fuerza sobre barra | 15 | CX=-595.92(kNm) X=0.190(m) local |
| | 44 | fuerza sobre barra | 15 | FZ=-302.50(kN) X=1.790(m) |
| | 44 | fuerza sobre barra | 15 | CX=-595.92(kNm) X=1.790(m) local |
| | 44 | fuerza sobre barra | 16 | FZ=-302.50(kN) X=1.290(m) |
| | 44 | fuerza sobre barra | 16 | CX=-595.92(kNm) X=1.290(m) local |
| | 45 | carga trapezoidal | 20 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=0.080(m) X1=0.0(m) local no proyectadas absolutos |





| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 45 | momento repartido | 19 | MX=-11.00(kNm/m) local |
| | 45 | sobrecarga uniforme | 19 | PY=2.93(kN/m) local |
| | 45 | momento repartido | 18 | MX=-11.00(kNm/m) local |
| | 45 | sobrecarga uniforme | 18 | PY=2.93(kN/m) local |
| | 45 | momento repartido | 17 | MX=-11.00(kNm/m) local |
| | 45 | sobrecarga uniforme | 17 | PY=2.93(kN/m) local |
| | 45 | fuerza sobre barra | 16 | CX=-23.10(kNm) X=2.090(m) local |
| | 45 | carga trapezoidal | 16 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=2.090(m) local no proyectadas absolutos |
| | 45 | fuerza sobre barra | 20 | CX=-0.88(kNm) X=0.040(m) local |
| | 45 | fuerza sobre barra | 17 | FY=-9.16(kN) X=0.790(m) local |
| | 45 | fuerza sobre barra | 17 | CX=34.38(kNm) X=0.790(m) local |
| | 45 | fuerza sobre barra | 18 | FY=-9.16(kN) X=0.290(m) local |
| | 45 | fuerza sobre barra | 18 | CX=34.38(kNm) X=0.290(m) local |
| | 45 | fuerza sobre barra | 18 | FY=-9.16(kN) X=1.890(m) local |
| | 45 | fuerza sobre barra | 18 | CX=34.38(kNm) X=1.890(m) local |
| | 45 | fuerza sobre barra | 19 | FY=-9.16(kN) X=1.380(m) local |
| | 45 | fuerza sobre barra | 19 | CX=34.38(kNm) X=1.380(m) local |
| | 45 | carga trapezoidal | 16 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=2.090(m) global no proyectadas absolutos |
| | 45 | fuerza sobre barra | 16 | CX=-554.95(kNm) X=2.090(m) local |
| | 45 | sobrecarga uniforme | 17 | PZ=96.80(kN/m) |
| | 45 | momento repartido | 17 | MX=-264.26(kNm/m) local |
| | 45 | sobrecarga uniforme | 18 | PZ=96.80(kN/m) |
| | 45 | momento repartido | 18 | MX=-264.26(kNm/m) local |
| | 45 | sobrecarga uniforme | 19 | PZ=96.80(kN/m) |
| | 45 | momento repartido | 19 | MX=-264.26(kNm/m) local |
| | 45 | carga trapezoidal | 20 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=0.080(m) X1=0.0(m) global no proyectadas absolutos |
| | 45 | fuerza sobre barra | 20 | CX=-21.14(kNm) X=0.040(m) local |
| | 45 | fuerza sobre barra | 17 | FZ=-302.50(kN) X=0.790(m) |
| | 45 | fuerza sobre barra | 17 | CX=825.83(kNm) X=0.790(m) local |
| | 45 | fuerza sobre barra | 18 | FZ=-302.50(kN) X=0.290(m) |
| | 45 | fuerza sobre barra | 18 | CX=825.83(kNm) X=0.290(m) local |
| | 45 | fuerza sobre barra | 18 | FZ=-302.50(kN) X=1.890(m) |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 45 | fuerza sobre barra | 18 | CX=825.83(kNm) X=1.890(m) local |
| | 45 | fuerza sobre barra | 19 | FZ=-302.50(kN) X=1.380(m) |
| | 45 | fuerza sobre barra | 19 | CX=825.83(kNm) X=1.380(m) local |
| | 46 | carga trapezoidal | 20 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=0.080(m) X1=0.0(m) local no proyectadas absolutos |
| | 46 | momento repartido | 19 | MX=-11.00(kNm/m) local |
| | 46 | sobrecarga uniforme | 19 | PY=2.93(kN/m) local |
| | 46 | momento repartido | 18 | MX=-11.00(kNm/m) local |
| | 46 | sobrecarga uniforme | 18 | PY=2.93(kN/m) local |
| | 46 | momento repartido | 17 | MX=-11.00(kNm/m) local |
| | 46 | sobrecarga uniforme | 17 | PY=2.93(kN/m) local |
| | 46 | fuerza sobre barra | 16 | CX=-23.10(kNm) X=2.090(m) local |
| | 46 | carga trapezoidal | 16 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=2.090(m) local no proyectadas absolutos |
| | 46 | fuerza sobre barra | 20 | CX=-0.88(kNm) X=0.040(m) local |
| | 46 | fuerza sobre barra | 17 | FY=-9.16(kN) X=0.790(m) local |
| | 46 | fuerza sobre barra | 17 | CX=34.38(kNm) X=0.790(m) local |
| | 46 | fuerza sobre barra | 18 | FY=-9.16(kN) X=0.290(m) local |
| | 46 | fuerza sobre barra | 18 | CX=34.38(kNm) X=0.290(m) local |
| | 46 | fuerza sobre barra | 18 | FY=-9.16(kN) X=1.890(m) local |
| | 46 | fuerza sobre barra | 18 | CX=34.38(kNm) X=1.890(m) local |
| | 46 | fuerza sobre barra | 19 | FY=-9.16(kN) X=1.380(m) local |
| | 46 | fuerza sobre barra | 19 | CX=34.38(kNm) X=1.380(m) local |
| | 46 | carga trapezoidal | 16 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=2.090(m) global no proyectadas absolutos |
| | 46 | fuerza sobre barra | 16 | CX=400.46(kNm) X=2.090(m) local |
| | 46 | sobrecarga uniforme | 17 | PZ=96.80(kN/m) |
| | 46 | momento repartido | 17 | MX=190.70(kNm/m) local |
| | 46 | sobrecarga uniforme | 18 | PZ=96.80(kN/m) |
| | 46 | momento repartido | 18 | MX=190.70(kNm/m) local |
| | 46 | sobrecarga uniforme | 19 | PZ=96.80(kN/m) |
| | 46 | momento repartido | 19 | MX=190.70(kNm/m) local |
| | 46 | carga trapezoidal | 20 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=0.080(m) X1=0.0(m) global no proyectadas absolutos |
| | 46 | fuerza sobre barra | 19 | CX=-595.92(kNm) X=1.380(m) local |
| | 46 | fuerza sobre barra | 19 | FZ=-302.50(kN) X=1.380(m) |





| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 46 | fuerza sobre barra | 18 | CX=-595.92(kNm) X=1.890(m) local |
| | 46 | fuerza sobre barra | 18 | FZ=-302.50(kN) X=1.890(m) |
| | 46 | fuerza sobre barra | 18 | CX=-595.92(kNm) X=0.290(m) local |
| | 46 | fuerza sobre barra | 18 | FZ=-302.50(kN) X=0.290(m) |
| | 46 | fuerza sobre barra | 17 | CX=-595.92(kNm) X=0.790(m) local |
| | 46 | fuerza sobre barra | 17 | FZ=-302.50(kN) X=0.790(m) |
| | 46 | fuerza sobre barra | 20 | CX=15.26(kNm) X=0.040(m) local |
| | 47 | carga trapezoidal | 33 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=1.980(m) local no proyectadas absolutos |
| | 47 | fuerza sobre barra | 33 | CX=-23.10(kNm) X=2.040(m) local |
| | 47 | sobrecarga uniforme | 34 | PY=2.93(kN/m) local |
| | 47 | momento repartido | 34 | MX=-11.00(kNm/m) local |
| | 47 | sobrecarga uniforme | 35 | PY=2.93(kN/m) local |
| | 47 | momento repartido | 35 | MX=-11.00(kNm/m) local |
| | 47 | carga trapezoidal | 36 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.070(m) X1=0.0(m) local no proyectadas absolutos |
| | 47 | fuerza sobre barra | 36 | CX=-22.81(kNm) X=1.040(m) local |
| | 47 | fuerza sobre barra | 34 | FY=-9.16(kN) X=0.680(m) local |
| | 47 | fuerza sobre barra | 34 | CX=34.38(kNm) X=0.680(m) local |
| | 47 | fuerza sobre barra | 35 | FY=-9.16(kN) X=0.180(m) local |
| | 47 | fuerza sobre barra | 35 | CX=34.38(kNm) X=0.180(m) local |
| | 47 | fuerza sobre barra | 35 | FY=-9.16(kN) X=1.780(m) local |
| | 47 | fuerza sobre barra | 35 | CX=34.38(kNm) X=1.780(m) local |
| | 47 | fuerza sobre barra | 36 | FY=-9.16(kN) X=1.270(m) local |
| | 47 | fuerza sobre barra | 36 | CX=34.38(kNm) X=1.270(m) local |
| | 47 | carga trapezoidal | 33 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=1.980(m) global no proyectadas absolutos |
| | 47 | fuerza sobre barra | 33 | CX=-554.95(kNm) X=2.040(m) local |
| | 47 | sobrecarga uniforme | 34 | PZ=96.80(kN/m) |
| | 47 | momento repartido | 34 | MX=-264.26(kNm/m) local |
| | 47 | sobrecarga uniforme | 35 | PZ=96.80(kN/m) |
| | 47 | momento repartido | 35 | MX=-264.26(kNm/m) local |
| | 47 | carga trapezoidal | 36 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.070(m) X1=0.0(m) global no proyectadas absolutos |
| | 47 | fuerza sobre barra | 36 | CX=-548.08(kNm) X=1.040(m) local |
| | 47 | fuerza sobre barra | 34 | FZ=-302.50(kN) X=0.680(m) |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 47 | fuerza sobre barra | 34 | CX=825.83(kNm) X=0.680(m) local |
| | 47 | fuerza sobre barra | 35 | FZ=-302.50(kN) X=0.180(m) |
| | 47 | fuerza sobre barra | 35 | CX=825.83(kNm) X=0.180(m) local |
| | 47 | fuerza sobre barra | 35 | FZ=-302.50(kN) X=1.780(m) |
| | 47 | fuerza sobre barra | 35 | CX=825.83(kNm) X=1.780(m) local |
| | 47 | fuerza sobre barra | 36 | FZ=-302.50(kN) X=1.270(m) |
| | 47 | fuerza sobre barra | 36 | CX=825.83(kNm) X=1.270(m) local |
| | 48 | carga trapezoidal | 33 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=1.980(m) local no proyectadas absolutos |
| | 48 | fuerza sobre barra | 33 | CX=-23.10(kNm) X=2.040(m) local |
| | 48 | sobrecarga uniforme | 34 | PY=2.93(kN/m) local |
| | 48 | momento repartido | 34 | MX=-11.00(kNm/m) local |
| | 48 | sobrecarga uniforme | 35 | PY=2.93(kN/m) local |
| | 48 | momento repartido | 35 | MX=-11.00(kNm/m) local |
| | 48 | carga trapezoidal | 36 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.070(m) X1=0.0(m) local no proyectadas absolutos |
| | 48 | fuerza sobre barra | 36 | CX=-22.81(kNm) X=1.040(m) local |
| | 48 | fuerza sobre barra | 34 | FY=-9.16(kN) X=0.680(m) local |
| | 48 | fuerza sobre barra | 34 | CX=34.38(kNm) X=0.680(m) local |
| | 48 | fuerza sobre barra | 35 | FY=-9.16(kN) X=0.180(m) local |
| | 48 | fuerza sobre barra | 35 | CX=34.38(kNm) X=0.180(m) local |
| | 48 | fuerza sobre barra | 35 | FY=-9.16(kN) X=1.780(m) local |
| | 48 | fuerza sobre barra | 35 | CX=34.38(kNm) X=1.780(m) local |
| | 48 | fuerza sobre barra | 36 | FY=-9.16(kN) X=1.270(m) local |
| | 48 | fuerza sobre barra | 36 | CX=34.38(kNm) X=1.270(m) local |
| | 48 | carga trapezoidal | 33 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=1.980(m) global no proyectadas absolutos |
| | 48 | fuerza sobre barra | 33 | CX=400.46(kNm) X=2.040(m) local |
| | 48 | sobrecarga uniforme | 34 | PZ=96.80(kN/m) |
| | 48 | momento repartido | 34 | MX=190.70(kNm/m) local |
| | 48 | sobrecarga uniforme | 35 | PZ=96.80(kN/m) |
| | 48 | momento repartido | 35 | MX=190.70(kNm/m) local |
| | 48 | carga trapezoidal | 36 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.070(m) X1=0.0(m) global no proyectadas absolutos |
| | 48 | fuerza sobre barra | 36 | CX=395.50(kNm) X=1.040(m) local |
| | 48 | fuerza sobre barra | 34 | FZ=-302.50(kN) X=0.680(m) |





| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 48 | fuerza sobre barra | 34 | CX=-595.92(kNm) X=0.680(m) local |
| | 48 | fuerza sobre barra | 35 | FZ=-302.50(kN) X=0.180(m) |
| | 48 | fuerza sobre barra | 35 | CX=-595.92(kNm) X=0.180(m) local |
| | 48 | fuerza sobre barra | 35 | FZ=-302.50(kN) X=1.780(m) |
| | 48 | fuerza sobre barra | 35 | CX=-595.92(kNm) X=1.780(m) local |
| | 48 | fuerza sobre barra | 36 | FZ=-302.50(kN) X=1.270(m) |
| | 48 | fuerza sobre barra | 36 | CX=-595.92(kNm) X=1.270(m) local |
| | 49 | carga trapezoidal | 40 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=0.070(m) X1=0.0(m) local no proyectadas absolutos |
| | 49 | momento repartido | 39 | MX=-11.00(kNm/m) local |
| | 49 | sobrecarga uniforme | 39 | PY=2.93(kN/m) local |
| | 49 | momento repartido | 38 | MX=-11.00(kNm/m) local |
| | 49 | sobrecarga uniforme | 38 | PY=2.93(kN/m) local |
| | 49 | momento repartido | 37 | MX=-11.00(kNm/m) local |
| | 49 | sobrecarga uniforme | 37 | PY=2.93(kN/m) local |
| | 49 | fuerza sobre barra | 36 | CX=-23.10(kNm) X=2.090(m) local |
| | 49 | carga trapezoidal | 36 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=2.070(m) local no proyectadas absolutos |
| | 49 | fuerza sobre barra | 40 | CX=-0.76(kNm) X=0.030(m) local |
| | 49 | fuerza sobre barra | 37 | FY=-9.16(kN) X=0.780(m) local |
| | 49 | fuerza sobre barra | 37 | CX=34.38(kNm) X=0.780(m) local |
| | 49 | fuerza sobre barra | 38 | FY=-9.16(kN) X=0.280(m) local |
| | 49 | fuerza sobre barra | 38 | CX=34.38(kNm) X=0.280(m) local |
| | 49 | fuerza sobre barra | 38 | FY=-9.16(kN) X=1.880(m) local |
| | 49 | fuerza sobre barra | 38 | CX=34.38(kNm) X=1.880(m) local |
| | 49 | fuerza sobre barra | 39 | FY=-9.16(kN) X=1.370(m) local |
| | 49 | fuerza sobre barra | 39 | CX=34.38(kNm) X=1.370(m) local |
| | 49 | carga trapezoidal | 36 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=2.070(m) global no proyectadas absolutos |
| | 49 | fuerza sobre barra | 36 | CX=-554.95(kNm) X=2.090(m) local |
| | 49 | sobrecarga uniforme | 37 | PZ=96.80(kN/m) |
| | 49 | momento repartido | 37 | MX=-264.26(kNm/m) local |
| | 49 | sobrecarga uniforme | 38 | PZ=96.80(kN/m) |
| | 49 | momento repartido | 38 | MX=-264.26(kNm/m) local |
| | 49 | sobrecarga uniforme | 39 | PZ=96.80(kN/m) |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 49 | momento repartido | 39 | MX=-264.26(kNm/m) local |
| | 49 | carga trapezoidal | 40 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=0.070(m) X1=0.0(m) global no proyectadas absolutos |
| | 49 | fuerza sobre barra | 40 | CX=-18.23(kNm) X=0.030(m) local |
| | 49 | fuerza sobre barra | 37 | FZ=-302.50(kN) X=0.780(m) |
| | 49 | fuerza sobre barra | 37 | CX=825.83(kNm) X=0.780(m) local |
| | 49 | fuerza sobre barra | 38 | FZ=-302.50(kN) X=0.280(m) |
| | 49 | fuerza sobre barra | 38 | CX=825.83(kNm) X=0.280(m) local |
| | 49 | fuerza sobre barra | 38 | FZ=-302.50(kN) X=1.880(m) |
| | 49 | fuerza sobre barra | 38 | CX=825.83(kNm) X=1.880(m) local |
| | 49 | fuerza sobre barra | 39 | FZ=-302.50(kN) X=1.370(m) |
| | 49 | fuerza sobre barra | 39 | CX=825.83(kNm) X=1.370(m) local |
| | 50 | carga trapezoidal | 40 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=0.070(m) X1=0.0(m) local no proyectadas absolutos |
| | 50 | momento repartido | 39 | MX=-11.00(kNm/m) local |
| | 50 | sobrecarga uniforme | 39 | PY=2.93(kN/m) local |
| | 50 | momento repartido | 38 | MX=-11.00(kNm/m) local |
| | 50 | sobrecarga uniforme | 38 | PY=2.93(kN/m) local |
| | 50 | momento repartido | 37 | MX=-11.00(kNm/m) local |
| | 50 | sobrecarga uniforme | 37 | PY=2.93(kN/m) local |
| | 50 | fuerza sobre barra | 36 | CX=-23.10(kNm) X=2.090(m) local |
| | 50 | carga trapezoidal | 36 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=2.070(m) local no proyectadas absolutos |
| | 50 | fuerza sobre barra | 40 | CX=-0.76(kNm) X=0.030(m) local |
| | 50 | fuerza sobre barra | 37 | FY=-9.16(kN) X=0.780(m) local |
| | 50 | fuerza sobre barra | 37 | CX=34.38(kNm) X=0.780(m) local |
| | 50 | fuerza sobre barra | 38 | FY=-9.16(kN) X=0.280(m) local |
| | 50 | fuerza sobre barra | 38 | CX=34.38(kNm) X=0.280(m) local |
| | 50 | fuerza sobre barra | 38 | FY=-9.16(kN) X=1.880(m) local |
| | 50 | fuerza sobre barra | 38 | CX=34.38(kNm) X=1.880(m) local |
| | 50 | fuerza sobre barra | 39 | FY=-9.16(kN) X=1.370(m) local |
| | 50 | fuerza sobre barra | 39 | CX=34.38(kNm) X=1.370(m) local |
| | 50 | carga trapezoidal | 36 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=2.070(m) global no proyectadas absolutos |
| | 50 | fuerza sobre barra | 36 | CX=400.46(kNm) X=2.090(m) local |
| | 50 | sobrecarga uniforme | 37 | PZ=96.80(kN/m) |





| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 50 | momento repartido | 37 | MX=190.70(kNm/m) local |
| | 50 | sobrecarga uniforme | 38 | PZ=96.80(kN/m) |
| | 50 | momento repartido | 38 | MX=190.70(kNm/m) local |
| | 50 | sobrecarga uniforme | 39 | PZ=96.80(kN/m) |
| | 50 | momento repartido | 39 | MX=190.70(kNm/m) local |
| | 50 | carga trapezoidal | 40 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=0.070(m) X1=0.0(m) global no proyectadas absolutos |
| | 50 | fuerza sobre barra | 40 | CX=13.16(kNm) X=0.030(m) local |
| | 50 | fuerza sobre barra | 37 | FZ=-302.50(kN) X=0.780(m) |
| | 50 | fuerza sobre barra | 37 | CX=-595.92(kNm) X=0.780(m) local |
| | 50 | fuerza sobre barra | 38 | FZ=-302.50(kN) X=0.280(m) |
| | 50 | fuerza sobre barra | 38 | CX=-595.92(kNm) X=0.280(m) local |
| | 50 | fuerza sobre barra | 38 | FZ=-302.50(kN) X=1.880(m) |
| | 50 | fuerza sobre barra | 38 | CX=-595.92(kNm) X=1.880(m) local |
| | 50 | fuerza sobre barra | 39 | FZ=-302.50(kN) X=1.370(m) |
| | 50 | fuerza sobre barra | 39 | CX=-595.92(kNm) X=1.370(m) local |

## Cargas - Casos: 51A100 :

| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 51 | fuerza sobre barra | 56 | CX=34.38(kNm) X=1.260(m) local |
| 51 | fuerza sobre barra | 56 | FY=-9.16(kN) X=1.260(m) local |
| 51 | fuerza sobre barra | 55 | CX=34.38(kNm) X=1.770(m) local |
| 51 | fuerza sobre barra | 55 | FY=-9.16(kN) X=1.770(m) local |
| 51 | fuerza sobre barra | 55 | CX=34.38(kNm) X=0.170(m) local |
| 51 | fuerza sobre barra | 55 | FY=-9.16(kN) X=0.170(m) local |
| 51 | fuerza sobre barra | 54 | CX=34.38(kNm) X=0.670(m) local |
| 51 | fuerza sobre barra | 54 | FY=-9.16(kN) X=0.670(m) local |
| 51 | fuerza sobre barra | 56 | CX=-22.70(kNm) X=1.030(m) local |
| 51 | carga trapezoidal | 56 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.060(m) X1=0.0(m) local no proyectadas absolutos |
| 51 | momento repartido | 55 | MX=-11.00(kNm/m) local |
| 51 | sobrecarga uniforme | 55 | PY=2.93(kN/m) local |
| 51 | momento repartido | 54 | MX=-11.00(kNm/m) local |
| 51 | sobrecarga uniforme | 54 | PY=2.93(kN/m) local |
| 51 | fuerza sobre barra | 53 | CX=-23.10(kNm) X=2.040(m) local |
| 51 | carga trapezoidal | 53 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=1.970(m) local no proyectadas absoluto |
| 51 | carga trapezoidal | 53 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=1.970(m) global no proyectadas absol |
| 51 | fuerza sobre barra | 53 | CX=-554.95(kNm) X=2.040(m) local |
| 51 | sobrecarga uniforme | 54 | PZ=96.80(kN/m) |
| 51 | momento repartido | 54 | MX=-264.26(kNm/m) local |
| 51 | sobrecarga uniforme | 55 | PZ=96.80(kN/m) |
| 51 | momento repartido | 55 | MX=-264.26(kNm/m) local |
| 51 | carga trapezoidal | 56 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.060(m) X1=0.0(m) global no proyectadas absolut |
| 51 | fuerza sobre barra | 56 | CX=-545.44(kNm) X=1.030(m) local |
| 51 | fuerza sobre barra | 54 | FZ=-302.50(kN) X=0.670(m) |
| 51 | fuerza sobre barra | 54 | CX=825.83(kNm) X=0.670(m) local |
| 51 | fuerza sobre barra | 55 | FZ=-302.50(kN) X=0.170(m) |
| 51 | fuerza sobre barra | 55 | CX=825.83(kNm) X=0.170(m) local |
| 51 | fuerza sobre barra | 55 | FZ=-302.50(kN) X=1.770(m) |
| 51 | fuerza sobre barra | 55 | CX=825.83(kNm) X=1.770(m) local |



ROBOT v 14.5.0
Autor : **eipsa-eipsa**
Dirección :

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Archivo : **Gelserec.rtd**
Proyecto : Gelserec

| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 51 | fuerza sobre barra | 56 | FZ=-302.50(kN) X=1.260(m) |
| 51 | fuerza sobre barra | 56 | CX=825.83(kNm) X=1.260(m) local |
| 52 | carga trapezoidal | 53 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=1.970(m) local no proyectadas absoluto |
| 52 | fuerza sobre barra | 53 | CX=-23.10(kNm) X=2.040(m) local |
| 52 | sobrecarga uniforme | 54 | PY=2.93(kN/m) local |
| 52 | momento repartido | 54 | MX=-11.00(kNm/m) local |
| 52 | sobrecarga uniforme | 55 | PY=2.93(kN/m) local |
| 52 | momento repartido | 55 | MX=-11.00(kNm/m) local |
| 52 | carga trapezoidal | 56 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.060(m) X1=0.0(m) local no proyectadas absolutos |
| 52 | fuerza sobre barra | 56 | CX=-22.70(kNm) X=1.030(m) local |
| 52 | fuerza sobre barra | 54 | FY=-9.16(kN) X=0.670(m) local |
| 52 | fuerza sobre barra | 54 | CX=34.38(kNm) X=0.670(m) local |
| 52 | fuerza sobre barra | 55 | FY=-9.16(kN) X=0.170(m) local |
| 52 | fuerza sobre barra | 55 | CX=34.38(kNm) X=0.170(m) local |
| 52 | fuerza sobre barra | 55 | FY=-9.16(kN) X=1.770(m) local |
| 52 | fuerza sobre barra | 55 | CX=34.38(kNm) X=1.770(m) local |
| 52 | fuerza sobre barra | 56 | FY=-9.16(kN) X=1.260(m) local |
| 52 | fuerza sobre barra | 56 | CX=34.38(kNm) X=1.260(m) local |
| 52 | carga trapezoidal | 53 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=1.970(m) global no proyectadas absol |
| 52 | fuerza sobre barra | 53 | CX=400.46(kNm) X=2.040(m) local |
| 52 | sobrecarga uniforme | 54 | PZ=96.80(kN/m) |
| 52 | momento repartido | 54 | MX=190.70(kNm/m) local |
| 52 | sobrecarga uniforme | 55 | PZ=96.80(kN/m) |
| 52 | momento repartido | 55 | MX=190.70(kNm/m) local |
| 52 | carga trapezoidal | 56 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.060(m) X1=0.0(m) global no proyectadas absolut |
| 52 | fuerza sobre barra | 56 | CX=393.60(kNm) X=1.030(m) local |
| 52 | fuerza sobre barra | 54 | FZ=-302.50(kN) X=0.670(m) |
| 52 | fuerza sobre barra | 54 | CX=-595.92(kNm) X=0.670(m) local |
| 52 | fuerza sobre barra | 55 | FZ=-302.50(kN) X=0.170(m) |
| 52 | fuerza sobre barra | 55 | CX=-595.92(kNm) X=0.170(m) local |
| 52 | fuerza sobre barra | 55 | FZ=-302.50(kN) X=1.770(m) |
| 52 | fuerza sobre barra | 55 | CX=-595.92(kNm) X=1.770(m) local |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 52 | fuerza sobre barra | 56 | FZ=-302.50(kN) X=1.260(m) |
| | 52 | fuerza sobre barra | 56 | CX=-595.92(kNm) X=1.260(m) local |
| | 53 | carga trapezoidal | 60 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=0.060(m) X1=0.0(m) local no proyectadas absolutos |
| | 53 | momento repartido | 59 | MX=-11.00(kNm/m) local |
| | 53 | sobrecarga uniforme | 59 | PY=2.93(kN/m) local |
| | 53 | momento repartido | 58 | MX=-11.00(kNm/m) local |
| | 53 | sobrecarga uniforme | 58 | PY=2.93(kN/m) local |
| | 53 | momento repartido | 57 | MX=-11.00(kNm/m) local |
| | 53 | sobrecarga uniforme | 57 | PY=2.93(kN/m) local |
| | 53 | fuerza sobre barra | 56 | CX=-23.10(kNm) X=2.080(m) local |
| | 53 | carga trapezoidal | 56 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=2.060(m) local no proyectadas absoluto |
| | 53 | fuerza sobre barra | 60 | CX=-0.64(kNm) X=0.030(m) local |
| | 53 | fuerza sobre barra | 57 | FY=-9.16(kN) X=0.760(m) local |
| | 53 | fuerza sobre barra | 57 | CX=34.38(kNm) X=0.760(m) local |
| | 53 | fuerza sobre barra | 58 | FY=-9.16(kN) X=0.260(m) local |
| | 53 | fuerza sobre barra | 58 | CX=34.38(kNm) X=0.260(m) local |
| | 53 | fuerza sobre barra | 58 | FY=-9.16(kN) X=1.860(m) local |
| | 53 | fuerza sobre barra | 58 | CX=34.38(kNm) X=1.860(m) local |
| | 53 | fuerza sobre barra | 59 | FY=-9.16(kN) X=1.360(m) local |
| | 53 | fuerza sobre barra | 59 | CX=34.38(kNm) X=1.360(m) local |
| | 53 | carga trapezoidal | 56 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=2.060(m) global no proyectadas absol |
| | 53 | fuerza sobre barra | 56 | CX=-554.95(kNm) X=2.080(m) local |
| | 53 | sobrecarga uniforme | 57 | PZ=96.80(kN/m) |
| | 53 | momento repartido | 57 | MX=-264.26(kNm/m) local |
| | 53 | sobrecarga uniforme | 58 | PZ=96.80(kN/m) |
| | 53 | momento repartido | 58 | MX=-264.26(kNm/m) local |
| | 53 | sobrecarga uniforme | 59 | PZ=96.80(kN/m) |
| | 53 | momento repartido | 59 | MX=-264.26(kNm/m) local |
| | 53 | carga trapezoidal | 60 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=0.060(m) X1=0.0(m) global no proyectadas absolut |
| | 53 | fuerza sobre barra | 60 | CX=-15.33(kNm) X=0.030(m) local |
| | 53 | fuerza sobre barra | 57 | FZ=-302.50(kN) X=0.760(m) |
| | 53 | fuerza sobre barra | 57 | CX=825.83(kNm) X=0.760(m) local |





| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 53 | fuerza sobre barra | 58 | FZ=-302.50(kN) X=0.260(m) |
| | 53 | fuerza sobre barra | 58 | CX=825.83(kNm) X=0.260(m) local |
| | 53 | fuerza sobre barra | 58 | FZ=-302.50(kN) X=1.860(m) |
| | 53 | fuerza sobre barra | 58 | CX=825.83(kNm) X=1.860(m) local |
| | 53 | fuerza sobre barra | 59 | FZ=-302.50(kN) X=1.360(m) |
| | 53 | fuerza sobre barra | 59 | CX=825.83(kNm) X=1.360(m) local |
| | 54 | carga trapezoidal | 60 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=0.060(m) X1=0.0(m) local no proyectadas absolutos |
| | 54 | momento repartido | 59 | MX=-11.00(kNm/m) local |
| | 54 | sobrecarga uniforme | 59 | PY=2.93(kN/m) local |
| | 54 | momento repartido | 58 | MX=-11.00(kNm/m) local |
| | 54 | sobrecarga uniforme | 58 | PY=2.93(kN/m) local |
| | 54 | momento repartido | 57 | MX=-11.00(kNm/m) local |
| | 54 | sobrecarga uniforme | 57 | PY=2.93(kN/m) local |
| | 54 | fuerza sobre barra | 56 | CX=-23.10(kNm) X=2.080(m) local |
| | 54 | carga trapezoidal | 56 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=2.060(m) local no proyectadas absoluto |
| | 54 | fuerza sobre barra | 60 | CX=-0.64(kNm) X=0.030(m) local |
| | 54 | fuerza sobre barra | 57 | FY=-9.16(kN) X=0.760(m) local |
| | 54 | fuerza sobre barra | 57 | CX=34.38(kNm) X=0.760(m) local |
| | 54 | fuerza sobre barra | 58 | FY=-9.16(kN) X=0.260(m) local |
| | 54 | fuerza sobre barra | 58 | CX=34.38(kNm) X=0.260(m) local |
| | 54 | fuerza sobre barra | 58 | FY=-9.16(kN) X=1.860(m) local |
| | 54 | fuerza sobre barra | 58 | CX=34.38(kNm) X=1.860(m) local |
| | 54 | fuerza sobre barra | 59 | FY=-9.16(kN) X=1.360(m) local |
| | 54 | fuerza sobre barra | 59 | CX=34.38(kNm) X=1.360(m) local |
| | 54 | carga trapezoidal | 56 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=2.060(m) global no proyectadas absol |
| | 54 | fuerza sobre barra | 56 | CX=400.46(kNm) X=2.080(m) local |
| | 54 | sobrecarga uniforme | 57 | PZ=96.80(kN/m) |
| | 54 | momento repartido | 57 | MX=190.70(kNm/m) local |
| | 54 | sobrecarga uniforme | 58 | PZ=96.80(kN/m) |
| | 54 | momento repartido | 58 | MX=190.70(kNm/m) local |
| | 54 | sobrecarga uniforme | 59 | PZ=96.80(kN/m) |
| | 54 | momento repartido | 59 | MX=190.70(kNm/m) local |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 54 | carga trapezoidal | 60 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=0.060(m) X1=0.0(m) global no proyectadas absolut |
| | 54 | fuerza sobre barra | 59 | CX=-595.92(kNm) X=1.360(m) local |
| | 54 | fuerza sobre barra | 59 | FZ=-302.50(kN) X=1.360(m) |
| | 54 | fuerza sobre barra | 58 | CX=-595.92(kNm) X=1.860(m) local |
| | 54 | fuerza sobre barra | 58 | FZ=-302.50(kN) X=1.860(m) |
| | 54 | fuerza sobre barra | 58 | CX=-595.92(kNm) X=0.260(m) local |
| | 54 | fuerza sobre barra | 58 | FZ=-302.50(kN) X=0.260(m) |
| | 54 | fuerza sobre barra | 57 | CX=-595.92(kNm) X=0.760(m) local |
| | 54 | fuerza sobre barra | 57 | FZ=-302.50(kN) X=0.760(m) |
| | 54 | fuerza sobre barra | 60 | CX=11.06(kNm) X=0.030(m) local |
| | 55 | carga trapezoidal | 73 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=1.960(m) local no proyectadas absoluto |
| | 55 | fuerza sobre barra | 73 | CX=-23.10(kNm) X=2.030(m) local |
| | 55 | sobrecarga uniforme | 74 | PY=2.93(kN/m) local |
| | 55 | momento repartido | 74 | MX=-11.00(kNm/m) local |
| | 55 | sobrecarga uniforme | 75 | PY=2.93(kN/m) local |
| | 55 | momento repartido | 75 | MX=-11.00(kNm/m) local |
| | 55 | carga trapezoidal | 76 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.060(m) X1=0.0(m) local no proyectadas absolutos |
| | 55 | fuerza sobre barra | 76 | CX=-22.61(kNm) X=1.030(m) local |
| | 55 | fuerza sobre barra | 74 | FY=-9.16(kN) X=0.660(m) local |
| | 55 | fuerza sobre barra | 74 | CX=34.38(kNm) X=0.660(m) local |
| | 55 | fuerza sobre barra | 75 | FY=-9.16(kN) X=0.160(m) local |
| | 55 | fuerza sobre barra | 75 | CX=34.38(kNm) X=0.160(m) local |
| | 55 | fuerza sobre barra | 75 | FY=-9.16(kN) X=1.760(m) local |
| | 55 | fuerza sobre barra | 75 | CX=34.38(kNm) X=1.760(m) local |
| | 55 | fuerza sobre barra | 76 | FY=-9.16(kN) X=1.260(m) local |
| | 55 | fuerza sobre barra | 76 | CX=34.38(kNm) X=1.260(m) local |
| | 55 | carga trapezoidal | 73 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=1.960(m) global no proyectadas absol |
| | 55 | fuerza sobre barra | 73 | CX=-554.95(kNm) X=2.030(m) local |
| | 55 | sobrecarga uniforme | 74 | PZ=96.80(kN/m) |
| | 55 | momento repartido | 74 | MX=-264.26(kNm/m) local |
| | 55 | sobrecarga uniforme | 75 | PZ=96.80(kN/m) |
| | 55 | momento repartido | 75 | MX=-264.26(kNm/m) local |



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Dirección :

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Proyecto : Gelserec

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 55 | carga trapezoidal | 76 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.060(m) X1=0.0(m) global no proyectadas absolut |
| | 55 | fuerza sobre barra | 76 | CX=-543.06(kNm) X=1.030(m) local |
| | 55 | fuerza sobre barra | 74 | FZ=-302.50(kN) X=0.660(m) |
| | 55 | fuerza sobre barra | 74 | CX=825.83(kNm) X=0.660(m) local |
| | 55 | fuerza sobre barra | 75 | FZ=-302.50(kN) X=0.160(m) |
| | 55 | fuerza sobre barra | 75 | CX=825.83(kNm) X=0.160(m) local |
| | 55 | fuerza sobre barra | 75 | FZ=-302.50(kN) X=1.760(m) |
| | 55 | fuerza sobre barra | 75 | CX=825.83(kNm) X=1.760(m) local |
| | 55 | fuerza sobre barra | 76 | FZ=-302.50(kN) X=1.260(m) |
| | 55 | fuerza sobre barra | 76 | CX=825.83(kNm) X=1.260(m) local |
| | 56 | carga trapezoidal | 73 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=1.960(m) local no proyectadas absoluto |
| | 56 | fuerza sobre barra | 73 | CX=-23.10(kNm) X=2.030(m) local |
| | 56 | sobrecarga uniforme | 74 | PY=2.93(kN/m) local |
| | 56 | momento repartido | 74 | MX=-11.00(kNm/m) local |
| | 56 | sobrecarga uniforme | 75 | PY=2.93(kN/m) local |
| | 56 | momento repartido | 75 | MX=-11.00(kNm/m) local |
| | 56 | carga trapezoidal | 76 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.060(m) X1=0.0(m) local no proyectadas absolutos |
| | 56 | fuerza sobre barra | 76 | CX=-22.61(kNm) X=1.030(m) local |
| | 56 | fuerza sobre barra | 74 | FY=-9.16(kN) X=0.660(m) local |
| | 56 | fuerza sobre barra | 74 | CX=34.38(kNm) X=0.660(m) local |
| | 56 | fuerza sobre barra | 75 | FY=-9.16(kN) X=0.160(m) local |
| | 56 | fuerza sobre barra | 75 | CX=34.38(kNm) X=0.160(m) local |
| | 56 | fuerza sobre barra | 75 | FY=-9.16(kN) X=1.760(m) local |
| | 56 | fuerza sobre barra | 75 | CX=34.38(kNm) X=1.760(m) local |
| | 56 | fuerza sobre barra | 76 | FY=-9.16(kN) X=1.260(m) local |
| | 56 | fuerza sobre barra | 76 | CX=34.38(kNm) X=1.260(m) local |
| | 56 | carga trapezoidal | 73 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=1.960(m) global no proyectadas absol |
| | 56 | fuerza sobre barra | 73 | CX=400.46(kNm) X=2.030(m) local |
| | 56 | sobrecarga uniforme | 74 | PZ=96.80(kN/m) |
| | 56 | momento repartido | 74 | MX=190.70(kNm/m) local |
| | 56 | sobrecarga uniforme | 75 | PZ=96.80(kN/m) |
| | 56 | momento repartido | 75 | MX=190.70(kNm/m) local |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 56 | carga trapezoidal | 76 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.060(m) X1=0.0(m) global no proyectadas absolut |
| | 56 | fuerza sobre barra | 76 | CX=391.88(kNm) X=1.030(m) local |
| | 56 | fuerza sobre barra | 74 | FZ=-302.50(kN) X=0.660(m) |
| | 56 | fuerza sobre barra | 74 | CX=-595.92(kNm) X=0.660(m) local |
| | 56 | fuerza sobre barra | 75 | FZ=-302.50(kN) X=0.160(m) |
| | 56 | fuerza sobre barra | 75 | CX=-595.92(kNm) X=0.160(m) local |
| | 56 | fuerza sobre barra | 75 | FZ=-302.50(kN) X=1.760(m) |
| | 56 | fuerza sobre barra | 75 | CX=-595.92(kNm) X=1.760(m) local |
| | 56 | fuerza sobre barra | 76 | FZ=-302.50(kN) X=1.260(m) |
| | 56 | fuerza sobre barra | 76 | CX=-595.92(kNm) X=1.260(m) local |
| | 57 | carga trapezoidal | 80 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=0.050(m) X1=0.0(m) local no proyectadas absolutos |
| | 57 | momento repartido | 79 | MX=-11.00(kNm/m) local |
| | 57 | sobrecarga uniforme | 79 | PY=2.93(kN/m) local |
| | 57 | momento repartido | 78 | MX=-11.00(kNm/m) local |
| | 57 | sobrecarga uniforme | 78 | PY=2.93(kN/m) local |
| | 57 | momento repartido | 77 | MX=-11.00(kNm/m) local |
| | 57 | sobrecarga uniforme | 77 | PY=2.93(kN/m) local |
| | 57 | fuerza sobre barra | 76 | CX=-23.10(kNm) X=2.080(m) local |
| | 57 | carga trapezoidal | 76 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=2.060(m) local no proyectadas absoluto |
| | 57 | fuerza sobre barra | 80 | CX=-0.54(kNm) X=0.020(m) local |
| | 57 | fuerza sobre barra | 77 | FY=-9.16(kN) X=0.760(m) local |
| | 57 | fuerza sobre barra | 77 | CX=34.38(kNm) X=0.760(m) local |
| | 57 | fuerza sobre barra | 78 | FY=-9.16(kN) X=0.260(m) local |
| | 57 | fuerza sobre barra | 78 | CX=34.38(kNm) X=0.260(m) local |
| | 57 | fuerza sobre barra | 78 | FY=-9.16(kN) X=1.860(m) local |
| | 57 | fuerza sobre barra | 78 | CX=34.38(kNm) X=1.860(m) local |
| | 57 | fuerza sobre barra | 79 | FY=-9.16(kN) X=1.350(m) local |
| | 57 | fuerza sobre barra | 79 | CX=34.38(kNm) X=1.350(m) local |
| | 57 | carga trapezoidal | 76 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=2.060(m) global no proyectadas absol |
| | 57 | fuerza sobre barra | 76 | CX=-554.95(kNm) X=2.080(m) local |
| | 57 | sobrecarga uniforme | 77 | PZ=96.80(kN/m) |
| | 57 | momento repartido | 77 | MX=-264.26(kNm/m) local |



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Dirección :

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| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 57 | sobrecarga uniforme | 78 | PZ=96.80(kN/m) |
| | 57 | momento repartido | 78 | MX=-264.26(kNm/m) local |
| | 57 | sobrecarga uniforme | 79 | PZ=96.80(kN/m) |
| | 57 | momento repartido | 79 | MX=-264.26(kNm/m) local |
| | 57 | carga trapezoidal | 80 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=0.050(m) X1=0.0(m) global no proyectadas absolut |
| | 57 | fuerza sobre barra | 80 | CX=-12.95(kNm) X=0.020(m) local |
| | 57 | fuerza sobre barra | 77 | FZ=-302.50(kN) X=0.760(m) |
| | 57 | fuerza sobre barra | 77 | CX=825.83(kNm) X=0.760(m) local |
| | 57 | fuerza sobre barra | 78 | FZ=-302.50(kN) X=0.260(m) |
| | 57 | fuerza sobre barra | 78 | CX=825.83(kNm) X=0.260(m) local |
| | 57 | fuerza sobre barra | 78 | FZ=-302.50(kN) X=1.860(m) |
| | 57 | fuerza sobre barra | 78 | CX=825.83(kNm) X=1.860(m) local |
| | 57 | fuerza sobre barra | 79 | FZ=-302.50(kN) X=1.350(m) |
| | 57 | fuerza sobre barra | 79 | CX=825.83(kNm) X=1.350(m) local |
| | 58 | carga trapezoidal | 80 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=0.050(m) X1=0.0(m) local no proyectadas absolutos |
| | 58 | momento repartido | 79 | MX=-11.00(kNm/m) local |
| | 58 | sobrecarga uniforme | 79 | PY=2.93(kN/m) local |
| | 58 | momento repartido | 78 | MX=-11.00(kNm/m) local |
| | 58 | sobrecarga uniforme | 78 | PY=2.93(kN/m) local |
| | 58 | momento repartido | 77 | MX=-11.00(kNm/m) local |
| | 58 | sobrecarga uniforme | 77 | PY=2.93(kN/m) local |
| | 58 | fuerza sobre barra | 76 | CX=-23.10(kNm) X=2.080(m) local |
| | 58 | carga trapezoidal | 76 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=2.060(m) local no proyectadas absoluto |
| | 58 | fuerza sobre barra | 80 | CX=-0.54(kNm) X=0.020(m) local |
| | 58 | fuerza sobre barra | 77 | FY=-9.16(kN) X=0.760(m) local |
| | 58 | fuerza sobre barra | 77 | CX=34.38(kNm) X=0.760(m) local |
| | 58 | fuerza sobre barra | 78 | FY=-9.16(kN) X=0.260(m) local |
| | 58 | fuerza sobre barra | 78 | CX=34.38(kNm) X=0.260(m) local |
| | 58 | fuerza sobre barra | 78 | FY=-9.16(kN) X=1.860(m) local |
| | 58 | fuerza sobre barra | 78 | CX=34.38(kNm) X=1.860(m) local |
| | 58 | fuerza sobre barra | 79 | FY=-9.16(kN) X=1.350(m) local |
| | 58 | fuerza sobre barra | 79 | CX=34.38(kNm) X=1.350(m) local |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 58 | carga trapezoidal | 76 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=2.060(m) global no proyectadas absol |
| | 58 | fuerza sobre barra | 76 | CX=400.46(kNm) X=2.080(m) local |
| | 58 | sobrecarga uniforme | 77 | PZ=96.80(kN/m) |
| | 58 | momento repartido | 77 | MX=190.70(kNm/m) local |
| | 58 | sobrecarga uniforme | 78 | PZ=96.80(kN/m) |
| | 58 | momento repartido | 78 | MX=190.70(kNm/m) local |
| | 58 | sobrecarga uniforme | 79 | PZ=96.80(kN/m) |
| | 58 | momento repartido | 79 | MX=190.70(kNm/m) local |
| | 58 | carga trapezoidal | 80 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=0.050(m) X1=0.0(m) global no proyectadas absolut |
| | 58 | fuerza sobre barra | 79 | CX=-595.92(kNm) X=1.350(m) local |
| | 58 | fuerza sobre barra | 79 | FZ=-302.50(kN) X=1.350(m) |
| | 58 | fuerza sobre barra | 78 | CX=-595.92(kNm) X=1.860(m) local |
| | 58 | fuerza sobre barra | 78 | FZ=-302.50(kN) X=1.860(m) |
| | 58 | fuerza sobre barra | 78 | CX=-595.92(kNm) X=0.260(m) local |
| | 58 | fuerza sobre barra | 78 | FZ=-302.50(kN) X=0.260(m) |
| | 58 | fuerza sobre barra | 77 | CX=-595.92(kNm) X=0.760(m) local |
| | 58 | fuerza sobre barra | 77 | FZ=-302.50(kN) X=0.760(m) |
| | 58 | fuerza sobre barra | 80 | CX=9.34(kNm) X=0.020(m) local |
| | 59 | carga trapezoidal | 93 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=1.950(m) local no proyectadas absoluto |
| | 59 | fuerza sobre barra | 93 | CX=-23.10(kNm) X=2.030(m) local |
| | 59 | sobrecarga uniforme | 94 | PY=2.93(kN/m) local |
| | 59 | momento repartido | 94 | MX=-11.00(kNm/m) local |
| | 59 | sobrecarga uniforme | 95 | PY=2.93(kN/m) local |
| | 59 | momento repartido | 95 | MX=-11.00(kNm/m) local |
| | 59 | carga trapezoidal | 96 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.050(m) X1=0.0(m) local no proyectadas absolutos |
| | 59 | fuerza sobre barra | 96 | CX=-22.52(kNm) X=1.020(m) local |
| | 59 | fuerza sobre barra | 94 | FY=-9.16(kN) X=0.650(m) local |
| | 59 | fuerza sobre barra | 94 | CX=34.38(kNm) X=0.650(m) local |
| | 59 | fuerza sobre barra | 95 | FY=-9.16(kN) X=0.150(m) local |
| | 59 | fuerza sobre barra | 95 | CX=34.38(kNm) X=0.150(m) local |
| | 59 | fuerza sobre barra | 95 | FY=-9.16(kN) X=1.750(m) local |
| | 59 | fuerza sobre barra | 95 | CX=34.38(kNm) X=1.750(m) local |



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| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 59 | fuerza sobre barra | 96 | FY=-9.16(kN) X=1.250(m) local |
| | 59 | fuerza sobre barra | 96 | CX=34.38(kNm) X=1.250(m) local |
| | 59 | carga trapezoidal | 93 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=1.950(m) global no proyectadas absol |
| | 59 | fuerza sobre barra | 93 | CX=-554.95(kNm) X=2.030(m) local |
| | 59 | sobrecarga uniforme | 94 | PZ=96.80(kN/m) |
| | 59 | momento repartido | 94 | MX=-264.26(kNm/m) local |
| | 59 | sobrecarga uniforme | 95 | PZ=96.80(kN/m) |
| | 59 | momento repartido | 95 | MX=-264.26(kNm/m) local |
| | 59 | carga trapezoidal | 96 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.050(m) X1=0.0(m) global no proyectadas absolut |
| | 59 | fuerza sobre barra | 96 | CX=-540.95(kNm) X=1.020(m) local |
| | 59 | fuerza sobre barra | 94 | FZ=-302.50(kN) X=0.650(m) |
| | 59 | fuerza sobre barra | 94 | CX=825.83(kNm) X=0.650(m) local |
| | 59 | fuerza sobre barra | 95 | FZ=-302.50(kN) X=0.150(m) |
| | 59 | fuerza sobre barra | 95 | CX=825.83(kNm) X=0.150(m) local |
| | 59 | fuerza sobre barra | 95 | FZ=-302.50(kN) X=1.750(m) |
| | 59 | fuerza sobre barra | 95 | CX=825.83(kNm) X=1.750(m) local |
| | 59 | fuerza sobre barra | 96 | FZ=-302.50(kN) X=1.250(m) |
| | 59 | fuerza sobre barra | 96 | CX=825.83(kNm) X=1.250(m) local |
| | 60 | carga trapezoidal | 93 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=1.950(m) local no proyectadas absoluto |
| | 60 | fuerza sobre barra | 93 | CX=-23.10(kNm) X=2.030(m) local |
| | 60 | sobrecarga uniforme | 94 | PY=2.93(kN/m) local |
| | 60 | momento repartido | 94 | MX=-11.00(kNm/m) local |
| | 60 | sobrecarga uniforme | 95 | PY=2.93(kN/m) local |
| | 60 | momento repartido | 95 | MX=-11.00(kNm/m) local |
| | 60 | carga trapezoidal | 96 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.050(m) X1=0.0(m) local no proyectadas absolutos |
| | 60 | fuerza sobre barra | 96 | CX=-22.52(kNm) X=1.020(m) local |
| | 60 | fuerza sobre barra | 94 | FY=-9.16(kN) X=0.650(m) local |
| | 60 | fuerza sobre barra | 94 | CX=34.38(kNm) X=0.650(m) local |
| | 60 | fuerza sobre barra | 95 | FY=-9.16(kN) X=0.150(m) local |
| | 60 | fuerza sobre barra | 95 | CX=34.38(kNm) X=0.150(m) local |
| | 60 | fuerza sobre barra | 95 | FY=-9.16(kN) X=1.750(m) local |
| | 60 | fuerza sobre barra | 95 | CX=34.38(kNm) X=1.750(m) local |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 60 | fuerza sobre barra | 96 | FY=-9.16(kN) X=1.250(m) local |
| | 60 | fuerza sobre barra | 96 | CX=34.38(kNm) X=1.250(m) local |
| | 60 | carga trapezoidal | 93 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=1.950(m) global no proyectadas absol |
| | 60 | fuerza sobre barra | 93 | CX=400.46(kNm) X=2.030(m) local |
| | 60 | sobrecarga uniforme | 94 | PZ=96.80(kN/m) |
| | 60 | momento repartido | 94 | MX=190.70(kNm/m) local |
| | 60 | sobrecarga uniforme | 95 | PZ=96.80(kN/m) |
| | 60 | momento repartido | 95 | MX=190.70(kNm/m) local |
| | 60 | carga trapezoidal | 96 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.050(m) X1=0.0(m) global no proyectadas absolut |
| | 60 | fuerza sobre barra | 96 | CX=390.35(kNm) X=1.020(m) local |
| | 60 | fuerza sobre barra | 94 | FZ=-302.50(kN) X=0.650(m) |
| | 60 | fuerza sobre barra | 94 | CX=-595.92(kNm) X=0.650(m) local |
| | 60 | fuerza sobre barra | 95 | FZ=-302.50(kN) X=0.150(m) |
| | 60 | fuerza sobre barra | 95 | CX=-595.92(kNm) X=0.150(m) local |
| | 60 | fuerza sobre barra | 95 | FZ=-302.50(kN) X=1.750(m) |
| | 60 | fuerza sobre barra | 95 | CX=-595.92(kNm) X=1.750(m) local |
| | 60 | fuerza sobre barra | 96 | FZ=-302.50(kN) X=1.250(m) |
| | 60 | fuerza sobre barra | 96 | CX=-595.92(kNm) X=1.250(m) local |
| | 61 | carga trapezoidal | 100 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=0.040(m) X1=0.0(m) local no proyectadas absolutos |
| | 61 | momento repartido | 99 | MX=-11.00(kNm/m) local |
| | 61 | sobrecarga uniforme | 99 | PY=2.93(kN/m) local |
| | 61 | momento repartido | 98 | MX=-11.00(kNm/m) local |
| | 61 | sobrecarga uniforme | 98 | PY=2.93(kN/m) local |
| | 61 | momento repartido | 97 | MX=-11.00(kNm/m) local |
| | 61 | sobrecarga uniforme | 97 | PY=2.93(kN/m) local |
| | 61 | fuerza sobre barra | 96 | CX=-23.10(kNm) X=2.070(m) local |
| | 61 | carga trapezoidal | 96 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=2.050(m) local no proyectadas absoluto |
| | 61 | fuerza sobre barra | 100 | CX=-0.47(kNm) X=0.020(m) local |
| | 61 | fuerza sobre barra | 97 | FY=-9.16(kN) X=0.750(m) local |
| | 61 | fuerza sobre barra | 97 | CX=34.38(kNm) X=0.750(m) local |
| | 61 | fuerza sobre barra | 98 | FY=-9.16(kN) X=0.250(m) local |
| | 61 | fuerza sobre barra | 98 | CX=34.38(kNm) X=0.250(m) local |



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| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 61 | fuerza sobre barra | 98 | FY=-9.16(kN) X=1.850(m) local |
| | 61 | fuerza sobre barra | 98 | CX=34.38(kNm) X=1.850(m) local |
| | 61 | fuerza sobre barra | 99 | FY=-9.16(kN) X=1.340(m) local |
| | 61 | fuerza sobre barra | 99 | CX=34.38(kNm) X=1.340(m) local |
| | 61 | carga trapezoidal | 96 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=2.050(m) global no proyectadas absol |
| | 61 | fuerza sobre barra | 96 | CX=-554.95(kNm) X=2.070(m) local |
| | 61 | sobrecarga uniforme | 97 | PZ=96.80(kN/m) |
| | 61 | momento repartido | 97 | MX=-264.26(kNm/m) local |
| | 61 | sobrecarga uniforme | 98 | PZ=96.80(kN/m) |
| | 61 | momento repartido | 98 | MX=-264.26(kNm/m) local |
| | 61 | sobrecarga uniforme | 99 | PZ=96.80(kN/m) |
| | 61 | momento repartido | 99 | MX=-264.26(kNm/m) local |
| | 61 | carga trapezoidal | 100 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=0.040(m) X1=0.0(m) global no proyectadas absolut |
| | 61 | fuerza sobre barra | 100 | CX=-11.36(kNm) X=0.020(m) local |
| | 61 | fuerza sobre barra | 97 | FZ=-302.50(kN) X=0.750(m) |
| | 61 | fuerza sobre barra | 97 | CX=825.83(kNm) X=0.750(m) local |
| | 61 | fuerza sobre barra | 98 | FZ=-302.50(kN) X=0.250(m) |
| | 61 | fuerza sobre barra | 98 | CX=825.83(kNm) X=0.250(m) local |
| | 61 | fuerza sobre barra | 98 | FZ=-302.50(kN) X=1.850(m) |
| | 61 | fuerza sobre barra | 98 | CX=825.83(kNm) X=1.850(m) local |
| | 61 | fuerza sobre barra | 99 | FZ=-302.50(kN) X=1.340(m) |
| | 61 | fuerza sobre barra | 99 | CX=825.83(kNm) X=1.340(m) local |
| | 62 | carga trapezoidal | 100 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=0.040(m) X1=0.0(m) local no proyectadas absolutos |
| | 62 | momento repartido | 99 | MX=-11.00(kNm/m) local |
| | 62 | sobrecarga uniforme | 99 | PY=2.93(kN/m) local |
| | 62 | momento repartido | 98 | MX=-11.00(kNm/m) local |
| | 62 | sobrecarga uniforme | 98 | PY=2.93(kN/m) local |
| | 62 | momento repartido | 97 | MX=-11.00(kNm/m) local |
| | 62 | sobrecarga uniforme | 97 | PY=2.93(kN/m) local |
| | 62 | fuerza sobre barra | 96 | CX=-23.10(kNm) X=2.070(m) local |
| | 62 | carga trapezoidal | 96 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=2.050(m) local no proyectadas absoluto |
| | 62 | fuerza sobre barra | 100 | CX=-0.47(kNm) X=0.020(m) local |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 62 | fuerza sobre barra | 97 | FY=-9.16(kN) X=0.750(m) local |
| | 62 | fuerza sobre barra | 97 | CX=34.38(kNm) X=0.750(m) local |
| | 62 | fuerza sobre barra | 98 | FY=-9.16(kN) X=0.250(m) local |
| | 62 | fuerza sobre barra | 98 | CX=34.38(kNm) X=0.250(m) local |
| | 62 | fuerza sobre barra | 98 | FY=-9.16(kN) X=1.850(m) local |
| | 62 | fuerza sobre barra | 98 | CX=34.38(kNm) X=1.850(m) local |
| | 62 | fuerza sobre barra | 99 | FY=-9.16(kN) X=1.340(m) local |
| | 62 | fuerza sobre barra | 99 | CX=34.38(kNm) X=1.340(m) local |
| | 62 | carga trapezoidal | 96 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=2.050(m) global no proyectadas absol |
| | 62 | fuerza sobre barra | 96 | CX=400.46(kNm) X=2.070(m) local |
| | 62 | sobrecarga uniforme | 97 | PZ=96.80(kN/m) |
| | 62 | momento repartido | 97 | MX=190.70(kNm/m) local |
| | 62 | sobrecarga uniforme | 98 | PZ=96.80(kN/m) |
| | 62 | momento repartido | 98 | MX=190.70(kNm/m) local |
| | 62 | sobrecarga uniforme | 99 | PZ=96.80(kN/m) |
| | 62 | momento repartido | 99 | MX=190.70(kNm/m) local |
| | 62 | carga trapezoidal | 100 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=0.040(m) X1=0.0(m) global no proyectadas absolut |
| | 62 | fuerza sobre barra | 99 | CX=-595.92(kNm) X=1.340(m) local |
| | 62 | fuerza sobre barra | 99 | FZ=-302.50(kN) X=1.340(m) |
| | 62 | fuerza sobre barra | 98 | CX=-595.92(kNm) X=1.850(m) local |
| | 62 | fuerza sobre barra | 98 | FZ=-302.50(kN) X=1.850(m) |
| | 62 | fuerza sobre barra | 98 | CX=-595.92(kNm) X=0.250(m) local |
| | 62 | fuerza sobre barra | 98 | FZ=-302.50(kN) X=0.250(m) |
| | 62 | fuerza sobre barra | 97 | CX=-595.92(kNm) X=0.750(m) local |
| | 62 | fuerza sobre barra | 97 | FZ=-302.50(kN) X=0.750(m) |
| | 62 | fuerza sobre barra | 100 | CX=8.20(kNm) X=0.020(m) local |
| | 63 | carga trapezoidal | 109 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=1.350(m) local no proyectadas absoluto |
| | 63 | fuerza sobre barra | 109 | CX=-23.10(kNm) X=1.720(m) local |
| | 63 | sobrecarga uniforme | 110 | PY=2.93(kN/m) local |
| | 63 | momento repartido | 110 | MX=-11.00(kNm/m) local |
| | 63 | sobrecarga uniforme | 111 | PY=2.93(kN/m) local |
| | 63 | momento repartido | 111 | MX=-11.00(kNm/m) local |





| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 63 | carga trapezoidal | 112 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=1.450(m) X1=0.0(m) local no proyectadas absolutos |
| | 63 | fuerza sobre barra | 112 | CX=-15.92(kNm) X=0.720(m) local |
| | 63 | fuerza sobre barra | 110 | FY=-9.16(kN) X=0.050(m) local |
| | 63 | fuerza sobre barra | 110 | CX=34.38(kNm) X=0.050(m) local |
| | 63 | fuerza sobre barra | 110 | FY=-9.16(kN) X=1.650(m) local |
| | 63 | fuerza sobre barra | 110 | CX=34.38(kNm) X=1.650(m) local |
| | 63 | fuerza sobre barra | 111 | FY=-9.16(kN) X=1.150(m) local |
| | 63 | fuerza sobre barra | 111 | CX=34.38(kNm) X=1.150(m) local |
| | 63 | fuerza sobre barra | 112 | FY=-9.16(kN) X=0.650(m) local |
| | 63 | fuerza sobre barra | 112 | CX=34.38(kNm) X=0.650(m) local |
| | 63 | carga trapezoidal | 109 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=1.350(m) global no proyectadas absol |
| | 63 | fuerza sobre barra | 109 | CX=-554.95(kNm) X=1.720(m) local |
| | 63 | sobrecarga uniforme | 110 | PZ=96.80(kN/m) |
| | 63 | momento repartido | 110 | MX=-264.26(kNm/m) local |
| | 63 | sobrecarga uniforme | 111 | PZ=96.80(kN/m) |
| | 63 | momento repartido | 111 | MX=-264.26(kNm/m) local |
| | 63 | carga trapezoidal | 112 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=1.450(m) X1=0.0(m) global no proyectadas absolut |
| | 63 | fuerza sobre barra | 112 | CX=-382.39(kNm) X=0.720(m) local |
| | 63 | fuerza sobre barra | 110 | FZ=-302.50(kN) X=0.050(m) |
| | 63 | fuerza sobre barra | 110 | CX=825.83(kNm) X=0.050(m) local |
| | 63 | fuerza sobre barra | 110 | FZ=-302.50(kN) X=1.650(m) |
| | 63 | fuerza sobre barra | 110 | CX=825.83(kNm) X=1.650(m) local |
| | 63 | fuerza sobre barra | 111 | FZ=-302.50(kN) X=1.150(m) |
| | 63 | fuerza sobre barra | 111 | CX=825.83(kNm) X=1.150(m) local |
| | 63 | fuerza sobre barra | 112 | FZ=-302.50(kN) X=0.650(m) |
| | 63 | fuerza sobre barra | 112 | CX=825.83(kNm) X=0.650(m) local |
| | 64 | carga trapezoidal | 109 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=1.350(m) local no proyectadas absoluto |
| | 64 | fuerza sobre barra | 109 | CX=-23.10(kNm) X=1.720(m) local |
| | 64 | sobrecarga uniforme | 110 | PY=2.93(kN/m) local |
| | 64 | momento repartido | 110 | MX=-11.00(kNm/m) local |
| | 64 | sobrecarga uniforme | 111 | PY=2.93(kN/m) local |
| | 64 | momento repartido | 111 | MX=-11.00(kNm/m) local |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 64 | carga trapezoidal | 112 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=1.450(m) X1=0.0(m) local no proyectadas absolutos |
| | 64 | fuerza sobre barra | 112 | CX=-15.92(kNm) X=0.720(m) local |
| | 64 | fuerza sobre barra | 110 | FY=-9.16(kN) X=0.050(m) local |
| | 64 | fuerza sobre barra | 110 | CX=34.38(kNm) X=0.050(m) local |
| | 64 | fuerza sobre barra | 110 | FY=-9.16(kN) X=1.650(m) local |
| | 64 | fuerza sobre barra | 110 | CX=34.38(kNm) X=1.650(m) local |
| | 64 | fuerza sobre barra | 111 | FY=-9.16(kN) X=1.150(m) local |
| | 64 | fuerza sobre barra | 111 | CX=34.38(kNm) X=1.150(m) local |
| | 64 | fuerza sobre barra | 112 | FY=-9.16(kN) X=0.650(m) local |
| | 64 | fuerza sobre barra | 112 | CX=34.38(kNm) X=0.650(m) local |
| | 64 | carga trapezoidal | 109 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=1.350(m) global no proyectadas absol |
| | 64 | fuerza sobre barra | 109 | CX=400.46(kNm) X=1.720(m) local |
| | 64 | sobrecarga uniforme | 110 | PZ=96.80(kN/m) |
| | 64 | momento repartido | 110 | MX=190.70(kNm/m) local |
| | 64 | sobrecarga uniforme | 111 | PZ=96.80(kN/m) |
| | 64 | momento repartido | 111 | MX=190.70(kNm/m) local |
| | 64 | carga trapezoidal | 112 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=1.450(m) X1=0.0(m) global no proyectadas absolut |
| | 64 | fuerza sobre barra | 112 | CX=275.94(kNm) X=0.720(m) local |
| | 64 | fuerza sobre barra | 110 | FZ=-302.50(kN) X=0.050(m) |
| | 64 | fuerza sobre barra | 110 | CX=-595.92(kNm) X=0.050(m) local |
| | 64 | fuerza sobre barra | 110 | FZ=-302.50(kN) X=1.650(m) |
| | 64 | fuerza sobre barra | 110 | CX=-595.92(kNm) X=1.650(m) local |
| | 64 | fuerza sobre barra | 111 | FZ=-302.50(kN) X=1.150(m) |
| | 64 | fuerza sobre barra | 111 | CX=-595.92(kNm) X=1.150(m) local |
| | 64 | fuerza sobre barra | 112 | FZ=-302.50(kN) X=0.650(m) |
| | 64 | fuerza sobre barra | 112 | CX=-595.92(kNm) X=0.650(m) local |
| | 65 | carga trapezoidal | 6 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=0.090(m) local no proyectadas absoluto |
| | 65 | fuerza sobre barra | 6 | CX=-23.10(kNm) X=1.100(m) local |
| | 65 | sobrecarga uniforme | 7 | PY=2.93(kN/m) local |
| | 65 | momento repartido | 7 | MX=-11.00(kNm/m) local |
| | 65 | sobrecarga uniforme | 8 | PY=2.93(kN/m) local |
| | 65 | momento repartido | 8 | MX=-11.00(kNm/m) local |



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Dirección :

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Archivo : **Gelserec.rtd**
Proyecto : Gelserec

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 65 | carga trapezoidal | 9 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=0.190(m) X1=0.0(m) local no proyectadas absolutos |
| | 65 | fuerza sobre barra | 9 | CX=-2.11(kNm) X=0.100(m) local |
| | 65 | fuerza sobre barra | 6 | FY=-9.16(kN) X=0.890(m) local |
| | 65 | fuerza sobre barra | 6 | CX=34.38(kNm) X=0.890(m) local |
| | 65 | fuerza sobre barra | 7 | FY=-9.16(kN) X=0.390(m) local |
| | 65 | fuerza sobre barra | 7 | CX=34.38(kNm) X=0.390(m) local |
| | 65 | fuerza sobre barra | 7 | FY=-9.16(kN) X=1.990(m) local |
| | 65 | fuerza sobre barra | 7 | CX=34.38(kNm) X=1.990(m) local |
| | 65 | fuerza sobre barra | 8 | FY=-9.16(kN) X=1.490(m) local |
| | 65 | fuerza sobre barra | 8 | CX=34.38(kNm) X=1.490(m) local |
| | 65 | carga trapezoidal | 6 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=0.090(m) global no proyectadas absol |
| | 65 | fuerza sobre barra | 6 | CX=-554.95(kNm) X=1.100(m) local |
| | 65 | sobrecarga uniforme | 7 | PZ=96.80(kN/m) |
| | 65 | momento repartido | 7 | MX=-264.26(kNm/m) local |
| | 65 | sobrecarga uniforme | 8 | PZ=96.80(kN/m) |
| | 65 | momento repartido | 8 | MX=-264.26(kNm/m) local |
| | 65 | carga trapezoidal | 9 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=0.190(m) X1=0.0(m) global no proyectadas absolut |
| | 65 | fuerza sobre barra | 9 | CX=-50.74(kNm) X=0.100(m) local |
| | 65 | fuerza sobre barra | 6 | FZ=-302.50(kN) X=0.890(m) |
| | 65 | fuerza sobre barra | 6 | CX=825.83(kNm) X=0.890(m) local |
| | 65 | fuerza sobre barra | 7 | FZ=-302.50(kN) X=0.390(m) |
| | 65 | fuerza sobre barra | 7 | CX=825.83(kNm) X=0.390(m) local |
| | 65 | fuerza sobre barra | 7 | FZ=-302.50(kN) X=1.990(m) |
| | 65 | fuerza sobre barra | 7 | CX=825.83(kNm) X=1.990(m) local |
| | 65 | fuerza sobre barra | 8 | FZ=-302.50(kN) X=1.490(m) |
| | 65 | fuerza sobre barra | 8 | CX=825.83(kNm) X=1.490(m) local |
| | 66 | carga trapezoidal | 6 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=0.090(m) local no proyectadas absoluto |
| | 66 | fuerza sobre barra | 6 | CX=-23.10(kNm) X=1.100(m) local |
| | 66 | sobrecarga uniforme | 7 | PY=2.93(kN/m) local |
| | 66 | momento repartido | 7 | MX=-11.00(kNm/m) local |
| | 66 | sobrecarga uniforme | 8 | PY=2.93(kN/m) local |
| | 66 | momento repartido | 8 | MX=-11.00(kNm/m) local |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 66 | carga trapezoidal | 9 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=0.190(m) X1=0.0(m) local no proyectadas absolutos |
| | 66 | fuerza sobre barra | 9 | CX=-2.11(kNm) X=0.100(m) local |
| | 66 | fuerza sobre barra | 6 | FY=-9.16(kN) X=0.890(m) local |
| | 66 | fuerza sobre barra | 6 | CX=34.38(kNm) X=0.890(m) local |
| | 66 | fuerza sobre barra | 7 | FY=-9.16(kN) X=0.390(m) local |
| | 66 | fuerza sobre barra | 7 | CX=34.38(kNm) X=0.390(m) local |
| | 66 | fuerza sobre barra | 7 | FY=-9.16(kN) X=1.990(m) local |
| | 66 | fuerza sobre barra | 7 | CX=34.38(kNm) X=1.990(m) local |
| | 66 | fuerza sobre barra | 8 | FY=-9.16(kN) X=1.490(m) local |
| | 66 | fuerza sobre barra | 8 | CX=34.38(kNm) X=1.490(m) local |
| | 66 | carga trapezoidal | 6 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=0.090(m) global no proyectadas absol |
| | 66 | fuerza sobre barra | 6 | CX=400.46(kNm) X=1.100(m) local |
| | 66 | sobrecarga uniforme | 7 | PZ=96.80(kN/m) |
| | 66 | momento repartido | 7 | MX=190.70(kNm/m) local |
| | 66 | sobrecarga uniforme | 8 | PZ=96.80(kN/m) |
| | 66 | momento repartido | 8 | MX=190.70(kNm/m) local |
| | 66 | carga trapezoidal | 9 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=0.190(m) X1=0.0(m) global no proyectadas absolut |
| | 66 | fuerza sobre barra | 9 | CX=36.61(kNm) X=0.100(m) local |
| | 66 | fuerza sobre barra | 6 | FZ=-302.50(kN) X=0.890(m) |
| | 66 | fuerza sobre barra | 6 | CX=-595.92(kNm) X=0.890(m) local |
| | 66 | fuerza sobre barra | 7 | FZ=-302.50(kN) X=0.390(m) |
| | 66 | fuerza sobre barra | 7 | CX=-595.92(kNm) X=0.390(m) local |
| | 66 | fuerza sobre barra | 7 | FZ=-302.50(kN) X=1.990(m) |
| | 66 | fuerza sobre barra | 7 | CX=-595.92(kNm) X=1.990(m) local |
| | 66 | fuerza sobre barra | 8 | FZ=-302.50(kN) X=1.490(m) |
| | 66 | fuerza sobre barra | 8 | CX=-595.92(kNm) X=1.490(m) local |
| | 67 | carga trapezoidal | 7 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=1.290(m) local no proyectadas absoluto |
| | 67 | fuerza sobre barra | 7 | CX=-23.10(kNm) X=1.700(m) local |
| | 67 | sobrecarga uniforme | 8 | PY=2.93(kN/m) local |
| | 67 | momento repartido | 8 | MX=-11.00(kNm/m) local |
| | 67 | sobrecarga uniforme | 9 | PY=2.93(kN/m) local |
| | 67 | momento repartido | 9 | MX=-11.00(kNm/m) local |





| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 67 | carga trapezoidal | 10 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=1.390(m) X1=0.0(m) local no proyectadas absolutos |
| | 67 | fuerza sobre barra | 10 | CX=-15.31(kNm) X=0.700(m) local |
| | 67 | fuerza sobre barra | 8 | FY=-9.16(kN) local |
| | 67 | fuerza sobre barra | 8 | CX=34.38(kNm) local |
| | 67 | fuerza sobre barra | 8 | FY=-9.16(kN) X=1.590(m) local |
| | 67 | fuerza sobre barra | 8 | CX=34.38(kNm) X=1.590(m) local |
| | 67 | fuerza sobre barra | 9 | FY=-9.16(kN) X=1.090(m) local |
| | 67 | fuerza sobre barra | 9 | CX=34.38(kNm) X=1.090(m) local |
| | 67 | fuerza sobre barra | 10 | FY=-9.16(kN) X=0.590(m) local |
| | 67 | fuerza sobre barra | 10 | CX=34.38(kNm) X=0.590(m) local |
| | 67 | carga trapezoidal | 7 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=1.290(m) global no proyectadas absol |
| | 67 | fuerza sobre barra | 7 | CX=-554.95(kNm) X=1.700(m) local |
| | 67 | sobrecarga uniforme | 8 | PZ=96.80(kN/m) |
| | 67 | momento repartido | 8 | MX=-264.26(kNm/m) local |
| | 67 | sobrecarga uniforme | 9 | PZ=96.80(kN/m) |
| | 67 | momento repartido | 9 | MX=-264.26(kNm/m) local |
| | 67 | carga trapezoidal | 10 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=1.390(m) X1=0.0(m) global no proyectadas absolut |
| | 67 | fuerza sobre barra | 10 | CX=-367.86(kNm) X=0.700(m) local |
| | 67 | fuerza sobre barra | 8 | FZ=-302.50(kN) |
| | 67 | fuerza sobre barra | 8 | CX=825.83(kNm) local |
| | 67 | fuerza sobre barra | 8 | FZ=-302.50(kN) X=1.590(m) |
| | 67 | fuerza sobre barra | 8 | CX=825.83(kNm) X=1.590(m) local |
| | 67 | fuerza sobre barra | 9 | FZ=-302.50(kN) X=1.090(m) |
| | 67 | fuerza sobre barra | 9 | CX=825.83(kNm) X=1.090(m) local |
| | 67 | fuerza sobre barra | 10 | FZ=-302.50(kN) X=0.590(m) |
| | 67 | fuerza sobre barra | 10 | CX=825.83(kNm) X=0.590(m) local |
| | 68 | carga trapezoidal | 7 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=1.290(m) local no proyectadas absoluto |
| | 68 | fuerza sobre barra | 7 | CX=-23.10(kNm) X=1.700(m) local |
| | 68 | sobrecarga uniforme | 8 | PY=2.93(kN/m) local |
| | 68 | momento repartido | 8 | MX=-11.00(kNm/m) local |
| | 68 | sobrecarga uniforme | 9 | PY=2.93(kN/m) local |
| | 68 | momento repartido | 9 | MX=-11.00(kNm/m) local |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 68 | carga trapezoidal | 10 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=1.390(m) X1=0.0(m) local no proyectadas absolutos |
| | 68 | fuerza sobre barra | 10 | CX=-15.31(kNm) X=0.700(m) local |
| | 68 | fuerza sobre barra | 8 | FY=-9.16(kN) local |
| | 68 | fuerza sobre barra | 8 | CX=34.38(kNm) local |
| | 68 | fuerza sobre barra | 8 | FY=-9.16(kN) X=1.590(m) local |
| | 68 | fuerza sobre barra | 8 | CX=34.38(kNm) X=1.590(m) local |
| | 68 | fuerza sobre barra | 9 | FY=-9.16(kN) X=1.090(m) local |
| | 68 | fuerza sobre barra | 9 | CX=34.38(kNm) X=1.090(m) local |
| | 68 | fuerza sobre barra | 10 | FY=-9.16(kN) X=0.590(m) local |
| | 68 | fuerza sobre barra | 10 | CX=34.38(kNm) X=0.590(m) local |
| | 68 | carga trapezoidal | 7 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=1.290(m) global no proyectadas absol |
| | 68 | fuerza sobre barra | 7 | CX=400.46(kNm) X=1.700(m) local |
| | 68 | sobrecarga uniforme | 8 | PZ=96.80(kN/m) |
| | 68 | momento repartido | 8 | MX=190.70(kNm/m) local |
| | 68 | sobrecarga uniforme | 9 | PZ=96.80(kN/m) |
| | 68 | momento repartido | 9 | MX=190.70(kNm/m) local |
| | 68 | carga trapezoidal | 10 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=1.390(m) X1=0.0(m) global no proyectadas absolut |
| | 68 | fuerza sobre barra | 10 | CX=265.45(kNm) X=0.700(m) local |
| | 68 | fuerza sobre barra | 8 | FZ=-302.50(kN) |
| | 68 | fuerza sobre barra | 8 | CX=-595.92(kNm) local |
| | 68 | fuerza sobre barra | 8 | FZ=-302.50(kN) X=1.590(m) |
| | 68 | fuerza sobre barra | 8 | CX=-595.92(kNm) X=1.590(m) local |
| | 68 | fuerza sobre barra | 9 | FZ=-302.50(kN) X=1.090(m) |
| | 68 | fuerza sobre barra | 9 | CX=-595.92(kNm) X=1.090(m) local |
| | 68 | fuerza sobre barra | 10 | FZ=-302.50(kN) X=0.590(m) |
| | 68 | fuerza sobre barra | 10 | CX=-595.92(kNm) X=0.590(m) local |
| | 69 | carga trapezoidal | 23 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=0.980(m) local no proyectadas absoluto |
| | 69 | fuerza sobre barra | 23 | CX=-23.10(kNm) X=1.540(m) local |
| | 69 | sobrecarga uniforme | 24 | PY=2.93(kN/m) local |
| | 69 | momento repartido | 24 | MX=-11.00(kNm/m) local |
| | 69 | sobrecarga uniforme | 25 | PY=2.93(kN/m) local |
| | 69 | momento repartido | 25 | MX=-11.00(kNm/m) local |





| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 69 | carga trapezoidal | 26 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=1.080(m) X1=0.0(m) local no proyectadas absolutos |
| | 69 | fuerza sobre barra | 26 | CX=-11.88(kNm) X=0.540(m) local |
| | 69 | fuerza sobre barra | 23 | FY=-9.16(kN) X=1.780(m) local |
| | 69 | fuerza sobre barra | 23 | CX=34.38(kNm) X=1.780(m) local |
| | 69 | fuerza sobre barra | 24 | FY=-9.16(kN) X=1.280(m) local |
| | 69 | fuerza sobre barra | 24 | CX=34.38(kNm) X=1.280(m) local |
| | 69 | fuerza sobre barra | 25 | FY=-9.16(kN) X=0.780(m) local |
| | 69 | fuerza sobre barra | 25 | CX=34.38(kNm) X=0.780(m) local |
| | 69 | fuerza sobre barra | 26 | FY=-9.16(kN) X=0.280(m) local |
| | 69 | fuerza sobre barra | 26 | CX=34.38(kNm) X=0.280(m) local |
| | 69 | carga trapezoidal | 23 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=0.980(m) global no proyectadas absol |
| | 69 | fuerza sobre barra | 23 | CX=-554.95(kNm) X=1.540(m) local |
| | 69 | sobrecarga uniforme | 24 | PZ=96.80(kN/m) |
| | 69 | momento repartido | 24 | MX=-264.26(kNm/m) local |
| | 69 | sobrecarga uniforme | 25 | PZ=96.80(kN/m) |
| | 69 | momento repartido | 25 | MX=-264.26(kNm/m) local |
| | 69 | carga trapezoidal | 26 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=1.080(m) X1=0.0(m) global no proyectadas absolut |
| | 69 | fuerza sobre barra | 26 | CX=-285.41(kNm) X=0.540(m) local |
| | 69 | fuerza sobre barra | 23 | FZ=-302.50(kN) X=1.780(m) |
| | 69 | fuerza sobre barra | 23 | CX=825.83(kNm) X=1.780(m) local |
| | 69 | fuerza sobre barra | 24 | FZ=-302.50(kN) X=1.280(m) |
| | 69 | fuerza sobre barra | 24 | CX=825.83(kNm) X=1.280(m) local |
| | 69 | fuerza sobre barra | 25 | FZ=-302.50(kN) X=0.780(m) |
| | 69 | fuerza sobre barra | 25 | CX=825.83(kNm) X=0.780(m) local |
| | 69 | fuerza sobre barra | 26 | FZ=-302.50(kN) X=0.280(m) |
| | 69 | fuerza sobre barra | 26 | CX=825.83(kNm) X=0.280(m) local |
| | 70 | carga trapezoidal | 23 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=0.980(m) local no proyectadas absoluto |
| | 70 | fuerza sobre barra | 23 | CX=-23.10(kNm) X=1.540(m) local |
| | 70 | sobrecarga uniforme | 24 | PY=2.93(kN/m) local |
| | 70 | momento repartido | 24 | MX=-11.00(kNm/m) local |
| | 70 | sobrecarga uniforme | 25 | PY=2.93(kN/m) local |
| | 70 | momento repartido | 25 | MX=-11.00(kNm/m) local |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 70 | carga trapezoidal | 26 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=1.080(m) X1=0.0(m) local no proyectadas absolutos |
| | 70 | fuerza sobre barra | 26 | CX=-11.88(kNm) X=0.540(m) local |
| | 70 | fuerza sobre barra | 23 | FY=-9.16(kN) X=1.780(m) local |
| | 70 | fuerza sobre barra | 23 | CX=34.38(kNm) X=1.780(m) local |
| | 70 | fuerza sobre barra | 24 | FY=-9.16(kN) X=1.280(m) local |
| | 70 | fuerza sobre barra | 24 | CX=34.38(kNm) X=1.280(m) local |
| | 70 | fuerza sobre barra | 25 | FY=-9.16(kN) X=0.780(m) local |
| | 70 | fuerza sobre barra | 25 | CX=34.38(kNm) X=0.780(m) local |
| | 70 | fuerza sobre barra | 26 | FY=-9.16(kN) X=0.280(m) local |
| | 70 | fuerza sobre barra | 26 | CX=34.38(kNm) X=0.280(m) local |
| | 70 | carga trapezoidal | 23 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=0.980(m) global no proyectadas absol |
| | 70 | fuerza sobre barra | 23 | CX=400.46(kNm) X=1.540(m) local |
| | 70 | sobrecarga uniforme | 24 | PZ=96.80(kN/m) |
| | 70 | momento repartido | 24 | MX=190.70(kNm/m) local |
| | 70 | sobrecarga uniforme | 25 | PZ=96.80(kN/m) |
| | 70 | momento repartido | 25 | MX=190.70(kNm/m) local |
| | 70 | carga trapezoidal | 26 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=1.080(m) X1=0.0(m) global no proyectadas absolut |
| | 70 | fuerza sobre barra | 26 | CX=205.95(kNm) X=0.540(m) local |
| | 70 | fuerza sobre barra | 23 | FZ=-302.50(kN) X=1.780(m) |
| | 70 | fuerza sobre barra | 23 | CX=-595.92(kNm) X=1.780(m) local |
| | 70 | fuerza sobre barra | 24 | FZ=-302.50(kN) X=1.280(m) |
| | 70 | fuerza sobre barra | 24 | CX=-595.92(kNm) X=1.280(m) local |
| | 70 | fuerza sobre barra | 25 | FZ=-302.50(kN) X=0.780(m) |
| | 70 | fuerza sobre barra | 25 | CX=-595.92(kNm) X=0.780(m) local |
| | 70 | fuerza sobre barra | 26 | FZ=-302.50(kN) X=0.280(m) |
| | 70 | fuerza sobre barra | 26 | CX=-595.92(kNm) X=0.280(m) local |
| | 71 | carga trapezoidal | 25 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=0.980(m) local no proyectadas absoluto |
| | 71 | fuerza sobre barra | 25 | CX=-23.10(kNm) X=1.540(m) local |
| | 71 | sobrecarga uniforme | 26 | PY=2.93(kN/m) local |
| | 71 | momento repartido | 26 | MX=-11.00(kNm/m) local |
| | 71 | sobrecarga uniforme | 27 | PY=2.93(kN/m) local |
| | 71 | momento repartido | 27 | MX=-11.00(kNm/m) local |



ROBOT v 14.5.0
Autor : **eipsa-eipsa**
Dirección :

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Archivo : **Gelserec.rtd**
Proyecto : Gelserec

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 71 | carga trapezoidal | 28 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=1.080(m) X1=0.0(m) local no proyectadas absolutos |
| | 71 | fuerza sobre barra | 28 | CX=-11.88(kNm) X=0.540(m) local |
| | 71 | fuerza sobre barra | 25 | FY=-9.16(kN) X=1.780(m) local |
| | 71 | fuerza sobre barra | 25 | CX=34.38(kNm) X=1.780(m) local |
| | 71 | fuerza sobre barra | 26 | FY=-9.16(kN) X=1.280(m) local |
| | 71 | fuerza sobre barra | 26 | CX=34.38(kNm) X=1.280(m) local |
| | 71 | fuerza sobre barra | 27 | FY=-9.16(kN) X=0.780(m) local |
| | 71 | fuerza sobre barra | 27 | CX=34.38(kNm) X=0.780(m) local |
| | 71 | fuerza sobre barra | 28 | FY=-9.16(kN) X=0.280(m) local |
| | 71 | fuerza sobre barra | 28 | CX=34.38(kNm) X=0.280(m) local |
| | 71 | carga trapezoidal | 25 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=0.980(m) global no proyectadas absol |
| | 71 | fuerza sobre barra | 25 | CX=-554.95(kNm) X=1.540(m) local |
| | 71 | sobrecarga uniforme | 26 | PZ=96.80(kN/m) |
| | 71 | momento repartido | 26 | MX=-264.26(kNm/m) local |
| | 71 | sobrecarga uniforme | 27 | PZ=96.80(kN/m) |
| | 71 | momento repartido | 27 | MX=-264.26(kNm/m) local |
| | 71 | carga trapezoidal | 28 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=1.080(m) X1=0.0(m) global no proyectadas absolut |
| | 71 | fuerza sobre barra | 28 | CX=-285.41(kNm) X=0.540(m) local |
| | 71 | fuerza sobre barra | 25 | FZ=-302.50(kN) X=1.780(m) |
| | 71 | fuerza sobre barra | 25 | CX=825.83(kNm) X=1.780(m) local |
| | 71 | fuerza sobre barra | 26 | FZ=-302.50(kN) X=1.280(m) |
| | 71 | fuerza sobre barra | 26 | CX=825.83(kNm) X=1.280(m) local |
| | 71 | fuerza sobre barra | 27 | FZ=-302.50(kN) X=0.780(m) |
| | 71 | fuerza sobre barra | 27 | CX=825.83(kNm) X=0.780(m) local |
| | 71 | fuerza sobre barra | 28 | FZ=-302.50(kN) X=0.280(m) |
| | 71 | fuerza sobre barra | 28 | CX=825.83(kNm) X=0.280(m) local |
| | 72 | carga trapezoidal | 25 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=0.980(m) local no proyectadas absoluto |
| | 72 | fuerza sobre barra | 25 | CX=-23.10(kNm) X=1.540(m) local |
| | 72 | sobrecarga uniforme | 26 | PY=2.93(kN/m) local |
| | 72 | momento repartido | 26 | MX=-11.00(kNm/m) local |
| | 72 | sobrecarga uniforme | 27 | PY=2.93(kN/m) local |
| | 72 | momento repartido | 27 | MX=-11.00(kNm/m) local |

| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 72 | carga trapezoidal | 28 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=1.080(m) X1=0.0(m) local no proyectadas absolutos |
| 72 | fuerza sobre barra | 28 | CX=-11.88(kNm) X=0.540(m) local |
| 72 | fuerza sobre barra | 25 | FY=-9.16(kN) X=1.780(m) local |
| 72 | fuerza sobre barra | 25 | CX=34.38(kNm) X=1.780(m) local |
| 72 | fuerza sobre barra | 26 | FY=-9.16(kN) X=1.280(m) local |
| 72 | fuerza sobre barra | 26 | CX=34.38(kNm) X=1.280(m) local |
| 72 | fuerza sobre barra | 27 | FY=-9.16(kN) X=0.780(m) local |
| 72 | fuerza sobre barra | 27 | CX=34.38(kNm) X=0.780(m) local |
| 72 | fuerza sobre barra | 28 | FY=-9.16(kN) X=0.280(m) local |
| 72 | fuerza sobre barra | 28 | CX=34.38(kNm) X=0.280(m) local |
| 72 | carga trapezoidal | 25 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=0.980(m) global no proyectadas absol |
| 72 | fuerza sobre barra | 25 | CX=400.46(kNm) X=1.540(m) local |
| 72 | sobrecarga uniforme | 26 | PZ=96.80(kN/m) |
| 72 | momento repartido | 26 | MX=190.70(kNm/m) local |
| 72 | sobrecarga uniforme | 27 | PZ=96.80(kN/m) |
| 72 | momento repartido | 27 | MX=190.70(kNm/m) local |
| 72 | carga trapezoidal | 28 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=1.080(m) X1=0.0(m) global no proyectadas absolut |
| 72 | fuerza sobre barra | 28 | CX=205.95(kNm) X=0.540(m) local |
| 72 | fuerza sobre barra | 25 | FZ=-302.50(kN) X=1.780(m) |
| 72 | fuerza sobre barra | 25 | CX=-595.92(kNm) X=1.780(m) local |
| 72 | fuerza sobre barra | 26 | FZ=-302.50(kN) X=1.280(m) |
| 72 | fuerza sobre barra | 26 | CX=-595.92(kNm) X=1.280(m) local |
| 72 | fuerza sobre barra | 27 | FZ=-302.50(kN) X=0.780(m) |
| 72 | fuerza sobre barra | 27 | CX=-595.92(kNm) X=0.780(m) local |
| 72 | fuerza sobre barra | 28 | FZ=-302.50(kN) X=0.280(m) |
| 72 | fuerza sobre barra | 28 | CX=-595.92(kNm) X=0.280(m) local |
| 73 | carga trapezoidal | 27 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=0.980(m) local no proyectadas absoluto |
| 73 | fuerza sobre barra | 27 | CX=-23.10(kNm) X=1.540(m) local |
| 73 | sobrecarga uniforme | 28 | PY=2.93(kN/m) local |
| 73 | momento repartido | 28 | MX=-11.00(kNm/m) local |
| 73 | sobrecarga uniforme | 29 | PY=2.93(kN/m) local |
| 73 | momento repartido | 29 | MX=-11.00(kNm/m) local |



ROBOT v 14.5.0
Autor : **eipsa-eipsa**
Dirección :

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Archivo : **Gelserec.rtd**
Proyecto : Gelserec

| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 73 | carga trapezoidal | 30 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=1.080(m) X1=0.0(m) local no proyectadas absolutos |
| 73 | fuerza sobre barra | 30 | CX=-11.88(kNm) X=0.540(m) local |
| 73 | fuerza sobre barra | 27 | FY=-9.16(kN) X=1.780(m) local |
| 73 | fuerza sobre barra | 27 | CX=34.38(kNm) X=1.780(m) local |
| 73 | fuerza sobre barra | 28 | FY=-9.16(kN) X=1.280(m) local |
| 73 | fuerza sobre barra | 28 | CX=34.38(kNm) X=1.280(m) local |
| 73 | fuerza sobre barra | 29 | FY=-9.16(kN) X=0.780(m) local |
| 73 | fuerza sobre barra | 29 | CX=34.38(kNm) X=0.780(m) local |
| 73 | fuerza sobre barra | 30 | FY=-9.16(kN) X=0.280(m) local |
| 73 | fuerza sobre barra | 30 | CX=34.38(kNm) X=0.280(m) local |
| 73 | carga trapezoidal | 27 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=0.980(m) global no proyectadas absol |
| 73 | fuerza sobre barra | 27 | CX=-554.95(kNm) X=1.540(m) local |
| 73 | sobrecarga uniforme | 28 | PZ=96.80(kN/m) |
| 73 | momento repartido | 28 | MX=-264.26(kNm/m) local |
| 73 | sobrecarga uniforme | 29 | PZ=96.80(kN/m) |
| 73 | momento repartido | 29 | MX=-264.26(kNm/m) local |
| 73 | carga trapezoidal | 30 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=1.080(m) X1=0.0(m) global no proyectadas absolut |
| 73 | fuerza sobre barra | 30 | CX=-285.41(kNm) X=0.540(m) local |
| 73 | fuerza sobre barra | 27 | FZ=-302.50(kN) X=1.780(m) |
| 73 | fuerza sobre barra | 27 | CX=825.83(kNm) X=1.780(m) local |
| 73 | fuerza sobre barra | 28 | FZ=-302.50(kN) X=1.280(m) |
| 73 | fuerza sobre barra | 28 | CX=825.83(kNm) X=1.280(m) local |
| 73 | fuerza sobre barra | 29 | FZ=-302.50(kN) X=0.780(m) |
| 73 | fuerza sobre barra | 29 | CX=825.83(kNm) X=0.780(m) local |
| 73 | fuerza sobre barra | 30 | FZ=-302.50(kN) X=0.280(m) |
| 73 | fuerza sobre barra | 30 | CX=825.83(kNm) X=0.280(m) local |
| 74 | carga trapezoidal | 27 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=0.980(m) local no proyectadas absoluto |
| 74 | fuerza sobre barra | 27 | CX=-23.10(kNm) X=1.540(m) local |
| 74 | sobrecarga uniforme | 28 | PY=2.93(kN/m) local |
| 74 | momento repartido | 28 | MX=-11.00(kNm/m) local |
| 74 | sobrecarga uniforme | 29 | PY=2.93(kN/m) local |
| 74 | momento repartido | 29 | MX=-11.00(kNm/m) local |

| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 74 | carga trapezoidal | 30 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=1.080(m) X1=0.0(m) local no proyectadas absolutos |
| 74 | fuerza sobre barra | 30 | CX=-11.88(kNm) X=0.540(m) local |
| 74 | fuerza sobre barra | 27 | FY=-9.16(kN) X=1.780(m) local |
| 74 | fuerza sobre barra | 27 | CX=34.38(kNm) X=1.780(m) local |
| 74 | fuerza sobre barra | 28 | FY=-9.16(kN) X=1.280(m) local |
| 74 | fuerza sobre barra | 28 | CX=34.38(kNm) X=1.280(m) local |
| 74 | fuerza sobre barra | 29 | FY=-9.16(kN) X=0.780(m) local |
| 74 | fuerza sobre barra | 29 | CX=34.38(kNm) X=0.780(m) local |
| 74 | fuerza sobre barra | 30 | FY=-9.16(kN) X=0.280(m) local |
| 74 | fuerza sobre barra | 30 | CX=34.38(kNm) X=0.280(m) local |
| 74 | carga trapezoidal | 27 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=0.980(m) global no proyectadas absol |
| 74 | fuerza sobre barra | 27 | CX=400.46(kNm) X=1.540(m) local |
| 74 | sobrecarga uniforme | 28 | PZ=96.80(kN/m) |
| 74 | momento repartido | 28 | MX=190.70(kNm/m) local |
| 74 | sobrecarga uniforme | 29 | PZ=96.80(kN/m) |
| 74 | momento repartido | 29 | MX=190.70(kNm/m) local |
| 74 | carga trapezoidal | 30 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=1.080(m) X1=0.0(m) global no proyectadas absolut |
| 74 | fuerza sobre barra | 30 | CX=205.95(kNm) X=0.540(m) local |
| 74 | fuerza sobre barra | 27 | FZ=-302.50(kN) X=1.780(m) |
| 74 | fuerza sobre barra | 27 | CX=-595.92(kNm) X=1.780(m) local |
| 74 | fuerza sobre barra | 28 | FZ=-302.50(kN) X=1.280(m) |
| 74 | fuerza sobre barra | 28 | CX=-595.92(kNm) X=1.280(m) local |
| 74 | fuerza sobre barra | 29 | FZ=-302.50(kN) X=0.780(m) |
| 74 | fuerza sobre barra | 29 | CX=-595.92(kNm) X=0.780(m) local |
| 74 | fuerza sobre barra | 30 | FZ=-302.50(kN) X=0.280(m) |
| 74 | fuerza sobre barra | 30 | CX=-595.92(kNm) X=0.280(m) local |
| 75 | carga trapezoidal | 43 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=0.970(m) local no proyectadas absoluto |
| 75 | fuerza sobre barra | 43 | CX=-23.10(kNm) X=1.530(m) local |
| 75 | sobrecarga uniforme | 44 | PY=2.93(kN/m) local |
| 75 | momento repartido | 44 | MX=-11.00(kNm/m) local |
| 75 | sobrecarga uniforme | 45 | PY=2.93(kN/m) local |
| 75 | momento repartido | 45 | MX=-11.00(kNm/m) local |





| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 75 | carga trapezoidal | 46 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=1.070(m) X1=0.0(m) local no proyectadas absolutos |
| 75 | fuerza sobre barra | 46 | CX=-11.76(kNm) X=0.530(m) local |
| 75 | fuerza sobre barra | 43 | FY=-9.16(kN) X=1.770(m) local |
| 75 | fuerza sobre barra | 43 | CX=34.38(kNm) X=1.770(m) local |
| 75 | fuerza sobre barra | 44 | FY=-9.16(kN) X=1.270(m) local |
| 75 | fuerza sobre barra | 44 | CX=34.38(kNm) X=1.270(m) local |
| 75 | fuerza sobre barra | 45 | FY=-9.16(kN) X=0.770(m) local |
| 75 | fuerza sobre barra | 45 | CX=34.38(kNm) X=0.770(m) local |
| 75 | fuerza sobre barra | 46 | FY=-9.16(kN) X=0.270(m) local |
| 75 | fuerza sobre barra | 46 | CX=34.38(kNm) X=0.270(m) local |
| 75 | carga trapezoidal | 43 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=0.970(m) global no proyectadas absol |
| 75 | fuerza sobre barra | 43 | CX=-554.95(kNm) X=1.530(m) local |
| 75 | sobrecarga uniforme | 44 | PZ=96.80(kN/m) |
| 75 | momento repartido | 44 | MX=-264.26(kNm/m) local |
| 75 | sobrecarga uniforme | 45 | PZ=96.80(kN/m) |
| 75 | momento repartido | 45 | MX=-264.26(kNm/m) local |
| 75 | carga trapezoidal | 46 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=1.070(m) X1=0.0(m) global no proyectadas absolut |
| 75 | fuerza sobre barra | 46 | CX=-282.50(kNm) X=0.530(m) local |
| 75 | fuerza sobre barra | 43 | FZ=-302.50(kN) X=1.770(m) |
| 75 | fuerza sobre barra | 43 | CX=825.83(kNm) X=1.770(m) local |
| 75 | fuerza sobre barra | 44 | FZ=-302.50(kN) X=1.270(m) |
| 75 | fuerza sobre barra | 44 | CX=825.83(kNm) X=1.270(m) local |
| 75 | fuerza sobre barra | 45 | FZ=-302.50(kN) X=0.770(m) |
| 75 | fuerza sobre barra | 45 | CX=825.83(kNm) X=0.770(m) local |
| 75 | fuerza sobre barra | 46 | FZ=-302.50(kN) X=0.270(m) |
| 75 | fuerza sobre barra | 46 | CX=825.83(kNm) X=0.270(m) local |
| 76 | carga trapezoidal | 43 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=0.970(m) local no proyectadas absoluto |
| 76 | fuerza sobre barra | 43 | CX=-23.10(kNm) X=1.530(m) local |
| 76 | sobrecarga uniforme | 44 | PY=2.93(kN/m) local |
| 76 | momento repartido | 44 | MX=-11.00(kNm/m) local |
| 76 | sobrecarga uniforme | 45 | PY=2.93(kN/m) local |
| 76 | momento repartido | 45 | MX=-11.00(kNm/m) local |

| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 76 | carga trapezoidal | 46 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=1.070(m) X1=0.0(m) local no proyectadas absolutos |
| 76 | fuerza sobre barra | 46 | CX=-11.76(kNm) X=0.530(m) local |
| 76 | fuerza sobre barra | 43 | FY=-9.16(kN) X=1.770(m) local |
| 76 | fuerza sobre barra | 43 | CX=34.38(kNm) X=1.770(m) local |
| 76 | fuerza sobre barra | 44 | FY=-9.16(kN) X=1.270(m) local |
| 76 | fuerza sobre barra | 44 | CX=34.38(kNm) X=1.270(m) local |
| 76 | fuerza sobre barra | 45 | FY=-9.16(kN) X=0.770(m) local |
| 76 | fuerza sobre barra | 45 | CX=34.38(kNm) X=0.770(m) local |
| 76 | fuerza sobre barra | 46 | FY=-9.16(kN) X=0.270(m) local |
| 76 | fuerza sobre barra | 46 | CX=34.38(kNm) X=0.270(m) local |
| 76 | carga trapezoidal | 43 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=0.970(m) global no proyectadas absol |
| 76 | fuerza sobre barra | 43 | CX=400.46(kNm) X=1.530(m) local |
| 76 | sobrecarga uniforme | 44 | PZ=96.80(kN/m) |
| 76 | momento repartido | 44 | MX=190.70(kNm/m) local |
| 76 | sobrecarga uniforme | 45 | PZ=96.80(kN/m) |
| 76 | momento repartido | 45 | MX=190.70(kNm/m) local |
| 76 | carga trapezoidal | 46 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=1.070(m) X1=0.0(m) global no proyectadas absolut |
| 76 | fuerza sobre barra | 46 | CX=203.85(kNm) X=0.530(m) local |
| 76 | fuerza sobre barra | 43 | FZ=-302.50(kN) X=1.770(m) |
| 76 | fuerza sobre barra | 43 | CX=-595.92(kNm) X=1.770(m) local |
| 76 | fuerza sobre barra | 44 | FZ=-302.50(kN) X=1.270(m) |
| 76 | fuerza sobre barra | 44 | CX=-595.92(kNm) X=1.270(m) local |
| 76 | fuerza sobre barra | 45 | FZ=-302.50(kN) X=0.770(m) |
| 76 | fuerza sobre barra | 45 | CX=-595.92(kNm) X=0.770(m) local |
| 76 | fuerza sobre barra | 46 | FZ=-302.50(kN) X=0.270(m) |
| 76 | fuerza sobre barra | 46 | CX=-595.92(kNm) X=0.270(m) local |
| 77 | carga trapezoidal | 45 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=0.970(m) local no proyectadas absoluto |
| 77 | fuerza sobre barra | 45 | CX=-23.10(kNm) X=1.530(m) local |
| 77 | sobrecarga uniforme | 46 | PY=2.93(kN/m) local |
| 77 | momento repartido | 46 | MX=-11.00(kNm/m) local |
| 77 | sobrecarga uniforme | 47 | PY=2.93(kN/m) local |
| 77 | momento repartido | 47 | MX=-11.00(kNm/m) local |





| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 77 | carga trapezoidal | 48 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=1.070(m) X1=0.0(m) local no proyectadas absolutos |
| 77 | fuerza sobre barra | 48 | CX=-11.76(kNm) X=0.530(m) local |
| 77 | fuerza sobre barra | 45 | FY=-9.16(kN) X=1.770(m) local |
| 77 | fuerza sobre barra | 45 | CX=34.38(kNm) X=1.770(m) local |
| 77 | fuerza sobre barra | 46 | FY=-9.16(kN) X=1.270(m) local |
| 77 | fuerza sobre barra | 46 | CX=34.38(kNm) X=1.270(m) local |
| 77 | fuerza sobre barra | 47 | FY=-9.16(kN) X=0.770(m) local |
| 77 | fuerza sobre barra | 47 | CX=34.38(kNm) X=0.770(m) local |
| 77 | fuerza sobre barra | 48 | FY=-9.16(kN) X=0.270(m) local |
| 77 | fuerza sobre barra | 48 | CX=34.38(kNm) X=0.270(m) local |
| 77 | carga trapezoidal | 45 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=0.970(m) global no proyectadas absol |
| 77 | fuerza sobre barra | 45 | CX=-554.95(kNm) X=1.530(m) local |
| 77 | sobrecarga uniforme | 46 | PZ=96.80(kN/m) |
| 77 | momento repartido | 46 | MX=-264.26(kNm/m) local |
| 77 | sobrecarga uniforme | 47 | PZ=96.80(kN/m) |
| 77 | momento repartido | 47 | MX=-264.26(kNm/m) local |
| 77 | carga trapezoidal | 48 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=1.070(m) X1=0.0(m) global no proyectadas absolut |
| 77 | fuerza sobre barra | 48 | CX=-282.50(kNm) X=0.530(m) local |
| 77 | fuerza sobre barra | 45 | FZ=-302.50(kN) X=1.770(m) |
| 77 | fuerza sobre barra | 45 | CX=825.83(kNm) X=1.770(m) local |
| 77 | fuerza sobre barra | 46 | FZ=-302.50(kN) X=1.270(m) |
| 77 | fuerza sobre barra | 46 | CX=825.83(kNm) X=1.270(m) local |
| 77 | fuerza sobre barra | 47 | FZ=-302.50(kN) X=0.770(m) |
| 77 | fuerza sobre barra | 47 | CX=825.83(kNm) X=0.770(m) local |
| 77 | fuerza sobre barra | 48 | FZ=-302.50(kN) X=0.270(m) |
| 77 | fuerza sobre barra | 48 | CX=825.83(kNm) X=0.270(m) local |
| 78 | carga trapezoidal | 45 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=0.970(m) local no proyectadas absoluto |
| 78 | fuerza sobre barra | 45 | CX=-23.10(kNm) X=1.530(m) local |
| 78 | sobrecarga uniforme | 46 | PY=2.93(kN/m) local |
| 78 | momento repartido | 46 | MX=-11.00(kNm/m) local |
| 78 | sobrecarga uniforme | 47 | PY=2.93(kN/m) local |
| 78 | momento repartido | 47 | MX=-11.00(kNm/m) local |

| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 78 | carga trapezoidal | 48 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=1.070(m) X1=0.0(m) local no proyectadas absolutos |
| 78 | fuerza sobre barra | 48 | CX=-11.76(kNm) X=0.530(m) local |
| 78 | fuerza sobre barra | 45 | FY=-9.16(kN) X=1.770(m) local |
| 78 | fuerza sobre barra | 45 | CX=34.38(kNm) X=1.770(m) local |
| 78 | fuerza sobre barra | 46 | FY=-9.16(kN) X=1.270(m) local |
| 78 | fuerza sobre barra | 46 | CX=34.38(kNm) X=1.270(m) local |
| 78 | fuerza sobre barra | 47 | FY=-9.16(kN) X=0.770(m) local |
| 78 | fuerza sobre barra | 47 | CX=34.38(kNm) X=0.770(m) local |
| 78 | fuerza sobre barra | 48 | FY=-9.16(kN) X=0.270(m) local |
| 78 | fuerza sobre barra | 48 | CX=34.38(kNm) X=0.270(m) local |
| 78 | carga trapezoidal | 45 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=0.970(m) global no proyectadas absol |
| 78 | fuerza sobre barra | 45 | CX=400.46(kNm) X=1.530(m) local |
| 78 | sobrecarga uniforme | 46 | PZ=96.80(kN/m) |
| 78 | momento repartido | 46 | MX=190.70(kNm/m) local |
| 78 | sobrecarga uniforme | 47 | PZ=96.80(kN/m) |
| 78 | momento repartido | 47 | MX=190.70(kNm/m) local |
| 78 | carga trapezoidal | 48 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=1.070(m) X1=0.0(m) global no proyectadas absolut |
| 78 | fuerza sobre barra | 48 | CX=203.85(kNm) X=0.530(m) local |
| 78 | fuerza sobre barra | 45 | FZ=-302.50(kN) X=1.770(m) |
| 78 | fuerza sobre barra | 45 | CX=-595.92(kNm) X=1.770(m) local |
| 78 | fuerza sobre barra | 46 | FZ=-302.50(kN) X=1.270(m) |
| 78 | fuerza sobre barra | 46 | CX=-595.92(kNm) X=1.270(m) local |
| 78 | fuerza sobre barra | 47 | FZ=-302.50(kN) X=0.770(m) |
| 78 | fuerza sobre barra | 47 | CX=-595.92(kNm) X=0.770(m) local |
| 78 | fuerza sobre barra | 48 | FZ=-302.50(kN) X=0.270(m) |
| 78 | fuerza sobre barra | 48 | CX=-595.92(kNm) X=0.270(m) local |
| 79 | carga trapezoidal | 47 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=0.970(m) local no proyectadas absoluto |
| 79 | fuerza sobre barra | 47 | CX=-23.10(kNm) X=1.530(m) local |
| 79 | sobrecarga uniforme | 48 | PY=2.93(kN/m) local |
| 79 | momento repartido | 48 | MX=-11.00(kNm/m) local |
| 79 | sobrecarga uniforme | 49 | PY=2.93(kN/m) local |
| 79 | momento repartido | 49 | MX=-11.00(kNm/m) local |





| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 79 | carga trapezoidal | 50 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=1.070(m) X1=0.0(m) local no proyectadas absolutos |
| 79 | fuerza sobre barra | 50 | CX=-11.76(kNm) X=0.530(m) local |
| 79 | fuerza sobre barra | 47 | FY=-9.16(kN) X=1.770(m) local |
| 79 | fuerza sobre barra | 47 | CX=34.38(kNm) X=1.770(m) local |
| 79 | fuerza sobre barra | 48 | FY=-9.16(kN) X=1.270(m) local |
| 79 | fuerza sobre barra | 48 | CX=34.38(kNm) X=1.270(m) local |
| 79 | fuerza sobre barra | 49 | FY=-9.16(kN) X=0.770(m) local |
| 79 | fuerza sobre barra | 49 | CX=34.38(kNm) X=0.770(m) local |
| 79 | fuerza sobre barra | 50 | FY=-9.16(kN) X=0.270(m) local |
| 79 | fuerza sobre barra | 50 | CX=34.38(kNm) X=0.270(m) local |
| 79 | carga trapezoidal | 47 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=0.970(m) global no proyectadas absol |
| 79 | fuerza sobre barra | 47 | CX=-554.95(kNm) X=1.530(m) local |
| 79 | sobrecarga uniforme | 48 | PZ=96.80(kN/m) |
| 79 | momento repartido | 48 | MX=-264.26(kNm/m) local |
| 79 | sobrecarga uniforme | 49 | PZ=96.80(kN/m) |
| 79 | momento repartido | 49 | MX=-264.26(kNm/m) local |
| 79 | carga trapezoidal | 50 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=1.070(m) X1=0.0(m) global no proyectadas absolut |
| 79 | fuerza sobre barra | 50 | CX=-282.50(kNm) X=0.530(m) local |
| 79 | fuerza sobre barra | 47 | FZ=-302.50(kN) X=1.770(m) |
| 79 | fuerza sobre barra | 47 | CX=825.83(kNm) X=1.770(m) local |
| 79 | fuerza sobre barra | 48 | FZ=-302.50(kN) X=1.270(m) |
| 79 | fuerza sobre barra | 48 | CX=825.83(kNm) X=1.270(m) local |
| 79 | fuerza sobre barra | 49 | FZ=-302.50(kN) X=0.770(m) |
| 79 | fuerza sobre barra | 49 | CX=825.83(kNm) X=0.770(m) local |
| 79 | fuerza sobre barra | 50 | FZ=-302.50(kN) X=0.270(m) |
| 79 | fuerza sobre barra | 50 | CX=825.83(kNm) X=0.270(m) local |
| 80 | carga trapezoidal | 47 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=0.970(m) local no proyectadas absoluto |
| 80 | fuerza sobre barra | 47 | CX=-23.10(kNm) X=1.530(m) local |
| 80 | sobrecarga uniforme | 48 | PY=2.93(kN/m) local |
| 80 | momento repartido | 48 | MX=-11.00(kNm/m) local |
| 80 | sobrecarga uniforme | 49 | PY=2.93(kN/m) local |
| 80 | momento repartido | 49 | MX=-11.00(kNm/m) local |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 80 | carga trapezoidal | 50 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=1.070(m) X1=0.0(m) local no proyectadas absolutos |
| | 80 | fuerza sobre barra | 50 | CX=-11.76(kNm) X=0.530(m) local |
| | 80 | fuerza sobre barra | 47 | FY=-9.16(kN) X=1.770(m) local |
| | 80 | fuerza sobre barra | 47 | CX=34.38(kNm) X=1.770(m) local |
| | 80 | fuerza sobre barra | 48 | FY=-9.16(kN) X=1.270(m) local |
| | 80 | fuerza sobre barra | 48 | CX=34.38(kNm) X=1.270(m) local |
| | 80 | fuerza sobre barra | 49 | FY=-9.16(kN) X=0.770(m) local |
| | 80 | fuerza sobre barra | 49 | CX=34.38(kNm) X=0.770(m) local |
| | 80 | fuerza sobre barra | 50 | FY=-9.16(kN) X=0.270(m) local |
| | 80 | fuerza sobre barra | 50 | CX=34.38(kNm) X=0.270(m) local |
| | 80 | carga trapezoidal | 47 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=0.970(m) global no proyectadas absol |
| | 80 | fuerza sobre barra | 47 | CX=400.46(kNm) X=1.530(m) local |
| | 80 | sobrecarga uniforme | 48 | PZ=96.80(kN/m) |
| | 80 | momento repartido | 48 | MX=190.70(kNm/m) local |
| | 80 | sobrecarga uniforme | 49 | PZ=96.80(kN/m) |
| | 80 | momento repartido | 49 | MX=190.70(kNm/m) local |
| | 80 | carga trapezoidal | 50 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=1.070(m) X1=0.0(m) global no proyectadas absolut |
| | 80 | fuerza sobre barra | 50 | CX=203.85(kNm) X=0.530(m) local |
| | 80 | fuerza sobre barra | 47 | FZ=-302.50(kN) X=1.770(m) |
| | 80 | fuerza sobre barra | 47 | CX=-595.92(kNm) X=1.770(m) local |
| | 80 | fuerza sobre barra | 48 | FZ=-302.50(kN) X=1.270(m) |
| | 80 | fuerza sobre barra | 48 | CX=-595.92(kNm) X=1.270(m) local |
| | 80 | fuerza sobre barra | 49 | FZ=-302.50(kN) X=0.770(m) |
| | 80 | fuerza sobre barra | 49 | CX=-595.92(kNm) X=0.770(m) local |
| | 80 | fuerza sobre barra | 50 | FZ=-302.50(kN) X=0.270(m) |
| | 80 | fuerza sobre barra | 50 | CX=-595.92(kNm) X=0.270(m) local |
| | 81 | carga trapezoidal | 63 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=0.960(m) local no proyectadas absoluto |
| | 81 | fuerza sobre barra | 63 | CX=-23.09(kNm) X=1.530(m) local |
| | 81 | sobrecarga uniforme | 64 | PY=2.93(kN/m) local |
| | 81 | momento repartido | 64 | MX=-11.00(kNm/m) local |
| | 81 | sobrecarga uniforme | 65 | PY=2.93(kN/m) local |
| | 81 | momento repartido | 65 | MX=-11.00(kNm/m) local |





| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 81 | carga trapezoidal | 66 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=1.060(m) X1=0.0(m) local no proyectadas absolutos |
| | 81 | fuerza sobre barra | 66 | CX=-11.65(kNm) X=0.530(m) local |
| | 81 | fuerza sobre barra | 63 | FY=-9.16(kN) X=1.760(m) local |
| | 81 | fuerza sobre barra | 63 | CX=34.38(kNm) X=1.760(m) local |
| | 81 | fuerza sobre barra | 64 | FY=-9.16(kN) X=1.260(m) local |
| | 81 | fuerza sobre barra | 64 | CX=34.38(kNm) X=1.260(m) local |
| | 81 | fuerza sobre barra | 65 | FY=-9.16(kN) X=0.760(m) local |
| | 81 | fuerza sobre barra | 65 | CX=34.38(kNm) X=0.760(m) local |
| | 81 | fuerza sobre barra | 66 | FY=-9.16(kN) X=0.260(m) local |
| | 81 | fuerza sobre barra | 66 | CX=34.38(kNm) X=0.260(m) local |
| | 81 | carga trapezoidal | 63 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=0.960(m) global no proyectadas absol |
| | 81 | fuerza sobre barra | 63 | CX=-554.69(kNm) X=1.530(m) local |
| | 81 | sobrecarga uniforme | 64 | PZ=96.80(kN/m) |
| | 81 | momento repartido | 64 | MX=-264.26(kNm/m) local |
| | 81 | sobrecarga uniforme | 65 | PZ=96.80(kN/m) |
| | 81 | momento repartido | 65 | MX=-264.26(kNm/m) local |
| | 81 | carga trapezoidal | 66 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=1.060(m) X1=0.0(m) global no proyectadas absolut |
| | 81 | fuerza sobre barra | 66 | CX=-279.86(kNm) X=0.530(m) local |
| | 81 | fuerza sobre barra | 63 | FZ=-302.50(kN) X=1.760(m) |
| | 81 | fuerza sobre barra | 63 | CX=825.83(kNm) X=1.760(m) local |
| | 81 | fuerza sobre barra | 64 | FZ=-302.50(kN) X=1.260(m) |
| | 81 | fuerza sobre barra | 64 | CX=825.83(kNm) X=1.260(m) local |
| | 81 | fuerza sobre barra | 65 | FZ=-302.50(kN) X=0.760(m) |
| | 81 | fuerza sobre barra | 65 | CX=825.83(kNm) X=0.760(m) local |
| | 81 | fuerza sobre barra | 66 | FZ=-302.50(kN) X=0.260(m) |
| | 81 | fuerza sobre barra | 66 | CX=825.83(kNm) X=0.260(m) local |
| | 82 | carga trapezoidal | 63 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=0.960(m) local no proyectadas absoluto |
| | 82 | fuerza sobre barra | 63 | CX=-23.09(kNm) X=1.530(m) local |
| | 82 | sobrecarga uniforme | 64 | PY=2.93(kN/m) local |
| | 82 | momento repartido | 64 | MX=-11.00(kNm/m) local |
| | 82 | sobrecarga uniforme | 65 | PY=2.93(kN/m) local |
| | 82 | momento repartido | 65 | MX=-11.00(kNm/m) local |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 82 | carga trapezoidal | 66 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=1.060(m) X1=0.0(m) local no proyectadas absolutos |
| | 82 | fuerza sobre barra | 66 | CX=-11.65(kNm) X=0.530(m) local |
| | 82 | fuerza sobre barra | 63 | FY=-9.16(kN) X=1.760(m) local |
| | 82 | fuerza sobre barra | 63 | CX=34.38(kNm) X=1.760(m) local |
| | 82 | fuerza sobre barra | 64 | FY=-9.16(kN) X=1.260(m) local |
| | 82 | fuerza sobre barra | 64 | CX=34.38(kNm) X=1.260(m) local |
| | 82 | fuerza sobre barra | 65 | FY=-9.16(kN) X=0.760(m) local |
| | 82 | fuerza sobre barra | 65 | CX=34.38(kNm) X=0.760(m) local |
| | 82 | fuerza sobre barra | 66 | FY=-9.16(kN) X=0.260(m) local |
| | 82 | fuerza sobre barra | 66 | CX=34.38(kNm) X=0.260(m) local |
| | 82 | carga trapezoidal | 63 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=0.960(m) global no proyectadas absol |
| | 82 | fuerza sobre barra | 63 | CX=400.27(kNm) X=1.530(m) local |
| | 82 | sobrecarga uniforme | 64 | PZ=96.80(kN/m) |
| | 82 | momento repartido | 64 | MX=190.70(kNm/m) local |
| | 82 | sobrecarga uniforme | 65 | PZ=96.80(kN/m) |
| | 82 | momento repartido | 65 | MX=190.70(kNm/m) local |
| | 82 | carga trapezoidal | 66 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=1.060(m) X1=0.0(m) global no proyectadas absolut |
| | 82 | fuerza sobre barra | 66 | CX=201.95(kNm) X=0.530(m) local |
| | 82 | fuerza sobre barra | 63 | FZ=-302.50(kN) X=1.760(m) |
| | 82 | fuerza sobre barra | 63 | CX=-595.92(kNm) X=1.760(m) local |
| | 82 | fuerza sobre barra | 64 | FZ=-302.50(kN) X=1.260(m) |
| | 82 | fuerza sobre barra | 64 | CX=-595.92(kNm) X=1.260(m) local |
| | 82 | fuerza sobre barra | 65 | FZ=-302.50(kN) X=0.760(m) |
| | 82 | fuerza sobre barra | 65 | CX=-595.92(kNm) X=0.760(m) local |
| | 82 | fuerza sobre barra | 66 | FZ=-302.50(kN) X=0.260(m) |
| | 82 | fuerza sobre barra | 66 | CX=-595.92(kNm) X=0.260(m) local |
| | 83 | carga trapezoidal | 65 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=0.960(m) local no proyectadas absoluto |
| | 83 | fuerza sobre barra | 65 | CX=-23.10(kNm) X=1.530(m) local |
| | 83 | sobrecarga uniforme | 66 | PY=2.93(kN/m) local |
| | 83 | momento repartido | 66 | MX=-11.00(kNm/m) local |
| | 83 | sobrecarga uniforme | 67 | PY=2.93(kN/m) local |
| | 83 | momento repartido | 67 | MX=-11.00(kNm/m) local |





| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 83 | carga trapezoidal | 68 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=1.060(m) X1=0.0(m) local no proyectadas absolutos |
| | 83 | fuerza sobre barra | 68 | CX=-11.65(kNm) X=0.530(m) local |
| | 83 | fuerza sobre barra | 65 | FY=-9.16(kN) X=1.760(m) local |
| | 83 | fuerza sobre barra | 65 | CX=34.38(kNm) X=1.760(m) local |
| | 83 | fuerza sobre barra | 66 | FY=-9.16(kN) X=1.260(m) local |
| | 83 | fuerza sobre barra | 66 | CX=34.38(kNm) X=1.260(m) local |
| | 83 | fuerza sobre barra | 67 | FY=-9.16(kN) X=0.760(m) local |
| | 83 | fuerza sobre barra | 67 | CX=34.38(kNm) X=0.760(m) local |
| | 83 | fuerza sobre barra | 68 | FY=-9.16(kN) X=0.260(m) local |
| | 83 | fuerza sobre barra | 68 | CX=34.38(kNm) X=0.260(m) local |
| | 83 | carga trapezoidal | 65 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=0.960(m) global no proyectadas absol |
| | 83 | fuerza sobre barra | 65 | CX=-554.95(kNm) X=1.530(m) local |
| | 83 | sobrecarga uniforme | 66 | PZ=96.80(kN/m) |
| | 83 | momento repartido | 66 | MX=-264.26(kNm/m) local |
| | 83 | sobrecarga uniforme | 67 | PZ=96.80(kN/m) |
| | 83 | momento repartido | 67 | MX=-264.26(kNm/m) local |
| | 83 | carga trapezoidal | 68 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=1.060(m) X1=0.0(m) global no proyectadas absolut |
| | 83 | fuerza sobre barra | 68 | CX=-279.86(kNm) X=0.530(m) local |
| | 83 | fuerza sobre barra | 65 | FZ=-302.50(kN) X=1.760(m) |
| | 83 | fuerza sobre barra | 65 | CX=825.83(kNm) X=1.760(m) local |
| | 83 | fuerza sobre barra | 66 | FZ=-302.50(kN) X=1.260(m) |
| | 83 | fuerza sobre barra | 66 | CX=825.83(kNm) X=1.260(m) local |
| | 83 | fuerza sobre barra | 67 | FZ=-302.50(kN) X=0.760(m) |
| | 83 | fuerza sobre barra | 67 | CX=825.83(kNm) X=0.760(m) local |
| | 83 | fuerza sobre barra | 68 | FZ=-302.50(kN) X=0.260(m) |
| | 83 | fuerza sobre barra | 68 | CX=825.83(kNm) X=0.260(m) local |
| | 84 | carga trapezoidal | 65 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=0.960(m) local no proyectadas absoluto |
| | 84 | fuerza sobre barra | 65 | CX=-23.10(kNm) X=1.530(m) local |
| | 84 | sobrecarga uniforme | 66 | PY=2.93(kN/m) local |
| | 84 | momento repartido | 66 | MX=-11.00(kNm/m) local |
| | 84 | sobrecarga uniforme | 67 | PY=2.93(kN/m) local |
| | 84 | momento repartido | 67 | MX=-11.00(kNm/m) local |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 84 | carga trapezoidal | 68 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=1.060(m) X1=0.0(m) local no proyectadas absolutos |
| | 84 | fuerza sobre barra | 68 | CX=-11.65(kNm) X=0.530(m) local |
| | 84 | fuerza sobre barra | 65 | FY=-9.16(kN) X=1.760(m) local |
| | 84 | fuerza sobre barra | 65 | CX=34.38(kNm) X=1.760(m) local |
| | 84 | fuerza sobre barra | 66 | FY=-9.16(kN) X=1.260(m) local |
| | 84 | fuerza sobre barra | 66 | CX=34.38(kNm) X=1.260(m) local |
| | 84 | fuerza sobre barra | 67 | FY=-9.16(kN) X=0.760(m) local |
| | 84 | fuerza sobre barra | 67 | CX=34.38(kNm) X=0.760(m) local |
| | 84 | fuerza sobre barra | 68 | FY=-9.16(kN) X=0.260(m) local |
| | 84 | fuerza sobre barra | 68 | CX=34.38(kNm) X=0.260(m) local |
| | 84 | carga trapezoidal | 65 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=0.960(m) global no proyectadas absol |
| | 84 | fuerza sobre barra | 65 | CX=400.46(kNm) X=1.530(m) local |
| | 84 | sobrecarga uniforme | 66 | PZ=96.80(kN/m) |
| | 84 | momento repartido | 66 | MX=190.70(kNm/m) local |
| | 84 | sobrecarga uniforme | 67 | PZ=96.80(kN/m) |
| | 84 | momento repartido | 67 | MX=190.70(kNm/m) local |
| | 84 | carga trapezoidal | 68 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=1.060(m) X1=0.0(m) global no proyectadas absolut |
| | 84 | fuerza sobre barra | 68 | CX=201.95(kNm) X=0.530(m) local |
| | 84 | fuerza sobre barra | 65 | FZ=-302.50(kN) X=1.760(m) |
| | 84 | fuerza sobre barra | 65 | CX=-595.92(kNm) X=1.760(m) local |
| | 84 | fuerza sobre barra | 66 | FZ=-302.50(kN) X=1.260(m) |
| | 84 | fuerza sobre barra | 66 | CX=-595.92(kNm) X=1.260(m) local |
| | 84 | fuerza sobre barra | 67 | FZ=-302.50(kN) X=0.760(m) |
| | 84 | fuerza sobre barra | 67 | CX=-595.92(kNm) X=0.760(m) local |
| | 84 | fuerza sobre barra | 68 | FZ=-302.50(kN) X=0.260(m) |
| | 84 | fuerza sobre barra | 68 | CX=-595.92(kNm) X=0.260(m) local |
| | 85 | carga trapezoidal | 67 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=0.960(m) local no proyectadas absoluto |
| | 85 | fuerza sobre barra | 67 | CX=-23.10(kNm) X=1.530(m) local |
| | 85 | sobrecarga uniforme | 68 | PY=2.93(kN/m) local |
| | 85 | momento repartido | 68 | MX=-11.00(kNm/m) local |
| | 85 | sobrecarga uniforme | 69 | PY=2.93(kN/m) local |
| | 85 | momento repartido | 69 | MX=-11.00(kNm/m) local |





| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 85 | carga trapezoidal | 70 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=1.060(m) X1=0.0(m) local no proyectadas absolutos |
| | 85 | fuerza sobre barra | 70 | CX=-11.66(kNm) X=0.530(m) local |
| | 85 | fuerza sobre barra | 67 | FY=-9.16(kN) X=1.760(m) local |
| | 85 | fuerza sobre barra | 67 | CX=34.38(kNm) X=1.760(m) local |
| | 85 | fuerza sobre barra | 68 | FY=-9.16(kN) X=1.260(m) local |
| | 85 | fuerza sobre barra | 68 | CX=34.38(kNm) X=1.260(m) local |
| | 85 | fuerza sobre barra | 69 | FY=-9.16(kN) X=0.760(m) local |
| | 85 | fuerza sobre barra | 69 | CX=34.38(kNm) X=0.760(m) local |
| | 85 | fuerza sobre barra | 70 | FY=-9.16(kN) X=0.260(m) local |
| | 85 | fuerza sobre barra | 70 | CX=34.38(kNm) X=0.260(m) local |
| | 85 | carga trapezoidal | 67 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=0.960(m) global no proyectadas absol |
| | 85 | fuerza sobre barra | 67 | CX=-554.95(kNm) X=1.530(m) local |
| | 85 | sobrecarga uniforme | 68 | PZ=96.80(kN/m) |
| | 85 | momento repartido | 68 | MX=-264.26(kNm/m) local |
| | 85 | sobrecarga uniforme | 69 | PZ=96.80(kN/m) |
| | 85 | momento repartido | 69 | MX=-264.26(kNm/m) local |
| | 85 | carga trapezoidal | 70 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=1.060(m) X1=0.0(m) global no proyectadas absolut |
| | 85 | fuerza sobre barra | 70 | CX=-280.12(kNm) X=0.530(m) local |
| | 85 | fuerza sobre barra | 67 | FZ=-302.50(kN) X=1.760(m) |
| | 85 | fuerza sobre barra | 67 | CX=825.83(kNm) X=1.760(m) local |
| | 85 | fuerza sobre barra | 68 | FZ=-302.50(kN) X=1.260(m) |
| | 85 | fuerza sobre barra | 68 | CX=825.83(kNm) X=1.260(m) local |
| | 85 | fuerza sobre barra | 69 | FZ=-302.50(kN) X=0.760(m) |
| | 85 | fuerza sobre barra | 69 | CX=825.83(kNm) X=0.760(m) local |
| | 85 | fuerza sobre barra | 70 | FZ=-302.50(kN) X=0.260(m) |
| | 85 | fuerza sobre barra | 70 | CX=825.83(kNm) X=0.260(m) local |
| | 86 | carga trapezoidal | 67 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=0.960(m) local no proyectadas absoluto |
| | 86 | fuerza sobre barra | 67 | CX=-23.10(kNm) X=1.530(m) local |
| | 86 | sobrecarga uniforme | 68 | PY=2.93(kN/m) local |
| | 86 | momento repartido | 68 | MX=-11.00(kNm/m) local |
| | 86 | sobrecarga uniforme | 69 | PY=2.93(kN/m) local |
| | 86 | momento repartido | 69 | MX=-11.00(kNm/m) local |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 86 | carga trapezoidal | 70 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=1.060(m) X1=0.0(m) local no proyectadas absolutos |
| | 86 | fuerza sobre barra | 70 | CX=-11.66(kNm) X=0.530(m) local |
| | 86 | fuerza sobre barra | 67 | FY=-9.16(kN) X=1.760(m) local |
| | 86 | fuerza sobre barra | 67 | CX=34.38(kNm) X=1.760(m) local |
| | 86 | fuerza sobre barra | 68 | FY=-9.16(kN) X=1.260(m) local |
| | 86 | fuerza sobre barra | 68 | CX=34.38(kNm) X=1.260(m) local |
| | 86 | fuerza sobre barra | 69 | FY=-9.16(kN) X=0.760(m) local |
| | 86 | fuerza sobre barra | 69 | CX=34.38(kNm) X=0.760(m) local |
| | 86 | fuerza sobre barra | 70 | FY=-9.16(kN) X=0.260(m) local |
| | 86 | fuerza sobre barra | 70 | CX=34.38(kNm) X=0.260(m) local |
| | 86 | carga trapezoidal | 67 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=0.960(m) global no proyectadas absol |
| | 86 | fuerza sobre barra | 67 | CX=400.46(kNm) X=1.530(m) local |
| | 86 | sobrecarga uniforme | 68 | PZ=96.80(kN/m) |
| | 86 | momento repartido | 68 | MX=190.70(kNm/m) local |
| | 86 | sobrecarga uniforme | 69 | PZ=96.80(kN/m) |
| | 86 | momento repartido | 69 | MX=190.70(kNm/m) local |
| | 86 | carga trapezoidal | 70 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=1.060(m) X1=0.0(m) global no proyectadas absolut |
| | 86 | fuerza sobre barra | 70 | CX=202.14(kNm) X=0.530(m) local |
| | 86 | fuerza sobre barra | 67 | FZ=-302.50(kN) X=1.760(m) |
| | 86 | fuerza sobre barra | 67 | CX=-595.92(kNm) X=1.760(m) local |
| | 86 | fuerza sobre barra | 68 | FZ=-302.50(kN) X=1.260(m) |
| | 86 | fuerza sobre barra | 68 | CX=-595.92(kNm) X=1.260(m) local |
| | 86 | fuerza sobre barra | 69 | FZ=-302.50(kN) X=0.760(m) |
| | 86 | fuerza sobre barra | 69 | CX=-595.92(kNm) X=0.760(m) local |
| | 86 | fuerza sobre barra | 70 | FZ=-302.50(kN) X=0.260(m) |
| | 86 | fuerza sobre barra | 70 | CX=-595.92(kNm) X=0.260(m) local |
| | 87 | carga trapezoidal | 83 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=0.950(m) local no proyectadas absoluto |
| | 87 | fuerza sobre barra | 83 | CX=-23.10(kNm) X=1.530(m) local |
| | 87 | sobrecarga uniforme | 84 | PY=2.93(kN/m) local |
| | 87 | momento repartido | 84 | MX=-11.00(kNm/m) local |
| | 87 | sobrecarga uniforme | 85 | PY=2.93(kN/m) local |
| | 87 | momento repartido | 85 | MX=-11.00(kNm/m) local |



ROBOT v 14.5.0
Autor : **eipsa-eipsa**
Dirección :

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Archivo : **Gelserec.rtd**
Proyecto : Gelserec

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 87 | carga trapezoidal | 86 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=1.050(m) X1=0.0(m) local no proyectadas absolutos |
| | 87 | fuerza sobre barra | 86 | CX=-11.56(kNm) X=0.530(m) local |
| | 87 | fuerza sobre barra | 83 | FY=-9.16(kN) X=1.750(m) local |
| | 87 | fuerza sobre barra | 83 | CX=34.38(kNm) X=1.750(m) local |
| | 87 | fuerza sobre barra | 84 | FY=-9.16(kN) X=1.250(m) local |
| | 87 | fuerza sobre barra | 84 | CX=34.38(kNm) X=1.250(m) local |
| | 87 | fuerza sobre barra | 85 | FY=-9.16(kN) X=0.750(m) local |
| | 87 | fuerza sobre barra | 85 | CX=34.38(kNm) X=0.750(m) local |
| | 87 | fuerza sobre barra | 86 | FY=-9.16(kN) X=0.250(m) local |
| | 87 | fuerza sobre barra | 86 | CX=34.38(kNm) X=0.250(m) local |
| | 87 | carga trapezoidal | 83 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=0.950(m) global no proyectadas absol |
| | 87 | fuerza sobre barra | 83 | CX=-554.95(kNm) X=1.530(m) local |
| | 87 | sobrecarga uniforme | 84 | PZ=96.80(kN/m) |
| | 87 | momento repartido | 84 | MX=-264.26(kNm/m) local |
| | 87 | sobrecarga uniforme | 85 | PZ=96.80(kN/m) |
| | 87 | momento repartido | 85 | MX=-264.26(kNm/m) local |
| | 87 | carga trapezoidal | 86 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=1.050(m) X1=0.0(m) global no proyectadas absolut |
| | 87 | fuerza sobre barra | 86 | CX=-277.74(kNm) X=0.530(m) local |
| | 87 | fuerza sobre barra | 83 | FZ=-302.50(kN) X=1.750(m) |
| | 87 | fuerza sobre barra | 83 | CX=825.83(kNm) X=1.750(m) local |
| | 87 | fuerza sobre barra | 84 | FZ=-302.50(kN) X=1.250(m) |
| | 87 | fuerza sobre barra | 84 | CX=825.83(kNm) X=1.250(m) local |
| | 87 | fuerza sobre barra | 85 | FZ=-302.50(kN) X=0.750(m) |
| | 87 | fuerza sobre barra | 85 | CX=825.83(kNm) X=0.750(m) local |
| | 87 | fuerza sobre barra | 86 | FZ=-302.50(kN) X=0.250(m) |
| | 87 | fuerza sobre barra | 86 | CX=825.83(kNm) X=0.250(m) local |
| | 88 | carga trapezoidal | 83 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=0.950(m) local no proyectadas absoluto |
| | 88 | fuerza sobre barra | 83 | CX=-23.10(kNm) X=1.530(m) local |
| | 88 | sobrecarga uniforme | 84 | PY=2.93(kN/m) local |
| | 88 | momento repartido | 84 | MX=-11.00(kNm/m) local |
| | 88 | sobrecarga uniforme | 85 | PY=2.93(kN/m) local |
| | 88 | momento repartido | 85 | MX=-11.00(kNm/m) local |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 88 | carga trapezoidal | 86 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=1.050(m) X1=0.0(m) local no proyectadas absolutos |
| | 88 | fuerza sobre barra | 86 | CX=-11.56(kNm) X=0.530(m) local |
| | 88 | fuerza sobre barra | 83 | FY=-9.16(kN) X=1.750(m) local |
| | 88 | fuerza sobre barra | 83 | CX=34.38(kNm) X=1.750(m) local |
| | 88 | fuerza sobre barra | 84 | FY=-9.16(kN) X=1.250(m) local |
| | 88 | fuerza sobre barra | 84 | CX=34.38(kNm) X=1.250(m) local |
| | 88 | fuerza sobre barra | 85 | FY=-9.16(kN) X=0.750(m) local |
| | 88 | fuerza sobre barra | 85 | CX=34.38(kNm) X=0.750(m) local |
| | 88 | fuerza sobre barra | 86 | FY=-9.16(kN) X=0.250(m) local |
| | 88 | fuerza sobre barra | 86 | CX=34.38(kNm) X=0.250(m) local |
| | 88 | carga trapezoidal | 83 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=0.950(m) global no proyectadas abso |
| | 88 | fuerza sobre barra | 83 | CX=400.46(kNm) X=1.530(m) local |
| | 88 | sobrecarga uniforme | 84 | PZ=96.80(kN/m) |
| | 88 | momento repartido | 84 | MX=190.70(kNm/m) local |
| | 88 | sobrecarga uniforme | 85 | PZ=96.80(kN/m) |
| | 88 | momento repartido | 85 | MX=190.70(kNm/m) local |
| | 88 | carga trapezoidal | 86 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=1.050(m) X1=0.0(m) global no proyectadas absolut |
| | 88 | fuerza sobre barra | 86 | CX=200.42(kNm) X=0.530(m) local |
| | 88 | fuerza sobre barra | 83 | FZ=-302.50(kN) X=1.750(m) |
| | 88 | fuerza sobre barra | 83 | CX=-595.92(kNm) X=1.750(m) local |
| | 88 | fuerza sobre barra | 84 | FZ=-302.50(kN) X=1.250(m) |
| | 88 | fuerza sobre barra | 84 | CX=-595.92(kNm) X=1.250(m) local |
| | 88 | fuerza sobre barra | 85 | FZ=-302.50(kN) X=0.750(m) |
| | 88 | fuerza sobre barra | 85 | CX=-595.92(kNm) X=0.750(m) local |
| | 88 | fuerza sobre barra | 86 | FZ=-302.50(kN) X=0.250(m) |
| | 88 | fuerza sobre barra | 86 | CX=-595.92(kNm) X=0.250(m) local |
| | 89 | carga trapezoidal | 85 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=0.950(m) local no proyectadas absoluto |
| | 89 | fuerza sobre barra | 85 | CX=-23.09(kNm) X=1.530(m) local |
| | 89 | sobrecarga uniforme | 86 | PY=2.93(kN/m) local |
| | 89 | momento repartido | 86 | MX=-11.00(kNm/m) local |
| | 89 | sobrecarga uniforme | 87 | PY=2.93(kN/m) local |
| | 89 | momento repartido | 87 | MX=-11.00(kNm/m) local |





| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 89 | carga trapezoidal | 88 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=1.050(m) X1=0.0(m) local no proyectadas absolutos |
| | 89 | fuerza sobre barra | 88 | CX=-11.56(kNm) X=0.530(m) local |
| | 89 | fuerza sobre barra | 85 | FY=-9.16(kN) X=1.750(m) local |
| | 89 | fuerza sobre barra | 85 | CX=34.38(kNm) X=1.750(m) local |
| | 89 | fuerza sobre barra | 86 | FY=-9.16(kN) X=1.250(m) local |
| | 89 | fuerza sobre barra | 86 | CX=34.38(kNm) X=1.250(m) local |
| | 89 | fuerza sobre barra | 87 | FY=-9.16(kN) X=0.750(m) local |
| | 89 | fuerza sobre barra | 87 | CX=34.38(kNm) X=0.750(m) local |
| | 89 | fuerza sobre barra | 88 | FY=-9.16(kN) X=0.250(m) local |
| | 89 | fuerza sobre barra | 88 | CX=34.38(kNm) X=0.250(m) local |
| | 89 | carga trapezoidal | 85 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=0.950(m) global no proyectadas abso |
| | 89 | fuerza sobre barra | 85 | CX=-554.69(kNm) X=1.530(m) local |
| | 89 | sobrecarga uniforme | 86 | PZ=96.80(kN/m) |
| | 89 | momento repartido | 86 | MX=-264.26(kNm/m) local |
| | 89 | sobrecarga uniforme | 87 | PZ=96.80(kN/m) |
| | 89 | momento repartido | 87 | MX=-264.26(kNm/m) local |
| | 89 | carga trapezoidal | 88 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=1.050(m) X1=0.0(m) global no proyectadas absolut |
| | 89 | fuerza sobre barra | 88 | CX=-277.74(kNm) X=0.530(m) local |
| | 89 | fuerza sobre barra | 85 | FZ=-302.50(kN) X=1.750(m) |
| | 89 | fuerza sobre barra | 85 | CX=825.83(kNm) X=1.750(m) local |
| | 89 | fuerza sobre barra | 86 | FZ=-302.50(kN) X=1.250(m) |
| | 89 | fuerza sobre barra | 86 | CX=825.83(kNm) X=1.250(m) local |
| | 89 | fuerza sobre barra | 87 | FZ=-302.50(kN) X=0.750(m) |
| | 89 | fuerza sobre barra | 87 | CX=825.83(kNm) X=0.750(m) local |
| | 89 | fuerza sobre barra | 88 | FZ=-302.50(kN) X=0.250(m) |
| | 89 | fuerza sobre barra | 88 | CX=825.83(kNm) X=0.250(m) local |
| | 90 | carga trapezoidal | 85 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=0.950(m) local no proyectadas absoluto |
| | 90 | fuerza sobre barra | 85 | CX=-23.09(kNm) X=1.530(m) local |
| | 90 | sobrecarga uniforme | 86 | PY=2.93(kN/m) local |
| | 90 | momento repartido | 86 | MX=-11.00(kNm/m) local |
| | 90 | sobrecarga uniforme | 87 | PY=2.93(kN/m) local |
| | 90 | momento repartido | 87 | MX=-11.00(kNm/m) local |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 90 | carga trapezoidal | 88 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=1.050(m) X1=0.0(m) local no proyectadas absolutos |
| | 90 | fuerza sobre barra | 88 | CX=-11.56(kNm) X=0.530(m) local |
| | 90 | fuerza sobre barra | 85 | FY=-9.16(kN) X=1.750(m) local |
| | 90 | fuerza sobre barra | 85 | CX=34.38(kNm) X=1.750(m) local |
| | 90 | fuerza sobre barra | 86 | FY=-9.16(kN) X=1.250(m) local |
| | 90 | fuerza sobre barra | 86 | CX=34.38(kNm) X=1.250(m) local |
| | 90 | fuerza sobre barra | 87 | FY=-9.16(kN) X=0.750(m) local |
| | 90 | fuerza sobre barra | 87 | CX=34.38(kNm) X=0.750(m) local |
| | 90 | fuerza sobre barra | 88 | FY=-9.16(kN) X=0.250(m) local |
| | 90 | fuerza sobre barra | 88 | CX=34.38(kNm) X=0.250(m) local |
| | 90 | carga trapezoidal | 85 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=0.950(m) global no proyectadas absol |
| | 90 | fuerza sobre barra | 85 | CX=400.27(kNm) X=1.530(m) local |
| | 90 | sobrecarga uniforme | 86 | PZ=96.80(kN/m) |
| | 90 | momento repartido | 86 | MX=190.70(kNm/m) local |
| | 90 | sobrecarga uniforme | 87 | PZ=96.80(kN/m) |
| | 90 | momento repartido | 87 | MX=190.70(kNm/m) local |
| | 90 | carga trapezoidal | 88 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=1.050(m) X1=0.0(m) global no proyectadas absolut |
| | 90 | fuerza sobre barra | 88 | CX=200.42(kNm) X=0.530(m) local |
| | 90 | fuerza sobre barra | 85 | FZ=-302.50(kN) X=1.750(m) |
| | 90 | fuerza sobre barra | 85 | CX=-595.92(kNm) X=1.750(m) local |
| | 90 | fuerza sobre barra | 86 | FZ=-302.50(kN) X=1.250(m) |
| | 90 | fuerza sobre barra | 86 | CX=-595.92(kNm) X=1.250(m) local |
| | 90 | fuerza sobre barra | 87 | FZ=-302.50(kN) X=0.750(m) |
| | 90 | fuerza sobre barra | 87 | CX=-595.92(kNm) X=0.750(m) local |
| | 90 | fuerza sobre barra | 88 | FZ=-302.50(kN) X=0.250(m) |
| | 90 | fuerza sobre barra | 88 | CX=-595.92(kNm) X=0.250(m) local |
| | 91 | carga trapezoidal | 87 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=0.950(m) local no proyectadas absoluto |
| | 91 | fuerza sobre barra | 87 | CX=-23.10(kNm) X=1.530(m) local |
| | 91 | sobrecarga uniforme | 88 | PY=2.93(kN/m) local |
| | 91 | momento repartido | 88 | MX=-11.00(kNm/m) local |
| | 91 | sobrecarga uniforme | 89 | PY=2.93(kN/m) local |
| | 91 | momento repartido | 89 | MX=-11.00(kNm/m) local |





| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 91 | carga trapezoidal | 90 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=1.050(m) X1=0.0(m) local no proyectadas absolutos |
| | 91 | fuerza sobre barra | 90 | CX=-11.57(kNm) X=0.530(m) local |
| | 91 | fuerza sobre barra | 87 | FY=-9.16(kN) X=1.750(m) local |
| | 91 | fuerza sobre barra | 87 | CX=34.38(kNm) X=1.750(m) local |
| | 91 | fuerza sobre barra | 88 | FY=-9.16(kN) X=1.250(m) local |
| | 91 | fuerza sobre barra | 88 | CX=34.38(kNm) X=1.250(m) local |
| | 91 | fuerza sobre barra | 89 | FY=-9.16(kN) X=0.750(m) local |
| | 91 | fuerza sobre barra | 89 | CX=34.38(kNm) X=0.750(m) local |
| | 91 | fuerza sobre barra | 90 | FY=-9.16(kN) X=0.250(m) local |
| | 91 | fuerza sobre barra | 90 | CX=34.38(kNm) X=0.250(m) local |
| | 91 | carga trapezoidal | 87 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=0.950(m) global no proyectadas absol |
| | 91 | fuerza sobre barra | 87 | CX=-554.95(kNm) X=1.530(m) local |
| | 91 | sobrecarga uniforme | 88 | PZ=96.80(kN/m) |
| | 91 | momento repartido | 88 | MX=-264.26(kNm/m) local |
| | 91 | sobrecarga uniforme | 89 | PZ=96.80(kN/m) |
| | 91 | momento repartido | 89 | MX=-264.26(kNm/m) local |
| | 91 | carga trapezoidal | 90 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=1.050(m) X1=0.0(m) global no proyectadas absolut |
| | 91 | fuerza sobre barra | 90 | CX=-278.01(kNm) X=0.530(m) local |
| | 91 | fuerza sobre barra | 87 | FZ=-302.50(kN) X=1.750(m) |
| | 91 | fuerza sobre barra | 87 | CX=825.83(kNm) X=1.750(m) local |
| | 91 | fuerza sobre barra | 88 | FZ=-302.50(kN) X=1.250(m) |
| | 91 | fuerza sobre barra | 88 | CX=825.83(kNm) X=1.250(m) local |
| | 91 | fuerza sobre barra | 89 | FZ=-302.50(kN) X=0.750(m) |
| | 91 | fuerza sobre barra | 89 | CX=825.83(kNm) X=0.750(m) local |
| | 91 | fuerza sobre barra | 90 | FZ=-302.50(kN) X=0.250(m) |
| | 91 | fuerza sobre barra | 90 | CX=825.83(kNm) X=0.250(m) local |
| | 92 | carga trapezoidal | 87 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=0.950(m) local no proyectadas absoluto |
| | 92 | fuerza sobre barra | 87 | CX=-23.10(kNm) X=1.530(m) local |
| | 92 | sobrecarga uniforme | 88 | PY=2.93(kN/m) local |
| | 92 | momento repartido | 88 | MX=-11.00(kNm/m) local |
| | 92 | sobrecarga uniforme | 89 | PY=2.93(kN/m) local |
| | 92 | momento repartido | 89 | MX=-11.00(kNm/m) local |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 92 | carga trapezoidal | 90 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=1.050(m) X1=0.0(m) local no proyectadas absolutos |
| | 92 | fuerza sobre barra | 90 | CX=-11.57(kNm) X=0.530(m) local |
| | 92 | fuerza sobre barra | 87 | FY=-9.16(kN) X=1.750(m) local |
| | 92 | fuerza sobre barra | 87 | CX=34.38(kNm) X=1.750(m) local |
| | 92 | fuerza sobre barra | 88 | FY=-9.16(kN) X=1.250(m) local |
| | 92 | fuerza sobre barra | 88 | CX=34.38(kNm) X=1.250(m) local |
| | 92 | fuerza sobre barra | 89 | FY=-9.16(kN) X=0.750(m) local |
| | 92 | fuerza sobre barra | 89 | CX=34.38(kNm) X=0.750(m) local |
| | 92 | fuerza sobre barra | 90 | FY=-9.16(kN) X=0.250(m) local |
| | 92 | fuerza sobre barra | 90 | CX=34.38(kNm) X=0.250(m) local |
| | 92 | carga trapezoidal | 87 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=0.950(m) global no proyectadas absol |
| | 92 | fuerza sobre barra | 87 | CX=400.46(kNm) X=1.530(m) local |
| | 92 | sobrecarga uniforme | 88 | PZ=96.80(kN/m) |
| | 92 | momento repartido | 88 | MX=190.70(kNm/m) local |
| | 92 | sobrecarga uniforme | 89 | PZ=96.80(kN/m) |
| | 92 | momento repartido | 89 | MX=190.70(kNm/m) local |
| | 92 | carga trapezoidal | 90 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=1.050(m) X1=0.0(m) global no proyectadas absolut |
| | 92 | fuerza sobre barra | 90 | CX=200.61(kNm) X=0.530(m) local |
| | 92 | fuerza sobre barra | 87 | FZ=-302.50(kN) X=1.750(m) |
| | 92 | fuerza sobre barra | 87 | CX=-595.92(kNm) X=1.750(m) local |
| | 92 | fuerza sobre barra | 88 | FZ=-302.50(kN) X=1.250(m) |
| | 92 | fuerza sobre barra | 88 | CX=-595.92(kNm) X=1.250(m) local |
| | 92 | fuerza sobre barra | 89 | FZ=-302.50(kN) X=0.750(m) |
| | 92 | fuerza sobre barra | 89 | CX=-595.92(kNm) X=0.750(m) local |
| | 92 | fuerza sobre barra | 90 | FZ=-302.50(kN) X=0.250(m) |
| | 92 | fuerza sobre barra | 90 | CX=-595.92(kNm) X=0.250(m) local |
| | 93 | carga trapezoidal | 103 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=0.640(m) local no proyectadas absoluto |
| | 93 | fuerza sobre barra | 103 | CX=-23.09(kNm) X=1.370(m) local |
| | 93 | sobrecarga uniforme | 104 | PY=2.93(kN/m) local |
| | 93 | momento repartido | 104 | MX=-11.00(kNm/m) local |
| | 93 | sobrecarga uniforme | 105 | PY=2.93(kN/m) local |
| | 93 | momento repartido | 105 | MX=-11.00(kNm/m) local |





| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 93 | carga trapezoidal | 106 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=0.750(m) X1=0.0(m) local no proyectadas absolutos |
| | 93 | fuerza sobre barra | 106 | CX=-8.20(kNm) X=0.370(m) local |
| | 93 | fuerza sobre barra | 103 | FY=-9.16(kN) X=1.440(m) local |
| | 93 | fuerza sobre barra | 103 | CX=34.38(kNm) X=1.440(m) local |
| | 93 | fuerza sobre barra | 104 | FY=-9.16(kN) X=0.940(m) local |
| | 93 | fuerza sobre barra | 104 | CX=34.38(kNm) X=0.940(m) local |
| | 93 | fuerza sobre barra | 105 | FY=-9.16(kN) X=0.440(m) local |
| | 93 | fuerza sobre barra | 105 | CX=34.38(kNm) X=0.440(m) local |
| | 93 | fuerza sobre barra | 105 | FY=-9.16(kN) X=2.040(m) local |
| | 93 | fuerza sobre barra | 105 | CX=34.38(kNm) X=2.040(m) local |
| | 93 | carga trapezoidal | 103 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=0.640(m) global no proyectadas absol |
| | 93 | fuerza sobre barra | 103 | CX=-554.69(kNm) X=1.370(m) local |
| | 93 | sobrecarga uniforme | 104 | PZ=96.80(kN/m) |
| | 93 | momento repartido | 104 | MX=-264.26(kNm/m) local |
| | 93 | sobrecarga uniforme | 105 | PZ=96.80(kN/m) |
| | 93 | momento repartido | 105 | MX=-264.26(kNm/m) local |
| | 93 | carga trapezoidal | 106 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=0.750(m) X1=0.0(m) global no proyectadas absolut |
| | 93 | fuerza sobre barra | 106 | CX=-196.88(kNm) X=0.370(m) local |
| | 93 | fuerza sobre barra | 103 | FZ=-302.50(kN) X=1.440(m) |
| | 93 | fuerza sobre barra | 103 | CX=825.83(kNm) X=1.440(m) local |
| | 93 | fuerza sobre barra | 104 | FZ=-302.50(kN) X=0.940(m) |
| | 93 | fuerza sobre barra | 104 | CX=825.83(kNm) X=0.940(m) local |
| | 93 | fuerza sobre barra | 105 | FZ=-302.50(kN) X=0.440(m) |
| | 93 | fuerza sobre barra | 105 | CX=825.83(kNm) X=0.440(m) local |
| | 93 | fuerza sobre barra | 105 | FZ=-302.50(kN) X=2.040(m) |
| | 93 | fuerza sobre barra | 105 | CX=825.83(kNm) X=2.040(m) local |
| | 94 | carga trapezoidal | 103 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=0.640(m) local no proyectadas absoluto |
| | 94 | fuerza sobre barra | 103 | CX=-23.09(kNm) X=1.370(m) local |
| | 94 | sobrecarga uniforme | 104 | PY=2.93(kN/m) local |
| | 94 | momento repartido | 104 | MX=-11.00(kNm/m) local |
| | 94 | sobrecarga uniforme | 105 | PY=2.93(kN/m) local |
| | 94 | momento repartido | 105 | MX=-11.00(kNm/m) local |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 94 | carga trapezoidal | 106 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=0.750(m) X1=0.0(m) local no proyectadas absolutos |
| | 94 | fuerza sobre barra | 106 | CX=-8.20(kNm) X=0.370(m) local |
| | 94 | fuerza sobre barra | 103 | FY=-9.16(kN) X=1.440(m) local |
| | 94 | fuerza sobre barra | 103 | CX=34.38(kNm) X=1.440(m) local |
| | 94 | fuerza sobre barra | 104 | FY=-9.16(kN) X=0.940(m) local |
| | 94 | fuerza sobre barra | 104 | CX=34.38(kNm) X=0.940(m) local |
| | 94 | fuerza sobre barra | 105 | FY=-9.16(kN) X=0.440(m) local |
| | 94 | fuerza sobre barra | 105 | CX=34.38(kNm) X=0.440(m) local |
| | 94 | fuerza sobre barra | 105 | FY=-9.16(kN) X=2.040(m) local |
| | 94 | fuerza sobre barra | 105 | CX=34.38(kNm) X=2.040(m) local |
| | 94 | carga trapezoidal | 103 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=0.640(m) global no proyectadas absol |
| | 94 | fuerza sobre barra | 103 | CX=400.27(kNm) X=1.370(m) local |
| | 94 | sobrecarga uniforme | 104 | PZ=96.80(kN/m) |
| | 94 | momento repartido | 104 | MX=190.70(kNm/m) local |
| | 94 | sobrecarga uniforme | 105 | PZ=96.80(kN/m) |
| | 94 | momento repartido | 105 | MX=190.70(kNm/m) local |
| | 94 | carga trapezoidal | 106 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=0.750(m) X1=0.0(m) global no proyectadas absolut |
| | 94 | fuerza sobre barra | 106 | CX=142.07(kNm) X=0.370(m) local |
| | 94 | fuerza sobre barra | 103 | FZ=-302.50(kN) X=1.440(m) |
| | 94 | fuerza sobre barra | 103 | CX=-595.92(kNm) X=1.440(m) local |
| | 94 | fuerza sobre barra | 104 | FZ=-302.50(kN) X=0.940(m) |
| | 94 | fuerza sobre barra | 104 | CX=-595.92(kNm) X=0.940(m) local |
| | 94 | fuerza sobre barra | 105 | FZ=-302.50(kN) X=0.440(m) |
| | 94 | fuerza sobre barra | 105 | CX=-595.92(kNm) X=0.440(m) local |
| | 94 | fuerza sobre barra | 105 | FZ=-302.50(kN) X=2.040(m) |
| | 94 | fuerza sobre barra | 105 | CX=-595.92(kNm) X=2.040(m) local |
| | 95 | carga trapezoidal | 104 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=1.840(m) local no proyectadas absoluto |
| | 95 | fuerza sobre barra | 104 | CX=-23.09(kNm) X=1.970(m) local |
| | 95 | sobrecarga uniforme | 105 | PY=2.93(kN/m) local |
| | 95 | momento repartido | 105 | MX=-11.00(kNm/m) local |
| | 95 | sobrecarga uniforme | 106 | PY=2.93(kN/m) local |
| | 95 | momento repartido | 106 | MX=-11.00(kNm/m) local |





| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 95 | carga trapezoidal | 107 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=1.950(m) X1=0.0(m) local no proyectadas absolutos |
| | 95 | fuerza sobre barra | 107 | CX=-21.40(kNm) X=0.970(m) local |
| | 95 | fuerza sobre barra | 105 | FY=-9.16(kN) X=0.540(m) local |
| | 95 | fuerza sobre barra | 105 | CX=34.38(kNm) X=0.540(m) local |
| | 95 | fuerza sobre barra | 106 | FY=-9.16(kN) X=0.050(m) local |
| | 95 | fuerza sobre barra | 106 | CX=34.38(kNm) X=0.050(m) local |
| | 95 | fuerza sobre barra | 106 | FY=-9.16(kN) X=1.650(m) local |
| | 95 | fuerza sobre barra | 106 | CX=34.38(kNm) X=1.650(m) local |
| | 95 | fuerza sobre barra | 107 | FY=-9.16(kN) X=1.150(m) local |
| | 95 | fuerza sobre barra | 107 | CX=34.38(kNm) X=1.150(m) local |
| | 95 | carga trapezoidal | 104 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=1.840(m) global no proyectadas absol |
| | 95 | fuerza sobre barra | 104 | CX=-554.69(kNm) X=1.970(m) local |
| | 95 | sobrecarga uniforme | 105 | PZ=96.80(kN/m) |
| | 95 | momento repartido | 105 | MX=-264.26(kNm/m) local |
| | 95 | sobrecarga uniforme | 106 | PZ=96.80(kN/m) |
| | 95 | momento repartido | 106 | MX=-264.26(kNm/m) local |
| | 95 | carga trapezoidal | 107 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=1.950(m) X1=0.0(m) global no proyectadas absolut |
| | 95 | fuerza sobre barra | 107 | CX=-513.99(kNm) X=0.970(m) local |
| | 95 | fuerza sobre barra | 105 | FZ=-302.50(kN) X=0.540(m) |
| | 95 | fuerza sobre barra | 105 | CX=825.83(kNm) X=0.540(m) local |
| | 95 | fuerza sobre barra | 106 | FZ=-302.50(kN) X=0.050(m) |
| | 95 | fuerza sobre barra | 106 | CX=825.83(kNm) X=0.050(m) local |
| | 95 | fuerza sobre barra | 106 | FZ=-302.50(kN) X=1.650(m) |
| | 95 | fuerza sobre barra | 106 | CX=825.83(kNm) X=1.650(m) local |
| | 95 | fuerza sobre barra | 107 | FZ=-302.50(kN) X=1.150(m) |
| | 95 | fuerza sobre barra | 107 | CX=825.83(kNm) X=1.150(m) local |
| | 96 | carga trapezoidal | 104 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=2.100(m) X1=1.840(m) local no proyectadas absoluto |
| | 96 | fuerza sobre barra | 104 | CX=-23.09(kNm) X=1.970(m) local |
| | 96 | sobrecarga uniforme | 105 | PY=2.93(kN/m) local |
| | 96 | momento repartido | 105 | MX=-11.00(kNm/m) local |
| | 96 | sobrecarga uniforme | 106 | PY=2.93(kN/m) local |
| | 96 | momento repartido | 106 | MX=-11.00(kNm/m) local |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 96 | carga trapezoidal | 107 | PY2=2.93(kN/m) PY1=2.93(kN/m) X2=1.950(m) X1=0.0(m) local no proyectadas absolutos |
| | 96 | fuerza sobre barra | 107 | CX=-21.40(kNm) X=0.970(m) local |
| | 96 | fuerza sobre barra | 105 | FY=-9.16(kN) X=0.540(m) local |
| | 96 | fuerza sobre barra | 105 | CX=34.38(kNm) X=0.540(m) local |
| | 96 | fuerza sobre barra | 106 | FY=-9.16(kN) X=0.050(m) local |
| | 96 | fuerza sobre barra | 106 | CX=34.38(kNm) X=0.050(m) local |
| | 96 | fuerza sobre barra | 106 | FY=-9.16(kN) X=1.650(m) local |
| | 96 | fuerza sobre barra | 106 | CX=34.38(kNm) X=1.650(m) local |
| | 96 | fuerza sobre barra | 107 | FY=-9.16(kN) X=1.150(m) local |
| | 96 | fuerza sobre barra | 107 | CX=34.38(kNm) X=1.150(m) local |
| | 96 | carga trapezoidal | 104 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=2.100(m) X1=1.840(m) global no proyectadas absol |
| | 96 | fuerza sobre barra | 104 | CX=400.27(kNm) X=1.970(m) local |
| | 96 | sobrecarga uniforme | 105 | PZ=96.80(kN/m) |
| | 96 | momento repartido | 105 | MX=190.70(kNm/m) local |
| | 96 | sobrecarga uniforme | 106 | PZ=96.80(kN/m) |
| | 96 | momento repartido | 106 | MX=190.70(kNm/m) local |
| | 96 | carga trapezoidal | 107 | PZ2=96.80(kN/m) PZ1=96.80(kN/m) X2=1.950(m) X1=0.0(m) global no proyectadas absolut |
| | 96 | fuerza sobre barra | 107 | CX=370.90(kNm) X=0.970(m) local |
| | 96 | fuerza sobre barra | 105 | FZ=-302.50(kN) X=0.540(m) |
| | 96 | fuerza sobre barra | 105 | CX=-595.92(kNm) X=0.540(m) local |
| | 96 | fuerza sobre barra | 106 | FZ=-302.50(kN) X=0.050(m) |
| | 96 | fuerza sobre barra | 106 | CX=-595.92(kNm) X=0.050(m) local |
| | 96 | fuerza sobre barra | 106 | FZ=-302.50(kN) X=1.650(m) |
| | 96 | fuerza sobre barra | 106 | CX=-595.92(kNm) X=1.650(m) local |
| | 96 | fuerza sobre barra | 107 | FZ=-302.50(kN) X=1.150(m) |
| | 96 | fuerza sobre barra | 107 | CX=-595.92(kNm) X=1.150(m) local |
| | 97 | sobrecarga uniforme | 1A7 | PY=-0.79(kN/m) local |
| | 97 | momento repartido | 1A7 | MX=2.96(kNm/m) local |
| | 97 | carga trapezoidal | 8 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=0.890(m) X1=0.0(m) local no proyectadas absolutos |
| | 97 | fuerza sobre barra | 8 | CX=2.64(kNm) X=0.450(m) local |
| | 97 | carga trapezoidal | 10 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=1.990(m) local no proyectadas absolut |
| | 97 | fuerza sobre barra | 10 | CX=0.32(kNm) X=2.050(m) local |



ROBOT v 14.5.0
Autor : **eipsa-eipsa**
Dirección :

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Archivo : **Gelserec.rtd**
Proyecto : Gelserec

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 97 | sobrecarga uniforme | 11A17 | PY=-0.79(kN/m) local |
| | 97 | momento repartido | 11A17 | MX=2.96(kNm/m) local |
| | 97 | carga trapezoidal | 18 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=0.190(m) X1=0.0(m) local no proyectadas absolutos |
| | 97 | fuerza sobre barra | 18 | CX=0.55(kNm) X=0.090(m) local |
| | 97 | fuerza sobre barra | 18 | CX=79.32(kNm) X=0.090(m) local |
| | 97 | carga trapezoidal | 18 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=0.190(m) X1=0.0(m) global no proyectadas abs |
| | 97 | momento repartido | 11A17 | MX=426.46(kNm/m) local |
| | 97 | sobrecarga uniforme | 11A17 | PZ=-160.93(kN/m) |
| | 97 | fuerza sobre barra | 10 | CX=46.06(kNm) X=2.050(m) local |
| | 97 | carga trapezoidal | 10 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=1.990(m) global no proyectadas a |
| | 97 | fuerza sobre barra | 8 | CX=380.41(kNm) X=0.450(m) local |
| | 97 | carga trapezoidal | 8 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=0.890(m) X1=0.0(m) global no proyectadas abs |
| | 97 | momento repartido | 1A7 | MX=426.46(kNm/m) local |
| | 97 | sobrecarga uniforme | 1A7 | PZ=-160.93(kN/m) |
| | 98 | sobrecarga uniforme | 1A7 | PY=-0.79(kN/m) local |
| | 98 | momento repartido | 1A7 | MX=2.96(kNm/m) local |
| | 98 | carga trapezoidal | 8 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=0.890(m) X1=0.0(m) local no proyectadas absolutos |
| | 98 | fuerza sobre barra | 8 | CX=2.64(kNm) X=0.450(m) local |
| | 98 | carga trapezoidal | 10 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=1.990(m) local no proyectadas absolut |
| | 98 | fuerza sobre barra | 10 | CX=0.32(kNm) X=2.050(m) local |
| | 98 | sobrecarga uniforme | 11A17 | PY=-0.79(kN/m) local |
| | 98 | momento repartido | 11A17 | MX=2.96(kNm/m) local |
| | 98 | carga trapezoidal | 18 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=0.190(m) X1=0.0(m) local no proyectadas absolutos |
| | 98 | fuerza sobre barra | 18 | CX=0.55(kNm) X=0.090(m) local |
| | 98 | fuerza sobre barra | 18 | CX=-61.36(kNm) X=0.090(m) local |
| | 98 | carga trapezoidal | 18 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=0.190(m) X1=0.0(m) global no proyectadas abs |
| | 98 | momento repartido | 11A17 | MX=-329.91(kNm/m) local |
| | 98 | sobrecarga uniforme | 11A17 | PZ=-160.93(kN/m) |
| | 98 | fuerza sobre barra | 10 | CX=-35.63(kNm) X=2.050(m) local |
| | 98 | carga trapezoidal | 10 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=1.990(m) global no proyectadas a |
| | 98 | fuerza sobre barra | 8 | CX=-294.28(kNm) X=0.450(m) local |
| | 98 | carga trapezoidal | 8 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=0.890(m) X1=0.0(m) global no proyectadas abs |

| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 98 | momento repartido | 1A7 | MX=-329.91(kNm/m) local |
| 98 | sobrecarga uniforme | 1A7 | PZ=-160.93(kN/m) |
| 99 | carga trapezoidal | 8 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=1.240(m) local no proyectadas absolut |
| 99 | fuerza sobre barra | 8 | CX=2.54(kNm) X=1.670(m) local |
| 99 | sobrecarga uniforme | 9A14 | PY=-0.79(kN/m) local |
| 99 | momento repartido | 9A14 | MX=2.96(kNm/m) local |
| 99 | carga trapezoidal | 15 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=1.540(m) X1=0.0(m) local no proyectadas absolutos |
| 99 | fuerza sobre barra | 15 | CX=4.56(kNm) X=0.770(m) local |
| 99 | carga trapezoidal | 18 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=0.540(m) local no proyectadas absolut |
| 99 | fuerza sobre barra | 18 | CX=4.65(kNm) X=1.320(m) local |
| 99 | sobrecarga uniforme | 19A24 | PY=-0.79(kN/m) local |
| 99 | momento repartido | 19A24 | MX=2.96(kNm/m) local |
| 99 | carga trapezoidal | 25 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=0.830(m) X1=0.0(m) local no proyectadas absolutos |
| 99 | fuerza sobre barra | 25 | CX=2.46(kNm) X=0.420(m) local |
| 99 | carga trapezoidal | 8 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=1.240(m) global no proyectadas a |
| 99 | fuerza sobre barra | 8 | CX=365.91(kNm) X=1.670(m) local |
| 99 | sobrecarga uniforme | 9A14 | PZ=-160.93(kN/m) |
| 99 | momento repartido | 9A14 | MX=426.46(kNm/m) local |
| 99 | carga trapezoidal | 15 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=1.540(m) X1=0.0(m) global no proyectadas abs |
| 99 | fuerza sobre barra | 15 | CX=657.61(kNm) X=0.770(m) local |
| 99 | carga trapezoidal | 18 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=0.540(m) global no proyectadas a |
| 99 | fuerza sobre barra | 18 | CX=669.55(kNm) X=1.320(m) local |
| 99 | sobrecarga uniforme | 19A24 | PZ=-160.93(kN/m) |
| 99 | momento repartido | 19A24 | MX=426.46(kNm/m) local |
| 99 | carga trapezoidal | 25 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=0.830(m) X1=0.0(m) global no proyectadas abs |
| 99 | fuerza sobre barra | 25 | CX=353.97(kNm) X=0.420(m) local |
| 100 | carga trapezoidal | 8 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=1.240(m) local no proyectadas absolut |
| 100 | fuerza sobre barra | 8 | CX=2.54(kNm) X=1.670(m) local |
| 100 | sobrecarga uniforme | 9A14 | PY=-0.79(kN/m) local |
| 100 | momento repartido | 9A14 | MX=2.96(kNm/m) local |
| 100 | carga trapezoidal | 15 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=1.540(m) X1=0.0(m) local no proyectadas absolutos |
| 100 | fuerza sobre barra | 15 | CX=4.56(kNm) X=0.770(m) local |



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| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 100 | carga trapezoidal | 18 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=0.540(m) local no proyectadas absolut |
| 100 | fuerza sobre barra | 18 | CX=4.65(kNm) X=1.320(m) local |
| 100 | sobrecarga uniforme | 19A24 | PY=-0.79(kN/m) local |
| 100 | momento repartido | 19A24 | MX=2.96(kNm/m) local |
| 100 | carga trapezoidal | 25 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=0.830(m) X1=0.0(m) local no proyectadas absolutos |
| 100 | fuerza sobre barra | 25 | CX=2.46(kNm) X=0.420(m) local |
| 100 | fuerza sobre barra | 25 | CX=-273.82(kNm) X=0.420(m) local |
| 100 | carga trapezoidal | 25 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=0.830(m) X1=0.0(m) global no proyectadas abs |
| 100 | momento repartido | 19A24 | MX=-329.91(kNm/m) local |
| 100 | sobrecarga uniforme | 19A24 | PZ=-160.93(kN/m) |
| 100 | fuerza sobre barra | 18 | CX=-517.95(kNm) X=1.320(m) local |
| 100 | carga trapezoidal | 18 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=0.540(m) global no proyectadas a |
| 100 | fuerza sobre barra | 15 | CX=-508.72(kNm) X=0.770(m) local |
| 100 | carga trapezoidal | 15 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=1.540(m) X1=0.0(m) global no proyectadas abs |
| 100 | momento repartido | 9A14 | MX=-329.91(kNm/m) local |
| 100 | sobrecarga uniforme | 9A14 | PZ=-160.93(kN/m) |
| 100 | fuerza sobre barra | 8 | CX=-283.06(kNm) X=1.670(m) local |
| 100 | carga trapezoidal | 8 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=1.240(m) global no proyectadas a |

## Cargas - Casos: 101A142 :

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 101 | fuerza sobre barra | 35 | CX=2.46(kNm) X=0.420(m) local |
| | 101 | carga trapezoidal | 35 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=0.830(m) X1=0.0(m) local no proyectadas absoluto |
| | 101 | momento repartido | 29A34 | MX=2.96(kNm/m) local |
| | 101 | sobrecarga uniforme | 29A34 | PY=-0.79(kN/m) local |
| | 101 | fuerza sobre barra | 28 | CX=4.65(kNm) X=1.320(m) local |
| | 101 | carga trapezoidal | 28 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=0.530(m) local no proyectadas absol |
| | 101 | fuerza sobre barra | 25 | CX=4.53(kNm) X=0.760(m) local |
| | 101 | carga trapezoidal | 25 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=1.530(m) X1=0.0(m) local no proyectadas absoluto |
| | 101 | momento repartido | 19A24 | MX=2.96(kNm/m) local |
| | 101 | sobrecarga uniforme | 19A24 | PY=-0.79(kN/m) local |
| | 101 | fuerza sobre barra | 18 | CX=2.58(kNm) X=1.670(m) local |
| | 101 | carga trapezoidal | 18 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=1.240(m) local no proyectadas absol |
| | 101 | carga trapezoidal | 18 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=1.240(m) global no proyectadas |
| | 101 | fuerza sobre barra | 18 | CX=371.02(kNm) X=1.670(m) local |
| | 101 | sobrecarga uniforme | 19A24 | PZ=-160.93(kN/m) |
| | 101 | momento repartido | 19A24 | MX=426.46(kNm/m) local |
| | 101 | carga trapezoidal | 25 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=1.530(m) X1=0.0(m) global no proyectadas ab |
| | 101 | fuerza sobre barra | 25 | CX=652.49(kNm) X=0.760(m) local |
| | 101 | carga trapezoidal | 28 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=0.530(m) global no proyectadas |
| | 101 | fuerza sobre barra | 28 | CX=669.55(kNm) X=1.320(m) local |
| | 101 | sobrecarga uniforme | 29A34 | PZ=-160.93(kN/m) |
| | 101 | momento repartido | 29A34 | MX=426.46(kNm/m) local |
| | 101 | carga trapezoidal | 35 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=0.830(m) X1=0.0(m) global no proyectadas ab |
| | 101 | fuerza sobre barra | 35 | CX=353.97(kNm) X=0.420(m) local |
| | 102 | carga trapezoidal | 18 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=1.240(m) local no proyectadas absol |
| | 102 | fuerza sobre barra | 18 | CX=2.58(kNm) X=1.670(m) local |
| | 102 | sobrecarga uniforme | 19A24 | PY=-0.79(kN/m) local |
| | 102 | momento repartido | 19A24 | MX=2.96(kNm/m) local |
| | 102 | carga trapezoidal | 25 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=1.530(m) X1=0.0(m) local no proyectadas absoluto |
| | 102 | fuerza sobre barra | 25 | CX=4.53(kNm) X=0.760(m) local |



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| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 102 | carga trapezoidal | 28 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=0.530(m) local no proyectadas absol |
| | 102 | fuerza sobre barra | 28 | CX=4.65(kNm) X=1.320(m) local |
| | 102 | sobrecarga uniforme | 29A34 | PY=-0.79(kN/m) local |
| | 102 | momento repartido | 29A34 | MX=2.96(kNm/m) local |
| | 102 | carga trapezoidal | 35 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=0.830(m) X1=0.0(m) local no proyectadas absoluto |
| | 102 | fuerza sobre barra | 35 | CX=2.46(kNm) X=0.420(m) local |
| | 102 | carga trapezoidal | 18 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=1.240(m) global no proyectadas |
| | 102 | fuerza sobre barra | 18 | CX=-287.02(kNm) X=1.670(m) local |
| | 102 | sobrecarga uniforme | 19A24 | PZ=-160.93(kN/m) |
| | 102 | momento repartido | 19A24 | MX=-329.91(kNm/m) local |
| | 102 | carga trapezoidal | 25 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=1.530(m) X1=0.0(m) global no proyectadas ab |
| | 102 | fuerza sobre barra | 25 | CX=-504.76(kNm) X=0.760(m) local |
| | 102 | carga trapezoidal | 28 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=0.530(m) global no proyectadas |
| | 102 | fuerza sobre barra | 28 | CX=-517.95(kNm) X=1.320(m) local |
| | 102 | sobrecarga uniforme | 29A34 | PZ=-160.93(kN/m) |
| | 102 | momento repartido | 29A34 | MX=-329.91(kNm/m) local |
| | 102 | carga trapezoidal | 35 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=0.830(m) X1=0.0(m) global no proyectadas ab |
| | 102 | fuerza sobre barra | 35 | CX=-273.82(kNm) X=0.420(m) local |
| | 103 | carga trapezoidal | 28 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=1.230(m) local no proyectadas absol |
| | 103 | fuerza sobre barra | 28 | CX=2.58(kNm) X=1.660(m) local |
| | 103 | sobrecarga uniforme | 29A34 | PY=-0.79(kN/m) local |
| | 103 | momento repartido | 29A34 | MX=2.96(kNm/m) local |
| | 103 | carga trapezoidal | 35 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=1.530(m) X1=0.0(m) local no proyectadas absoluto |
| | 103 | fuerza sobre barra | 35 | CX=4.53(kNm) X=0.760(m) local |
| | 103 | carga trapezoidal | 38 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=0.530(m) local no proyectadas absol |
| | 103 | fuerza sobre barra | 38 | CX=4.68(kNm) X=1.320(m) local |
| | 103 | sobrecarga uniforme | 39A44 | PY=-0.79(kN/m) local |
| | 103 | momento repartido | 39A44 | MX=2.96(kNm/m) local |
| | 103 | carga trapezoidal | 45 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=0.820(m) X1=0.0(m) local no proyectadas absoluto |
| | 103 | fuerza sobre barra | 45 | CX=2.42(kNm) X=0.410(m) local |
| | 103 | carga trapezoidal | 28 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=1.230(m) global no proyectadas |
| | 103 | fuerza sobre barra | 28 | CX=371.02(kNm) X=1.660(m) local |

| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 103 | sobrecarga uniforme | 29A34 | PZ=-160.93(kN/m) |
| 103 | momento repartido | 29A34 | MX=426.46(kNm/m) local |
| 103 | carga trapezoidal | 35 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=1.530(m) X1=0.0(m) global no proyectadas ab |
| 103 | fuerza sobre barra | 35 | CX=652.49(kNm) X=0.760(m) local |
| 103 | carga trapezoidal | 38 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=0.530(m) global no proyectadas |
| 103 | fuerza sobre barra | 38 | CX=674.24(kNm) X=1.320(m) local |
| 103 | sobrecarga uniforme | 39A44 | PZ=-160.93(kN/m) |
| 103 | momento repartido | 39A44 | MX=426.46(kNm/m) local |
| 103 | carga trapezoidal | 45 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=0.820(m) X1=0.0(m) global no proyectadas ab |
| 103 | fuerza sobre barra | 45 | CX=349.27(kNm) X=0.410(m) local |
| 104 | carga trapezoidal | 28 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=1.230(m) local no proyectadas absol |
| 104 | fuerza sobre barra | 28 | CX=2.58(kNm) X=1.660(m) local |
| 104 | sobrecarga uniforme | 29A34 | PY=-0.79(kN/m) local |
| 104 | momento repartido | 29A34 | MX=2.96(kNm/m) local |
| 104 | carga trapezoidal | 35 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=1.530(m) X1=0.0(m) local no proyectadas absoluto |
| 104 | fuerza sobre barra | 35 | CX=4.53(kNm) X=0.760(m) local |
| 104 | carga trapezoidal | 38 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=0.530(m) local no proyectadas absol |
| 104 | fuerza sobre barra | 38 | CX=4.68(kNm) X=1.320(m) local |
| 104 | sobrecarga uniforme | 39A44 | PY=-0.79(kN/m) local |
| 104 | momento repartido | 39A44 | MX=2.96(kNm/m) local |
| 104 | carga trapezoidal | 45 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=0.820(m) X1=0.0(m) local no proyectadas absoluto |
| 104 | fuerza sobre barra | 45 | CX=2.42(kNm) X=0.410(m) local |
| 104 | carga trapezoidal | 28 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=1.230(m) global no proyectadas |
| 104 | fuerza sobre barra | 28 | CX=-287.02(kNm) X=1.660(m) local |
| 104 | sobrecarga uniforme | 29A34 | PZ=-160.93(kN/m) |
| 104 | momento repartido | 29A34 | MX=-329.91(kNm/m) local |
| 104 | carga trapezoidal | 35 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=1.530(m) X1=0.0(m) global no proyectadas ab |
| 104 | fuerza sobre barra | 35 | CX=-504.76(kNm) X=0.760(m) local |
| 104 | carga trapezoidal | 38 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=0.530(m) global no proyectadas |
| 104 | fuerza sobre barra | 38 | CX=-521.58(kNm) X=1.320(m) local |
| 104 | sobrecarga uniforme | 39A44 | PZ=-160.93(kN/m) |
| 104 | momento repartido | 39A44 | MX=-329.91(kNm/m) local |





| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 104 | carga trapezoidal | 45 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=0.820(m) X1=0.0(m) global no proyectadas ab |
| 104 | fuerza sobre barra | 45 | CX=-270.19(kNm) X=0.410(m) local |
| 105 | carga trapezoidal | 38 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=1.220(m) local no proyectadas absol |
| 105 | fuerza sobre barra | 38 | CX=2.61(kNm) X=1.670(m) local |
| 105 | sobrecarga uniforme | 39A44 | PY=-0.79(kN/m) local |
| 105 | momento repartido | 39A44 | MX=2.96(kNm/m) local |
| 105 | carga trapezoidal | 45 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=1.520(m) X1=0.0(m) local no proyectadas absoluto |
| 105 | fuerza sobre barra | 45 | CX=4.50(kNm) X=0.760(m) local |
| 105 | carga trapezoidal | 48 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=0.520(m) local no proyectadas absol |
| 105 | fuerza sobre barra | 48 | CX=4.68(kNm) X=1.310(m) local |
| 105 | sobrecarga uniforme | 49A54 | PY=-0.79(kN/m) local |
| 105 | momento repartido | 49A54 | MX=2.96(kNm/m) local |
| 105 | carga trapezoidal | 55 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=0.820(m) X1=0.0(m) local no proyectadas absoluto |
| 105 | fuerza sobre barra | 55 | CX=2.43(kNm) X=0.410(m) local |
| 105 | carga trapezoidal | 38 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=1.220(m) global no proyectadas |
| 105 | fuerza sobre barra | 38 | CX=375.72(kNm) X=1.670(m) local |
| 105 | sobrecarga uniforme | 39A44 | PZ=-160.93(kN/m) |
| 105 | momento repartido | 39A44 | MX=426.46(kNm/m) local |
| 105 | carga trapezoidal | 45 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=1.520(m) X1=0.0(m) global no proyectadas ab |
| 105 | fuerza sobre barra | 45 | CX=647.80(kNm) X=0.760(m) local |
| 105 | carga trapezoidal | 48 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=0.520(m) global no proyectadas |
| 105 | fuerza sobre barra | 48 | CX=674.24(kNm) X=1.310(m) local |
| 105 | sobrecarga uniforme | 49A54 | PZ=-160.93(kN/m) |
| 105 | momento repartido | 49A54 | MX=426.46(kNm/m) local |
| 105 | carga trapezoidal | 55 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=0.820(m) X1=0.0(m) global no proyectadas ab |
| 105 | fuerza sobre barra | 55 | CX=349.70(kNm) X=0.410(m) local |
| 106 | carga trapezoidal | 38 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=1.220(m) local no proyectadas absol |
| 106 | fuerza sobre barra | 38 | CX=2.61(kNm) X=1.670(m) local |
| 106 | sobrecarga uniforme | 39A44 | PY=-0.79(kN/m) local |
| 106 | momento repartido | 39A44 | MX=2.96(kNm/m) local |
| 106 | carga trapezoidal | 45 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=1.520(m) X1=0.0(m) local no proyectadas absoluto |
| 106 | fuerza sobre barra | 45 | CX=4.50(kNm) X=0.760(m) local |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 106 | carga trapezoidal | 48 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=0.520(m) local no proyectadas absol |
| | 106 | fuerza sobre barra | 48 | CX=4.68(kNm) X=1.310(m) local |
| | 106 | sobrecarga uniforme | 49A54 | PY=-0.79(kN/m) local |
| | 106 | momento repartido | 49A54 | MX=2.96(kNm/m) local |
| | 106 | carga trapezoidal | 55 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=0.820(m) X1=0.0(m) local no proyectadas absoluto |
| | 106 | fuerza sobre barra | 55 | CX=2.43(kNm) X=0.410(m) local |
| | 106 | carga trapezoidal | 38 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=1.220(m) global no proyectadas |
| | 106 | fuerza sobre barra | 38 | CX=-290.65(kNm) X=1.670(m) local |
| | 106 | sobrecarga uniforme | 39A44 | PZ=-160.93(kN/m) |
| | 106 | momento repartido | 39A44 | MX=-329.91(kNm/m) local |
| | 106 | carga trapezoidal | 45 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=1.520(m) X1=0.0(m) global no proyectadas ab |
| | 106 | fuerza sobre barra | 45 | CX=-501.13(kNm) X=0.760(m) local |
| | 106 | carga trapezoidal | 48 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=0.520(m) global no proyectadas |
| | 106 | fuerza sobre barra | 48 | CX=-521.58(kNm) X=1.310(m) local |
| | 106 | sobrecarga uniforme | 49A54 | PZ=-160.93(kN/m) |
| | 106 | momento repartido | 49A54 | MX=-329.91(kNm/m) local |
| | 106 | carga trapezoidal | 55 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=0.820(m) X1=0.0(m) global no proyectadas ab |
| | 106 | fuerza sobre barra | 55 | CX=-270.52(kNm) X=0.410(m) local |
| | 107 | carga trapezoidal | 48 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=1.220(m) local no proyectadas absol |
| | 107 | fuerza sobre barra | 48 | CX=2.61(kNm) X=1.660(m) local |
| | 107 | sobrecarga uniforme | 49A54 | PY=-0.79(kN/m) local |
| | 107 | momento repartido | 49A54 | MX=2.96(kNm/m) local |
| | 107 | carga trapezoidal | 55 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=1.520(m) X1=0.0(m) local no proyectadas absoluto |
| | 107 | fuerza sobre barra | 55 | CX=4.50(kNm) X=0.760(m) local |
| | 107 | carga trapezoidal | 58 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=0.510(m) local no proyectadas absol |
| | 107 | fuerza sobre barra | 58 | CX=4.71(kNm) X=1.310(m) local |
| | 107 | sobrecarga uniforme | 59A64 | PY=-0.79(kN/m) local |
| | 107 | momento repartido | 59A64 | MX=2.96(kNm/m) local |
| | 107 | carga trapezoidal | 65 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=0.810(m) X1=0.0(m) local no proyectadas absoluto |
| | 107 | fuerza sobre barra | 65 | CX=2.39(kNm) X=0.400(m) local |
| | 107 | carga trapezoidal | 48 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=1.220(m) global no proyectadas |
| | 107 | fuerza sobre barra | 48 | CX=375.72(kNm) X=1.660(m) local |



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Autor : **eipsa-eipsa**
Dirección :

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Proyecto : Gelserec

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 107 | sobrecarga uniforme | 49A54 | PZ=-160.93(kN/m) |
| | 107 | momento repartido | 49A54 | MX=426.46(kNm/m) local |
| | 107 | carga trapezoidal | 55 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=1.520(m) X1=0.0(m) global no proyectadas ab |
| | 107 | fuerza sobre barra | 55 | CX=648.23(kNm) X=0.760(m) local |
| | 107 | carga trapezoidal | 58 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=0.510(m) global no proyectadas |
| | 107 | fuerza sobre barra | 58 | CX=678.93(kNm) X=1.310(m) local |
| | 107 | sobrecarga uniforme | 59A64 | PZ=-160.93(kN/m) |
| | 107 | momento repartido | 59A64 | MX=426.46(kNm/m) local |
| | 107 | carga trapezoidal | 65 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=0.810(m) X1=0.0(m) global no proyectadas ab |
| | 107 | fuerza sobre barra | 65 | CX=345.01(kNm) X=0.400(m) local |
| | 108 | carga trapezoidal | 48 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=1.220(m) local no proyectadas absol |
| | 108 | fuerza sobre barra | 48 | CX=2.61(kNm) X=1.660(m) local |
| | 108 | sobrecarga uniforme | 49A54 | PY=-0.79(kN/m) local |
| | 108 | momento repartido | 49A54 | MX=2.96(kNm/m) local |
| | 108 | carga trapezoidal | 55 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=1.520(m) X1=0.0(m) local no proyectadas absoluto |
| | 108 | fuerza sobre barra | 55 | CX=4.50(kNm) X=0.760(m) local |
| | 108 | carga trapezoidal | 58 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=0.510(m) local no proyectadas absol |
| | 108 | fuerza sobre barra | 58 | CX=4.71(kNm) X=1.310(m) local |
| | 108 | sobrecarga uniforme | 59A64 | PY=-0.79(kN/m) local |
| | 108 | momento repartido | 59A64 | MX=2.96(kNm/m) local |
| | 108 | carga trapezoidal | 65 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=0.810(m) X1=0.0(m) local no proyectadas absoluto |
| | 108 | fuerza sobre barra | 65 | CX=2.39(kNm) X=0.400(m) local |
| | 108 | carga trapezoidal | 48 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=1.220(m) global no proyectadas |
| | 108 | fuerza sobre barra | 48 | CX=-290.65(kNm) X=1.660(m) local |
| | 108 | sobrecarga uniforme | 49A54 | PZ=-160.93(kN/m) |
| | 108 | momento repartido | 49A54 | MX=-329.91(kNm/m) local |
| | 108 | carga trapezoidal | 55 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=1.520(m) X1=0.0(m) global no proyectadas ab |
| | 108 | fuerza sobre barra | 55 | CX=-501.46(kNm) X=0.760(m) local |
| | 108 | carga trapezoidal | 58 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=0.510(m) global no proyectadas |
| | 108 | fuerza sobre barra | 58 | CX=-525.21(kNm) X=1.310(m) local |
| | 108 | sobrecarga uniforme | 59A64 | PZ=-160.93(kN/m) |
| | 108 | momento repartido | 59A64 | MX=-329.91(kNm/m) local |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 108 | carga trapezoidal | 65 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=0.810(m) X1=0.0(m) global no proyectadas ab |
| | 108 | fuerza sobre barra | 65 | CX=-266.89(kNm) X=0.400(m) local |
| | 109 | carga trapezoidal | 58 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=1.210(m) local no proyectadas absol |
| | 109 | fuerza sobre barra | 58 | CX=2.64(kNm) X=1.660(m) local |
| | 109 | sobrecarga uniforme | 59A64 | PY=-0.79(kN/m) local |
| | 109 | momento repartido | 59A64 | MX=2.96(kNm/m) local |
| | 109 | carga trapezoidal | 65 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=1.510(m) X1=0.0(m) local no proyectadas absoluto |
| | 109 | fuerza sobre barra | 65 | CX=4.47(kNm) X=0.750(m) local |
| | 109 | carga trapezoidal | 68 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=0.510(m) local no proyectadas absol |
| | 109 | fuerza sobre barra | 68 | CX=4.71(kNm) X=1.300(m) local |
| | 109 | sobrecarga uniforme | 69A74 | PY=-0.79(kN/m) local |
| | 109 | momento repartido | 69A74 | MX=2.96(kNm/m) local |
| | 109 | carga trapezoidal | 75 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=0.810(m) X1=0.0(m) local no proyectadas absoluto |
| | 109 | fuerza sobre barra | 75 | CX=2.40(kNm) X=0.410(m) local |
| | 109 | carga trapezoidal | 58 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=1.210(m) global no proyectadas |
| | 109 | fuerza sobre barra | 58 | CX=380.41(kNm) X=1.660(m) local |
| | 109 | sobrecarga uniforme | 59A64 | PZ=-160.93(kN/m) |
| | 109 | momento repartido | 59A64 | MX=426.46(kNm/m) local |
| | 109 | carga trapezoidal | 65 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=1.510(m) X1=0.0(m) global no proyectadas ab |
| | 109 | fuerza sobre barra | 65 | CX=643.53(kNm) X=0.750(m) local |
| | 109 | carga trapezoidal | 68 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=0.510(m) global no proyectadas |
| | 109 | fuerza sobre barra | 68 | CX=678.50(kNm) X=1.300(m) local |
| | 109 | sobrecarga uniforme | 69A74 | PZ=-160.93(kN/m) |
| | 109 | momento repartido | 69A74 | MX=426.46(kNm/m) local |
| | 109 | carga trapezoidal | 75 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=0.810(m) X1=0.0(m) global no proyectadas ab |
| | 109 | fuerza sobre barra | 75 | CX=345.44(kNm) X=0.410(m) local |
| | 110 | carga trapezoidal | 58 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=1.210(m) local no proyectadas absol |
| | 110 | fuerza sobre barra | 58 | CX=2.64(kNm) X=1.660(m) local |
| | 110 | sobrecarga uniforme | 59A64 | PY=-0.79(kN/m) local |
| | 110 | momento repartido | 59A64 | MX=2.96(kNm/m) local |
| | 110 | carga trapezoidal | 65 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=1.510(m) X1=0.0(m) local no proyectadas absoluto |
| | 110 | fuerza sobre barra | 65 | CX=4.47(kNm) X=0.750(m) local |





| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 110 | carga trapezoidal | 68 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=0.510(m) local no proyectadas absol |
| | 110 | fuerza sobre barra | 68 | CX=4.71(kNm) X=1.300(m) local |
| | 110 | sobrecarga uniforme | 69A74 | PY=-0.79(kN/m) local |
| | 110 | momento repartido | 69A74 | MX=2.96(kNm/m) local |
| | 110 | carga trapezoidal | 75 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=0.810(m) X1=0.0(m) local no proyectadas absoluto |
| | 110 | fuerza sobre barra | 75 | CX=2.40(kNm) X=0.410(m) local |
| | 110 | carga trapezoidal | 58 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=1.210(m) global no proyectadas |
| | 110 | fuerza sobre barra | 58 | CX=-294.28(kNm) X=1.660(m) local |
| | 110 | sobrecarga uniforme | 59A64 | PZ=-160.93(kN/m) |
| | 110 | momento repartido | 59A64 | MX=-329.91(kNm/m) local |
| | 110 | carga trapezoidal | 65 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=1.510(m) X1=0.0(m) global no proyectadas ab |
| | 110 | fuerza sobre barra | 65 | CX=-497.83(kNm) X=0.750(m) local |
| | 110 | carga trapezoidal | 68 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=0.510(m) global no proyectadas |
| | 110 | fuerza sobre barra | 68 | CX=-524.88(kNm) X=1.300(m) local |
| | 110 | sobrecarga uniforme | 69A74 | PZ=-160.93(kN/m) |
| | 110 | momento repartido | 69A74 | MX=-329.91(kNm/m) local |
| | 110 | carga trapezoidal | 75 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=0.810(m) X1=0.0(m) global no proyectadas ab |
| | 110 | fuerza sobre barra | 75 | CX=-267.22(kNm) X=0.410(m) local |
| | 111 | carga trapezoidal | 68 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=1.210(m) local no proyectadas absol |
| | 111 | fuerza sobre barra | 68 | CX=2.64(kNm) X=1.650(m) local |
| | 111 | sobrecarga uniforme | 69A74 | PY=-0.79(kN/m) local |
| | 111 | momento repartido | 69A74 | MX=2.96(kNm/m) local |
| | 111 | carga trapezoidal | 75 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=1.510(m) X1=0.0(m) local no proyectadas absoluto |
| | 111 | fuerza sobre barra | 75 | CX=4.47(kNm) X=0.760(m) local |
| | 111 | carga trapezoidal | 78 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=0.510(m) local no proyectadas absol |
| | 111 | fuerza sobre barra | 78 | CX=4.74(kNm) X=1.310(m) local |
| | 111 | sobrecarga uniforme | 79A84 | PY=-0.79(kN/m) local |
| | 111 | momento repartido | 79A84 | MX=2.96(kNm/m) local |
| | 111 | carga trapezoidal | 85 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=0.800(m) X1=0.0(m) local no proyectadas absoluto |
| | 111 | fuerza sobre barra | 85 | CX=2.37(kNm) X=0.400(m) local |
| | 111 | carga trapezoidal | 68 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=1.210(m) global no proyectadas |
| | 111 | fuerza sobre barra | 68 | CX=379.98(kNm) X=1.650(m) local |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 111 | sobrecarga uniforme | 69A74 | PZ=-160.93(kN/m) |
| | 111 | momento repartido | 69A74 | MX=426.46(kNm/m) local |
| | 111 | carga trapezoidal | 75 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=1.510(m) X1=0.0(m) global no proyectadas ab |
| | 111 | fuerza sobre barra | 75 | CX=643.96(kNm) X=0.760(m) local |
| | 111 | carga trapezoidal | 78 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=0.510(m) global no proyectadas |
| | 111 | fuerza sobre barra | 78 | CX=682.77(kNm) X=1.310(m) local |
| | 111 | sobrecarga uniforme | 79A84 | PZ=-160.93(kN/m) |
| | 111 | momento repartido | 79A84 | MX=426.46(kNm/m) local |
| | 111 | carga trapezoidal | 85 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=0.800(m) X1=0.0(m) global no proyectadas ab |
| | 111 | fuerza sobre barra | 85 | CX=341.60(kNm) X=0.400(m) local |
| | 112 | carga trapezoidal | 68 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=1.210(m) local no proyectadas absol |
| | 112 | fuerza sobre barra | 68 | CX=2.64(kNm) X=1.650(m) local |
| | 112 | sobrecarga uniforme | 69A74 | PY=-0.79(kN/m) local |
| | 112 | momento repartido | 69A74 | MX=2.96(kNm/m) local |
| | 112 | carga trapezoidal | 75 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=1.510(m) X1=0.0(m) local no proyectadas absoluto |
| | 112 | fuerza sobre barra | 75 | CX=4.47(kNm) X=0.760(m) local |
| | 112 | carga trapezoidal | 78 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=0.510(m) local no proyectadas absol |
| | 112 | fuerza sobre barra | 78 | CX=4.74(kNm) X=1.310(m) local |
| | 112 | sobrecarga uniforme | 79A84 | PY=-0.79(kN/m) local |
| | 112 | momento repartido | 79A84 | MX=2.96(kNm/m) local |
| | 112 | carga trapezoidal | 85 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=0.800(m) X1=0.0(m) local no proyectadas absoluto |
| | 112 | fuerza sobre barra | 85 | CX=2.37(kNm) X=0.400(m) local |
| | 112 | carga trapezoidal | 68 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=1.210(m) global no proyectadas |
| | 112 | fuerza sobre barra | 68 | CX=-293.95(kNm) X=1.650(m) local |
| | 112 | sobrecarga uniforme | 69A74 | PZ=-160.93(kN/m) |
| | 112 | momento repartido | 69A74 | MX=-329.91(kNm/m) local |
| | 112 | carga trapezoidal | 75 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=1.510(m) X1=0.0(m) global no proyectadas ab |
| | 112 | fuerza sobre barra | 75 | CX=-498.16(kNm) X=0.760(m) local |
| | 112 | carga trapezoidal | 78 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=0.510(m) global no proyectadas |
| | 112 | fuerza sobre barra | 78 | CX=-528.18(kNm) X=1.310(m) local |
| | 112 | sobrecarga uniforme | 79A84 | PZ=-160.93(kN/m) |
| | 112 | momento repartido | 79A84 | MX=-329.91(kNm/m) local |



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Dirección :

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Proyecto : Gelserec

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 112 | carga trapezoidal | 85 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=0.800(m) X1=0.0(m) global no proyectadas ab |
| | 112 | fuerza sobre barra | 85 | CX=-264.26(kNm) X=0.400(m) local |
| | 113 | carga trapezoidal | 78 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=1.210(m) local no proyectadas absol |
| | 113 | fuerza sobre barra | 78 | CX=2.67(kNm) X=1.660(m) local |
| | 113 | sobrecarga uniforme | 79A84 | PY=-0.79(kN/m) local |
| | 113 | momento repartido | 79A84 | MX=2.96(kNm/m) local |
| | 113 | carga trapezoidal | 85 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=1.500(m) X1=0.0(m) local no proyectadas absoluto |
| | 113 | fuerza sobre barra | 85 | CX=4.44(kNm) X=0.750(m) local |
| | 113 | carga trapezoidal | 88 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=0.500(m) local no proyectadas absol |
| | 113 | fuerza sobre barra | 88 | CX=4.73(kNm) X=1.300(m) local |
| | 113 | sobrecarga uniforme | 89A94 | PY=-0.79(kN/m) local |
| | 113 | momento repartido | 89A94 | MX=2.96(kNm/m) local |
| | 113 | carga trapezoidal | 95 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=0.800(m) X1=0.0(m) local no proyectadas absoluto |
| | 113 | fuerza sobre barra | 95 | CX=2.38(kNm) X=0.400(m) local |
| | 113 | carga trapezoidal | 78 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=1.210(m) global no proyectadas |
| | 113 | fuerza sobre barra | 78 | CX=384.24(kNm) X=1.660(m) local |
| | 113 | sobrecarga uniforme | 79A84 | PZ=-160.93(kN/m) |
| | 113 | momento repartido | 79A84 | MX=426.46(kNm/m) local |
| | 113 | carga trapezoidal | 85 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=1.500(m) X1=0.0(m) global no proyectadas ab |
| | 113 | fuerza sobre barra | 85 | CX=640.12(kNm) X=0.750(m) local |
| | 113 | carga trapezoidal | 88 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=0.500(m) global no proyectadas |
| | 113 | fuerza sobre barra | 88 | CX=681.92(kNm) X=1.300(m) local |
| | 113 | sobrecarga uniforme | 89A94 | PZ=-160.93(kN/m) |
| | 113 | momento repartido | 89A94 | MX=426.46(kNm/m) local |
| | 113 | carga trapezoidal | 95 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=0.800(m) X1=0.0(m) global no proyectadas ab |
| | 113 | fuerza sobre barra | 95 | CX=342.45(kNm) X=0.400(m) local |
| | 114 | carga trapezoidal | 78 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=1.210(m) local no proyectadas absol |
| | 114 | fuerza sobre barra | 78 | CX=2.67(kNm) X=1.660(m) local |
| | 114 | sobrecarga uniforme | 79A84 | PY=-0.79(kN/m) local |
| | 114 | momento repartido | 79A84 | MX=2.96(kNm/m) local |
| | 114 | carga trapezoidal | 85 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=1.500(m) X1=0.0(m) local no proyectadas absoluto |
| | 114 | fuerza sobre barra | 85 | CX=4.44(kNm) X=0.750(m) local |

| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 114 | carga trapezoidal | 88 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=0.500(m) local no proyectadas absol |
| 114 | fuerza sobre barra | 88 | CX=4.73(kNm) X=1.300(m) local |
| 114 | sobrecarga uniforme | 89A94 | PY=-0.79(kN/m) local |
| 114 | momento repartido | 89A94 | MX=2.96(kNm/m) local |
| 114 | carga trapezoidal | 95 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=0.800(m) X1=0.0(m) local no proyectadas absoluto |
| 114 | fuerza sobre barra | 95 | CX=2.38(kNm) X=0.400(m) local |
| 114 | carga trapezoidal | 78 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=1.210(m) global no proyectadas |
| 114 | fuerza sobre barra | 78 | CX=-297.25(kNm) X=1.660(m) local |
| 114 | sobrecarga uniforme | 79A84 | PZ=-160.93(kN/m) |
| 114 | momento repartido | 79A84 | MX=-329.91(kNm/m) local |
| 114 | carga trapezoidal | 85 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=1.500(m) X1=0.0(m) global no proyectadas ab |
| 114 | fuerza sobre barra | 85 | CX=-495.19(kNm) X=0.750(m) local |
| 114 | carga trapezoidal | 88 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=0.500(m) global no proyectadas |
| 114 | fuerza sobre barra | 88 | CX=-527.52(kNm) X=1.300(m) local |
| 114 | sobrecarga uniforme | 89A94 | PZ=-160.93(kN/m) |
| 114 | momento repartido | 89A94 | MX=-329.91(kNm/m) local |
| 114 | carga trapezoidal | 95 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=0.800(m) X1=0.0(m) global no proyectadas ab |
| 114 | fuerza sobre barra | 95 | CX=-264.91(kNm) X=0.400(m) local |
| 115 | carga trapezoidal | 88 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=1.200(m) local no proyectadas absol |
| 115 | fuerza sobre barra | 88 | CX=2.66(kNm) X=1.650(m) local |
| 115 | sobrecarga uniforme | 89A94 | PY=-0.79(kN/m) local |
| 115 | momento repartido | 89A94 | MX=2.96(kNm/m) local |
| 115 | carga trapezoidal | 95 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=1.500(m) X1=0.0(m) local no proyectadas absoluto |
| 115 | fuerza sobre barra | 95 | CX=4.45(kNm) X=0.750(m) local |
| 115 | carga trapezoidal | 98 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=0.500(m) local no proyectadas absol |
| 115 | fuerza sobre barra | 98 | CX=4.76(kNm) X=1.300(m) local |
| 115 | sobrecarga uniforme | 99A104 | PY=-0.79(kN/m) local |
| 115 | momento repartido | 99A104 | MX=2.96(kNm/m) local |
| 115 | carga trapezoidal | 105 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=0.790(m) X1=0.0(m) local no proyectadas absoluto |
| 115 | fuerza sobre barra | 105 | CX=2.35(kNm) X=0.400(m) local |
| 115 | carga trapezoidal | 88 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=1.200(m) global no proyectadas |
| 115 | fuerza sobre barra | 88 | CX=383.39(kNm) X=1.650(m) local |



ROBOT v 14.5.0
Autor : **elpsa-elpsa**
Dirección :

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Proyecto : Gelserec

| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 115 | sobrecarga uniforme | 89A94 | PZ=-160.93(kN/m) |
| 115 | momento repartido | 89A94 | MX=426.46(kNm/m) local |
| 115 | carga trapezoidal | 95 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=1.500(m) X1=0.0(m) global no proyectadas ab |
| 115 | fuerza sobre barra | 95 | CX=640.98(kNm) X=0.750(m) local |
| 115 | carga trapezoidal | 98 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=0.500(m) global no proyectadas |
| 115 | fuerza sobre barra | 98 | CX=685.75(kNm) X=1.300(m) local |
| 115 | sobrecarga uniforme | 99A104 | PZ=-160.93(kN/m) |
| 115 | momento repartido | 99A104 | MX=426.46(kNm/m) local |
| 115 | carga trapezoidal | 105 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=0.790(m) X1=0.0(m) global no proyectadas ab |
| 115 | fuerza sobre barra | 105 | CX=338.61(kNm) X=0.400(m) local |
| 116 | carga trapezoidal | 88 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=1.200(m) local no proyectadas absol |
| 116 | fuerza sobre barra | 88 | CX=2.66(kNm) X=1.650(m) local |
| 116 | sobrecarga uniforme | 89A94 | PY=-0.79(kN/m) local |
| 116 | momento repartido | 89A94 | MX=2.96(kNm/m) local |
| 116 | carga trapezoidal | 95 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=1.500(m) X1=0.0(m) local no proyectadas absoluto |
| 116 | fuerza sobre barra | 95 | CX=4.45(kNm) X=0.750(m) local |
| 116 | carga trapezoidal | 98 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=0.500(m) local no proyectadas absol |
| 116 | fuerza sobre barra | 98 | CX=4.76(kNm) X=1.300(m) local |
| 116 | sobrecarga uniforme | 99A104 | PY=-0.79(kN/m) local |
| 116 | momento repartido | 99A104 | MX=2.96(kNm/m) local |
| 116 | carga trapezoidal | 105 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=0.790(m) X1=0.0(m) local no proyectadas absoluto |
| 116 | fuerza sobre barra | 105 | CX=2.35(kNm) X=0.400(m) local |
| 116 | carga trapezoidal | 88 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=1.200(m) global no proyectadas |
| 116 | fuerza sobre barra | 88 | CX=-296.59(kNm) X=1.650(m) local |
| 116 | sobrecarga uniforme | 89A94 | PZ=-160.93(kN/m) |
| 116 | momento repartido | 89A94 | MX=-329.91(kNm/m) local |
| 116 | carga trapezoidal | 95 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=1.500(m) X1=0.0(m) global no proyectadas ab |
| 116 | fuerza sobre barra | 95 | CX=-495.85(kNm) X=0.750(m) local |
| 116 | carga trapezoidal | 98 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=0.500(m) global no proyectadas |
| 116 | fuerza sobre barra | 98 | CX=-530.49(kNm) X=1.300(m) local |
| 116 | sobrecarga uniforme | 99A104 | PZ=-160.93(kN/m) |
| 116 | momento repartido | 99A104 | MX=-329.91(kNm/m) local |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 116 | carga trapezoidal | 105 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=0.790(m) X1=0.0(m) global no proyectadas ab |
| | 116 | fuerza sobre barra | 105 | CX=-261.95(kNm) X=0.400(m) local |
| | 117 | carga trapezoidal | 95 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=1.850(m) local no proyectadas absol |
| | 117 | fuerza sobre barra | 95 | CX=0.75(kNm) X=1.980(m) local |
| | 117 | sobrecarga uniforme | 96A102 | PY=-0.79(kN/m) local |
| | 117 | momento repartido | 96A102 | MX=2.96(kNm/m) local |
| | 117 | carga trapezoidal | 103 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=0.040(m) X1=0.0(m) local no proyectadas absoluto |
| | 117 | fuerza sobre barra | 103 | CX=0.13(kNm) X=0.020(m) local |
| | 117 | carga trapezoidal | 105 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=1.140(m) local no proyectadas absol |
| | 117 | fuerza sobre barra | 105 | CX=2.83(kNm) X=1.620(m) local |
| | 117 | sobrecarga uniforme | 106A111 | PY=-0.79(kN/m) local |
| | 117 | momento repartido | 106A111 | MX=2.96(kNm/m) local |
| | 117 | carga trapezoidal | 112 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=1.450(m) X1=0.0(m) local no proyectadas absoluto |
| | 117 | fuerza sobre barra | 112 | CX=4.28(kNm) X=0.720(m) local |
| | 117 | carga trapezoidal | 95 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=1.850(m) global no proyectadas |
| | 117 | fuerza sobre barra | 95 | CX=107.90(kNm) X=1.980(m) local |
| | 117 | sobrecarga uniforme | 96A102 | PZ=-160.93(kN/m) |
| | 117 | momento repartido | 96A102 | MX=426.46(kNm/m) local |
| | 117 | carga trapezoidal | 103 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=0.040(m) X1=0.0(m) global no proyectadas ab |
| | 117 | fuerza sobre barra | 103 | CX=18.76(kNm) X=0.020(m) local |
| | 117 | carga trapezoidal | 105 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=1.140(m) global no proyectadas |
| | 117 | fuerza sobre barra | 105 | CX=407.27(kNm) X=1.620(m) local |
| | 117 | sobrecarga uniforme | 106A111 | PZ=-160.93(kN/m) |
| | 117 | momento repartido | 106A111 | MX=426.46(kNm/m) local |
| | 117 | carga trapezoidal | 112 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=1.450(m) X1=0.0(m) global no proyectadas ab |
| | 117 | fuerza sobre barra | 112 | CX=617.09(kNm) X=0.720(m) local |
| | 118 | carga trapezoidal | 95 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=1.850(m) local no proyectadas absol |
| | 118 | fuerza sobre barra | 95 | CX=0.75(kNm) X=1.980(m) local |
| | 118 | sobrecarga uniforme | 96A102 | PY=-0.79(kN/m) local |
| | 118 | momento repartido | 96A102 | MX=2.96(kNm/m) local |
| | 118 | carga trapezoidal | 103 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=0.040(m) X1=0.0(m) local no proyectadas absoluto |
| | 118 | fuerza sobre barra | 103 | CX=0.13(kNm) X=0.020(m) local |





| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 118 | carga trapezoidal | 105 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=2.100(m) X1=1.140(m) local no proyectadas absol |
| | 118 | fuerza sobre barra | 105 | CX=2.83(kNm) X=1.620(m) local |
| | 118 | sobrecarga uniforme | 106A111 | PY=-0.79(kN/m) local |
| | 118 | momento repartido | 106A111 | MX=2.96(kNm/m) local |
| | 118 | carga trapezoidal | 112 | PY2=-0.79(kN/m) PY1=-0.79(kN/m) X2=1.450(m) X1=0.0(m) local no proyectadas absoluto |
| | 118 | fuerza sobre barra | 112 | CX=4.28(kNm) X=0.720(m) local |
| | 118 | carga trapezoidal | 95 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=1.850(m) global no proyectadas |
| | 118 | fuerza sobre barra | 95 | CX=-83.47(kNm) X=1.980(m) local |
| | 118 | sobrecarga uniforme | 96A102 | PZ=-160.93(kN/m) |
| | 118 | momento repartido | 96A102 | MX=-329.91(kNm/m) local |
| | 118 | carga trapezoidal | 103 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=0.040(m) X1=0.0(m) global no proyectadas ab |
| | 118 | fuerza sobre barra | 103 | CX=-14.52(kNm) X=0.020(m) local |
| | 118 | carga trapezoidal | 105 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=2.100(m) X1=1 140(m) global no proyectadas |
| | 118 | fuerza sobre barra | 105 | CX=-315.06(kNm) X=1.620(m) local |
| | 118 | sobrecarga uniforme | 106A111 | PZ=-160.93(kN/m) |
| | 118 | momento repartido | 106A111 | MX=-329.91(kNm/m) local |
| | 118 | carga trapezoidal | 112 | PZ2=-160.93(kN/m) PZ1=-160.93(kN/m) X2=1.450(m) X1=0.0(m) global no proyectadas ab |
| | 118 | fuerza sobre barra | 112 | CX=-477.37(kNm) X=0.720(m) local |
| | 119 | fuerza sobre barra | 14 | CX=4.30(kNm) X=0.650(m) local |
| | 119 | carga trapezoidal | 14 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=1.290(m) X1=0.0(m) local no proyectadas absoluto |
| | 119 | momento repartido | 3A13 | MX=3.33(kNm/m) local |
| | 119 | sobrecarga uniforme | 3A13 | PY=-0.89(kN/m) local |
| | 119 | fuerza sobre barra | 2 | CX=2.02(kNm) X=1.800(m) local |
| | 119 | carga trapezoidal | 2 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=1.490(m) local no proyectadas absol |
| | 119 | fuerza sobre barra | 1 | local |
| | 119 | carga trapezoidal | 1 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=0.0(m) X1=0.0(m) local no proyectadas absolutos |
| | 119 | fuerza sobre barra | 14 | CX=513.57(kNm) X=0.650(m) local |
| | 119 | carga trapezoidal | 14 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=1.290(m) X1=0.0(m) global no proyectadas ab |
| | 119 | momento repartido | 3A13 | MX=397.50(kNm/m) local |
| | 119 | sobrecarga uniforme | 3A13 | PZ=-150.00(kN/m) |
| | 119 | fuerza sobre barra | 2 | CX=241.68(kNm) X=1.800(m) local |
| | 119 | carga trapezoidal | 2 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=1.490(m) global no proyectadas |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 119 | fuerza sobre barra | 1 | local |
| | 119 | carga trapezoidal | 1 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=0.0(m) X1=0.0(m) global no proyectadas abso |
| | 120 | fuerza sobre barra | 14 | CX=4.30(kNm) X=0.650(m) local |
| | 120 | carga trapezoidal | 14 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=1.290(m) X1=0.0(m) local no proyectadas absoluto |
| | 120 | momento repartido | 3A13 | MX=3.33(kNm/m) local |
| | 120 | sobrecarga uniforme | 3A13 | PY=-0.89(kN/m) local |
| | 120 | fuerza sobre barra | 2 | CX=2.02(kNm) X=1.800(m) local |
| | 120 | carga trapezoidal | 2 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=1.490(m) local no proyectadas absol |
| | 120 | fuerza sobre barra | 1 | local |
| | 120 | carga trapezoidal | 1 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=0.0(m) X1=0.0(m) local no proyectadas absolutos |
| | 120 | fuerza sobre barra | 14 | CX=-397.29(kNm) X=0.650(m) local |
| | 120 | carga trapezoidal | 14 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=1.290(m) X1=0.0(m) global no proyectadas ab |
| | 120 | momento repartido | 3A13 | MX=-307.50(kNm/m) local |
| | 120 | sobrecarga uniforme | 3A13 | PZ=-150.00(kN/m) |
| | 120 | fuerza sobre barra | 2 | CX=-186.96(kNm) X=1.800(m) local |
| | 120 | carga trapezoidal | 2 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=1.490(m) global no proyectadas |
| | 120 | fuerza sobre barra | 1 | local |
| | 120 | carga trapezoidal | 1 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=0.0(m) X1=0.0(m) global no proyectadas abso |
| | 121 | carga trapezoidal | 3 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=0.890(m) local no proyectadas absol |
| | 121 | fuerza sobre barra | 3 | CX=4.02(kNm) X=1.500(m) local |
| | 121 | sobrecarga uniforme | 4A14 | PY=-0.89(kN/m) local |
| | 121 | momento repartido | 4A14 | MX=3.33(kNm/m) local |
| | 121 | carga trapezoidal | 15 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=0.690(m) X1=0.0(m) local no proyectadas absoluto |
| | 121 | fuerza sobre barra | 15 | CX=2.30(kNm) X=0.350(m) local |
| | 121 | carga trapezoidal | 18 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=1.390(m) local no proyectadas absol |
| | 121 | fuerza sobre barra | 18 | CX=2.40(kNm) X=1.750(m) local |
| | 121 | sobrecarga uniforme | 19A29 | PY=-0.89(kN/m) local |
| | 121 | momento repartido | 19A29 | MX=3.33(kNm/m) local |
| | 121 | carga trapezoidal | 30 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=1.180(m) X1=0.0(m) local no proyectadas absoluto |
| | 121 | fuerza sobre barra | 30 | CX=3.93(kNm) X=0.590(m) local |
| | 121 | carga trapezoidal | 3 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=0.890(m) global no proyectadas |
| | 121 | fuerza sobre barra | 3 | CX=480.18(kNm) X=1.500(m) local |





| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 121 | sobrecarga uniforme | 4A14 | PZ=-150.00(kN/m) |
| | 121 | momento repartido | 4A14 | MX=397.50(kNm/m) local |
| | 121 | carga trapezoidal | 15 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=0.690(m) X1=0.0(m) global no proyectadas ab |
| | 121 | fuerza sobre barra | 15 | CX=275.07(kNm) X=0.350(m) local |
| | 121 | carga trapezoidal | 18 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=1.390(m) global no proyectadas |
| | 121 | fuerza sobre barra | 18 | CX=286.20(kNm) X=1.750(m) local |
| | 121 | sobrecarga uniforme | 19A29 | PZ=-150.00(kN/m) |
| | 121 | momento repartido | 19A29 | MX=397.50(kNm/m) local |
| | 121 | carga trapezoidal | 30 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=1.180(m) X1=0.0(m) global no proyectadas ab |
| | 121 | fuerza sobre barra | 30 | CX=469.05(kNm) X=0.590(m) local |
| | 122 | carga trapezoidal | 3 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=0.890(m) local no proyectadas absol |
| | 122 | fuerza sobre barra | 3 | CX=4.02(kNm) X=1.500(m) local |
| | 122 | sobrecarga uniforme | 4A14 | PY=-0.89(kN/m) local |
| | 122 | momento repartido | 4A14 | MX=3.33(kNm/m) local |
| | 122 | carga trapezoidal | 15 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=0.690(m) X1=0.0(m) local no proyectadas absoluto |
| | 122 | fuerza sobre barra | 15 | CX=2.30(kNm) X=0.350(m) local |
| | 122 | carga trapezoidal | 18 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=1.390(m) local no proyectadas absol |
| | 122 | fuerza sobre barra | 18 | CX=2.40(kNm) X=1.750(m) local |
| | 122 | sobrecarga uniforme | 19A29 | PY=-0.89(kN/m) local |
| | 122 | momento repartido | 19A29 | MX=3.33(kNm/m) local |
| | 122 | carga trapezoidal | 30 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=1.180(m) X1=0.0(m) local no proyectadas absoluto |
| | 122 | fuerza sobre barra | 30 | CX=3.93(kNm) X=0.590(m) local |
| | 122 | carga trapezoidal | 3 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=0.890(m) global no proyectadas |
| | 122 | fuerza sobre barra | 3 | CX=-371.46(kNm) X=1.500(m) local |
| | 122 | sobrecarga uniforme | 4A14 | PZ=-150.00(kN/m) |
| | 122 | momento repartido | 4A14 | MX=-307.50(kNm/m) local |
| | 122 | carga trapezoidal | 15 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=0.690(m) X1=0.0(m) global no proyectadas ab |
| | 122 | fuerza sobre barra | 15 | CX=-212.79(kNm) X=0.350(m) local |
| | 122 | carga trapezoidal | 18 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=1.390(m) global no proyectadas |
| | 122 | fuerza sobre barra | 18 | CX=-221.40(kNm) X=1.750(m) local |
| | 122 | sobrecarga uniforme | 19A29 | PZ=-150.00(kN/m) |
| | 122 | momento repartido | 19A29 | MX=-307.50(kNm/m) local |

| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 122 | carga trapezoidal | 30 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=1.180(m) X1=0.0(m) global no proyectadas ab |
| 122 | fuerza sobre barra | 30 | CX=-362.85(kNm) X=0.590(m) local |
| 123 | carga trapezoidal | 13 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=0.890(m) local no proyectadas absol |
| 123 | fuerza sobre barra | 13 | CX=4.02(kNm) X=1.500(m) local |
| 123 | sobrecarga uniforme | 14A24 | PY=-0.89(kN/m) local |
| 123 | momento repartido | 14A24 | MX=3.33(kNm/m) local |
| 123 | carga trapezoidal | 25 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=0.680(m) X1=0.0(m) local no proyectadas absoluto |
| 123 | fuerza sobre barra | 25 | CX=2.26(kNm) X=0.340(m) local |
| 123 | carga trapezoidal | 28 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=1.380(m) local no proyectadas absol |
| 123 | fuerza sobre barra | 28 | CX=2.40(kNm) X=1.740(m) local |
| 123 | sobrecarga uniforme | 29A39 | PY=-0.89(kN/m) local |
| 123 | momento repartido | 29A39 | MX=3.33(kNm/m) local |
| 123 | carga trapezoidal | 40 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=1.170(m) X1=0.0(m) local no proyectadas absoluto |
| 123 | fuerza sobre barra | 40 | CX=3.89(kNm) X=0.580(m) local |
| 123 | carga trapezoidal | 13 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=0.890(m) global no proyectadas |
| 123 | fuerza sobre barra | 13 | CX=480.18(kNm) X=1.500(m) local |
| 123 | sobrecarga uniforme | 14A24 | PZ=-150.00(kN/m) |
| 123 | momento repartido | 14A24 | MX=397.50(kNm/m) local |
| 123 | carga trapezoidal | 25 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=0.680(m) X1=0.0(m) global no proyectadas ab |
| 123 | fuerza sobre barra | 25 | CX=270.30(kNm) X=0.340(m) local |
| 123 | carga trapezoidal | 28 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=1.380(m) global no proyectadas |
| 123 | fuerza sobre barra | 28 | CX=286.20(kNm) X=1.740(m) local |
| 123 | sobrecarga uniforme | 29A39 | PZ=-150.00(kN/m) |
| 123 | momento repartido | 29A39 | MX=397.50(kNm/m) local |
| 123 | carga trapezoidal | 40 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=1.170(m) X1=0.0(m) global no proyectadas ab |
| 123 | fuerza sobre barra | 40 | CX=464.68(kNm) X=0.580(m) local |
| 124 | carga trapezoidal | 13 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=0.890(m) local no proyectadas absol |
| 124 | fuerza sobre barra | 13 | CX=4.02(kNm) X=1.500(m) local |
| 124 | sobrecarga uniforme | 14A24 | PY=-0.89(kN/m) local |
| 124 | momento repartido | 14A24 | MX=3.33(kNm/m) local |
| 124 | carga trapezoidal | 25 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=0.680(m) X1=0.0(m) local no proyectadas absoluto |
| 124 | fuerza sobre barra | 25 | CX=2.26(kNm) X=0.340(m) local |





| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 124 | carga trapezoidal | 28 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=1.380(m) local no proyectadas absol |
| 124 | fuerza sobre barra | 28 | CX=2.40(kNm) X=1.740(m) local |
| 124 | sobrecarga uniforme | 29A39 | PY=-0.89(kN/m) local |
| 124 | momento repartido | 29A39 | MX=3.33(kNm/m) local |
| 124 | carga trapezoidal | 40 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=1.170(m) X1=0.0(m) local no proyectadas absoluto |
| 124 | fuerza sobre barra | 40 | CX=3.89(kNm) X=0.580(m) local |
| 124 | carga trapezoidal | 13 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=0.890(m) global no proyectadas |
| 124 | fuerza sobre barra | 13 | CX=-371.46(kNm) X=1.500(m) local |
| 124 | sobrecarga uniforme | 14A24 | PZ=-150.00(kN/m) |
| 124 | momento repartido | 14A24 | MX=-307.50(kNm/m) local |
| 124 | carga trapezoidal | 25 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=0.680(m) X1=0.0(m) global no proyectadas ab |
| 124 | fuerza sobre barra | 25 | CX=-209.10(kNm) X=0.340(m) local |
| 124 | carga trapezoidal | 28 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=1.380(m) global no proyectadas |
| 124 | fuerza sobre barra | 28 | CX=-221.40(kNm) X=1.740(m) local |
| 124 | sobrecarga uniforme | 29A39 | PZ=-150.00(kN/m) |
| 124 | momento repartido | 29A39 | MX=-307.50(kNm/m) local |
| 124 | carga trapezoidal | 40 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=1.170(m) X1=0.0(m) global no proyectadas ab |
| 124 | fuerza sobre barra | 40 | CX=-359.47(kNm) X=0.580(m) local |
| 125 | carga trapezoidal | 23 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=0.880(m) local no proyectadas absol |
| 125 | fuerza sobre barra | 23 | CX=4.06(kNm) X=1.490(m) local |
| 125 | sobrecarga uniforme | 24A34 | PY=-0.89(kN/m) local |
| 125 | momento repartido | 24A34 | MX=3.33(kNm/m) local |
| 125 | carga trapezoidal | 35 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=0.680(m) X1=0.0(m) local no proyectadas absoluto |
| 125 | fuerza sobre barra | 35 | CX=2.26(kNm) X=0.340(m) local |
| 125 | carga trapezoidal | 38 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=1.380(m) local no proyectadas absol |
| 125 | fuerza sobre barra | 38 | CX=2.43(kNm) X=1.740(m) local |
| 125 | sobrecarga uniforme | 39A49 | PY=-0.89(kN/m) local |
| 125 | momento repartido | 39A49 | MX=3.33(kNm/m) local |
| 125 | carga trapezoidal | 50 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=1.170(m) X1=0.0(m) local no proyectadas absoluto |
| 125 | fuerza sobre barra | 50 | CX=3.89(kNm) X=0.580(m) local |
| 125 | carga trapezoidal | 23 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=0.880(m) global no proyectadas |
| 125 | fuerza sobre barra | 23 | CX=484.95(kNm) X=1.490(m) local |

| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 125 | sobrecarga uniforme | 24A34 | PZ=-150.00(kN/m) |
| 125 | momento repartido | 24A34 | MX=397.50(kNm/m) local |
| 125 | carga trapezoidal | 35 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=0.680(m) X1=0.0(m) global no proyectadas ab |
| 125 | fuerza sobre barra | 35 | CX=270.30(kNm) X=0.340(m) local |
| 125 | carga trapezoidal | 38 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=1.380(m) global no proyectadas |
| 125 | fuerza sobre barra | 38 | CX=290.57(kNm) X=1.740(m) local |
| 125 | sobrecarga uniforme | 39A49 | PZ=-150.00(kN/m) |
| 125 | momento repartido | 39A49 | MX=397.50(kNm/m) local |
| 125 | carga trapezoidal | 50 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=1.170(m) X1=0.0(m) global no proyectadas ab |
| 125 | fuerza sobre barra | 50 | CX=464.68(kNm) X=0.580(m) local |
| 126 | carga trapezoidal | 23 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=0.880(m) local no proyectadas absol |
| 126 | fuerza sobre barra | 23 | CX=4.06(kNm) X=1.490(m) local |
| 126 | sobrecarga uniforme | 24A34 | PY=-0.89(kN/m) local |
| 126 | momento repartido | 24A34 | MX=3.33(kNm/m) local |
| 126 | carga trapezoidal | 35 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=0.680(m) X1=0.0(m) local no proyectadas absoluto |
| 126 | fuerza sobre barra | 35 | CX=2.26(kNm) X=0.340(m) local |
| 126 | carga trapezoidal | 38 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=1.380(m) local no proyectadas absol |
| 126 | fuerza sobre barra | 38 | CX=2.43(kNm) X=1.740(m) local |
| 126 | sobrecarga uniforme | 39A49 | PY=-0.89(kN/m) local |
| 126 | momento repartido | 39A49 | MX=3.33(kNm/m) local |
| 126 | carga trapezoidal | 50 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=1.170(m) X1=0.0(m) local no proyectadas absoluto |
| 126 | fuerza sobre barra | 50 | CX=3.89(kNm) X=0.580(m) local |
| 126 | carga trapezoidal | 23 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=0.880(m) global no proyectadas |
| 126 | fuerza sobre barra | 23 | CX=-375.15(kNm) X=1.490(m) local |
| 126 | sobrecarga uniforme | 24A34 | PZ=-150.00(kN/m) |
| 126 | momento repartido | 24A34 | MX=-307.50(kNm/m) local |
| 126 | carga trapezoidal | 35 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=0.680(m) X1=0.0(m) global no proyectadas ab |
| 126 | fuerza sobre barra | 35 | CX=-209.10(kNm) X=0.340(m) local |
| 126 | carga trapezoidal | 38 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=1.380(m) global no proyectadas |
| 126 | fuerza sobre barra | 38 | CX=-224.78(kNm) X=1.740(m) local |
| 126 | sobrecarga uniforme | 39A49 | PZ=-150.00(kN/m) |
| 126 | momento repartido | 39A49 | MX=-307.50(kNm/m) local |





| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 126 | carga trapezoidal | 50 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=1.170(m) X1=0.0(m) global no proyectadas ab |
| 126 | fuerza sobre barra | 50 | CX=-359.47(kNm) X=0.580(m) local |
| 127 | carga trapezoidal | 33 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=0.880(m) local no proyectadas absol |
| 127 | fuerza sobre barra | 33 | CX=4.06(kNm) X=1.490(m) local |
| 127 | sobrecarga uniforme | 34A44 | PY=-0.89(kN/m) local |
| 127 | momento repartido | 34A44 | MX=3.33(kNm/m) local |
| 127 | carga trapezoidal | 45 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=0.670(m) X1=0.0(m) local no proyectadas absoluto |
| 127 | fuerza sobre barra | 45 | CX=2.23(kNm) X=0.330(m) local |
| 127 | carga trapezoidal | 48 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=1.370(m) local no proyectadas absol |
| 127 | fuerza sobre barra | 48 | CX=2.43(kNm) X=1.730(m) local |
| 127 | sobrecarga uniforme | 49A59 | PY=-0.89(kN/m) local |
| 127 | momento repartido | 49A59 | MX=3.33(kNm/m) local |
| 127 | carga trapezoidal | 60 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=1.160(m) X1=0.0(m) local no proyectadas absoluto |
| 127 | fuerza sobre barra | 60 | CX=3.86(kNm) X=0.580(m) local |
| 127 | carga trapezoidal | 33 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=0.880(m) global no proyectadas |
| 127 | fuerza sobre barra | 33 | CX=484.95(kNm) X=1.490(m) local |
| 127 | sobrecarga uniforme | 34A44 | PZ=-150.00(kN/m) |
| 127 | momento repartido | 34A44 | MX=397.50(kNm/m) local |
| 127 | carga trapezoidal | 45 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=0.670(m) X1=0.0(m) global no proyectadas ab |
| 127 | fuerza sobre barra | 45 | CX=265.93(kNm) X=0.330(m) local |
| 127 | carga trapezoidal | 48 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=1.370(m) global no proyectadas |
| 127 | fuerza sobre barra | 48 | CX=290.57(kNm) X=1.730(m) local |
| 127 | sobrecarga uniforme | 49A59 | PZ=-150.00(kN/m) |
| 127 | momento repartido | 49A59 | MX=397.50(kNm/m) local |
| 127 | carga trapezoidal | 60 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=1.160(m) X1=0.0(m) global no proyectadas ab |
| 127 | fuerza sobre barra | 60 | CX=460.31(kNm) X=0.580(m) local |
| 128 | carga trapezoidal | 33 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=0.880(m) local no proyectadas absol |
| 128 | fuerza sobre barra | 33 | CX=4.06(kNm) X=1.490(m) local |
| 128 | sobrecarga uniforme | 34A44 | PY=-0.89(kN/m) local |
| 128 | momento repartido | 34A44 | MX=3.33(kNm/m) local |
| 128 | carga trapezoidal | 45 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=0.670(m) X1=0.0(m) local no proyectadas absoluto |
| 128 | fuerza sobre barra | 45 | CX=2.23(kNm) X=0.330(m) local |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 128 | carga trapezoidal | 48 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=1.370(m) local no proyectadas absol |
| | 128 | fuerza sobre barra | 48 | CX=2.43(kNm) X=1.730(m) local |
| | 128 | sobrecarga uniforme | 49A59 | PY=-0.89(kN/m) local |
| | 128 | momento repartido | 49A59 | MX=3.33(kNm/m) local |
| | 128 | carga trapezoidal | 60 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=1.160(m) X1=0.0(m) local no proyectadas absoluto |
| | 128 | fuerza sobre barra | 60 | CX=3.86(kNm) X=0.580(m) local |
| | 128 | carga trapezoidal | 33 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=0.880(m) global no proyectadas |
| | 128 | fuerza sobre barra | 33 | CX=-375.15(kNm) X=1.490(m) local |
| | 128 | sobrecarga uniforme | 34A44 | PZ=-150.00(kN/m) |
| | 128 | momento repartido | 34A44 | MX=-307.50(kNm/m) local |
| | 128 | carga trapezoidal | 45 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=0.670(m) X1=0.0(m) global no proyectadas ab |
| | 128 | fuerza sobre barra | 45 | CX=-205.72(kNm) X=0.330(m) local |
| | 128 | carga trapezoidal | 48 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=1.370(m) global no proyectadas |
| | 128 | fuerza sobre barra | 48 | CX=-224.78(kNm) X=1.730(m) local |
| | 128 | sobrecarga uniforme | 49A59 | PZ=-150.00(kN/m) |
| | 128 | momento repartido | 49A59 | MX=-307.50(kNm/m) local |
| | 128 | carga trapezoidal | 60 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=1.160(m) X1=0.0(m) global no proyectadas ab |
| | 128 | fuerza sobre barra | 60 | CX=-356.09(kNm) X=0.580(m) local |
| | 129 | carga trapezoidal | 43 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=0.870(m) local no proyectadas absol |
| | 129 | fuerza sobre barra | 43 | CX=4.10(kNm) X=1.480(m) local |
| | 129 | sobrecarga uniforme | 44A54 | PY=-0.89(kN/m) local |
| | 129 | momento repartido | 44A54 | MX=3.33(kNm/m) local |
| | 129 | carga trapezoidal | 55 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=0.670(m) X1=0.0(m) local no proyectadas absoluto |
| | 129 | fuerza sobre barra | 55 | CX=2.23(kNm) X=0.340(m) local |
| | 129 | carga trapezoidal | 58 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=1.360(m) local no proyectadas absol |
| | 129 | fuerza sobre barra | 58 | CX=2.47(kNm) X=1.740(m) local |
| | 129 | sobrecarga uniforme | 59A69 | PY=-0.89(kN/m) local |
| | 129 | momento repartido | 59A69 | MX=3.33(kNm/m) local |
| | 129 | carga trapezoidal | 70 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=1.160(m) X1=0.0(m) local no proyectadas absoluto |
| | 129 | fuerza sobre barra | 70 | CX=3.86(kNm) X=0.580(m) local |
| | 129 | carga trapezoidal | 43 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=0.870(m) global no proyectadas |
| | 129 | fuerza sobre barra | 43 | CX=489.32(kNm) X=1.480(m) local |



ROBOT v 14.5.0
Autor : **elpsa-elpsa**
Dirección :

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Archivo : **Gelserec.rtd**
Proyecto : Gelserec

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 129 | sobrecarga uniforme | 44A54 | PZ=-150.00(kN/m) |
| | 129 | momento repartido | 44A54 | MX=397.50(kNm/m) local |
| | 129 | carga trapezoidal | 55 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=0.670(m) X1=0.0(m) global no proyectadas ab |
| | 129 | fuerza sobre barra | 55 | CX=266.33(kNm) X=0.340(m) local |
| | 129 | carga trapezoidal | 58 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=1.360(m) global no proyectadas |
| | 129 | fuerza sobre barra | 58 | CX=294.94(kNm) X=1.740(m) local |
| | 129 | sobrecarga uniforme | 59A69 | PZ=-150.00(kN/m) |
| | 129 | momento repartido | 59A69 | MX=397.50(kNm/m) local |
| | 129 | carga trapezoidal | 70 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=1.160(m) X1=0.0(m) global no proyectadas ab |
| | 129 | fuerza sobre barra | 70 | CX=461.10(kNm) X=0.580(m) local |
| | 130 | carga trapezoidal | 43 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=0.870(m) local no proyectadas absol |
| | 130 | fuerza sobre barra | 43 | CX=4.10(kNm) X=1.480(m) local |
| | 130 | sobrecarga uniforme | 44A54 | PY=-0.89(kN/m) local |
| | 130 | momento repartido | 44A54 | MX=3.33(kNm/m) local |
| | 130 | carga trapezoidal | 55 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=0.670(m) X1=0.0(m) local no proyectadas absoluto |
| | 130 | fuerza sobre barra | 55 | CX=2.23(kNm) X=0.340(m) local |
| | 130 | carga trapezoidal | 58 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=1.360(m) local no proyectadas absol |
| | 130 | fuerza sobre barra | 58 | CX=2.47(kNm) X=1.740(m) local |
| | 130 | sobrecarga uniforme | 59A69 | PY=-0.89(kN/m) local |
| | 130 | momento repartido | 59A69 | MX=3.33(kNm/m) local |
| | 130 | carga trapezoidal | 70 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=1.160(m) X1=0.0(m) local no proyectadas absoluto |
| | 130 | fuerza sobre barra | 70 | CX=3.86(kNm) X=0.580(m) local |
| | 130 | carga trapezoidal | 43 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=0.870(m) global no proyectadas |
| | 130 | fuerza sobre barra | 43 | CX=-378.53(kNm) X=1.480(m) local |
| | 130 | sobrecarga uniforme | 44A54 | PZ=-150.00(kN/m) |
| | 130 | momento repartido | 44A54 | MX=-307.50(kNm/m) local |
| | 130 | carga trapezoidal | 55 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=0.670(m) X1=0.0(m) global no proyectadas ab |
| | 130 | fuerza sobre barra | 55 | CX=-206.03(kNm) X=0.340(m) local |
| | 130 | carga trapezoidal | 58 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=1.360(m) global no proyectadas |
| | 130 | fuerza sobre barra | 58 | CX=-228.16(kNm) X=1.740(m) local |
| | 130 | sobrecarga uniforme | 59A69 | PZ=-150.00(kN/m) |
| | 130 | momento repartido | 59A69 | MX=-307.50(kNm/m) local |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 130 | carga trapezoidal | 70 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=1.160(m) X1=0.0(m) global no proyectadas ab |
| | 130 | fuerza sobre barra | 70 | CX=-356.70(kNm) X=0.580(m) local |
| | 131 | carga trapezoidal | 53 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=0.870(m) local no proyectadas absol |
| | 131 | fuerza sobre barra | 53 | CX=4.10(kNm) X=1.490(m) local |
| | 131 | sobrecarga uniforme | 54A64 | PY=-0.89(kN/m) local |
| | 131 | momento repartido | 54A64 | MX=3.33(kNm/m) local |
| | 131 | carga trapezoidal | 65 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=0.660(m) X1=0.0(m) local no proyectadas absoluto |
| | 131 | fuerza sobre barra | 65 | CX=2.19(kNm) X=0.330(m) local |
| | 131 | carga trapezoidal | 68 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=1.360(m) local no proyectadas absol |
| | 131 | fuerza sobre barra | 68 | CX=2.47(kNm) X=1.730(m) local |
| | 131 | sobrecarga uniforme | 69A79 | PY=-0.89(kN/m) local |
| | 131 | momento repartido | 69A79 | MX=3.33(kNm/m) local |
| | 131 | carga trapezoidal | 80 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=1.150(m) X1=0.0(m) local no proyectadas absoluto |
| | 131 | fuerza sobre barra | 80 | CX=3.83(kNm) X=0.570(m) local |
| | 131 | carga trapezoidal | 53 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=0.870(m) global no proyectadas |
| | 131 | fuerza sobre barra | 53 | CX=488.92(kNm) X=1.490(m) local |
| | 131 | sobrecarga uniforme | 54A64 | PZ=-150.00(kN/m) |
| | 131 | momento repartido | 54A64 | MX=397.50(kNm/m) local |
| | 131 | carga trapezoidal | 65 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=0.660(m) X1=0.0(m) global no proyectadas ab |
| | 131 | fuerza sobre barra | 65 | CX=261.95(kNm) X=0.330(m) local |
| | 131 | carga trapezoidal | 68 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=1.360(m) global no proyectadas |
| | 131 | fuerza sobre barra | 68 | CX=294.55(kNm) X=1.730(m) local |
| | 131 | sobrecarga uniforme | 69A79 | PZ=-150.00(kN/m) |
| | 131 | momento repartido | 69A79 | MX=397.50(kNm/m) local |
| | 131 | carga trapezoidal | 80 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=1.150(m) X1=0.0(m) global no proyectadas ab |
| | 131 | fuerza sobre barra | 80 | CX=456.73(kNm) X=0.570(m) local |
| | 132 | carga trapezoidal | 53 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=0.870(m) local no proyectadas absol |
| | 132 | fuerza sobre barra | 53 | CX=4.10(kNm) X=1.490(m) local |
| | 132 | sobrecarga uniforme | 54A64 | PY=-0.89(kN/m) local |
| | 132 | momento repartido | 54A64 | MX=3.33(kNm/m) local |
| | 132 | carga trapezoidal | 65 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=0.660(m) X1=0.0(m) local no proyectadas absoluto |
| | 132 | fuerza sobre barra | 65 | CX=2.19(kNm) X=0.330(m) local |





| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 132 | carga trapezoidal | 68 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=1.360(m) local no proyectadas absol |
| | 132 | fuerza sobre barra | 68 | CX=2.47(kNm) X=1.730(m) local |
| | 132 | sobrecarga uniforme | 69A79 | PY=-0.89(kN/m) local |
| | 132 | momento repartido | 69A79 | MX=3.33(kNm/m) local |
| | 132 | carga trapezoidal | 80 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=1.150(m) X1=0.0(m) local no proyectadas absoluto |
| | 132 | fuerza sobre barra | 80 | CX=3.83(kNm) X=0.570(m) local |
| | 132 | carga trapezoidal | 53 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=0.870(m) global no proyectadas |
| | 132 | fuerza sobre barra | 53 | CX=-378.22(kNm) X=1.490(m) local |
| | 132 | sobrecarga uniforme | 54A64 | PZ=-150.00(kN/m) |
| | 132 | momento repartido | 54A64 | MX=-307.50(kNm/m) local |
| | 132 | carga trapezoidal | 65 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=0.660(m) X1=0.0(m) global no proyectadas ab |
| | 132 | fuerza sobre barra | 65 | CX=-202.64(kNm) X=0.330(m) local |
| | 132 | carga trapezoidal | 68 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=1.360(m) global no proyectadas |
| | 132 | fuerza sobre barra | 68 | CX=-227.86(kNm) X=1.730(m) local |
| | 132 | sobrecarga uniforme | 69A79 | PZ=-150.00(kN/m) |
| | 132 | momento repartido | 69A79 | MX=-307.50(kNm/m) local |
| | 132 | carga trapezoidal | 80 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=1.150(m) X1=0.0(m) global no proyectadas ab |
| | 132 | fuerza sobre barra | 80 | CX=-353.32(kNm) X=0.570(m) local |
| | 133 | carga trapezoidal | 63 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=0.860(m) local no proyectadas absol |
| | 133 | fuerza sobre barra | 63 | CX=4.13(kNm) X=1.480(m) local |
| | 133 | sobrecarga uniforme | 64A74 | PY=-0.89(kN/m) local |
| | 133 | momento repartido | 64A74 | MX=3.33(kNm/m) local |
| | 133 | carga trapezoidal | 75 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=0.660(m) X1=0.0(m) local no proyectadas absoluto |
| | 133 | fuerza sobre barra | 75 | CX=2.20(kNm) X=0.330(m) local |
| | 133 | carga trapezoidal | 78 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=1.360(m) local no proyectadas absol |
| | 133 | fuerza sobre barra | 78 | CX=2.50(kNm) X=1.730(m) local |
| | 133 | sobrecarga uniforme | 79A89 | PY=-0.89(kN/m) local |
| | 133 | momento repartido | 79A89 | MX=3.33(kNm/m) local |
| | 133 | carga trapezoidal | 90 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=1.150(m) X1=0.0(m) local no proyectadas absoluto |
| | 133 | fuerza sobre barra | 90 | CX=3.84(kNm) X=0.580(m) local |
| | 133 | carga trapezoidal | 63 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=0.860(m) global no proyectadas |
| | 133 | fuerza sobre barra | 63 | CX=493.30(kNm) X=1.480(m) local |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 133 | sobrecarga uniforme | 64A74 | PZ=-150.00(kN/m) |
| | 133 | momento repartido | 64A74 | MX=397.50(kNm/m) local |
| | 133 | carga trapezoidal | 75 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=0.660(m) X1=0.0(m) global no proyectadas ab |
| | 133 | fuerza sobre barra | 75 | CX=262.35(kNm) X=0.330(m) local |
| | 133 | carga trapezoidal | 78 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=1.360(m) global no proyectadas |
| | 133 | fuerza sobre barra | 78 | CX=298.52(kNm) X=1.730(m) local |
| | 133 | sobrecarga uniforme | 79A89 | PZ=-150.00(kN/m) |
| | 133 | momento repartido | 79A89 | MX=397.50(kNm/m) local |
| | 133 | carga trapezoidal | 90 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=1.150(m) X1=0.0(m) global no proyectadas ab |
| | 133 | fuerza sobre barra | 90 | CX=457.92(kNm) X=0.580(m) local |
| | 134 | carga trapezoidal | 63 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=0.860(m) local no proyectadas absol |
| | 134 | fuerza sobre barra | 63 | CX=4.13(kNm) X=1.480(m) local |
| | 134 | sobrecarga uniforme | 64A74 | PY=-0.89(kN/m) local |
| | 134 | momento repartido | 64A74 | MX=3.33(kNm/m) local |
| | 134 | carga trapezoidal | 75 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=0.660(m) X1=0.0(m) local no proyectadas absoluto |
| | 134 | fuerza sobre barra | 75 | CX=2.20(kNm) X=0.330(m) local |
| | 134 | carga trapezoidal | 78 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=1.360(m) local no proyectadas absol |
| | 134 | fuerza sobre barra | 78 | CX=2.50(kNm) X=1.730(m) local |
| | 134 | sobrecarga uniforme | 79A89 | PY=-0.89(kN/m) local |
| | 134 | momento repartido | 79A89 | MX=3.33(kNm/m) local |
| | 134 | carga trapezoidal | 90 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=1.150(m) X1=0.0(m) local no proyectadas absoluto |
| | 134 | fuerza sobre barra | 90 | CX=3.84(kNm) X=0.580(m) local |
| | 134 | carga trapezoidal | 63 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=0.860(m) global no proyectadas |
| | 134 | fuerza sobre barra | 63 | CX=-381.61(kNm) X=1.480(m) local |
| | 134 | sobrecarga uniforme | 64A74 | PZ=-150.00(kN/m) |
| | 134 | momento repartido | 64A74 | MX=-307.50(kNm/m) local |
| | 134 | carga trapezoidal | 75 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=0.660(m) X1=0.0(m) global no proyectadas ab |
| | 134 | fuerza sobre barra | 75 | CX=-202.95(kNm) X=0.330(m) local |
| | 134 | carga trapezoidal | 78 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=1.360(m) global no proyectadas |
| | 134 | fuerza sobre barra | 78 | CX=-230.93(kNm) X=1.730(m) local |
| | 134 | sobrecarga uniforme | 79A89 | PZ=-150.00(kN/m) |
| | 134 | momento repartido | 79A89 | MX=-307.50(kNm/m) local |





| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 134 | carga trapezoidal | 90 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=1.150(m) X1=0.0(m) global no proyectadas ab |
| | 134 | fuerza sobre barra | 90 | CX=-354.24(kNm) X=0.580(m) local |
| | 135 | carga trapezoidal | 73 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=0.860(m) local no proyectadas absol |
| | 135 | fuerza sobre barra | 73 | CX=4.13(kNm) X=1.480(m) local |
| | 135 | sobrecarga uniforme | 74A84 | PY=-0.89(kN/m) local |
| | 135 | momento repartido | 74A84 | MX=3.33(kNm/m) local |
| | 135 | carga trapezoidal | 85 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=0.650(m) X1=0.0(m) local no proyectadas absoluto |
| | 135 | fuerza sobre barra | 85 | CX=2.17(kNm) X=0.330(m) local |
| | 135 | carga trapezoidal | 88 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=1.350(m) local no proyectadas absol |
| | 135 | fuerza sobre barra | 88 | CX=2.49(kNm) X=1.730(m) local |
| | 135 | sobrecarga uniforme | 89A99 | PY=-0.89(kN/m) local |
| | 135 | momento repartido | 89A99 | MX=3.33(kNm/m) local |
| | 135 | carga trapezoidal | 100 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=1.140(m) X1=0.0(m) local no proyectadas absoluto |
| | 135 | fuerza sobre barra | 100 | CX=3.81(kNm) X=0.570(m) local |
| | 135 | carga trapezoidal | 73 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=0.860(m) global no proyectadas |
| | 135 | fuerza sobre barra | 73 | CX=492.90(kNm) X=1.480(m) local |
| | 135 | sobrecarga uniforme | 74A84 | PZ=-150.00(kN/m) |
| | 135 | momento repartido | 74A84 | MX=397.50(kNm/m) local |
| | 135 | carga trapezoidal | 85 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=0.650(m) X1=0.0(m) global no proyectadas ab |
| | 135 | fuerza sobre barra | 85 | CX=258.77(kNm) X=0.330(m) local |
| | 135 | carga trapezoidal | 88 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=1.350(m) global no proyectadas |
| | 135 | fuerza sobre barra | 88 | CX=297.73(kNm) X=1.730(m) local |
| | 135 | sobrecarga uniforme | 89A99 | PZ=-150.00(kN/m) |
| | 135 | momento repartido | 89A99 | MX=397.50(kNm/m) local |
| | 135 | carga trapezoidal | 100 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=1.140(m) X1=0.0(m) global no proyectadas ab |
| | 135 | fuerza sobre barra | 100 | CX=454.34(kNm) X=0.570(m) local |
| | 136 | carga trapezoidal | 73 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=0.860(m) local no proyectadas absol |
| | 136 | fuerza sobre barra | 73 | CX=4.13(kNm) X=1.480(m) local |
| | 136 | sobrecarga uniforme | 74A84 | PY=-0.89(kN/m) local |
| | 136 | momento repartido | 74A84 | MX=3.33(kNm/m) local |
| | 136 | carga trapezoidal | 85 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=0.650(m) X1=0.0(m) local no proyectadas absoluto |
| | 136 | fuerza sobre barra | 85 | CX=2.17(kNm) X=0.330(m) local |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 136 | carga trapezoidal | 88 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=1.350(m) local no proyectadas absol |
| | 136 | fuerza sobre barra | 88 | CX=2.49(kNm) X=1.730(m) local |
| | 136 | sobrecarga uniforme | 89A99 | PY=-0.89(kN/m) local |
| | 136 | momento repartido | 89A99 | MX=3.33(kNm/m) local |
| | 136 | carga trapezoidal | 100 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=1.140(m) X1=0.0(m) local no proyectadas absoluto |
| | 136 | fuerza sobre barra | 100 | CX=3.81(kNm) X=0.570(m) local |
| | 136 | carga trapezoidal | 73 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=0.860(m) global no proyectadas |
| | 136 | fuerza sobre barra | 73 | CX=-381.30(kNm) X=1.480(m) local |
| | 136 | sobrecarga uniforme | 74A84 | PZ=-150.00(kN/m) |
| | 136 | momento repartido | 74A84 | MX=-307.50(kNm/m) local |
| | 136 | carga trapezoidal | 85 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=0.650(m) X1=0.0(m) global no proyectadas ab |
| | 136 | fuerza sobre barra | 85 | CX=-200.18(kNm) X=0.330(m) local |
| | 136 | carga trapezoidal | 88 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=1.350(m) global no proyectadas |
| | 136 | fuerza sobre barra | 88 | CX=-230.32(kNm) X=1.730(m) local |
| | 136 | sobrecarga uniforme | 89A99 | PZ=-150.00(kN/m) |
| | 136 | momento repartido | 89A99 | MX=-307.50(kNm/m) local |
| | 136 | carga trapezoidal | 100 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=1.140(m) X1=0.0(m) global no proyectadas ab |
| | 136 | fuerza sobre barra | 100 | CX=-351.47(kNm) X=0.570(m) local |
| | 137 | carga trapezoidal | 83 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=0.850(m) local no proyectadas absol |
| | 137 | fuerza sobre barra | 83 | CX=4.16(kNm) X=1.480(m) local |
| | 137 | sobrecarga uniforme | 84A94 | PY=-0.89(kN/m) local |
| | 137 | momento repartido | 84A94 | MX=3.33(kNm/m) local |
| | 137 | carga trapezoidal | 95 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=0.650(m) X1=0.0(m) local no proyectadas absoluto |
| | 137 | fuerza sobre barra | 95 | CX=2.17(kNm) X=0.330(m) local |
| | 137 | carga trapezoidal | 98 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=1.350(m) local no proyectadas absol |
| | 137 | fuerza sobre barra | 98 | CX=2.52(kNm) X=1.730(m) local |
| | 137 | sobrecarga uniforme | 99A109 | PY=-0.89(kN/m) local |
| | 137 | momento repartido | 99A109 | MX=3.33(kNm/m) local |
| | 137 | carga trapezoidal | 110 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=1.150(m) X1=0.0(m) local no proyectadas absoluto |
| | 137 | fuerza sobre barra | 110 | CX=3.82(kNm) X=0.570(m) local |
| | 137 | carga trapezoidal | 83 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=0.850(m) global no proyectadas |
| | 137 | fuerza sobre barra | 83 | CX=496.87(kNm) X=1.480(m) local |



ROBOT v 14.5.0
Autor : **eipsa-eipsa**
Dirección :

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Archivo : **Gelserec.rtd**
Proyecto : Gelserec

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 137 | sobrecarga uniforme | 84A94 | PZ=-150.00(kN/m) |
| | 137 | momento repartido | 84A94 | MX=397.50(kNm/m) local |
| | 137 | carga trapezoidal | 95 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=0.650(m) X1=0.0(m) global no proyectadas ab |
| | 137 | fuerza sobre barra | 95 | CX=259.57(kNm) X=0.330(m) local |
| | 137 | carga trapezoidal | 98 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=1.350(m) global no proyectadas |
| | 137 | fuerza sobre barra | 98 | CX=301.30(kNm) X=1.730(m) local |
| | 137 | sobrecarga uniforme | 99A109 | PZ=-150.00(kN/m) |
| | 137 | momento repartido | 99A109 | MX=397.50(kNm/m) local |
| | 137 | carga trapezoidal | 110 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=1.150(m) X1=0.0(m) global no proyectadas ab |
| | 137 | fuerza sobre barra | 110 | CX=455.54(kNm) X=0.570(m) local |
| | 138 | carga trapezoidal | 83 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=0.850(m) local no proyectadas absol |
| | 138 | fuerza sobre barra | 83 | CX=4.16(kNm) X=1.480(m) local |
| | 138 | sobrecarga uniforme | 84A94 | PY=-0.89(kN/m) local |
| | 138 | momento repartido | 84A94 | MX=3.33(kNm/m) local |
| | 138 | carga trapezoidal | 95 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=0.650(m) X1=0.0(m) local no proyectadas absoluto |
| | 138 | fuerza sobre barra | 95 | CX=2.17(kNm) X=0.330(m) local |
| | 138 | carga trapezoidal | 98 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=1.350(m) local no proyectadas absol |
| | 138 | fuerza sobre barra | 98 | CX=2.52(kNm) X=1.730(m) local |
| | 138 | sobrecarga uniforme | 99A109 | PY=-0.89(kN/m) local |
| | 138 | momento repartido | 99A109 | MX=3.33(kNm/m) local |
| | 138 | carga trapezoidal | 110 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=1.150(m) X1=0.0(m) local no proyectadas absoluto |
| | 138 | fuerza sobre barra | 110 | CX=3.82(kNm) X=0.570(m) local |
| | 138 | carga trapezoidal | 83 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=0.850(m) global no proyectadas |
| | 138 | fuerza sobre barra | 83 | CX=-384.37(kNm) X=1.480(m) local |
| | 138 | sobrecarga uniforme | 84A94 | PZ=-150.00(kN/m) |
| | 138 | momento repartido | 84A94 | MX=-307.50(kNm/m) local |
| | 138 | carga trapezoidal | 95 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=0.650(m) X1=0.0(m) global no proyectadas ab |
| | 138 | fuerza sobre barra | 95 | CX=-200.80(kNm) X=0.330(m) local |
| | 138 | carga trapezoidal | 98 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=1.350(m) global no proyectadas |
| | 138 | fuerza sobre barra | 98 | CX=-233.08(kNm) X=1.730(m) local |
| | 138 | sobrecarga uniforme | 99A109 | PZ=-150.00(kN/m) |
| | 138 | momento repartido | 99A109 | MX=-307.50(kNm/m) local |

| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 138 | carga trapezoidal | 110 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=1.150(m) X1=0.0(m) global no proyectadas ab |
| 138 | fuerza sobre barra | 110 | CX=-352.40(kNm) X=0.570(m) local |
| 139 | fuerza sobre barra | 111 | CX=1.82(kNm) X=0.270(m) local |
| 139 | carga trapezoidal | 111 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=0.550(m) X1=0.0(m) local no proyectadas absoluto |
| 139 | momento repartido | 100A110 | MX=3.33(kNm/m) local |
| 139 | sobrecarga uniforme | 100A110 | PY=-0.89(kN/m) local |
| 139 | fuerza sobre barra | 99 | CX=4.52(kNm) X=1.420(m) local |
| 139 | carga trapezoidal | 99 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=0.740(m) local no proyectadas absol |
| 139 | fuerza sobre barra | 111 | CX=217.43(kNm) X=0.270(m) local |
| 139 | carga trapezoidal | 111 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=0.550(m) X1=0.0(m) global no proyectadas ab |
| 139 | momento repartido | 100A110 | MX=397.50(kNm/m) local |
| 139 | sobrecarga uniforme | 100A110 | PZ=-150.00(kN/m) |
| 139 | fuerza sobre barra | 99 | CX=539.41(kNm) X=1.420(m) local |
| 139 | carga trapezoidal | 99 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=0.740(m) global no proyectadas |
| 140 | fuerza sobre barra | 111 | CX=1.82(kNm) X=0.270(m) local |
| 140 | carga trapezoidal | 111 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=0.550(m) X1=0.0(m) local no proyectadas absoluto |
| 140 | momento repartido | 100A110 | MX=3.33(kNm/m) local |
| 140 | sobrecarga uniforme | 100A110 | PY=-0.89(kN/m) local |
| 140 | fuerza sobre barra | 99 | CX=4.52(kNm) X=1.420(m) local |
| 140 | carga trapezoidal | 99 | PY2=-0.89(kN/m) PY1=-0.89(kN/m) X2=2.100(m) X1=0.740(m) local no proyectadas absol |
| 140 | fuerza sobre barra | 111 | CX=-168.20(kNm) X=0.270(m) local |
| 140 | carga trapezoidal | 111 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=0.550(m) X1=0.0(m) global no proyectadas ab |
| 140 | momento repartido | 100A110 | MX=-307.50(kNm/m) local |
| 140 | sobrecarga uniforme | 100A110 | PZ=-150.00(kN/m) |
| 140 | fuerza sobre barra | 99 | CX=-417.28(kNm) X=1.420(m) local |
| 140 | carga trapezoidal | 99 | PZ2=-150.00(kN/m) PZ1=-150.00(kN/m) X2=2.100(m) X1=0.740(m) global no proyectadas |
| 141 | temperatura | 1A112 | TZ=5.80(°C) |
| 142 | fuerza nodal | 80 | FX=-0.01(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| 142 | fuerza nodal | 81 | FX=-0.47(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.47(kNm) |
| 142 | fuerza nodal | 82 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| 142 | fuerza nodal | 83 | FX=0.48(kN) FY=0.01(kN) CX=-0.01(kNm) CY=0.48(kNm) |
| 142 | fuerza nodal | 84 | FX=-0.96(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.97(kNm) |



ROBOT v 14.5.0
Autor : **eipsa-eipsa**
Dirección :

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Archivo : **Gelserec.rtd**
Proyecto : Gelserec

| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 142 | fuerza nodal | 85 | FX=0.48(kN) FY=0.01(kN) CX=-0.01(kNm) CY=0.49(kNm) |
| 142 | fuerza nodal | 86 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| 142 | fuerza nodal | 88 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| 142 | fuerza nodal | 89 | FX=-0.01(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| 142 | fuerza nodal | 90 | FX=0.01(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| 142 | fuerza nodal | 77 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.56(kNm) |
| 142 | fuerza nodal | 76 | FX=0.01(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| 142 | fuerza nodal | 75 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.49(kNm) |
| 142 | fuerza nodal | 72 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| 142 | fuerza nodal | 70 | FX=-0.47(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| 142 | fuerza nodal | 69 | FX=-0.01(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| 142 | fuerza nodal | 67 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| 142 | fuerza nodal | 64 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| 142 | fuerza nodal | 63 | FX=0.01(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| 142 | fuerza nodal | 62 | FX=-0.01(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| 142 | fuerza nodal | 113 | FX=20.00(kN) FY=-999.80(kN) CX=1167.77(kNm) CY=23.36(kNm) |
| 142 | fuerza nodal | 112 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| 142 | fuerza nodal | 111 | FX=0.01(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| 142 | fuerza nodal | 110 | FX=-0.49(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.49(kNm) |
| 142 | fuerza nodal | 109 | FX=0.01(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0 01(kNm) |
| 142 | fuerza nodal | 108 | FX=-0.01(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| 142 | fuerza nodal | 107 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| 142 | fuerza nodal | 106 | FX=0.01(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| 142 | fuerza nodal | 105 | FX=-0.01(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| 142 | fuerza nodal | 104 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| 142 | fuerza nodal | 103 | FX=0.01(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| 142 | fuerza nodal | 102 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.49(kNm) |
| 142 | fuerza nodal | 100 | FX=0.01(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| 142 | fuerza nodal | 99 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.49(kNm) |
| 142 | fuerza nodal | 97 | FX=0.01(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| 142 | fuerza nodal | 96 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.57(kNm) |
| 142 | fuerza nodal | 94 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 142 | fuerza nodal | 93 | FX=0.01(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| | 142 | fuerza nodal | 92 | FX=-0.01(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| | 142 | fuerza nodal | 91 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 26 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 24 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 22 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 21 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 142 | fuerza nodal | 20 | FX=-0.95(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.96(kNm) |
| | 142 | fuerza nodal | 19 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 142 | fuerza nodal | 18 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.56(kNm) |
| | 142 | fuerza nodal | 16 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.56(kNm) |
| | 142 | fuerza nodal | 14 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 13 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 142 | fuerza nodal | 12 | FX=-0.95(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.96(kNm) |
| | 142 | fuerza nodal | 11 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 142 | fuerza nodal | 10 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 8 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 6 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 5 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 142 | fuerza nodal | 4 | FX=-0.95(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.96(kNm) |
| | 142 | fuerza nodal | 3 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 142 | fuerza nodal | 2 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 1 | FY=1000.00(kN) CX=-1168.00(kNm) |
| | 142 | fuerza nodal | 61 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 60 | FX=-10.48(kN) FY=999.95(kN) CX=-1009.94(kNm) CY=-10.58(kNm) |
| | 142 | fuerza nodal | 60 | FX=10.48(kN) FY=-999.95(kN) CX=1009.94(kNm) CY=10.58(kNm) |
| | 142 | fuerza nodal | 59 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 56 | FX=-0.48(kN) FY=-0.00(kN) CX=0.01(kNm) CY=-0.56(kNm) |
| | 142 | fuerza nodal | 54 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 53 | FX=0.00(kN) CY=0.00(kNm) |
| | 142 | fuerza nodal | 52 | FX=-0.00(kN) CY=-0.00(kNm) |
| | 142 | fuerza nodal | 50 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |



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Proyecto : Gelserec

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 142 | fuerza nodal | 49 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 45 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 43 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 40 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 37 | FX=-0.47(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.55(kNm) |
| | 142 | fuerza nodal | 36 | FX=-0.00(kN) CY=-0.00(kNm) |
| | 142 | fuerza nodal | 35 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 32 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 30 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 29 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 142 | fuerza nodal | 28 | FX=-0.95(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.96(kNm) |
| | 142 | fuerza nodal | 27 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |

## Cargas - Casos: 142A165 :

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 142 | fuerza nodal | 90 | FX=0.01(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| | 142 | fuerza nodal | 89 | FX=-0.01(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| | 142 | fuerza nodal | 88 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 86 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 85 | FX=0.48(kN) FY=0.01(kN) CX=-0.01(kNm) CY=0.49(kNm) |
| | 142 | fuerza nodal | 84 | FX=-0.96(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.97(kNm) |
| | 142 | fuerza nodal | 83 | FX=0.48(kN) FY=0.01(kN) CX=-0.01(kNm) CY=0.48(kNm) |
| | 142 | fuerza nodal | 82 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 81 | FX=-0.47(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.47(kNm) |
| | 142 | fuerza nodal | 80 | FX=-0.01(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| | 142 | fuerza nodal | 77 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.56(kNm) |
| | 142 | fuerza nodal | 76 | FX=0.01(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| | 142 | fuerza nodal | 75 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.49(kNm) |
| | 142 | fuerza nodal | 72 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 70 | FX=-0.47(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 69 | FX=-0.01(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| | 142 | fuerza nodal | 67 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 64 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 63 | FX=0.01(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| | 142 | fuerza nodal | 62 | FX=-0.01(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| | 142 | fuerza nodal | 113 | FX=20.00(kN) FY=-999.80(kN) CX=1167.77(kNm) CY=23.36(kNm) |
| | 142 | fuerza nodal | 112 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 111 | FX=0.01(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| | 142 | fuerza nodal | 110 | FX=-0.49(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.49(kNm) |
| | 142 | fuerza nodal | 109 | FX=0.01(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| | 142 | fuerza nodal | 108 | FX=-0.01(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| | 142 | fuerza nodal | 107 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 106 | FX=0.01(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| | 142 | fuerza nodal | 105 | FX=-0.01(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| | 142 | fuerza nodal | 104 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |





| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 142 | fuerza nodal | 103 | FX=0.01(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| | 142 | fuerza nodal | 102 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.49(kNm) |
| | 142 | fuerza nodal | 100 | FX=0.01(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| | 142 | fuerza nodal | 99 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.49(kNm) |
| | 142 | fuerza nodal | 97 | FX=0.01(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| | 142 | fuerza nodal | 96 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.57(kNm) |
| | 142 | fuerza nodal | 94 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 93 | FX=0.01(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| | 142 | fuerza nodal | 92 | FX=-0.01(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| | 142 | fuerza nodal | 91 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 26 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 24 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 22 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 21 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 142 | fuerza nodal | 20 | FX=-0.95(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.96(kNm) |
| | 142 | fuerza nodal | 19 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 142 | fuerza nodal | 18 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.56(kNm) |
| | 142 | fuerza nodal | 16 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.56(kNm) |
| | 142 | fuerza nodal | 14 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 13 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 142 | fuerza nodal | 12 | FX=-0.95(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.96(kNm) |
| | 142 | fuerza nodal | 11 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 142 | fuerza nodal | 10 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 8 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 6 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 5 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 142 | fuerza nodal | 4 | FX=-0.95(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.96(kNm) |
| | 142 | fuerza nodal | 3 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 142 | fuerza nodal | 2 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 1 | FY=1000.00(kN) CX=-1168.00(kNm) |
| | 142 | fuerza nodal | 61 | FX=-0.48(kN) FY=-0.01(kN) CX=0.01(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 60 | FX=-10.48(kN) FY=999.95(kN) CX=-1009.94(kNm) CY=-10.58(kNm) |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 142 | fuerza nodal | 60 | FX=10.48(kN) FY=-999.95(kN) CX=1009.94(kNm) CY=10.58(kNm) |
| | 142 | fuerza nodal | 59 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 56 | FX=-0.48(kN) FY=-0.00(kN) CX=0.01(kNm) CY=-0.56(kNm) |
| | 142 | fuerza nodal | 54 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 53 | FX=0.00(kN) CY=0.00(kNm) |
| | 142 | fuerza nodal | 52 | FX=-0.00(kN) CY=-0.00(kNm) |
| | 142 | fuerza nodal | 50 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 49 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 27 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 142 | fuerza nodal | 28 | FX=-0.95(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.96(kNm) |
| | 142 | fuerza nodal | 29 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 142 | fuerza nodal | 30 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 32 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 35 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 36 | FX=-0.00(kN) CY=-0.00(kNm) |
| | 142 | fuerza nodal | 37 | FX=-0.47(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.55(kNm) |
| | 142 | fuerza nodal | 40 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 43 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 142 | fuerza nodal | 45 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 143 | fuerza nodal | 22 | FX=3.33(kN) FY=-999.99(kN) CX=1009.99(kNm) CY=3.37(kNm) |
| | 143 | fuerza nodal | 21 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 143 | fuerza nodal | 20 | FX=-0.95(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.96(kNm) |
| | 143 | fuerza nodal | 19 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 143 | fuerza nodal | 18 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.56(kNm) |
| | 143 | fuerza nodal | 16 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.56(kNm) |
| | 143 | fuerza nodal | 14 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 143 | fuerza nodal | 13 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 143 | fuerza nodal | 12 | FX=-0.95(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.96(kNm) |
| | 143 | fuerza nodal | 11 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 143 | fuerza nodal | 10 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 143 | fuerza nodal | 8 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 143 | fuerza nodal | 6 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |





| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 143 | fuerza nodal | 5 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 143 | fuerza nodal | 4 | FX=-0.95(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.96(kNm) |
| | 143 | fuerza nodal | 3 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 143 | fuerza nodal | 2 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 143 | fuerza nodal | 1 | FY=1000.00(kN) CX=-1168.00(kNm) |
| | 144 | fuerza nodal | 12 | FX=1.43(kN) FY=-1000.00(kN) CX=1010.00(kNm) CY=1.44(kNm) |
| | 144 | fuerza nodal | 11 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 144 | fuerza nodal | 10 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 144 | fuerza nodal | 8 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 144 | fuerza nodal | 6 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 144 | fuerza nodal | 5 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 144 | fuerza nodal | 4 | FX=-0.95(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.96(kNm) |
| | 144 | fuerza nodal | 3 | FX=0.48(kN) FY=0.00(kN) CX=-0.00(kNm) CY=0.48(kNm) |
| | 144 | fuerza nodal | 2 | FX=-0.48(kN) FY=-0.00(kN) CX=0.00(kNm) CY=-0.48(kNm) |
| | 144 | fuerza nodal | 1 | FY=1000.00(kN) CX=-1168.00(kNm) |
| | 145 | fuerza nodal | 90 | FX=0.01(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| | 145 | fuerza nodal | 89 | FX=-0.01(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| | 145 | fuerza nodal | 88 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.01(kNm) CY=0.83(kNm) |
| | 145 | fuerza nodal | 86 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.01(kNm) CY=0.83(kNm) |
| | 145 | fuerza nodal | 85 | FX=0.48(kN) FY=0.01(kN) CX=0.01(kNm) CY=-0.84(kNm) |
| | 145 | fuerza nodal | 84 | FX=-0.96(kN) FY=-0.01(kN) CX=-0.02(kNm) CY=1.67(kNm) |
| | 145 | fuerza nodal | 83 | FX=0.48(kN) FY=0.01(kN) CX=0.01(kNm) CY=-0.83(kNm) |
| | 145 | fuerza nodal | 82 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.01(kNm) CY=0.83(kNm) |
| | 145 | fuerza nodal | 81 | FX=-0.47(kN) FY=-0.01(kN) CX=-0.01(kNm) CY=0.82(kNm) |
| | 145 | fuerza nodal | 80 | FX=-0.01(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| | 145 | fuerza nodal | 77 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.01(kNm) CY=0.75(kNm) |
| | 145 | fuerza nodal | 76 | FX=0.01(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| | 145 | fuerza nodal | 75 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.01(kNm) CY=0.84(kNm) |
| | 145 | fuerza nodal | 72 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.01(kNm) CY=0.83(kNm) |
| | 145 | fuerza nodal | 70 | FX=-0.47(kN) FY=-0.01(kN) CX=-0.01(kNm) CY=0.82(kNm) |
| | 145 | fuerza nodal | 69 | FX=-0.01(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| | 145 | fuerza nodal | 67 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.01(kNm) CY=0.83(kNm) |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 145 | fuerza nodal | 64 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.01(kNm) CY=0.83(kNm) |
| | 145 | fuerza nodal | 63 | FX=0.01(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| | 145 | fuerza nodal | 62 | FX=-0.01(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| | 145 | fuerza nodal | 113 | FX=20.00(kN) FY=-999.80(kN) CX=-1579.68(kNm) CY=-31.59(kNm) |
| | 145 | fuerza nodal | 112 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.02(kNm) CY=0.83(kNm) |
| | 145 | fuerza nodal | 111 | FX=0.01(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.02(kNm) |
| | 145 | fuerza nodal | 110 | FX=-0.49(kN) FY=-0.01(kN) CX=-0.02(kNm) CY=0.84(kNm) |
| | 145 | fuerza nodal | 109 | FX=0.01(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.02(kNm) |
| | 145 | fuerza nodal | 108 | FX=-0.01(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.02(kNm) |
| | 145 | fuerza nodal | 107 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.02(kNm) CY=0.83(kNm) |
| | 145 | fuerza nodal | 106 | FX=0.01(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.02(kNm) |
| | 145 | fuerza nodal | 105 | FX=-0.01(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.02(kNm) |
| | 145 | fuerza nodal | 104 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.02(kNm) CY=0.83(kNm) |
| | 145 | fuerza nodal | 103 | FX=0.01(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| | 145 | fuerza nodal | 102 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.01(kNm) CY=0.84(kNm) |
| | 145 | fuerza nodal | 100 | FX=0.01(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| | 145 | fuerza nodal | 99 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.01(kNm) CY=0.84(kNm) |
| | 145 | fuerza nodal | 97 | FX=0.01(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| | 145 | fuerza nodal | 96 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.01(kNm) CY=0.77(kNm) |
| | 145 | fuerza nodal | 94 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.01(kNm) CY=0.83(kNm) |
| | 145 | fuerza nodal | 93 | FX=0.01(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| | 145 | fuerza nodal | 92 | FX=-0.01(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| | 145 | fuerza nodal | 91 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.01(kNm) CY=0.83(kNm) |
| | 145 | fuerza nodal | 26 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 145 | fuerza nodal | 24 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 145 | fuerza nodal | 22 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 145 | fuerza nodal | 21 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| | 145 | fuerza nodal | 20 | FX=-0.95(kN) FY=-0.00(kN) CX=-0.01(kNm) CY=1.66(kNm) |
| | 145 | fuerza nodal | 19 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| | 145 | fuerza nodal | 18 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.75(kNm) |
| | 145 | fuerza nodal | 16 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.75(kNm) |
| | 145 | fuerza nodal | 14 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |



ROBOT v 14.5.0
Autor : **eipsa-eipsa**
Dirección :

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Archivo : **Gelserec.rtd**
Proyecto : Gelserec

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 145 | fuerza nodal | 13 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| | 145 | fuerza nodal | 12 | FX=-0.95(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=1.66(kNm) |
| | 145 | fuerza nodal | 11 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| | 145 | fuerza nodal | 10 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 145 | fuerza nodal | 8 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 145 | fuerza nodal | 6 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 145 | fuerza nodal | 5 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| | 145 | fuerza nodal | 4 | FX=-0.95(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=1.66(kNm) |
| | 145 | fuerza nodal | 3 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| | 145 | fuerza nodal | 2 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 145 | fuerza nodal | 1 | FY=1000.00(kN) CX=1580.00(kNm) |
| | 145 | fuerza nodal | 61 | FX=-0.48(kN) FY=-0.01(kN) CX=-0.01(kNm) CY=0.83(kNm) |
| | 145 | fuerza nodal | 60 | FX=-10.48(kN) FY=999.95(kN) CX=1737.90(kNm) CY=18.21(kNm) |
| | 145 | fuerza nodal | 60 | FX=10.48(kN) FY=-999.95(kN) CX=-1737.90(kNm) CY=-18.21(kNm) |
| | 145 | fuerza nodal | 59 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.01(kNm) CY=0.83(kNm) |
| | 145 | fuerza nodal | 56 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.01(kNm) CY=0.75(kNm) |
| | 145 | fuerza nodal | 54 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.01(kNm) CY=0.83(kNm) |
| | 145 | fuerza nodal | 53 | FX=0.00(kN) CX=0.00(kNm) CY=-0.01(kNm) |
| | 145 | fuerza nodal | 52 | FX=-0.00(kN) CX=-0.00(kNm) CY=0.01(kNm) |
| | 145 | fuerza nodal | 50 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.01(kNm) CY=0.83(kNm) |
| | 145 | fuerza nodal | 49 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.01(kNm) CY=0.83(kNm) |
| | 145 | fuerza nodal | 45 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.01(kNm) CY=0.83(kNm) |
| | 145 | fuerza nodal | 43 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.01(kNm) CY=0.83(kNm) |
| | 145 | fuerza nodal | 40 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.01(kNm) CY=0.83(kNm) |
| | 145 | fuerza nodal | 37 | FX=-0.47(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.75(kNm) |
| | 145 | fuerza nodal | 36 | FX=-0.00(kN) CY=0.00(kNm) |
| | 145 | fuerza nodal | 35 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 145 | fuerza nodal | 32 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 145 | fuerza nodal | 30 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| | 145 | fuerza nodal | 29 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| | 145 | fuerza nodal | 28 | FX=-0.95(kN) FY=-0.00(kN) CX=-0.01(kNm) CY=1.66(kNm) |
| | 145 | fuerza nodal | 27 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |

| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 146 | fuerza nodal | 12 | FX=1.43(kN) FY=-1000.00(kN) CX=-1738.00(kNm) CY=-2.48(kNm) |
| 146 | fuerza nodal | 11 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| 146 | fuerza nodal | 10 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| 146 | fuerza nodal | 8 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| 146 | fuerza nodal | 6 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| 146 | fuerza nodal | 5 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| 146 | fuerza nodal | 4 | FX=-0.95(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=1.66(kNm) |
| 146 | fuerza nodal | 3 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| 146 | fuerza nodal | 2 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| 146 | fuerza nodal | 1 | FY=1000.00(kN) CX=1580.00(kNm) |
| 147 | fuerza nodal | 20 | FX=-0.95(kN) FY=-0.00(kN) CX=-0.01(kNm) CY=1.66(kNm) |
| 147 | fuerza nodal | 21 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| 147 | fuerza nodal | 22 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| 147 | fuerza nodal | 24 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| 147 | fuerza nodal | 26 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| 147 | fuerza nodal | 27 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| 147 | fuerza nodal | 28 | FX=-0.95(kN) FY=-0.00(kN) CX=-0.01(kNm) CY=1.66(kNm) |
| 147 | fuerza nodal | 29 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| 147 | fuerza nodal | 30 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| 147 | fuerza nodal | 32 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| 147 | fuerza nodal | 35 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| 147 | fuerza nodal | 36 | FX=-0.00(kN) CY=0.00(kNm) |
| 147 | fuerza nodal | 37 | FX=-0.47(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.75(kNm) |
| 147 | fuerza nodal | 40 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.01(kNm) CY=0.83(kNm) |
| 147 | fuerza nodal | 42 | FX=7.14(kN) FY=-999.97(kN) CX=-1737.96(kNm) CY=-12.41(kNm) |
| 147 | fuerza nodal | 1 | FY=1000.00(kN) CX=1580.00(kNm) |
| 147 | fuerza nodal | 2 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| 147 | fuerza nodal | 3 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| 147 | fuerza nodal | 4 | FX=-0.95(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=1.66(kNm) |
| 147 | fuerza nodal | 5 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| 147 | fuerza nodal | 6 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| 147 | fuerza nodal | 8 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |





| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 147 | fuerza nodal | 10 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| 147 | fuerza nodal | 11 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| 147 | fuerza nodal | 12 | FX=-0.95(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=1.66(kNm) |
| 147 | fuerza nodal | 13 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| 147 | fuerza nodal | 14 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.83(kNm) |
| 147 | fuerza nodal | 16 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.75(kNm) |
| 147 | fuerza nodal | 18 | FX=-0.48(kN) FY=-0.00(kN) CX=-0.00(kNm) CY=0.75(kNm) |
| 147 | fuerza nodal | 19 | FX=0.48(kN) FY=0.00(kN) CX=0.00(kNm) CY=-0.83(kNm) |
| 148 | fuerza nodal | 11 | FX=0.46(kN) FY=-8.90(kN) FZ=20.76(kN) CX=-4.44(kNm) CY=-0.23(kNm) |
| 148 | fuerza nodal | 12 | FX=-0.86(kN) FY=-9.28(kN) FZ=20.32(kN) CX=-3.05(kNm) CY=0.28(kNm) |
| 148 | fuerza nodal | 13 | FX=0.46(kN) FY=-9.78(kN) FZ=20.27(kN) CX=-1.09(kNm) CY=-0.05(kNm) |
| 148 | fuerza nodal | 14 | FX=-0.41(kN) FY=-10.12(kN) FZ=19.76(kN) CX=1.58(kNm) CY=-0.06(kNm) |
| 148 | fuerza nodal | 15 | FX=-0.00(kN) FY=1.76(kN) FZ=-25.98(kN) CX=-0.83(kNm) CY=-0.00(kNm) |
| 148 | fuerza nodal | 16 | FX=-0.39(kN) FY=-12.72(kN) FZ=-73.67(kN) CX=11.26(kNm) CY=-0.35(kNm) |
| 148 | fuerza nodal | 17 | FX=0.08(kN) FY=-28.46(kN) FZ=-103.01(kN) CX=27.60(kNm) CY=0.08(kNm) |
| 148 | fuerza nodal | 18 | FX=-0.23(kN) FY=-53.11(kN) FZ=-120.75(kN) CX=42.86(kNm) CY=-0.19(kNm |
| 148 | fuerza nodal | 19 | FX=2.70(kN) FY=-809.38(kN) FZ=187.70(kN) CX=131.12(kNm) CY=0.44(kN |
| 148 | fuerza nodal | 1 | FY=908.08(kN) FZ=-88.99(kN) CX=-154.37(kNm) |
| 148 | fuerza nodal | 2 | FX=-0.44(kN) FY=6.08(kN) FZ=11.51(kN) CX=0.82(kNm) CY=0.06(kNm) |
| 148 | fuerza nodal | 3 | FX=0.44(kN) FY=7.35(kN) FZ=13.42(kN) CX=2.30(kNm) CY=-0.14(kNm) |
| 148 | fuerza nodal | 4 | FX=-0.88(kN) FY=7.24(kN) FZ=14.09(kN) CX=3.32(kNm) CY=0.41(kNm) |
| 148 | fuerza nodal | 5 | FX=0.44(kN) FY=6.87(kN) FZ=13.89(kN) CX=3.93(kNm) CY=-0.25(kNm) |
| 148 | fuerza nodal | 6 | FX=-0.45(kN) FY=6.62(kN) FZ=14.10(kN) CX=4.32(kNm) CY=0.29(kNm) |
| 148 | fuerza nodal | 7 | FX=-0.01(kN) FY=6.46(kN) FZ=14.76(kN) CX=4.54(kNm) CY=0.00(kNm) |
| 148 | fuerza nodal | 8 | FX=-0.46(kN) FY=6.83(kN) FZ=18.15(kN) CX=4.91(kNm) CY=0.33(kNm) |
| 148 | fuerza nodal | 9 | FX=0.01(kN) FY=-6.92(kN) FZ=22.05(kN) CX=-4.80(kNm) CY=-0.01(kNm) |
| 148 | fuerza nodal | 10 | FX=-0.44(kN) FY=-8.62(kN) FZ=21.63(kN) CX=-5.35(kNm) CY=0.27(kNm) |
| 149 | fuerza nodal | 19 | FX=2.67(kN) FY=-800.78(kN) FZ=202.86(kN) CX=-190.59(kNm) CY=-0.64(kN |
| 149 | fuerza nodal | 18 | FX=-0.21(kN) FY=-59.11(kN) FZ=-129.98(kN) CX=26.72(kNm) CY=-0.10(kNm |
| 149 | fuerza nodal | 17 | FX=0.09(kN) FY=-30.27(kN) FZ=-108.92(kN) CX=19.07(kNm) CY=0.05(kNm) |
| 149 | fuerza nodal | 16 | FX=-0.39(kN) FY=-12.65(kN) FZ=-73.60(kN) CX=6.89(kNm) CY=-0.21(kNm) |
| 149 | fuerza nodal | 15 | FX=-0.01(kN) FY=4.64(kN) FZ=-25.53(kN) CX=-0.61(kNm) CY=-0.00(kNm) |

| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 149 | fuerza nodal | 14 | FX=-0.44(kN) FY=4.31(kN) FZ=21.51(kN) CX=0.79(kNm) CY=0.08(kNm) |
| 149 | fuerza nodal | 13 | FX=0.41(kN) FY=4.77(kN) FZ=21.35(kN) CX=2.15(kNm) CY=-0.19(kNm) |
| 149 | fuerza nodal | 12 | FX=-0.85(kN) FY=5.17(kN) FZ=20.74(kN) CX=3.46(kNm) CY=0.57(kNm) |
| 149 | fuerza nodal | 11 | FX=0.41(kN) FY=5.60(kN) FZ=20.53(kN) CX=4.70(kNm) CY=-0.34(kNm) |
| 149 | fuerza nodal | 1 | FY=825.68(kN) FZ=-74.31(kN) CX=189.91(kNm) |
| 149 | fuerza nodal | 2 | FX=-0.40(kN) FY=5.61(kN) FZ=9.79(kN) CX=2.93(kNm) CY=0.21(kNm) |
| 149 | fuerza nodal | 3 | FX=0.40(kN) FY=5.85(kN) FZ=11.11(kN) CX=4.01(kNm) CY=-0.27(kNm) |
| 149 | fuerza nodal | 4 | FX=-0.80(kN) FY=5.84(kN) FZ=11.67(kN) CX=4.79(kNm) CY=0.66(kNm) |
| 149 | fuerza nodal | 5 | FX=0.40(kN) FY=5.61(kN) FZ=11.44(kN) CX=5.19(kNm) CY=-0.37(kNm) |
| 149 | fuerza nodal | 6 | FX=-0.41(kN) FY=5.68(kN) FZ=12.41(kN) CX=5.67(kNm) CY=0.41(kNm) |
| 149 | fuerza nodal | 7 | FX=-0.01(kN) FY=5.35(kN) FZ=11.76(kN) CX=5.58(kNm) CY=0.01(kNm) |
| 149 | fuerza nodal | 8 | FX=-0.42(kN) FY=6.05(kN) FZ=16.03(kN) CX=6.40(kNm) CY=0.44(kNm) |
| 149 | fuerza nodal | 9 | FX=-0.01(kN) FY=6.53(kN) FZ=20.43(kN) CX=6.75(kNm) CY=0.01(kNm) |
| 149 | fuerza nodal | 10 | FX=-0.43(kN) FY=6.10(kN) FZ=20.71(kN) CX=5.86(kNm) CY=0.41(kNm) |
| 150 | fuerza nodal | 21 | FX=0.40(kN) FY=-3.78(kN) FZ=21.87(kN) CX=-1.56(kNm) CY=-0.17(kNm) |
| 150 | fuerza nodal | 22 | FX=-0.38(kN) FY=-0.61(kN) FZ=20.54(kN) CX=-0.43(kNm) CY=0.27(kNm) |
| 150 | fuerza nodal | 23 | FX=-0.03(kN) FY=8.93(kN) FZ=19.65(kN) CX=8.47(kNm) CY=0.03(kNm) |
| 150 | fuerza nodal | 24 | FX=-0.43(kN) FY=8.63(kN) FZ=20.52(kN) CX=9.82(kNm) CY=0.49(kNm) |
| 150 | fuerza nodal | 25 | FX=-0.04(kN) FY=8.19(kN) FZ=20.98(kN) CX=10.41(kNm) CY=0.04(kNm) |
| 150 | fuerza nodal | 26 | FX=-0.43(kN) FY=7.63(kN) FZ=21.00(kN) CX=10.31(kNm) CY=0.59(kNm) |
| 150 | fuerza nodal | 27 | FX=0.37(kN) FY=7.25(kN) FZ=21.79(kN) CX=9.99(kNm) CY=-0.51(kNm) |
| 150 | fuerza nodal | 28 | FX=-0.85(kN) FY=6.81(kN) FZ=22.55(kN) CX=9.20(kNm) CY=1.14(kNm) |
| 150 | fuerza nodal | 29 | FX=0.38(kN) FY=6.27(kN) FZ=22.87(kN) CX=7.96(kNm) CY=-0.48(kNm) |
| 150 | fuerza nodal | 30 | FX=-0.44(kN) FY=5.71(kN) FZ=23.15(kN) CX=6.47(kNm) CY=0.50(kNm) |
| 150 | fuerza nodal | 31 | FX=-0.03(kN) FY=5.11(kN) FZ=22.96(kN) CX=4.81(kNm) CY=0.03(kNm) |
| 150 | fuerza nodal | 32 | FX=-0.44(kN) FY=4.59(kN) FZ=23.57(kN) CX=3.19(kNm) CY=0.31(kNm) |
| 150 | fuerza nodal | 33 | FX=-0.02(kN) FY=4.02(kN) FZ=23.72(kN) CX=1.58(kNm) CY=0.01(kNm) |
| 150 | fuerza nodal | 34 | FX=-0.02(kN) FY=3.46(kN) FZ=23.82(kN) CX=0.13(kNm) CY=0.00(kNm) |
| 150 | fuerza nodal | 35 | FX=-0.52(kN) FY=15.00(kN) FZ=-32.71(kN) CX=-5.61(kNm) CY=-0.19(kNm) |
| 150 | fuerza nodal | 36 | FX=0.08(kN) FY=-13.14(kN) FZ=-94.30(kN) CX=11.30(kNm) CY=0.07(kNm) |
| 150 | fuerza nodal | 37 | FX=-0.22(kN) FY=-30.30(kN) FZ=-113.21(kN) CX=29.39(kNm) CY=-0.21(kNm |
| 150 | fuerza nodal | 38 | FX=0.35(kN) FY=-53.01(kN) FZ=-120.16(kN) CX=42.78(kNm) CY=0.29(kNm) |





| Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|
| 150 | fuerza nodal | 39 | FX=5.37(kN) FY=-805.48(kN) FZ=186.79(kN) CX=130.49(kNm) CY=0.87(kN |
| 150 | fuerza nodal | 1 | FY=914.49(kN) FZ=-68.89(kN) CX=-155.46(kNm) |
| 150 | fuerza nodal | 2 | FX=-0.44(kN) FY=5.12(kN) FZ=9.34(kN) CX=0.52(kNm) CY=0.04(kNm) |
| 150 | fuerza nodal | 3 | FX=0.44(kN) FY=6.12(kN) FZ=10.18(kN) CX=1.45(kNm) CY=-0.10(kNm) |
| 150 | fuerza nodal | 4 | FX=-0.89(kN) FY=6.10(kN) FZ=10.77(kN) CX=2.13(kNm) CY=0.31(kNm) |
| 150 | fuerza nodal | 5 | FX=0.44(kN) FY=5.94(kN) FZ=10.92(kN) CX=2.59(kNm) CY=-0.19(kNm) |
| 150 | fuerza nodal | 6 | FX=-0.45(kN) FY=5.67(kN) FZ=10.61(kN) CX=2.83(kNm) CY=0.23(kNm) |
| 150 | fuerza nodal | 7 | FX=-0.01(kN) FY=5.72(kN) FZ=11.65(kN) CX=3.07(kNm) CY=0.00(kNm) |
| 150 | fuerza nodal | 8 | FX=-0.46(kN) FY=6.47(kN) FZ=16.35(kN) CX=3.54(kNm) CY=0.25(kNm) |
| 150 | fuerza nodal | 9 | FX=0.00(kN) FY=-2.53(kN) FZ=22.21(kN) CX=-1.33(kNm) CY=-0.00(kNm) |
| 150 | fuerza nodal | 10 | FX=-0.44(kN) FY=-8.66(kN) FZ=21.74(kN) CX=-3.90(kNm) CY=0.20(kNm) |
| 150 | fuerza nodal | 20 | FX=-0.77(kN) FY=-3.25(kN) FZ=21.18(kN) CX=-0.21(kNm) CY=0.05(kNm) |
| 150 | fuerza nodal | 19 | FX=0.40(kN) FY=-2.77(kN) FZ=18.12(kN) CX=0.93(kNm) CY=0.13(kNm) |
| 150 | fuerza nodal | 18 | FX=-0.28(kN) FY=-37.95(kN) FZ=-93.74(kN) CX=35.74(kNm) CY=-0.27(kNm) |
| 150 | fuerza nodal | 17 | FX=0.09(kN) FY=-30.58(kN) FZ=-116.96(kN) CX=34.86(kNm) CY=0.10(kNm) |
| 150 | fuerza nodal | 16 | FX=-0.39(kN) FY=-12.14(kN) FZ=-73.46(kN) CX=12.80(kNm) CY=-0.42(kNm) |
| 150 | fuerza nodal | 15 | FX=0.01(kN) FY=-4.79(kN) FZ=-26.90(kN) CX=3.07(kNm) CY=0.01(kNm) |
| 150 | fuerza nodal | 14 | FX=-0.41(kN) FY=-10.17(kN) FZ=19.85(kN) CX=3.32(kNm) CY=-0.13(kNm) |
| 150 | fuerza nodal | 13 | FX=0.46(kN) FY=-9.82(kN) FZ=20.36(kN) CX=0.58(kNm) CY=0.03(kNm) |
| 150 | fuerza nodal | 12 | FX=-0.87(kN) FY=-9.33(kN) FZ=20.41(kN) CX=-1.48(kNm) CY=0.14(kNm) |
| 150 | fuerza nodal | 11 | FX=0.46(kN) FY=-8.94(kN) FZ=20.86(kN) CX=-2.94(kNm) CY=-0.15(kNm) |
| 151 | fuerza nodal | 21 | FX=0.40(kN) FY=-3.79(kN) FZ=21.90(kN) CX=-2.85(kNm) CY=-0.30(kNm) |
| 151 | fuerza nodal | 22 | FX=-0.37(kN) FY=-4.24(kN) FZ=20.99(kN) CX=-4.45(kNm) CY=0.39(kNm) |
| 151 | fuerza nodal | 23 | FX=-0.03(kN) FY=7.71(kN) FZ=19.70(kN) CX=9.94(kNm) CY=0.04(kNm) |
| 151 | fuerza nodal | 24 | FX=-0.43(kN) FY=8.60(kN) FZ=20.43(kN) CX=12.70(kNm) CY=0.63(kNm) |
| 151 | fuerza nodal | 25 | FX=-0.04(kN) FY=8.16(kN) FZ=20.89(kN) CX=13.14(kNm) CY=0.06(kNm) |
| 151 | fuerza nodal | 26 | FX=-0.43(kN) FY=7.60(kN) FZ=20.91(kN) CX=12.85(kNm) CY=0.73(kNm) |
| 151 | fuerza nodal | 27 | FX=0.37(kN) FY=7.22(kN) FZ=21.70(kN) CX=12.40(kNm) CY=-0.63(kNm) |
| 151 | fuerza nodal | 28 | FX=-0.84(kN) FY=6.78(kN) FZ=22.46(kN) CX=11.46(kNm) CY=1.42(kNm) |
| 151 | fuerza nodal | 29 | FX=0.38(kN) FY=6.24(kN) FZ=22.78(kN) CX=10.05(kNm) CY=-0.61(kNm) |
| 151 | fuerza nodal | 30 | FX=-0.44(kN) FY=5.69(kN) FZ=23.05(kN) CX=8.37(kNm) CY=0.65(kNm) |
| 151 | fuerza nodal | 31 | FX=-0.03(kN) FY=5.09(kN) FZ=22.87(kN) CX=6.52(kNm) CY=0.03(kNm) |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 151 | fuerza nodal | 32 | FX=-0.44(kN) FY=4.57(kN) FZ=23.47(kN) CX=4.73(kNm) CY=0.46(kNm) |
| | 151 | fuerza nodal | 33 | FX=-0.02(kN) FY=4.01(kN) FZ=23.61(kN) CX=2.94(kNm) CY=0.02(kNm) |
| | 151 | fuerza nodal | 34 | FX=-0.02(kN) FY=3.44(kN) FZ=23.71(kN) CX=1.30(kNm) CY=0.01(kNm) |
| | 151 | fuerza nodal | 35 | FX=-0.53(kN) FY=18.15(kN) FZ=-31.64(kN) CX=-0.62(kNm) CY=-0.02(kNm) |
| | 151 | fuerza nodal | 36 | FX=0.08(kN) FY=-13.14(kN) FZ=-95.08(kN) CX=6.85(kNm) CY=0.04(kNm) |
| | 151 | fuerza nodal | 37 | FX=-0.21(kN) FY=-32.03(kN) FZ=-118.69(kN) CX=20.18(kNm) CY=-0.13(kNm |
| | 151 | fuerza nodal | 38 | FX=0.39(kN) FY=-59.01(kN) FZ=-129.37(kN) CX=26.67(kNm) CY=0.18(kNm) |
| | 151 | fuerza nodal | 39 | FX=5.31(kN) FY=-797.12(kN) FZ=201.94(kN) CX=-189.72(kNm) CY=-1.26(kN |
| | 151 | fuerza nodal | 1 | FY=916.72(kN) FZ=-61.73(kN) CX=210.85(kNm) |
| | 151 | fuerza nodal | 2 | FX=-0.44(kN) FY=4.70(kN) FZ=8.20(kN) CX=2.30(kNm) CY=0.21(kNm) |
| | 151 | fuerza nodal | 3 | FX=0.44(kN) FY=5.82(kN) FZ=9.38(kN) CX=3.55(kNm) CY=-0.27(kNm) |
| | 151 | fuerza nodal | 4 | FX=-0.89(kN) FY=5.81(kN) FZ=9.94(kN) CX=4.13(kNm) CY=0.63(kNm) |
| | 151 | fuerza nodal | 5 | FX=0.44(kN) FY=5.45(kN) FZ=9.19(kN) CX=4.30(kNm) CY=-0.35(kNm) |
| | 151 | fuerza nodal | 6 | FX=-0.45(kN) FY=5.55(kN) FZ=10.19(kN) CX=4.68(kNm) CY=0.38(kNm) |
| | 151 | fuerza nodal | 7 | FX=-0.01(kN) FY=5.30(kN) FZ=9.86(kN) CX=4.65(kNm) CY=0.00(kNm) |
| | 151 | fuerza nodal | 8 | FX=-0.46(kN) FY=6.38(kN) FZ=15.90(kN) CX=5.66(kNm) CY=0.41(kNm) |
| | 151 | fuerza nodal | 9 | FX=0.00(kN) FY=-1.04(kN) FZ=22.26(kN) CX=-0.89(kNm) CY=-0.00(kNm) |
| | 151 | fuerza nodal | 10 | FX=-0.44(kN) FY=-8.67(kN) FZ=21.77(kN) CX=-6.86(kNm) CY=0.35(kNm) |
| | 151 | fuerza nodal | 11 | FX=0.46(kN) FY=-8.96(kN) FZ=20.90(kN) CX=-5.99(kNm) CY=-0.31(kNm) |
| | 151 | fuerza nodal | 12 | FX=-0.87(kN) FY=-9.34(kN) FZ=20.45(kN) CX=-4.66(kNm) CY=0.43(kNm) |
| | 151 | fuerza nodal | 13 | FX=0.46(kN) FY=-9.84(kN) FZ=20.40(kN) CX=-2.76(kNm) CY=-0.13(kNm) |
| | 151 | fuerza nodal | 14 | FX=-0.41(kN) FY=-10.19(kN) FZ=19.88(kN) CX=-0.14(kNm) CY=0.01(kNm) |
| | 151 | fuerza nodal | 15 | FX=0.01(kN) FY=-4.80(kN) FZ=-26.95(kN) CX=1.45(kNm) CY=0.00(kNm) |
| | 151 | fuerza nodal | 16 | FX=-0.40(kN) FY=-12.16(kN) FZ=-73.58(kN) CX=8.69(kNm) CY=-0.28(kNm) |
| | 151 | fuerza nodal | 17 | FX=0.09(kN) FY=-30.63(kN) FZ=-117.15(kN) CX=24.51(kNm) CY=0.07(kNm) |
| | 151 | fuerza nodal | 18 | FX=-0.28(kN) FY=-38.01(kN) FZ=-93.89(kN) CX=22.88(kNm) CY=-0.17(kNm) |
| | 151 | fuerza nodal | 19 | FX=0.40(kN) FY=-2.78(kN) FZ=18.15(kN) CX=-0.01(kNm) CY=-0.00(kNm) |
| | 151 | fuerza nodal | 20 | FX=-0.77(kN) FY=-3.25(kN) FZ=21.22(kN) CX=-1.32(kNm) CY=0.31(kNm) |
| | 152 | fuerza nodal | 48 | FX=-0.06(kN) FY=6.81(kN) FZ=22.55(kN) CX=9.20(kNm) CY=0.07(kNm) |
| | 152 | fuerza nodal | 47 | FX=-0.06(kN) FY=7.24(kN) FZ=21.79(kN) CX=9.98(kNm) CY=0.08(kNm) |
| | 152 | fuerza nodal | 46 | FX=-0.06(kN) FY=7.63(kN) FZ=21.00(kN) CX=10.31(kNm) CY=0.08(kNm) |
| | 152 | fuerza nodal | 45 | FX=-0.46(kN) FY=8.19(kN) FZ=20.98(kN) CX=10.41(kNm) CY=0.59(kNm) |





| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 152 | fuerza nodal | 44 | FX=-0.07(kN) FY=8.63(kN) FZ=20.52(kN) CX=9.82(kNm) CY=0.07(kNm) |
| | 152 | fuerza nodal | 43 | FX=-0.45(kN) FY=8.93(kN) FZ=19.65(kN) CX=8.47(kNm) CY=0.43(kNm) |
| | 152 | fuerza nodal | 42 | FX=-0.07(kN) FY=9.30(kN) FZ=19.15(kN) CX=6.59(kNm) CY=0.05(kNm) |
| | 152 | fuerza nodal | 41 | FX=-0.07(kN) FY=9.93(kN) FZ=19.33(kN) CX=4.11(kNm) CY=0.03(kNm) |
| | 152 | fuerza nodal | 40 | FX=-0.44(kN) FY=9.98(kN) FZ=18.05(kN) CX=0.65(kNm) CY=0.03(kNm) |
| | 152 | fuerza nodal | 39 | FX=-0.06(kN) FY=9.08(kN) FZ=14.81(kN) CX=-3.06(kNm) CY=-0.02(kNm) |
| | 152 | fuerza nodal | 38 | FX=-0.05(kN) FY=7.52(kN) FZ=-92.25(kN) CX=-7.09(kNm) CY=-0.05(kNm) |
| | 152 | fuerza nodal | 49 | FX=-0.46(kN) FY=6.26(kN) FZ=22.87(kN) CX=7.95(kNm) CY=0.59(kNm) |
| | 152 | fuerza nodal | 50 | FX=-0.46(kN) FY=5.71(kN) FZ=23.15(kN) CX=6.46(kNm) CY=0.52(kNm) |
| | 152 | fuerza nodal | 51 | FX=-0.05(kN) FY=5.11(kN) FZ=22.96(kN) CX=4.81(kNm) CY=0.04(kNm) |
| | 152 | fuerza nodal | 52 | FX=-0.05(kN) FY=4.60(kN) FZ=23.63(kN) CX=3.19(kNm) CY=0.03(kNm) |
| | 152 | fuerza nodal | 53 | FX=-0.03(kN) FY=4.02(kN) FZ=23.65(kN) CX=1.58(kNm) CY=0.01(kNm) |
| | 152 | fuerza nodal | 54 | FX=-0.45(kN) FY=3.45(kN) FZ=23.81(kN) CX=0.13(kNm) CY=0.02(kNm) |
| | 152 | fuerza nodal | 55 | FX=-0.14(kN) FY=15.01(kN) FZ=-32.71(kN) CX=-5.61(kNm) CY=-0.05(kNm) |
| | 152 | fuerza nodal | 56 | FX=-0.30(kN) FY=-13.14(kN) FZ=-94.32(kN) CX=11.30(kNm) CY=-0.26(kNm) |
| | 152 | fuerza nodal | 57 | FX=0.30(kN) FY=-30.29(kN) FZ=-113.19(kN) CX=29.39(kNm) CY=0.29(kNm) |
| | 152 | fuerza nodal | 58 | FX=0.53(kN) FY=-53.01(kN) FZ=-120.16(kN) CX=42.78(kNm) CY=0.43(kNm) |
| | 152 | fuerza nodal | 59 | FX=8.05(kN) FY=-805.47(kN) FZ=186.79(kN) CX=130.49(kNm) CY=1.30(kN |
| | 152 | fuerza nodal | 15 | FX=-1.92(kN) FY=805.50(kN) FZ=186.80(kN) CX=-267.43(kNm) CY=-0.64(kN |
| | 152 | fuerza nodal | 16 | FX=-0.54(kN) FY=53.01(kN) FZ=-120.16(kN) CX=-51.79(kNm) CY=-0.52(kNm |
| | 152 | fuerza nodal | 17 | FX=-0.09(kN) FY=30.30(kN) FZ=-113.19(kN) CX=-34.54(kNm) CY=-0.10(kNm |
| | 152 | fuerza nodal | 18 | FX=-0.47(kN) FY=13.14(kN) FZ=-94.32(kN) CX=-13.53(kNm) CY=-0.48(kNm) |
| | 152 | fuerza nodal | 19 | FX=0.47(kN) FY=-15.01(kN) FZ=-32.71(kN) CX=8.17(kNm) CY=0.26(kNm) |
| | 152 | fuerza nodal | 20 | FX=-0.83(kN) FY=-3.46(kN) FZ=23.82(kN) CX=0.46(kNm) CY=-0.11(kNm) |
| | 152 | fuerza nodal | 21 | FX=0.43(kN) FY=-4.02(kN) FZ=23.72(kN) CX=-0.90(kNm) CY=-0.10(kNm) |
| | 152 | fuerza nodal | 22 | FX=-0.40(kN) FY=-4.60(kN) FZ=23.57(kN) CX=-2.41(kNm) CY=0.21(kNm) |
| | 152 | fuerza nodal | 23 | FX=0.02(kN) FY=-5.11(kN) FZ=22.96(kN) CX=-3.94(kNm) CY=-0.01(kNm) |
| | 152 | fuerza nodal | 24 | FX=-0.39(kN) FY=-5.72(kN) FZ=23.15(kN) CX=-5.50(kNm) CY=0.37(kNm) |
| | 152 | fuerza nodal | 25 | FX=0.03(kN) FY=-6.27(kN) FZ=22.87(kN) CX=-6.89(kNm) CY=-0.03(kNm) |
| | 152 | fuerza nodal | 37 | FX=-0.36(kN) FY=-0.94(kN) FZ=-112.20(kN) CX=1.07(kNm) CY=-0.41(kNm) |
| | 152 | fuerza nodal | 36 | FX=0.06(kN) FY=-10.83(kN) FZ=-81.13(kN) CX=11.16(kNm) CY=0.07(kNm) |
| | 152 | fuerza nodal | 35 | FX=-0.35(kN) FY=-3.52(kN) FZ=-31.37(kN) CX=1.91(kNm) CY=-0.19(kNm) |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 152 | fuerza nodal | 34 | FX=0.06(kN) FY=-10.32(kN) FZ=18.67(kN) CX=1.37(kNm) CY=0.01(kNm) |
| | 152 | fuerza nodal | 33 | FX=0.06(kN) FY=-9.98(kN) FZ=19.26(kN) CX=-2.23(kNm) CY=-0.01(kNm) |
| | 152 | fuerza nodal | 32 | FX=-0.33(kN) FY=-9.61(kN) FZ=19.83(kN) CX=-5.03(kNm) CY=0.17(kNm) |
| | 152 | fuerza nodal | 31 | FX=0.05(kN) FY=-9.08(kN) FZ=19.99(kN) CX=-7.00(kNm) CY=-0.04(kNm) |
| | 152 | fuerza nodal | 30 | FX=-0.35(kN) FY=-8.78(kN) FZ=20.87(kN) CX=-8.45(kNm) CY=0.33(kNm) |
| | 152 | fuerza nodal | 29 | FX=0.44(kN) FY=-8.31(kN) FZ=21.35(kN) CX=-9.14(kNm) CY=-0.48(kNm) |
| | 152 | fuerza nodal | 28 | FX=-0.76(kN) FY=-7.84(kN) FZ=21.79(kN) CX=-9.26(kNm) CY=0.90(kNm) |
| | 152 | fuerza nodal | 27 | FX=0.44(kN) FY=-7.24(kN) FZ=21.79(kN) CX=-8.75(kNm) CY=-0.53(kNm) |
| | 152 | fuerza nodal | 26 | FX=-0.38(kN) FY=-6.81(kN) FZ=22.55(kN) CX=-8.04(kNm) CY=0.44(kNm) |
| | 153 | fuerza nodal | 48 | FX=-0.05(kN) FY=6.78(kN) FZ=22.46(kN) CX=11.46(kNm) CY=0.09(kNm) |
| | 153 | fuerza nodal | 47 | FX=-0.06(kN) FY=7.21(kN) FZ=21.70(kN) CX=12.39(kNm) CY=0.10(kNm) |
| | 153 | fuerza nodal | 46 | FX=-0.06(kN) FY=7.60(kN) FZ=20.91(kN) CX=12.85(kNm) CY=0.10(kNm) |
| | 153 | fuerza nodal | 45 | FX=-0.46(kN) FY=8.15(kN) FZ=20.89(kN) CX=13.13(kNm) CY=0.74(kNm) |
| | 153 | fuerza nodal | 44 | FX=-0.07(kN) FY=8.60(kN) FZ=20.43(kN) CX=12.70(kNm) CY=0.10(kNm) |
| | 153 | fuerza nodal | 43 | FX=-0.45(kN) FY=8.89(kN) FZ=19.57(kN) CX=11.46(kNm) CY=0.58(kNm) |
| | 153 | fuerza nodal | 42 | FX=-0.07(kN) FY=9.26(kN) FZ=19.07(kN) CX=9.71(kNm) CY=0.07(kNm) |
| | 153 | fuerza nodal | 41 | FX=-0.07(kN) FY=9.89(kN) FZ=19.25(kN) CX=7.45(kNm) CY=0.05(kNm) |
| | 153 | fuerza nodal | 40 | FX=-0.44(kN) FY=9.94(kN) FZ=17.98(kN) CX=4.03(kNm) CY=0.18(kNm) |
| | 153 | fuerza nodal | 39 | FX=-0.06(kN) FY=9.04(kN) FZ=14.74(kN) CX=0.03(kNm) CY=0.00(kNm) |
| | 153 | fuerza nodal | 38 | FX=-0.05(kN) FY=7.49(kN) FZ=-91.86(kN) CX=-4.51(kNm) CY=-0.03(kNm) |
| | 153 | fuerza nodal | 49 | FX=-0.46(kN) FY=6.24(kN) FZ=22.78(kN) CX=10.04(kNm) CY=0.74(kNm) |
| | 153 | fuerza nodal | 50 | FX=-0.46(kN) FY=5.69(kN) FZ=23.05(kN) CX=8.37(kNm) CY=0.68(kNm) |
| | 153 | fuerza nodal | 51 | FX=-0.05(kN) FY=5.09(kN) FZ=22.87(kN) CX=6.52(kNm) CY=0.06(kNm) |
| | 153 | fuerza nodal | 52 | FX=-0.05(kN) FY=4.58(kN) FZ=23.53(kN) CX=4.73(kNm) CY=0.05(kNm) |
| | 153 | fuerza nodal | 53 | FX=-0.03(kN) FY=4.00(kN) FZ=23.55(kN) CX=2.93(kNm) CY=0.02(kNm) |
| | 153 | fuerza nodal | 54 | FX=-0.45(kN) FY=3.44(kN) FZ=23.71(kN) CX=1.30(kNm) CY=0.17(kNm) |
| | 153 | fuerza nodal | 55 | FX=-0.17(kN) FY=18.16(kN) FZ=-31.64(kN) CX=-0.62(kNm) CY=-0.01(kNm) |
| | 153 | fuerza nodal | 56 | FX=-0.30(kN) FY=-13.15(kN) FZ=-95.10(kN) CX=6.85(kNm) CY=-0.16(kNm) |
| | 153 | fuerza nodal | 57 | FX=0.32(kN) FY=-32.02(kN) FZ=-118.67(kN) CX=20.18(kNm) CY=0.20(kNm) |
| | 153 | fuerza nodal | 58 | FX=0.59(kN) FY=-59.00(kN) FZ=-129.37(kN) CX=26.67(kNm) CY=0.27(kNm) |
| | 153 | fuerza nodal | 59 | FX=7.97(kN) FY=-797.12(kN) FZ=201.94(kN) CX=-189.71(kNm) CY=-1.90(kN |
| | 153 | fuerza nodal | 15 | FX=-1.90(kN) FY=797.14(kN) FZ=201.94(kN) CX=54.21(kNm) CY=0.13(kNm) |



ROBOT v 14.5.0
Autor : **eipsa-eipsa**
Dirección :

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Archivo : **Gelserec.rtd**
Proyecto : Gelserec

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 153 | fuerza nodal | 16 | FX=-0.55(kN) FY=59.01(kN) FZ=-129.37(kN) CX=-36.70(kNm) CY=-0.34(kNm |
| | 153 | fuerza nodal | 17 | FX=-0.09(kN) FY=32.03(kN) FZ=-118.67(kN) CX=-25.62(kNm) CY=-0.07(kNm |
| | 153 | fuerza nodal | 18 | FX=-0.47(kN) FY=13.14(kN) FZ=-95.11(kN) CX=-9.08(kNm) CY=-0.32(kNm) |
| | 153 | fuerza nodal | 19 | FX=0.48(kN) FY=-18.16(kN) FZ=-31.64(kN) CX=3.70(kNm) CY=0.10(kNm) |
| | 153 | fuerza nodal | 20 | FX=-0.83(kN) FY=-3.45(kN) FZ=23.71(kN) CX=-0.71(kNm) CY=0.17(kNm) |
| | 153 | fuerza nodal | 21 | FX=0.43(kN) FY=-4.01(kN) FZ=23.61(kN) CX=-2.26(kNm) CY=-0.24(kNm) |
| | 153 | fuerza nodal | 22 | FX=-0.40(kN) FY=-4.58(kN) FZ=23.47(kN) CX=-3.95(kNm) CY=0.35(kNm) |
| | 153 | fuerza nodal | 23 | FX=0.02(kN) FY=-5.09(kN) FZ=22.87(kN) CX=-5.65(kNm) CY=-0.02(kNm) |
| | 153 | fuerza nodal | 24 | FX=-0.39(kN) FY=-5.69(kN) FZ=23.05(kN) CX=-7.41(kNm) CY=0.51(kNm) |
| | 153 | fuerza nodal | 25 | FX=0.03(kN) FY=-6.24(kN) FZ=22.78(kN) CX=-8.98(kNm) CY=-0.04(kNm) |
| | 153 | fuerza nodal | 37 | FX=-0.35(kN) FY=-0.88(kN) FZ=-111.35(kN) CX=0.70(kNm) CY=-0.28(kNm) |
| | 153 | fuerza nodal | 36 | FX=0.07(kN) FY=-10.86(kN) FZ=-81.52(kN) CX=7.50(kNm) CY=0.04(kNm) |
| | 153 | fuerza nodal | 35 | FX=-0.35(kN) FY=-3.48(kN) FZ=-30.87(kN) CX=0.71(kNm) CY=-0.07(kNm) |
| | 153 | fuerza nodal | 34 | FX=0.06(kN) FY=-10.27(kN) FZ=18.59(kN) CX=-2.13(kNm) CY=-0.01(kNm) |
| | 153 | fuerza nodal | 33 | FX=0.06(kN) FY=-9.93(kN) FZ=19.18(kN) CX=-5.59(kNm) CY=-0.03(kNm) |
| | 153 | fuerza nodal | 32 | FX=-0.33(kN) FY=-9.57(kN) FZ=19.74(kN) CX=-8.27(kNm) CY=0.28(kNm) |
| | 153 | fuerza nodal | 31 | FX=0.05(kN) FY=-9.05(kN) FZ=19.91(kN) CX=-10.04(kNm) CY=-0.05(kNm) |
| | 153 | fuerza nodal | 30 | FX=-0.35(kN) FY=-8.74(kN) FZ=20.78(kN) CX=-11.38(kNm) CY=0.45(kNm) |
| | 153 | fuerza nodal | 29 | FX=0.44(kN) FY=-8.28(kN) FZ=21.26(kN) CX=-11.91(kNm) CY=-0.63(kNm) |
| | 153 | fuerza nodal | 28 | FX=-0.76(kN) FY=-7.80(kN) FZ=21.70(kN) CX=-11.87(kNm) CY=1.15(kNm) |
| | 153 | fuerza nodal | 27 | FX=0.43(kN) FY=-7.21(kN) FZ=21.70(kN) CX=-11.17(kNm) CY=-0.67(kNm) |
| | 153 | fuerza nodal | 26 | FX=-0.37(kN) FY=-6.78(kN) FZ=22.46(kN) CX=-10.32(kNm) CY=0.57(kNm) |
| | 154 | fuerza nodal | 68 | FX=-0.08(kN) FY=6.81(kN) FZ=22.55(kN) CX=9.20(kNm) CY=0.11(kNm) |
| | 154 | fuerza nodal | 67 | FX=-0.49(kN) FY=7.24(kN) FZ=21.79(kN) CX=9.98(kNm) CY=0.67(kNm) |
| | 154 | fuerza nodal | 66 | FX=-0.09(kN) FY=7.63(kN) FZ=21.00(kN) CX=10.31(kNm) CY=0.12(kNm) |
| | 154 | fuerza nodal | 65 | FX=-0.09(kN) FY=8.19(kN) FZ=20.98(kN) CX=10.41(kNm) CY=0.12(kNm) |
| | 154 | fuerza nodal | 64 | FX=-0.49(kN) FY=8.63(kN) FZ=20.52(kN) CX=9.81(kNm) CY=0.56(kNm) |
| | 154 | fuerza nodal | 63 | FX=-0.09(kN) FY=8.94(kN) FZ=19.69(kN) CX=8.49(kNm) CY=0.09(kNm) |
| | 154 | fuerza nodal | 62 | FX=-0.11(kN) FY=9.29(kN) FZ=19.11(kN) CX=6.58(kNm) CY=0.07(kNm) |
| | 154 | fuerza nodal | 61 | FX=-0.49(kN) FY=9.92(kN) FZ=19.33(kN) CX=4.11(kNm) CY=0.20(kNm) |
| | 154 | fuerza nodal | 60 | FX=-0.10(kN) FY=9.98(kN) FZ=18.05(kN) CX=0.65(kNm) CY=0.01(kNm) |
| | 154 | fuerza nodal | 59 | FX=-0.46(kN) FY=9.08(kN) FZ=14.81(kN) CX=-3.06(kNm) CY=-0.16(kNm) |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 154 | fuerza nodal | 58 | FX=-0.08(kN) FY=7.52(kN) FZ=-92.25(kN) CX=-7.09(kNm) CY=-0.07(kNm) |
| | 154 | fuerza nodal | 69 | FX=-0.08(kN) FY=6.27(kN) FZ=22.90(kN) CX=7.96(kNm) CY=0.10(kNm) |
| | 154 | fuerza nodal | 70 | FX=-0.48(kN) FY=5.71(kN) FZ=23.12(kN) CX=6.46(kNm) CY=0.54(kNm) |
| | 154 | fuerza nodal | 71 | FX=-0.06(kN) FY=5.11(kN) FZ=22.96(kN) CX=4.81(kNm) CY=0.06(kNm) |
| | 154 | fuerza nodal | 72 | FX=-0.48(kN) FY=4.59(kN) FZ=23.57(kN) CX=3.18(kNm) CY=0.33(kNm) |
| | 154 | fuerza nodal | 73 | FX=-0.05(kN) FY=4.02(kN) FZ=23.71(kN) CX=1.58(kNm) CY=0.02(kNm) |
| | 154 | fuerza nodal | 74 | FX=-0.04(kN) FY=3.46(kN) FZ=23.81(kN) CX=0.13(kNm) CY=0.00(kNm) |
| | 154 | fuerza nodal | 75 | FX=-0.63(kN) FY=15.00(kN) FZ=-32.64(kN) CX=-5.61(kNm) CY=-0.23(kNm) |
| | 154 | fuerza nodal | 76 | FX=0.18(kN) FY=-13.14(kN) FZ=-94.38(kN) CX=11.30(kNm) CY=0.16(kNm) |
| | 154 | fuerza nodal | 77 | FX=-0.00(kN) FY=-30.30(kN) FZ=-113.18(kN) CX=29.39(kNm) CY=-0.00(kNm |
| | 154 | fuerza nodal | 78 | FX=0.73(kN) FY=-53.00(kN) FZ=-120.15(kN) CX=42.77(kNm) CY=0.59(kNm) |
| | 154 | fuerza nodal | 79 | FX=11.12(kN) FY=-805.44(kN) FZ=186.78(kN) CX=130.48(kNm) CY=1.80(kN |
| | 154 | fuerza nodal | 35 | FX=-4.99(kN) FY=805.48(kN) FZ=186.80(kN) CX=-267.42(kNm) CY=-1.66(kN |
| | 154 | fuerza nodal | 36 | FX=-0.33(kN) FY=53.00(kN) FZ=-120.13(kN) CX=-51.78(kNm) CY=-0.32(kNm |
| | 154 | fuerza nodal | 37 | FX=-0.61(kN) FY=30.30(kN) FZ=-113.22(kN) CX=-34.54(kNm) CY=-0.69(kNm |
| | 154 | fuerza nodal | 38 | FX=-0.09(kN) FY=13.14(kN) FZ=-94.32(kN) CX=-13.54(kNm) CY=-0.09(kNm) |
| | 154 | fuerza nodal | 39 | FX=0.10(kN) FY=-15.00(kN) FZ=-32.71(kN) CX=8.16(kNm) CY=0.05(kNm) |
| | 154 | fuerza nodal | 40 | FX=-0.40(kN) FY=-3.46(kN) FZ=23.82(kN) CX=0.46(kNm) CY=-0.05(kNm) |
| | 154 | fuerza nodal | 41 | FX=0.03(kN) FY=-4.02(kN) FZ=23.72(kN) CX=-0.90(kNm) CY=-0.01(kNm) |
| | 154 | fuerza nodal | 42 | FX=0.03(kN) FY=-4.59(kN) FZ=23.57(kN) CX=-2.41(kNm) CY=-0.02(kNm) |
| | 154 | fuerza nodal | 43 | FX=-0.38(kN) FY=-5.12(kN) FZ=22.96(kN) CX=-3.94(kNm) CY=0.29(kNm) |
| | 154 | fuerza nodal | 44 | FX=0.04(kN) FY=-5.71(kN) FZ=23.15(kN) CX=-5.50(kNm) CY=-0.04(kNm) |
| | 154 | fuerza nodal | 45 | FX=-0.36(kN) FY=-6.27(kN) FZ=22.87(kN) CX=-6.89(kNm) CY=0.40(kNm) |
| | 154 | fuerza nodal | 57 | FX=0.01(kN) FY=-0.94(kN) FZ=-112.17(kN) CX=1.08(kNm) CY=0.01(kNm) |
| | 154 | fuerza nodal | 56 | FX=-0.26(kN) FY=-10.84(kN) FZ=-81.15(kN) CX=11.16(kNm) CY=-0.27(kNm) |
| | 154 | fuerza nodal | 55 | FX=0.03(kN) FY=-3.51(kN) FZ=-31.37(kN) CX=1.91(kNm) CY=0.02(kNm) |
| | 154 | fuerza nodal | 54 | FX=-0.28(kN) FY=-10.32(kN) FZ=18.67(kN) CX=1.37(kNm) CY=-0.04(kNm) |
| | 154 | fuerza nodal | 53 | FX=0.09(kN) FY=-9.96(kN) FZ=19.21(kN) CX=-2.22(kNm) CY=-0.02(kNm) |
| | 154 | fuerza nodal | 52 | FX=0.08(kN) FY=-9.62(kN) FZ=19.88(kN) CX=-5.04(kNm) CY=-0.04(kNm) |
| | 154 | fuerza nodal | 51 | FX=0.08(kN) FY=-9.08(kN) FZ=19.99(kN) CX=-6.99(kNm) CY=-0.06(kNm) |
| | 154 | fuerza nodal | 50 | FX=-0.31(kN) FY=-8.78(kN) FZ=20.87(kN) CX=-8.45(kNm) CY=0.30(kNm) |
| | 154 | fuerza nodal | 49 | FX=-0.33(kN) FY=-8.32(kN) FZ=21.35(kN) CX=-9.14(kNm) CY=0.36(kNm) |



ROBOT v 14.5.0
Autor : **eipsa-eipsa**
Dirección :

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Proyecto : Gelserec

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 154 | fuerza nodal | 48 | FX=0.06(kN) FY=-7.83(kN) FZ=21.79(kN) CX=-9.25(kNm) CY=-0.07(kNm) |
| | 154 | fuerza nodal | 47 | FX=0.06(kN) FY=-7.24(kN) FZ=21.79(kN) CX=-8.75(kNm) CY=-0.07(kNm) |
| | 154 | fuerza nodal | 46 | FX=0.06(kN) FY=-6.81(kN) FZ=22.55(kN) CX=-8.04(kNm) CY=-0.07(kNm) |
| | 155 | fuerza nodal | 68 | FX=-0.08(kN) FY=6.78(kN) FZ=22.46(kN) CX=11.46(kNm) CY=0.14(kNm) |
| | 155 | fuerza nodal | 67 | FX=-0.49(kN) FY=7.21(kN) FZ=21.69(kN) CX=12.39(kNm) CY=0.83(kNm) |
| | 155 | fuerza nodal | 66 | FX=-0.09(kN) FY=7.60(kN) FZ=20.91(kN) CX=12.85(kNm) CY=0.15(kNm) |
| | 155 | fuerza nodal | 65 | FX=-0.09(kN) FY=8.15(kN) FZ=20.89(kN) CX=13.14(kNm) CY=0.15(kNm) |
| | 155 | fuerza nodal | 64 | FX=-0.49(kN) FY=8.59(kN) FZ=20.43(kN) CX=12.69(kNm) CY=0.72(kNm) |
| | 155 | fuerza nodal | 63 | FX=-0.09(kN) FY=8.90(kN) FZ=19.61(kN) CX=11.48(kNm) CY=0.12(kNm) |
| | 155 | fuerza nodal | 62 | FX=-0.11(kN) FY=9.25(kN) FZ=19.02(kN) CX=9.69(kNm) CY=0.11(kNm) |
| | 155 | fuerza nodal | 61 | FX=-0.48(kN) FY=9.88(kN) FZ=19.25(kN) CX=7.45(kNm) CY=0.36(kNm) |
| | 155 | fuerza nodal | 60 | FX=-0.10(kN) FY=9.94(kN) FZ=17.98(kN) CX=4.03(kNm) CY=0.04(kNm) |
| | 155 | fuerza nodal | 59 | FX=-0.46(kN) FY=9.04(kN) FZ=14.74(kN) CX=0.03(kNm) CY=0.00(kNm) |
| | 155 | fuerza nodal | 58 | FX=-0.07(kN) FY=7.49(kN) FZ=-91.85(kN) CX=-4.51(kNm) CY=-0.05(kNm) |
| | 155 | fuerza nodal | 69 | FX=-0.08(kN) FY=6.24(kN) FZ=22.80(kN) CX=10.04(kNm) CY=0.13(kNm) |
| | 155 | fuerza nodal | 70 | FX=-0.48(kN) FY=5.68(kN) FZ=23.02(kN) CX=8.36(kNm) CY=0.70(kNm) |
| | 155 | fuerza nodal | 71 | FX=-0.06(kN) FY=5.09(kN) FZ=22.86(kN) CX=6.52(kNm) CY=0.08(kNm) |
| | 155 | fuerza nodal | 72 | FX=-0.47(kN) FY=4.57(kN) FZ=23.47(kN) CX=4.72(kNm) CY=0.49(kNm) |
| | 155 | fuerza nodal | 73 | FX=-0.05(kN) FY=4.01(kN) FZ=23.61(kN) CX=2.94(kNm) CY=0.04(kNm) |
| | 155 | fuerza nodal | 74 | FX=-0.04(kN) FY=3.44(kN) FZ=23.71(kN) CX=1.30(kNm) CY=0.02(kNm) |
| | 155 | fuerza nodal | 75 | FX=-0.67(kN) FY=18.15(kN) FZ=-31.57(kN) CX=-0.62(kNm) CY=-0.02(kNm) |
| | 155 | fuerza nodal | 76 | FX=0.18(kN) FY=-13.15(kN) FZ=-95.17(kN) CX=6.85(kNm) CY=0.09(kNm) |
| | 155 | fuerza nodal | 77 | FX=0.02(kN) FY=-32.03(kN) FZ=-118.66(kN) CX=20.18(kNm) CY=0.01(kNm) |
| | 155 | fuerza nodal | 78 | FX=0.81(kN) FY=-59.00(kN) FZ=-129.36(kN) CX=26.67(kNm) CY=0.37(kNm) |
| | 155 | fuerza nodal | 79 | FX=11.01(kN) FY=-797.08(kN) FZ=201.93(kN) CX=-189.71(kNm) CY=-2.62(k |
| | 155 | fuerza nodal | 35 | FX=-4.93(kN) FY=797.13(kN) FZ=201.94(kN) CX=54.20(kNm) CY=0.34(kNm) |
| | 155 | fuerza nodal | 36 | FX=-0.37(kN) FY=59.00(kN) FZ=-129.34(kN) CX=-36.70(kNm) CY=-0.23(kNm |
| | 155 | fuerza nodal | 37 | FX=-0.62(kN) FY=32.03(kN) FZ=-118.70(kN) CX=-25.63(kNm) CY=-0.50(kNm |
| | 155 | fuerza nodal | 38 | FX=-0.09(kN) FY=13.14(kN) FZ=-95.10(kN) CX=-9.08(kNm) CY=-0.06(kNm) |
| | 155 | fuerza nodal | 39 | FX=0.12(kN) FY=-18.15(kN) FZ=-31.64(kN) CX=3.70(kNm) CY=0.02(kNm) |
| | 155 | fuerza nodal | 40 | FX=-0.40(kN) FY=-3.45(kN) FZ=23.71(kN) CX=-0.71(kNm) CY=0.08(kNm) |
| | 155 | fuerza nodal | 41 | FX=0.03(kN) FY=-4.01(kN) FZ=23.61(kN) CX=-2.26(kNm) CY=-0.02(kNm) |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 155 | fuerza nodal | 42 | FX=0.03(kN) FY=-4.57(kN) FZ=23.47(kN) CX=-3.95(kNm) CY=-0.03(kNm) |
| | 155 | fuerza nodal | 43 | FX=-0.38(kN) FY=-5.09(kN) FZ=22.87(kN) CX=-5.65(kNm) CY=0.42(kNm) |
| | 155 | fuerza nodal | 44 | FX=0.04(kN) FY=-5.69(kN) FZ=23.05(kN) CX=-7.41(kNm) CY=-0.06(kNm) |
| | 155 | fuerza nodal | 45 | FX=-0.36(kN) FY=-6.24(kN) FZ=22.78(kN) CX=-8.99(kNm) CY=0.52(kNm) |
| | 155 | fuerza nodal | 57 | FX=0.01(kN) FY=-0.88(kN) FZ=-111.33(kN) CX=0.71(kNm) CY=0.01(kNm) |
| | 155 | fuerza nodal | 56 | FX=-0.26(kN) FY=-10.87(kN) FZ=-81.54(kN) CX=7.51(kNm) CY=-0.18(kNm) |
| | 155 | fuerza nodal | 55 | FX=0.03(kN) FY=-3.48(kN) FZ=-30.86(kN) CX=0.71(kNm) CY=0.01(kNm) |
| | 155 | fuerza nodal | 54 | FX=-0.28(kN) FY=-10.28(kN) FZ=18.59(kN) CX=-2.13(kNm) CY=0.06(kNm) |
| | 155 | fuerza nodal | 53 | FX=0.09(kN) FY=-9.91(kN) FZ=19.13(kN) CX=-5.58(kNm) CY=-0.05(kNm) |
| | 155 | fuerza nodal | 52 | FX=0.08(kN) FY=-9.58(kN) FZ=19.80(kN) CX=-8.28(kNm) CY=-0.07(kNm) |
| | 155 | fuerza nodal | 51 | FX=0.08(kN) FY=-9.05(kN) FZ=19.90(kN) CX=-10.04(kNm) CY=-0.09(kNm) |
| | 155 | fuerza nodal | 50 | FX=-0.31(kN) FY=-8.74(kN) FZ=20.78(kN) CX=-11.38(kNm) CY=0.41(kNm) |
| | 155 | fuerza nodal | 49 | FX=-0.33(kN) FY=-8.28(kN) FZ=21.26(kN) CX=-11.92(kNm) CY=0.47(kNm) |
| | 155 | fuerza nodal | 48 | FX=0.06(kN) FY=-7.80(kN) FZ=21.70(kN) CX=-11.86(kNm) CY=-0.10(kNm) |
| | 155 | fuerza nodal | 47 | FX=0.06(kN) FY=-7.21(kN) FZ=21.70(kN) CX=-11.17(kNm) CY=-0.09(kNm) |
| | 155 | fuerza nodal | 46 | FX=0.05(kN) FY=-6.78(kN) FZ=22.46(kN) CX=-10.31(kNm) CY=-0.08(kNm) |
| | 156 | fuerza nodal | 88 | FX=-0.51(kN) FY=6.80(kN) FZ=22.55(kN) CX=9.19(kNm) CY=0.69(kNm) |
| | 156 | fuerza nodal | 87 | FX=-0.11(kN) FY=7.24(kN) FZ=21.79(kN) CX=9.98(kNm) CY=0.15(kNm) |
| | 156 | fuerza nodal | 86 | FX=-0.51(kN) FY=7.63(kN) FZ=21.00(kN) CX=10.31(kNm) CY=0.69(kNm) |
| | 156 | fuerza nodal | 85 | FX=0.28(kN) FY=8.20(kN) FZ=21.00(kN) CX=10.43(kNm) CY=-0.35(kNm) |
| | 156 | fuerza nodal | 84 | FX=-0.92(kN) FY=8.62(kN) FZ=20.49(kN) CX=9.80(kNm) CY=1.04(kNm) |
| | 156 | fuerza nodal | 83 | FX=0.26(kN) FY=8.93(kN) FZ=19.65(kN) CX=8.48(kNm) CY=-0.25(kNm) |
| | 156 | fuerza nodal | 82 | FX=-0.52(kN) FY=9.30(kN) FZ=19.15(kN) CX=6.58(kNm) CY=0.37(kNm) |
| | 156 | fuerza nodal | 81 | FX=-0.51(kN) FY=9.95(kN) FZ=19.39(kN) CX=4.12(kNm) CY=0.21(kNm) |
| | 156 | fuerza nodal | 80 | FX=-0.14(kN) FY=9.96(kN) FZ=17.99(kN) CX=0.65(kNm) CY=0.01(kNm) |
| | 156 | fuerza nodal | 79 | FX=-0.13(kN) FY=9.08(kN) FZ=14.80(kN) CX=-3.06(kNm) CY=-0.04(kNm) |
| | 156 | fuerza nodal | 78 | FX=-0.10(kN) FY=7.52(kN) FZ=-92.24(kN) CX=-7.09(kNm) CY=-0.10(kNm) |
| | 156 | fuerza nodal | 89 | FX=-0.11(kN) FY=6.27(kN) FZ=22.90(kN) CX=7.96(kNm) CY=0.13(kNm) |
| | 156 | fuerza nodal | 90 | FX=-0.08(kN) FY=5.71(kN) FZ=23.12(kN) CX=6.46(kNm) CY=0.09(kNm) |
| | 156 | fuerza nodal | 91 | FX=-0.50(kN) FY=5.11(kN) FZ=22.96(kN) CX=4.80(kNm) CY=0.47(kNm) |
| | 156 | fuerza nodal | 92 | FX=-0.08(kN) FY=4.60(kN) FZ=23.63(kN) CX=3.19(kNm) CY=0.06(kNm) |
| | 156 | fuerza nodal | 93 | FX=-0.06(kN) FY=4.02(kN) FZ=23.65(kN) CX=1.58(kNm) CY=0.02(kNm) |





| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 156 | fuerza nodal | 94 | FX=-0.48(kN) FY=3.45(kN) FZ=23.81(kN) CX=0.13(kNm) CY=0.02(kNm) |
| | 156 | fuerza nodal | 95 | FX=-0.25(kN) FY=15.00(kN) FZ=-32.71(kN) CX=-5.61(kNm) CY=-0.09(kNm) |
| | 156 | fuerza nodal | 96 | FX=-0.21(kN) FY=-13.14(kN) FZ=-94.29(kN) CX=11.30(kNm) CY=-0.18(kNm) |
| | 156 | fuerza nodal | 97 | FX=0.53(kN) FY=-30.29(kN) FZ=-113.20(kN) CX=29.38(kNm) CY=0.51(kNm) |
| | 156 | fuerza nodal | 98 | FX=0.91(kN) FY=-53.00(kN) FZ=-120.15(kN) CX=42.77(kNm) CY=0.73(kNm) |
| | 156 | fuerza nodal | 99 | FX=13.81(kN) FY=-805.40(kN) FZ=186.78(kN) CX=130.48(kNm) CY=2.24(kN |
| | 156 | fuerza nodal | 55 | FX=-7.67(kN) FY=805.47(kN) FZ=186.79(kN) CX=-267.42(kNm) CY=-2.55(kN |
| | 156 | fuerza nodal | 56 | FX=-0.91(kN) FY=53.01(kN) FZ=-120.16(kN) CX=-51.79(kNm) CY=-0.89(kNm |
| | 156 | fuerza nodal | 57 | FX=-0.30(kN) FY=30.29(kN) FZ=-113.19(kN) CX=-34.54(kNm) CY=-0.35(kNm |
| | 156 | fuerza nodal | 58 | FX=-0.13(kN) FY=13.14(kN) FZ=-94.32(kN) CX=-13.53(kNm) CY=-0.14(kNm) |
| | 156 | fuerza nodal | 59 | FX=-0.27(kN) FY=-15.01(kN) FZ=-32.71(kN) CX=8.17(kNm) CY=-0.15(kNm) |
| | 156 | fuerza nodal | 60 | FX=0.04(kN) FY=-3.46(kN) FZ=23.81(kN) CX=0.46(kNm) CY=0.00(kNm) |
| | 156 | fuerza nodal | 61 | FX=-0.38(kN) FY=-4.03(kN) FZ=23.72(kN) CX=-0.90(kNm) CY=0.08(kNm) |
| | 156 | fuerza nodal | 62 | FX=0.05(kN) FY=-4.59(kN) FZ=23.52(kN) CX=-2.40(kNm) CY=-0.02(kNm) |
| | 156 | fuerza nodal | 63 | FX=0.06(kN) FY=-5.12(kN) FZ=23.01(kN) CX=-3.94(kNm) CY=-0.05(kNm) |
| | 156 | fuerza nodal | 64 | FX=-0.35(kN) FY=-5.72(kN) FZ=23.15(kN) CX=-5.50(kNm) CY=0.34(kNm) |
| | 156 | fuerza nodal | 65 | FX=0.07(kN) FY=-6.27(kN) FZ=22.87(kN) CX=-6.89(kNm) CY=-0.08(kNm) |
| | 156 | fuerza nodal | 77 | FX=-0.35(kN) FY=-0.95(kN) FZ=-112.17(kN) CX=1.08(kNm) CY=-0.40(kNm) |
| | 156 | fuerza nodal | 76 | FX=0.15(kN) FY=-10.84(kN) FZ=-81.21(kN) CX=11.16(kNm) CY=0.15(kNm) |
| | 156 | fuerza nodal | 75 | FX=-0.33(kN) FY=-3.52(kN) FZ=-31.31(kN) CX=1.91(kNm) CY=-0.18(kNm) |
| | 156 | fuerza nodal | 74 | FX=0.13(kN) FY=-10.32(kN) FZ=18.67(kN) CX=1.37(kNm) CY=0.02(kNm) |
| | 156 | fuerza nodal | 73 | FX=0.13(kN) FY=-9.98(kN) FZ=19.26(kN) CX=-2.22(kNm) CY=-0.03(kNm) |
| | 156 | fuerza nodal | 72 | FX=-0.26(kN) FY=-9.61(kN) FZ=19.83(kN) CX=-5.04(kNm) CY=0.14(kNm) |
| | 156 | fuerza nodal | 71 | FX=0.11(kN) FY=-9.08(kN) FZ=19.99(kN) CX=-6.99(kNm) CY=-0.09(kNm) |
| | 156 | fuerza nodal | 70 | FX=-0.28(kN) FY=-8.77(kN) FZ=20.85(kN) CX=-8.44(kNm) CY=0.27(kNm) |
| | 156 | fuerza nodal | 69 | FX=0.09(kN) FY=-8.32(kN) FZ=21.37(kN) CX=-9.15(kNm) CY=-0.10(kNm) |
| | 156 | fuerza nodal | 68 | FX=0.09(kN) FY=-7.83(kN) FZ=21.79(kN) CX=-9.25(kNm) CY=-0.11(kNm) |
| | 156 | fuerza nodal | 67 | FX=-0.32(kN) FY=-7.25(kN) FZ=21.79(kN) CX=-8.76(kNm) CY=0.39(kNm) |
| | 156 | fuerza nodal | 66 | FX=0.08(kN) FY=-6.81(kN) FZ=22.55(kN) CX=-8.04(kNm) CY=-0.09(kNm) |
| | 157 | fuerza nodal | 88 | FX=-0.51(kN) FY=6.77(kN) FZ=22.45(kN) CX=11.45(kNm) CY=0.86(kNm) |
| | 157 | fuerza nodal | 87 | FX=-0.11(kN) FY=7.21(kN) FZ=21.69(kN) CX=12.39(kNm) CY=0.19(kNm) |
| | 157 | fuerza nodal | 86 | FX=-0.51(kN) FY=7.60(kN) FZ=20.91(kN) CX=12.84(kNm) CY=0.87(kNm) |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 157 | fuerza nodal | 85 | FX=0.28(kN) FY=8.17(kN) FZ=20.91(kN) CX=13.16(kNm) CY=-0.45(kNm) |
| | 157 | fuerza nodal | 84 | FX=-0.91(kN) FY=8.58(kN) FZ=20.40(kN) CX=12.67(kNm) CY=1.35(kNm) |
| | 157 | fuerza nodal | 83 | FX=0.26(kN) FY=8.90(kN) FZ=19.57(kN) CX=11.47(kNm) CY=-0.33(kNm) |
| | 157 | fuerza nodal | 82 | FX=-0.52(kN) FY=9.26(kN) FZ=19.07(kN) CX=9.70(kNm) CY=0.54(kNm) |
| | 157 | fuerza nodal | 81 | FX=-0.51(kN) FY=9.90(kN) FZ=19.30(kN) CX=7.47(kNm) CY=0.39(kNm) |
| | 157 | fuerza nodal | 80 | FX=-0.14(kN) FY=9.92(kN) FZ=17.92(kN) CX=4.02(kNm) CY=0.06(kNm) |
| | 157 | fuerza nodal | 79 | FX=-0.12(kN) FY=9.04(kN) FZ=14.74(kN) CX=0.03(kNm) CY=0.00(kNm) |
| | 157 | fuerza nodal | 78 | FX=-0.10(kN) FY=7.49(kN) FZ=-91.85(kN) CX=-4.51(kNm) CY=-0.06(kNm) |
| | 157 | fuerza nodal | 89 | FX=-0.10(kN) FY=6.24(kN) FZ=22.80(kN) CX=10.04(kNm) CY=0.17(kNm) |
| | 157 | fuerza nodal | 90 | FX=-0.08(kN) FY=5.68(kN) FZ=23.02(kN) CX=8.37(kNm) CY=0.12(kNm) |
| | 157 | fuerza nodal | 91 | FX=-0.49(kN) FY=5.08(kN) FZ=22.86(kN) CX=6.51(kNm) CY=0.63(kNm) |
| | 157 | fuerza nodal | 92 | FX=-0.08(kN) FY=4.58(kN) FZ=23.53(kN) CX=4.73(kNm) CY=0.08(kNm) |
| | 157 | fuerza nodal | 93 | FX=-0.06(kN) FY=4.00(kN) FZ=23.55(kN) CX=2.93(kNm) CY=0.04(kNm) |
| | 157 | fuerza nodal | 94 | FX=-0.48(kN) FY=3.44(kN) FZ=23.71(kN) CX=1.30(kNm) CY=0.18(kNm) |
| | 157 | fuerza nodal | 95 | FX=-0.30(kN) FY=18.15(kN) FZ=-31.64(kN) CX=-0.62(kNm) CY=-0.01(kNm) |
| | 157 | fuerza nodal | 96 | FX=-0.21(kN) FY=-13.15(kN) FZ=-95.07(kN) CX=6.85(kNm) CY=-0.11(kNm) |
| | 157 | fuerza nodal | 97 | FX=0.56(kN) FY=-32.02(kN) FZ=-118.68(kN) CX=20.17(kNm) CY=0.35(kNm) |
| | 157 | fuerza nodal | 98 | FX=1.01(kN) FY=-58.99(kN) FZ=-129.36(kN) CX=26.66(kNm) CY=0.46(kNm) |
| | 157 | fuerza nodal | 99 | FX=13.66(kN) FY=-797.05(kN) FZ=201.92(kN) CX=-189.70(kNm) CY=-3.25(k |
| | 157 | fuerza nodal | 55 | FX=-7.59(kN) FY=797.12(kN) FZ=201.94(kN) CX=54.20(kNm) CY=0.52(kNm) |
| | 157 | fuerza nodal | 56 | FX=-0.97(kN) FY=59.00(kN) FZ=-129.37(kN) CX=-36.70(kNm) CY=-0.60(kNm |
| | 157 | fuerza nodal | 57 | FX=-0.32(kN) FY=32.02(kN) FZ=-118.67(kN) CX=-25.62(kNm) CY=-0.26(kNm |
| | 157 | fuerza nodal | 58 | FX=-0.13(kN) FY=13.14(kN) FZ=-95.10(kN) CX=-9.08(kNm) CY=-0.09(kNm) |
| | 157 | fuerza nodal | 59 | FX=-0.24(kN) FY=-18.16(kN) FZ=-31.64(kN) CX=3.71(kNm) CY=-0.05(kNm) |
| | 157 | fuerza nodal | 60 | FX=0.04(kN) FY=-3.44(kN) FZ=23.71(kN) CX=-0.71(kNm) CY=-0.01(kNm) |
| | 157 | fuerza nodal | 61 | FX=-0.38(kN) FY=-4.01(kN) FZ=23.61(kN) CX=-2.26(kNm) CY=0.21(kNm) |
| | 157 | fuerza nodal | 62 | FX=0.05(kN) FY=-4.57(kN) FZ=23.42(kN) CX=-3.95(kNm) CY=-0.04(kNm) |
| | 157 | fuerza nodal | 63 | FX=0.06(kN) FY=-5.09(kN) FZ=22.91(kN) CX=-5.65(kNm) CY=-0.07(kNm) |
| | 157 | fuerza nodal | 64 | FX=-0.35(kN) FY=-5.69(kN) FZ=23.05(kN) CX=-7.41(kNm) CY=0.45(kNm) |
| | 157 | fuerza nodal | 65 | FX=0.07(kN) FY=-6.24(kN) FZ=22.78(kN) CX=-8.98(kNm) CY=-0.10(kNm) |
| | 157 | fuerza nodal | 77 | FX=-0.35(kN) FY=-0.89(kN) FZ=-111.33(kN) CX=0.71(kNm) CY=-0.28(kNm) |
| | 157 | fuerza nodal | 76 | FX=0.15(kN) FY=-10.87(kN) FZ=-81.60(kN) CX=7.51(kNm) CY=0.10(kNm) |



ROBOT v 14.5.0
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Dirección :

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Proyecto : Gelserec

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 157 | fuerza nodal | 75 | FX=-0.33(kN) FY=-3.48(kN) FZ=-30.81(kN) CX=0.71(kNm) CY=-0.07(kNm) |
| | 157 | fuerza nodal | 74 | FX=0.13(kN) FY=-10.27(kN) FZ=18.59(kN) CX=-2.13(kNm) CY=-0.03(kNm) |
| | 157 | fuerza nodal | 73 | FX=0.13(kN) FY=-9.93(kN) FZ=19.18(kN) CX=-5.59(kNm) CY=-0.07(kNm) |
| | 157 | fuerza nodal | 72 | FX=-0.26(kN) FY=-9.57(kN) FZ=19.74(kN) CX=-8.27(kNm) CY=0.23(kNm) |
| | 157 | fuerza nodal | 71 | FX=0.11(kN) FY=-9.04(kN) FZ=19.90(kN) CX=-10.04(kNm) CY=-0.12(kNm) |
| | 157 | fuerza nodal | 70 | FX=-0.28(kN) FY=-8.74(kN) FZ=20.76(kN) CX=-11.37(kNm) CY=0.36(kNm) |
| | 157 | fuerza nodal | 69 | FX=0.09(kN) FY=-8.29(kN) FZ=21.28(kN) CX=-11.93(kNm) CY=-0.14(kNm) |
| | 157 | fuerza nodal | 68 | FX=0.09(kN) FY=-7.80(kN) FZ=21.70(kN) CX=-11.86(kNm) CY=-0.14(kNm) |
| | 157 | fuerza nodal | 67 | FX=-0.32(kN) FY=-7.22(kN) FZ=21.69(kN) CX=-11.17(kNm) CY=0.49(kNm) |
| | 157 | fuerza nodal | 66 | FX=0.08(kN) FY=-6.78(kN) FZ=22.46(kN) CX=-10.31(kNm) CY=-0.12(kNm) |
| | 158 | fuerza nodal | 95 | FX=-0.25(kN) FY=15.07(kN) FZ=-30.49(kN) CX=-8.20(kNm) CY=-0.14(kNm) |
| | 158 | fuerza nodal | 96 | FX=-0.93(kN) FY=30.45(kN) FZ=-86.21(kN) CX=-31.37(kNm) CY=-0.96(kNm) |
| | 158 | fuerza nodal | 97 | FX=-0.44(kN) FY=26.15(kN) FZ=-120.30(kN) CX=-29.82(kNm) CY=-0.50(kNm |
| | 158 | fuerza nodal | 98 | FX=-0.16(kN) FY=9.34(kN) FZ=-77.64(kN) CX=-9.03(kNm) CY=-0.15(kNm) |
| | 158 | fuerza nodal | 99 | FX=-0.62(kN) FY=10.06(kN) FZ=18.46(kN) CX=-4.62(kNm) CY=-0.28(kNm) |
| | 158 | fuerza nodal | 100 | FX=-0.17(kN) FY=9.82(kN) FZ=19.05(kN) CX=-1.52(kNm) CY=-0.03(kNm) |
| | 158 | fuerza nodal | 101 | FX=-0.17(kN) FY=9.62(kN) FZ=19.89(kN) CX=0.99(kNm) CY=0.02(kNm) |
| | 158 | fuerza nodal | 102 | FX=-0.63(kN) FY=9.39(kN) FZ=20.76(kN) CX=2.95(kNm) CY=0.20(kNm) |
| | 158 | fuerza nodal | 103 | FX=-0.15(kN) FY=8.79(kN) FZ=20.37(kN) CX=4.19(kNm) CY=0.07(kNm) |
| | 158 | fuerza nodal | 104 | FX=-0.53(kN) FY=3.68(kN) FZ=20.90(kN) CX=2.19(kNm) CY=0.31(kNm) |
| | 158 | fuerza nodal | 105 | FX=0.13(kN) FY=-7.23(kN) FZ=22.09(kN) CX=-4.81(kNm) CY=-0.08(kNm) |
| | 158 | fuerza nodal | 106 | FX=0.11(kN) FY=-5.28(kN) FZ=10.48(kN) CX=-3.63(kNm) CY=-0.07(kNm) |
| | 158 | fuerza nodal | 107 | FX=-0.39(kN) FY=-3.20(kN) CX=-2.20(kNm) CY=0.27(kNm) |
| | 158 | fuerza nodal | 108 | FX=0.05(kN) FY=-3.11(kN) CX=-2.14(kNm) CY=-0.03(kNm) |
| | 158 | fuerza nodal | 109 | FX=0.07(kN) FY=-3.12(kN) CX=-2.15(kNm) CY=-0.05(kNm) |
| | 158 | fuerza nodal | 110 | FX=-0.39(kN) FY=-3.24(kN) CX=-2.23(kNm) CY=0.27(kNm) |
| | 158 | fuerza nodal | 111 | FX=0.07(kN) FY=-3.14(kN) CX=-2.16(kNm) CY=-0.05(kNm) |
| | 158 | fuerza nodal | 112 | FX=-0.40(kN) FY=-2.36(kN) CX=-1.62(kNm) CY=0.27(kNm) |
| | 158 | fuerza nodal | 113 | FX=18.65(kN) FY=-932.68(kN) CX=-494.32(kNm) CY=-9.89(kNm) |
| | 158 | fuerza nodal | 75 | FX=-10.74(kN) FY=805.38(kN) FZ=186.86(kN) CX=-267.39(kNm) CY=-3.57(k |
| | 158 | fuerza nodal | 76 | FX=-0.70(kN) FY=53.04(kN) FZ=-120.23(kN) CX=-51.82(kNm) CY=-0.69(kNm |
| | 158 | fuerza nodal | 77 | FX=-0.83(kN) FY=30.29(kN) FZ=-113.18(kN) CX=-34.53(kNm) CY=-0.94(kNm |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 158 | fuerza nodal | 78 | FX=-0.18(kN) FY=13.14(kN) FZ=-94.31(kN) CX=-13.53(kNm) CY=-0.19(kNm) |
| | 158 | fuerza nodal | 79 | FX=0.21(kN) FY=-15.00(kN) FZ=-32.71(kN) CX=8.16(kNm) CY=0.11(kNm) |
| | 158 | fuerza nodal | 80 | FX=0.04(kN) FY=-3.45(kN) FZ=23.74(kN) CX=0.46(kNm) CY=0.01(kNm) |
| | 158 | fuerza nodal | 81 | FX=-0.36(kN) FY=-4.03(kN) FZ=23.79(kN) CX=-0.90(kNm) CY=0.08(kNm) |
| | 158 | fuerza nodal | 82 | FX=-0.35(kN) FY=-4.60(kN) FZ=23.57(kN) CX=-2.41(kNm) CY=0.18(kNm) |
| | 158 | fuerza nodal | 83 | FX=0.49(kN) FY=-5.11(kN) FZ=22.96(kN) CX=-3.93(kNm) CY=-0.38(kNm) |
| | 158 | fuerza nodal | 84 | FX=-0.75(kN) FY=-5.72(kN) FZ=23.12(kN) CX=-5.51(kNm) CY=0.72(kNm) |
| | 158 | fuerza nodal | 94 | FX=-0.45(kN) FY=3.23(kN) FZ=22.31(kN) CX=-0.43(kNm) CY=-0.06(kNm) |
| | 158 | fuerza nodal | 93 | FX=-0.05(kN) FY=3.77(kN) FZ=22.16(kN) CX=0.84(kNm) CY=0.01(kNm) |
| | 158 | fuerza nodal | 92 | FX=-0.08(kN) FY=4.31(kN) FZ=22.14(kN) CX=2.26(kNm) CY=0.04(kNm) |
| | 158 | fuerza nodal | 91 | FX=-0.41(kN) FY=0.98(kN) FZ=21.17(kN) CX=0.75(kNm) CY=0.31(kNm) |
| | 158 | fuerza nodal | 90 | FX=0.14(kN) FY=-8.77(kN) FZ=20.84(kN) CX=-8.43(kNm) CY=-0.14(kNm) |
| | 158 | fuerza nodal | 89 | FX=0.12(kN) FY=-8.32(kN) FZ=21.37(kN) CX=-9.15(kNm) CY=-0.14(kNm) |
| | 158 | fuerza nodal | 88 | FX=-0.28(kN) FY=-7.84(kN) FZ=21.79(kN) CX=-9.26(kNm) CY=0.33(kNm) |
| | 158 | fuerza nodal | 87 | FX=0.11(kN) FY=-7.24(kN) FZ=21.79(kN) CX=-8.75(kNm) CY=-0.13(kNm) |
| | 158 | fuerza nodal | 86 | FX=-0.30(kN) FY=-6.81(kN) FZ=22.55(kN) CX=-8.05(kNm) CY=0.36(kNm) |
| | 158 | fuerza nodal | 85 | FX=0.51(kN) FY=-6.26(kN) FZ=22.90(kN) CX=-6.88(kNm) CY=-0.56(kNm) |
| | 159 | fuerza nodal | 95 | FX=-0.24(kN) FY=14.66(kN) FZ=-29.55(kN) CX=-2.99(kNm) CY=-0.05(kNm) |
| | 159 | fuerza nodal | 96 | FX=-0.92(kN) FY=30.14(kN) FZ=-85.40(kN) CX=-20.83(kNm) CY=-0.64(kNm) |
| | 159 | fuerza nodal | 97 | FX=-0.47(kN) FY=27.91(kN) FZ=-138.17(kN) CX=-22.33(kNm) CY=-0.38(kNm |
| | 159 | fuerza nodal | 98 | FX=-0.13(kN) FY=7.67(kN) FZ=-96.81(kN) CX=-4.44(kNm) CY=-0.08(kNm) |
| | 159 | fuerza nodal | 99 | FX=-0.66(kN) FY=12.65(kN) FZ=22.33(kN) CX=0.32(kNm) CY=0.02(kNm) |
| | 159 | fuerza nodal | 100 | FX=-0.21(kN) FY=12.45(kN) FZ=23.66(kN) CX=5.14(kNm) CY=0.09(kNm) |
| | 159 | fuerza nodal | 101 | FX=-0.22(kN) FY=12.24(kN) FZ=25.19(kN) CX=9.08(kNm) CY=0.16(kNm) |
| | 159 | fuerza nodal | 102 | FX=-0.66(kN) FY=11.38(kN) FZ=25.05(kN) CX=11.49(kNm) CY=0.67(kNm) |
| | 159 | fuerza nodal | 103 | FX=-0.19(kN) FY=10.84(kN) FZ=25.81(kN) CX=13.22(kNm) CY=0.23(kNm) |
| | 159 | fuerza nodal | 104 | FX=-0.60(kN) FY=8.01(kN) FZ=27.42(kN) CX=10.96(kNm) CY=0.83(kNm) |
| | 159 | fuerza nodal | 105 | FX=0.14(kN) FY=-8.02(kN) FZ=27.18(kN) CX=-11.69(kNm) CY=-0.20(kNm) |
| | 159 | fuerza nodal | 106 | FX=0.12(kN) FY=-5.92(kN) FZ=13.66(kN) CX=-8.81(kNm) CY=-0.18(kNm) |
| | 159 | fuerza nodal | 107 | FX=-0.39(kN) FY=-3.20(kN) CX=-4.77(kNm) CY=0.58(kNm) |
| | 159 | fuerza nodal | 108 | FX=0.05(kN) FY=-3.11(kN) CX=-4.63(kNm) CY=-0.08(kNm) |
| | 159 | fuerza nodal | 109 | FX=0.07(kN) FY=-3.12(kN) CX=-4.64(kNm) CY=-0.10(kNm) |





| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 159 | fuerza nodal | 110 | FX=-0.39(kN) FY=-3.24(kN) CX=-4.82(kNm) CY=0.59(kNm) |
| | 159 | fuerza nodal | 111 | FX=0.07(kN) FY=-3.14(kN) CX=-4.67(kNm) CY=-0.10(kNm) |
| | 159 | fuerza nodal | 112 | FX=-0.40(kN) FY=-2.36(kN) CX=-3.51(kNm) CY=0.59(kNm) |
| | 159 | fuerza nodal | 113 | FX=18.63(kN) FY=-931.48(kN) CX=-1238.87(kNm) CY=-24.78(kNm) |
| | 159 | fuerza nodal | 75 | FX=-10.63(kN) FY=797.02(kN) FZ=202.01(kN) CX=54.20(kNm) CY=0.72(kN |
| | 159 | fuerza nodal | 76 | FX=-0.78(kN) FY=59.04(kN) FZ=-129.45(kN) CX=-36.72(kNm) CY=-0.49(kNm |
| | 159 | fuerza nodal | 77 | FX=-0.85(kN) FY=32.02(kN) FZ=-118.66(kN) CX=-25.61(kNm) CY=-0.68(kNm |
| | 159 | fuerza nodal | 78 | FX=-0.18(kN) FY=13.14(kN) FZ=-95.10(kN) CX=-9.08(kNm) CY=-0.13(kNm) |
| | 159 | fuerza nodal | 79 | FX=0.25(kN) FY=-18.15(kN) FZ=-31.64(kN) CX=3.70(kNm) CY=0.05(kNm) |
| | 159 | fuerza nodal | 80 | FX=0.04(kN) FY=-3.44(kN) FZ=23.64(kN) CX=-0.71(kNm) CY=-0.01(kNm) |
| | 159 | fuerza nodal | 81 | FX=-0.36(kN) FY=-4.01(kN) FZ=23.68(kN) CX=-2.26(kNm) CY=0.20(kNm) |
| | 159 | fuerza nodal | 82 | FX=-0.35(kN) FY=-4.58(kN) FZ=23.47(kN) CX=-3.96(kNm) CY=0.30(kNm) |
| | 159 | fuerza nodal | 83 | FX=0.49(kN) FY=-5.09(kN) FZ=22.86(kN) CX=-5.64(kNm) CY=-0.54(kNm) |
| | 159 | fuerza nodal | 84 | FX=-0.74(kN) FY=-5.70(kN) FZ=23.02(kN) CX=-7.42(kNm) CY=0.97(kNm) |
| | 159 | fuerza nodal | 94 | FX=-0.44(kN) FY=3.17(kN) FZ=21.90(kN) CX=0.66(kNm) CY=0.09(kNm) |
| | 159 | fuerza nodal | 93 | FX=-0.05(kN) FY=3.70(kN) FZ=21.75(kN) CX=2.08(kNm) CY=0.03(kNm) |
| | 159 | fuerza nodal | 92 | FX=-0.05(kN) FY=2.62(kN) FZ=21.54(kN) CX=2.27(kNm) CY=0.04(kNm) |
| | 159 | fuerza nodal | 91 | FX=-0.24(kN) FY=-9.05(kN) FZ=19.90(kN) CX=-10.05(kNm) CY=0.27(kNm) |
| | 159 | fuerza nodal | 90 | FX=0.14(kN) FY=-8.73(kN) FZ=20.76(kN) CX=-11.36(kNm) CY=-0.19(kNm) |
| | 159 | fuerza nodal | 89 | FX=0.12(kN) FY=-8.29(kN) FZ=21.28(kN) CX=-11.92(kNm) CY=-0.18(kNm) |
| | 159 | fuerza nodal | 88 | FX=-0.28(kN) FY=-7.80(kN) FZ=21.70(kN) CX=-11.87(kNm) CY=0.42(kNm) |
| | 159 | fuerza nodal | 87 | FX=0.11(kN) FY=-7.21(kN) FZ=21.69(kN) CX=-11.17(kNm) CY=-0.17(kNm) |
| | 159 | fuerza nodal | 86 | FX=-0.30(kN) FY=-6.79(kN) FZ=22.45(kN) CX=-10.32(kNm) CY=0.46(kNm) |
| | 159 | fuerza nodal | 85 | FX=0.51(kN) FY=-6.24(kN) FZ=22.80(kN) CX=-8.97(kNm) CY=-0.73(kNm) |
| | 160 | fuerza nodal | 113 | FX=17.93(kN) FY=-896.54(kN) FZ=-123.72(kN) CX=600.68(kNm) CY=12.01(k |
| | 160 | fuerza nodal | 112 | FX=-0.27(kN) FY=-7.99(kN) FZ=15.18(kN) CX=2.44(kNm) CY=-0.08(kNm) |
| | 160 | fuerza nodal | 111 | FX=0.20(kN) FY=-9.87(kN) FZ=19.24(kN) CX=0.52(kNm) CY=0.01(kNm) |
| | 160 | fuerza nodal | 110 | FX=-0.27(kN) FY=-9.19(kN) FZ=18.94(kN) CX=-1.40(kNm) CY=0.04(kNm) |
| | 160 | fuerza nodal | 109 | FX=0.17(kN) FY=-8.72(kN) FZ=19.29(kN) CX=-2.72(kNm) CY=-0.05(kNm) |
| | 160 | fuerza nodal | 108 | FX=0.15(kN) FY=-8.50(kN) FZ=20.61(kN) CX=-3.63(kNm) CY=-0.07(kNm) |
| | 160 | fuerza nodal | 107 | FX=-0.30(kN) FY=-7.79(kN) FZ=20.07(kN) CX=-3.86(kNm) CY=0.15(kNm) |
| | 160 | fuerza nodal | 106 | FX=0.01(kN) FY=-0.12(kN) FZ=21.24(kN) CX=-0.06(kNm) CY=-0.01(kNm) |

| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 160 | fuerza nodal | 105 | FX=-0.15(kN) FY=7.89(kN) FZ=20.96(kN) CX=3.90(kNm) CY=0.08(kNm) |
| | 160 | fuerza nodal | 95 | FX=-13.49(kN) FY=809.56(kN) FZ=187.74(kN) CX=-268.77(kNm) CY=-4.48(k |
| | 160 | fuerza nodal | 96 | FX=-1.30(kN) FY=53.08(kN) FZ=-120.75(kN) CX=-51.86(kNm) CY=-1.27(kNm |
| | 160 | fuerza nodal | 97 | FX=-0.48(kN) FY=28.31(kN) FZ=-102.20(kN) CX=-32.27(kNm) CY=-0.55(kNm |
| | 160 | fuerza nodal | 98 | FX=-0.22(kN) FY=12.67(kN) FZ=-72.36(kN) CX=-13.40(kNm) CY=-0.23(kNm) |
| | 160 | fuerza nodal | 99 | FX=-0.42(kN) FY=-0.85(kN) FZ=-25.75(kN) CX=0.55(kNm) CY=-0.27(kNm) |
| | 160 | fuerza nodal | 100 | FX=-0.03(kN) FY=2.31(kN) FZ=20.41(kN) CX=-0.78(kNm) CY=-0.01(kNm) |
| | 160 | fuerza nodal | 101 | FX=-0.17(kN) FY=9.52(kN) FZ=19.72(kN) CX=-0.73(kNm) CY=-0.01(kNm) |
| | 160 | fuerza nodal | 102 | FX=-0.61(kN) FY=9.02(kN) FZ=19.72(kN) CX=1.24(kNm) CY=0.08(kNm) |
| | 160 | fuerza nodal | 103 | FX=-0.15(kN) FY=8.81(kN) FZ=20.65(kN) CX=2.68(kNm) CY=0.05(kNm) |
| | 160 | fuerza nodal | 104 | FX=-0.60(kN) FY=8.40(kN) FZ=21.03(kN) CX=3.55(kNm) CY=0.25(kNm) |
| | 161 | fuerza nodal | 113 | FX=18.64(kN) FY=-931.93(kN) CX=-866.70(kNm) CY=-17.33(kNm) |
| | 161 | fuerza nodal | 112 | FX=-0.40(kN) FY=-2.36(kN) CX=-2.56(kNm) CY=0.43(kNm) |
| | 161 | fuerza nodal | 111 | FX=0.07(kN) FY=-3.14(kN) CX=-3.42(kNm) CY=-0.08(kNm) |
| | 161 | fuerza nodal | 110 | FX=-0.39(kN) FY=-3.24(kN) CX=-3.52(kNm) CY=0.43(kNm) |
| | 161 | fuerza nodal | 109 | FX=0.07(kN) FY=-3.12(kN) CX=-3.39(kNm) CY=-0.07(kNm) |
| | 161 | fuerza nodal | 108 | FX=0.05(kN) FY=-3.11(kN) CX=-3.38(kNm) CY=-0.06(kNm) |
| | 161 | fuerza nodal | 107 | FX=-0.39(kN) FY=-3.20(kN) CX=-3.49(kNm) CY=0.43(kNm) |
| | 161 | fuerza nodal | 106 | FX=0.11(kN) FY=-5.65(kN) FZ=12.29(kN) CX=-6.15(kNm) CY=-0.12(kNm) |
| | 161 | fuerza nodal | 105 | FX=0.14(kN) FY=-7.82(kN) FZ=25.79(kN) CX=-8.30(kNm) CY=-0.15(kNm) |
| | 161 | fuerza nodal | 104 | FX=-0.57(kN) FY=6.35(kN) FZ=24.36(kN) CX=6.21(kNm) CY=0.56(kNm) |
| | 161 | fuerza nodal | 103 | FX=-0.18(kN) FY=10.16(kN) FZ=24.18(kN) CX=8.55(kNm) CY=0.15(kNm) |
| | 161 | fuerza nodal | 102 | FX=-0.65(kN) FY=10.77(kN) FZ=23.94(kN) CX=6.99(kNm) CY=0.42(kNm) |
| | 161 | fuerza nodal | 101 | FX=-0.19(kN) FY=10.97(kN) FZ=22.50(kN) CX=4.40(kNm) CY=0.08(kNm) |
| | 161 | fuerza nodal | 100 | FX=-0.20(kN) FY=11.58(kN) FZ=22.34(kN) CX=1.15(kNm) CY=0.02(kNm) |
| | 161 | fuerza nodal | 99 | FX=-0.52(kN) FY=4.56(kN) FZ=-30.72(kN) CX=-1.18(kNm) CY=-0.13(kNm) |
| | 161 | fuerza nodal | 98 | FX=-0.22(kN) FY=12.58(kN) FZ=-83.70(kN) CX=-8.86(kNm) CY=-0.15(kNm) |
| | 161 | fuerza nodal | 97 | FX=-0.49(kN) FY=29.15(kN) FZ=-114.55(kN) CX=-23.32(kNm) CY=-0.39(kNm |
| | 161 | fuerza nodal | 96 | FX=-1.56(kN) FY=68.37(kN) FZ=-128.87(kN) CX=-42.53(kNm) CY=-0.97(kNm |
| | 161 | fuerza nodal | 95 | FX=-13.32(kN) FY=799.07(kN) FZ=202.43(kN) CX=54.34(kNm) CY=0.91(kN |
| | 162 | sobrecarga uniforme | 1A112 | PY=9.57(kN/m) local |
| | 162 | momento repartido | 1A112 | MX=-28.77(kNm/m) local |





| | Caso | Tipo de carga | Lista | Valores de carga |
|---|---|---|---|---|
| | 163 | sobrecarga uniforme | 1A112 | PY=7.21(kN/m) local |
| | 163 | momento repartido | 1A112 | MX=-4.38(kNm/m) local |

### 7.1.3. Fuerzas de Pretensado

### 7.1.3.1. Pretensado de empuje

"TITULO:" LAV GELIDA. V-Riera de la Rierussa. Tendon 1 (Servicio).

CARACTERISTICAS DEL PRETENSADO

| NS | Po (t) | MU | K | INT.CUÑ.(mm) | Ep(Kg/cm2) | Ap(cm2) |
|---|---|---|---|---|---|---|
| 19 | 1000.000 | 0.2100 | 0.0015 | 5 | 1900000.0 | 70.17 |

COORDENADAS

| | | CENTRO DE GRAVEDAD DE LA SECCION | | | PRETENSADO |
|---|---|---|---|---|---|
| SECCION | NUDO | X (long.) | Y (tran.) | Z (prof.) | Zp (prof.) |
| 1 | 1 | 0 | 0 | -1.370 | -1.200 |
| 2 | 2 | 0 | 1.5 | -1.212 | -1.347 |
| 3 | 3 | -0.001 | 3.6 | -1.212 | -1.525 |
| 4 | 4 | -0.001 | 5.7 | -1.212 | -1.671 |
| 5 | 5 | -0.003 | 7.8 | -1.212 | -1.784 |
| 6 | 6 | -0.004 | 9.9 | -1.212 | -1.865 |
| 7 | 7 | -0.006 | 12 | -1.212 | -1.914 |
| 8 | 8 | -0.008 | 14.1 | -1.212 | -1.930 |
| 9 | 9 | -0.011 | 16.2 | -1.212 | -1.906 |
| 10 | 10 | -0.014 | 18.3 | -1.212 | -1.833 |
| 11 | 11 | -0.018 | 20.4 | -1.212 | -1.711 |
| 12 | 12 | -0.021 | 22.5 | -1.212 | -1.541 |
| 13 | 13 | -0.026 | 24.6 | -1.212 | -1.323 |
| 14 | 14 | -0.03 | 26.7 | -1.212 | -1.056 |
| 15 | 15 | -0.035 | 28.8 | -1.212 | -0.740 |
| 16 | 16 | -0.04 | 30.9 | -1.370 | -0.485 |
| 17 | 17 | -0.046 | 33 | -1.370 | -0.400 |
| 18 | 18 | -0.052 | 35.1 | -1.370 | -0.563 |
| 19 | 19 | -0.059 | 37.2 | -1.212 | -1.050 |

### 7.1.3.2. Pretensado de Servicio

LAV GELIDA. V-Riera de la Rierussa. Tendon 1 (Servicio).

Numero de secciones
19

| | Lt | Lac | Anghor | Angver | Angulo | cosx | cosy | cosz |
|---|---|---|---|---|---|---|---|---|
| 1 | 1.507 | 0.000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.99523 | -.09753 |
| 2 | 2.108 | 1.507 | -3.14112 | 0.01313 | 0.01314 | -.00047 | 0.99643 | -.08446 |
| 3 | 2.105 | 3.615 | 3.14112 | 0.01515 | 0.01516 | 0.00000 | 0.99759 | -.06936 |
| 4 | 2.103 | 5.720 | -3.14064 | 0.01565 | 0.01568 | -.00095 | 0.99855 | -.05373 |
| 5 | 2.102 | 7.823 | -0.00048 | 0.01521 | 0.01521 | -.00048 | 0.99926 | -.03854 |
| 6 | 2.101 | 9.924 | 0.00048 | 0.01522 | 0.01523 | -.00095 | 0.99973 | -.02333 |
| 7 | 2.100 | 12.025 | 0.00000 | 0.01571 | 0.01571 | -.00095 | 0.99997 | -.00762 |
| 8 | 2.100 | 14.125 | 0.00048 | 0.01905 | 0.01905 | -.00143 | 0.99993 | 0.01143 |
| 9 | 2.101 | 16.225 | 0.00000 | 0.02332 | 0.02332 | -.00143 | 0.99940 | 0.03474 |
| 10 | 2.104 | 18.326 | 0.00048 | 0.02328 | 0.02329 | -.00190 | 0.99831 | 0.05800 |
| 11 | 2.107 | 20.430 | -0.00048 | 0.02275 | 0.02275 | -.00142 | 0.99674 | 0.08069 |
| 12 | 2.111 | 22.537 | 0.00095 | 0.02266 | 0.02268 | -.00237 | 0.99465 | 0.10325 |
| 13 | 2.117 | 24.648 | -0.00048 | 0.02303 | 0.02303 | -.00189 | 0.99201 | 0.12613 |
| 14 | 2.124 | 26.765 | 0.00048 | 0.02289 | 0.02290 | -.00235 | 0.98886 | 0.14880 |
| 15 | 2.115 | 28.889 | 0.00000 | -0.02852 | 0.02852 | -.00236 | 0.99271 | 0.12054 |
| 16 | 2.102 | 31.004 | 0.00048 | -0.08038 | 0.08038 | -.00285 | 0.99918 | 0.04044 |
| 17 | 2.106 | 33.106 | 0.00000 | -0.11792 | 0.11792 | -.00285 | 0.99700 | -.07739 |
| 18 | 2.156 | 35.212 | 0.00048 | -0.15041 | 0.15041 | -.00325 | 0.97414 | -.22591 |
| 19 | 0.000 | 37.368 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

ESTADO A
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 912.428 | 912.428 | 912.428 | 0.0000 | 908.0782 | -88.9917 | 154.3733 | 0.0000 |
| 2 | 996.367 | 916.061 | 914.687 | 917.435 | -0.4353 | 6.0790 | 11.5060 | -0.8207 | -0.0588 |
| 3 | 990.277 | 922.152 | 920.576 | 923.727 | 0.4353 | 7.3459 | 13.4193 | -2.2993 | 0.1363 |
| 4 | 983.964 | 928.465 | 926.844 | 930.085 | -0.8845 | 7.2381 | 14.0913 | -3.3223 | -0.4060 |
| 5 | 977.688 | 934.741 | 933.179 | 936.303 | 0.4390 | 6.8656 | 13.8874 | -3.9271 | 0.2511 |
| 6 | 971.500 | 940.928 | 939.375 | 942.482 | -0.4518 | 6.6185 | 14.1024 | -4.3219 | -0.2950 |
| 7 | 965.303 | 947.126 | 945.533 | 948.718 | -0.0062 | 6.4649 | 14.7571 | -4.5384 | -0.0043 |
| 8 | 958.761 | 953.667 | 951.749 | 955.585 | -0.4615 | 6.8317 | 18.1484 | -4.9052 | -0.3314 |
| 9 | 951.504 | 951.504 | 953.834 | 949.174 | 0.0099 | -6.9218 | 22.0549 | 4.8037 | 0.0069 |
| 10 | 943.879 | 943.879 | 946.187 | 941.571 | -0.4353 | -8.6155 | 21.6335 | 5.3502 | -0.2703 |
| 11 | 936.368 | 936.368 | 938.605 | 934.131 | 0.4603 | -8.9002 | 20.7649 | 4.4412 | 0.2297 |
| 12 | 928.971 | 928.971 | 931.184 | 926.759 | -0.8646 | -9.2818 | 20.3184 | 3.0537 | -0.2845 |
| 13 | 921.600 | 921.600 | 923.828 | 919.371 | 0.4576 | -9.7751 | 20.2659 | 1.0850 | 0.0508 |
| 14 | 914.259 | 914.259 | 916.457 | 912.061 | -0.4102 | -10.1232 | 19.7573 | -1.5792 | 0.0640 |
| 15 | 906.446 | 906.446 | 909.160 | 903.731 | 0.0113 | -4.7654 | -26.7768 | -2.2493 | -0.0054 |
| 16 | 893.328 | 893.328 | 900.868 | 885.789 | -0.3927 | -12.0786 | -73.1144 | -10.6896 | 0.3475 |
| 17 | 872.202 | 872.202 | 883.000 | 861.403 | 0.0750 | -26.2434 | -102.4844 | -25.4561 | -0.0727 |
| 18 | 845.337 | 845.337 | 858.686 | 831.987 | -0.2478 | -48.3424 | -121.2923 | -39.0123 | 0.2000 |
| 19 | 829.301 | 829.301 | 829.301 | 829.301 | 2.7016 | -810.4745 | 187.9529 | -131.2969 | -0.4377 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 170.699 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 87.572 Tn
Distancia afectada por clavado de cuñas: 14.649 m

Sum. Fx= 0.000000
Sum. Fy= 0.000000
Sum. Fz= 0.000000
Sum. Mx= 0.000000
Sum. My= -0.000000
Sum. Mz= 0.000000

ESTADO B
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 829.301 | 829.301 | 829.301 | 829.301 | 0.0000 | 827.2152 | -81.0671 | 140.6266 | 0.0000 |
| 2 | 832.326 | 832.326 | 831.178 | 833.474 | -0.3967 | 5.9104 | 10.4498 | -0.7979 | -0.0536 |
| 3 | 837.446 | 837.446 | 836.113 | 838.778 | 0.3967 | 6.2793 | 12.2587 | -1.9654 | 0.1242 |
| 4 | 842.819 | 842.819 | 841.431 | 844.207 | -0.8054 | 6.2456 | 12.8546 | -2.8667 | -0.3697 |
| 5 | 848.229 | 848.229 | 846.874 | 849.584 | 0.3998 | 5.9826 | 12.6553 | -3.4221 | 0.2287 |
| 6 | 853.632 | 853.632 | 852.267 | 854.997 | -0.4111 | 5.8281 | 12.8413 | -3.8058 | -0.2684 |
| 7 | 859.112 | 859.112 | 857.695 | 860.529 | -0.0055 | 5.7577 | 13.4305 | -4.0419 | -0.0038 |
| 8 | 864.975 | 864.975 | 863.244 | 866.705 | -0.4199 | 6.1632 | 16.5127 | -4.4252 | -0.3015 |
| 9 | 871.574 | 871.574 | 869.440 | 873.708 | -0.0094 | 6.5541 | 20.5134 | -4.5486 | -0.0065 |
| 10 | 878.615 | 878.615 | 876.466 | 880.763 | -0.4288 | 6.1212 | 20.7941 | -3.8013 | -0.2663 |
| 11 | 885.662 | 885.662 | 883.546 | 887.778 | 0.4120 | 5.6256 | 20.6167 | -2.8072 | 0.2056 |
| 12 | 892.714 | 892.714 | 890.588 | 894.840 | -0.8578 | 5.1948 | 20.8292 | -1.7091 | -0.2822 |
| 13 | 899.855 | 899.855 | 897.679 | 902.031 | 0.4160 | 4.7934 | 21.4433 | -0.5321 | 0.0462 |
| 14 | 907.080 | 907.080 | 904.900 | 909.261 | -0.4378 | 4.3331 | 21.5977 | 0.6760 | 0.0683 |
| 15 | 914.902 | 914.902 | 912.162 | 917.641 | -0.0039 | 1.6570 | -25.9999 | 0.7821 | 0.0019 |
| 16 | 928.393 | 902.466 | 910.302 | 894.630 | -0.3940 | -12.7205 | -73.6684 | -11.2577 | 0.3487 |
| 17 | 950.959 | 879.901 | 891.674 | 868.127 | 0.0813 | -28.4582 | -103.0070 | -27.6044 | -0.0789 |
| 18 | 981.275 | 849.584 | 865.081 | 834.088 | -0.2337 | -53.1068 | -120.7531 | -42.8572 | 0.1886 |
| 19 | 1000.000 | 830.859 | 830.859 | 830.859 | 2.6979 | -809.3761 | 187.6982 | -131.1189 | -0.4371 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 170.699 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 169.141 Tn
Distancia afectada por clavado de cuñas: 8.427 m

Sum. Fx= 0.000000
Sum. Fy= -0.000000
Sum. Fz= 0.000000
Sum. Mx= 0.000000
Sum. My= -0.000000
Sum. Mz= 0.000000

ESTADO C
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 912.428 | 912.428 | 912.428 | 0.0000 | 908.0782 | -88.9917 | 154.3733 | 0.0000 |
| 2 | 996.367 | 916.061 | 914.687 | 917.435 | -0.4353 | 6.0790 | 11.5060 | -0.8207 | -0.0588 |
| 3 | 990.277 | 922.152 | 920.576 | 923.727 | 0.4353 | 7.3459 | 13.4193 | -2.2993 | 0.1363 |
| 4 | 983.964 | 928.465 | 926.844 | 930.085 | -0.8845 | 7.2381 | 14.0913 | -3.3223 | -0.4060 |
| 5 | 977.688 | 934.741 | 933.179 | 936.303 | 0.4390 | 6.8656 | 13.8874 | -3.9271 | 0.2511 |
| 6 | 971.500 | 940.928 | 939.375 | 942.482 | -0.4518 | 6.6185 | 14.1024 | -4.3219 | -0.2950 |
| 7 | 965.303 | 947.126 | 945.533 | 948.718 | -0.0062 | 6.4649 | 14.7571 | -4.5384 | -0.0043 |
| 8 | 958.761 | 953.667 | 951.749 | 955.585 | -0.4615 | 6.8317 | 18.1484 | -4.9052 | -0.3314 |
| 9 | 951.504 | 951.504 | 953.834 | 949.174 | 0.0099 | -6.9218 | 22.0549 | 4.8037 | 0.0069 |
| 10 | 943.879 | 943.879 | 946.187 | 941.571 | -0.4353 | -8.6155 | 21.6335 | 5.3502 | -0.2703 |
| 11 | 936.368 | 936.368 | 938.605 | 934.131 | 0.4603 | -8.9002 | 20.7649 | 4.4412 | 0.2297 |
| 12 | 928.971 | 928.971 | 931.184 | 926.759 | -0.8646 | -9.2818 | 20.3184 | 3.0537 | -0.2845 |
| 13 | 921.600 | 921.600 | 923.828 | 919.371 | 0.4576 | -9.7751 | 20.2659 | 1.0850 | 0.0508 |
| 14 | 914.259 | 914.259 | 916.457 | 912.061 | -0.4102 | -10.1232 | 19.7573 | -1.5792 | 0.0640 |
| 15 | 906.446 | 914.902 | 912.162 | 917.641 | -0.0042 | 1.7572 | -25.9848 | 0.8294 | 0.0020 |
| 16 | 928.393 | 902.466 | 910.302 | 894.630 | -0.3940 | -12.7205 | -73.6684 | -11.2577 | 0.3487 |
| 17 | 950.959 | 879.901 | 891.674 | 868.127 | 0.0813 | -28.4582 | -103.0070 | -27.6044 | -0.0789 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 18 | 981.275 | 849.584 | 865.081 | 834.088 | -0.2337 | -53.1068 | -120.7531 | -42.8572 | 0.1886 |
| 19 | 1000.000 | 830.859 | 830.859 | 830.859 | 2.6979 | -809.3761 | 187.6982 | -131.1189 | -0.4371 |

Sum. Fx= 0.000000
Sum. Fy= 0.000000
Sum. Fz= 0.000000
Sum. Mx= -0.000000
Sum. My= -0.000000
Sum. Mz= -0.000000

Alargamientos teoricos de tendones
==========

Tesado por seccion No. 1: 25.7 cm.
Al retesar por seccion No. 19: 0.0 cm.
Tesado por seccion No. 19: 24.4 cm.

"TITULO:" LAV GELIDA. V-Riera de la Rierussa. Tendon 2 (Servicio).

CARACTERISTICAS DEL PRETENSADO

| NS | Po (t) | MU | K | INT.CUÑ.(mm) | Ep(Kg/cm2) | Ap(cm2) |
|---|---|---|---|---|---|---|
| 19 | 1000.000 | 0.2100 | 0.0015 | 5 | 1900000.0 | 70.17 |

COORDENADAS

| | | CENTRO DE GRAVEDAD DE LA SECCION | | | PRETENSADO |
|---|---|---|---|---|---|
| SECCION | NUDO | X (long.) | Y (tran.) | Z (prof.) | Zp (prof.) |
| 1 | 1 | 0 | 0 | -1.370 | -1.600 |
| 2 | 2 | 0 | 1.5 | -1.212 | -1.735 |
| 3 | 3 | -0.001 | 3.6 | -1.212 | -1.898 |
| 4 | 4 | -0.001 | 5.7 | -1.212 | -2.032 |
| 5 | 5 | -0.003 | 7.8 | -1.212 | -2.136 |
| 6 | 6 | -0.004 | 9.9 | -1.212 | -2.211 |
| 7 | 7 | -0.006 | 12 | -1.212 | -2.255 |
| 8 | 8 | -0.008 | 14.1 | -1.212 | -2.270 |
| 9 | 9 | -0.011 | 16.2 | -1.212 | -2.246 |
| 10 | 10 | -0.014 | 18.3 | -1.212 | -2.173 |
| 11 | 11 | -0.018 | 20.4 | -1.212 | -2.051 |
| 12 | 12 | -0.021 | 22.5 | -1.212 | -1.881 |
| 13 | 13 | -0.026 | 24.6 | -1.212 | -1.663 |
| 14 | 14 | -0.03 | 26.7 | -1.212 | -1.396 |
| 15 | 15 | -0.035 | 28.8 | -1.212 | -1.080 |
| 16 | 16 | -0.04 | 30.9 | -1.370 | -0.825 |
| 17 | 17 | -0.046 | 33 | -1.370 | -0.740 |
| 18 | 18 | -0.052 | 35.1 | -1.370 | -0.918 |
| 19 | 19 | -0.059 | 37.2 | -1.212 | -1.450 |

LAV GELIDA. V-Riera de la Rierussa. Tendon 2 (Servicio).

Numero de secciones
19

| | Lt | Lac | Anghor | Angver | Angulo | cosx | cosy | cosz |
|---|---|---|---|---|---|---|---|---|
| 1 | 1.506 | 0.000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.99597 | -.08964 |
| 2 | 2.106 | 1.506 | -3.14112 | 0.01229 | 0.01230 | -.00047 | 0.99700 | -.07739 |
| 3 | 2.104 | 3.612 | 3.14112 | 0.01374 | 0.01375 | 0.00000 | 0.99797 | -.06368 |
| 4 | 2.103 | 5.717 | -3.14064 | 0.01424 | 0.01427 | -.00095 | 0.99878 | -.04946 |
| 5 | 2.101 | 7.819 | -0.00048 | 0.01378 | 0.01379 | -.00048 | 0.99936 | -.03569 |
| 6 | 2.100 | 9.921 | 0.00048 | 0.01475 | 0.01476 | -.00095 | 0.99978 | -.02095 |
| 7 | 2.100 | 12.021 | 0.00000 | 0.01381 | 0.01381 | -.00095 | 0.99997 | -.00714 |
| 8 | 2.100 | 14.121 | 0.00048 | 0.01857 | 0.01858 | -.00143 | 0.99993 | 0.01143 |
| 9 | 2.101 | 16.221 | 0.00000 | 0.02332 | 0.02332 | -.00143 | 0.99940 | 0.03474 |
| 10 | 2.104 | 18.322 | 0.00048 | 0.02328 | 0.02329 | -.00190 | 0.99831 | 0.05800 |
| 11 | 2.107 | 20.426 | -0.00048 | 0.02275 | 0.02275 | -.00142 | 0.99674 | 0.08069 |
| 12 | 2.111 | 22.533 | 0.00095 | 0.02266 | 0.02268 | -.00237 | 0.99465 | 0.10325 |
| 13 | 2.117 | 24.644 | -0.00048 | 0.02303 | 0.02303 | -.00189 | 0.99201 | 0.12613 |
| 14 | 2.124 | 26.761 | 0.00048 | 0.02289 | 0.02290 | -.00235 | 0.98886 | 0.14880 |
| 15 | 2.115 | 28.885 | 0.00000 | -0.02852 | 0.02852 | -.00236 | 0.99271 | 0.12054 |
| 16 | 2.102 | 31.000 | 0.00048 | -0.08038 | 0.08038 | -.00285 | 0.99918 | 0.04044 |
| 17 | 2.108 | 33.102 | 0.00000 | -0.12501 | 0.12501 | -.00285 | 0.99642 | -.08446 |
| 18 | 2.166 | 35.209 | 0.00048 | -0.16355 | 0.16355 | -.00323 | 0.96937 | -.24557 |
| 19 | 0.000 | 37.376 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

ESTADO A
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 914.037 | 914.037 | 914.037 | 0.0000 | 910.3579 | -81.9322 | -209.3823 | 0.0000 |
| 2 | 996.456 | 917.581 | 916.294 | 918.869 | -0.4362 | 5.7551 | 10.8244 | -3.0099 | -0.2282 |
| 3 | 990.600 | 923.438 | 922.008 | 924.868 | 0.4362 | 6.8778 | 12.2122 | -4.7182 | 0.2993 |
| 4 | 984.577 | 929.461 | 927.985 | 930.936 | -0.8855 | 6.8053 | 12.8486 | -5.5804 | -0.7261 |
| 5 | 978.588 | 935.449 | 934.032 | 936.866 | 0.4397 | 6.4730 | 12.6089 | -5.9810 | 0.4063 |
| 6 | 972.589 | 941.448 | 939.941 | 942.955 | -0.4520 | 6.4790 | 13.6854 | -6.4725 | -0.4516 |
| 7 | 966.626 | 947.411 | 946.010 | 948.813 | -0.0058 | 6.0401 | 12.9758 | -6.2998 | -0.0060 |
| 8 | 960.316 | 953.722 | 951.849 | 955.595 | -0.4614 | 6.7433 | 17.6974 | -7.1345 | -0.4882 |
| 9 | 953.094 | 953.094 | 955.428 | 950.761 | 0.0076 | -5.3459 | 22.1099 | 5.5276 | 0.0079 |
| 10 | 945.457 | 945.457 | 947.769 | 943.145 | -0.4360 | -8.6299 | 21.6696 | 8.2933 | -0.4190 |
| 11 | 937.933 | 937.933 | 940.174 | 935.693 | 0.4611 | -8.9151 | 20.7996 | 7.4797 | 0.3869 |
| 12 | 930.524 | 930.524 | 932.740 | 928.308 | -0.8661 | -9.2973 | 20.3523 | 6.2199 | -0.5794 |
| 13 | 923.140 | 923.140 | 925.373 | 920.908 | 0.4583 | -9.7914 | 20.2998 | 4.4159 | 0.2067 |
| 14 | 915.787 | 915.787 | 917.988 | 913.585 | -0.4109 | -10.1402 | 19.7904 | 1.8658 | -0.0756 |
| 15 | 907.961 | 907.961 | 910.680 | 905.242 | 0.0114 | -4.7734 | -26.8216 | -0.6301 | -0.0015 |
| 16 | 894.822 | 894.822 | 902.374 | 887.269 | -0.3934 | -12.0988 | -73.2366 | -6.5939 | 0.2144 |
| 17 | 873.017 | 873.017 | 884.476 | 861.558 | 0.0802 | -28.0630 | -108.6499 | -17.6797 | -0.0505 |
| 18 | 844.341 | 844.341 | 858.839 | 829.842 | -0.2286 | -54.0506 | -131.0218 | -24.4309 | 0.1033 |
| 19 | 827.150 | 827.150 | 827.150 | 827.150 | 2.6814 | -804.4260 | 203.7879 | 191.4534 | 0.6382 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 172.850 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 85.963 Tn
Distancia afectada por clavado de cuñas: 14.864 m

Sum. Fx= 0.000000
Sum. Fy= -0.000000
Sum. Fz= 0.000000
Sum. Mx= -0.000000
Sum. My= -0.000000
Sum. Mz= 0.000000

ESTADO B
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 827.150 | 827.150 | 827.150 | 827.150 | 0.0000 | 825.6833 | -74.3115 | -189.9072 | 0.0000 |
| 2 | 830.093 | 830.093 | 829.021 | 831.165 | -0.3959 | 5.6117 | 9.7872 | -2.9349 | -0.2070 |
| 3 | 835.001 | 835.001 | 833.796 | 836.206 | 0.3959 | 5.8524 | 11.1064 | -4.0147 | 0.2716 |
| 4 | 840.109 | 840.109 | 838.850 | 841.368 | -0.8028 | 5.8446 | 11.6698 | -4.7926 | -0.6583 |
| 5 | 845.250 | 845.250 | 844.026 | 846.474 | 0.3988 | 5.6129 | 11.4409 | -5.1863 | 0.3684 |
| 6 | 850.464 | 850.464 | 849.146 | 851.782 | -0.4095 | 5.6768 | 12.4081 | -5.6711 | -0.4091 |
| 7 | 855.710 | 855.710 | 854.470 | 856.951 | -0.0051 | 5.3503 | 11.7590 | -5.5804 | -0.0053 |
| 8 | 861.334 | 861.334 | 859.654 | 863.015 | -0.4180 | 6.0481 | 16.0337 | -6.3988 | -0.4422 |
| 9 | 867.863 | 867.863 | 865.738 | 869.988 | -0.0093 | 6.5262 | 20.4261 | -6.7481 | -0.0096 |
| 10 | 874.873 | 874.873 | 872.734 | 877.012 | -0.4269 | 6.0952 | 20.7056 | -5.8575 | -0.4103 |
| 11 | 881.891 | 881.891 | 879.784 | 883.997 | 0.4102 | 5.6017 | 20.5289 | -4.6998 | 0.3442 |
| 12 | 888.913 | 888.913 | 886.796 | 891.030 | -0.8541 | 5.1727 | 20.7405 | -3.4605 | -0.5714 |
| 13 | 896.023 | 896.023 | 893.856 | 898.190 | 0.4143 | 4.7730 | 21.3520 | -2.1526 | 0.1868 |
| 14 | 903.218 | 903.218 | 901.046 | 905.389 | -0.4359 | 4.3146 | 21.5057 | -0.7939 | -0.0802 |
| 15 | 911.006 | 911.006 | 908.278 | 913.734 | -0.0111 | 4.6431 | -25.5257 | 0.6129 | 0.0015 |
| 16 | 924.440 | 901.638 | 909.441 | 893.836 | -0.3938 | -12.6468 | -73.5962 | -6.8925 | 0.2146 |
| 17 | 947.624 | 878.454 | 890.892 | 866.016 | 0.0865 | -30.2706 | -108.9161 | -19.0705 | -0.0545 |
| 18 | 979.929 | 846.149 | 862.976 | 829.322 | -0.2124 | -59.1117 | -129.9778 | -26.7185 | 0.0960 |
| 19 | 1000.000 | 826.078 | 826.078 | 826.078 | 2.6693 | -800.7774 | 202.8636 | 190.5850 | 0.6353 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 172.850 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 173.922 Tn
Distancia afectada por clavado de cuñas: 8.297 m

Sum. Fx= 0.000000
Sum. Fy= -0.000000
Sum. Fz= 0.000000
Sum. Mx= -0.000000
Sum. My= -0.000000
Sum. Mz= -0.000000

Alargamientos teoricos de tendones
==================================

Tesado por seccion No. 1: 25.8 cm.
Tesado por seccion No. 19: 24.3 cm.

NO PROCEDE EFECTUAR RETESADO

"TITULO:" LAV GELIDA. V-Riera de la Rierussa. Tendon 3 (Servicio).

CARACTERISTICAS DEL PRETENSADO

| NS | Po (t) | MU | K | INT.CUÑ.(mm) | Ep(Kg/cm2) | Ap(cm2) |
|---|---|---|---|---|---|---|
| 39 | 1000.000 | 0.2100 | 0.0015 | 5 | 1900000.0 | 70.17 |

COORDENADAS

| | | CENTRO DE GRAVEDAD DE LA SECCION | | | PRETENSADO |
|---|---|---|---|---|---|
| SECCION | NUDO | X (long.) | Y (tran.) | Z (prof.) | Zp (prof.) |
| 1 | 1 | 0 | 0 | -1.370 | -1.200 |
| 2 | 2 | 0 | 1.5 | -1.212 | -1.313 |
| 3 | 3 | -0.001 | 3.6 | -1.212 | -1.449 |
| 4 | 4 | -0.001 | 5.7 | -1.212 | -1.561 |
| 5 | 5 | -0.003 | 7.8 | -1.212 | -1.648 |
| 6 | 6 | -0.004 | 9.9 | -1.212 | -1.710 |
| 7 | 7 | -0.006 | 12 | -1.212 | -1.748 |
| 8 | 8 | -0.008 | 14.1 | -1.212 | -1.760 |
| 9 | 9 | -0.011 | 16.2 | -1.212 | -1.736 |
| 10 | 10 | -0.014 | 18.3 | -1.212 | -1.663 |
| 11 | 11 | -0.018 | 20.4 | -1.212 | -1.541 |
| 12 | 12 | -0.021 | 22.5 | -1.212 | -1.371 |
| 13 | 13 | -0.026 | 24.6 | -1.212 | -1.153 |
| 14 | 14 | -0.03 | 26.7 | -1.212 | -0.886 |
| 15 | 15 | -0.035 | 28.8 | -1.212 | -0.570 |
| 16 | 16 | -0.04 | 30.9 | -1.370 | -0.315 |
| 17 | 17 | -0.046 | 33 | -1.370 | -0.230 |
| 18 | 18 | -0.052 | 35.1 | -1.370 | -0.428 |
| 19 | 19 | -0.059 | 37.2 | -1.212 | -0.875 |
| 20 | 20 | -0.065 | 39.3 | -1.212 | -1.277 |
| 21 | 21 | -0.073 | 41.4 | -1.212 | -1.626 |
| 22 | 22 | -0.08 | 43.5 | -1.212 | -1.920 |
| 23 | 23 | -0.088 | 45.6 | -1.212 | -2.161 |
| 24 | 24 | -0.096 | 47.7 | -1.212 | -2.349 |
| 25 | 25 | -0.105 | 49.8 | -1.212 | -2.483 |
| 26 | 26 | -0.114 | 51.9 | -1.212 | -2.563 |
| 27 | 27 | -0.124 | 54 | -1.212 | -2.590 |
| 28 | 28 | -0.133 | 56.1 | -1.212 | -2.563 |
| 29 | 29 | -0.144 | 58.2 | -1.212 | -2.481 |
| 30 | 30 | -0.154 | 60.3 | -1.212 | -2.344 |
| 31 | 31 | -0.165 | 62.4 | -1.212 | -2.152 |
| 32 | 32 | -0.176 | 64.5 | -1.212 | -1.906 |
| 33 | 33 | -0.188 | 66.6 | -1.212 | -1.605 |
| 34 | 34 | -0.2 | 68.7 | -1.212 | -1.249 |
| 35 | 35 | -0.212 | 70.8 | -1.212 | -0.838 |
| 36 | 36 | -0.225 | 72.9 | -1.370 | -0.510 |
| 37 | 37 | -0.238 | 74.999 | -1.370 | -0.400 |
| 38 | 38 | -0.252 | 77.099 | -1.370 | -0.563 |
| 39 | 39 | -0.266 | 79.199 | -1.212 | -1.050 |

LAV GELIDA. V-Riera de la Rierussa. Tendon 3 (Servicio).

Numero de secciones
39

| | Lt | Lac | Anghor | Angver | Angulo | cosx | cosy | cosz |
|---|---|---|---|---|---|---|---|---|
| 1 | 1.504 | 0.000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.99717 | -.07512 |
| 2 | 2.104 | 1.504 | -3.14112 | 0.01052 | 0.01053 | -.00048 | 0.99791 | -.06463 |
| 3 | 2.103 | 3.609 | 3.14112 | 0.01139 | 0.01140 | 0.00000 | 0.99858 | -.05326 |
| 4 | 2.102 | 5.712 | -3.14064 | 0.01188 | 0.01192 | -.00095 | 0.99914 | -.04139 |
| 5 | 2.101 | 7.813 | -0.00048 | 0.01189 | 0.01190 | -.00048 | 0.99956 | -.02951 |
| 6 | 2.100 | 9.914 | 0.00048 | 0.01142 | 0.01143 | -.00095 | 0.99984 | -.01809 |
| 7 | 2.100 | 12.015 | 0.00000 | 0.01238 | 0.01238 | -.00095 | 0.99998 | -.00571 |
| 8 | 2.100 | 14.115 | 0.00048 | 0.01714 | 0.01715 | -.00143 | 0.99993 | 0.01143 |
| 9 | 2.101 | 16.215 | 0.00000 | 0.02332 | 0.02332 | -.00143 | 0.99940 | 0.03474 |
| 10 | 2.104 | 18.316 | 0.00048 | 0.02328 | 0.02329 | -.00190 | 0.99831 | 0.05800 |
| 11 | 2.107 | 20.420 | -0.00048 | 0.02275 | 0.02275 | -.00142 | 0.99674 | 0.08069 |
| 12 | 2.111 | 22.527 | 0.00095 | 0.02266 | 0.02268 | -.00237 | 0.99465 | 0.10325 |
| 13 | 2.117 | 24.638 | -0.00048 | 0.02303 | 0.02303 | -.00189 | 0.99201 | 0.12613 |
| 14 | 2.124 | 26.755 | 0.00048 | 0.02289 | 0.02290 | -.00235 | 0.98886 | 0.14880 |
| 15 | 2.115 | 28.878 | 0.00000 | -0.02852 | 0.02852 | -.00236 | 0.99271 | 0.12054 |
| 16 | 2.102 | 30.994 | 0.00048 | -0.08038 | 0.08038 | -.00285 | 0.99918 | 0.04044 |
| 17 | 2.109 | 33.096 | 0.00000 | -0.13446 | 0.13446 | -.00284 | 0.99558 | -.09387 |
| 18 | 2.147 | 35.205 | 0.00048 | -0.11572 | 0.11572 | -.00326 | 0.97808 | -.20819 |
| 19 | 2.138 | 37.352 | -0.00048 | 0.02059 | 0.02059 | -.00281 | 0.98216 | -.18801 |
| 20 | 2.129 | 39.490 | 0.00095 | 0.02446 | 0.02447 | -.00376 | 0.98646 | -.16394 |
| 21 | 2.120 | 41.619 | -0.00048 | 0.02559 | 0.02559 | -.00330 | 0.99034 | -.13865 |
| 22 | 2.114 | 43.739 | 0.00048 | 0.02483 | 0.02484 | -.00378 | 0.99347 | -.11401 |
| 23 | 2.108 | 45.853 | 0.00000 | 0.02498 | 0.02498 | -.00379 | 0.99601 | -.08917 |
| 24 | 2.104 | 47.962 | 0.00048 | 0.02556 | 0.02557 | -.00428 | 0.99796 | -.06368 |
| 25 | 2.102 | 50.066 | 0.00000 | 0.02565 | 0.02565 | -.00428 | 0.99927 | -.03807 |
| 26 | 2.100 | 52.167 | 0.00048 | 0.02522 | 0.02522 | -.00476 | 0.99991 | -.01286 |
| 27 | 2.100 | 54.268 | -0.00048 | 0.02571 | 0.02572 | -.00429 | 0.99991 | 0.01286 |
| 28 | 2.102 | 56.368 | 0.00095 | 0.02617 | 0.02619 | -.00523 | 0.99922 | 0.03902 |
| 29 | 2.104 | 58.469 | -0.00048 | 0.02612 | 0.02612 | -.00475 | 0.99787 | 0.06510 |
| 30 | 2.109 | 60.574 | 0.00048 | 0.02603 | 0.02603 | -.00522 | 0.99583 | 0.09105 |
| 31 | 2.114 | 62.683 | 0.00000 | 0.02544 | 0.02544 | -.00520 | 0.99320 | 0.11635 |
| 32 | 2.121 | 64.797 | 0.00048 | 0.02575 | 0.02576 | -.00566 | 0.98987 | 0.14188 |
| 33 | 2.130 | 66.919 | 0.00000 | 0.02556 | 0.02556 | -.00563 | 0.98592 | 0.16714 |
| 34 | 2.140 | 69.049 | 0.00000 | 0.02534 | 0.02534 | -.00561 | 0.98137 | 0.19207 |
| 35 | 2.126 | 71.188 | 0.00048 | -0.03833 | 0.03834 | -.00612 | 0.98800 | 0.15432 |
| 36 | 2.102 | 73.314 | 0.00000 | -0.10258 | 0.10258 | -.00618 | 0.99861 | 0.05233 |
| 37 | 2.106 | 75.416 | 0.00047 | -0.12982 | 0.12982 | -.00665 | 0.99698 | -.07738 |
| 38 | 2.156 | 77.522 | 0.00000 | -0.15041 | 0.15041 | -.00649 | 0.97413 | -.22590 |
| 39 | 0.000 | 79.678 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

ESTADO A
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 917.081 | 917.081 | 917.081 | 0.0000 | 914.4901 | -68.8916 | 155.4633 | 0.0000 |
| 2 | 996.644 | 920.437 | 919.335 | 921.539 | -0.4379 | 5.1225 | 9.3357 | -0.5174 | -0.0442 |
| 3 | 991.218 | 925.863 | 924.677 | 927.049 | 0.4379 | 6.1212 | 10.1834 | -1.4507 | 0.1038 |
| 4 | 985.681 | 931.401 | 930.168 | 932.634 | -0.8875 | 6.1006 | 10.7679 | -2.1291 | -0.3097 |
| 5 | 980.124 | 936.957 | 935.733 | 938.182 | 0.4409 | 5.9390 | 10.9179 | -2.5894 | 0.1922 |
| 6 | 974.649 | 942.432 | 941.262 | 943.602 | -0.4520 | 5.6737 | 10.6147 | -2.8255 | -0.2251 |
| 7 | 969.158 | 947.924 | 946.664 | 949.183 | -0.0054 | 5.7205 | 11.6481 | -3.0662 | -0.0029 |
| 8 | 963.120 | 953.962 | 952.228 | 955.696 | -0.4612 | 6.4651 | 16.3453 | -3.5429 | -0.2527 |
| 9 | 956.021 | 956.021 | 958.362 | 953.680 | 0.0036 | -2.5295 | 22.2102 | 1.3255 | 0.0019 |
| 10 | 948.360 | 948.360 | 950.679 | 946.041 | -0.4374 | -8.6564 | 21.7362 | 3.9040 | -0.1973 |
| 11 | 940.813 | 940.813 | 943.061 | 938.566 | 0.4625 | -8.9424 | 20.8634 | 2.9421 | 0.1522 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 12 | 933.381 | 933.381 | 935.604 | 931.158 | -0.8688 | -9.3259 | 20.4148 | 1.4828 | -0.1381 |
| 13 | 925.975 | 925.975 | 928.214 | 923.735 | 0.4597 | -9.8215 | 20.3621 | -0.5795 | -0.0271 |
| 14 | 918.599 | 918.599 | 920.807 | 916.390 | -0.4121 | -10.1713 | 19.8511 | -3.3158 | 0.1344 |
| 15 | 910.748 | 910.748 | 913.476 | 908.021 | 0.0114 | -4.7881 | -26.9039 | -3.0739 | -0.0073 |
| 16 | 897.569 | 897.569 | 905.145 | 889.993 | -0.3946 | -12.1360 | -73.4615 | -12.8034 | 0.4163 |
| 17 | 874.841 | 874.841 | 887.192 | 862.491 | 0.0874 | -30.5825 | -116.9551 | -34.8641 | -0.0996 |
| 18 | 849.446 | 849.446 | 859.766 | 839.125 | -0.2824 | -37.9457 | -93.7378 | -35.7449 | 0.2660 |
| 19 | 834.622 | 834.622 | 836.427 | 832.818 | 0.3987 | -2.7713 | 18.1177 | -0.9339 | -0.1344 |
| 20 | 828.023 | 828.023 | 830.151 | 825.895 | -0.7666 | -3.2470 | 21.1834 | 0.2111 | -0.0498 |
| 21 | 821.056 | 821.056 | 823.262 | 818.849 | 0.4006 | -3.7789 | 21.8668 | 1.5644 | 0.1658 |
| 22 | 814.126 | 814.126 | 816.249 | 812.002 | -0.3700 | -4.2346 | 20.9525 | 2.9981 | -0.2620 |
| 23 | 807.315 | 807.315 | 809.432 | 805.197 | 0.0180 | -4.7173 | 20.7819 | 4.4767 | 0.0171 |
| 24 | 800.506 | 800.506 | 802.655 | 798.357 | -0.3594 | -5.2550 | 20.9578 | 5.9749 | -0.4086 |
| 25 | 793.704 | 793.704 | 795.841 | 791.566 | 0.0246 | -5.7440 | 20.7061 | 7.3006 | 0.0313 |
| 26 | 786.991 | 786.991 | 789.075 | 784.906 | -0.3474 | -6.1529 | 20.0421 | 8.3126 | -0.4693 |
| 27 | 780.330 | 780.330 | 782.437 | 778.223 | 0.4024 | -6.6807 | 20.0955 | 9.2060 | 0.5545 |
| 28 | 773.648 | 773.648 | 775.775 | 771.521 | -0.7032 | -7.2291 | 20.0979 | 9.7665 | -0.9501 |
| 29 | 766.989 | 766.989 | 769.092 | 764.885 | 0.4036 | -7.6688 | 19.6905 | 9.7317 | 0.5122 |
| 30 | 760.396 | 760.396 | 762.474 | 758.317 | -0.3210 | -8.0967 | 19.2497 | 9.1654 | -0.3634 |
| 31 | 753.909 | 753.909 | 755.922 | 751.895 | 0.0439 | -8.3785 | 18.4368 | 7.8758 | 0.0413 |
| 32 | 747.493 | 747.493 | 749.514 | 745.471 | -0.3050 | -8.8608 | 18.2884 | 6.1494 | -0.2117 |
| 33 | 741.114 | 741.114 | 743.103 | 739.124 | 0.0526 | -9.2021 | 17.7664 | 3.6164 | 0.0207 |
| 34 | 734.811 | 734.811 | 736.767 | 732.856 | 0.0544 | -9.5161 | 17.2230 | 0.3521 | 0.0020 |
| 35 | 727.579 | 727.579 | 730.507 | 724.650 | -0.3224 | -3.2436 | -28.9321 | -1.2131 | 0.1206 |
| 36 | 714.646 | 714.646 | 722.343 | 706.949 | 0.0598 | -9.9890 | -74.8287 | -8.5905 | -0.0514 |
| 37 | 695.247 | 695.247 | 704.724 | 685.771 | -0.1856 | -22.2675 | -90.0649 | -21.5995 | 0.1801 |
| 38 | 672.980 | 672.980 | 683.608 | 662.353 | 0.2566 | -38.4833 | -96.5606 | -31.0560 | -0.2070 |
| 39 | 660.214 | 660.214 | 660.214 | 660.214 | 4.3014 | -645.2162 | 149.6287 | -104.5250 | -0.6968 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 339.786 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 82.919 Tn
Distancia afectada por clavado de cuñas: 15.286 m

Sum. Fx= 0.000000
Sum. Fy= -0.000000
Sum. Fz= 0.000000
Sum. Mx= 0.000000
Sum. My= -0.000000
Sum. Mz= 0.000000

ESTADO B
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 660.214 | 660.214 | 660.214 | 660.214 | 0.0000 | 659.8361 | -49.7077 | 112.1721 | 0.0000 |
| 2 | 662.438 | 662.438 | 661.706 | 663.171 | -0.3161 | 4.0405 | 6.7137 | -0.4081 | -0.0319 |
| 3 | 666.065 | 666.065 | 665.267 | 666.862 | 0.3161 | 4.1427 | 7.3662 | -0.9818 | 0.0749 |
| 4 | 669.807 | 669.807 | 668.969 | 670.645 | -0.6402 | 4.1663 | 7.7800 | -1.4540 | -0.2234 |
| 5 | 673.604 | 673.604 | 672.762 | 674.446 | 0.3181 | 4.0941 | 7.8813 | -1.7850 | 0.1387 |
| 6 | 677.388 | 677.388 | 676.574 | 678.201 | -0.3258 | 3.9493 | 7.6574 | -1.9668 | -0.1622 |
| 7 | 681.226 | 681.226 | 680.341 | 682.112 | -0.0038 | 4.0232 | 8.3989 | -2.1564 | -0.0021 |
| 8 | 685.498 | 685.498 | 684.264 | 686.732 | -0.3324 | 4.6012 | 11.7826 | -2.5215 | -0.1822 |
| 9 | 690.590 | 690.590 | 688.899 | 692.281 | -0.0074 | 5.1931 | 16.2538 | -2.7212 | -0.0039 |
| 10 | 696.169 | 696.169 | 694.466 | 697.871 | -0.3397 | 4.8502 | 16.4762 | -2.1874 | -0.1532 |
| 11 | 701.753 | 701.753 | 700.076 | 703.429 | 0.3264 | 4.4575 | 16.3356 | -1.4665 | 0.1074 |
| 12 | 707.340 | 707.340 | 705.656 | 709.025 | -0.6797 | 4.1161 | 16.5040 | -0.6545 | -0.1081 |
| 13 | 712.998 | 712.998 | 711.274 | 714.722 | 0.3297 | 3.7980 | 16.9905 | 0.2241 | -0.0194 |
| 14 | 718.723 | 718.723 | 716.995 | 720.451 | -0.3469 | 3.4333 | 17.1129 | 1.1193 | 0.1131 |
| 15 | 724.921 | 724.921 | 722.750 | 727.091 | -0.0223 | 9.3798 | -19.6214 | 6.0218 | 0.0143 |
| 16 | 735.611 | 735.611 | 729.402 | 741.819 | -0.4004 | 19.4685 | -57.8281 | 20.5393 | 0.4224 |
| 17 | 754.818 | 754.818 | 744.162 | 765.474 | -0.0599 | 20.9562 | -102.1781 | 23.8901 | 0.0683 |
| 18 | 777.345 | 777.345 | 767.900 | 786.789 | -0.3891 | 7.5211 | -92.2495 | 7.0849 | 0.3666 |
| 19 | 791.038 | 791.038 | 789.327 | 792.748 | 0.3417 | 9.0811 | 14.8051 | 3.0603 | -0.1151 |
| 20 | 797.344 | 797.344 | 795.295 | 799.392 | -0.7820 | 9.9849 | 18.0543 | -0.6490 | -0.0508 |
| 21 | 804.110 | 804.110 | 801.949 | 806.271 | 0.3436 | 9.9300 | 19.3289 | -4.1110 | 0.1423 |
| 22 | 810.955 | 810.955 | 808.840 | 813.070 | -0.4169 | 9.3039 | 19.1486 | -6.5872 | -0.2952 |
| 23 | 817.796 | 817.796 | 815.652 | 819.941 | -0.0340 | 8.9288 | 19.6518 | -8.4734 | -0.0323 |
| 24 | 824.752 | 824.752 | 822.538 | 826.966 | -0.4271 | 8.6336 | 20.5157 | -9.8164 | -0.4856 |
| 25 | 831.821 | 831.821 | 829.581 | 834.061 | -0.0351 | 8.1905 | 20.9766 | -10.4101 | -0.0446 |
| 26 | 838.916 | 838.916 | 836.694 | 841.138 | -0.4345 | 7.6327 | 21.0029 | -10.3118 | -0.5870 |
| 27 | 846.077 | 846.077 | 843.792 | 848.361 | 0.3707 | 7.2472 | 21.7886 | -9.9867 | 0.5108 |
| 28 | 853.385 | 853.385 | 851.038 | 855.731 | -0.8461 | 6.8078 | 22.5529 | -9.1974 | -1.1431 |
| 29 | 860.794 | 860.794 | 858.433 | 863.155 | 0.3786 | 6.2700 | 22.8744 | -7.9566 | 0.4804 |
| 30 | 868.258 | 868.258 | 865.884 | 870.631 | -0.4414 | 5.7120 | 23.1518 | -6.4660 | -0.4996 |
| 31 | 875.728 | 875.728 | 873.389 | 878.067 | -0.0268 | 5.1124 | 22.9639 | -4.8057 | -0.0252 |
| 32 | 883.245 | 883.245 | 880.856 | 885.634 | -0.4428 | 4.5919 | 23.5712 | -3.1868 | -0.3073 |
| 33 | 890.847 | 890.847 | 888.456 | 893.239 | -0.0230 | 4.0239 | 23.7155 | -1.5814 | -0.0090 |
| 34 | 898.488 | 898.488 | 896.097 | 900.879 | -0.0197 | 3.4561 | 23.8151 | -0.1279 | -0.0007 |
| 35 | 907.428 | 907.428 | 903.775 | 911.080 | -0.5152 | 14.9980 | -32.7125 | 5.6093 | 0.1927 |
| 36 | 923.941 | 902.933 | 912.884 | 892.982 | 0.0787 | -13.1358 | -94.2950 | -11.2968 | -0.0677 |
| 37 | 949.787 | 877.087 | 890.033 | 864.141 | -0.2186 | -30.3028 | -113.2136 | -29.3937 | 0.2120 |
| 38 | 981.276 | 845.599 | 861.095 | 830.103 | 0.3534 | -53.0124 | -120.1595 | -42.7810 | -0.2852 |
| 39 | 1000.000 | 826.874 | 826.874 | 826.874 | 5.3699 | -805.4811 | 186.7949 | -130.4879 | -0.8699 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 339.786 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 173.126 Tn
Distancia afectada por clavado de cuñas: 7.938 m

Sum. Fx= -0.000000
Sum. Fy= 0.000000
Sum. Fz= 0.000000
Sum. Mx= 0.000000
Sum. My= -0.000000
Sum. Mz= 0.000000

ESTADO C
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 917.081 | 917.081 | 917.081 | 0.0000 | 914.4901 | -68.8916 | 155.4633 | 0.0000 |
| 2 | 996.644 | 920.437 | 919.335 | 921.539 | -0.4379 | 5.1225 | 9.3357 | -0.5174 | -0.0442 |
| 3 | 991.218 | 925.863 | 924.677 | 927.049 | 0.4379 | 6.1212 | 10.1834 | -1.4507 | 0.1038 |
| 4 | 985.681 | 931.401 | 930.168 | 932.634 | -0.8875 | 6.1006 | 10.7679 | -2.1291 | -0.3097 |
| 5 | 980.124 | 936.957 | 935.733 | 938.182 | 0.4409 | 5.9390 | 10.9179 | -2.5894 | 0.1922 |
| 6 | 974.649 | 942.432 | 941.262 | 943.602 | -0.4520 | 5.6737 | 10.6147 | -2.8255 | -0.2251 |
| 7 | 969.158 | 947.924 | 946.664 | 949.183 | -0.0054 | 5.7205 | 11.6481 | -3.0662 | -0.0029 |
| 8 | 963.120 | 953.962 | 952.228 | 955.696 | -0.4612 | 6.4651 | 16.3453 | -3.5429 | -0.2527 |
| 9 | 956.021 | 956.021 | 958.362 | 953.680 | 0.0036 | -2.5295 | 22.2102 | 1.3255 | 0.0019 |
| 10 | 948.360 | 948.360 | 950.679 | 946.041 | -0.4374 | -8.6564 | 21.7362 | 3.9040 | -0.1973 |
| 11 | 940.813 | 940.813 | 943.061 | 938.566 | 0.4625 | -8.9424 | 20.8634 | 2.9421 | 0.1522 |
| 12 | 933.381 | 933.381 | 935.604 | 931.158 | -0.8688 | -9.3259 | 20.4148 | 1.4828 | -0.1381 |
| 13 | 925.975 | 925.975 | 928.214 | 923.735 | 0.4597 | -9.8215 | 20.3621 | -0.5795 | -0.0271 |
| 14 | 918.599 | 918.599 | 920.807 | 916.390 | -0.4121 | -10.1713 | 19.8511 | -3.3158 | 0.1344 |
| 15 | 910.748 | 910.748 | 913.476 | 908.021 | 0.0114 | -4.7881 | -26.9039 | -3.0739 | -0.0073 |
| 16 | 897.569 | 897.569 | 905.145 | 889.993 | -0.3946 | -12.1360 | -73.4615 | -12.8034 | 0.4163 |
| 17 | 874.841 | 874.841 | 887.192 | 862.491 | 0.0874 | -30.5825 | -116.9551 | -34.8641 | -0.0996 |
| 18 | 849.446 | 849.446 | 859.766 | 839.125 | -0.2824 | -37.9457 | -93.7378 | -35.7449 | 0.2660 |
| 19 | 834.622 | 834.622 | 836.427 | 832.818 | 0.3987 | -2.7713 | 18.1177 | -0.9339 | -0.1344 |
| 20 | 828.023 | 828.023 | 830.151 | 825.895 | -0.7666 | -3.2470 | 21.1834 | 0.2111 | -0.0498 |
| 21 | 821.056 | 821.056 | 823.262 | 818.849 | 0.4006 | -3.7789 | 21.8668 | 1.5644 | 0.1658 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 22 | 814.126 | 814.659 | 816.249 | 813.070 | -0.3838 | -0.6090 | 20.5364 | 0.4312 | -0.2718 |
| 23 | 817.796 | 817.796 | 815.652 | 819.941 | -0.0340 | 8.9288 | 19.6518 | -8.4734 | -0.0323 |
| 24 | 824.752 | 824.752 | 822.538 | 826.966 | -0.4271 | 8.6336 | 20.5157 | -9.8164 | -0.4856 |
| 25 | 831.821 | 831.821 | 829.581 | 834.061 | -0.0351 | 8.1905 | 20.9766 | -10.4101 | -0.0446 |
| 26 | 838.916 | 838.916 | 836.694 | 841.138 | -0.4345 | 7.6327 | 21.0029 | -10.3118 | -0.5870 |
| 27 | 846.077 | 846.077 | 843.792 | 848.361 | 0.3707 | 7.2472 | 21.7886 | -9.9867 | 0.5108 |
| 28 | 853.385 | 853.385 | 851.038 | 855.731 | -0.8461 | 6.8078 | 22.5529 | -9.1974 | -1.1431 |
| 29 | 860.794 | 860.794 | 858.433 | 863.155 | 0.3786 | 6.2700 | 22.8744 | -7.9566 | 0.4804 |
| 30 | 868.258 | 868.258 | 865.884 | 870.631 | -0.4414 | 5.7120 | 23.1518 | -6.4660 | -0.4996 |
| 31 | 875.728 | 875.728 | 873.389 | 878.067 | -0.0268 | 5.1124 | 22.9639 | -4.8057 | -0.0252 |
| 32 | 883.245 | 883.245 | 880.856 | 885.634 | -0.4428 | 4.5919 | 23.5712 | -3.1868 | -0.3073 |
| 33 | 890.847 | 890.847 | 888.456 | 893.239 | -0.0230 | 4.0239 | 23.7155 | -1.5814 | -0.0090 |
| 34 | 898.488 | 898.488 | 896.097 | 900.879 | -0.0197 | 3.4561 | 23.8151 | -0.1279 | -0.0007 |
| 35 | 907.428 | 907.428 | 903.775 | 911.080 | -0.5152 | 14.9980 | -32.7125 | 5.6093 | 0.1927 |
| 36 | 923.941 | 902.933 | 912.884 | 892.982 | 0.0787 | -13.1358 | -94.2950 | -11.2968 | -0.0677 |
| 37 | 949.787 | 877.087 | 890.033 | 864.141 | -0.2186 | -30.3028 | -113.2136 | -29.3937 | 0.2120 |
| 38 | 981.276 | 845.599 | 861.095 | 830.103 | 0.3534 | -53.0124 | -120.1595 | -42.7810 | -0.2852 |
| 39 | 1000.000 | 826.874 | 826.874 | 826.874 | 5.3699 | -805.4811 | 186.7949 | -130.4879 | -0.8699 |

Sum. Fx= -0.000000
Sum. Fy= -0.000000
Sum. Fz= 0.000000
Sum. Mx= -0.000000
Sum. My= -0.000000
Sum. Mz= 0.000000

Alargamientos teoricos de tendones
==========

Tesado por seccion No. 1: 50.1 cm.
Al retesar por seccion No. 39: 2.9 cm.
Tesado por seccion No. 39: 46.8 cm.

"TITULO:" LAV GELIDA. V-Riera de la Rierussa. Tendon 4 (Servicio).

CARACTERISTICAS DEL PRETENSADO

| NS | Po (t) | MU | K | INT.CUÑ.(mm) | Ep(Kg/cm2) | Ap(cm2) |
|---|---|---|---|---|---|---|
| 39 | 1000.000 | 0.2100 | 0.0015 | 5 | 1900000.0 | 70.17 |

COORDENADAS

| | | CENTRO DE GRAVEDAD DE LA SECCION | | | PRETENSADO |
|---|---|---|---|---|---|
| SECCION | NUDO | X (long.) | Y (tran.) | Z (prof.) | Zp (prof.) |
| 1 | 1 | 0 | 0 | -1.370 | -1.600 |
| 2 | 2 | 0 | 1.5 | -1.212 | -1.701 |
| 3 | 3 | -0.001 | 3.6 | -1.212 | -1.823 |
| 4 | 4 | -0.001 | 5.7 | -1.212 | -1.923 |
| 5 | 5 | -0.003 | 7.8 | -1.212 | -2.000 |
| 6 | 6 | -0.004 | 9.9 | -1.212 | -2.056 |
| 7 | 7 | -0.006 | 12 | -1.212 | -2.089 |
| 8 | 8 | -0.008 | 14.1 | -1.212 | -2.100 |
| 9 | 9 | -0.011 | 16.2 | -1.212 | -2.076 |
| 10 | 10 | -0.014 | 18.3 | -1.212 | -2.003 |
| 11 | 11 | -0.018 | 20.4 | -1.212 | -1.881 |
| 12 | 12 | -0.021 | 22.5 | -1.212 | -1.711 |
| 13 | 13 | -0.026 | 24.6 | -1.212 | -1.493 |
| 14 | 14 | -0.03 | 26.7 | -1.212 | -1.226 |
| 15 | 15 | -0.035 | 28.8 | -1.212 | -0.910 |
| 16 | 16 | -0.04 | 30.9 | -1.370 | -0.655 |
| 17 | 17 | -0.046 | 33 | -1.370 | -0.570 |
| 18 | 18 | -0.052 | 35.1 | -1.370 | -0.768 |
| 19 | 19 | -0.059 | 37.2 | -1.212 | -1.215 |
| 20 | 20 | -0.065 | 39.3 | -1.212 | -1.617 |
| 21 | 21 | -0.073 | 41.4 | -1.212 | -1.966 |
| 22 | 22 | -0.08 | 43.5 | -1.212 | -2.260 |
| 23 | 23 | -0.088 | 45.6 | -1.212 | -2.501 |
| 24 | 24 | -0.096 | 47.7 | -1.212 | -2.689 |
| 25 | 25 | -0.105 | 49.8 | -1.212 | -2.823 |
| 26 | 26 | -0.114 | 51.9 | -1.212 | -2.903 |
| 27 | 27 | -0.124 | 54 | -1.212 | -2.930 |
| 28 | 28 | -0.133 | 56.1 | -1.212 | -2.903 |
| 29 | 29 | -0.144 | 58.2 | -1.212 | -2.821 |
| 30 | 30 | -0.154 | 60.3 | -1.212 | -2.684 |
| 31 | 31 | -0.165 | 62.4 | -1.212 | -2.492 |
| 32 | 32 | -0.176 | 64.5 | -1.212 | -2.246 |
| 33 | 33 | -0.188 | 66.6 | -1.212 | -1.945 |
| 34 | 34 | -0.2 | 68.7 | -1.212 | -1.589 |
| 35 | 35 | -0.212 | 70.8 | -1.212 | -1.178 |
| 36 | 36 | -0.225 | 72.9 | -1.370 | -0.849 |
| 37 | 37 | -0.238 | 74.999 | -1.370 | -0.740 |
| 38 | 38 | -0.252 | 77.099 | -1.370 | -0.918 |
| 39 | 39 | -0.266 | 79.199 | -1.212 | -1.450 |

LAV GELIDA. V-Riera de la Rierussa. Tendon 4 (Servicio).

Numero de secciones
39

| | Lt | Lac | Anghor | Angver | Angulo | cosx | cosy | cosz |
|---|---|---|---|---|---|---|---|---|
| 1 | 1.503 | 0.000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.99774 | -.06718 |
| 2 | 2.104 | 1.503 | -3.14112 | 0.00920 | 0.00921 | -.00048 | 0.99832 | -.05800 |
| 3 | 2.102 | 3.607 | 3.14112 | 0.01045 | 0.01046 | 0.00000 | 0.99887 | -.04757 |
| 4 | 2.101 | 5.709 | -3.14064 | 0.01093 | 0.01097 | -.00095 | 0.99933 | -.03664 |
| 5 | 2.101 | 7.811 | -0.00048 | 0.00999 | 0.01000 | -.00048 | 0.99964 | -.02666 |
| 6 | 2.100 | 9.911 | 0.00048 | 0.01095 | 0.01096 | -.00095 | 0.99988 | -.01571 |
| 7 | 2.100 | 12.012 | 0.00000 | 0.01047 | 0.01047 | -.00095 | 0.99999 | -.00524 |
| 8 | 2.100 | 14.112 | 0.00048 | 0.01667 | 0.01667 | -.00143 | 0.99993 | 0.01143 |
| 9 | 2.101 | 16.212 | 0.00000 | 0.02332 | 0.02332 | -.00143 | 0.99940 | 0.03474 |
| 10 | 2.104 | 18.313 | 0.00048 | 0.02328 | 0.02329 | -.00190 | 0.99831 | 0.05800 |
| 11 | 2.107 | 20.417 | -0.00048 | 0.02275 | 0.02275 | -.00142 | 0.99674 | 0.08069 |
| 12 | 2.111 | 22.524 | 0.00095 | 0.02266 | 0.02268 | -.00237 | 0.99465 | 0.10325 |
| 13 | 2.117 | 24.635 | -0.00048 | 0.02303 | 0.02303 | -.00189 | 0.99201 | 0.12613 |
| 14 | 2.124 | 26.752 | 0.00048 | 0.02289 | 0.02290 | -.00235 | 0.98886 | 0.14880 |
| 15 | 2.115 | 28.875 | 0.00000 | -0.02852 | 0.02852 | -.00236 | 0.99271 | 0.12054 |
| 16 | 2.102 | 30.991 | 0.00048 | -0.08038 | 0.08038 | -.00285 | 0.99918 | 0.04044 |
| 17 | 2.109 | 33.093 | 0.00000 | -0.13446 | 0.13446 | -.00284 | 0.99558 | -.09387 |
| 18 | 2.147 | 35.202 | 0.00048 | -0.11572 | 0.11572 | -.00326 | 0.97808 | -.20819 |
| 19 | 2.138 | 37.349 | -0.00048 | 0.02059 | 0.02059 | -.00281 | 0.98216 | -.18801 |
| 20 | 2.129 | 39.487 | 0.00095 | 0.02446 | 0.02447 | -.00376 | 0.98646 | -.16394 |
| 21 | 2.120 | 41.616 | -0.00048 | 0.02559 | 0.02559 | -.00330 | 0.99034 | -.13865 |
| 22 | 2.114 | 43.736 | 0.00048 | 0.02483 | 0.02484 | -.00378 | 0.99347 | -.11401 |
| 23 | 2.108 | 45.850 | 0.00000 | 0.02498 | 0.02498 | -.00379 | 0.99601 | -.08917 |
| 24 | 2.104 | 47.959 | 0.00048 | 0.02556 | 0.02557 | -.00428 | 0.99796 | -.06368 |
| 25 | 2.102 | 50.063 | 0.00000 | 0.02565 | 0.02565 | -.00428 | 0.99927 | -.03807 |
| 26 | 2.100 | 52.164 | 0.00048 | 0.02522 | 0.02522 | -.00476 | 0.99991 | -.01286 |
| 27 | 2.100 | 54.265 | -0.00048 | 0.02571 | 0.02572 | -.00429 | 0.99991 | 0.01286 |
| 28 | 2.102 | 56.365 | 0.00095 | 0.02617 | 0.02619 | -.00523 | 0.99922 | 0.03902 |
| 29 | 2.104 | 58.466 | -0.00048 | 0.02612 | 0.02612 | -.00475 | 0.99787 | 0.06510 |
| 30 | 2.109 | 60.571 | 0.00048 | 0.02603 | 0.02603 | -.00522 | 0.99583 | 0.09105 |
| 31 | 2.114 | 62.680 | 0.00000 | 0.02544 | 0.02544 | -.00520 | 0.99320 | 0.11635 |
| 32 | 2.121 | 64.794 | 0.00048 | 0.02575 | 0.02576 | -.00566 | 0.98987 | 0.14188 |
| 33 | 2.130 | 66.916 | 0.00000 | 0.02556 | 0.02556 | -.00563 | 0.98592 | 0.16714 |
| 34 | 2.140 | 69.046 | 0.00000 | 0.02534 | 0.02534 | -.00561 | 0.98137 | 0.19207 |
| 35 | 2.126 | 71.186 | 0.00048 | -0.03787 | 0.03787 | -.00612 | 0.98793 | 0.15478 |
| 36 | 2.102 | 73.311 | 0.00000 | -0.10352 | 0.10352 | -.00618 | 0.99864 | 0.05186 |
| 37 | 2.108 | 75.413 | 0.00047 | -0.13644 | 0.13644 | -.00664 | 0.99640 | -.08446 |
| 38 | 2.166 | 77.521 | 0.00000 | -0.16355 | 0.16355 | -.00646 | 0.96936 | -.24557 |
| 39 | 0.000 | 79.687 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

ESTADO A
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 918.796 | 918.796 | 918.796 | 0.0000 | 916.7198 | -61.7258 | -210.8456 | 0.0000 |
| 2 | 996.783 | 922.012 | 921.048 | 922.977 | -0.4388 | 4.7033 | 8.1955 | -2.2999 | -0.2146 |
| 3 | 991.593 | 927.203 | 926.114 | 928.292 | 0.4388 | 5.8179 | 9.3760 | -3.5547 | 0.2681 |
| 4 | 986.249 | 932.547 | 931.410 | 933.683 | -0.8886 | 5.8149 | 9.9423 | -4.1344 | -0.6318 |
| 5 | 980.982 | 937.814 | 936.784 | 938.844 | 0.4417 | 5.4543 | 9.1851 | -4.2980 | 0.3481 |
| 6 | 975.746 | 943.050 | 941.927 | 944.172 | -0.4522 | 5.5451 | 10.1918 | -4.6801 | -0.3816 |
| 7 | 970.490 | 948.305 | 947.238 | 949.373 | -0.0051 | 5.3040 | 9.8623 | -4.6516 | -0.0044 |
| 8 | 964.685 | 954.110 | 952.422 | 955.799 | -0.4612 | 6.3766 | 15.8955 | -5.6625 | -0.4095 |
| 9 | 957.623 | 957.623 | 959.967 | 955.278 | 0.0015 | -1.0358 | 22.2645 | 0.8949 | 0.0013 |
| 10 | 949.949 | 949.949 | 952.272 | 947.626 | -0.4381 | -8.6709 | 21.7726 | 6.8587 | -0.3465 |
| 11 | 942.389 | 942.389 | 944.641 | 940.138 | 0.4633 | -8.9574 | 20.8984 | 5.9925 | 0.3099 |
| 12 | 934.945 | 934.945 | 937.172 | 932.718 | -0.8702 | -9.3415 | 20.4490 | 4.6614 | -0.4342 |
| 13 | 927.526 | 927.526 | 929.769 | 925.283 | 0.4605 | -9.8379 | 20.3962 | 2.7645 | 0.1294 |
| 14 | 920.138 | 920.138 | 922.350 | 917.926 | -0.4128 | -10.1883 | 19.8844 | 0.1426 | -0.0058 |
| 15 | 912.275 | 912.275 | 915.006 | 909.543 | 0.0114 | -4.7961 | -26.9490 | -1.4484 | -0.0034 |
| 16 | 899.073 | 899.073 | 906.661 | 891.485 | -0.3952 | -12.1563 | -73.5846 | -8.6918 | 0.2826 |
| 17 | 876.307 | 876.307 | 888.679 | 863.936 | 0.0875 | -30.6338 | -117.1511 | -24.5070 | -0.0700 |
| 18 | 850.869 | 850.869 | 861.207 | 840.531 | -0.2829 | -38.0093 | -93.8949 | -22.8816 | 0.1703 |
| 19 | 836.021 | 836.021 | 837.828 | 834.213 | 0.3994 | -2.7760 | 18.1480 | 0.0083 | 0.0012 |
| 20 | 829.410 | 829.410 | 831.542 | 827.279 | -0.7679 | -3.2524 | 21.2189 | 1.3172 | -0.3110 |
| 21 | 822.431 | 822.431 | 824.642 | 820.221 | 0.4012 | -3.7852 | 21.9035 | 2.8540 | 0.3025 |
| 22 | 815.490 | 815.490 | 817.617 | 813.363 | -0.3706 | -4.2417 | 20.9876 | 4.4453 | -0.3884 |
| 23 | 808.667 | 808.667 | 810.788 | 806.547 | 0.0180 | -4.7252 | 20.8167 | 6.0908 | 0.0232 |
| 24 | 801.847 | 801.847 | 804.000 | 799.695 | -0.3600 | -5.2638 | 20.9929 | 7.7746 | -0.5317 |
| 25 | 795.034 | 795.034 | 797.175 | 792.893 | 0.0247 | -5.7536 | 20.7408 | 9.2690 | 0.0397 |
| 26 | 788.309 | 788.309 | 790.397 | 786.221 | -0.3479 | -6.1632 | 20.0757 | 10.4220 | -0.5884 |
| 27 | 781.638 | 781.638 | 783.748 | 779.527 | 0.4030 | -6.6919 | 20.1292 | 11.4967 | 0.6924 |
| 28 | 774.944 | 774.944 | 777.075 | 772.813 | -0.7044 | -7.2412 | 20.1316 | 12.2448 | -1.1912 |
| 29 | 768.274 | 768.274 | 770.381 | 766.167 | 0.4043 | -7.6817 | 19.7235 | 12.3598 | 0.6505 |
| 30 | 761.670 | 761.670 | 763.752 | 759.588 | -0.3216 | -8.1102 | 19.2820 | 11.9382 | -0.4734 |
| 31 | 755.172 | 755.172 | 757.189 | 753.155 | 0.0440 | -8.3925 | 18.4677 | 10.7424 | 0.0563 |
| 32 | 748.745 | 748.745 | 750.770 | 746.720 | -0.3055 | -8.8757 | 18.3191 | 9.1774 | -0.3159 |
| 33 | 742.355 | 742.355 | 744.348 | 740.363 | 0.0527 | -9.2176 | 17.7962 | 6.7565 | 0.0386 |
| 34 | 736.042 | 736.042 | 738.001 | 734.084 | 0.0545 | -9.5321 | 17.2518 | 3.5936 | 0.0205 |
| 35 | 728.833 | 728.833 | 731.731 | 725.935 | -0.3230 | -3.2312 | -28.6363 | -0.1099 | 0.0110 |
| 36 | 715.844 | 715.844 | 723.624 | 708.063 | 0.0603 | -10.0768 | -75.6380 | -5.2500 | -0.0314 |
| 37 | 695.866 | 695.866 | 705.834 | 685.897 | -0.1769 | -23.6653 | -94.6481 | -14.9092 | 0.1114 |
| 38 | 672.190 | 672.190 | 683.732 | 660.648 | 0.2869 | -43.0277 | -104.3067 | -19.4485 | -0.1297 |
| 39 | 658.504 | 658.504 | 658.504 | 658.504 | 4.2694 | -640.4037 | 162.2356 | 152.4161 | 1.0161 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 341.496 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 81.204 Tn
Distancia afectada por clavado de cuñas: 15.533 m

Sum. Fx= 0.000000
Sum. Fy= -0.000000
Sum. Fz= -0.000000
Sum. Mx= -0.000000
Sum. My= 0.000000
Sum. Mz= 0.000000

ESTADO B
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 658.504 | 658.504 | 658.504 | 658.504 | 0.0000 | 658.5001 | -44.3390 | -151.4550 | 0.0000 |
| 2 | 660.630 | 660.630 | 659.991 | 661.269 | -0.3154 | 3.7425 | 5.8659 | -1.8301 | -0.1542 |
| 3 | 664.088 | 664.088 | 663.359 | 664.818 | 0.3154 | 3.9201 | 6.7511 | -2.3952 | 0.1927 |
| 4 | 667.687 | 667.687 | 666.918 | 668.456 | -0.6382 | 3.9534 | 7.1511 | -2.8108 | -0.4538 |
| 5 | 671.272 | 671.272 | 670.567 | 671.977 | 0.3173 | 3.7417 | 6.6014 | -2.9484 | 0.2500 |
| 6 | 674.874 | 674.874 | 674.097 | 675.650 | -0.3245 | 3.8405 | 7.3200 | -3.2414 | -0.2739 |
| 7 | 678.529 | 678.529 | 677.782 | 679.275 | -0.0035 | 3.7100 | 7.0803 | -3.2537 | -0.0031 |
| 8 | 682.613 | 682.613 | 681.418 | 683.808 | -0.3309 | 4.5117 | 11.4084 | -4.0064 | -0.2939 |
| 9 | 687.649 | 687.649 | 685.965 | 689.333 | -0.0074 | 5.1710 | 16.1846 | -4.4678 | -0.0064 |
| 10 | 693.204 | 693.204 | 691.509 | 694.899 | -0.3383 | 4.8295 | 16.4060 | -3.8201 | -0.2676 |
| 11 | 698.764 | 698.764 | 697.095 | 700.434 | 0.3251 | 4.4385 | 16.2661 | -2.9693 | 0.2175 |
| 12 | 704.328 | 704.328 | 702.651 | 706.006 | -0.6768 | 4.0986 | 16.4337 | -2.0452 | -0.3377 |
| 13 | 709.962 | 709.962 | 708.245 | 711.679 | 0.3283 | 3.7819 | 16.9182 | -1.0627 | 0.0922 |
| 14 | 715.663 | 715.663 | 713.942 | 717.383 | -0.3454 | 3.4187 | 17.0400 | -0.0479 | -0.0048 |
| 15 | 721.834 | 721.834 | 719.672 | 723.995 | -0.0222 | 9.3398 | -19.5379 | 2.8206 | 0.0067 |
| 16 | 732.478 | 732.478 | 726.296 | 738.660 | -0.3987 | 19.3856 | -57.5818 | 13.8607 | 0.2851 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 17 | 751.604 | 751.604 | 740.993 | 762.214 | -0.0596 | 20.8670 | -101.7430 | 16.6936 | 0.0477 |
| 18 | 774.034 | 774.034 | 764.630 | 783.439 | -0.3875 | 7.4891 | -91.8567 | 4.5084 | 0.2333 |
| 19 | 787.669 | 787.669 | 785.966 | 789.372 | 0.3402 | 9.0424 | 14.7420 | -0.0271 | 0.0010 |
| 20 | 793.948 | 793.948 | 791.908 | 795.988 | -0.7786 | 9.9424 | 17.9774 | -4.0267 | -0.3153 |
| 21 | 800.686 | 800.686 | 798.534 | 802.838 | 0.3421 | 9.8877 | 19.2466 | -7.4553 | 0.2580 |
| 22 | 807.501 | 807.501 | 805.395 | 809.607 | -0.4151 | 9.2643 | 19.0670 | -9.7090 | -0.4350 |
| 23 | 814.314 | 814.314 | 812.178 | 816.449 | -0.0339 | 8.8907 | 19.5681 | -11.4601 | -0.0437 |
| 24 | 821.240 | 821.240 | 819.036 | 823.445 | -0.4253 | 8.5968 | 20.4283 | -12.6975 | -0.6282 |
| 25 | 828.279 | 828.279 | 826.048 | 830.509 | -0.0350 | 8.1556 | 20.8872 | -13.1386 | -0.0563 |
| 26 | 835.344 | 835.344 | 833.131 | 837.556 | -0.4326 | 7.6002 | 20.9135 | -12.8520 | -0.7316 |
| 27 | 842.474 | 842.474 | 840.199 | 844.749 | 0.3691 | 7.2164 | 21.6959 | -12.3977 | 0.6342 |
| 28 | 849.751 | 849.751 | 847.414 | 852.087 | -0.8425 | 6.7788 | 22.4568 | -11.4630 | -1.4247 |
| 29 | 857.129 | 857.129 | 854.778 | 859.479 | 0.3770 | 6.2433 | 22.7770 | -10.0455 | 0.6066 |
| 30 | 864.560 | 864.560 | 862.197 | 866.923 | -0.4395 | 5.6877 | 23.0532 | -8.3723 | -0.6469 |
| 31 | 871.999 | 871.999 | 869.670 | 874.328 | -0.0267 | 5.0907 | 22.8661 | -6.5161 | -0.0341 |
| 32 | 879.484 | 879.484 | 877.105 | 881.862 | -0.4410 | 4.5723 | 23.4709 | -4.7278 | -0.4559 |
| 33 | 887.054 | 887.054 | 884.673 | 889.435 | -0.0229 | 4.0067 | 23.6145 | -2.9369 | -0.0168 |
| 34 | 894.662 | 894.662 | 892.281 | 897.043 | -0.0197 | 3.4414 | 23.7137 | -1.2974 | -0.0074 |
| 35 | 903.519 | 903.519 | 899.927 | 907.112 | -0.5329 | 18.1459 | -31.6423 | 0.6170 | 0.0181 |
| 36 | 920.009 | 902.314 | 912.314 | 892.315 | 0.0787 | -13.1387 | -95.0822 | -6.8453 | -0.0410 |
| 37 | 946.504 | 875.819 | 889.378 | 862.260 | -0.2068 | -32.0330 | -118.6892 | -20.1808 | 0.1303 |
| 38 | 979.929 | 842.394 | 859.220 | 825.567 | 0.3934 | -59.0066 | -129.3710 | -26.6710 | -0.1778 |
| 39 | 1000.000 | 822.323 | 822.323 | 822.323 | 5.3142 | -797.1248 | 201.9383 | 189.7157 | 1.2648 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 341.496 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 177.677 Tn
Distancia afectada por clavado de cuñas: 7.828 m

Sum. Fx= -0.000000
Sum. Fy= 0.000000
Sum. Fz= 0.000000
Sum. Mx= 0.000000
Sum. My= -0.000000
Sum. Mz= -0.000000

ESTADO C
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 918.796 | 918.796 | 918.796 | 0.0000 | 916.7198 | -61.7258 | -210.8456 | 0.0000 |
| 2 | 996.783 | 922.012 | 921.048 | 922.977 | -0.4388 | 4.7033 | 8.1955 | -2.2999 | -0.2146 |
| 3 | 991.593 | 927.203 | 926.114 | 928.292 | 0.4388 | 5.8179 | 9.3760 | -3.5547 | 0.2681 |
| 4 | 986.249 | 932.547 | 931.410 | 933.683 | -0.8886 | 5.8149 | 9.9423 | -4.1344 | -0.6318 |
| 5 | 980.982 | 937.814 | 936.784 | 938.844 | 0.4417 | 5.4543 | 9.1851 | -4.2980 | 0.3481 |
| 6 | 975.746 | 943.050 | 941.927 | 944.172 | -0.4522 | 5.5451 | 10.1918 | -4.6801 | -0.3816 |
| 7 | 970.490 | 948.305 | 947.238 | 949.373 | -0.0051 | 5.3040 | 9.8623 | -4.6516 | -0.0044 |
| 8 | 964.685 | 954.110 | 952.422 | 955.799 | -0.4612 | 6.3766 | 15.8955 | -5.6625 | -0.4095 |
| 9 | 957.623 | 957.623 | 959.967 | 955.278 | 0.0015 | -1.0358 | 22.2645 | 0.8949 | 0.0013 |
| 10 | 949.949 | 949.949 | 952.272 | 947.626 | -0.4381 | -8.6709 | 21.7726 | 6.8587 | -0.3465 |
| 11 | 942.389 | 942.389 | 944.641 | 940.138 | 0.4633 | -8.9574 | 20.8984 | 5.9925 | 0.3099 |
| 12 | 934.945 | 934.945 | 937.172 | 932.718 | -0.8702 | -9.3415 | 20.4490 | 4.6614 | -0.4342 |
| 13 | 927.526 | 927.526 | 929.769 | 925.283 | 0.4605 | -9.8379 | 20.3962 | 2.7645 | 0.1294 |
| 14 | 920.138 | 920.138 | 922.350 | 917.926 | -0.4128 | -10.1883 | 19.8844 | 0.1426 | -0.0058 |
| 15 | 912.275 | 912.275 | 915.006 | 909.543 | 0.0114 | -4.7961 | -26.9490 | -1.4484 | -0.0034 |
| 16 | 899.073 | 899.073 | 906.661 | 891.485 | -0.3952 | -12.1563 | -73.5846 | -8.6918 | 0.2826 |
| 17 | 876.307 | 876.307 | 888.679 | 863.936 | 0.0875 | -30.6338 | -117.1511 | -24.5070 | -0.0700 |
| 18 | 850.869 | 850.869 | 861.207 | 840.531 | -0.2829 | -38.0093 | -93.8949 | -22.8816 | 0.1703 |
| 19 | 836.021 | 836.021 | 837.828 | 834.213 | 0.3994 | -2.7760 | 18.1480 | 0.0083 | 0.0012 |
| 20 | 829.410 | 829.410 | 831.542 | 827.279 | -0.7679 | -3.2524 | 21.2189 | 1.3172 | -0.3110 |
| 21 | 822.431 | 822.431 | 824.642 | 820.221 | 0.4012 | -3.7852 | 21.9035 | 2.8540 | 0.3025 |
| 22 | 815.490 | 815.490 | 817.617 | 813.363 | -0.3706 | -4.2417 | 20.9876 | 4.4453 | -0.3884 |
| 23 | 808.667 | 814.314 | 812.178 | 816.449 | -0.0294 | 7.7138 | 19.7032 | -9.9432 | -0.0379 |
| 24 | 821.240 | 821.240 | 819.036 | 823.445 | -0.4253 | 8.5968 | 20.4283 | -12.6975 | -0.6282 |
| 25 | 828.279 | 828.279 | 826.048 | 830.509 | -0.0350 | 8.1556 | 20.8872 | -13.1386 | -0.0563 |
| 26 | 835.344 | 835.344 | 833.131 | 837.556 | -0.4326 | 7.6002 | 20.9135 | -12.8520 | -0.7316 |
| 27 | 842.474 | 842.474 | 840.199 | 844.749 | 0.3691 | 7.2164 | 21.6959 | -12.3977 | 0.6342 |
| 28 | 849.751 | 849.751 | 847.414 | 852.087 | -0.8425 | 6.7788 | 22.4568 | -11.4630 | -1.4247 |
| 29 | 857.129 | 857.129 | 854.778 | 859.479 | 0.3770 | 6.2433 | 22.7770 | -10.0455 | 0.6066 |
| 30 | 864.560 | 864.560 | 862.197 | 866.923 | -0.4395 | 5.6877 | 23.0532 | -8.3723 | -0.6469 |
| 31 | 871.999 | 871.999 | 869.670 | 874.328 | -0.0267 | 5.0907 | 22.8661 | -6.5161 | -0.0341 |
| 32 | 879.484 | 879.484 | 877.105 | 881.862 | -0.4410 | 4.5723 | 23.4709 | -4.7278 | -0.4559 |
| 33 | 887.054 | 887.054 | 884.673 | 889.435 | -0.0229 | 4.0067 | 23.6145 | -2.9369 | -0.0168 |
| 34 | 894.662 | 894.662 | 892.281 | 897.043 | -0.0197 | 3.4414 | 23.7137 | -1.2974 | -0.0074 |
| 35 | 903.519 | 903.519 | 899.927 | 907.112 | -0.5329 | 18.1459 | -31.6423 | 0.6170 | 0.0181 |
| 36 | 920.009 | 902.314 | 912.314 | 892.315 | 0.0787 | -13.1387 | -95.0822 | -6.8453 | -0.0410 |
| 37 | 946.504 | 875.819 | 889.378 | 862.260 | -0.2068 | -32.0330 | -118.6892 | -20.1808 | 0.1303 |
| 38 | 979.929 | 842.394 | 859.220 | 825.567 | 0.3934 | -59.0066 | -129.3710 | -26.6710 | -0.1778 |
| 39 | 1000.000 | 822.323 | 822.323 | 822.323 | 5.3142 | -797.1248 | 201.9383 | 189.7157 | 1.2648 |

Sum. Fx= 0.000000
Sum. Fy= -0.000000
Sum. Fz= 0.000000
Sum. Mx= 0.000000
Sum. My= -0.000000
Sum. Mz= 0.000000

Alargamientos teoricos de tendones
==========

Tesado por seccion No. 1: 50.1 cm.
Al retesar por seccion No. 39: 2.8 cm.
Tesado por seccion No. 39: 46.6 cm.

"TITULO:" LAV GELIDA. V-Riera de la Rierussa. Tendon 5 (Servicio).

CARACTERISTICAS DEL PRETENSADO

| NS | Po (t) | MU | K | INT.CUÑ.(mm) | Ep(Kg/cm2) | Ap(cm2) |
|---|---|---|---|---|---|---|
| 45 | 1000.000 | 0.2100 | 0.0015 | 5 | 1900000.0 | 70.17 |

COORDENADAS

| | | CENTRO DE GRAVEDAD DE LA SECCION | | | PRETENSADO |
|---|---|---|---|---|---|
| SECCION | NUDO | X (long.) | Y (tran.) | Z (prof.) | Zp (prof.) |
| 1 | 15 | -0.035 | 28.8 | -1.212 | -0.930 |
| 2 | 16 | -0.04 | 30.9 | -1.370 | -0.405 |
| 3 | 17 | -0.046 | 33 | -1.370 | -0.230 |
| 4 | 18 | -0.052 | 35.1 | -1.370 | -0.340 |
| 5 | 19 | -0.059 | 37.2 | -1.212 | -0.668 |
| 6 | 20 | -0.065 | 39.3 | -1.212 | -1.079 |
| 7 | 21 | -0.073 | 41.4 | -1.212 | -1.435 |
| 8 | 22 | -0.08 | 43.5 | -1.212 | -1.736 |
| 9 | 23 | -0.088 | 45.6 | -1.212 | -1.982 |
| 10 | 24 | -0.096 | 47.7 | -1.212 | -2.174 |
| 11 | 25 | -0.105 | 49.8 | -1.212 | -2.311 |
| 12 | 26 | -0.114 | 51.9 | -1.212 | -2.393 |
| 13 | 27 | -0.124 | 54 | -1.212 | -2.420 |
| 14 | 28 | -0.133 | 56.1 | -1.212 | -2.393 |
| 15 | 29 | -0.144 | 58.2 | -1.212 | -2.311 |
| 16 | 30 | -0.154 | 60.3 | -1.212 | -2.174 |
| 17 | 31 | -0.165 | 62.4 | -1.212 | -1.982 |
| 18 | 32 | -0.176 | 64.5 | -1.212 | -1.736 |
| 19 | 33 | -0.188 | 66.6 | -1.212 | -1.435 |
| 20 | 34 | -0.2 | 68.7 | -1.212 | -1.079 |
| 21 | 35 | -0.212 | 70.8 | -1.212 | -0.668 |
| 22 | 36 | -0.225 | 72.9 | -1.370 | -0.340 |
| 23 | 37 | -0.238 | 74.999 | -1.370 | -0.230 |
| 24 | 38 | -0.252 | 77.099 | -1.370 | -0.428 |
| 25 | 39 | -0.266 | 79.199 | -1.212 | -0.875 |
| 26 | 40 | -0.28 | 81.299 | -1.212 | -1.277 |
| 27 | 41 | -0.295 | 83.399 | -1.212 | -1.626 |
| 28 | 42 | -0.31 | 85.499 | -1.212 | -1.920 |
| 29 | 43 | -0.325 | 87.599 | -1.212 | -2.161 |
| 30 | 44 | -0.341 | 89.699 | -1.212 | -2.349 |
| 31 | 45 | -0.357 | 91.799 | -1.212 | -2.483 |
| 32 | 46 | -0.374 | 93.899 | -1.212 | -2.563 |
| 33 | 47 | -0.391 | 95.999 | -1.212 | -2.590 |
| 34 | 48 | -0.408 | 98.099 | -1.212 | -2.563 |
| 35 | 49 | -0.425 | 100.199 | -1.212 | -2.481 |
| 36 | 50 | -0.443 | 102.299 | -1.212 | -2.344 |
| 37 | 51 | -0.462 | 104.399 | -1.212 | -2.152 |
| 38 | 52 | -0.481 | 106.499 | -1.212 | -1.906 |
| 39 | 53 | -0.5 | 108.598 | -1.212 | -1.605 |
| 40 | 54 | -0.519 | 110.698 | -1.212 | -1.249 |
| 41 | 55 | -0.539 | 112.798 | -1.212 | -0.838 |
| 42 | 56 | -0.559 | 114.898 | -1.370 | -0.510 |
| 43 | 57 | -0.58 | 116.998 | -1.370 | -0.400 |
| 44 | 58 | -0.601 | 119.098 | -1.370 | -0.563 |
| 45 | 59 | -0.622 | 121.198 | -1.212 | -1.050 |

LAV GELIDA. V-Riera de la Rierussa. Tendon 5 (Servicio).

Numero de secciones
45

| | Lt | Lac | Anghor | Angver | Angulo | cosx | cosy | cosz |
|---|---|---|---|---|---|---|---|---|
| 1 | 2.165 | 0.000 | 0.00000 | 0.00000 | 0.00000 | -.00231 | 0.97014 | 0.24253 |
| 2 | 2.107 | 2.165 | 0.00048 | -0.16184 | 0.16184 | -.00285 | 0.99654 | 0.08305 |
| 3 | 2.103 | 4.272 | 0.00000 | -0.13547 | 0.13547 | -.00285 | 0.99863 | -.05231 |
| 4 | 2.125 | 6.375 | 0.00048 | -0.10260 | 0.10261 | -.00329 | 0.98802 | -.15432 |
| 5 | 2.140 | 8.500 | -0.00048 | -0.03833 | 0.03834 | -.00280 | 0.98138 | -.19207 |
| 6 | 2.130 | 10.640 | 0.00095 | 0.02534 | 0.02536 | -.00376 | 0.98593 | -.16714 |
| 7 | 2.121 | 12.770 | -0.00048 | 0.02556 | 0.02557 | -.00330 | 0.98988 | -.14188 |
| 8 | 2.114 | 14.892 | 0.00048 | 0.02575 | 0.02576 | -.00378 | 0.99320 | -.11635 |
| 9 | 2.109 | 17.006 | 0.00000 | 0.02544 | 0.02544 | -.00379 | 0.99584 | -.09105 |
| 10 | 2.104 | 19.115 | 0.00048 | 0.02603 | 0.02603 | -.00428 | 0.99787 | -.06510 |
| 11 | 2.102 | 21.219 | 0.00000 | 0.02612 | 0.02612 | -.00428 | 0.99923 | -.03902 |
| 12 | 2.100 | 23.321 | 0.00048 | 0.02617 | 0.02618 | -.00476 | 0.99991 | -.01286 |
| 13 | 2.100 | 25.421 | -0.00048 | 0.02571 | 0.02572 | -.00429 | 0.99991 | 0.01286 |
| 14 | 2.102 | 27.521 | 0.00095 | 0.02617 | 0.02619 | -.00523 | 0.99922 | 0.03902 |
| 15 | 2.104 | 29.623 | -0.00048 | 0.02612 | 0.02612 | -.00475 | 0.99787 | 0.06510 |
| 16 | 2.109 | 31.727 | 0.00048 | 0.02603 | 0.02603 | -.00522 | 0.99583 | 0.09105 |
| 17 | 2.114 | 33.836 | 0.00000 | 0.02544 | 0.02544 | -.00520 | 0.99320 | 0.11635 |
| 18 | 2.121 | 35.951 | 0.00048 | 0.02575 | 0.02576 | -.00566 | 0.98987 | 0.14188 |
| 19 | 2.130 | 38.072 | 0.00000 | 0.02556 | 0.02556 | -.00563 | 0.98592 | 0.16714 |
| 20 | 2.140 | 40.202 | 0.00000 | 0.02534 | 0.02534 | -.00561 | 0.98137 | 0.19207 |
| 21 | 2.126 | 42.342 | 0.00048 | -0.03833 | 0.03834 | -.00612 | 0.98800 | 0.15432 |
| 22 | 2.102 | 44.467 | 0.00000 | -0.10258 | 0.10258 | -.00618 | 0.99861 | 0.05233 |
| 23 | 2.109 | 46.569 | 0.00047 | -0.14636 | 0.14636 | -.00664 | 0.99556 | -.09387 |
| 24 | 2.147 | 48.679 | 0.00000 | -0.11572 | 0.11572 | -.00652 | 0.97807 | -.20819 |
| 25 | 2.138 | 50.826 | 0.00000 | 0.02059 | 0.02059 | -.00655 | 0.98215 | -.18801 |
| 26 | 2.129 | 52.964 | 0.00048 | 0.02446 | 0.02446 | -.00705 | 0.98645 | -.16394 |
| 27 | 2.121 | 55.093 | 0.00000 | 0.02559 | 0.02559 | -.00707 | 0.99032 | -.13864 |
| 28 | 2.114 | 57.213 | 0.00000 | 0.02483 | 0.02483 | -.00710 | 0.99345 | -.11401 |
| 29 | 2.108 | 59.327 | 0.00048 | 0.02498 | 0.02498 | -.00759 | 0.99599 | -.08916 |
| 30 | 2.104 | 61.436 | 0.00000 | 0.02556 | 0.02556 | -.00760 | 0.99794 | -.06368 |
| 31 | 2.102 | 63.540 | 0.00048 | 0.02565 | 0.02565 | -.00809 | 0.99924 | -.03807 |
| 32 | 2.100 | 65.642 | 0.00000 | 0.02522 | 0.02522 | -.00809 | 0.99988 | -.01286 |
| 33 | 2.100 | 67.742 | 0.00000 | 0.02571 | 0.02571 | -.00809 | 0.99988 | 0.01286 |
| 34 | 2.102 | 69.842 | 0.00000 | 0.02617 | 0.02617 | -.00809 | 0.99921 | 0.03902 |
| 35 | 2.105 | 71.944 | 0.00048 | 0.02612 | 0.02612 | -.00855 | 0.99784 | 0.06510 |
| 36 | 2.109 | 74.048 | 0.00048 | 0.02603 | 0.02603 | -.00901 | 0.99581 | 0.09105 |
| 37 | 2.114 | 76.157 | 0.00000 | 0.02544 | 0.02544 | -.00899 | 0.99317 | 0.11634 |
| 38 | 2.121 | 78.272 | 0.00000 | 0.02582 | 0.02582 | -.00896 | 0.98983 | 0.14194 |
| 39 | 2.130 | 80.392 | -0.00000 | 0.02550 | 0.02550 | -.00892 | 0.98589 | 0.16713 |
| 40 | 2.140 | 82.522 | 0.00048 | 0.02534 | 0.02535 | -.00935 | 0.98134 | 0.19206 |
| 41 | 2.126 | 84.662 | 0.00000 | -0.03833 | 0.03833 | -.00941 | 0.98798 | 0.15431 |
| 42 | 2.103 | 86.788 | 0.00048 | -0.10260 | 0.10260 | -.00999 | 0.99858 | 0.05231 |
| 43 | 2.106 | 88.891 | 0.00000 | -0.12979 | 0.12979 | -.00997 | 0.99695 | -.07738 |
| 44 | 2.156 | 90.997 | 0.00000 | -0.15041 | 0.15041 | -.00974 | 0.97410 | -.22590 |
| 45 | 0.000 | 93.153 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

ESTADO A
==========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 822.979 | 822.979 | 822.979 | -1.9010 | 798.4043 | 199.6011 | 225.1500 | 0.5361 |
| 2 | 980.105 | 842.874 | 826.220 | 859.527 | -0.5463 | 58.1500 | -128.2216 | 56.1147 | 0.5272 |
| 3 | 946.942 | 876.037 | 862.567 | 889.506 | -0.0907 | 31.7299 | -117.9087 | 36.1721 | 0.1033 |
| 4 | 920.615 | 902.363 | 892.445 | 912.281 | -0.4665 | 13.0641 | -94.2529 | 13.4560 | 0.4805 |
| 5 | 904.159 | 904.159 | 907.798 | 900.519 | 0.4795 | -17.5991 | -32.1803 | -9.5739 | -0.2608 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 6 | 895.249 | 895.249 | 897.634 | 892.865 | -0.8285 | -3.4498 | 23.7306 | -0.4588 | 0.1102 |
| 7 | 887.634 | 887.634 | 890.017 | 885.251 | 0.4326 | -4.0086 | 23.6300 | 0.8939 | 0.0965 |
| 8 | 880.059 | 880.059 | 882.439 | 877.679 | -0.3998 | -4.5791 | 23.4869 | 2.3995 | -0.2095 |
| 9 | 872.569 | 872.569 | 874.899 | 870.239 | 0.0194 | -5.0940 | 22.8812 | 3.9224 | 0.0149 |
| 10 | 865.125 | 865.125 | 867.490 | 862.761 | -0.3883 | -5.6952 | 23.0687 | 5.4788 | -0.3735 |
| 11 | 857.689 | 857.689 | 860.041 | 855.337 | 0.0268 | -6.2446 | 22.7918 | 6.8628 | 0.0294 |
| 12 | 850.308 | 850.308 | 852.645 | 847.971 | -0.3747 | -6.7867 | 22.4717 | 8.0151 | -0.4425 |
| 13 | 843.027 | 843.027 | 845.304 | 840.751 | 0.4347 | -7.2175 | 21.7101 | 8.7187 | 0.5251 |
| 14 | 835.808 | 835.808 | 838.107 | 833.510 | -0.7597 | -7.8099 | 21.7127 | 9.2235 | -0.8972 |
| 15 | 828.614 | 828.614 | 830.887 | 826.341 | 0.4361 | -8.2850 | 21.2726 | 9.1052 | 0.4792 |
| 16 | 821.491 | 821.491 | 823.737 | 819.246 | -0.3468 | -8.7472 | 20.7964 | 8.4148 | -0.3337 |
| 17 | 814.483 | 814.483 | 816.658 | 812.308 | 0.0474 | -9.0517 | 19.9182 | 6.9698 | 0.0365 |
| 18 | 807.552 | 807.552 | 809.735 | 805.368 | -0.3295 | -9.5728 | 19.7579 | 5.0161 | -0.1726 |
| 19 | 800.660 | 800.660 | 802.809 | 798.511 | 0.0568 | -9.9415 | 19.1939 | 2.2170 | 0.0127 |
| 20 | 793.851 | 793.851 | 795.964 | 791.739 | 0.0587 | -10.2807 | 18.6068 | -1.3673 | -0.0078 |
| 21 | 786.037 | 786.037 | 789.201 | 782.873 | -0.3483 | -3.5042 | -31.2567 | -1.9063 | 0.1895 |
| 22 | 772.066 | 772.066 | 780.381 | 763.751 | 0.0646 | -10.7916 | -80.8409 | -11.1153 | -0.0665 |
| 23 | 749.824 | 749.824 | 761.346 | 738.301 | -0.1765 | -27.6642 | -109.2718 | -31.5372 | 0.2012 |
| 24 | 727.134 | 727.134 | 735.969 | 718.300 | 0.2165 | -32.4796 | -80.2395 | -30.5957 | -0.2040 |
| 25 | 714.446 | 714.446 | 715.990 | 712.902 | 0.0158 | -2.3725 | 15.5087 | -0.7995 | -0.0053 |
| 26 | 708.799 | 708.799 | 710.619 | 706.978 | -0.3136 | -2.7776 | 18.1326 | 0.1805 | -0.0204 |
| 27 | 702.836 | 702.836 | 704.724 | 700.947 | 0.0231 | -3.2353 | 18.7181 | 1.3394 | 0.0096 |
| 28 | 696.904 | 696.904 | 698.721 | 695.087 | 0.0259 | -3.6230 | 17.9351 | 2.5651 | 0.0183 |
| 29 | 691.074 | 691.074 | 692.887 | 689.261 | -0.2980 | -4.0412 | 17.7896 | 3.8351 | -0.2828 |
| 30 | 685.246 | 685.246 | 687.085 | 683.406 | 0.0343 | -4.4963 | 17.9397 | 5.1123 | 0.0390 |
| 31 | 679.423 | 679.423 | 681.253 | 677.593 | -0.2849 | -4.9200 | 17.7246 | 6.2533 | -0.3621 |
| 32 | 673.676 | 673.676 | 675.460 | 671.892 | 0.0426 | -5.2648 | 17.1559 | 7.1127 | 0.0576 |
| 33 | 667.976 | 667.976 | 669.779 | 666.172 | 0.0463 | -5.7195 | 17.2017 | 7.8814 | 0.0638 |
| 34 | 662.257 | 662.257 | 664.077 | 660.437 | 0.0500 | -6.1826 | 17.2039 | 8.3527 | 0.0676 |
| 35 | 656.558 | 656.558 | 658.359 | 654.757 | -0.2579 | -6.5685 | 16.8549 | 8.3355 | -0.3273 |
| 36 | 650.914 | 650.914 | 652.693 | 649.135 | -0.2484 | -6.9318 | 16.4776 | 7.8468 | -0.2812 |
| 37 | 645.361 | 645.361 | 647.085 | 643.638 | 0.0649 | -7.1718 | 15.7819 | 6.7415 | 0.0610 |
| 38 | 639.865 | 639.865 | 641.599 | 638.130 | 0.0660 | -7.5975 | 15.6962 | 5.2727 | 0.0458 |
| 39 | 634.405 | 634.405 | 636.104 | 632.707 | 0.0738 | -7.8610 | 15.1673 | 3.0894 | 0.0290 |
| 40 | 629.015 | 629.015 | 630.689 | 627.341 | -0.2194 | -8.1488 | 14.7423 | 0.3015 | -0.0081 |
| 41 | 622.823 | 622.823 | 625.330 | 620.317 | 0.0264 | -2.7745 | -24.7655 | -1.0377 | -0.0099 |
| 42 | 611.752 | 611.752 | 618.342 | 605.162 | -0.2063 | -8.5559 | -64.0688 | -7.3581 | 0.1774 |
| 43 | 595.145 | 595.145 | 603.256 | 587.035 | 0.1906 | -19.0571 | -77.0802 | -18.4854 | -0.1849 |
| 44 | 576.086 | 576.086 | 585.183 | 566.989 | 0.3294 | -32.9405 | -82.6560 | -26.5830 | -0.2658 |
| 45 | 565.159 | 565.159 | 565.159 | 565.159 | 5.5231 | -552.3053 | 128.0822 | -89.4735 | -0.8947 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 434.841 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 177.021 Tn
Distancia afectada por clavado de cuñas: 7.850 m

Sum. Fx= 0.000000
Sum. Fy= 0.000000
Sum. Fz= 0.000000
Sum. Mx= 0.000000
Sum. My= -0.000000
Sum. Mz= -0.000000

ESTADO B
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 565.159 | 565.159 | 565.159 | 565.159 | -1.3097 | 550.0660 | 137.5165 | 155.1186 | 0.3693 |
| 2 | 576.797 | 576.797 | 566.997 | 586.598 | -0.3658 | 36.3538 | -88.6482 | 35.0814 | 0.3530 |
| 3 | 596.946 | 596.946 | 588.455 | 605.436 | -0.0574 | 20.0955 | -80.6382 | 22.9089 | 0.0655 |
| 4 | 613.964 | 613.964 | 607.349 | 620.578 | -0.3174 | 8.5834 | -64.3027 | 8.8409 | 0.3270 |
| 5 | 625.076 | 625.076 | 622.560 | 627.592 | 0.2849 | 2.7858 | -24.8563 | 1.5155 | -0.1550 |
| 6 | 631.291 | 631.291 | 629.609 | 632.972 | -0.6196 | 8.1762 | 14.7966 | 1.0874 | 0.0824 |
| 7 | 636.707 | 636.707 | 634.997 | 638.416 | 0.2718 | 7.9075 | 15.2634 | -1.7634 | 0.0606 |
| 8 | 642.187 | 642.187 | 640.451 | 643.924 | -0.3309 | 7.6100 | 15.7125 | -3.9877 | -0.1734 |
| 9 | 647.700 | 647.700 | 645.970 | 649.429 | -0.0274 | 7.1982 | 15.8396 | -5.5426 | -0.0211 |
| 10 | 653.273 | 653.273 | 651.487 | 655.058 | -0.3387 | 6.9533 | 16.5381 | -6.6891 | -0.3259 |
| 11 | 658.937 | 658.937 | 657.130 | 660.744 | -0.0282 | 6.5894 | 16.9166 | -7.2418 | -0.0310 |
| 12 | 664.657 | 664.657 | 662.830 | 666.483 | -0.3449 | 6.2044 | 17.2667 | -7.3274 | -0.4074 |
| 13 | 670.397 | 670.397 | 668.586 | 672.207 | 0.2937 | 5.7424 | 17.2644 | -6.9368 | 0.3548 |
| 14 | 676.187 | 676.187 | 674.328 | 678.047 | -0.6704 | 5.3942 | 17.8700 | -6.3706 | -0.7918 |
| 15 | 682.058 | 682.058 | 680.187 | 683.929 | 0.3000 | 4.9681 | 18.1247 | -5.4599 | 0.3297 |
| 16 | 687.972 | 687.972 | 686.091 | 689.852 | -0.3497 | 4.5260 | 18.3445 | -4.3540 | -0.3364 |
| 17 | 693.891 | 693.891 | 692.038 | 695.744 | -0.0212 | 4.0509 | 18.1956 | -3.1192 | -0.0163 |
| 18 | 699.847 | 699.847 | 697.955 | 701.740 | -0.3509 | 3.6384 | 18.6769 | -1.9065 | -0.1839 |
| 19 | 705.871 | 705.871 | 703.977 | 707.766 | -0.0182 | 3.1883 | 18.7912 | -0.7110 | -0.0041 |
| 20 | 711.925 | 711.925 | 710.031 | 713.820 | -0.0156 | 2.7385 | 18.8701 | 0.3642 | 0.0021 |
| 21 | 719.009 | 719.009 | 716.115 | 721.903 | -0.4136 | 12.7492 | -25.7849 | 6.9356 | 0.2250 |
| 22 | 732.093 | 732.093 | 724.208 | 739.978 | -0.1617 | 25.7638 | -72.9097 | 26.5367 | 0.1665 |
| 23 | 753.900 | 753.900 | 742.315 | 765.485 | -0.5056 | 23.2200 | -110.9294 | 26.4708 | 0.5764 |
| 24 | 777.356 | 777.356 | 767.911 | 786.800 | -0.0501 | 7.5223 | -92.2494 | 7.0860 | 0.0472 |
| 25 | 791.048 | 791.048 | 789.338 | 792.758 | -0.0605 | 9.0790 | 14.8054 | 3.0596 | 0.0204 |
| 26 | 797.352 | 797.352 | 795.305 | 799.400 | -0.4433 | 9.9823 | 18.0546 | -0.6489 | -0.0288 |
| 27 | 804.118 | 804.118 | 801.957 | 806.278 | -0.0709 | 9.9278 | 19.3291 | -4.1101 | -0.0294 |
| 28 | 810.961 | 810.961 | 808.847 | 813.076 | -0.0665 | 9.3042 | 19.1483 | -6.5874 | -0.0471 |
| 29 | 817.803 | 817.803 | 815.658 | 819.948 | -0.4539 | 8.9265 | 19.6518 | -8.4713 | -0.4307 |
| 30 | 824.759 | 824.759 | 822.546 | 826.973 | -0.0658 | 8.6341 | 20.5154 | -9.8170 | -0.0748 |
| 31 | 831.828 | 831.828 | 829.587 | 834.068 | -0.4605 | 8.1880 | 20.9764 | -10.4069 | -0.5853 |
| 32 | 838.923 | 838.923 | 836.701 | 841.144 | -0.0618 | 7.6336 | 21.0026 | -10.3129 | -0.0835 |
| 33 | 846.083 | 846.083 | 843.799 | 848.367 | -0.0586 | 7.2445 | 21.7883 | -9.9829 | -0.0808 |
| 34 | 853.389 | 853.389 | 851.044 | 855.734 | -0.0551 | 6.8085 | 22.5525 | -9.1982 | -0.0745 |
| 35 | 860.797 | 860.797 | 858.436 | 863.158 | -0.4621 | 6.2644 | 22.8737 | -7.9495 | -0.5865 |
| 36 | 868.260 | 868.260 | 865.887 | 870.633 | -0.4631 | 5.7103 | 23.1511 | -6.4641 | -0.5242 |
| 37 | 875.731 | 875.731 | 873.392 | 878.069 | -0.0463 | 5.1124 | 22.9633 | -4.8057 | -0.0435 |
| 38 | 883.253 | 883.253 | 880.859 | 885.648 | -0.0454 | 4.5960 | 23.6313 | -3.1896 | -0.0315 |
| 39 | 890.854 | 890.854 | 888.469 | 893.239 | -0.0326 | 4.0200 | 23.6543 | -1.5799 | -0.0128 |
| 40 | 898.489 | 898.489 | 896.097 | 900.880 | -0.4536 | 3.4531 | 23.8140 | -0.1278 | -0.0168 |
| 41 | 907.428 | 907.428 | 903.776 | 911.081 | -0.1430 | 15.0105 | -32.7096 | 5.6139 | 0.0535 |
| 42 | 923.944 | 902.943 | 912.896 | 892.989 | -0.2980 | -13.1449 | -94.3165 | -11.3046 | 0.2563 |
| 43 | 949.791 | 877.096 | 890.039 | 864.153 | 0.3029 | -30.2947 | -113.1894 | -29.3859 | -0.2939 |
| 44 | 981.276 | 845.611 | 861.106 | 830.115 | 0.5301 | -53.0095 | -120.1582 | -42.7786 | -0.4278 |
| 45 | 1000.000 | 826.886 | 826.886 | 826.886 | 8.0547 | -805.4718 | 186.7927 | -130.4864 | -1.3049 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 434.841 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 173.114 Tn
Distancia afectada por clavado de cuñas: 7.939 m

Sum. Fx= -0.000000
Sum. Fy= 0.000000
Sum. Fz= 0.000000
Sum. Mx= -0.000000
Sum. My= 0.000000
Sum. Mz= -0.000000

ESTADO C
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 822.979 | 822.979 | 822.979 | -1.9010 | 798.4043 | 199.6011 | 225.1500 | 0.5361 |
| 2 | 980.105 | 842.874 | 826.220 | 859.527 | -0.5463 | 58.1500 | -128.2216 | 56.1147 | 0.5272 |
| 3 | 946.942 | 876.037 | 862.567 | 889.506 | -0.0907 | 31.7299 | -117.9087 | 36.1721 | 0.1033 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 4 | 920.615 | 902.363 | 892.445 | 912.281 | -0.4665 | 13.0641 | -94.2529 | 13.4560 | 0.4805 |
| 5 | 904.159 | 904.159 | 907.798 | 900.519 | 0.4795 | -17.5991 | -32.1803 | -9.5739 | -0.2608 |
| 6 | 895.249 | 895.249 | 897.634 | 892.865 | -0.8285 | -3.4498 | 23.7306 | -0.4588 | 0.1102 |
| 7 | 887.634 | 887.634 | 890.017 | 885.251 | 0.4326 | -4.0086 | 23.6300 | 0.8939 | 0.0965 |
| 8 | 880.059 | 880.059 | 882.439 | 877.679 | -0.3998 | -4.5791 | 23.4869 | 2.3995 | -0.2095 |
| 9 | 872.569 | 872.569 | 874.899 | 870.239 | 0.0194 | -5.0940 | 22.8812 | 3.9224 | 0.0149 |
| 10 | 865.125 | 865.125 | 867.490 | 862.761 | -0.3883 | -5.6952 | 23.0687 | 5.4788 | -0.3735 |
| 11 | 857.689 | 857.689 | 860.041 | 855.337 | 0.0268 | -6.2446 | 22.7918 | 6.8628 | 0.0294 |
| 12 | 850.308 | 850.308 | 852.645 | 847.971 | -0.3747 | -6.7867 | 22.4717 | 8.0151 | -0.4425 |
| 13 | 843.027 | 843.027 | 845.304 | 840.751 | 0.4347 | -7.2175 | 21.7101 | 8.7187 | 0.5251 |
| 14 | 835.808 | 835.808 | 838.107 | 833.510 | -0.7597 | -7.8099 | 21.7127 | 9.2235 | -0.8972 |
| 15 | 828.614 | 828.614 | 830.887 | 826.341 | 0.4361 | -8.2850 | 21.2726 | 9.1052 | 0.4792 |
| 16 | 821.491 | 821.491 | 823.737 | 819.246 | -0.3468 | -8.7472 | 20.7964 | 8.4148 | -0.3337 |
| 17 | 814.483 | 814.483 | 816.658 | 812.308 | 0.0474 | -9.0517 | 19.9182 | 6.9698 | 0.0365 |
| 18 | 807.552 | 807.552 | 809.735 | 805.368 | -0.3295 | -9.5728 | 19.7579 | 5.0161 | -0.1726 |
| 19 | 800.660 | 800.660 | 802.809 | 798.511 | 0.0568 | -9.9415 | 19.1939 | 2.2170 | 0.0127 |
| 20 | 793.851 | 793.851 | 795.964 | 791.739 | 0.0587 | -10.2807 | 18.6068 | -1.3673 | -0.0078 |
| 21 | 786.037 | 786.037 | 789.201 | 782.873 | -0.3483 | -3.5042 | -31.2567 | -1.9063 | 0.1895 |
| 22 | 772.066 | 772.066 | 780.381 | 763.751 | 0.0646 | -10.7916 | -80.8409 | -11.1153 | -0.0665 |
| 23 | 749.824 | 763.416 | 761.346 | 765.485 | -0.3730 | 1.8141 | -112.0512 | 2.0681 | 0.4253 |
| 24 | 777.356 | 777.356 | 767.911 | 786.800 | -0.0501 | 7.5223 | -92.2494 | 7.0860 | 0.0472 |
| 25 | 791.048 | 791.048 | 789.338 | 792.758 | -0.0605 | 9.0790 | 14.8054 | 3.0596 | 0.0204 |
| 26 | 797.352 | 797.352 | 795.305 | 799.400 | -0.4433 | 9.9823 | 18.0546 | -0.6489 | -0.0288 |
| 27 | 804.118 | 804.118 | 801.957 | 806.278 | -0.0709 | 9.9278 | 19.3291 | -4.1101 | -0.0294 |
| 28 | 810.961 | 810.961 | 808.847 | 813.076 | -0.0665 | 9.3042 | 19.1483 | -6.5874 | -0.0471 |
| 29 | 817.803 | 817.803 | 815.658 | 819.948 | -0.4539 | 8.9265 | 19.6518 | -8.4713 | -0.4307 |
| 30 | 824.759 | 824.759 | 822.546 | 826.973 | -0.0658 | 8.6341 | 20.5154 | -9.8170 | -0.0748 |
| 31 | 831.828 | 831.828 | 829.587 | 834.068 | -0.4605 | 8.1880 | 20.9764 | -10.4069 | -0.5853 |
| 32 | 838.923 | 838.923 | 836.701 | 841.144 | -0.0618 | 7.6336 | 21.0026 | -10.3129 | -0.0835 |
| 33 | 846.083 | 846.083 | 843.799 | 848.367 | -0.0586 | 7.2445 | 21.7883 | -9.9829 | -0.0808 |
| 34 | 853.389 | 853.389 | 851.044 | 855.734 | -0.0551 | 6.8085 | 22.5525 | -9.1982 | -0.0745 |
| 35 | 860.797 | 860.797 | 858.436 | 863.158 | -0.4621 | 6.2644 | 22.8737 | -7.9495 | -0.5865 |
| 36 | 868.260 | 868.260 | 865.887 | 870.633 | -0.4631 | 5.7103 | 23.1511 | -6.4641 | -0.5242 |
| 37 | 875.731 | 875.731 | 873.392 | 878.069 | -0.0463 | 5.1124 | 22.9633 | -4.8057 | -0.0435 |
| 38 | 883.253 | 883.253 | 880.859 | 885.648 | -0.0454 | 4.5960 | 23.6313 | -3.1896 | -0.0315 |
| 39 | 890.854 | 890.854 | 888.469 | 893.239 | -0.0326 | 4.0200 | 23.6543 | -1.5799 | -0.0128 |
| 40 | 898.489 | 898.489 | 896.097 | 900.880 | -0.4536 | 3.4531 | 23.8140 | -0.1278 | -0.0168 |
| 41 | 907.428 | 907.428 | 903.776 | 911.081 | -0.1430 | 15.0105 | -32.7096 | 5.6139 | 0.0535 |
| 42 | 923.944 | 902.943 | 912.896 | 892.989 | -0.2980 | -13.1449 | -94.3165 | -11.3046 | 0.2563 |
| 43 | 949.791 | 877.096 | 890.039 | 864.153 | 0.3029 | -30.2947 | -113.1894 | -29.3859 | -0.2939 |
| 44 | 981.276 | 845.611 | 861.106 | 830.115 | 0.5301 | -53.0095 | -120.1582 | -42.7786 | -0.4278 |
| 45 | 1000.000 | 826.886 | 826.886 | 826.886 | 8.0547 | -805.4718 | 186.7927 | -130.4864 | -1.3049 |

Sum. Fx= -0.000000
Sum. Fy= 0.000000
Sum. Fz= 0.000000
Sum. Mx= -0.000000
Sum. My= 0.000000
Sum. Mz= -0.000000

Alargamientos teoricos de tendones
==========

Tesado por seccion No. 1: 52.5 cm.
Al retesar por seccion No. 45: 6.5 cm.
Tesado por seccion No. 45: 52.7 cm.

"TITULO:" LAV GELIDA. V-Riera de la Rierussa. Tendon 6 (Servicio).

CARACTERISTICAS DEL PRETENSADO

| NS | Po (t) | MU | K | INT.CUÑ.(mm) | Ep(Kg/cm2) | Ap(cm2) |
|---|---|---|---|---|---|---|
| 45 | 1000.000 | 0.2100 | 0.0015 | 5 | 1900000.0 | 70.17 |

COORDENADAS

| | | CENTRO DE GRAVEDAD DE LA SECCION | | | PRETENSADO |
|---|---|---|---|---|---|
| SECCION | NUDO | X (long.) | Y (tran.) | Z (prof.) | Zp (prof.) |
| 1 | 15 | -0.035 | 28.8 | -1.212 | -1.330 |
| 2 | 16 | -0.04 | 30.9 | -1.370 | -0.760 |
| 3 | 17 | -0.046 | 33 | -1.370 | -0.570 |
| 4 | 18 | -0.052 | 35.1 | -1.370 | -0.679 |
| 5 | 19 | -0.059 | 37.2 | -1.212 | -1.008 |
| 6 | 20 | -0.065 | 39.3 | -1.212 | -1.419 |
| 7 | 21 | -0.073 | 41.4 | -1.212 | -1.775 |
| 8 | 22 | -0.08 | 43.5 | -1.212 | -2.076 |
| 9 | 23 | -0.088 | 45.6 | -1.212 | -2.322 |
| 10 | 24 | -0.096 | 47.7 | -1.212 | -2.514 |
| 11 | 25 | -0.105 | 49.8 | -1.212 | -2.651 |
| 12 | 26 | -0.114 | 51.9 | -1.212 | -2.733 |
| 13 | 27 | -0.124 | 54 | -1.212 | -2.760 |
| 14 | 28 | -0.133 | 56.1 | -1.212 | -2.733 |
| 15 | 29 | -0.144 | 58.2 | -1.212 | -2.651 |
| 16 | 30 | -0.154 | 60.3 | -1.212 | -2.514 |
| 17 | 31 | -0.165 | 62.4 | -1.212 | -2.322 |
| 18 | 32 | -0.176 | 64.5 | -1.212 | -2.076 |
| 19 | 33 | -0.188 | 66.6 | -1.212 | -1.775 |
| 20 | 34 | -0.2 | 68.7 | -1.212 | -1.419 |
| 21 | 35 | -0.212 | 70.8 | -1.212 | -1.008 |
| 22 | 36 | -0.225 | 72.9 | -1.370 | -0.679 |
| 23 | 37 | -0.238 | 74.999 | -1.370 | -0.570 |
| 24 | 38 | -0.252 | 77.099 | -1.370 | -0.768 |
| 25 | 39 | -0.266 | 79.199 | -1.212 | -1.215 |
| 26 | 40 | -0.28 | 81.299 | -1.212 | -1.617 |
| 27 | 41 | -0.295 | 83.399 | -1.212 | -1.966 |
| 28 | 42 | -0.31 | 85.499 | -1.212 | -2.260 |
| 29 | 43 | -0.325 | 87.599 | -1.212 | -2.501 |
| 30 | 44 | -0.341 | 89.699 | -1.212 | -2.689 |
| 31 | 45 | -0.357 | 91.799 | -1.212 | -2.823 |
| 32 | 46 | -0.374 | 93.899 | -1.212 | -2.903 |
| 33 | 47 | -0.391 | 95.999 | -1.212 | -2.930 |
| 34 | 48 | -0.408 | 98.099 | -1.212 | -2.903 |
| 35 | 49 | -0.425 | 100.199 | -1.212 | -2.821 |
| 36 | 50 | -0.443 | 102.299 | -1.212 | -2.684 |
| 37 | 51 | -0.462 | 104.399 | -1.212 | -2.492 |
| 38 | 52 | -0.481 | 106.499 | -1.212 | -2.246 |
| 39 | 53 | -0.5 | 108.598 | -1.212 | -1.945 |
| 40 | 54 | -0.519 | 110.698 | -1.212 | -1.589 |
| 41 | 55 | -0.539 | 112.798 | -1.212 | -1.178 |
| 42 | 56 | -0.559 | 114.898 | -1.370 | -0.849 |
| 43 | 57 | -0.58 | 116.998 | -1.370 | -0.740 |
| 44 | 58 | -0.601 | 119.098 | -1.370 | -0.918 |
| 45 | 59 | -0.622 | 121.198 | -1.212 | -1.450 |

LAV GELIDA. V-Riera de la Rierussa. Tendon 6 (Servicio).

Numero de secciones
45

| | Lt | Lac | Anghor | Angver | Angulo | cosx | cosy | cosz |
|---|---|---|---|---|---|---|---|---|
| 1 | 2.176 | 0.000 | 0.00000 | 0.00000 | 0.00000 | -.00230 | 0.96508 | 0.26195 |
| 2 | 2.109 | 2.176 | 0.00048 | -0.17481 | 0.17481 | -.00285 | 0.99593 | 0.09011 |
| 3 | 2.103 | 4.285 | 0.00000 | -0.14209 | 0.14209 | -.00285 | 0.99865 | -.05183 |
| 4 | 2.126 | 6.387 | 0.00048 | -0.10354 | 0.10355 | -.00329 | 0.98794 | -.15478 |
| 5 | 2.140 | 8.513 | -0.00048 | -0.03787 | 0.03787 | -.00280 | 0.98138 | -.19207 |
| 6 | 2.130 | 10.653 | 0.00095 | 0.02534 | 0.02536 | -.00376 | 0.98593 | -.16714 |
| 7 | 2.121 | 12.783 | -0.00048 | 0.02556 | 0.02557 | -.00330 | 0.98988 | -.14188 |
| 8 | 2.114 | 14.904 | 0.00048 | 0.02575 | 0.02576 | -.00378 | 0.99320 | -.11635 |
| 9 | 2.109 | 17.019 | 0.00000 | 0.02544 | 0.02544 | -.00379 | 0.99584 | -.09105 |
| 10 | 2.104 | 19.127 | 0.00048 | 0.02603 | 0.02603 | -.00428 | 0.99787 | -.06510 |
| 11 | 2.102 | 21.232 | 0.00000 | 0.02612 | 0.02612 | -.00428 | 0.99923 | -.03902 |
| 12 | 2.100 | 23.334 | 0.00048 | 0.02617 | 0.02618 | -.00476 | 0.99991 | -.01286 |
| 13 | 2.100 | 25.434 | -0.00048 | 0.02571 | 0.02572 | -.00429 | 0.99991 | 0.01286 |
| 14 | 2.102 | 27.534 | 0.00095 | 0.02617 | 0.02619 | -.00523 | 0.99922 | 0.03902 |
| 15 | 2.104 | 29.636 | -0.00048 | 0.02612 | 0.02612 | -.00475 | 0.99787 | 0.06510 |
| 16 | 2.109 | 31.740 | 0.00048 | 0.02603 | 0.02603 | -.00522 | 0.99583 | 0.09105 |
| 17 | 2.114 | 33.849 | 0.00000 | 0.02544 | 0.02544 | -.00520 | 0.99320 | 0.11635 |
| 18 | 2.121 | 35.963 | 0.00048 | 0.02575 | 0.02576 | -.00566 | 0.98987 | 0.14188 |
| 19 | 2.130 | 38.085 | 0.00000 | 0.02556 | 0.02556 | -.00563 | 0.98592 | 0.16714 |
| 20 | 2.140 | 40.215 | 0.00000 | 0.02534 | 0.02534 | -.00561 | 0.98137 | 0.19207 |
| 21 | 2.126 | 42.355 | 0.00048 | -0.03787 | 0.03787 | -.00612 | 0.98793 | 0.15478 |
| 22 | 2.102 | 44.480 | 0.00000 | -0.10352 | 0.10352 | -.00618 | 0.99864 | 0.05186 |
| 23 | 2.109 | 46.582 | 0.00047 | -0.14589 | 0.14589 | -.00664 | 0.99556 | -.09387 |
| 24 | 2.147 | 48.692 | 0.00000 | -0.11572 | 0.11572 | -.00652 | 0.97807 | -.20819 |
| 25 | 2.138 | 50.839 | 0.00000 | 0.02059 | 0.02059 | -.00655 | 0.98215 | -.18801 |
| 26 | 2.129 | 52.977 | 0.00048 | 0.02446 | 0.02446 | -.00705 | 0.98645 | -.16394 |
| 27 | 2.121 | 55.106 | 0.00000 | 0.02559 | 0.02559 | -.00707 | 0.99032 | -.13864 |
| 28 | 2.114 | 57.226 | 0.00000 | 0.02483 | 0.02483 | -.00710 | 0.99345 | -.11401 |
| 29 | 2.108 | 59.340 | 0.00048 | 0.02498 | 0.02498 | -.00759 | 0.99599 | -.08916 |
| 30 | 2.104 | 61.448 | 0.00000 | 0.02556 | 0.02556 | -.00760 | 0.99794 | -.06368 |
| 31 | 2.102 | 63.553 | 0.00048 | 0.02565 | 0.02565 | -.00809 | 0.99924 | -.03807 |
| 32 | 2.100 | 65.654 | 0.00000 | 0.02522 | 0.02522 | -.00809 | 0.99988 | -.01286 |
| 33 | 2.100 | 67.755 | 0.00000 | 0.02571 | 0.02571 | -.00809 | 0.99988 | 0.01286 |
| 34 | 2.102 | 69.855 | 0.00000 | 0.02617 | 0.02617 | -.00809 | 0.99921 | 0.03902 |
| 35 | 2.105 | 71.957 | 0.00048 | 0.02612 | 0.02612 | -.00855 | 0.99784 | 0.06510 |
| 36 | 2.109 | 74.061 | 0.00048 | 0.02603 | 0.02603 | -.00901 | 0.99581 | 0.09105 |
| 37 | 2.114 | 76.170 | 0.00000 | 0.02544 | 0.02544 | -.00899 | 0.99317 | 0.11634 |
| 38 | 2.121 | 78.284 | 0.00000 | 0.02582 | 0.02582 | -.00896 | 0.98983 | 0.14194 |
| 39 | 2.130 | 80.405 | -0.00000 | 0.02550 | 0.02550 | -.00892 | 0.98589 | 0.16713 |
| 40 | 2.140 | 82.535 | 0.00048 | 0.02534 | 0.02535 | -.00935 | 0.98134 | 0.19206 |
| 41 | 2.126 | 84.675 | 0.00000 | -0.03787 | 0.03787 | -.00941 | 0.98791 | 0.15477 |
| 42 | 2.103 | 86.801 | 0.00048 | -0.10354 | 0.10354 | -.00999 | 0.99861 | 0.05183 |
| 43 | 2.108 | 88.904 | 0.00000 | -0.13641 | 0.13641 | -.00996 | 0.99638 | -.08445 |
| 44 | 2.166 | 91.011 | 0.00000 | -0.16355 | 0.16355 | -.00969 | 0.96933 | -.24556 |
| 45 | 0.000 | 93.178 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

ESTADO A
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 818.596 | 818.596 | 818.596 | -1.8810 | 790.0093 | 214.4311 | -93.2211 | -0.2220 |
| 2 | 978.778 | 839.818 | 821.854 | 857.782 | -0.5599 | 64.2797 | -137.1383 | 39.2106 | 0.3415 |
| 3 | 943.701 | 874.894 | 860.816 | 888.973 | -0.0957 | 33.4849 | -123.3725 | 26.7879 | 0.0765 |
| 4 | 916.729 | 901.867 | 891.900 | 911.833 | -0.4663 | 13.0662 | -95.0519 | 9.0288 | 0.3222 |
| 5 | 900.296 | 900.296 | 903.876 | 896.716 | 0.4885 | -20.8235 | -31.1002 | -4.2480 | -0.0996 |
| 6 | 891.468 | 891.468 | 893.842 | 889.094 | -0.8250 | -3.4352 | 23.6304 | 0.7111 | -0.1708 |
| 7 | 883.885 | 883.885 | 886.258 | 881.512 | 0.4307 | -3.9917 | 23.5302 | 2.2473 | 0.2425 |
| 8 | 876.342 | 876.342 | 878.712 | 873.972 | -0.3981 | -4.5598 | 23.3877 | 3.9397 | -0.3440 |
| 9 | 868.884 | 868.884 | 871.204 | 866.563 | 0.0193 | -5.0725 | 22.7845 | 5.6305 | 0.0214 |
| 10 | 861.471 | 861.471 | 863.826 | 859.117 | -0.3866 | -5.6711 | 22.9712 | 7.3838 | -0.5034 |
| 11 | 854.067 | 854.067 | 856.409 | 851.724 | 0.0266 | -6.2182 | 22.6955 | 8.9480 | 0.0383 |
| 12 | 846.717 | 846.717 | 849.044 | 844.389 | -0.3731 | -6.7580 | 22.3768 | 10.2789 | -0.5675 |
| 13 | 839.467 | 839.467 | 841.734 | 837.200 | 0.4329 | -7.1870 | 21.6184 | 11.1255 | 0.6701 |
| 14 | 832.278 | 832.278 | 834.567 | 829.990 | -0.7565 | -7.7769 | 21.6210 | 11.8287 | -1.1507 |
| 15 | 825.114 | 825.114 | 827.377 | 822.851 | 0.4342 | -8.2500 | 21.1828 | 11.8717 | 0.6248 |
| 16 | 818.021 | 818.021 | 820.258 | 815.785 | -0.3454 | -8.7102 | 20.7085 | 11.3407 | -0.4497 |
| 17 | 811.043 | 811.043 | 813.209 | 808.877 | 0.0472 | -9.0134 | 19.8341 | 10.0049 | 0.0524 |
| 18 | 804.141 | 804.141 | 806.315 | 801.966 | -0.3281 | -9.5323 | 19.6744 | 8.2359 | -0.2835 |
| 19 | 797.278 | 797.278 | 799.418 | 795.138 | 0.0566 | -9.8995 | 19.1128 | 5.5734 | 0.0318 |
| 20 | 790.498 | 790.498 | 792.602 | 788.395 | 0.0585 | -10.2373 | 18.5282 | 2.1191 | 0.0121 |
| 21 | 782.755 | 782.755 | 785.868 | 779.643 | -0.3469 | -3.4702 | -30.7549 | -0.7079 | 0.0708 |
| 22 | 768.805 | 768.805 | 777.161 | 760.449 | 0.0648 | -10.8223 | -81.2340 | -7.4782 | -0.0447 |
| 23 | 746.619 | 746.619 | 758.055 | 735.183 | -0.1761 | -27.4903 | -108.4455 | -21.9923 | 0.1409 |
| 24 | 724.063 | 724.063 | 732.860 | 715.266 | 0.2156 | -32.3424 | -79.9006 | -19.4701 | -0.1298 |
| 25 | 711.428 | 711.428 | 712.966 | 709.891 | 0.0158 | -2.3625 | 15.4432 | 0.0071 | 0.0000 |
| 26 | 705.805 | 705.805 | 707.617 | 703.992 | -0.3123 | -2.7658 | 18.0560 | 1.1202 | -0.1265 |
| 27 | 699.867 | 699.867 | 701.748 | 697.987 | 0.0230 | -3.2217 | 18.6390 | 2.4291 | 0.0174 |
| 28 | 693.961 | 693.961 | 695.770 | 692.151 | 0.0258 | -3.6077 | 17.8593 | 3.7809 | 0.0270 |
| 29 | 688.155 | 688.155 | 689.960 | 686.350 | -0.2968 | -4.0241 | 17.7145 | 5.1871 | -0.3825 |
| 30 | 682.351 | 682.351 | 684.183 | 680.520 | 0.0341 | -4.4773 | 17.8639 | 6.6130 | 0.0504 |
| 31 | 676.553 | 676.553 | 678.375 | 674.731 | -0.2837 | -4.8992 | 17.6497 | 7.8927 | -0.4571 |
| 32 | 670.831 | 670.831 | 672.607 | 669.054 | 0.0424 | -5.2425 | 17.0834 | 8.8651 | 0.0718 |
| 33 | 665.154 | 665.154 | 666.950 | 663.359 | 0.0461 | -5.6953 | 17.1290 | 9.7845 | 0.0792 |
| 34 | 659.460 | 659.460 | 661.272 | 657.648 | 0.0498 | -6.1565 | 17.1313 | 10.4107 | 0.0843 |
| 35 | 653.785 | 653.785 | 655.578 | 651.991 | -0.2569 | -6.5408 | 16.7837 | 10.5242 | -0.4133 |
| 36 | 648.165 | 648.165 | 649.936 | 646.393 | -0.2474 | -6.9025 | 16.4080 | 10.1605 | -0.3641 |
| 37 | 642.635 | 642.635 | 644.352 | 640.919 | 0.0646 | -7.1415 | 15.7152 | 9.1412 | 0.0827 |
| 38 | 637.162 | 637.162 | 638.890 | 635.435 | 0.0657 | -7.5654 | 15.6299 | 7.8226 | 0.0680 |
| 39 | 631.726 | 631.726 | 633.417 | 630.035 | 0.0735 | -7.8278 | 15.1032 | 5.7378 | 0.0539 |
| 40 | 626.358 | 626.358 | 628.025 | 624.691 | -0.2185 | -8.1143 | 14.6801 | 3.0591 | -0.0824 |
| 41 | 620.223 | 620.223 | 622.689 | 617.757 | 0.0262 | -2.7476 | -24.3679 | -0.0934 | -0.0009 |
| 42 | 609.168 | 609.168 | 615.790 | 602.545 | -0.2048 | -8.5803 | -64.3800 | -4.4703 | 0.1067 |
| 43 | 592.166 | 592.166 | 600.648 | 583.685 | 0.2013 | -20.1343 | -80.5264 | -12.6846 | -0.1268 |
| 44 | 572.021 | 572.021 | 581.843 | 562.199 | 0.3661 | -36.6135 | -88.7608 | -16.5493 | -0.1655 |
| 45 | 560.375 | 560.375 | 560.375 | 560.375 | 5.4496 | -544.9574 | 138.0559 | 129.6999 | 1.2970 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 439.625 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 181.404 Tn
Distancia afectada por clavado de cuñas: 7.744 m

Sum. Fx= -0.000000
Sum. Fy= -0.000000
Sum. Fz= 0.000000
Sum. Mx= -0.000000
Sum. My= -0.000000
Sum. Mz= -0.000000

ESTADO B
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 560.375 | 560.375 | 560.375 | 560.375 | -1.2918 | 542.5740 | 147.2701 | -64.0237 | -0.1524 |
| 2 | 572.718 | 572.718 | 562.207 | 583.230 | -0.3730 | 40.1206 | -94.5501 | 24.4736 | 0.2275 |
| 3 | 593.938 | 593.938 | 585.077 | 602.798 | -0.0605 | 21.1924 | -84.0646 | 16.9539 | 0.0484 |
| 4 | 611.349 | 611.349 | 604.702 | 617.995 | -0.3163 | 8.6075 | -64.6129 | 5.9478 | 0.2185 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 5 | 622.444 | 622.444 | 619.969 | 624.919 | 0.2838 | 2.7587 | -24.4564 | 0.5628 | -0.0579 |
| 6 | 628.602 | 628.602 | 626.928 | 630.276 | -0.6170 | 8.1413 | 14.7336 | -1.6853 | -0.1277 |
| 7 | 633.995 | 633.995 | 632.293 | 635.697 | 0.2706 | 7.8738 | 15.1984 | -4.4330 | 0.1524 |
| 8 | 639.453 | 639.453 | 637.723 | 641.182 | -0.3295 | 7.5776 | 15.6456 | -6.5471 | -0.2847 |
| 9 | 644.941 | 644.941 | 643.219 | 646.664 | -0.0273 | 7.1676 | 15.7721 | -7.9560 | -0.0303 |
| 10 | 650.491 | 650.491 | 648.713 | 652.269 | -0.3373 | 6.9237 | 16.4677 | -9.0147 | -0.4392 |
| 11 | 656.131 | 656.131 | 654.331 | 657.930 | -0.0281 | 6.5614 | 16.8445 | -9.4418 | -0.0405 |
| 12 | 661.826 | 661.826 | 660.007 | 663.645 | -0.3435 | 6.1780 | 17.1932 | -9.3967 | -0.5224 |
| 13 | 667.542 | 667.542 | 665.739 | 669.344 | 0.2925 | 5.7180 | 17.1909 | -8.8514 | 0.4528 |
| 14 | 673.308 | 673.308 | 671.456 | 675.159 | -0.6676 | 5.3713 | 17.7939 | -8.1697 | -1.0154 |
| 15 | 679.154 | 679.154 | 677.291 | 681.016 | 0.2987 | 4.9469 | 18.0475 | -7.1186 | 0.4298 |
| 16 | 685.042 | 685.042 | 683.170 | 686.915 | -0.3482 | 4.5067 | 18.2664 | -5.8677 | -0.4534 |
| 17 | 690.936 | 690.936 | 689.091 | 692.782 | -0.0211 | 4.0336 | 18.1182 | -4.4773 | -0.0235 |
| 18 | 696.867 | 696.867 | 694.982 | 698.752 | -0.3494 | 3.6229 | 18.5973 | -3.1302 | -0.3019 |
| 19 | 702.865 | 702.865 | 700.979 | 704.752 | -0.0181 | 3.1748 | 18.7111 | -1.7874 | -0.0102 |
| 20 | 708.894 | 708.894 | 707.007 | 710.780 | -0.0156 | 2.7268 | 18.7898 | -0.5645 | -0.0032 |
| 21 | 715.912 | 715.912 | 713.065 | 718.759 | -0.4111 | 12.5737 | -25.3548 | 2.5650 | 0.0839 |
| 22 | 728.977 | 728.977 | 721.054 | 736.901 | -0.1623 | 25.8673 | -73.2664 | 17.8743 | 0.1122 |
| 23 | 750.726 | 750.726 | 739.227 | 762.225 | -0.5029 | 23.0292 | -110.1101 | 18.4234 | 0.4023 |
| 24 | 774.045 | 774.045 | 764.641 | 783.450 | -0.0499 | 7.4902 | -91.8566 | 4.5091 | 0.0301 |
| 25 | 787.680 | 787.680 | 785.977 | 789.382 | -0.0603 | 9.0403 | 14.7424 | -0.0271 | -0.0002 |
| 26 | 793.957 | 793.957 | 791.918 | 795.996 | -0.4414 | 9.9398 | 17.9777 | -4.0256 | -0.1788 |
| 27 | 800.693 | 800.693 | 798.542 | 802.845 | -0.0706 | 9.8855 | 19.2467 | -7.4537 | -0.0532 |
| 28 | 807.508 | 807.508 | 805.402 | 809.614 | -0.0662 | 9.2646 | 19.0668 | -9.7093 | -0.0694 |
| 29 | 814.321 | 814.321 | 812.185 | 816.457 | -0.4519 | 8.8885 | 19.5681 | -11.4573 | -0.5826 |
| 30 | 821.247 | 821.247 | 819.043 | 823.451 | -0.0655 | 8.5974 | 20.4280 | -12.6983 | -0.0967 |
| 31 | 828.285 | 828.285 | 826.055 | 830.516 | -0.4586 | 8.1531 | 20.8871 | -13.1346 | -0.7387 |
| 32 | 835.351 | 835.351 | 833.138 | 837.563 | -0.0615 | 7.6011 | 20.9132 | -12.8534 | -0.1041 |
| 33 | 842.480 | 842.480 | 840.205 | 844.754 | -0.0584 | 7.2136 | 21.6955 | -12.3930 | -0.1003 |
| 34 | 849.755 | 849.755 | 847.420 | 852.090 | -0.0549 | 6.7795 | 22.4565 | -11.4641 | -0.0928 |
| 35 | 857.131 | 857.131 | 854.780 | 859.482 | -0.4602 | 6.2377 | 22.7763 | -10.0365 | -0.7404 |
| 36 | 864.563 | 864.563 | 862.200 | 866.926 | -0.4611 | 5.6860 | 23.0526 | -8.3698 | -0.6788 |
| 37 | 872.001 | 872.001 | 869.673 | 874.330 | -0.0461 | 5.0906 | 22.8656 | -6.5160 | -0.0590 |
| 38 | 879.492 | 879.492 | 877.108 | 881.876 | -0.0452 | 4.5764 | 23.5307 | -4.7320 | -0.0467 |
| 39 | 887.061 | 887.061 | 884.686 | 889.435 | -0.0324 | 4.0029 | 23.5536 | -2.9341 | -0.0238 |
| 40 | 894.663 | 894.663 | 892.282 | 897.044 | -0.4516 | 3.4384 | 23.7126 | -1.2963 | -0.1703 |
| 41 | 903.520 | 903.520 | 899.928 | 907.112 | -0.1729 | 18.1583 | -31.6395 | 0.6174 | 0.0059 |
| 42 | 920.011 | 902.324 | 912.326 | 892.322 | -0.2977 | -13.1478 | -95.1035 | -6.8500 | 0.1551 |
| 43 | 946.508 | 875.828 | 889.384 | 862.272 | 0.3202 | -32.0248 | -118.6652 | -20.1756 | -0.2018 |
| 44 | 979.930 | 842.406 | 859.232 | 825.580 | 0.5900 | -59.0033 | -129.3698 | -26.6695 | -0.2667 |
| 45 | 1000.000 | 822.335 | 822.335 | 822.335 | 7.9712 | -797.1160 | 201.9361 | 189.7136 | 1.8971 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 439.625 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 177.665 Tn
Distancia afectada por clavado de cuñas: 7.829 m

Sum. Fx= 0.000000
Sum. Fy= 0.000000
Sum. Fz= -0.000000
Sum. Mx= -0.000000
Sum. My= -0.000000
Sum. Mz= 0.000000

ESTADO C
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 818.596 | 818.596 | 818.596 | -1.8810 | 790.0093 | 214.4311 | -93.2211 | -0.2220 |
| 2 | 978.778 | 839.818 | 821.854 | 857.782 | -0.5599 | 64.2797 | -137.1383 | 39.2106 | 0.3415 |
| 3 | 943.701 | 874.894 | 860.816 | 888.973 | -0.0957 | 33.4849 | -123.3725 | 26.7879 | 0.0765 |
| 4 | 916.729 | 901.867 | 891.900 | 911.833 | -0.4663 | 13.0662 | -95.0519 | 9.0288 | 0.3222 |
| 5 | 900.296 | 900.296 | 903.876 | 896.716 | 0.4885 | -20.8235 | -31.1002 | -4.2480 | -0.0996 |
| 6 | 891.468 | 891.468 | 893.842 | 889.094 | -0.8250 | -3.4352 | 23.6304 | 0.7111 | -0.1708 |
| 7 | 883.885 | 883.885 | 886.258 | 881.512 | 0.4307 | -3.9917 | 23.5302 | 2.2473 | 0.2425 |
| 8 | 876.342 | 876.342 | 878.712 | 873.972 | -0.3981 | -4.5598 | 23.3877 | 3.9397 | -0.3440 |
| 9 | 868.884 | 868.884 | 871.204 | 866.563 | 0.0193 | -5.0725 | 22.7845 | 5.6305 | 0.0214 |
| 10 | 861.471 | 861.471 | 863.826 | 859.117 | -0.3866 | -5.6711 | 22.9712 | 7.3838 | -0.5034 |
| 11 | 854.067 | 854.067 | 856.409 | 851.724 | 0.0266 | -6.2182 | 22.6955 | 8.9480 | 0.0383 |
| 12 | 846.717 | 846.717 | 849.044 | 844.389 | -0.3731 | -6.7580 | 22.3768 | 10.2789 | -0.5675 |
| 13 | 839.467 | 839.467 | 841.734 | 837.200 | 0.4329 | -7.1870 | 21.6184 | 11.1255 | 0.6701 |
| 14 | 832.278 | 832.278 | 834.567 | 829.990 | -0.7565 | -7.7769 | 21.6210 | 11.8287 | -1.1507 |
| 15 | 825.114 | 825.114 | 827.377 | 822.851 | 0.4342 | -8.2500 | 21.1828 | 11.8717 | 0.6248 |
| 16 | 818.021 | 818.021 | 820.258 | 815.785 | -0.3454 | -8.7102 | 20.7085 | 11.3407 | -0.4497 |
| 17 | 811.043 | 811.043 | 813.209 | 808.877 | 0.0472 | -9.0134 | 19.8341 | 10.0049 | 0.0524 |
| 18 | 804.141 | 804.141 | 806.315 | 801.966 | -0.3281 | -9.5323 | 19.6744 | 8.2359 | -0.2835 |
| 19 | 797.278 | 797.278 | 799.418 | 795.138 | 0.0566 | -9.8995 | 19.1128 | 5.5734 | 0.0318 |
| 20 | 790.498 | 790.498 | 792.602 | 788.395 | 0.0585 | -10.2373 | 18.5282 | 2.1191 | 0.0121 |
| 21 | 782.755 | 782.755 | 785.868 | 779.643 | -0.3469 | -3.4702 | -30.7549 | -0.7079 | 0.0708 |
| 22 | 768.805 | 768.805 | 777.161 | 760.449 | 0.0648 | -10.8223 | -81.2340 | -7.4782 | -0.0447 |
| 23 | 746.619 | 760.140 | 758.055 | 762.225 | -0.3716 | 1.8370 | -111.2106 | 1.4696 | 0.2973 |
| 24 | 774.045 | 774.045 | 764.641 | 783.450 | -0.0499 | 7.4902 | -91.8566 | 4.5091 | 0.0301 |
| 25 | 787.680 | 787.680 | 785.977 | 789.382 | -0.0603 | 9.0403 | 14.7424 | -0.0271 | -0.0002 |
| 26 | 793.957 | 793.957 | 791.918 | 795.996 | -0.4414 | 9.9398 | 17.9777 | -4.0256 | -0.1788 |
| 27 | 800.693 | 800.693 | 798.542 | 802.845 | -0.0706 | 9.8855 | 19.2467 | -7.4537 | -0.0532 |
| 28 | 807.508 | 807.508 | 805.402 | 809.614 | -0.0662 | 9.2646 | 19.0668 | -9.7093 | -0.0694 |
| 29 | 814.321 | 814.321 | 812.185 | 816.457 | -0.4519 | 8.8885 | 19.5681 | -11.4573 | -0.5826 |
| 30 | 821.247 | 821.247 | 819.043 | 823.451 | -0.0655 | 8.5974 | 20.4280 | -12.6983 | -0.0967 |
| 31 | 828.285 | 828.285 | 826.055 | 830.516 | -0.4586 | 8.1531 | 20.8871 | -13.1346 | -0.7387 |
| 32 | 835.351 | 835.351 | 833.138 | 837.563 | -0.0615 | 7.6011 | 20.9132 | -12.8534 | -0.1041 |
| 33 | 842.480 | 842.480 | 840.205 | 844.754 | -0.0584 | 7.2136 | 21.6955 | -12.3930 | -0.1003 |
| 34 | 849.755 | 849.755 | 847.420 | 852.090 | -0.0549 | 6.7795 | 22.4565 | -11.4641 | -0.0928 |
| 35 | 857.131 | 857.131 | 854.780 | 859.482 | -0.4602 | 6.2377 | 22.7763 | -10.0365 | -0.7404 |
| 36 | 864.563 | 864.563 | 862.200 | 866.926 | -0.4611 | 5.6860 | 23.0526 | -8.3698 | -0.6788 |
| 37 | 872.001 | 872.001 | 869.673 | 874.330 | -0.0461 | 5.0906 | 22.8656 | -6.5160 | -0.0590 |
| 38 | 879.492 | 879.492 | 877.108 | 881.876 | -0.0452 | 4.5764 | 23.5307 | -4.7320 | -0.0467 |
| 39 | 887.061 | 887.061 | 884.686 | 889.435 | -0.0324 | 4.0029 | 23.5536 | -2.9341 | -0.0238 |
| 40 | 894.663 | 894.663 | 892.282 | 897.044 | -0.4516 | 3.4384 | 23.7126 | -1.2963 | -0.1703 |
| 41 | 903.520 | 903.520 | 899.928 | 907.112 | -0.1729 | 18.1583 | -31.6395 | 0.6174 | 0.0059 |
| 42 | 920.011 | 902.324 | 912.326 | 892.322 | -0.2977 | -13.1478 | -95.1035 | -6.8500 | 0.1551 |
| 43 | 946.508 | 875.828 | 889.384 | 862.272 | 0.3202 | -32.0248 | -118.6652 | -20.1756 | -0.2018 |
| 44 | 979.930 | 842.406 | 859.232 | 825.580 | 0.5900 | -59.0033 | -129.3698 | -26.6695 | -0.2667 |
| 45 | 1000.000 | 822.335 | 822.335 | 822.335 | 7.9712 | -797.1160 | 201.9361 | 189.7136 | 1.8971 |

Sum. Fx= 0.000000
Sum. Fy= 0.000000
Sum. Fz= -0.000000
Sum. Mx= 0.000000
Sum. My= -0.000000
Sum. Mz= -0.000000

Alargamientos teoricos de tendones
==========

Tesado por seccion No. 1: 52.3 cm.
Al retesar por seccion No. 45: 6.4 cm.
Tesado por seccion No. 45: 52.5 cm.

"TITULO:" LAV GELIDA. V-Riera de la Rierussa. Tendon 7 (Servicio).

CARACTERISTICAS DEL PRETENSADO

| NS | Po (t) | MU | K | INT.CUÑ.(mm) | Ep(Kg/cm2) | Ap(cm2) |
|---|---|---|---|---|---|---|
| 45 | 1000.000 | 0.2100 | 0.0015 | 5 | 1900000.0 | 70.17 |

COORDENADAS

| | | CENTRO DE GRAVEDAD DE LA SECCION | | | PRETENSADO |
|---|---|---|---|---|---|
| SECCION | NUDO | X (long.) | Y (tran.) | Z (prof.) | Zp (prof.) |
| 1 | 35 | -0.212 | 70.8 | -1.212 | -0.880 |
| 2 | 36 | -0.225 | 72.9 | -1.370 | -0.393 |
| 3 | 37 | -0.238 | 74.999 | -1.370 | -0.230 |
| 4 | 38 | -0.252 | 77.099 | -1.370 | -0.340 |
| 5 | 39 | -0.266 | 79.199 | -1.212 | -0.668 |
| 6 | 40 | -0.28 | 81.299 | -1.212 | -1.079 |
| 7 | 41 | -0.295 | 83.399 | -1.212 | -1.435 |
| 8 | 42 | -0.31 | 85.499 | -1.212 | -1.736 |
| 9 | 43 | -0.325 | 87.599 | -1.212 | -1.982 |
| 10 | 44 | -0.341 | 89.699 | -1.212 | -2.174 |
| 11 | 45 | -0.357 | 91.799 | -1.212 | -2.311 |
| 12 | 46 | -0.374 | 93.899 | -1.212 | -2.393 |
| 13 | 47 | -0.391 | 95.999 | -1.212 | -2.420 |
| 14 | 48 | -0.408 | 98.099 | -1.212 | -2.393 |
| 15 | 49 | -0.425 | 100.199 | -1.212 | -2.311 |
| 16 | 50 | -0.443 | 102.299 | -1.212 | -2.174 |
| 17 | 51 | -0.462 | 104.399 | -1.212 | -1.982 |
| 18 | 52 | -0.481 | 106.499 | -1.212 | -1.736 |
| 19 | 53 | -0.5 | 108.598 | -1.212 | -1.435 |
| 20 | 54 | -0.519 | 110.698 | -1.212 | -1.079 |
| 21 | 55 | -0.539 | 112.798 | -1.212 | -0.668 |
| 22 | 56 | -0.559 | 114.898 | -1.370 | -0.340 |
| 23 | 57 | -0.58 | 116.998 | -1.370 | -0.230 |
| 24 | 58 | -0.601 | 119.098 | -1.370 | -0.428 |
| 25 | 59 | -0.622 | 121.198 | -1.212 | -0.875 |
| 26 | 60 | -0.644 | 123.298 | -1.212 | -1.277 |
| 27 | 61 | -0.666 | 125.398 | -1.212 | -1.626 |
| 28 | 62 | -0.689 | 127.498 | -1.212 | -1.920 |
| 29 | 63 | -0.712 | 129.597 | -1.212 | -2.161 |
| 30 | 64 | -0.735 | 131.697 | -1.212 | -2.349 |
| 31 | 65 | -0.759 | 133.797 | -1.212 | -2.483 |
| 32 | 66 | -0.783 | 135.897 | -1.212 | -2.563 |
| 33 | 67 | -0.807 | 137.997 | -1.212 | -2.590 |
| 34 | 68 | -0.832 | 140.097 | -1.212 | -2.563 |
| 35 | 69 | -0.857 | 142.197 | -1.212 | -2.481 |
| 36 | 70 | -0.882 | 144.296 | -1.212 | -2.344 |
| 37 | 71 | -0.908 | 146.396 | -1.212 | -2.152 |
| 38 | 72 | -0.934 | 148.496 | -1.212 | -1.906 |
| 39 | 73 | -0.961 | 150.596 | -1.212 | -1.605 |
| 40 | 74 | -0.988 | 152.696 | -1.212 | -1.249 |
| 41 | 75 | -1.015 | 154.796 | -1.212 | -0.838 |
| 42 | 76 | -1.043 | 156.895 | -1.370 | -0.510 |
| 43 | 77 | -1.071 | 158.995 | -1.370 | -0.400 |
| 44 | 78 | -1.1 | 161.095 | -1.370 | -0.563 |
| 45 | 79 | -1.129 | 163.195 | -1.212 | -1.050 |

LAV GELIDA. V-Riera de la Rierussa. Tendon 7 (Servicio).

Numero de secciones
45

| | Lt | Lac | Anghor | Angver | Angulo | cosx | cosy | cosz |
|---|---|---|---|---|---|---|---|---|
| 1 | 2.156 | 0.000 | 0.00000 | 0.00000 | 0.00000 | -.00603 | 0.97413 | 0.22591 |
| 2 | 2.105 | 2.156 | 0.00000 | -0.15037 | 0.15037 | -.00617 | 0.99698 | 0.07742 |
| 3 | 2.103 | 4.261 | 0.00047 | -0.12983 | 0.12983 | -.00666 | 0.99861 | -.05231 |
| 4 | 2.126 | 6.364 | 0.00000 | -0.10260 | 0.10260 | -.00659 | 0.98800 | -.15432 |
| 5 | 2.140 | 8.490 | 0.00000 | -0.03833 | 0.03833 | -.00654 | 0.98136 | -.19207 |
| 6 | 2.130 | 10.629 | 0.00048 | 0.02534 | 0.02535 | -.00704 | 0.98591 | -.16714 |
| 7 | 2.122 | 12.759 | 0.00000 | 0.02556 | 0.02556 | -.00707 | 0.98986 | -.14188 |
| 8 | 2.114 | 14.881 | 0.00000 | 0.02575 | 0.02575 | -.00709 | 0.99318 | -.11634 |
| 9 | 2.109 | 16.995 | 0.00048 | 0.02544 | 0.02544 | -.00759 | 0.99582 | -.09105 |
| 10 | 2.105 | 19.104 | 0.00000 | 0.02603 | 0.02603 | -.00760 | 0.99785 | -.06510 |
| 11 | 2.102 | 21.209 | 0.00048 | 0.02612 | 0.02612 | -.00809 | 0.99921 | -.03902 |
| 12 | 2.100 | 23.310 | 0.00000 | 0.02617 | 0.02617 | -.00809 | 0.99988 | -.01286 |
| 13 | 2.100 | 25.411 | 0.00000 | 0.02571 | 0.02571 | -.00809 | 0.99988 | 0.01286 |
| 14 | 2.102 | 27.511 | 0.00000 | 0.02617 | 0.02617 | -.00809 | 0.99921 | 0.03902 |
| 15 | 2.105 | 29.613 | 0.00048 | 0.02612 | 0.02612 | -.00855 | 0.99784 | 0.06510 |
| 16 | 2.109 | 31.717 | 0.00048 | 0.02603 | 0.02603 | -.00901 | 0.99581 | 0.09105 |
| 17 | 2.114 | 33.826 | 0.00000 | 0.02544 | 0.02544 | -.00899 | 0.99317 | 0.11634 |
| 18 | 2.121 | 35.940 | 0.00000 | 0.02582 | 0.02582 | -.00896 | 0.98983 | 0.14194 |
| 19 | 2.130 | 38.061 | -0.00000 | 0.02550 | 0.02550 | -.00892 | 0.98589 | 0.16713 |
| 20 | 2.140 | 40.191 | 0.00048 | 0.02534 | 0.02535 | -.00935 | 0.98134 | 0.19206 |
| 21 | 2.126 | 42.331 | 0.00000 | -0.03833 | 0.03833 | -.00941 | 0.98798 | 0.15431 |
| 22 | 2.103 | 44.456 | 0.00048 | -0.10260 | 0.10260 | -.00999 | 0.99858 | 0.05231 |
| 23 | 2.109 | 46.559 | 0.00000 | -0.14633 | 0.14633 | -.00996 | 0.99554 | -.09386 |
| 24 | 2.147 | 48.669 | 0.00000 | -0.11571 | 0.11571 | -.00978 | 0.97804 | -.20818 |
| 25 | 2.138 | 50.816 | 0.00048 | 0.02059 | 0.02059 | -.01029 | 0.98211 | -.18800 |
| 26 | 2.129 | 52.954 | 0.00000 | 0.02445 | 0.02445 | -.01033 | 0.98642 | -.16393 |
| 27 | 2.121 | 55.083 | 0.00048 | 0.02559 | 0.02559 | -.01085 | 0.99028 | -.13864 |
| 28 | 2.113 | 57.204 | 0.00001 | 0.02478 | 0.02478 | -.01089 | 0.99341 | -.11406 |
| 29 | 2.109 | 59.317 | -0.00001 | 0.02503 | 0.02503 | -.01091 | 0.99596 | -.08916 |
| 30 | 2.104 | 61.425 | 0.00048 | 0.02556 | 0.02557 | -.01140 | 0.99791 | -.06368 |
| 31 | 2.102 | 63.530 | 0.00000 | 0.02564 | 0.02564 | -.01142 | 0.99921 | -.03807 |
| 32 | 2.100 | 65.631 | 0.00000 | 0.02522 | 0.02522 | -.01143 | 0.99985 | -.01286 |
| 33 | 2.100 | 67.732 | 0.00048 | 0.02571 | 0.02572 | -.01190 | 0.99985 | 0.01286 |
| 34 | 2.102 | 69.832 | 0.00000 | 0.02617 | 0.02617 | -.01189 | 0.99917 | 0.03902 |
| 35 | 2.104 | 71.934 | 0.00001 | 0.02615 | 0.02615 | -.01188 | 0.99781 | 0.06513 |
| 36 | 2.109 | 74.037 | 0.00047 | 0.02600 | 0.02600 | -.01233 | 0.99577 | 0.09104 |
| 37 | 2.115 | 76.146 | -0.00000 | 0.02543 | 0.02543 | -.01230 | 0.99313 | 0.11634 |
| 38 | 2.122 | 78.261 | 0.00048 | 0.02575 | 0.02575 | -.01273 | 0.98980 | 0.14187 |
| 39 | 2.130 | 80.382 | 0.00000 | 0.02556 | 0.02556 | -.01268 | 0.98585 | 0.16713 |
| 40 | 2.140 | 82.513 | 0.00000 | 0.02534 | 0.02534 | -.01262 | 0.98130 | 0.19206 |
| 41 | 2.125 | 84.653 | 0.00048 | -0.03826 | 0.03826 | -.01318 | 0.98792 | 0.15438 |
| 42 | 2.103 | 86.777 | -0.00001 | -0.10267 | 0.10267 | -.01331 | 0.99854 | 0.05230 |
| 43 | 2.107 | 88.880 | 0.00048 | -0.12978 | 0.12979 | -.01377 | 0.99691 | -.07738 |
| 44 | 2.156 | 90.987 | -0.00000 | -0.15040 | 0.15040 | -.01345 | 0.97406 | -.22589 |
| 45 | 0.000 | 93.143 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

ESTADO A
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 826.874 | 826.874 | 826.874 | -4.9863 | 805.4834 | 186.7954 | 267.4205 | 1.6555 |
| 2 | 981.279 | 845.595 | 830.103 | 861.087 | -0.3306 | 53.0028 | -120.1288 | 51.7838 | 0.3230 |
| 3 | 949.795 | 877.080 | 864.132 | 890.027 | -0.6083 | 30.3023 | -113.2222 | 34.5446 | 0.6934 |
| 4 | 923.943 | 902.931 | 892.977 | 912.884 | -0.0876 | 13.1409 | -94.3172 | 13.5351 | 0.0902 |
| 5 | 907.428 | 907.428 | 911.080 | 903.776 | 0.1000 | -14.9997 | -32.7120 | -8.1598 | -0.0544 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 6 | 898.488 | 898.488 | 900.880 | 896.097 | -0.3976 | -3.4599 | 23.8156 | -0.4602 | 0.0529 |
| 7 | 890.847 | 890.847 | 893.238 | 888.456 | 0.0287 | -4.0239 | 23.7152 | 0.8973 | 0.0064 |
| 8 | 883.245 | 883.245 | 885.633 | 880.857 | 0.0328 | -4.5934 | 23.5712 | 2.4069 | 0.0172 |
| 9 | 875.728 | 875.728 | 878.067 | 873.389 | -0.3776 | -5.1163 | 22.9640 | 3.9396 | -0.2908 |
| 10 | 868.258 | 868.258 | 870.631 | 865.885 | 0.0435 | -5.7132 | 23.1515 | 5.4961 | 0.0419 |
| 11 | 860.795 | 860.795 | 863.156 | 858.434 | -0.3607 | -6.2711 | 22.8740 | 6.8919 | -0.3964 |
| 12 | 853.387 | 853.387 | 855.732 | 851.042 | 0.0551 | -6.8085 | 22.5525 | 8.0408 | 0.0651 |
| 13 | 846.081 | 846.081 | 848.365 | 843.796 | 0.0586 | -7.2445 | 21.7883 | 8.7513 | 0.0708 |
| 14 | 838.837 | 838.837 | 841.142 | 836.532 | 0.0634 | -7.8311 | 21.7911 | 9.2486 | 0.0749 |
| 15 | 831.618 | 831.618 | 833.899 | 829.337 | -0.3267 | -8.3199 | 21.3490 | 9.1436 | -0.3591 |
| 16 | 824.470 | 824.470 | 826.723 | 822.216 | -0.3146 | -8.7800 | 20.8711 | 8.4464 | -0.3027 |
| 17 | 817.436 | 817.436 | 819.619 | 815.253 | 0.0822 | -9.0841 | 19.9899 | 6.9947 | 0.0633 |
| 18 | 810.474 | 810.474 | 812.672 | 808.277 | 0.0836 | -9.6233 | 19.8813 | 5.0426 | 0.0438 |
| 19 | 803.559 | 803.559 | 805.710 | 801.408 | 0.0935 | -9.9570 | 19.2114 | 2.2204 | 0.0209 |
| 20 | 796.731 | 796.731 | 798.852 | 794.611 | -0.2779 | -10.3215 | 18.6731 | -1.3728 | 0.0370 |
| 21 | 788.889 | 788.889 | 792.064 | 785.714 | 0.0335 | -3.5143 | -31.3689 | -1.9118 | -0.0182 |
| 22 | 774.866 | 774.866 | 783.213 | 766.518 | -0.2613 | -10.8373 | -81.1516 | -11.1624 | 0.2691 |
| 23 | 752.542 | 752.542 | 764.104 | 740.980 | 0.2776 | -27.7588 | -109.6459 | -31.6450 | -0.3164 |
| 24 | 729.773 | 729.773 | 738.639 | 720.907 | 0.3260 | -32.5954 | -80.5286 | -30.7049 | -0.3070 |
| 25 | 717.038 | 717.038 | 718.589 | 715.488 | -0.3108 | -2.3855 | 15.5654 | -0.8039 | 0.1047 |
| 26 | 711.370 | 711.370 | 713.197 | 709.544 | 0.0292 | -2.7847 | 18.1974 | 0.1810 | 0.0019 |
| 27 | 705.386 | 705.386 | 707.281 | 703.490 | -0.2977 | -3.2513 | 18.7861 | 1.3460 | -0.1232 |
| 28 | 699.436 | 699.436 | 701.256 | 697.617 | 0.0362 | -3.6326 | 17.9612 | 2.5719 | 0.0256 |
| 29 | 693.586 | 693.586 | 695.409 | 691.764 | 0.0480 | -4.0551 | 17.8915 | 3.8483 | 0.0456 |
| 30 | 687.733 | 687.733 | 689.579 | 685.887 | -0.2765 | -4.5169 | 18.0045 | 5.1357 | -0.3143 |
| 31 | 681.889 | 681.889 | 683.725 | 680.053 | 0.0564 | -4.9345 | 17.7881 | 6.2718 | 0.0717 |
| 32 | 676.122 | 676.122 | 677.912 | 674.332 | 0.0604 | -5.2837 | 17.2176 | 7.1383 | 0.0816 |
| 33 | 670.400 | 670.400 | 672.211 | 668.590 | -0.2527 | -5.7443 | 17.2635 | 7.9157 | -0.3482 |
| 34 | 664.661 | 664.661 | 666.487 | 662.835 | 0.0739 | -6.2047 | 17.2657 | 8.3826 | 0.0998 |
| 35 | 658.939 | 658.939 | 660.748 | 657.130 | 0.0748 | -6.5945 | 16.9357 | 8.3684 | 0.0949 |
| 36 | 653.276 | 653.276 | 655.060 | 651.493 | -0.2225 | -6.9509 | 16.5169 | 7.8685 | -0.2518 |
| 37 | 647.705 | 647.705 | 649.435 | 645.976 | 0.0891 | -7.1975 | 15.8387 | 6.7656 | 0.0838 |
| 38 | 642.193 | 642.193 | 643.930 | 640.457 | -0.2076 | -7.6138 | 15.7109 | 5.2840 | -0.1441 |
| 39 | 636.713 | 636.713 | 638.422 | 635.004 | 0.1016 | -7.9049 | 15.2628 | 3.1066 | 0.0399 |
| 40 | 631.298 | 631.298 | 632.978 | 629.619 | 0.1051 | -8.1746 | 14.7959 | 0.3025 | 0.0039 |
| 41 | 625.090 | 625.090 | 627.601 | 622.578 | -0.2610 | -2.7866 | -24.8091 | -1.0422 | 0.0976 |
| 42 | 613.979 | 613.979 | 620.597 | 607.360 | 0.1184 | -8.5852 | -64.3446 | -7.3833 | -0.1018 |
| 43 | 597.308 | 597.308 | 605.447 | 589.169 | -0.0246 | -19.1288 | -77.3570 | -18.5549 | 0.0239 |
| 44 | 578.180 | 578.180 | 587.310 | 569.050 | 0.4565 | -33.0570 | -82.9530 | -26.6770 | -0.3684 |
| 45 | 567.213 | 567.213 | 567.213 | 567.213 | 7.6545 | -554.2891 | 128.5423 | -89.7948 | -1.2400 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 432.787 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 173.126 Tn
Distancia afectada por clavado de cuñas: 7.938 m

Sum. Fx= 0.000000
Sum. Fy= -0.000000
Sum. Fz= 0.000000
Sum. Mx= -0.000000
Sum. My= 0.000000
Sum. Mz= -0.000000

ESTADO B
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 567.213 | 567.213 | 567.213 | 567.213 | -3.4316 | 554.3291 | 128.5515 | 184.0372 | 1.1393 |
| 2 | 578.178 | 578.178 | 569.050 | 587.307 | -0.2064 | 33.0555 | -82.9376 | 32.2952 | 0.2016 |
| 3 | 597.306 | 597.306 | 589.164 | 605.449 | -0.4055 | 19.1319 | -77.3839 | 21.8104 | 0.4623 |
| 4 | 613.976 | 613.976 | 607.361 | 620.590 | -0.0572 | 8.5842 | -64.3030 | 8.8417 | 0.0589 |
| 5 | 625.088 | 625.088 | 622.572 | 627.603 | -0.0186 | 2.7846 | -24.8561 | 1.5148 | 0.0101 |
| 6 | 631.301 | 631.301 | 629.621 | 632.982 | -0.3526 | 8.1742 | 14.7970 | 1.0872 | 0.0469 |
| 7 | 636.716 | 636.716 | 635.007 | 638.425 | -0.0565 | 7.9058 | 15.2636 | -1.7630 | -0.0126 |
| 8 | 642.197 | 642.197 | 640.460 | 643.933 | -0.0544 | 7.6103 | 15.7124 | -3.9878 | -0.0285 |
| 9 | 647.709 | 647.709 | 645.979 | 649.439 | -0.3603 | 7.1965 | 15.8397 | -5.5413 | -0.2775 |
| 10 | 653.282 | 653.282 | 651.497 | 655.068 | -0.0530 | 6.9538 | 16.5380 | -6.6896 | -0.0510 |
| 11 | 658.946 | 658.946 | 657.139 | 660.753 | -0.3656 | 6.5875 | 16.9165 | -7.2396 | -0.4018 |
| 12 | 664.666 | 664.666 | 662.840 | 666.493 | -0.0502 | 6.2051 | 17.2665 | -7.3283 | -0.0593 |
| 13 | 670.405 | 670.405 | 668.596 | 672.215 | -0.0465 | 5.7403 | 17.2643 | -6.9342 | -0.0561 |
| 14 | 676.195 | 676.195 | 674.336 | 678.053 | -0.0437 | 5.3948 | 17.8698 | -6.3712 | -0.0516 |
| 15 | 682.064 | 682.064 | 680.194 | 683.935 | -0.3662 | 4.9637 | 18.1243 | -5.4551 | -0.4024 |
| 16 | 687.978 | 687.978 | 686.098 | 689.859 | -0.3669 | 4.5247 | 18.3441 | -4.3527 | -0.3530 |
| 17 | 693.897 | 693.897 | 692.044 | 695.751 | -0.0367 | 4.0509 | 18.1953 | -3.1192 | -0.0282 |
| 18 | 699.858 | 699.858 | 697.961 | 701.755 | -0.0360 | 3.6417 | 18.7246 | -1.9082 | -0.0188 |
| 19 | 705.881 | 705.881 | 703.991 | 707.770 | -0.0258 | 3.1853 | 18.7428 | -0.7103 | -0.0058 |
| 20 | 711.930 | 711.930 | 710.035 | 713.825 | -0.3594 | 2.7361 | 18.8693 | 0.3639 | 0.0478 |
| 21 | 719.014 | 719.014 | 716.120 | 721.907 | -0.1214 | 12.7500 | -25.7842 | 6.9360 | 0.0661 |
| 22 | 732.100 | 732.100 | 724.213 | 739.986 | -0.5984 | 25.7653 | -72.9267 | 26.5382 | 0.6163 |
| 23 | 753.907 | 753.907 | 742.324 | 765.490 | -0.2322 | 23.2164 | -110.9087 | 26.4667 | 0.2647 |
| 24 | 777.361 | 777.361 | 767.916 | 786.805 | -0.0752 | 7.5224 | -92.2476 | 7.0861 | 0.0709 |
| 25 | 791.053 | 791.053 | 789.343 | 792.764 | -0.4627 | 9.0760 | 14.8057 | 3.0586 | 0.1559 |
| 26 | 797.358 | 797.358 | 795.311 | 799.405 | -0.1046 | 9.9835 | 18.0540 | -0.6489 | -0.0068 |
| 27 | 804.123 | 804.123 | 801.962 | 806.284 | -0.4854 | 9.9242 | 19.3291 | -4.1086 | -0.2010 |
| 28 | 810.963 | 810.963 | 808.853 | 813.073 | -0.1060 | 9.2883 | 19.1053 | -6.5761 | -0.0750 |
| 29 | 817.803 | 817.803 | 815.654 | 819.952 | -0.0937 | 8.9423 | 19.6937 | -8.4863 | -0.0889 |
| 30 | 824.763 | 824.763 | 822.549 | 826.977 | -0.4887 | 8.6302 | 20.5151 | -9.8125 | -0.5557 |
| 31 | 831.832 | 831.832 | 829.592 | 834.072 | -0.0936 | 8.1899 | 20.9757 | -10.4093 | -0.1190 |
| 32 | 838.927 | 838.927 | 836.705 | 841.148 | -0.0872 | 7.6333 | 21.0020 | -10.3125 | -0.1179 |
| 33 | 846.087 | 846.087 | 843.802 | 848.371 | -0.4879 | 7.2403 | 21.7877 | -9.9771 | -0.6724 |
| 34 | 853.393 | 853.393 | 851.048 | 855.738 | -0.0811 | 6.8082 | 22.5518 | -9.1979 | -0.1095 |
| 35 | 860.804 | 860.804 | 858.440 | 863.167 | -0.0795 | 6.2694 | 22.9001 | -7.9558 | -0.1009 |
| 36 | 868.265 | 868.265 | 865.895 | 870.636 | -0.4772 | 5.7050 | 23.1232 | -6.4581 | -0.5401 |
| 37 | 875.733 | 875.733 | 873.394 | 878.072 | -0.0633 | 5.1123 | 22.9626 | -4.8056 | -0.0595 |
| 38 | 883.250 | 883.250 | 880.861 | 885.638 | -0.4756 | 4.5889 | 23.5695 | -3.1847 | -0.3301 |
| 39 | 890.852 | 890.852 | 888.461 | 893.243 | -0.0517 | 4.0240 | 23.7141 | -1.5814 | -0.0203 |
| 40 | 898.493 | 898.493 | 896.102 | 900.883 | -0.0444 | 3.4563 | 23.8138 | -0.1279 | -0.0016 |
| 41 | 907.425 | 907.425 | 903.780 | 911.071 | -0.6281 | 15.0013 | -32.6428 | 5.6105 | 0.2349 |
| 42 | 923.939 | 902.948 | 912.907 | 892.988 | 0.1810 | -13.1436 | -94.3796 | -11.3035 | -0.1556 |
| 43 | 949.792 | 877.094 | 890.037 | 864.152 | -0.0048 | -30.2982 | -113.1844 | -29.3892 | 0.0047 |
| 44 | 981.276 | 845.610 | 861.105 | 830.115 | 0.7320 | -53.0043 | -120.1533 | -42.7744 | -0.5907 |
| 45 | 1000.000 | 826.886 | 826.886 | 826.886 | 11.1227 | -805.4372 | 186.7847 | -130.4808 | -1.8019 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 432.787 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 173.114 Tn
Distancia afectada por clavado de cuñas: 7.938 m

Sum. Fx= 0.000000
Sum. Fy= 0.000000
Sum. Fz= -0.000000
Sum. Mx= 0.000000
Sum. My= 0.000000
Sum. Mz= -0.000000

ESTADO C
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 826.874 | 826.874 | 826.874 | -4.9863 | 805.4834 | 186.7954 | 267.4205 | 1.6555 |
| 2 | 981.279 | 845.595 | 830.103 | 861.087 | -0.3306 | 53.0028 | -120.1288 | 51.7838 | 0.3230 |
| 3 | 949.795 | 877.080 | 864.132 | 890.027 | -0.6083 | 30.3023 | -113.2222 | 34.5446 | 0.6934 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 4 | 923.943 | 902.931 | 892.977 | 912.884 | -0.0876 | 13.1409 | -94.3172 | 13.5351 | 0.0902 |
| 5 | 907.428 | 907.428 | 911.080 | 903.776 | 0.1000 | -14.9997 | -32.7120 | -8.1598 | -0.0544 |
| 6 | 898.488 | 898.488 | 900.880 | 896.097 | -0.3976 | -3.4599 | 23.8156 | -0.4602 | 0.0529 |
| 7 | 890.847 | 890.847 | 893.238 | 888.456 | 0.0287 | -4.0239 | 23.7152 | 0.8973 | 0.0064 |
| 8 | 883.245 | 883.245 | 885.633 | 880.857 | 0.0328 | -4.5934 | 23.5712 | 2.4069 | 0.0172 |
| 9 | 875.728 | 875.728 | 878.067 | 873.389 | -0.3776 | -5.1163 | 22.9640 | 3.9396 | -0.2908 |
| 10 | 868.258 | 868.258 | 870.631 | 865.885 | 0.0435 | -5.7132 | 23.1515 | 5.4961 | 0.0419 |
| 11 | 860.795 | 860.795 | 863.156 | 858.434 | -0.3607 | -6.2711 | 22.8740 | 6.8919 | -0.3964 |
| 12 | 853.387 | 853.387 | 855.732 | 851.042 | 0.0551 | -6.8085 | 22.5525 | 8.0408 | 0.0651 |
| 13 | 846.081 | 846.081 | 848.365 | 843.796 | 0.0586 | -7.2445 | 21.7883 | 8.7513 | 0.0708 |
| 14 | 838.837 | 838.837 | 841.142 | 836.532 | 0.0634 | -7.8311 | 21.7911 | 9.2486 | 0.0749 |
| 15 | 831.618 | 831.618 | 833.899 | 829.337 | -0.3267 | -8.3199 | 21.3490 | 9.1436 | -0.3591 |
| 16 | 824.470 | 824.470 | 826.723 | 822.216 | -0.3146 | -8.7800 | 20.8711 | 8.4464 | -0.3027 |
| 17 | 817.436 | 817.436 | 819.619 | 815.253 | 0.0822 | -9.0841 | 19.9899 | 6.9947 | 0.0633 |
| 18 | 810.474 | 810.474 | 812.672 | 808.277 | 0.0836 | -9.6233 | 19.8813 | 5.0426 | 0.0438 |
| 19 | 803.559 | 803.559 | 805.710 | 801.408 | 0.0935 | -9.9570 | 19.2114 | 2.2204 | 0.0209 |
| 20 | 796.731 | 796.731 | 798.852 | 794.611 | -0.2779 | -10.3215 | 18.6731 | -1.3728 | 0.0370 |
| 21 | 788.889 | 788.889 | 792.064 | 785.714 | 0.0335 | -3.5143 | -31.3689 | -1.9118 | -0.0182 |
| 22 | 774.866 | 774.866 | 783.213 | 766.518 | -0.2613 | -10.8373 | -81.1516 | -11.1624 | 0.2691 |
| 23 | 752.542 | 764.797 | 764.104 | 765.490 | 0.0094 | -0.9430 | -112.1742 | -1.0750 | -0.0108 |
| 24 | 777.361 | 777.361 | 767.916 | 786.805 | -0.0752 | 7.5224 | -92.2476 | 7.0861 | 0.0709 |
| 25 | 791.053 | 791.053 | 789.343 | 792.764 | -0.4627 | 9.0760 | 14.8057 | 3.0586 | 0.1559 |
| 26 | 797.358 | 797.358 | 795.311 | 799.405 | -0.1046 | 9.9835 | 18.0540 | -0.6489 | -0.0068 |
| 27 | 804.123 | 804.123 | 801.962 | 806.284 | -0.4854 | 9.9242 | 19.3291 | -4.1086 | -0.2010 |
| 28 | 810.963 | 810.963 | 808.853 | 813.073 | -0.1060 | 9.2883 | 19.1053 | -6.5761 | -0.0750 |
| 29 | 817.803 | 817.803 | 815.654 | 819.952 | -0.0937 | 8.9423 | 19.6937 | -8.4863 | -0.0889 |
| 30 | 824.763 | 824.763 | 822.549 | 826.977 | -0.4887 | 8.6302 | 20.5151 | -9.8125 | -0.5557 |
| 31 | 831.832 | 831.832 | 829.592 | 834.072 | -0.0936 | 8.1899 | 20.9757 | -10.4093 | -0.1190 |
| 32 | 838.927 | 838.927 | 836.705 | 841.148 | -0.0872 | 7.6333 | 21.0020 | -10.3125 | -0.1179 |
| 33 | 846.087 | 846.087 | 843.802 | 848.371 | -0.4879 | 7.2403 | 21.7877 | -9.9771 | -0.6724 |
| 34 | 853.393 | 853.393 | 851.048 | 855.738 | -0.0811 | 6.8082 | 22.5518 | -9.1979 | -0.1095 |
| 35 | 860.804 | 860.804 | 858.440 | 863.167 | -0.0795 | 6.2694 | 22.9001 | -7.9558 | -0.1009 |
| 36 | 868.265 | 868.265 | 865.895 | 870.636 | -0.4772 | 5.7050 | 23.1232 | -6.4581 | -0.5401 |
| 37 | 875.733 | 875.733 | 873.394 | 878.072 | -0.0633 | 5.1123 | 22.9626 | -4.8056 | -0.0595 |
| 38 | 883.250 | 883.250 | 880.861 | 885.638 | -0.4756 | 4.5889 | 23.5695 | -3.1847 | -0.3301 |
| 39 | 890.852 | 890.852 | 888.461 | 893.243 | -0.0517 | 4.0240 | 23.7141 | -1.5814 | -0.0203 |
| 40 | 898.493 | 898.493 | 896.102 | 900.883 | -0.0444 | 3.4563 | 23.8138 | -0.1279 | -0.0016 |
| 41 | 907.425 | 907.425 | 903.780 | 911.071 | -0.6281 | 15.0013 | -32.6428 | 5.6105 | 0.2349 |
| 42 | 923.939 | 902.948 | 912.907 | 892.988 | 0.1810 | -13.1436 | -94.3796 | -11.3035 | -0.1556 |
| 43 | 949.792 | 877.094 | 890.037 | 864.152 | -0.0048 | -30.2982 | -113.1844 | -29.3892 | 0.0047 |
| 44 | 981.276 | 845.610 | 861.105 | 830.115 | 0.7320 | -53.0043 | -120.1533 | -42.7744 | -0.5907 |
| 45 | 1000.000 | 826.886 | 826.886 | 826.886 | 11.1227 | -805.4372 | 186.7847 | -130.4808 | -1.8019 |

Sum. Fx= -0.000000
Sum. Fy= -0.000000
Sum. Fz= 0.000000
Sum. Mx= -0.000000
Sum. My= 0.000000
Sum. Mz= -0.000000

Alargamientos teoricos de tendones
==========

Tesado por seccion No. 1: 52.7 cm.
Al retesar por seccion No. 45: 6.4 cm.
Tesado por seccion No. 45: 52.7 cm.

"TITULO:" LAV GELIDA. V-Riera de la Rierussa. Tendon 8 (Servicio).

CARACTERISTICAS DEL PRETENSADO

| NS | Po (t) | MU | K | INT.CUÑ.(mm) | Ep(Kg/cm2) | Ap(cm2) |
|---|---|---|---|---|---|---|
| 45 | 1000.000 | 0.2100 | 0.0015 | 5 | 1900000.0 | 70.17 |

COORDENADAS

| | | CENTRO DE GRAVEDAD DE LA SECCION | | | PRETENSADO |
|---|---|---|---|---|---|
| SECCION | NUDO | X (long.) | Y (tran.) | Z (prof.) | Zp (prof.) |
| 1 | 35 | -0.212 | 70.8 | -1.212 | -1.280 |
| 2 | 36 | -0.225 | 72.9 | -1.370 | -0.748 |
| 3 | 37 | -0.238 | 74.999 | -1.370 | -0.570 |
| 4 | 38 | -0.252 | 77.099 | -1.370 | -0.679 |
| 5 | 39 | -0.266 | 79.199 | -1.212 | -1.008 |
| 6 | 40 | -0.28 | 81.299 | -1.212 | -1.419 |
| 7 | 41 | -0.295 | 83.399 | -1.212 | -1.775 |
| 8 | 42 | -0.31 | 85.499 | -1.212 | -2.076 |
| 9 | 43 | -0.325 | 87.599 | -1.212 | -2.322 |
| 10 | 44 | -0.341 | 89.699 | -1.212 | -2.514 |
| 11 | 45 | -0.357 | 91.799 | -1.212 | -2.651 |
| 12 | 46 | -0.374 | 93.899 | -1.212 | -2.733 |
| 13 | 47 | -0.391 | 95.999 | -1.212 | -2.760 |
| 14 | 48 | -0.408 | 98.099 | -1.212 | -2.733 |
| 15 | 49 | -0.425 | 100.199 | -1.212 | -2.651 |
| 16 | 50 | -0.443 | 102.299 | -1.212 | -2.514 |
| 17 | 51 | -0.462 | 104.399 | -1.212 | -2.322 |
| 18 | 52 | -0.481 | 106.499 | -1.212 | -2.076 |
| 19 | 53 | -0.5 | 108.598 | -1.212 | -1.775 |
| 20 | 54 | -0.519 | 110.698 | -1.212 | -1.419 |
| 21 | 55 | -0.539 | 112.798 | -1.212 | -1.008 |
| 22 | 56 | -0.559 | 114.898 | -1.370 | -0.679 |
| 23 | 57 | -0.58 | 116.998 | -1.370 | -0.570 |
| 24 | 58 | -0.601 | 119.098 | -1.370 | -0.768 |
| 25 | 59 | -0.622 | 121.198 | -1.212 | -1.215 |
| 26 | 60 | -0.644 | 123.298 | -1.212 | -1.617 |
| 27 | 61 | -0.666 | 125.398 | -1.212 | -1.966 |
| 28 | 62 | -0.689 | 127.498 | -1.212 | -2.260 |
| 29 | 63 | -0.712 | 129.597 | -1.212 | -2.501 |
| 30 | 64 | -0.735 | 131.697 | -1.212 | -2.689 |
| 31 | 65 | -0.759 | 133.797 | -1.212 | -2.823 |
| 32 | 66 | -0.783 | 135.897 | -1.212 | -2.903 |
| 33 | 67 | -0.807 | 137.997 | -1.212 | -2.930 |
| 34 | 68 | -0.832 | 140.097 | -1.212 | -2.903 |
| 35 | 69 | -0.857 | 142.197 | -1.212 | -2.821 |
| 36 | 70 | -0.882 | 144.296 | -1.212 | -2.684 |
| 37 | 71 | -0.908 | 146.396 | -1.212 | -2.492 |
| 38 | 72 | -0.934 | 148.496 | -1.212 | -2.246 |
| 39 | 73 | -0.961 | 150.596 | -1.212 | -1.945 |
| 40 | 74 | -0.988 | 152.696 | -1.212 | -1.589 |
| 41 | 75 | -1.015 | 154.796 | -1.212 | -1.178 |
| 42 | 76 | -1.043 | 156.895 | -1.370 | -0.849 |
| 43 | 77 | -1.071 | 158.995 | -1.370 | -0.740 |
| 44 | 78 | -1.1 | 161.095 | -1.370 | -0.918 |
| 45 | 79 | -1.129 | 163.195 | -1.212 | -1.450 |

LAV GELIDA. V-Riera de la Rierussa. Tendon 8 (Servicio).

Numero de secciones
45

| | Lt | Lac | Anghor | Angver | Angulo | cosx | cosy | cosz |
|---|---|---|---|---|---|---|---|---|
| 1 | 2.166 | 0.000 | 0.00000 | 0.00000 | 0.00000 | -.00600 | 0.96936 | 0.24557 |
| 2 | 2.107 | 2.166 | 0.00000 | -0.16351 | 0.16351 | -.00617 | 0.99640 | 0.08450 |
| 3 | 2.103 | 4.273 | 0.00047 | -0.13646 | 0.13646 | -.00666 | 0.99863 | -.05183 |
| 4 | 2.126 | 6.376 | 0.00000 | -0.10354 | 0.10354 | -.00659 | 0.98793 | -.15478 |
| 5 | 2.140 | 8.501 | 0.00000 | -0.03787 | 0.03787 | -.00654 | 0.98136 | -.19207 |
| 6 | 2.130 | 10.641 | 0.00048 | 0.02534 | 0.02535 | -.00704 | 0.98591 | -.16714 |
| 7 | 2.122 | 12.771 | 0.00000 | 0.02556 | 0.02556 | -.00707 | 0.98986 | -.14188 |
| 8 | 2.114 | 14.893 | 0.00000 | 0.02575 | 0.02575 | -.00709 | 0.99318 | -.11634 |
| 9 | 2.109 | 17.007 | 0.00048 | 0.02544 | 0.02544 | -.00759 | 0.99582 | -.09105 |
| 10 | 2.105 | 19.116 | 0.00000 | 0.02603 | 0.02603 | -.00760 | 0.99785 | -.06510 |
| 11 | 2.102 | 21.221 | 0.00048 | 0.02612 | 0.02612 | -.00809 | 0.99921 | -.03902 |
| 12 | 2.100 | 23.322 | 0.00000 | 0.02617 | 0.02617 | -.00809 | 0.99988 | -.01286 |
| 13 | 2.100 | 25.423 | 0.00000 | 0.02571 | 0.02571 | -.00809 | 0.99988 | 0.01286 |
| 14 | 2.102 | 27.523 | 0.00000 | 0.02617 | 0.02617 | -.00809 | 0.99921 | 0.03902 |
| 15 | 2.105 | 29.624 | 0.00048 | 0.02612 | 0.02612 | -.00855 | 0.99784 | 0.06510 |
| 16 | 2.109 | 31.729 | 0.00048 | 0.02603 | 0.02603 | -.00901 | 0.99581 | 0.09105 |
| 17 | 2.114 | 33.838 | 0.00000 | 0.02544 | 0.02544 | -.00899 | 0.99317 | 0.11634 |
| 18 | 2.121 | 35.952 | 0.00000 | 0.02582 | 0.02582 | -.00896 | 0.98983 | 0.14194 |
| 19 | 2.130 | 38.073 | -0.00000 | 0.02550 | 0.02550 | -.00892 | 0.98589 | 0.16713 |
| 20 | 2.140 | 40.203 | 0.00048 | 0.02534 | 0.02535 | -.00935 | 0.98134 | 0.19206 |
| 21 | 2.126 | 42.343 | 0.00000 | -0.03787 | 0.03787 | -.00941 | 0.98791 | 0.15477 |
| 22 | 2.103 | 44.469 | 0.00048 | -0.10354 | 0.10354 | -.00999 | 0.99861 | 0.05183 |
| 23 | 2.109 | 46.571 | 0.00000 | -0.14586 | 0.14586 | -.00996 | 0.99554 | -.09386 |
| 24 | 2.147 | 48.681 | 0.00000 | -0.11571 | 0.11571 | -.00978 | 0.97804 | -.20818 |
| 25 | 2.138 | 50.828 | 0.00048 | 0.02059 | 0.02059 | -.01029 | 0.98211 | -.18800 |
| 26 | 2.129 | 52.966 | 0.00000 | 0.02445 | 0.02445 | -.01033 | 0.98642 | -.16393 |
| 27 | 2.121 | 55.095 | 0.00048 | 0.02559 | 0.02559 | -.01085 | 0.99028 | -.13864 |
| 28 | 2.113 | 57.216 | 0.00001 | 0.02478 | 0.02478 | -.01089 | 0.99341 | -.11406 |
| 29 | 2.109 | 59.329 | -0.00001 | 0.02503 | 0.02503 | -.01091 | 0.99596 | -.08916 |
| 30 | 2.104 | 61.437 | 0.00048 | 0.02556 | 0.02557 | -.01140 | 0.99791 | -.06368 |
| 31 | 2.102 | 63.542 | 0.00000 | 0.02564 | 0.02564 | -.01142 | 0.99921 | -.03807 |
| 32 | 2.100 | 65.643 | 0.00000 | 0.02522 | 0.02522 | -.01143 | 0.99985 | -.01286 |
| 33 | 2.100 | 67.744 | 0.00048 | 0.02571 | 0.02572 | -.01190 | 0.99985 | 0.01286 |
| 34 | 2.102 | 69.844 | 0.00000 | 0.02617 | 0.02617 | -.01189 | 0.99917 | 0.03902 |
| 35 | 2.104 | 71.946 | 0.00001 | 0.02615 | 0.02615 | -.01188 | 0.99781 | 0.06513 |
| 36 | 2.109 | 74.049 | 0.00047 | 0.02600 | 0.02600 | -.01233 | 0.99577 | 0.09104 |
| 37 | 2.115 | 76.158 | -0.00000 | 0.02543 | 0.02543 | -.01230 | 0.99313 | 0.11634 |
| 38 | 2.122 | 78.273 | 0.00048 | 0.02575 | 0.02575 | -.01273 | 0.98980 | 0.14187 |
| 39 | 2.130 | 80.394 | 0.00000 | 0.02556 | 0.02556 | -.01268 | 0.98585 | 0.16713 |
| 40 | 2.140 | 82.525 | 0.00000 | 0.02534 | 0.02534 | -.01262 | 0.98130 | 0.19206 |
| 41 | 2.125 | 84.665 | 0.00048 | -0.03779 | 0.03780 | -.01318 | 0.98785 | 0.15484 |
| 42 | 2.103 | 86.789 | -0.00001 | -0.10361 | 0.10361 | -.01331 | 0.99857 | 0.05183 |
| 43 | 2.108 | 88.892 | 0.00048 | -0.13641 | 0.13641 | -.01376 | 0.99633 | -.08445 |
| 44 | 2.167 | 91.000 | -0.00000 | -0.16354 | 0.16354 | -.01339 | 0.96929 | -.24555 |
| 45 | 0.000 | 93.167 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

ESTADO A
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 822.323 | 822.323 | 822.323 | -4.9346 | 797.1270 | 201.9389 | -54.2046 | -0.3356 |
| 2 | 979.933 | 842.390 | 825.567 | 859.212 | -0.3677 | 58.9960 | -129.3377 | 36.6955 | 0.2287 |
| 3 | 946.512 | 875.811 | 862.251 | 889.372 | -0.6187 | 32.0336 | -118.7007 | 25.6269 | 0.4950 |
| 4 | 920.011 | 902.312 | 892.310 | 912.314 | -0.0876 | 13.1437 | -95.1042 | 9.0823 | 0.0605 |
| 5 | 903.520 | 903.520 | 907.112 | 899.927 | 0.1210 | -18.1476 | -31.6419 | -3.7021 | -0.0247 |
| 6 | 894.662 | 894.662 | 897.043 | 892.281 | -0.3959 | -3.4452 | 23.7142 | 0.7132 | -0.0820 |
| 7 | 887.054 | 887.054 | 889.435 | 884.673 | 0.0286 | -4.0067 | 23.6143 | 2.2558 | 0.0161 |
| 8 | 879.484 | 879.484 | 881.862 | 877.106 | 0.0327 | -4.5738 | 23.4708 | 3.9518 | 0.0282 |
| 9 | 871.999 | 871.999 | 874.328 | 869.670 | -0.3760 | -5.0945 | 22.8662 | 5.6549 | -0.4174 |
| 10 | 864.560 | 864.560 | 866.923 | 862.197 | 0.0433 | -5.6889 | 23.0529 | 7.4070 | 0.0564 |
| 11 | 857.129 | 857.129 | 859.480 | 854.778 | -0.3591 | -6.2444 | 22.7766 | 8.9856 | -0.5168 |
| 12 | 849.753 | 849.753 | 852.088 | 847.418 | 0.0549 | -6.7795 | 22.4564 | 10.3116 | 0.0835 |
| 13 | 842.478 | 842.478 | 844.752 | 840.203 | 0.0584 | -7.2136 | 21.6955 | 11.1667 | 0.0904 |
| 14 | 835.265 | 835.265 | 837.560 | 832.970 | 0.0631 | -7.7978 | 21.6983 | 11.8604 | 0.0960 |
| 15 | 828.077 | 828.077 | 830.348 | 825.806 | -0.3253 | -8.2845 | 21.2581 | 11.9214 | -0.4681 |
| 16 | 820.959 | 820.959 | 823.203 | 818.715 | -0.3133 | -8.7426 | 20.7823 | 11.3829 | -0.4079 |
| 17 | 813.955 | 813.955 | 816.129 | 811.782 | 0.0818 | -9.0454 | 19.9048 | 10.0404 | 0.0908 |
| 18 | 807.023 | 807.023 | 809.211 | 804.835 | 0.0833 | -9.5823 | 19.7966 | 8.2791 | 0.0719 |
| 19 | 800.137 | 800.137 | 802.279 | 797.995 | 0.0931 | -9.9146 | 19.1296 | 5.5819 | 0.0524 |
| 20 | 793.338 | 793.338 | 795.450 | 791.227 | -0.2768 | -10.2775 | 18.5936 | 2.1275 | -0.0573 |
| 21 | 785.568 | 785.568 | 788.691 | 782.445 | 0.0331 | -3.4801 | -30.8642 | -0.7099 | -0.0068 |
| 22 | 771.566 | 771.566 | 779.954 | 763.178 | -0.2594 | -10.8677 | -81.5431 | -7.5096 | 0.1793 |
| 23 | 749.299 | 749.299 | 760.774 | 737.825 | 0.2758 | -27.5834 | -108.8130 | -22.0667 | -0.2207 |
| 24 | 726.665 | 726.665 | 735.494 | 717.837 | 0.3246 | -32.4566 | -80.1857 | -19.5389 | -0.1954 |
| 25 | 713.985 | 713.985 | 715.528 | 712.441 | -0.3094 | -2.3753 | 15.4991 | 0.0071 | -0.0009 |
| 26 | 708.341 | 708.341 | 710.159 | 706.522 | 0.0290 | -2.7728 | 18.1199 | 1.1230 | 0.0118 |
| 27 | 702.382 | 702.382 | 704.269 | 700.494 | -0.2964 | -3.2375 | 18.7061 | 2.4411 | -0.2235 |
| 28 | 696.458 | 696.458 | 698.270 | 694.646 | 0.0360 | -3.6171 | 17.8847 | 3.7907 | 0.0377 |
| 29 | 690.633 | 690.633 | 692.448 | 688.818 | 0.0478 | -4.0379 | 17.8153 | 5.2048 | 0.0616 |
| 30 | 684.804 | 684.804 | 686.642 | 682.966 | -0.2753 | -4.4976 | 17.9278 | 6.6430 | -0.4066 |
| 31 | 678.985 | 678.985 | 680.813 | 677.157 | 0.0562 | -4.9135 | 17.7124 | 7.9156 | 0.0905 |
| 32 | 673.243 | 673.243 | 675.025 | 671.460 | 0.0601 | -5.2612 | 17.1443 | 8.8967 | 0.1017 |
| 33 | 667.545 | 667.545 | 669.348 | 665.743 | -0.2516 | -5.7198 | 17.1900 | 9.8267 | -0.4323 |
| 34 | 661.830 | 661.830 | 663.649 | 660.012 | 0.0736 | -6.1783 | 17.1922 | 10.4475 | 0.1244 |
| 35 | 656.133 | 656.133 | 657.934 | 654.332 | 0.0745 | -6.5664 | 16.8636 | 10.5654 | 0.1198 |
| 36 | 650.494 | 650.494 | 652.270 | 648.718 | -0.2215 | -6.9213 | 16.4466 | 10.1882 | -0.3261 |
| 37 | 644.947 | 644.947 | 646.669 | 643.225 | 0.0887 | -7.1668 | 15.7712 | 9.1735 | 0.1136 |
| 38 | 639.459 | 639.459 | 641.188 | 637.729 | -0.2067 | -7.5814 | 15.6440 | 7.8392 | -0.2137 |
| 39 | 634.001 | 634.001 | 635.703 | 632.300 | 0.1012 | -7.8713 | 15.1978 | 5.7696 | 0.0742 |
| 40 | 628.610 | 628.610 | 630.283 | 626.937 | 0.1047 | -8.1398 | 14.7329 | 3.0687 | 0.0395 |
| 41 | 622.458 | 622.458 | 624.928 | 619.988 | -0.2601 | -2.7595 | -24.4093 | -0.0938 | 0.0088 |
| 42 | 611.364 | 611.364 | 618.015 | 604.713 | 0.1187 | -8.6093 | -64.6546 | -4.4854 | -0.0618 |
| 43 | 594.297 | 594.297 | 602.809 | 585.786 | -0.0085 | -20.2091 | -80.8128 | -12.7317 | 0.0053 |
| 44 | 574.080 | 574.080 | 583.937 | 564.223 | 0.5074 | -36.7416 | -89.0768 | -16.6072 | -0.2293 |
| 45 | 562.392 | 562.392 | 562.392 | 562.392 | 7.5524 | -546.8961 | 138.5470 | 130.1613 | 1.7975 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 437.608 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 177.677 Tn
Distancia afectada por clavado de cuñas: 7.828 m

Sum. Fx= 0.000000
Sum. Fy= 0.000000
Sum. Fz= 0.000000
Sum. Mx= -0.000000
Sum. My= -0.000000
Sum. Mz= 0.000000

ESTADO B
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 562.392 | 562.392 | 562.392 | 562.392 | -3.3858 | 546.9351 | 138.5569 | -37.1916 | -0.2302 |
| 2 | 574.078 | 574.078 | 564.223 | 583.933 | -0.2292 | 36.7401 | -89.0599 | 22.8523 | 0.1425 |
| 3 | 594.296 | 594.296 | 585.781 | 602.810 | -0.4110 | 20.2131 | -80.8417 | 16.1705 | 0.3288 |
| 4 | 611.361 | 611.361 | 604.715 | 618.008 | -0.0574 | 8.6083 | -64.6131 | 5.9484 | 0.0397 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 5 | 622.456 | 622.456 | 619.981 | 624.931 | -0.0184 | 2.7575 | -24.4562 | 0.5625 | 0.0038 |
| 6 | 628.613 | 628.613 | 626.940 | 630.286 | -0.3511 | 8.1394 | 14.7340 | -1.6849 | -0.0727 |
| 7 | 634.005 | 634.005 | 632.303 | 635.707 | -0.0562 | 7.8721 | 15.1986 | -4.4320 | -0.0317 |
| 8 | 639.462 | 639.462 | 637.733 | 641.191 | -0.0541 | 7.5779 | 15.6454 | -6.5473 | -0.0468 |
| 9 | 644.951 | 644.951 | 643.228 | 646.674 | -0.3588 | 7.1658 | 15.7722 | -7.9541 | -0.3983 |
| 10 | 650.500 | 650.500 | 648.722 | 652.278 | -0.0528 | 6.9242 | 16.4676 | -9.0153 | -0.0687 |
| 11 | 656.140 | 656.140 | 654.340 | 657.940 | -0.3640 | 6.5594 | 16.8445 | -9.4390 | -0.5238 |
| 12 | 661.836 | 661.836 | 660.017 | 663.654 | -0.0500 | 6.1787 | 17.1930 | -9.3978 | -0.0761 |
| 13 | 667.551 | 667.551 | 665.748 | 669.353 | -0.0463 | 5.7158 | 17.1908 | -8.8481 | -0.0716 |
| 14 | 673.315 | 673.315 | 671.465 | 675.165 | -0.0435 | 5.3718 | 17.7937 | -8.1705 | -0.0661 |
| 15 | 679.160 | 679.160 | 677.297 | 681.023 | -0.3646 | 4.9425 | 18.0471 | -7.1123 | -0.5247 |
| 16 | 685.048 | 685.048 | 683.176 | 686.921 | -0.3654 | 4.5054 | 18.2660 | -5.8660 | -0.4757 |
| 17 | 690.943 | 690.943 | 689.097 | 692.788 | -0.0365 | 4.0336 | 18.1178 | -4.4773 | -0.0405 |
| 18 | 696.878 | 696.878 | 694.989 | 698.767 | -0.0358 | 3.6262 | 18.6449 | -3.1330 | -0.0309 |
| 19 | 702.875 | 702.875 | 700.993 | 704.756 | -0.0257 | 3.1717 | 18.6630 | -1.7857 | -0.0145 |
| 20 | 708.898 | 708.898 | 707.012 | 710.785 | -0.3579 | 2.7245 | 18.7890 | -0.5640 | -0.0741 |
| 21 | 715.917 | 715.917 | 713.070 | 718.763 | -0.1198 | 12.5746 | -25.3541 | 2.5652 | 0.0244 |
| 22 | 728.984 | 728.984 | 721.059 | 736.909 | -0.5979 | 25.8687 | -73.2832 | 17.8753 | 0.4131 |
| 23 | 750.734 | 750.734 | 739.237 | 762.231 | -0.2303 | 23.0256 | -110.0898 | 18.4205 | 0.1842 |
| 24 | 774.050 | 774.050 | 764.646 | 783.455 | -0.0749 | 7.4904 | -91.8548 | 4.5092 | 0.0451 |
| 25 | 787.685 | 787.685 | 785.982 | 789.388 | -0.4607 | 9.0374 | 14.7426 | -0.0271 | -0.0014 |
| 26 | 793.963 | 793.963 | 791.924 | 796.001 | -0.1041 | 9.9410 | 17.9771 | -4.0261 | -0.0422 |
| 27 | 800.699 | 800.699 | 798.547 | 802.851 | -0.4833 | 9.8819 | 19.2468 | -7.4510 | -0.3644 |
| 28 | 807.510 | 807.510 | 805.409 | 809.610 | -0.1055 | 9.2488 | 19.0240 | -9.6927 | -0.1106 |
| 29 | 814.321 | 814.321 | 812.180 | 816.461 | -0.0933 | 8.9043 | 19.6099 | -11.4776 | -0.1203 |
| 30 | 821.252 | 821.252 | 819.047 | 823.456 | -0.4867 | 8.5935 | 20.4277 | -12.6925 | -0.7188 |
| 31 | 828.290 | 828.290 | 826.060 | 830.520 | -0.0932 | 8.1550 | 20.8864 | -13.1377 | -0.1501 |
| 32 | 835.354 | 835.354 | 833.142 | 837.566 | -0.0869 | 7.6007 | 20.9126 | -12.8529 | -0.1469 |
| 33 | 842.484 | 842.484 | 840.209 | 844.759 | -0.4859 | 7.2094 | 21.6949 | -12.3858 | -0.8347 |
| 34 | 849.760 | 849.760 | 847.425 | 852.095 | -0.0807 | 6.7792 | 22.4558 | -11.4637 | -0.1365 |
| 35 | 857.138 | 857.138 | 854.785 | 859.492 | -0.0792 | 6.2427 | 22.8026 | -10.0445 | -0.1274 |
| 36 | 864.568 | 864.568 | 862.208 | 866.928 | -0.4751 | 5.6807 | 23.0247 | -8.3620 | -0.6994 |
| 37 | 872.004 | 872.004 | 869.675 | 874.333 | -0.0630 | 5.0906 | 22.8648 | -6.5159 | -0.0807 |
| 38 | 879.489 | 879.489 | 877.110 | 881.867 | -0.4736 | 4.5693 | 23.4691 | -4.7247 | -0.4897 |
| 39 | 887.059 | 887.059 | 884.678 | 889.440 | -0.0515 | 4.0068 | 23.6131 | -2.9370 | -0.0378 |
| 40 | 894.667 | 894.667 | 892.286 | 897.047 | -0.0442 | 3.4416 | 23.7124 | -1.2975 | -0.0167 |
| 41 | 903.517 | 903.517 | 899.931 | 907.103 | -0.6682 | 18.1489 | -31.5726 | 0.6171 | 0.0227 |
| 42 | 920.007 | 902.329 | 912.337 | 892.321 | 0.1810 | -13.1464 | -95.1668 | -6.8493 | -0.0943 |
| 43 | 946.509 | 875.827 | 889.382 | 862.271 | 0.0194 | -32.0281 | -118.6600 | -20.1777 | -0.0122 |
| 44 | 979.930 | 842.406 | 859.231 | 825.580 | 0.8147 | -58.9975 | -129.3646 | -26.6669 | -0.3683 |
| 45 | 1000.000 | 822.336 | 822.336 | 822.336 | 11.0073 | -797.0824 | 201.9275 | 189.7056 | 2.6197 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 437.608 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 177.664 Tn
Distancia afectada por clavado de cuñas: 7.828 m

Sum. Fx= -0.000000
Sum. Fy= 0.000000
Sum. Fz= 0.000000
Sum. Mx= 0.000000
Sum. My= -0.000000
Sum. Mz= 0.000000

ESTADO C
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 822.323 | 822.323 | 822.323 | -4.9346 | 797.1270 | 201.9389 | -54.2046 | -0.3356 |
| 2 | 979.933 | 842.390 | 825.567 | 859.212 | -0.3677 | 58.9960 | -129.3377 | 36.6955 | 0.2287 |
| 3 | 946.512 | 875.811 | 862.251 | 889.372 | -0.6187 | 32.0336 | -118.7007 | 25.6269 | 0.4950 |
| 4 | 920.011 | 902.312 | 892.310 | 912.314 | -0.0876 | 13.1437 | -95.1042 | 9.0823 | 0.0605 |
| 5 | 903.520 | 903.520 | 907.112 | 899.927 | 0.1210 | -18.1476 | -31.6419 | -3.7021 | -0.0247 |
| 6 | 894.662 | 894.662 | 897.043 | 892.281 | -0.3959 | -3.4452 | 23.7142 | 0.7132 | -0.0820 |
| 7 | 887.054 | 887.054 | 889.435 | 884.673 | 0.0286 | -4.0067 | 23.6143 | 2.2558 | 0.0161 |
| 8 | 879.484 | 879.484 | 881.862 | 877.106 | 0.0327 | -4.5738 | 23.4708 | 3.9518 | 0.0282 |
| 9 | 871.999 | 871.999 | 874.328 | 869.670 | -0.3760 | -5.0945 | 22.8662 | 5.6549 | -0.4174 |
| 10 | 864.560 | 864.560 | 866.923 | 862.197 | 0.0433 | -5.6889 | 23.0529 | 7.4070 | 0.0564 |
| 11 | 857.129 | 857.129 | 859.480 | 854.778 | -0.3591 | -6.2444 | 22.7766 | 8.9856 | -0.5168 |
| 12 | 849.753 | 849.753 | 852.088 | 847.418 | 0.0549 | -6.7795 | 22.4564 | 10.3116 | 0.0835 |
| 13 | 842.478 | 842.478 | 844.752 | 840.203 | 0.0584 | -7.2136 | 21.6955 | 11.1667 | 0.0904 |
| 14 | 835.265 | 835.265 | 837.560 | 832.970 | 0.0631 | -7.7978 | 21.6983 | 11.8604 | 0.0960 |
| 15 | 828.077 | 828.077 | 830.348 | 825.806 | -0.3253 | -8.2845 | 21.2581 | 11.9214 | -0.4681 |
| 16 | 820.959 | 820.959 | 823.203 | 818.715 | -0.3133 | -8.7426 | 20.7823 | 11.3829 | -0.4079 |
| 17 | 813.955 | 813.955 | 816.129 | 811.782 | 0.0818 | -9.0454 | 19.9048 | 10.0404 | 0.0908 |
| 18 | 807.023 | 807.023 | 809.211 | 804.835 | 0.0833 | -9.5823 | 19.7966 | 8.2791 | 0.0719 |
| 19 | 800.137 | 800.137 | 802.279 | 797.995 | 0.0931 | -9.9146 | 19.1296 | 5.5819 | 0.0524 |
| 20 | 793.338 | 793.338 | 795.450 | 791.227 | -0.2768 | -10.2775 | 18.5936 | 2.1275 | -0.0573 |
| 21 | 785.568 | 785.568 | 788.691 | 782.445 | 0.0331 | -3.4801 | -30.8642 | -0.7099 | -0.0068 |
| 22 | 771.566 | 771.566 | 779.954 | 763.178 | -0.2594 | -10.8677 | -81.5431 | -7.5096 | 0.1793 |
| 23 | 749.299 | 761.502 | 760.774 | 762.231 | 0.0088 | -0.8815 | -111.3306 | -0.7052 | -0.0071 |
| 24 | 774.050 | 774.050 | 764.646 | 783.455 | -0.0749 | 7.4904 | -91.8548 | 4.5092 | 0.0451 |
| 25 | 787.685 | 787.685 | 785.982 | 789.388 | -0.4607 | 9.0374 | 14.7426 | -0.0271 | -0.0014 |
| 26 | 793.963 | 793.963 | 791.924 | 796.001 | -0.1041 | 9.9410 | 17.9771 | -4.0261 | -0.0422 |
| 27 | 800.699 | 800.699 | 798.547 | 802.851 | -0.4833 | 9.8819 | 19.2468 | -7.4510 | -0.3644 |
| 28 | 807.510 | 807.510 | 805.409 | 809.610 | -0.1055 | 9.2488 | 19.0240 | -9.6927 | -0.1106 |
| 29 | 814.321 | 814.321 | 812.180 | 816.461 | -0.0933 | 8.9043 | 19.6099 | -11.4776 | -0.1203 |
| 30 | 821.252 | 821.252 | 819.047 | 823.456 | -0.4867 | 8.5935 | 20.4277 | -12.6925 | -0.7188 |
| 31 | 828.290 | 828.290 | 826.060 | 830.520 | -0.0932 | 8.1550 | 20.8864 | -13.1377 | -0.1501 |
| 32 | 835.354 | 835.354 | 833.142 | 837.566 | -0.0869 | 7.6007 | 20.9126 | -12.8529 | -0.1469 |
| 33 | 842.484 | 842.484 | 840.209 | 844.759 | -0.4859 | 7.2094 | 21.6949 | -12.3858 | -0.8347 |
| 34 | 849.760 | 849.760 | 847.425 | 852.095 | -0.0807 | 6.7792 | 22.4558 | -11.4637 | -0.1365 |
| 35 | 857.138 | 857.138 | 854.785 | 859.492 | -0.0792 | 6.2427 | 22.8026 | -10.0445 | -0.1274 |
| 36 | 864.568 | 864.568 | 862.208 | 866.928 | -0.4751 | 5.6807 | 23.0247 | -8.3620 | -0.6994 |
| 37 | 872.004 | 872.004 | 869.675 | 874.333 | -0.0630 | 5.0906 | 22.8648 | -6.5159 | -0.0807 |
| 38 | 879.489 | 879.489 | 877.110 | 881.867 | -0.4736 | 4.5693 | 23.4691 | -4.7247 | -0.4897 |
| 39 | 887.059 | 887.059 | 884.678 | 889.440 | -0.0515 | 4.0068 | 23.6131 | -2.9370 | -0.0378 |
| 40 | 894.667 | 894.667 | 892.286 | 897.047 | -0.0442 | 3.4416 | 23.7124 | -1.2975 | -0.0167 |
| 41 | 903.517 | 903.517 | 899.931 | 907.103 | -0.6682 | 18.1489 | -31.5726 | 0.6171 | 0.0227 |
| 42 | 920.007 | 902.329 | 912.337 | 892.321 | 0.1810 | -13.1464 | -95.1668 | -6.8493 | -0.0943 |
| 43 | 946.509 | 875.827 | 889.382 | 862.271 | 0.0194 | -32.0281 | -118.6600 | -20.1777 | -0.0122 |
| 44 | 979.930 | 842.406 | 859.231 | 825.580 | 0.8147 | -58.9975 | -129.3646 | -26.6669 | -0.3683 |
| 45 | 1000.000 | 822.336 | 822.336 | 822.336 | 11.0073 | -797.0824 | 201.9275 | 189.7056 | 2.6197 |

Sum. Fx= 0.000000
Sum. Fy= 0.000000
Sum. Fz= 0.000000
Sum. Mx= 0.000000
Sum. My= -0.000000
Sum. Mz= 0.000000

Alargamientos teoricos de tendones
==========

Tesado por seccion No. 1: 52.5 cm.
Al retesar por seccion No. 45: 6.4 cm.
Tesado por seccion No. 45: 52.5 cm.

"TITULO:" LAV GELIDA. V-Riera de la Rierussa. Tendon 9 (Servicio).

CARACTERISTICAS DEL PRETENSADO

| NS | Po (t) | MU | K | INT.CUÑ.(mm) | Ep(Kg/cm2) | Ap(cm2) |
|---|---|---|---|---|---|---|
| 45 | 1000.000 | 0.2100 | 0.0015 | 5 | 1900000.0 | 70.17 |

COORDENADAS

| | | CENTRO DE GRAVEDAD DE LA SECCION | | | PRETENSADO |
|---|---|---|---|---|---|
| SECCION | NUDO | X (long.) | Y (tran.) | Z (prof.) | Zp (prof.) |
| 1 | 55 | -0.539 | 112.798 | -1.212 | -0.880 |
| 2 | 56 | -0.559 | 114.898 | -1.370 | -0.393 |
| 3 | 57 | -0.58 | 116.998 | -1.370 | -0.230 |
| 4 | 58 | -0.601 | 119.098 | -1.370 | -0.340 |
| 5 | 59 | -0.622 | 121.198 | -1.212 | -0.668 |
| 6 | 60 | -0.644 | 123.298 | -1.212 | -1.079 |
| 7 | 61 | -0.666 | 125.398 | -1.212 | -1.435 |
| 8 | 62 | -0.689 | 127.498 | -1.212 | -1.736 |
| 9 | 63 | -0.712 | 129.597 | -1.212 | -1.982 |
| 10 | 64 | -0.735 | 131.697 | -1.212 | -2.174 |
| 11 | 65 | -0.759 | 133.797 | -1.212 | -2.311 |
| 12 | 66 | -0.783 | 135.897 | -1.212 | -2.393 |
| 13 | 67 | -0.807 | 137.997 | -1.212 | -2.420 |
| 14 | 68 | -0.832 | 140.097 | -1.212 | -2.393 |
| 15 | 69 | -0.857 | 142.197 | -1.212 | -2.311 |
| 16 | 70 | -0.882 | 144.296 | -1.212 | -2.174 |
| 17 | 71 | -0.908 | 146.396 | -1.212 | -1.982 |
| 18 | 72 | -0.934 | 148.496 | -1.212 | -1.736 |
| 19 | 73 | -0.961 | 150.596 | -1.212 | -1.435 |
| 20 | 74 | -0.988 | 152.696 | -1.212 | -1.079 |
| 21 | 75 | -1.015 | 154.796 | -1.212 | -0.668 |
| 22 | 76 | -1.043 | 156.895 | -1.370 | -0.340 |
| 23 | 77 | -1.071 | 158.995 | -1.370 | -0.230 |
| 24 | 78 | -1.1 | 161.095 | -1.370 | -0.428 |
| 25 | 79 | -1.129 | 163.195 | -1.212 | -0.875 |
| 26 | 80 | -1.158 | 165.295 | -1.212 | -1.277 |
| 27 | 81 | -1.187 | 167.394 | -1.212 | -1.626 |
| 28 | 82 | -1.217 | 169.494 | -1.212 | -1.920 |
| 29 | 83 | -1.248 | 171.594 | -1.212 | -2.161 |
| 30 | 84 | -1.278 | 173.694 | -1.212 | -2.349 |
| 31 | 85 | -1.31 | 175.793 | -1.212 | -2.483 |
| 32 | 86 | -1.341 | 177.893 | -1.212 | -2.563 |
| 33 | 87 | -1.373 | 179.993 | -1.212 | -2.590 |
| 34 | 88 | -1.405 | 182.093 | -1.212 | -2.563 |
| 35 | 89 | -1.438 | 184.193 | -1.212 | -2.481 |
| 36 | 90 | -1.471 | 186.292 | -1.212 | -2.344 |
| 37 | 91 | -1.504 | 188.392 | -1.212 | -2.152 |
| 38 | 92 | -1.538 | 190.492 | -1.212 | -1.906 |
| 39 | 93 | -1.572 | 192.591 | -1.212 | -1.605 |
| 40 | 94 | -1.606 | 194.691 | -1.212 | -1.249 |
| 41 | 95 | -1.641 | 196.791 | -1.212 | -0.838 |
| 42 | 96 | -1.676 | 198.891 | -1.370 | -0.510 |
| 43 | 97 | -1.712 | 200.99 | -1.370 | -0.400 |
| 44 | 98 | -1.748 | 203.09 | -1.370 | -0.563 |
| 45 | 99 | -1.784 | 205.19 | -1.212 | -1.050 |

LAV GELIDA. V-Riera de la Rierussa. Tendon 9 (Servicio).

Numero de secciones
45

| | Lt | Lac | Anghor | Angver | Angulo | cosx | cosy | cosz |
|---|---|---|---|---|---|---|---|---|
| 1 | 2.156 | 0.000 | 0.00000 | 0.00000 | 0.00000 | -.00928 | 0.97411 | 0.22590 |
| 2 | 2.106 | 2.156 | 0.00048 | -0.15041 | 0.15041 | -.00997 | 0.99695 | 0.07738 |
| 3 | 2.103 | 4.262 | 0.00000 | -0.12979 | 0.12979 | -.00999 | 0.99858 | -.05231 |
| 4 | 2.126 | 6.365 | 0.00000 | -0.10260 | 0.10260 | -.00988 | 0.98797 | -.15431 |
| 5 | 2.140 | 8.491 | 0.00048 | -0.03833 | 0.03833 | -.01028 | 0.98133 | -.19206 |
| 6 | 2.130 | 10.631 | 0.00000 | 0.02534 | 0.02534 | -.01033 | 0.98588 | -.16713 |
| 7 | 2.122 | 12.761 | 0.00048 | 0.02556 | 0.02557 | -.01084 | 0.98983 | -.14187 |
| 8 | 2.113 | 14.882 | 0.00001 | 0.02570 | 0.02570 | -.01088 | 0.99314 | -.11640 |
| 9 | 2.109 | 16.996 | -0.00001 | 0.02549 | 0.02549 | -.01091 | 0.99579 | -.09104 |
| 10 | 2.105 | 19.105 | 0.00048 | 0.02603 | 0.02603 | -.01140 | 0.99781 | -.06510 |
| 11 | 2.102 | 21.209 | 0.00000 | 0.02612 | 0.02612 | -.01142 | 0.99917 | -.03902 |
| 12 | 2.100 | 23.311 | 0.00000 | 0.02617 | 0.02617 | -.01143 | 0.99985 | -.01286 |
| 13 | 2.100 | 25.411 | 0.00048 | 0.02571 | 0.02572 | -.01190 | 0.99985 | 0.01286 |
| 14 | 2.102 | 27.512 | 0.00000 | 0.02617 | 0.02617 | -.01189 | 0.99917 | 0.03902 |
| 15 | 2.104 | 29.614 | 0.00001 | 0.02615 | 0.02615 | -.01188 | 0.99781 | 0.06513 |
| 16 | 2.109 | 31.717 | 0.00047 | 0.02600 | 0.02600 | -.01233 | 0.99577 | 0.09104 |
| 17 | 2.115 | 33.826 | -0.00000 | 0.02543 | 0.02543 | -.01230 | 0.99313 | 0.11634 |
| 18 | 2.122 | 35.941 | 0.00048 | 0.02575 | 0.02575 | -.01273 | 0.98980 | 0.14187 |
| 19 | 2.130 | 38.062 | 0.00000 | 0.02556 | 0.02556 | -.01268 | 0.98585 | 0.16713 |
| 20 | 2.140 | 40.192 | 0.00000 | 0.02534 | 0.02534 | -.01262 | 0.98130 | 0.19206 |
| 21 | 2.125 | 42.332 | 0.00048 | -0.03826 | 0.03826 | -.01318 | 0.98792 | 0.15438 |
| 22 | 2.103 | 44.457 | -0.00001 | -0.10267 | 0.10267 | -.01331 | 0.99854 | 0.05230 |
| 23 | 2.110 | 46.560 | 0.00048 | -0.14633 | 0.14633 | -.01375 | 0.99549 | -.09386 |
| 24 | 2.147 | 48.670 | -0.00000 | -0.11571 | 0.11571 | -.01351 | 0.97800 | -.20817 |
| 25 | 2.138 | 50.817 | 0.00000 | 0.02058 | 0.02058 | -.01356 | 0.98208 | -.18800 |
| 26 | 2.128 | 52.955 | 0.00001 | 0.02438 | 0.02438 | -.01363 | 0.98637 | -.16400 |
| 27 | 2.121 | 55.083 | 0.00047 | 0.02566 | 0.02567 | -.01415 | 0.99024 | -.13863 |
| 28 | 2.114 | 57.204 | 0.00048 | 0.02483 | 0.02484 | -.01466 | 0.99337 | -.11400 |
| 29 | 2.109 | 59.318 | -0.00048 | 0.02497 | 0.02498 | -.01423 | 0.99592 | -.08916 |
| 30 | 2.104 | 61.426 | 0.00096 | 0.02553 | 0.02555 | -.01521 | 0.99785 | -.06370 |
| 31 | 2.102 | 63.530 | -0.00048 | 0.02567 | 0.02568 | -.01475 | 0.99917 | -.03806 |
| 32 | 2.100 | 65.632 | 0.00048 | 0.02522 | 0.02522 | -.01524 | 0.99980 | -.01285 |
| 33 | 2.100 | 67.732 | 0.00000 | 0.02571 | 0.02571 | -.01524 | 0.99980 | 0.01285 |
| 34 | 2.102 | 69.833 | 0.00048 | 0.02617 | 0.02617 | -.01570 | 0.99912 | 0.03901 |
| 35 | 2.104 | 71.934 | 0.00001 | 0.02615 | 0.02615 | -.01569 | 0.99775 | 0.06512 |
| 36 | 2.109 | 74.038 | -0.00001 | 0.02600 | 0.02600 | -.01565 | 0.99572 | 0.09104 |
| 37 | 2.115 | 76.147 | 0.00048 | 0.02543 | 0.02544 | -.01608 | 0.99308 | 0.11633 |
| 38 | 2.121 | 78.262 | 0.00001 | 0.02582 | 0.02582 | -.01603 | 0.98975 | 0.14193 |
| 39 | 2.130 | 80.383 | -0.00001 | 0.02549 | 0.02549 | -.01596 | 0.98581 | 0.16712 |
| 40 | 2.140 | 82.513 | 0.00048 | 0.02534 | 0.02534 | -.01635 | 0.98125 | 0.19204 |
| 41 | 2.126 | 84.653 | 0.00000 | -0.03833 | 0.03833 | -.01646 | 0.98789 | 0.15430 |
| 42 | 2.102 | 86.779 | 0.00048 | -0.10257 | 0.10257 | -.01713 | 0.99848 | 0.05233 |
| 43 | 2.107 | 88.881 | -0.00001 | -0.12980 | 0.12980 | -.01709 | 0.99686 | -.07737 |
| 44 | 2.156 | 90.987 | 0.00000 | -0.15039 | 0.15039 | -.01670 | 0.97401 | -.22588 |
| 45 | 0.000 | 93.144 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

ESTADO A
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 826.886 | 826.886 | 826.886 | -7.6712 | 805.4749 | 186.7935 | 267.4177 | 2.5468 |
| 2 | 981.276 | 845.610 | 830.114 | 861.106 | -0.9136 | 53.0062 | -120.1590 | 51.7871 | 0.8926 |
| 3 | 949.790 | 877.096 | 864.153 | 890.039 | -0.3029 | 30.2947 | -113.1894 | 34.5359 | 0.3454 |
| 4 | 923.943 | 902.943 | 892.989 | 912.896 | -0.1314 | 13.1405 | -94.3158 | 13.5347 | 0.1353 |
| 5 | 907.428 | 907.428 | 911.081 | 903.776 | -0.2722 | -15.0144 | -32.7086 | -8.1678 | 0.1481 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 6 | 898.489 | 898.489 | 900.880 | 896.098 | 0.0362 | -3.4562 | 23.8143 | -0.4597 | -0.0048 |
| 7 | 890.848 | 890.848 | 893.239 | 888.456 | -0.3766 | -4.0292 | 23.7154 | 0.8985 | -0.0840 |
| 8 | 883.250 | 883.250 | 885.633 | 880.867 | 0.0457 | -4.5889 | 23.5211 | 2.4046 | 0.0239 |
| 9 | 875.735 | 875.735 | 878.079 | 873.391 | 0.0606 | -5.1155 | 23.0121 | 3.9389 | 0.0467 |
| 10 | 868.260 | 868.260 | 870.633 | 865.886 | -0.3488 | -5.7186 | 23.1512 | 5.5013 | -0.3355 |
| 11 | 860.797 | 860.797 | 863.157 | 858.436 | 0.0716 | -6.2669 | 22.8731 | 6.8873 | 0.0787 |
| 12 | 853.389 | 853.389 | 855.734 | 851.044 | 0.0778 | -6.8082 | 22.5518 | 8.0405 | 0.0919 |
| 13 | 846.083 | 846.083 | 848.367 | 843.798 | -0.3189 | -7.2496 | 21.7875 | 8.7576 | -0.3852 |
| 14 | 838.839 | 838.839 | 841.144 | 836.534 | 0.0932 | -7.8307 | 21.7903 | 9.2481 | 0.1101 |
| 15 | 831.618 | 831.618 | 833.901 | 829.335 | 0.0944 | -8.3226 | 21.3738 | 9.1466 | 0.1037 |
| 16 | 824.471 | 824.471 | 826.722 | 822.220 | -0.2807 | -8.7725 | 20.8452 | 8.4391 | -0.2701 |
| 17 | 817.440 | 817.440 | 819.623 | 815.257 | 0.1125 | -9.0836 | 19.9893 | 6.9944 | 0.0866 |
| 18 | 810.484 | 810.484 | 812.675 | 808.292 | -0.2620 | -9.6091 | 19.8281 | 5.0352 | -0.1373 |
| 19 | 803.567 | 803.567 | 805.724 | 801.410 | 0.1283 | -9.9764 | 19.2624 | 2.2247 | 0.0286 |
| 20 | 796.734 | 796.734 | 798.854 | 794.614 | 0.1326 | -10.3168 | 18.6733 | -1.3721 | -0.0176 |
| 21 | 788.898 | 788.898 | 792.067 | 785.728 | -0.3294 | -3.5169 | -31.3105 | -1.9132 | 0.1792 |
| 22 | 774.875 | 774.875 | 783.228 | 766.522 | 0.1494 | -10.8350 | -81.2064 | -11.1601 | -0.1539 |
| 23 | 752.546 | 752.546 | 764.108 | 740.985 | 0.0189 | -27.7616 | -109.6419 | -31.6482 | -0.0215 |
| 24 | 729.778 | 729.778 | 738.644 | 720.912 | 0.4501 | -32.5924 | -80.5259 | -30.7021 | -0.4240 |
| 25 | 717.044 | 717.044 | 718.594 | 715.494 | 0.0329 | -2.3814 | 15.5641 | -0.8025 | -0.0111 |
| 26 | 711.382 | 711.382 | 713.203 | 709.561 | 0.0338 | -2.7825 | 18.1411 | 0.1809 | 0.0022 |
| 27 | 705.399 | 705.399 | 707.300 | 703.498 | -0.2822 | -3.2537 | 18.8413 | 1.3470 | -0.1168 |
| 28 | 699.439 | 699.439 | 701.263 | 697.615 | -0.2780 | -3.6416 | 17.9996 | 2.5783 | -0.1968 |
| 29 | 693.588 | 693.588 | 695.407 | 691.769 | 0.3878 | -4.0484 | 17.8522 | 3.8420 | 0.3681 |
| 30 | 687.739 | 687.739 | 689.584 | 685.894 | -0.5922 | -4.5218 | 17.9834 | 5.1413 | -0.6733 |
| 31 | 681.895 | 681.895 | 683.733 | 680.056 | 0.4037 | -4.9320 | 17.8081 | 6.2686 | 0.5131 |
| 32 | 676.125 | 676.125 | 677.916 | 674.335 | -0.2430 | -5.2889 | 17.2170 | 7.1453 | -0.3283 |
| 33 | 670.404 | 670.404 | 672.213 | 668.594 | 0.0875 | -5.7396 | 17.2628 | 7.9092 | 0.1205 |
| 34 | 664.664 | 664.664 | 666.491 | 662.837 | -0.2207 | -6.2098 | 17.2648 | 8.3895 | -0.2982 |
| 35 | 658.942 | 658.942 | 660.751 | 657.133 | 0.0987 | -6.5940 | 16.9349 | 8.3678 | 0.1253 |
| 36 | 653.279 | 653.279 | 655.063 | 651.496 | 0.1141 | -6.9461 | 16.5165 | 7.8630 | 0.1291 |
| 37 | 647.709 | 647.709 | 649.439 | 645.979 | -0.1923 | -7.2022 | 15.8374 | 6.7701 | -0.1808 |
| 38 | 642.192 | 642.192 | 643.933 | 640.451 | 0.1185 | -7.6240 | 15.7519 | 5.2911 | 0.0823 |
| 39 | 636.713 | 636.713 | 638.417 | 635.009 | 0.1326 | -7.8883 | 15.2212 | 3.1001 | 0.0521 |
| 40 | 631.303 | 631.303 | 632.983 | 629.623 | -0.1618 | -8.1790 | 14.7944 | 0.3026 | -0.0060 |
| 41 | 625.089 | 625.089 | 627.605 | 622.574 | 0.0464 | -2.7849 | -24.8535 | -1.0415 | -0.0174 |
| 42 | 613.980 | 613.980 | 620.592 | 607.367 | -0.1506 | -8.5863 | -64.2809 | -7.3842 | 0.1295 |
| 43 | 597.315 | 597.315 | 605.455 | 589.174 | 0.3328 | -19.1245 | -77.3687 | -18.5507 | -0.3228 |
| 44 | 578.186 | 578.186 | 587.316 | 569.057 | 0.5666 | -33.0535 | -82.9501 | -26.6742 | -0.4573 |
| 45 | 567.219 | 567.219 | 567.219 | 567.219 | 9.5017 | -554.2682 | 128.5374 | -89.7915 | -1.5393 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 432.781 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 173.114 Tn
Distancia afectada por clavado de cuñas: 7.939 m

Sum. Fx= -0.000000
Sum. Fy= -0.000000
Sum. Fz= 0.000000
Sum. Mx= -0.000000
Sum. My= 0.000000
Sum. Mz= -0.000000

ESTADO B
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 567.219 | 567.219 | 567.219 | 567.219 | -5.2793 | 554.3215 | 128.5498 | 184.0347 | 1.7527 |
| 2 | 578.187 | 578.187 | 569.056 | 587.317 | -0.5945 | 33.0584 | -82.9579 | 32.2981 | 0.5809 |
| 3 | 597.316 | 597.316 | 589.176 | 605.455 | -0.1913 | 19.1266 | -77.3613 | 21.8043 | 0.2180 |
| 4 | 613.982 | 613.982 | 607.368 | 620.597 | -0.0858 | 8.5841 | -64.3019 | 8.8417 | 0.0884 |
| 5 | 625.094 | 625.094 | 622.578 | 627.610 | -0.3220 | 2.7820 | -24.8552 | 1.5134 | 0.1752 |
| 6 | 631.308 | 631.308 | 629.628 | 632.988 | -0.0856 | 8.1752 | 14.7965 | 1.0873 | 0.0114 |
| 7 | 636.723 | 636.723 | 635.014 | 638.432 | -0.3847 | 7.9030 | 15.2637 | -1.7624 | -0.0858 |
| 8 | 642.200 | 642.200 | 640.467 | 643.933 | -0.0866 | 7.5974 | 15.6777 | -3.9810 | -0.0454 |
| 9 | 647.711 | 647.711 | 645.977 | 649.445 | -0.0756 | 7.2093 | 15.8736 | -5.5512 | -0.0582 |
| 10 | 653.288 | 653.288 | 651.502 | 655.074 | -0.3884 | 6.9507 | 16.5378 | -6.6866 | -0.3736 |
| 11 | 658.952 | 658.952 | 657.145 | 660.759 | -0.0753 | 6.5890 | 16.9160 | -7.2413 | -0.0828 |
| 12 | 664.672 | 664.672 | 662.845 | 666.498 | -0.0709 | 6.2049 | 17.2661 | -7.3280 | -0.0837 |
| 13 | 670.411 | 670.411 | 668.601 | 672.221 | -0.3866 | 5.7370 | 17.2638 | -6.9302 | -0.4671 |
| 14 | 676.201 | 676.201 | 674.343 | 678.059 | -0.0642 | 5.3946 | 17.8693 | -6.3710 | -0.0758 |
| 15 | 682.072 | 682.072 | 680.200 | 683.945 | -0.0630 | 4.9676 | 18.1453 | -5.4594 | -0.0693 |
| 16 | 687.985 | 687.985 | 686.106 | 689.863 | -0.3781 | 4.5205 | 18.3221 | -4.3487 | -0.3637 |
| 17 | 693.902 | 693.902 | 692.049 | 695.755 | -0.0502 | 4.0508 | 18.1948 | -3.1191 | -0.0386 |
| 18 | 699.858 | 699.858 | 697.965 | 701.750 | -0.3768 | 3.6361 | 18.6757 | -1.9053 | -0.1975 |
| 19 | 705.882 | 705.882 | 703.987 | 707.776 | -0.0410 | 3.1884 | 18.7903 | -0.7110 | -0.0091 |
| 20 | 711.936 | 711.936 | 710.041 | 713.830 | -0.0352 | 2.7387 | 18.8693 | 0.3642 | 0.0047 |
| 21 | 719.014 | 719.014 | 716.125 | 721.902 | -0.5089 | 12.7253 | -25.7340 | 6.9226 | 0.2768 |
| 22 | 732.099 | 732.099 | 724.207 | 739.991 | -0.3393 | 25.7854 | -72.9743 | 26.5590 | 0.3494 |
| 23 | 753.911 | 753.911 | 742.329 | 765.494 | -0.6735 | 23.2101 | -110.9045 | 26.4595 | 0.7678 |
| 24 | 777.364 | 777.364 | 767.920 | 786.808 | -0.1039 | 7.5226 | -92.2440 | 7.0863 | 0.0979 |
| 25 | 791.056 | 791.056 | 789.346 | 792.766 | -0.1254 | 9.0779 | 14.8046 | 3.0593 | 0.0422 |
| 26 | 797.353 | 797.353 | 795.313 | 799.394 | -0.1427 | 9.9586 | 17.9947 | -0.6473 | -0.0093 |
| 27 | 804.117 | 804.117 | 801.950 | 806.285 | -0.5135 | 9.9452 | 19.3874 | -4.1173 | -0.2126 |
| 28 | 810.968 | 810.968 | 808.853 | 813.083 | -0.5187 | 9.2985 | 19.1476 | -6.5833 | -0.3672 |
| 29 | 817.810 | 817.810 | 815.666 | 819.955 | 0.2582 | 8.9337 | 19.6496 | -8.4781 | 0.2450 |
| 30 | 824.765 | 824.765 | 822.553 | 826.978 | -0.9175 | 8.6168 | 20.4900 | -9.7973 | -1.0432 |
| 31 | 831.834 | 831.834 | 829.591 | 834.077 | 0.2791 | 8.2030 | 20.9992 | -10.4260 | 0.3548 |
| 32 | 838.932 | 838.932 | 836.711 | 841.154 | -0.5143 | 7.6276 | 21.0013 | -10.3050 | -0.6949 |
| 33 | 846.092 | 846.092 | 843.808 | 848.376 | -0.1104 | 7.2438 | 21.7868 | -9.9820 | -0.1521 |
| 34 | 853.399 | 853.399 | 851.054 | 855.744 | -0.5121 | 6.8023 | 22.5507 | -9.1900 | -0.6918 |
| 35 | 860.809 | 860.809 | 858.446 | 863.173 | -0.1050 | 6.2691 | 22.8991 | -7.9554 | -0.1332 |
| 36 | 868.271 | 868.271 | 865.901 | 870.641 | -0.0832 | 5.7092 | 23.1225 | -6.4628 | -0.0942 |
| 37 | 875.738 | 875.738 | 873.399 | 878.077 | -0.4968 | 5.1064 | 22.9610 | -4.8000 | -0.4670 |
| 38 | 883.261 | 883.261 | 880.867 | 885.655 | -0.0812 | 4.5959 | 23.6295 | -3.1895 | -0.0563 |
| 39 | 890.862 | 890.862 | 888.477 | 893.247 | -0.0583 | 4.0202 | 23.6525 | -1.5799 | -0.0229 |
| 40 | 898.496 | 898.496 | 896.105 | 900.887 | -0.4782 | 3.4504 | 23.8116 | -0.1277 | -0.0177 |
| 41 | 907.436 | 907.436 | 903.784 | 911.088 | -0.2500 | 14.9990 | -32.7085 | 5.6096 | 0.0935 |
| 42 | 923.948 | 902.945 | 912.895 | 892.994 | -0.2114 | -13.1421 | -94.2855 | -11.3022 | 0.1818 |
| 43 | 949.792 | 877.101 | 890.045 | 864.157 | 0.5266 | -30.2930 | -113.2012 | -29.3842 | -0.5108 |
| 44 | 981.277 | 845.615 | 861.110 | 830.121 | 0.9085 | -52.9985 | -120.1485 | -42.7698 | -0.7332 |
| 45 | 1000.000 | 826.892 | 826.892 | 826.892 | 13.8069 | -805.4034 | 186.7769 | -130.4753 | -2.2367 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 432.781 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 173.108 Tn
Distancia afectada por clavado de cuñas: 7.939 m

Sum. Fx= -0.000000
Sum. Fy= 0.000000
Sum. Fz= -0.000000
Sum. Mx= 0.000000
Sum. My= 0.000000
Sum. Mz= -0.000000

ESTADO C
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 826.886 | 826.886 | 826.886 | -7.6712 | 805.4749 | 186.7935 | 267.4177 | 2.5468 |
| 2 | 981.276 | 845.610 | 830.114 | 861.106 | -0.9136 | 53.0062 | -120.1590 | 51.7871 | 0.8926 |
| 3 | 949.790 | 877.096 | 864.153 | 890.039 | -0.3029 | 30.2947 | -113.1894 | 34.5359 | 0.3454 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 4 | 923.943 | 902.943 | 892.989 | 912.896 | -0.1314 | 13.1405 | -94.3158 | 13.5347 | 0.1353 |
| 5 | 907.428 | 907.428 | 911.081 | 903.776 | -0.2722 | -15.0144 | -32.7086 | -8.1678 | 0.1481 |
| 6 | 898.489 | 898.489 | 900.880 | 896.098 | 0.0362 | -3.4562 | 23.8143 | -0.4597 | -0.0048 |
| 7 | 890.848 | 890.848 | 893.239 | 888.456 | -0.3766 | -4.0292 | 23.7154 | 0.8985 | -0.0840 |
| 8 | 883.250 | 883.250 | 885.633 | 880.867 | 0.0457 | -4.5889 | 23.5211 | 2.4046 | 0.0239 |
| 9 | 875.735 | 875.735 | 878.079 | 873.391 | 0.0606 | -5.1155 | 23.0121 | 3.9389 | 0.0467 |
| 10 | 868.260 | 868.260 | 870.633 | 865.886 | -0.3488 | -5.7186 | 23.1512 | 5.5013 | -0.3355 |
| 11 | 860.797 | 860.797 | 863.157 | 858.436 | 0.0716 | -6.2669 | 22.8731 | 6.8873 | 0.0787 |
| 12 | 853.389 | 853.389 | 855.734 | 851.044 | 0.0778 | -6.8082 | 22.5518 | 8.0405 | 0.0919 |
| 13 | 846.083 | 846.083 | 848.367 | 843.798 | -0.3189 | -7.2496 | 21.7875 | 8.7576 | -0.3852 |
| 14 | 838.839 | 838.839 | 841.144 | 836.534 | 0.0932 | -7.8307 | 21.7903 | 9.2481 | 0.1101 |
| 15 | 831.618 | 831.618 | 833.901 | 829.335 | 0.0944 | -8.3226 | 21.3738 | 9.1466 | 0.1037 |
| 16 | 824.471 | 824.471 | 826.722 | 822.220 | -0.2807 | -8.7725 | 20.8452 | 8.4391 | -0.2701 |
| 17 | 817.440 | 817.440 | 819.623 | 815.257 | 0.1125 | -9.0836 | 19.9893 | 6.9944 | 0.0866 |
| 18 | 810.484 | 810.484 | 812.675 | 808.292 | -0.2620 | -9.6091 | 19.8281 | 5.0352 | -0.1373 |
| 19 | 803.567 | 803.567 | 805.724 | 801.410 | 0.1283 | -9.9764 | 19.2624 | 2.2247 | 0.0286 |
| 20 | 796.734 | 796.734 | 798.854 | 794.614 | 0.1326 | -10.3168 | 18.6733 | -1.3721 | -0.0176 |
| 21 | 788.898 | 788.898 | 792.067 | 785.728 | -0.3294 | -3.5169 | -31.3105 | -1.9132 | 0.1792 |
| 22 | 774.875 | 774.875 | 783.228 | 766.522 | 0.1494 | -10.8350 | -81.2064 | -11.1601 | -0.1539 |
| 23 | 752.546 | 764.801 | 764.108 | 765.494 | -0.3514 | -0.9483 | -112.1700 | -1.0811 | 0.4006 |
| 24 | 777.364 | 777.364 | 767.920 | 786.808 | -0.1039 | 7.5226 | -92.2440 | 7.0863 | 0.0979 |
| 25 | 791.056 | 791.056 | 789.346 | 792.766 | -0.1254 | 9.0779 | 14.8046 | 3.0593 | 0.0422 |
| 26 | 797.353 | 797.353 | 795.313 | 799.394 | -0.1427 | 9.9586 | 17.9947 | -0.6473 | -0.0093 |
| 27 | 804.117 | 804.117 | 801.950 | 806.285 | -0.5135 | 9.9452 | 19.3874 | -4.1173 | -0.2126 |
| 28 | 810.968 | 810.968 | 808.853 | 813.083 | -0.5187 | 9.2985 | 19.1476 | -6.5833 | -0.3672 |
| 29 | 817.810 | 817.810 | 815.666 | 819.955 | 0.2582 | 8.9337 | 19.6496 | -8.4781 | 0.2450 |
| 30 | 824.765 | 824.765 | 822.553 | 826.978 | -0.9175 | 8.6168 | 20.4900 | -9.7973 | -1.0432 |
| 31 | 831.834 | 831.834 | 829.591 | 834.077 | 0.2791 | 8.2030 | 20.9992 | -10.4260 | 0.3548 |
| 32 | 838.932 | 838.932 | 836.711 | 841.154 | -0.5143 | 7.6276 | 21.0013 | -10.3050 | -0.6949 |
| 33 | 846.092 | 846.092 | 843.808 | 848.376 | -0.1104 | 7.2438 | 21.7868 | -9.9820 | -0.1521 |
| 34 | 853.399 | 853.399 | 851.054 | 855.744 | -0.5121 | 6.8023 | 22.5507 | -9.1900 | -0.6918 |
| 35 | 860.809 | 860.809 | 858.446 | 863.173 | -0.1050 | 6.2691 | 22.8991 | -7.9554 | -0.1332 |
| 36 | 868.271 | 868.271 | 865.901 | 870.641 | -0.0832 | 5.7092 | 23.1225 | -6.4628 | -0.0942 |
| 37 | 875.738 | 875.738 | 873.399 | 878.077 | -0.4968 | 5.1064 | 22.9610 | -4.8000 | -0.4670 |
| 38 | 883.261 | 883.261 | 880.867 | 885.655 | -0.0812 | 4.5959 | 23.6295 | -3.1895 | -0.0563 |
| 39 | 890.862 | 890.862 | 888.477 | 893.247 | -0.0583 | 4.0202 | 23.6525 | -1.5799 | -0.0229 |
| 40 | 898.496 | 898.496 | 896.105 | 900.887 | -0.4782 | 3.4504 | 23.8116 | -0.1277 | -0.0177 |
| 41 | 907.436 | 907.436 | 903.784 | 911.088 | -0.2500 | 14.9990 | -32.7085 | 5.6096 | 0.0935 |
| 42 | 923.948 | 902.945 | 912.895 | 892.994 | -0.2114 | -13.1421 | -94.2855 | -11.3022 | 0.1818 |
| 43 | 949.792 | 877.101 | 890.045 | 864.157 | 0.5266 | -30.2930 | -113.2012 | -29.3842 | -0.5108 |
| 44 | 981.277 | 845.615 | 861.110 | 830.121 | 0.9085 | -52.9985 | -120.1485 | -42.7698 | -0.7332 |
| 45 | 1000.000 | 826.892 | 826.892 | 826.892 | 13.8069 | -805.4034 | 186.7769 | -130.4753 | -2.2367 |

Sum. Fx= -0.000000
Sum. Fy= -0.000000
Sum. Fz= -0.000000
Sum. Mx= -0.000000
Sum. My= 0.000000
Sum. Mz= -0.000000

Alargamientos teoricos de tendones
==========

Tesado por seccion No. 1: 52.7 cm.
Al retesar por seccion No. 45: 6.4 cm.
Tesado por seccion No. 45: 52.7 cm.

"TITULO:" LAV GELIDA. V-Riera de la Rierussa. Tendon 10 (Servicio).

CARACTERISTICAS DEL PRETENSADO

| NS | Po (t) | MU | K | INT.CUÑ.(mm) | Ep(Kg/cm2) | Ap(cm2) |
|---|---|---|---|---|---|---|
| 45 | 1000.000 | 0.2100 | 0.0015 | 5 | 1900000.0 | 70.17 |

COORDENADAS

| | | CENTRO DE GRAVEDAD DE LA SECCION | | | PRETENSADO |
|---|---|---|---|---|---|
| SECCION | NUDO | X (long.) | Y (tran.) | Z (prof.) | Zp (prof.) |
| 1 | 55 | -0.539 | 112.798 | -1.212 | -1.280 |
| 2 | 56 | -0.559 | 114.898 | -1.370 | -0.748 |
| 3 | 57 | -0.58 | 116.998 | -1.370 | -0.570 |
| 4 | 58 | -0.601 | 119.098 | -1.370 | -0.679 |
| 5 | 59 | -0.622 | 121.198 | -1.212 | -1.008 |
| 6 | 60 | -0.644 | 123.298 | -1.212 | -1.419 |
| 7 | 61 | -0.666 | 125.398 | -1.212 | -1.775 |
| 8 | 62 | -0.689 | 127.498 | -1.212 | -2.076 |
| 9 | 63 | -0.712 | 129.597 | -1.212 | -2.322 |
| 10 | 64 | -0.735 | 131.697 | -1.212 | -2.514 |
| 11 | 65 | -0.759 | 133.797 | -1.212 | -2.651 |
| 12 | 66 | -0.783 | 135.897 | -1.212 | -2.733 |
| 13 | 67 | -0.807 | 137.997 | -1.212 | -2.760 |
| 14 | 68 | -0.832 | 140.097 | -1.212 | -2.733 |
| 15 | 69 | -0.857 | 142.197 | -1.212 | -2.651 |
| 16 | 70 | -0.882 | 144.296 | -1.212 | -2.514 |
| 17 | 71 | -0.908 | 146.396 | -1.212 | -2.322 |
| 18 | 72 | -0.934 | 148.496 | -1.212 | -2.076 |
| 19 | 73 | -0.961 | 150.596 | -1.212 | -1.775 |
| 20 | 74 | -0.988 | 152.696 | -1.212 | -1.419 |
| 21 | 75 | -1.015 | 154.796 | -1.212 | -1.008 |
| 22 | 76 | -1.043 | 156.895 | -1.370 | -0.679 |
| 23 | 77 | -1.071 | 158.995 | -1.370 | -0.570 |
| 24 | 78 | -1.1 | 161.095 | -1.370 | -0.768 |
| 25 | 79 | -1.129 | 163.195 | -1.212 | -1.215 |
| 26 | 80 | -1.158 | 165.295 | -1.212 | -1.617 |
| 27 | 81 | -1.187 | 167.394 | -1.212 | -1.966 |
| 28 | 82 | -1.217 | 169.494 | -1.212 | -2.260 |
| 29 | 83 | -1.248 | 171.594 | -1.212 | -2.501 |
| 30 | 84 | -1.278 | 173.694 | -1.212 | -2.689 |
| 31 | 85 | -1.31 | 175.793 | -1.212 | -2.823 |
| 32 | 86 | -1.341 | 177.893 | -1.212 | -2.903 |
| 33 | 87 | -1.373 | 179.993 | -1.212 | -2.930 |
| 34 | 88 | -1.405 | 182.093 | -1.212 | -2.903 |
| 35 | 89 | -1.438 | 184.193 | -1.212 | -2.821 |
| 36 | 90 | -1.471 | 186.292 | -1.212 | -2.684 |
| 37 | 91 | -1.504 | 188.392 | -1.212 | -2.492 |
| 38 | 92 | -1.538 | 190.492 | -1.212 | -2.246 |
| 39 | 93 | -1.572 | 192.591 | -1.212 | -1.945 |
| 40 | 94 | -1.606 | 194.691 | -1.212 | -1.589 |
| 41 | 95 | -1.641 | 196.791 | -1.212 | -1.178 |
| 42 | 96 | -1.676 | 198.891 | -1.370 | -0.849 |
| 43 | 97 | -1.712 | 200.99 | -1.370 | -0.740 |
| 44 | 98 | -1.748 | 203.09 | -1.370 | -0.918 |
| 45 | 99 | -1.784 | 205.19 | -1.212 | -1.450 |

LAV GELIDA. V-Riera de la Rierussa. Tendon 10 (Servicio).

Numero de secciones
45

| | Lt | Lac | Anghor | Angver | Angulo | cosx | cosy | cosz |
|---|---|---|---|---|---|---|---|---|
| 1 | 2.166 | 0.000 | 0.00000 | 0.00000 | 0.00000 | -.00923 | 0.96934 | 0.24557 |
| 2 | 2.108 | 2.166 | 0.00048 | -0.16355 | 0.16355 | -.00996 | 0.99638 | 0.08445 |
| 3 | 2.103 | 4.274 | 0.00000 | -0.13641 | 0.13641 | -.00999 | 0.99861 | -.05183 |
| 4 | 2.126 | 6.377 | 0.00000 | -0.10354 | 0.10354 | -.00988 | 0.98790 | -.15477 |
| 5 | 2.140 | 8.503 | 0.00048 | -0.03787 | 0.03787 | -.01028 | 0.98133 | -.19206 |
| 6 | 2.130 | 10.643 | 0.00000 | 0.02534 | 0.02534 | -.01033 | 0.98588 | -.16713 |
| 7 | 2.122 | 12.773 | 0.00048 | 0.02556 | 0.02557 | -.01084 | 0.98983 | -.14187 |
| 8 | 2.113 | 14.894 | 0.00001 | 0.02570 | 0.02570 | -.01088 | 0.99314 | -.11640 |
| 9 | 2.109 | 17.008 | -0.00001 | 0.02549 | 0.02549 | -.01091 | 0.99579 | -.09104 |
| 10 | 2.105 | 19.117 | 0.00048 | 0.02603 | 0.02603 | -.01140 | 0.99781 | -.06510 |
| 11 | 2.102 | 21.221 | 0.00000 | 0.02612 | 0.02612 | -.01142 | 0.99917 | -.03902 |
| 12 | 2.100 | 23.323 | 0.00000 | 0.02617 | 0.02617 | -.01143 | 0.99985 | -.01286 |
| 13 | 2.100 | 25.423 | 0.00048 | 0.02571 | 0.02572 | -.01190 | 0.99985 | 0.01286 |
| 14 | 2.102 | 27.524 | 0.00000 | 0.02617 | 0.02617 | -.01189 | 0.99917 | 0.03902 |
| 15 | 2.104 | 29.625 | 0.00001 | 0.02615 | 0.02615 | -.01188 | 0.99781 | 0.06513 |
| 16 | 2.109 | 31.729 | 0.00047 | 0.02600 | 0.02600 | -.01233 | 0.99577 | 0.09104 |
| 17 | 2.115 | 33.838 | -0.00000 | 0.02543 | 0.02543 | -.01230 | 0.99313 | 0.11634 |
| 18 | 2.122 | 35.952 | 0.00048 | 0.02575 | 0.02575 | -.01273 | 0.98980 | 0.14187 |
| 19 | 2.130 | 38.074 | 0.00000 | 0.02556 | 0.02556 | -.01268 | 0.98585 | 0.16713 |
| 20 | 2.140 | 40.204 | 0.00000 | 0.02534 | 0.02534 | -.01262 | 0.98130 | 0.19206 |
| 21 | 2.125 | 42.344 | 0.00048 | -0.03779 | 0.03780 | -.01318 | 0.98785 | 0.15484 |
| 22 | 2.103 | 44.469 | -0.00001 | -0.10361 | 0.10361 | -.01331 | 0.99857 | 0.05183 |
| 23 | 2.110 | 46.572 | 0.00048 | -0.14585 | 0.14585 | -.01375 | 0.99549 | -.09386 |
| 24 | 2.147 | 48.682 | -0.00000 | -0.11571 | 0.11571 | -.01351 | 0.97800 | -.20817 |
| 25 | 2.138 | 50.829 | 0.00000 | 0.02058 | 0.02058 | -.01356 | 0.98208 | -.18800 |
| 26 | 2.128 | 52.967 | 0.00001 | 0.02438 | 0.02438 | -.01363 | 0.98637 | -.16400 |
| 27 | 2.121 | 55.095 | 0.00047 | 0.02566 | 0.02567 | -.01415 | 0.99024 | -.13863 |
| 28 | 2.114 | 57.216 | 0.00048 | 0.02483 | 0.02484 | -.01466 | 0.99337 | -.11400 |
| 29 | 2.109 | 59.330 | -0.00048 | 0.02497 | 0.02498 | -.01423 | 0.99592 | -.08916 |
| 30 | 2.104 | 61.438 | 0.00096 | 0.02553 | 0.02555 | -.01521 | 0.99785 | -.06370 |
| 31 | 2.102 | 63.542 | -0.00048 | 0.02567 | 0.02568 | -.01475 | 0.99917 | -.03806 |
| 32 | 2.100 | 65.644 | 0.00048 | 0.02522 | 0.02522 | -.01524 | 0.99980 | -.01285 |
| 33 | 2.100 | 67.744 | 0.00000 | 0.02571 | 0.02571 | -.01524 | 0.99980 | 0.01285 |
| 34 | 2.102 | 69.845 | 0.00048 | 0.02617 | 0.02617 | -.01570 | 0.99912 | 0.03901 |
| 35 | 2.104 | 71.946 | 0.00001 | 0.02615 | 0.02615 | -.01569 | 0.99775 | 0.06512 |
| 36 | 2.109 | 74.050 | -0.00001 | 0.02600 | 0.02600 | -.01565 | 0.99572 | 0.09104 |
| 37 | 2.115 | 76.159 | 0.00048 | 0.02543 | 0.02544 | -.01608 | 0.99308 | 0.11633 |
| 38 | 2.121 | 78.274 | 0.00001 | 0.02582 | 0.02582 | -.01603 | 0.98975 | 0.14193 |
| 39 | 2.130 | 80.395 | -0.00001 | 0.02549 | 0.02549 | -.01596 | 0.98581 | 0.16712 |
| 40 | 2.140 | 82.525 | 0.00048 | 0.02534 | 0.02534 | -.01635 | 0.98125 | 0.19204 |
| 41 | 2.126 | 84.665 | 0.00000 | -0.03786 | 0.03786 | -.01646 | 0.98782 | 0.15476 |
| 42 | 2.102 | 86.791 | 0.00048 | -0.10351 | 0.10351 | -.01713 | 0.99851 | 0.05185 |
| 43 | 2.108 | 88.893 | -0.00001 | -0.13642 | 0.13642 | -.01708 | 0.99628 | -.08445 |
| 44 | 2.167 | 91.001 | 0.00000 | -0.16353 | 0.16353 | -.01662 | 0.96924 | -.24554 |
| 45 | 0.000 | 93.167 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

ESTADO A
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 822.335 | 822.335 | 822.335 | -7.5916 | 797.1190 | 201.9368 | -54.2041 | -0.5162 |
| 2 | 979.929 | 842.406 | 825.579 | 859.232 | -0.9696 | 59.0002 | -129.3705 | 36.6981 | 0.6031 |
| 3 | 946.507 | 875.828 | 862.272 | 889.384 | -0.3202 | 32.0248 | -118.6652 | 25.6198 | 0.2562 |
| 4 | 920.011 | 902.324 | 892.322 | 912.326 | -0.1314 | 13.1433 | -95.1028 | 9.0820 | 0.0908 |
| 5 | 903.520 | 903.520 | 907.112 | 899.927 | -0.2389 | -18.1622 | -31.6385 | -3.7051 | 0.0487 |
| 6 | 894.663 | 894.663 | 897.043 | 892.282 | 0.0361 | -3.4415 | 23.7129 | 0.7124 | 0.0075 |
| 7 | 887.054 | 887.054 | 889.436 | 884.673 | -0.3750 | -4.0121 | 23.6144 | 2.2588 | -0.2111 |
| 8 | 879.489 | 879.489 | 881.862 | 877.116 | 0.0455 | -4.5694 | 23.4209 | 3.9480 | 0.0393 |
| 9 | 872.006 | 872.006 | 874.340 | 869.672 | 0.0603 | -5.0937 | 22.9141 | 5.6540 | 0.0670 |
| 10 | 864.562 | 864.562 | 866.925 | 862.199 | -0.3473 | -5.6942 | 23.0527 | 7.4139 | -0.4522 |
| 11 | 857.131 | 857.131 | 859.481 | 854.781 | 0.0713 | -6.2402 | 22.7757 | 8.9796 | 0.1026 |
| 12 | 849.755 | 849.755 | 852.090 | 847.420 | 0.0775 | -6.7792 | 22.4558 | 10.3112 | 0.1178 |
| 13 | 842.480 | 842.480 | 844.755 | 840.205 | -0.3175 | -7.2188 | 21.6948 | 11.1746 | -0.4915 |
| 14 | 835.267 | 835.267 | 837.562 | 832.972 | 0.0928 | -7.7974 | 21.6975 | 11.8598 | 0.1412 |
| 15 | 828.076 | 828.076 | 830.350 | 825.803 | 0.0940 | -8.2872 | 21.2827 | 11.9252 | 0.1352 |
| 16 | 820.960 | 820.960 | 823.201 | 818.719 | -0.2796 | -8.7351 | 20.7565 | 11.3731 | -0.3640 |
| 17 | 813.959 | 813.959 | 816.133 | 811.786 | 0.1120 | -9.0449 | 19.9042 | 10.0398 | 0.1243 |
| 18 | 807.032 | 807.032 | 809.215 | 804.850 | -0.2609 | -9.5682 | 19.7436 | 8.2669 | -0.2254 |
| 19 | 800.145 | 800.145 | 802.293 | 797.998 | 0.1277 | -9.9340 | 19.1804 | 5.5928 | 0.0719 |
| 20 | 793.341 | 793.341 | 795.452 | 791.230 | 0.1321 | -10.2729 | 18.5937 | 2.1265 | 0.0273 |
| 21 | 785.577 | 785.577 | 788.694 | 782.459 | -0.3282 | -3.4827 | -30.8059 | -0.7105 | 0.0670 |
| 22 | 771.575 | 771.575 | 779.969 | 763.182 | 0.1498 | -10.8654 | -81.5978 | -7.5080 | -0.1035 |
| 23 | 749.304 | 749.304 | 760.778 | 737.829 | 0.0181 | -27.5862 | -108.8091 | -22.0690 | -0.0144 |
| 24 | 726.670 | 726.670 | 735.498 | 717.842 | 0.4482 | -32.4536 | -80.1830 | -19.5371 | -0.2698 |
| 25 | 713.990 | 713.990 | 715.534 | 712.447 | 0.0327 | -2.3712 | 15.4978 | 0.0071 | 0.0001 |
| 26 | 708.353 | 708.353 | 710.166 | 706.540 | 0.0337 | -2.7707 | 18.0638 | 1.1221 | 0.0136 |
| 27 | 702.395 | 702.395 | 704.288 | 700.502 | -0.2810 | -3.2399 | 18.7611 | 2.4429 | -0.2119 |
| 28 | 696.461 | 696.461 | 698.277 | 694.644 | -0.2768 | -3.6261 | 17.9230 | 3.8002 | -0.2901 |
| 29 | 690.634 | 690.634 | 692.445 | 688.823 | 0.3862 | -4.0312 | 17.7762 | 5.1962 | 0.4978 |
| 30 | 684.810 | 684.810 | 686.647 | 682.973 | -0.5897 | -4.5025 | 17.9068 | 6.6502 | -0.8710 |
| 31 | 678.991 | 678.991 | 680.822 | 677.160 | 0.4020 | -4.9110 | 17.7323 | 7.9116 | 0.6476 |
| 32 | 673.246 | 673.246 | 675.029 | 671.463 | -0.2419 | -5.2664 | 17.1437 | 8.9055 | -0.4091 |
| 33 | 667.549 | 667.549 | 669.351 | 665.747 | 0.0871 | -5.7152 | 17.1893 | 9.8187 | 0.1496 |
| 34 | 661.834 | 661.834 | 663.652 | 660.015 | -0.2198 | -6.1834 | 17.1913 | 10.4561 | -0.3717 |
| 35 | 656.136 | 656.136 | 657.937 | 654.335 | 0.0983 | -6.5660 | 16.8627 | 10.5646 | 0.1582 |
| 36 | 650.498 | 650.498 | 652.273 | 648.722 | 0.1136 | -6.9166 | 16.4462 | 10.1812 | 0.1672 |
| 37 | 644.950 | 644.950 | 646.673 | 643.228 | -0.1915 | -7.1716 | 15.7700 | 9.1796 | -0.2451 |
| 38 | 639.457 | 639.457 | 641.191 | 637.724 | 0.1180 | -7.5915 | 15.6848 | 7.8497 | 0.1221 |
| 39 | 634.002 | 634.002 | 635.699 | 632.304 | 0.1320 | -7.8547 | 15.1564 | 5.7575 | 0.0968 |
| 40 | 628.614 | 628.614 | 630.287 | 626.942 | -0.1611 | -8.1442 | 14.7314 | 3.0704 | -0.0607 |
| 41 | 622.458 | 622.458 | 624.932 | 619.983 | 0.0460 | -2.7578 | -24.4536 | -0.0938 | -0.0016 |
| 42 | 611.365 | 611.365 | 618.009 | 604.721 | -0.1490 | -8.6104 | -64.5912 | -4.4860 | 0.0776 |
| 43 | 594.304 | 594.304 | 602.817 | 585.792 | 0.3513 | -20.2046 | -80.8242 | -12.7289 | -0.2213 |
| 44 | 574.086 | 574.086 | 583.943 | 564.230 | 0.6298 | -36.7377 | -89.0737 | -16.6054 | -0.2847 |
| 45 | 562.399 | 562.399 | 562.399 | 562.399 | 9.3750 | -546.8759 | 138.5419 | 130.1565 | 2.2313 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 437.601 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 177.665 Tn
Distancia afectada por clavado de cuñas: 7.829 m

Sum. Fx= -0.000000
Sum. Fy= 0.000000
Sum. Fz= 0.000000
Sum. Mx= 0.000000
Sum. My= 0.000000
Sum. Mz= -0.000000

ESTADO B
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 562.399 | 562.399 | 562.399 | 562.399 | -5.2088 | 546.9279 | 138.5551 | -37.1911 | -0.3542 |
| 2 | 574.087 | 574.087 | 564.229 | 583.944 | -0.6279 | 36.7435 | -89.0820 | 22.8545 | 0.3905 |
| 3 | 594.305 | 594.305 | 585.793 | 602.817 | -0.2021 | 20.2070 | -80.8173 | 16.1656 | 0.1617 |
| 4 | 611.368 | 611.368 | 604.722 | 618.014 | -0.0861 | 8.6082 | -64.6121 | 5.9483 | 0.0595 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 5 | 622.463 | 622.463 | 619.988 | 624.938 | -0.3205 | 2.7549 | -24.4553 | 0.5620 | 0.0654 |
| 6 | 628.620 | 628.620 | 626.947 | 630.293 | -0.0853 | 8.1403 | 14.7335 | -1.6851 | -0.0177 |
| 7 | 634.012 | 634.012 | 632.310 | 635.714 | -0.3830 | 7.8693 | 15.1987 | -4.4304 | -0.2156 |
| 8 | 639.465 | 639.465 | 637.740 | 641.191 | -0.0862 | 7.5651 | 15.6109 | -6.5362 | -0.0745 |
| 9 | 644.953 | 644.953 | 643.227 | 646.679 | -0.0753 | 7.1786 | 15.8060 | -7.9683 | -0.0836 |
| 10 | 650.506 | 650.506 | 648.728 | 652.284 | -0.3867 | 6.9211 | 16.4674 | -9.0113 | -0.5035 |
| 11 | 656.146 | 656.146 | 654.347 | 657.945 | -0.0750 | 6.5610 | 16.8440 | -9.4412 | -0.1079 |
| 12 | 661.841 | 661.841 | 660.023 | 663.660 | -0.0706 | 6.1785 | 17.1926 | -9.3975 | -0.1074 |
| 13 | 667.557 | 667.557 | 665.754 | 669.359 | -0.3850 | 5.7125 | 17.1903 | -8.8430 | -0.5960 |
| 14 | 673.321 | 673.321 | 671.471 | 675.171 | -0.0639 | 5.3716 | 17.7932 | -8.1703 | -0.0973 |
| 15 | 679.168 | 679.168 | 677.303 | 681.033 | -0.0628 | 4.9465 | 18.0680 | -7.1180 | -0.0903 |
| 16 | 685.055 | 685.055 | 683.185 | 686.925 | -0.3765 | 4.5012 | 18.2440 | -5.8606 | -0.4902 |
| 17 | 690.947 | 690.947 | 689.102 | 692.792 | -0.0499 | 4.0336 | 18.1173 | -4.4773 | -0.0554 |
| 18 | 696.878 | 696.878 | 694.993 | 698.762 | -0.3752 | 3.6206 | 18.5962 | -3.1282 | -0.3242 |
| 19 | 702.876 | 702.876 | 700.989 | 704.762 | -0.0408 | 3.1749 | 18.7103 | -1.7875 | -0.0230 |
| 20 | 708.904 | 708.904 | 707.018 | 710.791 | -0.0351 | 2.7270 | 18.7889 | -0.5645 | -0.0073 |
| 21 | 715.917 | 715.917 | 713.076 | 718.758 | -0.5051 | 12.5499 | -25.3040 | 2.5602 | 0.1030 |
| 22 | 728.983 | 728.983 | 721.053 | 736.913 | -0.3407 | 25.8888 | -73.3306 | 17.8892 | 0.2354 |
| 23 | 750.738 | 750.738 | 739.241 | 762.234 | -0.6694 | 23.0194 | -110.0856 | 18.4155 | 0.5355 |
| 24 | 774.054 | 774.054 | 764.650 | 783.458 | -0.1034 | 7.4906 | -91.8512 | 4.5093 | 0.0623 |
| 25 | 787.688 | 787.688 | 785.985 | 789.390 | -0.1248 | 9.0393 | 14.7416 | -0.0271 | -0.0004 |
| 26 | 793.958 | 793.958 | 791.926 | 795.990 | -0.1421 | 9.9162 | 17.9181 | -4.0161 | -0.0576 |
| 27 | 800.693 | 800.693 | 798.535 | 802.851 | -0.5114 | 9.9029 | 19.3048 | -7.4668 | -0.3856 |
| 28 | 807.515 | 807.515 | 805.409 | 809.621 | -0.5165 | 9.2589 | 19.0661 | -9.7033 | -0.5413 |
| 29 | 814.328 | 814.328 | 812.193 | 816.464 | 0.2571 | 8.8957 | 19.5660 | -11.4665 | 0.3314 |
| 30 | 821.253 | 821.253 | 819.050 | 823.457 | -0.9136 | 8.5801 | 20.4027 | -12.6728 | -1.3494 |
| 31 | 828.292 | 828.292 | 826.059 | 830.525 | 0.2779 | 8.1680 | 20.9098 | -13.1587 | 0.4477 |
| 32 | 835.360 | 835.360 | 833.148 | 837.572 | -0.5121 | 7.5952 | 20.9119 | -12.8434 | -0.8660 |
| 33 | 842.490 | 842.490 | 840.215 | 844.764 | -0.1099 | 7.2130 | 21.6940 | -12.3919 | -0.1888 |
| 34 | 849.765 | 849.765 | 847.430 | 852.100 | -0.5099 | 6.7734 | 22.4547 | -11.4538 | -0.8622 |
| 35 | 857.144 | 857.144 | 854.791 | 859.497 | -0.1045 | 6.2424 | 22.8016 | -10.0440 | -0.1682 |
| 36 | 864.574 | 864.574 | 862.214 | 866.933 | -0.0829 | 5.6849 | 23.0241 | -8.3681 | -0.1220 |
| 37 | 872.009 | 872.009 | 869.680 | 874.338 | -0.4947 | 5.0846 | 22.8632 | -6.5083 | -0.6332 |
| 38 | 879.500 | 879.500 | 877.116 | 881.884 | -0.0808 | 4.5763 | 23.5289 | -4.7319 | -0.0836 |
| 39 | 887.069 | 887.069 | 884.694 | 889.443 | -0.0581 | 4.0031 | 23.5518 | -2.9343 | -0.0426 |
| 40 | 894.671 | 894.671 | 892.290 | 897.051 | -0.4761 | 3.4357 | 23.7102 | -1.2953 | -0.1795 |
| 41 | 903.528 | 903.528 | 899.936 | 907.120 | -0.3024 | 18.1463 | -31.6385 | 0.6170 | 0.0103 |
| 42 | 920.016 | 902.326 | 912.325 | 892.327 | -0.2111 | -13.1451 | -95.0726 | -6.8486 | 0.1100 |
| 43 | 946.509 | 875.833 | 889.390 | 862.276 | 0.5562 | -32.0227 | -118.6763 | -20.1743 | -0.3504 |
| 44 | 979.931 | 842.411 | 859.235 | 825.586 | 1.0113 | -58.9910 | -129.3596 | -26.6639 | -0.4571 |
| 45 | 1000.000 | 822.342 | 822.342 | 822.342 | 13.6637 | -797.0494 | 201.9192 | 189.6978 | 3.2520 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 437.601 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 177.658 Tn
Distancia afectada por clavado de cuñas: 7.829 m

Sum. Fx= -0.000000
Sum. Fy= 0.000000
Sum. Fz= 0.000000
Sum. Mx= 0.000000
Sum. My= 0.000000
Sum. Mz= -0.000000

ESTADO C
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 822.335 | 822.335 | 822.335 | -7.5916 | 797.1190 | 201.9368 | -54.2041 | -0.5162 |
| 2 | 979.929 | 842.406 | 825.579 | 859.232 | -0.9696 | 59.0002 | -129.3705 | 36.6981 | 0.6031 |
| 3 | 946.507 | 875.828 | 862.272 | 889.384 | -0.3202 | 32.0248 | -118.6652 | 25.6198 | 0.2562 |
| 4 | 920.011 | 902.324 | 892.322 | 912.326 | -0.1314 | 13.1433 | -95.1028 | 9.0820 | 0.0908 |
| 5 | 903.520 | 903.520 | 907.112 | 899.927 | -0.2389 | -18.1622 | -31.6385 | -3.7051 | 0.0487 |
| 6 | 894.663 | 894.663 | 897.043 | 892.282 | 0.0361 | -3.4415 | 23.7129 | 0.7124 | 0.0075 |
| 7 | 887.054 | 887.054 | 889.436 | 884.673 | -0.3750 | -4.0121 | 23.6144 | 2.2588 | -0.2111 |
| 8 | 879.489 | 879.489 | 881.862 | 877.116 | 0.0455 | -4.5694 | 23.4209 | 3.9480 | 0.0393 |
| 9 | 872.006 | 872.006 | 874.340 | 869.672 | 0.0603 | -5.0937 | 22.9141 | 5.6540 | 0.0670 |
| 10 | 864.562 | 864.562 | 866.925 | 862.199 | -0.3473 | -5.6942 | 23.0527 | 7.4139 | -0.4522 |
| 11 | 857.131 | 857.131 | 859.481 | 854.781 | 0.0713 | -6.2402 | 22.7757 | 8.9796 | 0.1026 |
| 12 | 849.755 | 849.755 | 852.090 | 847.420 | 0.0775 | -6.7792 | 22.4558 | 10.3112 | 0.1178 |
| 13 | 842.480 | 842.480 | 844.755 | 840.205 | -0.3175 | -7.2188 | 21.6948 | 11.1746 | -0.4915 |
| 14 | 835.267 | 835.267 | 837.562 | 832.972 | 0.0928 | -7.7974 | 21.6975 | 11.8598 | 0.1412 |
| 15 | 828.076 | 828.076 | 830.350 | 825.803 | 0.0940 | -8.2872 | 21.2827 | 11.9252 | 0.1352 |
| 16 | 820.960 | 820.960 | 823.201 | 818.719 | -0.2796 | -8.7351 | 20.7565 | 11.3731 | -0.3640 |
| 17 | 813.959 | 813.959 | 816.133 | 811.786 | 0.1120 | -9.0449 | 19.9042 | 10.0398 | 0.1243 |
| 18 | 807.032 | 807.032 | 809.215 | 804.850 | -0.2609 | -9.5682 | 19.7436 | 8.2669 | -0.2254 |
| 19 | 800.145 | 800.145 | 802.293 | 797.998 | 0.1277 | -9.9340 | 19.1804 | 5.5928 | 0.0719 |
| 20 | 793.341 | 793.341 | 795.452 | 791.230 | 0.1321 | -10.2729 | 18.5937 | 2.1265 | 0.0273 |
| 21 | 785.577 | 785.577 | 788.694 | 782.459 | -0.3282 | -3.4827 | -30.8059 | -0.7105 | 0.0670 |
| 22 | 771.575 | 771.575 | 779.969 | 763.182 | 0.1498 | -10.8654 | -81.5978 | -7.5080 | -0.1035 |
| 23 | 749.304 | 761.506 | 760.778 | 762.234 | -0.3507 | -0.8867 | -111.3265 | -0.7093 | 0.2805 |
| 24 | 774.054 | 774.054 | 764.650 | 783.458 | -0.1034 | 7.4906 | -91.8512 | 4.5093 | 0.0623 |
| 25 | 787.688 | 787.688 | 785.985 | 789.390 | -0.1248 | 9.0393 | 14.7416 | -0.0271 | -0.0004 |
| 26 | 793.958 | 793.958 | 791.926 | 795.990 | -0.1421 | 9.9162 | 17.9181 | -4.0161 | -0.0576 |
| 27 | 800.693 | 800.693 | 798.535 | 802.851 | -0.5114 | 9.9029 | 19.3048 | -7.4668 | -0.3856 |
| 28 | 807.515 | 807.515 | 805.409 | 809.621 | -0.5165 | 9.2589 | 19.0661 | -9.7033 | -0.5413 |
| 29 | 814.328 | 814.328 | 812.193 | 816.464 | 0.2571 | 8.8957 | 19.5660 | -11.4665 | 0.3314 |
| 30 | 821.253 | 821.253 | 819.050 | 823.457 | -0.9136 | 8.5801 | 20.4027 | -12.6728 | -1.3494 |
| 31 | 828.292 | 828.292 | 826.059 | 830.525 | 0.2779 | 8.1680 | 20.9098 | -13.1587 | 0.4477 |
| 32 | 835.360 | 835.360 | 833.148 | 837.572 | -0.5121 | 7.5952 | 20.9119 | -12.8434 | -0.8660 |
| 33 | 842.490 | 842.490 | 840.215 | 844.764 | -0.1099 | 7.2130 | 21.6940 | -12.3919 | -0.1888 |
| 34 | 849.765 | 849.765 | 847.430 | 852.100 | -0.5099 | 6.7734 | 22.4547 | -11.4538 | -0.8622 |
| 35 | 857.144 | 857.144 | 854.791 | 859.497 | -0.1045 | 6.2424 | 22.8016 | -10.0440 | -0.1682 |
| 36 | 864.574 | 864.574 | 862.214 | 866.933 | -0.0829 | 5.6849 | 23.0241 | -8.3681 | -0.1220 |
| 37 | 872.009 | 872.009 | 869.680 | 874.338 | -0.4947 | 5.0846 | 22.8632 | -6.5083 | -0.6332 |
| 38 | 879.500 | 879.500 | 877.116 | 881.884 | -0.0808 | 4.5763 | 23.5289 | -4.7319 | -0.0836 |
| 39 | 887.069 | 887.069 | 884.694 | 889.443 | -0.0581 | 4.0031 | 23.5518 | -2.9343 | -0.0426 |
| 40 | 894.671 | 894.671 | 892.290 | 897.051 | -0.4761 | 3.4357 | 23.7102 | -1.2953 | -0.1795 |
| 41 | 903.528 | 903.528 | 899.936 | 907.120 | -0.3024 | 18.1463 | -31.6385 | 0.6170 | 0.0103 |
| 42 | 920.016 | 902.326 | 912.325 | 892.327 | -0.2111 | -13.1451 | -95.0726 | -6.8486 | 0.1100 |
| 43 | 946.509 | 875.833 | 889.390 | 862.276 | 0.5562 | -32.0227 | -118.6763 | -20.1743 | -0.3504 |
| 44 | 979.931 | 842.411 | 859.235 | 825.586 | 1.0113 | -58.9910 | -129.3596 | -26.6639 | -0.4571 |
| 45 | 1000.000 | 822.342 | 822.342 | 822.342 | 13.6637 | -797.0494 | 201.9192 | 189.6978 | 3.2520 |

Sum. Fx= 0.000000
Sum. Fy= 0.000000
Sum. Fz= 0.000000
Sum. Mx= -0.000000
Sum. My= 0.000000
Sum. Mz= -0.000000

Alargamientos teoricos de tendones
==========

Tesado por seccion No. 1: 52.5 cm.
Al retesar por seccion No. 45: 6.4 cm.
Tesado por seccion No. 45: 52.5 cm.

"TITULO:" LAV GELIDA. V-Riera de la Rierussa. Tendon 11 (Servicio).

CARACTERISTICAS DEL PRETENSADO

| NS | Po (t) | MU | K | INT.CUÑ.(mm) | Ep(Kg/cm2) | Ap(cm2) |
|---|---|---|---|---|---|---|
| 39 | 1000.000 | 0.2100 | 0.0015 | 5 | 1900000.0 | 70.17 |

COORDENADAS

| | | CENTRO DE GRAVEDAD DE LA SECCION | | | PRETENSADO |
|---|---|---|---|---|---|
| SECCION | NUDO | X (long.) | Y (tran.) | Z (prof.) | Zp (prof.) |
| 1 | 75 | -1.015 | 154.796 | -1.212 | -0.880 |
| 2 | 76 | -1.043 | 156.895 | -1.370 | -0.393 |
| 3 | 77 | -1.071 | 158.995 | -1.370 | -0.230 |
| 4 | 78 | -1.1 | 161.095 | -1.370 | -0.340 |
| 5 | 79 | -1.129 | 163.195 | -1.212 | -0.668 |
| 6 | 80 | -1.158 | 165.295 | -1.212 | -1.079 |
| 7 | 81 | -1.187 | 167.394 | -1.212 | -1.435 |
| 8 | 82 | -1.217 | 169.494 | -1.212 | -1.736 |
| 9 | 83 | -1.248 | 171.594 | -1.212 | -1.982 |
| 10 | 84 | -1.278 | 173.694 | -1.212 | -2.174 |
| 11 | 85 | -1.31 | 175.793 | -1.212 | -2.311 |
| 12 | 86 | -1.341 | 177.893 | -1.212 | -2.393 |
| 13 | 87 | -1.373 | 179.993 | -1.212 | -2.420 |
| 14 | 88 | -1.405 | 182.093 | -1.212 | -2.393 |
| 15 | 89 | -1.438 | 184.193 | -1.212 | -2.311 |
| 16 | 90 | -1.471 | 186.292 | -1.212 | -2.174 |
| 17 | 91 | -1.504 | 188.392 | -1.212 | -1.982 |
| 18 | 92 | -1.538 | 190.492 | -1.212 | -1.736 |
| 19 | 93 | -1.572 | 192.591 | -1.212 | -1.435 |
| 20 | 94 | -1.606 | 194.691 | -1.212 | -1.079 |
| 21 | 95 | -1.641 | 196.791 | -1.212 | -0.668 |
| 22 | 96 | -1.676 | 198.891 | -1.370 | -0.340 |
| 23 | 97 | -1.712 | 200.99 | -1.370 | -0.230 |
| 24 | 98 | -1.748 | 203.09 | -1.370 | -0.403 |
| 25 | 99 | -1.784 | 205.19 | -1.212 | -0.753 |
| 26 | 100 | -1.821 | 207.289 | -1.212 | -1.057 |
| 27 | 101 | -1.858 | 209.389 | -1.212 | -1.315 |
| 28 | 102 | -1.895 | 211.489 | -1.212 | -1.526 |
| 29 | 103 | -1.933 | 213.588 | -1.212 | -1.689 |
| 30 | 104 | -1.971 | 215.688 | -1.212 | -1.806 |
| 31 | 105 | -2.01 | 217.788 | -1.212 | -1.877 |
| 32 | 106 | -2.049 | 219.887 | -1.212 | -1.900 |
| 33 | 107 | -2.088 | 221.987 | -1.212 | -1.900 |
| 34 | 108 | -2.128 | 224.087 | -1.212 | -1.900 |
| 35 | 109 | -2.168 | 226.186 | -1.212 | -1.900 |
| 36 | 110 | -2.208 | 228.286 | -1.212 | -1.900 |
| 37 | 111 | -2.249 | 230.385 | -1.212 | -1.900 |
| 38 | 112 | -2.29 | 232.485 | -1.212 | -1.900 |
| 39 | 113 | -2.320 | 233.985 | -1.370 | -1.900 |

LAV GELIDA. V-Riera de la Rierussa. Tendon 11 (Servicio).

Numero de secciones
39

| | Lt | Lac | Anghor | Angver | Angulo | cosx | cosy | cosz |
|---|---|---|---|---|---|---|---|---|
| 1 | 2.155 | 0.000 | 0.00000 | 0.00000 | 0.00000 | -.01299 | 0.97404 | 0.22599 |
| 2 | 2.107 | 2.155 | -0.00001 | -0.15051 | 0.15051 | -.01329 | 0.99691 | 0.07738 |
| 3 | 2.103 | 4.261 | 0.00048 | -0.12979 | 0.12979 | -.01379 | 0.99854 | -.05230 |
| 4 | 2.126 | 6.365 | -0.00000 | -0.10260 | 0.10260 | -.01364 | 0.98793 | -.15431 |
| 5 | 2.140 | 8.490 | 0.00000 | -0.03833 | 0.03833 | -.01355 | 0.98129 | -.19205 |
| 6 | 2.129 | 10.630 | 0.00001 | 0.02526 | 0.02526 | -.01362 | 0.98583 | -.16720 |
| 7 | 2.122 | 12.759 | 0.00047 | 0.02564 | 0.02565 | -.01414 | 0.98978 | -.14187 |
| 8 | 2.115 | 14.881 | 0.00048 | 0.02575 | 0.02575 | -.01466 | 0.99310 | -.11633 |
| 9 | 2.109 | 16.996 | -0.00048 | 0.02543 | 0.02544 | -.01422 | 0.99575 | -.09104 |
| 10 | 2.104 | 19.105 | 0.00096 | 0.02600 | 0.02601 | -.01521 | 0.99776 | -.06512 |
| 11 | 2.102 | 21.208 | -0.00048 | 0.02615 | 0.02615 | -.01475 | 0.99913 | -.03901 |
| 12 | 2.100 | 23.310 | 0.00048 | 0.02617 | 0.02617 | -.01524 | 0.99980 | -.01285 |
| 13 | 2.100 | 25.411 | 0.00000 | 0.02571 | 0.02571 | -.01524 | 0.99980 | 0.01285 |
| 14 | 2.102 | 27.511 | 0.00048 | 0.02617 | 0.02617 | -.01570 | 0.99912 | 0.03901 |
| 15 | 2.104 | 29.613 | 0.00001 | 0.02615 | 0.02615 | -.01569 | 0.99775 | 0.06512 |
| 16 | 2.109 | 31.717 | -0.00001 | 0.02600 | 0.02600 | -.01565 | 0.99572 | 0.09104 |
| 17 | 2.115 | 33.826 | 0.00048 | 0.02543 | 0.02544 | -.01608 | 0.99308 | 0.11633 |
| 18 | 2.121 | 35.940 | 0.00001 | 0.02582 | 0.02582 | -.01603 | 0.98975 | 0.14193 |
| 19 | 2.130 | 38.061 | -0.00001 | 0.02549 | 0.02549 | -.01596 | 0.98581 | 0.16712 |
| 20 | 2.140 | 40.191 | 0.00048 | 0.02534 | 0.02534 | -.01635 | 0.98125 | 0.19204 |
| 21 | 2.126 | 42.331 | 0.00000 | -0.03833 | 0.03833 | -.01646 | 0.98789 | 0.15430 |
| 22 | 2.102 | 44.457 | 0.00048 | -0.10257 | 0.10257 | -.01713 | 0.99848 | 0.05233 |
| 23 | 2.107 | 46.559 | -0.00001 | -0.13453 | 0.13453 | -.01708 | 0.99648 | -.08209 |
| 24 | 2.129 | 48.667 | 0.00000 | -0.08294 | 0.08294 | -.01691 | 0.98625 | -.16438 |
| 25 | 2.121 | 50.796 | 0.00048 | 0.02132 | 0.02132 | -.01744 | 0.98952 | -.14331 |
| 26 | 2.116 | 52.917 | -0.00001 | 0.02158 | 0.02158 | -.01748 | 0.99239 | -.12192 |
| 27 | 2.111 | 55.033 | 0.00000 | 0.02210 | 0.02210 | -.01753 | 0.99484 | -.09996 |
| 28 | 2.106 | 57.144 | 0.00048 | 0.02264 | 0.02264 | -.01805 | 0.99684 | -.07741 |
| 29 | 2.104 | 59.250 | -0.00001 | 0.02184 | 0.02184 | -.01806 | 0.99829 | -.05562 |
| 30 | 2.102 | 61.353 | 0.00048 | 0.02186 | 0.02186 | -.01856 | 0.99926 | -.03378 |
| 31 | 2.099 | 63.455 | 0.00001 | 0.02284 | 0.02284 | -.01858 | 0.99977 | -.01096 |
| 32 | 2.100 | 65.555 | -0.00001 | 0.01096 | 0.01096 | -.01857 | 0.99983 | 0.00000 |
| 33 | 2.100 | 67.655 | 0.00048 | 0.00000 | 0.00048 | -.01904 | 0.99982 | 0.00000 |
| 34 | 2.099 | 69.755 | 0.00001 | 0.00000 | 0.00001 | -.01905 | 0.99982 | 0.00000 |
| 35 | 2.100 | 71.855 | -0.00001 | 0.00000 | 0.00001 | -.01904 | 0.99982 | 0.00000 |
| 36 | 2.099 | 73.955 | 0.00049 | 0.00000 | 0.00049 | -.01953 | 0.99981 | 0.00000 |
| 37 | 2.100 | 76.054 | -0.00001 | 0.00000 | 0.00001 | -.01952 | 0.99981 | 0.00000 |
| 38 | 1.500 | 78.155 | 0.00048 | 0.00000 | 0.00048 | -.02000 | 0.99980 | 0.00000 |
| 39 | 0.000 | 79.655 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

ESTADO A
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 826.848 | 826.848 | 826.848 | -10.7436 | 805.3845 | 186.8615 | 267.3877 | 3.5669 |
| 2 | 981.267 | 845.580 | 830.075 | 861.086 | -0.7021 | 53.0435 | -120.2311 | 51.8235 | 0.6860 |
| 3 | 949.772 | 877.075 | 864.133 | 890.017 | -0.8270 | 30.2863 | -113.1821 | 34.5264 | 0.9428 |
| 4 | 923.927 | 902.921 | 892.968 | 912.873 | -0.1815 | 13.1398 | -94.3093 | 13.5340 | 0.1869 |
| 5 | 907.413 | 907.413 | 911.065 | 903.761 | 0.2072 | -15.0019 | -32.7086 | -8.1610 | -0.1127 |
| 6 | 898.481 | 898.481 | 900.864 | 896.098 | 0.0419 | -3.4536 | 23.7412 | -0.4593 | -0.0056 |
| 7 | 890.841 | 890.841 | 893.240 | 888.443 | -0.3573 | -4.0320 | 23.7859 | 0.8991 | -0.0797 |
| 8 | 883.231 | 883.231 | 885.620 | 880.843 | -0.3508 | -4.6002 | 23.5699 | 2.4105 | -0.1838 |
| 9 | 875.714 | 875.714 | 878.053 | 873.375 | 0.4895 | -5.1069 | 22.9609 | 3.9323 | 0.3769 |
| 10 | 868.245 | 868.245 | 870.617 | 865.873 | -0.7473 | -5.7245 | 23.1234 | 5.5070 | -0.7189 |
| 11 | 860.782 | 860.782 | 863.145 | 858.418 | 0.5101 | -6.2635 | 22.8983 | 6.8836 | 0.5606 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 12 | 853.371 | 853.371 | 855.716 | 851.026 | -0.3046 | -6.8146 | 22.5504 | 8.0481 | -0.3597 |
| 13 | 846.065 | 846.065 | 848.349 | 843.781 | 0.1104 | -7.2436 | 21.7860 | 8.7502 | 0.1333 |
| 14 | 838.822 | 838.822 | 841.127 | 836.516 | -0.2786 | -7.8369 | 21.7886 | 9.2554 | -0.3290 |
| 15 | 831.600 | 831.600 | 833.883 | 829.317 | 0.1246 | -8.3218 | 21.3722 | 9.1457 | 0.1369 |
| 16 | 824.454 | 824.454 | 826.704 | 822.204 | 0.1439 | -8.7662 | 20.8442 | 8.4331 | 0.1385 |
| 17 | 817.424 | 817.424 | 819.607 | 815.240 | -0.2427 | -9.0894 | 19.9872 | 6.9988 | -0.1869 |
| 18 | 810.462 | 810.462 | 812.658 | 808.265 | 0.1496 | -9.6217 | 19.8793 | 5.0418 | 0.0784 |
| 19 | 803.547 | 803.547 | 805.698 | 801.396 | 0.1674 | -9.9552 | 19.2095 | 2.2200 | 0.0373 |
| 20 | 796.719 | 796.719 | 798.839 | 794.599 | -0.2042 | -10.3221 | 18.6709 | -1.3728 | 0.0272 |
| 21 | 788.877 | 788.877 | 792.052 | 785.703 | 0.0586 | -3.5146 | -31.3657 | -1.9119 | -0.0319 |
| 22 | 774.857 | 774.857 | 783.201 | 766.512 | -0.1901 | -10.8361 | -81.1239 | -11.1611 | 0.1958 |
| 23 | 753.456 | 753.456 | 764.099 | 742.813 | 0.4374 | -25.1517 | -101.0870 | -28.6729 | -0.4987 |
| 24 | 734.076 | 734.076 | 740.469 | 727.683 | 0.3860 | -22.5177 | -58.6351 | -21.7746 | -0.3733 |
| 25 | 723.743 | 723.743 | 725.363 | 722.122 | -0.2927 | -3.1228 | 16.1234 | -1.4333 | 0.1344 |
| 26 | 718.201 | 718.201 | 719.828 | 716.573 | 0.0666 | -3.4402 | 16.1241 | -0.5332 | -0.0103 |
| 27 | 712.649 | 712.649 | 714.302 | 710.995 | 0.0668 | -3.7929 | 16.2966 | 0.3907 | 0.0069 |
| 28 | 707.066 | 707.066 | 708.747 | 705.385 | -0.2674 | -4.1709 | 16.4651 | 1.3097 | -0.0840 |
| 29 | 701.552 | 701.552 | 703.161 | 699.943 | 0.0858 | -4.4081 | 15.6740 | 2.1026 | 0.0409 |
| 30 | 696.140 | 696.140 | 697.738 | 694.542 | -0.2451 | -4.7194 | 15.4654 | 2.8033 | -0.1456 |
| 31 | 690.700 | 690.700 | 692.356 | 689.044 | 0.0894 | -5.1423 | 15.9162 | 3.4196 | 0.0595 |
| 32 | 686.088 | 686.088 | 686.877 | 685.299 | 0.0749 | -3.7029 | 7.5485 | 2.5476 | 0.0515 |
| 33 | 683.109 | 683.109 | 683.143 | 683.075 | -0.2838 | -2.2297 | 0.0000 | 1.5340 | -0.1953 |
| 34 | 680.925 | 680.925 | 680.926 | 680.925 | 0.0348 | -2.1497 | 0.0000 | 1.4790 | 0.0239 |
| 35 | 678.783 | 678.783 | 678.784 | 678.783 | 0.0470 | -2.1417 | 0.0000 | 1.4735 | 0.0323 |
| 36 | 676.613 | 676.613 | 676.647 | 676.578 | -0.2863 | -2.2101 | 0.0000 | 1.5205 | -0.1970 |
| 37 | 674.451 | 674.451 | 674.451 | 674.450 | 0.0478 | -2.1281 | 0.0000 | 1.4641 | 0.0329 |
| 38 | 672.295 | 672.295 | 672.328 | 672.261 | -0.2772 | -2.1947 | 0.0000 | 1.5099 | -0.1907 |
| 39 | 670.750 | 670.750 | 670.750 | 670.750 | 13.4425 | -672.1267 | 0.0000 | 356.2271 | 7.1245 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 329.250 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 173.152 Tn
Distancia afectada por clavado de cuñas: 7.939 m

Sum. Fx= -0.000000
Sum. Fy= -0.000000
Sum. Fz= 0.000000
Sum. Mx= -0.000000
Sum. My= 0.000000
Sum. Mz= -0.000000

ESTADO B
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 670.750 | 670.750 | 670.750 | 670.750 | -8.7436 | 655.4541 | 152.0753 | 217.6108 | 2.9029 |
| 2 | 683.726 | 683.726 | 672.922 | 694.530 | -0.5175 | 39.1228 | -98.1629 | 38.2230 | 0.5056 |
| 3 | 706.353 | 706.353 | 696.728 | 715.978 | -0.6430 | 22.6119 | -91.4794 | 25.7776 | 0.7330 |
| 4 | 726.062 | 726.062 | 718.240 | 733.883 | -0.1402 | 10.1508 | -76.0365 | 10.4553 | 0.1444 |
| 5 | 739.201 | 739.201 | 736.227 | 742.176 | -0.0455 | 3.2931 | -29.3917 | 1.7915 | 0.0247 |
| 6 | 746.543 | 746.543 | 744.563 | 748.523 | -0.1380 | 9.6436 | 17.4410 | 1.2826 | 0.0184 |
| 7 | 752.945 | 752.945 | 750.918 | 754.973 | -0.4814 | 9.3659 | 18.1055 | -2.0886 | -0.1074 |
| 8 | 759.433 | 759.433 | 757.379 | 761.487 | -0.4897 | 8.9941 | 18.5799 | -4.7129 | -0.2566 |
| 9 | 765.952 | 765.952 | 763.906 | 767.997 | 0.2396 | 8.5168 | 18.7291 | -6.5580 | 0.1845 |
| 10 | 772.541 | 772.541 | 770.431 | 774.651 | -0.8613 | 8.2067 | 19.5326 | -7.8948 | -0.8286 |
| 11 | 779.239 | 779.239 | 777.099 | 781.379 | 0.2596 | 7.8042 | 20.0264 | -8.5768 | 0.2853 |
| 12 | 786.006 | 786.006 | 783.846 | 788.166 | -0.4847 | 7.3322 | 20.4172 | -8.6594 | -0.5724 |
| 13 | 792.793 | 792.793 | 790.653 | 794.934 | -0.1034 | 6.7875 | 20.4143 | -8.1993 | -0.1249 |
| 14 | 799.640 | 799.640 | 797.442 | 801.837 | -0.4798 | 6.3738 | 21.1301 | -7.5275 | -0.5667 |
| 15 | 806.583 | 806.583 | 804.369 | 808.798 | -0.0984 | 5.8741 | 21.4566 | -6.4557 | -0.1081 |
| 16 | 813.575 | 813.575 | 811.354 | 815.795 | -0.0780 | 5.3495 | 21.6660 | -5.1462 | -0.0750 |
| 17 | 820.572 | 820.572 | 818.380 | 822.763 | -0.4655 | 4.7847 | 21.5146 | -3.6842 | -0.3584 |
| 18 | 827.621 | 827.621 | 825.377 | 829.864 | -0.0761 | 4.3064 | 22.1410 | -2.2565 | -0.0399 |
| 19 | 834.743 | 834.743 | 832.508 | 836.977 | -0.0546 | 3.7670 | 22.1625 | -0.8400 | -0.0122 |
| 20 | 841.896 | 841.896 | 839.656 | 844.137 | -0.4480 | 3.2330 | 22.3116 | 0.4300 | 0.0596 |
| 21 | 850.273 | 850.273 | 846.851 | 853.694 | -0.2512 | 15.0749 | -30.4886 | 8.2007 | 0.1367 |
| 22 | 865.744 | 865.744 | 856.421 | 875.068 | -0.9321 | 30.4528 | -86.2107 | 31.3664 | 0.9600 |
| 23 | 890.409 | 890.409 | 877.831 | 902.986 | -0.4412 | 26.1547 | -120.2953 | 29.8164 | 0.5030 |
| 24 | 913.803 | 913.803 | 905.845 | 921.761 | -0.1602 | 9.3426 | -77.6380 | 9.0343 | 0.1549 |
| 25 | 926.784 | 926.784 | 924.709 | 928.859 | -0.6193 | 10.0598 | 18.4572 | 4.6175 | 0.2842 |
| 26 | 933.936 | 933.936 | 931.819 | 936.052 | -0.1653 | 9.8210 | 19.0545 | 1.5222 | 0.0256 |
| 27 | 941.212 | 941.212 | 939.028 | 943.396 | -0.1696 | 9.6244 | 19.8893 | -0.9913 | -0.0175 |
| 28 | 948.644 | 948.644 | 946.388 | 950.899 | -0.6264 | 9.3865 | 20.7563 | -2.9474 | -0.1967 |
| 29 | 956.100 | 956.100 | 953.907 | 958.292 | -0.1508 | 8.7867 | 20.3746 | -4.1912 | -0.0719 |
| 30 | 963.533 | 963.533 | 961.321 | 965.744 | -0.5254 | 3.6813 | 20.8970 | -2.1867 | -0.3121 |
| 31 | 971.122 | 961.745 | 964.073 | 959.416 | 0.1259 | -7.2334 | 22.0938 | 4.8102 | 0.0837 |
| 32 | 977.645 | 955.221 | 956.346 | 954.097 | 0.1065 | -5.2792 | 10.4768 | 3.6321 | 0.0733 |
| 33 | 981.908 | 950.959 | 951.008 | 950.910 | -0.3917 | -3.2047 | 0.0000 | 2.2048 | -0.2695 |
| 34 | 985.056 | 947.810 | 947.811 | 947.810 | 0.0506 | -3.1084 | 0.0000 | 2.1386 | 0.0348 |
| 35 | 988.165 | 944.702 | 944.703 | 944.701 | 0.0680 | -3.1194 | 0.0000 | 2.1461 | 0.0468 |
| 36 | 991.335 | 941.532 | 941.583 | 941.482 | -0.3938 | -3.2361 | 0.0000 | 2.2265 | -0.2710 |
| 37 | 994.513 | 938.354 | 938.355 | 938.353 | 0.0700 | -3.1394 | 0.0000 | 2.1599 | 0.0482 |
| 38 | 997.702 | 935.165 | 935.214 | 935.115 | -0.3981 | -2.3560 | 0.0000 | 1.6209 | -0.2739 |
| 39 | 1000.000 | 932.867 | 932.867 | 932.867 | 18.6536 | -932.6803 | 0.0000 | 494.3205 | 9.8864 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 329.250 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 67.133 Tn
Distancia afectada por clavado de cuñas: 16.846 m

Sum. Fx= 0.000000
Sum. Fy= 0.000000
Sum. Fz= 0.000000
Sum. Mx= 0.000000
Sum. My= 0.000000
Sum. Mz= 0.000000

ESTADO C
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 826.848 | 826.848 | 826.848 | -10.7436 | 805.3845 | 186.8615 | 267.3877 | 3.5669 |
| 2 | 981.267 | 845.580 | 830.075 | 861.086 | -0.7021 | 53.0435 | -120.2311 | 51.8235 | 0.6860 |
| 3 | 949.772 | 877.075 | 864.133 | 890.017 | -0.8270 | 30.2863 | -113.1821 | 34.5264 | 0.9428 |
| 4 | 923.927 | 902.921 | 892.968 | 912.873 | -0.1815 | 13.1398 | -94.3093 | 13.5340 | 0.1869 |
| 5 | 907.413 | 907.413 | 911.065 | 903.761 | 0.2072 | -15.0019 | -32.7086 | -8.1610 | -0.1127 |
| 6 | 898.481 | 898.481 | 900.864 | 896.098 | 0.0419 | -3.4536 | 23.7412 | -0.4593 | -0.0056 |
| 7 | 890.841 | 890.841 | 893.240 | 888.443 | -0.3573 | -4.0320 | 23.7859 | 0.8991 | -0.0797 |
| 8 | 883.231 | 883.231 | 885.620 | 880.843 | -0.3508 | -4.6002 | 23.5699 | 2.4105 | -0.1838 |
| 9 | 875.714 | 875.714 | 878.053 | 873.375 | 0.4895 | -5.1069 | 22.9609 | 3.9323 | 0.3769 |
| 10 | 868.245 | 868.245 | 870.617 | 865.873 | -0.7473 | -5.7245 | 23.1234 | 5.5070 | -0.7189 |
| 11 | 860.782 | 860.782 | 863.145 | 858.418 | 0.5101 | -6.2635 | 22.8983 | 6.8836 | 0.5606 |
| 12 | 853.371 | 853.371 | 855.716 | 851.026 | -0.3046 | -6.8146 | 22.5504 | 8.0481 | -0.3597 |
| 13 | 846.065 | 846.065 | 848.349 | 843.781 | 0.1104 | -7.2436 | 21.7860 | 8.7502 | 0.1333 |
| 14 | 838.822 | 838.822 | 841.127 | 836.516 | -0.2786 | -7.8369 | 21.7886 | 9.2554 | -0.3290 |
| 15 | 831.600 | 831.600 | 833.883 | 829.317 | 0.1246 | -8.3218 | 21.3722 | 9.1457 | 0.1369 |
| 16 | 824.454 | 824.454 | 826.704 | 822.204 | 0.1439 | -8.7662 | 20.8442 | 8.4331 | 0.1385 |
| 17 | 817.424 | 821.185 | 819.607 | 822.763 | -0.4057 | 0.9775 | 21.1665 | -0.7527 | -0.3124 |
| 18 | 827.621 | 827.621 | 825.377 | 829.864 | -0.0761 | 4.3064 | 22.1410 | -2.2565 | -0.0399 |
| 19 | 834.743 | 834.743 | 832.508 | 836.977 | -0.0546 | 3.7670 | 22.1625 | -0.8400 | -0.0122 |
| 20 | 841.896 | 841.896 | 839.656 | 844.137 | -0.4480 | 3.2330 | 22.3116 | 0.4300 | 0.0596 |
| 21 | 850.273 | 850.273 | 846.851 | 853.694 | -0.2512 | 15.0749 | -30.4886 | 8.2007 | 0.1367 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 22 | 865.744 | 865.744 | 856.421 | 875.068 | -0.9321 | 30.4528 | -86.2107 | 31.3664 | 0.9600 |
| 23 | 890.409 | 890.409 | 877.831 | 902.986 | -0.4412 | 26.1547 | -120.2953 | 29.8164 | 0.5030 |
| 24 | 913.803 | 913.803 | 905.845 | 921.761 | -0.1602 | 9.3426 | -77.6380 | 9.0343 | 0.1549 |
| 25 | 926.784 | 926.784 | 924.709 | 928.859 | -0.6193 | 10.0598 | 18.4572 | 4.6175 | 0.2842 |
| 26 | 933.936 | 933.936 | 931.819 | 936.052 | -0.1653 | 9.8210 | 19.0545 | 1.5222 | 0.0256 |
| 27 | 941.212 | 941.212 | 939.028 | 943.396 | -0.1696 | 9.6244 | 19.8893 | -0.9913 | -0.0175 |
| 28 | 948.644 | 948.644 | 946.388 | 950.899 | -0.6264 | 9.3865 | 20.7563 | -2.9474 | -0.1967 |
| 29 | 956.100 | 956.100 | 953.907 | 958.292 | -0.1508 | 8.7867 | 20.3746 | -4.1912 | -0.0719 |
| 30 | 963.533 | 963.533 | 961.321 | 965.744 | -0.5254 | 3.6813 | 20.8970 | -2.1867 | -0.3121 |
| 31 | 971.122 | 961.745 | 964.073 | 959.416 | 0.1259 | -7.2334 | 22.0938 | 4.8102 | 0.0837 |
| 32 | 977.645 | 955.221 | 956.346 | 954.097 | 0.1065 | -5.2792 | 10.4768 | 3.6321 | 0.0733 |
| 33 | 981.908 | 950.959 | 951.008 | 950.910 | -0.3917 | -3.2047 | 0.0000 | 2.2048 | -0.2695 |
| 34 | 985.056 | 947.810 | 947.811 | 947.810 | 0.0506 | -3.1084 | 0.0000 | 2.1386 | 0.0348 |
| 35 | 988.165 | 944.702 | 944.703 | 944.701 | 0.0680 | -3.1194 | 0.0000 | 2.1461 | 0.0468 |
| 36 | 991.335 | 941.532 | 941.583 | 941.482 | -0.3938 | -3.2361 | 0.0000 | 2.2265 | -0.2710 |
| 37 | 994.513 | 938.354 | 938.355 | 938.353 | 0.0700 | -3.1394 | 0.0000 | 2.1599 | 0.0482 |
| 38 | 997.702 | 935.165 | 935.214 | 935.115 | -0.3981 | -2.3560 | 0.0000 | 1.6209 | -0.2739 |
| 39 | 1000.000 | 932.867 | 932.867 | 932.867 | 18.6536 | -932.6803 | 0.0000 | 494.3205 | 9.8864 |

Sum. Fx= -0.000000
Sum. Fy= -0.000000
Sum. Fz= 0.000000
Sum. Mx= -0.000000
Sum. My= -0.000000
Sum. Mz= -0.000000

Alargamientos teoricos de tendones
==========

Tesado por seccion No. 1: 46.8 cm.
Al retesar por seccion No. 39: 6.6 cm.
Tesado por seccion No. 39: 50.8 cm.

"TITULO:" LAV GELIDA. V-Riera de la Rierussa. Tendon 12 (Servicio).

CARACTERISTICAS DEL PRETENSADO

| NS | Po (t) | MU | K | INT.CUÑ.(mm) | Ep(Kg/cm2) | Ap(cm2) |
|---|---|---|---|---|---|---|
| 39 | 1000.000 | 0.2100 | 0.0015 | 5 | 1900000.0 | 70.17 |

COORDENADAS

| | | CENTRO DE GRAVEDAD DE LA SECCION | | | PRETENSADO |
|---|---|---|---|---|---|
| SECCION | NUDO | X (long.) | Y (tran.) | Z (prof.) | Zp (prof.) |
| 1 | 75 | -1.015 | 154.796 | -1.212 | -1.280 |
| 2 | 76 | -1.043 | 156.895 | -1.370 | -0.748 |
| 3 | 77 | -1.071 | 158.995 | -1.370 | -0.570 |
| 4 | 78 | -1.1 | 161.095 | -1.370 | -0.679 |
| 5 | 79 | -1.129 | 163.195 | -1.212 | -1.008 |
| 6 | 80 | -1.158 | 165.295 | -1.212 | -1.419 |
| 7 | 81 | -1.187 | 167.394 | -1.212 | -1.775 |
| 8 | 82 | -1.217 | 169.494 | -1.212 | -2.076 |
| 9 | 83 | -1.248 | 171.594 | -1.212 | -2.322 |
| 10 | 84 | -1.278 | 173.694 | -1.212 | -2.514 |
| 11 | 85 | -1.31 | 175.793 | -1.212 | -2.651 |
| 12 | 86 | -1.341 | 177.893 | -1.212 | -2.733 |
| 13 | 87 | -1.373 | 179.993 | -1.212 | -2.760 |
| 14 | 88 | -1.405 | 182.093 | -1.212 | -2.733 |
| 15 | 89 | -1.438 | 184.193 | -1.212 | -2.651 |
| 16 | 90 | -1.471 | 186.292 | -1.212 | -2.514 |
| 17 | 91 | -1.504 | 188.392 | -1.212 | -2.322 |
| 18 | 92 | -1.538 | 190.492 | -1.212 | -2.076 |
| 19 | 93 | -1.572 | 192.591 | -1.212 | -1.775 |
| 20 | 94 | -1.606 | 194.691 | -1.212 | -1.419 |
| 21 | 95 | -1.641 | 196.791 | -1.212 | -1.008 |
| 22 | 96 | -1.676 | 198.891 | -1.370 | -0.679 |
| 23 | 97 | -1.712 | 200.99 | -1.370 | -0.570 |
| 24 | 98 | -1.748 | 203.09 | -1.370 | -0.791 |
| 25 | 99 | -1.784 | 205.19 | -1.212 | -1.237 |
| 26 | 100 | -1.821 | 207.289 | -1.212 | -1.625 |
| 27 | 101 | -1.858 | 209.389 | -1.212 | -1.954 |
| 28 | 102 | -1.895 | 211.489 | -1.212 | -2.222 |
| 29 | 103 | -1.933 | 213.588 | -1.212 | -2.431 |
| 30 | 104 | -1.971 | 215.688 | -1.212 | -2.581 |
| 31 | 105 | -2.01 | 217.788 | -1.212 | -2.670 |
| 32 | 106 | -2.049 | 219.887 | -1.212 | -2.700 |
| 33 | 107 | -2.088 | 221.987 | -1.212 | -2.700 |
| 34 | 108 | -2.128 | 224.087 | -1.212 | -2.700 |
| 35 | 109 | -2.168 | 226.186 | -1.212 | -2.700 |
| 36 | 110 | -2.208 | 228.286 | -1.212 | -2.700 |
| 37 | 111 | -2.249 | 230.385 | -1.212 | -2.700 |
| 38 | 112 | -2.29 | 232.485 | -1.212 | -2.700 |
| 39 | 113 | -2.320 | 233.985 | -1.370 | -2.700 |

LAV GELIDA. V-Riera de la Rierussa. Tendon 12 (Servicio).

Numero de secciones
39

| | Lt | Lac | Anghor | Angver | Angulo | cosx | cosy | cosz |
|---|---|---|---|---|---|---|---|---|
| 1 | 2.166 | 0.000 | 0.00000 | 0.00000 | 0.00000 | -.01293 | 0.96927 | 0.24567 |
| 2 | 2.108 | 2.166 | -0.00001 | -0.16365 | 0.16365 | -.01328 | 0.99634 | 0.08445 |
| 3 | 2.103 | 4.273 | 0.00048 | -0.13641 | 0.13641 | -.01379 | 0.99856 | -.05183 |
| 4 | 2.126 | 6.376 | -0.00000 | -0.10354 | 0.10354 | -.01364 | 0.98786 | -.15476 |
| 5 | 2.140 | 8.502 | 0.00000 | -0.03786 | 0.03786 | -.01355 | 0.98129 | -.19205 |
| 6 | 2.129 | 10.642 | 0.00001 | 0.02526 | 0.02526 | -.01362 | 0.98583 | -.16720 |
| 7 | 2.122 | 12.771 | 0.00047 | 0.02564 | 0.02565 | -.01414 | 0.98978 | -.14187 |
| 8 | 2.115 | 14.893 | 0.00048 | 0.02575 | 0.02575 | -.01466 | 0.99310 | -.11633 |
| 9 | 2.109 | 17.008 | -0.00048 | 0.02543 | 0.02544 | -.01422 | 0.99575 | -.09104 |
| 10 | 2.104 | 19.117 | 0.00096 | 0.02600 | 0.02601 | -.01521 | 0.99776 | -.06512 |
| 11 | 2.102 | 21.220 | -0.00048 | 0.02615 | 0.02615 | -.01475 | 0.99913 | -.03901 |
| 12 | 2.100 | 23.322 | 0.00048 | 0.02617 | 0.02617 | -.01524 | 0.99980 | -.01285 |
| 13 | 2.100 | 25.423 | 0.00000 | 0.02571 | 0.02571 | -.01524 | 0.99980 | 0.01285 |
| 14 | 2.102 | 27.523 | 0.00048 | 0.02617 | 0.02617 | -.01570 | 0.99912 | 0.03901 |
| 15 | 2.104 | 29.625 | 0.00001 | 0.02615 | 0.02615 | -.01569 | 0.99775 | 0.06512 |
| 16 | 2.109 | 31.729 | -0.00001 | 0.02600 | 0.02600 | -.01565 | 0.99572 | 0.09104 |
| 17 | 2.115 | 33.838 | 0.00048 | 0.02543 | 0.02544 | -.01608 | 0.99308 | 0.11633 |
| 18 | 2.121 | 35.952 | 0.00001 | 0.02582 | 0.02582 | -.01603 | 0.98975 | 0.14193 |
| 19 | 2.130 | 38.073 | -0.00001 | 0.02549 | 0.02549 | -.01596 | 0.98581 | 0.16712 |
| 20 | 2.140 | 40.203 | 0.00048 | 0.02534 | 0.02534 | -.01635 | 0.98125 | 0.19204 |
| 21 | 2.126 | 42.343 | 0.00000 | -0.03786 | 0.03786 | -.01646 | 0.98782 | 0.15476 |
| 22 | 2.102 | 44.469 | 0.00048 | -0.10351 | 0.10351 | -.01713 | 0.99851 | 0.05185 |
| 23 | 2.112 | 46.571 | -0.00001 | -0.15671 | 0.15671 | -.01705 | 0.99436 | -.10464 |
| 24 | 2.147 | 48.683 | 0.00000 | -0.10440 | 0.10440 | -.01677 | 0.97805 | -.20772 |
| 25 | 2.135 | 50.830 | 0.00048 | 0.02648 | 0.02649 | -.01733 | 0.98319 | -.18174 |
| 26 | 2.126 | 52.965 | -0.00001 | 0.02738 | 0.02738 | -.01740 | 0.98780 | -.15476 |
| 27 | 2.117 | 55.091 | 0.00000 | 0.02847 | 0.02847 | -.01747 | 0.99180 | -.12657 |
| 28 | 2.110 | 57.209 | 0.00048 | 0.02769 | 0.02769 | -.01801 | 0.99492 | -.09907 |
| 29 | 2.106 | 59.318 | -0.00001 | 0.02793 | 0.02793 | -.01805 | 0.99730 | -.07124 |
| 30 | 2.102 | 61.424 | 0.00048 | 0.02895 | 0.02895 | -.01855 | 0.99893 | -.04234 |
| 31 | 2.100 | 63.526 | 0.00001 | 0.02806 | 0.02806 | -.01858 | 0.99973 | -.01429 |
| 32 | 2.100 | 65.626 | -0.00001 | 0.01429 | 0.01429 | -.01857 | 0.99983 | 0.00000 |
| 33 | 2.100 | 67.726 | 0.00048 | 0.00000 | 0.00048 | -.01904 | 0.99982 | 0.00000 |
| 34 | 2.099 | 69.827 | 0.00001 | 0.00000 | 0.00001 | -.01905 | 0.99982 | 0.00000 |
| 35 | 2.100 | 71.926 | -0.00001 | 0.00000 | 0.00001 | -.01904 | 0.99982 | 0.00000 |
| 36 | 2.099 | 74.026 | 0.00049 | 0.00000 | 0.00049 | -.01953 | 0.99981 | 0.00000 |
| 37 | 2.100 | 76.126 | -0.00001 | 0.00000 | 0.00001 | -.01952 | 0.99981 | 0.00000 |
| 38 | 1.500 | 78.226 | 0.00048 | 0.00000 | 0.00048 | -.02000 | 0.99980 | 0.00000 |
| 39 | 0.000 | 79.726 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

ESTADO A
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 822.295 | 822.295 | 822.295 | -10.6321 | 797.0243 | 202.0090 | -54.1976 | -0.7230 |
| 2 | 979.920 | 842.375 | 825.538 | 859.211 | -0.7822 | 59.0416 | -129.4472 | 36.7239 | 0.4865 |
| 3 | 946.488 | 875.807 | 862.251 | 889.362 | -0.8498 | 32.0162 | -118.6575 | 25.6129 | 0.6798 |
| 4 | 919.993 | 902.301 | 892.300 | 912.303 | -0.1815 | 13.1426 | -95.0962 | 9.0816 | 0.1254 |
| 5 | 903.503 | 903.503 | 907.095 | 899.911 | 0.2506 | -18.1503 | -31.6384 | -3.7027 | -0.0511 |
| 6 | 894.653 | 894.653 | 897.027 | 892.280 | 0.0417 | -3.4389 | 23.6401 | 0.7118 | 0.0086 |
| 7 | 887.046 | 887.046 | 889.435 | 884.658 | -0.3557 | -4.0149 | 23.6846 | 2.2604 | -0.2003 |
| 8 | 879.469 | 879.469 | 881.847 | 877.090 | -0.3493 | -4.5806 | 23.4695 | 3.9576 | -0.3018 |
| 9 | 871.984 | 871.984 | 874.313 | 869.655 | 0.4874 | -5.0851 | 22.8631 | 5.6445 | 0.5410 |
| 10 | 864.546 | 864.546 | 866.908 | 862.185 | -0.7441 | -5.7002 | 23.0249 | 7.4216 | -0.9688 |
| 11 | 857.115 | 857.115 | 859.469 | 854.762 | 0.5080 | -6.2369 | 22.8008 | 8.9748 | 0.7310 |
| 12 | 849.736 | 849.736 | 852.071 | 847.401 | -0.3033 | -6.7856 | 22.4544 | 10.3209 | -0.4613 |
| 13 | 842.461 | 842.461 | 844.735 | 840.187 | 0.1099 | -7.2127 | 21.6932 | 11.1653 | 0.1701 |
| 14 | 835.248 | 835.248 | 837.544 | 832.953 | -0.2774 | -7.8036 | 21.6958 | 11.8692 | -0.4219 |
| 15 | 828.058 | 828.058 | 830.331 | 825.784 | 0.1240 | -8.2864 | 21.2812 | 11.9241 | 0.1785 |
| 16 | 820.942 | 820.942 | 823.183 | 818.701 | 0.1433 | -8.7288 | 20.7554 | 11.3649 | 0.1866 |
| 17 | 813.941 | 813.941 | 816.115 | 811.767 | -0.2417 | -9.0507 | 19.9021 | 10.0462 | -0.2682 |
| 18 | 807.009 | 807.009 | 809.197 | 804.822 | 0.1490 | -9.5807 | 19.7946 | 8.2777 | 0.1287 |
| 19 | 800.124 | 800.124 | 802.265 | 797.982 | 0.1666 | -9.9128 | 19.1277 | 5.5809 | 0.0938 |
| 20 | 793.325 | 793.325 | 795.436 | 791.214 | -0.2033 | -10.2781 | 18.5913 | 2.1276 | -0.0421 |
| 21 | 785.555 | 785.555 | 788.678 | 782.432 | 0.0580 | -3.4804 | -30.8610 | -0.7100 | -0.0118 |
| 22 | 771.556 | 771.556 | 779.941 | 763.170 | -0.1880 | -10.8665 | -81.5155 | -7.5087 | 0.1299 |
| 23 | 748.453 | 748.453 | 760.768 | 736.139 | 0.5212 | -30.0422 | -116.6051 | -24.0337 | -0.4170 |
| 24 | 725.854 | 725.854 | 733.810 | 717.897 | 0.5118 | -29.8542 | -72.0870 | -17.2856 | -0.2963 |
| 25 | 713.604 | 713.604 | 715.588 | 711.619 | -0.2966 | -2.4763 | 19.7882 | 0.0619 | -0.0074 |
| 26 | 707.310 | 707.310 | 709.344 | 705.277 | 0.0585 | -2.9867 | 20.1866 | 1.2335 | 0.0242 |
| 27 | 700.937 | 700.937 | 703.032 | 698.841 | 0.0627 | -3.5590 | 20.6909 | 2.6408 | 0.0465 |
| 28 | 694.606 | 694.606 | 696.625 | 692.586 | -0.2628 | -4.0467 | 19.8433 | 4.0871 | -0.2654 |
| 29 | 688.379 | 688.379 | 690.398 | 686.360 | 0.0885 | -4.5621 | 19.7180 | 5.5612 | 0.1079 |
| 30 | 682.122 | 682.122 | 684.196 | 680.049 | -0.2297 | -5.1827 | 20.1029 | 7.0952 | -0.3145 |
| 31 | 675.916 | 675.916 | 677.908 | 673.925 | 0.0977 | -5.5821 | 19.1609 | 8.1387 | 0.1425 |
| 32 | 670.799 | 670.799 | 671.806 | 669.793 | 0.0814 | -4.0624 | 9.6294 | 6.0448 | 0.1211 |
| 33 | 667.653 | 667.653 | 667.686 | 667.619 | -0.2774 | -2.1792 | 0.0000 | 3.2427 | -0.4127 |
| 34 | 665.518 | 665.518 | 665.519 | 665.518 | 0.0340 | -2.1011 | 0.0000 | 3.1264 | 0.0506 |
| 35 | 663.425 | 663.425 | 663.425 | 663.424 | 0.0459 | -2.0932 | 0.0000 | 3.1147 | 0.0683 |
| 36 | 661.304 | 661.304 | 661.337 | 661.270 | -0.2798 | -2.1601 | 0.0000 | 3.2142 | -0.4164 |
| 37 | 659.190 | 659.190 | 659.191 | 659.189 | 0.0468 | -2.0799 | 0.0000 | 3.0949 | 0.0696 |
| 38 | 657.083 | 657.083 | 657.116 | 657.050 | -0.2709 | -2.1450 | 0.0000 | 3.1918 | -0.4032 |
| 39 | 655.573 | 655.573 | 655.573 | 655.573 | 13.1384 | -656.9188 | 0.0000 | 873.7020 | 17.4740 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 344.427 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 177.705 Tn
Distancia afectada por clavado de cuñas: 7.829 m

Sum. Fx= 0.000000
Sum. Fy= 0.000000
Sum. Fz= 0.000000
Sum. Mx= -0.000000
Sum. My= -0.000000
Sum. Mz= -0.000000

ESTADO B
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 655.573 | 655.573 | 655.573 | 655.573 | -8.5040 | 637.4939 | 161.5754 | -43.3496 | -0.5783 |
| 2 | 669.204 | 669.204 | 657.706 | 680.703 | -0.5675 | 42.8643 | -103.9069 | 26.6616 | 0.3530 |
| 3 | 692.780 | 692.780 | 682.858 | 702.702 | -0.6492 | 23.5491 | -94.2046 | 18.8393 | 0.5193 |
| 4 | 712.669 | 712.669 | 704.922 | 720.416 | -0.1386 | 10.0343 | -75.3147 | 6.9337 | 0.0958 |
| 5 | 725.602 | 725.602 | 722.717 | 728.487 | -0.0444 | 3.2146 | -28.5069 | 0.6558 | 0.0091 |
| 6 | 732.773 | 732.773 | 730.829 | 734.717 | -0.1355 | 9.4657 | 17.1193 | -1.9594 | -0.0280 |
| 7 | 739.057 | 739.057 | 737.067 | 741.047 | -0.4726 | 9.1931 | 17.7716 | -5.1757 | -0.2661 |
| 8 | 745.425 | 745.425 | 743.409 | 747.441 | -0.4807 | 8.8282 | 18.2372 | -7.6276 | -0.4153 |
| 9 | 751.824 | 751.824 | 749.815 | 753.832 | 0.2352 | 8.3597 | 18.3836 | -9.2793 | 0.2610 |
| 10 | 758.291 | 758.291 | 756.220 | 760.363 | -0.8454 | 8.0553 | 19.1723 | -10.4880 | -1.1007 |
| 11 | 764.866 | 764.866 | 762.766 | 766.966 | 0.2549 | 7.6602 | 19.6570 | -11.0231 | 0.3667 |
| 12 | 771.508 | 771.508 | 769.388 | 773.628 | -0.4757 | 7.1970 | 20.0406 | -10.9466 | -0.7236 |
| 13 | 778.170 | 778.170 | 776.070 | 780.271 | -0.1015 | 6.6623 | 20.0378 | -10.3132 | -0.1572 |
| 14 | 784.890 | 784.890 | 782.733 | 787.047 | -0.4710 | 6.2563 | 20.7404 | -9.5158 | -0.7163 |
| 15 | 791.706 | 791.706 | 789.532 | 793.879 | -0.0966 | 5.7658 | 21.0608 | -8.2970 | -0.1389 |
| 16 | 798.568 | 798.568 | 796.388 | 800.748 | -0.0766 | 5.2508 | 21.2663 | -6.8366 | -0.0997 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 17 | 805.436 | 805.436 | 803.285 | 807.587 | -0.4569 | 4.6964 | 21.1177 | -5.2131 | -0.5072 |
| 18 | 812.355 | 812.355 | 810.153 | 814.557 | -0.0747 | 4.2269 | 21.7326 | -3.6521 | -0.0645 |
| 19 | 819.346 | 819.346 | 817.153 | 821.539 | -0.0536 | 3.6975 | 21.7538 | -2.0817 | -0.0302 |
| 20 | 826.367 | 826.367 | 824.168 | 828.566 | -0.4398 | 3.1734 | 21.9001 | -0.6569 | -0.0910 |
| 21 | 834.548 | 834.548 | 831.231 | 837.866 | -0.2443 | 14.6556 | -29.5529 | 2.9897 | 0.0498 |
| 22 | 849.778 | 849.778 | 840.542 | 859.013 | -0.9191 | 30.1396 | -85.3982 | 20.8264 | 0.6351 |
| 23 | 876.141 | 876.141 | 861.726 | 890.557 | -0.4714 | 27.9067 | -138.1701 | 22.3253 | 0.3771 |
| 24 | 903.284 | 903.284 | 893.382 | 913.186 | -0.1315 | 7.6714 | -96.8093 | 4.4417 | 0.0761 |
| 25 | 918.687 | 918.687 | 916.132 | 921.242 | -0.6571 | 12.6458 | 22.3307 | -0.3161 | -0.0164 |
| 26 | 926.861 | 926.861 | 924.197 | 929.526 | -0.2118 | 12.4538 | 23.6580 | -5.1434 | -0.0875 |
| 27 | 935.290 | 935.290 | 932.495 | 938.086 | -0.2156 | 12.2385 | 25.1944 | -9.0809 | -0.1600 |
| 28 | 943.814 | 943.814 | 941.070 | 946.558 | -0.6585 | 11.3762 | 25.0459 | -11.4900 | -0.6650 |
| 29 | 952.351 | 952.351 | 949.558 | 955.144 | -0.1881 | 10.8430 | 25.8128 | -13.2176 | -0.2292 |
| 30 | 961.088 | 961.088 | 958.166 | 964.009 | -0.6037 | 8.0061 | 27.4179 | -10.9604 | -0.8265 |
| 31 | 969.911 | 961.755 | 964.613 | 958.897 | 0.1404 | -8.0151 | 27.1801 | 11.6860 | 0.2047 |
| 32 | 977.304 | 954.363 | 955.829 | 952.896 | 0.1184 | -5.9224 | 13.6575 | 8.8125 | 0.1762 |
| 33 | 981.908 | 949.759 | 949.808 | 949.710 | -0.3912 | -3.2047 | 0.0000 | 4.7686 | -0.5821 |
| 34 | 985.056 | 946.610 | 946.611 | 946.609 | 0.0506 | -3.1084 | 0.0000 | 4.6253 | 0.0754 |
| 35 | 988.165 | 943.501 | 943.502 | 943.500 | 0.0680 | -3.1194 | 0.0000 | 4.6416 | 0.1011 |
| 36 | 991.335 | 940.332 | 940.382 | 940.281 | -0.3933 | -3.2361 | 0.0000 | 4.8153 | -0.5852 |
| 37 | 994.513 | 937.153 | 937.154 | 937.152 | 0.0700 | -3.1394 | 0.0000 | 4.6715 | 0.1042 |
| 38 | 997.702 | 933.964 | 934.014 | 933.914 | -0.3976 | -2.3560 | 0.0000 | 3.5057 | -0.5916 |
| 39 | 1000.000 | 931.666 | 931.666 | 931.666 | 18.6296 | -931.4802 | 0.0000 | 1238.8686 | 24.7774 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 344.427 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 68.334 Tn
Distancia afectada por clavado de cuñas: 16.070 m

Sum. Fx= 0.000000
Sum. Fy= -0.000000
Sum. Fz= 0.000000
Sum. Mx= -0.000000
Sum. My= 0.000000
Sum. Mz= 0.000000

ESTADO C
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 822.295 | 822.295 | 822.295 | -10.6321 | 797.0243 | 202.0090 | -54.1976 | -0.7230 |
| 2 | 979.920 | 842.375 | 825.538 | 859.211 | -0.7822 | 59.0416 | -129.4472 | 36.7239 | 0.4865 |
| 3 | 946.488 | 875.807 | 862.251 | 889.362 | -0.8498 | 32.0162 | -118.6575 | 25.6129 | 0.6798 |
| 4 | 919.993 | 902.301 | 892.300 | 912.303 | -0.1815 | 13.1426 | -95.0962 | 9.0816 | 0.1254 |
| 5 | 903.503 | 903.503 | 907.095 | 899.911 | 0.2506 | -18.1503 | -31.6384 | -3.7027 | -0.0511 |
| 6 | 894.653 | 894.653 | 897.027 | 892.280 | 0.0417 | -3.4389 | 23.6401 | 0.7118 | 0.0086 |
| 7 | 887.046 | 887.046 | 889.435 | 884.658 | -0.3557 | -4.0149 | 23.6846 | 2.2604 | -0.2003 |
| 8 | 879.469 | 879.469 | 881.847 | 877.090 | -0.3493 | -4.5806 | 23.4695 | 3.9576 | -0.3018 |
| 9 | 871.984 | 871.984 | 874.313 | 869.655 | 0.4874 | -5.0851 | 22.8631 | 5.6445 | 0.5410 |
| 10 | 864.546 | 864.546 | 866.908 | 862.185 | -0.7441 | -5.7002 | 23.0249 | 7.4216 | -0.9688 |
| 11 | 857.115 | 857.115 | 859.469 | 854.762 | 0.5080 | -6.2369 | 22.8008 | 8.9748 | 0.7310 |
| 12 | 849.736 | 849.736 | 852.071 | 847.401 | -0.3033 | -6.7856 | 22.4544 | 10.3209 | -0.4613 |
| 13 | 842.461 | 842.461 | 844.735 | 840.187 | 0.1099 | -7.2127 | 21.6932 | 11.1653 | 0.1701 |
| 14 | 835.248 | 835.248 | 837.544 | 832.953 | -0.2774 | -7.8036 | 21.6958 | 11.8692 | -0.4219 |
| 15 | 828.058 | 828.058 | 830.331 | 825.784 | 0.1240 | -8.2864 | 21.2812 | 11.9241 | 0.1785 |
| 16 | 820.942 | 820.942 | 823.183 | 818.701 | 0.1433 | -8.7288 | 20.7554 | 11.3649 | 0.1866 |
| 17 | 813.941 | 813.941 | 816.115 | 811.767 | -0.2417 | -9.0507 | 19.9021 | 10.0462 | -0.2682 |
| 18 | 807.009 | 812.355 | 810.153 | 814.557 | -0.0487 | 2.6239 | 21.5448 | -2.2670 | -0.0421 |
| 19 | 819.346 | 819.346 | 817.153 | 821.539 | -0.0536 | 3.6975 | 21.7538 | -2.0817 | -0.0302 |
| 20 | 826.367 | 826.367 | 824.168 | 828.566 | -0.4398 | 3.1734 | 21.9001 | -0.6569 | -0.0910 |
| 21 | 834.548 | 834.548 | 831.231 | 837.866 | -0.2443 | 14.6556 | -29.5529 | 2.9897 | 0.0498 |

Sum. Fx= 0.000000
Sum. Fy= -0.000000
Sum. Fz= -0.000000
Sum. Mx= -0.000000
Sum. My= 0.000000
Sum. Mz= 0.000000

Alargamientos teoricos de tendones
==========

Tesado por seccion No. 1: 46.4 cm.
Al retesar por seccion No. 39: 6.7 cm.
Tesado por seccion No. 39: 50.2 cm.

"TITULO:" LAV GELIDA. V-Riera de la Rierussa. Tendon 13 (Servicio).

CARACTERISTICAS DEL PRETENSADO

| NS | Po (t) | MU | K | INT.CUÑ.(mm) | Ep(Kg/cm2) | Ap(cm2) |
|---|---|---|---|---|---|---|
| 19 | 1000.000 | 0.2100 | 0.0015 | 5 | 1900000.0 | 70.17 |

COORDENADAS

| | | CENTRO DE GRAVEDAD DE LA SECCION | | | PRETENSADO |
|---|---|---|---|---|---|
| SECCION | NUDO | X (long.) | Y (tran.) | Z (prof.) | Zp (prof.) |
| 1 | 95 | -1.641 | 196.791 | -1.212 | -0.880 |
| 2 | 96 | -1.676 | 198.891 | -1.370 | -0.393 |
| 3 | 97 | -1.712 | 200.99 | -1.370 | -0.230 |
| 4 | 98 | -1.748 | 203.09 | -1.370 | -0.313 |
| 5 | 99 | -1.784 | 205.19 | -1.212 | -0.563 |
| 6 | 100 | -1.821 | 207.289 | -1.212 | -0.873 |
| 7 | 101 | -1.858 | 209.389 | -1.212 | -1.135 |
| 8 | 102 | -1.895 | 211.489 | -1.212 | -1.349 |
| 9 | 103 | -1.933 | 213.588 | -1.212 | -1.516 |
| 10 | 104 | -1.971 | 215.688 | -1.212 | -1.635 |
| 11 | 105 | -2.01 | 217.788 | -1.212 | -1.706 |
| 12 | 106 | -2.049 | 219.887 | -1.212 | -1.730 |
| 13 | 107 | -2.088 | 221.987 | -1.212 | -1.707 |
| 14 | 108 | -2.128 | 224.087 | -1.212 | -1.639 |
| 15 | 109 | -2.168 | 226.186 | -1.212 | -1.524 |
| 16 | 110 | -2.208 | 228.286 | -1.212 | -1.364 |
| 17 | 111 | -2.249 | 230.385 | -1.212 | -1.159 |
| 18 | 112 | -2.29 | 232.485 | -1.212 | -0.907 |
| 19 | 113 | -2.320 | 233.985 | -1.370 | -0.700 |

LAV GELIDA. V-Riera de la Rierussa. Tendon 13 (Servicio).

Numero de secciones
19

| | Lt | Lac | Anghor | Angver | Angulo | cosx | cosy | cosz |
|---|---|---|---|---|---|---|---|---|
| 1 | 2.156 | 0.000 | 0.00000 | 0.00000 | 0.00000 | -.01623 | 0.97402 | 0.22588 |
| 2 | 2.106 | 2.156 | 0.00048 | -0.15036 | 0.15036 | -.01710 | 0.99685 | 0.07741 |
| 3 | 2.102 | 4.262 | -0.00001 | -0.11699 | 0.11699 | -.01713 | 0.99907 | -.03949 |
| 4 | 2.115 | 6.364 | 0.00000 | -0.07898 | 0.07898 | -.01702 | 0.99284 | -.11820 |
| 5 | 2.122 | 8.479 | 0.00048 | -0.02813 | 0.02814 | -.01744 | 0.98912 | -.14608 |
| 6 | 2.117 | 10.601 | -0.00001 | 0.02251 | 0.02251 | -.01748 | 0.99216 | -.12378 |
| 7 | 2.111 | 12.717 | 0.00000 | 0.02256 | 0.02256 | -.01753 | 0.99470 | -.10136 |
| 8 | 2.106 | 14.829 | 0.00048 | 0.02216 | 0.02216 | -.01804 | 0.99669 | -.07930 |
| 9 | 2.104 | 16.935 | -0.00001 | 0.02278 | 0.02278 | -.01806 | 0.99824 | -.05657 |
| 10 | 2.102 | 19.038 | 0.00048 | 0.02281 | 0.02281 | -.01856 | 0.99926 | -.03378 |
| 11 | 2.099 | 21.140 | 0.00001 | 0.02236 | 0.02236 | -.01858 | 0.99976 | -.01143 |
| 12 | 2.100 | 23.239 | -0.00001 | 0.02238 | 0.02238 | -.01857 | 0.99977 | 0.01095 |
| 13 | 2.101 | 25.340 | 0.00048 | 0.02141 | 0.02142 | -.01903 | 0.99930 | 0.03236 |
| 14 | 2.103 | 27.441 | 0.00001 | 0.02236 | 0.02236 | -.01902 | 0.99832 | 0.05470 |
| 15 | 2.106 | 29.544 | -0.00001 | 0.02131 | 0.02131 | -.01899 | 0.99693 | 0.07596 |
| 16 | 2.109 | 31.650 | 0.00049 | 0.02131 | 0.02131 | -.01944 | 0.99508 | 0.09718 |
| 17 | 2.115 | 33.760 | -0.00001 | 0.02207 | 0.02207 | -.01938 | 0.99269 | 0.11912 |
| 18 | 1.515 | 35.875 | 0.00048 | 0.01770 | 0.01771 | -.01981 | 0.99042 | 0.13668 |
| 19 | 0.000 | 37.390 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

ESTADO A
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 831.151 | 831.151 | 831.151 | -13.4926 | 809.5575 | 187.7402 | 268.7731 | 4.4796 |
| 2 | 981.280 | 849.870 | 834.380 | 865.361 | -1.3025 | 53.0800 | -120.7512 | 51.8592 | 1.2725 |
| 3 | 951.062 | 880.089 | 868.407 | 891.771 | -0.4782 | 28.3065 | -102.2025 | 32.2694 | 0.5452 |
| 4 | 928.722 | 902.429 | 894.728 | 910.130 | -0.2173 | 12.6734 | -72.3600 | 13.3958 | 0.2296 |
| 5 | 915.399 | 915.399 | 918.103 | 912.694 | -0.4228 | -0.8544 | -25.7550 | -0.5545 | 0.2744 |
| 6 | 907.649 | 907.649 | 909.794 | 905.504 | 0.0844 | -4.3625 | 21.2423 | -1.4789 | -0.0286 |
| 7 | 900.500 | 900.500 | 902.634 | 898.367 | 0.0846 | -4.7995 | 21.0240 | -0.3696 | -0.0065 |
| 8 | 893.447 | 893.447 | 895.526 | 891.368 | -0.3394 | -5.1853 | 20.3783 | 0.7104 | -0.0465 |
| 9 | 886.436 | 886.436 | 888.557 | 884.316 | 0.1101 | -5.6607 | 20.6611 | 1.7208 | 0.0335 |
| 10 | 879.423 | 879.423 | 881.529 | 877.317 | -0.3073 | -6.0904 | 20.3832 | 2.5762 | -0.1300 |
| 11 | 872.507 | 872.507 | 874.555 | 870.459 | 0.1114 | -6.4131 | 19.6891 | 3.1681 | 0.0550 |
| 12 | 865.687 | 865.687 | 867.722 | 863.653 | 0.1340 | -6.7994 | 19.4073 | 3.5221 | 0.0694 |
| 13 | 859.004 | 859.004 | 860.936 | 857.072 | -0.2781 | -6.9841 | 18.2764 | 3.4572 | -0.1377 |
| 14 | 852.374 | 852.374 | 854.375 | 850.372 | 0.1356 | -7.5227 | 18.7788 | 3.2122 | 0.0579 |
| 15 | 845.803 | 845.803 | 847.695 | 843.910 | 0.1530 | -7.6255 | 17.5885 | 2.3792 | 0.0477 |
| 16 | 839.370 | 839.370 | 841.248 | 837.491 | -0.2531 | -7.9521 | 17.2908 | 1.2087 | -0.0385 |
| 17 | 832.915 | 832.915 | 834.845 | 830.985 | 0.1729 | -8.4565 | 17.5980 | -0.4482 | -0.0092 |
| 18 | 826.816 | 826.816 | 828.353 | 825.278 | -0.2420 | -7.5411 | 13.8077 | -2.3000 | 0.0738 |
| 19 | 823.406 | 823.406 | 823.406 | 823.406 | 16.3474 | -817.3701 | -112.7971 | -547.6380 | -10.9528 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 176.594 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 168.849 Tn
Distancia afectada por clavado de cuñas: 8.461 m

Sum. Fx= 0.000000
Sum. Fy= -0.000000
Sum. Fz= -0.000000
Sum. Mx= 0.000000
Sum. My= -0.000000

Sum. Mz= -0.000000

ESTADO B

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 823.406 | 823.406 | 823.406 | 823.406 | -13.4102 | 804.6114 | 186.5932 | 267.1310 | 4.4522 |
| 2 | 839.323 | 839.323 | 826.073 | 852.572 | -1.2124 | 47.9662 | -120.3854 | 46.8629 | 1.1845 |
| 3 | 865.905 | 865.905 | 855.269 | 876.541 | -0.4373 | 25.9168 | -100.9292 | 29.5452 | 0.4986 |
| 4 | 886.662 | 886.662 | 879.309 | 894.014 | -0.2047 | 11.9431 | -71.2830 | 12.6238 | 0.2164 |
| 5 | 899.513 | 899.513 | 896.855 | 902.170 | -0.5154 | 4.7611 | -26.2068 | 3.0899 | 0.3345 |
| 6 | 907.190 | 907.190 | 905.046 | 909.334 | -0.1664 | 9.8710 | 19.2931 | 3.3463 | 0.0564 |
| 7 | 914.392 | 914.392 | 912.226 | 916.558 | -0.1677 | 9.5181 | 19.7174 | 0.7329 | 0.0129 |
| 8 | 921.610 | 921.610 | 919.465 | 923.755 | -0.6067 | 9.0202 | 19.7170 | -1.2358 | -0.0831 |
| 9 | 928.900 | 928.900 | 926.677 | 931.122 | -0.1514 | 8.8087 | 20.6469 | -2.6778 | -0.0460 |
| 10 | 936.307 | 936.307 | 934.065 | 938.550 | -0.6000 | 8.3970 | 21.0285 | -3.5519 | -0.2538 |
| 11 | 943.729 | 943.729 | 941.513 | 945.944 | -0.1549 | 7.8889 | 20.9610 | -3.8971 | -0.0765 |
| 12 | 951.163 | 951.163 | 948.928 | 953.399 | 0.0106 | -0.1198 | 21.2367 | 0.0621 | 0.0055 |
| 13 | 958.563 | 946.647 | 948.803 | 944.491 | -0.3034 | -7.7880 | 20.0746 | 3.8551 | -0.1502 |
| 14 | 966.020 | 939.190 | 941.458 | 936.922 | 0.1534 | -8.4981 | 20.6148 | 3.6287 | 0.0655 |
| 15 | 973.525 | 931.686 | 933.864 | 929.508 | 0.1746 | -8.7203 | 19.2891 | 2.7207 | 0.0545 |
| 16 | 980.986 | 924.225 | 926.420 | 922.029 | -0.2689 | -9.1870 | 18.9366 | 1.3964 | -0.0409 |
| 17 | 988.588 | 916.623 | 918.913 | 914.332 | 0.2011 | -9.8668 | 19.2384 | -0.5229 | -0.0107 |
| 18 | 995.879 | 909.331 | 911.183 | 907.480 | -0.2710 | -7.9860 | 15.1793 | -2.4357 | 0.0827 |
| 19 | 1000.000 | 905.210 | 905.210 | 905.210 | 17.9307 | -896.5363 | -123.7220 | -600.6793 | -12.0136 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 176.594 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 94.790 Tn
Distancia afectada por clavado de cuñas: 13.733 m

Sum. Fx= 0.000000
Sum. Fy= 0.000000
Sum. Fz= 0.000000
Sum. Mx= -0.000000
Sum. My= -0.000000
Sum. Mz= 0.000000

ESTADO C

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 831.151 | 831.151 | 831.151 | -13.4926 | 809.5575 | 187.7402 | 268.7731 | 4.4796 |
| 2 | 981.280 | 849.870 | 834.380 | 865.361 | -1.3025 | 53.0800 | -120.7512 | 51.8592 | 1.2725 |
| 3 | 951.062 | 880.089 | 868.407 | 891.771 | -0.4782 | 28.3065 | -102.2025 | 32.2694 | 0.5452 |
| 4 | 928.722 | 902.429 | 894.728 | 910.130 | -0.2173 | 12.6734 | -72.3600 | 13.3958 | 0.2296 |
| 5 | 915.399 | 915.399 | 918.103 | 912.694 | -0.4228 | -0.8544 | -25.7550 | -0.5545 | 0.2744 |
| 6 | 907.649 | 909.564 | 909.794 | 909.334 | -0.0331 | 2.3064 | 20.4103 | 0.7819 | 0.0112 |
| 7 | 914.392 | 914.392 | 912.226 | 916.558 | -0.1677 | 9.5181 | 19.7174 | 0.7329 | 0.0129 |
| 8 | 921.610 | 921.610 | 919.465 | 923.755 | -0.6067 | 9.0202 | 19.7170 | -1.2358 | -0.0831 |
| 9 | 928.900 | 928.900 | 926.677 | 931.122 | -0.1514 | 8.8087 | 20.6469 | -2.6778 | -0.0460 |
| 10 | 936.307 | 936.307 | 934.065 | 938.550 | -0.6000 | 8.3970 | 21.0285 | -3.5519 | -0.2538 |
| 11 | 943.729 | 943.729 | 941.513 | 945.944 | -0.1549 | 7.8889 | 20.9610 | -3.8971 | -0.0765 |
| 12 | 951.163 | 951.163 | 948.928 | 953.399 | 0.0106 | -0.1198 | 21.2367 | 0.0621 | 0.0055 |
| 13 | 958.563 | 946.647 | 948.803 | 944.491 | -0.3034 | -7.7880 | 20.0746 | 3.8551 | -0.1502 |
| 14 | 966.020 | 939.190 | 941.458 | 936.922 | 0.1534 | -8.4981 | 20.6148 | 3.6287 | 0.0655 |
| 15 | 973.525 | 931.686 | 933.864 | 929.508 | 0.1746 | -8.7203 | 19.2891 | 2.7207 | 0.0545 |
| 16 | 980.986 | 924.225 | 926.420 | 922.029 | -0.2689 | -9.1870 | 18.9366 | 1.3964 | -0.0409 |
| 17 | 988.588 | 916.623 | 918.913 | 914.332 | 0.2011 | -9.8668 | 19.2384 | -0.5229 | -0.0107 |
| 18 | 995.879 | 909.331 | 911.183 | 907.480 | -0.2710 | -7.9860 | 15.1793 | -2.4357 | 0.0827 |
| 19 | 1000.000 | 905.210 | 905.210 | 905.210 | 17.9307 | -896.5363 | -123.7220 | -600.6793 | -12.0136 |

Sum. Fx= 0.000000
Sum. Fy= 0.000000
Sum. Fz= 0.000000
Sum. Mx= 0.000000
Sum. My= -0.000000
Sum. Mz= 0.000000

Alargamientos teoricos de tendones

Tesado por seccion No. 1: 24.4 cm.
Al retesar por seccion No. 19: 1.3 cm.
Tesado por seccion No. 19: 25.6 cm.

"TITULO:" LAV GELIDA. V-Riera de la Rierussa. Tendon 14 (Servicio).

CARACTERISTICAS DEL PRETENSADO

| NS | Po (t) | MU | K | INT.CUÑ.(mm) | Ep(Kg/cm2) | Ap(cm2) |
|---|---|---|---|---|---|---|
| 19 | 1000.000 | 0.2100 | 0.0015 | 5 | 1900000.0 | 70.17 |

COORDENADAS

| | | CENTRO DE GRAVEDAD DE LA SECCION | | | PRETENSADO |
|---|---|---|---|---|---|
| SECCION | NUDO | X (long.) | Y (tran.) | Z (prof.) | Zp (prof.) |
| 1 | 95 | -1.641 | 196.791 | -1.212 | -1.280 |
| 2 | 96 | -1.676 | 198.891 | -1.370 | -0.748 |
| 3 | 97 | -1.712 | 200.99 | -1.370 | -0.570 |
| 4 | 98 | -1.748 | 203.09 | -1.370 | -0.666 |
| 5 | 99 | -1.784 | 205.19 | -1.212 | -0.954 |
| 6 | 100 | -1.821 | 207.289 | -1.212 | -1.311 |
| 7 | 101 | -1.858 | 209.389 | -1.212 | -1.613 |
| 8 | 102 | -1.895 | 211.489 | -1.212 | -1.861 |
| 9 | 103 | -1.933 | 213.588 | -1.212 | -2.053 |
| 10 | 104 | -1.971 | 215.688 | -1.212 | -2.190 |
| 11 | 105 | -2.01 | 217.788 | -1.212 | -2.273 |
| 12 | 106 | -2.049 | 219.887 | -1.212 | -2.300 |
| 13 | 107 | -2.088 | 221.987 | -1.212 | -2.300 |
| 14 | 108 | -2.128 | 224.087 | -1.212 | -2.300 |
| 15 | 109 | -2.168 | 226.186 | -1.212 | -2.300 |
| 16 | 110 | -2.208 | 228.286 | -1.212 | -2.300 |
| 17 | 111 | -2.249 | 230.385 | -1.212 | -2.300 |
| 18 | 112 | -2.29 | 232.485 | -1.212 | -2.300 |
| 19 | 113 | -2.320 | 233.985 | -1.370 | -2.300 |

LAV GELIDA. V-Riera de la Rierussa. Tendon 14 (Servicio).

Numero de secciones
19

| | Lt | Lac | Anghor | Angver | Angulo | cosx | cosy | cosz |
|---|---|---|---|---|---|---|---|---|
| 1 | 2.167 | 0.000 | 0.00000 | 0.00000 | 0.00000 | -.01615 | 0.96925 | 0.24554 |
| 2 | 2.107 | 2.167 | 0.00048 | -0.16349 | 0.16349 | -.01709 | 0.99628 | 0.08449 |
| 3 | 2.103 | 4.273 | -0.00001 | -0.13026 | 0.13026 | -.01712 | 0.99881 | -.04566 |
| 4 | 2.120 | 6.376 | 0.00000 | -0.09060 | 0.09060 | -.01698 | 0.99058 | -.13585 |
| 5 | 2.129 | 8.496 | 0.00048 | -0.03217 | 0.03217 | -.01738 | 0.98569 | -.16765 |
| 6 | 2.122 | 10.625 | -0.00001 | 0.02563 | 0.02563 | -.01744 | 0.98967 | -.14232 |
| 7 | 2.115 | 12.747 | 0.00000 | 0.02528 | 0.02528 | -.01749 | 0.99295 | -.11726 |
| 8 | 2.108 | 14.862 | 0.00048 | 0.02633 | 0.02633 | -.01803 | 0.99568 | -.09108 |
| 9 | 2.105 | 16.970 | -0.00001 | 0.02607 | 0.02607 | -.01805 | 0.99772 | -.06509 |
| 10 | 2.102 | 19.075 | 0.00048 | 0.02564 | 0.02564 | -.01855 | 0.99905 | -.03949 |
| 11 | 2.100 | 21.177 | 0.00001 | 0.02664 | 0.02664 | -.01858 | 0.99974 | -.01286 |
| 12 | 2.100 | 23.277 | -0.00001 | 0.01286 | 0.01286 | -.01857 | 0.99983 | 0.00000 |
| 13 | 2.100 | 25.377 | 0.00048 | 0.00000 | 0.00048 | -.01904 | 0.99982 | 0.00000 |
| 14 | 2.099 | 27.477 | 0.00001 | 0.00000 | 0.00001 | -.01905 | 0.99982 | 0.00000 |
| 15 | 2.100 | 29.577 | -0.00001 | 0.00000 | 0.00001 | -.01904 | 0.99982 | 0.00000 |
| 16 | 2.099 | 31.677 | 0.00049 | 0.00000 | 0.00049 | -.01953 | 0.99981 | 0.00000 |
| 17 | 2.100 | 33.777 | -0.00001 | 0.00000 | 0.00001 | -.01952 | 0.99981 | 0.00000 |
| 18 | 1.500 | 35.877 | 0.00048 | 0.00000 | 0.00048 | -.02000 | 0.99980 | 0.00000 |
| 19 | 0.000 | 37.377 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

ESTADO A
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 824.425 | 824.425 | 824.425 | -13.3179 | 799.0748 | 202.4323 | -54.3371 | -0.9056 |
| 2 | 979.935 | 844.490 | 827.670 | 861.311 | -1.3995 | 59.0307 | -129.6630 | 36.7171 | 0.8705 |
| 3 | 947.121 | 877.304 | 864.350 | 890.257 | -0.5260 | 31.0926 | -113.4184 | 24.8741 | 0.4208 |
| 4 | 922.452 | 901.973 | 893.199 | 910.748 | -0.2224 | 12.9742 | -83.0774 | 9.1338 | 0.1566 |
| 5 | 907.710 | 907.710 | 910.776 | 904.643 | -0.2526 | -10.4711 | -27.9349 | -2.7015 | 0.0652 |
| 6 | 899.337 | 899.337 | 901.758 | 896.917 | 0.0789 | -4.0526 | 24.0091 | 0.4012 | 0.0078 |
| 7 | 891.700 | 891.700 | 894.066 | 889.333 | 0.0808 | -4.5877 | 23.3670 | 1.8397 | 0.0324 |
| 8 | 884.072 | 884.072 | 886.517 | 881.628 | -0.3332 | -5.2412 | 23.9893 | 3.4016 | -0.2163 |
| 9 | 876.445 | 876.445 | 878.844 | 874.046 | 0.1120 | -5.7696 | 23.4051 | 4.8522 | 0.0942 |
| 10 | 868.951 | 868.951 | 871.291 | 866.612 | -0.2989 | -6.2635 | 22.6717 | 6.1257 | -0.2924 |
| 11 | 861.474 | 861.474 | 863.884 | 859.065 | 0.1213 | -6.9410 | 23.1716 | 7.3644 | 0.1287 |
| 12 | 855.209 | 855.209 | 856.364 | 854.054 | 0.0993 | -4.9388 | 11.0476 | 5.3734 | 0.1081 |
| 13 | 851.325 | 851.325 | 851.368 | 851.282 | -0.3537 | -2.7787 | 0.0000 | 3.0233 | -0.3848 |
| 14 | 848.604 | 848.604 | 848.605 | 848.603 | 0.0433 | -2.6791 | 0.0000 | 2.9148 | 0.0471 |
| 15 | 845.934 | 845.934 | 845.935 | 845.933 | 0.0585 | -2.6691 | 0.0000 | 2.9040 | 0.0637 |
| 16 | 843.229 | 843.229 | 843.272 | 843.186 | -0.3568 | -2.7543 | 0.0000 | 2.9967 | -0.3882 |
| 17 | 840.534 | 840.534 | 840.535 | 840.534 | 0.0596 | -2.6521 | 0.0000 | 2.8855 | 0.0649 |
| 18 | 837.848 | 837.848 | 837.890 | 837.806 | -0.3455 | -2.7351 | 0.0000 | 2.9758 | -0.3759 |
| 19 | 835.923 | 835.923 | 835.923 | 835.923 | 16.7528 | -837.6383 | 0.0000 | 779.0037 | 15.5801 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 164.077 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 175.575 Tn
Distancia afectada por clavado de cuñas: 8.081 m

Sum. Fx= 0.000000
Sum. Fy= 0.000000
Sum. Fz= -0.000000
Sum. Mx= 0.000000
Sum. My= 0.000000

Sum. Mz= 0.000000

ESTADO B

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 835.923 | 835.923 | 835.923 | 835.923 | -13.5476 | 812.8561 | 205.9236 | -55.2742 | -0.9212 |
| 2 | 853.290 | 853.290 | 838.644 | 867.937 | -1.3300 | 54.5878 | -132.3623 | 33.9536 | 0.8272 |
| 3 | 882.758 | 882.758 | 870.685 | 894.831 | -0.4926 | 29.1458 | -114.5482 | 23.3166 | 0.3940 |
| 4 | 906.279 | 906.279 | 897.658 | 914.899 | -0.2157 | 12.5813 | -83.6994 | 8.8572 | 0.1518 |
| 5 | 920.925 | 920.925 | 917.813 | 924.036 | -0.5209 | 4.5592 | -30.7218 | 1.1763 | 0.1344 |
| 6 | 929.494 | 929.494 | 926.992 | 931.996 | -0.1963 | 11.5752 | 22.3404 | -1.1459 | -0.0194 |
| 7 | 937.455 | 937.455 | 934.967 | 939.943 | -0.1933 | 10.9733 | 22.4977 | -4.4003 | -0.0775 |
| 8 | 945.544 | 945.544 | 942.929 | 948.158 | -0.6490 | 10.7741 | 23.9411 | -6.9924 | -0.4212 |
| 9 | 953.772 | 953.772 | 951.161 | 956.383 | -0.1757 | 10.1627 | 24.1820 | -8.5468 | -0.1478 |
| 10 | 961.997 | 961.997 | 959.407 | 964.587 | -0.5738 | 6.3507 | 24.3631 | -6.2110 | -0.5611 |
| 11 | 970.347 | 961.771 | 964.485 | 959.057 | 0.1368 | -7.8227 | 25.7898 | 8.2999 | 0.1452 |
| 12 | 977.450 | 954.668 | 955.988 | 953.348 | 0.1133 | -5.6481 | 12.2940 | 6.1451 | 0.1233 |
| 13 | 981.908 | 950.210 | 950.259 | 950.161 | -0.3914 | -3.2047 | 0.0000 | 3.4867 | -0.4258 |
| 14 | 985.056 | 947.062 | 947.063 | 947.061 | 0.0506 | -3.1084 | 0.0000 | 3.3819 | 0.0551 |
| 15 | 988.165 | 943.953 | 943.954 | 943.952 | 0.0680 | -3.1194 | 0.0000 | 3.3939 | 0.0740 |
| 16 | 991.335 | 940.783 | 940.834 | 940.733 | -0.3935 | -3.2361 | 0.0000 | 3.5209 | -0.4281 |
| 17 | 994.513 | 937.605 | 937.606 | 937.604 | 0.0700 | -3.1394 | 0.0000 | 3.4157 | 0.0762 |
| 18 | 997.702 | 934.416 | 934.466 | 934.366 | -0.3978 | -2.3560 | 0.0000 | 2.5633 | -0.4328 |
| 19 | 1000.000 | 932.118 | 932.118 | 932.118 | 18.6386 | -931.9316 | 0.0000 | 866.6964 | 17.3339 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 164.077 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 67.882 Tn
Distancia afectada por clavado de cuñas: 16.346 m

Sum. Fx= 0.000000
Sum. Fy= -0.000000
Sum. Fz= 0.000000
Sum. Mx= 0.000000
Sum. My= -0.000000
Sum. Mz= -0.000000

Alargamientos teoricos de tendones

Tesado por seccion No. 1: 24.3 cm.
Al retesar por seccion No. 19: 1.8 cm.
Tesado por seccion No. 19: 26.1 cm.

Sum. Fx= 0.000000
Sum. Fy= -0.000000
Sum. Fz= 0.000000
Sum. Mx= 0.000000
Sum. My= -0.000000
Sum. Mz= -0.000000

ESTADO C

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 824.425 | 824.425 | 824.425 | -13.3179 | 799.0748 | 202.4323 | -54.3371 | -0.9056 |
| 2 | 979.935 | 853.290 | 838.644 | 867.937 | -1.5596 | 68.3692 | -128.8710 | 42.5256 | 0.9701 |
| 3 | 882.758 | 882.758 | 870.685 | 894.831 | -0.4926 | 29.1458 | -114.5482 | 23.3166 | 0.3940 |
| 4 | 906.279 | 906.279 | 897.658 | 914.899 | -0.2157 | 12.5813 | -83.6994 | 8.8572 | 0.1518 |
| 5 | 920.925 | 920.925 | 917.813 | 924.036 | -0.5209 | 4.5592 | -30.7218 | 1.1763 | 0.1344 |
| 6 | 929.494 | 929.494 | 926.992 | 931.996 | -0.1963 | 11.5752 | 22.3404 | -1.1459 | -0.0194 |
| 7 | 937.455 | 937.455 | 934.967 | 939.943 | -0.1933 | 10.9733 | 22.4977 | -4.4003 | -0.0775 |
| 8 | 945.544 | 945.544 | 942.929 | 948.158 | -0.6490 | 10.7741 | 23.9411 | -6.9924 | -0.4212 |
| 9 | 953.772 | 953.772 | 951.161 | 956.383 | -0.1757 | 10.1627 | 24.1820 | -8.5468 | -0.1478 |
| 10 | 961.997 | 961.997 | 959.407 | 964.587 | -0.5738 | 6.3507 | 24.3631 | -6.2110 | -0.5611 |
| 11 | 970.347 | 961.771 | 964.485 | 959.057 | 0.1368 | -7.8227 | 25.7898 | 8.2999 | 0.1452 |
| 12 | 977.450 | 954.668 | 955.988 | 953.348 | 0.1133 | -5.6481 | 12.2940 | 6.1451 | 0.1233 |
| 13 | 981.908 | 950.210 | 950.259 | 950.161 | -0.3914 | -3.2047 | 0.0000 | 3.4867 | -0.4258 |
| 14 | 985.056 | 947.062 | 947.063 | 947.061 | 0.0506 | -3.1084 | 0.0000 | 3.3819 | 0.0551 |
| 15 | 988.165 | 943.953 | 943.954 | 943.952 | 0.0680 | -3.1194 | 0.0000 | 3.3939 | 0.0740 |
| 16 | 991.335 | 940.783 | 940.834 | 940.733 | -0.3935 | -3.2361 | 0.0000 | 3.5209 | -0.4281 |
| 17 | 994.513 | 937.605 | 937.606 | 937.604 | 0.0700 | -3.1394 | 0.0000 | 3.4157 | 0.0762 |

"TITULO:" LAV GELIDA. V-Riera de la Rierussa. Tendon 11 (Servicio).

CARACTERISTICAS DEL PRETENSADO

| NS | Po (t) | MU | K | INT.CUÑ.(mm) | Ep(Kg/cm2) | Ap(cm2) |
|---|---|---|---|---|---|---|
| 39 | 1000.000 | 0.2100 | 0.0015 | 5 | 1900000.0 | 70.17 |

COORDENADAS

| | | CENTRO DE GRAVEDAD DE LA SECCION | | | PRETENSADO |
|---|---|---|---|---|---|
| SECCION | NUDO | X (long.) | Y (tran.) | Z (prof.) | Zp (prof.) |
| 1 | 75 | -1.015 | 154.796 | -1.212 | -0.930 |
| 2 | 76 | -1.043 | 156.895 | -1.370 | -0.405 |
| 3 | 77 | -1.071 | 158.995 | -1.370 | -0.230 |
| 4 | 78 | -1.1 | 161.095 | -1.370 | -0.340 |
| 5 | 79 | -1.129 | 163.195 | -1.212 | -0.668 |
| 6 | 80 | -1.158 | 165.295 | -1.212 | -1.079 |
| 7 | 81 | -1.187 | 167.394 | -1.212 | -1.435 |
| 8 | 82 | -1.217 | 169.494 | -1.212 | -1.736 |
| 9 | 83 | -1.248 | 171.594 | -1.212 | -1.982 |
| 10 | 84 | -1.278 | 173.694 | -1.212 | -2.174 |
| 11 | 85 | -1.31 | 175.793 | -1.212 | -2.311 |
| 12 | 86 | -1.341 | 177.893 | -1.212 | -2.393 |
| 13 | 87 | -1.373 | 179.993 | -1.212 | -2.420 |
| 14 | 88 | -1.405 | 182.093 | -1.212 | -2.393 |
| 15 | 89 | -1.438 | 184.193 | -1.212 | -2.311 |
| 16 | 90 | -1.471 | 186.292 | -1.212 | -2.174 |
| 17 | 91 | -1.504 | 188.392 | -1.212 | -1.982 |
| 18 | 92 | -1.538 | 190.492 | -1.212 | -1.736 |
| 19 | 93 | -1.572 | 192.591 | -1.212 | -1.435 |
| 20 | 94 | -1.606 | 194.691 | -1.212 | -1.079 |
| 21 | 95 | -1.641 | 196.791 | -1.212 | -0.668 |
| 22 | 96 | -1.676 | 198.891 | -1.370 | -0.340 |
| 23 | 97 | -1.712 | 200.99 | -1.370 | -0.230 |
| 24 | 98 | -1.748 | 203.09 | -1.370 | -0.403 |
| 25 | 99 | -1.784 | 205.19 | -1.212 | -0.753 |
| 26 | 100 | -1.821 | 207.289 | -1.212 | -1.057 |
| 27 | 101 | -1.858 | 209.389 | -1.212 | -1.315 |
| 28 | 102 | -1.895 | 211.489 | -1.212 | -1.526 |
| 29 | 103 | -1.933 | 213.588 | -1.212 | -1.689 |
| 30 | 104 | -1.971 | 215.688 | -1.212 | -1.806 |
| 31 | 105 | -2.01 | 217.788 | -1.212 | -1.877 |
| 32 | 106 | -2.049 | 219.887 | -1.212 | -1.900 |
| 33 | 107 | -2.088 | 221.987 | -1.212 | -1.900 |
| 34 | 108 | -2.128 | 224.087 | -1.212 | -1.900 |
| 35 | 109 | -2.168 | 226.186 | -1.212 | -1.900 |
| 36 | 110 | -2.208 | 228.286 | -1.212 | -1.900 |
| 37 | 111 | -2.249 | 230.385 | -1.212 | -1.900 |
| 38 | 112 | -2.29 | 232.485 | -1.212 | -1.900 |
| 39 | 113 | -2.320 | 233.985 | -1.370 | -1.900 |

LAV GELIDA. V-Riera de la Rierussa. Tendon 11 (Servicio).

Numero de secciones
39

| | Lt | Lac | Anghor | Angver | Angulo | cosx | cosy | cosz |
|---|---|---|---|---|---|---|---|---|
| 1 | 2.164 | 0.000 | 0.00000 | 0.00000 | 0.00000 | -.01294 | 0.97003 | 0.24262 |
| 2 | 2.107 | 2.164 | -0.00001 | -0.16194 | 0.16194 | -.01329 | 0.99646 | 0.08304 |
| 3 | 2.103 | 4.271 | 0.00048 | -0.13546 | 0.13546 | -.01379 | 0.99854 | -.05230 |
| 4 | 2.126 | 6.374 | -0.00000 | -0.10260 | 0.10260 | -.01364 | 0.98793 | -.15431 |
| 5 | 2.140 | 8.500 | 0.00000 | -0.03833 | 0.03833 | -.01355 | 0.98129 | -.19205 |
| 6 | 2.129 | 10.640 | 0.00001 | 0.02526 | 0.02526 | -.01362 | 0.98583 | -.16720 |
| 7 | 2.122 | 12.769 | 0.00047 | 0.02564 | 0.02565 | -.01414 | 0.98978 | -.14187 |
| 8 | 2.115 | 14.891 | 0.00048 | 0.02575 | 0.02575 | -.01466 | 0.99310 | -.11633 |
| 9 | 2.109 | 17.006 | -0.00048 | 0.02543 | 0.02544 | -.01422 | 0.99575 | -.09104 |
| 10 | 2.104 | 19.114 | 0.00096 | 0.02600 | 0.02601 | -.01521 | 0.99776 | -.06512 |
| 11 | 2.102 | 21.218 | -0.00048 | 0.02615 | 0.02615 | -.01475 | 0.99913 | -.03901 |
| 12 | 2.100 | 23.320 | 0.00048 | 0.02617 | 0.02617 | -.01524 | 0.99980 | -.01285 |
| 13 | 2.100 | 25.420 | 0.00000 | 0.02571 | 0.02571 | -.01524 | 0.99980 | 0.01285 |
| 14 | 2.102 | 27.521 | 0.00048 | 0.02617 | 0.02617 | -.01570 | 0.99912 | 0.03901 |
| 15 | 2.104 | 29.623 | 0.00001 | 0.02615 | 0.02615 | -.01569 | 0.99775 | 0.06512 |
| 16 | 2.109 | 31.726 | -0.00001 | 0.02600 | 0.02600 | -.01565 | 0.99572 | 0.09104 |
| 17 | 2.115 | 33.835 | 0.00048 | 0.02543 | 0.02544 | -.01608 | 0.99308 | 0.11633 |
| 18 | 2.121 | 35.950 | 0.00001 | 0.02582 | 0.02582 | -.01603 | 0.98975 | 0.14193 |
| 19 | 2.130 | 38.071 | -0.00001 | 0.02549 | 0.02549 | -.01596 | 0.98581 | 0.16712 |
| 20 | 2.140 | 40.201 | 0.00048 | 0.02534 | 0.02534 | -.01635 | 0.98125 | 0.19204 |
| 21 | 2.126 | 42.341 | 0.00000 | -0.03833 | 0.03833 | -.01646 | 0.98789 | 0.15430 |
| 22 | 2.102 | 44.467 | 0.00048 | -0.10257 | 0.10257 | -.01713 | 0.99848 | 0.05233 |
| 23 | 2.107 | 46.569 | -0.00001 | -0.13453 | 0.13453 | -.01708 | 0.99648 | -.08209 |
| 24 | 2.129 | 48.677 | 0.00000 | -0.08294 | 0.08294 | -.01691 | 0.98625 | -.16438 |
| 25 | 2.121 | 50.806 | 0.00048 | 0.02132 | 0.02132 | -.01744 | 0.98952 | -.14331 |
| 26 | 2.116 | 52.927 | -0.00001 | 0.02158 | 0.02158 | -.01748 | 0.99239 | -.12192 |
| 27 | 2.111 | 55.043 | 0.00000 | 0.02210 | 0.02210 | -.01753 | 0.99484 | -.09996 |
| 28 | 2.106 | 57.154 | 0.00048 | 0.02264 | 0.02264 | -.01805 | 0.99684 | -.07741 |
| 29 | 2.104 | 59.260 | -0.00001 | 0.02184 | 0.02184 | -.01806 | 0.99829 | -.05562 |
| 30 | 2.102 | 61.363 | 0.00048 | 0.02186 | 0.02186 | -.01856 | 0.99926 | -.03378 |
| 31 | 2.099 | 63.465 | 0.00001 | 0.02284 | 0.02284 | -.01858 | 0.99977 | -.01096 |
| 32 | 2.100 | 65.564 | -0.00001 | 0.01096 | 0.01096 | -.01857 | 0.99983 | 0.00000 |
| 33 | 2.100 | 67.665 | 0.00048 | 0.00000 | 0.00048 | -.01904 | 0.99982 | 0.00000 |
| 34 | 2.099 | 69.765 | 0.00001 | 0.00000 | 0.00001 | -.01905 | 0.99982 | 0.00000 |
| 35 | 2.100 | 71.865 | -0.00001 | 0.00000 | 0.00001 | -.01904 | 0.99982 | 0.00000 |
| 36 | 2.099 | 73.965 | 0.00049 | 0.00000 | 0.00049 | -.01953 | 0.99981 | 0.00000 |
| 37 | 2.100 | 76.064 | -0.00001 | 0.00000 | 0.00001 | -.01952 | 0.99981 | 0.00000 |
| 38 | 1.500 | 78.165 | 0.00048 | 0.00000 | 0.00048 | -.02000 | 0.99980 | 0.00000 |
| 39 | 0.000 | 79.665 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

ESTADO A
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 822.945 | 822.945 | 822.945 | -10.6489 | 798.2846 | 199.6662 | 225.1163 | 3.0030 |
| 2 | 980.096 | 842.849 | 826.185 | 859.512 | -0.7707 | 58.1827 | -128.2940 | 56.1463 | 0.7437 |
| 3 | 946.924 | 876.020 | 862.553 | 889.488 | -0.8459 | 31.7187 | -117.8963 | 36.1593 | 0.9643 |
| 4 | 920.600 | 902.345 | 892.428 | 912.262 | -0.1804 | 13.0641 | -94.2427 | 13.4560 | 0.1858 |
| 5 | 904.145 | 904.145 | 907.784 | 900.506 | 0.2429 | -17.5913 | -32.1780 | -9.5697 | -0.1322 |
| 6 | 895.246 | 895.246 | 897.620 | 892.871 | 0.0417 | -3.4411 | 23.6557 | -0.4577 | -0.0056 |
| 7 | 887.634 | 887.634 | 890.024 | 885.243 | -0.3560 | -4.0175 | 23.7003 | 0.8959 | -0.0794 |
| 8 | 880.051 | 880.051 | 882.431 | 877.671 | -0.3496 | -4.5836 | 23.4850 | 2.4018 | -0.1832 |
| 9 | 872.561 | 872.561 | 874.891 | 870.230 | 0.4877 | -5.0885 | 22.8782 | 3.9181 | 0.3756 |
| 10 | 865.119 | 865.119 | 867.482 | 862.756 | -0.7446 | -5.7039 | 23.0401 | 5.4872 | -0.7163 |
| 11 | 857.682 | 857.682 | 860.037 | 855.327 | 0.5083 | -6.2410 | 22.8158 | 6.8588 | 0.5586 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 12 | 850.298 | 850.298 | 852.635 | 847.961 | -0.3035 | -6.7901 | 22.4692 | 8.0191 | -0.3584 |
| 13 | 843.018 | 843.018 | 845.294 | 840.743 | 0.1100 | -7.2175 | 21.7076 | 8.7187 | 0.1329 |
| 14 | 835.801 | 835.801 | 838.098 | 833.504 | -0.2776 | -7.8087 | 21.7102 | 9.2221 | -0.3278 |
| 15 | 828.606 | 828.606 | 830.880 | 826.331 | 0.1241 | -8.2919 | 21.2952 | 9.1128 | 0.1364 |
| 16 | 821.485 | 821.485 | 823.727 | 819.243 | 0.1434 | -8.7346 | 20.7692 | 8.4027 | 0.1380 |
| 17 | 814.480 | 814.480 | 816.655 | 812.305 | -0.2418 | -9.0566 | 19.9153 | 6.9736 | -0.1862 |
| 18 | 807.543 | 807.543 | 809.732 | 805.354 | 0.1491 | -9.5870 | 19.8077 | 5.0236 | 0.0781 |
| 19 | 800.653 | 800.653 | 802.796 | 798.510 | 0.1667 | -9.9194 | 19.1403 | 2.2120 | 0.0372 |
| 20 | 793.850 | 793.850 | 795.962 | 791.737 | -0.2034 | -10.2849 | 18.6036 | -1.3679 | 0.0271 |
| 21 | 786.037 | 786.037 | 789.200 | 782.873 | 0.0584 | -3.5019 | -31.2527 | -1.9050 | -0.0318 |
| 22 | 772.066 | 772.066 | 780.381 | 763.752 | -0.1894 | -10.7970 | -80.8318 | -11.1210 | 0.1951 |
| 23 | 750.743 | 750.743 | 761.347 | 740.139 | 0.4358 | -25.0611 | -100.7230 | -28.5697 | -0.4969 |
| 24 | 731.433 | 731.433 | 737.803 | 725.063 | 0.3846 | -22.4366 | -58.4240 | -21.6962 | -0.3719 |
| 25 | 721.137 | 721.137 | 722.751 | 719.522 | -0.2917 | -3.1115 | 16.0653 | -1.4282 | 0.1339 |
| 26 | 715.615 | 715.615 | 717.236 | 713.993 | 0.0664 | -3.4278 | 16.0661 | -0.5313 | -0.0103 |
| 27 | 710.082 | 710.082 | 711.730 | 708.434 | 0.0666 | -3.7793 | 16.2379 | 0.3893 | 0.0069 |
| 28 | 704.520 | 704.520 | 706.195 | 702.845 | -0.2664 | -4.1559 | 16.4059 | 1.3049 | -0.0837 |
| 29 | 699.026 | 699.026 | 700.629 | 697.423 | 0.0855 | -4.3922 | 15.6176 | 2.0951 | 0.0408 |
| 30 | 693.633 | 693.633 | 695.225 | 692.041 | -0.2442 | -4.7024 | 15.4097 | 2.7932 | -0.1451 |
| 31 | 688.213 | 688.213 | 689.863 | 686.562 | 0.0891 | -5.1238 | 15.8589 | 3.4073 | 0.0592 |
| 32 | 683.617 | 683.617 | 684.404 | 682.831 | 0.0746 | -3.6895 | 7.5213 | 2.5384 | 0.0513 |
| 33 | 680.649 | 680.649 | 680.683 | 680.615 | -0.2828 | -2.2217 | 0.0000 | 1.5285 | -0.1946 |
| 34 | 678.473 | 678.473 | 678.474 | 678.473 | 0.0346 | -2.1420 | 0.0000 | 1.4737 | 0.0238 |
| 35 | 676.339 | 676.339 | 676.340 | 676.338 | 0.0468 | -2.1340 | 0.0000 | 1.4682 | 0.0322 |
| 36 | 674.176 | 674.176 | 674.211 | 674.142 | -0.2853 | -2.2021 | 0.0000 | 1.5151 | -0.1963 |
| 37 | 672.022 | 672.022 | 672.023 | 672.021 | 0.0477 | -2.1204 | 0.0000 | 1.4588 | 0.0328 |
| 38 | 669.874 | 669.874 | 669.907 | 669.840 | -0.2762 | -2.1868 | 0.0000 | 1.5045 | -0.1900 |
| 39 | 668.335 | 668.335 | 668.335 | 668.335 | 13.3941 | -669.7064 | 0.0000 | 354.9444 | 7.0989 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 331.665 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 177.055 Tn
Distancia afectada por clavado de cuñas: 7.850 m

Sum. Fx= 0.000000
Sum. Fy= 0.000000
Sum. Fz= 0.000000
Sum. Mx= 0.000000
Sum. My= -0.000000
Sum. Mz= -0.000000

ESTADO B
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 668.335 | 668.335 | 668.335 | 668.335 | -8.6763 | 650.4150 | 162.6812 | 183.4170 | 2.4467 |
| 2 | 682.104 | 682.104 | 670.507 | 693.701 | -0.5694 | 43.0175 | -104.8952 | 41.5119 | 0.5495 |
| 3 | 705.938 | 705.938 | 695.898 | 715.978 | -0.6583 | 23.7563 | -95.3531 | 27.0822 | 0.7504 |
| 4 | 726.062 | 726.062 | 718.240 | 733.883 | -0.1402 | 10.1508 | -76.0365 | 10.4553 | 0.1444 |
| 5 | 739.201 | 739.201 | 736.227 | 742.176 | -0.0455 | 3.2931 | -29.3917 | 1.7915 | 0.0247 |
| 6 | 746.543 | 746.543 | 744.563 | 748.523 | -0.1380 | 9.6436 | 17.4410 | 1.2826 | 0.0184 |
| 7 | 752.945 | 752.945 | 750.918 | 754.973 | -0.4814 | 9.3659 | 18.1055 | -2.0886 | -0.1074 |
| 8 | 759.433 | 759.433 | 757.379 | 761.487 | -0.4897 | 8.9941 | 18.5799 | -4.7129 | -0.2566 |
| 9 | 765.952 | 765.952 | 763.906 | 767.997 | 0.2396 | 8.5168 | 18.7291 | -6.5580 | 0.1845 |
| 10 | 772.541 | 772.541 | 770.431 | 774.651 | -0.8613 | 8.2067 | 19.5326 | -7.8948 | -0.8286 |
| 11 | 779.239 | 779.239 | 777.099 | 781.379 | 0.2596 | 7.8042 | 20.0264 | -8.5768 | 0.2853 |
| 12 | 786.006 | 786.006 | 783.846 | 788.166 | -0.4847 | 7.3322 | 20.4172 | -8.6594 | -0.5724 |
| 13 | 792.793 | 792.793 | 790.653 | 794.934 | -0.1034 | 6.7875 | 20.4143 | -8.1993 | -0.1249 |
| 14 | 799.640 | 799.640 | 797.442 | 801.837 | -0.4798 | 6.3738 | 21.1301 | -7.5275 | -0.5667 |
| 15 | 806.583 | 806.583 | 804.369 | 808.798 | -0.0984 | 5.8741 | 21.4566 | -6.4557 | -0.1081 |
| 16 | 813.575 | 813.575 | 811.354 | 815.795 | -0.0780 | 5.3495 | 21.6660 | -5.1462 | -0.0750 |
| 17 | 820.572 | 820.572 | 818.380 | 822.763 | -0.4655 | 4.7847 | 21.5146 | -3.6842 | -0.3584 |
| 18 | 827.621 | 827.621 | 825.377 | 829.864 | -0.0761 | 4.3064 | 22.1410 | -2.2565 | -0.0399 |
| 19 | 834.743 | 834.743 | 832.508 | 836.977 | -0.0546 | 3.7670 | 22.1625 | -0.8400 | -0.0122 |
| 20 | 841.896 | 841.896 | 839.656 | 844.137 | -0.4480 | 3.2330 | 22.3116 | 0.4300 | 0.0596 |
| 21 | 850.273 | 850.273 | 846.851 | 853.694 | -0.2512 | 15.0749 | -30.4886 | 8.2007 | 0.1367 |
| 22 | 865.744 | 865.744 | 856.421 | 875.068 | -0.9321 | 30.4528 | -86.2107 | 31.3664 | 0.9600 |
| 23 | 890.409 | 890.409 | 877.831 | 902.986 | -0.4412 | 26.1547 | -120.2953 | 29.8164 | 0.5030 |
| 24 | 913.803 | 913.803 | 905.845 | 921.761 | -0.1602 | 9.3426 | -77.6380 | 9.0343 | 0.1549 |
| 25 | 926.784 | 926.784 | 924.709 | 928.859 | -0.6193 | 10.0598 | 18.4572 | 4.6175 | 0.2842 |
| 26 | 933.936 | 933.936 | 931.819 | 936.052 | -0.1653 | 9.8210 | 19.0545 | 1.5222 | 0.0256 |
| 27 | 941.212 | 941.212 | 939.028 | 943.396 | -0.1696 | 9.6244 | 19.8893 | -0.9913 | -0.0175 |
| 28 | 948.644 | 948.644 | 946.388 | 950.899 | -0.6264 | 9.3865 | 20.7563 | -2.9474 | -0.1967 |
| 29 | 956.100 | 956.100 | 953.907 | 958.292 | -0.1508 | 8.7867 | 20.3746 | -4.1912 | -0.0719 |
| 30 | 963.533 | 963.533 | 961.321 | 965.744 | -0.5254 | 3.6813 | 20.8970 | -2.1867 | -0.3121 |
| 31 | 971.122 | 961.745 | 964.073 | 959.416 | 0.1259 | -7.2334 | 22.0938 | 4.8102 | 0.0837 |
| 32 | 977.645 | 955.221 | 956.346 | 954.097 | 0.1065 | -5.2792 | 10.4768 | 3.6321 | 0.0733 |
| 33 | 981.908 | 950.959 | 951.008 | 950.910 | -0.3917 | -3.2047 | 0.0000 | 2.2048 | -0.2695 |
| 34 | 985.056 | 947.810 | 947.811 | 947.810 | 0.0506 | -3.1084 | 0.0000 | 2.1386 | 0.0348 |
| 35 | 988.165 | 944.702 | 944.703 | 944.701 | 0.0680 | -3.1194 | 0.0000 | 2.1461 | 0.0468 |
| 36 | 991.335 | 941.532 | 941.583 | 941.482 | -0.3938 | -3.2361 | 0.0000 | 2.2265 | -0.2710 |
| 37 | 994.513 | 938.354 | 938.355 | 938.353 | 0.0700 | -3.1394 | 0.0000 | 2.1599 | 0.0482 |
| 38 | 997.702 | 935.165 | 935.214 | 935.115 | -0.3981 | -2.3560 | 0.0000 | 1.6209 | -0.2739 |
| 39 | 1000.000 | 932.867 | 932.867 | 932.867 | 18.6536 | -932.6803 | 0.0000 | 494.3205 | 9.8864 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 331.665 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 67.133 Tn
Distancia afectada por clavado de cuñas: 16.846 m

Sum. Fx= 0.000000
Sum. Fy= 0.000000
Sum. Fz= 0.000000
Sum. Mx= -0.000000
Sum. My= 0.000000
Sum. Mz= -0.000000

ESTADO C
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 822.945 | 822.945 | 822.945 | -10.6489 | 798.2846 | 199.6662 | 225.1163 | 3.0030 |
| 2 | 980.096 | 842.849 | 826.185 | 859.512 | -0.7707 | 58.1827 | -128.2940 | 56.1463 | 0.7437 |
| 3 | 946.924 | 876.020 | 862.553 | 889.488 | -0.8459 | 31.7187 | -117.8963 | 36.1593 | 0.9643 |
| 4 | 920.600 | 902.345 | 892.428 | 912.262 | -0.1804 | 13.0641 | -94.2427 | 13.4560 | 0.1858 |
| 5 | 904.145 | 904.145 | 907.784 | 900.506 | 0.2429 | -17.5913 | -32.1780 | -9.5697 | -0.1322 |
| 6 | 895.246 | 895.246 | 897.620 | 892.871 | 0.0417 | -3.4411 | 23.6557 | -0.4577 | -0.0056 |
| 7 | 887.634 | 887.634 | 890.024 | 885.243 | -0.3560 | -4.0175 | 23.7003 | 0.8959 | -0.0794 |
| 8 | 880.051 | 880.051 | 882.431 | 877.671 | -0.3496 | -4.5836 | 23.4850 | 2.4018 | -0.1832 |
| 9 | 872.561 | 872.561 | 874.891 | 870.230 | 0.4877 | -5.0885 | 22.8782 | 3.9181 | 0.3756 |
| 10 | 865.119 | 865.119 | 867.482 | 862.756 | -0.7446 | -5.7039 | 23.0401 | 5.4872 | -0.7163 |
| 11 | 857.682 | 857.682 | 860.037 | 855.327 | 0.5083 | -6.2410 | 22.8158 | 6.8588 | 0.5586 |
| 12 | 850.298 | 850.298 | 852.635 | 847.961 | -0.3035 | -6.7901 | 22.4692 | 8.0191 | -0.3584 |
| 13 | 843.018 | 843.018 | 845.294 | 840.743 | 0.1100 | -7.2175 | 21.7076 | 8.7187 | 0.1329 |
| 14 | 835.801 | 835.801 | 838.098 | 833.504 | -0.2776 | -7.8087 | 21.7102 | 9.2221 | -0.3278 |
| 15 | 828.606 | 828.606 | 830.880 | 826.331 | 0.1241 | -8.2919 | 21.2952 | 9.1128 | 0.1364 |
| 16 | 821.485 | 821.485 | 823.727 | 819.243 | 0.1434 | -8.7346 | 20.7692 | 8.4027 | 0.1380 |
| 17 | 814.480 | 820.572 | 818.380 | 822.763 | -0.4520 | 3.9256 | 21.4360 | -3.0227 | -0.3480 |
| 18 | 827.621 | 827.621 | 825.377 | 829.864 | -0.0761 | 4.3064 | 22.1410 | -2.2565 | -0.0399 |
| 19 | 834.743 | 834.743 | 832.508 | 836.977 | -0.0546 | 3.7670 | 22.1625 | -0.8400 | -0.0122 |
| 20 | 841.896 | 841.896 | 839.656 | 844.137 | -0.4480 | 3.2330 | 22.3116 | 0.4300 | 0.0596 |
| 21 | 850.273 | 850.273 | 846.851 | 853.694 | -0.2512 | 15.0749 | -30.4886 | 8.2007 | 0.1367 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 22 | 865.744 | 865.744 | 856.421 | 875.068 | -0.9321 | 30.4528 | -86.2107 | 31.3664 | 0.9600 |
| 23 | 890.409 | 890.409 | 877.831 | 902.986 | -0.4412 | 26.1547 | -120.2953 | 29.8164 | 0.5030 |
| 24 | 913.803 | 913.803 | 905.845 | 921.761 | -0.1602 | 9.3426 | -77.6380 | 9.0343 | 0.1549 |
| 25 | 926.784 | 926.784 | 924.709 | 928.859 | -0.6193 | 10.0598 | 18.4572 | 4.6175 | 0.2842 |
| 26 | 933.936 | 933.936 | 931.819 | 936.052 | -0.1653 | 9.8210 | 19.0545 | 1.5222 | 0.0256 |
| 27 | 941.212 | 941.212 | 939.028 | 943.396 | -0.1696 | 9.6244 | 19.8893 | -0.9913 | -0.0175 |
| 28 | 948.644 | 948.644 | 946.388 | 950.899 | -0.6264 | 9.3865 | 20.7563 | -2.9474 | -0.1967 |
| 29 | 956.100 | 956.100 | 953.907 | 958.292 | -0.1508 | 8.7867 | 20.3746 | -4.1912 | -0.0719 |
| 30 | 963.533 | 963.533 | 961.321 | 965.744 | -0.5254 | 3.6813 | 20.8970 | -2.1867 | -0.3121 |
| 31 | 971.122 | 961.745 | 964.073 | 959.416 | 0.1259 | -7.2334 | 22.0938 | 4.8102 | 0.0837 |
| 32 | 977.645 | 955.221 | 956.346 | 954.097 | 0.1065 | -5.2792 | 10.4768 | 3.6321 | 0.0733 |
| 33 | 981.908 | 950.959 | 951.008 | 950.910 | -0.3917 | -3.2047 | 0.0000 | 2.2048 | -0.2695 |
| 34 | 985.056 | 947.810 | 947.811 | 947.810 | 0.0506 | -3.1084 | 0.0000 | 2.1386 | 0.0348 |
| 35 | 988.165 | 944.702 | 944.703 | 944.701 | 0.0680 | -3.1194 | 0.0000 | 2.1461 | 0.0468 |
| 36 | 991.335 | 941.532 | 941.583 | 941.482 | -0.3938 | -3.2361 | 0.0000 | 2.2265 | -0.2710 |
| 37 | 994.513 | 938.354 | 938.355 | 938.353 | 0.0700 | -3.1394 | 0.0000 | 2.1599 | 0.0482 |
| 38 | 997.702 | 935.165 | 935.214 | 935.115 | -0.3981 | -2.3560 | 0.0000 | 1.6209 | -0.2739 |
| 39 | 1000.000 | 932.867 | 932.867 | 932.867 | 18.6536 | -932.6803 | 0.0000 | 494.3205 | 9.8864 |

Sum. Fx= 0.000000
Sum. Fy= 0.000000
Sum. Fz= 0.000000
Sum. Mx= -0.000000
Sum. My= -0.000000
Sum. Mz= -0.000000

Alargamientos teoricos de tendones
==========

Tesado por seccion No. 1: 46.7 cm.
Al retesar por seccion No. 39: 6.7 cm.
Tesado por seccion No. 39: 50.8 cm.

"TITULO:" LAV GELIDA. V-Riera de la Rierussa. Tendon 12 (Servicio).

CARACTERISTICAS DEL PRETENSADO

| NS | Po (t) | MU | K | INT.CUÑ.(mm) | Ep(Kg/cm2) | Ap(cm2) |
|---|---|---|---|---|---|---|
| 39 | 1000.000 | 0.2100 | 0.0015 | 5 | 1900000.0 | 70.17 |

COORDENADAS

| | | CENTRO DE GRAVEDAD DE LA SECCION | | | PRETENSADO |
|---|---|---|---|---|---|
| SECCION | NUDO | X (long.) | Y (tran.) | Z (prof.) | Zp (prof.) |
| 1 | 75 | -1.015 | 154.796 | -1.212 | -1.330 |
| 2 | 76 | -1.043 | 156.895 | -1.370 | -0.760 |
| 3 | 77 | -1.071 | 158.995 | -1.370 | -0.570 |
| 4 | 78 | -1.1 | 161.095 | -1.370 | -0.679 |
| 5 | 79 | -1.129 | 163.195 | -1.212 | -1.008 |
| 6 | 80 | -1.158 | 165.295 | -1.212 | -1.419 |
| 7 | 81 | -1.187 | 167.394 | -1.212 | -1.775 |
| 8 | 82 | -1.217 | 169.494 | -1.212 | -2.076 |
| 9 | 83 | -1.248 | 171.594 | -1.212 | -2.322 |
| 10 | 84 | -1.278 | 173.694 | -1.212 | -2.514 |
| 11 | 85 | -1.31 | 175.793 | -1.212 | -2.651 |
| 12 | 86 | -1.341 | 177.893 | -1.212 | -2.733 |
| 13 | 87 | -1.373 | 179.993 | -1.212 | -2.760 |
| 14 | 88 | -1.405 | 182.093 | -1.212 | -2.733 |
| 15 | 89 | -1.438 | 184.193 | -1.212 | -2.651 |
| 16 | 90 | -1.471 | 186.292 | -1.212 | -2.514 |
| 17 | 91 | -1.504 | 188.392 | -1.212 | -2.322 |
| 18 | 92 | -1.538 | 190.492 | -1.212 | -2.076 |
| 19 | 93 | -1.572 | 192.591 | -1.212 | -1.775 |
| 20 | 94 | -1.606 | 194.691 | -1.212 | -1.419 |
| 21 | 95 | -1.641 | 196.791 | -1.212 | -1.008 |
| 22 | 96 | -1.676 | 198.891 | -1.370 | -0.679 |
| 23 | 97 | -1.712 | 200.99 | -1.370 | -0.570 |
| 24 | 98 | -1.748 | 203.09 | -1.370 | -0.791 |
| 25 | 99 | -1.784 | 205.19 | -1.212 | -1.237 |
| 26 | 100 | -1.821 | 207.289 | -1.212 | -1.625 |
| 27 | 101 | -1.858 | 209.389 | -1.212 | -1.954 |
| 28 | 102 | -1.895 | 211.489 | -1.212 | -2.222 |
| 29 | 103 | -1.933 | 213.588 | -1.212 | -2.431 |
| 30 | 104 | -1.971 | 215.688 | -1.212 | -2.581 |
| 31 | 105 | -2.01 | 217.788 | -1.212 | -2.670 |
| 32 | 106 | -2.049 | 219.887 | -1.212 | -2.700 |
| 33 | 107 | -2.088 | 221.987 | -1.212 | -2.700 |
| 34 | 108 | -2.128 | 224.087 | -1.212 | -2.700 |
| 35 | 109 | -2.168 | 226.186 | -1.212 | -2.700 |
| 36 | 110 | -2.208 | 228.286 | -1.212 | -2.700 |
| 37 | 111 | -2.249 | 230.385 | -1.212 | -2.700 |
| 38 | 112 | -2.29 | 232.485 | -1.212 | -2.700 |
| 39 | 113 | -2.320 | 233.985 | -1.370 | -2.700 |

LAV GELIDA. V-Riera de la Rierussa. Tendon 12 (Servicio).

Numero de secciones
39

| | Lt | Lac | Anghor | Angver | Angulo | cosx | cosy | cosz |
|---|---|---|---|---|---|---|---|---|
| 1 | 2.175 | 0.000 | 0.00000 | 0.00000 | 0.00000 | -.01287 | 0.96497 | 0.26205 |
| 2 | 2.109 | 2.175 | -0.00001 | -0.17492 | 0.17492 | -.01328 | 0.99584 | 0.09010 |
| 3 | 2.103 | 4.284 | 0.00048 | -0.14208 | 0.14208 | -.01379 | 0.99856 | -.05183 |
| 4 | 2.126 | 6.387 | -0.00000 | -0.10354 | 0.10354 | -.01364 | 0.98786 | -.15476 |
| 5 | 2.140 | 8.513 | 0.00000 | -0.03786 | 0.03786 | -.01355 | 0.98129 | -.19205 |
| 6 | 2.129 | 10.653 | 0.00001 | 0.02526 | 0.02526 | -.01362 | 0.98583 | -.16720 |
| 7 | 2.122 | 12.782 | 0.00047 | 0.02564 | 0.02565 | -.01414 | 0.98978 | -.14187 |
| 8 | 2.115 | 14.904 | 0.00048 | 0.02575 | 0.02575 | -.01466 | 0.99310 | -.11633 |
| 9 | 2.109 | 17.018 | -0.00048 | 0.02543 | 0.02544 | -.01422 | 0.99575 | -.09104 |
| 10 | 2.104 | 19.127 | 0.00096 | 0.02600 | 0.02601 | -.01521 | 0.99776 | -.06512 |
| 11 | 2.102 | 21.231 | -0.00048 | 0.02615 | 0.02615 | -.01475 | 0.99913 | -.03901 |
| 12 | 2.100 | 23.333 | 0.00048 | 0.02617 | 0.02617 | -.01524 | 0.99980 | -.01285 |
| 13 | 2.100 | 25.433 | 0.00000 | 0.02571 | 0.02571 | -.01524 | 0.99980 | 0.01285 |
| 14 | 2.102 | 27.534 | 0.00048 | 0.02617 | 0.02617 | -.01570 | 0.99912 | 0.03901 |
| 15 | 2.104 | 29.635 | 0.00001 | 0.02615 | 0.02615 | -.01569 | 0.99775 | 0.06512 |
| 16 | 2.109 | 31.739 | -0.00001 | 0.02600 | 0.02600 | -.01565 | 0.99572 | 0.09104 |
| 17 | 2.115 | 33.848 | 0.00048 | 0.02543 | 0.02544 | -.01608 | 0.99308 | 0.11633 |
| 18 | 2.121 | 35.963 | 0.00001 | 0.02582 | 0.02582 | -.01603 | 0.98975 | 0.14193 |
| 19 | 2.130 | 38.084 | -0.00001 | 0.02549 | 0.02549 | -.01596 | 0.98581 | 0.16712 |
| 20 | 2.140 | 40.214 | 0.00048 | 0.02534 | 0.02534 | -.01635 | 0.98125 | 0.19204 |
| 21 | 2.126 | 42.354 | 0.00000 | -0.03786 | 0.03786 | -.01646 | 0.98782 | 0.15476 |
| 22 | 2.102 | 44.480 | 0.00048 | -0.10351 | 0.10351 | -.01713 | 0.99851 | 0.05185 |
| 23 | 2.112 | 46.582 | -0.00001 | -0.15671 | 0.15671 | -.01705 | 0.99436 | -.10464 |
| 24 | 2.147 | 48.694 | 0.00000 | -0.10440 | 0.10440 | -.01677 | 0.97805 | -.20772 |
| 25 | 2.135 | 50.841 | 0.00048 | 0.02648 | 0.02649 | -.01733 | 0.98319 | -.18174 |
| 26 | 2.126 | 52.976 | -0.00001 | 0.02738 | 0.02738 | -.01740 | 0.98780 | -.15476 |
| 27 | 2.117 | 55.102 | 0.00000 | 0.02847 | 0.02847 | -.01747 | 0.99180 | -.12657 |
| 28 | 2.110 | 57.219 | 0.00048 | 0.02769 | 0.02769 | -.01801 | 0.99492 | -.09907 |
| 29 | 2.106 | 59.329 | -0.00001 | 0.02793 | 0.02793 | -.01805 | 0.99730 | -.07124 |
| 30 | 2.102 | 61.435 | 0.00048 | 0.02895 | 0.02895 | -.01855 | 0.99893 | -.04234 |
| 31 | 2.100 | 63.537 | 0.00001 | 0.02806 | 0.02806 | -.01858 | 0.99973 | -.01429 |
| 32 | 2.100 | 65.636 | -0.00001 | 0.01429 | 0.01429 | -.01857 | 0.99983 | 0.00000 |
| 33 | 2.100 | 67.737 | 0.00048 | 0.00000 | 0.00048 | -.01904 | 0.99982 | 0.00000 |
| 34 | 2.099 | 69.837 | 0.00001 | 0.00000 | 0.00001 | -.01905 | 0.99982 | 0.00000 |
| 35 | 2.100 | 71.937 | -0.00001 | 0.00000 | 0.00001 | -.01904 | 0.99982 | 0.00000 |
| 36 | 2.099 | 74.037 | 0.00049 | 0.00000 | 0.00049 | -.01953 | 0.99981 | 0.00000 |
| 37 | 2.100 | 76.136 | -0.00001 | 0.00000 | 0.00001 | -.01952 | 0.99981 | 0.00000 |
| 38 | 1.500 | 78.237 | 0.00048 | 0.00000 | 0.00048 | -.02000 | 0.99980 | 0.00000 |
| 39 | 0.000 | 79.737 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

ESTADO A
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 818.560 | 818.560 | 818.560 | -10.5368 | 789.8860 | 214.4998 | -93.2065 | -1.2433 |
| 2 | 978.768 | 839.792 | 821.818 | 857.767 | -0.8525 | 64.3160 | -137.2148 | 39.2328 | 0.5200 |
| 3 | 943.682 | 874.878 | 860.801 | 888.955 | -0.8690 | 33.4733 | -123.3595 | 26.7786 | 0.6952 |
| 4 | 916.712 | 901.848 | 891.883 | 911.813 | -0.1804 | 13.0662 | -95.0416 | 9.0287 | 0.1247 |
| 5 | 900.281 | 900.281 | 903.860 | 896.702 | 0.2875 | -20.8162 | -31.0978 | -4.2465 | -0.0586 |
| 6 | 891.463 | 891.463 | 893.828 | 889.098 | 0.0416 | -3.4266 | 23.5558 | 0.7093 | 0.0086 |
| 7 | 883.883 | 883.883 | 886.263 | 881.503 | -0.3545 | -4.0005 | 23.6001 | 2.2523 | -0.1996 |
| 8 | 876.332 | 876.332 | 878.702 | 873.963 | -0.3481 | -4.5643 | 23.3858 | 3.9435 | -0.3008 |
| 9 | 868.874 | 868.874 | 871.195 | 866.553 | 0.4857 | -5.0670 | 22.7816 | 5.6244 | 0.5391 |
| 10 | 861.463 | 861.463 | 863.816 | 859.110 | -0.7415 | -5.6798 | 22.9428 | 7.3951 | -0.9654 |
| 11 | 854.059 | 854.059 | 856.404 | 851.714 | 0.5061 | -6.2146 | 22.7194 | 8.9428 | 0.7283 |
| 12 | 846.706 | 846.706 | 849.033 | 844.379 | -0.3022 | -6.7614 | 22.3743 | 10.2841 | -0.4596 |
| 13 | 839.457 | 839.457 | 841.723 | 837.190 | 0.1095 | -7.1870 | 21.6159 | 11.1255 | 0.1695 |
| 14 | 832.270 | 832.270 | 834.557 | 829.983 | -0.2764 | -7.7757 | 21.6184 | 11.8269 | -0.4204 |
| 15 | 825.105 | 825.105 | 827.370 | 822.840 | 0.1236 | -8.2568 | 21.2053 | 11.8816 | 0.1779 |
| 16 | 818.014 | 818.014 | 820.247 | 815.782 | 0.1428 | -8.6977 | 20.6814 | 11.3244 | 0.1860 |
| 17 | 811.039 | 811.039 | 813.205 | 808.873 | -0.2408 | -9.0184 | 19.8311 | 10.0104 | -0.2673 |
| 18 | 804.131 | 804.131 | 806.311 | 801.952 | 0.1484 | -9.5465 | 19.7240 | 8.2482 | 0.1283 |
| 19 | 797.270 | 797.270 | 799.404 | 795.136 | 0.1660 | -9.8775 | 19.0595 | 5.5610 | 0.0935 |
| 20 | 790.496 | 790.496 | 792.599 | 788.392 | -0.2026 | -10.2415 | 18.5250 | 2.1200 | -0.0419 |
| 21 | 782.754 | 782.754 | 785.865 | 779.642 | 0.0578 | -3.4679 | -30.7509 | -0.7075 | -0.0118 |
| 22 | 768.804 | 768.804 | 777.159 | 760.449 | -0.1873 | -10.8277 | -81.2248 | -7.4820 | 0.1294 |
| 23 | 745.784 | 745.784 | 758.055 | 733.514 | 0.5194 | -29.9351 | -116.1893 | -23.9480 | -0.4155 |
| 24 | 723.265 | 723.265 | 731.194 | 715.337 | 0.5100 | -29.7477 | -71.8299 | -17.2239 | -0.2953 |
| 25 | 711.059 | 711.059 | 713.036 | 709.081 | -0.2955 | -2.4674 | 19.7177 | 0.0617 | -0.0074 |
| 26 | 704.788 | 704.788 | 706.814 | 702.762 | 0.0583 | -2.9760 | 20.1146 | 1.2291 | 0.0241 |
| 27 | 698.437 | 698.437 | 700.525 | 696.349 | 0.0625 | -3.5464 | 20.6171 | 2.6314 | 0.0464 |
| 28 | 692.129 | 692.129 | 694.141 | 690.117 | -0.2618 | -4.0322 | 19.7725 | 4.0726 | -0.2645 |
| 29 | 685.924 | 685.924 | 687.936 | 683.913 | 0.0882 | -4.5458 | 19.6477 | 5.5413 | 0.1075 |
| 30 | 679.690 | 679.690 | 681.756 | 677.624 | -0.2289 | -5.1643 | 20.0312 | 7.0699 | -0.3133 |
| 31 | 673.506 | 673.506 | 675.490 | 671.522 | 0.0974 | -5.5622 | 19.0925 | 8.1097 | 0.1419 |
| 32 | 668.407 | 668.407 | 669.410 | 667.404 | 0.0811 | -4.0479 | 9.5951 | 6.0232 | 0.1207 |
| 33 | 665.272 | 665.272 | 665.305 | 665.238 | -0.2764 | -2.1715 | 0.0000 | 3.2311 | -0.4113 |
| 34 | 663.145 | 663.145 | 663.146 | 663.145 | 0.0339 | -2.0936 | 0.0000 | 3.1152 | 0.0504 |
| 35 | 661.059 | 661.059 | 661.060 | 661.058 | 0.0457 | -2.0858 | 0.0000 | 3.1036 | 0.0681 |
| 36 | 658.945 | 658.945 | 658.979 | 658.912 | -0.2788 | -2.1524 | 0.0000 | 3.2027 | -0.4149 |
| 37 | 656.839 | 656.839 | 656.840 | 656.839 | 0.0466 | -2.0725 | 0.0000 | 3.0839 | 0.0693 |
| 38 | 654.740 | 654.740 | 654.773 | 654.707 | -0.2700 | -2.1374 | 0.0000 | 3.1804 | -0.4017 |
| 39 | 653.235 | 653.235 | 653.235 | 653.235 | 13.0915 | -654.5762 | 0.0000 | 870.5864 | 17.4117 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 346.765 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 181.440 Tn
Distancia afectada por clavado de cuñas: 7.745 m

Sum. Fx= -0.000000
Sum. Fy= -0.000000
Sum. Fz= -0.000000
Sum. Mx= -0.000000
Sum. My= 0.000000
Sum. Mz= 0.000000

ESTADO B
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 653.235 | 653.235 | 653.235 | 653.235 | -8.4362 | 632.4125 | 171.7366 | -74.6247 | -0.9955 |
| 2 | 667.631 | 667.631 | 655.370 | 679.891 | -0.6200 | 46.7985 | -110.2842 | 28.5471 | 0.3782 |
| 3 | 692.374 | 692.374 | 682.045 | 702.702 | -0.6645 | 24.6962 | -97.9886 | 19.7570 | 0.5316 |
| 4 | 712.669 | 712.669 | 704.922 | 720.416 | -0.1386 | 10.0343 | -75.3147 | 6.9337 | 0.0958 |
| 5 | 725.602 | 725.602 | 722.717 | 728.487 | -0.0444 | 3.2146 | -28.5069 | 0.6558 | 0.0091 |
| 6 | 732.773 | 732.773 | 730.829 | 734.717 | -0.1355 | 9.4657 | 17.1193 | -1.9594 | -0.0280 |
| 7 | 739.057 | 739.057 | 737.067 | 741.047 | -0.4726 | 9.1931 | 17.7716 | -5.1757 | -0.2661 |
| 8 | 745.425 | 745.425 | 743.409 | 747.441 | -0.4807 | 8.8282 | 18.2372 | -7.6276 | -0.4153 |
| 9 | 751.824 | 751.824 | 749.815 | 753.832 | 0.2352 | 8.3597 | 18.3836 | -9.2793 | 0.2610 |
| 10 | 758.291 | 758.291 | 756.220 | 760.363 | -0.8454 | 8.0553 | 19.1723 | -10.4880 | -1.1007 |
| 11 | 764.866 | 764.866 | 762.766 | 766.966 | 0.2549 | 7.6602 | 19.6570 | -11.0231 | 0.3667 |
| 12 | 771.508 | 771.508 | 769.388 | 773.628 | -0.4757 | 7.1970 | 20.0406 | -10.9466 | -0.7236 |
| 13 | 778.170 | 778.170 | 776.070 | 780.271 | -0.1015 | 6.6623 | 20.0378 | -10.3132 | -0.1572 |
| 14 | 784.890 | 784.890 | 782.733 | 787.047 | -0.4710 | 6.2563 | 20.7404 | -9.5158 | -0.7163 |
| 15 | 791.706 | 791.706 | 789.532 | 793.879 | -0.0966 | 5.7658 | 21.0608 | -8.2970 | -0.1389 |
| 16 | 798.568 | 798.568 | 796.388 | 800.748 | -0.0766 | 5.2508 | 21.2663 | -6.8366 | -0.0997 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 17 | 805.436 | 805.436 | 803.285 | 807.587 | -0.4569 | 4.6964 | 21.1177 | -5.2131 | -0.5072 |
| 18 | 812.355 | 812.355 | 810.153 | 814.557 | -0.0747 | 4.2269 | 21.7326 | -3.6521 | -0.0645 |
| 19 | 819.346 | 819.346 | 817.153 | 821.539 | -0.0536 | 3.6975 | 21.7538 | -2.0817 | -0.0302 |
| 20 | 826.367 | 826.367 | 824.168 | 828.566 | -0.4398 | 3.1734 | 21.9001 | -0.6569 | -0.0910 |
| 21 | 834.548 | 834.548 | 831.231 | 837.866 | -0.2443 | 14.6556 | -29.5529 | 2.9897 | 0.0498 |
| 22 | 849.778 | 849.778 | 840.542 | 859.013 | -0.9191 | 30.1396 | -85.3982 | 20.8264 | 0.6351 |
| 23 | 876.141 | 876.141 | 861.726 | 890.557 | -0.4714 | 27.9067 | -138.1701 | 22.3253 | 0.3771 |
| 24 | 903.284 | 903.284 | 893.382 | 913.186 | -0.1315 | 7.6714 | -96.8093 | 4.4417 | 0.0761 |
| 25 | 918.687 | 918.687 | 916.132 | 921.242 | -0.6571 | 12.6458 | 22.3307 | -0.3161 | -0.0164 |
| 26 | 926.861 | 926.861 | 924.197 | 929.526 | -0.2118 | 12.4538 | 23.6580 | -5.1434 | -0.0875 |
| 27 | 935.290 | 935.290 | 932.495 | 938.086 | -0.2156 | 12.2385 | 25.1944 | -9.0809 | -0.1600 |
| 28 | 943.814 | 943.814 | 941.070 | 946.558 | -0.6585 | 11.3762 | 25.0459 | -11.4900 | -0.6650 |
| 29 | 952.351 | 952.351 | 949.558 | 955.144 | -0.1881 | 10.8430 | 25.8128 | -13.2176 | -0.2292 |
| 30 | 961.088 | 961.088 | 958.166 | 964.009 | -0.6037 | 8.0061 | 27.4179 | -10.9604 | -0.8265 |
| 31 | 969.911 | 961.755 | 964.613 | 958.897 | 0.1404 | -8.0151 | 27.1801 | 11.6860 | 0.2047 |
| 32 | 977.304 | 954.363 | 955.829 | 952.896 | 0.1184 | -5.9224 | 13.6575 | 8.8125 | 0.1762 |
| 33 | 981.908 | 949.759 | 949.808 | 949.710 | -0.3912 | -3.2047 | 0.0000 | 4.7686 | -0.5821 |
| 34 | 985.056 | 946.610 | 946.611 | 946.609 | 0.0506 | -3.1084 | 0.0000 | 4.6253 | 0.0754 |
| 35 | 988.165 | 943.501 | 943.502 | 943.500 | 0.0680 | -3.1194 | 0.0000 | 4.6416 | 0.1011 |
| 36 | 991.335 | 940.332 | 940.382 | 940.281 | -0.3933 | -3.2361 | 0.0000 | 4.8153 | -0.5852 |
| 37 | 994.513 | 937.153 | 937.154 | 937.152 | 0.0700 | -3.1394 | 0.0000 | 4.6715 | 0.1042 |
| 38 | 997.702 | 933.964 | 934.014 | 933.914 | -0.3976 | -2.3560 | 0.0000 | 3.5057 | -0.5916 |
| 39 | 1000.000 | 931.666 | 931.666 | 931.666 | 18.6296 | -931.4802 | 0.0000 | 1238.8686 | 24.7774 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 346.765 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 68.334 Tn
Distancia afectada por clavado de cuñas: 16.070 m

Sum. Fx= 0.000000
Sum. Fy= 0.000000
Sum. Fz= 0.000000
Sum. Mx= -0.000000
Sum. My= 0.000000
Sum. Mz= 0.000000

ESTADO C
========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 818.560 | 818.560 | 818.560 | -10.5368 | 789.8860 | 214.4998 | -93.2065 | -1.2433 |
| 2 | 978.768 | 839.792 | 821.818 | 857.767 | -0.8525 | 64.3160 | -137.2148 | 39.2328 | 0.5200 |
| 3 | 943.682 | 874.878 | 860.801 | 888.955 | -0.8690 | 33.4733 | -123.3595 | 26.7786 | 0.6952 |
| 4 | 916.712 | 901.848 | 891.883 | 911.813 | -0.1804 | 13.0662 | -95.0416 | 9.0287 | 0.1247 |
| 5 | 900.281 | 900.281 | 903.860 | 896.702 | 0.2875 | -20.8162 | -31.0978 | -4.2465 | -0.0586 |
| 6 | 891.463 | 891.463 | 893.828 | 889.098 | 0.0416 | -3.4266 | 23.5558 | 0.7093 | 0.0086 |
| 7 | 883.883 | 883.883 | 886.263 | 881.503 | -0.3545 | -4.0005 | 23.6001 | 2.2523 | -0.1996 |
| 8 | 876.332 | 876.332 | 878.702 | 873.963 | -0.3481 | -4.5643 | 23.3858 | 3.9435 | -0.3008 |
| 9 | 868.874 | 868.874 | 871.195 | 866.553 | 0.4857 | -5.0670 | 22.7816 | 5.6244 | 0.5391 |
| 10 | 861.463 | 861.463 | 863.816 | 859.110 | -0.7415 | -5.6798 | 22.9428 | 7.3951 | -0.9654 |
| 11 | 854.059 | 854.059 | 856.404 | 851.714 | 0.5061 | -6.2146 | 22.7194 | 8.9428 | 0.7283 |
| 12 | 846.706 | 846.706 | 849.033 | 844.379 | -0.3022 | -6.7614 | 22.3743 | 10.2841 | -0.4596 |
| 13 | 839.457 | 839.457 | 841.723 | 837.190 | 0.1095 | -7.1870 | 21.6159 | 11.1255 | 0.1695 |
| 14 | 832.270 | 832.270 | 834.557 | 829.983 | -0.2764 | -7.7757 | 21.6184 | 11.8269 | -0.4204 |
| 15 | 825.105 | 825.105 | 827.370 | 822.840 | 0.1236 | -8.2568 | 21.2053 | 11.8816 | 0.1779 |
| 16 | 818.014 | 818.014 | 820.247 | 815.782 | 0.1428 | -8.6977 | 20.6814 | 11.3244 | 0.1860 |
| 17 | 811.039 | 811.039 | 813.205 | 808.873 | -0.2408 | -9.0184 | 19.8311 | 10.0104 | -0.2673 |
| 18 | 804.131 | 812.355 | 810.153 | 814.557 | -0.0953 | 5.4986 | 21.8815 | -4.7508 | -0.0823 |
| 19 | 819.346 | 819.346 | 817.153 | 821.539 | -0.0536 | 3.6975 | 21.7538 | -2.0817 | -0.0302 |
| 20 | 826.367 | 826.367 | 824.168 | 828.566 | -0.4398 | 3.1734 | 21.9001 | -0.6569 | -0.0910 |
| 21 | 834.548 | 834.548 | 831.231 | 837.866 | -0.2443 | 14.6556 | -29.5529 | 2.9897 | 0.0498 |
| 22 | 849.778 | 849.778 | 840.542 | 859.013 | -0.9191 | 30.1396 | -85.3982 | 20.8264 | 0.6351 |
| 23 | 876.141 | 876.141 | 861.726 | 890.557 | -0.4714 | 27.9067 | -138.1701 | 22.3253 | 0.3771 |
| 24 | 903.284 | 903.284 | 893.382 | 913.186 | -0.1315 | 7.6714 | -96.8093 | 4.4417 | 0.0761 |
| 25 | 918.687 | 918.687 | 916.132 | 921.242 | -0.6571 | 12.6458 | 22.3307 | -0.3161 | -0.0164 |
| 26 | 926.861 | 926.861 | 924.197 | 929.526 | -0.2118 | 12.4538 | 23.6580 | -5.1434 | -0.0875 |
| 27 | 935.290 | 935.290 | 932.495 | 938.086 | -0.2156 | 12.2385 | 25.1944 | -9.0809 | -0.1600 |
| 28 | 943.814 | 943.814 | 941.070 | 946.558 | -0.6585 | 11.3762 | 25.0459 | -11.4900 | -0.6650 |
| 29 | 952.351 | 952.351 | 949.558 | 955.144 | -0.1881 | 10.8430 | 25.8128 | -13.2176 | -0.2292 |
| 30 | 961.088 | 961.088 | 958.166 | 964.009 | -0.6037 | 8.0061 | 27.4179 | -10.9604 | -0.8265 |
| 31 | 969.911 | 961.755 | 964.613 | 958.897 | 0.1404 | -8.0151 | 27.1801 | 11.6860 | 0.2047 |
| 32 | 977.304 | 954.363 | 955.829 | 952.896 | 0.1184 | -5.9224 | 13.6575 | 8.8125 | 0.1762 |
| 33 | 981.908 | 949.759 | 949.808 | 949.710 | -0.3912 | -3.2047 | 0.0000 | 4.7686 | -0.5821 |
| 34 | 985.056 | 946.610 | 946.611 | 946.609 | 0.0506 | -3.1084 | 0.0000 | 4.6253 | 0.0754 |
| 35 | 988.165 | 943.501 | 943.502 | 943.500 | 0.0680 | -3.1194 | 0.0000 | 4.6416 | 0.1011 |
| 36 | 991.335 | 940.332 | 940.382 | 940.281 | -0.3933 | -3.2361 | 0.0000 | 4.8153 | -0.5852 |
| 37 | 994.513 | 937.153 | 937.154 | 937.152 | 0.0700 | -3.1394 | 0.0000 | 4.6715 | 0.1042 |
| 38 | 997.702 | 933.964 | 934.014 | 933.914 | -0.3976 | -2.3560 | 0.0000 | 3.5057 | -0.5916 |
| 39 | 1000.000 | 931.666 | 931.666 | 931.666 | 18.6296 | -931.4802 | 0.0000 | 1238.8686 | 24.7774 |

Sum. Fx= 0.000000
Sum. Fy= -0.000000
Sum. Fz= -0.000000
Sum. Mx= -0.000000
Sum. My= 0.000000
Sum. Mz= 0.000000

Alargamientos teoricos de tendones
==================================

Tesado por seccion No. 1: 46.3 cm.
Al retesar por seccion No. 39: 6.8 cm.
Tesado por seccion No. 39: 50.2 cm.

"TITULO:" LAV GELIDA. V-Riera de la Rierussa. Tendon 13 (Servicio).

CARACTERISTICAS DEL PRETENSADO

| NS | Po (t) | MU | K | INT.CUÑ.(mm) | Ep(Kg/cm2) | Ap(cm2) |
|---|---|---|---|---|---|---|
| 19 | 1000.000 | 0.2100 | 0.0015 | 5 | 1900000.0 | 70.17 |

COORDENADAS

| | | CENTRO DE GRAVEDAD DE LA SECCION | | | PRETENSADO |
|---|---|---|---|---|---|
| SECCION | NUDO | X (long.) | Y (tran.) | Z (prof.) | Zp (prof.) |
| 1 | 95 | -1.641 | 196.791 | -1.212 | -0.930 |
| 2 | 96 | -1.676 | 198.891 | -1.370 | -0.405 |
| 3 | 97 | -1.712 | 200.99 | -1.370 | -0.230 |
| 4 | 98 | -1.748 | 203.09 | -1.370 | -0.313 |
| 5 | 99 | -1.784 | 205.19 | -1.212 | -0.563 |
| 6 | 100 | -1.821 | 207.289 | -1.212 | -0.873 |
| 7 | 101 | -1.858 | 209.389 | -1.212 | -1.135 |
| 8 | 102 | -1.895 | 211.489 | -1.212 | -1.349 |
| 9 | 103 | -1.933 | 213.588 | -1.212 | -1.516 |
| 10 | 104 | -1.971 | 215.688 | -1.212 | -1.635 |
| 11 | 105 | -2.01 | 217.788 | -1.212 | -1.706 |
| 12 | 106 | -2.049 | 219.887 | -1.212 | -1.730 |
| 13 | 107 | -2.088 | 221.987 | -1.212 | -1.707 |
| 14 | 108 | -2.128 | 224.087 | -1.212 | -1.639 |
| 15 | 109 | -2.168 | 226.186 | -1.212 | -1.524 |
| 16 | 110 | -2.208 | 228.286 | -1.212 | -1.364 |
| 17 | 111 | -2.249 | 230.385 | -1.212 | -1.159 |
| 18 | 112 | -2.29 | 232.485 | -1.212 | -0.907 |
| 19 | 113 | -2.320 | 233.985 | -1.370 | -0.700 |

LAV GELIDA. V-Riera de la Rierussa. Tendon 13 (Servicio).

Numero de secciones
19

| | Lt | Lac | Anghor | Angver | Angulo | cosx | cosy | cosz |
|---|---|---|---|---|---|---|---|---|
| 1 | 2.165 | 0.000 | 0.00000 | 0.00000 | 0.00000 | -.01617 | 0.97002 | 0.24250 |
| 2 | 2.107 | 2.165 | 0.00048 | -0.16178 | 0.16178 | -.01709 | 0.99640 | 0.08307 |
| 3 | 2.102 | 4.272 | -0.00001 | -0.12267 | 0.12267 | -.01713 | 0.99907 | -.03949 |
| 4 | 2.115 | 6.373 | 0.00000 | -0.07898 | 0.07898 | -.01702 | 0.99284 | -.11820 |
| 5 | 2.122 | 8.489 | 0.00048 | -0.02813 | 0.02814 | -.01744 | 0.98912 | -.14608 |
| 6 | 2.117 | 10.611 | -0.00001 | 0.02251 | 0.02251 | -.01748 | 0.99216 | -.12378 |
| 7 | 2.111 | 12.727 | 0.00000 | 0.02256 | 0.02256 | -.01753 | 0.99470 | -.10136 |
| 8 | 2.106 | 14.838 | 0.00048 | 0.02216 | 0.02216 | -.01804 | 0.99669 | -.07930 |
| 9 | 2.104 | 16.944 | -0.00001 | 0.02278 | 0.02278 | -.01806 | 0.99824 | -.05657 |
| 10 | 2.102 | 19.048 | 0.00048 | 0.02281 | 0.02281 | -.01856 | 0.99926 | -.03378 |
| 11 | 2.099 | 21.150 | 0.00001 | 0.02236 | 0.02236 | -.01858 | 0.99976 | -.01143 |
| 12 | 2.100 | 23.249 | -0.00001 | 0.02238 | 0.02238 | -.01857 | 0.99977 | 0.01095 |
| 13 | 2.101 | 25.350 | 0.00048 | 0.02141 | 0.02142 | -.01903 | 0.99930 | 0.03236 |
| 14 | 2.103 | 27.451 | 0.00001 | 0.02236 | 0.02236 | -.01902 | 0.99832 | 0.05470 |
| 15 | 2.106 | 29.554 | -0.00001 | 0.02131 | 0.02131 | -.01899 | 0.99693 | 0.07596 |
| 16 | 2.109 | 31.660 | 0.00049 | 0.02131 | 0.02131 | -.01944 | 0.99508 | 0.09718 |
| 17 | 2.115 | 33.770 | -0.00001 | 0.02207 | 0.02207 | -.01938 | 0.99269 | 0.11912 |
| 18 | 1.515 | 35.885 | 0.00048 | 0.01770 | 0.01771 | -.01981 | 0.99042 | 0.13668 |
| 19 | 0.000 | 37.400 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

ESTADO A
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 827.052 | 827.052 | 827.052 | -13.3709 | 802.2537 | 200.5634 | 226.2355 | 3.7706 |
| 2 | 980.111 | 846.942 | 830.294 | 863.589 | -1.3872 | 58.2236 | -128.8228 | 56.1858 | 1.3386 |
| 3 | 948.212 | 878.841 | 866.629 | 891.053 | -0.5030 | 29.7499 | -106.9258 | 33.9148 | 0.5734 |
| 4 | 925.379 | 901.673 | 893.999 | 909.346 | -0.2162 | 12.6122 | -72.2957 | 13.3311 | 0.2285 |
| 5 | 912.104 | 912.104 | 914.799 | 909.409 | -0.3789 | -3.3256 | -25.3677 | -2.1583 | 0.2459 |
| 6 | 904.382 | 904.382 | 906.519 | 902.245 | 0.0841 | -4.3468 | 21.1659 | -1.4736 | -0.0285 |
| 7 | 897.259 | 897.259 | 899.385 | 895.133 | 0.0843 | -4.7822 | 20.9483 | -0.3682 | -0.0065 |
| 8 | 890.232 | 890.232 | 892.303 | 888.160 | -0.3381 | -5.1667 | 20.3050 | 0.7078 | -0.0463 |
| 9 | 883.246 | 883.246 | 885.359 | 881.133 | 0.1097 | -5.6403 | 20.5867 | 1.7146 | 0.0333 |
| 10 | 876.258 | 876.258 | 878.357 | 874.159 | -0.3061 | -6.0684 | 20.3098 | 2.5669 | -0.1295 |
| 11 | 869.367 | 869.367 | 871.408 | 867.326 | 0.1110 | -6.3901 | 19.6183 | 3.1567 | 0.0548 |
| 12 | 862.571 | 862.571 | 864.599 | 860.544 | 0.1335 | -6.7749 | 19.3375 | 3.5094 | 0.0691 |
| 13 | 855.912 | 855.912 | 857.837 | 853.987 | -0.2771 | -6.9590 | 18.2106 | 3.4447 | -0.1372 |
| 14 | 849.306 | 849.306 | 851.300 | 847.312 | 0.1351 | -7.4956 | 18.7112 | 3.2006 | 0.0577 |
| 15 | 842.758 | 842.758 | 844.644 | 840.873 | 0.1524 | -7.5981 | 17.5252 | 2.3706 | 0.0475 |
| 16 | 836.348 | 836.348 | 838.220 | 834.477 | -0.2522 | -7.9234 | 17.2285 | 1.2044 | -0.0383 |
| 17 | 829.918 | 829.918 | 831.841 | 827.995 | 0.1722 | -8.4261 | 17.5347 | -0.4466 | -0.0091 |
| 18 | 823.840 | 823.840 | 825.371 | 822.308 | -0.2411 | -7.5140 | 13.7580 | -2.2918 | 0.0735 |
| 19 | 820.442 | 820.442 | 820.442 | 820.442 | 16.2886 | -814.4282 | -112.3911 | -545.6669 | -10.9133 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 179.558 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 172.948 Tn
Distancia afectada por clavado de cuñas: 8.351 m

Sum. Fx= -0.000000
Sum. Fy= -0.000000
Sum. Fz= 0.000000
Sum. Mx= -0.000000
Sum. My= -0.000000

Sum. Mz= -0.000000

ESTADO B

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 820.442 | 820.442 | 820.442 | 820.442 | -13.3072 | 798.4302 | 199.6075 | 225.1573 | 3.7526 |
| 2 | 837.333 | 837.333 | 823.111 | 851.555 | -1.2913 | 52.7419 | -128.6427 | 50.8959 | 1.2461 |
| 3 | 865.396 | 865.396 | 854.250 | 876.541 | -0.4614 | 27.3223 | -105.6862 | 31.1474 | 0.5260 |
| 4 | 886.662 | 886.662 | 879.309 | 894.014 | -0.2047 | 11.9431 | -71.2830 | 12.6238 | 0.2164 |
| 5 | 899.513 | 899.513 | 896.855 | 902.170 | -0.5154 | 4.7611 | -26.2068 | 3.0899 | 0.3345 |
| 6 | 907.190 | 907.190 | 905.046 | 909.334 | -0.1664 | 9.8710 | 19.2931 | 3.3463 | 0.0564 |
| 7 | 914.392 | 914.392 | 912.226 | 916.558 | -0.1677 | 9.5181 | 19.7174 | 0.7329 | 0.0129 |
| 8 | 921.610 | 921.610 | 919.465 | 923.755 | -0.6067 | 9.0202 | 19.7170 | -1.2358 | -0.0831 |
| 9 | 928.900 | 928.900 | 926.677 | 931.122 | -0.1514 | 8.8087 | 20.6469 | -2.6778 | -0.0460 |
| 10 | 936.307 | 936.307 | 934.065 | 938.550 | -0.6000 | 8.3970 | 21.0285 | -3.5519 | -0.2538 |
| 11 | 943.729 | 943.729 | 941.513 | 945.944 | -0.1549 | 7.8889 | 20.9610 | -3.8971 | -0.0765 |
| 12 | 951.163 | 951.163 | 948.928 | 953.399 | 0.0106 | -0.1198 | 21.2367 | 0.0621 | 0.0055 |
| 13 | 958.563 | 946.647 | 948.803 | 944.491 | -0.3034 | -7.7880 | 20.0746 | 3.8551 | -0.1502 |
| 14 | 966.020 | 939.190 | 941.458 | 936.922 | 0.1534 | -8.4981 | 20.6148 | 3.6287 | 0.0655 |
| 15 | 973.525 | 931.686 | 933.864 | 929.508 | 0.1746 | -8.7203 | 19.2891 | 2.7207 | 0.0545 |
| 16 | 980.986 | 924.225 | 926.420 | 922.029 | -0.2689 | -9.1870 | 18.9366 | 1.3964 | -0.0409 |
| 17 | 988.588 | 916.623 | 918.913 | 914.332 | 0.2011 | -9.8668 | 19.2384 | -0.5229 | -0.0107 |
| 18 | 995.879 | 909.331 | 911.183 | 907.480 | -0.2710 | -7.9860 | 15.1793 | -2.4357 | 0.0827 |
| 19 | 1000.000 | 905.210 | 905.210 | 905.210 | 17.9307 | -896.5363 | -123.7220 | -600.6793 | -12.0136 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 179.558 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 94.790 Tn
Distancia afectada por clavado de cuñas: 13.733 m

Sum. Fx= 0.000000
Sum. Fy= 0.000000
Sum. Fz= 0.000000
Sum. Mx= 0.000000
Sum. My= -0.000000
Sum. Mz= 0.000000

ESTADO C

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 827.052 | 827.052 | 827.052 | -13.3709 | 802.2537 | 200.5634 | 226.2355 | 3.7706 |
| 2 | 980.111 | 846.942 | 830.294 | 863.589 | -1.3872 | 58.2236 | -128.8228 | 56.1858 | 1.3386 |
| 3 | 948.212 | 878.841 | 866.629 | 891.053 | -0.5030 | 29.7499 | -106.9258 | 33.9148 | 0.5734 |
| 4 | 925.379 | 901.673 | 893.999 | 909.346 | -0.2162 | 12.6122 | -72.2957 | 13.3311 | 0.2285 |
| 5 | 912.104 | 912.104 | 914.799 | 909.409 | -0.3789 | -3.3256 | -25.3677 | -2.1583 | 0.2459 |
| 6 | 904.382 | 907.927 | 906.519 | 909.334 | -0.0903 | 5.5557 | 19.9304 | 1.8834 | 0.0306 |
| 7 | 914.392 | 914.392 | 912.226 | 916.558 | -0.1677 | 9.5181 | 19.7174 | 0.7329 | 0.0129 |
| 8 | 921.610 | 921.610 | 919.465 | 923.755 | -0.6067 | 9.0202 | 19.7170 | -1.2358 | -0.0831 |
| 9 | 928.900 | 928.900 | 926.677 | 931.122 | -0.1514 | 8.8087 | 20.6469 | -2.6778 | -0.0460 |
| 10 | 936.307 | 936.307 | 934.065 | 938.550 | -0.6000 | 8.3970 | 21.0285 | -3.5519 | -0.2538 |
| 11 | 943.729 | 943.729 | 941.513 | 945.944 | -0.1549 | 7.8889 | 20.9610 | -3.8971 | -0.0765 |
| 12 | 951.163 | 951.163 | 948.928 | 953.399 | 0.0106 | -0.1198 | 21.2367 | 0.0621 | 0.0055 |
| 13 | 958.563 | 946.647 | 948.803 | 944.491 | -0.3034 | -7.7880 | 20.0746 | 3.8551 | -0.1502 |
| 14 | 966.020 | 939.190 | 941.458 | 936.922 | 0.1534 | -8.4981 | 20.6148 | 3.6287 | 0.0655 |
| 15 | 973.525 | 931.686 | 933.864 | 929.508 | 0.1746 | -8.7203 | 19.2891 | 2.7207 | 0.0545 |
| 16 | 980.986 | 924.225 | 926.420 | 922.029 | -0.2689 | -9.1870 | 18.9366 | 1.3964 | -0.0409 |
| 17 | 988.588 | 916.623 | 918.913 | 914.332 | 0.2011 | -9.8668 | 19.2384 | -0.5229 | -0.0107 |
| 18 | 995.879 | 909.331 | 911.183 | 907.480 | -0.2710 | -7.9860 | 15.1793 | -2.4357 | 0.0827 |
| 19 | 1000.000 | 905.210 | 905.210 | 905.210 | 17.9307 | -896.5363 | -123.7220 | -600.6793 | -12.0136 |

Sum. Fx= 0.000000
Sum. Fy= 0.000000
Sum. Fz= 0.000000
Sum. Mx= 0.000000
Sum. My= 0.000000
Sum. Mz= 0.000000

Alargamientos teoricos de tendones

Tesado por seccion No. 1: 24.3 cm.
Al retesar por seccion No. 19: 1.4 cm.
Tesado por seccion No. 19: 25.6 cm.

"TITULO:" LAV GELIDA. V-Riera de la Rierussa. Tendon 14 (Servicio).

CARACTERISTICAS DEL PRETENSADO

| NS | Po (t) | MU | K | INT.CUÑ.(mm) | Ep(Kg/cm2) | Ap(cm2) |
|---|---|---|---|---|---|---|
| 19 | 1000.000 | 0.2100 | 0.0015 | 5 | 1900000.0 | 70.17 |

COORDENADAS

| | | CENTRO DE GRAVEDAD DE LA SECCION | | | PRETENSADO |
|---|---|---|---|---|---|
| SECCION | NUDO | X (long.) | Y (tran.) | Z (prof.) | Zp (prof.) |
| 1 | 95 | -1.641 | 196.791 | -1.212 | -1.330 |
| 2 | 96 | -1.676 | 198.891 | -1.370 | -0.760 |
| 3 | 97 | -1.712 | 200.99 | -1.370 | -0.570 |
| 4 | 98 | -1.748 | 203.09 | -1.370 | -0.666 |
| 5 | 99 | -1.784 | 205.19 | -1.212 | -0.954 |
| 6 | 100 | -1.821 | 207.289 | -1.212 | -1.311 |
| 7 | 101 | -1.858 | 209.389 | -1.212 | -1.613 |
| 8 | 102 | -1.895 | 211.489 | -1.212 | -1.861 |
| 9 | 103 | -1.933 | 213.588 | -1.212 | -2.053 |
| 10 | 104 | -1.971 | 215.688 | -1.212 | -2.190 |
| 11 | 105 | -2.01 | 217.788 | -1.212 | -2.273 |
| 12 | 106 | -2.049 | 219.887 | -1.212 | -2.300 |
| 13 | 107 | -2.088 | 221.987 | -1.212 | -2.300 |
| 14 | 108 | -2.128 | 224.087 | -1.212 | -2.300 |
| 15 | 109 | -2.168 | 226.186 | -1.212 | -2.300 |
| 16 | 110 | -2.208 | 228.286 | -1.212 | -2.300 |
| 17 | 111 | -2.249 | 230.385 | -1.212 | -2.300 |
| 18 | 112 | -2.29 | 232.485 | -1.212 | -2.300 |
| 19 | 113 | -2.320 | 233.985 | -1.370 | -2.300 |

LAV GELIDA. V-Riera de la Rierussa. Tendon 14 (Servicio).

Numero de secciones
19

| | Lt | Lac | Anghor | Angver | Angulo | cosx | cosy | cosz |
|---|---|---|---|---|---|---|---|---|
| 1 | 2.176 | 0.000 | 0.00000 | 0.00000 | 0.00000 | -.01608 | 0.96496 | 0.26192 |
| 2 | 2.108 | 2.176 | 0.00048 | -0.17475 | 0.17475 | -.01708 | 0.99578 | 0.09014 |
| 3 | 2.103 | 4.284 | -0.00001 | -0.13594 | 0.13594 | -.01712 | 0.99881 | -.04566 |
| 4 | 2.120 | 6.387 | 0.00000 | -0.09060 | 0.09060 | -.01698 | 0.99058 | -.13585 |
| 5 | 2.129 | 8.507 | 0.00048 | -0.03217 | 0.03217 | -.01738 | 0.98569 | -.16765 |
| 6 | 2.122 | 10.636 | -0.00001 | 0.02563 | 0.02563 | -.01744 | 0.98967 | -.14232 |
| 7 | 2.115 | 12.758 | 0.00000 | 0.02528 | 0.02528 | -.01749 | 0.99295 | -.11726 |
| 8 | 2.108 | 14.873 | 0.00048 | 0.02633 | 0.02633 | -.01803 | 0.99568 | -.09108 |
| 9 | 2.105 | 16.981 | -0.00001 | 0.02607 | 0.02607 | -.01805 | 0.99772 | -.06509 |
| 10 | 2.102 | 19.086 | 0.00048 | 0.02564 | 0.02564 | -.01855 | 0.99905 | -.03949 |
| 11 | 2.100 | 21.188 | 0.00001 | 0.02664 | 0.02664 | -.01858 | 0.99974 | -.01286 |
| 12 | 2.100 | 23.287 | -0.00001 | 0.01286 | 0.01286 | -.01857 | 0.99983 | 0.00000 |
| 13 | 2.100 | 25.388 | 0.00048 | 0.00000 | 0.00048 | -.01904 | 0.99982 | 0.00000 |
| 14 | 2.099 | 27.488 | 0.00001 | 0.00000 | 0.00001 | -.01905 | 0.99982 | 0.00000 |
| 15 | 2.100 | 29.587 | -0.00001 | 0.00000 | 0.00001 | -.01904 | 0.99982 | 0.00000 |
| 16 | 2.099 | 31.688 | 0.00049 | 0.00000 | 0.00049 | -.01953 | 0.99981 | 0.00000 |
| 17 | 2.100 | 33.787 | -0.00001 | 0.00000 | 0.00001 | -.01952 | 0.99981 | 0.00000 |
| 18 | 1.500 | 35.888 | 0.00048 | 0.00000 | 0.00048 | -.02000 | 0.99980 | 0.00000 |
| 19 | 0.000 | 37.388 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |

ESTADO A
=========

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 820.600 | 820.600 | 820.600 | -13.1974 | 791.8432 | 214.9289 | -93.4375 | -1.5573 |
| 2 | 978.784 | 841.816 | 823.859 | 859.774 | -1.4864 | 64.3046 | -137.4310 | 39.2258 | 0.9067 |
| 3 | 944.316 | 876.284 | 862.807 | 889.762 | -0.5511 | 32.5555 | -118.1243 | 26.0444 | 0.4409 |
| 4 | 919.164 | 901.436 | 892.693 | 910.180 | -0.2212 | 12.9059 | -83.0228 | 9.0858 | 0.1558 |
| 5 | 904.474 | 904.474 | 907.530 | 901.419 | -0.2062 | -13.0864 | -27.4716 | -3.3763 | 0.0532 |
| 6 | 896.132 | 896.132 | 898.544 | 893.720 | 0.0786 | -4.0382 | 23.9235 | 0.3998 | 0.0078 |
| 7 | 888.522 | 888.522 | 890.880 | 886.163 | 0.0805 | -4.5713 | 23.2837 | 1.8331 | 0.0323 |
| 8 | 880.921 | 880.921 | 883.357 | 878.485 | -0.3320 | -5.2226 | 23.9037 | 3.3894 | -0.2155 |
| 9 | 873.321 | 873.321 | 875.712 | 870.931 | 0.1116 | -5.7490 | 23.3217 | 4.8349 | 0.0938 |
| 10 | 865.854 | 865.854 | 868.185 | 863.523 | -0.2979 | -6.2411 | 22.5909 | 6.1038 | -0.2913 |
| 11 | 858.404 | 858.404 | 860.804 | 856.003 | 0.1209 | -6.9162 | 23.0890 | 7.3381 | 0.1282 |
| 12 | 852.161 | 852.161 | 853.311 | 851.010 | 0.0990 | -4.9212 | 11.0082 | 5.3543 | 0.1077 |
| 13 | 848.291 | 848.291 | 848.333 | 848.248 | -0.3524 | -2.7688 | 0.0000 | 3.0125 | -0.3834 |
| 14 | 845.579 | 845.579 | 845.580 | 845.578 | 0.0432 | -2.6695 | 0.0000 | 2.9045 | 0.0470 |
| 15 | 842.919 | 842.919 | 842.920 | 842.918 | 0.0583 | -2.6596 | 0.0000 | 2.8936 | 0.0635 |
| 16 | 840.224 | 840.224 | 840.267 | 840.181 | -0.3555 | -2.7445 | 0.0000 | 2.9860 | -0.3868 |
| 17 | 837.538 | 837.538 | 837.539 | 837.538 | 0.0594 | -2.6426 | 0.0000 | 2.8752 | 0.0646 |
| 18 | 834.861 | 834.861 | 834.903 | 834.820 | -0.3442 | -2.7254 | 0.0000 | 2.9652 | -0.3745 |
| 19 | 832.943 | 832.943 | 832.943 | 832.943 | 16.6931 | -834.6527 | 0.0000 | 776.2270 | 15.5245 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 167.057 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 179.400 Tn
Distancia afectada por clavado de cuñas: 7.988 m

Sum. Fx= -0.000000
Sum. Fy= 0.000000
Sum. Fz= -0.000000
Sum. Mx= 0.000000
Sum. My= -0.000000

Sum. Mz= -0.000000

ESTADO B

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 832.943 | 832.943 | 832.943 | 832.943 | -13.4397 | 806.3817 | 218.8750 | -95.1530 | -1.5859 |
| 2 | 851.285 | 851.285 | 835.666 | 866.903 | -1.4128 | 59.5989 | -140.4871 | 36.3553 | 0.8618 |
| 3 | 882.240 | 882.240 | 869.648 | 894.831 | -0.5177 | 30.6092 | -119.3749 | 24.4873 | 0.4141 |
| 4 | 906.279 | 906.279 | 897.658 | 914.899 | -0.2157 | 12.5813 | -83.6994 | 8.8572 | 0.1518 |
| 5 | 920.925 | 920.925 | 917.813 | 924.036 | -0.5209 | 4.5592 | -30.7218 | 1.1763 | 0.1344 |
| 6 | 929.494 | 929.494 | 926.992 | 931.996 | -0.1963 | 11.5752 | 22.3404 | -1.1459 | -0.0194 |
| 7 | 937.455 | 937.455 | 934.967 | 939.943 | -0.1933 | 10.9733 | 22.4977 | -4.4003 | -0.0775 |
| 8 | 945.544 | 945.544 | 942.929 | 948.158 | -0.6490 | 10.7741 | 23.9411 | -6.9924 | -0.4212 |
| 9 | 953.772 | 953.772 | 951.161 | 956.383 | -0.1757 | 10.1627 | 24.1820 | -8.5468 | -0.1478 |
| 10 | 961.997 | 961.997 | 959.407 | 964.587 | -0.5738 | 6.3507 | 24.3631 | -6.2110 | -0.5611 |
| 11 | 970.347 | 961.771 | 964.485 | 959.057 | 0.1368 | -7.8227 | 25.7898 | 8.2999 | 0.1452 |
| 12 | 977.450 | 954.668 | 955.988 | 953.348 | 0.1133 | -5.6481 | 12.2940 | 6.1451 | 0.1233 |
| 13 | 981.908 | 950.210 | 950.259 | 950.161 | -0.3914 | -3.2047 | 0.0000 | 3.4867 | -0.4258 |
| 14 | 985.056 | 947.062 | 947.063 | 947.061 | 0.0506 | -3.1084 | 0.0000 | 3.3819 | 0.0551 |
| 15 | 988.165 | 943.953 | 943.954 | 943.952 | 0.0680 | -3.1194 | 0.0000 | 3.3939 | 0.0740 |
| 16 | 991.335 | 940.783 | 940.834 | 940.733 | -0.3935 | -3.2361 | 0.0000 | 3.5209 | -0.4281 |
| 17 | 994.513 | 937.605 | 937.606 | 937.604 | 0.0700 | -3.1394 | 0.0000 | 3.4157 | 0.0762 |
| 18 | 997.702 | 934.416 | 934.466 | 934.366 | -0.3978 | -2.3560 | 0.0000 | 2.5633 | -0.4328 |
| 19 | 1000.000 | 932.118 | 932.118 | 932.118 | 18.6386 | -931.9316 | 0.0000 | 866.6964 | 17.3339 |

Perdida de fuerza en anclaje pasivo debido al rozamiento: 167.057 Tn
Perdida de fuerza en anclaje activo debido al clavado de cuñas: 67.882 Tn
Distancia afectada por clavado de cuñas: 16.346 m

Sum. Fx= 0.000000
Sum. Fy= -0.000000
Sum. Fz= -0.000000
Sum. Mx= 0.000000
Sum. My= -0.000000
Sum. Mz= -0.000000

Alargamientos teoricos de tendones

Tesado por seccion No. 1: 24.2 cm.
Al retesar por seccion No. 19: 1.9 cm.
Tesado por seccion No. 19: 26.1 cm.

Sum. Fx= 0.000000
Sum. Fy= -0.000000
Sum. Fz= 0.000000
Sum. Mx= 0.000000
Sum. My= -0.000000
Sum. Mz= -0.000000

ESTADO C

| | Proz | Pcu | P1 | P2 | Fx | Fy | Fz | Mx | My |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000.000 | 820.600 | 820.600 | 820.600 | -13.1974 | 791.8432 | 214.9289 | -93.4375 | -1.5573 |
| 2 | 978.784 | 851.285 | 835.666 | 866.903 | -1.6551 | 74.1374 | -136.5409 | 45.2238 | 1.0096 |
| 3 | 882.240 | 882.240 | 869.648 | 894.831 | -0.5177 | 30.6092 | -119.3749 | 24.4873 | 0.4141 |
| 4 | 906.279 | 906.279 | 897.658 | 914.899 | -0.2157 | 12.5813 | -83.6994 | 8.8572 | 0.1518 |
| 5 | 920.925 | 920.925 | 917.813 | 924.036 | -0.5209 | 4.5592 | -30.7218 | 1.1763 | 0.1344 |
| 6 | 929.494 | 929.494 | 926.992 | 931.996 | -0.1963 | 11.5752 | 22.3404 | -1.1459 | -0.0194 |
| 7 | 937.455 | 937.455 | 934.967 | 939.943 | -0.1933 | 10.9733 | 22.4977 | -4.4003 | -0.0775 |
| 8 | 945.544 | 945.544 | 942.929 | 948.158 | -0.6490 | 10.7741 | 23.9411 | -6.9924 | -0.4212 |
| 9 | 953.772 | 953.772 | 951.161 | 956.383 | -0.1757 | 10.1627 | 24.1820 | -8.5468 | -0.1478 |
| 10 | 961.997 | 961.997 | 959.407 | 964.587 | -0.5738 | 6.3507 | 24.3631 | -6.2110 | -0.5611 |
| 11 | 970.347 | 961.771 | 964.485 | 959.057 | 0.1368 | -7.8227 | 25.7898 | 8.2999 | 0.1452 |
| 12 | 977.450 | 954.668 | 955.988 | 953.348 | 0.1133 | -5.6481 | 12.2940 | 6.1451 | 0.1233 |
| 13 | 981.908 | 950.210 | 950.259 | 950.161 | -0.3914 | -3.2047 | 0.0000 | 3.4867 | -0.4258 |
| 14 | 985.056 | 947.062 | 947.063 | 947.061 | 0.0506 | -3.1084 | 0.0000 | 3.3819 | 0.0551 |
| 15 | 988.165 | 943.953 | 943.954 | 943.952 | 0.0680 | -3.1194 | 0.0000 | 3.3939 | 0.0740 |
| 16 | 991.335 | 940.783 | 940.834 | 940.733 | -0.3935 | -3.2361 | 0.0000 | 3.5209 | -0.4281 |
| 17 | 994.513 | 937.605 | 937.606 | 937.604 | 0.0700 | -3.1394 | 0.0000 | 3.4157 | 0.0762 |

## 7.2. ANÁLISIS EN E.L.S.: LISTADOS DE TENSIONES

### 7.2.1. Combinación Cuasipermanente t=0

TITULO
=======
LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=0)(1.00*G+1.00*LEV+1.10*P+0.5*GT)

FICHERO DE GEOMETRIA COMPLETA
==============================
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
================================
1

| Fich | Num. Nudos | Num. barras | Num. hipotesis | NOMBRE FICHERO |
|---|---|---|---|---|
| 1 | 120 | 119 | 57 | ESFipf.TXT |

| Fich | Hipotesis | Caracter | Coeficiente |
|---|---|---|---|
| 1 | 1 | 1 | 1.0 |
| 1 | 2 | 1 | 1.0 |
| 1 | 3 | 1 | 1.0 |
| 1 | 4 | 3 | 1.0 |
| 1 | 5 | 3 | 1.0 |
| 1 | 6 | 3 | 1.0 |
| 1 | 7 | 2 | 0.0 |
| 1 | 8 | 2 | 0.0 |
| 1 | 9 | 2 | 0.0 |
| 1 | 10 | 2 | 0.0 |
| 1 | 11 | 2 | 0.0 |
| 1 | 12 | 2 | 0.0 |
| 1 | 13 | 2 | 0.0 |
| 1 | 14 | 2 | 0.0 |
| 1 | 15 | 2 | 0.0 |
| 1 | 16 | 2 | 0.0 |
| 1 | 17 | 2 | 0.0 |
| 1 | 18 | 2 | 0.0 |
| 1 | 19 | 4 | 0.0 |
| 1 | 20 | 5 | 0.0 |
| 1 | 21 | 4 | 0.0 |
| 1 | 22 | 5 | 0.0 |
| 1 | 23 | 4 | 0.0 |
| 1 | 24 | 5 | 0.0 |
| 1 | 25 | 4 | 0.0 |
| 1 | 26 | 5 | 0.0 |
| 1 | 27 | 4 | 0.0 |
| 1 | 28 | 5 | 0.0 |
| 1 | 29 | 4 | 0.0 |
| 1 | 30 | 5 | 0.0 |
| 1 | 31 | 4 | 0.0 |
| 1 | 32 | 5 | 0.0 |
| 1 | 33 | 4 | 0.0 |
| 1 | 34 | 5 | 0.0 |
| 1 | 35 | 4 | 0.0 |
| 1 | 36 | 5 | 0.0 |
| 1 | 37 | 2 | 0.5 |
| 1 | 38 | 1 | 24.542 |
| 1 | 39 | 1 | 3.506 |
| 1 | 40 | 1 | 3.506 |
| 1 | 41 | 1 | 14.024 |
| 1 | 42 | 1 | 3.506 |
| 1 | 43 | 1 | 3.506 |
| 1 | 44 | 1 | 8.173 |
| 1 | 45 | 1 | 8.173 |
| 1 | 46 | 1 | 8.173 |
| 1 | 47 | 1 | 8.173 |
| 1 | 48 | 1 | 8.173 |
| 1 | 49 | 1 | 8.173 |
| 1 | 50 | 1 | 8.173 |
| 1 | 51 | 1 | 8.173 |
| 1 | 52 | 1 | 8.173 |
| 1 | 53 | 1 | 8.173 |
| 1 | 54 | 1 | 8.173 |
| 1 | 55 | 1 | 8.173 |
| 1 | 56 | 1 | 8.173 |
| 1 | 57 | 1 | 8.173 |

PONDERACION DE TENSIONES

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=0)(1.00*G+1.00*LEV+1.10*P+0.5*GT)

| BARRA 1 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 1 | 7.441>> | 7.434 | 6.805 | 6.799 |
| 1 | 7.428<< | 7.425 | 6.792 | 6.790 |
| 1 | 7.441 | 7.434>> | 6.805 | 6.799 |
| 1 | 7.428 | 7.425<< | 6.792 | 6.790 |
| 1 | 7.441 | 7.434 | 6.805>> | 6.799 |
| 1 | 7.428 | 7.425 | 6.792<< | 6.790 |
| 1 | 7.441 | 7.434 | 6.805 | 6.799>> |
| 1 | 7.428 | 7.425 | 6.792 | 6.790<< |
| 2 | 6.625>> | 6.619 | 7.820 | 7.814 |
| 2 | 6.449<< | 6.447 | 8.016 | 8.014 |
| 2 | 6.625 | 6.619>> | 7.820 | 7.814 |
| 2 | 6.449 | 6.447<< | 8.016 | 8.014 |
| 2 | 6.449 | 6.447 | 8.016>> | 8.014 |
| 2 | 6.625 | 6.619 | 7.820<< | 7.814 |
| 2 | 6.449 | 6.447 | 8.016 | 8.014>> |
| 2 | 6.625 | 6.619 | 7.820 | 7.814<< |

| BARRA 2 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 2 | 8.726>> | 8.726 | 10.166 | 10.166 |
| 2 | 8.553<< | 8.553 | 10.436 | 10.436 |
| 2 | 8.726 | 8.726>> | 10.166 | 10.166 |
| 2 | 8.553 | 8.553<< | 10.436 | 10.436 |
| 2 | 8.553 | 8.553 | 10.436>> | 10.436 |
| 2 | 8.726 | 8.726 | 10.166<< | 10.166 |
| 2 | 8.553 | 8.553 | 10.436 | 10.436>> |
| 2 | 8.726 | 8.726 | 10.166 | 10.166<< |
| 3 | 9.296>> | 9.297 | 9.278 | 9.278 |
| 3 | 8.913<< | 8.913 | 9.875 | 9.874 |
| 3 | 9.296 | 9.297>> | 9.278 | 9.278 |
| 3 | 8.913 | 8.913<< | 9.875 | 9.874 |
| 3 | 8.913 | 8.913 | 9.875>> | 9.874 |
| 3 | 9.296 | 9.297 | 9.278<< | 9.278 |
| 3 | 8.913 | 8.913 | 9.875 | 9.874>> |
| 3 | 9.296 | 9.297 | 9.278 | 9.278<< |

| BARRA 3 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 3 | 9.310>> | 9.310 | 9.316 | 9.317 |
| 3 | 8.927<< | 8.927 | 9.913 | 9.913 |
| 3 | 9.310 | 9.310>> | 9.316 | 9.317 |
| 3 | 8.927 | 8.927<< | 9.913 | 9.913 |
| 3 | 8.927 | 8.927 | 9.913>> | 9.913 |
| 3 | 9.310 | 9.310 | 9.316<< | 9.317 |
| 3 | 8.927 | 8.927 | 9.913 | 9.913>> |
| 3 | 9.310 | 9.310 | 9.316 | 9.317<< |
| 4 | 9.775>> | 9.777 | 8.590 | 8.591 |
| 4 | 9.224<< | 9.223 | 9.451 | 9.451 |
| 4 | 9.775 | 9.777>> | 8.590 | 8.591 |
| 4 | 9.224 | 9.223<< | 9.451 | 9.451 |
| 4 | 9.224 | 9.223 | 9.451>> | 9.451 |
| 4 | 9.775 | 9.777 | 8.590<< | 8.591 |
| 4 | 9.224 | 9.223 | 9.451 | 9.451>> |
| 4 | 9.775 | 9.777 | 8.590 | 8.591<< |

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| BARRA 4 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 4 | 9.786>> | 9.788 | 8.632 | 8.633 |
| 4 | 9.235<< | 9.234 | 9.493 | 9.493 |
| 4 | 9.786 | 9.788>> | 8.632 | 8.633 |
| 4 | 9.235 | 9.234<< | 9.493 | 9.493 |
| 4 | 9.235 | 9.234 | 9.493>> | 9.493 |
| 4 | 9.786 | 9.788 | 8.632<< | 8.633 |
| 4 | 9.235 | 9.234 | 9.493 | 9.493>> |
| 4 | 9.786 | 9.788 | 8.632 | 8.633<< |
| 5 | 10.152>> | 10.154 | 8.061 | 8.063 |
| 5 | 9.471<< | 9.470 | 9.125 | 9.125 |
| 5 | 10.152 | 10.154>> | 8.061 | 8.063 |
| 5 | 9.471 | 9.470<< | 9.125 | 9.125 |
| 5 | 9.471 | 9.470 | 9.125>> | 9.125 |
| 5 | 10.152 | 10.154 | 8.061<< | 8.063 |
| 5 | 9.471 | 9.470 | 9.125 | 9.125>> |
| 5 | 10.152 | 10.154 | 8.061 | 8.063<< |

| BARRA 5 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 5 | 10.161>> | 10.163 | 8.104 | 8.106 |
| 5 | 9.479<< | 9.479 | 9.169 | 9.168 |
| 5 | 10.161 | 10.163>> | 8.104 | 8.106 |
| 5 | 9.479 | 9.479<< | 9.169 | 9.168 |
| 5 | 9.479 | 9.479 | 9.169>> | 9.168 |
| 5 | 10.161 | 10.163 | 8.104<< | 8.106 |
| 5 | 9.479 | 9.479 | 9.169 | 9.168>> |
| 5 | 10.161 | 10.163 | 8.104 | 8.106<< |
| 6 | 10.426>> | 10.428 | 7.691 | 7.693 |
| 6 | 9.654<< | 9.653 | 8.897 | 8.897 |
| 6 | 10.426 | 10.428>> | 7.691 | 7.693 |
| 6 | 9.654 | 9.653<< | 8.897 | 8.897 |
| 6 | 9.654 | 9.653 | 8.897>> | 8.897 |
| 6 | 10.426 | 10.428 | 7.691<< | 7.693 |
| 6 | 9.654 | 9.653 | 8.897 | 8.897>> |
| 6 | 10.426 | 10.428 | 7.691 | 7.693<< |

| BARRA 6 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 6 | 10.433>> | 10.435 | 7.735 | 7.738 |
| 6 | 9.661<< | 9.660 | 8.942 | 8.942 |
| 6 | 10.433 | 10.435>> | 7.735 | 7.738 |
| 6 | 9.661 | 9.660<< | 8.942 | 8.942 |
| 6 | 9.661 | 9.660 | 8.942>> | 8.942 |
| 6 | 10.433 | 10.435 | 7.735<< | 7.738 |
| 6 | 9.661 | 9.660 | 8.942 | 8.942>> |
| 6 | 10.433 | 10.435 | 7.735 | 7.738<< |
| 7 | 10.599>> | 10.603 | 7.475 | 7.479 |
| 7 | 9.776<< | 9.776 | 8.762 | 8.761 |
| 7 | 10.599 | 10.603>> | 7.475 | 7.479 |
| 7 | 9.776 | 9.776<< | 8.762 | 8.761 |
| 7 | 9.776 | 9.776 | 8.762>> | 8.761 |
| 7 | 10.599 | 10.603 | 7.475<< | 7.479 |
| 7 | 9.776 | 9.776 | 8.762 | 8.761>> |
| 7 | 10.599 | 10.603 | 7.475 | 7.479<< |

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| BARRA 7 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 7 | 10.605>> | 10.609 | 7.520 | 7.523 |
| 7 | 9.783<< | 9.782 | 8.806 | 8.806 |
| 7 | 10.605 | 10.609>> | 7.520 | 7.523 |
| 7 | 9.783 | 9.782<< | 8.806 | 8.806 |
| 7 | 9.783 | 9.782 | 8.806>> | 8.806 |
| 7 | 10.605 | 10.609 | 7.520<< | 7.523 |
| 7 | 9.783 | 9.782 | 8.806 | 8.806>> |
| 7 | 10.605 | 10.609 | 7.520 | 7.523<< |
| 8 | 10.675>> | 10.679 | 7.410 | 7.414 |
| 8 | 9.841<< | 9.841 | 8.715 | 8.715 |
| 8 | 10.675 | 10.679>> | 7.410 | 7.414 |
| 8 | 9.841 | 9.841<< | 8.715 | 8.715 |
| 8 | 9.841 | 9.841 | 8.715>> | 8.715 |
| 8 | 10.675 | 10.679 | 7.410<< | 7.414 |
| 8 | 9.841 | 9.841 | 8.715 | 8.715>> |
| 8 | 10.675 | 10.679 | 7.410 | 7.414<< |

| BARRA 8 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 8 | 10.682>> | 10.686 | 7.461 | 7.465 |
| 8 | 9.848<< | 9.847 | 8.766 | 8.766 |
| 8 | 10.682 | 10.686>> | 7.461 | 7.465 |
| 8 | 9.848 | 9.847<< | 8.766 | 8.766 |
| 8 | 9.848 | 9.847 | 8.766>> | 8.766 |
| 8 | 10.682 | 10.686 | 7.461<< | 7.465 |
| 8 | 9.848 | 9.847 | 8.766 | 8.766>> |
| 8 | 10.682 | 10.686 | 7.461 | 7.465<< |
| 9 | 10.687>> | 10.692 | 7.452 | 7.456 |
| 9 | 9.881<< | 9.881 | 8.714 | 8.713 |
| 9 | 10.687 | 10.692>> | 7.452 | 7.456 |
| 9 | 9.881 | 9.881<< | 8.714 | 8.713 |
| 9 | 9.881 | 9.881 | 8.714>> | 8.713 |
| 9 | 10.687 | 10.692 | 7.452<< | 7.456 |
| 9 | 9.881 | 9.881 | 8.714 | 8.713>> |
| 9 | 10.687 | 10.692 | 7.452 | 7.456<< |

| BARRA 9 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 9 | 10.684>> | 10.688 | 7.448 | 7.452 |
| 9 | 9.878<< | 9.877 | 8.710 | 8.709 |
| 9 | 10.684 | 10.688>> | 7.448 | 7.452 |
| 9 | 9.878 | 9.877<< | 8.710 | 8.709 |
| 9 | 9.878 | 9.877 | 8.710>> | 8.709 |
| 9 | 10.684 | 10.688 | 7.448<< | 7.452 |
| 9 | 9.878 | 9.877 | 8.710 | 8.709>> |
| 9 | 10.684 | 10.688 | 7.448 | 7.452<< |
| 10 | 10.661>> | 10.666 | 7.482 | 7.487 |
| 10 | 9.923<< | 9.922 | 8.640 | 8.639 |
| 10 | 10.661 | 10.666>> | 7.482 | 7.487 |
| 10 | 9.923 | 9.922<< | 8.640 | 8.639 |
| 10 | 9.923 | 9.922 | 8.640>> | 8.639 |
| 10 | 10.661 | 10.666 | 7.482<< | 7.487 |
| 10 | 9.923 | 9.922 | 8.640 | 8.639>> |
| 10 | 10.661 | 10.666 | 7.482 | 7.487<< |

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| BARRA 10 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 10 | 10.651>> | 10.657 | 7.450 | 7.456 |
| 10 | 9.913<< | 9.913 | 8.608 | 8.607 |
| 10 | 10.651 | 10.657>> | 7.450 | 7.456 |
| 10 | 9.913 | 9.913<< | 8.608 | 8.607 |
| 10 | 9.913 | 9.913 | 8.608>> | 8.607 |
| 10 | 10.651 | 10.657 | 7.450<< | 7.456 |
| 10 | 9.913 | 9.913 | 8.608 | 8.607>> |
| 10 | 10.651 | 10.657 | 7.450 | 7.456<< |
| 11 | 10.599>> | 10.605 | 7.531 | 7.537 |
| 11 | 9.968<< | 9.967 | 8.523 | 8.522 |
| 11 | 10.599 | 10.605>> | 7.531 | 7.537 |
| 11 | 9.968 | 9.967<< | 8.523 | 8.522 |
| 11 | 9.968 | 9.967 | 8.523>> | 8.522 |
| 11 | 10.599 | 10.605 | 7.531<< | 7.537 |
| 11 | 9.968 | 9.967 | 8.523 | 8.522>> |
| 11 | 10.599 | 10.605 | 7.531 | 7.537<< |

| BARRA 11 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 11 | 10.586>> | 10.592 | 7.500 | 7.506 |
| 11 | 9.955<< | 9.955 | 8.492 | 8.491 |
| 11 | 10.586 | 10.592>> | 7.500 | 7.506 |
| 11 | 9.955 | 9.955<< | 8.492 | 8.491 |
| 11 | 9.955 | 9.955 | 8.492>> | 8.491 |
| 11 | 10.586 | 10.592 | 7.500<< | 7.506 |
| 11 | 9.955 | 9.955 | 8.492 | 8.491>> |
| 11 | 10.586 | 10.592 | 7.500 | 7.506<< |
| 12 | 10.499>> | 10.506 | 7.636 | 7.642 |
| 12 | 10.015<< | 10.014 | 8.399 | 8.399 |
| 12 | 10.499 | 10.506>> | 7.636 | 7.642 |
| 12 | 10.015 | 10.014<< | 8.399 | 8.399 |
| 12 | 10.015 | 10.014 | 8.399>> | 8.399 |
| 12 | 10.499 | 10.506 | 7.636<< | 7.642 |
| 12 | 10.015 | 10.014 | 8.399 | 8.399>> |
| 12 | 10.499 | 10.506 | 7.636 | 7.642<< |

| BARRA 12 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 12 | 9.950>> | 9.957 | 6.402 | 6.409 |
| 12 | 9.466<< | 9.466 | 7.166 | 7.165 |
| 12 | 9.950 | 9.957>> | 6.402 | 6.409 |
| 12 | 9.466 | 9.466<< | 7.166 | 7.165 |
| 12 | 9.466 | 9.466 | 7.166>> | 7.165 |
| 12 | 9.950 | 9.957 | 6.402<< | 6.409 |
| 12 | 9.466 | 9.466 | 7.166 | 7.165>> |
| 12 | 9.950 | 9.957 | 6.402 | 6.409<< |
| 13 | 9.865>> | 9.865 | 6.544 | 6.543 |
| 13 | 9.489<< | 9.496 | 7.121 | 7.128 |
| 13 | 9.865 | 9.865>> | 6.544 | 6.543 |
| 13 | 9.489 | 9.496<< | 7.121 | 7.128 |
| 13 | 9.489 | 9.496 | 7.121>> | 7.128 |
| 13 | 9.865 | 9.865 | 6.544<< | 6.543 |
| 13 | 9.489 | 9.496 | 7.121 | 7.128>> |
| 13 | 9.865 | 9.865 | 6.544 | 6.543<< |

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| BARRA 13 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 13 | 9.843>> | 9.843 | 6.519 | 6.519 |
| 13 | 9.467<< | 9.474 | 7.096 | 7.103 |
| 13 | 9.843 | 9.843>> | 6.519 | 6.519 |
| 13 | 9.467 | 9.474<< | 7.096 | 7.103 |
| 13 | 9.467 | 9.474 | 7.096>> | 7.103 |
| 13 | 9.843 | 9.843 | 6.519<< | 6.519 |
| 13 | 9.467 | 9.474 | 7.096 | 7.103>> |
| 13 | 9.843 | 9.843 | 6.519 | 6.519<< |
| 14 | 9.938>> | 9.937 | 6.373 | 6.372 |
| 14 | 9.278<< | 9.285 | 7.390 | 7.398 |
| 14 | 9.938 | 9.937>> | 6.373 | 6.372 |
| 14 | 9.278 | 9.285<< | 7.390 | 7.398 |
| 14 | 9.278 | 9.285 | 7.390>> | 7.398 |
| 14 | 9.938 | 9.937 | 6.373<< | 6.372 |
| 14 | 9.278 | 9.285 | 7.390 | 7.398>> |
| 14 | 9.938 | 9.937 | 6.373 | 6.372<< |

| BARRA 14 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 14 | 9.909>> | 9.908 | 6.356 | 6.355 |
| 14 | 9.249<< | 9.256 | 7.373 | 7.381 |
| 14 | 9.909 | 9.908>> | 6.356 | 6.355 |
| 14 | 9.249 | 9.256<< | 7.373 | 7.381 |
| 14 | 9.249 | 9.256 | 7.373>> | 7.381 |
| 14 | 9.909 | 9.908 | 6.356<< | 6.355 |
| 14 | 9.249 | 9.256 | 7.373 | 7.381>> |
| 14 | 9.909 | 9.908 | 6.356 | 6.355<< |
| 15 | 10.004>> | 10.003 | 6.208 | 6.207 |
| 15 | 9.021<< | 9.029 | 7.727 | 7.736 |
| 15 | 10.004 | 10.003>> | 6.208 | 6.207 |
| 15 | 9.021 | 9.029<< | 7.727 | 7.736 |
| 15 | 9.021 | 9.029 | 7.727>> | 7.736 |
| 15 | 10.004 | 10.003 | 6.208<< | 6.207 |
| 15 | 9.021 | 9.029 | 7.727 | 7.736>> |
| 15 | 10.004 | 10.003 | 6.208 | 6.207<< |

| BARRA 15 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 15 | 9.268>> | 9.266 | 5.707 | 5.705 |
| 15 | 8.348<< | 8.353 | 6.884 | 6.889 |
| 15 | 9.268 | 9.266>> | 5.707 | 5.705 |
| 15 | 8.348 | 8.353<< | 6.884 | 6.889 |
| 15 | 8.348 | 8.353 | 6.884>> | 6.889 |
| 15 | 9.268 | 9.266 | 5.707<< | 5.705 |
| 15 | 8.348 | 8.353 | 6.884 | 6.889>> |
| 15 | 9.268 | 9.266 | 5.707 | 5.705<< |
| 16 | 11.050>> | 11.048 | 3.469 | 3.467 |
| 16 | 9.787<< | 9.793 | 5.081 | 5.086 |
| 16 | 11.050 | 11.048>> | 3.469 | 3.467 |
| 16 | 9.787 | 9.793<< | 5.081 | 5.086 |
| 16 | 9.787 | 9.793 | 5.081>> | 5.086 |
| 16 | 11.050 | 11.048 | 3.469<< | 3.467 |
| 16 | 9.787 | 9.793 | 5.081 | 5.086>> |
| 16 | 11.050 | 11.048 | 3.469 | 3.467<< |

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| BARRA 16 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 16 | 11.165>> | 11.165 | 3.496 | 3.496 |
| 16 | 9.890<< | 9.899 | 5.096 | 5.104 |
| 16 | 11.165 | 11.165>> | 3.496 | 3.496 |
| 16 | 9.890 | 9.899<< | 5.096 | 5.104 |
| 16 | 9.890 | 9.899 | 5.096>> | 5.104 |
| 16 | 11.165 | 11.165 | 3.496<< | 3.496 |
| 16 | 9.890 | 9.899 | 5.096 | 5.104>> |
| 16 | 11.165 | 11.165 | 3.496 | 3.496<< |
| 17 | 10.507>> | 10.507 | 4.327 | 4.327 |
| 17 | 8.851<< | 8.860 | 6.407 | 6.416 |
| 17 | 10.507 | 10.507>> | 4.327 | 4.327 |
| 17 | 8.851 | 8.860<< | 6.407 | 6.416 |
| 17 | 8.851 | 8.860 | 6.407>> | 6.416 |
| 17 | 10.507 | 10.507 | 4.327<< | 4.327 |
| 17 | 8.851 | 8.860 | 6.407 | 6.416>> |
| 17 | 10.507 | 10.507 | 4.327 | 4.327<< |

| BARRA 17 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 17 | 10.429>> | 10.429 | 4.332 | 4.332 |
| 17 | 8.774<< | 8.783 | 6.412 | 6.421 |
| 17 | 10.429 | 10.429>> | 4.332 | 4.332 |
| 17 | 8.774 | 8.783<< | 6.412 | 6.421 |
| 17 | 8.774 | 8.783 | 6.412>> | 6.421 |
| 17 | 10.429 | 10.429 | 4.332<< | 4.332 |
| 17 | 8.774 | 8.783 | 6.412 | 6.421>> |
| 17 | 10.429 | 10.429 | 4.332 | 4.332<< |
| 18 | 11.093>> | 11.092 | 3.494 | 3.493 |
| 18 | 9.794<< | 9.802 | 5.124 | 5.132 |
| 18 | 11.093 | 11.092>> | 3.494 | 3.493 |
| 18 | 9.794 | 9.802<< | 5.124 | 5.132 |
| 18 | 9.794 | 9.802 | 5.124>> | 5.132 |
| 18 | 11.093 | 11.092 | 3.494<< | 3.493 |
| 18 | 9.794 | 9.802 | 5.124 | 5.132>> |
| 18 | 11.093 | 11.092 | 3.494 | 3.493<< |

| BARRA 18 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 18 | 10.857>> | 10.854 | 3.449 | 3.446 |
| 18 | 9.571<< | 9.574 | 5.091 | 5.094 |
| 18 | 10.857 | 10.854>> | 3.449 | 3.446 |
| 18 | 9.571 | 9.574<< | 5.091 | 5.094 |
| 18 | 9.571 | 9.574 | 5.091>> | 5.094 |
| 18 | 10.857 | 10.854 | 3.449<< | 3.446 |
| 18 | 9.571 | 9.574 | 5.091 | 5.094>> |
| 18 | 10.857 | 10.854 | 3.449 | 3.446<< |
| 19 | 8.961>> | 8.957 | 5.833 | 5.830 |
| 19 | 7.993<< | 7.994 | 7.072 | 7.073 |
| 19 | 8.961 | 8.957>> | 5.833 | 5.830 |
| 19 | 7.993 | 7.994<< | 7.072 | 7.073 |
| 19 | 7.993 | 7.994 | 7.072>> | 7.073 |
| 19 | 8.961 | 8.957 | 5.833<< | 5.830 |
| 19 | 7.993 | 7.994 | 7.072 | 7.073>> |
| 19 | 8.961 | 8.957 | 5.833 | 5.830<< |

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| BARRA 19 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 19 | 9.827>> | 9.825 | 5.995 | 5.993 |
| 19 | 8.794<< | 8.800 | 7.594 | 7.601 |
| 19 | 9.827 | 9.825>> | 5.995 | 5.993 |
| 19 | 8.794 | 8.800<< | 7.594 | 7.601 |
| 19 | 8.794 | 8.800 | 7.594>> | 7.601 |
| 19 | 9.827 | 9.825 | 5.995<< | 5.993 |
| 19 | 8.794 | 8.800 | 7.594 | 7.601>> |
| 19 | 9.827 | 9.825 | 5.995 | 5.993<< |
| 20 | 9.729>> | 9.727 | 6.148 | 6.145 |
| 20 | 8.994<< | 8.998 | 7.285 | 7.289 |
| 20 | 9.729 | 9.727>> | 6.148 | 6.145 |
| 20 | 8.994 | 8.998<< | 7.285 | 7.289 |
| 20 | 8.994 | 8.998 | 7.285>> | 7.289 |
| 20 | 9.729 | 9.727 | 6.148<< | 6.145 |
| 20 | 8.994 | 8.998 | 7.285 | 7.289>> |
| 20 | 9.729 | 9.727 | 6.148 | 6.145<< |

| BARRA 20 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 20 | 9.718>> | 9.716 | 6.133 | 6.131 |
| 20 | 8.983<< | 8.988 | 7.270 | 7.275 |
| 20 | 9.718 | 9.716>> | 6.133 | 6.131 |
| 20 | 8.983 | 8.988<< | 7.270 | 7.275 |
| 20 | 8.983 | 8.988 | 7.270>> | 7.275 |
| 20 | 9.718 | 9.716 | 6.133<< | 6.131 |
| 20 | 8.983 | 8.988 | 7.270 | 7.275>> |
| 20 | 9.718 | 9.716 | 6.133 | 6.131<< |
| 21 | 9.638>> | 9.634 | 6.260 | 6.257 |
| 21 | 9.160<< | 9.163 | 6.996 | 6.999 |
| 21 | 9.638 | 9.634>> | 6.260 | 6.257 |
| 21 | 9.160 | 9.163<< | 6.996 | 6.999 |
| 21 | 9.160 | 9.163 | 6.996>> | 6.999 |
| 21 | 9.638 | 9.634 | 6.260<< | 6.257 |
| 21 | 9.160 | 9.163 | 6.996 | 6.999>> |
| 21 | 9.638 | 9.634 | 6.260 | 6.257<< |

| BARRA 21 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 21 | 9.630>> | 9.626 | 6.236 | 6.232 |
| 21 | 9.152<< | 9.155 | 6.971 | 6.974 |
| 21 | 9.630 | 9.626>> | 6.236 | 6.232 |
| 21 | 9.152 | 9.155<< | 6.971 | 6.974 |
| 21 | 9.152 | 9.155 | 6.971>> | 6.974 |
| 21 | 9.630 | 9.626 | 6.236<< | 6.232 |
| 21 | 9.152 | 9.155 | 6.971 | 6.974>> |
| 21 | 9.630 | 9.626 | 6.236 | 6.232<< |
| 22 | 9.732>> | 9.734 | 6.070 | 6.071 |
| 22 | 9.144<< | 9.140 | 6.993 | 6.989 |
| 22 | 9.732 | 9.734>> | 6.070 | 6.071 |
| 22 | 9.144 | 9.140<< | 6.993 | 6.989 |
| 22 | 9.144 | 9.140 | 6.993>> | 6.989 |
| 22 | 9.732 | 9.734 | 6.070<< | 6.071 |
| 22 | 9.144 | 9.140 | 6.993 | 6.989>> |
| 22 | 9.732 | 9.734 | 6.070 | 6.071<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=0)(1.00*G+1.00*LEV+1.10*P+0.5*GT)

| BARRA 22 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 22 | 8.966>> | 8.968 | 6.213 | 6.214 |
| 22 | 8.378<< | 8.374 | 7.136 | 7.132 |
| 22 | 8.966 | 8.968>> | 6.213 | 6.214 |
| 22 | 8.378 | 8.374<< | 7.136 | 7.132 |
| 22 | 8.378 | 8.374 | 7.136>> | 7.132 |
| 22 | 8.966 | 8.968 | 6.213<< | 6.214 |
| 22 | 8.378 | 8.374 | 7.136 | 7.132>> |
| 22 | 8.966 | 8.968 | 6.213 | 6.214<< |
| 23 | 9.092>> | 9.092 | 6.019 | 6.019 |
| 23 | 8.337<< | 8.332 | 7.202 | 7.197 |
| 23 | 9.092 | 9.092>> | 6.019 | 6.019 |
| 23 | 8.337 | 8.332<< | 7.202 | 7.197 |
| 23 | 8.337 | 8.332 | 7.202>> | 7.197 |
| 23 | 9.092 | 9.092 | 6.019<< | 6.019 |
| 23 | 8.337 | 8.332 | 7.202 | 7.197>> |
| 23 | 9.092 | 9.092 | 6.019 | 6.019<< |

| BARRA 23 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 23 | 9.090>> | 9.090 | 6.036 | 6.036 |
| 23 | 8.335<< | 8.330 | 7.219 | 7.214 |
| 23 | 9.090 | 9.090>> | 6.036 | 6.036 |
| 23 | 8.335 | 8.330<< | 7.219 | 7.214 |
| 23 | 8.335 | 8.330 | 7.219>> | 7.214 |
| 23 | 9.090 | 9.090 | 6.036<< | 6.036 |
| 23 | 8.335 | 8.330 | 7.219 | 7.214>> |
| 23 | 9.090 | 9.090 | 6.036 | 6.036<< |
| 24 | 9.185>> | 9.183 | 5.891 | 5.889 |
| 24 | 8.302<< | 8.296 | 7.272 | 7.266 |
| 24 | 9.185 | 9.183>> | 5.891 | 5.889 |
| 24 | 8.302 | 8.296<< | 7.272 | 7.266 |
| 24 | 8.302 | 8.296 | 7.272>> | 7.266 |
| 24 | 9.185 | 9.183 | 5.891<< | 5.889 |
| 24 | 8.302 | 8.296 | 7.272 | 7.266>> |
| 24 | 9.185 | 9.183 | 5.891 | 5.889<< |

| BARRA 24 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 24 | 9.182>> | 9.181 | 5.909 | 5.907 |
| 24 | 8.299<< | 8.293 | 7.290 | 7.284 |
| 24 | 9.182 | 9.181>> | 5.909 | 5.907 |
| 24 | 8.299 | 8.293<< | 7.290 | 7.284 |
| 24 | 8.299 | 8.293 | 7.290>> | 7.284 |
| 24 | 9.182 | 9.181 | 5.909<< | 5.907 |
| 24 | 8.299 | 8.293 | 7.290 | 7.284>> |
| 24 | 9.182 | 9.181 | 5.909 | 5.907<< |
| 25 | 9.249>> | 9.246 | 5.807 | 5.804 |
| 25 | 8.278<< | 8.271 | 7.324 | 7.318 |
| 25 | 9.249 | 9.246>> | 5.807 | 5.804 |
| 25 | 8.278 | 8.271<< | 7.324 | 7.318 |
| 25 | 8.278 | 8.271 | 7.324>> | 7.318 |
| 25 | 9.249 | 9.246 | 5.807<< | 5.804 |
| 25 | 8.278 | 8.271 | 7.324 | 7.318>> |
| 25 | 9.249 | 9.246 | 5.807 | 5.804<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=0)(1.00*G+1.00*LEV+1.10*P+0.5*GT)

| BARRA 25 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 25 | 9.246>> | 9.243 | 5.821 | 5.817 |
| 25 | 8.275<< | 8.268 | 7.338 | 7.332 |
| 25 | 9.246 | 9.243>> | 5.821 | 5.817 |
| 25 | 8.275 | 8.268<< | 7.338 | 7.332 |
| 25 | 8.275 | 8.268 | 7.338>> | 7.332 |
| 25 | 9.246 | 9.243 | 5.821<< | 5.817 |
| 25 | 8.275 | 8.268 | 7.338 | 7.332>> |
| 25 | 9.246 | 9.243 | 5.821 | 5.817<< |
| 26 | 9.286>> | 9.281 | 5.761 | 5.755 |
| 26 | 8.266<< | 8.259 | 7.353 | 7.346 |
| 26 | 9.286 | 9.281>> | 5.761 | 5.755 |
| 26 | 8.266 | 8.259<< | 7.353 | 7.346 |
| 26 | 8.266 | 8.259 | 7.353>> | 7.346 |
| 26 | 9.286 | 9.281 | 5.761<< | 5.755 |
| 26 | 8.266 | 8.259 | 7.353 | 7.346>> |
| 26 | 9.286 | 9.281 | 5.761 | 5.755<< |

| BARRA 26 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 26 | 9.284>> | 9.279 | 5.768 | 5.763 |
| 26 | 8.263<< | 8.256 | 7.361 | 7.354 |
| 26 | 9.284 | 9.279>> | 5.768 | 5.763 |
| 26 | 8.263 | 8.256<< | 7.361 | 7.354 |
| 26 | 8.263 | 8.256 | 7.361>> | 7.354 |
| 26 | 9.284 | 9.279 | 5.768<< | 5.763 |
| 26 | 8.263 | 8.256 | 7.361 | 7.354>> |
| 26 | 9.284 | 9.279 | 5.768 | 5.763<< |
| 27 | 9.296>> | 9.289 | 5.752 | 5.745 |
| 27 | 8.266<< | 8.258 | 7.358 | 7.350 |
| 27 | 9.296 | 9.289>> | 5.752 | 5.745 |
| 27 | 8.266 | 8.258<< | 7.358 | 7.350 |
| 27 | 8.266 | 8.258 | 7.358>> | 7.350 |
| 27 | 9.296 | 9.289 | 5.752<< | 5.745 |
| 27 | 8.266 | 8.258 | 7.358 | 7.350>> |
| 27 | 9.296 | 9.289 | 5.752 | 5.745<< |

| BARRA 27 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 27 | 9.294>> | 9.287 | 5.755 | 5.749 |
| 27 | 8.264<< | 8.256 | 7.361 | 7.353 |
| 27 | 9.294 | 9.287>> | 5.755 | 5.749 |
| 27 | 8.264 | 8.256<< | 7.361 | 7.353 |
| 27 | 8.264 | 8.256 | 7.361>> | 7.353 |
| 27 | 9.294 | 9.287 | 5.755<< | 5.749 |
| 27 | 8.264 | 8.256 | 7.361 | 7.353>> |
| 27 | 9.294 | 9.287 | 5.755 | 5.749<< |
| 28 | 9.277>> | 9.269 | 5.783 | 5.774 |
| 28 | 8.278<< | 8.269 | 7.340 | 7.332 |
| 28 | 9.277 | 9.269>> | 5.783 | 5.774 |
| 28 | 8.278 | 8.269<< | 7.340 | 7.332 |
| 28 | 8.278 | 8.269 | 7.340>> | 7.332 |
| 28 | 9.277 | 9.269 | 5.783<< | 5.774 |
| 28 | 8.278 | 8.269 | 7.340 | 7.332>> |
| 28 | 9.277 | 9.269 | 5.783 | 5.774<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=0)(1.00*G+1.00*LEV+1.10*P+0.5*GT)

| BARRA 28 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 28 | 9.276>> | 9.267 | 5.780 | 5.772 |
| 28 | 8.276<< | 8.268 | 7.338 | 7.329 |
| 28 | 9.276 | 9.267>> | 5.780 | 5.772 |
| 28 | 8.276 | 8.268<< | 7.338 | 7.329 |
| 28 | 8.276 | 8.268 | 7.338>> | 7.329 |
| 28 | 9.276 | 9.267 | 5.780<< | 5.772 |
| 28 | 8.276 | 8.268 | 7.338 | 7.329>> |
| 28 | 9.276 | 9.267 | 5.780 | 5.772<< |
| 29 | 9.235>> | 9.224 | 5.847 | 5.836 |
| 29 | 8.304<< | 8.295 | 7.294 | 7.285 |
| 29 | 9.235 | 9.224>> | 5.847 | 5.836 |
| 29 | 8.304 | 8.295<< | 7.294 | 7.285 |
| 29 | 8.304 | 8.295 | 7.294>> | 7.285 |
| 29 | 9.235 | 9.224 | 5.847<< | 5.836 |
| 29 | 8.304 | 8.295 | 7.294 | 7.285>> |
| 29 | 9.235 | 9.224 | 5.847 | 5.836<< |

| BARRA 29 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 29 | 9.233>> | 9.223 | 5.839 | 5.829 |
| 29 | 8.303<< | 8.294 | 7.287 | 7.277 |
| 29 | 9.233 | 9.223>> | 5.839 | 5.829 |
| 29 | 8.303 | 8.294<< | 7.287 | 7.277 |
| 29 | 8.303 | 8.294 | 7.287>> | 7.277 |
| 29 | 9.233 | 9.223 | 5.839<< | 5.829 |
| 29 | 8.303 | 8.294 | 7.287 | 7.277>> |
| 29 | 9.233 | 9.223 | 5.839 | 5.829<< |
| 30 | 9.166>> | 9.155 | 5.945 | 5.934 |
| 30 | 8.345<< | 8.335 | 7.222 | 7.212 |
| 30 | 9.166 | 9.155>> | 5.945 | 5.934 |
| 30 | 8.345 | 8.335<< | 7.222 | 7.212 |
| 30 | 8.345 | 8.335 | 7.222>> | 7.212 |
| 30 | 9.166 | 9.155 | 5.945<< | 5.934 |
| 30 | 8.345 | 8.335 | 7.222 | 7.212>> |
| 30 | 9.166 | 9.155 | 5.945 | 5.934<< |

| BARRA 30 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 30 | 9.165>> | 9.153 | 5.933 | 5.921 |
| 30 | 8.344<< | 8.334 | 7.210 | 7.200 |
| 30 | 9.165 | 9.153>> | 5.933 | 5.921 |
| 30 | 8.344 | 8.334<< | 7.210 | 7.200 |
| 30 | 8.344 | 8.334 | 7.210>> | 7.200 |
| 30 | 9.165 | 9.153 | 5.933<< | 5.921 |
| 30 | 8.344 | 8.334 | 7.210 | 7.200>> |
| 30 | 9.165 | 9.153 | 5.933 | 5.921<< |
| 31 | 9.071>> | 9.058 | 6.081 | 6.067 |
| 31 | 8.399<< | 8.388 | 7.125 | 7.114 |
| 31 | 9.071 | 9.058>> | 6.081 | 6.067 |
| 31 | 8.399 | 8.388<< | 7.125 | 7.114 |
| 31 | 8.399 | 8.388 | 7.125>> | 7.114 |
| 31 | 9.071 | 9.058 | 6.081<< | 6.067 |
| 31 | 8.399 | 8.388 | 7.125 | 7.114>> |
| 31 | 9.071 | 9.058 | 6.081 | 6.067<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=0)(1.00*G+1.00*LEV+1.10*P+0.5*GT)

| BARRA 31 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 31 | 9.069>> | 9.055 | 6.066 | 6.053 |
| 31 | 8.396<< | 8.386 | 7.110 | 7.099 |
| 31 | 9.069 | 9.055>> | 6.066 | 6.053 |
| 31 | 8.396 | 8.386<< | 7.110 | 7.099 |
| 31 | 8.396 | 8.386 | 7.110>> | 7.099 |
| 31 | 9.069 | 9.055 | 6.066<< | 6.053 |
| 31 | 8.396 | 8.386 | 7.110 | 7.099>> |
| 31 | 9.069 | 9.055 | 6.066 | 6.053<< |
| 32 | 8.945>> | 8.930 | 6.261 | 6.246 |
| 32 | 8.461<< | 8.450 | 7.010 | 6.999 |
| 32 | 8.945 | 8.930>> | 6.261 | 6.246 |
| 32 | 8.461 | 8.450<< | 7.010 | 6.999 |
| 32 | 8.461 | 8.450 | 7.010>> | 6.999 |
| 32 | 8.945 | 8.930 | 6.261<< | 6.246 |
| 32 | 8.461 | 8.450 | 7.010 | 6.999>> |
| 32 | 8.945 | 8.930 | 6.261 | 6.246<< |

| BARRA 32 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 32 | 8.940>> | 8.925 | 6.244 | 6.229 |
| 32 | 8.456<< | 8.445 | 6.994 | 6.983 |
| 32 | 8.940 | 8.925>> | 6.244 | 6.229 |
| 32 | 8.456 | 8.445<< | 6.994 | 6.983 |
| 32 | 8.456 | 8.445 | 6.994>> | 6.983 |
| 32 | 8.940 | 8.925 | 6.244<< | 6.229 |
| 32 | 8.456 | 8.445 | 6.994 | 6.983>> |
| 32 | 8.940 | 8.925 | 6.244 | 6.229<< |
| 33 | 8.891>> | 8.879 | 6.318 | 6.305 |
| 33 | 8.429<< | 8.412 | 7.043 | 7.027 |
| 33 | 8.891 | 8.879>> | 6.318 | 6.305 |
| 33 | 8.429 | 8.412<< | 7.043 | 7.027 |
| 33 | 8.429 | 8.412 | 7.043>> | 7.027 |
| 33 | 8.891 | 8.879 | 6.318<< | 6.305 |
| 33 | 8.429 | 8.412 | 7.043 | 7.027>> |
| 33 | 8.891 | 8.879 | 6.318 | 6.305<< |

| BARRA 33 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 33 | 8.883>> | 8.871 | 6.302 | 6.290 |
| 33 | 8.421<< | 8.404 | 7.028 | 7.011 |
| 33 | 8.883 | 8.871>> | 6.302 | 6.290 |
| 33 | 8.421 | 8.404<< | 7.028 | 7.011 |
| 33 | 8.421 | 8.404 | 7.028>> | 7.011 |
| 33 | 8.883 | 8.871 | 6.302<< | 6.290 |
| 33 | 8.421 | 8.404 | 7.028 | 7.011>> |
| 33 | 8.883 | 8.871 | 6.302 | 6.290<< |
| 34 | 8.962>> | 8.949 | 6.180 | 6.167 |
| 34 | 8.244<< | 8.226 | 7.305 | 7.287 |
| 34 | 8.962 | 8.949>> | 6.180 | 6.167 |
| 34 | 8.244 | 8.226<< | 7.305 | 7.287 |
| 34 | 8.244 | 8.226 | 7.305>> | 7.287 |
| 34 | 8.962 | 8.949 | 6.180<< | 6.167 |
| 34 | 8.244 | 8.226 | 7.305 | 7.287>> |
| 34 | 8.962 | 8.949 | 6.180 | 6.167<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=0)(1.00*G+1.00*LEV+1.10*P+0.5*GT)

| BARRA 34 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 34 | 8.949>> | 8.936 | 6.168 | 6.155 |
| 34 | 8.231<< | 8.212 | 7.293 | 7.275 |
| 34 | 8.949 | 8.936>> | 6.168 | 6.155 |
| 34 | 8.231 | 8.212<< | 7.293 | 7.275 |
| 34 | 8.231 | 8.212 | 7.293>> | 7.275 |
| 34 | 8.949 | 8.936 | 6.168<< | 6.155 |
| 34 | 8.231 | 8.212 | 7.293 | 7.275>> |
| 34 | 8.949 | 8.936 | 6.168 | 6.155<< |
| 35 | 9.035>> | 9.022 | 6.034 | 6.020 |
| 35 | 8.023<< | 8.003 | 7.620 | 7.600 |
| 35 | 9.035 | 9.022>> | 6.034 | 6.020 |
| 35 | 8.023 | 8.003<< | 7.620 | 7.600 |
| 35 | 8.023 | 8.003 | 7.620>> | 7.600 |
| 35 | 9.035 | 9.022 | 6.034<< | 6.020 |
| 35 | 8.023 | 8.003 | 7.620 | 7.600>> |
| 35 | 9.035 | 9.022 | 6.034 | 6.020<< |

| BARRA 35 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 35 | 8.496>> | 8.482 | 5.588 | 5.574 |
| 35 | 7.546<< | 7.525 | 6.817 | 6.796 |
| 35 | 8.496 | 8.482>> | 5.588 | 5.574 |
| 35 | 7.546 | 7.525<< | 6.817 | 6.796 |
| 35 | 7.546 | 7.525 | 6.817>> | 6.796 |
| 35 | 8.496 | 8.482 | 5.588<< | 5.574 |
| 35 | 7.546 | 7.525 | 6.817 | 6.796>> |
| 35 | 8.496 | 8.482 | 5.588 | 5.574<< |
| 36 | 10.147>> | 10.132 | 3.515 | 3.501 |
| 36 | 8.882<< | 8.859 | 5.147 | 5.124 |
| 36 | 10.147 | 10.132>> | 3.515 | 3.501 |
| 36 | 8.882 | 8.859<< | 5.147 | 5.124 |
| 36 | 8.882 | 8.859 | 5.147>> | 5.124 |
| 36 | 10.147 | 10.132 | 3.515<< | 3.501 |
| 36 | 8.882 | 8.859 | 5.147 | 5.124>> |
| 36 | 10.147 | 10.132 | 3.515 | 3.501<< |

| BARRA 36 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 36 | 10.263>> | 10.250 | 3.538 | 3.525 |
| 36 | 8.986<< | 8.967 | 5.158 | 5.139 |
| 36 | 10.263 | 10.250>> | 3.538 | 3.525 |
| 36 | 8.986 | 8.967<< | 5.158 | 5.139 |
| 36 | 8.986 | 8.967 | 5.158>> | 5.139 |
| 36 | 10.263 | 10.250 | 3.538<< | 3.525 |
| 36 | 8.986 | 8.967 | 5.158 | 5.139>> |
| 36 | 10.263 | 10.250 | 3.538 | 3.525<< |
| 37 | 9.465>> | 9.452 | 4.546 | 4.533 |
| 37 | 7.833<< | 7.813 | 6.614 | 6.594 |
| 37 | 9.465 | 9.452>> | 4.546 | 4.533 |
| 37 | 7.833 | 7.813<< | 6.614 | 6.594 |
| 37 | 7.833 | 7.813 | 6.614>> | 6.594 |
| 37 | 9.465 | 9.452 | 4.546<< | 4.533 |
| 37 | 7.833 | 7.813 | 6.614 | 6.594>> |
| 37 | 9.465 | 9.452 | 4.546 | 4.533<< |

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| BARRA 37 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 37 | 9.471>> | 9.458 | 4.536 | 4.523 |
| 37 | 7.839<< | 7.819 | 6.604 | 6.584 |
| 37 | 9.471 | 9.458>> | 4.536 | 4.523 |
| 37 | 7.839 | 7.819<< | 6.604 | 6.584 |
| 37 | 7.839 | 7.819 | 6.604>> | 6.584 |
| 37 | 9.471 | 9.458 | 4.536<< | 4.523 |
| 37 | 7.839 | 7.819 | 6.604 | 6.584>> |
| 37 | 9.471 | 9.458 | 4.536 | 4.523<< |
| 38 | 10.148>> | 10.136 | 3.679 | 3.668 |
| 38 | 8.873<< | 8.856 | 5.294 | 5.277 |
| 38 | 10.148 | 10.136>> | 3.679 | 3.668 |
| 38 | 8.873 | 8.856<< | 5.294 | 5.277 |
| 38 | 8.873 | 8.856 | 5.294>> | 5.277 |
| 38 | 10.148 | 10.136 | 3.679<< | 3.668 |
| 38 | 8.873 | 8.856 | 5.294 | 5.277>> |
| 38 | 10.148 | 10.136 | 3.679 | 3.668<< |

| BARRA 38 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 38 | 10.035>> | 10.022 | 3.630 | 3.617 |
| 38 | 8.773<< | 8.752 | 5.257 | 5.236 |
| 38 | 10.035 | 10.022>> | 3.630 | 3.617 |
| 38 | 8.773 | 8.752<< | 5.257 | 5.236 |
| 38 | 8.773 | 8.752 | 5.257>> | 5.236 |
| 38 | 10.035 | 10.022 | 3.630<< | 3.617 |
| 38 | 8.773 | 8.752 | 5.257 | 5.236>> |
| 38 | 10.035 | 10.022 | 3.630 | 3.617<< |
| 39 | 8.227>> | 8.215 | 5.899 | 5.887 |
| 39 | 7.284<< | 7.266 | 7.119 | 7.102 |
| 39 | 8.227 | 8.215>> | 5.899 | 5.887 |
| 39 | 7.284 | 7.266<< | 7.119 | 7.102 |
| 39 | 7.284 | 7.266 | 7.119>> | 7.102 |
| 39 | 8.227 | 8.215 | 5.899<< | 5.887 |
| 39 | 7.284 | 7.266 | 7.119 | 7.102>> |
| 39 | 8.227 | 8.215 | 5.899 | 5.887<< |

| BARRA 39 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 39 | 8.992>> | 8.980 | 6.106 | 6.094 |
| 39 | 7.985<< | 7.969 | 7.680 | 7.664 |
| 39 | 8.992 | 8.980>> | 6.106 | 6.094 |
| 39 | 7.985 | 7.969<< | 7.680 | 7.664 |
| 39 | 7.985 | 7.969 | 7.680>> | 7.664 |
| 39 | 8.992 | 8.980 | 6.106<< | 6.094 |
| 39 | 7.985 | 7.969 | 7.680 | 7.664>> |
| 39 | 8.992 | 8.980 | 6.106 | 6.094<< |
| 40 | 8.901>> | 8.891 | 6.245 | 6.235 |
| 40 | 8.192<< | 8.180 | 7.352 | 7.340 |
| 40 | 8.901 | 8.891>> | 6.245 | 6.235 |
| 40 | 8.192 | 8.180<< | 7.352 | 7.340 |
| 40 | 8.192 | 8.180 | 7.352>> | 7.340 |
| 40 | 8.901 | 8.891 | 6.245<< | 6.235 |
| 40 | 8.192 | 8.180 | 7.352 | 7.340>> |
| 40 | 8.901 | 8.891 | 6.245 | 6.235<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=0)(1.00*G+1.00*LEV+1.10*P+0.5*GT)

| BARRA 40 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 40 | 8.909>> | 8.900 | 6.263 | 6.253 |
| 40 | 8.200<< | 8.188 | 7.370 | 7.358 |
| 40 | 8.909 | 8.900>> | 6.263 | 6.253 |
| 40 | 8.200 | 8.188<< | 7.370 | 7.358 |
| 40 | 8.200 | 8.188 | 7.370>> | 7.358 |
| 40 | 8.909 | 8.900 | 6.263<< | 6.253 |
| 40 | 8.200 | 8.188 | 7.370 | 7.358>> |
| 40 | 8.909 | 8.900 | 6.263 | 6.253<< |
| 41 | 8.824>> | 8.816 | 6.393 | 6.385 |
| 41 | 8.374<< | 8.365 | 7.095 | 7.087 |
| 41 | 8.824 | 8.816>> | 6.393 | 6.385 |
| 41 | 8.374 | 8.365<< | 7.095 | 7.087 |
| 41 | 8.374 | 8.365 | 7.095>> | 7.087 |
| 41 | 8.824 | 8.816 | 6.393<< | 6.385 |
| 41 | 8.374 | 8.365 | 7.095 | 7.087>> |
| 41 | 8.824 | 8.816 | 6.393 | 6.385<< |

| BARRA 41 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 41 | 8.828>> | 8.820 | 6.415 | 6.407 |
| 41 | 8.377<< | 8.369 | 7.117 | 7.109 |
| 41 | 8.828 | 8.820>> | 6.415 | 6.407 |
| 41 | 8.377 | 8.369<< | 7.117 | 7.109 |
| 41 | 8.377 | 8.369 | 7.117>> | 7.109 |
| 41 | 8.828 | 8.820 | 6.415<< | 6.407 |
| 41 | 8.377 | 8.369 | 7.117 | 7.109>> |
| 41 | 8.828 | 8.820 | 6.415 | 6.407<< |
| 42 | 8.866>> | 8.862 | 6.351 | 6.346 |
| 42 | 8.407<< | 8.401 | 7.069 | 7.062 |
| 42 | 8.866 | 8.862>> | 6.351 | 6.346 |
| 42 | 8.407 | 8.401<< | 7.069 | 7.062 |
| 42 | 8.407 | 8.401 | 7.069>> | 7.062 |
| 42 | 8.866 | 8.862 | 6.351<< | 6.346 |
| 42 | 8.407 | 8.401 | 7.069 | 7.062>> |
| 42 | 8.866 | 8.862 | 6.351 | 6.346<< |

| BARRA 42 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 42 | 9.097>> | 9.093 | 4.997 | 4.992 |
| 42 | 8.638<< | 8.631 | 5.715 | 5.708 |
| 42 | 9.097 | 9.093>> | 4.997 | 4.992 |
| 42 | 8.638 | 8.631<< | 5.715 | 5.708 |
| 42 | 8.638 | 8.631 | 5.715>> | 5.708 |
| 42 | 9.097 | 9.093 | 4.997<< | 4.992 |
| 42 | 8.638 | 8.631 | 5.715 | 5.708>> |
| 42 | 9.097 | 9.093 | 4.997 | 4.992<< |
| 43 | 9.211>> | 9.211 | 4.814 | 4.813 |
| 43 | 8.569<< | 8.564 | 5.820 | 5.815 |
| 43 | 9.211 | 9.211>> | 4.814 | 4.813 |
| 43 | 8.569 | 8.564<< | 5.820 | 5.815 |
| 43 | 8.569 | 8.564 | 5.820>> | 5.815 |
| 43 | 9.211 | 9.211 | 4.814<< | 4.813 |
| 43 | 8.569 | 8.564 | 5.820 | 5.815>> |
| 43 | 9.211 | 9.211 | 4.814 | 4.813<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=0)(1.00*G+1.00*LEV+1.10*P+0.5*GT)

| BARRA 43 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 43 | 9.210>> | 9.209 | 4.834 | 4.834 |
| 43 | 8.567<< | 8.562 | 5.841 | 5.836 |
| 43 | 9.210 | 9.209>> | 4.834 | 4.834 |
| 43 | 8.567 | 8.562<< | 5.841 | 5.836 |
| 43 | 8.567 | 8.562 | 5.841>> | 5.836 |
| 43 | 9.210 | 9.209 | 4.834<< | 4.834 |
| 43 | 8.567 | 8.562 | 5.841 | 5.836>> |
| 43 | 9.210 | 9.209 | 4.834 | 4.834<< |
| 44 | 9.293>> | 9.296 | 4.700 | 4.703 |
| 44 | 8.506<< | 8.503 | 5.933 | 5.930 |
| 44 | 9.293 | 9.296>> | 4.700 | 4.703 |
| 44 | 8.506 | 8.503<< | 5.933 | 5.930 |
| 44 | 8.506 | 8.503 | 5.933>> | 5.930 |
| 44 | 9.293 | 9.296 | 4.700<< | 4.703 |
| 44 | 8.506 | 8.503 | 5.933 | 5.930>> |
| 44 | 9.293 | 9.296 | 4.700 | 4.703<< |

| BARRA 44 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 44 | 9.290>> | 9.293 | 4.718 | 4.721 |
| 44 | 8.504<< | 8.501 | 5.951 | 5.948 |
| 44 | 9.290 | 9.293>> | 4.718 | 4.721 |
| 44 | 8.504 | 8.501<< | 5.951 | 5.948 |
| 44 | 8.504 | 8.501 | 5.951>> | 5.948 |
| 44 | 9.290 | 9.293 | 4.718<< | 4.721 |
| 44 | 8.504 | 8.501 | 5.951 | 5.948>> |
| 44 | 9.290 | 9.293 | 4.718 | 4.721<< |
| 45 | 9.345>> | 9.352 | 4.627 | 4.634 |
| 45 | 8.455<< | 8.453 | 6.025 | 6.023 |
| 45 | 9.345 | 9.352>> | 4.627 | 4.634 |
| 45 | 8.455 | 8.453<< | 6.025 | 6.023 |
| 45 | 8.455 | 8.453 | 6.025>> | 6.023 |
| 45 | 9.345 | 9.352 | 4.627<< | 4.634 |
| 45 | 8.455 | 8.453 | 6.025 | 6.023>> |
| 45 | 9.345 | 9.352 | 4.627 | 4.634<< |

| BARRA 45 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 45 | 9.342>> | 9.349 | 4.641 | 4.648 |
| 45 | 8.452<< | 8.450 | 6.039 | 6.037 |
| 45 | 9.342 | 9.349>> | 4.641 | 4.648 |
| 45 | 8.452 | 8.450<< | 6.039 | 6.037 |
| 45 | 8.452 | 8.450 | 6.039>> | 6.037 |
| 45 | 9.342 | 9.349 | 4.641<< | 4.648 |
| 45 | 8.452 | 8.450 | 6.039 | 6.037>> |
| 45 | 9.342 | 9.349 | 4.641 | 4.648<< |
| 46 | 9.371>> | 9.381 | 4.592 | 4.603 |
| 46 | 8.416<< | 8.416 | 6.093 | 6.093 |
| 46 | 9.371 | 9.381>> | 4.592 | 4.603 |
| 46 | 8.416 | 8.416<< | 6.093 | 6.093 |
| 46 | 8.416 | 8.416 | 6.093>> | 6.093 |
| 46 | 9.371 | 9.381 | 4.592<< | 4.603 |
| 46 | 8.416 | 8.416 | 6.093 | 6.093>> |
| 46 | 9.371 | 9.381 | 4.592 | 4.603<< |

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| BARRA 46 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 46 | 9.368>> | 9.379 | 4.600 | 4.610 |
| 46 | 8.413<< | 8.413 | 6.101 | 6.101 |
| 46 | 9.368 | 9.379>> | 4.600 | 4.610 |
| 46 | 8.413 | 8.413<< | 6.101 | 6.101 |
| 46 | 8.413 | 8.413 | 6.101>> | 6.101 |
| 46 | 9.368 | 9.379 | 4.600<< | 4.610 |
| 46 | 8.413 | 8.413 | 6.101 | 6.101>> |
| 46 | 9.368 | 9.379 | 4.600 | 4.610<< |
| 47 | 9.368>> | 9.383 | 4.594 | 4.609 |
| 47 | 8.388<< | 8.390 | 6.138 | 6.139 |
| 47 | 9.368 | 9.383>> | 4.594 | 4.609 |
| 47 | 8.388 | 8.390<< | 6.138 | 6.139 |
| 47 | 8.388 | 8.390 | 6.138>> | 6.139 |
| 47 | 9.368 | 9.383 | 4.594<< | 4.609 |
| 47 | 8.388 | 8.390 | 6.138 | 6.139>> |
| 47 | 9.368 | 9.383 | 4.594 | 4.609<< |

| BARRA 47 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 47 | 9.366>> | 9.381 | 4.598 | 4.612 |
| 47 | 8.386<< | 8.388 | 6.141 | 6.143 |
| 47 | 9.366 | 9.381>> | 4.598 | 4.612 |
| 47 | 8.386 | 8.388<< | 6.141 | 6.143 |
| 47 | 8.386 | 8.388 | 6.141>> | 6.143 |
| 47 | 9.366 | 9.381 | 4.598<< | 4.612 |
| 47 | 8.386 | 8.388 | 6.141 | 6.143>> |
| 47 | 9.366 | 9.381 | 4.598 | 4.612<< |
| 48 | 9.339>> | 9.357 | 4.636 | 4.654 |
| 48 | 8.373<< | 8.376 | 6.159 | 6.163 |
| 48 | 9.339 | 9.357>> | 4.636 | 4.654 |
| 48 | 8.373 | 8.376<< | 6.159 | 6.163 |
| 48 | 8.373 | 8.376 | 6.159>> | 6.163 |
| 48 | 9.339 | 9.357 | 4.636<< | 4.654 |
| 48 | 8.373 | 8.376 | 6.159 | 6.163>> |
| 48 | 9.339 | 9.357 | 4.636 | 4.654<< |

| BARRA 48 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 48 | 9.337>> | 9.356 | 4.633 | 4.652 |
| 48 | 8.371<< | 8.375 | 6.157 | 6.160 |
| 48 | 9.337 | 9.356>> | 4.633 | 4.652 |
| 48 | 8.371 | 8.375<< | 6.157 | 6.160 |
| 48 | 8.371 | 8.375 | 6.157>> | 6.160 |
| 48 | 9.337 | 9.356 | 4.633<< | 4.652 |
| 48 | 8.371 | 8.375 | 6.157 | 6.160>> |
| 48 | 9.337 | 9.356 | 4.633 | 4.652<< |
| 49 | 9.284>> | 9.306 | 4.711 | 4.733 |
| 49 | 8.372<< | 8.377 | 6.153 | 6.158 |
| 49 | 9.284 | 9.306>> | 4.711 | 4.733 |
| 49 | 8.372 | 8.377<< | 6.153 | 6.158 |
| 49 | 8.372 | 8.377 | 6.153>> | 6.158 |
| 49 | 9.284 | 9.306 | 4.711<< | 4.733 |
| 49 | 8.372 | 8.377 | 6.153 | 6.158>> |
| 49 | 9.284 | 9.306 | 4.711 | 4.733<< |

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| BARRA 49 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 49 | 9.283>> | 9.305 | 4.703 | 4.726 |
| 49 | 8.371<< | 8.376 | 6.146 | 6.151 |
| 49 | 9.283 | 9.305>> | 4.703 | 4.726 |
| 49 | 8.371 | 8.376<< | 6.146 | 6.151 |
| 49 | 8.371 | 8.376 | 6.146>> | 6.151 |
| 49 | 9.283 | 9.305 | 4.703<< | 4.726 |
| 49 | 8.371 | 8.376 | 6.146 | 6.151>> |
| 49 | 9.283 | 9.305 | 4.703 | 4.726<< |
| 50 | 9.204>> | 9.230 | 4.821 | 4.847 |
| 50 | 8.386<< | 8.393 | 6.121 | 6.127 |
| 50 | 9.204 | 9.230>> | 4.821 | 4.847 |
| 50 | 8.386 | 8.393<< | 6.121 | 6.127 |
| 50 | 8.386 | 8.393 | 6.121>> | 6.127 |
| 50 | 9.204 | 9.230 | 4.821<< | 4.847 |
| 50 | 8.386 | 8.393 | 6.121 | 6.127>> |
| 50 | 9.204 | 9.230 | 4.821 | 4.847<< |

| BARRA 50 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 50 | 9.203>> | 9.229 | 4.809 | 4.835 |
| 50 | 8.384<< | 8.391 | 6.108 | 6.115 |
| 50 | 9.203 | 9.229>> | 4.809 | 4.835 |
| 50 | 8.384 | 8.391<< | 6.108 | 6.115 |
| 50 | 8.384 | 8.391 | 6.108>> | 6.115 |
| 50 | 9.203 | 9.229 | 4.809<< | 4.835 |
| 50 | 8.384 | 8.391 | 6.108 | 6.115>> |
| 50 | 9.203 | 9.229 | 4.809 | 4.835<< |
| 51 | 9.097>> | 9.127 | 4.968 | 4.998 |
| 51 | 8.412<< | 8.421 | 6.063 | 6.071 |
| 51 | 9.097 | 9.127>> | 4.968 | 4.998 |
| 51 | 8.412 | 8.421<< | 6.063 | 6.071 |
| 51 | 8.412 | 8.421 | 6.063>> | 6.071 |
| 51 | 9.097 | 9.127 | 4.968<< | 4.998 |
| 51 | 8.412 | 8.421 | 6.063 | 6.071>> |
| 51 | 9.097 | 9.127 | 4.968 | 4.998<< |

| BARRA 51 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 51 | 9.095>> | 9.125 | 4.953 | 4.983 |
| 51 | 8.410<< | 8.418 | 6.048 | 6.056 |
| 51 | 9.095 | 9.125>> | 4.953 | 4.983 |
| 51 | 8.410 | 8.418<< | 6.048 | 6.056 |
| 51 | 8.410 | 8.418 | 6.048>> | 6.056 |
| 51 | 9.095 | 9.125 | 4.953<< | 4.983 |
| 51 | 8.410 | 8.418 | 6.048 | 6.056>> |
| 51 | 9.095 | 9.125 | 4.953 | 4.983<< |
| 52 | 8.960>> | 8.993 | 5.159 | 5.193 |
| 52 | 8.447<< | 8.457 | 5.988 | 5.998 |
| 52 | 8.960 | 8.993>> | 5.159 | 5.193 |
| 52 | 8.447 | 8.457<< | 5.988 | 5.998 |
| 52 | 8.447 | 8.457 | 5.988>> | 5.998 |
| 52 | 8.960 | 8.993 | 5.159<< | 5.193 |
| 52 | 8.447 | 8.457 | 5.988 | 5.998>> |
| 52 | 8.960 | 8.993 | 5.159 | 5.193<< |

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| BARRA 52 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 52 | 8.955>> | 8.989 | 5.142 | 5.176 |
| 52 | 8.442<< | 8.452 | 5.972 | 5.982 |
| 52 | 8.955 | 8.989>> | 5.142 | 5.176 |
| 52 | 8.442 | 8.452<< | 5.972 | 5.982 |
| 52 | 8.442 | 8.452 | 5.972>> | 5.982 |
| 52 | 8.955 | 8.989 | 5.142<< | 5.176 |
| 52 | 8.442 | 8.452 | 5.972 | 5.982>> |
| 52 | 8.955 | 8.989 | 5.142 | 5.176<< |
| 53 | 8.857>> | 8.870 | 5.322 | 5.334 |
| 53 | 8.425<< | 8.462 | 5.964 | 6.001 |
| 53 | 8.857 | 8.870>> | 5.322 | 5.334 |
| 53 | 8.425 | 8.462<< | 5.964 | 6.001 |
| 53 | 8.425 | 8.462 | 5.964>> | 6.001 |
| 53 | 8.857 | 8.870 | 5.322<< | 5.334 |
| 53 | 8.425 | 8.462 | 5.964 | 6.001>> |
| 53 | 8.857 | 8.870 | 5.322 | 5.334<< |

| BARRA 53 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 53 | 8.849>> | 8.861 | 5.307 | 5.319 |
| 53 | 8.417<< | 8.453 | 5.949 | 5.986 |
| 53 | 8.849 | 8.861>> | 5.307 | 5.319 |
| 53 | 8.417 | 8.453<< | 5.949 | 5.986 |
| 53 | 8.417 | 8.453 | 5.949>> | 5.986 |
| 53 | 8.849 | 8.861 | 5.307<< | 5.319 |
| 53 | 8.417 | 8.453 | 5.949 | 5.986>> |
| 53 | 8.849 | 8.861 | 5.307 | 5.319<< |
| 54 | 8.909>> | 8.923 | 5.212 | 5.226 |
| 54 | 8.221<< | 8.261 | 6.249 | 6.290 |
| 54 | 8.909 | 8.923>> | 5.212 | 5.226 |
| 54 | 8.221 | 8.261<< | 6.249 | 6.290 |
| 54 | 8.221 | 8.261 | 6.249>> | 6.290 |
| 54 | 8.909 | 8.923 | 5.212<< | 5.226 |
| 54 | 8.221 | 8.261 | 6.249 | 6.290>> |
| 54 | 8.909 | 8.923 | 5.212 | 5.226<< |

| BARRA 54 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 54 | 8.895>> | 8.909 | 5.200 | 5.214 |
| 54 | 8.207<< | 8.248 | 6.237 | 6.278 |
| 54 | 8.895 | 8.909>> | 5.200 | 5.214 |
| 54 | 8.207 | 8.248<< | 6.237 | 6.278 |
| 54 | 8.207 | 8.248 | 6.237>> | 6.278 |
| 54 | 8.895 | 8.909 | 5.200<< | 5.214 |
| 54 | 8.207 | 8.248 | 6.237 | 6.278>> |
| 54 | 8.895 | 8.909 | 5.200 | 5.214<< |
| 55 | 8.962>> | 8.978 | 5.093 | 5.109 |
| 55 | 7.980<< | 8.024 | 6.587 | 6.632 |
| 55 | 8.962 | 8.978>> | 5.093 | 5.109 |
| 55 | 7.980 | 8.024<< | 6.587 | 6.632 |
| 55 | 7.980 | 8.024 | 6.587>> | 6.632 |
| 55 | 8.962 | 8.978 | 5.093<< | 5.109 |
| 55 | 7.980 | 8.024 | 6.587 | 6.632>> |
| 55 | 8.962 | 8.978 | 5.093 | 5.109<< |

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| BARRA 55 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 55 | 8.498>> | 8.510 | 4.863 | 4.875 |
| 55 | 7.579<< | 7.614 | 6.020 | 6.055 |
| 55 | 8.498 | 8.510>> | 4.863 | 4.875 |
| 55 | 7.579 | 7.614<< | 6.020 | 6.055 |
| 55 | 7.579 | 7.614 | 6.020>> | 6.055 |
| 55 | 8.498 | 8.510 | 4.863<< | 4.875 |
| 55 | 7.579 | 7.614 | 6.020 | 6.055>> |
| 55 | 8.498 | 8.510 | 4.863 | 4.875<< |
| 56 | 10.077>> | 10.090 | 2.880 | 2.893 |
| 56 | 8.842<< | 8.880 | 4.436 | 4.474 |
| 56 | 10.077 | 10.090>> | 2.880 | 2.893 |
| 56 | 8.842 | 8.880<< | 4.436 | 4.474 |
| 56 | 8.842 | 8.880 | 4.436>> | 4.474 |
| 56 | 10.077 | 10.090 | 2.880<< | 2.893 |
| 56 | 8.842 | 8.880 | 4.436 | 4.474>> |
| 56 | 10.077 | 10.090 | 2.880 | 2.893<< |

| BARRA 56 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 56 | 10.191>> | 10.207 | 2.901 | 2.916 |
| 56 | 8.944<< | 8.987 | 4.445 | 4.488 |
| 56 | 10.191 | 10.207>> | 2.901 | 2.916 |
| 56 | 8.944 | 8.987<< | 4.445 | 4.488 |
| 56 | 8.944 | 8.987 | 4.445>> | 4.488 |
| 56 | 10.191 | 10.207 | 2.901<< | 2.916 |
| 56 | 8.944 | 8.987 | 4.445 | 4.488>> |
| 56 | 10.191 | 10.207 | 2.901 | 2.916<< |
| 57 | 9.374>> | 9.391 | 3.931 | 3.948 |
| 57 | 7.773<< | 7.819 | 5.920 | 5.966 |
| 57 | 9.374 | 9.391>> | 3.931 | 3.948 |
| 57 | 7.773 | 7.819<< | 5.920 | 5.966 |
| 57 | 7.773 | 7.819 | 5.920>> | 5.966 |
| 57 | 9.374 | 9.391 | 3.931<< | 3.948 |
| 57 | 7.773 | 7.819 | 5.920 | 5.966>> |
| 57 | 9.374 | 9.391 | 3.931 | 3.948<< |

| BARRA 57 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 57 | 9.380>> | 9.397 | 3.921 | 3.938 |
| 57 | 7.779<< | 7.825 | 5.910 | 5.956 |
| 57 | 9.380 | 9.397>> | 3.921 | 3.938 |
| 57 | 7.779 | 7.825<< | 5.910 | 5.956 |
| 57 | 7.779 | 7.825 | 5.910>> | 5.956 |
| 57 | 9.380 | 9.397 | 3.921<< | 3.938 |
| 57 | 7.779 | 7.825 | 5.910 | 5.956>> |
| 57 | 9.380 | 9.397 | 3.921 | 3.938<< |
| 58 | 10.015>> | 10.031 | 3.121 | 3.136 |
| 58 | 8.768<< | 8.811 | 4.664 | 4.708 |
| 58 | 10.015 | 10.031>> | 3.121 | 3.136 |
| 58 | 8.768 | 8.811<< | 4.664 | 4.708 |
| 58 | 8.768 | 8.811 | 4.664>> | 4.708 |
| 58 | 10.015 | 10.031 | 3.121<< | 3.136 |
| 58 | 8.768 | 8.811 | 4.664 | 4.708>> |
| 58 | 10.015 | 10.031 | 3.121 | 3.136<< |

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| BARRA 58 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 58 | 9.902>> | 9.916 | 3.071 | 3.085 |
| 58 | 8.667<< | 8.705 | 4.627 | 4.666 |
| 58 | 9.902 | 9.916>> | 3.071 | 3.085 |
| 58 | 8.667 | 8.705<< | 4.627 | 4.666 |
| 58 | 8.667 | 8.705 | 4.627>> | 4.666 |
| 58 | 9.902 | 9.916 | 3.071<< | 3.085 |
| 58 | 8.667 | 8.705 | 4.627 | 4.666>> |
| 58 | 9.902 | 9.916 | 3.071 | 3.085<< |
| 59 | 8.106>> | 8.118 | 5.328 | 5.341 |
| 59 | 7.186<< | 7.222 | 6.485 | 6.521 |
| 59 | 8.106 | 8.118>> | 5.328 | 5.341 |
| 59 | 7.186 | 7.222<< | 6.485 | 6.521 |
| 59 | 7.186 | 7.222 | 6.485>> | 6.521 |
| 59 | 8.106 | 8.118 | 5.328<< | 5.341 |
| 59 | 7.186 | 7.222 | 6.485 | 6.521>> |
| 59 | 8.106 | 8.118 | 5.328 | 5.341<< |

| BARRA 59 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 59 | 8.790>> | 8.806 | 5.368 | 5.383 |
| 59 | 7.807<< | 7.852 | 6.862 | 6.907 |
| 59 | 8.790 | 8.806>> | 5.368 | 5.383 |
| 59 | 7.807 | 7.852<< | 6.862 | 6.907 |
| 59 | 7.807 | 7.852 | 6.862>> | 6.907 |
| 59 | 8.790 | 8.806 | 5.368<< | 5.383 |
| 59 | 7.807 | 7.852 | 6.862 | 6.907>> |
| 59 | 8.790 | 8.806 | 5.368 | 5.383<< |
| 60 | 8.655>> | 8.669 | 5.580 | 5.594 |
| 60 | 7.966<< | 8.008 | 6.618 | 6.659 |
| 60 | 8.655 | 8.669>> | 5.580 | 5.594 |
| 60 | 7.966 | 8.008<< | 6.618 | 6.659 |
| 60 | 7.966 | 8.008 | 6.618>> | 6.659 |
| 60 | 8.655 | 8.669 | 5.580<< | 5.594 |
| 60 | 7.966 | 8.008 | 6.618 | 6.659>> |
| 60 | 8.655 | 8.669 | 5.580 | 5.594<< |

| BARRA 60 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 60 | 8.664>> | 8.678 | 5.598 | 5.612 |
| 60 | 7.975<< | 8.016 | 6.636 | 6.677 |
| 60 | 8.664 | 8.678>> | 5.598 | 5.612 |
| 60 | 7.975 | 8.016<< | 6.636 | 6.677 |
| 60 | 7.975 | 8.016 | 6.636>> | 6.677 |
| 60 | 8.664 | 8.678 | 5.598<< | 5.612 |
| 60 | 7.975 | 8.016 | 6.636 | 6.677>> |
| 60 | 8.664 | 8.678 | 5.598 | 5.612<< |
| 61 | 8.534>> | 8.547 | 5.801 | 5.814 |
| 61 | 8.100<< | 8.139 | 6.444 | 6.483 |
| 61 | 8.534 | 8.547>> | 5.801 | 5.814 |
| 61 | 8.100 | 8.139<< | 6.444 | 6.483 |
| 61 | 8.100 | 8.139 | 6.444>> | 6.483 |
| 61 | 8.534 | 8.547 | 5.801<< | 5.814 |
| 61 | 8.100 | 8.139 | 6.444 | 6.483>> |
| 61 | 8.534 | 8.547 | 5.801 | 5.814<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=0)(1.00*G+1.00*LEV+1.10*P+0.5*GT)

| BARRA 61 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 61 | 8.538>> | 8.551 | 5.823 | 5.836 |
| 61 | 8.104<< | 8.143 | 6.466 | 6.504 |
| 61 | 8.538 | 8.551>> | 5.823 | 5.836 |
| 61 | 8.104 | 8.143<< | 6.466 | 6.504 |
| 61 | 8.104 | 8.143 | 6.466>> | 6.504 |
| 61 | 8.538 | 8.551 | 5.823<< | 5.836 |
| 61 | 8.104 | 8.143 | 6.466 | 6.504>> |
| 61 | 8.538 | 8.551 | 5.823 | 5.836<< |
| 62 | 8.565>> | 8.600 | 5.752 | 5.788 |
| 62 | 8.053<< | 8.064 | 6.581 | 6.591 |
| 62 | 8.565 | 8.600>> | 5.752 | 5.788 |
| 62 | 8.053 | 8.064<< | 6.581 | 6.591 |
| 62 | 8.053 | 8.064 | 6.581>> | 6.591 |
| 62 | 8.565 | 8.600 | 5.752<< | 5.788 |
| 62 | 8.053 | 8.064 | 6.581 | 6.591>> |
| 62 | 8.565 | 8.600 | 5.752 | 5.788<< |

| BARRA 62 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 62 | 8.565>> | 8.601 | 5.774 | 5.809 |
| 62 | 8.054<< | 8.064 | 6.603 | 6.613 |
| 62 | 8.565 | 8.601>> | 5.774 | 5.809 |
| 62 | 8.054 | 8.064<< | 6.603 | 6.613 |
| 62 | 8.054 | 8.064 | 6.603>> | 6.613 |
| 62 | 8.565 | 8.601 | 5.774<< | 5.809 |
| 63 | 8.628>> | 8.660 | 5.681 | 5.713 |
| 63 | 7.944<< | 7.953 | 6.776 | 6.784 |
| 63 | 8.628 | 8.660>> | 5.681 | 5.713 |
| 63 | 7.944 | 7.953<< | 6.776 | 6.784 |
| 63 | 7.944 | 7.953 | 6.776>> | 6.784 |
| 63 | 8.628 | 8.660 | 5.681<< | 5.713 |
| 63 | 7.944 | 7.953 | 6.776 | 6.784>> |
| 63 | 8.628 | 8.660 | 5.681 | 5.713<< |

| BARRA 63 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 63 | 8.626>> | 8.658 | 5.702 | 5.734 |
| 63 | 7.943<< | 7.951 | 6.796 | 6.805 |
| 63 | 8.626 | 8.658>> | 5.702 | 5.734 |
| 63 | 7.943 | 7.951<< | 6.796 | 6.805 |
| 63 | 7.943 | 7.951 | 6.796>> | 6.805 |
| 63 | 8.626 | 8.658 | 5.702<< | 5.734 |
| 63 | 7.943 | 7.951 | 6.796 | 6.805>> |
| 63 | 8.626 | 8.658 | 5.702 | 5.734<< |
| 64 | 8.658>> | 8.686 | 5.657 | 5.685 |
| 64 | 7.841<< | 7.848 | 6.956 | 6.963 |
| 64 | 8.658 | 8.686>> | 5.657 | 5.685 |
| 64 | 7.841 | 7.848<< | 6.956 | 6.963 |
| 64 | 7.841 | 7.848 | 6.956>> | 6.963 |
| 64 | 8.658 | 8.686 | 5.657<< | 5.685 |
| 64 | 7.841 | 7.848 | 6.956 | 6.963>> |
| 64 | 8.658 | 8.686 | 5.657 | 5.685<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=0)(1.00*G+1.00*LEV+1.10*P+0.5*GT)

| BARRA 64 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 64 | 8.655>> | 8.684 | 5.675 | 5.703 |
| 64 | 7.839<< | 7.846 | 6.974 | 6.981 |
| 64 | 8.655 | 8.684>> | 5.675 | 5.703 |
| 64 | 7.839 | 7.846<< | 6.974 | 6.981 |
| 64 | 7.839 | 7.846 | 6.974>> | 6.981 |
| 64 | 8.655 | 8.684 | 5.675<< | 5.703 |
| 64 | 7.839 | 7.846 | 6.974 | 6.981>> |
| 64 | 8.655 | 8.684 | 5.675 | 5.703<< |
| 65 | 8.659>> | 8.684 | 5.673 | 5.698 |
| 65 | 7.750<< | 7.755 | 7.115 | 7.120 |
| 65 | 8.659 | 8.684>> | 5.673 | 5.698 |
| 65 | 7.750 | 7.755<< | 7.115 | 7.120 |
| 65 | 7.750 | 7.755 | 7.115>> | 7.120 |
| 65 | 8.659 | 8.684 | 5.673<< | 5.698 |
| 65 | 7.750 | 7.755 | 7.115 | 7.120>> |
| 65 | 8.659 | 8.684 | 5.673 | 5.698<< |

| BARRA 65 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 65 | 8.656>> | 8.681 | 5.687 | 5.712 |
| 65 | 7.747<< | 7.752 | 7.129 | 7.134 |
| 65 | 8.656 | 8.681>> | 5.687 | 5.712 |
| 65 | 7.747 | 7.752<< | 7.129 | 7.134 |
| 65 | 7.747 | 7.752 | 7.129>> | 7.134 |
| 65 | 8.656 | 8.681 | 5.687<< | 5.712 |
| 65 | 7.747 | 7.752 | 7.129 | 7.134>> |
| 65 | 8.656 | 8.681 | 5.687 | 5.712<< |
| 66 | 8.633>> | 8.654 | 5.727 | 5.749 |
| 66 | 7.670<< | 7.674 | 7.250 | 7.254 |
| 66 | 8.633 | 8.654>> | 5.727 | 5.749 |
| 66 | 7.670 | 7.674<< | 7.250 | 7.254 |
| 66 | 7.670 | 7.674 | 7.250>> | 7.254 |
| 66 | 8.633 | 8.654 | 5.727<< | 5.749 |
| 66 | 7.670 | 7.674 | 7.250 | 7.254>> |
| 66 | 8.633 | 8.654 | 5.727 | 5.749<< |

| BARRA 66 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 66 | 8.630>> | 8.652 | 5.735 | 5.757 |
| 66 | 7.667<< | 7.671 | 7.258 | 7.262 |
| 66 | 8.630 | 8.652>> | 5.735 | 5.757 |
| 66 | 7.667 | 7.671<< | 7.258 | 7.262 |
| 66 | 7.667 | 7.671 | 7.258>> | 7.262 |
| 66 | 8.630 | 8.652 | 5.735<< | 5.757 |
| 66 | 7.667 | 7.671 | 7.258 | 7.262>> |
| 66 | 8.630 | 8.652 | 5.735 | 5.757<< |
| 67 | 8.579>> | 8.597 | 5.819 | 5.838 |
| 67 | 7.602<< | 7.604 | 7.362 | 7.364 |
| 67 | 8.579 | 8.597>> | 5.819 | 5.838 |
| 67 | 7.602 | 7.604<< | 7.362 | 7.364 |
| 67 | 7.602 | 7.604 | 7.362>> | 7.364 |
| 67 | 8.579 | 8.597 | 5.819<< | 5.838 |
| 67 | 7.602 | 7.604 | 7.362 | 7.364>> |
| 67 | 8.579 | 8.597 | 5.819 | 5.838<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=0)(1.00*G+1.00*LEV+1.10*P+0.5*GT)

| BARRA 67 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 67 | 8.577>> | 8.595 | 5.823 | 5.841 |
| 67 | 7.600<< | 7.602 | 7.365 | 7.367 |
| 67 | 8.577 | 8.595>> | 5.823 | 5.841 |
| 67 | 7.600 | 7.602<< | 7.365 | 7.367 |
| 67 | 7.600 | 7.602 | 7.365>> | 7.367 |
| 67 | 8.577 | 8.595 | 5.823<< | 5.841 |
| 67 | 7.600 | 7.602 | 7.365 | 7.367>> |
| 67 | 8.577 | 8.595 | 5.823 | 5.841<< |
| 68 | 8.498>> | 8.512 | 5.951 | 5.965 |
| 68 | 7.546<< | 7.547 | 7.451 | 7.452 |
| 68 | 8.498 | 8.512>> | 5.951 | 5.965 |
| 68 | 7.546 | 7.547<< | 7.451 | 7.452 |
| 68 | 7.546 | 7.547 | 7.451>> | 7.452 |
| 68 | 8.498 | 8.512 | 5.951<< | 5.965 |
| 68 | 7.546 | 7.547 | 7.451 | 7.452>> |
| 68 | 8.498 | 8.512 | 5.951 | 5.965<< |

| BARRA 68 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 68 | 8.496>> | 8.511 | 5.948 | 5.963 |
| 68 | 7.545<< | 7.545 | 7.449 | 7.449 |
| 68 | 8.496 | 8.511>> | 5.948 | 5.963 |
| 68 | 7.545 | 7.545<< | 7.449 | 7.449 |
| 68 | 7.545 | 7.545 | 7.449>> | 7.449 |
| 68 | 8.496 | 8.511 | 5.948<< | 5.963 |
| 68 | 7.545 | 7.545 | 7.449 | 7.449>> |
| 68 | 8.496 | 8.511 | 5.948 | 5.963<< |
| 69 | 8.392>> | 8.403 | 6.115 | 6.126 |
| 69 | 7.505<< | 7.504 | 7.512 | 7.511 |
| 69 | 8.392 | 8.403>> | 6.115 | 6.126 |
| 69 | 7.505 | 7.504<< | 7.512 | 7.511 |
| 69 | 7.505 | 7.504 | 7.512>> | 7.511 |
| 69 | 8.392 | 8.403 | 6.115<< | 6.126 |
| 69 | 7.505 | 7.504 | 7.512 | 7.511>> |
| 69 | 8.392 | 8.403 | 6.115 | 6.126<< |

| BARRA 69 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 69 | 8.391>> | 8.402 | 6.107 | 6.119 |
| 69 | 7.504<< | 7.503 | 7.504 | 7.503 |
| 69 | 8.391 | 8.402>> | 6.107 | 6.119 |
| 69 | 7.504 | 7.503<< | 7.504 | 7.503 |
| 69 | 7.504 | 7.503 | 7.504>> | 7.503 |
| 69 | 8.391 | 8.402 | 6.107<< | 6.119 |
| 69 | 7.504 | 7.503 | 7.504 | 7.503>> |
| 69 | 8.391 | 8.402 | 6.107 | 6.119<< |
| 70 | 8.261>> | 8.268 | 6.314 | 6.322 |
| 70 | 7.478<< | 7.476 | 7.546 | 7.544 |
| 70 | 8.261 | 8.268>> | 6.314 | 6.322 |
| 70 | 7.478 | 7.476<< | 7.546 | 7.544 |
| 70 | 7.478 | 7.476 | 7.546>> | 7.544 |
| 70 | 8.261 | 8.268 | 6.314<< | 6.322 |
| 70 | 7.478 | 7.476 | 7.546 | 7.544>> |
| 70 | 8.261 | 8.268 | 6.314 | 6.322<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=0)(1.00*G+1.00*LEV+1.10*P+0.5*GT)

| BARRA 70 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 70 | 8.259>> | 8.267 | 6.302 | 6.310 |
| 70 | 7.477<< | 7.474 | 7.534 | 7.531 |
| 70 | 8.259 | 8.267>> | 6.302 | 6.310 |
| 70 | 7.477 | 7.474<< | 7.534 | 7.531 |
| 70 | 7.477 | 7.474 | 7.534>> | 7.531 |
| 70 | 8.259 | 8.267 | 6.302<< | 6.310 |
| 70 | 7.477 | 7.474 | 7.534 | 7.531>> |
| 70 | 8.259 | 8.267 | 6.302 | 6.310<< |
| 71 | 8.103>> | 8.107 | 6.550 | 6.555 |
| 71 | 7.464<< | 7.460 | 7.556 | 7.552 |
| 71 | 8.103 | 8.107>> | 6.550 | 6.555 |
| 71 | 7.464 | 7.460<< | 7.556 | 7.552 |
| 71 | 7.464 | 7.460 | 7.556>> | 7.552 |
| 71 | 8.103 | 8.107 | 6.550<< | 6.555 |
| 71 | 7.464 | 7.460 | 7.556 | 7.552>> |
| 71 | 8.103 | 8.107 | 6.550 | 6.555<< |

| BARRA 71 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 71 | 8.100>> | 8.104 | 6.536 | 6.540 |
| 71 | 7.462<< | 7.457 | 7.541 | 7.537 |
| 71 | 8.100 | 8.104>> | 6.536 | 6.540 |
| 71 | 7.462 | 7.457<< | 7.541 | 7.537 |
| 71 | 7.462 | 7.457 | 7.541>> | 7.537 |
| 71 | 8.100 | 8.104 | 6.536<< | 6.540 |
| 71 | 7.462 | 7.457 | 7.541 | 7.537>> |
| 71 | 8.100 | 8.104 | 6.536 | 6.540<< |
| 72 | 7.913>> | 7.914 | 6.831 | 6.832 |
| 72 | 7.458<< | 7.452 | 7.548 | 7.542 |
| 72 | 7.913 | 7.914>> | 6.831 | 6.832 |
| 72 | 7.458 | 7.452<< | 7.548 | 7.542 |
| 72 | 7.458 | 7.452 | 7.548>> | 7.542 |
| 72 | 7.913 | 7.914 | 6.831<< | 6.832 |
| 72 | 7.458 | 7.452 | 7.548 | 7.542>> |
| 72 | 7.913 | 7.914 | 6.831 | 6.832<< |

| BARRA 72 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 72 | 7.909>> | 7.909 | 6.815 | 6.815 |
| 72 | 7.454<< | 7.448 | 7.532 | 7.526 |
| 72 | 7.909 | 7.909>> | 6.815 | 6.815 |
| 72 | 7.454 | 7.448<< | 7.532 | 7.526 |
| 72 | 7.454 | 7.448 | 7.532>> | 7.526 |
| 72 | 7.909 | 7.909 | 6.815<< | 6.815 |
| 72 | 7.454 | 7.448 | 7.532 | 7.526>> |
| 72 | 7.909 | 7.909 | 6.815 | 6.815<< |
| 73 | 7.805>> | 7.798 | 6.986 | 6.979 |
| 73 | 7.349<< | 7.346 | 7.690 | 7.688 |
| 73 | 7.805 | 7.798>> | 6.986 | 6.979 |
| 73 | 7.349 | 7.346<< | 7.690 | 7.688 |
| 73 | 7.349 | 7.346 | 7.690>> | 7.688 |
| 73 | 7.805 | 7.798 | 6.986<< | 6.979 |
| 73 | 7.349 | 7.346 | 7.690 | 7.688>> |
| 73 | 7.805 | 7.798 | 6.986 | 6.979<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=0)(1.00*G+1.00*LEV+1.10*P+0.5*GT)

| BARRA 73 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 73 | 7.797>> | 7.790 | 6.971 | 6.963 |
| 73 | 7.341<< | 7.338 | 7.675 | 7.672 |
| 73 | 7.797 | 7.790>> | 6.971 | 6.963 |
| 73 | 7.341 | 7.338<< | 7.675 | 7.672 |
| 73 | 7.341 | 7.338 | 7.675>> | 7.672 |
| 73 | 7.797 | 7.790 | 6.971<< | 6.963 |
| 73 | 7.341 | 7.338 | 7.675 | 7.672>> |
| 73 | 7.797 | 7.790 | 6.971 | 6.963<< |
| 74 | 7.812>> | 7.803 | 6.949 | 6.940 |
| 74 | 7.098<< | 7.091 | 8.059 | 8.053 |
| 74 | 7.812 | 7.803>> | 6.949 | 6.940 |
| 74 | 7.098 | 7.091<< | 8.059 | 8.053 |
| 74 | 7.098 | 7.091 | 8.059>> | 8.053 |
| 74 | 7.812 | 7.803 | 6.949<< | 6.940 |
| 74 | 7.098 | 7.091 | 8.059 | 8.053>> |
| 74 | 7.812 | 7.803 | 6.949 | 6.940<< |

| BARRA 74 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 74 | 7.799>> | 7.790 | 6.938 | 6.928 |
| 74 | 7.084<< | 7.078 | 8.047 | 8.041 |
| 74 | 7.799 | 7.790>> | 6.938 | 6.928 |
| 74 | 7.084 | 7.078<< | 8.047 | 8.041 |
| 74 | 7.084 | 7.078 | 8.047>> | 8.041 |
| 74 | 7.799 | 7.790 | 6.938<< | 6.928 |
| 74 | 7.084 | 7.078 | 8.047 | 8.041>> |
| 74 | 7.799 | 7.790 | 6.938 | 6.928<< |
| 75 | 7.822>> | 7.811 | 6.904 | 6.893 |
| 75 | 6.809<< | 6.799 | 8.481 | 8.471 |
| 75 | 7.822 | 7.811>> | 6.904 | 6.893 |
| 75 | 6.809 | 6.799<< | 8.481 | 8.471 |
| 75 | 6.809 | 6.799 | 8.481>> | 8.471 |
| 75 | 7.822 | 7.811 | 6.904<< | 6.893 |
| 75 | 6.809 | 6.799 | 8.481 | 8.471>> |
| 75 | 7.822 | 7.811 | 6.904 | 6.893<< |

| BARRA 75 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 75 | 7.417>> | 7.406 | 6.257 | 6.246 |
| 75 | 6.469<< | 6.456 | 7.478 | 7.466 |
| 75 | 7.417 | 7.406>> | 6.257 | 6.246 |
| 75 | 6.469 | 6.456<< | 7.478 | 7.466 |
| 75 | 6.469 | 6.456 | 7.478>> | 7.466 |
| 75 | 7.417 | 7.406 | 6.257<< | 6.246 |
| 75 | 6.469 | 6.456 | 7.478 | 7.466>> |
| 75 | 7.417 | 7.406 | 6.257 | 6.246<< |
| 76 | 8.955>> | 8.942 | 4.329 | 4.317 |
| 76 | 7.687<< | 7.672 | 5.958 | 5.942 |
| 76 | 8.955 | 8.942>> | 4.329 | 4.317 |
| 76 | 7.687 | 7.672<< | 5.958 | 5.942 |
| 76 | 7.687 | 7.672 | 5.958>> | 5.942 |
| 76 | 8.955 | 8.942 | 4.329<< | 4.317 |
| 76 | 7.687 | 7.672 | 5.958 | 5.942>> |
| 76 | 8.955 | 8.942 | 4.329 | 4.317<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=0)(1.00*G+1.00*LEV+1.10*P+0.5*GT)

| BARRA 76 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 76 | 9.068>> | 9.057 | 4.349 | 4.338 |
| 76 | 7.788<< | 7.777 | 5.966 | 5.954 |
| 76 | 9.068 | 9.057>> | 4.349 | 4.338 |
| 76 | 7.788 | 7.777<< | 5.966 | 5.954 |
| 76 | 7.788 | 7.777 | 5.966>> | 5.954 |
| 76 | 9.068 | 9.057 | 4.349<< | 4.338 |
| 76 | 7.788 | 7.777 | 5.966 | 5.954>> |
| 76 | 9.068 | 9.057 | 4.349 | 4.338<< |
| 77 | 8.209>> | 8.197 | 5.436 | 5.424 |
| 77 | 6.571<< | 6.557 | 7.505 | 7.491 |
| 77 | 8.209 | 8.197>> | 5.436 | 5.424 |
| 77 | 6.571 | 6.557<< | 7.505 | 7.491 |
| 77 | 6.571 | 6.557 | 7.505>> | 7.491 |
| 77 | 8.209 | 8.197 | 5.436<< | 5.424 |
| 77 | 6.571 | 6.557 | 7.505 | 7.491>> |
| 77 | 8.209 | 8.197 | 5.436 | 5.424<< |

| BARRA 77 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 77 | 8.214>> | 8.202 | 5.426 | 5.413 |
| 77 | 6.577<< | 6.563 | 7.495 | 7.481 |
| 77 | 8.214 | 8.202>> | 5.426 | 5.413 |
| 77 | 6.577 | 6.563<< | 7.495 | 7.481 |
| 77 | 6.577 | 6.563 | 7.495>> | 7.481 |
| 77 | 8.214 | 8.202 | 5.426<< | 5.413 |
| 77 | 6.577 | 6.563 | 7.495 | 7.481>> |
| 77 | 8.214 | 8.202 | 5.426 | 5.413<< |
| 78 | 8.917>> | 8.906 | 4.538 | 4.526 |
| 78 | 7.635<< | 7.622 | 6.158 | 6.146 |
| 78 | 8.917 | 8.906>> | 4.538 | 4.526 |
| 78 | 7.635 | 7.622<< | 6.158 | 6.146 |
| 78 | 7.635 | 7.622 | 6.158>> | 6.146 |
| 78 | 8.917 | 8.906 | 4.538<< | 4.526 |
| 78 | 7.635 | 7.622 | 6.158 | 6.146>> |
| 78 | 8.917 | 8.906 | 4.538 | 4.526<< |

| BARRA 78 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 78 | 8.806>> | 8.793 | 4.490 | 4.477 |
| 78 | 7.535<< | 7.520 | 6.122 | 6.106 |
| 78 | 8.806 | 8.793>> | 4.490 | 4.477 |
| 78 | 7.535 | 7.520<< | 6.122 | 6.106 |
| 78 | 7.535 | 7.520 | 6.122>> | 6.106 |
| 78 | 8.806 | 8.793 | 4.490<< | 4.477 |
| 78 | 7.535 | 7.520 | 6.122 | 6.106>> |
| 78 | 8.806 | 8.793 | 4.490 | 4.477<< |
| 79 | 7.077>> | 7.066 | 6.660 | 6.648 |
| 79 | 6.123<< | 6.109 | 7.889 | 7.875 |
| 79 | 7.077 | 7.066>> | 6.660 | 6.648 |
| 79 | 6.123 | 6.109<< | 7.889 | 7.875 |
| 79 | 6.123 | 6.109 | 7.889>> | 7.875 |
| 79 | 7.077 | 7.066 | 6.660<< | 6.648 |
| 79 | 6.123 | 6.109 | 7.889 | 7.875>> |
| 79 | 7.077 | 7.066 | 6.660 | 6.648<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=0)(1.00*G+1.00*LEV+1.10*P+0.5*GT)

| BARRA 79 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 79 | 7.703>> | 7.691 | 7.096 | 7.084 |
| 79 | 6.685<< | 6.673 | 8.682 | 8.670 |
| 79 | 7.703 | 7.691>> | 7.096 | 7.084 |
| 79 | 6.685 | 6.673<< | 8.682 | 8.670 |
| 79 | 6.685 | 6.673 | 8.682>> | 8.670 |
| 79 | 7.703 | 7.691 | 7.096<< | 7.084 |
| 79 | 6.685 | 6.673 | 8.682 | 8.670>> |
| 79 | 7.703 | 7.691 | 7.096 | 7.084<< |
| 80 | 7.639>> | 7.628 | 7.195 | 7.184 |
| 80 | 6.917<< | 6.907 | 8.319 | 8.309 |
| 80 | 7.639 | 7.628>> | 7.195 | 7.184 |
| 80 | 6.917 | 6.907<< | 8.319 | 8.309 |
| 80 | 6.917 | 6.907 | 8.319>> | 8.309 |
| 80 | 7.639 | 7.628 | 7.195<< | 7.184 |
| 80 | 6.917 | 6.907 | 8.319 | 8.309>> |
| 80 | 7.639 | 7.628 | 7.195 | 7.184<< |

| BARRA 80 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 80 | 7.647>> | 7.637 | 7.212 | 7.202 |
| 80 | 6.925<< | 6.915 | 8.337 | 8.327 |
| 80 | 7.647 | 7.637>> | 7.212 | 7.202 |
| 80 | 6.925 | 6.915<< | 8.337 | 8.327 |
| 80 | 6.925 | 6.915 | 8.337>> | 8.327 |
| 80 | 7.647 | 7.637 | 7.212<< | 7.202 |
| 80 | 6.925 | 6.915 | 8.337 | 8.327>> |
| 80 | 7.647 | 7.637 | 7.212 | 7.202<< |
| 81 | 7.589>> | 7.579 | 7.303 | 7.293 |
| 81 | 7.122<< | 7.114 | 8.027 | 8.019 |
| 81 | 7.589 | 7.579>> | 7.303 | 7.293 |
| 81 | 7.122 | 7.114<< | 8.027 | 8.019 |
| 81 | 7.122 | 7.114 | 8.027>> | 8.019 |
| 81 | 7.589 | 7.579 | 7.303<< | 7.293 |
| 81 | 7.122 | 7.114 | 8.027 | 8.019>> |
| 81 | 7.589 | 7.579 | 7.303 | 7.293<< |

| BARRA 81 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 81 | 7.593>> | 7.583 | 7.325 | 7.315 |
| 81 | 7.126<< | 7.118 | 8.049 | 8.041 |
| 81 | 7.593 | 7.583>> | 7.325 | 7.315 |
| 81 | 7.126 | 7.118<< | 8.049 | 8.041 |
| 81 | 7.126 | 7.118 | 8.049>> | 8.041 |
| 81 | 7.593 | 7.583 | 7.325<< | 7.315 |
| 81 | 7.126 | 7.118 | 8.049 | 8.041>> |
| 81 | 7.593 | 7.583 | 7.325 | 7.315<< |
| 82 | 7.659>> | 7.654 | 7.216 | 7.210 |
| 82 | 7.179<< | 7.170 | 7.968 | 7.960 |
| 82 | 7.659 | 7.654>> | 7.216 | 7.210 |
| 82 | 7.179 | 7.170<< | 7.968 | 7.960 |
| 82 | 7.179 | 7.170 | 7.968>> | 7.960 |
| 82 | 7.659 | 7.654 | 7.216<< | 7.210 |
| 82 | 7.179 | 7.170 | 7.968 | 7.960>> |
| 82 | 7.659 | 7.654 | 7.216 | 7.210<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=0)(1.00*G+1.00*LEV+1.10*P+0.5*GT)

| BARRA 82 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 82 | 7.659>> | 7.654 | 7.237 | 7.232 |
| 82 | 7.179<< | 7.170 | 7.990 | 7.981 |
| 82 | 7.659 | 7.654>> | 7.237 | 7.232 |
| 82 | 7.179 | 7.170<< | 7.990 | 7.981 |
| 82 | 7.179 | 7.170 | 7.990>> | 7.981 |
| 82 | 7.659 | 7.654 | 7.237<< | 7.232 |
| 82 | 7.179 | 7.170 | 7.990 | 7.981>> |
| 82 | 7.659 | 7.654 | 7.237 | 7.232<< |
| 83 | 7.802>> | 7.799 | 7.012 | 7.009 |
| 83 | 7.133<< | 7.125 | 8.060 | 8.053 |
| 83 | 7.802 | 7.799>> | 7.012 | 7.009 |
| 83 | 7.133 | 7.125<< | 8.060 | 8.053 |
| 83 | 7.133 | 7.125 | 8.060>> | 8.053 |
| 83 | 7.802 | 7.799 | 7.012<< | 7.009 |
| 83 | 7.133 | 7.125 | 8.060 | 8.053>> |
| 83 | 7.802 | 7.799 | 7.012 | 7.009<< |

| BARRA 83 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 83 | 7.800>> | 7.797 | 7.033 | 7.030 |
| 83 | 7.131<< | 7.123 | 8.081 | 8.073 |
| 83 | 7.800 | 7.797>> | 7.033 | 7.030 |
| 83 | 7.131 | 7.123<< | 8.081 | 8.073 |
| 83 | 7.800 | 7.797 | 7.033<< | 7.030 |
| 83 | 7.131 | 7.123 | 8.081>> | 8.073 |
| 83 | 7.800 | 7.797 | 7.033 | 7.030<< |
| 84 | 7.911>> | 7.910 | 6.857 | 6.856 |
| 84 | 7.093<< | 7.087 | 8.139 | 8.132 |
| 84 | 7.911 | 7.910>> | 6.857 | 6.856 |
| 84 | 7.093 | 7.087<< | 8.139 | 8.132 |
| 84 | 7.093 | 7.087 | 8.139>> | 8.132 |
| 84 | 7.911 | 7.910 | 6.857<< | 6.856 |
| 84 | 7.093 | 7.087 | 8.139 | 8.132>> |
| 84 | 7.911 | 7.910 | 6.857 | 6.856<< |

| BARRA 84 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 84 | 7.908>> | 7.908 | 6.875 | 6.874 |
| 84 | 7.091<< | 7.084 | 8.157 | 8.150 |
| 84 | 7.908 | 7.908>> | 6.875 | 6.874 |
| 84 | 7.091 | 7.084<< | 8.157 | 8.150 |
| 84 | 7.091 | 7.084 | 8.157>> | 8.150 |
| 84 | 7.908 | 7.908 | 6.875<< | 6.874 |
| 84 | 7.091 | 7.084 | 8.157 | 8.150>> |
| 84 | 7.908 | 7.908 | 6.875 | 6.874<< |
| 85 | 7.992>> | 7.993 | 6.743 | 6.744 |
| 85 | 7.064<< | 7.059 | 8.196 | 8.191 |
| 85 | 7.992 | 7.993>> | 6.743 | 6.744 |
| 85 | 7.064 | 7.059<< | 8.196 | 8.191 |
| 85 | 7.064 | 7.059 | 8.196>> | 8.191 |
| 85 | 7.992 | 7.993 | 6.743<< | 6.744 |
| 85 | 7.064 | 7.059 | 8.196 | 8.191>> |
| 85 | 7.992 | 7.993 | 6.743 | 6.744<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=0)(1.00*G+1.00*LEV+1.10*P+0.5*GT)

| BARRA 85 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 85 | 7.989>> | 7.990 | 6.756 | 6.758 |
| 85 | 7.062<< | 7.056 | 8.210 | 8.204 |
| 85 | 7.989 | 7.990>> | 6.756 | 6.758 |
| 85 | 7.062 | 7.056<< | 8.210 | 8.204 |
| 85 | 7.062 | 7.056 | 8.210>> | 8.204 |
| 85 | 7.989 | 7.990 | 6.756<< | 6.758 |
| 85 | 7.062 | 7.056 | 8.210 | 8.204>> |
| 85 | 7.989 | 7.990 | 6.756 | 6.758<< |
| 86 | 8.045>> | 8.049 | 6.665 | 6.669 |
| 86 | 7.048<< | 7.043 | 8.230 | 8.225 |
| 86 | 8.045 | 8.049>> | 6.665 | 6.669 |
| 86 | 7.048 | 7.043<< | 8.230 | 8.225 |
| 86 | 7.048 | 7.043 | 8.230>> | 8.225 |
| 86 | 8.045 | 8.049 | 6.665<< | 6.669 |
| 86 | 7.048 | 7.043 | 8.230 | 8.225>> |
| 86 | 8.045 | 8.049 | 6.665 | 6.669<< |

| BARRA 86 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 86 | 8.043>> | 8.047 | 6.673 | 6.677 |
| 86 | 7.046<< | 7.041 | 8.238 | 8.233 |
| 86 | 8.043 | 8.047>> | 6.673 | 6.677 |
| 86 | 7.046 | 7.041<< | 8.238 | 8.233 |
| 86 | 7.046 | 7.041 | 8.238>> | 8.233 |
| 86 | 8.043 | 8.047 | 6.673<< | 6.677 |
| 86 | 7.046 | 7.041 | 8.238 | 8.233>> |
| 86 | 8.043 | 8.047 | 6.673 | 6.677<< |
| 87 | 8.071>> | 8.077 | 6.626 | 6.632 |
| 87 | 7.043<< | 7.040 | 8.240 | 8.236 |
| 87 | 8.071 | 8.077>> | 6.626 | 6.632 |
| 87 | 7.043 | 7.040<< | 8.240 | 8.236 |
| 87 | 7.043 | 7.040 | 8.240>> | 8.236 |
| 87 | 8.071 | 8.077 | 6.626<< | 6.632 |
| 87 | 7.043 | 7.040 | 8.240 | 8.236>> |
| 87 | 8.071 | 8.077 | 6.626 | 6.632<< |

| BARRA 87 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 87 | 8.069>> | 8.075 | 6.629 | 6.635 |
| 87 | 7.041<< | 7.038 | 8.243 | 8.239 |
| 87 | 8.069 | 8.075>> | 6.629 | 6.635 |
| 87 | 7.041 | 7.038<< | 8.243 | 8.239 |
| 87 | 7.041 | 7.038 | 8.243>> | 8.239 |
| 87 | 8.069 | 8.075 | 6.629<< | 6.635 |
| 87 | 7.041 | 7.038 | 8.243 | 8.239>> |
| 87 | 8.069 | 8.075 | 6.629 | 6.635<< |
| 88 | 8.069>> | 8.078 | 6.626 | 6.634 |
| 88 | 7.051<< | 7.048 | 8.227 | 8.224 |
| 88 | 8.069 | 8.078>> | 6.626 | 6.634 |
| 88 | 7.051 | 7.048<< | 8.227 | 8.224 |
| 88 | 7.051 | 7.048 | 8.227>> | 8.224 |
| 88 | 8.069 | 8.078 | 6.626<< | 6.634 |
| 88 | 7.051 | 7.048 | 8.227 | 8.224>> |
| 88 | 8.069 | 8.078 | 6.626 | 6.634<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=0)(1.00*G+1.00*LEV+1.10*P+0.5*GT)

| BARRA 88 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 88 | 8.068>> | 8.076 | 6.623 | 6.632 |
| 88 | 7.049<< | 7.047 | 8.224 | 8.222 |
| 88 | 8.068 | 8.076>> | 6.623 | 6.632 |
| 88 | 7.049 | 7.047<< | 8.224 | 8.222 |
| 88 | 7.049 | 7.047 | 8.224>> | 8.222 |
| 88 | 8.068 | 8.076 | 6.623<< | 6.632 |
| 88 | 7.049 | 7.047 | 8.224 | 8.222>> |
| 88 | 8.068 | 8.076 | 6.623 | 6.632<< |
| 89 | 8.043>> | 8.053 | 6.659 | 6.670 |
| 89 | 7.073<< | 7.071 | 8.186 | 8.184 |
| 89 | 8.043 | 8.053>> | 6.659 | 6.670 |
| 89 | 7.073 | 7.071<< | 8.186 | 8.184 |
| 89 | 7.073 | 7.071 | 8.186>> | 8.184 |
| 89 | 8.043 | 8.053 | 6.659<< | 6.670 |
| 89 | 7.073 | 7.071 | 8.186 | 8.184>> |
| 89 | 8.043 | 8.053 | 6.659 | 6.670<< |

| BARRA 89 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 89 | 8.042>> | 8.052 | 6.652 | 6.662 |
| 89 | 7.072<< | 7.070 | 8.178 | 8.177 |
| 89 | 8.042 | 8.052>> | 6.652 | 6.662 |
| 89 | 7.072 | 7.070<< | 8.178 | 8.177 |
| 89 | 7.072 | 7.070 | 8.178>> | 8.177 |
| 89 | 8.042 | 8.052 | 6.652<< | 6.662 |
| 89 | 7.072 | 7.070 | 8.178 | 8.177>> |
| 89 | 8.042 | 8.052 | 6.652 | 6.662<< |
| 90 | 7.991>> | 8.004 | 6.727 | 6.740 |
| 90 | 7.109<< | 7.109 | 8.118 | 8.118 |
| 90 | 7.991 | 8.004>> | 6.727 | 6.740 |
| 90 | 7.109 | 7.109<< | 8.118 | 8.118 |
| 90 | 7.109 | 7.109 | 8.118>> | 8.118 |
| 90 | 7.991 | 8.004 | 6.727<< | 6.740 |
| 90 | 7.109 | 7.109 | 8.118 | 8.118>> |
| 90 | 7.991 | 8.004 | 6.727 | 6.740<< |

| BARRA 90 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 90 | 7.990>> | 8.003 | 6.715 | 6.728 |
| 90 | 7.108<< | 7.107 | 8.106 | 8.106 |
| 90 | 7.990 | 8.003>> | 6.715 | 6.728 |
| 90 | 7.108 | 7.107<< | 8.106 | 8.106 |
| 90 | 7.108 | 7.107 | 8.106>> | 8.106 |
| 90 | 7.990 | 8.003 | 6.715<< | 6.728 |
| 90 | 7.108 | 7.107 | 8.106 | 8.106>> |
| 90 | 7.990 | 8.003 | 6.715 | 6.728<< |
| 91 | 7.913>> | 7.928 | 6.832 | 6.847 |
| 91 | 7.158<< | 7.159 | 8.026 | 8.027 |
| 91 | 7.913 | 7.928>> | 6.832 | 6.847 |
| 91 | 7.158 | 7.159<< | 8.026 | 8.027 |
| 91 | 7.158 | 7.159 | 8.026>> | 8.027 |
| 91 | 7.913 | 7.928 | 6.832<< | 6.847 |
| 91 | 7.158 | 7.159 | 8.026 | 8.027>> |
| 91 | 7.913 | 7.928 | 6.832 | 6.847<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=0)(1.00*G+1.00*LEV+1.10*P+0.5*GT)

| BARRA 91 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 91 | 7.913>> | 7.928 | 6.837 | 6.852 |
| 91 | 7.159<< | 7.159 | 8.031 | 8.031 |
| 91 | 7.913 | 7.928>> | 6.837 | 6.852 |
| 91 | 7.159 | 7.159<< | 8.031 | 8.031 |
| 91 | 7.159 | 7.159 | 8.031>> | 8.031 |
| 91 | 7.913 | 7.928 | 6.837<< | 6.852 |
| 91 | 7.159 | 7.159 | 8.031 | 8.031>> |
| 91 | 7.913 | 7.928 | 6.837 | 6.852<< |
| 92 | 7.808>> | 7.825 | 6.998 | 7.015 |
| 92 | 7.221<< | 7.222 | 7.933 | 7.934 |
| 92 | 7.808 | 7.825>> | 6.998 | 7.015 |
| 92 | 7.221 | 7.222<< | 7.933 | 7.934 |
| 92 | 7.221 | 7.222 | 7.933>> | 7.934 |
| 92 | 7.808 | 7.825 | 6.998<< | 7.015 |
| 92 | 7.221 | 7.222 | 7.933 | 7.934>> |
| 92 | 7.808 | 7.825 | 6.998 | 7.015<< |

| BARRA 92 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 92 | 7.812>> | 7.830 | 7.029 | 7.047 |
| 92 | 7.225<< | 7.226 | 7.964 | 7.966 |
| 92 | 7.812 | 7.830>> | 7.029 | 7.047 |
| 92 | 7.225 | 7.226<< | 7.964 | 7.966 |
| 92 | 7.225 | 7.226 | 7.964>> | 7.966 |
| 92 | 7.812 | 7.830 | 7.029<< | 7.047 |
| 92 | 7.225 | 7.226 | 7.964 | 7.966>> |
| 92 | 7.812 | 7.830 | 7.029 | 7.047<< |
| 93 | 7.734>> | 7.737 | 7.169 | 7.172 |
| 93 | 7.257<< | 7.277 | 7.891 | 7.911 |
| 93 | 7.734 | 7.737>> | 7.169 | 7.172 |
| 93 | 7.257 | 7.277<< | 7.891 | 7.911 |
| 93 | 7.257 | 7.277 | 7.891>> | 7.911 |
| 93 | 7.734 | 7.737 | 7.169<< | 7.172 |
| 93 | 7.257 | 7.277 | 7.891 | 7.911>> |
| 93 | 7.734 | 7.737 | 7.169 | 7.172<< |

| BARRA 93 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 93 | 7.742>> | 7.745 | 7.193 | 7.196 |
| 93 | 7.265<< | 7.285 | 7.915 | 7.935 |
| 93 | 7.742 | 7.745>> | 7.193 | 7.196 |
| 93 | 7.265 | 7.285<< | 7.915 | 7.935 |
| 93 | 7.265 | 7.285 | 7.915>> | 7.935 |
| 93 | 7.742 | 7.745 | 7.193<< | 7.196 |
| 93 | 7.265 | 7.285 | 7.915 | 7.935>> |
| 93 | 7.742 | 7.745 | 7.193 | 7.196<< |
| 94 | 7.847>> | 7.851 | 7.028 | 7.032 |
| 94 | 7.113<< | 7.134 | 8.150 | 8.172 |
| 94 | 7.847 | 7.851>> | 7.028 | 7.032 |
| 94 | 7.113 | 7.134<< | 8.150 | 8.172 |
| 94 | 7.113 | 7.134 | 8.150>> | 8.172 |
| 94 | 7.847 | 7.851 | 7.028<< | 7.032 |
| 94 | 7.113 | 7.134 | 8.150 | 8.172>> |
| 94 | 7.847 | 7.851 | 7.028 | 7.032<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=0)(1.00*G+1.00*LEV+1.10*P+0.5*GT)

| BARRA 94 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 94 | 7.858>> | 7.862 | 7.043 | 7.047 |
| 94 | 7.124<< | 7.145 | 8.165 | 8.186 |
| 94 | 7.858 | 7.862>> | 7.043 | 7.047 |
| 94 | 7.124 | 7.145<< | 8.165 | 8.186 |
| 94 | 7.124 | 7.145 | 8.165>> | 8.186 |
| 94 | 7.858 | 7.862 | 7.043<< | 7.047 |
| 94 | 7.124 | 7.145 | 8.165 | 8.186>> |
| 94 | 7.858 | 7.862 | 7.043 | 7.047<< |
| 95 | 7.983>> | 7.988 | 6.847 | 6.852 |
| 95 | 6.951<< | 6.975 | 8.430 | 8.454 |
| 95 | 7.983 | 7.988>> | 6.847 | 6.852 |
| 95 | 6.951 | 6.975<< | 8.430 | 8.454 |
| 95 | 6.951 | 6.975 | 8.430>> | 8.454 |
| 95 | 7.983 | 7.988 | 6.847<< | 6.852 |
| 95 | 6.951 | 6.975 | 8.430 | 8.454>> |
| 95 | 7.983 | 7.988 | 6.847 | 6.852<< |

| BARRA 95 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 95 | 7.596>> | 7.598 | 6.225 | 6.227 |
| 95 | 6.630<< | 6.646 | 7.451 | 7.467 |
| 95 | 7.596 | 7.598>> | 6.225 | 6.227 |
| 95 | 6.630 | 6.646<< | 7.451 | 7.467 |
| 95 | 6.630 | 6.646 | 7.451>> | 7.467 |
| 95 | 7.596 | 7.598 | 6.225<< | 6.227 |
| 95 | 6.630 | 6.646 | 7.451 | 7.467>> |
| 95 | 7.596 | 7.598 | 6.225 | 6.227<< |
| 96 | 9.253>> | 9.256 | 4.144 | 4.147 |
| 96 | 7.968<< | 7.987 | 5.773 | 5.791 |
| 96 | 9.253 | 9.256>> | 4.144 | 4.147 |
| 96 | 7.968 | 7.987<< | 5.773 | 5.791 |
| 96 | 7.968 | 7.987 | 5.773>> | 5.791 |
| 96 | 9.253 | 9.256 | 4.144<< | 4.147 |
| 96 | 7.968 | 7.987 | 5.773 | 5.791>> |
| 96 | 9.253 | 9.256 | 4.144 | 4.147<< |

| BARRA 96 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 96 | 9.496>> | 9.502 | 4.155 | 4.161 |
| 96 | 8.200<< | 8.223 | 5.772 | 5.796 |
| 96 | 9.496 | 9.502>> | 4.155 | 4.161 |
| 96 | 8.200 | 8.223<< | 5.772 | 5.796 |
| 96 | 8.200 | 8.223 | 5.772>> | 5.796 |
| 96 | 9.496 | 9.502 | 4.155<< | 4.161 |
| 96 | 8.200 | 8.223 | 5.772 | 5.796>> |
| 96 | 9.496 | 9.502 | 4.155 | 4.161<< |
| 97 | 8.725>> | 8.732 | 5.128 | 5.134 |
| 97 | 7.072<< | 7.098 | 7.194 | 7.219 |
| 97 | 8.725 | 8.732>> | 5.128 | 5.134 |
| 97 | 7.072 | 7.098<< | 7.194 | 7.219 |
| 97 | 7.072 | 7.098 | 7.194>> | 7.219 |
| 97 | 8.725 | 8.732 | 5.128<< | 5.134 |
| 97 | 7.072 | 7.098 | 7.194 | 7.219>> |
| 97 | 8.725 | 8.732 | 5.128 | 5.134<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=0)(1.00*G+1.00*LEV+1.10*P+0.5*GT)

| BARRA 97 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 97 | 8.807>> | 8.813 | 5.104 | 5.111 |
| 97 | 7.154<< | 7.179 | 7.170 | 7.196 |
| 97 | 8.807 | 8.813>> | 5.104 | 5.111 |
| 97 | 7.154 | 7.179<< | 7.170 | 7.196 |
| 97 | 7.154 | 7.179 | 7.170>> | 7.196 |
| 97 | 8.807 | 8.813 | 5.104<< | 5.111 |
| 97 | 7.154 | 7.179 | 7.170 | 7.196>> |
| 97 | 8.807 | 8.813 | 5.104 | 5.111<< |
| 98 | 9.378>> | 9.384 | 4.383 | 4.389 |
| 98 | 8.106<< | 8.130 | 5.970 | 5.993 |
| 98 | 9.378 | 9.384>> | 4.383 | 4.389 |
| 98 | 8.106 | 8.130<< | 5.970 | 5.993 |
| 98 | 8.106 | 8.130 | 5.970>> | 5.993 |
| 98 | 9.378 | 9.384 | 4.383<< | 4.389 |
| 98 | 8.106 | 8.130 | 5.970 | 5.993>> |
| 98 | 9.378 | 9.384 | 4.383 | 4.389<< |

| BARRA 98 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 98 | 9.266>> | 9.271 | 4.332 | 4.337 |
| 98 | 8.006<< | 8.028 | 5.931 | 5.953 |
| 98 | 9.266 | 9.271>> | 4.332 | 4.337 |
| 98 | 8.006 | 8.028<< | 5.931 | 5.953 |
| 98 | 8.006 | 8.028 | 5.931>> | 5.953 |
| 98 | 9.266 | 9.271 | 4.332<< | 4.337 |
| 98 | 8.006 | 8.028 | 5.931 | 5.953>> |
| 98 | 9.266 | 9.271 | 4.332 | 4.337<< |
| 99 | 7.444>> | 7.449 | 6.622 | 6.627 |
| 99 | 6.526<< | 6.546 | 7.787 | 7.807 |
| 99 | 7.444 | 7.449>> | 6.622 | 6.627 |
| 99 | 6.526 | 6.546<< | 7.787 | 7.807 |
| 99 | 6.526 | 6.546 | 7.787>> | 7.807 |
| 99 | 7.444 | 7.449 | 6.622<< | 6.627 |
| 99 | 6.526 | 6.546 | 7.787 | 7.807>> |
| 99 | 7.444 | 7.449 | 6.622 | 6.627<< |

| BARRA 99 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 99 | 8.190>> | 8.196 | 7.071 | 7.077 |
| 99 | 7.209<< | 7.233 | 8.575 | 8.600 |
| 99 | 8.190 | 8.196>> | 7.071 | 7.077 |
| 99 | 7.209 | 7.233<< | 8.575 | 8.600 |
| 99 | 7.209 | 7.233 | 8.575>> | 8.600 |
| 99 | 8.190 | 8.196 | 7.071<< | 7.077 |
| 99 | 7.209 | 7.233 | 8.575 | 8.600>> |
| 99 | 8.190 | 8.196 | 7.071 | 7.077<< |
| 100 | 8.097>> | 8.103 | 7.216 | 7.221 |
| 100 | 7.439<< | 7.462 | 8.219 | 8.242 |
| 100 | 8.097 | 8.103>> | 7.216 | 7.221 |
| 100 | 7.439 | 7.462<< | 8.219 | 8.242 |
| 100 | 7.439 | 7.462 | 8.219>> | 8.242 |
| 100 | 8.097 | 8.103 | 7.216<< | 7.221 |
| 100 | 7.439 | 7.462 | 8.219 | 8.242>> |
| 100 | 8.097 | 8.103 | 7.216 | 7.221<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=0)(1.00*G+1.00*LEV+1.10*P+0.5*GT)

| BARRA 100 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 100 | 8.128>> | 8.133 | 7.254 | 7.260 |
| 100 | 7.469<< | 7.492 | 8.258 | 8.280 |
| 100 | 8.128 | 8.133>> | 7.254 | 7.260 |
| 100 | 7.469 | 7.492<< | 8.258 | 8.280 |
| 100 | 7.469 | 7.492 | 8.258>> | 8.280 |
| 100 | 8.128 | 8.133 | 7.254<< | 7.260 |
| 100 | 7.469 | 7.492 | 8.258 | 8.280>> |
| 100 | 8.128 | 8.133 | 7.254 | 7.260<< |
| 101 | 8.044>> | 8.049 | 7.385 | 7.390 |
| 101 | 7.669<< | 7.690 | 7.949 | 7.970 |
| 101 | 8.044 | 8.049>> | 7.385 | 7.390 |
| 101 | 7.669 | 7.690<< | 7.949 | 7.970 |
| 101 | 7.669 | 7.690 | 7.949>> | 7.970 |
| 101 | 8.044 | 8.049 | 7.385<< | 7.390 |
| 101 | 7.669 | 7.690 | 7.949 | 7.970>> |
| 101 | 8.044 | 8.049 | 7.385 | 7.390<< |

| BARRA 101 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 101 | 8.072>> | 8.077 | 7.442 | 7.447 |
| 101 | 7.697<< | 7.718 | 8.006 | 8.027 |
| 101 | 8.072 | 8.077>> | 7.442 | 7.447 |
| 101 | 7.697 | 7.718<< | 8.006 | 8.027 |
| 101 | 7.697 | 7.718 | 8.006>> | 8.027 |
| 101 | 8.072 | 8.077 | 7.442<< | 7.447 |
| 101 | 7.697 | 7.718 | 8.006 | 8.027>> |
| 101 | 8.072 | 8.077 | 7.442 | 7.447<< |
| 102 | 8.177>> | 8.197 | 7.259 | 7.279 |
| 102 | 7.692<< | 7.697 | 8.034 | 8.039 |
| 102 | 8.177 | 8.197>> | 7.259 | 7.279 |
| 102 | 7.692 | 7.697<< | 8.034 | 8.039 |
| 102 | 7.692 | 7.697 | 8.034>> | 8.039 |
| 102 | 8.177 | 8.197 | 7.259<< | 7.279 |
| 102 | 7.692 | 7.697 | 8.034 | 8.039>> |
| 102 | 8.177 | 8.197 | 7.259 | 7.279<< |

| BARRA 102 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 102 | 8.196>> | 8.215 | 7.327 | 7.346 |
| 102 | 7.711<< | 7.715 | 8.102 | 8.106 |
| 102 | 8.196 | 8.215>> | 7.327 | 7.346 |
| 102 | 7.711 | 7.715<< | 8.102 | 8.106 |
| 102 | 7.711 | 7.715 | 8.102>> | 8.106 |
| 102 | 8.196 | 8.215 | 7.327<< | 7.346 |
| 102 | 7.711 | 7.715 | 8.102 | 8.106>> |
| 102 | 8.196 | 8.215 | 7.327 | 7.346<< |
| 103 | 8.316>> | 8.333 | 7.142 | 7.160 |
| 103 | 7.684<< | 7.688 | 8.144 | 8.148 |
| 103 | 8.316 | 8.333>> | 7.142 | 7.160 |
| 103 | 7.684 | 7.688<< | 8.144 | 8.148 |
| 103 | 7.684 | 7.688 | 8.144>> | 8.148 |
| 103 | 8.316 | 8.333 | 7.142<< | 7.160 |
| 103 | 7.684 | 7.688 | 8.144 | 8.148>> |
| 103 | 8.316 | 8.333 | 7.142 | 7.160<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=0)(1.00*G+1.00*LEV+1.10*P+0.5*GT)

| BARRA 103 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 103 | 8.327>> | 8.345 | 7.216 | 7.233 |
| 103 | 7.696<< | 7.700 | 8.217 | 8.221 |
| 103 | 8.327 | 8.345>> | 7.216 | 7.233 |
| 103 | 7.696 | 7.700<< | 8.217 | 8.221 |
| 103 | 7.696 | 7.700 | 8.217>> | 8.221 |
| 103 | 8.327 | 8.345 | 7.216<< | 7.233 |
| 103 | 7.696 | 7.700 | 8.217 | 8.221>> |
| 103 | 8.327 | 8.345 | 7.216 | 7.233<< |
| 104 | 8.427>> | 8.442 | 7.063 | 7.079 |
| 104 | 7.688<< | 7.691 | 8.230 | 8.234 |
| 104 | 8.427 | 8.442>> | 7.063 | 7.079 |
| 104 | 7.688 | 7.691<< | 8.230 | 8.234 |
| 104 | 7.688 | 7.691 | 8.230>> | 8.234 |
| 104 | 8.427 | 8.442 | 7.063<< | 7.079 |
| 104 | 7.688 | 7.691 | 8.230 | 8.234>> |
| 104 | 8.427 | 8.442 | 7.063 | 7.079<< |

| BARRA 104 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 104 | 8.432>> | 8.448 | 7.118 | 7.134 |
| 104 | 7.693<< | 7.697 | 8.285 | 8.288 |
| 104 | 8.432 | 8.448>> | 7.118 | 7.134 |
| 104 | 7.693 | 7.697<< | 8.285 | 8.288 |
| 104 | 7.693 | 7.697 | 8.285>> | 8.288 |
| 104 | 8.432 | 8.448 | 7.118<< | 7.134 |
| 104 | 7.693 | 7.697 | 8.285 | 8.288>> |
| 104 | 8.432 | 8.448 | 7.118 | 7.134<< |
| 105 | 8.515>> | 8.529 | 6.991 | 7.005 |
| 105 | 7.709<< | 7.712 | 8.261 | 8.264 |
| 105 | 8.515 | 8.529>> | 6.991 | 7.005 |
| 105 | 7.709 | 7.712<< | 8.261 | 8.264 |
| 105 | 7.709 | 7.712 | 8.261>> | 8.264 |
| 105 | 8.515 | 8.529 | 6.991<< | 7.005 |
| 105 | 7.709 | 7.712 | 8.261 | 8.264>> |
| 105 | 8.515 | 8.529 | 6.991 | 7.005<< |

| BARRA 105 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 105 | 8.519>> | 8.532 | 6.950 | 6.963 |
| 105 | 7.712<< | 7.715 | 8.220 | 8.223 |
| 105 | 8.519 | 8.532>> | 6.950 | 6.963 |
| 105 | 7.712 | 7.715<< | 8.220 | 8.223 |
| 105 | 7.712 | 7.715 | 8.220>> | 8.223 |
| 105 | 8.519 | 8.532 | 6.950<< | 6.963 |
| 105 | 7.712 | 7.715 | 8.220 | 8.223>> |
| 105 | 8.519 | 8.532 | 6.950 | 6.963<< |
| 106 | 8.590>> | 8.602 | 6.841 | 6.853 |
| 106 | 7.755<< | 7.758 | 8.153 | 8.156 |
| 106 | 8.590 | 8.602>> | 6.841 | 6.853 |
| 106 | 7.755 | 7.758<< | 8.153 | 8.156 |
| 106 | 7.755 | 7.758 | 8.153>> | 8.156 |
| 106 | 8.590 | 8.602 | 6.841<< | 6.853 |
| 106 | 7.755 | 7.758 | 8.153 | 8.156>> |
| 106 | 8.590 | 8.602 | 6.841 | 6.853<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=0)(1.00*G+1.00*LEV+1.10*P+0.5*GT)

| BARRA 106 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 106 | 8.590>> | 8.602 | 6.801 | 6.813 |
| 106 | 7.755<< | 7.758 | 8.113 | 8.116 |
| 106 | 8.590 | 8.602>> | 6.801 | 6.813 |
| 106 | 7.755 | 7.758<< | 8.113 | 8.116 |
| 106 | 7.755 | 7.758 | 8.113>> | 8.116 |
| 106 | 8.590 | 8.602 | 6.801<< | 6.813 |
| 106 | 7.755 | 7.758 | 8.113 | 8.116>> |
| 106 | 8.590 | 8.602 | 6.801 | 6.813<< |
| 107 | 8.581>> | 8.591 | 6.817 | 6.827 |
| 107 | 7.758<< | 7.760 | 8.109 | 8.111 |
| 107 | 8.581 | 8.591>> | 6.817 | 6.827 |
| 107 | 7.758 | 7.760<< | 8.109 | 8.111 |
| 107 | 7.758 | 7.760 | 8.109>> | 8.111 |
| 107 | 8.581 | 8.591 | 6.817<< | 6.827 |
| 107 | 7.758 | 7.760 | 8.109 | 8.111>> |
| 107 | 8.581 | 8.591 | 6.817 | 6.827<< |

| BARRA 107 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 107 | 8.577>> | 8.587 | 6.782 | 6.792 |
| 107 | 7.754<< | 7.756 | 8.074 | 8.077 |
| 107 | 8.577 | 8.587>> | 6.782 | 6.792 |
| 107 | 7.754 | 7.756<< | 8.074 | 8.077 |
| 107 | 7.754 | 7.756 | 8.074>> | 8.077 |
| 107 | 8.577 | 8.587 | 6.782<< | 6.792 |
| 107 | 7.754 | 7.756 | 8.074 | 8.077>> |
| 107 | 8.577 | 8.587 | 6.782 | 6.792<< |
| 108 | 8.422>> | 8.430 | 7.026 | 7.034 |
| 108 | 7.650<< | 7.652 | 8.237 | 8.239 |
| 108 | 8.422 | 8.430>> | 7.026 | 7.034 |
| 108 | 7.650 | 7.652<< | 8.237 | 8.239 |
| 108 | 7.650 | 7.652 | 8.237>> | 8.239 |
| 108 | 8.422 | 8.430 | 7.026<< | 7.034 |
| 108 | 7.650 | 7.652 | 8.237 | 8.239>> |
| 108 | 8.422 | 8.430 | 7.026 | 7.034<< |

| BARRA 108 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 108 | 8.417>> | 8.425 | 6.991 | 6.999 |
| 108 | 7.645<< | 7.647 | 8.202 | 8.204 |
| 108 | 8.417 | 8.425>> | 6.991 | 6.999 |
| 108 | 7.645 | 7.647<< | 8.202 | 8.204 |
| 108 | 7.645 | 7.647 | 8.202>> | 8.204 |
| 108 | 8.417 | 8.425 | 6.991<< | 6.999 |
| 108 | 7.645 | 7.647 | 8.202 | 8.204>> |
| 108 | 8.417 | 8.425 | 6.991 | 6.999<< |
| 109 | 8.117>> | 8.123 | 7.461 | 7.467 |
| 109 | 7.435<< | 7.436 | 8.530 | 8.531 |
| 109 | 8.117 | 8.123>> | 7.461 | 7.467 |
| 109 | 7.435 | 7.436<< | 8.530 | 8.531 |
| 109 | 7.435 | 7.436 | 8.530>> | 8.531 |
| 109 | 8.117 | 8.123 | 7.461<< | 7.467 |
| 109 | 7.435 | 7.436 | 8.530 | 8.531>> |
| 109 | 8.117 | 8.123 | 7.461 | 7.467<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=0)(1.00*G+1.00*LEV+1.10*P+0.5*GT)

| BARRA 109 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 109 | 8.111>> | 8.118 | 7.427 | 7.434 |
| 109 | 7.429<< | 7.431 | 8.496 | 8.497 |
| 109 | 8.111 | 8.118>> | 7.427 | 7.434 |
| 109 | 7.429 | 7.431<< | 8.496 | 8.497 |
| 109 | 7.429 | 7.431 | 8.496>> | 8.497 |
| 109 | 8.111 | 8.118 | 7.427<< | 7.434 |
| 109 | 7.429 | 7.431 | 8.496 | 8.497>> |
| 109 | 8.111 | 8.118 | 7.427 | 7.434<< |
| 110 | 7.663>> | 7.668 | 8.127 | 8.132 |
| 110 | 7.111<< | 7.112 | 8.992 | 8.993 |
| 110 | 7.663 | 7.668>> | 8.127 | 8.132 |
| 110 | 7.111 | 7.112<< | 8.992 | 8.993 |
| 110 | 7.111 | 7.112 | 8.992>> | 8.993 |
| 110 | 7.663 | 7.668 | 8.127<< | 8.132 |
| 110 | 7.111 | 7.112 | 8.992 | 8.993>> |
| 110 | 7.663 | 7.668 | 8.127 | 8.132<< |

| BARRA 110 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 110 | 7.656>> | 7.660 | 8.094 | 8.099 |
| 110 | 7.104<< | 7.105 | 8.959 | 8.960 |
| 110 | 7.656 | 7.660>> | 8.094 | 8.099 |
| 110 | 7.104 | 7.105<< | 8.959 | 8.960 |
| 110 | 7.104 | 7.105 | 8.959>> | 8.960 |
| 110 | 7.656 | 7.660 | 8.094<< | 8.099 |
| 110 | 7.104 | 7.105 | 8.959 | 8.960>> |
| 110 | 7.656 | 7.660 | 8.094 | 8.099<< |
| 111 | 7.060>> | 7.063 | 9.025 | 9.028 |
| 111 | 6.677<< | 6.678 | 9.624 | 9.624 |
| 111 | 7.060 | 7.063>> | 9.025 | 9.028 |
| 111 | 6.677 | 6.678<< | 9.624 | 9.624 |
| 111 | 6.677 | 6.678 | 9.624>> | 9.624 |
| 111 | 7.060 | 7.063 | 9.025<< | 9.028 |
| 111 | 6.677 | 6.678 | 9.624 | 9.624>> |
| 111 | 7.060 | 7.063 | 9.025 | 9.028<< |

| BARRA 111 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 111 | 7.050>> | 7.053 | 8.994 | 8.997 |
| 111 | 6.668<< | 6.668 | 9.593 | 9.594 |
| 111 | 7.050 | 7.053>> | 8.994 | 8.997 |
| 111 | 6.668 | 6.668<< | 9.593 | 9.594 |
| 111 | 6.668 | 6.668 | 9.593>> | 9.594 |
| 111 | 7.050 | 7.053 | 8.994<< | 8.997 |
| 111 | 6.668 | 6.668 | 9.593 | 9.594>> |
| 111 | 7.050 | 7.053 | 8.994 | 8.997<< |
| 112 | 6.306>> | 6.307 | 10.156 | 10.156 |
| 112 | 6.132<< | 6.133 | 10.427 | 10.427 |
| 112 | 6.306 | 6.307>> | 10.156 | 10.156 |
| 112 | 6.132 | 6.133<< | 10.427 | 10.427 |
| 112 | 6.132 | 6.133 | 10.427>> | 10.427 |
| 112 | 6.306 | 6.307 | 10.156<< | 10.156 |
| 112 | 6.132 | 6.133 | 10.427 | 10.427>> |
| 112 | 6.306 | 6.307 | 10.156 | 10.156<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=0)(1.00*G+1.00*LEV+1.10*P+0.5*GT)

| BARRA 112 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 112 | 4.609>> | 4.604 | 7.827 | 7.821 |
| 112 | 4.433<< | 4.430 | 8.024 | 8.021 |
| 112 | 4.609 | 4.604>> | 7.827 | 7.821 |
| 112 | 4.433 | 4.430<< | 8.024 | 8.021 |
| 112 | 4.433 | 4.430 | 8.024>> | 8.021 |
| 112 | 4.609 | 4.604 | 7.827<< | 7.821 |
| 112 | 4.433 | 4.430 | 8.024 | 8.021>> |
| 112 | 4.609 | 4.604 | 7.827 | 7.821<< |
| 113 | 5.078>> | 5.071 | 7.251 | 7.244 |
| 113 | 5.065<< | 5.062 | 7.238 | 7.235 |
| 113 | 5.078 | 5.071>> | 7.251 | 7.244 |
| 113 | 5.065 | 5.062<< | 7.238 | 7.235 |
| 113 | 5.078 | 5.071 | 7.251>> | 7.244 |
| 113 | 5.065 | 5.062 | 7.238<< | 7.235 |
| 113 | 5.078 | 5.071 | 7.251 | 7.244>> |
| 113 | 5.065 | 5.062 | 7.238 | 7.235<< |

### 7.2.2. Combinación Cuasipermanente t=∞

```
TITULO
=======
LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=inf)(1.00*G+0.4*LEV+0.90*P+0.5*GT)

FICHERO DE GEOMETRIA COMPLETA
=============================
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
================================
1

Fich   Num. Nudos    Num. barras     Num. hipotesis   NOMBRE FICHERO
=====================================================================
  1       120           119              57          ESFipf.TXT

Fich    Hipotesis      Caracter      Coeficiente
=================================================
  1        1              1             1.0
  1        2              1             0.4
  1        3              1             1.0
  1        4              3             1.0
  1        5              3             1.0
  1        6              3             1.0
  1        7              2             0.0
  1        8              2             0.0
  1        9              2             0.0
  1        10             2             0.0
  1        11             2             0.0
  1        12             2             0.0
  1        13             2             0.0
  1        14             2             0.0
  1        15             2             0.0
  1        16             2             0.0
  1        17             2             0.0
  1        18             2             0.0
  1        19             4             0.0
  1        20             5             0.0
  1        21             4             0.0
  1        22             5             0.0
  1        23             4             0.0
  1        24             5             0.0
  1        25             4             0.0
  1        26             5             0.0
  1        27             4             0.0
  1        28             5             0.0
  1        29             4             0.0
  1        30             5             0.0
  1        31             4             0.0
  1        32             5             0.0
  1        33             4             0.0
  1        34             5             0.0
  1        35             4             0.0
  1        36             5             0.0
  1        37             2             0.5
  1        38             1            17.780
  1        39             1             2.540
  1        40             1             2.540
  1        41             1            10.160
  1        42             1             2.540
  1        43             1             2.540
  1        44             1             5.818
  1        45             1             5.818
  1        46             1             5.818
  1        47             1             5.818
  1        48             1             5.818
  1        49             1             5.818
  1        50             1             5.818
  1        51             1             5.818
  1        52             1             5.818
  1        53             1             5.818
  1        54             1             5.818
  1        55             1             5.818
  1        56             1             5.818
  1        57             1             5.818
```

PONDERACION DE TENSIONES

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=inf)(1.00*G+0.4*LEV+0.90*P+0.5*GT)

| BARRA 1 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 1 | 5.372>> | 5.366 | 4.910 | 4.904 |
| 1 | 5.360<< | 5.357 | 4.897 | 4.895 |
| 1 | 5.372 | 5.366>> | 4.910 | 4.904 |
| 1 | 5.360 | 5.357<< | 4.897 | 4.895 |
| 1 | 5.372 | 5.366 | 4.910>> | 4.904 |
| 1 | 5.360 | 5.357 | 4.897<< | 4.895 |
| 1 | 5.372 | 5.366 | 4.910 | 4.904>> |
| 1 | 5.360 | 5.357 | 4.897 | 4.895<< |
| 2 | 4.965>> | 4.959 | 5.410 | 5.404 |
| 2 | 4.789<< | 4.786 | 5.606 | 5.604 |
| 2 | 4.965 | 4.959>> | 5.410 | 5.404 |
| 2 | 4.789 | 4.786<< | 5.606 | 5.604 |
| 2 | 4.789 | 4.786 | 5.606>> | 5.604 |
| 2 | 4.965 | 4.959 | 5.410<< | 5.404 |
| 2 | 4.789 | 4.786 | 5.606 | 5.604>> |
| 2 | 4.965 | 4.959 | 5.410 | 5.404<< |

| BARRA 2 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 2 | 6.476>> | 6.476 | 7.017 | 7.017 |
| 2 | 6.303<< | 6.302 | 7.288 | 7.288 |
| 2 | 6.476 | 6.476>> | 7.017 | 7.017 |
| 2 | 6.303 | 6.302<< | 7.288 | 7.288 |
| 2 | 6.303 | 6.302 | 7.288>> | 7.288 |
| 2 | 6.476 | 6.476 | 7.017<< | 7.017 |
| 2 | 6.303 | 6.302 | 7.288 | 7.288>> |
| 2 | 6.476 | 6.476 | 7.017 | 7.017<< |
| 3 | 7.106>> | 7.107 | 6.035 | 6.036 |
| 3 | 6.724<< | 6.724 | 6.632 | 6.632 |
| 3 | 7.106 | 7.107>> | 6.035 | 6.036 |
| 3 | 6.724 | 6.724<< | 6.632 | 6.632 |
| 3 | 6.724 | 6.724 | 6.632>> | 6.632 |
| 3 | 7.106 | 7.107 | 6.035<< | 6.036 |
| 3 | 6.724 | 6.724 | 6.632 | 6.632>> |
| 3 | 7.106 | 7.107 | 6.035 | 6.036<< |

| BARRA 3 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 3 | 7.116>> | 7.117 | 6.062 | 6.063 |
| 3 | 6.734<< | 6.734 | 6.659 | 6.659 |
| 3 | 7.116 | 7.117>> | 6.062 | 6.063 |
| 3 | 6.734 | 6.734<< | 6.659 | 6.659 |
| 3 | 6.734 | 6.734 | 6.659>> | 6.659 |
| 3 | 7.116 | 7.117 | 6.062<< | 6.063 |
| 3 | 6.734 | 6.734 | 6.659 | 6.659>> |
| 3 | 7.116 | 7.117 | 6.062 | 6.063<< |
| 4 | 7.620>> | 7.622 | 5.276 | 5.278 |
| 4 | 7.068<< | 7.068 | 6.138 | 6.138 |
| 4 | 7.620 | 7.622>> | 5.276 | 5.278 |
| 4 | 7.068 | 7.068<< | 6.138 | 6.138 |
| 4 | 7.068 | 7.068 | 6.138>> | 6.138 |
| 4 | 7.620 | 7.622 | 5.276<< | 5.278 |
| 4 | 7.068 | 7.068 | 6.138 | 6.138>> |
| 4 | 7.620 | 7.622 | 5.276 | 5.278<< |

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| BARRA 4 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 4 | 7.628>> | 7.630 | 5.306 | 5.307 |
| 4 | 7.076<< | 7.076 | 6.168 | 6.168 |
| 4 | 7.628 | 7.630>> | 5.306 | 5.307 |
| 4 | 7.076 | 7.076<< | 6.168 | 6.168 |
| 4 | 7.076 | 7.076 | 6.168>> | 6.168 |
| 4 | 7.628 | 7.630 | 5.306<< | 5.307 |
| 4 | 7.076 | 7.076 | 6.168 | 6.168>> |
| 4 | 7.628 | 7.630 | 5.306 | 5.307<< |
| 5 | 8.009>> | 8.011 | 4.712 | 4.714 |
| 5 | 7.327<< | 7.327 | 5.777 | 5.777 |
| 5 | 8.009 | 8.011>> | 4.712 | 4.714 |
| 5 | 7.327 | 7.327<< | 5.777 | 5.777 |
| 5 | 7.327 | 7.327 | 5.777>> | 5.777 |
| 5 | 8.009 | 8.011 | 4.712<< | 4.714 |
| 5 | 7.327 | 7.327 | 5.777 | 5.777>> |
| 5 | 8.009 | 8.011 | 4.712 | 4.714<< |

| BARRA 5 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 5 | 8.015>> | 8.017 | 4.743 | 4.745 |
| 5 | 7.333<< | 7.333 | 5.807 | 5.808 |
| 5 | 8.015 | 8.017>> | 4.743 | 4.745 |
| 5 | 7.333 | 7.333<< | 5.807 | 5.808 |
| 5 | 7.333 | 7.333 | 5.807>> | 5.808 |
| 5 | 8.015 | 8.017 | 4.743<< | 4.745 |
| 5 | 7.333 | 7.333 | 5.807 | 5.808>> |
| 5 | 8.015 | 8.017 | 4.743 | 4.745<< |
| 6 | 8.271>> | 8.274 | 4.343 | 4.346 |
| 6 | 7.499<< | 7.499 | 5.549 | 5.549 |
| 6 | 8.271 | 8.274>> | 4.343 | 4.346 |
| 6 | 7.499 | 7.499<< | 5.549 | 5.549 |
| 6 | 7.499 | 7.499 | 5.549>> | 5.549 |
| 6 | 8.271 | 8.274 | 4.343<< | 4.346 |
| 6 | 7.499 | 7.499 | 5.549 | 5.549>> |
| 6 | 8.271 | 8.274 | 4.343 | 4.346<< |

| BARRA 6 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 6 | 8.276>> | 8.279 | 4.375 | 4.378 |
| 6 | 7.504<< | 7.504 | 5.581 | 5.581 |
| 6 | 8.276 | 8.279>> | 4.375 | 4.378 |
| 6 | 7.504 | 7.504<< | 5.581 | 5.581 |
| 6 | 7.504 | 7.504 | 5.581>> | 5.581 |
| 6 | 8.276 | 8.279 | 4.375<< | 4.378 |
| 6 | 7.504 | 7.504 | 5.581 | 5.581>> |
| 6 | 8.276 | 8.279 | 4.375 | 4.378<< |
| 7 | 8.410>> | 8.414 | 4.165 | 4.169 |
| 7 | 7.587<< | 7.587 | 5.452 | 5.452 |
| 7 | 8.410 | 8.414>> | 4.165 | 4.169 |
| 7 | 7.587 | 7.587<< | 5.452 | 5.452 |
| 7 | 7.587 | 7.587 | 5.452>> | 5.452 |
| 7 | 8.410 | 8.414 | 4.165<< | 4.169 |
| 7 | 7.587 | 7.587 | 5.452 | 5.452>> |
| 7 | 8.410 | 8.414 | 4.165 | 4.169<< |

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| BARRA 7 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 7 | 8.414>> | 8.418 | 4.197 | 4.201 |
| 7 | 7.591<< | 7.591 | 5.483 | 5.484 |
| 7 | 8.414 | 8.418>> | 4.197 | 4.201 |
| 7 | 7.591 | 7.591<< | 5.483 | 5.484 |
| 7 | 7.591 | 7.591 | 5.483>> | 5.484 |
| 7 | 8.414 | 8.418 | 4.197<< | 4.201 |
| 7 | 7.591 | 7.591 | 5.483 | 5.484>> |
| 7 | 8.414 | 8.418 | 4.197 | 4.201<< |
| 8 | 8.427>> | 8.431 | 4.176 | 4.181 |
| 8 | 7.592<< | 7.593 | 5.481 | 5.482 |
| 8 | 8.427 | 8.431>> | 4.176 | 4.181 |
| 8 | 7.592 | 7.593<< | 5.481 | 5.482 |
| 8 | 7.592 | 7.593 | 5.481>> | 5.482 |
| 8 | 8.427 | 8.431 | 4.176<< | 4.181 |
| 8 | 7.592 | 7.593 | 5.481 | 5.482>> |
| 8 | 8.427 | 8.431 | 4.176 | 4.181<< |

| BARRA 8 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 8 | 8.431>> | 8.436 | 4.212 | 4.217 |
| 8 | 7.597<< | 7.597 | 5.517 | 5.518 |
| 8 | 8.431 | 8.436>> | 4.212 | 4.217 |
| 8 | 7.597 | 7.597<< | 5.517 | 5.518 |
| 8 | 7.597 | 7.597 | 5.517>> | 5.518 |
| 8 | 8.431 | 8.436 | 4.212<< | 4.217 |
| 8 | 7.597 | 7.597 | 5.517 | 5.518>> |
| 8 | 8.431 | 8.436 | 4.212 | 4.217<< |
| 9 | 8.346>> | 8.351 | 4.345 | 4.350 |
| 9 | 7.540<< | 7.540 | 5.607 | 5.607 |
| 9 | 8.346 | 8.351>> | 4.345 | 4.350 |
| 9 | 7.540 | 7.540<< | 5.607 | 5.607 |
| 9 | 7.540 | 7.540 | 5.607>> | 5.607 |
| 9 | 8.346 | 8.351 | 4.345<< | 4.350 |
| 9 | 7.540 | 7.540 | 5.607 | 5.607>> |
| 9 | 8.346 | 8.351 | 4.345 | 4.350<< |

| BARRA 9 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 9 | 8.343>> | 8.349 | 4.342 | 4.347 |
| 9 | 7.537<< | 7.538 | 5.604 | 5.604 |
| 9 | 8.343 | 8.349>> | 4.342 | 4.347 |
| 9 | 7.537 | 7.538<< | 5.604 | 5.604 |
| 9 | 7.537 | 7.538 | 5.604>> | 5.604 |
| 9 | 8.343 | 8.349 | 4.342<< | 4.347 |
| 9 | 7.537 | 7.538 | 5.604 | 5.604>> |
| 9 | 8.343 | 8.349 | 4.342 | 4.347<< |
| 10 | 8.185>> | 8.192 | 4.587 | 4.593 |
| 10 | 7.447<< | 7.448 | 5.744 | 5.745 |
| 10 | 8.185 | 8.192>> | 4.587 | 4.593 |
| 10 | 7.447 | 7.448<< | 5.744 | 5.745 |
| 10 | 7.447 | 7.448 | 5.744>> | 5.745 |
| 10 | 8.185 | 8.192 | 4.587<< | 4.593 |
| 10 | 7.447 | 7.448 | 5.744 | 5.745>> |
| 10 | 8.185 | 8.192 | 4.587 | 4.593<< |

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| BARRA 10 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 10 | 8.178>> | 8.185 | 4.564 | 4.570 |
| 10 | 7.440<< | 7.441 | 5.722 | 5.722 |
| 10 | 8.178 | 8.185>> | 4.564 | 4.570 |
| 10 | 7.440 | 7.441<< | 5.722 | 5.722 |
| 10 | 7.440 | 7.441 | 5.722>> | 5.722 |
| 10 | 8.178 | 8.185 | 4.564<< | 4.570 |
| 10 | 7.440 | 7.441 | 5.722 | 5.722>> |
| 10 | 8.178 | 8.185 | 4.564 | 4.570<< |
| 11 | 7.947>> | 7.954 | 4.924 | 4.931 |
| 11 | 7.316<< | 7.316 | 5.915 | 5.916 |
| 11 | 7.947 | 7.954>> | 4.924 | 4.931 |
| 11 | 7.316 | 7.316<< | 5.915 | 5.916 |
| 11 | 7.316 | 7.316 | 5.915>> | 5.916 |
| 11 | 7.947 | 7.954 | 4.924<< | 4.931 |
| 11 | 7.316 | 7.316 | 5.915 | 5.916>> |
| 11 | 7.947 | 7.954 | 4.924 | 4.931<< |

| BARRA 11 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 11 | 7.938>> | 7.945 | 4.902 | 4.909 |
| 11 | 7.307<< | 7.308 | 5.893 | 5.894 |
| 11 | 7.938 | 7.945>> | 4.902 | 4.909 |
| 11 | 7.307 | 7.308<< | 5.893 | 5.894 |
| 11 | 7.307 | 7.308 | 5.893>> | 5.894 |
| 11 | 7.938 | 7.945 | 4.902<< | 4.909 |
| 11 | 7.307 | 7.308 | 5.893 | 5.894>> |
| 11 | 7.938 | 7.945 | 4.902 | 4.909<< |
| 12 | 7.629>> | 7.637 | 5.382 | 5.390 |
| 12 | 7.145<< | 7.146 | 6.145 | 6.146 |
| 12 | 7.629 | 7.637>> | 5.382 | 5.390 |
| 12 | 7.145 | 7.146<< | 6.145 | 6.146 |
| 12 | 7.145 | 7.146 | 6.145>> | 6.146 |
| 12 | 7.629 | 7.637 | 5.382<< | 5.390 |
| 12 | 7.145 | 7.146 | 6.145 | 6.146>> |
| 12 | 7.629 | 7.637 | 5.382 | 5.390<< |

| BARRA 12 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 12 | 7.232>> | 7.240 | 4.489 | 4.496 |
| 12 | 6.748<< | 6.748 | 5.252 | 5.253 |
| 12 | 7.232 | 7.240>> | 4.489 | 4.496 |
| 12 | 6.748 | 6.748<< | 5.252 | 5.253 |
| 12 | 6.748 | 6.748 | 5.252>> | 5.253 |
| 12 | 7.232 | 7.240 | 4.489<< | 4.496 |
| 12 | 6.748 | 6.748 | 5.252 | 5.253>> |
| 12 | 7.232 | 7.240 | 4.489 | 4.496<< |
| 13 | 6.884>> | 6.885 | 5.040 | 5.041 |
| 13 | 6.507<< | 6.516 | 5.617 | 5.625 |
| 13 | 6.884 | 6.885>> | 5.040 | 5.041 |
| 13 | 6.507 | 6.516<< | 5.617 | 5.625 |
| 13 | 6.507 | 6.516 | 5.617>> | 5.625 |
| 13 | 6.884 | 6.885 | 5.040<< | 5.041 |
| 13 | 6.507 | 6.516 | 5.617 | 5.625>> |
| 13 | 6.884 | 6.885 | 5.040 | 5.041<< |

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| BARRA 13 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 13 | 6.868>> | 6.869 | 5.022 | 5.023 |
| 13 | 6.492<< | 6.500 | 5.600 | 5.608 |
| 13 | 6.868 | 6.869>> | 5.022 | 5.023 |
| 13 | 6.492 | 6.500<< | 5.600 | 5.608 |
| 13 | 6.492 | 6.500 | 5.600>> | 5.608 |
| 13 | 6.868 | 6.869 | 5.022<< | 5.023 |
| 13 | 6.492 | 6.500 | 5.600 | 5.608>> |
| 13 | 6.868 | 6.869 | 5.022 | 5.023<< |
| 14 | 6.657>> | 6.658 | 5.351 | 5.352 |
| 14 | 5.997<< | 6.006 | 6.369 | 6.378 |
| 14 | 6.657 | 6.658>> | 5.351 | 5.352 |
| 14 | 5.997 | 6.006<< | 6.369 | 6.378 |
| 14 | 5.997 | 6.006 | 6.369>> | 6.378 |
| 14 | 6.657 | 6.658 | 5.351<< | 5.352 |
| 14 | 5.997 | 6.006 | 6.369 | 6.378>> |
| 14 | 6.657 | 6.658 | 5.351 | 5.352<< |

| BARRA 14 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 14 | 6.637>> | 6.638 | 5.339 | 5.340 |
| 14 | 5.977<< | 5.986 | 6.356 | 6.366 |
| 14 | 6.637 | 6.638>> | 5.339 | 5.340 |
| 14 | 5.977 | 5.986<< | 6.356 | 6.366 |
| 14 | 5.977 | 5.986 | 6.356>> | 6.366 |
| 14 | 6.637 | 6.638 | 5.339<< | 5.340 |
| 14 | 5.977 | 5.986 | 6.356 | 6.366>> |
| 14 | 6.637 | 6.638 | 5.339 | 5.340<< |
| 15 | 6.386>> | 6.386 | 5.730 | 5.731 |
| 15 | 5.403<< | 5.412 | 7.250 | 7.260 |
| 15 | 6.386 | 6.386>> | 5.730 | 5.731 |
| 15 | 5.403 | 5.412<< | 7.250 | 7.260 |
| 15 | 5.403 | 5.412 | 7.250>> | 7.260 |
| 15 | 6.386 | 6.386 | 5.730<< | 5.731 |
| 15 | 5.403 | 5.412 | 7.250 | 7.260>> |
| 15 | 6.386 | 6.386 | 5.730 | 5.731<< |

| BARRA 15 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 15 | 5.899>> | 5.899 | 5.080 | 5.080 |
| 15 | 4.979<< | 4.986 | 6.258 | 6.264 |
| 15 | 5.899 | 5.899>> | 5.080 | 5.080 |
| 15 | 4.979 | 4.986<< | 6.258 | 6.264 |
| 15 | 4.979 | 4.986 | 6.258>> | 6.264 |
| 15 | 5.899 | 5.899 | 5.080<< | 5.080 |
| 15 | 4.979 | 4.986 | 6.258 | 6.264>> |
| 15 | 5.899 | 5.899 | 5.080 | 5.080<< |
| 16 | 6.833>> | 6.833 | 3.913 | 3.913 |
| 16 | 5.570<< | 5.578 | 5.525 | 5.532 |
| 16 | 6.833 | 6.833>> | 3.913 | 3.913 |
| 16 | 5.570 | 5.578<< | 5.525 | 5.532 |
| 16 | 5.570 | 5.578 | 5.525>> | 5.532 |
| 16 | 6.833 | 6.833 | 3.913<< | 3.913 |
| 16 | 5.570 | 5.578 | 5.525 | 5.532>> |
| 16 | 6.833 | 6.833 | 3.913 | 3.913<< |

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| BARRA 16 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 16 | 6.903>> | 6.904 | 3.921 | 3.922 |
| 16 | 5.629<< | 5.638 | 5.520 | 5.530 |
| 16 | 6.903 | 6.904>> | 3.921 | 3.922 |
| 16 | 5.629 | 5.638<< | 5.520 | 5.530 |
| 16 | 5.629 | 5.638 | 5.520>> | 5.530 |
| 16 | 6.903 | 6.904 | 3.921<< | 3.922 |
| 16 | 5.629 | 5.638 | 5.520 | 5.530>> |
| 16 | 6.903 | 6.904 | 3.921 | 3.922<< |
| 17 | 6.043>> | 6.044 | 5.007 | 5.008 |
| 17 | 4.387<< | 4.398 | 7.087 | 7.098 |
| 17 | 6.043 | 6.044>> | 5.007 | 5.008 |
| 17 | 4.387 | 4.398<< | 7.087 | 7.098 |
| 17 | 4.387 | 4.398 | 7.087>> | 7.098 |
| 17 | 6.043 | 6.044 | 5.007<< | 5.008 |
| 17 | 4.387 | 4.398 | 7.087 | 7.098>> |
| 17 | 6.043 | 6.044 | 5.007 | 5.008<< |

| BARRA 17 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 17 | 5.987>> | 5.988 | 5.011 | 5.012 |
| 17 | 4.332<< | 4.342 | 7.091 | 7.101 |
| 17 | 5.987 | 5.988>> | 5.011 | 5.012 |
| 17 | 4.332 | 4.342<< | 7.091 | 7.101 |
| 17 | 4.332 | 4.342 | 7.091>> | 7.101 |
| 17 | 5.987 | 5.988 | 5.011<< | 5.012 |
| 17 | 4.332 | 4.342 | 7.091 | 7.101>> |
| 17 | 5.987 | 5.988 | 5.011 | 5.012<< |
| 18 | 6.838>> | 6.838 | 3.937 | 3.938 |
| 18 | 5.539<< | 5.548 | 5.567 | 5.576 |
| 18 | 6.838 | 6.838>> | 3.937 | 3.938 |
| 18 | 5.539 | 5.548<< | 5.567 | 5.576 |
| 18 | 5.539 | 5.548 | 5.567>> | 5.576 |
| 18 | 6.838 | 6.838 | 3.937<< | 3.938 |
| 18 | 5.539 | 5.548 | 5.567 | 5.576>> |
| 18 | 6.838 | 6.838 | 3.937 | 3.938<< |

| BARRA 18 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 18 | 6.681>> | 6.680 | 3.917 | 3.915 |
| 18 | 5.395<< | 5.399 | 5.559 | 5.563 |
| 18 | 6.681 | 6.680>> | 3.917 | 3.915 |
| 18 | 5.395 | 5.399<< | 5.559 | 5.563 |
| 18 | 5.395 | 5.399 | 5.559>> | 5.563 |
| 18 | 6.681 | 6.680 | 3.917<< | 3.915 |
| 18 | 5.395 | 5.399 | 5.559 | 5.563>> |
| 18 | 6.681 | 6.680 | 3.917 | 3.915<< |
| 19 | 5.652>> | 5.650 | 5.205 | 5.203 |
| 19 | 4.684<< | 4.687 | 6.444 | 6.447 |
| 19 | 5.652 | 5.650>> | 5.205 | 5.203 |
| 19 | 4.684 | 4.687<< | 6.444 | 6.447 |
| 19 | 4.684 | 4.687 | 6.444>> | 6.447 |
| 19 | 5.652 | 5.650 | 5.205<< | 5.203 |
| 19 | 4.684 | 4.687 | 6.444 | 6.447>> |
| 19 | 5.652 | 5.650 | 5.205 | 5.203<< |

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| BARRA 19 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 19 | 6.230>> | 6.230 | 5.625 | 5.625 |
| 19 | 5.197<< | 5.205 | 7.224 | 7.233 |
| 19 | 6.230 | 6.230>> | 5.625 | 5.625 |
| 19 | 5.197 | 5.205<< | 7.224 | 7.233 |
| 19 | 5.197 | 5.205 | 7.224>> | 7.233 |
| 19 | 6.230 | 6.230 | 5.625<< | 5.625 |
| 19 | 5.197 | 5.205 | 7.224 | 7.233>> |
| 19 | 6.230 | 6.230 | 5.625 | 5.625<< |
| 20 | 6.465>> | 6.464 | 5.261 | 5.260 |
| 20 | 5.729<< | 5.735 | 6.397 | 6.404 |
| 20 | 6.465 | 6.464>> | 5.261 | 5.260 |
| 20 | 5.729 | 5.735<< | 6.397 | 6.404 |
| 20 | 5.729 | 5.735 | 6.397>> | 6.404 |
| 20 | 6.465 | 6.464 | 5.261<< | 5.260 |
| 20 | 5.729 | 5.735 | 6.397 | 6.404>> |
| 20 | 6.465 | 6.464 | 5.261 | 5.260<< |

| BARRA 20 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 20 | 6.457>> | 6.456 | 5.250 | 5.249 |
| 20 | 5.721<< | 5.728 | 6.387 | 6.393 |
| 20 | 6.457 | 6.456>> | 5.250 | 5.249 |
| 20 | 5.721 | 5.728<< | 6.387 | 6.393 |
| 20 | 5.721 | 5.728 | 6.387>> | 6.393 |
| 20 | 6.457 | 6.456 | 5.250<< | 5.249 |
| 20 | 5.721 | 5.728 | 6.387 | 6.393>> |
| 20 | 6.457 | 6.456 | 5.250 | 5.249<< |
| 21 | 6.662>> | 6.661 | 4.931 | 4.929 |
| 21 | 6.185<< | 6.190 | 5.666 | 5.671 |
| 21 | 6.662 | 6.661>> | 4.931 | 4.929 |
| 21 | 6.185 | 6.190<< | 5.666 | 5.671 |
| 21 | 6.185 | 6.190 | 5.666>> | 5.671 |
| 21 | 6.662 | 6.661 | 4.931<< | 4.929 |
| 21 | 6.185 | 6.190 | 5.666 | 5.671>> |
| 21 | 6.662 | 6.661 | 4.931 | 4.929<< |

| BARRA 21 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 21 | 6.657>> | 6.655 | 4.913 | 4.912 |
| 21 | 6.179<< | 6.184 | 5.649 | 5.654 |
| 21 | 6.657 | 6.655>> | 4.913 | 4.912 |
| 21 | 6.179 | 6.184<< | 5.649 | 5.654 |
| 21 | 6.179 | 6.184 | 5.649>> | 5.654 |
| 21 | 6.657 | 6.655 | 4.913<< | 4.912 |
| 21 | 6.179 | 6.184 | 5.649 | 5.654>> |
| 21 | 6.657 | 6.655 | 4.913 | 4.912<< |
| 22 | 6.999>> | 7.003 | 4.374 | 4.377 |
| 22 | 6.411<< | 6.409 | 5.297 | 5.294 |
| 22 | 6.999 | 7.003>> | 4.374 | 4.377 |
| 22 | 6.411 | 6.409<< | 5.297 | 5.294 |
| 22 | 6.411 | 6.409 | 5.297>> | 5.294 |
| 22 | 6.999 | 7.003 | 4.374<< | 4.377 |
| 22 | 6.411 | 6.409 | 5.297 | 5.294>> |
| 22 | 6.999 | 7.003 | 4.374 | 4.377<< |

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| BARRA 22 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 22 | 6.444>> | 6.448 | 4.477 | 4.481 |
| 22 | 5.856<< | 5.854 | 5.401 | 5.398 |
| 22 | 6.444 | 6.448>> | 4.477 | 4.481 |
| 22 | 5.856 | 5.854<< | 5.401 | 5.398 |
| 22 | 5.856 | 5.854 | 5.401>> | 5.398 |
| 22 | 6.444 | 6.448 | 4.477<< | 4.481 |
| 22 | 5.856 | 5.854 | 5.401 | 5.398>> |
| 22 | 6.444 | 6.448 | 4.477 | 4.481<< |
| 23 | 6.765>> | 6.767 | 3.980 | 3.982 |
| 23 | 6.010<< | 6.006 | 5.163 | 5.160 |
| 23 | 6.765 | 6.767>> | 3.980 | 3.982 |
| 23 | 6.010 | 6.006<< | 5.163 | 5.160 |
| 23 | 6.010 | 6.006 | 5.163>> | 5.160 |
| 23 | 6.765 | 6.767 | 3.980<< | 3.982 |
| 23 | 6.010 | 6.006 | 5.163 | 5.160>> |
| 23 | 6.765 | 6.767 | 3.980 | 3.982<< |

| BARRA 23 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 23 | 6.764>> | 6.766 | 3.993 | 3.994 |
| 23 | 6.009<< | 6.005 | 5.175 | 5.172 |
| 23 | 6.764 | 6.766>> | 3.993 | 3.994 |
| 23 | 6.009 | 6.005<< | 5.175 | 5.172 |
| 23 | 6.009 | 6.005 | 5.175>> | 5.172 |
| 23 | 6.764 | 6.766 | 3.993<< | 3.994 |
| 23 | 6.009 | 6.005 | 5.175 | 5.172>> |
| 23 | 6.764 | 6.766 | 3.993 | 3.994<< |
| 24 | 7.010>> | 7.010 | 3.612 | 3.612 |
| 24 | 6.127<< | 6.123 | 4.992 | 4.989 |
| 24 | 7.010 | 7.010>> | 3.612 | 3.612 |
| 24 | 6.127 | 6.123<< | 4.992 | 4.989 |
| 24 | 6.127 | 6.123 | 4.992>> | 4.989 |
| 24 | 7.010 | 7.010 | 3.612<< | 3.612 |
| 24 | 6.127 | 6.123 | 4.992 | 4.989>> |
| 24 | 7.010 | 7.010 | 3.612 | 3.612<< |

| BARRA 24 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 24 | 7.008>> | 7.008 | 3.624 | 3.624 |
| 24 | 6.125<< | 6.121 | 5.005 | 5.001 |
| 24 | 7.008 | 7.008>> | 3.624 | 3.624 |
| 24 | 6.125 | 6.121<< | 5.005 | 5.001 |
| 24 | 6.125 | 6.121 | 5.005>> | 5.001 |
| 24 | 7.008 | 7.008 | 3.624<< | 3.624 |
| 24 | 6.125 | 6.121 | 5.005 | 5.001>> |
| 24 | 7.008 | 7.008 | 3.624 | 3.624<< |
| 25 | 7.182>> | 7.180 | 3.355 | 3.354 |
| 25 | 6.210<< | 6.206 | 4.873 | 4.868 |
| 25 | 7.182 | 7.180>> | 3.355 | 3.354 |
| 25 | 6.210 | 6.206<< | 4.873 | 4.868 |
| 25 | 6.210 | 6.206 | 4.873>> | 4.868 |
| 25 | 7.182 | 7.180 | 3.355<< | 3.354 |
| 25 | 6.210 | 6.206 | 4.873 | 4.868>> |
| 25 | 7.182 | 7.180 | 3.355 | 3.354<< |

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| BARRA 25 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 25 | 7.180>> | 7.178 | 3.365 | 3.364 |
| 25 | 6.208<< | 6.204 | 4.883 | 4.878 |
| 25 | 7.180 | 7.178>> | 3.365 | 3.364 |
| 25 | 6.208 | 6.204<< | 4.883 | 4.878 |
| 25 | 6.208 | 6.204 | 4.883>> | 4.878 |
| 25 | 7.180 | 7.178 | 3.365<< | 3.364 |
| 25 | 6.208 | 6.204 | 4.883 | 4.878>> |
| 25 | 7.180 | 7.178 | 3.365 | 3.364<< |
| 26 | 7.282>> | 7.279 | 3.208 | 3.205 |
| 26 | 6.262<< | 6.256 | 4.800 | 4.795 |
| 26 | 7.282 | 7.279>> | 3.208 | 3.205 |
| 26 | 6.262 | 6.256<< | 4.800 | 4.795 |
| 26 | 6.262 | 6.256 | 4.800>> | 4.795 |
| 26 | 7.282 | 7.279 | 3.208<< | 3.205 |
| 26 | 6.262 | 6.256 | 4.800 | 4.795>> |
| 26 | 7.282 | 7.279 | 3.208 | 3.205<< |

| BARRA 26 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 26 | 7.280>> | 7.277 | 3.213 | 3.210 |
| 26 | 6.260<< | 6.255 | 4.806 | 4.801 |
| 26 | 7.280 | 7.277>> | 3.213 | 3.210 |
| 26 | 6.260 | 6.255<< | 4.806 | 4.801 |
| 26 | 6.260 | 6.255 | 4.806>> | 4.801 |
| 26 | 7.280 | 7.277 | 3.213<< | 3.210 |
| 26 | 6.260 | 6.255 | 4.806 | 4.801>> |
| 26 | 7.280 | 7.277 | 3.213 | 3.210<< |
| 27 | 7.310>> | 7.306 | 3.169 | 3.164 |
| 27 | 6.280<< | 6.275 | 4.774 | 4.769 |
| 27 | 7.310 | 7.306>> | 3.169 | 3.164 |
| 27 | 6.280 | 6.275<< | 4.774 | 4.769 |
| 27 | 6.280 | 6.275 | 4.774>> | 4.769 |
| 27 | 7.310 | 7.306 | 3.169<< | 3.164 |
| 27 | 6.280 | 6.275 | 4.774 | 4.769>> |
| 27 | 7.310 | 7.306 | 3.169 | 3.164<< |

| BARRA 27 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 27 | 7.309>> | 7.304 | 3.171 | 3.166 |
| 27 | 6.279<< | 6.273 | 4.777 | 4.771 |
| 27 | 7.309 | 7.304>> | 3.171 | 3.166 |
| 27 | 6.279 | 6.273<< | 4.777 | 4.771 |
| 27 | 6.279 | 6.273 | 4.777>> | 4.771 |
| 27 | 7.309 | 7.304 | 3.171<< | 3.166 |
| 27 | 6.279 | 6.273 | 4.777 | 4.771>> |
| 27 | 7.309 | 7.304 | 3.171 | 3.166<< |
| 28 | 7.267>> | 7.260 | 3.239 | 3.233 |
| 28 | 6.267<< | 6.260 | 4.797 | 4.790 |
| 28 | 7.267 | 7.260>> | 3.239 | 3.233 |
| 28 | 6.267 | 6.260<< | 4.797 | 4.790 |
| 28 | 6.267 | 6.260 | 4.797>> | 4.790 |
| 28 | 7.267 | 7.260 | 3.239<< | 3.233 |
| 28 | 6.267 | 6.260 | 4.797 | 4.790>> |
| 28 | 7.267 | 7.260 | 3.239 | 3.233<< |

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| BARRA 28 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 28 | 7.266>> | 7.259 | 3.237 | 3.231 |
| 28 | 6.266<< | 6.259 | 4.795 | 4.788 |
| 28 | 7.266 | 7.259>> | 3.237 | 3.231 |
| 28 | 6.266 | 6.259<< | 4.795 | 4.788 |
| 28 | 6.266 | 6.259 | 4.795>> | 4.788 |
| 28 | 7.266 | 7.259 | 3.237<< | 3.231 |
| 28 | 6.266 | 6.259 | 4.795 | 4.788>> |
| 28 | 7.266 | 7.259 | 3.237 | 3.231<< |
| 29 | 7.153>> | 7.145 | 3.415 | 3.407 |
| 29 | 6.223<< | 6.216 | 4.863 | 4.855 |
| 29 | 7.153 | 7.145>> | 3.415 | 3.407 |
| 29 | 6.223 | 6.216<< | 4.863 | 4.855 |
| 29 | 6.223 | 6.216 | 4.863>> | 4.855 |
| 29 | 7.153 | 7.145 | 3.415<< | 3.407 |
| 29 | 6.223 | 6.216 | 4.863 | 4.855>> |
| 29 | 7.153 | 7.145 | 3.415 | 3.407<< |

| BARRA 29 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 29 | 7.152>> | 7.144 | 3.409 | 3.401 |
| 29 | 6.222<< | 6.215 | 4.857 | 4.850 |
| 29 | 7.152 | 7.144>> | 3.409 | 3.401 |
| 29 | 6.222 | 6.215<< | 4.857 | 4.850 |
| 29 | 6.222 | 6.215 | 4.857>> | 4.850 |
| 29 | 7.152 | 7.144 | 3.409<< | 3.401 |
| 29 | 6.222 | 6.215 | 4.857 | 4.850>> |
| 29 | 7.152 | 7.144 | 3.409 | 3.401<< |
| 30 | 6.969>> | 6.959 | 3.697 | 3.687 |
| 30 | 6.148<< | 6.140 | 4.973 | 4.966 |
| 30 | 6.969 | 6.959>> | 3.697 | 3.687 |
| 30 | 6.148 | 6.140<< | 4.973 | 4.966 |
| 30 | 6.148 | 6.140 | 4.973>> | 4.966 |
| 30 | 6.969 | 6.959 | 3.697<< | 3.687 |
| 30 | 6.148 | 6.140 | 4.973 | 4.966>> |
| 30 | 6.969 | 6.959 | 3.697 | 3.687<< |

| BARRA 30 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 30 | 6.968>> | 6.958 | 3.688 | 3.678 |
| 30 | 6.147<< | 6.139 | 4.965 | 4.957 |
| 30 | 6.968 | 6.958>> | 3.688 | 3.678 |
| 30 | 6.147 | 6.139<< | 4.965 | 4.957 |
| 30 | 6.147 | 6.139 | 4.965>> | 4.957 |
| 30 | 6.968 | 6.958 | 3.688<< | 3.678 |
| 30 | 6.147 | 6.139 | 4.965 | 4.957>> |
| 30 | 6.968 | 6.958 | 3.688 | 3.678<< |
| 31 | 6.713>> | 6.702 | 4.087 | 4.075 |
| 31 | 6.041<< | 6.032 | 5.130 | 5.122 |
| 31 | 6.713 | 6.702>> | 4.087 | 4.075 |
| 31 | 6.041 | 6.032<< | 5.130 | 5.122 |
| 31 | 6.041 | 6.032 | 5.130>> | 5.122 |
| 31 | 6.713 | 6.702 | 4.087<< | 4.075 |
| 31 | 6.041 | 6.032 | 5.130 | 5.122>> |
| 31 | 6.713 | 6.702 | 4.087 | 4.075<< |

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| BARRA 31 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 31 | 6.711>> | 6.700 | 4.076 | 4.065 |
| 31 | 6.039<< | 6.030 | 5.120 | 5.111 |
| 31 | 6.711 | 6.700>> | 4.076 | 4.065 |
| 31 | 6.039 | 6.030<< | 5.120 | 5.111 |
| 31 | 6.039 | 6.030 | 5.120>> | 5.111 |
| 31 | 6.711 | 6.700 | 4.076<< | 4.065 |
| 31 | 6.039 | 6.030 | 5.120 | 5.111>> |
| 31 | 6.711 | 6.700 | 4.076 | 4.065<< |
| 32 | 6.383>> | 6.370 | 4.590 | 4.577 |
| 32 | 5.899<< | 5.890 | 5.339 | 5.330 |
| 32 | 6.383 | 6.370>> | 4.590 | 4.577 |
| 32 | 5.899 | 5.890<< | 5.339 | 5.330 |
| 32 | 5.899 | 5.890 | 5.339>> | 5.330 |
| 32 | 6.383 | 6.370 | 4.590<< | 4.577 |
| 32 | 5.899 | 5.890 | 5.339 | 5.330>> |
| 32 | 6.383 | 6.370 | 4.590 | 4.577<< |

| BARRA 32 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 32 | 6.380>> | 6.367 | 4.578 | 4.565 |
| 32 | 5.895<< | 5.886 | 5.327 | 5.318 |
| 32 | 6.380 | 6.367>> | 4.578 | 4.565 |
| 32 | 5.895 | 5.886<< | 5.327 | 5.318 |
| 32 | 5.895 | 5.886 | 5.327>> | 5.318 |
| 32 | 6.380 | 6.367 | 4.578<< | 4.565 |
| 32 | 5.895 | 5.886 | 5.327 | 5.318>> |
| 32 | 6.380 | 6.367 | 4.578 | 4.565<< |
| 33 | 6.081>> | 6.072 | 5.039 | 5.029 |
| 33 | 5.619<< | 5.605 | 5.765 | 5.750 |
| 33 | 6.081 | 6.072>> | 5.039 | 5.029 |
| 33 | 5.619 | 5.605<< | 5.765 | 5.750 |
| 33 | 5.619 | 5.605 | 5.765>> | 5.750 |
| 33 | 6.081 | 6.072 | 5.039<< | 5.029 |
| 33 | 5.619 | 5.605 | 5.765 | 5.750>> |
| 33 | 6.081 | 6.072 | 5.039 | 5.029<< |

| BARRA 33 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 33 | 6.076>> | 6.066 | 5.028 | 5.018 |
| 33 | 5.613<< | 5.599 | 5.754 | 5.739 |
| 33 | 6.076 | 6.066>> | 5.028 | 5.018 |
| 33 | 5.613 | 5.599<< | 5.754 | 5.739 |
| 33 | 5.613 | 5.599 | 5.754>> | 5.739 |
| 33 | 6.076 | 6.066 | 5.028<< | 5.018 |
| 33 | 5.613 | 5.599 | 5.754 | 5.739>> |
| 33 | 6.076 | 6.066 | 5.028 | 5.018<< |
| 34 | 5.862>> | 5.851 | 5.361 | 5.351 |
| 34 | 5.144<< | 5.128 | 6.486 | 6.470 |
| 34 | 5.862 | 5.851>> | 5.361 | 5.351 |
| 34 | 5.144 | 5.128<< | 6.486 | 6.470 |
| 34 | 5.144 | 5.128 | 6.486>> | 6.470 |
| 34 | 5.862 | 5.851 | 5.361<< | 5.351 |
| 34 | 5.144 | 5.128 | 6.486 | 6.470>> |
| 34 | 5.862 | 5.851 | 5.361 | 5.351<< |

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| BARRA 34 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 34 | 5.853>> | 5.842 | 5.353 | 5.342 |
| 34 | 5.135<< | 5.119 | 6.478 | 6.462 |
| 34 | 5.853 | 5.842>> | 5.353 | 5.342 |
| 34 | 5.135 | 5.119<< | 6.478 | 6.462 |
| 34 | 5.135 | 5.119 | 6.478>> | 6.462 |
| 34 | 5.853 | 5.842 | 5.353<< | 5.342 |
| 34 | 5.135 | 5.119 | 6.478 | 6.462>> |
| 34 | 5.853 | 5.842 | 5.353 | 5.342<< |
| 35 | 5.604>> | 5.592 | 5.742 | 5.730 |
| 35 | 4.591<< | 4.573 | 7.328 | 7.310 |
| 35 | 5.604 | 5.592>> | 5.742 | 5.730 |
| 35 | 4.591 | 4.573<< | 7.328 | 7.310 |
| 35 | 4.591 | 4.573 | 7.328>> | 7.310 |
| 35 | 5.604 | 5.592 | 5.742<< | 5.730 |
| 35 | 4.591 | 4.573 | 7.328 | 7.310>> |
| 35 | 5.604 | 5.592 | 5.742 | 5.730<< |

| BARRA 35 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 35 | 5.262>> | 5.251 | 5.099 | 5.088 |
| 35 | 4.313<< | 4.294 | 6.328 | 6.309 |
| 35 | 5.262 | 5.251>> | 5.099 | 5.088 |
| 35 | 4.313 | 4.294<< | 6.328 | 6.309 |
| 35 | 4.313 | 4.294 | 6.328>> | 6.309 |
| 35 | 5.262 | 5.251 | 5.099<< | 5.088 |
| 35 | 4.313 | 4.294 | 6.328 | 6.309>> |
| 35 | 5.262 | 5.251 | 5.099 | 5.088<< |
| 36 | 6.110>> | 6.098 | 4.041 | 4.029 |
| 36 | 4.845<< | 4.824 | 5.673 | 5.652 |
| 36 | 6.110 | 6.098>> | 4.041 | 4.029 |
| 36 | 4.845 | 4.824<< | 5.673 | 5.652 |
| 36 | 4.845 | 4.824 | 5.673>> | 5.652 |
| 36 | 6.110 | 6.098 | 4.041<< | 4.029 |
| 36 | 4.845 | 4.824 | 5.673 | 5.652>> |
| 36 | 6.110 | 6.098 | 4.041 | 4.029<< |

| BARRA 36 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 36 | 6.181>> | 6.171 | 4.045 | 4.035 |
| 36 | 4.904<< | 4.887 | 5.665 | 5.649 |
| 36 | 6.181 | 6.171>> | 4.045 | 4.035 |
| 36 | 4.904 | 4.887<< | 5.665 | 5.649 |
| 36 | 4.904 | 4.887 | 5.665>> | 5.649 |
| 36 | 6.181 | 6.171 | 4.045<< | 4.035 |
| 36 | 4.904 | 4.887 | 5.665 | 5.649>> |
| 36 | 6.181 | 6.171 | 4.045 | 4.035<< |
| 37 | 5.229>> | 5.218 | 5.248 | 5.237 |
| 37 | 3.597<< | 3.579 | 7.317 | 7.299 |
| 37 | 5.229 | 5.218>> | 5.248 | 5.237 |
| 37 | 3.597 | 3.579<< | 7.317 | 7.299 |
| 37 | 3.597 | 3.579 | 7.317>> | 7.299 |
| 37 | 5.229 | 5.218 | 5.248<< | 5.237 |
| 37 | 3.597 | 3.579 | 7.317 | 7.299>> |
| 37 | 5.229 | 5.218 | 5.248 | 5.237<< |

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| BARRA 37 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 37 | 5.233>> | 5.222 | 5.241 | 5.230 |
| 37 | 3.601<< | 3.583 | 7.310 | 7.291 |
| 37 | 5.233 | 5.222>> | 5.241 | 5.230 |
| 37 | 3.601 | 3.583<< | 7.310 | 7.291 |
| 37 | 3.601 | 3.583 | 7.310>> | 7.291 |
| 37 | 5.233 | 5.222 | 5.241<< | 5.230 |
| 37 | 3.601 | 3.583 | 7.310 | 7.291>> |
| 37 | 5.233 | 5.222 | 5.241 | 5.230<< |
| 38 | 6.098>> | 6.088 | 4.147 | 4.138 |
| 38 | 4.824<< | 4.809 | 5.762 | 5.748 |
| 38 | 6.098 | 6.088>> | 4.147 | 4.138 |
| 38 | 4.824 | 4.809<< | 5.762 | 5.748 |
| 38 | 4.824 | 4.809 | 5.762>> | 5.748 |
| 38 | 6.098 | 6.088 | 4.147<< | 4.138 |
| 38 | 4.824 | 4.809 | 5.762 | 5.748>> |
| 38 | 6.098 | 6.088 | 4.147 | 4.138<< |

| BARRA 38 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 38 | 6.029>> | 6.018 | 4.124 | 4.113 |
| 38 | 4.767<< | 4.748 | 5.751 | 5.732 |
| 38 | 6.029 | 6.018>> | 4.124 | 4.113 |
| 38 | 4.767 | 4.748<< | 5.751 | 5.732 |
| 38 | 4.767 | 4.748 | 5.751>> | 5.732 |
| 38 | 6.029 | 6.018 | 4.124<< | 4.113 |
| 38 | 4.767 | 4.748 | 5.751 | 5.732>> |
| 38 | 6.029 | 6.018 | 4.124 | 4.113<< |
| 39 | 5.069>> | 5.059 | 5.324 | 5.314 |
| 39 | 4.125<< | 4.110 | 6.544 | 6.528 |
| 39 | 5.069 | 5.059>> | 5.324 | 5.314 |
| 39 | 4.125 | 4.110<< | 6.544 | 6.528 |
| 39 | 4.125 | 4.110 | 6.544>> | 6.528 |
| 39 | 5.069 | 5.059 | 5.324<< | 5.314 |
| 39 | 4.125 | 4.110 | 6.544 | 6.528>> |
| 39 | 5.069 | 5.059 | 5.324 | 5.314<< |

| BARRA 39 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 39 | 5.570>> | 5.560 | 5.796 | 5.787 |
| 39 | 4.563<< | 4.549 | 7.370 | 7.357 |
| 39 | 5.570 | 5.560>> | 5.796 | 5.787 |
| 39 | 4.563 | 4.549<< | 7.370 | 7.357 |
| 39 | 4.563 | 4.549 | 7.370>> | 7.357 |
| 39 | 5.570 | 5.560 | 5.796<< | 5.787 |
| 39 | 4.563 | 4.549 | 7.370 | 7.357>> |
| 39 | 5.570 | 5.560 | 5.796 | 5.787<< |
| 40 | 5.815>> | 5.807 | 5.413 | 5.405 |
| 40 | 5.106<< | 5.096 | 6.520 | 6.510 |
| 40 | 5.815 | 5.807>> | 5.413 | 5.405 |
| 40 | 5.106 | 5.096<< | 6.520 | 6.510 |
| 40 | 5.106 | 5.096 | 6.520>> | 6.510 |
| 40 | 5.815 | 5.807 | 5.413<< | 5.405 |
| 40 | 5.106 | 5.096 | 6.520 | 6.510>> |
| 40 | 5.815 | 5.807 | 5.413 | 5.405<< |

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| BARRA 40 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 40 | 5.821>> | 5.813 | 5.425 | 5.418 |
| 40 | 5.112<< | 5.101 | 6.533 | 6.523 |
| 40 | 5.821 | 5.813>> | 5.425 | 5.418 |
| 40 | 5.112 | 5.101<< | 6.533 | 6.523 |
| 40 | 5.112 | 5.101 | 6.533>> | 6.523 |
| 40 | 5.821 | 5.813 | 5.425<< | 5.418 |
| 40 | 5.112 | 5.101 | 6.533 | 6.523>> |
| 40 | 5.821 | 5.813 | 5.425 | 5.418<< |
| 41 | 6.029>> | 6.022 | 5.100 | 5.093 |
| 41 | 5.578<< | 5.571 | 5.802 | 5.796 |
| 41 | 6.029 | 6.022>> | 5.100 | 5.093 |
| 41 | 5.578 | 5.571<< | 5.802 | 5.796 |
| 41 | 5.578 | 5.571 | 5.802>> | 5.796 |
| 41 | 6.029 | 6.022 | 5.100<< | 5.093 |
| 41 | 5.578 | 5.571 | 5.802 | 5.796>> |
| 41 | 6.029 | 6.022 | 5.100 | 5.093<< |

| BARRA 41 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 41 | 6.031>> | 6.025 | 5.115 | 5.109 |
| 41 | 5.581<< | 5.574 | 5.818 | 5.811 |
| 41 | 6.031 | 6.025>> | 5.115 | 5.109 |
| 41 | 5.581 | 5.574<< | 5.818 | 5.811 |
| 41 | 5.581 | 5.574 | 5.818>> | 5.811 |
| 41 | 6.031 | 6.025 | 5.115<< | 5.109 |
| 41 | 5.581 | 5.574 | 5.818 | 5.811>> |
| 41 | 6.031 | 6.025 | 5.115 | 5.109<< |
| 42 | 6.319>> | 6.316 | 4.663 | 4.660 |
| 42 | 5.859<< | 5.854 | 5.381 | 5.376 |
| 42 | 6.319 | 6.316>> | 4.663 | 4.660 |
| 42 | 5.859 | 5.854<< | 5.381 | 5.376 |
| 42 | 5.859 | 5.854 | 5.381>> | 5.376 |
| 42 | 6.319 | 6.316 | 4.663<< | 4.660 |
| 42 | 5.859 | 5.854 | 5.381 | 5.376>> |
| 42 | 6.319 | 6.316 | 4.663 | 4.660<< |

| BARRA 42 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 42 | 6.486>> | 6.483 | 3.682 | 3.679 |
| 42 | 6.026<< | 6.022 | 4.400 | 4.395 |
| 42 | 6.486 | 6.483>> | 3.682 | 3.679 |
| 42 | 6.026 | 6.022<< | 4.400 | 4.395 |
| 42 | 6.026 | 6.022 | 4.400>> | 4.395 |
| 42 | 6.486 | 6.483 | 3.682<< | 3.679 |
| 42 | 6.026 | 6.022 | 4.400 | 4.395>> |
| 42 | 6.486 | 6.483 | 3.682 | 3.679<< |
| 43 | 6.806>> | 6.807 | 3.179 | 3.179 |
| 43 | 6.163<< | 6.160 | 4.185 | 4.182 |
| 43 | 6.806 | 6.807>> | 3.179 | 3.179 |
| 43 | 6.163 | 6.160<< | 4.185 | 4.182 |
| 43 | 6.163 | 6.160 | 4.185>> | 4.182 |
| 43 | 6.806 | 6.807 | 3.179<< | 3.179 |
| 43 | 6.163 | 6.160 | 4.185 | 4.182>> |
| 43 | 6.806 | 6.807 | 3.179 | 3.179<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=inf)(1.00*G+0.4*LEV+0.90*P+0.5*GT)

| BARRA 43 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 43 | 6.805>> | 6.806 | 3.193 | 3.194 |
| 43 | 6.162<< | 6.159 | 4.200 | 4.196 |
| 43 | 6.805 | 6.806>> | 3.193 | 3.194 |
| 43 | 6.162 | 6.159<< | 4.200 | 4.196 |
| 43 | 6.162 | 6.159 | 4.200>> | 4.196 |
| 43 | 6.805 | 6.806 | 3.193<< | 3.194 |
| 43 | 6.162 | 6.159 | 4.200 | 4.196>> |
| 43 | 6.805 | 6.806 | 3.193 | 3.194<< |
| 44 | 7.050>> | 7.055 | 2.806 | 2.811 |
| 44 | 6.264<< | 6.262 | 4.039 | 4.038 |
| 44 | 7.050 | 7.055>> | 2.806 | 2.811 |
| 44 | 6.264 | 6.262<< | 4.039 | 4.038 |
| 44 | 6.264 | 6.262 | 4.039>> | 4.038 |
| 44 | 7.050 | 7.055 | 2.806<< | 2.811 |
| 44 | 6.264 | 6.262 | 4.039 | 4.038>> |
| 44 | 7.050 | 7.055 | 2.806 | 2.811<< |

| BARRA 44 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 44 | 7.048>> | 7.053 | 2.819 | 2.824 |
| 44 | 6.262<< | 6.260 | 4.052 | 4.050 |
| 44 | 7.048 | 7.053>> | 2.819 | 2.824 |
| 44 | 6.262 | 6.260<< | 4.052 | 4.050 |
| 44 | 6.262 | 6.260 | 4.052>> | 4.050 |
| 44 | 7.048 | 7.053 | 2.819<< | 2.824 |
| 44 | 6.262 | 6.260 | 4.052 | 4.050>> |
| 44 | 7.048 | 7.053 | 2.819 | 2.824<< |
| 45 | 7.221>> | 7.230 | 2.545 | 2.553 |
| 45 | 6.331<< | 6.331 | 3.943 | 3.942 |
| 45 | 7.221 | 7.230>> | 2.545 | 2.553 |
| 45 | 6.331 | 6.331<< | 3.943 | 3.942 |
| 45 | 6.331 | 6.331 | 3.943>> | 3.942 |
| 45 | 7.221 | 7.230 | 2.545<< | 2.553 |
| 45 | 6.331 | 6.331 | 3.943 | 3.942>> |
| 45 | 7.221 | 7.230 | 2.545 | 2.553<< |

| BARRA 45 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 45 | 7.219>> | 7.228 | 2.554 | 2.563 |
| 45 | 6.329<< | 6.329 | 3.952 | 3.952 |
| 45 | 7.219 | 7.228>> | 2.554 | 2.563 |
| 45 | 6.329 | 6.329<< | 3.952 | 3.952 |
| 45 | 6.329 | 6.329 | 3.952>> | 3.952 |
| 45 | 7.219 | 7.228 | 2.554<< | 2.563 |
| 45 | 6.329 | 6.329 | 3.952 | 3.952>> |
| 45 | 7.219 | 7.228 | 2.554 | 2.563<< |
| 46 | 7.321>> | 7.333 | 2.391 | 2.403 |
| 46 | 6.366<< | 6.367 | 3.893 | 3.894 |
| 46 | 7.321 | 7.333>> | 2.391 | 2.403 |
| 46 | 6.366 | 6.367<< | 3.893 | 3.894 |
| 46 | 6.366 | 6.367 | 3.893>> | 3.894 |
| 46 | 7.321 | 7.333 | 2.391<< | 2.403 |
| 46 | 6.366 | 6.367 | 3.893 | 3.894>> |
| 46 | 7.321 | 7.333 | 2.391 | 2.403<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=inf)(1.00*G+0.4*LEV+0.90*P+0.5*GT)

| BARRA 46 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 46 | 7.319>> | 7.331 | 2.397 | 2.409 |
| 46 | 6.364<< | 6.365 | 3.898 | 3.899 |
| 46 | 7.319 | 7.331>> | 2.397 | 2.409 |
| 46 | 6.364 | 6.365<< | 3.898 | 3.899 |
| 46 | 6.364 | 6.365 | 3.898>> | 3.899 |
| 46 | 7.319 | 7.331 | 2.397<< | 2.409 |
| 46 | 6.364 | 6.365 | 3.898 | 3.899>> |
| 46 | 7.319 | 7.331 | 2.397 | 2.409<< |
| 47 | 7.348>> | 7.364 | 2.347 | 2.362 |
| 47 | 6.368<< | 6.371 | 3.890 | 3.892 |
| 47 | 7.348 | 7.364>> | 2.347 | 2.362 |
| 47 | 6.368 | 6.371<< | 3.890 | 3.892 |
| 47 | 6.368 | 6.371 | 3.890>> | 3.892 |
| 47 | 7.348 | 7.364 | 2.347<< | 2.362 |
| 47 | 6.368 | 6.371 | 3.890 | 3.892>> |
| 47 | 7.348 | 7.364 | 2.347 | 2.362<< |

| BARRA 47 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 47 | 7.347>> | 7.363 | 2.349 | 2.364 |
| 47 | 6.367<< | 6.370 | 3.892 | 3.895 |
| 47 | 7.347 | 7.363>> | 2.349 | 2.364 |
| 47 | 6.367 | 6.370<< | 3.892 | 3.895 |
| 47 | 6.367 | 6.370 | 3.892>> | 3.895 |
| 47 | 7.347 | 7.363 | 2.349<< | 2.364 |
| 47 | 6.367 | 6.370 | 3.892 | 3.895>> |
| 47 | 7.347 | 7.363 | 2.349 | 2.364<< |
| 48 | 7.304>> | 7.323 | 2.411 | 2.430 |
| 48 | 6.338<< | 6.343 | 3.935 | 3.939 |
| 48 | 7.304 | 7.323>> | 2.411 | 2.430 |
| 48 | 6.338 | 6.343<< | 3.935 | 3.939 |
| 48 | 6.338 | 6.343 | 3.935>> | 3.939 |
| 48 | 7.304 | 7.323 | 2.411<< | 2.430 |
| 48 | 6.338 | 6.343 | 3.935 | 3.939>> |
| 48 | 7.304 | 7.323 | 2.411 | 2.430<< |

| BARRA 48 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 48 | 7.303>> | 7.322 | 2.409 | 2.429 |
| 48 | 6.337<< | 6.341 | 3.933 | 3.937 |
| 48 | 7.303 | 7.322>> | 2.409 | 2.429 |
| 48 | 6.337 | 6.341<< | 3.933 | 3.937 |
| 48 | 6.337 | 6.341 | 3.933>> | 3.937 |
| 48 | 7.303 | 7.322 | 2.409<< | 2.429 |
| 48 | 6.337 | 6.341 | 3.933 | 3.937>> |
| 48 | 7.303 | 7.322 | 2.409 | 2.429<< |
| 49 | 7.189>> | 7.212 | 2.581 | 2.604 |
| 49 | 6.278<< | 6.283 | 4.024 | 4.029 |
| 49 | 7.189 | 7.212>> | 2.581 | 2.604 |
| 49 | 6.278 | 6.283<< | 4.024 | 4.029 |
| 49 | 6.278 | 6.283 | 4.024>> | 4.029 |
| 49 | 7.189 | 7.212 | 2.581<< | 2.604 |
| 49 | 6.278 | 6.283 | 4.024 | 4.029>> |
| 49 | 7.189 | 7.212 | 2.581 | 2.604<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=inf)(1.00*G+0.4*LEV+0.90*P+0.5*GT)

| BARRA 49 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 49 | 7.189>> | 7.212 | 2.576 | 2.599 |
| 49 | 6.277<< | 6.283 | 4.018 | 4.024 |
| 49 | 7.189 | 7.212>> | 2.576 | 2.599 |
| 49 | 6.277 | 6.283<< | 4.018 | 4.024 |
| 49 | 6.277 | 6.283 | 4.018>> | 4.024 |
| 49 | 7.189 | 7.212 | 2.576<< | 2.599 |
| 49 | 6.277 | 6.283 | 4.018 | 4.024>> |
| 49 | 7.189 | 7.212 | 2.576 | 2.599<< |
| 50 | 7.005>> | 7.031 | 2.858 | 2.884 |
| 50 | 6.186<< | 6.194 | 4.157 | 4.164 |
| 50 | 7.005 | 7.031>> | 2.858 | 2.884 |
| 50 | 6.186 | 6.194<< | 4.157 | 4.164 |
| 50 | 6.186 | 6.194 | 4.157>> | 4.164 |
| 50 | 7.005 | 7.031 | 2.858<< | 2.884 |
| 50 | 6.186 | 6.194 | 4.157 | 4.164>> |
| 50 | 7.005 | 7.031 | 2.858 | 2.884<< |

| BARRA 50 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 50 | 7.004>> | 7.030 | 2.849 | 2.876 |
| 50 | 6.185<< | 6.192 | 4.149 | 4.156 |
| 50 | 7.004 | 7.030>> | 2.849 | 2.876 |
| 50 | 6.185 | 6.192<< | 4.149 | 4.156 |
| 50 | 6.185 | 6.192 | 4.149>> | 4.156 |
| 50 | 7.004 | 7.030 | 2.849<< | 2.876 |
| 50 | 6.185 | 6.192 | 4.149 | 4.156>> |
| 50 | 7.004 | 7.030 | 2.849 | 2.876<< |
| 51 | 6.748>> | 6.779 | 3.242 | 3.272 |
| 51 | 6.063<< | 6.072 | 4.337 | 4.346 |
| 51 | 6.748 | 6.779>> | 3.242 | 3.272 |
| 51 | 6.063 | 6.072<< | 4.337 | 4.346 |
| 51 | 6.063 | 6.072 | 4.337>> | 4.346 |
| 51 | 6.748 | 6.779 | 3.242<< | 3.272 |
| 51 | 6.063 | 6.072 | 4.337 | 4.346>> |
| 51 | 6.748 | 6.779 | 3.242 | 3.272<< |

| BARRA 51 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 51 | 6.746>> | 6.777 | 3.231 | 3.262 |
| 51 | 6.061<< | 6.070 | 4.326 | 4.335 |
| 51 | 6.746 | 6.777>> | 3.231 | 3.262 |
| 51 | 6.061 | 6.070<< | 4.326 | 4.335 |
| 51 | 6.061 | 6.070 | 4.326>> | 4.335 |
| 51 | 6.746 | 6.777 | 3.231<< | 3.262 |
| 51 | 6.061 | 6.070 | 4.326 | 4.335>> |
| 51 | 6.746 | 6.777 | 3.231 | 3.262<< |
| 52 | 6.417>> | 6.451 | 3.739 | 3.773 |
| 52 | 5.905<< | 5.915 | 4.569 | 4.579 |
| 52 | 6.417 | 6.451>> | 3.739 | 3.773 |
| 52 | 5.905 | 5.915<< | 4.569 | 4.579 |
| 52 | 5.905 | 5.915 | 4.569>> | 4.579 |
| 52 | 6.417 | 6.451 | 3.739<< | 3.773 |
| 52 | 5.905 | 5.915 | 4.569 | 4.579>> |
| 52 | 6.417 | 6.451 | 3.739 | 3.773<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=inf)(1.00*G+0.4*LEV+0.90*P+0.5*GT)

| BARRA 52 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 52 | 6.414>> | 6.448 | 3.728 | 3.762 |
| 52 | 5.901<< | 5.911 | 4.557 | 4.567 |
| 52 | 6.414 | 6.448>> | 3.728 | 3.762 |
| 52 | 5.901 | 5.911<< | 4.557 | 4.567 |
| 52 | 5.901 | 5.911 | 4.557>> | 4.567 |
| 52 | 6.414 | 6.448 | 3.728<< | 3.762 |
| 52 | 5.901 | 5.911 | 4.557 | 4.567>> |
| 52 | 6.414 | 6.448 | 3.728 | 3.762<< |
| 53 | 6.078>> | 6.091 | 4.278 | 4.290 |
| 53 | 5.646<< | 5.683 | 4.920 | 4.957 |
| 53 | 6.078 | 6.091>> | 4.278 | 4.290 |
| 53 | 5.646 | 5.683<< | 4.920 | 4.957 |
| 53 | 5.646 | 5.683 | 4.920>> | 4.957 |
| 53 | 6.078 | 6.091 | 4.278<< | 4.290 |
| 53 | 5.646 | 5.683 | 4.920 | 4.957>> |
| 53 | 6.078 | 6.091 | 4.278 | 4.290<< |

| BARRA 53 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 53 | 6.073>> | 6.085 | 4.267 | 4.279 |
| 53 | 5.640<< | 5.677 | 4.909 | 4.946 |
| 53 | 6.073 | 6.085>> | 4.267 | 4.279 |
| 53 | 5.640 | 5.677<< | 4.909 | 4.946 |
| 53 | 5.640 | 5.677 | 4.909>> | 4.946 |
| 53 | 6.073 | 6.085 | 4.267<< | 4.279 |
| 53 | 5.640 | 5.677 | 4.909 | 4.946>> |
| 53 | 6.073 | 6.085 | 4.267 | 4.279<< |
| 54 | 5.850>> | 5.864 | 4.611 | 4.625 |
| 54 | 5.163<< | 5.203 | 5.648 | 5.689 |
| 54 | 5.850 | 5.864>> | 4.611 | 4.625 |
| 54 | 5.163 | 5.203<< | 5.648 | 5.689 |
| 54 | 5.163 | 5.203 | 5.648>> | 5.689 |
| 54 | 5.850 | 5.864 | 4.611<< | 4.625 |
| 54 | 5.163 | 5.203 | 5.648 | 5.689>> |
| 54 | 5.850 | 5.864 | 4.611 | 4.625<< |

| BARRA 54 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 54 | 5.841>> | 5.855 | 4.603 | 4.617 |
| 54 | 5.153<< | 5.194 | 5.640 | 5.681 |
| 54 | 5.841 | 5.855>> | 4.603 | 4.617 |
| 54 | 5.153 | 5.194<< | 5.640 | 5.681 |
| 54 | 5.153 | 5.194 | 5.640>> | 5.681 |
| 54 | 5.841 | 5.855 | 4.603<< | 4.617 |
| 54 | 5.153 | 5.194 | 5.640 | 5.681>> |
| 54 | 5.841 | 5.855 | 4.603 | 4.617<< |
| 55 | 5.583>> | 5.599 | 5.002 | 5.018 |
| 55 | 4.601<< | 4.645 | 6.496 | 6.540 |
| 55 | 5.583 | 5.599>> | 5.002 | 5.018 |
| 55 | 4.601 | 4.645<< | 6.496 | 6.540 |
| 55 | 4.601 | 4.645 | 6.496>> | 6.540 |
| 55 | 5.583 | 5.599 | 5.002<< | 5.018 |
| 55 | 4.601 | 4.645 | 6.496 | 6.540>> |
| 55 | 5.583 | 5.599 | 5.002 | 5.018<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=inf)(1.00*G+0.4*LEV+0.90*P+0.5*GT)

| BARRA 55 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 55 | 5.295>> | 5.307 | 4.529 | 4.541 |
| 55 | 4.376<< | 4.411 | 5.686 | 5.721 |
| 55 | 5.295 | 5.307>> | 4.529 | 4.541 |
| 55 | 4.376 | 4.411<< | 5.686 | 5.721 |
| 55 | 4.376 | 4.411 | 5.686>> | 5.721 |
| 55 | 5.295 | 5.307 | 4.529<< | 4.541 |
| 55 | 4.376 | 4.411 | 5.686 | 5.721>> |
| 55 | 5.295 | 5.307 | 4.529 | 4.541<< |
| 56 | 6.096>> | 6.109 | 3.529 | 3.542 |
| 56 | 4.861<< | 4.899 | 5.084 | 5.123 |
| 56 | 6.096 | 6.109>> | 3.529 | 3.542 |
| 56 | 4.861 | 4.899<< | 5.084 | 5.123 |
| 56 | 4.861 | 4.899 | 5.084>> | 5.123 |
| 56 | 6.096 | 6.109 | 3.529<< | 3.542 |
| 56 | 4.861 | 4.899 | 5.084 | 5.123>> |
| 56 | 6.096 | 6.109 | 3.529 | 3.542<< |

| BARRA 56 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 56 | 6.166>> | 6.181 | 3.532 | 3.547 |
| 56 | 4.919<< | 4.961 | 5.076 | 5.119 |
| 56 | 6.166 | 6.181>> | 3.532 | 3.547 |
| 56 | 4.919 | 4.961<< | 5.076 | 5.119 |
| 56 | 4.919 | 4.961 | 5.076>> | 5.119 |
| 56 | 6.166 | 6.181 | 3.532<< | 3.547 |
| 56 | 4.919 | 4.961 | 5.076 | 5.119>> |
| 56 | 6.166 | 6.181 | 3.532 | 3.547<< |
| 57 | 5.205>> | 5.221 | 4.744 | 4.761 |
| 57 | 3.603<< | 3.649 | 6.733 | 6.779 |
| 57 | 5.205 | 5.221>> | 4.744 | 4.761 |
| 57 | 3.603 | 3.649<< | 6.733 | 6.779 |
| 57 | 3.603 | 3.649 | 6.733>> | 6.779 |
| 57 | 5.205 | 5.221 | 4.744<< | 4.761 |
| 57 | 3.603 | 3.649 | 6.733 | 6.779>> |
| 57 | 5.205 | 5.221 | 4.744 | 4.761<< |

| BARRA 57 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 57 | 5.209>> | 5.225 | 4.737 | 4.753 |
| 57 | 3.607<< | 3.653 | 6.726 | 6.772 |
| 57 | 5.209 | 5.225>> | 4.737 | 4.753 |
| 57 | 3.607 | 3.653<< | 6.726 | 6.772 |
| 57 | 3.607 | 3.653 | 6.726>> | 6.772 |
| 57 | 5.209 | 5.225 | 4.737<< | 4.753 |
| 57 | 3.607 | 3.653 | 6.726 | 6.772>> |
| 57 | 5.209 | 5.225 | 4.737 | 4.753<< |
| 58 | 6.054>> | 6.069 | 3.671 | 3.686 |
| 58 | 4.807<< | 4.850 | 5.215 | 5.258 |
| 58 | 6.054 | 6.069>> | 3.671 | 3.686 |
| 58 | 4.807 | 4.850<< | 5.215 | 5.258 |
| 58 | 4.807 | 4.850 | 5.215>> | 5.258 |
| 58 | 6.054 | 6.069 | 3.671<< | 3.686 |
| 58 | 4.807 | 4.850 | 5.215 | 5.258>> |
| 58 | 6.054 | 6.069 | 3.671 | 3.686<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=inf)(1.00*G+0.4*LEV+0.90*P+0.5*GT)

| BARRA 58 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 58 | 5.985>> | 5.999 | 3.648 | 3.661 |
| 58 | 4.750<< | 4.789 | 5.204 | 5.242 |
| 58 | 5.985 | 5.999>> | 3.648 | 3.661 |
| 58 | 4.750 | 4.789<< | 5.204 | 5.242 |
| 58 | 4.750 | 4.789 | 5.204>> | 5.242 |
| 58 | 5.985 | 5.999 | 3.648<< | 3.661 |
| 58 | 4.750 | 4.789 | 5.204 | 5.242>> |
| 58 | 5.985 | 5.999 | 3.648 | 3.661<< |
| 59 | 5.044>> | 5.057 | 4.826 | 4.838 |
| 59 | 4.124<< | 4.160 | 5.982 | 6.018 |
| 59 | 5.044 | 5.057>> | 4.826 | 4.838 |
| 59 | 4.124 | 4.160<< | 5.982 | 6.018 |
| 59 | 4.124 | 4.160 | 5.982>> | 6.018 |
| 59 | 5.044 | 5.057 | 4.826<< | 4.838 |
| 59 | 4.124 | 4.160 | 5.982 | 6.018>> |
| 59 | 5.044 | 5.057 | 4.826 | 4.838<< |

| BARRA 59 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 59 | 5.490>> | 5.506 | 5.152 | 5.168 |
| 59 | 4.507<< | 4.552 | 6.646 | 6.691 |
| 59 | 5.490 | 5.506>> | 5.152 | 5.168 |
| 59 | 4.507 | 4.552<< | 6.646 | 6.691 |
| 59 | 4.507 | 4.552 | 6.646>> | 6.691 |
| 59 | 5.490 | 5.506 | 5.152<< | 5.168 |
| 59 | 4.507 | 4.552 | 6.646 | 6.691>> |
| 59 | 5.490 | 5.506 | 5.152 | 5.168<< |
| 60 | 5.714>> | 5.728 | 4.804 | 4.819 |
| 60 | 5.025<< | 5.067 | 5.842 | 5.884 |
| 60 | 5.714 | 5.728>> | 4.804 | 4.819 |
| 60 | 5.025 | 5.067<< | 5.842 | 5.884 |
| 60 | 5.025 | 5.067 | 5.842>> | 5.884 |
| 60 | 5.714 | 5.728 | 4.804<< | 4.819 |
| 60 | 5.025 | 5.067 | 5.842 | 5.884>> |
| 60 | 5.714 | 5.728 | 4.804 | 4.819<< |

| BARRA 60 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 60 | 5.720>> | 5.734 | 4.817 | 4.832 |
| 60 | 5.031<< | 5.073 | 5.855 | 5.897 |
| 60 | 5.720 | 5.734>> | 4.817 | 4.832 |
| 60 | 5.031 | 5.073<< | 5.855 | 5.897 |
| 60 | 5.031 | 5.073 | 5.855>> | 5.897 |
| 60 | 5.720 | 5.734 | 4.817<< | 4.832 |
| 60 | 5.031 | 5.073 | 5.855 | 5.897>> |
| 60 | 5.720 | 5.734 | 4.817 | 4.832<< |
| 61 | 5.907>> | 5.920 | 4.528 | 4.541 |
| 61 | 5.473<< | 5.512 | 5.171 | 5.209 |
| 61 | 5.907 | 5.920>> | 4.528 | 4.541 |
| 61 | 5.473 | 5.512<< | 5.171 | 5.209 |
| 61 | 5.473 | 5.512 | 5.171>> | 5.209 |
| 61 | 5.907 | 5.920 | 4.528<< | 4.541 |
| 61 | 5.473 | 5.512 | 5.171 | 5.209>> |
| 61 | 5.907 | 5.920 | 4.528 | 4.541<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=inf)(1.00*G+0.4*LEV+0.90*P+0.5*GT)

| BARRA 61 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 61 | 5.910>> | 5.923 | 4.543 | 4.556 |
| 61 | 5.476<< | 5.515 | 5.186 | 5.225 |
| 61 | 5.910 | 5.923>> | 4.543 | 4.556 |
| 61 | 5.476 | 5.515<< | 5.186 | 5.225 |
| 61 | 5.476 | 5.515 | 5.186>> | 5.225 |
| 61 | 5.910 | 5.923 | 4.543<< | 4.556 |
| 61 | 5.476 | 5.515 | 5.186 | 5.225>> |
| 61 | 5.910 | 5.923 | 4.543 | 4.556<< |
| 62 | 6.209>> | 6.245 | 4.047 | 4.083 |
| 62 | 5.698<< | 5.709 | 4.876 | 4.887 |
| 62 | 6.209 | 6.245>> | 4.047 | 4.083 |
| 62 | 5.698 | 5.709<< | 4.876 | 4.887 |
| 62 | 5.698 | 5.709 | 4.876>> | 4.887 |
| 62 | 6.209 | 6.245 | 4.047<< | 4.083 |
| 62 | 5.698 | 5.709 | 4.876 | 4.887>> |
| 62 | 6.209 | 6.245 | 4.047 | 4.083<< |

| BARRA 62 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 62 | 6.209>> | 6.246 | 4.063 | 4.099 |
| 62 | 5.698<< | 5.709 | 4.892 | 4.903 |
| 62 | 6.209 | 6.246>> | 4.063 | 4.099 |
| 62 | 5.698 | 5.709<< | 4.892 | 4.903 |
| 62 | 5.698 | 5.709 | 4.892>> | 4.903 |
| 62 | 6.209 | 6.246 | 4.063<< | 4.099 |
| 62 | 5.698 | 5.709 | 4.892 | 4.903>> |
| 62 | 6.209 | 6.246 | 4.063 | 4.099<< |
| 63 | 6.501>> | 6.534 | 3.612 | 3.645 |
| 63 | 5.818<< | 5.827 | 4.707 | 4.717 |
| 63 | 6.501 | 6.534>> | 3.612 | 3.645 |
| 63 | 5.818 | 5.827<< | 4.707 | 4.717 |
| 63 | 5.818 | 5.827 | 4.707>> | 4.717 |
| 63 | 6.501 | 6.534 | 3.612<< | 3.645 |
| 63 | 5.818 | 5.827 | 4.707 | 4.717>> |
| 63 | 6.501 | 6.534 | 3.612 | 3.645<< |

| BARRA 63 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 63 | 6.500>> | 6.533 | 3.627 | 3.660 |
| 63 | 5.816<< | 5.826 | 4.722 | 4.731 |
| 63 | 6.500 | 6.533>> | 3.627 | 3.660 |
| 63 | 5.816 | 5.826<< | 4.722 | 4.731 |
| 63 | 5.816 | 5.826 | 4.722>> | 4.731 |
| 63 | 6.500 | 6.533 | 3.627<< | 3.660 |
| 63 | 5.816 | 5.826 | 4.722 | 4.731>> |
| 63 | 6.500 | 6.533 | 3.627 | 3.660<< |
| 64 | 6.717>> | 6.747 | 3.293 | 3.322 |
| 64 | 5.901<< | 5.909 | 4.592 | 4.600 |
| 64 | 6.717 | 6.747>> | 3.293 | 3.322 |
| 64 | 5.901 | 5.909<< | 4.592 | 4.600 |
| 64 | 5.901 | 5.909 | 4.592>> | 4.600 |
| 64 | 6.717 | 6.747 | 3.293<< | 3.322 |
| 64 | 5.901 | 5.909 | 4.592 | 4.600>> |
| 64 | 6.717 | 6.747 | 3.293 | 3.322<< |

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| BARRA 64 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 64 | 6.715>> | 6.745 | 3.306 | 3.335 |
| 64 | 5.899<< | 5.907 | 4.604 | 4.613 |
| 64 | 6.715 | 6.745>> | 3.306 | 3.335 |
| 64 | 5.899 | 5.907<< | 4.604 | 4.613 |
| 64 | 5.899 | 5.907 | 4.604>> | 4.613 |
| 64 | 6.715 | 6.745 | 3.306<< | 3.335 |
| 64 | 5.899 | 5.907 | 4.604 | 4.613>> |
| 64 | 6.715 | 6.745 | 3.306 | 3.335<< |
| 65 | 6.861>> | 6.887 | 3.083 | 3.110 |
| 65 | 5.951<< | 5.958 | 4.525 | 4.532 |
| 65 | 6.861 | 6.887>> | 3.083 | 3.110 |
| 65 | 5.951 | 5.958<< | 4.525 | 4.532 |
| 65 | 5.951 | 5.958 | 4.525>> | 4.532 |
| 65 | 6.861 | 6.887 | 3.083<< | 3.110 |
| 65 | 5.951 | 5.958 | 4.525 | 4.532>> |
| 65 | 6.861 | 6.887 | 3.083 | 3.110<< |

| BARRA 65 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 65 | 6.859>> | 6.885 | 3.093 | 3.119 |
| 65 | 5.949<< | 5.956 | 4.535 | 4.541 |
| 65 | 6.859 | 6.885>> | 3.093 | 3.119 |
| 65 | 5.949 | 5.956<< | 4.535 | 4.541 |
| 65 | 5.949 | 5.956 | 4.535>> | 4.541 |
| 65 | 6.859 | 6.885 | 3.093<< | 3.119 |
| 65 | 5.949 | 5.956 | 4.535 | 4.541>> |
| 65 | 6.859 | 6.885 | 3.093 | 3.119<< |
| 66 | 6.932>> | 6.955 | 2.982 | 3.006 |
| 66 | 5.969<< | 5.975 | 4.505 | 4.511 |
| 66 | 6.932 | 6.955>> | 2.982 | 3.006 |
| 66 | 5.969 | 5.975<< | 4.505 | 4.511 |
| 66 | 5.969 | 5.975 | 4.505>> | 4.511 |
| 66 | 6.932 | 6.955 | 2.982<< | 3.006 |
| 66 | 5.969 | 5.975 | 4.505 | 4.511>> |
| 66 | 6.932 | 6.955 | 2.982 | 3.006<< |

| BARRA 66 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 66 | 6.930>> | 6.954 | 2.988 | 3.011 |
| 66 | 5.967<< | 5.973 | 4.511 | 4.516 |
| 66 | 6.930 | 6.954>> | 2.988 | 3.011 |
| 66 | 5.967 | 5.973<< | 4.511 | 4.516 |
| 66 | 5.967 | 5.973 | 4.511>> | 4.516 |
| 66 | 6.930 | 6.954 | 2.988<< | 3.011 |
| 66 | 5.967 | 5.973 | 4.511 | 4.516>> |
| 66 | 6.930 | 6.954 | 2.988 | 3.011<< |
| 67 | 6.932>> | 6.952 | 2.990 | 3.010 |
| 67 | 5.955<< | 5.959 | 4.533 | 4.537 |
| 67 | 6.932 | 6.952>> | 2.990 | 3.010 |
| 67 | 5.955 | 5.959<< | 4.533 | 4.537 |
| 67 | 5.955 | 5.959 | 4.533>> | 4.537 |
| 67 | 6.932 | 6.952 | 2.990<< | 3.010 |
| 67 | 5.955 | 5.959 | 4.533 | 4.537>> |
| 67 | 6.932 | 6.952 | 2.990 | 3.010<< |

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| BARRA 67 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 67 | 6.930>> | 6.950 | 2.992 | 3.012 |
| 67 | 5.953<< | 5.957 | 4.535 | 4.539 |
| 67 | 6.930 | 6.950>> | 2.992 | 3.012 |
| 67 | 5.953 | 5.957<< | 4.535 | 4.539 |
| 67 | 5.953 | 5.957 | 4.535>> | 4.539 |
| 67 | 6.930 | 6.950 | 2.992<< | 3.012 |
| 67 | 5.953 | 5.957 | 4.535 | 4.539>> |
| 67 | 6.930 | 6.950 | 2.992 | 3.012<< |
| 68 | 6.859>> | 6.876 | 3.107 | 3.124 |
| 68 | 5.908<< | 5.910 | 4.608 | 4.610 |
| 68 | 6.859 | 6.876>> | 3.107 | 3.124 |
| 68 | 5.908 | 5.910<< | 4.608 | 4.610 |
| 68 | 5.908 | 5.910 | 4.608>> | 4.610 |
| 68 | 6.859 | 6.876 | 3.107<< | 3.124 |
| 68 | 5.908 | 5.910 | 4.608 | 4.610>> |
| 68 | 6.859 | 6.876 | 3.107 | 3.124<< |

| BARRA 68 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 68 | 6.858>> | 6.875 | 3.105 | 3.122 |
| 68 | 5.907<< | 5.909 | 4.606 | 4.609 |
| 68 | 6.858 | 6.875>> | 3.105 | 3.122 |
| 68 | 5.907 | 5.909<< | 4.606 | 4.609 |
| 68 | 5.907 | 5.909 | 4.606>> | 4.609 |
| 68 | 6.858 | 6.875 | 3.105<< | 3.122 |
| 68 | 5.907 | 5.909 | 4.606 | 4.609>> |
| 68 | 6.858 | 6.875 | 3.105 | 3.122<< |
| 69 | 6.717>> | 6.730 | 3.330 | 3.343 |
| 69 | 5.830<< | 5.831 | 4.727 | 4.728 |
| 69 | 6.717 | 6.730>> | 3.330 | 3.343 |
| 69 | 5.830 | 5.831<< | 4.727 | 4.728 |
| 69 | 5.830 | 5.831 | 4.727>> | 4.728 |
| 69 | 6.717 | 6.730 | 3.330<< | 3.343 |
| 69 | 5.830 | 5.831 | 4.727 | 4.728>> |
| 69 | 6.717 | 6.730 | 3.330 | 3.343<< |

| BARRA 69 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 69 | 6.716>> | 6.729 | 3.324 | 3.338 |
| 69 | 5.829<< | 5.830 | 4.721 | 4.722 |
| 69 | 6.716 | 6.729>> | 3.324 | 3.338 |
| 69 | 5.829 | 5.830<< | 4.721 | 4.722 |
| 69 | 5.829 | 5.830 | 4.721>> | 4.722 |
| 69 | 6.716 | 6.729 | 3.324<< | 3.338 |
| 69 | 5.829 | 5.830 | 4.721 | 4.722>> |
| 69 | 6.716 | 6.729 | 3.324 | 3.338<< |
| 70 | 6.504>> | 6.514 | 3.658 | 3.668 |
| 70 | 5.722<< | 5.722 | 4.890 | 4.890 |
| 70 | 6.504 | 6.514>> | 3.658 | 3.668 |
| 70 | 5.722 | 5.722<< | 4.890 | 4.890 |
| 70 | 5.722 | 5.722 | 4.890>> | 4.890 |
| 70 | 6.504 | 6.514 | 3.658<< | 3.668 |
| 70 | 5.722 | 5.722 | 4.890 | 4.890>> |
| 70 | 6.504 | 6.514 | 3.658 | 3.668<< |

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| BARRA 70 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 70 | 6.503>> | 6.513 | 3.650 | 3.660 |
| 70 | 5.721<< | 5.720 | 4.882 | 4.881 |
| 70 | 6.503 | 6.513>> | 3.650 | 3.660 |
| 70 | 5.721 | 5.720<< | 4.882 | 4.881 |
| 70 | 5.721 | 5.720 | 4.882>> | 4.881 |
| 70 | 6.503 | 6.513 | 3.650<< | 3.660 |
| 70 | 5.721 | 5.720 | 4.882 | 4.881>> |
| 70 | 6.503 | 6.513 | 3.650 | 3.660<< |
| 71 | 6.220>> | 6.227 | 4.095 | 4.102 |
| 71 | 5.581<< | 5.580 | 5.100 | 5.099 |
| 71 | 6.220 | 6.227>> | 4.095 | 4.102 |
| 71 | 5.581 | 5.580<< | 5.100 | 5.099 |
| 71 | 5.581 | 5.580 | 5.100>> | 5.099 |
| 71 | 6.220 | 6.227 | 4.095<< | 4.102 |
| 71 | 5.581 | 5.580 | 5.100 | 5.099>> |
| 71 | 6.220 | 6.227 | 4.095 | 4.102<< |

| BARRA 71 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 71 | 6.218>> | 6.225 | 4.084 | 4.091 |
| 71 | 5.580<< | 5.578 | 5.090 | 5.088 |
| 71 | 6.218 | 6.225>> | 4.084 | 4.091 |
| 71 | 5.580 | 5.578<< | 5.090 | 5.088 |
| 71 | 5.580 | 5.578 | 5.090>> | 5.088 |
| 71 | 6.218 | 6.225 | 4.084<< | 4.091 |
| 71 | 5.580 | 5.578 | 5.090 | 5.088>> |
| 71 | 6.218 | 6.225 | 4.084 | 4.091<< |
| 72 | 5.861>> | 5.865 | 4.645 | 4.648 |
| 72 | 5.406<< | 5.403 | 5.362 | 5.359 |
| 72 | 5.861 | 5.865>> | 4.645 | 4.648 |
| 72 | 5.406 | 5.403<< | 5.362 | 5.359 |
| 72 | 5.406 | 5.403 | 5.362>> | 5.359 |
| 72 | 5.861 | 5.865 | 4.645<< | 4.648 |
| 72 | 5.406 | 5.403 | 5.362 | 5.359>> |
| 72 | 5.861 | 5.865 | 4.645 | 4.648<< |

| BARRA 72 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 72 | 5.858>> | 5.861 | 4.633 | 4.637 |
| 72 | 5.403<< | 5.400 | 5.350 | 5.347 |
| 72 | 5.858 | 5.861>> | 4.633 | 4.637 |
| 72 | 5.403 | 5.400<< | 5.350 | 5.347 |
| 72 | 5.403 | 5.400 | 5.350>> | 5.347 |
| 72 | 5.858 | 5.861 | 4.633<< | 4.637 |
| 72 | 5.403 | 5.400 | 5.350 | 5.347>> |
| 72 | 5.858 | 5.861 | 4.633 | 4.637<< |
| 73 | 5.540>> | 5.536 | 5.138 | 5.134 |
| 73 | 5.084<< | 5.084 | 5.843 | 5.843 |
| 73 | 5.540 | 5.536>> | 5.138 | 5.134 |
| 73 | 5.084 | 5.084<< | 5.843 | 5.843 |
| 73 | 5.084 | 5.084 | 5.843>> | 5.843 |
| 73 | 5.540 | 5.536 | 5.138<< | 5.134 |
| 73 | 5.084 | 5.084 | 5.843 | 5.843>> |
| 73 | 5.540 | 5.536 | 5.138 | 5.134<< |

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| BARRA 73 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 73 | 5.534>> | 5.530 | 5.128 | 5.123 |
| 73 | 5.078<< | 5.078 | 5.832 | 5.832 |
| 73 | 5.534 | 5.530>> | 5.128 | 5.123 |
| 73 | 5.078 | 5.078<< | 5.832 | 5.832 |
| 73 | 5.078 | 5.078 | 5.832>> | 5.832 |
| 73 | 5.534 | 5.530 | 5.128<< | 5.123 |
| 73 | 5.078 | 5.078 | 5.832 | 5.832>> |
| 73 | 5.534 | 5.530 | 5.128 | 5.123<< |
| 74 | 5.291>> | 5.285 | 5.508 | 5.502 |
| 74 | 4.576<< | 4.573 | 6.618 | 6.615 |
| 74 | 5.291 | 5.285>> | 5.508 | 5.502 |
| 74 | 4.576 | 4.573<< | 6.618 | 6.615 |
| 74 | 4.576 | 4.573 | 6.618>> | 6.615 |
| 74 | 5.291 | 5.285 | 5.508<< | 5.502 |
| 74 | 4.576 | 4.573 | 6.618 | 6.615>> |
| 74 | 5.291 | 5.285 | 5.508 | 5.502<< |

| BARRA 74 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 74 | 5.281>> | 5.276 | 5.500 | 5.494 |
| 74 | 4.567<< | 4.564 | 6.609 | 6.606 |
| 74 | 5.281 | 5.276>> | 5.500 | 5.494 |
| 74 | 4.567 | 4.564<< | 6.609 | 6.606 |
| 74 | 4.567 | 4.564 | 6.609>> | 6.606 |
| 74 | 5.281 | 5.276 | 5.500<< | 5.494 |
| 74 | 4.567 | 4.564 | 6.609 | 6.606>> |
| 74 | 5.281 | 5.276 | 5.500 | 5.494<< |
| 75 | 5.003>> | 4.996 | 5.935 | 5.928 |
| 75 | 3.990<< | 3.984 | 7.512 | 7.506 |
| 75 | 5.003 | 4.996>> | 5.935 | 5.928 |
| 75 | 3.990 | 3.984<< | 7.512 | 7.506 |
| 75 | 3.990 | 3.984 | 7.512>> | 7.506 |
| 75 | 5.003 | 4.996 | 5.935<< | 5.928 |
| 75 | 3.990 | 3.984 | 7.512 | 7.506>> |
| 75 | 5.003 | 4.996 | 5.935 | 5.928<< |

| BARRA 75 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 75 | 4.745>> | 4.737 | 5.248 | 5.240 |
| 75 | 3.796<< | 3.787 | 6.469 | 6.460 |
| 75 | 4.745 | 4.737>> | 5.248 | 5.240 |
| 75 | 3.796 | 3.787<< | 6.469 | 6.460 |
| 75 | 3.796 | 3.787 | 6.469>> | 6.460 |
| 75 | 4.745 | 4.737 | 5.248<< | 5.240 |
| 75 | 3.796 | 3.787 | 6.469 | 6.460>> |
| 75 | 4.745 | 4.737 | 5.248 | 5.240<< |
| 76 | 5.526>> | 5.517 | 4.275 | 4.266 |
| 76 | 4.259<< | 4.247 | 5.903 | 5.891 |
| 76 | 5.526 | 5.517>> | 4.275 | 4.266 |
| 76 | 4.259 | 4.247<< | 5.903 | 5.891 |
| 76 | 4.259 | 4.247 | 5.903>> | 5.891 |
| 76 | 5.526 | 5.517 | 4.275<< | 4.266 |
| 76 | 4.259 | 4.247 | 5.903 | 5.891>> |
| 76 | 5.526 | 5.517 | 4.275 | 4.266<< |

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| BARRA 76 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 76 | 5.596>> | 5.588 | 4.278 | 4.270 |
| 76 | 4.316<< | 4.308 | 5.894 | 5.886 |
| 76 | 5.596 | 5.588>> | 4.278 | 4.270 |
| 76 | 4.316 | 4.308<< | 5.894 | 5.886 |
| 76 | 4.316 | 4.308 | 5.894>> | 5.886 |
| 76 | 5.596 | 5.588 | 4.278<< | 4.270 |
| 76 | 4.316 | 4.308 | 5.894 | 5.886>> |
| 76 | 5.596 | 5.588 | 4.278 | 4.270<< |
| 77 | 4.615>> | 4.606 | 5.518 | 5.509 |
| 77 | 2.977<< | 2.967 | 7.587 | 7.577 |
| 77 | 4.615 | 4.606>> | 5.518 | 5.509 |
| 77 | 2.977 | 2.967<< | 7.587 | 7.577 |
| 77 | 2.977 | 2.967 | 7.587>> | 7.577 |
| 77 | 4.615 | 4.606 | 5.518<< | 5.509 |
| 77 | 2.977 | 2.967 | 7.587 | 7.577>> |
| 77 | 4.615 | 4.606 | 5.518 | 5.509<< |

| BARRA 77 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 77 | 4.619>> | 4.610 | 5.510 | 5.502 |
| 77 | 2.982<< | 2.971 | 7.580 | 7.569 |
| 77 | 4.619 | 4.610>> | 5.510 | 5.502 |
| 77 | 2.982 | 2.971<< | 7.580 | 7.569 |
| 77 | 2.982 | 2.971 | 7.580>> | 7.569 |
| 77 | 4.619 | 4.610 | 5.510<< | 5.502 |
| 77 | 2.982 | 2.971 | 7.580 | 7.569>> |
| 77 | 4.619 | 4.610 | 5.510 | 5.502<< |
| 78 | 5.506>> | 5.498 | 4.389 | 4.381 |
| 78 | 4.224<< | 4.215 | 6.009 | 6.001 |
| 78 | 5.506 | 5.498>> | 4.389 | 4.381 |
| 78 | 4.224 | 4.215<< | 6.009 | 6.001 |
| 78 | 4.224 | 4.215 | 6.009>> | 6.001 |
| 78 | 5.506 | 5.498 | 4.389<< | 4.381 |
| 78 | 4.224 | 4.215 | 6.009 | 6.001>> |
| 78 | 5.506 | 5.498 | 4.389 | 4.381<< |

| BARRA 78 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 78 | 5.439>> | 5.429 | 4.367 | 4.358 |
| 78 | 4.168<< | 4.156 | 5.999 | 5.987 |
| 78 | 5.439 | 5.429>> | 4.367 | 4.358 |
| 78 | 4.168 | 4.156<< | 5.999 | 5.987 |
| 78 | 4.168 | 4.156 | 5.999>> | 5.987 |
| 78 | 5.439 | 5.429 | 4.367<< | 4.358 |
| 78 | 4.168 | 4.156 | 5.999 | 5.987>> |
| 78 | 5.439 | 5.429 | 4.367 | 4.358<< |
| 79 | 4.540>> | 4.531 | 5.490 | 5.481 |
| 79 | 3.586<< | 3.575 | 6.718 | 6.708 |
| 79 | 4.540 | 4.531>> | 5.490 | 5.481 |
| 79 | 3.586 | 3.575<< | 6.718 | 6.708 |
| 79 | 3.586 | 3.575 | 6.718>> | 6.708 |
| 79 | 4.540 | 4.531 | 5.490<< | 5.481 |
| 79 | 3.586 | 3.575 | 6.718 | 6.708>> |
| 79 | 4.540 | 4.531 | 5.490 | 5.481<< |

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| BARRA 79 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 79 | 4.957>> | 4.949 | 6.013 | 6.005 |
| 79 | 3.939<< | 3.930 | 7.599 | 7.591 |
| 79 | 4.957 | 4.949>> | 6.013 | 6.005 |
| 79 | 3.939 | 3.930<< | 7.599 | 7.591 |
| 79 | 3.939 | 3.930 | 7.599>> | 7.591 |
| 79 | 4.957 | 4.949 | 6.013<< | 6.005 |
| 79 | 3.939 | 3.930 | 7.599 | 7.591>> |
| 79 | 4.957 | 4.949 | 6.013 | 6.005<< |
| 80 | 5.225>> | 5.218 | 5.594 | 5.587 |
| 80 | 4.503<< | 4.496 | 6.718 | 6.712 |
| 80 | 5.225 | 5.218>> | 5.594 | 5.587 |
| 80 | 4.503 | 4.496<< | 6.718 | 6.712 |
| 80 | 4.503 | 4.496 | 6.718>> | 6.712 |
| 80 | 5.225 | 5.218 | 5.594<< | 5.587 |
| 80 | 4.503 | 4.496 | 6.718 | 6.712>> |
| 80 | 5.225 | 5.218 | 5.594 | 5.587<< |

| BARRA 80 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 80 | 5.231>> | 5.224 | 5.606 | 5.599 |
| 80 | 4.508<< | 4.502 | 6.731 | 6.724 |
| 80 | 5.231 | 5.224>> | 5.606 | 5.599 |
| 80 | 4.508 | 4.502<< | 6.731 | 6.724 |
| 80 | 4.508 | 4.502 | 6.731>> | 6.724 |
| 80 | 5.231 | 5.224 | 5.606<< | 5.599 |
| 80 | 4.508 | 4.502 | 6.731 | 6.724>> |
| 80 | 5.231 | 5.224 | 5.606 | 5.599<< |
| 81 | 5.462>> | 5.456 | 5.246 | 5.239 |
| 81 | 4.995<< | 4.991 | 5.970 | 5.966 |
| 81 | 5.462 | 5.456>> | 5.246 | 5.239 |
| 81 | 4.995 | 4.991<< | 5.970 | 5.966 |
| 81 | 4.995 | 4.991 | 5.970>> | 5.966 |
| 81 | 5.462 | 5.456 | 5.246<< | 5.239 |
| 81 | 4.995 | 4.991 | 5.970 | 5.966>> |
| 81 | 5.462 | 5.456 | 5.246 | 5.239<< |

| BARRA 81 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 81 | 5.464>> | 5.458 | 5.261 | 5.255 |
| 81 | 4.998<< | 4.994 | 5.985 | 5.981 |
| 81 | 5.464 | 5.458>> | 5.261 | 5.255 |
| 81 | 4.998 | 4.994<< | 5.985 | 5.981 |
| 81 | 4.998 | 4.994 | 5.985>> | 5.981 |
| 81 | 5.464 | 5.458 | 5.261<< | 5.255 |
| 81 | 4.998 | 4.994 | 5.985 | 5.981>> |
| 81 | 5.464 | 5.458 | 5.261 | 5.255<< |
| 82 | 5.777>> | 5.775 | 4.769 | 4.768 |
| 82 | 5.296<< | 5.291 | 5.522 | 5.517 |
| 82 | 5.777 | 5.775>> | 4.769 | 4.768 |
| 82 | 5.296 | 5.291<< | 5.522 | 5.517 |
| 82 | 5.296 | 5.291 | 5.522>> | 5.517 |
| 82 | 5.777 | 5.775 | 4.769<< | 4.768 |
| 82 | 5.296 | 5.291 | 5.522 | 5.517>> |
| 82 | 5.777 | 5.775 | 4.769 | 4.768<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=inf)(1.00*G+0.4*LEV+0.90*P+0.5*GT)

| BARRA 82 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 82 | 5.777>> | 5.775 | 4.785 | 4.783 |
| 82 | 5.297<< | 5.291 | 5.537 | 5.532 |
| 82 | 5.777 | 5.775>> | 4.785 | 4.783 |
| 82 | 5.297 | 5.291<< | 5.537 | 5.532 |
| 82 | 5.297 | 5.291 | 5.537>> | 5.532 |
| 82 | 5.777 | 5.775 | 4.785<< | 4.783 |
| 82 | 5.297 | 5.291 | 5.537 | 5.532>> |
| 82 | 5.777 | 5.775 | 4.785 | 4.783<< |
| 83 | 6.122>> | 6.122 | 4.245 | 4.245 |
| 83 | 5.453<< | 5.449 | 5.293 | 5.288 |
| 83 | 6.122 | 6.122>> | 4.245 | 4.245 |
| 83 | 5.453 | 5.449<< | 5.293 | 5.288 |
| 83 | 5.453 | 5.449 | 5.293>> | 5.288 |
| 83 | 6.122 | 6.122 | 4.245<< | 4.245 |
| 83 | 5.453 | 5.449 | 5.293 | 5.288>> |
| 83 | 6.122 | 6.122 | 4.245 | 4.245<< |

| BARRA 83 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 83 | 6.121>> | 6.121 | 4.259 | 4.260 |
| 83 | 5.452<< | 5.448 | 5.307 | 5.303 |
| 83 | 6.121 | 6.121>> | 4.259 | 4.260 |
| 83 | 5.452 | 5.448<< | 5.307 | 5.303 |
| 83 | 5.452 | 5.448 | 5.307>> | 5.303 |
| 83 | 6.121 | 6.121 | 4.259<< | 4.260 |
| 83 | 5.452 | 5.448 | 5.307 | 5.303>> |
| 83 | 6.121 | 6.121 | 4.259 | 4.260<< |
| 84 | 6.391>> | 6.394 | 3.836 | 3.838 |
| 84 | 5.573<< | 5.570 | 5.117 | 5.114 |
| 84 | 6.391 | 6.394>> | 3.836 | 3.838 |
| 84 | 5.573 | 5.570<< | 5.117 | 5.114 |
| 84 | 5.573 | 5.570 | 5.117>> | 5.114 |
| 84 | 6.391 | 6.394 | 3.836<< | 3.838 |
| 84 | 5.573 | 5.570 | 5.117 | 5.114>> |
| 84 | 6.391 | 6.394 | 3.836 | 3.838<< |

| BARRA 84 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 84 | 6.389>> | 6.392 | 3.848 | 3.851 |
| 84 | 5.571<< | 5.568 | 5.130 | 5.127 |
| 84 | 6.389 | 6.392>> | 3.848 | 3.851 |
| 84 | 5.571 | 5.568<< | 5.130 | 5.127 |
| 84 | 5.571 | 5.568 | 5.130>> | 5.127 |
| 84 | 6.389 | 6.392 | 3.848<< | 3.851 |
| 84 | 5.571 | 5.568 | 5.130 | 5.127>> |
| 84 | 6.389 | 6.392 | 3.848 | 3.851<< |
| 85 | 6.587>> | 6.592 | 3.537 | 3.542 |
| 85 | 5.660<< | 5.657 | 4.991 | 4.989 |
| 85 | 6.587 | 6.592>> | 3.537 | 3.542 |
| 85 | 5.660 | 5.657<< | 4.991 | 4.989 |
| 85 | 5.660 | 5.657 | 4.991>> | 4.989 |
| 85 | 6.587 | 6.592 | 3.537<< | 3.542 |
| 85 | 5.660 | 5.657 | 4.991 | 4.989>> |
| 85 | 6.587 | 6.592 | 3.537 | 3.542<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=inf)(1.00*G+0.4*LEV+0.90*P+0.5*GT)

| BARRA 85 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 85 | 6.585>> | 6.590 | 3.547 | 3.552 |
| 85 | 5.657<< | 5.655 | 5.001 | 4.998 |
| 85 | 6.585 | 6.590>> | 3.547 | 3.552 |
| 85 | 5.657 | 5.655<< | 5.001 | 4.998 |
| 85 | 5.657 | 5.655 | 5.001>> | 4.998 |
| 85 | 6.585 | 6.590 | 3.547<< | 3.552 |
| 85 | 5.657 | 5.655 | 5.001 | 4.998>> |
| 85 | 6.585 | 6.590 | 3.547 | 3.552<< |
| 86 | 6.711>> | 6.718 | 3.347 | 3.354 |
| 86 | 5.714<< | 5.713 | 4.912 | 4.910 |
| 86 | 6.711 | 6.718>> | 3.347 | 3.354 |
| 86 | 5.714 | 5.713<< | 4.912 | 4.910 |
| 86 | 5.714 | 5.713 | 4.912>> | 4.910 |
| 86 | 6.711 | 6.718 | 3.347<< | 3.354 |
| 86 | 5.714 | 5.713 | 4.912 | 4.910>> |
| 86 | 6.711 | 6.718 | 3.347 | 3.354<< |

| BARRA 86 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 86 | 6.709>> | 6.717 | 3.353 | 3.360 |
| 86 | 5.712<< | 5.711 | 4.917 | 4.916 |
| 86 | 6.709 | 6.717>> | 3.353 | 3.360 |
| 86 | 5.712 | 5.711<< | 4.917 | 4.916 |
| 86 | 5.712 | 5.711 | 4.917>> | 4.916 |
| 86 | 6.709 | 6.717 | 3.353<< | 3.360 |
| 86 | 5.712 | 5.711 | 4.917 | 4.916>> |
| 86 | 6.709 | 6.717 | 3.353 | 3.360<< |
| 87 | 6.764>> | 6.773 | 3.266 | 3.275 |
| 87 | 5.736<< | 5.735 | 4.879 | 4.879 |
| 87 | 6.764 | 6.773>> | 3.266 | 3.275 |
| 87 | 5.736 | 5.735<< | 4.879 | 4.879 |
| 87 | 5.736 | 5.735 | 4.879>> | 4.879 |
| 87 | 6.764 | 6.773 | 3.266<< | 3.275 |
| 87 | 5.736 | 5.735 | 4.879 | 4.879>> |
| 87 | 6.764 | 6.773 | 3.266 | 3.275<< |

| BARRA 87 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 87 | 6.762>> | 6.771 | 3.268 | 3.277 |
| 87 | 5.734<< | 5.734 | 4.881 | 4.881 |
| 87 | 6.762 | 6.771>> | 3.268 | 3.277 |
| 87 | 5.734 | 5.734<< | 4.881 | 4.881 |
| 87 | 5.734 | 5.734 | 4.881>> | 4.881 |
| 87 | 6.762 | 6.771 | 3.268<< | 3.277 |
| 87 | 5.734 | 5.734 | 4.881 | 4.881>> |
| 87 | 6.762 | 6.771 | 3.268 | 3.277<< |
| 88 | 6.744>> | 6.755 | 3.293 | 3.305 |
| 88 | 5.725<< | 5.726 | 4.894 | 4.895 |
| 88 | 6.744 | 6.755>> | 3.293 | 3.305 |
| 88 | 5.725 | 5.726<< | 4.894 | 4.895 |
| 88 | 5.725 | 5.726 | 4.894>> | 4.895 |
| 88 | 6.744 | 6.755 | 3.293<< | 3.305 |
| 88 | 5.725 | 5.726 | 4.894 | 4.895>> |
| 88 | 6.744 | 6.755 | 3.293 | 3.305<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=inf)(1.00*G+0.4*LEV+0.90*P+0.5*GT)

| BARRA 88 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 88 | 6.743>> | 6.754 | 3.292 | 3.303 |
| 88 | 5.724<< | 5.725 | 4.893 | 4.893 |
| 88 | 6.743 | 6.754>> | 3.292 | 3.303 |
| 88 | 5.724 | 5.725<< | 4.893 | 4.893 |
| 88 | 5.724 | 5.725 | 4.893>> | 4.893 |
| 88 | 6.743 | 6.754 | 3.292<< | 3.303 |
| 88 | 5.724 | 5.725 | 4.893 | 4.893>> |
| 88 | 6.743 | 6.754 | 3.292 | 3.303<< |
| 89 | 6.654>> | 6.668 | 3.427 | 3.441 |
| 89 | 5.684<< | 5.686 | 4.954 | 4.955 |
| 89 | 6.654 | 6.668>> | 3.427 | 3.441 |
| 89 | 5.684 | 5.686<< | 4.954 | 4.955 |
| 89 | 5.684 | 5.686 | 4.954>> | 4.955 |
| 89 | 6.654 | 6.668 | 3.427<< | 3.441 |
| 89 | 5.684 | 5.686 | 4.954 | 4.955>> |
| 89 | 6.654 | 6.668 | 3.427 | 3.441<< |

| BARRA 89 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 89 | 6.653>> | 6.667 | 3.421 | 3.435 |
| 89 | 5.683<< | 5.685 | 4.948 | 4.949 |
| 89 | 6.653 | 6.667>> | 3.421 | 3.435 |
| 89 | 5.683 | 5.685<< | 4.948 | 4.949 |
| 89 | 5.683 | 5.685 | 4.948>> | 4.949 |
| 89 | 6.653 | 6.667 | 3.421<< | 3.435 |
| 89 | 5.683 | 5.685 | 4.948 | 4.949>> |
| 89 | 6.653 | 6.667 | 3.421 | 3.435<< |
| 90 | 6.494>> | 6.510 | 3.666 | 3.682 |
| 90 | 5.612<< | 5.615 | 5.057 | 5.060 |
| 90 | 6.494 | 6.510>> | 3.666 | 3.682 |
| 90 | 5.612 | 5.615<< | 5.057 | 5.060 |
| 90 | 5.612 | 5.615 | 5.057>> | 5.060 |
| 90 | 6.494 | 6.510 | 3.666<< | 3.682 |
| 90 | 5.612 | 5.615 | 5.057 | 5.060>> |
| 90 | 6.494 | 6.510 | 3.666 | 3.682<< |

| BARRA 90 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 90 | 6.493>> | 6.509 | 3.658 | 3.674 |
| 90 | 5.611<< | 5.614 | 5.049 | 5.051 |
| 90 | 6.493 | 6.509>> | 3.658 | 3.674 |
| 90 | 5.611 | 5.614<< | 5.049 | 5.051 |
| 90 | 5.611 | 5.614 | 5.049>> | 5.051 |
| 90 | 6.493 | 6.509 | 3.658<< | 3.674 |
| 90 | 5.611 | 5.614 | 5.049 | 5.051>> |
| 90 | 6.493 | 6.509 | 3.658 | 3.674<< |
| 91 | 6.263>> | 6.281 | 4.014 | 4.032 |
| 91 | 5.509<< | 5.512 | 5.208 | 5.211 |
| 91 | 6.263 | 6.281>> | 4.014 | 4.032 |
| 91 | 5.509 | 5.512<< | 5.208 | 5.211 |
| 91 | 5.509 | 5.512 | 5.208>> | 5.211 |
| 91 | 6.263 | 6.281 | 4.014<< | 4.032 |
| 91 | 5.509 | 5.512 | 5.208 | 5.211>> |
| 91 | 6.263 | 6.281 | 4.014 | 4.032<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=inf)(1.00*G+0.4*LEV+0.90*P+0.5*GT)

| BARRA 91 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 91 | 6.263>> | 6.281 | 4.017 | 4.035 |
| 91 | 5.509<< | 5.512 | 5.211 | 5.214 |
| 91 | 6.263 | 6.281>> | 4.017 | 4.035 |
| 91 | 5.509 | 5.512<< | 5.211 | 5.214 |
| 91 | 5.509 | 5.512 | 5.211>> | 5.214 |
| 91 | 6.263 | 6.281 | 4.017<< | 4.035 |
| 91 | 5.509 | 5.512 | 5.211 | 5.214>> |
| 91 | 6.263 | 6.281 | 4.017 | 4.035<< |
| 92 | 5.960>> | 5.980 | 4.486 | 4.506 |
| 92 | 5.373<< | 5.377 | 5.421 | 5.425 |
| 92 | 5.960 | 5.980>> | 4.486 | 4.506 |
| 92 | 5.373 | 5.377<< | 5.421 | 5.425 |
| 92 | 5.373 | 5.377 | 5.421>> | 5.425 |
| 92 | 5.960 | 5.980 | 4.486<< | 4.506 |
| 92 | 5.373 | 5.377 | 5.421 | 5.425>> |
| 92 | 5.960 | 5.980 | 4.486 | 4.506<< |

| BARRA 92 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 92 | 5.963>> | 5.984 | 4.508 | 4.529 |
| 92 | 5.376<< | 5.380 | 5.443 | 5.448 |
| 92 | 5.963 | 5.984>> | 4.508 | 4.529 |
| 92 | 5.376 | 5.380<< | 5.443 | 5.448 |
| 92 | 5.376 | 5.380 | 5.443>> | 5.448 |
| 92 | 5.963 | 5.984 | 4.508<< | 4.529 |
| 92 | 5.376 | 5.380 | 5.443 | 5.448>> |
| 92 | 5.963 | 5.984 | 4.508 | 4.529<< |
| 93 | 5.641>> | 5.647 | 5.029 | 5.034 |
| 93 | 5.164<< | 5.187 | 5.750 | 5.773 |
| 93 | 5.641 | 5.647>> | 5.029 | 5.034 |
| 93 | 5.164 | 5.187<< | 5.750 | 5.773 |
| 93 | 5.164 | 5.187 | 5.750>> | 5.773 |
| 93 | 5.641 | 5.647 | 5.029<< | 5.034 |
| 93 | 5.164 | 5.187 | 5.750 | 5.773>> |
| 93 | 5.641 | 5.647 | 5.029 | 5.034<< |

| BARRA 93 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 93 | 5.647>> | 5.653 | 5.046 | 5.051 |
| 93 | 5.170<< | 5.192 | 5.768 | 5.790 |
| 93 | 5.647 | 5.653>> | 5.046 | 5.051 |
| 93 | 5.170 | 5.192<< | 5.768 | 5.790 |
| 93 | 5.170 | 5.192 | 5.768>> | 5.790 |
| 93 | 5.647 | 5.653 | 5.046<< | 5.051 |
| 93 | 5.170 | 5.192 | 5.768 | 5.790>> |
| 93 | 5.647 | 5.653 | 5.046 | 5.051<< |
| 94 | 5.462>> | 5.468 | 5.333 | 5.340 |
| 94 | 4.727<< | 4.751 | 6.455 | 6.479 |
| 94 | 5.462 | 5.468>> | 5.333 | 5.340 |
| 94 | 4.727 | 4.751<< | 6.455 | 6.479 |
| 94 | 4.727 | 4.751 | 6.455>> | 6.479 |
| 94 | 5.462 | 5.468 | 5.333<< | 5.340 |
| 94 | 4.727 | 4.751 | 6.455 | 6.479>> |
| 94 | 5.462 | 5.468 | 5.333 | 5.340<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=inf)(1.00*G+0.4*LEV+0.90*P+0.5*GT)

| BARRA 94 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 94 | 5.470>> | 5.476 | 5.344 | 5.350 |
| 94 | 4.735<< | 4.759 | 6.465 | 6.490 |
| 94 | 5.470 | 5.476>> | 5.344 | 5.350 |
| 94 | 4.735 | 4.759<< | 6.465 | 6.490 |
| 94 | 4.735 | 4.759 | 6.465>> | 6.490 |
| 94 | 5.470 | 5.476 | 5.344<< | 5.350 |
| 94 | 4.735 | 4.759 | 6.465 | 6.490>> |
| 94 | 5.470 | 5.476 | 5.344 | 5.350<< |
| 95 | 5.258>> | 5.265 | 5.673 | 5.680 |
| 95 | 4.226<< | 4.252 | 7.256 | 7.283 |
| 95 | 5.258 | 5.265>> | 5.673 | 5.680 |
| 95 | 4.226 | 4.252<< | 7.256 | 7.283 |
| 95 | 4.226 | 4.252 | 7.256>> | 7.283 |
| 95 | 5.258 | 5.265 | 5.673<< | 5.680 |
| 95 | 4.226 | 4.252 | 7.256 | 7.283>> |
| 95 | 5.258 | 5.265 | 5.673 | 5.680<< |

| BARRA 95 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 95 | 5.005>> | 5.009 | 5.055 | 5.059 |
| 95 | 4.038<< | 4.057 | 6.281 | 6.299 |
| 95 | 5.005 | 5.009>> | 5.055 | 5.059 |
| 95 | 4.038 | 4.057<< | 6.281 | 6.299 |
| 95 | 4.038 | 4.057 | 6.281>> | 6.299 |
| 95 | 5.005 | 5.009 | 5.055<< | 5.059 |
| 95 | 4.038 | 4.057 | 6.281 | 6.299>> |
| 95 | 5.005 | 5.009 | 5.055 | 5.059<< |
| 96 | 5.865>> | 5.870 | 3.979 | 3.985 |
| 96 | 4.580<< | 4.601 | 5.609 | 5.629 |
| 96 | 5.865 | 5.870>> | 3.979 | 3.985 |
| 96 | 4.580 | 4.601<< | 5.609 | 5.629 |
| 96 | 4.580 | 4.601 | 5.609>> | 5.629 |
| 96 | 5.865 | 5.870 | 3.979<< | 3.985 |
| 96 | 4.580 | 4.601 | 5.609 | 5.629>> |
| 96 | 5.865 | 5.870 | 3.979 | 3.985<< |

| BARRA 96 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 96 | 6.027>> | 6.034 | 3.976 | 3.984 |
| 96 | 4.730<< | 4.756 | 5.593 | 5.619 |
| 96 | 6.027 | 6.034>> | 3.976 | 3.984 |
| 96 | 4.730 | 4.756<< | 5.593 | 5.619 |
| 96 | 4.730 | 4.756 | 5.593>> | 5.619 |
| 96 | 6.027 | 6.034 | 3.976<< | 3.984 |
| 96 | 4.730 | 4.756 | 5.593 | 5.619>> |
| 96 | 6.027 | 6.034 | 3.976 | 3.984<< |
| 97 | 5.103>> | 5.111 | 5.142 | 5.150 |
| 97 | 3.450<< | 3.477 | 7.208 | 7.235 |
| 97 | 5.103 | 5.111>> | 5.142 | 5.150 |
| 97 | 3.450 | 3.477<< | 7.208 | 7.235 |
| 97 | 3.450 | 3.477 | 7.208>> | 7.235 |
| 97 | 5.103 | 5.111 | 5.142<< | 5.150 |
| 97 | 3.450 | 3.477 | 7.208 | 7.235>> |
| 97 | 5.103 | 5.111 | 5.142 | 5.150<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=inf)(1.00*G+0.4*LEV+0.90*P+0.5*GT)

| BARRA 97 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 97 | 5.161>> | 5.169 | 5.125 | 5.134 |
| 97 | 3.508<< | 3.535 | 7.191 | 7.219 |
| 97 | 5.161 | 5.169>> | 5.125 | 5.134 |
| 97 | 3.508 | 3.535<< | 7.191 | 7.219 |
| 97 | 3.508 | 3.535 | 7.191>> | 7.219 |
| 97 | 5.161 | 5.169 | 5.125<< | 5.134 |
| 97 | 3.508 | 3.535 | 7.191 | 7.219>> |
| 97 | 5.161 | 5.169 | 5.125 | 5.134<< |
| 98 | 5.938>> | 5.946 | 4.144 | 4.152 |
| 98 | 4.666<< | 4.692 | 5.730 | 5.756 |
| 98 | 5.938 | 5.946>> | 4.144 | 4.152 |
| 98 | 4.666 | 4.692<< | 5.730 | 5.756 |
| 98 | 4.666 | 4.692 | 5.730>> | 5.756 |
| 98 | 5.938 | 5.946 | 4.144<< | 4.152 |
| 98 | 4.666 | 4.692 | 5.730 | 5.756>> |
| 98 | 5.938 | 5.946 | 4.144 | 4.152<< |

| BARRA 98 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 98 | 5.870>> | 5.877 | 4.119 | 4.126 |
| 98 | 4.610<< | 4.634 | 5.717 | 5.741 |
| 98 | 5.870 | 5.877>> | 4.119 | 4.126 |
| 98 | 4.610 | 4.634<< | 5.717 | 5.741 |
| 98 | 4.610 | 4.634 | 5.717>> | 5.741 |
| 98 | 5.870 | 5.877 | 4.119<< | 4.126 |
| 98 | 4.610 | 4.634 | 5.717 | 5.741>> |
| 98 | 5.870 | 5.877 | 4.119 | 4.126<< |
| 99 | 4.887>> | 4.894 | 5.348 | 5.355 |
| 99 | 3.970<< | 3.992 | 6.513 | 6.535 |
| 99 | 4.887 | 4.894>> | 5.348 | 5.355 |
| 99 | 3.970 | 3.992<< | 6.513 | 6.535 |
| 99 | 3.970 | 3.992 | 6.513>> | 6.535 |
| 99 | 4.887 | 4.894 | 5.348<< | 5.355 |
| 99 | 3.970 | 3.992 | 6.513 | 6.535>> |
| 99 | 4.887 | 4.894 | 5.348 | 5.355<< |

| BARRA 99 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 99 | 5.395>> | 5.404 | 5.847 | 5.855 |
| 99 | 4.415<< | 4.441 | 7.351 | 7.378 |
| 99 | 5.395 | 5.404>> | 5.847 | 5.855 |
| 99 | 4.415 | 4.441<< | 7.351 | 7.378 |
| 99 | 4.415 | 4.441 | 7.351>> | 7.378 |
| 99 | 5.395 | 5.404 | 5.847<< | 5.855 |
| 99 | 4.415 | 4.441 | 7.351 | 7.378>> |
| 99 | 5.395 | 5.404 | 5.847 | 5.855<< |
| 100 | 5.626>> | 5.634 | 5.488 | 5.496 |
| 100 | 4.968<< | 4.993 | 6.491 | 6.516 |
| 100 | 5.626 | 5.634>> | 5.488 | 5.496 |
| 100 | 4.968 | 4.993<< | 6.491 | 6.516 |
| 100 | 4.968 | 4.993 | 6.491>> | 6.516 |
| 100 | 5.626 | 5.634 | 5.488<< | 5.496 |
| 100 | 4.968 | 4.993 | 6.491 | 6.516>> |
| 100 | 5.626 | 5.634 | 5.488 | 5.496<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=inf)(1.00*G+0.4*LEV+0.90*P+0.5*GT)

| BARRA 100 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 100 | 5.648>> | 5.655 | 5.516 | 5.523 |
| 100 | 4.989<< | 5.014 | 6.519 | 6.544 |
| 100 | 5.648 | 5.655>> | 5.516 | 5.523 |
| 100 | 4.989 | 5.014<< | 6.519 | 6.544 |
| 100 | 4.989 | 5.014 | 6.519>> | 6.544 |
| 100 | 5.648 | 5.655 | 5.516<< | 5.523 |
| 100 | 4.989 | 5.014 | 6.519 | 6.544>> |
| 100 | 5.648 | 5.655 | 5.516 | 5.523<< |
| 101 | 5.844>> | 5.851 | 5.211 | 5.218 |
| 101 | 5.469<< | 5.492 | 5.775 | 5.798 |
| 101 | 5.844 | 5.851>> | 5.211 | 5.218 |
| 101 | 5.469 | 5.492<< | 5.775 | 5.798 |
| 101 | 5.469 | 5.492 | 5.775>> | 5.798 |
| 101 | 5.844 | 5.851 | 5.211<< | 5.218 |
| 101 | 5.469 | 5.492 | 5.775 | 5.798>> |
| 101 | 5.844 | 5.851 | 5.211 | 5.218<< |

| BARRA 101 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 101 | 5.863>> | 5.870 | 5.252 | 5.259 |
| 101 | 5.488<< | 5.511 | 5.816 | 5.838 |
| 101 | 5.863 | 5.870>> | 5.252 | 5.259 |
| 101 | 5.488 | 5.511<< | 5.816 | 5.838 |
| 101 | 5.488 | 5.511 | 5.816>> | 5.838 |
| 101 | 5.863 | 5.870 | 5.252<< | 5.259 |
| 101 | 5.488 | 5.511 | 5.816 | 5.838>> |
| 101 | 5.863 | 5.870 | 5.252 | 5.259<< |
| 102 | 6.204>> | 6.225 | 4.703 | 4.724 |
| 102 | 5.719<< | 5.725 | 5.478 | 5.484 |
| 102 | 6.204 | 6.225>> | 4.703 | 4.724 |
| 102 | 5.719 | 5.725<< | 5.478 | 5.484 |
| 102 | 5.719 | 5.725 | 5.478>> | 5.484 |
| 102 | 6.204 | 6.225 | 4.703<< | 4.724 |
| 102 | 5.719 | 5.725 | 5.478 | 5.484>> |
| 102 | 6.204 | 6.225 | 4.703 | 4.724<< |

| BARRA 102 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 102 | 6.217>> | 6.238 | 4.751 | 4.772 |
| 102 | 5.732<< | 5.738 | 5.526 | 5.532 |
| 102 | 6.217 | 6.238>> | 4.751 | 4.772 |
| 102 | 5.732 | 5.738<< | 5.526 | 5.532 |
| 102 | 5.732 | 5.738 | 5.526>> | 5.532 |
| 102 | 6.217 | 6.238 | 4.751<< | 4.772 |
| 102 | 5.732 | 5.738 | 5.526 | 5.532>> |
| 102 | 6.217 | 6.238 | 4.751 | 4.772<< |
| 103 | 6.527>> | 6.546 | 4.271 | 4.291 |
| 103 | 5.895<< | 5.900 | 5.273 | 5.278 |
| 103 | 6.527 | 6.546>> | 4.271 | 4.291 |
| 103 | 5.895 | 5.900<< | 5.273 | 5.278 |
| 103 | 5.895 | 5.900 | 5.273>> | 5.278 |
| 103 | 6.527 | 6.546 | 4.271<< | 4.291 |
| 103 | 5.895 | 5.900 | 5.273 | 5.278>> |
| 103 | 6.527 | 6.546 | 4.271 | 4.291<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=inf)(1.00*G+0.4*LEV+0.90*P+0.5*GT)

| BARRA 103 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 103 | 6.535>> | 6.554 | 4.324 | 4.343 |
| 103 | 5.903<< | 5.909 | 5.325 | 5.331 |
| 103 | 6.535 | 6.554>> | 4.324 | 4.343 |
| 103 | 5.903 | 5.909<< | 5.325 | 5.331 |
| 103 | 5.903 | 5.909 | 5.325>> | 5.331 |
| 103 | 6.535 | 6.554 | 4.324<< | 4.343 |
| 103 | 5.903 | 5.909 | 5.325 | 5.331>> |
| 103 | 6.535 | 6.554 | 4.324 | 4.343<< |
| 104 | 6.777>> | 6.794 | 3.949 | 3.966 |
| 104 | 6.039<< | 6.043 | 5.115 | 5.120 |
| 104 | 6.777 | 6.794>> | 3.949 | 3.966 |
| 104 | 6.039 | 6.043<< | 5.115 | 5.120 |
| 104 | 6.039 | 6.043 | 5.115>> | 5.120 |
| 104 | 6.777 | 6.794 | 3.949<< | 3.966 |
| 104 | 6.039 | 6.043 | 5.115 | 5.120>> |
| 104 | 6.777 | 6.794 | 3.949 | 3.966<< |

| BARRA 104 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 104 | 6.781>> | 6.798 | 3.988 | 4.005 |
| 104 | 6.042<< | 6.047 | 5.154 | 5.159 |
| 104 | 6.781 | 6.798>> | 3.988 | 4.005 |
| 104 | 6.042 | 6.047<< | 5.154 | 5.159 |
| 104 | 6.042 | 6.047 | 5.154>> | 5.159 |
| 104 | 6.781 | 6.798 | 3.988<< | 4.005 |
| 104 | 6.042 | 6.047 | 5.154 | 5.159>> |
| 104 | 6.781 | 6.798 | 3.988 | 4.005<< |
| 105 | 6.960>> | 6.975 | 3.712 | 3.727 |
| 105 | 6.153<< | 6.157 | 4.982 | 4.987 |
| 105 | 6.960 | 6.975>> | 3.712 | 3.727 |
| 105 | 6.153 | 6.157<< | 4.982 | 4.987 |
| 105 | 6.153 | 6.157 | 4.982>> | 4.987 |
| 105 | 6.960 | 6.975 | 3.712<< | 3.727 |
| 105 | 6.153 | 6.157 | 4.982 | 4.987>> |
| 105 | 6.960 | 6.975 | 3.712 | 3.727<< |

| BARRA 105 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 105 | 6.962>> | 6.977 | 3.683 | 3.698 |
| 105 | 6.156<< | 6.160 | 4.953 | 4.957 |
| 105 | 6.962 | 6.977>> | 3.683 | 3.698 |
| 105 | 6.156 | 6.160<< | 4.953 | 4.957 |
| 105 | 6.156 | 6.160 | 4.953>> | 4.957 |
| 105 | 6.962 | 6.977 | 3.683<< | 3.698 |
| 105 | 6.156 | 6.160 | 4.953 | 4.957>> |
| 105 | 6.962 | 6.977 | 3.683 | 3.698<< |
| 106 | 7.080>> | 7.093 | 3.502 | 3.515 |
| 106 | 6.245<< | 6.249 | 4.814 | 4.818 |
| 106 | 7.080 | 7.093>> | 3.502 | 3.515 |
| 106 | 6.245 | 6.249<< | 4.814 | 4.818 |
| 106 | 6.245 | 6.249 | 4.814>> | 4.818 |
| 106 | 7.080 | 7.093 | 3.502<< | 3.515 |
| 106 | 6.245 | 6.249 | 4.814 | 4.818>> |
| 106 | 7.080 | 7.093 | 3.502 | 3.515<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=inf)(1.00*G+0.4*LEV+0.90*P+0.5*GT)

| BARRA 106 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 106 | 7.080>> | 7.093 | 3.473 | 3.486 |
| 106 | 6.245<< | 6.249 | 4.786 | 4.789 |
| 106 | 7.080 | 7.093>> | 3.473 | 3.486 |
| 106 | 6.245 | 6.249<< | 4.786 | 4.789 |
| 106 | 6.245 | 6.249 | 4.786>> | 4.789 |
| 106 | 7.080 | 7.093 | 3.473<< | 3.486 |
| 106 | 6.245 | 6.249 | 4.786 | 4.789>> |
| 106 | 7.080 | 7.093 | 3.473 | 3.486<< |
| 107 | 7.088>> | 7.099 | 3.463 | 3.474 |
| 107 | 6.265<< | 6.268 | 4.755 | 4.758 |
| 107 | 7.088 | 7.099>> | 3.463 | 3.474 |
| 107 | 6.265 | 6.268<< | 4.755 | 4.758 |
| 107 | 6.265 | 6.268 | 4.755>> | 4.758 |
| 107 | 7.088 | 7.099 | 3.463<< | 3.474 |
| 107 | 6.265 | 6.268 | 4.755 | 4.758>> |
| 107 | 7.088 | 7.099 | 3.463 | 3.474<< |

| BARRA 107 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 107 | 7.085>> | 7.096 | 3.438 | 3.449 |
| 107 | 6.262<< | 6.265 | 4.731 | 4.734 |
| 107 | 7.085 | 7.096>> | 3.438 | 3.449 |
| 107 | 6.262 | 6.265<< | 4.731 | 4.734 |
| 107 | 6.262 | 6.265 | 4.731>> | 4.734 |
| 107 | 7.085 | 7.096 | 3.438<< | 3.449 |
| 107 | 6.262 | 6.265 | 4.731 | 4.734>> |
| 107 | 7.085 | 7.096 | 3.438 | 3.449<< |
| 108 | 6.937>> | 6.946 | 3.671 | 3.680 |
| 108 | 6.165<< | 6.167 | 4.883 | 4.885 |
| 108 | 6.937 | 6.946>> | 3.671 | 3.680 |
| 108 | 6.165 | 6.167<< | 4.883 | 4.885 |
| 108 | 6.165 | 6.167 | 4.883>> | 4.885 |
| 108 | 6.937 | 6.946 | 3.671<< | 3.680 |
| 108 | 6.165 | 6.167 | 4.883 | 4.885>> |
| 108 | 6.937 | 6.946 | 3.671 | 3.680<< |

| BARRA 108 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 108 | 6.934>> | 6.943 | 3.647 | 3.656 |
| 108 | 6.161<< | 6.164 | 4.858 | 4.861 |
| 108 | 6.934 | 6.943>> | 3.647 | 3.656 |
| 108 | 6.161 | 6.164<< | 4.858 | 4.861 |
| 108 | 6.161 | 6.164 | 4.858>> | 4.861 |
| 108 | 6.934 | 6.943 | 3.647<< | 3.656 |
| 108 | 6.161 | 6.164 | 4.858 | 4.861>> |
| 108 | 6.934 | 6.943 | 3.647 | 3.656<< |
| 109 | 6.630>> | 6.637 | 4.122 | 4.129 |
| 109 | 5.948<< | 5.950 | 5.191 | 5.193 |
| 109 | 6.630 | 6.637>> | 4.122 | 4.129 |
| 109 | 5.948 | 5.950<< | 5.191 | 5.193 |
| 109 | 5.948 | 5.950 | 5.191>> | 5.193 |
| 109 | 6.630 | 6.637 | 4.122<< | 4.129 |
| 109 | 5.948 | 5.950 | 5.191 | 5.193>> |
| 109 | 6.630 | 6.637 | 4.122 | 4.129<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=inf)(1.00*G+0.4*LEV+0.90*P+0.5*GT)

| BARRA 109 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 109 | 6.626>> | 6.633 | 4.098 | 4.105 |
| 109 | 5.944<< | 5.946 | 5.167 | 5.169 |
| 109 | 6.626 | 6.633>> | 4.098 | 4.105 |
| 109 | 5.944 | 5.946<< | 5.167 | 5.169 |
| 109 | 5.944 | 5.946 | 5.167>> | 5.169 |
| 109 | 6.626 | 6.633 | 4.098<< | 4.105 |
| 109 | 5.944 | 5.946 | 5.167 | 5.169>> |
| 109 | 6.626 | 6.633 | 4.098 | 4.105<< |
| 110 | 6.164>> | 6.169 | 4.820 | 4.825 |
| 110 | 5.612<< | 5.614 | 5.684 | 5.686 |
| 110 | 6.164 | 6.169>> | 4.820 | 4.825 |
| 110 | 5.612 | 5.614<< | 5.684 | 5.686 |
| 110 | 5.612 | 5.614 | 5.684>> | 5.686 |
| 110 | 6.164 | 6.169 | 4.820<< | 4.825 |
| 110 | 5.612 | 5.614 | 5.684 | 5.686>> |
| 110 | 6.164 | 6.169 | 4.820 | 4.825<< |

| BARRA 110 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 110 | 6.159>> | 6.164 | 4.796 | 4.801 |
| 110 | 5.607<< | 5.608 | 5.661 | 5.662 |
| 110 | 6.159 | 6.164>> | 4.796 | 4.801 |
| 110 | 5.607 | 5.608<< | 5.661 | 5.662 |
| 110 | 5.607 | 5.608 | 5.661>> | 5.662 |
| 110 | 6.159 | 6.164 | 4.796<< | 4.801 |
| 110 | 5.607 | 5.608 | 5.661 | 5.662>> |
| 110 | 6.159 | 6.164 | 4.796 | 4.801<< |
| 111 | 5.540>> | 5.543 | 5.763 | 5.766 |
| 111 | 5.157<< | 5.158 | 6.362 | 6.363 |
| 111 | 5.540 | 5.543>> | 5.763 | 5.766 |
| 111 | 5.157 | 5.158<< | 6.362 | 6.363 |
| 111 | 5.157 | 5.158 | 6.362>> | 6.363 |
| 111 | 5.540 | 5.543 | 5.763<< | 5.766 |
| 111 | 5.157 | 5.158 | 6.362 | 6.363>> |
| 111 | 5.540 | 5.543 | 5.763 | 5.766<< |

| BARRA 111 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 111 | 5.533>> | 5.536 | 5.741 | 5.744 |
| 111 | 5.150<< | 5.151 | 6.340 | 6.341 |
| 111 | 5.533 | 5.536>> | 5.741 | 5.744 |
| 111 | 5.150 | 5.151<< | 6.340 | 6.341 |
| 111 | 5.150 | 5.151 | 6.340>> | 6.341 |
| 111 | 5.533 | 5.536 | 5.741<< | 5.744 |
| 111 | 5.150 | 5.151 | 6.340 | 6.341>> |
| 111 | 5.533 | 5.536 | 5.741 | 5.744<< |
| 112 | 4.756>> | 4.757 | 6.954 | 6.955 |
| 112 | 4.582<< | 4.582 | 7.226 | 7.226 |
| 112 | 4.756 | 4.757>> | 6.954 | 6.955 |
| 112 | 4.582 | 4.582<< | 7.226 | 7.226 |
| 112 | 4.582 | 4.582 | 7.226>> | 7.226 |
| 112 | 4.756 | 4.757 | 6.954<< | 6.955 |
| 112 | 4.582 | 4.582 | 7.226 | 7.226>> |
| 112 | 4.756 | 4.757 | 6.954 | 6.955<< |

LAV-Gelida. V.Rierussa. ELS Comb Cuasip.(t=inf)(1.00*G+0.4*LEV+0.90*P+0.5*GT)

| BARRA 112 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 112 | 3.537>> | 3.531 | 5.373 | 5.367 |
| 112 | 3.361<< | 3.358 | 5.570 | 5.567 |
| 112 | 3.537 | 3.531>> | 5.373 | 5.367 |
| 112 | 3.361 | 3.358<< | 5.570 | 5.567 |
| 112 | 3.361 | 3.358 | 5.570>> | 5.567 |
| 112 | 3.537 | 3.531 | 5.373<< | 5.367 |
| 112 | 3.361 | 3.358 | 5.570 | 5.567>> |
| 112 | 3.537 | 3.531 | 5.373 | 5.367<< |
| 113 | 3.680>> | 3.673 | 5.208 | 5.201 |
| 113 | 3.667<< | 3.664 | 5.195 | 5.192 |
| 113 | 3.680 | 3.673>> | 5.208 | 5.201 |
| 113 | 3.667 | 3.664<< | 5.195 | 5.192 |
| 113 | 3.680 | 3.673 | 5.208>> | 5.201 |
| 113 | 3.667 | 3.664 | 5.195<< | 5.192 |
| 113 | 3.680 | 3.673 | 5.208 | 5.201>> |
| 113 | 3.667 | 3.664 | 5.195 | 5.192<< |

### 7.2.3. Combinación Frecuente t=0

TITULO
=======
LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=0)(1.00*G+1.00*LEV+1.10*P+0.8*SC+0.5*GT)

FICHERO DE GEOMETRIA COMPLETA
==============================
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
================================
1

| Fich | Num. Nudos | Num. barras | Num. hipotesis | NOMBRE FICHERO |
|---|---|---|---|---|
| 1 | 120 | 119 | 57 | ESFipf.TXT |

| Fich | Hipotesis | Caracter | Coeficiente |
|---|---|---|---|
| 1 | 1 | 1 | 1.0 |
| 1 | 2 | 1 | 1.0 |
| 1 | 3 | 1 | 1.0 |
| 1 | 4 | 3 | 1.0 |
| 1 | 5 | 3 | 1.0 |
| 1 | 6 | 3 | 1.0 |
| 1 | 7 | 2 | 0.5 |
| 1 | 8 | 2 | 0.5 |
| 1 | 9 | 2 | 0.5 |
| 1 | 10 | 2 | 0.5 |
| 1 | 11 | 2 | 0.5 |
| 1 | 12 | 2 | 0.5 |
| 1 | 13 | 2 | 0.5 |
| 1 | 14 | 2 | 0.5 |
| 1 | 15 | 2 | 0.5 |
| 1 | 16 | 2 | 0.5 |
| 1 | 17 | 2 | 0.5 |
| 1 | 18 | 2 | 0.5 |
| 1 | 19 | 4 | 0.8 |
| 1 | 20 | 5 | 0.8 |
| 1 | 21 | 4 | 0.8 |
| 1 | 22 | 5 | 0.8 |
| 1 | 23 | 4 | 0.8 |
| 1 | 24 | 5 | 0.8 |
| 1 | 25 | 4 | 0.8 |
| 1 | 26 | 5 | 0.8 |
| 1 | 27 | 4 | 0.8 |
| 1 | 28 | 5 | 0.8 |
| 1 | 29 | 4 | 0.8 |
| 1 | 30 | 5 | 0.8 |
| 1 | 31 | 4 | 0.8 |
| 1 | 32 | 5 | 0.8 |
| 1 | 33 | 4 | 0.8 |
| 1 | 34 | 5 | 0.8 |
| 1 | 35 | 4 | 0.8 |
| 1 | 36 | 5 | 0.8 |
| 1 | 37 | 2 | 0.5 |
| 1 | 38 | 1 | 24.542 |
| 1 | 39 | 1 | 3.506 |
| 1 | 40 | 1 | 3.506 |
| 1 | 41 | 1 | 14.024 |
| 1 | 42 | 1 | 3.506 |
| 1 | 43 | 1 | 3.506 |
| 1 | 44 | 1 | 8.173 |
| 1 | 45 | 1 | 8.173 |
| 1 | 46 | 1 | 8.173 |
| 1 | 47 | 1 | 8.173 |
| 1 | 48 | 1 | 8.173 |
| 1 | 49 | 1 | 8.173 |
| 1 | 50 | 1 | 8.173 |
| 1 | 51 | 1 | 8.173 |
| 1 | 52 | 1 | 8.173 |
| 1 | 53 | 1 | 8.173 |
| 1 | 54 | 1 | 8.173 |
| 1 | 55 | 1 | 8.173 |
| 1 | 56 | 1 | 8.173 |
| 1 | 57 | 1 | 8.173 |

PONDERACION DE TENSIONES

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=0)(1.00*G+1.00*LEV+1.10*P+0.8*SC+0.5*GT)

| BARRA | | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|---|
| | 1 | 7.507>> | 7.392 | 6.872 | 6.757 |
| | 1 | 7.407<< | 7.469 | 6.772 | 6.834 |
| | 1 | 7.420 | 7.479>> | 6.785 | 6.844 |
| | 1 | 7.494 | 7.383<< | 6.859 | 6.748 |
| | 1 | 7.507 | 7.392 | 6.872>> | 6.757 |
| | 1 | 7.407 | 7.469 | 6.772<< | 6.834 |
| | 1 | 7.420 | 7.479 | 6.785 | 6.844>> |
| | 1 | 7.494 | 7.383 | 6.859 | 6.748<< |
| | 2 | 7.132>> | 7.112 | 7.262 | 7.243 |
| | 2 | 6.355<< | 6.346 | 8.130 | 8.121 |
| | 2 | 7.130 | 7.114>> | 7.261 | 7.244 |
| | 2 | 6.357 | 6.344<< | 8.132 | 8.119 |
| | 2 | 6.356 | 6.344 | 8.132>> | 8.120 |
| | 2 | 7.131 | 7.114 | 7.261<< | 7.243 |
| | 2 | 6.355 | 6.345 | 8.131 | 8.121>> |
| | 2 | 7.132 | 7.113 | 7.261 | 7.243<< |

| BARRA | | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|---|
| | 2 | 9.210>> | 9.237 | 9.378 | 9.405 |
| | 2 | 8.455<< | 8.455 | 10.588 | 10.588 |
| | 2 | 9.209 | 9.238>> | 9.377 | 9.406 |
| | 2 | 8.456 | 8.455<< | 10.589 | 10.587 |
| | 2 | 8.456 | 8.455 | 10.589>> | 10.587 |
| | 2 | 9.209 | 9.238 | 9.377<< | 9.406 |
| | 2 | 8.455 | 8.455 | 10.588 | 10.588>> |
| | 2 | 9.210 | 9.237 | 9.378 | 9.405<< |
| | 3 | 10.402>> | 10.465 | 7.475 | 7.538 |
| | 3 | 8.680<< | 8.679 | 10.239 | 10.239 |
| | 3 | 10.401 | 10.467>> | 7.473 | 7.539 |
| | 3 | 8.681 | 8.678<< | 10.241 | 10.237 |
| | 3 | 8.681 | 8.678 | 10.241>> | 10.237 |
| | 3 | 10.401 | 10.467 | 7.473<< | 7.539 |
| | 3 | 8.680 | 8.679 | 10.239 | 10.239>> |
| | 3 | 10.402 | 10.465 | 7.475 | 7.538<< |

| BARRA | | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|---|
| | 3 | 10.416>> | 10.479 | 7.513 | 7.576 |
| | 3 | 8.693<< | 8.693 | 10.277 | 10.277 |
| | 3 | 10.414 | 10.480>> | 7.511 | 7.578 |
| | 3 | 8.695 | 8.692<< | 10.279 | 10.275 |
| | 3 | 8.695 | 8.692 | 10.279>> | 10.275 |
| | 3 | 10.414 | 10.480 | 7.511<< | 7.578 |
| | 3 | 8.693 | 8.693 | 10.277 | 10.277>> |
| | 3 | 10.416 | 10.479 | 7.513 | 7.576<< |
| | 4 | 11.399>> | 11.492 | 5.942 | 6.035 |
| | 4 | 8.853<< | 8.853 | 10.028 | 10.028 |
| | 4 | 11.397 | 11.495>> | 5.940 | 6.038 |
| | 4 | 8.856 | 8.850<< | 10.031 | 10.025 |
| | 4 | 8.856 | 8.850 | 10.031>> | 10.025 |
| | 4 | 11.397 | 11.495 | 5.940<< | 6.038 |
| | 4 | 8.853 | 8.853 | 10.028 | 10.028>> |
| | 4 | 11.399 | 11.492 | 5.942 | 6.035<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=0)(1.00*G+1.00*LEV+1.10*P+0.8*SC+0.5*GT)

| BARRA | | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|---|
| | 4 | 11.411>> | 11.504 | 5.984 | 6.077 |
| | 4 | 8.864<< | 8.864 | 10.070 | 10.070 |
| | 4 | 11.408 | 11.506>> | 5.982 | 6.080 |
| | 4 | 8.867 | 8.862<< | 10.073 | 10.067 |
| | 4 | 8.867 | 8.862 | 10.073>> | 10.067 |
| | 4 | 11.408 | 11.506 | 5.982<< | 6.080 |
| | 4 | 8.864 | 8.864 | 10.070 | 10.070>> |
| | 4 | 11.411 | 11.504 | 5.984 | 6.077<< |
| | 5 | 12.190>> | 12.307 | 4.740 | 4.857 |
| | 5 | 8.964<< | 8.964 | 9.915 | 9.914 |
| | 5 | 12.187 | 12.310>> | 4.736 | 4.860 |
| | 5 | 8.968 | 8.960<< | 9.918 | 9.911 |
| | 5 | 8.968 | 8.960 | 9.918>> | 9.911 |
| | 5 | 12.187 | 12.310 | 4.736<< | 4.860 |
| | 5 | 8.964 | 8.964 | 9.915 | 9.914>> |
| | 5 | 12.190 | 12.307 | 4.740 | 4.857<< |

| BARRA | | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|---|
| | 5 | 12.199>> | 12.315 | 4.783 | 4.900 |
| | 5 | 8.973<< | 8.972 | 9.958 | 9.957 |
| | 5 | 12.195 | 12.319>> | 4.780 | 4.903 |
| | 5 | 8.976 | 8.969<< | 9.961 | 9.954 |
| | 5 | 8.976 | 8.969 | 9.961>> | 9.954 |
| | 5 | 12.195 | 12.319 | 4.780<< | 4.903 |
| | 5 | 8.973 | 8.972 | 9.958 | 9.957>> |
| | 5 | 12.199 | 12.315 | 4.783 | 4.900<< |
| | 6 | 12.772>> | 12.906 | 3.867 | 4.002 |
| | 6 | 9.011<< | 9.010 | 9.899 | 9.898 |
| | 6 | 12.767 | 12.911>> | 3.863 | 4.006 |
| | 6 | 9.015 | 9.006<< | 9.903 | 9.894 |
| | 6 | 9.015 | 9.006 | 9.903>> | 9.894 |
| | 6 | 12.767 | 12.911 | 3.863<< | 4.006 |
| | 6 | 9.011 | 9.010 | 9.899 | 9.898>> |
| | 6 | 12.772 | 12.906 | 3.867 | 4.002<< |

| BARRA | | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|---|
| | 6 | 12.779>> | 12.913 | 3.912 | 4.047 |
| | 6 | 9.018<< | 9.017 | 9.944 | 9.943 |
| | 6 | 12.775 | 12.918>> | 3.908 | 4.051 |
| | 6 | 9.022 | 9.013<< | 9.948 | 9.939 |
| | 6 | 9.022 | 9.013 | 9.948>> | 9.939 |
| | 6 | 12.775 | 12.918 | 3.908<< | 4.051 |
| | 6 | 9.018 | 9.017 | 9.944 | 9.943>> |
| | 6 | 12.779 | 12.913 | 3.912 | 4.047<< |
| | 7 | 13.149>> | 13.295 | 3.320 | 3.467 |
| | 7 | 8.997<< | 8.997 | 9.976 | 9.975 |
| | 7 | 13.144 | 13.301>> | 3.315 | 3.472 |
| | 7 | 9.002 | 8.991<< | 9.981 | 9.970 |
| | 7 | 9.002 | 8.991 | 9.981>> | 9.970 |
| | 7 | 13.144 | 13.301 | 3.315<< | 3.472 |
| | 7 | 8.997 | 8.997 | 9.976 | 9.975>> |
| | 7 | 13.149 | 13.295 | 3.320 | 3.467<< |

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| BARRA 7 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 7 | 13.155>> | 13.302 | 3.365 | 3.511 |
| 7 | 9.003<< | 9.003 | 10.020 | 10.020 |
| 7 | 13.150 | 13.307>> | 3.360 | 3.517 |
| 7 | 9.008 | 8.998<< | 10.026 | 10.015 |
| 7 | 9.008 | 8.998 | 10.026>> | 10.015 |
| 7 | 13.150 | 13.307 | 3.360<< | 3.517 |
| 7 | 9.003 | 9.003 | 10.020 | 10.020>> |
| 7 | 13.155 | 13.302 | 3.365 | 3.511<< |
| 8 | 13.324>> | 13.476 | 3.095 | 3.247 |
| 8 | 8.925<< | 8.925 | 10.142 | 10.142 |
| 8 | 13.318 | 13.482>> | 3.089 | 3.253 |
| 8 | 8.931 | 8.919<< | 10.148 | 10.135 |
| 8 | 8.931 | 8.919 | 10.148>> | 10.135 |
| 8 | 13.318 | 13.482 | 3.089<< | 3.253 |
| 8 | 8.925 | 8.925 | 10.142 | 10.142>> |
| 8 | 13.324 | 13.476 | 3.095 | 3.247<< |

| BARRA 8 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 8 | 13.330>> | 13.483 | 3.146 | 3.298 |
| 8 | 8.932<< | 8.931 | 10.193 | 10.192 |
| 8 | 13.324 | 13.489>> | 3.139 | 3.304 |
| 8 | 8.938 | 8.925<< | 10.199 | 10.186 |
| 8 | 8.938 | 8.925 | 10.199>> | 10.186 |
| 8 | 13.324 | 13.489 | 3.139<< | 3.304 |
| 8 | 8.932 | 8.931 | 10.193 | 10.192>> |
| 8 | 13.330 | 13.483 | 3.146 | 3.298<< |
| 9 | 13.330>> | 13.482 | 3.147 | 3.299 |
| 9 | 8.829<< | 8.828 | 10.353 | 10.352 |
| 9 | 13.323 | 13.489>> | 3.140 | 3.306 |
| 9 | 8.836 | 8.822<< | 10.360 | 10.345 |
| 9 | 8.836 | 8.822 | 10.360>> | 10.345 |
| 9 | 13.323 | 13.489 | 3.140<< | 3.306 |
| 9 | 8.829 | 8.828 | 10.353 | 10.352>> |
| 9 | 13.330 | 13.482 | 3.147 | 3.299<< |

| BARRA 9 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 9 | 13.326>> | 13.479 | 3.143 | 3.295 |
| 9 | 8.826<< | 8.825 | 10.349 | 10.348 |
| 9 | 13.319 | 13.485>> | 3.136 | 3.302 |
| 9 | 8.833 | 8.818<< | 10.356 | 10.341 |
| 9 | 8.833 | 8.818 | 10.356>> | 10.341 |
| 9 | 13.319 | 13.485 | 3.136<< | 3.302 |
| 9 | 8.826 | 8.825 | 10.349 | 10.348>> |
| 9 | 13.326 | 13.479 | 3.143 | 3.295<< |
| 10 | 13.193>> | 13.339 | 3.358 | 3.504 |
| 10 | 8.734<< | 8.734 | 10.491 | 10.491 |
| 10 | 13.185 | 13.347>> | 3.350 | 3.512 |
| 10 | 8.742 | 8.726<< | 10.499 | 10.483 |
| 10 | 8.742 | 8.726 | 10.499>> | 10.483 |
| 10 | 13.185 | 13.347 | 3.350<< | 3.512 |
| 10 | 8.734 | 8.734 | 10.491 | 10.491>> |
| 10 | 13.193 | 13.339 | 3.358 | 3.504<< |

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| BARRA 10 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 10 | 13.183>> | 13.329 | 3.326 | 3.472 |
| 10 | 8.725<< | 8.724 | 10.459 | 10.459 |
| 10 | 13.175 | 13.337>> | 3.318 | 3.480 |
| 10 | 8.732 | 8.716<< | 10.467 | 10.451 |
| 10 | 8.732 | 8.716 | 10.467>> | 10.451 |
| 10 | 13.175 | 13.337 | 3.318<< | 3.480 |
| 10 | 8.725 | 8.724 | 10.459 | 10.459>> |
| 10 | 13.183 | 13.329 | 3.326 | 3.472<< |
| 11 | 12.915>> | 13.049 | 3.759 | 3.893 |
| 11 | 8.643<< | 8.642 | 10.587 | 10.586 |
| 11 | 12.906 | 13.058>> | 3.751 | 3.902 |
| 11 | 8.652 | 8.633<< | 10.595 | 10.577 |
| 11 | 8.652 | 8.633 | 10.595>> | 10.577 |
| 11 | 12.906 | 13.058 | 3.751<< | 3.902 |
| 11 | 8.643 | 8.642 | 10.587 | 10.586>> |
| 11 | 12.915 | 13.049 | 3.759 | 3.893<< |

| BARRA 11 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 11 | 12.903>> | 13.037 | 3.728 | 3.862 |
| 11 | 8.630<< | 8.630 | 10.556 | 10.555 |
| 11 | 12.894 | 13.046>> | 3.720 | 3.871 |
| 11 | 8.639 | 8.621<< | 10.564 | 10.546 |
| 11 | 8.639 | 8.621 | 10.564>> | 10.546 |
| 11 | 12.894 | 13.046 | 3.720<< | 3.871 |
| 11 | 8.630 | 8.630 | 10.556 | 10.555>> |
| 11 | 12.903 | 13.037 | 3.728 | 3.862<< |
| 12 | 12.495>> | 12.611 | 4.387 | 4.503 |
| 12 | 8.553<< | 8.553 | 10.676 | 10.675 |
| 12 | 12.485 | 12.621>> | 4.377 | 4.512 |
| 12 | 8.563 | 8.543<< | 10.685 | 10.665 |
| 12 | 8.563 | 8.543 | 10.685>> | 10.665 |
| 12 | 12.485 | 12.621 | 4.377<< | 4.512 |
| 12 | 8.553 | 8.553 | 10.676 | 10.675>> |
| 12 | 12.495 | 12.611 | 4.387 | 4.503<< |

| BARRA 12 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 12 | 11.946>> | 12.062 | 3.153 | 3.269 |
| 12 | 8.005<< | 8.004 | 9.442 | 9.441 |
| 12 | 11.937 | 12.072>> | 3.144 | 3.279 |
| 12 | 8.015 | 7.994<< | 9.452 | 9.432 |
| 12 | 8.015 | 7.994 | 9.452>> | 9.432 |
| 12 | 11.937 | 12.072 | 3.144<< | 3.279 |
| 12 | 8.005 | 8.004 | 9.442 | 9.441>> |
| 12 | 11.946 | 12.062 | 3.153 | 3.269<< |
| 13 | 11.436>> | 11.520 | 3.989 | 4.073 |
| 13 | 7.891<< | 7.898 | 9.610 | 9.617 |
| 13 | 11.425 | 11.531>> | 3.978 | 4.083 |
| 13 | 7.902 | 7.887<< | 9.620 | 9.606 |
| 13 | 7.902 | 7.887 | 9.620>> | 9.606 |
| 13 | 11.425 | 11.531 | 3.978<< | 4.083 |
| 13 | 7.891 | 7.898 | 9.610 | 9.617>> |
| 13 | 11.436 | 11.520 | 3.989 | 4.073<< |

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| BARRA 13 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 13 | 11.414>> | 11.498 | 3.964 | 4.048 |
| 13 | 7.869<< | 7.876 | 9.585 | 9.592 |
| 13 | 11.404 | 11.509>> | 3.954 | 4.059 |
| 13 | 7.880 | 7.866<< | 9.596 | 9.582 |
| 13 | 7.880 | 7.866 | 9.596>> | 9.582 |
| 13 | 11.404 | 11.509 | 3.954<< | 4.059 |
| 13 | 7.869 | 7.876 | 9.585 | 9.592>> |
| 13 | 11.414 | 11.498 | 3.964 | 4.048<< |
| 14 | 10.978>> | 11.032 | 4.683 | 4.736 |
| 14 | 7.543<< | 7.551 | 10.092 | 10.099 |
| 14 | 10.967 | 11.043>> | 4.671 | 4.747 |
| 14 | 7.555 | 7.540<< | 10.103 | 10.088 |
| 14 | 7.555 | 7.540 | 10.103>> | 10.088 |
| 14 | 10.967 | 11.043 | 4.671<< | 4.747 |
| 14 | 7.543 | 7.551 | 10.092 | 10.099>> |
| 14 | 10.978 | 11.032 | 4.683 | 4.736<< |

| BARRA 14 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 14 | 10.949>> | 11.003 | 4.666 | 4.719 |
| 14 | 7.515<< | 7.522 | 10.075 | 10.082 |
| 14 | 10.938 | 11.014>> | 4.654 | 4.731 |
| 14 | 7.526 | 7.511<< | 10.086 | 10.071 |
| 14 | 7.526 | 7.511 | 10.086>> | 10.071 |
| 14 | 10.938 | 11.014 | 4.654<< | 4.731 |
| 14 | 7.515 | 7.522 | 10.075 | 10.082>> |
| 14 | 10.949 | 11.003 | 4.666 | 4.719<< |
| 15 | 10.666>> | 10.255 | 5.702 | 5.290 |
| 15 | 6.954<< | 7.440 | 10.337 | 10.823 |
| 15 | 10.349 | 10.570>> | 5.387 | 5.608 |
| 15 | 7.289 | 7.106<< | 10.670 | 10.487 |
| 15 | 7.289 | 7.106 | 10.670>> | 10.487 |
| 15 | 10.349 | 10.570 | 5.387<< | 5.608 |
| 15 | 6.954 | 7.440 | 10.337 | 10.823>> |
| 15 | 10.666 | 10.255 | 5.702 | 5.290<< |

| BARRA 15 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 15 | 9.877>> | 9.543 | 5.337 | 5.002 |
| 15 | 6.438<< | 6.829 | 8.895 | 9.285 |
| 15 | 9.632 | 9.787>> | 5.093 | 5.248 |
| 15 | 6.600 | 6.568<< | 9.144 | 9.111 |
| 15 | 6.699 | 6.569 | 9.154>> | 9.024 |
| 15 | 9.632 | 9.787 | 5.093<< | 5.248 |
| 15 | 6.438 | 6.829 | 8.895 | 9.285>> |
| 15 | 9.852 | 9.627 | 5.220 | 4.995<< |
| 16 | 11.663>> | 11.445 | 2.937 | 2.718 |
| 16 | 7.128<< | 7.382 | 8.225 | 8.479 |
| 16 | 11.651 | 11.456>> | 2.925 | 2.730 |
| 16 | 7.140 | 7.370<< | 8.237 | 8.467 |
| 16 | 7.140 | 7.370 | 8.237>> | 8.467 |
| 16 | 11.651 | 11.456 | 2.925<< | 2.730 |
| 16 | 7.128 | 7.382 | 8.225 | 8.479>> |
| 16 | 11.663 | 11.445 | 2.937 | 2.718<< |

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| BARRA 16 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 16 | 11.782>> | 11.536 | 2.995 | 2.749 |
| 16 | 7.195<< | 7.489 | 8.176 | 8.470 |
| 16 | 11.743 | 11.575>> | 2.956 | 2.788 |
| 16 | 7.234 | 7.450<< | 8.215 | 8.431 |
| 16 | 7.208 | 7.452 | 8.217>> | 8.461 |
| 16 | 11.769 | 11.573 | 2.954<< | 2.759 |
| 16 | 7.196 | 7.463 | 8.205 | 8.472>> |
| 16 | 11.781 | 11.562 | 2.966 | 2.747<< |
| 17 | 11.164>> | 10.930 | 3.761 | 3.527 |
| 17 | 5.194<< | 5.437 | 10.761 | 11.004 |
| 17 | 11.152 | 10.943>> | 3.749 | 3.540 |
| 17 | 5.206 | 5.425<< | 10.773 | 10.992 |
| 17 | 5.206 | 5.425 | 10.773>> | 10.992 |
| 17 | 11.152 | 10.943 | 3.749<< | 3.540 |
| 17 | 5.194 | 5.437 | 10.761 | 11.004>> |
| 17 | 11.164 | 10.930 | 3.761 | 3.527<< |

| BARRA 17 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 17 | 11.086>> | 10.853 | 3.766 | 3.532 |
| 17 | 5.116<< | 5.359 | 10.765 | 11.009 |
| 17 | 11.074 | 10.865>> | 3.754 | 3.545 |
| 17 | 5.128 | 5.347<< | 10.778 | 10.996 |
| 17 | 5.128 | 5.347 | 10.778>> | 10.996 |
| 17 | 11.074 | 10.865 | 3.754<< | 3.545 |
| 17 | 5.116 | 5.359 | 10.765 | 11.009>> |
| 17 | 11.086 | 10.853 | 3.766 | 3.532<< |
| 18 | 11.626>> | 11.393 | 3.084 | 2.851 |
| 18 | 7.062<< | 7.323 | 8.289 | 8.549 |
| 18 | 11.612 | 11.406>> | 3.070 | 2.865 |
| 18 | 7.076 | 7.309<< | 8.303 | 8.536 |
| 18 | 7.076 | 7.309 | 8.303>> | 8.536 |
| 18 | 11.612 | 11.406 | 3.070<< | 2.865 |
| 18 | 7.062 | 7.323 | 8.289 | 8.549>> |
| 18 | 11.626 | 11.393 | 3.084 | 2.851<< |

| BARRA 18 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 18 | 11.389>> | 11.131 | 3.058 | 2.800 |
| 18 | 6.878<< | 7.130 | 8.275 | 8.527 |
| 18 | 11.356 | 11.163>> | 3.026 | 2.832 |
| 18 | 6.911 | 7.097<< | 8.308 | 8.494 |
| 18 | 6.893 | 7.097 | 8.310>> | 8.515 |
| 18 | 11.375 | 11.163 | 3.023<< | 2.811 |
| 18 | 6.879 | 7.111 | 8.296 | 8.529>> |
| 18 | 11.389 | 11.149 | 3.037 | 2.797<< |
| 19 | 9.370>> | 9.097 | 5.614 | 5.340 |
| 19 | 6.136<< | 6.416 | 9.158 | 9.438 |
| 19 | 9.030 | 9.159>> | 5.592 | 5.721 |
| 19 | 6.447 | 6.363<< | 9.173 | 9.089 |
| 19 | 6.169 | 6.367 | 9.210>> | 9.408 |
| 19 | 9.337 | 9.146 | 5.561<< | 5.369 |
| 19 | 6.137 | 6.399 | 9.178 | 9.441>> |
| 19 | 9.370 | 9.113 | 5.594 | 5.337<< |

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| BARRA 19 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 19 | 10.273>> | 9.965 | 5.691 | 5.383 |
| 19 | 6.782<< | 7.133 | 10.287 | 10.638 |
| 19 | 9.896 | 10.045>> | 5.694 | 5.843 |
| 19 | 7.127 | 7.064<< | 10.279 | 10.216 |
| 19 | 6.805 | 7.078 | 10.350>> | 10.624 |
| 19 | 10.250 | 10.020 | 5.628<< | 5.397 |
| 19 | 6.788 | 7.096 | 10.333 | 10.641>> |
| 19 | 10.267 | 10.003 | 5.645 | 5.380<< |
| 20 | 10.197>> | 9.779 | 5.951 | 5.533 |
| 20 | 7.655<< | 8.147 | 8.747 | 9.239 |
| 20 | 10.030 | 10.101>> | 5.586 | 5.656 |
| 20 | 8.044 | 7.760<< | 9.133 | 8.849 |
| 20 | 8.044 | 7.760 | 9.133>> | 8.849 |
| 20 | 10.030 | 10.101 | 5.586<< | 5.656 |
| 20 | 7.655 | 8.147 | 8.747 | 9.239>> |
| 20 | 10.197 | 9.779 | 5.951 | 5.533<< |

| BARRA 20 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 20 | 10.185>> | 9.768 | 5.936 | 5.519 |
| 20 | 7.644<< | 8.137 | 8.731 | 9.224 |
| 20 | 10.020 | 10.090>> | 5.570 | 5.641 |
| 20 | 8.033 | 7.749<< | 9.118 | 8.835 |
| 20 | 8.033 | 7.749 | 9.118>> | 8.835 |
| 20 | 10.020 | 10.090 | 5.570<< | 5.641 |
| 20 | 7.644 | 8.137 | 8.731 | 9.224>> |
| 20 | 10.185 | 9.768 | 5.936 | 5.519<< |
| 21 | 10.499>> | 10.494 | 4.921 | 4.916 |
| 21 | 8.111<< | 8.071 | 8.685 | 8.645 |
| 21 | 10.420 | 10.572>> | 4.842 | 4.994 |
| 21 | 8.170 | 8.012<< | 8.744 | 8.586 |
| 21 | 8.154 | 8.013 | 8.747>> | 8.606 |
| 21 | 10.420 | 10.572 | 4.842<< | 4.994 |
| 21 | 8.111 | 8.071 | 8.685 | 8.645>> |
| 21 | 10.499 | 10.494 | 4.921 | 4.916<< |

| BARRA 21 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 21 | 10.491>> | 10.486 | 4.896 | 4.892 |
| 21 | 8.103<< | 8.063 | 8.661 | 8.620 |
| 21 | 10.412 | 10.564>> | 4.818 | 4.970 |
| 21 | 8.162 | 8.004<< | 8.719 | 8.562 |
| 21 | 8.146 | 8.005 | 8.723>> | 8.581 |
| 21 | 10.412 | 10.564 | 4.818<< | 4.970 |
| 21 | 8.103 | 8.063 | 8.661 | 8.620>> |
| 21 | 10.491 | 10.486 | 4.896 | 4.892<< |
| 22 | 11.104>> | 11.115 | 3.921 | 3.931 |
| 22 | 8.136<< | 8.061 | 8.654 | 8.579 |
| 22 | 11.022 | 11.197>> | 3.839 | 4.013 |
| 22 | 8.199 | 8.019<< | 8.690 | 8.510 |
| 22 | 8.199 | 8.019 | 8.690>> | 8.510 |
| 22 | 11.022 | 11.197 | 3.839<< | 4.013 |
| 22 | 8.136 | 8.061 | 8.654 | 8.579>> |
| 22 | 11.104 | 11.115 | 3.921 | 3.931<< |

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| BARRA 22 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 22 | 10.338>> | 10.349 | 4.064 | 4.074 |
| 22 | 7.370<< | 7.295 | 8.796 | 8.722 |
| 22 | 10.256 | 10.431>> | 3.981 | 4.156 |
| 22 | 7.433 | 7.253<< | 8.833 | 8.653 |
| 22 | 7.433 | 7.253 | 8.833>> | 8.653 |
| 22 | 10.256 | 10.431 | 3.981<< | 4.156 |
| 22 | 7.370 | 7.295 | 8.796 | 8.722>> |
| 22 | 10.338 | 10.349 | 4.064 | 4.074<< |
| 23 | 10.888>> | 10.901 | 3.204 | 3.218 |
| 23 | 7.345<< | 7.258 | 8.851 | 8.764 |
| 23 | 10.802 | 10.987>> | 3.118 | 3.303 |
| 23 | 7.379 | 7.224<< | 8.885 | 8.730 |
| 23 | 7.369 | 7.225 | 8.887>> | 8.743 |
| 23 | 10.812 | 10.986 | 3.116<< | 3.291 |
| 23 | 7.346 | 7.248 | 8.864 | 8.766>> |
| 23 | 10.887 | 10.911 | 3.191 | 3.216<< |

| BARRA 23 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 23 | 10.886>> | 10.900 | 3.221 | 3.235 |
| 23 | 7.343<< | 7.257 | 8.869 | 8.782 |
| 23 | 10.800 | 10.986>> | 3.135 | 3.321 |
| 23 | 7.377 | 7.222<< | 8.903 | 8.748 |
| 23 | 7.367 | 7.223 | 8.905>> | 8.760 |
| 23 | 10.810 | 10.985 | 3.134<< | 3.308 |
| 23 | 7.344 | 7.247 | 8.881 | 8.784>> |
| 23 | 10.885 | 10.910 | 3.209 | 3.233<< |
| 24 | 11.319>> | 11.340 | 2.538 | 2.559 |
| 24 | 7.315<< | 7.207 | 8.940 | 8.832 |
| 24 | 11.238 | 11.421>> | 2.457 | 2.639 |
| 24 | 7.340 | 7.182<< | 8.965 | 8.807 |
| 24 | 7.340 | 7.182 | 8.965>> | 8.807 |
| 24 | 11.266 | 11.417 | 2.454<< | 2.605 |
| 24 | 7.315 | 7.207 | 8.940 | 8.832>> |
| 24 | 11.319 | 11.340 | 2.538 | 2.559<< |

| BARRA 24 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 24 | 11.316>> | 11.338 | 2.555 | 2.577 |
| 24 | 7.312<< | 7.204 | 8.958 | 8.850 |
| 24 | 11.236 | 11.418>> | 2.475 | 2.657 |
| 24 | 7.337 | 7.179<< | 8.983 | 8.825 |
| 24 | 7.337 | 7.179 | 8.983>> | 8.825 |
| 24 | 11.263 | 11.414 | 2.472<< | 2.623 |
| 24 | 7.312 | 7.204 | 8.958 | 8.850>> |
| 24 | 11.316 | 11.338 | 2.555 | 2.577<< |
| 25 | 11.634>> | 11.647 | 2.071 | 2.084 |
| 25 | 7.287<< | 7.168 | 9.012 | 8.893 |
| 25 | 11.548 | 11.734>> | 1.984 | 2.170 |
| 25 | 7.313 | 7.141<< | 9.038 | 8.866 |
| 25 | 7.313 | 7.141 | 9.038>> | 8.866 |
| 25 | 11.582 | 11.733 | 1.976<< | 2.127 |
| 25 | 7.287 | 7.168 | 9.012 | 8.893>> |
| 25 | 11.634 | 11.647 | 2.071 | 2.084<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=0)(1.00*G+1.00*LEV+1.10*P+0.8*SC+0.5*GT)

| BARRA 25 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 25 | 11.632>> | 11.644 | 2.084 | 2.097 |
| 25 | 7.284<< | 7.165 | 9.025 | 8.906 |
| 25 | 11.545 | 11.731>> | 1.998 | 2.183 |
| 25 | 7.310 | 7.138<< | 9.052 | 8.880 |
| 25 | 7.310 | 7.138 | 9.052>> | 8.880 |
| 25 | 11.579 | 11.730 | 1.990<< | 2.141 |
| 25 | 7.284 | 7.165 | 9.025 | 8.906>> |
| 25 | 11.632 | 11.644 | 2.084 | 2.097<< |
| 26 | 11.835>> | 11.834 | 1.785 | 1.785 |
| 26 | 7.263<< | 7.132 | 9.074 | 8.943 |
| 26 | 11.782 | 11.929>> | 1.679 | 1.826 |
| 26 | 7.291 | 7.104<< | 9.102 | 8.915 |
| 26 | 7.291 | 7.104 | 9.102>> | 8.915 |
| 26 | 11.782 | 11.929 | 1.679<< | 1.826 |
| 26 | 7.263 | 7.132 | 9.074 | 8.943>> |
| 26 | 11.835 | 11.834 | 1.785 | 1.785<< |

| BARRA 26 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 26 | 11.832>> | 11.832 | 1.793 | 1.792 |
| 26 | 7.260<< | 7.129 | 9.081 | 8.950 |
| 26 | 11.779 | 11.926>> | 1.687 | 1.834 |
| 26 | 7.288 | 7.101<< | 9.109 | 8.923 |
| 26 | 7.288 | 7.101 | 9.109>> | 8.923 |
| 26 | 11.779 | 11.926 | 1.687<< | 1.834 |
| 26 | 7.260 | 7.129 | 9.081 | 8.950>> |
| 26 | 11.832 | 11.832 | 1.793 | 1.792<< |
| 27 | 11.919>> | 11.900 | 1.681 | 1.662 |
| 27 | 7.242<< | 7.099 | 9.125 | 8.982 |
| 27 | 11.866 | 12.004>> | 1.563 | 1.701 |
| 27 | 7.271 | 7.069<< | 9.155 | 8.953 |
| 27 | 7.271 | 7.069 | 9.155>> | 8.953 |
| 27 | 11.866 | 12.004 | 1.563<< | 1.701 |
| 27 | 7.242 | 7.099 | 9.125 | 8.982>> |
| 27 | 11.919 | 11.900 | 1.681 | 1.662<< |

| BARRA 27 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 27 | 11.917>> | 11.898 | 1.684 | 1.665 |
| 27 | 7.240<< | 7.097 | 9.129 | 8.986 |
| 27 | 11.864 | 12.002>> | 1.566 | 1.704 |
| 27 | 7.269 | 7.067<< | 9.158 | 8.956 |
| 27 | 7.269 | 7.067 | 9.158>> | 8.956 |
| 27 | 11.864 | 12.002 | 1.566<< | 1.704 |
| 27 | 7.240 | 7.097 | 9.129 | 8.986>> |
| 27 | 11.917 | 11.898 | 1.684 | 1.665<< |
| 28 | 11.888>> | 11.846 | 1.759 | 1.717 |
| 28 | 7.225<< | 7.069 | 9.169 | 9.013 |
| 28 | 11.835 | 11.958>> | 1.630 | 1.753 |
| 28 | 7.256 | 7.038<< | 9.199 | 8.982 |
| 28 | 7.256 | 7.038 | 9.199>> | 8.982 |
| 28 | 11.835 | 11.958 | 1.630<< | 1.753 |
| 28 | 7.225 | 7.069 | 9.169 | 9.013>> |
| 28 | 11.888 | 11.846 | 1.759 | 1.717<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=0)(1.00*G+1.00*LEV+1.10*P+0.8*SC+0.5*GT)

| BARRA 28 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 28 | 11.886>> | 11.844 | 1.757 | 1.714 |
| 28 | 7.223<< | 7.067 | 9.166 | 9.010 |
| 28 | 11.834 | 11.957>> | 1.627 | 1.750 |
| 28 | 7.254 | 7.037<< | 9.197 | 8.979 |
| 28 | 7.254 | 7.037 | 9.197>> | 8.979 |
| 28 | 11.834 | 11.957 | 1.627<< | 1.750 |
| 28 | 7.223 | 7.067 | 9.166 | 9.010>> |
| 28 | 11.886 | 11.844 | 1.757 | 1.714<< |
| 29 | 11.744>> | 11.674 | 2.014 | 1.944 |
| 29 | 7.214<< | 7.045 | 9.197 | 9.028 |
| 29 | 11.692 | 11.795>> | 1.874 | 1.977 |
| 29 | 7.246 | 7.013<< | 9.230 | 8.996 |
| 29 | 7.246 | 7.013 | 9.230>> | 8.996 |
| 29 | 11.692 | 11.795 | 1.874<< | 1.977 |
| 29 | 7.214 | 7.045 | 9.197 | 9.028>> |
| 29 | 11.744 | 11.674 | 2.014 | 1.944<< |

| BARRA 29 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 29 | 11.743>> | 11.673 | 2.007 | 1.936 |
| 29 | 7.213<< | 7.044 | 9.190 | 9.021 |
| 29 | 11.690 | 11.794>> | 1.866 | 1.969 |
| 29 | 7.245 | 7.011<< | 9.222 | 8.988 |
| 29 | 7.245 | 7.011 | 9.222>> | 8.988 |
| 29 | 11.690 | 11.794 | 1.866<< | 1.969 |
| 29 | 7.213 | 7.044 | 9.190 | 9.021>> |
| 29 | 11.743 | 11.673 | 2.007 | 1.936<< |
| 30 | 11.487>> | 11.383 | 2.448 | 2.344 |
| 30 | 7.209<< | 7.026 | 9.213 | 9.030 |
| 30 | 11.435 | 11.514>> | 2.295 | 2.375 |
| 30 | 7.243 | 6.992<< | 9.247 | 8.996 |
| 30 | 7.243 | 6.992 | 9.247>> | 8.996 |
| 30 | 11.435 | 11.514 | 2.295<< | 2.375 |
| 30 | 7.209 | 7.026 | 9.213 | 9.030>> |
| 30 | 11.469 | 11.480 | 2.329 | 2.341<< |

| BARRA 30 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 30 | 11.486>> | 11.382 | 2.436 | 2.332 |
| 30 | 7.207<< | 7.025 | 9.201 | 9.018 |
| 30 | 11.433 | 11.512>> | 2.283 | 2.363 |
| 30 | 7.241 | 6.991<< | 9.235 | 8.984 |
| 30 | 7.241 | 6.991 | 9.235>> | 8.984 |
| 30 | 11.433 | 11.512 | 2.283<< | 2.363 |
| 30 | 7.207 | 7.025 | 9.201 | 9.018>> |
| 30 | 11.467 | 11.478 | 2.317 | 2.329<< |
| 31 | 11.115>> | 10.973 | 3.061 | 2.920 |
| 31 | 7.194<< | 7.043 | 9.181 | 9.030 |
| 31 | 11.063 | 11.113>> | 2.898 | 2.948 |
| 31 | 7.271 | 6.968<< | 9.256 | 8.953 |
| 31 | 7.271 | 6.968 | 9.256>> | 8.953 |
| 31 | 11.063 | 11.113 | 2.898<< | 2.948 |
| 31 | 7.194 | 7.043 | 9.181 | 9.030>> |
| 31 | 11.098 | 11.077 | 2.933 | 2.912<< |

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| BARRA 31 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 31 | 11.113>> | 10.971 | 3.047 | 2.905 |
| 31 | 7.192<< | 7.041 | 9.166 | 9.015 |
| 31 | 11.060 | 11.110>> | 2.883 | 2.933 |
| 31 | 7.268 | 6.965<< | 9.241 | 8.938 |
| 31 | 7.268 | 6.965 | 9.241>> | 8.938 |
| 31 | 11.060 | 11.110 | 2.883<< | 2.933 |
| 31 | 7.192 | 7.041 | 9.166 | 9.015>> |
| 31 | 11.096 | 11.075 | 2.918 | 2.897<< |
| 32 | 10.624>> | 10.439 | 3.863 | 3.678 |
| 32 | 7.154<< | 6.972 | 9.265 | 9.082 |
| 32 | 10.572 | 10.588>> | 3.687 | 3.703 |
| 32 | 7.191 | 6.935<< | 9.302 | 9.045 |
| 32 | 7.173 | 6.939 | 9.302>> | 9.068 |
| 32 | 10.590 | 10.584 | 3.687<< | 3.681 |
| 32 | 7.158 | 6.953 | 9.288 | 9.082>> |
| 32 | 10.605 | 10.569 | 3.702 | 3.666<< |

| BARRA 32 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 32 | 10.619>> | 10.434 | 3.847 | 3.661 |
| 32 | 7.149<< | 6.967 | 9.249 | 9.066 |
| 32 | 10.567 | 10.583>> | 3.671 | 3.687 |
| 32 | 7.186 | 6.930<< | 9.286 | 9.029 |
| 32 | 7.168 | 6.934 | 9.286>> | 9.052 |
| 32 | 10.585 | 10.579 | 3.671<< | 3.664 |
| 32 | 7.153 | 6.948 | 9.271 | 9.066>> |
| 32 | 10.600 | 10.564 | 3.686 | 3.650<< |
| 33 | 10.134>> | 9.879 | 4.692 | 4.437 |
| 33 | 6.992<< | 6.809 | 9.495 | 9.311 |
| 33 | 10.049 | 10.070>> | 4.472 | 4.493 |
| 33 | 7.031 | 6.770<< | 9.533 | 9.273 |
| 33 | 7.011 | 6.774 | 9.534>> | 9.297 |
| 33 | 10.068 | 10.066 | 4.471<< | 4.469 |
| 33 | 6.996 | 6.789 | 9.519 | 9.312>> |
| 33 | 10.117 | 10.018 | 4.519 | 4.421<< |

| BARRA 33 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 33 | 10.126>> | 9.871 | 4.676 | 4.421 |
| 33 | 6.984<< | 6.800 | 9.479 | 9.296 |
| 33 | 10.040 | 10.061>> | 4.457 | 4.478 |
| 33 | 7.023 | 6.762<< | 9.518 | 9.257 |
| 33 | 7.003 | 6.766 | 9.519>> | 9.281 |
| 33 | 10.060 | 10.058 | 4.456<< | 4.453 |
| 33 | 6.988 | 6.781 | 9.504 | 9.296>> |
| 33 | 10.108 | 10.010 | 4.504 | 4.405<< |
| 34 | 9.745>> | 9.581 | 5.154 | 4.990 |
| 34 | 6.673<< | 6.512 | 9.936 | 9.774 |
| 34 | 9.685 | 9.640>> | 5.094 | 5.049 |
| 34 | 6.733 | 6.452<< | 9.995 | 9.714 |
| 34 | 6.694 | 6.457 | 9.999>> | 9.762 |
| 34 | 9.724 | 9.635 | 5.090<< | 5.001 |
| 34 | 6.678 | 6.473 | 9.983 | 9.778>> |
| 34 | 9.740 | 9.619 | 5.106 | 4.986<< |

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| BARRA 34 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 34 | 9.732>> | 9.568 | 5.142 | 4.978 |
| 34 | 6.660<< | 6.498 | 9.924 | 9.762 |
| 34 | 9.672 | 9.627>> | 5.082 | 5.038 |
| 34 | 6.719 | 6.439<< | 9.983 | 9.703 |
| 34 | 6.681 | 6.444 | 9.987>> | 9.751 |
| 34 | 9.711 | 9.622 | 5.078<< | 4.990 |
| 34 | 6.665 | 6.460 | 9.972 | 9.766>> |
| 34 | 9.726 | 9.606 | 5.094 | 4.974<< |
| 35 | 9.313>> | 9.083 | 5.878 | 5.648 |
| 35 | 5.913<< | 5.937 | 10.850 | 10.873 |
| 35 | 9.253 | 9.143>> | 5.818 | 5.709 |
| 35 | 5.974 | 5.876<< | 10.910 | 10.812 |
| 35 | 5.936 | 5.882 | 10.913>> | 10.860 |
| 35 | 9.291 | 9.137 | 5.815<< | 5.661 |
| 35 | 5.920 | 5.899 | 10.897 | 10.876>> |
| 35 | 9.307 | 9.121 | 5.831 | 5.645<< |

| BARRA 35 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 35 | 8.775>> | 8.558 | 5.505 | 5.288 |
| 35 | 5.583<< | 5.582 | 9.329 | 9.329 |
| 35 | 8.551 | 8.614>> | 5.451 | 5.514 |
| 35 | 5.632 | 5.534<< | 9.378 | 9.280 |
| 35 | 5.600 | 5.536 | 9.381>> | 9.317 |
| 35 | 8.583 | 8.612 | 5.449<< | 5.477 |
| 35 | 5.585 | 5.551 | 9.366 | 9.331>> |
| 35 | 8.773 | 8.590 | 5.468 | 5.285<< |
| 36 | 10.184>> | 10.132 | 3.510 | 3.458 |
| 36 | 6.099<< | 6.049 | 8.755 | 8.705 |
| 36 | 10.147 | 10.170>> | 3.473 | 3.496 |
| 36 | 6.137 | 6.011<< | 8.793 | 8.668 |
| 36 | 6.116 | 6.013 | 8.794>> | 8.691 |
| 36 | 10.168 | 10.168 | 3.472<< | 3.472 |
| 36 | 6.101 | 6.028 | 8.779 | 8.706>> |
| 36 | 10.183 | 10.153 | 3.487 | 3.457<< |

| BARRA 36 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 36 | 10.300>> | 10.250 | 3.533 | 3.483 |
| 36 | 6.167<< | 6.137 | 8.730 | 8.700 |
| 36 | 10.262 | 10.288>> | 3.495 | 3.521 |
| 36 | 6.205 | 6.099<< | 8.768 | 8.662 |
| 36 | 6.184 | 6.101 | 8.769>> | 8.685 |
| 36 | 10.283 | 10.286 | 3.495<< | 3.497 |
| 36 | 6.169 | 6.116 | 8.753 | 8.700>> |
| 36 | 10.298 | 10.271 | 3.510 | 3.482<< |
| 37 | 9.507>> | 9.455 | 4.537 | 4.485 |
| 37 | 4.109<< | 4.037 | 11.376 | 11.304 |
| 37 | 9.468 | 9.494>> | 4.498 | 4.524 |
| 37 | 4.148 | 3.998<< | 11.415 | 11.265 |
| 37 | 4.126 | 3.999 | 11.416>> | 11.289 |
| 37 | 9.490 | 9.493 | 4.497<< | 4.499 |
| 37 | 4.110 | 4.015 | 11.400 | 11.305>> |
| 37 | 9.506 | 9.477 | 4.512 | 4.484<< |

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| BARRA 37 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 37 | 9.513>> | 9.461 | 4.527 | 4.474 |
| 37 | 4.115<< | 4.043 | 11.365 | 11.294 |
| 37 | 9.474 | 9.500>> | 4.487 | 4.514 |
| 37 | 4.154 | 4.004<< | 11.405 | 11.255 |
| 37 | 4.132 | 4.005 | 11.406>> | 11.279 |
| 37 | 9.496 | 9.498 | 4.486<< | 4.489 |
| 37 | 4.116 | 4.021 | 11.390 | 11.295>> |
| 37 | 9.511 | 9.482 | 4.502 | 4.473<< |
| 38 | 10.185>> | 10.138 | 3.672 | 3.625 |
| 38 | 6.067<< | 6.060 | 8.827 | 8.820 |
| 38 | 10.150 | 10.174>> | 3.636 | 3.660 |
| 38 | 6.103 | 6.024<< | 8.863 | 8.784 |
| 38 | 6.103 | 6.024 | 8.863>> | 8.784 |
| 38 | 10.150 | 10.174 | 3.636<< | 3.660 |
| 38 | 6.067 | 6.060 | 8.827 | 8.820>> |
| 38 | 10.185 | 10.138 | 3.672 | 3.625<< |

| BARRA 38 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 38 | 10.073>> | 10.023 | 3.623 | 3.573 |
| 38 | 6.004<< | 5.976 | 8.828 | 8.799 |
| 38 | 10.037 | 10.060>> | 3.587 | 3.610 |
| 38 | 6.040 | 5.939<< | 8.864 | 8.763 |
| 38 | 6.040 | 5.939 | 8.864>> | 8.763 |
| 38 | 10.037 | 10.060 | 3.587<< | 3.610 |
| 38 | 6.004 | 5.976 | 8.828 | 8.799>> |
| 38 | 10.073 | 10.023 | 3.623 | 3.573<< |
| 39 | 8.476>> | 8.221 | 5.898 | 5.643 |
| 39 | 5.346<< | 5.379 | 9.569 | 9.601 |
| 39 | 8.265 | 8.324>> | 5.791 | 5.850 |
| 39 | 5.379 | 5.346<< | 9.602 | 9.568 |
| 39 | 5.379 | 5.346 | 9.602>> | 9.568 |
| 39 | 8.265 | 8.324 | 5.791<< | 5.850 |
| 39 | 5.346 | 5.379 | 9.569 | 9.601>> |
| 39 | 8.476 | 8.221 | 5.898 | 5.643<< |

| BARRA 39 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 39 | 9.236>> | 8.953 | 6.072 | 5.789 |
| 39 | 5.901<< | 5.976 | 10.810 | 10.885 |
| 39 | 9.022 | 9.070>> | 5.983 | 6.030 |
| 39 | 5.955 | 5.922<< | 10.864 | 10.831 |
| 39 | 5.938 | 5.923 | 10.867>> | 10.852 |
| 39 | 9.039 | 9.069 | 5.979<< | 6.009 |
| 39 | 5.902 | 5.959 | 10.831 | 10.888>> |
| 39 | 9.235 | 8.970 | 6.051 | 5.786<< |
| 40 | 9.628>> | 9.449 | 5.329 | 5.149 |
| 40 | 6.729<< | 6.980 | 9.295 | 9.546 |
| 40 | 9.577 | 9.500>> | 5.278 | 5.201 |
| 40 | 6.941 | 6.614<< | 9.703 | 9.376 |
| 40 | 6.881 | 6.620 | 9.713>> | 9.452 |
| 40 | 9.593 | 9.498 | 5.276<< | 5.180 |
| 40 | 6.731 | 6.964 | 9.315 | 9.547>> |
| 40 | 9.626 | 9.465 | 5.309 | 5.148<< |

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| BARRA 40 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 40 | 9.637>> | 9.457 | 5.347 | 5.167 |
| 40 | 6.737<< | 6.988 | 9.312 | 9.563 |
| 40 | 9.585 | 9.508>> | 5.296 | 5.219 |
| 40 | 6.949 | 6.623<< | 9.721 | 9.394 |
| 40 | 6.889 | 6.628 | 9.731>> | 9.470 |
| 40 | 9.602 | 9.506 | 5.294<< | 5.198 |
| 40 | 6.740 | 6.972 | 9.333 | 9.565>> |
| 40 | 9.634 | 9.473 | 5.327 | 5.165<< |
| 41 | 9.959>> | 9.897 | 4.695 | 4.633 |
| 41 | 7.048<< | 7.010 | 9.198 | 9.161 |
| 41 | 9.868 | 9.971>> | 4.624 | 4.727 |
| 41 | 7.156 | 6.902<< | 9.307 | 9.052 |
| 41 | 7.156 | 6.902 | 9.307>> | 9.052 |
| 41 | 9.868 | 9.971 | 4.624<< | 4.727 |
| 41 | 7.048 | 7.010 | 9.198 | 9.161>> |
| 41 | 9.959 | 9.897 | 4.695 | 4.633<< |

| BARRA 41 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 41 | 9.963>> | 9.900 | 4.717 | 4.655 |
| 41 | 7.051<< | 7.014 | 9.220 | 9.183 |
| 41 | 9.872 | 9.975>> | 4.646 | 4.749 |
| 41 | 7.160 | 6.906<< | 9.328 | 9.074 |
| 41 | 7.160 | 6.906 | 9.328>> | 9.074 |
| 41 | 9.872 | 9.975 | 4.646<< | 4.749 |
| 41 | 7.051 | 7.014 | 9.220 | 9.183>> |
| 41 | 9.963 | 9.900 | 4.717 | 4.655<< |
| 42 | 10.388>> | 10.534 | 3.789 | 3.935 |
| 42 | 7.134<< | 7.125 | 9.055 | 9.046 |
| 42 | 10.363 | 10.558>> | 3.764 | 3.959 |
| 42 | 7.231 | 7.028<< | 9.152 | 8.949 |
| 42 | 7.231 | 7.028 | 9.152>> | 8.949 |
| 42 | 10.363 | 10.558 | 3.764<< | 3.959 |
| 42 | 7.139 | 7.093 | 9.095 | 9.048>> |
| 42 | 10.388 | 10.534 | 3.789 | 3.935<< |

| BARRA 42 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 42 | 10.618>> | 10.764 | 2.435 | 2.581 |
| 42 | 7.364<< | 7.356 | 7.701 | 7.692 |
| 42 | 10.594 | 10.789>> | 2.410 | 2.605 |
| 42 | 7.461 | 7.259<< | 7.798 | 7.595 |
| 42 | 7.461 | 7.259 | 7.798>> | 7.595 |
| 42 | 10.594 | 10.789 | 2.410<< | 2.605 |
| 42 | 7.370 | 7.323 | 7.741 | 7.695>> |
| 42 | 10.618 | 10.764 | 2.435 | 2.581<< |
| 43 | 11.107>> | 11.345 | 1.555 | 1.793 |
| 43 | 7.324<< | 7.304 | 7.778 | 7.758 |
| 43 | 11.094 | 11.359>> | 1.541 | 1.807 |
| 43 | 7.417 | 7.272<< | 7.793 | 7.648 |
| 43 | 7.417 | 7.272 | 7.793>> | 7.648 |
| 43 | 11.094 | 11.359 | 1.541<< | 1.807 |
| 43 | 7.324 | 7.304 | 7.778 | 7.758>> |
| 43 | 11.107 | 11.345 | 1.555 | 1.793<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=0)(1.00*G+1.00*LEV+1.10*P+0.8*SC+0.5*GT)

| BARRA 43 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 43 | 11.106>> | 11.344 | 1.575 | 1.813 |
| 43 | 7.323<< | 7.303 | 7.799 | 7.779 |
| 43 | 11.092 | 11.358>> | 1.561 | 1.827 |
| 43 | 7.415 | 7.270<< | 7.814 | 7.669 |
| 43 | 7.415 | 7.270 | 7.814>> | 7.669 |
| 43 | 11.092 | 11.358 | 1.561<< | 1.827 |
| 43 | 7.323 | 7.303 | 7.799 | 7.779>> |
| 43 | 11.106 | 11.344 | 1.575 | 1.813<< |
| 44 | 11.480>> | 11.792 | 0.898 | 1.210 |
| 44 | 7.274<< | 7.290 | 7.828 | 7.844 |
| 44 | 11.466 | 11.806>> | 0.884 | 1.223 |
| 44 | 7.287 | 7.277<< | 7.841 | 7.831 |
| 44 | 7.287 | 7.277 | 7.841>> | 7.831 |
| 44 | 11.466 | 11.806 | 0.884<< | 1.223 |
| 44 | 7.274 | 7.290 | 7.828 | 7.844>> |
| 44 | 11.480 | 11.792 | 0.898 | 1.210<< |

| BARRA 44 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 44 | 11.477>> | 11.790 | 0.916 | 1.228 |
| 44 | 7.272<< | 7.287 | 7.846 | 7.862 |
| 44 | 11.464 | 11.803>> | 0.902 | 1.242 |
| 44 | 7.285 | 7.274<< | 7.859 | 7.849 |
| 44 | 7.285 | 7.274 | 7.859>> | 7.849 |
| 44 | 11.464 | 11.803 | 0.902<< | 1.242 |
| 44 | 7.272 | 7.287 | 7.846 | 7.862>> |
| 44 | 11.477 | 11.790 | 0.916 | 1.228<< |
| 45 | 11.736>> | 12.116 | 0.426 | 0.805 |
| 45 | 7.227<< | 7.278 | 7.871 | 7.922 |
| 45 | 11.724 | 12.129>> | 0.413 | 0.818 |
| 45 | 7.239 | 7.265<< | 7.883 | 7.909 |
| 45 | 7.239 | 7.265 | 7.883>> | 7.909 |
| 45 | 11.724 | 12.129 | 0.413<< | 0.818 |
| 45 | 7.227 | 7.278 | 7.871 | 7.922>> |
| 45 | 11.736 | 12.116 | 0.426 | 0.805<< |

| BARRA 45 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 45 | 11.733>> | 12.113 | 0.439 | 0.819 |
| 45 | 7.224<< | 7.275 | 7.884 | 7.936 |
| 45 | 11.721 | 12.126>> | 0.427 | 0.832 |
| 45 | 7.236 | 7.262<< | 7.897 | 7.923 |
| 45 | 7.236 | 7.262 | 7.897>> | 7.923 |
| 45 | 11.721 | 12.126 | 0.427<< | 0.832 |
| 45 | 7.224 | 7.275 | 7.884 | 7.936>> |
| 45 | 11.733 | 12.113 | 0.439 | 0.819<< |
| 46 | 11.879>> | 12.319 | 0.136 | 0.576 |
| 46 | 7.183<< | 7.269 | 7.903 | 7.989 |
| 46 | 11.867 | 12.330>> | 0.124 | 0.587 |
| 46 | 7.195 | 7.257<< | 7.915 | 7.978 |
| 46 | 7.187 | 7.258 | 7.916>> | 7.987 |
| 46 | 11.875 | 12.329 | 0.124<< | 0.578 |
| 46 | 7.184 | 7.261 | 7.913 | 7.990>> |
| 46 | 11.878 | 12.326 | 0.126 | 0.575<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=0)(1.00*G+1.00*LEV+1.10*P+0.8*SC+0.5*GT)

| BARRA 46 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 46 | 11.877>> | 12.316 | 0.144 | 0.583 |
| 46 | 7.181<< | 7.266 | 7.911 | 7.997 |
| 46 | 11.865 | 12.328>> | 0.132 | 0.595 |
| 46 | 7.192 | 7.255<< | 7.923 | 7.985 |
| 46 | 7.185 | 7.256 | 7.924>> | 7.995 |
| 46 | 11.873 | 12.327 | 0.131<< | 0.586 |
| 46 | 7.182 | 7.259 | 7.921 | 7.998>> |
| 46 | 11.875 | 12.324 | 0.134 | 0.583<< |
| 47 | 11.911>> | 12.274 | 0.188 | 0.551 |
| 47 | 7.143<< | 7.263 | 7.926 | 8.046 |
| 47 | 11.896 | 12.410>> | 0.018 | 0.532 |
| 47 | 7.154 | 7.252<< | 7.937 | 8.035 |
| 47 | 7.146 | 7.252 | 7.940>> | 8.046 |
| 47 | 11.904 | 12.410 | 0.016<< | 0.522 |
| 47 | 7.143 | 7.255 | 7.937 | 8.049>> |
| 47 | 11.907 | 12.407 | 0.019 | 0.519<< |

| BARRA 47 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 47 | 11.909>> | 12.272 | 0.191 | 0.554 |
| 47 | 7.141<< | 7.261 | 7.929 | 8.050 |
| 47 | 11.894 | 12.408>> | 0.021 | 0.535 |
| 47 | 7.152 | 7.250<< | 7.941 | 8.038 |
| 47 | 7.144 | 7.250 | 7.943>> | 8.049 |
| 47 | 11.902 | 12.408 | 0.019<< | 0.525 |
| 47 | 7.141 | 7.253 | 7.940 | 8.052>> |
| 47 | 11.905 | 12.405 | 0.022 | 0.522<< |
| 48 | 11.837>> | 12.233 | 0.261 | 0.657 |
| 48 | 7.105<< | 7.257 | 7.945 | 8.097 |
| 48 | 11.814 | 12.370>> | 0.093 | 0.648 |
| 48 | 7.113 | 7.248<< | 7.953 | 8.088 |
| 48 | 7.108 | 7.249 | 7.954>> | 8.095 |
| 48 | 11.819 | 12.369 | 0.092<< | 0.642 |
| 48 | 7.105 | 7.252 | 7.951 | 8.098>> |
| 48 | 11.822 | 12.366 | 0.095 | 0.639<< |

| BARRA 48 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 48 | 11.836>> | 12.232 | 0.258 | 0.654 |
| 48 | 7.103<< | 7.255 | 7.942 | 8.094 |
| 48 | 11.813 | 12.368>> | 0.090 | 0.646 |
| 48 | 7.112 | 7.247<< | 7.951 | 8.086 |
| 48 | 7.107 | 7.247 | 7.952>> | 8.092 |
| 48 | 11.818 | 12.368 | 0.089<< | 0.639 |
| 48 | 7.104 | 7.250 | 7.949 | 8.095>> |
| 48 | 11.821 | 12.365 | 0.092 | 0.636<< |
| 49 | 11.650>> | 12.072 | 0.514 | 0.936 |
| 49 | 7.073<< | 7.259 | 7.946 | 8.132 |
| 49 | 11.618 | 12.210>> | 0.347 | 0.939 |
| 49 | 7.081 | 7.251<< | 7.954 | 8.124 |
| 49 | 7.077 | 7.251 | 7.955>> | 8.129 |
| 49 | 11.623 | 12.209 | 0.346<< | 0.933 |
| 49 | 7.074 | 7.255 | 7.952 | 8.132>> |
| 49 | 11.626 | 12.206 | 0.349 | 0.930<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=0)(1.00*G+1.00*LEV+1.10*P+0.8*SC+0.5*GT)

| BARRA 49 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 49 | 11.649>> | 12.071 | 0.506 | 0.928 |
| 49 | 7.072<< | 7.258 | 7.938 | 8.124 |
| 49 | 11.617 | 12.209>> | 0.339 | 0.931 |
| 49 | 7.080 | 7.249<< | 7.947 | 8.116 |
| 49 | 7.076 | 7.250 | 7.947>> | 8.121 |
| 49 | 11.621 | 12.208 | 0.339<< | 0.925 |
| 49 | 7.072 | 7.253 | 7.944 | 8.125>> |
| 49 | 11.625 | 12.205 | 0.342 | 0.922<< |
| 50 | 11.350>> | 11.793 | 0.945 | 1.388 |
| 50 | 7.047<< | 7.266 | 7.934 | 8.154 |
| 50 | 11.310 | 11.931>> | 0.780 | 1.401 |
| 50 | 7.055 | 7.258<< | 7.942 | 8.145 |
| 50 | 7.052 | 7.259 | 7.943>> | 8.149 |
| 50 | 11.313 | 11.931 | 0.780<< | 1.397 |
| 50 | 7.047 | 7.264 | 7.937 | 8.154>> |
| 50 | 11.350 | 11.796 | 0.942 | 1.388<< |

| BARRA 50 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 50 | 11.349>> | 11.791 | 0.933 | 1.376 |
| 50 | 7.045<< | 7.265 | 7.922 | 8.141 |
| 50 | 11.309 | 11.930>> | 0.768 | 1.389 |
| 50 | 7.054 | 7.257<< | 7.930 | 8.133 |
| 50 | 7.051 | 7.257 | 7.930>> | 8.136 |
| 50 | 11.311 | 11.929 | 0.767<< | 1.385 |
| 50 | 7.046 | 7.262 | 7.925 | 8.141>> |
| 50 | 11.348 | 11.794 | 0.930 | 1.376<< |
| 51 | 10.935>> | 11.393 | 1.557 | 2.016 |
| 51 | 7.025<< | 7.278 | 7.911 | 8.164 |
| 51 | 10.888 | 11.531>> | 1.394 | 2.037 |
| 51 | 7.034 | 7.269<< | 7.919 | 8.155 |
| 51 | 7.031 | 7.270 | 7.920>> | 8.159 |
| 51 | 10.891 | 11.531 | 1.394<< | 2.033 |
| 51 | 7.026 | 7.275 | 7.915 | 8.164>> |
| 51 | 10.935 | 11.396 | 1.554 | 2.015<< |

| BARRA 51 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 51 | 10.933>> | 11.391 | 1.542 | 2.001 |
| 51 | 7.023<< | 7.275 | 7.896 | 8.149 |
| 51 | 10.886 | 11.529>> | 1.380 | 2.022 |
| 51 | 7.031 | 7.267<< | 7.905 | 8.141 |
| 51 | 7.028 | 7.267 | 7.905>> | 8.144 |
| 51 | 10.889 | 11.528 | 1.379<< | 2.018 |
| 51 | 7.023 | 7.272 | 7.900 | 8.149>> |
| 51 | 10.932 | 11.394 | 1.539 | 2.001<< |
| 52 | 10.402>> | 10.865 | 2.363 | 2.827 |
| 52 | 7.003<< | 7.293 | 7.879 | 8.169 |
| 52 | 10.344 | 11.006>> | 2.199 | 2.861 |
| 52 | 7.017 | 7.280<< | 7.892 | 8.155 |
| 52 | 7.009 | 7.281 | 7.893>> | 8.165 |
| 52 | 10.352 | 11.005 | 2.198<< | 2.851 |
| 52 | 7.004 | 7.285 | 7.889 | 8.170>> |
| 52 | 10.401 | 10.873 | 2.353 | 2.825<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=0)(1.00*G+1.00*LEV+1.10*P+0.8*SC+0.5*GT)

| BARRA 52 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 52 | 10.397>> | 10.860 | 2.347 | 2.810 |
| 52 | 6.998<< | 7.289 | 7.862 | 8.152 |
| 52 | 10.339 | 11.001>> | 2.182 | 2.845 |
| 52 | 7.012 | 7.275<< | 7.876 | 8.139 |
| 52 | 7.004 | 7.276 | 7.877>> | 8.149 |
| 52 | 10.347 | 11.001 | 2.181<< | 2.834 |
| 52 | 6.999 | 7.281 | 7.872 | 8.154>> |
| 52 | 10.396 | 10.868 | 2.337 | 2.809<< |
| 53 | 9.861>> | 10.340 | 3.162 | 3.641 |
| 53 | 6.914<< | 7.261 | 7.921 | 8.268 |
| 53 | 9.756 | 10.399>> | 3.115 | 3.758 |
| 53 | 6.927 | 7.248<< | 7.934 | 8.255 |
| 53 | 6.923 | 7.248 | 7.935>> | 8.260 |
| 53 | 9.760 | 10.399 | 3.114<< | 3.753 |
| 53 | 6.914 | 7.257 | 7.926 | 8.269>> |
| 53 | 9.860 | 10.343 | 3.158 | 3.641<< |

| BARRA 53 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 53 | 9.852>> | 10.332 | 3.147 | 3.626 |
| 53 | 6.906<< | 7.252 | 7.906 | 8.253 |
| 53 | 9.748 | 10.391>> | 3.100 | 3.742 |
| 53 | 6.918 | 7.240<< | 7.919 | 8.240 |
| 53 | 6.915 | 7.240 | 7.919>> | 8.244 |
| 53 | 9.752 | 10.391 | 3.099<< | 3.738 |
| 53 | 6.906 | 7.249 | 7.910 | 8.253>> |
| 53 | 9.852 | 10.335 | 3.142 | 3.625<< |
| 54 | 9.478>> | 9.922 | 3.775 | 4.219 |
| 54 | 6.512<< | 7.334 | 7.912 | 8.734 |
| 54 | 9.434 | 9.966>> | 3.731 | 4.263 |
| 54 | 6.668 | 6.992<< | 8.306 | 8.630 |
| 54 | 6.665 | 6.992 | 8.307>> | 8.634 |
| 54 | 9.437 | 9.966 | 3.730<< | 4.259 |
| 54 | 6.512 | 7.331 | 7.916 | 8.735>> |
| 54 | 9.478 | 9.925 | 3.771 | 4.218<< |

| BARRA 54 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 54 | 9.465>> | 9.908 | 3.763 | 4.207 |
| 54 | 6.498<< | 7.321 | 7.900 | 8.723 |
| 54 | 9.421 | 9.952>> | 3.719 | 4.251 |
| 54 | 6.655 | 6.978<< | 8.294 | 8.618 |
| 54 | 6.651 | 6.979 | 8.295>> | 8.622 |
| 54 | 9.424 | 9.952 | 3.719<< | 4.247 |
| 54 | 6.498 | 7.317 | 7.905 | 8.723>> |
| 54 | 9.465 | 9.912 | 3.759 | 4.206<< |
| 55 | 9.190>> | 9.039 | 4.952 | 4.801 |
| 55 | 5.556<< | 6.405 | 9.334 | 10.183 |
| 55 | 8.973 | 9.497>> | 4.427 | 4.951 |
| 55 | 5.602 | 6.360<< | 9.379 | 10.137 |
| 55 | 5.598 | 6.360 | 9.380>> | 10.142 |
| 55 | 8.976 | 9.497 | 4.426<< | 4.947 |
| 55 | 5.556 | 6.401 | 9.339 | 10.184>> |
| 55 | 9.189 | 9.043 | 4.947 | 4.801<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=0)(1.00*G+1.00*LEV+1.10*P+0.8*SC+0.5*GT)

| BARRA 55 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 55 | 8.698>> | 8.604 | 4.751 | 4.656 |
| 55 | 5.347<< | 6.062 | 8.126 | 8.842 |
| 55 | 8.556 | 8.987>> | 4.355 | 4.786 |
| 55 | 5.382 | 6.031<< | 8.157 | 8.806 |
| 55 | 5.379 | 6.031 | 8.158>> | 8.810 |
| 55 | 8.560 | 8.987 | 4.354<< | 4.782 |
| 55 | 5.347 | 6.062 | 8.126 | 8.842>> |
| 55 | 8.698 | 8.604 | 4.751 | 4.656<< |
| 56 | 10.113>> | 10.123 | 2.838 | 2.848 |
| 56 | 5.759<< | 6.466 | 7.638 | 8.345 |
| 56 | 9.719 | 10.198>> | 2.827 | 3.306 |
| 56 | 5.762 | 6.462<< | 7.641 | 8.341 |
| 56 | 5.759 | 6.462 | 7.642>> | 8.345 |
| 56 | 9.722 | 10.198 | 2.826<< | 3.302 |
| 56 | 5.759 | 6.462 | 7.642 | 8.345>> |
| 56 | 10.113 | 10.126 | 2.835 | 2.848<< |

| BARRA 56 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 56 | 10.227>> | 10.239 | 2.859 | 2.871 |
| 56 | 5.821<< | 6.555 | 7.607 | 8.341 |
| 56 | 9.792 | 10.336>> | 2.807 | 3.351 |
| 56 | 5.824 | 6.551<< | 7.611 | 8.337 |
| 56 | 5.821 | 6.551 | 7.611>> | 8.341 |
| 56 | 9.796 | 10.336 | 2.807<< | 3.347 |
| 56 | 5.821 | 6.551 | 7.611 | 8.341>> |
| 56 | 10.227 | 10.243 | 2.856 | 2.871<< |
| 57 | 9.416>> | 9.433 | 3.878 | 3.895 |
| 57 | 3.702<< | 4.448 | 10.269 | 11.015 |
| 57 | 9.416 | 9.433>> | 3.878 | 3.895 |
| 57 | 3.702 | 4.448<< | 10.269 | 11.015 |
| 57 | 3.702 | 4.448 | 10.269>> | 11.015 |
| 57 | 9.416 | 9.433 | 3.878<< | 3.895 |
| 57 | 3.702 | 4.448 | 10.269 | 11.015>> |
| 57 | 9.416 | 9.433 | 3.878 | 3.895<< |

| BARRA 57 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 57 | 9.422>> | 9.439 | 3.868 | 3.885 |
| 57 | 3.708<< | 4.454 | 10.259 | 11.004 |
| 57 | 9.422 | 9.439>> | 3.868 | 3.885 |
| 57 | 3.708 | 4.454<< | 10.259 | 11.004 |
| 57 | 3.708 | 4.454 | 10.259>> | 11.004 |
| 57 | 9.422 | 9.439 | 3.868<< | 3.885 |
| 57 | 3.708 | 4.454 | 10.259 | 11.004>> |
| 57 | 9.422 | 9.439 | 3.868 | 3.885<< |
| 58 | 10.051>> | 10.063 | 3.079 | 3.091 |
| 58 | 5.642<< | 6.380 | 7.825 | 8.563 |
| 58 | 9.616 | 10.157>> | 3.030 | 3.570 |
| 58 | 5.646 | 6.377<< | 7.829 | 8.560 |
| 58 | 5.646 | 6.377 | 7.829>> | 8.560 |
| 58 | 9.616 | 10.157 | 3.030<< | 3.570 |
| 58 | 5.642 | 6.380 | 7.825 | 8.563>> |
| 58 | 10.051 | 10.063 | 3.079 | 3.091<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=0)(1.00*G+1.00*LEV+1.10*P+0.8*SC+0.5*GT)

| BARRA 58 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 58 | 9.938>> | 9.948 | 3.030 | 3.039 |
| 58 | 5.581<< | 6.292 | 7.828 | 8.539 |
| 58 | 9.544 | 10.020>> | 3.021 | 3.497 |
| 58 | 5.585 | 6.288<< | 7.832 | 8.535 |
| 58 | 5.585 | 6.288 | 7.832>> | 8.535 |
| 58 | 9.544 | 10.020 | 3.021<< | 3.497 |
| 58 | 5.581 | 6.292 | 7.828 | 8.539>> |
| 58 | 9.938 | 9.948 | 3.030 | 3.039<< |
| 59 | 8.304>> | 8.212 | 5.216 | 5.124 |
| 59 | 4.950<< | 5.674 | 8.588 | 9.312 |
| 59 | 8.164 | 8.595>> | 4.821 | 5.251 |
| 59 | 4.982 | 5.643<< | 8.619 | 9.280 |
| 59 | 4.982 | 5.643 | 8.619>> | 9.280 |
| 59 | 8.164 | 8.595 | 4.821<< | 5.251 |
| 59 | 4.950 | 5.674 | 8.588 | 9.312>> |
| 59 | 8.304 | 8.212 | 5.216 | 5.124<< |

| BARRA 59 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 59 | 9.015>> | 8.870 | 5.223 | 5.078 |
| 59 | 5.378<< | 6.233 | 9.609 | 10.464 |
| 59 | 8.800 | 9.324>> | 4.702 | 5.226 |
| 59 | 5.420 | 6.192<< | 9.650 | 10.423 |
| 59 | 5.420 | 6.192 | 9.650>> | 10.423 |
| 59 | 8.800 | 9.324 | 4.702<< | 5.226 |
| 59 | 5.378 | 6.233 | 9.609 | 10.464>> |
| 59 | 9.015 | 8.870 | 5.223 | 5.078<< |
| 60 | 9.218>> | 9.674 | 4.138 | 4.594 |
| 60 | 6.250<< | 7.084 | 8.278 | 9.112 |
| 60 | 9.178 | 9.714>> | 4.098 | 4.634 |
| 60 | 6.424 | 6.743<< | 8.666 | 8.985 |
| 60 | 6.424 | 6.743 | 8.666>> | 8.985 |
| 60 | 9.178 | 9.714 | 4.098<< | 4.634 |
| 60 | 6.250 | 7.084 | 8.278 | 9.112>> |
| 60 | 9.218 | 9.674 | 4.138 | 4.594<< |

| BARRA 60 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 60 | 9.227>> | 9.683 | 4.156 | 4.612 |
| 60 | 6.258<< | 7.093 | 8.296 | 9.130 |
| 60 | 9.186 | 9.723>> | 4.116 | 4.652 |
| 60 | 6.432 | 6.751<< | 8.684 | 9.003 |
| 60 | 6.432 | 6.751 | 8.684>> | 9.003 |
| 60 | 9.186 | 9.723 | 4.116<< | 4.652 |
| 60 | 6.258 | 7.093 | 8.296 | 9.130>> |
| 60 | 9.227 | 9.683 | 4.156 | 4.612<< |
| 61 | 9.565>> | 9.964 | 3.701 | 4.100 |
| 61 | 6.533<< | 6.993 | 8.346 | 8.806 |
| 61 | 9.479 | 10.050>> | 3.616 | 4.186 |
| 61 | 6.626 | 6.940<< | 8.388 | 8.702 |
| 61 | 6.623 | 6.940 | 8.389>> | 8.706 |
| 61 | 9.482 | 10.050 | 3.615<< | 4.182 |
| 61 | 6.533 | 6.990 | 8.350 | 8.807>> |
| 61 | 9.565 | 9.967 | 3.697 | 4.100<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=0)(1.00*G+1.00*LEV+1.10*P+0.8*SC+0.5*GT)

| BARRA 61 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 61 | 9.569>> | 9.968 | 3.723 | 4.122 |
| 61 | 6.537<< | 6.997 | 8.368 | 8.828 |
| 61 | 9.483 | 10.054>> | 3.638 | 4.208 |
| 61 | 6.630 | 6.944<< | 8.410 | 8.724 |
| 61 | 6.627 | 6.944 | 8.411>> | 8.728 |
| 61 | 9.486 | 10.053 | 3.637<< | 4.204 |
| 61 | 6.537 | 6.994 | 8.372 | 8.829>> |
| 61 | 9.569 | 9.971 | 3.719 | 4.121<< |
| 62 | 10.044>> | 10.517 | 2.889 | 3.362 |
| 62 | 6.557<< | 6.952 | 8.420 | 8.816 |
| 62 | 9.924 | 10.530>> | 2.906 | 3.511 |
| 62 | 6.658 | 6.912<< | 8.443 | 8.697 |
| 62 | 6.650 | 6.912 | 8.445>> | 8.707 |
| 62 | 10.039 | 10.529 | 2.874<< | 3.365 |
| 62 | 6.557 | 6.944 | 8.430 | 8.817>> |
| 62 | 10.044 | 10.524 | 2.879 | 3.360<< |

| BARRA 62 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 62 | 10.044>> | 10.517 | 2.911 | 3.383 |
| 62 | 6.557<< | 6.952 | 8.442 | 8.837 |
| 62 | 9.925 | 10.530>> | 2.928 | 3.533 |
| 62 | 6.658 | 6.913<< | 8.465 | 8.719 |
| 62 | 6.651 | 6.913 | 8.466>> | 8.728 |
| 62 | 10.039 | 10.529 | 2.896<< | 3.386 |
| 62 | 6.557 | 6.945 | 8.452 | 8.839>> |
| 62 | 10.044 | 10.525 | 2.901 | 3.381<< |
| 63 | 10.507>> | 10.973 | 2.198 | 2.665 |
| 63 | 6.508<< | 6.858 | 8.577 | 8.927 |
| 63 | 10.499 | 10.981>> | 2.190 | 2.673 |
| 63 | 6.611 | 6.837<< | 8.574 | 8.800 |
| 63 | 6.513 | 6.850 | 8.585>> | 8.923 |
| 63 | 10.502 | 10.981 | 2.190<< | 2.669 |
| 63 | 6.508 | 6.855 | 8.580 | 8.928>> |
| 63 | 10.507 | 10.976 | 2.195 | 2.664<< |

| BARRA 63 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 63 | 10.505>> | 10.972 | 2.219 | 2.685 |
| 63 | 6.506<< | 6.856 | 8.597 | 8.948 |
| 63 | 10.497 | 10.980>> | 2.211 | 2.693 |
| 63 | 6.610 | 6.836<< | 8.595 | 8.821 |
| 63 | 6.511 | 6.849 | 8.606>> | 8.943 |
| 63 | 10.500 | 10.980 | 2.210<< | 2.690 |
| 63 | 6.506 | 6.854 | 8.601 | 8.948>> |
| 63 | 10.505 | 10.975 | 2.215 | 2.685<< |
| 64 | 10.849>> | 11.300 | 1.703 | 2.154 |
| 64 | 6.456<< | 6.766 | 8.726 | 9.036 |
| 64 | 10.841 | 11.308>> | 1.695 | 2.162 |
| 64 | 6.464 | 6.758<< | 8.734 | 9.028 |
| 64 | 6.462 | 6.758 | 8.735>> | 9.032 |
| 64 | 10.843 | 11.307 | 1.695<< | 2.159 |
| 64 | 6.456 | 6.763 | 8.730 | 9.037>> |
| 64 | 10.848 | 11.302 | 1.700 | 2.154<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=0)(1.00*G+1.00*LEV+1.10*P+0.8*SC+0.5*GT)

| BARRA 64 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 64 | 10.846>> | 11.297 | 1.721 | 2.172 |
| 64 | 6.454<< | 6.763 | 8.744 | 9.054 |
| 64 | 10.838 | 11.305>> | 1.713 | 2.180 |
| 64 | 6.462 | 6.755<< | 8.752 | 9.046 |
| 64 | 6.459 | 6.756 | 8.753>> | 9.050 |
| 64 | 10.841 | 11.305 | 1.713<< | 2.177 |
| 64 | 6.454 | 6.761 | 8.748 | 9.055>> |
| 64 | 10.846 | 11.300 | 1.718 | 2.172<< |
| 65 | 11.074>> | 11.504 | 1.393 | 1.823 |
| 65 | 6.407<< | 6.676 | 8.869 | 9.138 |
| 65 | 11.066 | 11.512>> | 1.385 | 1.831 |
| 65 | 6.415 | 6.668<< | 8.877 | 9.130 |
| 65 | 6.409 | 6.669 | 8.877>> | 9.138 |
| 65 | 11.073 | 11.511 | 1.384<< | 1.823 |
| 65 | 6.409 | 6.669 | 8.877 | 9.138>> |
| 65 | 11.073 | 11.511 | 1.384 | 1.823<< |

| BARRA 65 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 65 | 11.071>> | 11.502 | 1.406 | 1.837 |
| 65 | 6.405<< | 6.673 | 8.883 | 9.151 |
| 65 | 11.063 | 11.510>> | 1.398 | 1.845 |
| 65 | 6.412 | 6.665<< | 8.891 | 9.143 |
| 65 | 6.406 | 6.666 | 8.891>> | 9.152 |
| 65 | 11.070 | 11.508 | 1.398<< | 1.836 |
| 66 | 11.184>> | 11.589 | 1.263 | 1.668 |
| 66 | 6.362<< | 6.590 | 9.001 | 9.228 |
| 66 | 11.176 | 11.597>> | 1.255 | 1.676 |
| 66 | 6.370 | 6.581<< | 9.009 | 9.220 |
| 66 | 6.363 | 6.582 | 9.010>> | 9.229 |
| 66 | 11.183 | 11.596 | 1.254<< | 1.667 |
| 66 | 6.363 | 6.582 | 9.010 | 9.229>> |
| 66 | 11.183 | 11.596 | 1.254 | 1.667<< |

| BARRA 66 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 66 | 11.182>> | 11.586 | 1.271 | 1.676 |
| 66 | 6.360<< | 6.587 | 9.009 | 9.236 |
| 66 | 11.174 | 11.594>> | 1.263 | 1.684 |
| 66 | 6.368 | 6.579<< | 9.017 | 9.228 |
| 66 | 6.361 | 6.580 | 9.018>> | 9.237 |
| 66 | 11.181 | 11.594 | 1.262<< | 1.675 |
| 66 | 6.361 | 6.580 | 9.018 | 9.237>> |
| 66 | 11.181 | 11.594 | 1.262 | 1.675<< |
| 67 | 11.178>> | 11.558 | 1.308 | 1.688 |
| 67 | 6.321<< | 6.500 | 9.131 | 9.310 |
| 67 | 11.176 | 11.561>> | 1.305 | 1.690 |
| 67 | 6.323 | 6.498<< | 9.133 | 9.308 |
| 67 | 6.323 | 6.498 | 9.133>> | 9.308 |
| 67 | 11.176 | 11.561 | 1.305<< | 1.690 |
| 67 | 6.321 | 6.500 | 9.131 | 9.310>> |
| 67 | 11.178 | 11.558 | 1.308 | 1.688<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=0)(1.00*G+1.00*LEV+1.10*P+0.8*SC+0.5*GT)

| BARRA 67 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 67 | 11.176>> | 11.556 | 1.311 | 1.691 |
| 67 | 6.319<< | 6.498 | 9.134 | 9.314 |
| 67 | 11.174 | 11.559>> | 1.309 | 1.693 |
| 67 | 6.321 | 6.496<< | 9.137 | 9.311 |
| 67 | 6.321 | 6.496 | 9.137>> | 9.311 |
| 67 | 11.174 | 11.559 | 1.309<< | 1.693 |
| 67 | 6.319 | 6.498 | 9.134 | 9.314>> |
| 67 | 11.176 | 11.556 | 1.311 | 1.691<< |
| 68 | 11.058>> | 11.395 | 1.550 | 1.887 |
| 68 | 6.282<< | 6.426 | 9.237 | 9.380 |
| 68 | 11.049 | 11.404>> | 1.541 | 1.897 |
| 68 | 6.292 | 6.417<< | 9.246 | 9.371 |
| 68 | 6.285 | 6.417 | 9.248>> | 9.380 |
| 68 | 11.055 | 11.404 | 1.539<< | 1.888 |
| 68 | 6.282 | 6.419 | 9.245 | 9.382>> |
| 68 | 11.058 | 11.402 | 1.541 | 1.886<< |

| BARRA 68 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 68 | 11.056>> | 11.394 | 1.547 | 1.885 |
| 68 | 6.281<< | 6.424 | 9.234 | 9.378 |
| 68 | 11.047 | 11.403>> | 1.538 | 1.894 |
| 68 | 6.290 | 6.415<< | 9.244 | 9.369 |
| 68 | 6.283 | 6.415 | 9.245>> | 9.377 |
| 68 | 11.054 | 11.403 | 1.536<< | 1.885 |
| 68 | 6.281 | 6.418 | 9.243 | 9.380>> |
| 68 | 11.056 | 11.400 | 1.539 | 1.883<< |
| 69 | 10.825>> | 11.122 | 1.960 | 2.256 |
| 69 | 6.249<< | 6.350 | 9.338 | 9.439 |
| 69 | 10.815 | 11.131>> | 1.950 | 2.266 |
| 69 | 6.259 | 6.341<< | 9.348 | 9.429 |
| 69 | 6.253 | 6.342 | 9.348>> | 9.437 |
| 69 | 10.822 | 11.130 | 1.950<< | 2.258 |
| 69 | 6.250 | 6.344 | 9.346 | 9.439>> |
| 69 | 10.824 | 11.128 | 1.952 | 2.256<< |

| BARRA 69 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 69 | 10.824>> | 11.120 | 1.952 | 2.248 |
| 69 | 6.248<< | 6.349 | 9.330 | 9.431 |
| 69 | 10.814 | 11.130>> | 1.942 | 2.258 |
| 69 | 6.258 | 6.339<< | 9.340 | 9.421 |
| 69 | 6.251 | 6.340 | 9.340>> | 9.429 |
| 69 | 10.821 | 11.129 | 1.942<< | 2.250 |
| 69 | 6.249 | 6.343 | 9.338 | 9.431>> |
| 69 | 10.823 | 11.127 | 1.944 | 2.248<< |
| 70 | 10.480>> | 10.730 | 2.547 | 2.798 |
| 70 | 6.222<< | 6.280 | 9.425 | 9.483 |
| 70 | 10.469 | 10.740>> | 2.537 | 2.808 |
| 70 | 6.233 | 6.270<< | 9.436 | 9.473 |
| 70 | 6.233 | 6.270 | 9.436>> | 9.473 |
| 70 | 10.469 | 10.740 | 2.537<< | 2.808 |
| 70 | 6.222 | 6.280 | 9.425 | 9.483>> |
| 70 | 10.480 | 10.730 | 2.547 | 2.798<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=0)(1.00*G+1.00*LEV+1.10*P+0.8*SC+0.5*GT)

| BARRA 70 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 70 | 10.478>> | 10.729 | 2.535 | 2.785 |
| 70 | 6.221<< | 6.279 | 9.413 | 9.471 |
| 70 | 10.468 | 10.739>> | 2.525 | 2.796 |
| 70 | 6.231 | 6.268<< | 9.424 | 9.461 |
| 70 | 6.231 | 6.268 | 9.424>> | 9.461 |
| 70 | 10.468 | 10.739 | 2.525<< | 2.796 |
| 70 | 6.221 | 6.279 | 9.413 | 9.471>> |
| 70 | 10.478 | 10.729 | 2.535 | 2.785<< |
| 71 | 10.019>> | 10.218 | 3.315 | 3.515 |
| 71 | 6.199<< | 6.214 | 9.502 | 9.517 |
| 71 | 10.008 | 10.229>> | 3.305 | 3.526 |
| 71 | 6.273 | 6.201<< | 9.498 | 9.426 |
| 71 | 6.210 | 6.203 | 9.513>> | 9.506 |
| 71 | 10.008 | 10.229 | 3.305<< | 3.526 |
| 71 | 6.199 | 6.214 | 9.502 | 9.517>> |
| 71 | 10.019 | 10.218 | 3.315 | 3.515<< |

| BARRA 71 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 71 | 10.017>> | 10.216 | 3.301 | 3.500 |
| 71 | 6.197<< | 6.211 | 9.487 | 9.502 |
| 71 | 10.006 | 10.227>> | 3.290 | 3.511 |
| 71 | 6.271 | 6.199<< | 9.483 | 9.411 |
| 71 | 6.208 | 6.200 | 9.498>> | 9.491 |
| 71 | 10.006 | 10.227 | 3.290<< | 3.511 |
| 71 | 6.197 | 6.211 | 9.487 | 9.502>> |
| 71 | 10.017 | 10.216 | 3.301 | 3.500<< |
| 72 | 9.440>> | 9.577 | 4.279 | 4.415 |
| 72 | 6.173<< | 6.182 | 9.531 | 9.540 |
| 72 | 9.422 | 9.595>> | 4.260 | 4.433 |
| 72 | 6.239 | 6.117<< | 9.596 | 9.475 |
| 72 | 6.233 | 6.118 | 9.597>> | 9.482 |
| 72 | 9.428 | 9.594 | 4.260<< | 4.426 |
| 72 | 6.176 | 6.147 | 9.576 | 9.546>> |
| 72 | 9.439 | 9.583 | 4.272 | 4.415<< |

| BARRA 72 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 72 | 9.435>> | 9.572 | 4.262 | 4.399 |
| 72 | 6.169<< | 6.177 | 9.515 | 9.524 |
| 72 | 9.417 | 9.590>> | 4.244 | 4.417 |
| 72 | 6.234 | 6.112<< | 9.580 | 9.458 |
| 72 | 6.228 | 6.113 | 9.580>> | 9.465 |
| 72 | 9.423 | 9.589 | 4.244<< | 4.410 |
| 72 | 6.172 | 6.142 | 9.559 | 9.530>> |
| 72 | 9.435 | 9.578 | 4.255 | 4.398<< |
| 73 | 8.896>> | 8.918 | 5.250 | 5.272 |
| 73 | 6.015<< | 5.992 | 9.795 | 9.771 |
| 73 | 8.849 | 8.949>> | 5.222 | 5.323 |
| 73 | 6.085 | 5.922<< | 9.865 | 9.701 |
| 73 | 6.085 | 5.922 | 9.865>> | 9.701 |
| 73 | 8.849 | 8.949 | 5.222<< | 5.323 |
| 73 | 6.015 | 5.992 | 9.795 | 9.771>> |
| 73 | 8.896 | 8.918 | 5.250 | 5.272<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=0)(1.00*G+1.00*LEV+1.10*P+0.8*SC+0.5*GT)

| BARRA 73 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 73 | 8.887>> | 8.909 | 5.235 | 5.257 |
| 73 | 6.007<< | 5.983 | 9.780 | 9.756 |
| 73 | 8.841 | 8.941>> | 5.207 | 5.307 |
| 73 | 6.077 | 5.913<< | 9.850 | 9.686 |
| 73 | 6.077 | 5.913 | 9.850>> | 9.686 |
| 73 | 8.841 | 8.941 | 5.207<< | 5.307 |
| 73 | 6.007 | 5.983 | 9.780 | 9.756>> |
| 73 | 8.887 | 8.909 | 5.235 | 5.257<< |
| 74 | 8.494>> | 8.401 | 5.995 | 5.902 |
| 74 | 5.603<< | 5.918 | 9.976 | 10.291 |
| 74 | 8.447 | 8.447>> | 5.948 | 5.948 |
| 74 | 5.799 | 5.565<< | 10.373 | 10.139 |
| 74 | 5.741 | 5.569 | 10.384>> | 10.212 |
| 74 | 8.465 | 8.444 | 5.947<< | 5.927 |
| 74 | 5.607 | 5.901 | 9.997 | 10.291>> |
| 74 | 8.490 | 8.418 | 5.973 | 5.901<< |

| BARRA 74 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 74 | 8.481>> | 8.388 | 5.983 | 5.890 |
| 74 | 5.590<< | 5.905 | 9.964 | 10.279 |
| 74 | 8.434 | 8.434>> | 5.936 | 5.937 |
| 74 | 5.786 | 5.552<< | 10.361 | 10.127 |
| 74 | 5.728 | 5.555 | 10.373>> | 10.200 |
| 74 | 8.452 | 8.431 | 5.936<< | 5.915 |
| 74 | 5.593 | 5.887 | 9.986 | 10.280>> |
| 74 | 8.477 | 8.405 | 5.961 | 5.889<< |
| 75 | 8.018>> | 7.827 | 6.829 | 6.638 |
| 75 | 4.689<< | 4.841 | 11.576 | 11.728 |
| 75 | 7.866 | 7.884>> | 6.799 | 6.816 |
| 75 | 4.738 | 4.792<< | 11.625 | 11.679 |
| 75 | 4.707 | 4.797 | 11.627>> | 11.718 |
| 75 | 8.000 | 7.871 | 6.777<< | 6.649 |
| 75 | 4.693 | 4.810 | 11.614 | 11.731>> |
| 75 | 8.013 | 7.858 | 6.790 | 6.635<< |

| BARRA 75 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 75 | 7.622>> | 7.451 | 6.218 | 6.047 |
| 75 | 4.500<< | 4.599 | 9.898 | 9.997 |
| 75 | 7.469 | 7.498>> | 6.165 | 6.195 |
| 75 | 4.526 | 4.573<< | 9.924 | 9.971 |
| 75 | 4.526 | 4.573 | 9.924>> | 9.971 |
| 75 | 7.469 | 7.498 | 6.165<< | 6.195 |
| 75 | 4.500 | 4.599 | 9.898 | 9.997>> |
| 75 | 7.622 | 7.451 | 6.218 | 6.047<< |
| 76 | 8.989>> | 8.947 | 4.319 | 4.277 |
| 76 | 4.885<< | 4.928 | 9.496 | 9.538 |
| 76 | 8.959 | 8.976>> | 4.290 | 4.307 |
| 76 | 4.915 | 4.899<< | 9.525 | 9.509 |
| 76 | 4.899 | 4.900 | 9.526>> | 9.527 |
| 76 | 8.976 | 8.975 | 4.289<< | 4.288 |
| 76 | 4.887 | 4.912 | 9.514 | 9.540>> |
| 76 | 8.988 | 8.963 | 4.301 | 4.276<< |

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| BARRA 76 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 76 | 9.102>> | 9.062 | 4.339 | 4.299 |
| 76 | 4.949<< | 5.013 | 9.466 | 9.530 |
| 76 | 9.073 | 9.091>> | 4.310 | 4.328 |
| 76 | 4.978 | 4.984<< | 9.495 | 9.501 |
| 76 | 4.962 | 4.984 | 9.496>> | 9.519 |
| 76 | 9.089 | 9.091 | 4.309<< | 4.310 |
| 76 | 4.950 | 4.997 | 9.484 | 9.531>> |
| 76 | 9.101 | 9.078 | 4.321 | 4.298<< |
| 77 | 8.248>> | 8.224 | 5.400 | 5.376 |
| 77 | 2.813<< | 2.794 | 12.257 | 12.239 |
| 77 | 8.236 | 8.236>> | 5.388 | 5.388 |
| 77 | 2.824 | 2.783<< | 12.268 | 12.227 |
| 77 | 2.824 | 2.783 | 12.268>> | 12.227 |
| 77 | 8.236 | 8.236 | 5.388<< | 5.388 |
| 77 | 2.813 | 2.794 | 12.257 | 12.239>> |
| 77 | 8.248 | 8.224 | 5.400 | 5.376<< |

| BARRA 77 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 77 | 8.253>> | 8.230 | 5.390 | 5.366 |
| 77 | 2.818<< | 2.800 | 12.246 | 12.228 |
| 77 | 8.242 | 8.241>> | 5.378 | 5.377 |
| 77 | 2.830 | 2.789<< | 12.258 | 12.217 |
| 77 | 2.830 | 2.789 | 12.258>> | 12.217 |
| 77 | 8.242 | 8.241 | 5.378<< | 5.377 |
| 77 | 2.818 | 2.800 | 12.246 | 12.228>> |
| 77 | 8.253 | 8.230 | 5.390 | 5.366<< |
| 78 | 8.951>> | 8.909 | 4.529 | 4.487 |
| 78 | 4.780<< | 4.829 | 9.693 | 9.743 |
| 78 | 8.921 | 8.940>> | 4.498 | 4.518 |
| 78 | 4.810 | 4.799<< | 9.724 | 9.712 |
| 78 | 4.791 | 4.799 | 9.726>> | 9.734 |
| 78 | 8.940 | 8.940 | 4.496<< | 4.496 |
| 78 | 4.780 | 4.810 | 9.715 | 9.745>> |
| 78 | 8.951 | 8.928 | 4.507 | 4.485<< |

| BARRA 78 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 78 | 8.840>> | 8.816 | 4.460 | 4.436 |
| 78 | 4.716<< | 4.728 | 9.715 | 9.727 |
| 78 | 8.828 | 8.827>> | 4.449 | 4.447 |
| 78 | 4.727 | 4.717<< | 9.726 | 9.716 |
| 78 | 4.727 | 4.717 | 9.726>> | 9.716 |
| 78 | 8.828 | 8.827 | 4.449<< | 4.447 |
| 78 | 4.716 | 4.728 | 9.715 | 9.727>> |
| 78 | 8.840 | 8.816 | 4.460 | 4.436<< |
| 79 | 7.316>> | 7.168 | 6.552 | 6.404 |
| 79 | 4.120<< | 4.209 | 10.359 | 10.448 |
| 79 | 7.273 | 7.212>> | 6.509 | 6.448 |
| 79 | 4.164 | 4.165<< | 10.402 | 10.404 |
| 79 | 4.132 | 4.167 | 10.406>> | 10.440 |
| 79 | 7.304 | 7.210 | 6.505<< | 6.412 |
| 79 | 4.122 | 4.178 | 10.395 | 10.451>> |
| 79 | 7.315 | 7.199 | 6.516 | 6.401<< |

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| BARRA 79 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 79 | 7.935>> | 7.781 | 6.917 | 6.762 |
| 79 | 4.530<< | 4.656 | 11.863 | 11.989 |
| 79 | 7.879 | 7.837>> | 6.861 | 6.819 |
| 79 | 4.586 | 4.600<< | 11.919 | 11.933 |
| 79 | 4.565 | 4.601 | 11.923>> | 11.959 |
| 79 | 7.900 | 7.836 | 6.857<< | 6.792 |
| 79 | 4.531 | 4.635 | 11.890 | 11.993>> |
| 79 | 7.934 | 7.802 | 6.890 | 6.758<< |
| 80 | 8.373>> | 8.295 | 6.137 | 6.059 |
| 80 | 5.311<< | 5.235 | 10.904 | 10.829 |
| 80 | 8.317 | 8.351>> | 6.082 | 6.115 |
| 80 | 5.367 | 5.179<< | 10.960 | 10.773 |
| 80 | 5.327 | 5.184 | 10.965>> | 10.822 |
| 80 | 8.356 | 8.346 | 6.077<< | 6.067 |
| 80 | 5.316 | 5.196 | 10.953 | 10.834>> |
| 80 | 8.368 | 8.334 | 6.089 | 6.055<< |

| BARRA 80 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 80 | 8.381>> | 8.303 | 6.155 | 6.077 |
| 80 | 5.319<< | 5.244 | 10.922 | 10.847 |
| 80 | 8.325 | 8.359>> | 6.099 | 6.133 |
| 80 | 5.375 | 5.188<< | 10.978 | 10.791 |
| 80 | 5.336 | 5.193 | 10.983>> | 10.839 |
| 80 | 8.365 | 8.354 | 6.095<< | 6.084 |
| 80 | 5.324 | 5.205 | 10.971 | 10.851>> |
| 80 | 8.376 | 8.342 | 6.107 | 6.072<< |
| 81 | 8.772>> | 8.630 | 5.628 | 5.486 |
| 81 | 5.652<< | 5.552 | 10.435 | 10.335 |
| 81 | 8.698 | 8.809>> | 5.420 | 5.531 |
| 81 | 5.686 | 5.518<< | 10.469 | 10.301 |
| 81 | 5.667 | 5.520 | 10.471>> | 10.325 |
| 81 | 8.717 | 8.807 | 5.417<< | 5.507 |
| 81 | 5.654 | 5.533 | 10.458 | 10.338>> |
| 81 | 8.754 | 8.770 | 5.454 | 5.470<< |

| BARRA 81 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 81 | 8.776>> | 8.634 | 5.650 | 5.508 |
| 81 | 5.655<< | 5.556 | 10.457 | 10.357 |
| 81 | 8.702 | 8.813>> | 5.442 | 5.552 |
| 81 | 5.689 | 5.522<< | 10.491 | 10.323 |
| 81 | 5.671 | 5.524 | 10.493>> | 10.347 |
| 81 | 8.721 | 8.811 | 5.439<< | 5.529 |
| 81 | 5.658 | 5.537 | 10.480 | 10.360>> |
| 81 | 8.758 | 8.774 | 5.476 | 5.492<< |
| 82 | 9.279>> | 9.216 | 4.765 | 4.703 |
| 82 | 5.806<< | 5.801 | 10.101 | 10.096 |
| 82 | 9.216 | 9.376>> | 4.579 | 4.739 |
| 82 | 5.910 | 5.698<< | 10.205 | 9.992 |
| 82 | 5.852 | 5.702 | 10.216>> | 10.065 |
| 82 | 9.237 | 9.373 | 4.577<< | 4.713 |
| 82 | 5.809 | 5.780 | 10.128 | 10.099>> |
| 82 | 9.276 | 9.238 | 4.739 | 4.700<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=0)(1.00*G+1.00*LEV+1.10*P+0.8*SC+0.5*GT)

| BARRA 82 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 82 | 9.279>> | 9.217 | 4.787 | 4.724 |
| 82 | 5.806<< | 5.801 | 10.123 | 10.118 |
| 82 | 9.216 | 9.376>> | 4.601 | 4.761 |
| 82 | 5.910 | 5.698<< | 10.226 | 10.014 |
| 82 | 5.852 | 5.702 | 10.237>> | 10.087 |
| 82 | 9.237 | 9.373 | 4.598<< | 4.734 |
| 82 | 5.809 | 5.780 | 10.150 | 10.120>> |
| 82 | 9.276 | 9.238 | 4.760 | 4.722<< |
| 83 | 9.786>> | 9.774 | 3.934 | 3.921 |
| 83 | 5.844<< | 5.866 | 10.030 | 10.052 |
| 83 | 9.717 | 9.930>> | 3.753 | 3.966 |
| 83 | 5.966 | 5.745<< | 10.151 | 9.930 |
| 83 | 5.949 | 5.748 | 10.152>> | 9.950 |
| 83 | 9.733 | 9.927 | 3.752<< | 3.946 |
| 83 | 5.847 | 5.849 | 10.051 | 10.053>> |
| 83 | 9.783 | 9.790 | 3.913 | 3.920<< |

| BARRA 83 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 83 | 9.784>> | 9.772 | 3.954 | 3.942 |
| 83 | 5.843<< | 5.864 | 10.051 | 10.073 |
| 83 | 9.715 | 9.928>> | 3.774 | 3.987 |
| 83 | 5.964 | 5.743<< | 10.172 | 9.950 |
| 83 | 5.948 | 5.746 | 10.173>> | 9.971 |
| 83 | 9.732 | 9.925 | 3.773<< | 3.966 |
| 83 | 5.845 | 5.848 | 10.071 | 10.074>> |
| 83 | 9.781 | 9.789 | 3.934 | 3.941<< |
| 84 | 10.172>> | 10.201 | 3.298 | 3.327 |
| 84 | 5.870<< | 5.863 | 10.044 | 10.037 |
| 84 | 10.094 | 10.356>> | 3.120 | 3.383 |
| 84 | 6.027 | 5.793<< | 10.090 | 9.856 |
| 84 | 6.012 | 5.796 | 10.090>> | 9.875 |
| 84 | 10.110 | 10.353 | 3.120<< | 3.364 |
| 84 | 5.874 | 5.848 | 10.063 | 10.037>> |
| 84 | 10.168 | 10.217 | 3.278 | 3.327<< |

| BARRA 84 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 84 | 10.169>> | 10.198 | 3.316 | 3.345 |
| 84 | 5.868<< | 5.861 | 10.062 | 10.055 |
| 84 | 10.091 | 10.354>> | 3.138 | 3.401 |
| 84 | 6.025 | 5.790<< | 10.108 | 9.874 |
| 84 | 6.009 | 5.794 | 10.108>> | 9.893 |
| 84 | 10.107 | 10.351 | 3.138<< | 3.382 |
| 84 | 5.871 | 5.845 | 10.081 | 10.055>> |
| 84 | 10.166 | 10.214 | 3.296 | 3.345<< |
| 85 | 10.440>> | 10.506 | 2.846 | 2.912 |
| 85 | 5.885<< | 5.897 | 10.011 | 10.023 |
| 85 | 10.356 | 10.660>> | 2.673 | 2.977 |
| 85 | 6.095 | 5.848<< | 10.015 | 9.768 |
| 85 | 5.912 | 5.869 | 10.039>> | 9.996 |
| 85 | 10.356 | 10.660 | 2.673<< | 2.977 |
| 85 | 5.885 | 5.896 | 10.012 | 10.023>> |
| 85 | 10.440 | 10.507 | 2.845 | 2.912<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=0)(1.00*G+1.00*LEV+1.10*P+0.8*SC+0.5*GT)

| BARRA 85 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 85 | 10.438>> | 10.503 | 2.860 | 2.925 |
| 85 | 5.882<< | 5.894 | 10.024 | 10.036 |
| 85 | 10.353 | 10.657>> | 2.687 | 2.991 |
| 85 | 6.092 | 5.845<< | 10.029 | 9.782 |
| 85 | 5.909 | 5.866 | 10.052>> | 10.009 |
| 85 | 10.353 | 10.657 | 2.687<< | 2.990 |
| 85 | 5.882 | 5.894 | 10.025 | 10.037>> |
| 85 | 10.437 | 10.504 | 2.859 | 2.925<< |
| 86 | 10.594>> | 10.692 | 2.575 | 2.672 |
| 86 | 5.904<< | 5.934 | 9.967 | 9.998 |
| 86 | 10.503 | 10.842>> | 2.408 | 2.746 |
| 86 | 5.931 | 5.908<< | 9.994 | 9.971 |
| 86 | 5.930 | 5.908 | 9.994>> | 9.971 |
| 86 | 10.504 | 10.842 | 2.408<< | 2.746 |
| 86 | 5.904 | 5.934 | 9.968 | 9.998>> |
| 86 | 10.594 | 10.692 | 2.574 | 2.672<< |

| BARRA 86 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 86 | 10.592>> | 10.689 | 2.583 | 2.680 |
| 86 | 5.901<< | 5.932 | 9.975 | 10.005 |
| 86 | 10.501 | 10.840>> | 2.415 | 2.754 |
| 86 | 5.928 | 5.905<< | 10.002 | 9.979 |
| 86 | 5.927 | 5.905 | 10.002>> | 9.979 |
| 86 | 10.501 | 10.840 | 2.415<< | 2.754 |
| 86 | 5.901 | 5.931 | 9.975 | 10.005>> |
| 86 | 10.592 | 10.690 | 2.582 | 2.680<< |
| 87 | 10.633>> | 10.756 | 2.486 | 2.609 |
| 87 | 5.926<< | 5.975 | 9.913 | 9.962 |
| 87 | 10.537 | 10.903>> | 2.325 | 2.691 |
| 87 | 5.952 | 5.949<< | 9.939 | 9.936 |
| 87 | 5.951 | 5.949 | 9.939>> | 9.937 |
| 87 | 10.537 | 10.903 | 2.325<< | 2.690 |
| 87 | 5.926 | 5.974 | 9.914 | 9.962>> |
| 87 | 10.632 | 10.757 | 2.485 | 2.609<< |

| BARRA 87 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 87 | 10.630>> | 10.754 | 2.489 | 2.613 |
| 87 | 5.924<< | 5.973 | 9.916 | 9.965 |
| 87 | 10.535 | 10.901>> | 2.328 | 2.694 |
| 87 | 5.949 | 5.947<< | 9.942 | 9.940 |
| 87 | 5.949 | 5.947 | 9.942>> | 9.940 |
| 87 | 10.535 | 10.901 | 2.328<< | 2.693 |
| 87 | 5.924 | 5.972 | 9.917 | 9.965>> |
| 87 | 10.630 | 10.755 | 2.488 | 2.612<< |
| 88 | 10.555>> | 10.700 | 2.579 | 2.724 |
| 88 | 5.952<< | 6.018 | 9.850 | 9.917 |
| 88 | 10.456 | 10.841>> | 2.426 | 2.811 |
| 88 | 5.976 | 5.994<< | 9.875 | 9.892 |
| 88 | 5.976 | 5.994 | 9.875>> | 9.892 |
| 88 | 10.456 | 10.841 | 2.426<< | 2.811 |
| 88 | 5.952 | 6.018 | 9.850 | 9.917>> |
| 88 | 10.555 | 10.700 | 2.579 | 2.724<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=0)(1.00*G+1.00*LEV+1.10*P+0.8*SC+0.5*GT)

| BARRA 88 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 88 | 10.554>> | 10.699 | 2.576 | 2.721 |
| 88 | 5.950<< | 6.017 | 9.848 | 9.915 |
| 88 | 10.454 | 10.840>> | 2.424 | 2.809 |
| 88 | 5.975 | 5.992<< | 9.873 | 9.890 |
| 88 | 5.975 | 5.992 | 9.873>> | 9.890 |
| 88 | 10.454 | 10.840 | 2.424<< | 2.809 |
| 88 | 5.950 | 6.017 | 9.848 | 9.915>> |
| 88 | 10.554 | 10.699 | 2.576 | 2.721<< |
| 89 | 10.365>> | 10.527 | 2.849 | 3.011 |
| 89 | 5.984<< | 6.067 | 9.774 | 9.857 |
| 89 | 10.263 | 10.661>> | 2.706 | 3.103 |
| 89 | 6.007 | 6.044<< | 9.797 | 9.834 |
| 89 | 6.007 | 6.044 | 9.797>> | 9.834 |
| 89 | 10.263 | 10.661 | 2.706<< | 3.103 |
| 89 | 5.984 | 6.067 | 9.774 | 9.857>> |
| 89 | 10.365 | 10.527 | 2.849 | 3.011<< |

| BARRA 89 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 89 | 10.364>> | 10.526 | 2.841 | 3.003 |
| 89 | 5.982<< | 6.066 | 9.766 | 9.850 |
| 89 | 10.262 | 10.660>> | 2.698 | 3.095 |
| 89 | 6.006 | 6.043<< | 9.789 | 9.826 |
| 89 | 6.006 | 6.043 | 9.789>> | 9.826 |
| 89 | 10.262 | 10.660 | 2.698<< | 3.095 |
| 89 | 5.982 | 6.066 | 9.766 | 9.850>> |
| 89 | 10.364 | 10.526 | 2.841 | 3.003<< |
| 90 | 10.062>> | 10.235 | 3.297 | 3.470 |
| 90 | 6.022<< | 6.122 | 9.684 | 9.784 |
| 90 | 9.932 | 10.365>> | 3.167 | 3.600 |
| 90 | 6.147 | 6.090<< | 9.689 | 9.632 |
| 90 | 6.044 | 6.100 | 9.706>> | 9.762 |
| 90 | 9.959 | 10.361 | 3.164<< | 3.566 |
| 90 | 6.022 | 6.122 | 9.684 | 9.784>> |
| 90 | 10.062 | 10.235 | 3.297 | 3.470<< |

| BARRA 90 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 90 | 10.060>> | 10.234 | 3.284 | 3.458 |
| 90 | 6.020<< | 6.120 | 9.671 | 9.772 |
| 90 | 9.930 | 10.363>> | 3.155 | 3.588 |
| 90 | 6.145 | 6.089<< | 9.677 | 9.620 |
| 90 | 6.042 | 6.098 | 9.694>> | 9.750 |
| 90 | 9.958 | 10.360 | 3.152<< | 3.554 |
| 90 | 6.020 | 6.120 | 9.671 | 9.772>> |
| 90 | 10.060 | 10.234 | 3.284 | 3.458<< |
| 91 | 9.643>> | 9.824 | 3.925 | 4.105 |
| 91 | 6.064<< | 6.180 | 9.583 | 9.699 |
| 91 | 9.519 | 9.948>> | 3.801 | 4.230 |
| 91 | 6.168 | 6.134<< | 9.613 | 9.579 |
| 91 | 6.168 | 6.134 | 9.613>> | 9.579 |
| 91 | 9.519 | 9.948 | 3.801<< | 4.230 |
| 91 | 6.064 | 6.180 | 9.583 | 9.699>> |
| 91 | 9.643 | 9.824 | 3.925 | 4.105<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=0)(1.00*G+1.00*LEV+1.10*P+0.8*SC+0.5*GT)

| BARRA 91 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 91 | 9.644>> | 9.824 | 3.930 | 4.110 |
| 91 | 6.064<< | 6.181 | 9.587 | 9.704 |
| 91 | 9.519 | 9.948>> | 3.806 | 4.234 |
| 91 | 6.168 | 6.134<< | 9.618 | 9.583 |
| 91 | 6.168 | 6.134 | 9.618>> | 9.583 |
| 91 | 9.519 | 9.948 | 3.806<< | 4.234 |
| 91 | 6.064 | 6.181 | 9.587 | 9.704>> |
| 91 | 9.644 | 9.824 | 3.930 | 4.110<< |
| 92 | 9.112>> | 9.288 | 4.764 | 4.940 |
| 92 | 6.110<< | 6.248 | 9.489 | 9.627 |
| 92 | 8.989 | 9.411>> | 4.641 | 5.063 |
| 92 | 6.199 | 6.180<< | 9.550 | 9.532 |
| 92 | 6.194 | 6.181 | 9.550>> | 9.537 |
| 92 | 8.993 | 9.410 | 4.641<< | 5.057 |
| 92 | 6.111 | 6.243 | 9.495 | 9.627>> |
| 92 | 9.111 | 9.293 | 4.758 | 4.940<< |

| BARRA 92 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 92 | 9.116>> | 9.292 | 4.795 | 4.971 |
| 92 | 6.114<< | 6.252 | 9.520 | 9.658 |
| 92 | 8.993 | 9.415>> | 4.672 | 5.094 |
| 92 | 6.203 | 6.185<< | 9.582 | 9.563 |
| 92 | 6.199 | 6.186 | 9.582>> | 9.568 |
| 92 | 8.998 | 9.414 | 4.672<< | 5.088 |
| 92 | 6.115 | 6.247 | 9.526 | 9.658>> |
| 92 | 9.115 | 9.297 | 4.789 | 4.971<< |
| 93 | 8.526>> | 8.681 | 5.742 | 5.896 |
| 93 | 6.106<< | 6.289 | 9.475 | 9.658 |
| 93 | 8.410 | 8.797>> | 5.625 | 6.013 |
| 93 | 6.176 | 6.205<< | 9.563 | 9.592 |
| 93 | 6.176 | 6.205 | 9.563>> | 9.592 |
| 93 | 8.410 | 8.797 | 5.625<< | 6.013 |
| 93 | 6.106 | 6.289 | 9.475 | 9.658>> |
| 93 | 8.526 | 8.681 | 5.742 | 5.896<< |

| BARRA 93 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 93 | 8.534>> | 8.689 | 5.766 | 5.920 |
| 93 | 6.114<< | 6.297 | 9.499 | 9.682 |
| 93 | 8.418 | 8.805>> | 5.649 | 6.037 |
| 93 | 6.184 | 6.213<< | 9.587 | 9.616 |
| 93 | 6.184 | 6.213 | 9.587>> | 9.616 |
| 93 | 8.418 | 8.805 | 5.649<< | 6.037 |
| 93 | 6.114 | 6.297 | 9.499 | 9.682>> |
| 93 | 8.534 | 8.689 | 5.766 | 5.920<< |
| 94 | 8.300>> | 7.921 | 6.813 | 6.434 |
| 94 | 5.676<< | 6.395 | 9.496 | 10.215 |
| 94 | 8.054 | 8.331>> | 6.357 | 6.634 |
| 94 | 6.090 | 5.983<< | 9.908 | 9.801 |
| 94 | 5.974 | 5.997 | 9.923>> | 9.945 |
| 94 | 8.062 | 8.331 | 6.355<< | 6.624 |
| 94 | 5.677 | 6.387 | 9.507 | 10.216>> |
| 94 | 8.299 | 7.929 | 6.803 | 6.432<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=0)(1.00*G+1.00*LEV+1.10*P+0.8*SC+0.5*GT)

| BARRA 94 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 94 | 8.311>> | 7.932 | 6.828 | 6.448 |
| 94 | 5.687<< | 6.406 | 9.511 | 10.230 |
| 94 | 8.065 | 8.342>> | 6.372 | 6.649 |
| 94 | 6.101 | 5.994<< | 9.922 | 9.815 |
| 94 | 5.985 | 6.008 | 9.937>> | 9.960 |
| 94 | 8.073 | 8.341 | 6.370<< | 6.639 |
| 94 | 5.688 | 6.397 | 9.522 | 10.231>> |
| 94 | 8.311 | 7.940 | 6.817 | 6.447<< |
| 95 | 8.401>> | 8.164 | 6.506 | 6.268 |
| 95 | 4.835<< | 5.426 | 11.002 | 11.593 |
| 95 | 7.835 | 8.233>> | 6.576 | 6.973 |
| 95 | 4.888 | 5.373<< | 11.055 | 11.539 |
| 95 | 4.888 | 5.373 | 11.055>> | 11.539 |
| 95 | 8.348 | 8.217 | 6.453<< | 6.322 |
| 95 | 4.835 | 5.426 | 11.002 | 11.593>> |
| 95 | 8.401 | 8.164 | 6.505 | 6.268<< |

| BARRA 95 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 95 | 7.981>> | 7.769 | 5.973 | 5.762 |
| 95 | 4.682<< | 5.171 | 9.433 | 9.922 |
| 95 | 7.938 | 7.812>> | 5.931 | 5.804 |
| 95 | 4.725 | 5.129<< | 9.475 | 9.879 |
| 95 | 4.724 | 5.129 | 9.475>> | 9.880 |
| 95 | 7.938 | 7.812 | 5.931<< | 5.804 |
| 95 | 4.682 | 5.171 | 9.433 | 9.922>> |
| 95 | 7.981 | 7.770 | 5.973 | 5.762<< |
| 96 | 9.756>> | 9.570 | 3.713 | 3.527 |
| 96 | 5.185<< | 5.643 | 8.855 | 9.313 |
| 96 | 9.742 | 9.584>> | 3.699 | 3.541 |
| 96 | 5.198 | 5.629<< | 8.869 | 9.299 |
| 96 | 5.198 | 5.629 | 8.869>> | 9.299 |
| 96 | 9.742 | 9.584 | 3.699<< | 3.541 |
| 96 | 5.185 | 5.643 | 8.855 | 9.313>> |
| 96 | 9.756 | 9.570 | 3.713 | 3.527<< |

| BARRA 96 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 96 | 10.001>> | 9.823 | 3.726 | 3.547 |
| 96 | 5.375<< | 5.863 | 8.814 | 9.301 |
| 96 | 9.987 | 9.836>> | 3.712 | 3.561 |
| 96 | 5.389 | 5.849<< | 8.828 | 9.288 |
| 96 | 5.389 | 5.849 | 8.828>> | 9.288 |
| 96 | 9.987 | 9.836 | 3.712<< | 3.561 |
| 96 | 5.375 | 5.863 | 8.814 | 9.301>> |
| 96 | 10.001 | 9.823 | 3.726 | 3.547<< |
| 97 | 9.355>> | 9.174 | 4.544 | 4.363 |
| 97 | 3.320<< | 3.800 | 11.418 | 11.898 |
| 97 | 9.342 | 9.187>> | 4.531 | 4.376 |
| 97 | 3.333 | 3.787<< | 11.431 | 11.885 |
| 97 | 3.333 | 3.787 | 11.431>> | 11.885 |
| 97 | 9.342 | 9.187 | 4.531<< | 4.376 |
| 97 | 3.320 | 3.800 | 11.418 | 11.898>> |
| 97 | 9.355 | 9.174 | 4.544 | 4.363<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=0)(1.00*G+1.00*LEV+1.10*P+0.8*SC+0.5*GT)

| BARRA 97 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 97 | 9.437>> | 9.256 | 4.521 | 4.340 |
| 97 | 3.402<< | 3.881 | 11.394 | 11.874 |
| 97 | 9.424 | 9.269>> | 4.508 | 4.353 |
| 97 | 3.414 | 3.869<< | 11.407 | 11.862 |
| 97 | 3.414 | 3.869 | 11.407>> | 11.862 |
| 97 | 9.424 | 9.269 | 4.508<< | 4.353 |
| 97 | 3.402 | 3.881 | 11.394 | 11.874>> |
| 97 | 9.437 | 9.256 | 4.521 | 4.340<< |
| 98 | 9.971>> | 9.772 | 3.867 | 3.668 |
| 98 | 5.322<< | 5.840 | 8.926 | 9.444 |
| 98 | 9.929 | 9.814>> | 3.825 | 3.710 |
| 98 | 5.364 | 5.798<< | 8.968 | 9.402 |
| 98 | 5.337 | 5.801 | 8.968>> | 9.433 |
| 98 | 9.956 | 9.811 | 3.825<< | 3.680 |
| 98 | 5.325 | 5.813 | 8.956 | 9.444>> |
| 98 | 9.968 | 9.799 | 3.837 | 3.668<< |

| BARRA 98 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 98 | 9.855>> | 9.661 | 3.812 | 3.619 |
| 98 | 5.258<< | 5.761 | 8.923 | 9.425 |
| 98 | 9.817 | 9.700>> | 3.774 | 3.657 |
| 98 | 5.297 | 5.723<< | 8.961 | 9.387 |
| 98 | 5.272 | 5.724 | 8.964>> | 9.416 |
| 98 | 9.842 | 9.698 | 3.771<< | 3.628 |
| 98 | 5.260 | 5.736 | 8.952 | 9.428>> |
| 98 | 9.854 | 9.686 | 3.783 | 3.616<< |
| 99 | 8.032>> | 7.748 | 6.229 | 5.946 |
| 99 | 4.535<< | 5.128 | 9.688 | 10.281 |
| 99 | 7.717 | 8.060>> | 5.917 | 6.260 |
| 99 | 4.760 | 4.831<< | 9.970 | 10.041 |
| 99 | 4.858 | 4.840 | 9.971>> | 9.953 |
| 99 | 7.717 | 8.060 | 5.917<< | 6.260 |
| 99 | 4.535 | 5.128 | 9.688 | 10.281>> |
| 99 | 8.005 | 7.825 | 6.121 | 5.941<< |

| BARRA 99 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 99 | 8.828>> | 8.472 | 6.540 | 6.184 |
| 99 | 5.049<< | 5.764 | 11.057 | 11.772 |
| 99 | 8.432 | 8.866>> | 6.147 | 6.580 |
| 99 | 5.454 | 5.395<< | 11.416 | 11.357 |
| 99 | 5.343 | 5.415 | 11.421>> | 11.493 |
| 99 | 8.432 | 8.866 | 6.147<< | 6.580 |
| 99 | 5.049 | 5.764 | 11.057 | 11.772>> |
| 99 | 8.828 | 8.472 | 6.540 | 6.184<< |
| 100 | 9.048>> | 9.272 | 5.455 | 5.679 |
| 100 | 5.632<< | 5.846 | 10.790 | 11.003 |
| 100 | 9.008 | 9.313>> | 5.415 | 5.720 |
| 100 | 5.722 | 5.788<< | 10.838 | 10.904 |
| 100 | 5.694 | 5.789 | 10.846>> | 10.941 |
| 100 | 9.036 | 9.312 | 5.407<< | 5.683 |
| 100 | 5.633 | 5.817 | 10.826 | 11.011>> |
| 100 | 9.048 | 9.301 | 5.419 | 5.671<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=0)(1.00*G+1.00*LEV+1.10*P+0.8*SC+0.5*GT)

| BARRA 100 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 100 | 9.078>> | 9.302 | 5.494 | 5.718 |
| 100 | 5.663<< | 5.876 | 10.828 | 11.042 |
| 100 | 9.038 | 9.343>> | 5.454 | 5.758 |
| 100 | 5.752 | 5.819<< | 10.877 | 10.943 |
| 100 | 5.724 | 5.819 | 10.884>> | 10.979 |
| 100 | 9.066 | 9.343 | 5.446<< | 5.722 |
| 100 | 5.663 | 5.847 | 10.865 | 11.049>> |
| 100 | 9.078 | 9.331 | 5.458 | 5.710<< |
| 101 | 9.534>> | 9.802 | 4.728 | 4.996 |
| 101 | 6.005<< | 6.175 | 10.351 | 10.521 |
| 101 | 9.523 | 9.812>> | 4.718 | 5.007 |
| 101 | 6.061 | 6.148<< | 10.369 | 10.456 |
| 101 | 6.061 | 6.148 | 10.369>> | 10.456 |
| 101 | 9.523 | 9.812 | 4.718<< | 5.007 |
| 101 | 6.005 | 6.175 | 10.351 | 10.521>> |
| 101 | 9.534 | 9.802 | 4.728 | 4.996<< |

| BARRA 101 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 101 | 9.562>> | 9.829 | 4.786 | 5.053 |
| 101 | 6.032<< | 6.202 | 10.408 | 10.578 |
| 101 | 9.551 | 9.840>> | 4.775 | 5.064 |
| 101 | 6.089 | 6.176<< | 10.426 | 10.514 |
| 101 | 6.089 | 6.176 | 10.426>> | 10.514 |
| 101 | 9.551 | 9.840 | 4.775<< | 5.064 |
| 101 | 6.032 | 6.202 | 10.408 | 10.578>> |
| 101 | 9.562 | 9.829 | 4.786 | 5.053<< |
| 102 | 10.102>> | 10.393 | 3.914 | 4.206 |
| 102 | 6.170<< | 6.311 | 10.231 | 10.372 |
| 102 | 10.092 | 10.403>> | 3.904 | 4.215 |
| 102 | 6.221 | 6.287<< | 10.248 | 10.313 |
| 102 | 6.221 | 6.287 | 10.248>> | 10.313 |
| 102 | 10.092 | 10.403 | 3.904<< | 4.215 |
| 102 | 6.170 | 6.311 | 10.231 | 10.372>> |
| 102 | 10.102 | 10.393 | 3.914 | 4.206<< |

| BARRA 102 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 102 | 10.120>> | 10.412 | 3.981 | 4.273 |
| 102 | 6.188<< | 6.329 | 10.299 | 10.440 |
| 102 | 10.110 | 10.421>> | 3.972 | 4.283 |
| 102 | 6.240 | 6.305<< | 10.315 | 10.380 |
| 102 | 6.240 | 6.305 | 10.315>> | 10.380 |
| 102 | 10.110 | 10.421 | 3.972<< | 4.283 |
| 102 | 6.188 | 6.329 | 10.299 | 10.440>> |
| 102 | 10.120 | 10.412 | 3.981 | 4.273<< |
| 103 | 10.570>> | 10.863 | 3.279 | 3.572 |
| 103 | 6.304<< | 6.431 | 10.136 | 10.263 |
| 103 | 10.561 | 10.872>> | 3.270 | 3.581 |
| 103 | 6.350 | 6.410<< | 10.151 | 10.210 |
| 103 | 6.350 | 6.410 | 10.151>> | 10.210 |
| 103 | 10.561 | 10.872 | 3.270<< | 3.581 |
| 103 | 6.304 | 6.431 | 10.136 | 10.263>> |
| 103 | 10.570 | 10.863 | 3.279 | 3.572<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=0)(1.00*G+1.00*LEV+1.10*P+0.8*SC+0.5*GT)

| BARRA 103 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 103 | 10.581>> | 10.874 | 3.353 | 3.646 |
| 103 | 6.316<< | 6.443 | 10.209 | 10.337 |
| 103 | 10.572 | 10.883>> | 3.344 | 3.655 |
| 103 | 6.362 | 6.421<< | 10.224 | 10.283 |
| 103 | 6.362 | 6.421 | 10.224>> | 10.283 |
| 103 | 10.572 | 10.883 | 3.344<< | 3.655 |
| 103 | 6.316 | 6.443 | 10.209 | 10.337>> |
| 103 | 10.581 | 10.874 | 3.353 | 3.646<< |
| 104 | 10.905>> | 11.194 | 2.853 | 3.142 |
| 104 | 6.450<< | 6.564 | 10.017 | 10.131 |
| 104 | 10.897 | 11.202>> | 2.845 | 3.150 |
| 104 | 6.492 | 6.545<< | 10.030 | 10.083 |
| 104 | 6.492 | 6.545 | 10.030>> | 10.083 |
| 104 | 10.897 | 11.202 | 2.845<< | 3.150 |
| 104 | 6.450 | 6.564 | 10.017 | 10.131>> |
| 104 | 10.905 | 11.194 | 2.853 | 3.142<< |

| BARRA 104 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 104 | 10.911>> | 11.199 | 2.908 | 3.197 |
| 104 | 6.455<< | 6.569 | 10.072 | 10.186 |
| 104 | 10.903 | 11.207>> | 2.900 | 3.205 |
| 104 | 6.497 | 6.550<< | 10.085 | 10.138 |
| 104 | 6.497 | 6.550 | 10.085>> | 10.138 |
| 104 | 10.903 | 11.207 | 2.900<< | 3.205 |
| 104 | 6.455 | 6.569 | 10.072 | 10.186>> |
| 104 | 10.911 | 11.199 | 2.908 | 3.197<< |
| 105 | 11.114>> | 11.392 | 2.605 | 2.883 |
| 105 | 6.612<< | 6.714 | 9.843 | 9.944 |
| 105 | 11.107 | 11.399>> | 2.598 | 2.890 |
| 105 | 6.649 | 6.696<< | 9.855 | 9.902 |
| 105 | 6.649 | 6.696 | 9.855>> | 9.902 |
| 105 | 11.107 | 11.399 | 2.598<< | 2.890 |
| 105 | 6.612 | 6.714 | 9.843 | 9.944>> |
| 105 | 11.114 | 11.392 | 2.605 | 2.883<< |

| BARRA 105 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 105 | 11.117>> | 11.395 | 2.563 | 2.842 |
| 105 | 6.616<< | 6.717 | 9.802 | 9.903 |
| 105 | 11.110 | 11.403>> | 2.556 | 2.849 |
| 105 | 6.653 | 6.700<< | 9.813 | 9.860 |
| 105 | 6.653 | 6.700 | 9.813>> | 9.860 |
| 105 | 11.110 | 11.403 | 2.556<< | 2.849 |
| 105 | 6.616 | 6.717 | 9.802 | 9.903>> |
| 105 | 11.117 | 11.395 | 2.563 | 2.842<< |
| 106 | 11.204>> | 11.465 | 2.450 | 2.712 |
| 106 | 6.801<< | 6.889 | 9.530 | 9.618 |
| 106 | 11.197 | 11.472>> | 2.444 | 2.718 |
| 106 | 6.833 | 6.874<< | 9.540 | 9.581 |
| 106 | 6.833 | 6.874 | 9.540>> | 9.581 |
| 106 | 11.197 | 11.472 | 2.444<< | 2.718 |
| 106 | 6.801 | 6.889 | 9.530 | 9.618>> |
| 106 | 11.204 | 11.465 | 2.450 | 2.712<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=0)(1.00*G+1.00*LEV+1.10*P+0.8*SC+0.5*GT)

| BARRA 106 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 106 | 11.204>> | 11.465 | 2.410 | 2.671 |
| 106 | 6.801<< | 6.889 | 9.490 | 9.578 |
| 106 | 11.197 | 11.472>> | 2.403 | 2.678 |
| 106 | 6.833 | 6.874<< | 9.500 | 9.541 |
| 106 | 6.833 | 6.874 | 9.500>> | 9.541 |
| 106 | 11.197 | 11.472 | 2.403<< | 2.678 |
| 106 | 6.801 | 6.889 | 9.490 | 9.578>> |
| 106 | 11.204 | 11.465 | 2.410 | 2.671<< |
| 107 | 11.105>> | 11.345 | 2.591 | 2.831 |
| 107 | 6.946<< | 7.021 | 9.281 | 9.356 |
| 107 | 11.100 | 11.350>> | 2.586 | 2.836 |
| 107 | 6.973 | 7.008<< | 9.290 | 9.324 |
| 107 | 6.973 | 7.008 | 9.290>> | 9.324 |
| 107 | 11.100 | 11.350 | 2.586<< | 2.836 |
| 107 | 6.946 | 7.021 | 9.281 | 9.356>> |
| 107 | 11.105 | 11.345 | 2.591 | 2.831<< |

| BARRA 107 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 107 | 11.101>> | 11.341 | 2.557 | 2.796 |
| 107 | 6.942<< | 7.017 | 9.246 | 9.321 |
| 107 | 11.096 | 11.346>> | 2.551 | 2.801 |
| 107 | 6.969 | 7.004<< | 9.255 | 9.290 |
| 107 | 6.969 | 7.004 | 9.255>> | 9.290 |
| 107 | 11.096 | 11.346 | 2.551<< | 2.801 |
| 107 | 6.942 | 7.017 | 9.246 | 9.321>> |
| 107 | 11.101 | 11.341 | 2.557 | 2.796<< |
| 108 | 10.752>> | 10.963 | 3.137 | 3.348 |
| 108 | 6.980<< | 7.042 | 9.204 | 9.265 |
| 108 | 10.748 | 10.967>> | 3.133 | 3.352 |
| 108 | 7.003 | 7.031<< | 9.211 | 9.239 |
| 108 | 7.003 | 7.031 | 9.211>> | 9.239 |
| 108 | 10.748 | 10.967 | 3.133<< | 3.352 |
| 108 | 6.980 | 7.042 | 9.204 | 9.265>> |
| 108 | 10.752 | 10.963 | 3.137 | 3.348<< |

| BARRA 108 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 108 | 10.747>> | 10.958 | 3.102 | 3.313 |
| 108 | 6.975<< | 7.037 | 9.169 | 9.231 |
| 108 | 10.743 | 10.962>> | 3.098 | 3.318 |
| 108 | 6.998 | 7.026<< | 9.176 | 9.205 |
| 108 | 6.998 | 7.026 | 9.176>> | 9.205 |
| 108 | 10.743 | 10.962 | 3.098<< | 3.318 |
| 108 | 6.975 | 7.037 | 9.169 | 9.231>> |
| 108 | 10.747 | 10.958 | 3.102 | 3.313<< |
| 109 | 10.148>> | 10.324 | 4.080 | 4.256 |
| 109 | 6.907<< | 6.956 | 9.291 | 9.340 |
| 109 | 10.144 | 10.328>> | 4.076 | 4.260 |
| 109 | 6.925 | 6.948<< | 9.297 | 9.319 |
| 109 | 6.925 | 6.948 | 9.297>> | 9.319 |
| 109 | 10.144 | 10.328 | 4.076<< | 4.260 |
| 109 | 6.907 | 6.956 | 9.291 | 9.340>> |
| 109 | 10.148 | 10.324 | 4.080 | 4.256<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=0)(1.00*G+1.00*LEV+1.10*P+0.8*SC+0.5*GT)

| BARRA 109 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 109 | 10.142>> | 10.318 | 4.046 | 4.223 |
| 109 | 6.901<< | 6.950 | 9.258 | 9.306 |
| 109 | 10.139 | 10.322>> | 4.043 | 4.226 |
| 109 | 6.919 | 6.942<< | 9.263 | 9.286 |
| 109 | 6.919 | 6.942 | 9.263>> | 9.286 |
| 109 | 10.139 | 10.322 | 4.043<< | 4.226 |
| 109 | 6.901 | 6.950 | 9.258 | 9.306>> |
| 109 | 10.142 | 10.318 | 4.046 | 4.223<< |
| 110 | 9.290>> | 9.426 | 5.425 | 5.561 |
| 110 | 6.726<< | 6.761 | 9.548 | 9.584 |
| 110 | 9.287 | 9.429>> | 5.422 | 5.564 |
| 110 | 6.739 | 6.755<< | 9.552 | 9.569 |
| 110 | 6.739 | 6.755 | 9.552>> | 9.569 |
| 110 | 9.287 | 9.429 | 5.422<< | 5.564 |
| 110 | 6.726 | 6.761 | 9.548 | 9.584>> |
| 110 | 9.290 | 9.426 | 5.425 | 5.561<< |

| BARRA 110 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 110 | 9.282>> | 9.419 | 5.392 | 5.528 |
| 110 | 6.718<< | 6.754 | 9.515 | 9.551 |
| 110 | 9.280 | 9.421>> | 5.389 | 5.531 |
| 110 | 6.731 | 6.748<< | 9.519 | 9.536 |
| 110 | 6.731 | 6.748 | 9.519>> | 9.536 |
| 110 | 9.280 | 9.421 | 5.389<< | 5.531 |
| 110 | 6.718 | 6.754 | 9.515 | 9.551>> |
| 110 | 9.282 | 9.419 | 5.392 | 5.528<< |
| 111 | 8.178>> | 8.268 | 7.172 | 7.262 |
| 111 | 6.434<< | 6.456 | 9.975 | 9.998 |
| 111 | 8.176 | 8.269>> | 7.170 | 7.263 |
| 111 | 6.442 | 6.452<< | 9.978 | 9.988 |
| 111 | 6.442 | 6.452 | 9.978>> | 9.988 |
| 111 | 8.176 | 8.269 | 7.170<< | 7.263 |
| 111 | 6.434 | 6.456 | 9.975 | 9.998>> |
| 111 | 8.178 | 8.268 | 7.172 | 7.262<< |

| BARRA 111 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 111 | 8.168>> | 8.258 | 7.141 | 7.231 |
| 111 | 6.424<< | 6.446 | 9.945 | 9.967 |
| 111 | 8.167 | 8.260>> | 7.140 | 7.233 |
| 111 | 6.432 | 6.442<< | 9.947 | 9.958 |
| 111 | 6.432 | 6.442 | 9.947>> | 9.958 |
| 111 | 8.167 | 8.260 | 7.140<< | 7.233 |
| 111 | 6.424 | 6.446 | 9.945 | 9.967>> |
| 111 | 8.168 | 8.258 | 7.141 | 7.231<< |
| 112 | 6.810>> | 6.848 | 9.323 | 9.361 |
| 112 | 6.031<< | 6.040 | 10.574 | 10.583 |
| 112 | 6.810 | 6.849>> | 9.322 | 9.361 |
| 112 | 6.034 | 6.039<< | 10.575 | 10.579 |
| 112 | 6.034 | 6.039 | 10.575>> | 10.579 |
| 112 | 6.810 | 6.849 | 9.322<< | 9.361 |
| 112 | 6.031 | 6.040 | 10.574 | 10.583>> |
| 112 | 6.810 | 6.848 | 9.323 | 9.361<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=0)(1.00*G+1.00*LEV+1.10*P+0.8*SC+0.5*GT)

| BARRA 112 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 112 | 5.136>> | 5.125 | 7.234 | 7.223 |
| 112 | 4.337<< | 4.331 | 8.136 | 8.129 |
| 112 | 5.136 | 5.126>> | 7.233 | 7.223 |
| 112 | 4.338 | 4.330<< | 8.136 | 8.129 |
| 112 | 4.338 | 4.330 | 8.136>> | 8.129 |
| 112 | 5.136 | 5.126 | 7.233<< | 7.223 |
| 112 | 4.337 | 4.331 | 8.136 | 8.129>> |
| 112 | 5.136 | 5.125 | 7.234 | 7.223<< |
| 113 | 5.151>> | 5.025 | 7.324 | 7.198 |
| 113 | 5.044<< | 5.111 | 7.216 | 7.284 |
| 113 | 5.057 | 5.120>> | 7.229 | 7.293 |
| 113 | 5.138 | 5.016<< | 7.311 | 7.189 |
| 113 | 5.151 | 5.025 | 7.324>> | 7.198 |
| 113 | 5.044 | 5.111 | 7.216<< | 7.284 |
| 113 | 5.057 | 5.120 | 7.229 | 7.293>> |
| 113 | 5.138 | 5.016 | 7.311 | 7.189<< |

TITULO
=======
LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

FICHERO DE GEOMETRIA COMPLETA
==============================
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
================================
1

| Fich | Num. Nudos | Num. barras | Num. hipotesis | NOMBRE FICHERO |
|---|---|---|---|---|
| 1 | 120 | 119 | 161 | ESFec.TXT |

| Fich | Hipotesis | Caracter | Coeficiente |
|---|---|---|---|
| 1 | 1 | 1 | 1.0 |
| 1 | 2 | 1 | 1.0 |
| 1 | 3 | 1 | 1.0 |
| 1 | 4 | 3 | 1.0 |
| 1 | 5 | 3 | 1.0 |
| 1 | 6 | 3 | 1.0 |
| 1 | 7 | 2 | 0.5 |
| 1 | 8 | 2 | 0.5 |
| 1 | 9 | 2 | 0.5 |
| 1 | 10 | 2 | 0.5 |
| 1 | 11 | 2 | 0.5 |
| 1 | 12 | 2 | 0.5 |
| 1 | 13 | 2 | 0.5 |
| 1 | 14 | 2 | 0.5 |
| 1 | 15 | 2 | 0.5 |
| 1 | 16 | 2 | 0.5 |
| 1 | 17 | 2 | 0.5 |
| 1 | 18 | 2 | 0.5 |
| 1 | 19 | 4 | 0.8 |
| 1 | 20 | 5 | 0.8 |
| 1 | 21 | 4 | 0.8 |
| 1 | 22 | 5 | 0.8 |
| 1 | 23 | 4 | 0.8 |
| 1 | 24 | 5 | 0.8 |
| 1 | 25 | 4 | 0.8 |
| 1 | 26 | 5 | 0.8 |
| 1 | 27 | 4 | 0.8 |
| 1 | 28 | 5 | 0.8 |
| 1 | 29 | 4 | 0.8 |
| 1 | 30 | 5 | 0.8 |
| 1 | 31 | 4 | 0.8 |
| 1 | 32 | 5 | 0.8 |
| 1 | 33 | 4 | 0.8 |
| 1 | 34 | 5 | 0.8 |
| 1 | 35 | 4 | 0.8 |
| 1 | 36 | 5 | 0.8 |
| 1 | 37 | 4 | 0.8 |
| 1 | 38 | 5 | 0.8 |
| 1 | 39 | 4 | 0.8 |
| 1 | 40 | 5 | 0.8 |
| 1 | 41 | 6 | 0.8 |
| 1 | 42 | 7 | 0.8 |
| 1 | 43 | 6 | 0.8 |
| 1 | 44 | 7 | 0.8 |
| 1 | 45 | 6 | 0.8 |
| 1 | 46 | 7 | 0.8 |
| 1 | 47 | 6 | 0.8 |
| 1 | 48 | 7 | 0.8 |
| 1 | 49 | 6 | 0.8 |
| 1 | 50 | 7 | 0.8 |
| 1 | 51 | 6 | 0.8 |
| 1 | 52 | 7 | 0.8 |
| 1 | 53 | 6 | 0.8 |
| 1 | 54 | 7 | 0.8 |
| 1 | 55 | 6 | 0.8 |
| 1 | 56 | 7 | 0.8 |
| 1 | 57 | 6 | 0.8 |
| 1 | 58 | 7 | 0.8 |
| 1 | 59 | 6 | 0.8 |
| 1 | 60 | 7 | 0.8 |
| 1 | 61 | 6 | 0.8 |
| 1 | 62 | 7 | 0.8 |
| 1 | 63 | 6 | 0.8 |
| 1 | 64 | 7 | 0.8 |
| 1 | 65 | 6 | 0.8 |
| 1 | 66 | 7 | 0.8 |
| 1 | 67 | 6 | 0.8 |
| 1 | 68 | 7 | 0.8 |
| 1 | 69 | 6 | 0.8 |
| 1 | 70 | 7 | 0.8 |
| 1 | 71 | 6 | 0.8 |
| 1 | 72 | 7 | 0.8 |
| 1 | 73 | 6 | 0.8 |
| 1 | 74 | 7 | 0.8 |
| 1 | 75 | 6 | 0.8 |
| 1 | 76 | 7 | 0.8 |
| 1 | 77 | 6 | 0.8 |
| 1 | 78 | 7 | 0.8 |
| 1 | 79 | 6 | 0.8 |
| 1 | 80 | 7 | 0.8 |
| 1 | 81 | 6 | 0.8 |
| 1 | 82 | 7 | 0.8 |
| 1 | 83 | 6 | 0.8 |
| 1 | 84 | 7 | 0.8 |
| 1 | 85 | 6 | 0.8 |
| 1 | 86 | 7 | 0.8 |
| 1 | 87 | 6 | 0.8 |
| 1 | 88 | 7 | 0.8 |
| 1 | 89 | 6 | 0.8 |
| 1 | 90 | 7 | 0.8 |
| 1 | 91 | 6 | 0.8 |
| 1 | 92 | 7 | 0.8 |
| 1 | 93 | 6 | 0.8 |
| 1 | 94 | 7 | 0.8 |
| 1 | 95 | 6 | 0.8 |
| 1 | 96 | 7 | 0.8 |
| 1 | 97 | 8 | 0.0 |
| 1 | 98 | 9 | 0.0 |
| 1 | 99 | 8 | 0.0 |
| 1 | 100 | 9 | 0.0 |
| 1 | 101 | 8 | 0.0 |
| 1 | 102 | 9 | 0.0 |
| 1 | 103 | 8 | 0.0 |
| 1 | 104 | 9 | 0.0 |
| 1 | 105 | 8 | 0.0 |
| 1 | 106 | 9 | 0.0 |
| 1 | 107 | 8 | 0.0 |
| 1 | 108 | 9 | 0.0 |
| 1 | 109 | 8 | 0.0 |
| 1 | 110 | 9 | 0.0 |

| | | | |
|---|---|---|---|
| 1 | 111 | 8 | 0.0 |
| 1 | 112 | 9 | 0.0 |
| 1 | 113 | 8 | 0.0 |
| 1 | 114 | 9 | 0.0 |
| 1 | 115 | 8 | 0.0 |
| 1 | 116 | 9 | 0.0 |
| 1 | 117 | 8 | 0.0 |
| 1 | 118 | 9 | 0.0 |
| 1 | 119 | 10 | 0.0 |
| 1 | 120 | 10 | 0.0 |
| 1 | 121 | 10 | 0.0 |
| 1 | 122 | 10 | 0.0 |
| 1 | 123 | 10 | 0.0 |
| 1 | 124 | 10 | 0.0 |
| 1 | 125 | 10 | 0.0 |
| 1 | 126 | 10 | 0.0 |
| 1 | 127 | 10 | 0.0 |
| 1 | 128 | 10 | 0.0 |
| 1 | 129 | 10 | 0.0 |
| 1 | 130 | 10 | 0.0 |
| 1 | 131 | 10 | 0.0 |
| 1 | 132 | 10 | 0.0 |
| 1 | 133 | 10 | 0.0 |
| 1 | 134 | 10 | 0.0 |
| 1 | 135 | 10 | 0.0 |
| 1 | 136 | 10 | 0.0 |
| 1 | 137 | 10 | 0.0 |
| 1 | 138 | 10 | 0.0 |
| 1 | 139 | 10 | 0.0 |
| 1 | 140 | 10 | 0.0 |
| 1 | 141 | 2 | 0.5 |
| 1 | 142 | 1 | 22.309 |
| 1 | 143 | 1 | 3.187 |
| 1 | 144 | 1 | 3.187 |
| 1 | 145 | 1 | 12.748 |
| 1 | 146 | 1 | 3.187 |
| 1 | 147 | 1 | 3.187 |
| 1 | 148 | 1 | 7.430 |
| 1 | 149 | 1 | 7.430 |
| 1 | 150 | 1 | 7.430 |
| 1 | 151 | 1 | 7.430 |
| 1 | 152 | 1 | 7.430 |
| 1 | 153 | 1 | 7.430 |
| 1 | 154 | 1 | 7.430 |
| 1 | 155 | 1 | 7.430 |
| 1 | 156 | 1 | 7.430 |
| 1 | 157 | 1 | 7.430 |
| 1 | 158 | 1 | 7.430 |
| 1 | 159 | 1 | 7.430 |
| 1 | 160 | 1 | 7.430 |
| 1 | 161 | 1 | 7.430 |

PONDERACION DE TENSIONES

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 1 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 1 | 6.831>> | 6.726 | 6.254 | 6.148 |
| 1 | 6.736<< | 6.799 | 6.159 | 6.221 |
| 1 | 6.749 | 6.808>> | 6.172 | 6.230 |
| 1 | 6.817 | 6.716<< | 6.240 | 6.139 |
| 1 | 6.831 | 6.726 | 6.254>> | 6.148 |
| 1 | 6.736 | 6.799 | 6.159<< | 6.221 |
| 1 | 6.749 | 6.808 | 6.172 | 6.230>> |
| 1 | 6.817 | 6.716 | 6.240 | 6.139<< |
| 2 | 6.557>> | 6.548 | 6.503 | 6.495 |
| 2 | 5.825<< | 5.822 | 7.330 | 7.327 |
| 2 | 6.555 | 6.550>> | 6.502 | 6.497 |
| 2 | 5.826 | 5.820<< | 7.332 | 7.326 |
| 2 | 5.825 | 5.820 | 7.332>> | 7.327 |
| 2 | 6.556 | 6.550 | 6.502<< | 6.495 |
| 2 | 5.825 | 5.821 | 7.331 | 7.327>> |
| 2 | 6.557 | 6.549 | 6.502 | 6.495<< |

| BARRA 2 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 2 | 8.452>> | 8.478 | 8.399 | 8.425 |
| 2 | 7.734<< | 7.739 | 9.544 | 9.549 |
| 2 | 8.451 | 8.478>> | 8.399 | 8.426 |
| 2 | 7.735 | 7.738<< | 9.545 | 9.548 |
| 2 | 7.735 | 7.738 | 9.545>> | 9.548 |
| 2 | 8.451 | 8.478 | 8.399<< | 8.426 |
| 2 | 7.734 | 7.739 | 9.544 | 9.549>> |
| 2 | 8.452 | 8.478 | 8.399 | 8.425<< |
| 3 | 9.561>> | 9.624 | 6.624 | 6.686 |
| 3 | 7.993<< | 8.005 | 9.132 | 9.144 |
| 3 | 9.560 | 9.626>> | 6.622 | 6.688 |
| 3 | 7.994 | 8.003<< | 9.134 | 9.143 |
| 3 | 7.994 | 8.003 | 9.134>> | 9.143 |
| 3 | 9.560 | 9.626 | 6.622<< | 6.688 |
| 3 | 7.993 | 8.005 | 9.132 | 9.144>> |
| 3 | 9.561 | 9.624 | 6.624 | 6.686<< |

| BARRA 3 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 3 | 9.574>> | 9.637 | 6.658 | 6.721 |
| 3 | 8.005<< | 8.017 | 9.167 | 9.179 |
| 3 | 9.572 | 9.638>> | 6.657 | 6.723 |
| 3 | 8.007 | 8.016<< | 9.168 | 9.177 |
| 3 | 8.007 | 8.016 | 9.168>> | 9.177 |
| 3 | 9.572 | 9.638 | 6.657<< | 6.723 |
| 3 | 8.005 | 8.017 | 9.167 | 9.179>> |
| 3 | 9.574 | 9.637 | 6.658 | 6.721<< |
| 4 | 10.473>> | 10.574 | 5.208 | 5.310 |
| 4 | 8.192<< | 8.212 | 8.866 | 8.885 |
| 4 | 10.470 | 10.577>> | 5.206 | 5.312 |
| 4 | 8.195 | 8.209<< | 8.869 | 8.883 |
| 4 | 8.195 | 8.209 | 8.869>> | 8.883 |
| 4 | 10.470 | 10.577 | 5.206<< | 5.312 |
| 4 | 8.192 | 8.212 | 8.866 | 8.885>> |
| 4 | 10.473 | 10.574 | 5.208 | 5.310<< |

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| BARRA 4 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 4 | 10.483>> | 10.585 | 5.246 | 5.348 |
| 4 | 8.202<< | 8.222 | 8.904 | 8.924 |
| 4 | 10.481 | 10.587>> | 5.244 | 5.350 |
| 4 | 8.205 | 8.219<< | 8.907 | 8.921 |
| 4 | 8.205 | 8.219 | 8.907>> | 8.921 |
| 4 | 10.481 | 10.587 | 5.244<< | 5.350 |
| 4 | 8.202 | 8.222 | 8.904 | 8.924>> |
| 4 | 10.483 | 10.585 | 5.246 | 5.348<< |
| 5 | 11.234>> | 11.368 | 4.036 | 4.169 |
| 5 | 8.322<< | 8.349 | 8.709 | 8.735 |
| 5 | 11.231 | 11.371>> | 4.032 | 4.173 |
| 5 | 8.325 | 8.345<< | 8.712 | 8.732 |
| 5 | 8.325 | 8.345 | 8.712>> | 8.732 |
| 5 | 11.231 | 11.371 | 4.032<< | 4.173 |
| 5 | 8.322 | 8.349 | 8.709 | 8.735>> |
| 5 | 11.234 | 11.368 | 4.036 | 4.169<< |

| BARRA 5 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 5 | 11.242>> | 11.375 | 4.075 | 4.208 |
| 5 | 8.330<< | 8.356 | 8.748 | 8.775 |
| 5 | 11.238 | 11.379>> | 4.072 | 4.212 |
| 5 | 8.333 | 8.353<< | 8.751 | 8.771 |
| 5 | 8.333 | 8.353 | 8.751>> | 8.771 |
| 5 | 11.238 | 11.379 | 4.072<< | 4.212 |
| 5 | 8.330 | 8.356 | 8.748 | 8.775>> |
| 5 | 11.242 | 11.375 | 4.075 | 4.208<< |
| 6 | 11.811>> | 11.974 | 3.151 | 3.313 |
| 6 | 8.380<< | 8.414 | 8.660 | 8.694 |
| 6 | 11.807 | 11.978>> | 3.147 | 3.317 |
| 6 | 8.384 | 8.410<< | 8.664 | 8.690 |
| 6 | 8.384 | 8.410 | 8.664>> | 8.690 |
| 6 | 11.807 | 11.978 | 3.147<< | 3.317 |
| 6 | 8.380 | 8.414 | 8.660 | 8.694>> |
| 6 | 11.811 | 11.974 | 3.151 | 3.313<< |

| BARRA 6 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 6 | 11.818>> | 11.980 | 3.191 | 3.354 |
| 6 | 8.387<< | 8.420 | 8.701 | 8.735 |
| 6 | 11.814 | 11.985>> | 3.187 | 3.358 |
| 6 | 8.391 | 8.416<< | 8.705 | 8.730 |
| 6 | 8.391 | 8.416 | 8.705>> | 8.730 |
| 6 | 11.814 | 11.985 | 3.187<< | 3.358 |
| 6 | 8.387 | 8.420 | 8.701 | 8.735>> |
| 6 | 11.818 | 11.980 | 3.191 | 3.354<< |
| 7 | 12.182>> | 12.368 | 2.594 | 2.781 |
| 7 | 8.371<< | 8.412 | 8.716 | 8.757 |
| 7 | 12.176 | 12.373>> | 2.589 | 2.786 |
| 7 | 8.376 | 8.407<< | 8.721 | 8.752 |
| 7 | 8.376 | 8.407 | 8.721>> | 8.752 |
| 7 | 12.176 | 12.373 | 2.589<< | 2.786 |
| 7 | 8.371 | 8.412 | 8.716 | 8.757>> |
| 7 | 12.182 | 12.368 | 2.594 | 2.781<< |

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| BARRA 7 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 7 | 12.187>> | 12.374 | 2.634 | 2.821 |
| 7 | 8.376<< | 8.417 | 8.757 | 8.798 |
| 7 | 12.182 | 12.379>> | 2.629 | 2.826 |
| 7 | 8.382 | 8.412<< | 8.762 | 8.793 |
| 7 | 8.382 | 8.412 | 8.762>> | 8.793 |
| 7 | 12.182 | 12.379 | 2.629<< | 2.826 |
| 7 | 8.376 | 8.417 | 8.757 | 8.798>> |
| 7 | 12.187 | 12.374 | 2.634 | 2.821<< |
| 8 | 12.310>> | 12.515 | 2.420 | 2.624 |
| 8 | 8.296<< | 8.344 | 8.873 | 8.922 |
| 8 | 12.304 | 12.521>> | 2.414 | 2.630 |
| 8 | 8.302 | 8.338<< | 8.880 | 8.916 |
| 8 | 8.302 | 8.338 | 8.880>> | 8.916 |
| 8 | 12.304 | 12.521 | 2.414<< | 2.630 |
| 8 | 8.296 | 8.344 | 8.873 | 8.922>> |
| 8 | 12.310 | 12.515 | 2.420 | 2.624<< |

| BARRA 8 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 8 | 12.316>> | 12.521 | 2.466 | 2.670 |
| 8 | 8.302<< | 8.350 | 8.920 | 8.968 |
| 8 | 12.310 | 12.527>> | 2.460 | 2.676 |
| 8 | 8.308 | 8.344<< | 8.926 | 8.962 |
| 8 | 8.308 | 8.344 | 8.926>> | 8.962 |
| 8 | 12.310 | 12.527 | 2.460<< | 2.676 |
| 8 | 8.302 | 8.350 | 8.920 | 8.968>> |
| 8 | 12.316 | 12.521 | 2.466 | 2.670<< |
| 9 | 12.270>> | 12.490 | 2.517 | 2.738 |
| 9 | 8.185<< | 8.241 | 9.092 | 9.147 |
| 9 | 12.263 | 12.497>> | 2.511 | 2.745 |
| 9 | 8.192 | 8.234<< | 9.099 | 9.140 |
| 9 | 8.192 | 8.234 | 9.099>> | 9.140 |
| 9 | 12.263 | 12.497 | 2.511<< | 2.745 |
| 9 | 8.185 | 8.241 | 9.092 | 9.147>> |
| 9 | 12.270 | 12.490 | 2.517 | 2.738<< |

| BARRA 9 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 9 | 12.267>> | 12.487 | 2.514 | 2.734 |
| 9 | 8.182<< | 8.238 | 9.088 | 9.143 |
| 9 | 12.260 | 12.494>> | 2.507 | 2.741 |
| 9 | 8.189 | 8.231<< | 9.095 | 9.136 |
| 9 | 8.189 | 8.231 | 9.095>> | 9.136 |
| 9 | 12.260 | 12.494 | 2.507<< | 2.741 |
| 9 | 8.182 | 8.238 | 9.088 | 9.143>> |
| 9 | 12.267 | 12.487 | 2.514 | 2.734<< |
| 10 | 12.073>> | 12.302 | 2.806 | 3.035 |
| 10 | 8.063<< | 8.126 | 9.264 | 9.326 |
| 10 | 12.065 | 12.309>> | 2.798 | 3.042 |
| 10 | 8.071 | 8.118<< | 9.272 | 9.319 |
| 10 | 8.071 | 8.118 | 9.272>> | 9.319 |
| 10 | 12.065 | 12.309 | 2.798<< | 3.042 |
| 10 | 8.063 | 8.126 | 9.264 | 9.326>> |
| 10 | 12.073 | 12.302 | 2.806 | 3.035<< |

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| BARRA 10 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 10 | 12.064>> | 12.293 | 2.777 | 3.006 |
| 10 | 8.054<< | 8.117 | 9.235 | 9.297 |
| 10 | 12.056 | 12.301>> | 2.769 | 3.013 |
| 10 | 8.062 | 8.109<< | 9.243 | 9.290 |
| 10 | 8.062 | 8.109 | 9.243>> | 9.290 |
| 10 | 12.056 | 12.301 | 2.769<< | 3.013 |
| 10 | 8.054 | 8.117 | 9.235 | 9.297>> |
| 10 | 12.064 | 12.293 | 2.777 | 3.006<< |
| 11 | 11.691>> | 11.922 | 3.354 | 3.586 |
| 11 | 7.931<< | 8.001 | 9.417 | 9.487 |
| 11 | 11.682 | 11.931>> | 3.345 | 3.594 |
| 11 | 7.940 | 7.993<< | 9.426 | 9.478 |
| 11 | 7.940 | 7.993 | 9.426>> | 9.478 |
| 11 | 11.682 | 11.931 | 3.345<< | 3.594 |
| 11 | 7.931 | 8.001 | 9.417 | 9.487>> |
| 11 | 11.691 | 11.922 | 3.354 | 3.586<< |

| BARRA 11 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 11 | 11.680>> | 11.911 | 3.326 | 3.557 |
| 11 | 7.920<< | 7.990 | 9.389 | 9.459 |
| 11 | 11.671 | 11.920>> | 3.317 | 3.566 |
| 11 | 7.929 | 7.981<< | 9.398 | 9.450 |
| 11 | 7.929 | 7.981 | 9.398>> | 9.450 |
| 11 | 11.671 | 11.920 | 3.317<< | 3.566 |
| 11 | 7.920 | 7.990 | 9.389 | 9.459>> |
| 11 | 11.680 | 11.911 | 3.326 | 3.557<< |
| 12 | 11.172>> | 11.402 | 4.118 | 4.348 |
| 12 | 7.788<< | 7.866 | 9.585 | 9.662 |
| 12 | 11.163 | 11.412>> | 4.108 | 4.358 |
| 12 | 7.798 | 7.856<< | 9.595 | 9.652 |
| 12 | 7.798 | 7.856 | 9.595>> | 9.652 |
| 12 | 11.163 | 11.412 | 4.108<< | 4.358 |
| 12 | 7.788 | 7.866 | 9.585 | 9.662>> |
| 12 | 11.172 | 11.402 | 4.118 | 4.348<< |

| BARRA 12 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 12 | 10.674>> | 10.904 | 2.997 | 3.227 |
| 12 | 7.290<< | 7.367 | 8.464 | 8.541 |
| 12 | 10.664 | 10.913>> | 2.987 | 3.237 |
| 12 | 7.299 | 7.357<< | 8.473 | 8.531 |
| 12 | 7.299 | 7.357 | 8.473>> | 8.531 |
| 12 | 10.664 | 10.913 | 2.987<< | 3.237 |
| 12 | 7.290 | 7.367 | 8.464 | 8.541>> |
| 12 | 10.674 | 10.904 | 2.997 | 3.227<< |
| 13 | 10.083>> | 10.300 | 3.933 | 4.151 |
| 13 | 7.108<< | 7.200 | 8.727 | 8.820 |
| 13 | 10.072 | 10.311>> | 3.923 | 4.161 |
| 13 | 7.119 | 7.190<< | 8.738 | 8.809 |
| 13 | 7.119 | 7.190 | 8.738>> | 8.809 |
| 13 | 10.072 | 10.311 | 3.923<< | 4.161 |
| 13 | 7.108 | 7.200 | 8.727 | 8.820>> |
| 13 | 10.083 | 10.300 | 3.933 | 4.151<< |

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| BARRA 13 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 13 | 10.063>> | 10.280 | 3.911 | 4.129 |
| 13 | 7.088<< | 7.180 | 8.705 | 8.797 |
| 13 | 10.052 | 10.291>> | 3.901 | 4.139 |
| 13 | 7.099 | 7.170<< | 8.716 | 8.787 |
| 13 | 7.099 | 7.170 | 8.716>> | 8.787 |
| 13 | 10.052 | 10.291 | 3.901<< | 4.139 |
| 13 | 7.088 | 7.180 | 8.705 | 8.797>> |
| 13 | 10.063 | 10.280 | 3.911 | 4.129<< |
| 14 | 9.811>> | 9.394 | 5.115 | 4.697 |
| 14 | 6.681<< | 6.782 | 9.329 | 9.429 |
| 14 | 9.484 | 9.886>> | 4.577 | 4.979 |
| 14 | 6.693 | 6.770<< | 9.340 | 9.417 |
| 14 | 6.693 | 6.770 | 9.340>> | 9.417 |
| 14 | 9.633 | 9.881 | 4.542<< | 4.790 |
| 14 | 6.681 | 6.782 | 9.329 | 9.429>> |
| 14 | 9.803 | 9.567 | 4.896 | 4.659<< |

| BARRA 14 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 14 | 9.785>> | 9.368 | 5.099 | 4.682 |
| 14 | 6.655<< | 6.755 | 9.313 | 9.413 |
| 14 | 9.458 | 9.859>> | 4.562 | 4.963 |
| 14 | 6.667 | 6.744<< | 9.325 | 9.402 |
| 14 | 6.667 | 6.744 | 9.325>> | 9.402 |
| 14 | 9.607 | 9.855 | 4.526<< | 4.774 |
| 14 | 6.655 | 6.755 | 9.313 | 9.413>> |
| 14 | 9.777 | 9.541 | 4.880 | 4.644<< |
| 15 | 9.654>> | 9.340 | 5.172 | 4.858 |
| 15 | 6.067<< | 6.489 | 9.818 | 10.240 |
| 15 | 9.182 | 9.630>> | 4.932 | 5.380 |
| 15 | 6.304 | 6.252<< | 10.054 | 10.002 |
| 15 | 6.304 | 6.252 | 10.054>> | 10.002 |
| 15 | 9.589 | 9.551 | 4.920<< | 4.882 |
| 15 | 6.067 | 6.489 | 9.818 | 10.240>> |
| 15 | 9.652 | 9.435 | 5.050 | 4.833<< |

| BARRA 15 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 15 | 8.948>> | 8.758 | 4.746 | 4.556 |
| 15 | 5.609<< | 5.954 | 8.409 | 8.753 |
| 15 | 8.549 | 8.913>> | 4.641 | 5.006 |
| 15 | 5.793 | 5.770<< | 8.592 | 8.569 |
| 15 | 5.793 | 5.770 | 8.592>> | 8.569 |
| 15 | 8.896 | 8.861 | 4.638<< | 4.602 |
| 15 | 5.609 | 5.954 | 8.409 | 8.753>> |
| 15 | 8.948 | 8.758 | 4.746 | 4.556<< |
| 16 | 10.460>> | 10.307 | 2.805 | 2.652 |
| 16 | 6.239<< | 6.482 | 7.765 | 8.008 |
| 16 | 10.382 | 10.346>> | 2.777 | 2.741 |
| 16 | 6.250 | 6.470<< | 7.777 | 7.997 |
| 16 | 6.250 | 6.470 | 7.777>> | 7.997 |
| 16 | 10.382 | 10.346 | 2.777<< | 2.741 |
| 16 | 6.239 | 6.482 | 7.765 | 8.008>> |
| 16 | 10.460 | 10.307 | 2.805 | 2.652<< |

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| BARRA 16 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 16 | 10.565>> | 10.385 | 2.857 | 2.677 |
| 16 | 6.302<< | 6.581 | 7.721 | 8.000 |
| 16 | 10.453 | 10.451>> | 2.797 | 2.794 |
| 16 | 6.341 | 6.542<< | 7.759 | 7.961 |
| 16 | 6.315 | 6.544 | 7.761>> | 7.990 |
| 16 | 10.479 | 10.449 | 2.795<< | 2.765 |
| 16 | 6.303 | 6.555 | 7.750 | 8.002>> |
| 16 | 10.563 | 10.410 | 2.828 | 2.675<< |
| 17 | 9.893>> | 9.730 | 3.686 | 3.523 |
| 17 | 4.507<< | 4.753 | 10.025 | 10.271 |
| 17 | 9.881 | 9.742>> | 3.674 | 3.536 |
| 17 | 4.519 | 4.741<< | 10.037 | 10.258 |
| 17 | 4.519 | 4.741 | 10.037>> | 10.258 |
| 17 | 9.881 | 9.742 | 3.674<< | 3.536 |
| 17 | 4.507 | 4.753 | 10.025 | 10.271>> |
| 17 | 9.893 | 9.730 | 3.686 | 3.523<< |

| BARRA 17 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 17 | 9.822>> | 9.659 | 3.691 | 3.528 |
| 17 | 4.436<< | 4.682 | 10.029 | 10.275 |
| 17 | 9.810 | 9.671>> | 3.678 | 3.540 |
| 17 | 4.449 | 4.670<< | 10.042 | 10.263 |
| 17 | 4.449 | 4.670 | 10.042>> | 10.263 |
| 17 | 9.810 | 9.671 | 3.678<< | 3.540 |
| 17 | 4.436 | 4.682 | 10.029 | 10.275>> |
| 17 | 9.822 | 9.659 | 3.691 | 3.528<< |
| 18 | 10.433>> | 10.169 | 3.034 | 2.769 |
| 18 | 6.336<< | 6.606 | 7.603 | 7.873 |
| 18 | 10.339 | 10.299>> | 2.898 | 2.859 |
| 18 | 6.643 | 6.555<< | 7.620 | 7.533 |
| 18 | 6.643 | 6.555 | 7.620>> | 7.533 |
| 18 | 10.339 | 10.299 | 2.898<< | 2.859 |
| 18 | 6.336 | 6.606 | 7.603 | 7.873>> |
| 18 | 10.433 | 10.169 | 3.034 | 2.769<< |

| BARRA 18 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 18 | 10.222>> | 9.932 | 3.016 | 2.726 |
| 18 | 6.168<< | 6.437 | 7.588 | 7.857 |
| 18 | 10.116 | 10.080>> | 2.868 | 2.832 |
| 18 | 6.496 | 6.362<< | 7.626 | 7.492 |
| 18 | 6.478 | 6.362 | 7.628>> | 7.513 |
| 18 | 10.134 | 10.079 | 2.866<< | 2.812 |
| 18 | 6.168 | 6.419 | 7.608 | 7.859>> |
| 18 | 10.222 | 9.950 | 2.995 | 2.724<< |
| 19 | 8.538>> | 8.211 | 5.175 | 4.848 |
| 19 | 5.540<< | 5.839 | 8.326 | 8.624 |
| 19 | 8.453 | 8.419>> | 4.951 | 4.917 |
| 19 | 5.847 | 5.709<< | 8.430 | 8.291 |
| 19 | 5.830 | 5.709 | 8.432>> | 8.311 |
| 19 | 8.470 | 8.419 | 4.949<< | 4.897 |
| 19 | 5.541 | 5.822 | 8.346 | 8.627>> |
| 19 | 8.533 | 8.301 | 5.074 | 4.843<< |

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| BARRA 19 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 19 | 9.359>> | 8.990 | 5.256 | 4.887 |
| 19 | 6.125<< | 6.489 | 9.357 | 9.721 |
| 19 | 9.254 | 9.225>> | 4.985 | 4.956 |
| 19 | 6.468 | 6.335<< | 9.457 | 9.325 |
| 19 | 6.430 | 6.341 | 9.460>> | 9.372 |
| 19 | 9.292 | 9.219 | 4.982<< | 4.909 |
| 19 | 6.131 | 6.451 | 9.403 | 9.723>> |
| 19 | 9.344 | 9.108 | 5.110 | 4.874<< |
| 20 | 9.453>> | 9.078 | 5.117 | 4.742 |
| 20 | 6.905<< | 7.370 | 8.013 | 8.478 |
| 20 | 9.160 | 9.479>> | 4.686 | 5.005 |
| 20 | 6.988 | 7.077<< | 8.364 | 8.453 |
| 20 | 6.988 | 7.077 | 8.364>> | 8.453 |
| 20 | 9.318 | 9.457 | 4.670<< | 4.809 |
| 20 | 6.928 | 7.137 | 8.304 | 8.513>> |
| 20 | 9.453 | 9.078 | 5.117 | 4.742<< |

| BARRA 20 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 20 | 9.443>> | 9.068 | 5.104 | 4.729 |
| 20 | 6.895<< | 7.360 | 7.999 | 8.464 |
| 20 | 9.150 | 9.470>> | 4.672 | 4.991 |
| 20 | 6.978 | 7.067<< | 8.350 | 8.439 |
| 20 | 6.978 | 7.067 | 8.350>> | 8.439 |
| 20 | 9.308 | 9.447 | 4.657<< | 4.795 |
| 20 | 6.918 | 7.127 | 8.290 | 8.500>> |
| 20 | 9.443 | 9.068 | 5.104 | 4.729<< |
| 21 | 9.746>> | 9.763 | 4.131 | 4.148 |
| 21 | 7.282<< | 7.453 | 7.772 | 7.943 |
| 21 | 9.600 | 9.903>> | 3.993 | 4.295 |
| 21 | 7.317 | 7.418<< | 7.807 | 7.908 |
| 21 | 7.317 | 7.418 | 7.807>> | 7.908 |
| 21 | 9.600 | 9.903 | 3.993<< | 4.295 |
| 21 | 7.282 | 7.453 | 7.772 | 7.943>> |
| 21 | 9.744 | 9.801 | 4.082 | 4.140<< |

| BARRA 21 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 21 | 9.738>> | 9.755 | 4.109 | 4.126 |
| 21 | 7.275<< | 7.446 | 7.750 | 7.921 |
| 21 | 9.593 | 9.895>> | 3.971 | 4.273 |
| 21 | 7.309 | 7.411<< | 7.785 | 7.886 |
| 21 | 7.309 | 7.411 | 7.785>> | 7.886 |
| 21 | 9.593 | 9.895 | 3.971<< | 4.273 |
| 21 | 7.275 | 7.446 | 7.750 | 7.921>> |
| 21 | 9.736 | 9.794 | 4.060 | 4.118<< |
| 22 | 10.385>> | 10.446 | 3.046 | 3.107 |
| 22 | 7.432<< | 7.584 | 7.529 | 7.681 |
| 22 | 10.308 | 10.586>> | 2.888 | 3.165 |
| 22 | 7.467 | 7.550<< | 7.563 | 7.646 |
| 22 | 7.467 | 7.550 | 7.563>> | 7.646 |
| 22 | 10.308 | 10.586 | 2.888<< | 3.165 |
| 22 | 7.432 | 7.584 | 7.529 | 7.681>> |
| 22 | 10.385 | 10.446 | 3.046 | 3.107<< |

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| BARRA 22 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 22 | 9.689>> | 9.750 | 3.176 | 3.236 |
| 22 | 6.736<< | 6.888 | 7.659 | 7.811 |
| 22 | 9.612 | 9.890>> | 3.018 | 3.295 |
| 22 | 6.771 | 6.853<< | 7.693 | 7.776 |
| 22 | 6.771 | 6.853 | 7.693>> | 7.776 |
| 22 | 9.612 | 9.890 | 3.018<< | 3.295 |
| 22 | 6.736 | 6.888 | 7.659 | 7.811>> |
| 22 | 9.689 | 9.750 | 3.176 | 3.236<< |
| 23 | 10.288>> | 10.513 | 2.032 | 2.258 |
| 23 | 6.846<< | 6.985 | 7.504 | 7.643 |
| 23 | 10.253 | 10.548>> | 1.998 | 2.292 |
| 23 | 6.880 | 6.951<< | 7.538 | 7.609 |
| 23 | 6.870 | 6.952 | 7.540>> | 7.622 |
| 23 | 10.263 | 10.547 | 1.996<< | 2.279 |
| 23 | 6.847 | 6.975 | 7.516 | 7.645>> |
| 23 | 10.287 | 10.523 | 2.019 | 2.256<< |

| BARRA 23 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 23 | 10.286>> | 10.512 | 2.048 | 2.273 |
| 23 | 6.844<< | 6.984 | 7.520 | 7.659 |
| 23 | 10.252 | 10.546>> | 2.014 | 2.308 |
| 23 | 6.879 | 6.949<< | 7.554 | 7.625 |
| 23 | 6.869 | 6.950 | 7.556>> | 7.637 |
| 23 | 10.262 | 10.545 | 2.012<< | 2.295 |
| 23 | 6.845 | 6.974 | 7.532 | 7.661>> |
| 23 | 10.285 | 10.522 | 2.035 | 2.272<< |
| 24 | 10.807>> | 11.055 | 1.208 | 1.456 |
| 24 | 6.946<< | 7.064 | 7.389 | 7.507 |
| 24 | 10.782 | 11.080>> | 1.183 | 1.481 |
| 24 | 7.394 | 7.000<< | 7.346 | 6.951 |
| 24 | 6.971 | 7.039 | 7.414>> | 7.482 |
| 24 | 10.782 | 11.080 | 1.183<< | 1.481 |
| 24 | 6.946 | 7.064 | 7.389 | 7.507>> |
| 24 | 10.807 | 11.055 | 1.208 | 1.456<< |

| BARRA 24 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 24 | 10.804>> | 11.053 | 1.224 | 1.473 |
| 24 | 6.943<< | 7.061 | 7.406 | 7.524 |
| 24 | 10.779 | 11.078>> | 1.199 | 1.498 |
| 24 | 7.392 | 6.998<< | 7.362 | 6.967 |
| 24 | 6.968 | 7.036 | 7.431>> | 7.499 |
| 24 | 10.779 | 11.078 | 1.199<< | 1.498 |
| 24 | 6.943 | 7.061 | 7.406 | 7.524>> |
| 24 | 10.804 | 11.053 | 1.224 | 1.473<< |
| 25 | 11.146>> | 11.400 | 0.685 | 0.939 |
| 25 | 7.042<< | 7.149 | 7.266 | 7.373 |
| 25 | 11.119 | 11.426>> | 0.659 | 0.965 |
| 25 | 7.408 | 7.026<< | 7.321 | 6.939 |
| 25 | 7.408 | 7.026 | 7.321>> | 6.939 |
| 25 | 11.119 | 11.426 | 0.659<< | 0.965 |
| 25 | 7.042 | 7.149 | 7.266 | 7.373>> |
| 25 | 11.146 | 11.400 | 0.685 | 0.939<< |

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| BARRA 25 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 25 | 11.143>> | 11.397 | 0.698 | 0.951 |
| 25 | 7.039<< | 7.146 | 7.279 | 7.386 |
| 25 | 11.117 | 11.424>> | 0.671 | 0.978 |
| 25 | 7.405 | 7.024<< | 7.333 | 6.951 |
| 25 | 7.405 | 7.024 | 7.333>> | 6.951 |
| 25 | 11.117 | 11.424 | 0.671<< | 0.978 |
| 25 | 7.039 | 7.146 | 7.279 | 7.386>> |
| 25 | 11.143 | 11.397 | 0.698 | 0.951<< |
| 26 | 11.325>> | 11.577 | 0.417 | 0.668 |
| 26 | 7.100<< | 7.259 | 7.117 | 7.276 |
| 26 | 11.297 | 11.605>> | 0.389 | 0.696 |
| 26 | 7.444 | 7.046<< | 7.293 | 6.896 |
| 26 | 7.420 | 7.051 | 7.294>> | 6.925 |
| 26 | 11.297 | 11.605 | 0.389<< | 0.696 |
| 26 | 7.100 | 7.259 | 7.117 | 7.276>> |
| 26 | 11.325 | 11.577 | 0.417 | 0.668<< |

| BARRA 26 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 26 | 11.323>> | 11.575 | 0.424 | 0.675 |
| 26 | 7.098<< | 7.256 | 7.125 | 7.283 |
| 26 | 11.295 | 11.603>> | 0.396 | 0.703 |
| 26 | 7.441 | 7.044<< | 7.300 | 6.903 |
| 26 | 7.417 | 7.049 | 7.301>> | 6.933 |
| 26 | 11.295 | 11.603 | 0.396<< | 0.703 |
| 26 | 7.098 | 7.256 | 7.125 | 7.283>> |
| 26 | 11.323 | 11.575 | 0.424 | 0.675<< |
| 27 | 11.412>> | 11.663 | 0.287 | 0.537 |
| 27 | 7.106<< | 7.239 | 7.144 | 7.278 |
| 27 | 11.383 | 11.692>> | 0.257 | 0.566 |
| 27 | 7.308 | 6.977<< | 7.424 | 7.093 |
| 27 | 7.139 | 7.009 | 7.430>> | 7.299 |
| 27 | 11.383 | 11.692 | 0.257<< | 0.566 |
| 27 | 7.110 | 7.038 | 7.400 | 7.329>> |
| 27 | 11.412 | 11.663 | 0.287 | 0.537<< |

| BARRA 27 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 27 | 11.410>> | 11.661 | 0.289 | 0.540 |
| 27 | 7.104<< | 7.237 | 7.147 | 7.281 |
| 27 | 11.381 | 11.690>> | 0.260 | 0.569 |
| 27 | 7.306 | 6.975<< | 7.427 | 7.096 |
| 27 | 7.137 | 7.007 | 7.433>> | 7.302 |
| 27 | 11.381 | 11.690 | 0.260<< | 0.569 |
| 27 | 7.108 | 7.037 | 7.403 | 7.332>> |
| 27 | 11.410 | 11.661 | 0.289 | 0.540<< |
| 28 | 11.327>> | 11.570 | 0.429 | 0.672 |
| 28 | 6.983<< | 6.921 | 7.586 | 7.523 |
| 28 | 11.296 | 11.601>> | 0.398 | 0.703 |
| 28 | 7.199 | 6.865<< | 7.597 | 7.263 |
| 28 | 7.014 | 6.890 | 7.617>> | 7.493 |
| 28 | 11.296 | 11.601 | 0.398<< | 0.703 |
| 28 | 6.983 | 6.921 | 7.586 | 7.523>> |
| 28 | 11.327 | 11.570 | 0.429 | 0.672<< |

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| BARRA 28 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 28 | 11.326>> | 11.568 | 0.427 | 0.669 |
| 28 | 6.982<< | 6.919 | 7.584 | 7.521 |
| 28 | 11.295 | 11.599>> | 0.396 | 0.700 |
| 28 | 7.198 | 6.864<< | 7.595 | 7.260 |
| 28 | 7.013 | 6.888 | 7.615>> | 7.490 |
| 28 | 11.295 | 11.599 | 0.396<< | 0.700 |
| 28 | 6.982 | 6.919 | 7.584 | 7.521>> |
| 28 | 11.326 | 11.568 | 0.427 | 0.669<< |
| 29 | 11.156>> | 11.389 | 0.704 | 0.937 |
| 29 | 6.857<< | 6.803 | 7.767 | 7.713 |
| 29 | 11.123 | 11.421>> | 0.671 | 0.970 |
| 29 | 7.092 | 6.754<< | 7.765 | 7.427 |
| 29 | 6.890 | 6.771 | 7.799>> | 7.680 |
| 29 | 11.123 | 11.421 | 0.671<< | 0.970 |
| 29 | 6.857 | 6.803 | 7.767 | 7.713>> |
| 29 | 11.156 | 11.389 | 0.704 | 0.937<< |

| BARRA 29 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 29 | 11.155>> | 11.388 | 0.697 | 0.930 |
| 29 | 6.856<< | 6.802 | 7.760 | 7.706 |
| 29 | 11.122 | 11.420>> | 0.664 | 0.962 |
| 29 | 7.091 | 6.753<< | 7.758 | 7.420 |
| 29 | 6.889 | 6.770 | 7.792>> | 7.673 |
| 29 | 11.122 | 11.420 | 0.664<< | 0.962 |
| 29 | 6.856 | 6.802 | 7.760 | 7.706>> |
| 29 | 11.155 | 11.388 | 0.697 | 0.930<< |
| 30 | 10.823>> | 11.041 | 1.233 | 1.451 |
| 30 | 6.731<< | 6.686 | 7.943 | 7.898 |
| 30 | 10.789 | 11.075>> | 1.199 | 1.485 |
| 30 | 6.984 | 6.643<< | 7.928 | 7.587 |
| 30 | 6.765 | 6.652 | 7.977>> | 7.864 |
| 30 | 10.789 | 11.075 | 1.199<< | 1.485 |
| 30 | 6.731 | 6.686 | 7.943 | 7.898>> |
| 30 | 10.823 | 11.041 | 1.233 | 1.451<< |

| BARRA 30 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 30 | 10.821>> | 11.040 | 1.221 | 1.440 |
| 30 | 6.730<< | 6.685 | 7.932 | 7.887 |
| 30 | 10.787 | 11.074>> | 1.187 | 1.474 |
| 30 | 6.982 | 6.641<< | 7.917 | 7.576 |
| 30 | 6.764 | 6.651 | 7.966>> | 7.853 |
| 30 | 10.787 | 11.074 | 1.187<< | 1.474 |
| 30 | 6.730 | 6.685 | 7.932 | 7.887>> |
| 30 | 10.821 | 11.040 | 1.221 | 1.440<< |
| 31 | 10.310>> | 10.508 | 2.045 | 2.242 |
| 31 | 6.604<< | 6.567 | 8.117 | 8.081 |
| 31 | 10.274 | 10.543>> | 2.009 | 2.278 |
| 31 | 6.875 | 6.530<< | 8.089 | 7.745 |
| 31 | 6.639 | 6.532 | 8.153>> | 8.045 |
| 31 | 10.274 | 10.543 | 2.009<< | 2.278 |
| 31 | 6.604 | 6.567 | 8.117 | 8.081>> |
| 31 | 10.310 | 10.508 | 2.045 | 2.242<< |

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| BARRA 31 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 31 | 10.308>> | 10.505 | 2.031 | 2.229 |
| 31 | 6.602<< | 6.565 | 8.104 | 8.067 |
| 31 | 10.272 | 10.541>> | 1.996 | 2.264 |
| 31 | 6.872 | 6.528<< | 8.076 | 7.731 |
| 31 | 6.637 | 6.529 | 8.140>> | 8.032 |
| 31 | 10.272 | 10.541 | 1.996<< | 2.264 |
| 31 | 6.602 | 6.565 | 8.104 | 8.067>> |
| 31 | 10.308 | 10.505 | 2.031 | 2.229<< |
| 32 | 9.675>> | 9.848 | 3.048 | 3.221 |
| 32 | 6.471<< | 6.443 | 8.296 | 8.268 |
| 32 | 9.638 | 9.885>> | 3.011 | 3.258 |
| 32 | 6.508 | 6.406<< | 8.333 | 8.231 |
| 32 | 6.490 | 6.410 | 8.333>> | 8.254 |
| 32 | 9.657 | 9.881 | 3.011<< | 3.235 |
| 32 | 6.475 | 6.424 | 8.319 | 8.268>> |
| 32 | 9.671 | 9.867 | 3.025 | 3.221<< |

| BARRA 32 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 32 | 9.671>> | 9.844 | 3.033 | 3.206 |
| 32 | 6.467<< | 6.439 | 8.281 | 8.253 |
| 32 | 9.634 | 9.881>> | 2.996 | 3.243 |
| 32 | 6.504 | 6.402<< | 8.318 | 8.216 |
| 32 | 6.485 | 6.406 | 8.318>> | 8.239 |
| 32 | 9.652 | 9.877 | 2.996<< | 3.220 |
| 32 | 6.471 | 6.420 | 8.304 | 8.253>> |
| 32 | 9.667 | 9.863 | 3.010 | 3.206<< |
| 33 | 9.075>> | 8.609 | 4.778 | 4.312 |
| 33 | 6.230<< | 6.206 | 8.645 | 8.621 |
| 33 | 9.003 | 9.225>> | 4.010 | 4.233 |
| 33 | 6.269 | 6.167<< | 8.684 | 8.582 |
| 33 | 6.249 | 6.171 | 8.685>> | 8.607 |
| 33 | 9.022 | 9.222 | 4.010<< | 4.209 |
| 33 | 6.234 | 6.186 | 8.670 | 8.622>> |
| 33 | 9.037 | 9.207 | 4.025 | 4.194<< |

| BARRA 33 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 33 | 9.068>> | 8.602 | 4.764 | 4.298 |
| 33 | 6.223<< | 6.198 | 8.631 | 8.607 |
| 33 | 8.995 | 9.218>> | 3.996 | 4.219 |
| 33 | 6.261 | 6.160<< | 8.670 | 8.568 |
| 33 | 6.241 | 6.163 | 8.671>> | 8.593 |
| 33 | 9.015 | 9.214 | 3.996<< | 4.195 |
| 33 | 6.226 | 6.179 | 8.656 | 8.608>> |
| 33 | 9.030 | 9.199 | 4.011 | 4.180<< |
| 34 | 8.854>> | 8.357 | 5.137 | 4.640 |
| 34 | 5.818<< | 5.821 | 9.227 | 9.230 |
| 34 | 8.471 | 8.822>> | 4.649 | 5.000 |
| 34 | 5.878 | 5.761<< | 9.286 | 9.170 |
| 34 | 5.839 | 5.766 | 9.291>> | 9.218 |
| 34 | 8.509 | 8.817 | 4.644<< | 4.952 |
| 34 | 5.823 | 5.782 | 9.275 | 9.234>> |
| 34 | 8.849 | 8.395 | 5.089 | 4.636<< |

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| BARRA 34 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 34 | 8.842>> | 8.345 | 5.126 | 4.629 |
| 34 | 5.806<< | 5.809 | 9.216 | 9.219 |
| 34 | 8.459 | 8.810>> | 4.638 | 4.990 |
| 34 | 5.866 | 5.749<< | 9.276 | 9.159 |
| 34 | 5.827 | 5.754 | 9.280>> | 9.207 |
| 34 | 8.497 | 8.805 | 4.634<< | 4.942 |
| 34 | 5.811 | 5.770 | 9.264 | 9.223>> |
| 34 | 8.836 | 8.383 | 5.078 | 4.625<< |
| 35 | 8.735>> | 8.278 | 5.241 | 4.785 |
| 35 | 5.045<< | 5.176 | 10.238 | 10.369 |
| 35 | 8.423 | 8.550>> | 4.981 | 5.108 |
| 35 | 5.540 | 5.082<< | 10.219 | 9.762 |
| 35 | 5.068 | 5.121 | 10.302>> | 10.355 |
| 35 | 8.672 | 8.519 | 4.951<< | 4.797 |
| 35 | 5.051 | 5.138 | 10.285 | 10.372>> |
| 35 | 8.715 | 8.385 | 5.110 | 4.780<< |

| BARRA 35 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 35 | 8.202>> | 7.804 | 4.918 | 4.520 |
| 35 | 4.768<< | 4.864 | 8.765 | 8.862 |
| 35 | 7.932 | 8.035>> | 4.691 | 4.794 |
| 35 | 5.210 | 4.801<< | 8.776 | 8.367 |
| 35 | 4.785 | 4.818 | 8.816>> | 8.850 |
| 35 | 8.154 | 8.020 | 4.679<< | 4.545 |
| 35 | 4.770 | 4.833 | 8.802 | 8.864>> |
| 35 | 8.199 | 7.836 | 4.881 | 4.517<< |
| 36 | 9.596>> | 9.213 | 3.151 | 2.767 |
| 36 | 5.142<< | 5.207 | 8.348 | 8.414 |
| 36 | 9.316 | 9.410>> | 2.968 | 3.063 |
| 36 | 5.180 | 5.170<< | 8.386 | 8.376 |
| 36 | 5.159 | 5.172 | 8.387>> | 8.399 |
| 36 | 9.336 | 9.408 | 2.968<< | 3.040 |
| 36 | 5.144 | 5.187 | 8.372 | 8.414>> |
| 36 | 9.594 | 9.233 | 3.128 | 2.767<< |

| BARRA 36 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 36 | 9.700>> | 9.315 | 3.170 | 2.785 |
| 36 | 5.202<< | 5.283 | 8.323 | 8.404 |
| 36 | 9.411 | 9.518>> | 2.979 | 3.086 |
| 36 | 5.240 | 5.245<< | 8.361 | 8.367 |
| 36 | 5.219 | 5.247 | 8.362>> | 8.390 |
| 36 | 9.432 | 9.516 | 2.979<< | 3.063 |
| 36 | 5.204 | 5.262 | 8.347 | 8.405>> |
| 36 | 9.698 | 9.336 | 3.147 | 2.785<< |
| 37 | 8.888>> | 8.489 | 4.212 | 3.813 |
| 37 | 3.225<< | 3.284 | 10.845 | 10.904 |
| 37 | 8.669 | 8.698>> | 4.004 | 4.034 |
| 37 | 3.264 | 3.245<< | 10.884 | 10.865 |
| 37 | 3.242 | 3.246 | 10.885>> | 10.889 |
| 37 | 8.690 | 8.697 | 4.003<< | 4.009 |
| 37 | 3.226 | 3.262 | 10.869 | 10.905>> |
| 37 | 8.886 | 8.511 | 4.188 | 3.812<< |

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| BARRA 37 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 37 | 8.893>> | 8.494 | 4.203 | 3.804 |
| 37 | 3.230<< | 3.289 | 10.836 | 10.895 |
| 37 | 8.674 | 8.704>> | 3.994 | 4.024 |
| 37 | 3.269 | 3.250<< | 10.875 | 10.855 |
| 37 | 3.247 | 3.252 | 10.876>> | 10.880 |
| 37 | 8.696 | 8.702 | 3.993<< | 4.000 |
| 37 | 3.232 | 3.267 | 10.860 | 10.896>> |
| 37 | 8.892 | 8.516 | 4.178 | 3.803<< |
| 38 | 9.523>> | 9.121 | 3.410 | 3.009 |
| 38 | 5.100<< | 5.205 | 8.422 | 8.528 |
| 38 | 9.308 | 9.384>> | 3.142 | 3.218 |
| 38 | 5.135 | 5.170<< | 8.458 | 8.492 |
| 38 | 5.135 | 5.170 | 8.458>> | 8.492 |
| 38 | 9.308 | 9.384 | 3.142<< | 3.218 |
| 38 | 5.100 | 5.205 | 8.422 | 8.528>> |
| 38 | 9.523 | 9.121 | 3.410 | 3.009<< |

| BARRA 38 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 38 | 9.426>> | 9.016 | 3.371 | 2.961 |
| 38 | 5.043<< | 5.133 | 8.423 | 8.513 |
| 38 | 9.213 | 9.281>> | 3.105 | 3.173 |
| 38 | 5.079 | 5.097<< | 8.460 | 8.477 |
| 38 | 5.079 | 5.097 | 8.460>> | 8.477 |
| 38 | 9.213 | 9.281 | 3.105<< | 3.173 |
| 38 | 5.043 | 5.133 | 8.423 | 8.513>> |
| 38 | 9.426 | 9.016 | 3.371 | 2.961<< |
| 39 | 7.855>> | 7.546 | 5.231 | 4.923 |
| 39 | 4.523<< | 4.649 | 9.020 | 9.145 |
| 39 | 7.741 | 7.759>> | 5.007 | 5.025 |
| 39 | 4.940 | 4.600<< | 9.017 | 8.677 |
| 39 | 4.556 | 4.616 | 9.053>> | 9.112 |
| 39 | 7.741 | 7.759 | 5.007<< | 5.025 |
| 39 | 4.523 | 4.649 | 9.020 | 9.145>> |
| 39 | 7.855 | 7.546 | 5.231 | 4.923<< |

| BARRA 39 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 39 | 8.577>> | 8.218 | 5.369 | 5.009 |
| 39 | 5.005<< | 5.180 | 10.250 | 10.425 |
| 39 | 8.429 | 8.468>> | 5.090 | 5.128 |
| 39 | 5.479 | 5.097<< | 10.224 | 9.841 |
| 39 | 5.042 | 5.126 | 10.308>> | 10.392 |
| 39 | 8.446 | 8.467 | 5.086<< | 5.107 |
| 39 | 5.006 | 5.163 | 10.271 | 10.428>> |
| 39 | 8.576 | 8.234 | 5.348 | 5.006<< |
| 40 | 8.650>> | 8.287 | 5.259 | 4.897 |
| 40 | 5.774<< | 5.871 | 9.151 | 9.249 |
| 40 | 8.436 | 8.681>> | 4.815 | 5.060 |
| 40 | 5.825 | 5.820<< | 9.202 | 9.197 |
| 40 | 5.809 | 5.822 | 9.204>> | 9.218 |
| 40 | 8.453 | 8.679 | 4.813<< | 5.039 |
| 40 | 5.776 | 5.855 | 9.172 | 9.250>> |
| 40 | 8.627 | 8.606 | 4.858 | 4.837<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 40 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 40 | 8.657>> | 8.295 | 5.276 | 4.913 |
| 40 | 5.781<< | 5.879 | 9.167 | 9.265 |
| 40 | 8.444 | 8.689>> | 4.831 | 5.076 |
| 40 | 5.833 | 5.827<< | 9.219 | 9.213 |
| 40 | 5.816 | 5.830 | 9.221>> | 9.234 |
| 40 | 8.460 | 8.687 | 4.829<< | 5.056 |
| 40 | 5.783 | 5.862 | 9.188 | 9.267>> |
| 40 | 8.635 | 8.613 | 4.874 | 4.853<< |
| 41 | 9.023>> | 9.022 | 4.244 | 4.243 |
| 41 | 6.175<< | 6.249 | 8.584 | 8.658 |
| 41 | 8.901 | 9.144>> | 4.121 | 4.365 |
| 41 | 6.203 | 6.220<< | 8.613 | 8.630 |
| 41 | 6.203 | 6.220 | 8.613>> | 8.630 |
| 41 | 8.901 | 9.144 | 4.121<< | 4.365 |
| 41 | 6.175 | 6.249 | 8.584 | 8.658>> |
| 41 | 9.023 | 9.022 | 4.244 | 4.243<< |

| BARRA 41 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 41 | 9.026>> | 9.025 | 4.264 | 4.263 |
| 41 | 6.178<< | 6.252 | 8.604 | 8.678 |
| 41 | 8.904 | 9.148>> | 4.141 | 4.385 |
| 41 | 6.207 | 6.224<< | 8.633 | 8.650 |
| 41 | 6.207 | 6.224 | 8.633>> | 8.650 |
| 41 | 8.904 | 9.148 | 4.141<< | 4.385 |
| 41 | 6.178 | 6.252 | 8.604 | 8.678>> |
| 41 | 9.026 | 9.025 | 4.264 | 4.263<< |
| 42 | 9.594>> | 9.679 | 3.269 | 3.354 |
| 42 | 6.412<< | 6.480 | 8.248 | 8.316 |
| 42 | 9.557 | 9.802>> | 3.123 | 3.368 |
| 42 | 6.437 | 6.455<< | 8.273 | 8.291 |
| 42 | 6.437 | 6.455 | 8.273>> | 8.291 |
| 42 | 9.557 | 9.802 | 3.123<< | 3.368 |
| 42 | 6.412 | 6.480 | 8.248 | 8.316>> |
| 42 | 9.582 | 9.777 | 3.148 | 3.343<< |

| BARRA 42 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 42 | 9.804>> | 9.888 | 2.039 | 2.123 |
| 42 | 6.622<< | 6.689 | 7.017 | 7.085 |
| 42 | 9.767 | 10.011>> | 1.892 | 2.137 |
| 42 | 6.646 | 6.665<< | 7.042 | 7.061 |
| 42 | 6.646 | 6.665 | 7.042>> | 7.061 |
| 42 | 9.767 | 10.011 | 1.892<< | 2.137 |
| 42 | 6.622 | 6.689 | 7.017 | 7.085>> |
| 42 | 9.791 | 9.986 | 1.917 | 2.112<< |
| 43 | 10.415>> | 10.663 | 0.877 | 1.125 |
| 43 | 6.741<< | 6.796 | 6.848 | 6.902 |
| 43 | 10.401 | 10.677>> | 0.863 | 1.139 |
| 43 | 6.755 | 6.782<< | 6.862 | 6.888 |
| 43 | 6.755 | 6.782 | 6.862>> | 6.888 |
| 43 | 10.401 | 10.677 | 0.863<< | 1.139 |
| 43 | 6.741 | 6.796 | 6.848 | 6.902>> |
| 43 | 10.415 | 10.663 | 0.877 | 1.125<< |

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| BARRA 43 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 43 | 10.414>> | 10.662 | 0.896 | 1.144 |
| 43 | 6.740<< | 6.794 | 6.867 | 6.921 |
| 43 | 10.400 | 10.676>> | 0.882 | 1.158 |
| 43 | 6.754 | 6.781<< | 6.880 | 6.907 |
| 43 | 6.754 | 6.781 | 6.880>> | 6.907 |
| 43 | 10.400 | 10.676 | 0.882<< | 1.158 |
| 43 | 6.740 | 6.794 | 6.867 | 6.921>> |
| 43 | 10.414 | 10.662 | 0.896 | 1.144<< |
| 44 | 10.916>> | 11.204 | 0.063 | 0.350 |
| 44 | 6.852<< | 6.903 | 6.697 | 6.748 |
| 44 | 10.903 | 11.217>> | 0.049 | 0.363 |
| 44 | 6.865 | 6.890<< | 6.710 | 6.735 |
| 44 | 6.865 | 6.890 | 6.710>> | 6.735 |
| 44 | 10.903 | 11.217 | 0.049<< | 0.363 |
| 44 | 6.852 | 6.903 | 6.697 | 6.748>> |
| 44 | 10.916 | 11.204 | 0.063 | 0.350<< |

| BARRA 44 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 44 | 10.914>> | 11.201 | 0.079 | 0.366 |
| 44 | 6.849<< | 6.901 | 6.713 | 6.764 |
| 44 | 10.901 | 11.215>> | 0.066 | 0.380 |
| 44 | 6.862 | 6.887<< | 6.726 | 6.751 |
| 44 | 6.862 | 6.887 | 6.726>> | 6.751 |
| 44 | 10.901 | 11.215 | 0.066<< | 0.380 |
| 44 | 6.849 | 6.901 | 6.713 | 6.764>> |
| 44 | 10.914 | 11.201 | 0.079 | 0.366<< |
| 45 | 11.237>> | 11.557 | -0.466 | -0.146 |
| 45 | 6.959<< | 7.007 | 6.546 | 6.594 |
| 45 | 11.225 | 11.570>> | -0.479 | -0.134 |
| 45 | 6.971 | 6.994<< | 6.559 | 6.582 |
| 45 | 6.971 | 6.994 | 6.559>> | 6.582 |
| 45 | 11.225 | 11.570 | -0.479<< | -0.134 |
| 45 | 6.959 | 7.007 | 6.546 | 6.594>> |
| 45 | 11.237 | 11.557 | -0.466 | -0.146<< |

| BARRA 45 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 45 | 11.235>> | 11.555 | -0.454 | -0.134 |
| 45 | 6.956<< | 7.004 | 6.559 | 6.607 |
| 45 | 11.222 | 11.567>> | -0.466 | -0.121 |
| 45 | 6.969 | 6.992<< | 6.571 | 6.594 |
| 45 | 6.969 | 6.992 | 6.571>> | 6.594 |
| 45 | 11.222 | 11.567 | -0.466<< | -0.121 |
| 45 | 6.956 | 7.004 | 6.559 | 6.607>> |
| 45 | 11.235 | 11.555 | -0.454 | -0.134<< |
| 46 | 11.397>> | 11.744 | -0.742 | -0.395 |
| 46 | 7.064<< | 7.109 | 6.395 | 6.439 |
| 46 | 11.386 | 11.756>> | -0.754 | -0.383 |
| 46 | 7.076 | 7.097<< | 6.407 | 6.427 |
| 46 | 7.068 | 7.098 | 6.407>> | 6.437 |
| 46 | 11.393 | 11.755 | -0.754<< | -0.393 |
| 46 | 7.065 | 7.101 | 6.404 | 6.440>> |
| 46 | 11.396 | 11.752 | -0.751 | -0.396<< |

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| BARRA 46 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 46 | 11.395>> | 11.742 | -0.735 | -0.388 |
| 46 | 7.062<< | 7.107 | 6.402 | 6.446 |
| 46 | 11.383 | 11.754>> | -0.746 | -0.376 |
| 46 | 7.074 | 7.095<< | 6.414 | 6.435 |
| 46 | 7.066 | 7.096 | 6.414>> | 6.444 |
| 46 | 11.391 | 11.753 | -0.747<< | -0.386 |
| 46 | 7.063 | 7.099 | 6.412 | 6.447>> |
| 46 | 11.394 | 11.750 | -0.744 | -0.388<< |
| 47 | 11.466>> | 11.839 | -0.878 | -0.505 |
| 47 | 7.147<< | 7.231 | 6.219 | 6.303 |
| 47 | 11.455 | 11.850>> | -0.889 | -0.494 |
| 47 | 7.187 | 7.190<< | 6.260 | 6.263 |
| 47 | 7.179 | 7.191 | 6.262>> | 6.273 |
| 47 | 11.463 | 11.850 | -0.892<< | -0.505 |
| 47 | 7.147 | 7.223 | 6.230 | 6.306>> |
| 47 | 11.466 | 11.847 | -0.889 | -0.508<< |

| BARRA 47 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 47 | 11.464>> | 11.837 | -0.875 | -0.503 |
| 47 | 7.145<< | 7.229 | 6.222 | 6.306 |
| 47 | 11.453 | 11.848>> | -0.886 | -0.491 |
| 47 | 7.185 | 7.189<< | 6.263 | 6.266 |
| 47 | 7.177 | 7.189 | 6.265>> | 6.276 |
| 47 | 11.461 | 11.848 | -0.889<< | -0.502 |
| 47 | 7.145 | 7.221 | 6.233 | 6.309>> |
| 47 | 11.464 | 11.845 | -0.886 | -0.505<< |
| 48 | 11.364>> | 11.759 | -0.747 | -0.352 |
| 48 | 7.007<< | 7.104 | 6.420 | 6.517 |
| 48 | 11.355 | 11.767>> | -0.756 | -0.344 |
| 48 | 7.016 | 7.096<< | 6.429 | 6.508 |
| 48 | 7.011 | 7.096 | 6.430>> | 6.515 |
| 48 | 11.361 | 11.767 | -0.757<< | -0.350 |
| 48 | 7.008 | 7.099 | 6.427 | 6.518>> |
| 48 | 11.364 | 11.764 | -0.754 | -0.353<< |

| BARRA 48 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 48 | 11.363>> | 11.757 | -0.749 | -0.355 |
| 48 | 7.006<< | 7.103 | 6.418 | 6.515 |
| 48 | 11.354 | 11.766>> | -0.758 | -0.346 |
| 48 | 7.015 | 7.094<< | 6.426 | 6.506 |
| 48 | 7.009 | 7.095 | 6.427>> | 6.513 |
| 48 | 11.359 | 11.765 | -0.759<< | -0.353 |
| 48 | 7.006 | 7.098 | 6.424 | 6.516>> |
| 48 | 11.362 | 11.762 | -0.756 | -0.356<< |
| 49 | 11.175>> | 11.589 | -0.481 | -0.068 |
| 49 | 6.860<< | 6.988 | 6.606 | 6.734 |
| 49 | 11.166 | 11.597>> | -0.490 | -0.059 |
| 49 | 6.868 | 6.979<< | 6.614 | 6.725 |
| 49 | 6.864 | 6.980 | 6.615>> | 6.731 |
| 49 | 11.171 | 11.596 | -0.490<< | -0.065 |
| 49 | 6.861 | 6.983 | 6.612 | 6.734>> |
| 49 | 11.174 | 11.593 | -0.487 | -0.068<< |

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| BARRA 49 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 49 | 11.174>> | 11.587 | -0.488 | -0.075 |
| 49 | 6.859<< | 6.987 | 6.599 | 6.727 |
| 49 | 11.165 | 11.596>> | -0.497 | -0.066 |
| 49 | 6.867 | 6.978<< | 6.607 | 6.718 |
| 49 | 6.863 | 6.979 | 6.608>> | 6.724 |
| 49 | 11.170 | 11.595 | -0.497<< | -0.072 |
| 49 | 6.860 | 6.982 | 6.604 | 6.727>> |
| 49 | 11.173 | 11.592 | -0.494 | -0.075<< |
| 50 | 10.825>> | 11.251 | 0.039 | 0.465 |
| 50 | 6.712<< | 6.871 | 6.787 | 6.946 |
| 50 | 10.817 | 11.260>> | 0.030 | 0.473 |
| 50 | 6.721 | 6.863<< | 6.796 | 6.938 |
| 50 | 6.718 | 6.863 | 6.796>> | 6.941 |
| 50 | 10.820 | 11.259 | 0.030<< | 0.470 |
| 50 | 6.713 | 6.868 | 6.791 | 6.946>> |
| 50 | 10.825 | 11.254 | 0.035 | 0.465<< |

| BARRA 50 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 50 | 10.824>> | 11.250 | 0.028 | 0.454 |
| 50 | 6.711<< | 6.870 | 6.776 | 6.935 |
| 50 | 10.815 | 11.258>> | 0.019 | 0.462 |
| 50 | 6.719 | 6.861<< | 6.785 | 6.927 |
| 50 | 6.717 | 6.862 | 6.785>> | 6.930 |
| 50 | 10.818 | 11.258 | 0.019<< | 0.459 |
| 50 | 6.712 | 6.867 | 6.780 | 6.935>> |
| 50 | 10.823 | 11.253 | 0.024 | 0.454<< |
| 51 | 10.296>> | 10.728 | 0.843 | 1.275 |
| 51 | 6.564<< | 6.753 | 6.967 | 7.156 |
| 51 | 10.287 | 10.736>> | 0.835 | 1.283 |
| 51 | 6.572 | 6.745<< | 6.975 | 7.148 |
| 51 | 6.569 | 6.745 | 6.975>> | 7.152 |
| 51 | 10.290 | 10.735 | 0.834<< | 1.279 |
| 51 | 6.564 | 6.750 | 6.970 | 7.156>> |
| 51 | 10.295 | 10.731 | 0.839 | 1.274<< |

| BARRA 51 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 51 | 10.293>> | 10.725 | 0.829 | 1.261 |
| 51 | 6.561<< | 6.751 | 6.953 | 7.143 |
| 51 | 10.285 | 10.734>> | 0.821 | 1.270 |
| 51 | 6.569 | 6.743<< | 6.961 | 7.134 |
| 51 | 6.567 | 6.743 | 6.962>> | 7.138 |
| 51 | 10.288 | 10.733 | 0.821<< | 1.266 |
| 51 | 6.562 | 6.748 | 6.957 | 7.143>> |
| 51 | 10.293 | 10.728 | 0.826 | 1.261<< |
| 52 | 9.645>> | 10.074 | 1.843 | 2.272 |
| 52 | 6.409<< | 6.635 | 7.144 | 7.370 |
| 52 | 9.631 | 10.087>> | 1.830 | 2.286 |
| 52 | 6.422 | 6.621<< | 7.158 | 7.356 |
| 52 | 6.414 | 6.622 | 7.159>> | 7.366 |
| 52 | 9.640 | 10.087 | 1.829<< | 2.276 |
| 52 | 6.410 | 6.627 | 7.154 | 7.371>> |
| 52 | 9.644 | 10.082 | 1.833 | 2.271<< |

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| BARRA 52 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 52 | 9.641>> | 10.070 | 1.828 | 2.257 |
| 52 | 6.404<< | 6.630 | 7.129 | 7.355 |
| 52 | 9.627 | 10.083>> | 1.815 | 2.271 |
| 52 | 6.418 | 6.617<< | 7.143 | 7.341 |
| 52 | 6.410 | 6.618 | 7.144>> | 7.352 |
| 52 | 9.635 | 10.082 | 1.814<< | 2.261 |
| 52 | 6.405 | 6.622 | 7.139 | 7.356>> |
| 52 | 9.640 | 10.078 | 1.818 | 2.256<< |
| 53 | 8.969>> | 9.341 | 2.947 | 3.320 |
| 53 | 6.182<< | 6.463 | 7.405 | 7.686 |
| 53 | 8.924 | 9.386>> | 2.903 | 3.365 |
| 53 | 6.195 | 6.450<< | 7.418 | 7.674 |
| 53 | 6.191 | 6.451 | 7.418>> | 7.678 |
| 53 | 8.927 | 9.385 | 2.902<< | 3.360 |
| 53 | 6.182 | 6.460 | 7.409 | 7.687>> |
| 53 | 8.968 | 9.345 | 2.943 | 3.319<< |

| BARRA 53 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 53 | 8.961>> | 9.334 | 2.933 | 3.306 |
| 53 | 6.174<< | 6.456 | 7.391 | 7.672 |
| 53 | 8.917 | 9.378>> | 2.889 | 3.351 |
| 53 | 6.187 | 6.443<< | 7.404 | 7.660 |
| 53 | 6.184 | 6.443 | 7.404>> | 7.664 |
| 53 | 8.920 | 9.378 | 2.889<< | 3.346 |
| 53 | 6.175 | 6.452 | 7.395 | 7.673>> |
| 53 | 8.961 | 9.337 | 2.929 | 3.305<< |
| 54 | 8.748>> | 8.645 | 3.874 | 3.771 |
| 54 | 5.691<< | 6.459 | 7.522 | 8.290 |
| 54 | 8.406 | 8.985>> | 3.534 | 4.113 |
| 54 | 5.793 | 6.051<< | 8.016 | 8.273 |
| 54 | 5.790 | 6.051 | 8.016>> | 8.278 |
| 54 | 8.515 | 8.979 | 3.512<< | 3.975 |
| 54 | 5.749 | 6.091 | 7.976 | 8.318>> |
| 54 | 8.748 | 8.648 | 3.869 | 3.770<< |

| BARRA 54 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 54 | 8.736>> | 8.633 | 3.863 | 3.760 |
| 54 | 5.679<< | 6.447 | 7.511 | 8.280 |
| 54 | 8.394 | 8.973>> | 3.524 | 4.103 |
| 54 | 5.781 | 6.039<< | 8.005 | 8.262 |
| 54 | 5.777 | 6.039 | 8.006>> | 8.267 |
| 54 | 8.503 | 8.967 | 3.501<< | 3.965 |
| 54 | 5.737 | 6.079 | 7.965 | 8.307>> |
| 54 | 8.736 | 8.637 | 3.858 | 3.759<< |
| 55 | 8.599>> | 8.538 | 4.022 | 3.962 |
| 55 | 4.875<< | 5.587 | 8.835 | 9.547 |
| 55 | 8.132 | 8.710>> | 3.933 | 4.511 |
| 55 | 5.243 | 5.437<< | 8.924 | 9.118 |
| 55 | 5.239 | 5.437 | 8.925>> | 9.123 |
| 55 | 8.550 | 8.653 | 3.890<< | 3.992 |
| 55 | 4.875 | 5.583 | 8.840 | 9.548>> |
| 55 | 8.591 | 8.611 | 3.931 | 3.951<< |

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| BARRA 55 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 55 | 8.152>> | 8.103 | 3.956 | 3.907 |
| 55 | 4.693<< | 5.293 | 7.660 | 8.261 |
| 55 | 7.766 | 8.222>> | 3.890 | 4.346 |
| 55 | 4.990 | 5.189<< | 7.720 | 7.918 |
| 55 | 4.987 | 5.189 | 7.720>> | 7.922 |
| 55 | 8.114 | 8.200 | 3.852<< | 3.938 |
| 55 | 4.693 | 5.293 | 7.660 | 8.261>> |
| 55 | 8.146 | 8.168 | 3.884 | 3.906<< |
| 56 | 9.479>> | 9.463 | 2.253 | 2.237 |
| 56 | 5.004<< | 5.595 | 7.299 | 7.890 |
| 56 | 9.424 | 9.488>> | 2.238 | 2.302 |
| 56 | 5.007 | 5.591<< | 7.302 | 7.886 |
| 56 | 5.004 | 5.591 | 7.303>> | 7.890 |
| 56 | 9.427 | 9.487 | 2.238<< | 2.299 |
| 56 | 5.004 | 5.591 | 7.303 | 7.890>> |
| 56 | 9.479 | 9.467 | 2.249 | 2.237<< |

| BARRA 56 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 56 | 9.581>> | 9.567 | 2.270 | 2.256 |
| 56 | 5.060<< | 5.671 | 7.271 | 7.882 |
| 56 | 9.520 | 9.592>> | 2.249 | 2.321 |
| 56 | 5.064 | 5.668<< | 7.274 | 7.878 |
| 56 | 5.061 | 5.668 | 7.275>> | 7.882 |
| 56 | 9.523 | 9.591 | 2.249<< | 2.318 |
| 56 | 5.061 | 5.668 | 7.275 | 7.882>> |
| 56 | 9.580 | 9.570 | 2.266 | 2.255<< |
| 57 | 8.755>> | 8.746 | 3.307 | 3.297 |
| 57 | 3.058<< | 3.683 | 9.783 | 10.408 |
| 57 | 8.746 | 8.755>> | 3.298 | 3.306 |
| 57 | 3.060 | 3.681<< | 9.785 | 10.406 |
| 57 | 3.060 | 3.681 | 9.785>> | 10.406 |
| 57 | 8.746 | 8.755 | 3.298<< | 3.306 |
| 57 | 3.058 | 3.683 | 9.783 | 10.408>> |
| 57 | 8.755 | 8.746 | 3.307 | 3.297<< |

| BARRA 57 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 57 | 8.761>> | 8.751 | 3.297 | 3.288 |
| 57 | 3.064<< | 3.688 | 9.774 | 10.399 |
| 57 | 8.752 | 8.760>> | 3.288 | 3.297 |
| 57 | 3.065 | 3.687<< | 9.776 | 10.397 |
| 57 | 3.065 | 3.687 | 9.776>> | 10.397 |
| 57 | 8.752 | 8.760 | 3.288<< | 3.297 |
| 57 | 3.064 | 3.688 | 9.774 | 10.399>> |
| 57 | 8.761 | 8.751 | 3.297 | 3.288<< |
| 58 | 9.411>> | 9.408 | 2.469 | 2.466 |
| 58 | 4.894<< | 5.509 | 7.474 | 8.088 |
| 58 | 9.353 | 9.430>> | 2.451 | 2.528 |
| 58 | 4.898 | 5.505<< | 7.477 | 8.085 |
| 58 | 4.898 | 5.505 | 7.477>> | 8.085 |
| 58 | 9.353 | 9.430 | 2.451<< | 2.528 |
| 58 | 4.894 | 5.509 | 7.474 | 8.088>> |
| 58 | 9.411 | 9.408 | 2.469 | 2.466<< |

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| BARRA 58 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 58 | 9.310>> | 9.306 | 2.426 | 2.422 |
| 58 | 4.838<< | 5.433 | 7.476 | 8.071 |
| 58 | 9.260 | 9.326>> | 2.416 | 2.481 |
| 58 | 4.842 | 5.429<< | 7.480 | 8.067 |
| 58 | 4.842 | 5.429 | 7.480>> | 8.067 |
| 58 | 9.260 | 9.326 | 2.416<< | 2.481 |
| 58 | 4.838 | 5.433 | 7.476 | 8.071>> |
| 58 | 9.310 | 9.306 | 2.426 | 2.422<< |
| 59 | 7.777>> | 7.746 | 4.382 | 4.352 |
| 59 | 4.324<< | 4.932 | 8.090 | 8.697 |
| 59 | 7.410 | 7.843>> | 4.338 | 4.772 |
| 59 | 4.618 | 4.830<< | 8.147 | 8.360 |
| 59 | 4.618 | 4.830 | 8.147>> | 8.360 |
| 59 | 7.743 | 7.836 | 4.286<< | 4.379 |
| 59 | 4.324 | 4.932 | 8.090 | 8.697>> |
| 59 | 7.775 | 7.804 | 4.317 | 4.347<< |

| BARRA 59 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 59 | 8.423>> | 8.383 | 4.275 | 4.236 |
| 59 | 4.706<< | 5.422 | 9.099 | 9.815 |
| 59 | 7.976 | 8.530>> | 4.212 | 4.766 |
| 59 | 5.069 | 5.279<< | 9.181 | 9.391 |
| 59 | 5.069 | 5.279 | 9.181>> | 9.391 |
| 59 | 8.376 | 8.489 | 4.153<< | 4.266 |
| 59 | 4.706 | 5.422 | 9.099 | 9.815>> |
| 59 | 8.417 | 8.448 | 4.194 | 4.225<< |
| 60 | 8.489>> | 8.410 | 4.222 | 4.143 |
| 60 | 5.444<< | 6.217 | 7.876 | 8.650 |
| 60 | 8.169 | 8.727>> | 3.906 | 4.464 |
| 60 | 5.542 | 5.814<< | 8.364 | 8.636 |
| 60 | 5.542 | 5.814 | 8.364>> | 8.636 |
| 60 | 8.269 | 8.725 | 3.881<< | 4.337 |
| 60 | 5.502 | 5.854 | 8.324 | 8.677>> |
| 60 | 8.489 | 8.410 | 4.222 | 4.143<< |

| BARRA 60 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 60 | 8.497>> | 8.418 | 4.239 | 4.160 |
| 60 | 5.451<< | 6.225 | 7.892 | 8.666 |
| 60 | 8.177 | 8.735>> | 3.922 | 4.480 |
| 60 | 5.550 | 5.821<< | 8.381 | 8.652 |
| 60 | 5.550 | 5.821 | 8.381>> | 8.652 |
| 60 | 8.277 | 8.733 | 3.897<< | 4.353 |
| 60 | 5.509 | 5.862 | 8.340 | 8.693>> |
| 60 | 8.497 | 8.418 | 4.239 | 4.160<< |
| 61 | 8.654>> | 9.033 | 3.408 | 3.787 |
| 61 | 5.866<< | 6.159 | 7.861 | 8.154 |
| 61 | 8.615 | 9.071>> | 3.370 | 3.826 |
| 61 | 5.878 | 6.147<< | 7.873 | 8.142 |
| 61 | 5.875 | 6.147 | 7.874>> | 8.146 |
| 61 | 8.618 | 9.071 | 3.369<< | 3.822 |
| 61 | 5.866 | 6.155 | 7.866 | 8.155>> |
| 61 | 8.654 | 9.036 | 3.404 | 3.787<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 61 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 61 | 8.657>> | 9.037 | 3.428 | 3.807 |
| 61 | 5.869<< | 6.162 | 7.881 | 8.174 |
| 61 | 8.619 | 9.075>> | 3.390 | 3.846 |
| 61 | 5.881 | 6.150<< | 7.893 | 8.162 |
| 61 | 5.878 | 6.150 | 7.894>> | 8.166 |
| 61 | 8.622 | 9.075 | 3.389<< | 3.842 |
| 61 | 5.869 | 6.159 | 7.885 | 8.175>> |
| 61 | 8.657 | 9.040 | 3.424 | 3.806<< |
| 62 | 9.261>> | 9.699 | 2.412 | 2.850 |
| 62 | 6.025<< | 6.263 | 7.710 | 7.947 |
| 62 | 9.249 | 9.712>> | 2.399 | 2.863 |
| 62 | 6.037 | 6.250<< | 7.722 | 7.935 |
| 62 | 6.030 | 6.250 | 7.724>> | 7.944 |
| 62 | 9.256 | 9.711 | 2.398<< | 2.853 |
| 62 | 6.025 | 6.255 | 7.719 | 7.949>> |
| 62 | 9.261 | 9.707 | 2.402 | 2.848<< |

| BARRA 62 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 62 | 9.262>> | 9.699 | 2.432 | 2.870 |
| 62 | 6.025<< | 6.263 | 7.729 | 7.967 |
| 62 | 9.249 | 9.712>> | 2.419 | 2.882 |
| 62 | 6.038 | 6.250<< | 7.742 | 7.954 |
| 62 | 6.030 | 6.250 | 7.744>> | 7.964 |
| 62 | 9.257 | 9.712 | 2.417<< | 2.873 |
| 62 | 6.025 | 6.255 | 7.739 | 7.969>> |
| 62 | 9.261 | 9.707 | 2.422 | 2.868<< |
| 63 | 9.839>> | 10.282 | 1.526 | 1.969 |
| 63 | 6.106<< | 6.310 | 7.647 | 7.851 |
| 63 | 9.831 | 10.290>> | 1.518 | 1.977 |
| 63 | 6.114 | 6.302<< | 7.655 | 7.843 |
| 63 | 6.111 | 6.302 | 7.656>> | 7.846 |
| 63 | 9.834 | 10.290 | 1.517<< | 1.973 |
| 63 | 6.106 | 6.307 | 7.651 | 7.851>> |
| 63 | 9.839 | 10.285 | 1.522 | 1.968<< |

| BARRA 63 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 63 | 9.838>> | 10.280 | 1.545 | 1.987 |
| 63 | 6.104<< | 6.308 | 7.666 | 7.870 |
| 63 | 9.830 | 10.288>> | 1.537 | 1.995 |
| 63 | 6.112 | 6.300<< | 7.674 | 7.862 |
| 63 | 6.109 | 6.300 | 7.674>> | 7.865 |
| 63 | 9.832 | 10.288 | 1.536<< | 1.992 |
| 63 | 6.104 | 6.305 | 7.669 | 7.870>> |
| 63 | 9.837 | 10.283 | 1.541 | 1.987<< |
| 64 | 10.292>> | 10.731 | 0.842 | 1.281 |
| 64 | 6.180<< | 6.354 | 7.586 | 7.760 |
| 64 | 10.284 | 10.739>> | 0.834 | 1.289 |
| 64 | 6.188 | 6.346<< | 7.594 | 7.752 |
| 64 | 6.185 | 6.346 | 7.594>> | 7.756 |
| 64 | 10.286 | 10.739 | 0.834<< | 1.286 |
| 64 | 6.180 | 6.352 | 7.589 | 7.761>> |
| 64 | 10.291 | 10.733 | 0.839 | 1.281<< |

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| BARRA 64 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 64 | 10.289>> | 10.728 | 0.858 | 1.297 |
| 64 | 6.177<< | 6.352 | 7.602 | 7.777 |
| 64 | 10.281 | 10.736>> | 0.850 | 1.305 |
| 64 | 6.185 | 6.344<< | 7.610 | 7.769 |
| 64 | 6.183 | 6.344 | 7.611>> | 7.772 |
| 64 | 10.284 | 10.736 | 0.850<< | 1.302 |
| 64 | 6.177 | 6.349 | 7.606 | 7.777>> |
| 64 | 10.289 | 10.731 | 0.855 | 1.297<< |
| 65 | 10.564>> | 10.993 | 0.443 | 0.872 |
| 65 | 6.250<< | 6.396 | 7.526 | 7.671 |
| 65 | 10.556 | 11.001>> | 0.435 | 0.880 |
| 65 | 6.258 | 6.388<< | 7.534 | 7.663 |
| 65 | 6.252 | 6.389 | 7.534>> | 7.671 |
| 65 | 10.563 | 11.000 | 0.435<< | 0.872 |
| 65 | 6.252 | 6.389 | 7.534 | 7.671>> |
| 65 | 10.563 | 11.000 | 0.435 | 0.872<< |

| BARRA 65 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 65 | 10.561>> | 10.990 | 0.455 | 0.885 |
| 65 | 6.248<< | 6.393 | 7.538 | 7.683 |
| 65 | 10.553 | 10.998>> | 0.447 | 0.893 |
| 65 | 6.256 | 6.385<< | 7.546 | 7.675 |
| 65 | 6.249 | 6.386 | 7.547>> | 7.684 |
| 65 | 10.560 | 10.997 | 0.447<< | 0.884 |
| 65 | 6.249 | 6.386 | 7.547 | 7.684>> |
| 65 | 10.560 | 10.997 | 0.447 | 0.884<< |
| 66 | 10.676>> | 11.088 | 0.299 | 0.711 |
| 66 | 6.319<< | 6.435 | 7.464 | 7.580 |
| 66 | 10.668 | 11.096>> | 0.291 | 0.719 |
| 66 | 6.327 | 6.427<< | 7.472 | 7.572 |
| 66 | 6.320 | 6.428 | 7.473>> | 7.581 |
| 66 | 10.675 | 11.095 | 0.290<< | 0.710 |
| 66 | 6.320 | 6.428 | 7.473 | 7.581>> |
| 66 | 10.675 | 11.095 | 0.290 | 0.710<< |

| BARRA 66 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 66 | 10.673>> | 11.086 | 0.306 | 0.718 |
| 66 | 6.317<< | 6.433 | 7.471 | 7.587 |
| 66 | 10.665 | 11.094>> | 0.298 | 0.726 |
| 66 | 6.325 | 6.425<< | 7.479 | 7.579 |
| 66 | 6.318 | 6.426 | 7.480>> | 7.588 |
| 66 | 10.673 | 11.093 | 0.297<< | 0.717 |
| 66 | 6.318 | 6.426 | 7.480 | 7.588>> |
| 66 | 10.673 | 11.093 | 0.297 | 0.717<< |
| 67 | 10.696>> | 11.097 | 0.285 | 0.687 |
| 67 | 6.386<< | 6.467 | 7.408 | 7.489 |
| 67 | 10.693 | 11.100>> | 0.283 | 0.689 |
| 67 | 6.410 | 6.435<< | 7.442 | 7.467 |
| 67 | 6.410 | 6.435 | 7.442>> | 7.467 |
| 67 | 10.693 | 11.100 | 0.283<< | 0.689 |
| 67 | 6.386 | 6.467 | 7.408 | 7.489>> |
| 67 | 10.696 | 11.097 | 0.285 | 0.687<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 67 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 67 | 10.694>> | 11.095 | 0.288 | 0.689 |
| 67 | 6.384<< | 6.465 | 7.411 | 7.492 |
| 67 | 10.691 | 11.098>> | 0.286 | 0.692 |
| 67 | 6.408 | 6.433<< | 7.445 | 7.470 |
| 67 | 6.408 | 6.433 | 7.445>> | 7.470 |
| 67 | 10.691 | 11.098 | 0.286<< | 0.692 |
| 67 | 6.384 | 6.465 | 7.411 | 7.492>> |
| 67 | 10.694 | 11.095 | 0.288 | 0.689<< |
| 68 | 10.544>> | 10.916 | 0.559 | 0.931 |
| 68 | 6.225<< | 6.265 | 7.712 | 7.752 |
| 68 | 10.535 | 10.925>> | 0.550 | 0.940 |
| 68 | 6.234 | 6.256<< | 7.721 | 7.743 |
| 68 | 6.227 | 6.256 | 7.723>> | 7.751 |
| 68 | 10.542 | 10.925 | 0.548<< | 0.931 |
| 68 | 6.225 | 6.258 | 7.720 | 7.754>> |
| 68 | 10.544 | 10.923 | 0.550 | 0.929<< |

| BARRA 68 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 68 | 10.543>> | 10.915 | 0.557 | 0.929 |
| 68 | 6.223<< | 6.264 | 7.710 | 7.750 |
| 68 | 10.534 | 10.924>> | 0.548 | 0.938 |
| 68 | 6.233 | 6.254<< | 7.719 | 7.740 |
| 68 | 6.226 | 6.254 | 7.721>> | 7.749 |
| 68 | 10.540 | 10.924 | 0.546<< | 0.929 |
| 68 | 6.223 | 6.257 | 7.718 | 7.751>> |
| 68 | 10.543 | 10.921 | 0.548 | 0.927<< |
| 69 | 10.307>> | 10.654 | 0.956 | 1.303 |
| 69 | 6.041<< | 6.086 | 7.988 | 8.032 |
| 69 | 10.297 | 10.664>> | 0.946 | 1.313 |
| 69 | 6.051 | 6.076<< | 7.998 | 8.022 |
| 69 | 6.045 | 6.077 | 7.998>> | 8.030 |
| 69 | 10.303 | 10.663 | 0.946<< | 1.305 |
| 69 | 6.042 | 6.079 | 7.996 | 8.033>> |
| 69 | 10.306 | 10.661 | 0.948 | 1.303<< |

| BARRA 69 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 69 | 10.306>> | 10.653 | 0.949 | 1.296 |
| 69 | 6.040<< | 6.084 | 7.981 | 8.025 |
| 69 | 10.296 | 10.663>> | 0.939 | 1.306 |
| 69 | 6.050 | 6.075<< | 7.991 | 8.015 |
| 69 | 6.043 | 6.076 | 7.991>> | 8.023 |
| 69 | 10.302 | 10.662 | 0.939<< | 1.298 |
| 69 | 6.041 | 6.078 | 7.989 | 8.025>> |
| 69 | 10.304 | 10.659 | 0.941 | 1.296<< |
| 70 | 9.909>> | 10.226 | 1.606 | 1.923 |
| 70 | 5.858<< | 5.906 | 8.259 | 8.308 |
| 70 | 9.898 | 10.236>> | 1.595 | 1.933 |
| 70 | 5.868 | 5.896<< | 8.270 | 8.297 |
| 70 | 5.868 | 5.896 | 8.270>> | 8.297 |
| 70 | 9.898 | 10.236 | 1.595<< | 1.933 |
| 70 | 5.858 | 5.906 | 8.259 | 8.308>> |
| 70 | 9.909 | 10.226 | 1.606 | 1.923<< |

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| BARRA 70 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 70 | 9.907>> | 10.225 | 1.595 | 1.912 |
| 70 | 5.857<< | 5.905 | 8.248 | 8.297 |
| 70 | 9.897 | 10.235>> | 1.584 | 1.922 |
| 70 | 5.867 | 5.895<< | 8.259 | 8.286 |
| 70 | 5.867 | 5.895 | 8.259>> | 8.286 |
| 70 | 9.897 | 10.235 | 1.584<< | 1.922 |
| 70 | 5.857 | 5.905 | 8.248 | 8.297>> |
| 70 | 9.907 | 10.225 | 1.595 | 1.912<< |
| 71 | 9.331>> | 9.611 | 2.540 | 2.820 |
| 71 | 5.673<< | 5.726 | 8.529 | 8.581 |
| 71 | 9.320 | 9.622>> | 2.529 | 2.831 |
| 71 | 5.684 | 5.715<< | 8.540 | 8.570 |
| 71 | 5.684 | 5.715 | 8.540>> | 8.570 |
| 71 | 9.320 | 9.622 | 2.529<< | 2.831 |
| 71 | 5.673 | 5.726 | 8.529 | 8.581>> |
| 71 | 9.331 | 9.611 | 2.540 | 2.820<< |

| BARRA 71 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 71 | 9.328>> | 9.609 | 2.526 | 2.807 |
| 71 | 5.671<< | 5.723 | 8.515 | 8.568 |
| 71 | 9.317 | 9.620>> | 2.516 | 2.818 |
| 71 | 5.682 | 5.712<< | 8.526 | 8.557 |
| 71 | 5.682 | 5.712 | 8.526>> | 8.557 |
| 71 | 9.317 | 9.620 | 2.516<< | 2.818 |
| 71 | 5.671 | 5.723 | 8.515 | 8.568>> |
| 71 | 9.328 | 9.609 | 2.526 | 2.807<< |
| 72 | 8.632>> | 8.865 | 3.671 | 3.905 |
| 72 | 5.482<< | 5.545 | 8.796 | 8.859 |
| 72 | 8.614 | 8.884>> | 3.653 | 3.923 |
| 72 | 5.500 | 5.527<< | 8.814 | 8.841 |
| 72 | 5.494 | 5.528 | 8.814>> | 8.848 |
| 72 | 8.620 | 8.883 | 3.653<< | 3.916 |
| 72 | 5.483 | 5.539 | 8.803 | 8.859>> |
| 72 | 8.631 | 8.871 | 3.664 | 3.904<< |

| BARRA 72 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 72 | 8.628>> | 8.861 | 3.657 | 3.890 |
| 72 | 5.478<< | 5.541 | 8.781 | 8.844 |
| 72 | 8.610 | 8.879>> | 3.638 | 3.908 |
| 72 | 5.496 | 5.523<< | 8.799 | 8.826 |
| 72 | 5.490 | 5.524 | 8.800>> | 8.833 |
| 72 | 8.615 | 8.878 | 3.638<< | 3.901 |
| 72 | 5.479 | 5.535 | 8.788 | 8.845>> |
| 72 | 8.627 | 8.867 | 3.650 | 3.890<< |
| 73 | 7.989>> | 8.063 | 4.855 | 4.930 |
| 73 | 5.171<< | 5.246 | 9.244 | 9.319 |
| 73 | 7.890 | 8.153>> | 4.767 | 5.031 |
| 73 | 5.193 | 5.224<< | 9.266 | 9.297 |
| 73 | 5.193 | 5.224 | 9.266>> | 9.297 |
| 73 | 7.899 | 8.153 | 4.765<< | 5.019 |
| 73 | 5.171 | 5.246 | 9.244 | 9.319>> |
| 73 | 7.989 | 8.063 | 4.855 | 4.930<< |

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| BARRA 73 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 73 | 7.981>> | 8.055 | 4.842 | 4.916 |
| 73 | 5.163<< | 5.238 | 9.230 | 9.305 |
| 73 | 7.882 | 8.146>> | 4.753 | 5.017 |
| 73 | 5.185 | 5.216<< | 9.252 | 9.283 |
| 73 | 5.185 | 5.216 | 9.252>> | 9.283 |
| 73 | 7.891 | 8.146 | 4.751<< | 5.005 |
| 73 | 5.163 | 5.238 | 9.230 | 9.305>> |
| 73 | 7.981 | 8.055 | 4.842 | 4.916<< |
| 74 | 7.557>> | 7.257 | 5.980 | 5.681 |
| 74 | 4.700<< | 4.801 | 9.918 | 10.020 |
| 74 | 7.369 | 7.630>> | 5.557 | 5.818 |
| 74 | 4.747 | 4.755<< | 9.965 | 9.973 |
| 74 | 4.729 | 4.758 | 9.966>> | 9.995 |
| 74 | 7.508 | 7.605 | 5.549<< | 5.647 |
| 74 | 4.703 | 4.784 | 9.940 | 10.020>> |
| 74 | 7.533 | 7.580 | 5.575 | 5.621<< |

| BARRA 74 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 74 | 7.545>> | 7.245 | 5.970 | 5.670 |
| 74 | 4.688<< | 4.789 | 9.908 | 10.009 |
| 74 | 7.357 | 7.617>> | 5.546 | 5.807 |
| 74 | 4.734 | 4.743<< | 9.954 | 9.962 |
| 74 | 4.717 | 4.746 | 9.955>> | 9.984 |
| 74 | 7.496 | 7.593 | 5.538<< | 5.636 |
| 74 | 4.691 | 4.772 | 9.929 | 10.010>> |
| 74 | 7.521 | 7.568 | 5.564 | 5.611<< |
| 75 | 7.360>> | 7.103 | 6.204 | 5.947 |
| 75 | 3.841<< | 4.049 | 11.090 | 11.299 |
| 75 | 7.281 | 7.236>> | 6.056 | 6.010 |
| 75 | 3.890 | 4.000<< | 11.139 | 11.249 |
| 75 | 3.859 | 4.005 | 11.142>> | 11.288 |
| 75 | 7.313 | 7.231 | 6.053<< | 5.971 |
| 75 | 3.845 | 4.018 | 11.129 | 11.301>> |
| 75 | 7.355 | 7.134 | 6.165 | 5.944<< |

| BARRA 75 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 75 | 6.972>> | 6.760 | 5.630 | 5.418 |
| 75 | 3.694<< | 3.847 | 9.432 | 9.585 |
| 75 | 6.921 | 6.862>> | 5.521 | 5.462 |
| 75 | 3.721 | 3.821<< | 9.458 | 9.559 |
| 75 | 3.721 | 3.821 | 9.458>> | 9.559 |
| 75 | 6.921 | 6.862 | 5.521<< | 5.462 |
| 75 | 3.694 | 3.847 | 9.432 | 9.585>> |
| 75 | 6.972 | 6.760 | 5.630 | 5.418<< |
| 76 | 8.320>> | 8.017 | 4.041 | 3.737 |
| 76 | 3.963<< | 4.083 | 9.149 | 9.270 |
| 76 | 8.226 | 8.162>> | 3.894 | 3.830 |
| 76 | 3.992 | 4.054<< | 9.179 | 9.240 |
| 76 | 3.976 | 4.055 | 9.180>> | 9.259 |
| 76 | 8.242 | 8.161 | 3.893<< | 3.812 |
| 76 | 3.964 | 4.067 | 9.168 | 9.271>> |
| 76 | 8.319 | 8.033 | 4.022 | 3.736<< |

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| BARRA 76 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 76 | 8.420>> | 8.123 | 4.056 | 3.758 |
| 76 | 4.020<< | 4.156 | 9.122 | 9.257 |
| 76 | 8.322 | 8.267>> | 3.905 | 3.850 |
| 76 | 4.049 | 4.127<< | 9.151 | 9.228 |
| 76 | 4.033 | 4.127 | 9.152>> | 9.247 |
| 76 | 8.338 | 8.267 | 3.904<< | 3.832 |
| 76 | 4.021 | 4.140 | 9.140 | 9.259>> |
| 76 | 8.420 | 8.139 | 4.038 | 3.757<< |
| 77 | 7.627>> | 7.316 | 5.073 | 4.762 |
| 77 | 1.978<< | 2.053 | 11.769 | 11.844 |
| 77 | 7.595 | 7.435>> | 4.943 | 4.783 |
| 77 | 1.990 | 2.041<< | 11.781 | 11.832 |
| 77 | 1.990 | 2.041 | 11.781>> | 11.832 |
| 77 | 7.595 | 7.435 | 4.943<< | 4.783 |
| 77 | 1.978 | 2.053 | 11.769 | 11.844>> |
| 77 | 7.621 | 7.421 | 4.955 | 4.755<< |

| BARRA 77 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 77 | 7.632>> | 7.321 | 5.063 | 4.753 |
| 77 | 1.984<< | 2.058 | 11.760 | 11.835 |
| 77 | 7.600 | 7.440>> | 4.933 | 4.773 |
| 77 | 1.995 | 2.046<< | 11.772 | 11.823 |
| 77 | 1.995 | 2.046 | 11.772>> | 11.823 |
| 77 | 7.600 | 7.440 | 4.933<< | 4.773 |
| 77 | 1.984 | 2.058 | 11.760 | 11.835>> |
| 77 | 7.626 | 7.426 | 4.946 | 4.746<< |
| 78 | 8.359>> | 8.039 | 4.156 | 3.836 |
| 78 | 3.872<< | 3.994 | 9.321 | 9.443 |
| 78 | 8.262 | 8.187>> | 4.001 | 3.926 |
| 78 | 3.903 | 3.964<< | 9.352 | 9.413 |
| 78 | 3.884 | 3.964 | 9.354>> | 9.435 |
| 78 | 8.281 | 8.187 | 3.998<< | 3.904 |
| 78 | 3.872 | 3.975 | 9.343 | 9.446>> |
| 78 | 8.351 | 8.158 | 4.022 | 3.829<< |

| BARRA 78 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 78 | 8.259>> | 7.960 | 4.092 | 3.793 |
| 78 | 3.817<< | 3.905 | 9.345 | 9.433 |
| 78 | 8.190 | 8.086>> | 3.965 | 3.860 |
| 78 | 3.828 | 3.893<< | 9.356 | 9.422 |
| 78 | 3.828 | 3.893 | 9.356>> | 9.422 |
| 78 | 8.190 | 8.086 | 3.965<< | 3.860 |
| 78 | 3.817 | 3.905 | 9.345 | 9.433>> |
| 78 | 8.252 | 8.059 | 3.981 | 3.788<< |
| 79 | 6.793>> | 6.462 | 5.970 | 5.639 |
| 79 | 3.369<< | 3.515 | 9.824 | 9.970 |
| 79 | 6.735 | 6.658>> | 5.757 | 5.680 |
| 79 | 3.412 | 3.471<< | 9.868 | 9.927 |
| 79 | 3.381 | 3.473 | 9.871>> | 9.963 |
| 79 | 6.766 | 6.656 | 5.753<< | 5.644 |
| 79 | 3.370 | 3.484 | 9.860 | 9.974>> |
| 79 | 6.783 | 6.587 | 5.828 | 5.632<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 79 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 79 | 7.396>> | 7.011 | 6.317 | 5.931 |
| 79 | 3.716<< | 3.903 | 11.317 | 11.504 |
| 79 | 7.316 | 7.235>> | 6.052 | 5.971 |
| 79 | 3.772 | 3.847<< | 11.373 | 11.448 |
| 79 | 3.751 | 3.848 | 11.377>> | 11.474 |
| 79 | 7.337 | 7.234 | 6.048<< | 5.945 |
| 79 | 3.717 | 3.882 | 11.344 | 11.509>> |
| 79 | 7.371 | 7.200 | 6.082 | 5.911<< |
| 80 | 7.527>> | 7.087 | 6.182 | 5.742 |
| 80 | 4.506<< | 4.552 | 10.267 | 10.313 |
| 80 | 7.158 | 7.538>> | 5.709 | 6.088 |
| 80 | 4.562 | 4.496<< | 10.323 | 10.257 |
| 80 | 4.523 | 4.501 | 10.328>> | 10.306 |
| 80 | 7.198 | 7.533 | 5.704<< | 6.040 |
| 80 | 4.511 | 4.513 | 10.316 | 10.318>> |
| 80 | 7.508 | 7.225 | 6.012 | 5.729<< |

| BARRA 80 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 80 | 7.535>> | 7.095 | 6.198 | 5.759 |
| 80 | 4.514<< | 4.559 | 10.284 | 10.329 |
| 80 | 7.166 | 7.545>> | 5.725 | 6.105 |
| 80 | 4.570 | 4.504<< | 10.339 | 10.273 |
| 80 | 4.530 | 4.508 | 10.344>> | 10.322 |
| 80 | 7.205 | 7.540 | 5.721<< | 6.056 |
| 80 | 4.519 | 4.520 | 10.332 | 10.334>> |
| 80 | 7.516 | 7.232 | 6.028 | 5.745<< |
| 81 | 7.772>> | 7.361 | 5.792 | 5.381 |
| 81 | 4.936<< | 4.955 | 9.660 | 9.678 |
| 81 | 7.699 | 7.965>> | 5.040 | 5.306 |
| 81 | 4.970 | 4.921<< | 9.694 | 9.644 |
| 81 | 4.952 | 4.923 | 9.696>> | 9.668 |
| 81 | 7.728 | 7.963 | 5.035<< | 5.270 |
| 81 | 4.938 | 4.936 | 9.683 | 9.681>> |
| 81 | 7.741 | 7.950 | 5.048 | 5.256<< |

| BARRA 81 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 81 | 7.776>> | 7.365 | 5.812 | 5.401 |
| 81 | 4.940<< | 4.959 | 9.680 | 9.698 |
| 81 | 7.703 | 7.969>> | 5.060 | 5.326 |
| 81 | 4.974 | 4.925<< | 9.714 | 9.664 |
| 81 | 4.955 | 4.927 | 9.716>> | 9.688 |
| 81 | 7.731 | 7.966 | 5.055<< | 5.289 |
| 81 | 4.942 | 4.940 | 9.703 | 9.701>> |
| 81 | 7.745 | 7.953 | 5.068 | 5.276<< |
| 82 | 8.395>> | 8.615 | 4.040 | 4.261 |
| 82 | 5.199<< | 5.210 | 9.286 | 9.297 |
| 82 | 8.360 | 8.650>> | 4.005 | 4.296 |
| 82 | 5.234 | 5.175<< | 9.321 | 9.262 |
| 82 | 5.213 | 5.178 | 9.323>> | 9.288 |
| 82 | 8.381 | 8.647 | 4.003<< | 4.269 |
| 82 | 5.202 | 5.189 | 9.312 | 9.299>> |
| 82 | 8.392 | 8.636 | 4.014 | 4.258<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 82 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 82 | 8.395>> | 8.615 | 4.060 | 4.280 |
| 82 | 5.199<< | 5.210 | 9.306 | 9.317 |
| 82 | 8.360 | 8.650>> | 4.025 | 4.315 |
| 82 | 5.234 | 5.175<< | 9.341 | 9.282 |
| 82 | 5.213 | 5.178 | 9.343>> | 9.308 |
| 82 | 8.381 | 8.647 | 4.023<< | 4.289 |
| 82 | 5.202 | 5.189 | 9.332 | 9.319>> |
| 82 | 8.392 | 8.636 | 4.034 | 4.278<< |
| 83 | 9.042>> | 9.297 | 3.008 | 3.263 |
| 83 | 5.345<< | 5.345 | 9.092 | 9.092 |
| 83 | 9.012 | 9.327>> | 2.978 | 3.293 |
| 83 | 5.376 | 5.315<< | 9.122 | 9.062 |
| 83 | 5.359 | 5.318 | 9.123>> | 9.083 |
| 83 | 9.029 | 9.324 | 2.977<< | 3.272 |
| 83 | 5.348 | 5.329 | 9.113 | 9.093>> |
| 83 | 9.039 | 9.313 | 2.987 | 3.262<< |

| BARRA 83 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 83 | 9.041>> | 9.295 | 3.027 | 3.281 |
| 83 | 5.344<< | 5.344 | 9.111 | 9.111 |
| 83 | 9.010 | 9.325>> | 2.997 | 3.312 |
| 83 | 5.374 | 5.314<< | 9.141 | 9.081 |
| 83 | 5.357 | 5.317 | 9.142>> | 9.101 |
| 83 | 9.027 | 9.322 | 2.996<< | 3.291 |
| 83 | 5.347 | 5.327 | 9.132 | 9.112>> |
| 83 | 9.038 | 9.312 | 3.006 | 3.280<< |
| 84 | 9.563>> | 9.845 | 2.178 | 2.460 |
| 84 | 5.484<< | 5.477 | 8.902 | 8.894 |
| 84 | 9.534 | 9.874>> | 2.149 | 2.488 |
| 84 | 5.513 | 5.448<< | 8.931 | 8.865 |
| 84 | 5.498 | 5.451 | 8.931>> | 8.885 |
| 84 | 9.550 | 9.871 | 2.149<< | 2.469 |
| 84 | 5.488 | 5.461 | 8.921 | 8.895>> |
| 84 | 9.560 | 9.861 | 2.159 | 2.459<< |

| BARRA 84 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 84 | 9.561>> | 9.843 | 2.194 | 2.476 |
| 84 | 5.482<< | 5.474 | 8.918 | 8.911 |
| 84 | 9.532 | 9.872>> | 2.165 | 2.505 |
| 84 | 5.511 | 5.445<< | 8.947 | 8.882 |
| 84 | 5.495 | 5.448 | 8.948>> | 8.901 |
| 84 | 9.548 | 9.868 | 2.165<< | 2.486 |
| 84 | 5.485 | 5.458 | 8.938 | 8.911>> |
| 84 | 9.558 | 9.858 | 2.175 | 2.476<< |
| 85 | 9.904>> | 10.206 | 1.633 | 1.935 |
| 85 | 5.620<< | 5.605 | 8.713 | 8.698 |
| 85 | 9.876 | 10.234>> | 1.605 | 1.963 |
| 85 | 5.835 | 5.574<< | 8.693 | 8.431 |
| 85 | 5.647 | 5.577 | 8.741>> | 8.671 |
| 85 | 9.877 | 10.234 | 1.605<< | 1.962 |
| 85 | 5.620 | 5.604 | 8.714 | 8.698>> |
| 85 | 9.904 | 10.207 | 1.632 | 1.935<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 85 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 85 | 9.902>> | 10.204 | 1.646 | 1.948 |
| 85 | 5.617<< | 5.602 | 8.726 | 8.710 |
| 85 | 9.874 | 10.232>> | 1.618 | 1.976 |
| 85 | 5.832 | 5.571<< | 8.705 | 8.443 |
| 85 | 5.644 | 5.574 | 8.754>> | 8.683 |
| 85 | 9.874 | 10.231 | 1.618<< | 1.975 |
| 85 | 5.617 | 5.601 | 8.726 | 8.710>> |
| 85 | 9.901 | 10.204 | 1.645 | 1.948<< |
| 86 | 10.084>> | 10.402 | 1.342 | 1.660 |
| 86 | 5.754<< | 5.731 | 8.522 | 8.500 |
| 86 | 10.057 | 10.428>> | 1.315 | 1.686 |
| 86 | 5.953 | 5.692<< | 8.516 | 8.256 |
| 86 | 5.780 | 5.704 | 8.549>> | 8.474 |
| 86 | 10.058 | 10.428 | 1.315<< | 1.686 |
| 86 | 5.754 | 5.730 | 8.523 | 8.500>> |
| 86 | 10.084 | 10.402 | 1.341 | 1.660<< |

| BARRA 86 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 86 | 10.081>> | 10.399 | 1.349 | 1.667 |
| 86 | 5.751<< | 5.729 | 8.529 | 8.507 |
| 86 | 10.055 | 10.426>> | 1.322 | 1.693 |
| 86 | 5.950 | 5.690<< | 8.523 | 8.263 |
| 86 | 5.778 | 5.702 | 8.556>> | 8.481 |
| 86 | 10.055 | 10.426 | 1.322<< | 1.693 |
| 86 | 5.751 | 5.728 | 8.530 | 8.507>> |
| 86 | 10.081 | 10.400 | 1.348 | 1.667<< |
| 87 | 10.173>> | 10.504 | 1.190 | 1.521 |
| 87 | 5.885<< | 5.855 | 8.330 | 8.300 |
| 87 | 10.147 | 10.530>> | 1.164 | 1.547 |
| 87 | 6.068 | 5.809<< | 8.339 | 8.080 |
| 87 | 5.911 | 5.830 | 8.356>> | 8.275 |
| 87 | 10.147 | 10.530 | 1.164<< | 1.546 |
| 87 | 5.886 | 5.855 | 8.331 | 8.300>> |
| 87 | 10.172 | 10.505 | 1.189 | 1.521<< |

| BARRA 87 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 87 | 10.171>> | 10.502 | 1.192 | 1.524 |
| 87 | 5.884<< | 5.853 | 8.333 | 8.303 |
| 87 | 10.145 | 10.528>> | 1.167 | 1.550 |
| 87 | 6.066 | 5.807<< | 8.342 | 8.083 |
| 87 | 5.909 | 5.828 | 8.359>> | 8.278 |
| 87 | 10.146 | 10.528 | 1.167<< | 1.549 |
| 87 | 5.884 | 5.853 | 8.334 | 8.303>> |
| 87 | 10.171 | 10.503 | 1.192 | 1.524<< |
| 88 | 10.089>> | 10.428 | 1.310 | 1.649 |
| 88 | 5.986<< | 5.969 | 8.157 | 8.140 |
| 88 | 10.065 | 10.453>> | 1.285 | 1.673 |
| 88 | 6.174 | 5.912<< | 8.178 | 7.916 |
| 88 | 6.010 | 5.945 | 8.181>> | 8.115 |
| 88 | 10.065 | 10.453 | 1.285<< | 1.673 |
| 88 | 5.986 | 5.969 | 8.157 | 8.140>> |
| 88 | 10.089 | 10.428 | 1.310 | 1.649<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 88 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 88 | 10.088>> | 10.427 | 1.308 | 1.647 |
| 88 | 5.984<< | 5.968 | 8.154 | 8.138 |
| 88 | 10.063 | 10.451>> | 1.283 | 1.671 |
| 88 | 6.172 | 5.910<< | 8.175 | 7.913 |
| 88 | 6.009 | 5.943 | 8.179>> | 8.113 |
| 88 | 10.063 | 10.451 | 1.283<< | 1.671 |
| 88 | 5.984 | 5.968 | 8.154 | 8.138>> |
| 88 | 10.088 | 10.427 | 1.308 | 1.647<< |
| 89 | 9.918>> | 10.265 | 1.562 | 1.909 |
| 89 | 6.073<< | 6.053 | 8.021 | 8.000 |
| 89 | 9.894 | 10.289>> | 1.538 | 1.932 |
| 89 | 6.222 | 5.991<< | 8.059 | 7.827 |
| 89 | 6.222 | 5.991 | 8.059>> | 7.827 |
| 89 | 9.894 | 10.289 | 1.538<< | 1.932 |
| 89 | 6.073 | 6.053 | 8.021 | 8.000>> |
| 89 | 9.918 | 10.265 | 1.562 | 1.909<< |

| BARRA 89 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 89 | 9.917>> | 10.264 | 1.554 | 1.902 |
| 89 | 6.072<< | 6.051 | 8.014 | 7.993 |
| 89 | 9.893 | 10.288>> | 1.531 | 1.925 |
| 89 | 6.221 | 5.990<< | 8.052 | 7.820 |
| 89 | 6.221 | 5.990 | 8.052>> | 7.820 |
| 89 | 9.893 | 10.288 | 1.531<< | 1.925 |
| 89 | 6.072 | 6.051 | 8.014 | 7.993>> |
| 89 | 9.917 | 10.264 | 1.554 | 1.902<< |
| 90 | 9.587>> | 9.935 | 2.067 | 2.415 |
| 90 | 6.161<< | 6.136 | 7.881 | 7.856 |
| 90 | 9.565 | 9.957>> | 2.045 | 2.438 |
| 90 | 6.294 | 6.066<< | 7.933 | 7.706 |
| 90 | 6.294 | 6.066 | 7.933>> | 7.706 |
| 90 | 9.565 | 9.957 | 2.045<< | 2.438 |
| 90 | 6.161 | 6.136 | 7.881 | 7.856>> |
| 90 | 9.587 | 9.935 | 2.067 | 2.415<< |

| BARRA 90 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 90 | 9.586>> | 9.934 | 2.056 | 2.404 |
| 90 | 6.160<< | 6.135 | 7.870 | 7.845 |
| 90 | 9.563 | 9.956>> | 2.034 | 2.427 |
| 90 | 6.292 | 6.065<< | 7.922 | 7.695 |
| 90 | 6.292 | 6.065 | 7.922>> | 7.695 |
| 90 | 9.563 | 9.956 | 2.034<< | 2.427 |
| 90 | 6.160 | 6.135 | 7.870 | 7.845>> |
| 90 | 9.586 | 9.934 | 2.056 | 2.404<< |
| 91 | 9.076>> | 9.418 | 2.858 | 3.200 |
| 91 | 6.244<< | 6.260 | 7.686 | 7.702 |
| 91 | 9.054 | 9.439>> | 2.837 | 3.221 |
| 91 | 6.363 | 6.141<< | 7.806 | 7.583 |
| 91 | 6.363 | 6.141 | 7.806>> | 7.583 |
| 91 | 9.054 | 9.439 | 2.837<< | 3.221 |
| 91 | 6.247 | 6.218 | 7.739 | 7.710>> |
| 91 | 9.076 | 9.418 | 2.858 | 3.200<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 91 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 91 | 9.076>> | 9.418 | 2.862 | 3.205 |
| 91 | 6.244<< | 6.260 | 7.691 | 7.707 |
| 91 | 9.055 | 9.439>> | 2.841 | 3.226 |
| 91 | 6.363 | 6.141<< | 7.810 | 7.587 |
| 91 | 6.363 | 6.141 | 7.810>> | 7.587 |
| 91 | 9.055 | 9.439 | 2.841<< | 3.226 |
| 91 | 6.247 | 6.218 | 7.744 | 7.714>> |
| 91 | 9.076 | 9.418 | 2.862 | 3.205<< |
| 92 | 8.455>> | 8.704 | 3.948 | 4.197 |
| 92 | 6.176<< | 6.897 | 6.896 | 7.617 |
| 92 | 8.423 | 8.802>> | 3.833 | 4.212 |
| 92 | 6.437 | 6.213<< | 7.697 | 7.474 |
| 92 | 6.432 | 6.214 | 7.697>> | 7.479 |
| 92 | 8.427 | 8.801 | 3.833<< | 4.206 |
| 92 | 6.177 | 6.892 | 6.901 | 7.617>> |
| 92 | 8.448 | 8.781 | 3.853 | 4.186<< |

| BARRA 92 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 92 | 8.459>> | 8.708 | 3.977 | 4.226 |
| 92 | 6.180<< | 6.901 | 6.924 | 7.645 |
| 92 | 8.427 | 8.806>> | 3.861 | 4.240 |
| 92 | 6.441 | 6.217<< | 7.726 | 7.502 |
| 92 | 6.436 | 6.218 | 7.726>> | 7.508 |
| 92 | 8.432 | 8.805 | 3.861<< | 4.234 |
| 92 | 6.181 | 6.896 | 6.930 | 7.645>> |
| 92 | 8.452 | 8.785 | 3.881 | 4.214<< |
| 93 | 7.846>> | 8.054 | 4.985 | 5.193 |
| 93 | 5.883<< | 6.673 | 7.298 | 8.088 |
| 93 | 7.748 | 8.117>> | 4.931 | 5.300 |
| 93 | 6.512 | 6.078<< | 7.884 | 7.449 |
| 93 | 6.478 | 6.081 | 7.889>> | 7.492 |
| 93 | 7.748 | 8.117 | 4.931<< | 5.300 |
| 93 | 5.883 | 6.673 | 7.298 | 8.088>> |
| 93 | 7.846 | 8.054 | 4.985 | 5.193<< |

| BARRA 93 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 93 | 7.853>> | 8.061 | 5.007 | 5.215 |
| 93 | 5.891<< | 6.680 | 7.320 | 8.110 |
| 93 | 7.756 | 8.124>> | 4.953 | 5.322 |
| 93 | 6.520 | 6.085<< | 7.906 | 7.471 |
| 93 | 6.485 | 6.088 | 7.911>> | 7.514 |
| 93 | 7.756 | 8.124 | 4.953<< | 5.322 |
| 93 | 5.891 | 6.680 | 7.320 | 8.110>> |
| 93 | 7.853 | 8.061 | 5.007 | 5.215<< |
| 94 | 7.635>> | 7.295 | 6.047 | 5.708 |
| 94 | 5.189<< | 5.724 | 8.739 | 9.274 |
| 94 | 7.443 | 7.737>> | 5.536 | 5.830 |
| 94 | 5.978 | 5.538<< | 8.757 | 8.316 |
| 94 | 5.442 | 5.571 | 8.864>> | 8.993 |
| 94 | 7.451 | 7.736 | 5.535<< | 5.819 |
| 94 | 5.190 | 5.716 | 8.749 | 9.275>> |
| 94 | 7.634 | 7.303 | 6.037 | 5.706<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 94 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 94 | 7.645>> | 7.305 | 6.060 | 5.721 |
| 94 | 5.199<< | 5.734 | 8.752 | 9.287 |
| 94 | 7.453 | 7.747>> | 5.549 | 5.843 |
| 94 | 5.988 | 5.548<< | 8.770 | 8.329 |
| 94 | 5.452 | 5.581 | 8.878>> | 9.006 |
| 94 | 7.461 | 7.746 | 5.548<< | 5.833 |
| 94 | 5.199 | 5.726 | 8.762 | 9.289>> |
| 94 | 7.644 | 7.313 | 6.050 | 5.719<< |
| 95 | 7.560>> | 7.257 | 6.146 | 5.842 |
| 95 | 4.288<< | 4.812 | 10.185 | 10.709 |
| 95 | 7.117 | 7.517>> | 5.937 | 6.337 |
| 95 | 4.581 | 4.706<< | 10.239 | 10.363 |
| 95 | 4.581 | 4.706 | 10.239>> | 10.364 |
| 95 | 7.463 | 7.488 | 5.877<< | 5.903 |
| 95 | 4.288 | 4.812 | 10.185 | 10.709>> |
| 95 | 7.549 | 7.344 | 6.037 | 5.833<< |

| BARRA 95 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 95 | 7.184>> | 6.912 | 5.618 | 5.346 |
| 95 | 4.153<< | 4.592 | 8.715 | 9.154 |
| 95 | 6.819 | 7.122>> | 5.449 | 5.752 |
| 95 | 4.416 | 4.503<< | 8.778 | 8.865 |
| 95 | 4.416 | 4.503 | 8.778>> | 8.865 |
| 95 | 7.105 | 7.119 | 5.395<< | 5.409 |
| 95 | 4.153 | 4.591 | 8.715 | 9.154>> |
| 95 | 7.184 | 6.912 | 5.618 | 5.346<< |
| 96 | 8.644>> | 8.420 | 3.729 | 3.505 |
| 96 | 4.563<< | 4.969 | 8.255 | 8.661 |
| 96 | 8.551 | 8.555>> | 3.594 | 3.599 |
| 96 | 4.837 | 4.946<< | 8.243 | 8.352 |
| 96 | 4.577 | 4.955 | 8.269>> | 8.648 |
| 96 | 8.551 | 8.555 | 3.594<< | 3.599 |
| 96 | 4.563 | 4.969 | 8.255 | 8.661>> |
| 96 | 8.644 | 8.420 | 3.729 | 3.505<< |

| BARRA 96 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 96 | 8.863>> | 8.646 | 3.737 | 3.521 |
| 96 | 4.737<< | 5.164 | 8.219 | 8.646 |
| 96 | 8.765 | 8.781>> | 3.598 | 3.614 |
| 96 | 5.008 | 5.146<< | 8.203 | 8.342 |
| 96 | 4.751 | 5.150 | 8.233>> | 8.632 |
| 96 | 8.765 | 8.781 | 3.598<< | 3.614 |
| 96 | 4.737 | 5.164 | 8.219 | 8.646>> |
| 96 | 8.863 | 8.646 | 3.737 | 3.521<< |
| 97 | 8.154>> | 8.037 | 4.520 | 4.402 |
| 97 | 2.735<< | 3.151 | 10.759 | 11.176 |
| 97 | 8.142 | 8.050>> | 4.507 | 4.415 |
| 97 | 2.748 | 3.139<< | 10.772 | 11.163 |
| 97 | 2.748 | 3.139 | 10.772>> | 11.163 |
| 97 | 8.142 | 8.050 | 4.507<< | 4.415 |
| 97 | 2.735 | 3.151 | 10.759 | 11.176>> |
| 97 | 8.154 | 8.037 | 4.520 | 4.402<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 97 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 97 | 8.229>> | 8.111 | 4.498 | 4.381 |
| 97 | 2.809<< | 3.226 | 10.738 | 11.154 |
| 97 | 8.216 | 8.124>> | 4.486 | 4.394 |
| 97 | 2.822 | 3.213<< | 10.751 | 11.142 |
| 97 | 2.822 | 3.213 | 10.751>> | 11.142 |
| 97 | 8.216 | 8.124 | 4.486<< | 4.394 |
| 97 | 2.809 | 3.226 | 10.738 | 11.154>> |
| 97 | 8.229 | 8.111 | 4.498 | 4.381<< |
| 98 | 8.830>> | 8.691 | 3.764 | 3.624 |
| 98 | 4.534<< | 4.975 | 8.532 | 8.973 |
| 98 | 8.721 | 8.759>> | 3.701 | 3.738 |
| 98 | 4.576 | 4.933<< | 8.574 | 8.931 |
| 98 | 4.549 | 4.936 | 8.574>> | 8.962 |
| 98 | 8.749 | 8.756 | 3.700<< | 3.708 |
| 98 | 4.537 | 4.948 | 8.562 | 8.974>> |
| 98 | 8.828 | 8.718 | 3.734 | 3.624<< |

| BARRA 98 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 98 | 8.729>> | 8.594 | 3.717 | 3.582 |
| 98 | 4.473<< | 4.903 | 8.527 | 8.957 |
| 98 | 8.631 | 8.656>> | 3.666 | 3.691 |
| 98 | 4.512 | 4.865<< | 8.565 | 8.919 |
| 98 | 4.487 | 4.867 | 8.568>> | 8.948 |
| 98 | 8.656 | 8.654 | 3.663<< | 3.662 |
| 98 | 4.475 | 4.879 | 8.556 | 8.960>> |
| 98 | 8.727 | 8.619 | 3.689 | 3.580<< |
| 99 | 7.181>> | 7.043 | 5.665 | 5.526 |
| 99 | 3.813<< | 4.310 | 9.250 | 9.746 |
| 99 | 7.132 | 7.143>> | 5.558 | 5.570 |
| 99 | 4.019 | 4.105<< | 9.454 | 9.540 |
| 99 | 4.019 | 4.105 | 9.454>> | 9.540 |
| 99 | 7.132 | 7.143 | 5.558<< | 5.570 |
| 99 | 3.813 | 4.310 | 9.250 | 9.746>> |
| 99 | 7.181 | 7.043 | 5.665 | 5.526<< |

| BARRA 99 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 99 | 7.890>> | 7.630 | 6.074 | 5.814 |
| 99 | 4.267<< | 4.860 | 10.627 | 11.220 |
| 99 | 7.825 | 7.841>> | 5.822 | 5.838 |
| 99 | 4.529 | 4.599<< | 10.887 | 10.958 |
| 99 | 4.529 | 4.599 | 10.887>> | 10.958 |
| 99 | 7.825 | 7.841 | 5.822<< | 5.838 |
| 99 | 4.267 | 4.860 | 10.627 | 11.220>> |
| 99 | 7.888 | 7.725 | 5.953 | 5.790<< |
| 100 | 7.882>> | 7.642 | 6.061 | 5.821 |
| 100 | 4.886<< | 5.131 | 10.107 | 10.352 |
| 100 | 7.836 | 7.852>> | 5.806 | 5.821 |
| 100 | 4.927 | 5.091<< | 10.148 | 10.312 |
| 100 | 4.898 | 5.091 | 10.156>> | 10.348 |
| 100 | 7.865 | 7.851 | 5.798<< | 5.785 |
| 100 | 4.887 | 5.103 | 10.144 | 10.360>> |
| 100 | 7.876 | 7.840 | 5.810 | 5.773<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 100 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 100 | 7.909>> | 7.669 | 6.096 | 5.856 |
| 100 | 4.914<< | 5.159 | 10.143 | 10.387 |
| 100 | 7.863 | 7.879>> | 5.841 | 5.856 |
| 100 | 4.954 | 5.118<< | 10.183 | 10.347 |
| 100 | 4.926 | 5.118 | 10.191>> | 10.383 |
| 100 | 7.892 | 7.879 | 5.833<< | 5.820 |
| 100 | 4.914 | 5.130 | 10.179 | 10.395>> |
| 100 | 7.904 | 7.867 | 5.845 | 5.808<< |
| 101 | 7.942>> | 7.816 | 5.900 | 5.774 |
| 101 | 5.340<< | 5.539 | 9.537 | 9.736 |
| 101 | 7.510 | 7.952>> | 5.846 | 6.289 |
| 101 | 5.351 | 5.528<< | 9.548 | 9.725 |
| 101 | 5.351 | 5.528 | 9.548>> | 9.725 |
| 101 | 7.930 | 7.908 | 5.786<< | 5.764 |
| 101 | 5.340 | 5.539 | 9.537 | 9.736>> |
| 101 | 7.940 | 7.897 | 5.796 | 5.753<< |

| BARRA 101 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 101 | 7.967>> | 7.841 | 5.952 | 5.826 |
| 101 | 5.365<< | 5.564 | 9.589 | 9.788 |
| 101 | 7.535 | 7.977>> | 5.898 | 6.341 |
| 101 | 5.376 | 5.553<< | 9.600 | 9.777 |
| 101 | 5.376 | 5.553 | 9.600>> | 9.777 |
| 101 | 7.955 | 7.933 | 5.838<< | 5.816 |
| 101 | 5.365 | 5.564 | 9.589 | 9.788>> |
| 101 | 7.965 | 7.922 | 5.848 | 5.805<< |
| 102 | 8.337>> | 8.105 | 5.511 | 5.279 |
| 102 | 5.573<< | 5.740 | 9.306 | 9.474 |
| 102 | 8.039 | 8.474>> | 5.123 | 5.557 |
| 102 | 5.583 | 5.730<< | 9.316 | 9.464 |
| 102 | 5.583 | 5.730 | 9.316>> | 9.464 |
| 102 | 8.039 | 8.474 | 5.123<< | 5.557 |
| 102 | 5.573 | 5.740 | 9.306 | 9.474>> |
| 102 | 8.336 | 8.179 | 5.417 | 5.260<< |

| BARRA 102 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 102 | 8.354>> | 8.122 | 5.573 | 5.340 |
| 102 | 5.590<< | 5.757 | 9.368 | 9.535 |
| 102 | 8.056 | 8.490>> | 5.184 | 5.619 |
| 102 | 5.600 | 5.747<< | 9.378 | 9.525 |
| 102 | 5.600 | 5.747 | 9.378>> | 9.525 |
| 102 | 8.056 | 8.490 | 5.184<< | 5.619 |
| 102 | 5.590 | 5.757 | 9.368 | 9.535>> |
| 102 | 8.353 | 8.196 | 5.478 | 5.321<< |
| 103 | 8.792>> | 8.596 | 4.843 | 4.648 |
| 103 | 5.761<< | 5.912 | 9.121 | 9.273 |
| 103 | 8.768 | 9.059>> | 4.259 | 4.550 |
| 103 | 5.770 | 5.903<< | 9.130 | 9.264 |
| 103 | 5.770 | 5.903 | 9.130>> | 9.264 |
| 103 | 8.768 | 9.059 | 4.259<< | 4.550 |
| 103 | 5.761 | 5.912 | 9.121 | 9.273>> |
| 103 | 8.777 | 9.050 | 4.268 | 4.541<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 103 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 103 | 8.802>> | 8.607 | 4.910 | 4.715 |
| 103 | 5.772<< | 5.923 | 9.188 | 9.339 |
| 103 | 8.778 | 9.069>> | 4.326 | 4.616 |
| 103 | 5.780 | 5.914<< | 9.197 | 9.330 |
| 103 | 5.780 | 5.914 | 9.197>> | 9.330 |
| 103 | 8.778 | 9.069 | 4.326<< | 4.616 |
| 103 | 5.772 | 5.923 | 9.188 | 9.339>> |
| 103 | 8.787 | 9.060 | 4.334 | 4.608<< |
| 104 | 9.288>> | 9.554 | 3.564 | 3.830 |
| 104 | 5.947<< | 6.083 | 8.935 | 9.071 |
| 104 | 9.280 | 9.562>> | 3.556 | 3.838 |
| 104 | 5.955 | 6.075<< | 8.943 | 9.063 |
| 104 | 5.955 | 6.075 | 8.943>> | 9.063 |
| 104 | 9.280 | 9.562 | 3.556<< | 3.838 |
| 104 | 5.947 | 6.083 | 8.935 | 9.071>> |
| 104 | 9.288 | 9.554 | 3.564 | 3.830<< |

| BARRA 104 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 104 | 9.292>> | 9.558 | 3.614 | 3.880 |
| 104 | 5.952<< | 6.087 | 8.984 | 9.120 |
| 104 | 9.284 | 9.567>> | 3.606 | 3.888 |
| 104 | 5.960 | 6.079<< | 8.993 | 9.112 |
| 104 | 5.960 | 6.079 | 8.993>> | 9.112 |
| 104 | 9.284 | 9.567 | 3.606<< | 3.888 |
| 104 | 5.952 | 6.087 | 8.984 | 9.120>> |
| 104 | 9.292 | 9.558 | 3.614 | 3.880<< |
| 105 | 9.628>> | 9.881 | 3.108 | 3.361 |
| 105 | 6.135<< | 6.255 | 8.718 | 8.839 |
| 105 | 9.620 | 9.888>> | 3.101 | 3.368 |
| 105 | 6.142 | 6.248<< | 8.726 | 8.832 |
| 105 | 6.142 | 6.248 | 8.726>> | 8.832 |
| 105 | 9.620 | 9.888 | 3.101<< | 3.368 |
| 105 | 6.135 | 6.255 | 8.718 | 8.839>> |
| 105 | 9.628 | 9.881 | 3.108 | 3.361<< |

| BARRA 105 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 105 | 9.631>> | 9.884 | 3.071 | 3.324 |
| 105 | 6.138<< | 6.259 | 8.681 | 8.801 |
| 105 | 9.624 | 9.891>> | 3.063 | 3.331 |
| 105 | 6.145 | 6.251<< | 8.688 | 8.794 |
| 105 | 6.145 | 6.251 | 8.688>> | 8.794 |
| 105 | 9.624 | 9.891 | 3.063<< | 3.331 |
| 105 | 6.138 | 6.259 | 8.681 | 8.801>> |
| 105 | 9.631 | 9.884 | 3.071 | 3.324<< |
| 106 | 9.836>> | 10.066 | 2.780 | 3.010 |
| 106 | 6.334<< | 6.439 | 8.396 | 8.501 |
| 106 | 9.830 | 10.072>> | 2.774 | 3.016 |
| 106 | 6.340 | 6.432<< | 8.402 | 8.494 |
| 106 | 6.340 | 6.432 | 8.402>> | 8.494 |
| 106 | 9.830 | 10.072 | 2.774<< | 3.016 |
| 106 | 6.334 | 6.439 | 8.396 | 8.501>> |
| 106 | 9.836 | 10.066 | 2.780 | 3.010<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 106 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 106 | 9.836>> | 10.066 | 2.744 | 2.973 |
| 106 | 6.334<< | 6.439 | 8.359 | 8.464 |
| 106 | 9.830 | 10.072>> | 2.737 | 2.979 |
| 106 | 6.340 | 6.432<< | 8.366 | 8.458 |
| 106 | 6.340 | 6.432 | 8.366>> | 8.458 |
| 106 | 9.830 | 10.072 | 2.737<< | 2.979 |
| 106 | 6.334 | 6.439 | 8.359 | 8.464>> |
| 106 | 9.836 | 10.066 | 2.744 | 2.973<< |
| 107 | 9.852>> | 10.060 | 2.747 | 2.955 |
| 107 | 6.480<< | 6.569 | 8.152 | 8.241 |
| 107 | 9.847 | 10.065>> | 2.742 | 2.961 |
| 107 | 6.485 | 6.564<< | 8.157 | 8.235 |
| 107 | 6.485 | 6.564 | 8.157>> | 8.235 |
| 107 | 9.847 | 10.065 | 2.742<< | 2.961 |
| 107 | 6.480 | 6.569 | 8.152 | 8.241>> |
| 107 | 9.852 | 10.060 | 2.747 | 2.955<< |

| BARRA 107 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 107 | 9.848>> | 10.056 | 2.716 | 2.924 |
| 107 | 6.476<< | 6.565 | 8.120 | 8.209 |
| 107 | 9.843 | 10.061>> | 2.711 | 2.929 |
| 107 | 6.482 | 6.560<< | 8.125 | 8.204 |
| 107 | 6.482 | 6.560 | 8.125>> | 8.204 |
| 107 | 9.843 | 10.061 | 2.711<< | 2.929 |
| 107 | 6.476 | 6.565 | 8.120 | 8.209>> |
| 107 | 9.848 | 10.056 | 2.716 | 2.924<< |
| 108 | 9.581>> | 9.761 | 3.168 | 3.348 |
| 108 | 6.513<< | 6.586 | 8.083 | 8.157 |
| 108 | 9.576 | 9.765>> | 3.164 | 3.352 |
| 108 | 6.517 | 6.582<< | 8.088 | 8.153 |
| 108 | 6.517 | 6.582 | 8.088>> | 8.153 |
| 108 | 9.576 | 9.765 | 3.164<< | 3.352 |
| 108 | 6.513 | 6.586 | 8.083 | 8.157>> |
| 108 | 9.581 | 9.761 | 3.168 | 3.348<< |

| BARRA 108 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 108 | 9.576>> | 9.756 | 3.137 | 3.317 |
| 108 | 6.508<< | 6.582 | 8.052 | 8.125 |
| 108 | 9.572 | 9.760>> | 3.132 | 3.321 |
| 108 | 6.513 | 6.577<< | 8.056 | 8.121 |
| 108 | 6.513 | 6.577 | 8.056>> | 8.121 |
| 108 | 9.572 | 9.760 | 3.132<< | 3.321 |
| 108 | 6.508 | 6.582 | 8.052 | 8.125>> |
| 108 | 9.576 | 9.756 | 3.137 | 3.317<< |
| 109 | 9.061>> | 9.209 | 3.980 | 4.128 |
| 109 | 6.435<< | 6.493 | 8.186 | 8.243 |
| 109 | 9.058 | 9.212>> | 3.977 | 4.131 |
| 109 | 6.439 | 6.490<< | 8.189 | 8.240 |
| 109 | 6.439 | 6.490 | 8.189>> | 8.240 |
| 109 | 9.058 | 9.212 | 3.977<< | 4.131 |
| 109 | 6.435 | 6.493 | 8.186 | 8.243>> |
| 109 | 9.061 | 9.209 | 3.980 | 4.128<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 109 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 109 | 9.056>> | 9.203 | 3.950 | 4.097 |
| 109 | 6.430<< | 6.488 | 8.155 | 8.213 |
| 109 | 9.053 | 9.207>> | 3.946 | 4.100 |
| 109 | 6.433 | 6.484<< | 8.158 | 8.209 |
| 109 | 6.433 | 6.484 | 8.158>> | 8.209 |
| 109 | 9.053 | 9.207 | 3.946<< | 4.100 |
| 109 | 6.430 | 6.488 | 8.155 | 8.213>> |
| 109 | 9.056 | 9.203 | 3.950 | 4.097<< |
| 110 | 8.317>> | 8.429 | 5.146 | 5.258 |
| 110 | 6.246<< | 6.288 | 8.462 | 8.504 |
| 110 | 8.315 | 8.431>> | 5.144 | 5.260 |
| 110 | 6.248 | 6.285<< | 8.464 | 8.502 |
| 110 | 6.248 | 6.285 | 8.464>> | 8.502 |
| 110 | 8.315 | 8.431 | 5.144<< | 5.260 |
| 110 | 6.246 | 6.288 | 8.462 | 8.504>> |
| 110 | 8.317 | 8.429 | 5.146 | 5.258<< |

| BARRA 110 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 110 | 8.310>> | 8.422 | 5.116 | 5.228 |
| 110 | 6.239<< | 6.281 | 8.432 | 8.474 |
| 110 | 8.308 | 8.425>> | 5.114 | 5.230 |
| 110 | 6.241 | 6.279<< | 8.434 | 8.471 |
| 110 | 6.241 | 6.279 | 8.434>> | 8.471 |
| 110 | 8.308 | 8.425 | 5.114<< | 5.230 |
| 110 | 6.239 | 6.281 | 8.432 | 8.474>> |
| 110 | 8.310 | 8.422 | 5.116 | 5.228<< |
| 111 | 7.383>> | 7.452 | 6.616 | 6.685 |
| 111 | 5.943<< | 5.970 | 8.913 | 8.939 |
| 111 | 7.381 | 7.453>> | 6.614 | 6.686 |
| 111 | 5.945 | 5.968<< | 8.914 | 8.938 |
| 111 | 5.945 | 5.968 | 8.914>> | 8.938 |
| 111 | 7.381 | 7.453 | 6.614<< | 6.686 |
| 111 | 5.943 | 5.970 | 8.913 | 8.939>> |
| 111 | 7.383 | 7.452 | 6.616 | 6.685<< |

| BARRA 111 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 111 | 7.374>> | 7.443 | 6.588 | 6.657 |
| 111 | 5.934<< | 5.961 | 8.885 | 8.911 |
| 111 | 7.372 | 7.445>> | 6.586 | 6.659 |
| 111 | 5.936 | 5.959<< | 8.886 | 8.910 |
| 111 | 5.936 | 5.959 | 8.886>> | 8.910 |
| 111 | 7.372 | 7.445 | 6.586<< | 6.659 |
| 111 | 5.934 | 5.961 | 8.885 | 8.911>> |
| 111 | 7.374 | 7.443 | 6.588 | 6.657<< |
| 112 | 6.191>> | 6.220 | 8.482 | 8.511 |
| 112 | 5.527<< | 5.538 | 9.539 | 9.550 |
| 112 | 6.190 | 6.220>> | 8.482 | 8.511 |
| 112 | 5.527 | 5.537<< | 9.540 | 9.550 |
| 112 | 5.527 | 5.537 | 9.540>> | 9.550 |
| 112 | 6.190 | 6.220 | 8.482<< | 8.511 |
| 112 | 5.527 | 5.538 | 9.539 | 9.550>> |
| 112 | 6.191 | 6.220 | 8.482 | 8.511<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 112 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 112 | 4.667>> | 4.653 | 6.579 | 6.566 |
| 112 | 3.986<< | 3.986 | 7.341 | 7.341 |
| 112 | 4.650 | 4.654>> | 6.579 | 6.583 |
| 112 | 3.986 | 3.985<< | 7.341 | 7.340 |
| 112 | 3.986 | 3.985 | 7.341>> | 7.340 |
| 112 | 4.666 | 4.654 | 6.578<< | 6.566 |
| 112 | 3.986 | 3.986 | 7.341 | 7.341>> |
| 112 | 4.667 | 4.653 | 6.579 | 6.566<< |
| 113 | 4.683>> | 4.578 | 6.658 | 6.553 |
| 113 | 4.589<< | 4.646 | 6.564 | 6.621 |
| 113 | 4.602 | 4.658>> | 6.578 | 6.633 |
| 113 | 4.669 | 4.568<< | 6.644 | 6.544 |
| 113 | 4.683 | 4.578 | 6.658>> | 6.553 |
| 113 | 4.589 | 4.646 | 6.564<< | 6.621 |
| 113 | 4.602 | 4.658 | 6.578 | 6.633>> |
| 113 | 4.669 | 4.568 | 6.644 | 6.544<< |

TITULO
=======
LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

FICHERO DE GEOMETRIA COMPLETA
==============================
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
================================
1

| Fich | Num. Nudos | Num. barras | Num. hipotesis | NOMBRE FICHERO |
|---|---|---|---|---|
| 1 | 120 | 119 | 161 | ESFec.TXT |

| Fich | Hipotesis | Caracter | Coeficiente |
|---|---|---|---|
| 1 | 1 | 1 | 1.0 |
| 1 | 2 | 1 | 1.0 |
| 1 | 3 | 1 | 1.0 |
| 1 | 4 | 3 | 1.0 |
| 1 | 5 | 3 | 1.0 |
| 1 | 6 | 3 | 1.0 |
| 1 | 7 | 2 | 0.5 |
| 1 | 8 | 2 | 0.5 |
| 1 | 9 | 2 | 0.5 |
| 1 | 10 | 2 | 0.5 |
| 1 | 11 | 2 | 0.5 |
| 1 | 12 | 2 | 0.5 |
| 1 | 13 | 2 | 0.5 |
| 1 | 14 | 2 | 0.5 |
| 1 | 15 | 2 | 0.5 |
| 1 | 16 | 2 | 0.5 |
| 1 | 17 | 2 | 0.5 |
| 1 | 18 | 2 | 0.5 |
| 1 | 19 | 4 | 0.0 |
| 1 | 20 | 5 | 0.8 |
| 1 | 21 | 4 | 0.0 |
| 1 | 22 | 5 | 0.8 |
| 1 | 23 | 4 | 0.0 |
| 1 | 24 | 5 | 0.8 |
| 1 | 25 | 4 | 0.0 |
| 1 | 26 | 5 | 0.8 |
| 1 | 27 | 4 | 0.0 |
| 1 | 28 | 5 | 0.8 |
| 1 | 29 | 4 | 0.0 |
| 1 | 30 | 5 | 0.8 |
| 1 | 31 | 4 | 0.0 |
| 1 | 32 | 5 | 0.8 |
| 1 | 33 | 4 | 0.0 |
| 1 | 34 | 5 | 0.8 |
| 1 | 35 | 4 | 0.0 |
| 1 | 36 | 5 | 0.8 |
| 1 | 37 | 4 | 0.0 |
| 1 | 38 | 5 | 0.8 |
| 1 | 39 | 4 | 0.0 |
| 1 | 40 | 5 | 0.8 |
| 1 | 41 | 6 | 0.0 |
| 1 | 42 | 7 | 0.8 |
| 1 | 43 | 6 | 0.0 |
| 1 | 44 | 7 | 0.8 |
| 1 | 45 | 6 | 0.0 |
| 1 | 46 | 7 | 0.8 |
| 1 | 47 | 6 | 0.0 |
| 1 | 48 | 7 | 0.8 |
| 1 | 49 | 6 | 0.0 |
| 1 | 50 | 7 | 0.8 |
| 1 | 51 | 6 | 0.0 |
| 1 | 52 | 7 | 0.8 |
| 1 | 53 | 6 | 0.0 |
| 1 | 54 | 7 | 0.8 |
| 1 | 55 | 6 | 0.0 |
| 1 | 56 | 7 | 0.8 |
| 1 | 57 | 6 | 0.0 |
| 1 | 58 | 7 | 0.8 |
| 1 | 59 | 6 | 0.0 |
| 1 | 60 | 7 | 0.8 |
| 1 | 61 | 6 | 0.0 |
| 1 | 62 | 7 | 0.8 |
| 1 | 63 | 6 | 0.0 |
| 1 | 64 | 7 | 0.8 |
| 1 | 65 | 6 | 0.0 |
| 1 | 66 | 7 | 0.8 |
| 1 | 67 | 6 | 0.0 |
| 1 | 68 | 7 | 0.8 |
| 1 | 69 | 6 | 0.0 |
| 1 | 70 | 7 | 0.8 |
| 1 | 71 | 6 | 0.0 |
| 1 | 72 | 7 | 0.8 |
| 1 | 73 | 6 | 0.0 |
| 1 | 74 | 7 | 0.8 |
| 1 | 75 | 6 | 0.0 |
| 1 | 76 | 7 | 0.8 |
| 1 | 77 | 6 | 0.0 |
| 1 | 78 | 7 | 0.8 |
| 1 | 79 | 6 | 0.0 |
| 1 | 80 | 7 | 0.8 |
| 1 | 81 | 6 | 0.0 |
| 1 | 82 | 7 | 0.8 |
| 1 | 83 | 6 | 0.0 |
| 1 | 84 | 7 | 0.8 |
| 1 | 85 | 6 | 0.0 |
| 1 | 86 | 7 | 0.8 |
| 1 | 87 | 6 | 0.0 |
| 1 | 88 | 7 | 0.8 |
| 1 | 89 | 6 | 0.0 |
| 1 | 90 | 7 | 0.8 |
| 1 | 91 | 6 | 0.0 |
| 1 | 92 | 7 | 0.8 |
| 1 | 93 | 6 | 0.0 |
| 1 | 94 | 7 | 0.8 |
| 1 | 95 | 6 | 0.0 |
| 1 | 96 | 7 | 0.8 |
| 1 | 97 | 8 | 0.8 |
| 1 | 98 | 9 | 0.0 |
| 1 | 99 | 8 | 0.8 |
| 1 | 100 | 9 | 0.0 |
| 1 | 101 | 8 | 0.8 |
| 1 | 102 | 9 | 0.0 |
| 1 | 103 | 8 | 0.8 |
| 1 | 104 | 9 | 0.0 |
| 1 | 105 | 8 | 0.8 |
| 1 | 106 | 9 | 0.0 |
| 1 | 107 | 8 | 0.8 |
| 1 | 108 | 9 | 0.0 |
| 1 | 109 | 8 | 0.8 |
| 1 | 110 | 9 | 0.0 |

| | | | |
|---|---|---|---|
| 1 | 111 | 8 | 0.8 |
| 1 | 112 | 9 | 0.0 |
| 1 | 113 | 8 | 0.8 |
| 1 | 114 | 9 | 0.0 |
| 1 | 115 | 8 | 0.8 |
| 1 | 116 | 9 | 0.0 |
| 1 | 117 | 8 | 0.8 |
| 1 | 118 | 9 | 0.0 |
| 1 | 119 | 8 | 0.8 |
| 1 | 120 | 10 | 0.0 |
| 1 | 121 | 8 | 0.8 |
| 1 | 122 | 10 | 0.0 |
| 1 | 123 | 8 | 0.8 |
| 1 | 124 | 10 | 0.0 |
| 1 | 125 | 8 | 0.8 |
| 1 | 126 | 10 | 0.0 |
| 1 | 127 | 8 | 0.8 |
| 1 | 128 | 10 | 0.0 |
| 1 | 129 | 8 | 0.8 |
| 1 | 130 | 10 | 0.0 |
| 1 | 131 | 8 | 0.8 |
| 1 | 132 | 10 | 0.0 |
| 1 | 133 | 8 | 0.8 |
| 1 | 134 | 10 | 0.0 |
| 1 | 135 | 8 | 0.8 |
| 1 | 136 | 10 | 0.0 |
| 1 | 137 | 8 | 0.8 |
| 1 | 138 | 10 | 0.0 |
| 1 | 139 | 8 | 0.8 |
| 1 | 140 | 10 | 0.0 |
| 1 | 141 | 2 | 0.5 |
| 1 | 142 | 1 | 22.309 |
| 1 | 143 | 1 | 3.187 |
| 1 | 144 | 1 | 3.187 |
| 1 | 145 | 1 | 12.748 |
| 1 | 146 | 1 | 3.187 |
| 1 | 147 | 1 | 3.187 |
| 1 | 148 | 1 | 7.430 |
| 1 | 149 | 1 | 7.430 |
| 1 | 150 | 1 | 7.430 |
| 1 | 151 | 1 | 7.430 |
| 1 | 152 | 1 | 7.430 |
| 1 | 153 | 1 | 7.430 |
| 1 | 154 | 1 | 7.430 |
| 1 | 155 | 1 | 7.430 |
| 1 | 156 | 1 | 7.430 |
| 1 | 157 | 1 | 7.430 |
| 1 | 158 | 1 | 7.430 |
| 1 | 159 | 1 | 7.430 |
| 1 | 160 | 1 | 7.430 |
| 1 | 161 | 1 | 7.430 |

PONDERACION DE TENSIONES

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 1 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 1 | 6.828>> | 6.734 | 6.250 | 6.157 |
| 1 | 6.736<< | 6.798 | 6.159 | 6.221 |
| 1 | 6.749 | 6.808>> | 6.172 | 6.230 |
| 1 | 6.804 | 6.722<< | 6.227 | 6.144 |
| 1 | 6.828 | 6.734 | 6.250>> | 6.157 |
| 1 | 6.736 | 6.798 | 6.159<< | 6.221 |
| 1 | 6.749 | 6.808 | 6.172 | 6.230>> |
| 1 | 6.804 | 6.722 | 6.227 | 6.144<< |
| 2 | 6.573>> | 6.559 | 6.491 | 6.477 |
| 2 | 5.822<< | 5.820 | 7.332 | 7.330 |
| 2 | 6.572 | 6.561>> | 6.490 | 6.479 |
| 2 | 5.824 | 5.818<< | 7.334 | 7.328 |
| 2 | 5.823 | 5.818 | 7.334>> | 7.329 |
| 2 | 6.573 | 6.561 | 6.490<< | 6.477 |
| 2 | 5.822 | 5.819 | 7.333 | 7.330>> |
| 2 | 6.573 | 6.560 | 6.490 | 6.477<< |

| BARRA 2 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 2 | 8.466>> | 8.490 | 8.379 | 8.404 |
| 2 | 7.732<< | 7.736 | 9.548 | 9.552 |
| 2 | 8.465 | 8.491>> | 8.379 | 8.404 |
| 2 | 7.733 | 7.736<< | 9.549 | 9.551 |
| 2 | 7.733 | 7.736 | 9.549>> | 9.551 |
| 2 | 8.465 | 8.491 | 8.379<< | 8.404 |
| 2 | 7.732 | 7.736 | 9.548 | 9.552>> |
| 2 | 8.466 | 8.490 | 8.379 | 8.404<< |
| 3 | 9.616>> | 9.667 | 6.554 | 6.605 |
| 3 | 7.989<< | 7.999 | 9.141 | 9.151 |
| 3 | 9.614 | 9.668>> | 6.552 | 6.607 |
| 3 | 7.990 | 7.997<< | 9.143 | 9.150 |
| 3 | 7.990 | 7.997 | 9.143>> | 9.150 |
| 3 | 9.614 | 9.668 | 6.552<< | 6.607 |
| 3 | 7.989 | 7.999 | 9.141 | 9.151>> |
| 3 | 9.616 | 9.667 | 6.554 | 6.605<< |

| BARRA 3 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 3 | 9.628>> | 9.679 | 6.589 | 6.640 |
| 3 | 8.001<< | 8.011 | 9.176 | 9.186 |
| 3 | 9.626 | 9.681>> | 6.587 | 6.642 |
| 3 | 8.003 | 8.010<< | 9.177 | 9.184 |
| 3 | 8.003 | 8.010 | 9.177>> | 9.184 |
| 3 | 9.626 | 9.681 | 6.587<< | 6.642 |
| 3 | 8.001 | 8.011 | 9.176 | 9.186>> |
| 3 | 9.628 | 9.679 | 6.589 | 6.640<< |
| 4 | 10.588>> | 10.656 | 5.072 | 5.140 |
| 4 | 8.186<< | 8.202 | 8.880 | 8.896 |
| 4 | 10.586 | 10.658>> | 5.070 | 5.142 |
| 4 | 8.188 | 8.199<< | 8.883 | 8.894 |
| 4 | 8.188 | 8.199 | 8.883>> | 8.894 |
| 4 | 10.586 | 10.658 | 5.070<< | 5.142 |
| 4 | 8.186 | 8.202 | 8.880 | 8.896>> |
| 4 | 10.588 | 10.656 | 5.072 | 5.140<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 4 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 4 | 10.598>> | 10.666 | 5.110 | 5.178 |
| 4 | 8.196<< | 8.212 | 8.919 | 8.934 |
| 4 | 10.596 | 10.668>> | 5.108 | 5.180 |
| 4 | 8.198 | 8.209<< | 8.921 | 8.932 |
| 4 | 8.198 | 8.209 | 8.921>> | 8.932 |
| 4 | 10.596 | 10.668 | 5.108<< | 5.180 |
| 4 | 8.196 | 8.212 | 8.919 | 8.934>> |
| 4 | 10.598 | 10.666 | 5.110 | 5.178<< |
| 5 | 11.371>> | 11.459 | 3.881 | 3.969 |
| 5 | 8.313<< | 8.335 | 8.728 | 8.750 |
| 5 | 11.368 | 11.462>> | 3.878 | 3.972 |
| 5 | 8.317 | 8.332<< | 8.732 | 8.747 |
| 5 | 8.317 | 8.332 | 8.732>> | 8.747 |
| 5 | 11.368 | 11.462 | 3.878<< | 3.972 |
| 5 | 8.313 | 8.335 | 8.728 | 8.750>> |
| 5 | 11.371 | 11.459 | 3.881 | 3.969<< |

| BARRA 5 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 5 | 11.379>> | 11.466 | 3.920 | 4.008 |
| 5 | 8.321<< | 8.343 | 8.768 | 8.789 |
| 5 | 11.375 | 11.470>> | 3.917 | 4.011 |
| 5 | 8.324 | 8.340<< | 8.771 | 8.786 |
| 5 | 8.324 | 8.340 | 8.771>> | 8.786 |
| 5 | 11.375 | 11.470 | 3.917<< | 4.011 |
| 5 | 8.321 | 8.343 | 8.768 | 8.789>> |
| 5 | 11.379 | 11.466 | 3.920 | 4.008<< |
| 6 | 11.950>> | 12.055 | 3.008 | 3.113 |
| 6 | 8.369<< | 8.397 | 8.685 | 8.713 |
| 6 | 11.946 | 12.060>> | 3.004 | 3.117 |
| 6 | 8.373 | 8.393<< | 8.689 | 8.709 |
| 6 | 8.373 | 8.393 | 8.689>> | 8.709 |
| 6 | 11.946 | 12.060 | 3.004<< | 3.117 |
| 6 | 8.369 | 8.397 | 8.685 | 8.713>> |
| 6 | 11.950 | 12.055 | 3.008 | 3.113<< |

| BARRA 6 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 6 | 11.957>> | 12.062 | 3.049 | 3.154 |
| 6 | 8.376<< | 8.403 | 8.726 | 8.754 |
| 6 | 11.952 | 12.066>> | 3.044 | 3.158 |
| 6 | 8.380 | 8.399<< | 8.730 | 8.749 |
| 6 | 8.380 | 8.399 | 8.730>> | 8.749 |
| 6 | 11.952 | 12.066 | 3.044<< | 3.158 |
| 6 | 8.376 | 8.403 | 8.726 | 8.754>> |
| 6 | 11.957 | 12.062 | 3.049 | 3.154<< |
| 7 | 12.316>> | 12.436 | 2.470 | 2.590 |
| 7 | 8.357<< | 8.391 | 8.746 | 8.780 |
| 7 | 12.311 | 12.441>> | 2.465 | 2.595 |
| 7 | 8.363 | 8.386<< | 8.752 | 8.775 |
| 7 | 8.363 | 8.386 | 8.752>> | 8.775 |
| 7 | 12.311 | 12.441 | 2.465<< | 2.595 |
| 7 | 8.357 | 8.391 | 8.746 | 8.780>> |
| 7 | 12.316 | 12.436 | 2.470 | 2.590<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 7 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 7 | 12.321>> | 12.442 | 2.510 | 2.631 |
| 7 | 8.363<< | 8.397 | 8.787 | 8.821 |
| 7 | 12.316 | 12.447>> | 2.505 | 2.636 |
| 7 | 8.368 | 8.392<< | 8.792 | 8.816 |
| 7 | 8.368 | 8.392 | 8.792>> | 8.816 |
| 7 | 12.316 | 12.447 | 2.505<< | 2.636 |
| 7 | 8.363 | 8.397 | 8.787 | 8.821>> |
| 7 | 12.321 | 12.442 | 2.510 | 2.631<< |
| 8 | 12.452>> | 12.583 | 2.293 | 2.424 |
| 8 | 8.280<< | 8.320 | 8.909 | 8.949 |
| 8 | 12.446 | 12.589>> | 2.287 | 2.430 |
| 8 | 8.286 | 8.313<< | 8.915 | 8.943 |
| 8 | 8.286 | 8.313 | 8.915>> | 8.943 |
| 8 | 12.446 | 12.589 | 2.287<< | 2.430 |
| 8 | 8.280 | 8.320 | 8.909 | 8.949>> |
| 8 | 12.452 | 12.583 | 2.293 | 2.424<< |

| BARRA 8 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 8 | 12.458>> | 12.589 | 2.339 | 2.470 |
| 8 | 8.286<< | 8.326 | 8.955 | 8.995 |
| 8 | 12.452 | 12.595>> | 2.333 | 2.476 |
| 8 | 8.292 | 8.319<< | 8.961 | 8.989 |
| 8 | 8.292 | 8.319 | 8.961>> | 8.989 |
| 8 | 12.452 | 12.595 | 2.333<< | 2.476 |
| 8 | 8.286 | 8.326 | 8.955 | 8.995>> |
| 8 | 12.458 | 12.589 | 2.339 | 2.470<< |
| 9 | 12.410>> | 12.551 | 2.402 | 2.542 |
| 9 | 8.167<< | 8.213 | 9.132 | 9.178 |
| 9 | 12.403 | 12.558>> | 2.395 | 2.549 |
| 9 | 8.174 | 8.206<< | 9.139 | 9.171 |
| 9 | 8.174 | 8.206 | 9.139>> | 9.171 |
| 9 | 12.403 | 12.558 | 2.395<< | 2.549 |
| 9 | 8.167 | 8.213 | 9.132 | 9.178>> |
| 9 | 12.410 | 12.551 | 2.402 | 2.542<< |

| BARRA 9 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 9 | 12.407>> | 12.547 | 2.398 | 2.538 |
| 9 | 8.164<< | 8.210 | 9.129 | 9.174 |
| 9 | 12.400 | 12.554>> | 2.391 | 2.545 |
| 9 | 8.171 | 8.203<< | 9.136 | 9.167 |
| 9 | 8.171 | 8.203 | 9.136>> | 9.167 |
| 9 | 12.400 | 12.554 | 2.391<< | 2.545 |
| 9 | 8.164 | 8.210 | 9.129 | 9.174>> |
| 9 | 12.407 | 12.547 | 2.398 | 2.538<< |
| 10 | 12.208>> | 12.354 | 2.701 | 2.847 |
| 10 | 8.043<< | 8.095 | 9.310 | 9.361 |
| 10 | 12.200 | 12.362>> | 2.693 | 2.855 |
| 10 | 8.051 | 8.087<< | 9.318 | 9.353 |
| 10 | 8.051 | 8.087 | 9.318>> | 9.353 |
| 10 | 12.200 | 12.362 | 2.693<< | 2.855 |
| 10 | 8.043 | 8.095 | 9.310 | 9.361>> |
| 10 | 12.208 | 12.354 | 2.701 | 2.847<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 10 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 10 | 12.199>> | 12.345 | 2.672 | 2.818 |
| 10 | 8.034<< | 8.086 | 9.281 | 9.332 |
| 10 | 12.191 | 12.353>> | 2.664 | 2.826 |
| 10 | 8.042 | 8.078<< | 9.289 | 9.324 |
| 10 | 8.042 | 8.078 | 9.289>> | 9.324 |
| 10 | 12.191 | 12.353 | 2.664<< | 2.826 |
| 10 | 8.034 | 8.086 | 9.281 | 9.332>> |
| 10 | 12.199 | 12.345 | 2.672 | 2.818<< |
| 11 | 11.832>> | 11.980 | 3.241 | 3.389 |
| 11 | 7.909<< | 7.966 | 9.468 | 9.526 |
| 11 | 11.824 | 11.989>> | 3.232 | 3.397 |
| 11 | 7.917 | 7.957<< | 9.477 | 9.517 |
| 11 | 7.917 | 7.957 | 9.477>> | 9.517 |
| 11 | 11.824 | 11.989 | 3.232<< | 3.397 |
| 11 | 7.909 | 7.966 | 9.468 | 9.526>> |
| 11 | 11.832 | 11.980 | 3.241 | 3.389<< |

| BARRA 11 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 11 | 11.821>> | 11.969 | 3.213 | 3.360 |
| 11 | 7.897<< | 7.955 | 9.440 | 9.498 |
| 11 | 11.812 | 11.978>> | 3.204 | 3.369 |
| 11 | 7.906 | 7.946<< | 9.449 | 9.489 |
| 11 | 7.906 | 7.946 | 9.449>> | 9.489 |
| 11 | 11.812 | 11.978 | 3.204<< | 3.369 |
| 11 | 7.897 | 7.955 | 9.440 | 9.498>> |
| 11 | 11.821 | 11.969 | 3.213 | 3.360<< |
| 12 | 11.307>> | 11.454 | 4.015 | 4.162 |
| 12 | 7.763<< | 7.827 | 9.641 | 9.705 |
| 12 | 11.297 | 11.464>> | 4.005 | 4.171 |
| 12 | 7.773 | 7.817<< | 9.651 | 9.695 |
| 12 | 7.773 | 7.817 | 9.651>> | 9.695 |
| 12 | 11.297 | 11.464 | 4.005<< | 4.171 |
| 12 | 7.763 | 7.827 | 9.641 | 9.705>> |
| 12 | 11.307 | 11.454 | 4.015 | 4.162<< |

| BARRA 12 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 12 | 10.808>> | 10.955 | 2.893 | 3.040 |
| 12 | 7.265<< | 7.328 | 8.520 | 8.584 |
| 12 | 10.798 | 10.965>> | 2.884 | 3.050 |
| 12 | 7.274 | 7.319<< | 8.530 | 8.574 |
| 12 | 7.274 | 7.319 | 8.530>> | 8.574 |
| 12 | 10.798 | 10.965 | 2.884<< | 3.050 |
| 12 | 7.265 | 7.328 | 8.520 | 8.584>> |
| 12 | 10.808 | 10.955 | 2.893 | 3.040<< |
| 13 | 10.190>> | 10.327 | 3.869 | 4.006 |
| 13 | 7.081<< | 7.158 | 8.789 | 8.866 |
| 13 | 10.090 | 10.342>> | 3.878 | 4.130 |
| 13 | 7.091 | 7.147<< | 8.800 | 8.856 |
| 13 | 7.091 | 7.147 | 8.800>> | 8.856 |
| 13 | 10.180 | 10.338 | 3.858<< | 4.016 |
| 13 | 7.081 | 7.158 | 8.789 | 8.866>> |
| 13 | 10.190 | 10.327 | 3.869 | 4.006<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 13 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 13 | 10.171>> | 10.307 | 3.847 | 3.983 |
| 13 | 7.061<< | 7.138 | 8.767 | 8.844 |
| 13 | 10.070 | 10.322>> | 3.856 | 4.108 |
| 13 | 7.071 | 7.127<< | 8.778 | 8.834 |
| 13 | 7.071 | 7.127 | 8.778>> | 8.834 |
| 13 | 10.160 | 10.318 | 3.836<< | 3.994 |
| 13 | 7.061 | 7.138 | 8.767 | 8.844>> |
| 13 | 10.171 | 10.307 | 3.847 | 3.983<< |
| 14 | 9.803>> | 9.511 | 4.968 | 4.676 |
| 14 | 6.652<< | 6.736 | 9.396 | 9.480 |
| 14 | 9.490 | 9.897>> | 4.561 | 4.968 |
| 14 | 6.663 | 6.724<< | 9.407 | 9.468 |
| 14 | 6.663 | 6.724 | 9.407>> | 9.468 |
| 14 | 9.639 | 9.892 | 4.525<< | 4.779 |
| 14 | 6.652 | 6.736 | 9.396 | 9.480>> |
| 14 | 9.803 | 9.511 | 4.968 | 4.676<< |

| BARRA 14 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 14 | 9.777>> | 9.484 | 4.952 | 4.660 |
| 14 | 6.625<< | 6.709 | 9.380 | 9.464 |
| 14 | 9.464 | 9.870>> | 4.546 | 4.952 |
| 14 | 6.637 | 6.698<< | 9.392 | 9.453 |
| 14 | 6.637 | 6.698 | 9.392>> | 9.453 |
| 14 | 9.613 | 9.866 | 4.510<< | 4.763 |
| 14 | 6.625 | 6.709 | 9.380 | 9.464>> |
| 14 | 9.777 | 9.484 | 4.952 | 4.660<< |
| 15 | 9.645>> | 9.465 | 5.014 | 4.834 |
| 15 | 6.028<< | 6.472 | 9.851 | 10.295 |
| 15 | 9.137 | 9.601>> | 4.982 | 5.446 |
| 15 | 6.272 | 6.203<< | 10.127 | 10.057 |
| 15 | 6.272 | 6.203 | 10.127>> | 10.057 |
| 15 | 9.604 | 9.506 | 4.973<< | 4.875 |
| 15 | 6.028 | 6.472 | 9.851 | 10.295>> |
| 15 | 9.645 | 9.465 | 5.014 | 4.834<< |

| BARRA 15 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 15 | 8.943>> | 8.786 | 4.716 | 4.559 |
| 15 | 5.584<< | 5.933 | 8.443 | 8.793 |
| 15 | 8.512 | 8.883>> | 4.685 | 5.055 |
| 15 | 5.763 | 5.723<< | 8.649 | 8.609 |
| 15 | 5.763 | 5.723 | 8.649>> | 8.609 |
| 15 | 8.910 | 8.818 | 4.683<< | 4.591 |
| 15 | 5.584 | 5.933 | 8.443 | 8.793>> |
| 15 | 8.943 | 8.786 | 4.716 | 4.559<< |
| 16 | 10.454>> | 10.336 | 2.773 | 2.655 |
| 16 | 6.092<< | 6.349 | 7.942 | 8.199 |
| 16 | 10.442 | 10.348>> | 2.761 | 2.667 |
| 16 | 6.104 | 6.337<< | 7.954 | 8.188 |
| 16 | 6.104 | 6.337 | 7.954>> | 8.188 |
| 16 | 10.442 | 10.348 | 2.761<< | 2.667 |
| 16 | 6.092 | 6.349 | 7.942 | 8.199>> |
| 16 | 10.454 | 10.336 | 2.773 | 2.655<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 16 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 16 | 10.559>> | 10.414 | 2.825 | 2.680 |
| 16 | 6.146<< | 6.451 | 7.888 | 8.193 |
| 16 | 10.520 | 10.453>> | 2.786 | 2.719 |
| 16 | 6.185 | 6.412<< | 7.927 | 8.154 |
| 16 | 6.159 | 6.413 | 7.929>> | 8.184 |
| 16 | 10.546 | 10.452 | 2.784<< | 2.690 |
| 16 | 6.147 | 6.425 | 7.918 | 8.195>> |
| 16 | 10.557 | 10.440 | 2.796 | 2.678<< |
| 17 | 9.887>> | 9.761 | 3.652 | 3.526 |
| 17 | 4.260<< | 4.542 | 10.296 | 10.578 |
| 17 | 9.874 | 9.774>> | 3.639 | 3.539 |
| 17 | 4.273 | 4.530<< | 10.308 | 10.565 |
| 17 | 4.273 | 4.530 | 10.308>> | 10.565 |
| 17 | 9.874 | 9.774 | 3.639<< | 3.539 |
| 17 | 4.260 | 4.542 | 10.296 | 10.578>> |
| 17 | 9.887 | 9.761 | 3.652 | 3.526<< |

| BARRA 17 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 17 | 9.816>> | 9.690 | 3.656 | 3.531 |
| 17 | 4.189<< | 4.471 | 10.300 | 10.582 |
| 17 | 9.803 | 9.703>> | 3.644 | 3.543 |
| 17 | 4.202 | 4.459<< | 10.313 | 10.570 |
| 17 | 4.202 | 4.459 | 10.313>> | 10.570 |
| 17 | 9.803 | 9.703 | 3.644<< | 3.543 |
| 17 | 4.189 | 4.471 | 10.300 | 10.582>> |
| 17 | 9.816 | 9.690 | 3.656 | 3.531<< |
| 18 | 10.411>> | 10.289 | 2.900 | 2.779 |
| 18 | 6.140<< | 6.423 | 7.836 | 8.119 |
| 18 | 10.397 | 10.303>> | 2.887 | 2.793 |
| 18 | 6.154 | 6.409<< | 7.850 | 8.105 |
| 18 | 6.154 | 6.409 | 7.850>> | 8.105 |
| 18 | 10.397 | 10.303 | 2.887<< | 2.793 |
| 18 | 6.140 | 6.423 | 7.836 | 8.119>> |
| 18 | 10.411 | 10.289 | 2.900 | 2.779<< |

| BARRA 18 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 18 | 10.198>> | 10.053 | 2.881 | 2.736 |
| 18 | 5.978<< | 6.253 | 7.827 | 8.102 |
| 18 | 10.165 | 10.086>> | 2.848 | 2.769 |
| 18 | 6.011 | 6.221<< | 7.860 | 8.069 |
| 18 | 5.993 | 6.221 | 7.862>> | 8.090 |
| 18 | 10.184 | 10.085 | 2.846<< | 2.748 |
| 18 | 5.979 | 6.235 | 7.848 | 8.104>> |
| 18 | 10.198 | 10.071 | 2.860 | 2.734<< |
| 19 | 8.496>> | 8.321 | 5.055 | 4.880 |
| 19 | 5.466<< | 5.756 | 8.438 | 8.727 |
| 19 | 8.446 | 8.371>> | 5.005 | 4.930 |
| 19 | 5.516 | 5.706<< | 8.487 | 8.677 |
| 19 | 5.499 | 5.707 | 8.490>> | 8.698 |
| 19 | 8.463 | 8.370 | 5.002<< | 4.910 |
| 19 | 5.467 | 5.739 | 8.458 | 8.730>> |
| 19 | 8.495 | 8.338 | 5.035 | 4.877<< |

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| BARRA 19 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 19 | 9.310>> | 9.112 | 5.114 | 4.915 |
| 19 | 6.038<< | 6.402 | 9.492 | 9.856 |
| 19 | 9.249 | 9.173>> | 5.053 | 4.976 |
| 19 | 6.099 | 6.342<< | 9.552 | 9.795 |
| 19 | 6.061 | 6.348 | 9.555>> | 9.842 |
| 19 | 9.287 | 9.167 | 5.050<< | 4.930 |
| 19 | 6.044 | 6.365 | 9.538 | 9.859>> |
| 19 | 9.304 | 9.150 | 5.067 | 4.913<< |
| 20 | 9.374>> | 9.019 | 5.215 | 4.860 |
| 20 | 6.894<< | 7.051 | 8.423 | 8.580 |
| 20 | 9.193 | 9.439>> | 4.728 | 4.974 |
| 20 | 6.954 | 6.991<< | 8.483 | 8.520 |
| 20 | 6.954 | 6.991 | 8.483>> | 8.520 |
| 20 | 9.193 | 9.439 | 4.728<< | 4.974 |
| 20 | 6.894 | 7.051 | 8.423 | 8.580>> |
| 20 | 9.371 | 9.090 | 5.125 | 4.844<< |

| BARRA 20 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 20 | 9.364>> | 9.009 | 5.202 | 4.847 |
| 20 | 6.884<< | 7.041 | 8.410 | 8.567 |
| 20 | 9.183 | 9.429>> | 4.715 | 4.961 |
| 20 | 6.945 | 6.981<< | 8.470 | 8.506 |
| 20 | 6.945 | 6.981 | 8.470>> | 8.506 |
| 20 | 9.183 | 9.429 | 4.715<< | 4.961 |
| 20 | 6.884 | 7.041 | 8.410 | 8.567>> |
| 20 | 9.361 | 9.080 | 5.112 | 4.831<< |
| 21 | 9.757>> | 9.871 | 3.990 | 4.104 |
| 21 | 7.251<< | 7.374 | 7.882 | 8.005 |
| 21 | 9.719 | 9.944>> | 3.906 | 4.131 |
| 21 | 7.286 | 7.339<< | 7.917 | 7.970 |
| 21 | 7.286 | 7.339 | 7.917>> | 7.970 |
| 21 | 9.719 | 9.944 | 3.906<< | 4.131 |
| 21 | 7.251 | 7.374 | 7.882 | 8.005>> |
| 21 | 9.754 | 9.909 | 3.941 | 4.096<< |

| BARRA 21 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 21 | 9.749>> | 9.863 | 3.968 | 4.082 |
| 21 | 7.244<< | 7.366 | 7.860 | 7.983 |
| 21 | 9.712 | 9.937>> | 3.884 | 4.109 |
| 21 | 7.279 | 7.331<< | 7.895 | 7.948 |
| 21 | 7.279 | 7.331 | 7.895>> | 7.948 |
| 21 | 9.712 | 9.937 | 3.884<< | 4.109 |
| 21 | 7.244 | 7.366 | 7.860 | 7.983>> |
| 21 | 9.747 | 9.902 | 3.919 | 4.074<< |
| 22 | 10.449>> | 10.582 | 2.854 | 2.986 |
| 22 | 7.404<< | 7.512 | 7.629 | 7.737 |
| 22 | 10.415 | 10.617>> | 2.819 | 3.021 |
| 22 | 7.439 | 7.477<< | 7.664 | 7.702 |
| 22 | 7.439 | 7.477 | 7.664>> | 7.702 |
| 22 | 10.415 | 10.617 | 2.819<< | 3.021 |
| 22 | 7.404 | 7.512 | 7.629 | 7.737>> |
| 22 | 10.449 | 10.582 | 2.854 | 2.986<< |

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| BARRA 22 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 22 | 9.753>> | 9.886 | 2.983 | 3.116 |
| 22 | 6.708<< | 6.815 | 7.759 | 7.867 |
| 22 | 9.719 | 9.920>> | 2.949 | 3.150 |
| 22 | 6.742 | 6.781<< | 7.794 | 7.832 |
| 22 | 6.742 | 6.781 | 7.794>> | 7.832 |
| 22 | 9.719 | 9.920 | 2.949<< | 3.150 |
| 22 | 6.708 | 6.815 | 7.759 | 7.867>> |
| 22 | 9.753 | 9.886 | 2.983 | 3.116<< |
| 23 | 10.366>> | 10.508 | 2.017 | 2.159 |
| 23 | 6.820<< | 6.919 | 7.595 | 7.694 |
| 23 | 10.332 | 10.542>> | 1.982 | 2.193 |
| 23 | 6.854 | 6.885<< | 7.629 | 7.660 |
| 23 | 6.844 | 6.886 | 7.631>> | 7.672 |
| 23 | 10.342 | 10.541 | 1.981<< | 2.180 |
| 23 | 6.821 | 6.909 | 7.608 | 7.696>> |
| 23 | 10.365 | 10.518 | 2.004 | 2.157<< |

| BARRA 23 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 23 | 10.365>> | 10.507 | 2.033 | 2.175 |
| 23 | 6.819<< | 6.918 | 7.611 | 7.710 |
| 23 | 10.330 | 10.541>> | 1.998 | 2.209 |
| 23 | 6.853 | 6.884<< | 7.645 | 7.676 |
| 23 | 6.843 | 6.885 | 7.647>> | 7.688 |
| 23 | 10.340 | 10.540 | 1.997<< | 2.196 |
| 23 | 6.820 | 6.908 | 7.624 | 7.712>> |
| 23 | 10.364 | 10.517 | 2.020 | 2.173<< |
| 24 | 10.836>> | 10.994 | 1.277 | 1.436 |
| 24 | 6.923<< | 7.005 | 7.471 | 7.553 |
| 24 | 10.811 | 11.019>> | 1.253 | 1.461 |
| 24 | 6.948 | 6.980<< | 7.496 | 7.528 |
| 24 | 6.948 | 6.980 | 7.496>> | 7.528 |
| 24 | 10.811 | 11.019 | 1.253<< | 1.461 |
| 24 | 6.923 | 7.005 | 7.471 | 7.553>> |
| 24 | 10.836 | 10.994 | 1.277 | 1.436<< |

| BARRA 24 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 24 | 10.834>> | 10.992 | 1.294 | 1.452 |
| 24 | 6.921<< | 7.002 | 7.488 | 7.569 |
| 24 | 10.809 | 11.017>> | 1.269 | 1.477 |
| 24 | 6.945 | 6.977<< | 7.512 | 7.544 |
| 24 | 6.945 | 6.977 | 7.512>> | 7.544 |
| 24 | 10.809 | 11.017 | 1.269<< | 1.477 |
| 24 | 6.921 | 7.002 | 7.488 | 7.569>> |
| 24 | 10.834 | 10.992 | 1.294 | 1.452<< |
| 25 | 11.135>> | 11.295 | 0.822 | 0.982 |
| 25 | 7.022<< | 7.097 | 7.339 | 7.414 |
| 25 | 11.108 | 11.321>> | 0.796 | 1.009 |
| 25 | 7.048 | 7.070<< | 7.365 | 7.387 |
| 25 | 7.048 | 7.070 | 7.365>> | 7.387 |
| 25 | 11.108 | 11.321 | 0.796<< | 1.009 |
| 25 | 7.022 | 7.097 | 7.339 | 7.414>> |
| 25 | 11.135 | 11.295 | 0.822 | 0.982<< |

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| BARRA 25 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 25 | 11.132>> | 11.292 | 0.835 | 0.995 |
| 25 | 7.019<< | 7.094 | 7.351 | 7.426 |
| 25 | 11.106 | 11.319>> | 0.808 | 1.021 |
| 25 | 7.045 | 7.068<< | 7.377 | 7.400 |
| 25 | 7.045 | 7.068 | 7.377>> | 7.400 |
| 25 | 11.106 | 11.319 | 0.808<< | 1.021 |
| 25 | 7.019 | 7.094 | 7.351 | 7.426>> |
| 25 | 11.132 | 11.292 | 0.835 | 0.995<< |
| 26 | 11.274>> | 11.434 | 0.614 | 0.774 |
| 26 | 7.083<< | 7.213 | 7.180 | 7.311 |
| 26 | 11.246 | 11.462>> | 0.586 | 0.802 |
| 26 | 7.263 | 7.088<< | 7.290 | 7.115 |
| 26 | 7.263 | 7.088 | 7.290>> | 7.115 |
| 26 | 11.246 | 11.462 | 0.586<< | 0.802 |
| 26 | 7.083 | 7.213 | 7.180 | 7.311>> |
| 26 | 11.274 | 11.434 | 0.614 | 0.774<< |

| BARRA 26 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 26 | 11.271>> | 11.432 | 0.621 | 0.781 |
| 26 | 7.081<< | 7.211 | 7.188 | 7.318 |
| 26 | 11.244 | 11.460>> | 0.593 | 0.809 |
| 26 | 7.261 | 7.086<< | 7.297 | 7.123 |
| 26 | 7.261 | 7.086 | 7.297>> | 7.123 |
| 26 | 11.244 | 11.460 | 0.593<< | 0.809 |
| 26 | 7.081 | 7.211 | 7.188 | 7.318>> |
| 26 | 11.271 | 11.432 | 0.621 | 0.781<< |
| 27 | 11.330>> | 11.487 | 0.534 | 0.691 |
| 27 | 7.079<< | 7.037 | 7.411 | 7.369 |
| 27 | 11.300 | 11.516>> | 0.505 | 0.721 |
| 27 | 7.108 | 7.007<< | 7.440 | 7.340 |
| 27 | 7.108 | 7.007 | 7.440>> | 7.340 |
| 27 | 11.300 | 11.516 | 0.505<< | 0.721 |
| 27 | 7.079 | 7.037 | 7.411 | 7.369>> |
| 27 | 11.330 | 11.487 | 0.534 | 0.691<< |

| BARRA 27 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 27 | 11.328>> | 11.485 | 0.537 | 0.694 |
| 27 | 7.077<< | 7.035 | 7.414 | 7.372 |
| 27 | 11.298 | 11.515>> | 0.508 | 0.724 |
| 27 | 7.106 | 7.005<< | 7.443 | 7.343 |
| 27 | 7.106 | 7.005 | 7.443>> | 7.343 |
| 27 | 11.298 | 11.515 | 0.508<< | 0.724 |
| 27 | 7.077 | 7.035 | 7.414 | 7.372>> |
| 27 | 11.328 | 11.485 | 0.537 | 0.694<< |
| 28 | 11.277>> | 11.428 | 0.624 | 0.775 |
| 28 | 6.950<< | 6.915 | 7.602 | 7.568 |
| 28 | 11.246 | 11.459>> | 0.593 | 0.806 |
| 28 | 6.981 | 6.884<< | 7.633 | 7.537 |
| 28 | 6.981 | 6.884 | 7.633>> | 7.537 |
| 28 | 11.246 | 11.459 | 0.593<< | 0.806 |
| 28 | 6.950 | 6.915 | 7.602 | 7.568>> |
| 28 | 11.277 | 11.428 | 0.624 | 0.775<< |

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| BARRA 28 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 28 | 11.276>> | 11.427 | 0.622 | 0.773 |
| 28 | 6.949<< | 6.914 | 7.600 | 7.565 |
| 28 | 11.245 | 11.458>> | 0.591 | 0.804 |
| 28 | 6.980 | 6.883<< | 7.631 | 7.534 |
| 28 | 6.980 | 6.883 | 7.631>> | 7.534 |
| 28 | 11.245 | 11.458 | 0.591<< | 0.804 |
| 28 | 6.949 | 6.914 | 7.600 | 7.565>> |
| 28 | 11.276 | 11.427 | 0.622 | 0.773<< |
| 29 | 11.143>> | 11.287 | 0.837 | 0.981 |
| 29 | 6.822<< | 6.794 | 7.788 | 7.761 |
| 29 | 11.111 | 11.320>> | 0.805 | 1.014 |
| 29 | 6.854 | 6.762<< | 7.821 | 7.728 |
| 29 | 6.854 | 6.762 | 7.821>> | 7.728 |
| 29 | 11.111 | 11.320 | 0.805<< | 1.014 |
| 29 | 6.822 | 6.794 | 7.788 | 7.761>> |
| 29 | 11.143 | 11.287 | 0.837 | 0.981<< |

| BARRA 29 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 29 | 11.142>> | 11.286 | 0.830 | 0.974 |
| 29 | 6.821<< | 6.793 | 7.781 | 7.754 |
| 29 | 11.110 | 11.319>> | 0.798 | 1.007 |
| 29 | 6.853 | 6.761<< | 7.814 | 7.721 |
| 29 | 6.853 | 6.761 | 7.814>> | 7.721 |
| 29 | 11.110 | 11.319 | 0.798<< | 1.007 |
| 29 | 6.821 | 6.793 | 7.781 | 7.754>> |
| 29 | 11.142 | 11.286 | 0.830 | 0.974<< |
| 30 | 10.851>> | 10.984 | 1.298 | 1.431 |
| 30 | 6.693<< | 6.673 | 7.970 | 7.950 |
| 30 | 10.817 | 11.018>> | 1.264 | 1.465 |
| 30 | 6.727 | 6.639<< | 8.004 | 7.916 |
| 30 | 6.727 | 6.639 | 8.004>> | 7.916 |
| 30 | 10.817 | 11.018 | 1.264<< | 1.465 |
| 30 | 6.693 | 6.673 | 7.970 | 7.950>> |
| 30 | 10.851 | 10.984 | 1.298 | 1.431<< |

| BARRA 30 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 30 | 10.850>> | 10.983 | 1.287 | 1.420 |
| 30 | 6.692<< | 6.672 | 7.959 | 7.939 |
| 30 | 10.816 | 11.017>> | 1.253 | 1.454 |
| 30 | 6.726 | 6.638<< | 7.993 | 7.905 |
| 30 | 6.726 | 6.638 | 7.993>> | 7.905 |
| 30 | 10.816 | 11.017 | 1.253<< | 1.454 |
| 30 | 6.692 | 6.672 | 7.959 | 7.939>> |
| 30 | 10.850 | 10.983 | 1.287 | 1.420<< |
| 31 | 10.388>> | 10.507 | 2.024 | 2.143 |
| 31 | 6.564<< | 6.551 | 8.149 | 8.137 |
| 31 | 10.353 | 10.542>> | 1.989 | 2.178 |
| 31 | 6.599 | 6.515<< | 8.185 | 8.101 |
| 31 | 6.599 | 6.515 | 8.185>> | 8.101 |
| 31 | 10.353 | 10.542 | 1.989<< | 2.178 |
| 31 | 6.564 | 6.551 | 8.149 | 8.137>> |
| 31 | 10.388 | 10.507 | 2.024 | 2.143<< |

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| BARRA 31 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 31 | 10.386>> | 10.504 | 2.011 | 2.129 |
| 31 | 6.562<< | 6.549 | 8.136 | 8.123 |
| 31 | 10.350 | 10.540>> | 1.975 | 2.165 |
| 31 | 6.597 | 6.513<< | 8.172 | 8.088 |
| 31 | 6.597 | 6.513 | 8.172>> | 8.088 |
| 31 | 10.350 | 10.540 | 1.975<< | 2.165 |
| 31 | 6.562 | 6.549 | 8.136 | 8.123>> |
| 31 | 10.386 | 10.504 | 2.011 | 2.129<< |
| 32 | 9.782>> | 9.883 | 2.973 | 3.075 |
| 32 | 6.429<< | 6.423 | 8.333 | 8.328 |
| 32 | 9.745 | 9.920>> | 2.936 | 3.112 |
| 32 | 6.466 | 6.386<< | 8.370 | 8.291 |
| 32 | 6.447 | 6.390 | 8.370>> | 8.313 |
| 32 | 9.763 | 9.916 | 2.936<< | 3.089 |
| 32 | 6.433 | 6.405 | 8.356 | 8.328>> |
| 32 | 9.778 | 9.902 | 2.951 | 3.075<< |

| BARRA 32 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 32 | 9.777>> | 9.879 | 2.959 | 3.060 |
| 32 | 6.425<< | 6.419 | 8.319 | 8.313 |
| 32 | 9.740 | 9.916>> | 2.922 | 3.097 |
| 32 | 6.462 | 6.382<< | 8.356 | 8.276 |
| 32 | 6.443 | 6.386 | 8.356>> | 8.298 |
| 32 | 9.759 | 9.912 | 2.922<< | 3.074 |
| 32 | 6.429 | 6.400 | 8.341 | 8.313>> |
| 32 | 9.773 | 9.897 | 2.936 | 3.060<< |
| 33 | 9.147>> | 9.228 | 3.967 | 4.048 |
| 33 | 6.185<< | 6.182 | 8.688 | 8.685 |
| 33 | 9.109 | 9.266>> | 3.929 | 4.086 |
| 33 | 6.224 | 6.144<< | 8.726 | 8.646 |
| 33 | 6.204 | 6.147 | 8.727>> | 8.670 |
| 33 | 9.128 | 9.263 | 3.928<< | 4.062 |
| 33 | 6.189 | 6.163 | 8.712 | 8.685>> |
| 33 | 9.143 | 9.247 | 3.943 | 4.047<< |

| BARRA 33 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 33 | 9.140>> | 9.220 | 3.953 | 4.034 |
| 33 | 6.178<< | 6.175 | 8.674 | 8.671 |
| 33 | 9.101 | 9.259>> | 3.915 | 4.072 |
| 33 | 6.217 | 6.136<< | 8.713 | 8.632 |
| 33 | 6.197 | 6.140 | 8.713>> | 8.656 |
| 33 | 9.121 | 9.255 | 3.914<< | 4.048 |
| 33 | 6.182 | 6.155 | 8.698 | 8.671>> |
| 33 | 9.136 | 9.240 | 3.929 | 4.033<< |
| 34 | 8.807>> | 8.427 | 5.060 | 4.680 |
| 34 | 5.771<< | 5.794 | 9.275 | 9.297 |
| 34 | 8.457 | 8.763>> | 4.728 | 5.035 |
| 34 | 5.831 | 5.734<< | 9.334 | 9.238 |
| 34 | 5.792 | 5.739 | 9.339>> | 9.286 |
| 34 | 8.495 | 8.758 | 4.724<< | 4.987 |
| 34 | 5.776 | 5.755 | 9.323 | 9.301>> |
| 34 | 8.802 | 8.466 | 5.012 | 4.676<< |

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| BARRA 34 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 34 | 8.795>> | 8.415 | 5.049 | 4.670 |
| 34 | 5.759<< | 5.782 | 9.264 | 9.287 |
| 34 | 8.445 | 8.751>> | 4.718 | 5.024 |
| 34 | 5.819 | 5.722<< | 9.324 | 9.227 |
| 34 | 5.780 | 5.727 | 9.328>> | 9.275 |
| 34 | 8.483 | 8.746 | 4.713<< | 4.976 |
| 34 | 5.764 | 5.743 | 9.312 | 9.291>> |
| 34 | 8.790 | 8.454 | 5.002 | 4.666<< |
| 35 | 8.689>> | 8.436 | 5.052 | 4.799 |
| 35 | 5.000<< | 5.195 | 10.226 | 10.421 |
| 35 | 8.628 | 8.496>> | 4.992 | 4.860 |
| 35 | 5.273 | 5.107<< | 10.263 | 10.097 |
| 35 | 5.022 | 5.141 | 10.289>> | 10.407 |
| 35 | 8.667 | 8.490 | 4.989<< | 4.813 |
| 35 | 5.006 | 5.157 | 10.273 | 10.424>> |
| 35 | 8.683 | 8.474 | 5.005 | 4.796<< |

| BARRA 35 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 35 | 8.166>> | 7.946 | 4.762 | 4.541 |
| 35 | 4.736<< | 4.878 | 8.761 | 8.903 |
| 35 | 8.118 | 7.994>> | 4.714 | 4.590 |
| 35 | 4.942 | 4.825<< | 8.768 | 8.651 |
| 35 | 4.753 | 4.832 | 8.812>> | 8.891 |
| 35 | 8.150 | 7.992 | 4.711<< | 4.553 |
| 35 | 4.739 | 4.846 | 8.798 | 8.906>> |
| 35 | 8.164 | 7.977 | 4.725 | 4.539<< |
| 36 | 9.561>> | 9.362 | 2.987 | 2.787 |
| 36 | 5.000<< | 5.127 | 8.465 | 8.592 |
| 36 | 9.358 | 9.411>> | 2.956 | 3.008 |
| 36 | 5.037 | 5.089<< | 8.502 | 8.554 |
| 36 | 5.017 | 5.091 | 8.503>> | 8.577 |
| 36 | 9.544 | 9.398 | 2.948<< | 2.802 |
| 36 | 5.002 | 5.106 | 8.488 | 8.593>> |
| 36 | 9.559 | 9.382 | 2.963 | 2.787<< |

| BARRA 36 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 36 | 9.664>> | 9.465 | 3.005 | 2.806 |
| 36 | 5.052<< | 5.204 | 8.432 | 8.584 |
| 36 | 9.460 | 9.518>> | 2.973 | 3.031 |
| 36 | 5.090 | 5.166<< | 8.470 | 8.546 |
| 36 | 5.069 | 5.168 | 8.471>> | 8.570 |
| 36 | 9.647 | 9.501 | 2.967<< | 2.821 |
| 36 | 5.054 | 5.183 | 8.456 | 8.585>> |
| 36 | 9.663 | 9.486 | 2.982 | 2.806<< |
| 37 | 8.852>> | 8.646 | 4.039 | 3.833 |
| 37 | 2.995<< | 3.142 | 11.035 | 11.183 |
| 37 | 8.680 | 8.726>> | 3.972 | 4.017 |
| 37 | 3.034 | 3.103<< | 11.075 | 11.144 |
| 37 | 3.012 | 3.105 | 11.076>> | 11.168 |
| 37 | 8.702 | 8.724 | 3.970<< | 3.992 |
| 37 | 2.996 | 3.121 | 11.060 | 11.184>> |
| 37 | 8.851 | 8.668 | 4.014 | 3.832<< |

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| BARRA 37 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 37 | 8.857>> | 8.652 | 4.029 | 3.823 |
| 37 | 3.000<< | 3.148 | 11.026 | 11.174 |
| 37 | 8.686 | 8.731>> | 3.962 | 4.008 |
| 37 | 3.039 | 3.108<< | 11.065 | 11.135 |
| 37 | 3.017 | 3.110 | 11.066>> | 11.159 |
| 37 | 8.707 | 8.729 | 3.961<< | 3.983 |
| 37 | 3.001 | 3.126 | 11.051 | 11.175>> |
| 37 | 8.856 | 8.673 | 4.005 | 3.822<< |
| 38 | 9.479>> | 9.258 | 3.262 | 3.040 |
| 38 | 4.952<< | 5.117 | 8.542 | 8.707 |
| 38 | 9.364 | 9.397>> | 3.120 | 3.153 |
| 38 | 4.988 | 5.081<< | 8.578 | 8.671 |
| 38 | 4.988 | 5.081 | 8.578>> | 8.671 |
| 38 | 9.364 | 9.397 | 3.120<< | 3.153 |
| 38 | 4.952 | 5.117 | 8.542 | 8.707>> |
| 38 | 9.479 | 9.258 | 3.262 | 3.040<< |

| BARRA 38 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 38 | 9.381>> | 9.152 | 3.222 | 2.993 |
| 38 | 4.902<< | 5.043 | 8.550 | 8.691 |
| 38 | 9.261 | 9.296>> | 3.075 | 3.110 |
| 38 | 4.939 | 5.006<< | 8.587 | 8.654 |
| 38 | 4.939 | 5.006 | 8.587>> | 8.654 |
| 38 | 9.261 | 9.296 | 3.075<< | 3.110 |
| 38 | 4.902 | 5.043 | 8.550 | 8.691>> |
| 38 | 9.381 | 9.152 | 3.222 | 2.993<< |
| 39 | 7.794>> | 7.588 | 5.189 | 4.983 |
| 39 | 4.496<< | 4.651 | 9.028 | 9.183 |
| 39 | 7.744 | 7.729>> | 5.040 | 5.024 |
| 39 | 4.529 | 4.618<< | 9.061 | 9.150 |
| 39 | 4.529 | 4.618 | 9.061>> | 9.150 |
| 39 | 7.744 | 7.729 | 5.040<< | 5.024 |
| 39 | 4.496 | 4.651 | 9.028 | 9.183>> |
| 39 | 7.794 | 7.588 | 5.189 | 4.983<< |

| BARRA 39 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 39 | 8.510>> | 8.267 | 5.324 | 5.081 |
| 39 | 4.965<< | 5.186 | 10.252 | 10.474 |
| 39 | 8.435 | 8.435>> | 5.130 | 5.130 |
| 39 | 5.019 | 5.132<< | 10.306 | 10.420 |
| 39 | 5.002 | 5.133 | 10.310>> | 10.441 |
| 39 | 8.452 | 8.434 | 5.127<< | 5.109 |
| 39 | 4.966 | 5.170 | 10.273 | 10.478>> |
| 39 | 8.489 | 8.397 | 5.163 | 5.072<< |
| 40 | 8.595>> | 8.442 | 5.076 | 4.924 |
| 40 | 5.746<< | 5.829 | 9.213 | 9.296 |
| 40 | 8.463 | 8.657>> | 4.839 | 5.032 |
| 40 | 5.797 | 5.778<< | 9.264 | 9.245 |
| 40 | 5.780 | 5.780 | 9.266>> | 9.265 |
| 40 | 8.480 | 8.655 | 4.837<< | 5.012 |
| 40 | 5.748 | 5.813 | 9.233 | 9.298>> |
| 40 | 8.592 | 8.459 | 5.056 | 4.922<< |

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| BARRA 40 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 40 | 8.602>> | 8.450 | 5.093 | 4.940 |
| 40 | 5.753<< | 5.837 | 9.229 | 9.312 |
| 40 | 8.471 | 8.665>> | 4.855 | 5.049 |
| 40 | 5.805 | 5.786<< | 9.280 | 9.261 |
| 40 | 5.788 | 5.788 | 9.282>> | 9.282 |
| 40 | 8.487 | 8.662 | 4.853<< | 5.028 |
| 40 | 5.755 | 5.820 | 9.249 | 9.314>> |
| 40 | 8.600 | 8.466 | 5.072 | 4.939<< |
| 41 | 9.052>> | 9.142 | 4.082 | 4.172 |
| 41 | 6.149<< | 6.210 | 8.641 | 8.702 |
| 41 | 9.007 | 9.195>> | 4.027 | 4.214 |
| 41 | 6.177 | 6.182<< | 8.669 | 8.674 |
| 41 | 6.177 | 6.182 | 8.669>> | 8.674 |
| 41 | 9.007 | 9.195 | 4.027<< | 4.214 |
| 41 | 6.149 | 6.210 | 8.641 | 8.702>> |
| 41 | 9.052 | 9.142 | 4.082 | 4.172<< |

| BARRA 41 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 41 | 9.055>> | 9.145 | 4.102 | 4.192 |
| 41 | 6.152<< | 6.214 | 8.661 | 8.722 |
| 41 | 9.011 | 9.199>> | 4.047 | 4.234 |
| 41 | 6.181 | 6.185<< | 8.689 | 8.694 |
| 41 | 6.181 | 6.185 | 8.689>> | 8.694 |
| 41 | 9.011 | 9.199 | 4.047<< | 4.234 |
| 41 | 6.152 | 6.214 | 8.661 | 8.722>> |
| 41 | 9.055 | 9.145 | 4.102 | 4.192<< |
| 42 | 9.687>> | 9.811 | 3.075 | 3.199 |
| 42 | 6.388<< | 6.445 | 8.300 | 8.356 |
| 42 | 9.662 | 9.836>> | 3.050 | 3.223 |
| 42 | 6.413 | 6.420<< | 8.325 | 8.332 |
| 42 | 6.413 | 6.420 | 8.325>> | 8.332 |
| 42 | 9.662 | 9.836 | 3.050<< | 3.223 |
| 42 | 6.388 | 6.445 | 8.300 | 8.356>> |
| 42 | 9.687 | 9.811 | 3.075 | 3.199<< |

| BARRA 42 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 42 | 9.896>> | 10.021 | 1.844 | 1.968 |
| 42 | 6.598<< | 6.654 | 7.069 | 7.125 |
| 42 | 9.872 | 10.045>> | 1.819 | 1.993 |
| 42 | 6.623 | 6.629<< | 7.094 | 7.101 |
| 42 | 6.623 | 6.629 | 7.094>> | 7.101 |
| 42 | 9.872 | 10.045 | 1.819<< | 1.993 |
| 42 | 6.598 | 6.654 | 7.069 | 7.125>> |
| 42 | 9.896 | 10.021 | 1.844 | 1.968<< |
| 43 | 10.495>> | 10.658 | 0.861 | 1.024 |
| 43 | 6.720<< | 6.764 | 6.895 | 6.939 |
| 43 | 10.481 | 10.672>> | 0.847 | 1.038 |
| 43 | 6.734 | 6.750<< | 6.909 | 6.925 |
| 43 | 6.734 | 6.750 | 6.909>> | 6.925 |
| 43 | 10.481 | 10.672 | 0.847<< | 1.038 |
| 43 | 6.720 | 6.764 | 6.895 | 6.939>> |
| 43 | 10.495 | 10.658 | 0.861 | 1.024<< |

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| BARRA 43 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 43 | 10.494>> | 10.657 | 0.880 | 1.043 |
| 43 | 6.719<< | 6.762 | 6.913 | 6.957 |
| 43 | 10.480 | 10.671>> | 0.866 | 1.057 |
| 43 | 6.732 | 6.748<< | 6.927 | 6.943 |
| 43 | 6.732 | 6.748 | 6.927>> | 6.943 |
| 43 | 10.480 | 10.671 | 0.866<< | 1.057 |
| 43 | 6.719 | 6.762 | 6.913 | 6.957>> |
| 43 | 10.494 | 10.657 | 0.880 | 1.043<< |
| 44 | 10.951>> | 11.140 | 0.134 | 0.324 |
| 44 | 6.833<< | 6.874 | 6.739 | 6.780 |
| 44 | 10.937 | 11.154>> | 0.121 | 0.337 |
| 44 | 6.846 | 6.861<< | 6.752 | 6.767 |
| 44 | 6.846 | 6.861 | 6.752>> | 6.767 |
| 44 | 10.937 | 11.154 | 0.121<< | 0.337 |
| 44 | 6.833 | 6.874 | 6.739 | 6.780>> |
| 44 | 10.951 | 11.140 | 0.134 | 0.324<< |

| BARRA 44 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 44 | 10.948>> | 11.138 | 0.151 | 0.341 |
| 44 | 6.830<< | 6.872 | 6.755 | 6.797 |
| 44 | 10.935 | 11.151>> | 0.138 | 0.354 |
| 44 | 6.843 | 6.858<< | 6.768 | 6.784 |
| 44 | 6.843 | 6.858 | 6.768>> | 6.784 |
| 44 | 10.935 | 11.151 | 0.138<< | 0.354 |
| 44 | 6.830 | 6.872 | 6.755 | 6.797>> |
| 44 | 10.948 | 11.138 | 0.151 | 0.341<< |
| 45 | 11.234>> | 11.447 | -0.324 | -0.111 |
| 45 | 6.942<< | 6.981 | 6.584 | 6.623 |
| 45 | 11.221 | 11.459>> | -0.336 | -0.099 |
| 45 | 6.954 | 6.969<< | 6.596 | 6.611 |
| 45 | 6.954 | 6.969 | 6.596>> | 6.611 |
| 45 | 11.221 | 11.459 | -0.336<< | -0.099 |
| 45 | 6.942 | 6.981 | 6.584 | 6.623>> |
| 45 | 11.234 | 11.447 | -0.324 | -0.111<< |

| BARRA 45 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 45 | 11.231>> | 11.444 | -0.311 | -0.099 |
| 45 | 6.939<< | 6.979 | 6.596 | 6.636 |
| 45 | 11.219 | 11.456>> | -0.324 | -0.086 |
| 45 | 6.952 | 6.966<< | 6.609 | 6.623 |
| 45 | 6.952 | 6.966 | 6.609>> | 6.623 |
| 45 | 11.219 | 11.456 | -0.324<< | -0.086 |
| 45 | 6.939 | 6.979 | 6.596 | 6.636>> |
| 45 | 11.231 | 11.444 | -0.311 | -0.099<< |
| 46 | 11.358>> | 11.591 | -0.535 | -0.301 |
| 46 | 7.050<< | 7.087 | 6.427 | 6.464 |
| 46 | 11.346 | 11.603>> | -0.547 | -0.289 |
| 46 | 7.061 | 7.075<< | 6.439 | 6.452 |
| 46 | 7.054 | 7.076 | 6.440>> | 6.462 |
| 46 | 11.354 | 11.602 | -0.548<< | -0.299 |
| 46 | 7.051 | 7.079 | 6.437 | 6.465>> |
| 46 | 11.356 | 11.599 | -0.545 | -0.302<< |

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| BARRA 46 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 46 | 11.355>> | 11.589 | -0.528 | -0.294 |
| 46 | 7.047<< | 7.084 | 6.434 | 6.471 |
| 46 | 11.343 | 11.601>> | -0.540 | -0.282 |
| 46 | 7.059 | 7.073<< | 6.446 | 6.460 |
| 46 | 7.051 | 7.074 | 6.447>> | 6.469 |
| 46 | 11.351 | 11.600 | -0.540<< | -0.292 |
| 46 | 7.048 | 7.077 | 6.444 | 6.472>> |
| 46 | 11.354 | 11.597 | -0.538 | -0.295<< |
| 47 | 11.398>> | 11.650 | -0.619 | -0.366 |
| 47 | 7.134<< | 7.212 | 6.247 | 6.325 |
| 47 | 11.387 | 11.662>> | -0.630 | -0.355 |
| 47 | 7.180 | 7.165<< | 6.294 | 6.279 |
| 47 | 7.172 | 7.165 | 6.296>> | 6.289 |
| 47 | 11.395 | 11.662 | -0.632<< | -0.366 |
| 47 | 7.134 | 7.204 | 6.257 | 6.327>> |
| 47 | 11.398 | 11.659 | -0.629 | -0.369<< |

| BARRA 47 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 47 | 11.397>> | 11.649 | -0.616 | -0.364 |
| 47 | 7.132<< | 7.210 | 6.250 | 6.328 |
| 47 | 11.385 | 11.660>> | -0.627 | -0.352 |
| 47 | 7.179 | 7.163<< | 6.297 | 6.282 |
| 47 | 7.170 | 7.163 | 6.299>> | 6.292 |
| 47 | 11.394 | 11.660 | -0.629<< | -0.363 |
| 47 | 7.132 | 7.202 | 6.260 | 6.330>> |
| 47 | 11.396 | 11.657 | -0.626 | -0.366<< |
| 48 | 11.332>> | 11.601 | -0.537 | -0.268 |
| 48 | 7.002<< | 7.072 | 6.463 | 6.533 |
| 48 | 11.323 | 11.610>> | -0.545 | -0.259 |
| 48 | 7.010 | 7.063<< | 6.472 | 6.524 |
| 48 | 7.005 | 7.064 | 6.473>> | 6.531 |
| 48 | 11.328 | 11.609 | -0.546<< | -0.266 |
| 48 | 7.002 | 7.067 | 6.470 | 6.534>> |
| 48 | 11.332 | 11.606 | -0.543 | -0.269<< |

| BARRA 48 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 48 | 11.330>> | 11.600 | -0.539 | -0.270 |
| 48 | 7.001<< | 7.070 | 6.461 | 6.531 |
| 48 | 11.322 | 11.608>> | -0.548 | -0.261 |
| 48 | 7.009 | 7.062<< | 6.470 | 6.522 |
| 48 | 7.004 | 7.062 | 6.470>> | 6.529 |
| 48 | 11.327 | 11.608 | -0.549<< | -0.268 |
| 48 | 7.001 | 7.065 | 6.467 | 6.532>> |
| 48 | 11.330 | 11.605 | -0.546 | -0.271<< |
| 49 | 11.184>> | 11.468 | -0.329 | -0.046 |
| 49 | 6.856<< | 6.948 | 6.658 | 6.750 |
| 49 | 11.176 | 11.476>> | -0.338 | -0.037 |
| 49 | 6.864 | 6.940<< | 6.666 | 6.742 |
| 49 | 6.860 | 6.940 | 6.666>> | 6.747 |
| 49 | 11.180 | 11.475 | -0.338<< | -0.043 |
| 49 | 6.857 | 6.944 | 6.663 | 6.750>> |
| 49 | 11.183 | 11.472 | -0.335 | -0.046<< |

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| BARRA 49 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 49 | 11.183>> | 11.467 | -0.336 | -0.053 |
| 49 | 6.855<< | 6.947 | 6.650 | 6.743 |
| 49 | 11.174 | 11.475>> | -0.345 | -0.044 |
| 49 | 6.863 | 6.939<< | 6.659 | 6.734 |
| 49 | 6.859 | 6.939 | 6.659>> | 6.740 |
| 49 | 11.179 | 11.474 | -0.345<< | -0.050 |
| 49 | 6.855 | 6.943 | 6.656 | 6.743>> |
| 49 | 11.182 | 11.471 | -0.342 | -0.053<< |
| 50 | 10.878>> | 11.171 | 0.126 | 0.420 |
| 50 | 6.710<< | 6.825 | 6.848 | 6.963 |
| 50 | 10.869 | 11.180>> | 0.118 | 0.428 |
| 50 | 6.718 | 6.816<< | 6.856 | 6.954 |
| 50 | 6.715 | 6.817 | 6.856>> | 6.958 |
| 50 | 10.872 | 11.179 | 0.118<< | 0.425 |
| 50 | 6.710 | 6.822 | 6.851 | 6.963>> |
| 50 | 10.877 | 11.174 | 0.123 | 0.420<< |

| BARRA 50 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 50 | 10.876>> | 11.170 | 0.115 | 0.409 |
| 50 | 6.708<< | 6.823 | 6.837 | 6.952 |
| 50 | 10.868 | 11.178>> | 0.107 | 0.417 |
| 50 | 6.717 | 6.815<< | 6.845 | 6.943 |
| 50 | 6.714 | 6.815 | 6.845>> | 6.947 |
| 50 | 10.871 | 11.178 | 0.107<< | 0.414 |
| 50 | 6.709 | 6.820 | 6.840 | 6.952>> |
| 50 | 10.876 | 11.173 | 0.112 | 0.409<< |
| 51 | 10.401>> | 10.701 | 0.847 | 1.148 |
| 51 | 6.562<< | 6.700 | 7.035 | 7.173 |
| 51 | 10.393 | 10.709>> | 0.839 | 1.156 |
| 51 | 6.570 | 6.691<< | 7.044 | 7.165 |
| 51 | 6.567 | 6.692 | 7.044>> | 7.168 |
| 51 | 10.396 | 10.709 | 0.839<< | 1.152 |
| 51 | 6.562 | 6.697 | 7.039 | 7.173>> |
| 51 | 10.400 | 10.704 | 0.844 | 1.147<< |

| BARRA 51 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 51 | 10.399>> | 10.699 | 0.834 | 1.134 |
| 51 | 6.560<< | 6.697 | 7.022 | 7.160 |
| 51 | 10.390 | 10.707>> | 0.826 | 1.142 |
| 51 | 6.568 | 6.689<< | 7.030 | 7.151 |
| 51 | 6.565 | 6.690 | 7.030>> | 7.155 |
| 51 | 10.393 | 10.707 | 0.825<< | 1.139 |
| 51 | 6.560 | 6.694 | 7.025 | 7.160>> |
| 51 | 10.398 | 10.702 | 0.830 | 1.134<< |
| 52 | 9.781>> | 10.080 | 1.798 | 2.096 |
| 52 | 6.409<< | 6.574 | 7.221 | 7.387 |
| 52 | 9.767 | 10.094>> | 1.784 | 2.110 |
| 52 | 6.422 | 6.561<< | 7.235 | 7.373 |
| 52 | 6.414 | 6.562 | 7.236>> | 7.384 |
| 52 | 9.776 | 10.093 | 1.783<< | 2.100 |
| 52 | 6.409 | 6.566 | 7.231 | 7.388>> |
| 52 | 9.780 | 10.088 | 1.787 | 2.095<< |

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| BARRA 52 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 52 | 9.777>> | 10.076 | 1.783 | 2.082 |
| 52 | 6.404<< | 6.570 | 7.206 | 7.372 |
| 52 | 9.763 | 10.089>> | 1.769 | 2.095 |
| 52 | 6.418 | 6.556<< | 7.220 | 7.359 |
| 52 | 6.410 | 6.557 | 7.221>> | 7.369 |
| 52 | 9.771 | 10.088 | 1.768<< | 2.085 |
| 52 | 6.405 | 6.562 | 7.217 | 7.373>> |
| 52 | 9.776 | 10.084 | 1.773 | 2.080<< |
| 53 | 9.112>> | 9.357 | 2.887 | 3.133 |
| 53 | 6.183<< | 6.396 | 7.491 | 7.704 |
| 53 | 9.076 | 9.378>> | 2.871 | 3.173 |
| 53 | 6.196 | 6.383<< | 7.504 | 7.691 |
| 53 | 6.192 | 6.384 | 7.504>> | 7.695 |
| 53 | 9.079 | 9.377 | 2.870<< | 3.169 |
| 53 | 6.183 | 6.393 | 7.495 | 7.704>> |
| 53 | 9.111 | 9.361 | 2.882 | 3.132<< |

| BARRA 53 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 53 | 9.104>> | 9.350 | 2.873 | 3.119 |
| 53 | 6.175<< | 6.388 | 7.477 | 7.690 |
| 53 | 9.068 | 9.370>> | 2.857 | 3.159 |
| 53 | 6.188 | 6.376<< | 7.490 | 7.677 |
| 53 | 6.185 | 6.376 | 7.490>> | 7.681 |
| 53 | 9.071 | 9.370 | 2.856<< | 3.155 |
| 53 | 6.176 | 6.385 | 7.481 | 7.690>> |
| 53 | 9.104 | 9.353 | 2.869 | 3.118<< |
| 54 | 8.745>> | 8.580 | 3.958 | 3.792 |
| 54 | 5.751<< | 6.020 | 8.066 | 8.335 |
| 54 | 8.256 | 8.880>> | 3.710 | 4.335 |
| 54 | 5.795 | 5.976<< | 8.110 | 8.291 |
| 54 | 5.792 | 5.977 | 8.111>> | 8.295 |
| 54 | 8.537 | 8.847 | 3.674<< | 3.984 |
| 54 | 5.751 | 6.017 | 8.070 | 8.336>> |
| 54 | 8.745 | 8.583 | 3.953 | 3.791<< |

| BARRA 54 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 54 | 8.734>> | 8.568 | 3.947 | 3.781 |
| 54 | 5.739<< | 6.008 | 8.055 | 8.324 |
| 54 | 8.243 | 8.868>> | 3.700 | 4.324 |
| 54 | 5.783 | 5.964<< | 8.099 | 8.280 |
| 54 | 5.780 | 5.965 | 8.100>> | 8.285 |
| 54 | 8.525 | 8.835 | 3.664<< | 3.973 |
| 54 | 5.739 | 6.005 | 8.060 | 8.325>> |
| 54 | 8.733 | 8.571 | 3.942 | 3.780<< |
| 55 | 8.604>> | 8.553 | 4.002 | 3.950 |
| 55 | 4.956<< | 5.476 | 8.955 | 9.475 |
| 55 | 8.559 | 8.598>> | 3.957 | 3.996 |
| 55 | 5.247 | 5.356<< | 9.027 | 9.136 |
| 55 | 5.243 | 5.356 | 9.028>> | 9.141 |
| 55 | 8.563 | 8.598 | 3.956<< | 3.991 |
| 55 | 4.956 | 5.472 | 8.960 | 9.476>> |
| 55 | 8.604 | 8.557 | 3.997 | 3.950<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 55 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 55 | 8.158>> | 8.117 | 3.940 | 3.899 |
| 55 | 4.771<< | 5.193 | 7.771 | 8.193 |
| 55 | 8.122 | 8.148>> | 3.909 | 3.935 |
| 55 | 4.991 | 5.115<< | 7.804 | 7.927 |
| 55 | 4.987 | 5.115 | 7.804>> | 7.931 |
| 55 | 8.126 | 8.148 | 3.908<< | 3.931 |
| 55 | 4.771 | 5.193 | 7.771 | 8.193>> |
| 55 | 8.158 | 8.117 | 3.940 | 3.899<< |
| 56 | 9.486>> | 9.477 | 2.236 | 2.228 |
| 56 | 4.980<< | 5.391 | 7.539 | 7.950 |
| 56 | 9.482 | 9.481>> | 2.232 | 2.231 |
| 56 | 4.983 | 5.387<< | 7.543 | 7.946 |
| 56 | 4.980 | 5.387 | 7.543>> | 7.950 |
| 56 | 9.485 | 9.481 | 2.232<< | 2.227 |
| 56 | 4.980 | 5.387 | 7.543 | 7.950>> |
| 56 | 9.485 | 9.481 | 2.232 | 2.227<< |

| BARRA 56 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 56 | 9.587>> | 9.581 | 2.253 | 2.246 |
| 56 | 5.030<< | 5.468 | 7.505 | 7.943 |
| 56 | 9.584 | 9.584>> | 2.249 | 2.250 |
| 56 | 5.034 | 5.464<< | 7.508 | 7.939 |
| 56 | 5.030 | 5.465 | 7.508>> | 7.943 |
| 56 | 9.587 | 9.584 | 2.249<< | 2.246 |
| 57 | 8.763>> | 8.760 | 3.289 | 3.286 |
| 57 | 2.957<< | 3.407 | 10.109 | 10.558 |
| 57 | 8.756 | 8.768>> | 3.282 | 3.294 |
| 57 | 2.958 | 3.407<< | 10.109 | 10.558 |
| 57 | 2.958 | 3.407 | 10.109>> | 10.558 |
| 57 | 8.756 | 8.768 | 3.282<< | 3.294 |
| 57 | 2.957 | 3.407 | 10.109 | 10.558>> |
| 57 | 8.763 | 8.760 | 3.289 | 3.286<< |

| BARRA 57 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 57 | 8.768>> | 8.766 | 3.280 | 3.277 |
| 57 | 2.963<< | 3.412 | 10.099 | 10.549 |
| 57 | 8.761 | 8.773>> | 3.273 | 3.284 |
| 57 | 2.963 | 3.412<< | 10.100 | 10.548 |
| 57 | 2.963 | 3.412 | 10.100>> | 10.548 |
| 57 | 8.761 | 8.773 | 3.273<< | 3.284 |
| 57 | 2.963 | 3.412 | 10.099 | 10.549>> |
| 57 | 8.768 | 8.766 | 3.280 | 3.277<< |
| 58 | 9.419>> | 9.420 | 2.454 | 2.455 |
| 58 | 4.866<< | 5.305 | 7.708 | 8.147 |
| 58 | 9.416 | 9.424>> | 2.450 | 2.459 |
| 58 | 4.870 | 5.302<< | 7.711 | 8.143 |
| 58 | 4.870 | 5.302 | 7.711>> | 8.143 |
| 58 | 9.416 | 9.424 | 2.450<< | 2.459 |
| 58 | 4.866 | 5.305 | 7.708 | 8.147>> |
| 58 | 9.419 | 9.420 | 2.454 | 2.455<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 58 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 58 | 9.319>> | 9.318 | 2.411 | 2.410 |
| 58 | 4.817<< | 5.229 | 7.716 | 8.128 |
| 58 | 9.315 | 9.322>> | 2.407 | 2.414 |
| 58 | 4.821 | 5.225<< | 7.720 | 8.124 |
| 58 | 4.821 | 5.225 | 7.720>> | 8.124 |
| 58 | 9.315 | 9.322 | 2.407<< | 2.414 |
| 58 | 4.817 | 5.229 | 7.716 | 8.128>> |
| 58 | 9.319 | 9.318 | 2.411 | 2.410<< |
| 59 | 7.784>> | 7.758 | 4.368 | 4.342 |
| 59 | 4.406<< | 4.831 | 8.201 | 8.626 |
| 59 | 7.752 | 7.789>> | 4.337 | 4.373 |
| 59 | 4.620 | 4.755<< | 8.232 | 8.367 |
| 59 | 4.438 | 4.799 | 8.232>> | 8.594 |
| 59 | 7.752 | 7.789 | 4.337<< | 4.373 |
| 59 | 4.406 | 4.831 | 8.201 | 8.626>> |
| 59 | 7.784 | 7.758 | 4.368 | 4.342<< |

| BARRA 59 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 59 | 8.431>> | 8.396 | 4.257 | 4.222 |
| 59 | 4.791<< | 5.310 | 9.219 | 9.738 |
| 59 | 8.389 | 8.437>> | 4.216 | 4.264 |
| 59 | 5.075 | 5.196<< | 9.285 | 9.406 |
| 59 | 5.075 | 5.196 | 9.285>> | 9.406 |
| 59 | 8.389 | 8.437 | 4.216<< | 4.264 |
| 59 | 4.791 | 5.310 | 9.219 | 9.738>> |
| 59 | 8.431 | 8.396 | 4.257 | 4.222<< |
| 60 | 8.488>> | 8.348 | 4.302 | 4.162 |
| 60 | 5.506<< | 5.778 | 8.420 | 8.692 |
| 60 | 8.012 | 8.628>> | 4.076 | 4.693 |
| 60 | 5.547 | 5.738<< | 8.460 | 8.651 |
| 60 | 5.547 | 5.738 | 8.460>> | 8.651 |
| 60 | 8.288 | 8.603 | 4.031<< | 4.347 |
| 60 | 5.506 | 5.778 | 8.420 | 8.692>> |
| 60 | 8.488 | 8.348 | 4.302 | 4.162<< |

| BARRA 60 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 60 | 8.495>> | 8.355 | 4.319 | 4.179 |
| 60 | 5.514<< | 5.786 | 8.436 | 8.708 |
| 60 | 8.020 | 8.636>> | 4.092 | 4.709 |
| 60 | 5.554 | 5.746<< | 8.476 | 8.668 |
| 60 | 5.554 | 5.746 | 8.476>> | 8.668 |
| 60 | 8.296 | 8.611 | 4.047<< | 4.363 |
| 60 | 5.514 | 5.786 | 8.436 | 8.708>> |
| 60 | 8.495 | 8.355 | 4.319 | 4.179<< |
| 61 | 8.797>> | 9.048 | 3.348 | 3.600 |
| 61 | 5.869<< | 6.089 | 7.949 | 8.169 |
| 61 | 8.763 | 9.067>> | 3.333 | 3.638 |
| 61 | 5.881 | 6.078<< | 7.961 | 8.157 |
| 61 | 5.878 | 6.078 | 7.962>> | 8.161 |
| 61 | 8.766 | 9.067 | 3.333<< | 3.634 |
| 61 | 5.869 | 6.086 | 7.953 | 8.170>> |
| 61 | 8.797 | 9.052 | 3.344 | 3.599<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 61 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 61 | 8.800>> | 9.052 | 3.368 | 3.620 |
| 61 | 5.873<< | 6.093 | 7.969 | 8.189 |
| 61 | 8.766 | 9.071>> | 3.353 | 3.658 |
| 61 | 5.885 | 6.081<< | 7.981 | 8.177 |
| 61 | 5.881 | 6.081 | 7.981>> | 8.181 |
| 61 | 8.770 | 9.071 | 3.352<< | 3.654 |
| 61 | 5.873 | 6.090 | 7.973 | 8.190>> |
| 61 | 8.800 | 9.055 | 3.364 | 3.619<< |
| 62 | 9.397>> | 9.703 | 2.369 | 2.675 |
| 62 | 6.027<< | 6.200 | 7.789 | 7.962 |
| 62 | 9.385 | 9.716>> | 2.356 | 2.687 |
| 62 | 6.040 | 6.187<< | 7.801 | 7.949 |
| 62 | 6.032 | 6.188 | 7.803>> | 7.959 |
| 62 | 9.392 | 9.716 | 2.354<< | 2.678 |
| 62 | 6.027 | 6.192 | 7.798 | 7.964>> |
| 62 | 9.397 | 9.711 | 2.359 | 2.673<< |

| BARRA 62 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 62 | 9.398>> | 9.704 | 2.388 | 2.694 |
| 62 | 6.027<< | 6.200 | 7.808 | 7.982 |
| 62 | 9.385 | 9.717>> | 2.376 | 2.707 |
| 62 | 6.040 | 6.188<< | 7.821 | 7.969 |
| 62 | 6.032 | 6.188 | 7.823>> | 7.979 |
| 62 | 9.393 | 9.716 | 2.374<< | 2.697 |
| 62 | 6.028 | 6.193 | 7.818 | 7.983>> |
| 62 | 9.397 | 9.711 | 2.379 | 2.693<< |
| 63 | 9.944>> | 10.252 | 1.534 | 1.842 |
| 63 | 6.107<< | 6.254 | 7.718 | 7.865 |
| 63 | 9.936 | 10.260>> | 1.526 | 1.850 |
| 63 | 6.115 | 6.246<< | 7.726 | 7.857 |
| 63 | 6.112 | 6.246 | 7.726>> | 7.860 |
| 63 | 9.939 | 10.260 | 1.526<< | 1.847 |
| 63 | 6.107 | 6.251 | 7.721 | 7.865>> |
| 63 | 9.944 | 10.255 | 1.531 | 1.842<< |

| BARRA 63 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 63 | 9.943>> | 10.251 | 1.553 | 1.861 |
| 63 | 6.105<< | 6.252 | 7.737 | 7.884 |
| 63 | 9.935 | 10.259>> | 1.545 | 1.869 |
| 63 | 6.113 | 6.244<< | 7.745 | 7.876 |
| 63 | 6.111 | 6.245 | 7.745>> | 7.879 |
| 63 | 9.937 | 10.259 | 1.544<< | 1.866 |
| 63 | 6.106 | 6.250 | 7.740 | 7.884>> |
| 63 | 9.942 | 10.254 | 1.549 | 1.861<< |
| 64 | 10.345>> | 10.648 | 0.932 | 1.236 |
| 64 | 6.180<< | 6.305 | 7.649 | 7.774 |
| 64 | 10.337 | 10.656>> | 0.924 | 1.244 |
| 64 | 6.188 | 6.297<< | 7.657 | 7.766 |
| 64 | 6.185 | 6.297 | 7.657>> | 7.769 |
| 64 | 10.340 | 10.656 | 0.924<< | 1.241 |
| 64 | 6.180 | 6.303 | 7.652 | 7.774>> |
| 64 | 10.345 | 10.651 | 0.929 | 1.236<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 64 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 64 | 10.342>> | 10.646 | 0.949 | 1.252 |
| 64 | 6.177<< | 6.303 | 7.665 | 7.790 |
| 64 | 10.335 | 10.654>> | 0.941 | 1.260 |
| 64 | 6.185 | 6.295<< | 7.673 | 7.782 |
| 64 | 6.183 | 6.295 | 7.673>> | 7.786 |
| 64 | 10.337 | 10.654 | 0.940<< | 1.257 |
| 64 | 6.177 | 6.300 | 7.668 | 7.791>> |
| 64 | 10.342 | 10.649 | 0.946 | 1.252<< |
| 65 | 10.574>> | 10.869 | 0.599 | 0.894 |
| 65 | 6.249<< | 6.353 | 7.580 | 7.684 |
| 65 | 10.566 | 10.877>> | 0.591 | 0.902 |
| 65 | 6.257 | 6.345<< | 7.588 | 7.676 |
| 65 | 6.250 | 6.347 | 7.588>> | 7.685 |
| 65 | 10.573 | 10.876 | 0.591<< | 0.894 |
| 65 | 6.250 | 6.347 | 7.588 | 7.685>> |
| 65 | 10.573 | 10.876 | 0.591 | 0.894<< |

| BARRA 65 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 65 | 10.571>> | 10.866 | 0.612 | 0.906 |
| 65 | 6.247<< | 6.351 | 7.592 | 7.696 |
| 65 | 10.563 | 10.874>> | 0.604 | 0.914 |
| 65 | 6.255 | 6.343<< | 7.600 | 7.688 |
| 65 | 6.248 | 6.344 | 7.601>> | 7.697 |
| 65 | 10.570 | 10.873 | 0.603<< | 0.906 |
| 65 | 6.248 | 6.344 | 7.601 | 7.697>> |
| 65 | 10.570 | 10.873 | 0.603 | 0.906<< |
| 66 | 10.644>> | 10.927 | 0.514 | 0.796 |
| 66 | 6.317<< | 6.400 | 7.510 | 7.593 |
| 66 | 10.636 | 10.935>> | 0.506 | 0.804 |
| 66 | 6.325 | 6.392<< | 7.518 | 7.585 |
| 66 | 6.318 | 6.393 | 7.519>> | 7.594 |
| 66 | 10.643 | 10.934 | 0.505<< | 0.795 |
| 66 | 6.318 | 6.393 | 7.519 | 7.594>> |
| 66 | 10.643 | 10.934 | 0.505 | 0.795<< |

| BARRA 66 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 66 | 10.642>> | 10.924 | 0.521 | 0.803 |
| 66 | 6.315<< | 6.398 | 7.517 | 7.600 |
| 66 | 10.634 | 10.932>> | 0.513 | 0.811 |
| 66 | 6.323 | 6.390<< | 7.525 | 7.592 |
| 66 | 6.316 | 6.390 | 7.526>> | 7.601 |
| 66 | 10.641 | 10.932 | 0.512<< | 0.802 |
| 66 | 6.316 | 6.390 | 7.526 | 7.601>> |
| 66 | 10.641 | 10.932 | 0.512 | 0.802<< |
| 67 | 10.631>> | 10.906 | 0.548 | 0.823 |
| 67 | 6.379<< | 6.439 | 7.446 | 7.507 |
| 67 | 10.629 | 10.908>> | 0.545 | 0.825 |
| 67 | 6.400 | 6.417<< | 7.468 | 7.485 |
| 67 | 6.396 | 6.418 | 7.469>> | 7.490 |
| 67 | 10.629 | 10.908 | 0.545<< | 0.825 |
| 67 | 6.379 | 6.439 | 7.446 | 7.507>> |
| 67 | 10.631 | 10.906 | 0.548 | 0.823<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 67 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 67 | 10.629>> | 10.904 | 0.551 | 0.826 |
| 67 | 6.377<< | 6.437 | 7.449 | 7.509 |
| 67 | 10.627 | 10.907>> | 0.548 | 0.828 |
| 67 | 6.398 | 6.415<< | 7.471 | 7.488 |
| 67 | 6.394 | 6.416 | 7.472>> | 7.493 |
| 67 | 10.627 | 10.907 | 0.548<< | 0.828 |
| 67 | 6.377 | 6.437 | 7.449 | 7.509>> |
| 67 | 10.629 | 10.904 | 0.551 | 0.826<< |
| 68 | 10.509>> | 10.762 | 0.766 | 1.018 |
| 68 | 6.208<< | 6.244 | 7.743 | 7.779 |
| 68 | 10.500 | 10.771>> | 0.757 | 1.028 |
| 68 | 6.218 | 6.235<< | 7.752 | 7.769 |
| 68 | 6.211 | 6.235 | 7.754>> | 7.778 |
| 68 | 10.507 | 10.771 | 0.755<< | 1.019 |
| 68 | 6.209 | 6.237 | 7.752 | 7.780>> |
| 68 | 10.509 | 10.768 | 0.758 | 1.017<< |

| BARRA 68 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 68 | 10.508>> | 10.760 | 0.764 | 1.016 |
| 68 | 6.207<< | 6.243 | 7.741 | 7.776 |
| 68 | 10.499 | 10.769>> | 0.755 | 1.025 |
| 68 | 6.216 | 6.233<< | 7.750 | 7.767 |
| 68 | 6.209 | 6.233 | 7.752>> | 7.776 |
| 68 | 10.506 | 10.769 | 0.753<< | 1.017 |
| 68 | 6.207 | 6.236 | 7.750 | 7.778>> |
| 68 | 10.508 | 10.767 | 0.755 | 1.014<< |
| 69 | 10.308>> | 10.541 | 1.100 | 1.333 |
| 69 | 6.023<< | 6.061 | 8.024 | 8.063 |
| 69 | 10.298 | 10.551>> | 1.090 | 1.343 |
| 69 | 6.033 | 6.052<< | 8.034 | 8.053 |
| 69 | 6.026 | 6.053 | 8.034>> | 8.061 |
| 69 | 10.305 | 10.550 | 1.090<< | 1.335 |
| 69 | 6.024 | 6.055 | 8.032 | 8.063>> |
| 69 | 10.307 | 10.548 | 1.092 | 1.333<< |

| BARRA 69 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 69 | 10.307>> | 10.540 | 1.093 | 1.326 |
| 69 | 6.022<< | 6.060 | 8.017 | 8.056 |
| 69 | 10.297 | 10.550>> | 1.083 | 1.336 |
| 69 | 6.031 | 6.050<< | 8.027 | 8.046 |
| 69 | 6.025 | 6.052 | 8.027>> | 8.054 |
| 69 | 10.304 | 10.549 | 1.083<< | 1.328 |
| 69 | 6.023 | 6.054 | 8.025 | 8.056>> |
| 69 | 10.306 | 10.546 | 1.085 | 1.325<< |
| 70 | 9.948>> | 10.159 | 1.680 | 1.891 |
| 70 | 5.837<< | 5.879 | 8.300 | 8.342 |
| 70 | 9.937 | 10.170>> | 1.669 | 1.902 |
| 70 | 5.848 | 5.868<< | 8.311 | 8.332 |
| 70 | 5.848 | 5.868 | 8.311>> | 8.332 |
| 70 | 9.937 | 10.170 | 1.669<< | 1.902 |
| 70 | 5.837 | 5.879 | 8.300 | 8.342>> |
| 70 | 9.948 | 10.159 | 1.680 | 1.891<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 70 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 70 | 9.946>> | 10.158 | 1.669 | 1.880 |
| 70 | 5.836<< | 5.877 | 8.289 | 8.331 |
| 70 | 9.936 | 10.168>> | 1.658 | 1.891 |
| 70 | 5.846 | 5.867<< | 8.300 | 8.321 |
| 70 | 5.846 | 5.867 | 8.300>> | 8.321 |
| 70 | 9.936 | 10.168 | 1.658<< | 1.891 |
| 70 | 5.836 | 5.877 | 8.289 | 8.331>> |
| 70 | 9.946 | 10.158 | 1.669 | 1.880<< |
| 71 | 9.417>> | 9.603 | 2.526 | 2.713 |
| 71 | 5.650<< | 5.695 | 8.575 | 8.619 |
| 71 | 9.406 | 9.614>> | 2.515 | 2.724 |
| 71 | 5.661 | 5.684<< | 8.586 | 8.608 |
| 71 | 5.661 | 5.684 | 8.586>> | 8.608 |
| 71 | 9.406 | 9.614 | 2.515<< | 2.724 |
| 71 | 5.650 | 5.695 | 8.575 | 8.619>> |
| 71 | 9.417 | 9.603 | 2.526 | 2.713<< |

| BARRA 71 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 71 | 9.414>> | 9.601 | 2.512 | 2.699 |
| 71 | 5.648<< | 5.692 | 8.561 | 8.606 |
| 71 | 9.403 | 9.612>> | 2.502 | 2.710 |
| 71 | 5.659 | 5.682<< | 8.572 | 8.595 |
| 71 | 5.659 | 5.682 | 8.572>> | 8.595 |
| 71 | 9.403 | 9.612 | 2.502<< | 2.710 |
| 71 | 5.648 | 5.692 | 8.561 | 8.606>> |
| 71 | 9.414 | 9.601 | 2.512 | 2.699<< |
| 72 | 8.743>> | 8.896 | 3.602 | 3.755 |
| 72 | 5.457<< | 5.511 | 8.847 | 8.901 |
| 72 | 8.725 | 8.914>> | 3.584 | 3.773 |
| 72 | 5.475 | 5.493<< | 8.865 | 8.883 |
| 72 | 5.469 | 5.494 | 8.865>> | 8.890 |
| 72 | 8.730 | 8.913 | 3.583<< | 3.766 |
| 72 | 5.458 | 5.505 | 8.854 | 8.901>> |
| 72 | 8.742 | 8.901 | 3.595 | 3.754<< |

| BARRA 72 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 72 | 8.738>> | 8.891 | 3.587 | 3.740 |
| 72 | 5.453<< | 5.507 | 8.832 | 8.886 |
| 72 | 8.720 | 8.909>> | 3.569 | 3.758 |
| 72 | 5.471 | 5.489<< | 8.850 | 8.868 |
| 72 | 5.465 | 5.489 | 8.850>> | 8.875 |
| 72 | 8.726 | 8.908 | 3.568<< | 3.751 |
| 72 | 5.454 | 5.501 | 8.839 | 8.886>> |
| 72 | 8.738 | 8.897 | 3.580 | 3.739<< |
| 73 | 8.043>> | 8.159 | 4.718 | 4.834 |
| 73 | 5.143<< | 5.208 | 9.300 | 9.364 |
| 73 | 8.011 | 8.199>> | 4.675 | 4.864 |
| 73 | 5.165 | 5.186<< | 9.322 | 9.343 |
| 73 | 5.165 | 5.186 | 9.322>> | 9.343 |
| 73 | 8.011 | 8.199 | 4.675<< | 4.864 |
| 73 | 5.143 | 5.208 | 9.300 | 9.364>> |
| 73 | 8.043 | 8.159 | 4.718 | 4.834<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 73 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 73 | 8.035>> | 8.151 | 4.704 | 4.820 |
| 73 | 5.136<< | 5.201 | 9.286 | 9.351 |
| 73 | 8.003 | 8.191>> | 4.661 | 4.850 |
| 73 | 5.158 | 5.179<< | 9.308 | 9.329 |
| 73 | 5.158 | 5.179 | 9.308>> | 9.329 |
| 73 | 8.003 | 8.191 | 4.661<< | 4.850 |
| 73 | 5.136 | 5.201 | 9.286 | 9.351>> |
| 73 | 8.035 | 8.151 | 4.704 | 4.820<< |
| 74 | 7.535>> | 7.370 | 5.842 | 5.678 |
| 74 | 4.670<< | 4.760 | 9.979 | 10.069 |
| 74 | 7.400 | 7.595>> | 5.592 | 5.787 |
| 74 | 4.717 | 4.714<< | 10.025 | 10.022 |
| 74 | 4.699 | 4.717 | 10.026>> | 10.044 |
| 74 | 7.418 | 7.592 | 5.591<< | 5.765 |
| 74 | 4.674 | 4.743 | 10.000 | 10.069>> |
| 74 | 7.531 | 7.388 | 5.821 | 5.677<< |

| BARRA 74 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 74 | 7.523>> | 7.358 | 5.832 | 5.667 |
| 74 | 4.658<< | 4.748 | 9.968 | 10.058 |
| 74 | 7.388 | 7.583>> | 5.581 | 5.777 |
| 74 | 4.705 | 4.702<< | 10.015 | 10.011 |
| 74 | 4.687 | 4.705 | 10.015>> | 10.033 |
| 74 | 7.406 | 7.580 | 5.581<< | 5.755 |
| 74 | 4.662 | 4.731 | 9.990 | 10.059>> |
| 74 | 7.519 | 7.376 | 5.810 | 5.666<< |
| 75 | 7.312>> | 7.130 | 6.181 | 6.000 |
| 75 | 3.808<< | 4.049 | 11.100 | 11.341 |
| 75 | 7.258 | 7.272>> | 6.016 | 6.030 |
| 75 | 4.092 | 3.998<< | 11.085 | 10.991 |
| 75 | 3.826 | 4.004 | 11.152>> | 11.330 |
| 75 | 7.289 | 7.267 | 6.013<< | 5.991 |
| 75 | 3.813 | 4.017 | 11.139 | 11.344>> |
| 75 | 7.303 | 7.254 | 6.027 | 5.978<< |

| BARRA 75 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 75 | 6.930>> | 6.781 | 5.609 | 5.461 |
| 75 | 3.673<< | 3.843 | 9.447 | 9.617 |
| 75 | 6.901 | 6.895>> | 5.487 | 5.482 |
| 75 | 3.700 | 3.817<< | 9.473 | 9.591 |
| 75 | 3.700 | 3.817 | 9.473>> | 9.591 |
| 75 | 6.901 | 6.895 | 5.487<< | 5.482 |
| 75 | 3.673 | 3.843 | 9.447 | 9.617>> |
| 75 | 6.927 | 6.869 | 5.513 | 5.455<< |
| 76 | 8.293>> | 8.136 | 3.908 | 3.751 |
| 76 | 3.830<< | 3.986 | 9.283 | 9.440 |
| 76 | 8.203 | 8.221>> | 3.827 | 3.846 |
| 76 | 3.859 | 3.957<< | 9.313 | 9.410 |
| 76 | 3.843 | 3.958 | 9.314>> | 9.428 |
| 76 | 8.219 | 8.220 | 3.826<< | 3.827 |
| 76 | 3.831 | 3.970 | 9.301 | 9.441>> |
| 76 | 8.292 | 8.152 | 3.890 | 3.750<< |

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| BARRA 76 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 76 | 8.394>> | 8.242 | 3.925 | 3.772 |
| 76 | 3.880<< | 4.061 | 9.248 | 9.429 |
| 76 | 8.306 | 8.322>> | 3.845 | 3.861 |
| 76 | 3.909 | 4.031<< | 9.277 | 9.400 |
| 76 | 3.893 | 4.032 | 9.278>> | 9.418 |
| 76 | 8.322 | 8.321 | 3.844<< | 3.843 |
| 76 | 3.881 | 4.044 | 9.266 | 9.430>> |
| 76 | 8.393 | 8.258 | 3.906 | 3.771<< |
| 77 | 7.609>> | 7.456 | 4.917 | 4.764 |
| 77 | 1.759<< | 1.902 | 11.969 | 12.112 |
| 77 | 7.479 | 7.487>> | 4.899 | 4.906 |
| 77 | 1.771 | 1.890<< | 11.980 | 12.100 |
| 77 | 1.771 | 1.890 | 11.980>> | 12.100 |
| 77 | 7.479 | 7.487 | 4.899<< | 4.906 |
| 77 | 1.759 | 1.902 | 11.969 | 12.112>> |
| 77 | 7.609 | 7.456 | 4.917 | 4.764<< |

| BARRA 77 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 77 | 7.614>> | 7.461 | 4.908 | 4.755 |
| 77 | 1.765<< | 1.907 | 11.959 | 12.102 |
| 77 | 7.485 | 7.492>> | 4.890 | 4.897 |
| 77 | 1.776 | 1.896<< | 11.971 | 12.091 |
| 77 | 1.776 | 1.896 | 11.971>> | 12.091 |
| 77 | 7.485 | 7.492 | 4.890<< | 4.897 |
| 77 | 1.765 | 1.907 | 11.959 | 12.102>> |
| 77 | 7.614 | 7.461 | 4.908 | 4.755<< |
| 78 | 8.339>> | 8.172 | 4.008 | 3.840 |
| 78 | 3.735<< | 3.906 | 9.439 | 9.610 |
| 78 | 8.309 | 8.203>> | 3.977 | 3.871 |
| 78 | 3.766 | 3.876<< | 9.469 | 9.580 |
| 78 | 3.746 | 3.876 | 9.472>> | 9.601 |
| 78 | 8.328 | 8.202 | 3.975<< | 3.849 |
| 78 | 3.735 | 3.887 | 9.461 | 9.613>> |
| 78 | 8.339 | 8.191 | 3.986 | 3.838<< |

| BARRA 78 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 78 | 8.240>> | 8.092 | 3.945 | 3.797 |
| 78 | 3.687<< | 3.815 | 9.470 | 9.598 |
| 78 | 8.229 | 8.103>> | 3.934 | 3.808 |
| 78 | 3.698 | 3.804<< | 9.482 | 9.587 |
| 78 | 3.698 | 3.804 | 9.482>> | 9.587 |
| 78 | 8.229 | 8.103 | 3.934<< | 3.808 |
| 78 | 3.687 | 3.815 | 9.470 | 9.598>> |
| 78 | 8.240 | 8.092 | 3.945 | 3.797<< |
| 79 | 6.773>> | 6.588 | 5.830 | 5.645 |
| 79 | 3.351<< | 3.519 | 9.829 | 9.998 |
| 79 | 6.729 | 6.631>> | 5.787 | 5.688 |
| 79 | 3.556 | 3.464<< | 9.838 | 9.746 |
| 79 | 3.363 | 3.477 | 9.876>> | 9.990 |
| 79 | 6.760 | 6.630 | 5.783<< | 5.652 |
| 79 | 3.353 | 3.488 | 9.865 | 10.001>> |
| 79 | 6.771 | 6.619 | 5.794 | 5.641<< |

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| BARRA 79 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 79 | 7.368>> | 7.150 | 6.146 | 5.928 |
| 79 | 3.686<< | 3.912 | 11.315 | 11.540 |
| 79 | 7.312 | 7.206>> | 6.090 | 5.984 |
| 79 | 3.960 | 3.821<< | 11.355 | 11.215 |
| 79 | 3.721 | 3.857 | 11.375>> | 11.510 |
| 79 | 7.333 | 7.205 | 6.086<< | 5.958 |
| 79 | 3.687 | 3.891 | 11.341 | 11.545>> |
| 79 | 7.367 | 7.171 | 6.120 | 5.924<< |
| 80 | 7.496>> | 7.145 | 6.118 | 5.767 |
| 80 | 4.466<< | 4.518 | 10.322 | 10.374 |
| 80 | 7.152 | 7.478>> | 5.787 | 6.113 |
| 80 | 4.522 | 4.462<< | 10.377 | 10.318 |
| 80 | 4.483 | 4.467 | 10.382>> | 10.366 |
| 80 | 7.191 | 7.473 | 5.782<< | 6.064 |
| 80 | 4.471 | 4.479 | 10.370 | 10.378>> |
| 80 | 7.491 | 7.184 | 6.069 | 5.762<< |

| BARRA 80 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 80 | 7.503>> | 7.152 | 6.134 | 5.783 |
| 80 | 4.474<< | 4.526 | 10.338 | 10.390 |
| 80 | 7.160 | 7.486>> | 5.803 | 6.129 |
| 80 | 4.530 | 4.470<< | 10.393 | 10.334 |
| 80 | 4.490 | 4.475 | 10.398>> | 10.383 |
| 80 | 7.199 | 7.481 | 5.799<< | 6.080 |
| 80 | 4.479 | 4.487 | 10.386 | 10.394>> |
| 80 | 7.498 | 7.191 | 6.085 | 5.779<< |
| 81 | 7.858>> | 7.964 | 4.996 | 5.103 |
| 81 | 4.899<< | 4.925 | 9.708 | 9.735 |
| 81 | 7.814 | 7.999>> | 4.965 | 5.149 |
| 81 | 4.932 | 4.891<< | 9.742 | 9.701 |
| 81 | 4.914 | 4.893 | 9.745>> | 9.725 |
| 81 | 7.843 | 7.996 | 4.960<< | 5.113 |
| 81 | 4.901 | 4.906 | 9.732 | 9.738>> |
| 81 | 7.856 | 7.983 | 4.973 | 5.100<< |

| BARRA 81 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 81 | 7.862>> | 7.968 | 5.016 | 5.123 |
| 81 | 4.902<< | 4.929 | 9.728 | 9.755 |
| 81 | 7.818 | 8.002>> | 4.985 | 5.169 |
| 81 | 4.936 | 4.895<< | 9.762 | 9.721 |
| 81 | 4.917 | 4.897 | 9.765>> | 9.745 |
| 81 | 7.846 | 8.000 | 4.980<< | 5.133 |
| 81 | 4.904 | 4.910 | 9.752 | 9.758>> |
| 81 | 7.860 | 7.987 | 4.993 | 5.120<< |
| 82 | 8.504>> | 8.644 | 3.972 | 4.112 |
| 82 | 5.163<< | 5.184 | 9.329 | 9.350 |
| 82 | 8.469 | 8.679>> | 3.937 | 4.147 |
| 82 | 5.198 | 5.149<< | 9.364 | 9.315 |
| 82 | 5.177 | 5.152 | 9.367>> | 9.341 |
| 82 | 8.491 | 8.677 | 3.935<< | 4.121 |
| 82 | 5.166 | 5.163 | 9.356 | 9.352>> |
| 82 | 8.502 | 8.666 | 3.946 | 4.110<< |

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| BARRA 100 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 100 | 7.905>> | 7.782 | 5.954 | 5.831 |
| 100 | 4.900<< | 5.097 | 10.225 | 10.422 |
| 100 | 7.730 | 8.185>> | 5.487 | 5.942 |
| 100 | 4.940 | 5.057<< | 10.265 | 10.382 |
| 100 | 4.912 | 5.057 | 10.273>> | 10.418 |
| 100 | 7.758 | 8.185 | 5.480<< | 5.906 |
| 100 | 4.900 | 5.069 | 10.261 | 10.430>> |
| 100 | 7.904 | 7.810 | 5.918 | 5.823<< |
| 101 | 8.128>> | 8.398 | 5.104 | 5.374 |
| 101 | 5.327<< | 5.483 | 9.613 | 9.768 |
| 101 | 8.020 | 8.416>> | 5.111 | 5.506 |
| 101 | 5.338 | 5.472<< | 9.624 | 9.758 |
| 101 | 5.338 | 5.472 | 9.624>> | 9.758 |
| 101 | 8.117 | 8.409 | 5.093<< | 5.385 |
| 101 | 5.327 | 5.483 | 9.613 | 9.768>> |
| 101 | 8.128 | 8.398 | 5.104 | 5.374<< |

| BARRA 101 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 101 | 8.153>> | 8.423 | 5.156 | 5.426 |
| 101 | 5.352<< | 5.508 | 9.665 | 9.820 |
| 101 | 8.046 | 8.441>> | 5.163 | 5.558 |
| 101 | 5.363 | 5.497<< | 9.676 | 9.810 |
| 101 | 5.363 | 5.497 | 9.676>> | 9.810 |
| 101 | 8.142 | 8.434 | 5.145<< | 5.437 |
| 101 | 5.352 | 5.508 | 9.665 | 9.820>> |
| 101 | 8.153 | 8.423 | 5.156 | 5.426<< |
| 102 | 8.726>> | 8.855 | 4.443 | 4.572 |
| 102 | 5.561<< | 5.688 | 9.376 | 9.503 |
| 102 | 8.629 | 8.917>> | 4.392 | 4.679 |
| 102 | 5.571 | 5.679<< | 9.386 | 9.493 |
| 102 | 5.571 | 5.679 | 9.386>> | 9.493 |
| 102 | 8.629 | 8.917 | 4.392<< | 4.679 |
| 102 | 5.561 | 5.688 | 9.376 | 9.503>> |
| 102 | 8.726 | 8.855 | 4.443 | 4.572<< |

| BARRA 102 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 102 | 8.743>> | 8.872 | 4.504 | 4.633 |
| 102 | 5.578<< | 5.705 | 9.437 | 9.564 |
| 102 | 8.646 | 8.934>> | 4.453 | 4.740 |
| 102 | 5.588 | 5.695<< | 9.447 | 9.554 |
| 102 | 5.588 | 5.695 | 9.447>> | 9.554 |
| 102 | 8.646 | 8.934 | 4.453<< | 4.740 |
| 102 | 5.578 | 5.705 | 9.437 | 9.564>> |
| 102 | 8.743 | 8.872 | 4.504 | 4.633<< |
| 103 | 9.329>> | 9.461 | 3.588 | 3.719 |
| 103 | 5.750<< | 5.866 | 9.184 | 9.299 |
| 103 | 9.321 | 9.470>> | 3.579 | 3.728 |
| 103 | 5.759 | 5.857<< | 9.193 | 9.290 |
| 103 | 5.759 | 5.857 | 9.193>> | 9.290 |
| 103 | 9.321 | 9.470 | 3.579<< | 3.728 |
| 103 | 5.750 | 5.866 | 9.184 | 9.299>> |
| 103 | 9.329 | 9.461 | 3.588 | 3.719<< |

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| BARRA 103 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 103 | 9.340>> | 9.471 | 3.655 | 3.786 |
| 103 | 5.761<< | 5.876 | 9.251 | 9.366 |
| 103 | 9.331 | 9.480>> | 3.646 | 3.795 |
| 103 | 5.770 | 5.867<< | 9.260 | 9.357 |
| 103 | 5.770 | 5.867 | 9.260>> | 9.357 |
| 103 | 9.331 | 9.480 | 3.646<< | 3.795 |
| 103 | 5.761 | 5.876 | 9.251 | 9.366>> |
| 103 | 9.340 | 9.471 | 3.655 | 3.786<< |
| 104 | 9.791>> | 9.922 | 2.953 | 3.084 |
| 104 | 5.937<< | 6.041 | 8.991 | 9.095 |
| 104 | 9.783 | 9.930>> | 2.945 | 3.092 |
| 104 | 5.945 | 6.033<< | 8.999 | 9.087 |
| 104 | 5.945 | 6.033 | 8.999>> | 9.087 |
| 104 | 9.783 | 9.930 | 2.945<< | 3.092 |
| 104 | 5.937 | 6.041 | 8.991 | 9.095>> |
| 104 | 9.791 | 9.922 | 2.953 | 3.084<< |

| BARRA 104 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 104 | 9.796>> | 9.927 | 3.003 | 3.134 |
| 104 | 5.942<< | 6.045 | 9.041 | 9.144 |
| 104 | 9.788 | 9.935>> | 2.995 | 3.142 |
| 104 | 5.950 | 6.037<< | 9.049 | 9.136 |
| 104 | 5.950 | 6.037 | 9.049>> | 9.136 |
| 104 | 9.788 | 9.935 | 2.995<< | 3.142 |
| 104 | 5.942 | 6.045 | 9.041 | 9.144>> |
| 104 | 9.796 | 9.927 | 3.003 | 3.134<< |
| 105 | 10.092>> | 10.219 | 2.546 | 2.673 |
| 105 | 6.127<< | 6.218 | 8.768 | 8.860 |
| 105 | 10.085 | 10.226>> | 2.539 | 2.680 |
| 105 | 6.134 | 6.211<< | 8.776 | 8.853 |
| 105 | 6.134 | 6.211 | 8.776>> | 8.853 |
| 105 | 10.085 | 10.226 | 2.539<< | 2.680 |
| 105 | 6.127 | 6.218 | 8.768 | 8.860>> |
| 105 | 10.092 | 10.219 | 2.546 | 2.673<< |

| BARRA 105 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 105 | 10.095>> | 10.222 | 2.508 | 2.635 |
| 105 | 6.130<< | 6.221 | 8.731 | 8.822 |
| 105 | 10.088 | 10.229>> | 2.501 | 2.642 |
| 105 | 6.137 | 6.214<< | 8.738 | 8.815 |
| 105 | 6.137 | 6.214 | 8.738>> | 8.815 |
| 105 | 10.088 | 10.229 | 2.501<< | 2.642 |
| 105 | 6.130 | 6.221 | 8.731 | 8.822>> |
| 105 | 10.095 | 10.222 | 2.508 | 2.635<< |
| 106 | 10.253>> | 10.378 | 2.265 | 2.390 |
| 106 | 6.327<< | 6.406 | 8.439 | 8.519 |
| 106 | 10.247 | 10.384>> | 2.259 | 2.396 |
| 106 | 6.333 | 6.400<< | 8.446 | 8.513 |
| 106 | 6.333 | 6.400 | 8.446>> | 8.513 |
| 106 | 10.247 | 10.384 | 2.259<< | 2.396 |
| 106 | 6.327 | 6.406 | 8.439 | 8.519>> |
| 106 | 10.253 | 10.378 | 2.265 | 2.390<< |

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| BARRA 106 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 106 | 10.253>> | 10.378 | 2.228 | 2.353 |
| 106 | 6.327<< | 6.406 | 8.403 | 8.482 |
| 106 | 10.247 | 10.384>> | 2.222 | 2.360 |
| 106 | 6.333 | 6.400<< | 8.409 | 8.476 |
| 106 | 6.333 | 6.400 | 8.409>> | 8.476 |
| 106 | 10.247 | 10.384 | 2.222<< | 2.360 |
| 106 | 6.327 | 6.406 | 8.403 | 8.482>> |
| 106 | 10.253 | 10.378 | 2.228 | 2.353<< |
| 107 | 10.219>> | 10.334 | 2.294 | 2.409 |
| 107 | 6.474<< | 6.542 | 8.189 | 8.256 |
| 107 | 10.214 | 10.339>> | 2.289 | 2.414 |
| 107 | 6.479 | 6.536<< | 8.194 | 8.251 |
| 107 | 6.479 | 6.536 | 8.194>> | 8.251 |
| 107 | 10.214 | 10.339 | 2.289<< | 2.414 |
| 107 | 6.474 | 6.542 | 8.189 | 8.256>> |
| 107 | 10.219 | 10.334 | 2.294 | 2.409<< |

| BARRA 107 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 107 | 10.216>> | 10.330 | 2.263 | 2.377 |
| 107 | 6.470<< | 6.538 | 8.157 | 8.225 |
| 107 | 10.210 | 10.335>> | 2.257 | 2.383 |
| 107 | 6.475 | 6.533<< | 8.162 | 8.219 |
| 107 | 6.475 | 6.533 | 8.162>> | 8.219 |
| 107 | 10.210 | 10.335 | 2.257<< | 2.383 |
| 107 | 6.470 | 6.538 | 8.157 | 8.225>> |
| 107 | 10.216 | 10.330 | 2.263 | 2.377<< |
| 108 | 9.909>> | 10.010 | 2.757 | 2.858 |
| 108 | 6.507<< | 6.563 | 8.114 | 8.170 |
| 108 | 9.905 | 10.014>> | 2.753 | 2.862 |
| 108 | 6.512 | 6.559<< | 8.118 | 8.166 |
| 108 | 6.512 | 6.559 | 8.118>> | 8.166 |
| 108 | 9.905 | 10.014 | 2.753<< | 2.862 |
| 108 | 6.507 | 6.563 | 8.114 | 8.170>> |
| 108 | 9.909 | 10.010 | 2.757 | 2.858<< |

| BARRA 108 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 108 | 9.905>> | 10.006 | 2.726 | 2.827 |
| 108 | 6.503<< | 6.559 | 8.083 | 8.138 |
| 108 | 9.901 | 10.010>> | 2.722 | 2.831 |
| 108 | 6.507 | 6.554<< | 8.087 | 8.134 |
| 108 | 6.507 | 6.554 | 8.087>> | 8.134 |
| 108 | 9.901 | 10.010 | 2.722<< | 2.831 |
| 108 | 6.503 | 6.559 | 8.083 | 8.138>> |
| 108 | 9.905 | 10.006 | 2.726 | 2.827<< |
| 109 | 9.345>> | 9.428 | 3.620 | 3.704 |
| 109 | 6.431<< | 6.475 | 8.210 | 8.254 |
| 109 | 9.341 | 9.432>> | 3.617 | 3.708 |
| 109 | 6.435 | 6.472<< | 8.213 | 8.250 |
| 109 | 6.435 | 6.472 | 8.213>> | 8.250 |
| 109 | 9.341 | 9.432 | 3.617<< | 3.708 |
| 109 | 6.431 | 6.475 | 8.210 | 8.254>> |
| 109 | 9.345 | 9.428 | 3.620 | 3.704<< |

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| BARRA 109 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 109 | 9.339>> | 9.423 | 3.590 | 3.674 |
| 109 | 6.426<< | 6.470 | 8.179 | 8.223 |
| 109 | 9.336 | 9.426>> | 3.586 | 3.677 |
| 109 | 6.429 | 6.466<< | 8.182 | 8.220 |
| 109 | 6.429 | 6.466 | 8.182>> | 8.220 |
| 109 | 9.336 | 9.426 | 3.586<< | 3.677 |
| 109 | 6.426 | 6.470 | 8.179 | 8.223>> |
| 109 | 9.339 | 9.423 | 3.590 | 3.674<< |
| 110 | 8.535>> | 8.600 | 4.866 | 4.931 |
| 110 | 6.243<< | 6.275 | 8.479 | 8.512 |
| 110 | 8.533 | 8.603>> | 4.864 | 4.934 |
| 110 | 6.245 | 6.272<< | 8.482 | 8.509 |
| 110 | 6.245 | 6.272 | 8.482>> | 8.509 |
| 110 | 8.533 | 8.603 | 4.864<< | 4.934 |
| 110 | 6.243 | 6.275 | 8.479 | 8.512>> |
| 110 | 8.535 | 8.600 | 4.866 | 4.931<< |

| BARRA 110 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 110 | 8.528>> | 8.593 | 4.836 | 4.901 |
| 110 | 6.236<< | 6.268 | 8.449 | 8.481 |
| 110 | 8.526 | 8.596>> | 4.834 | 4.904 |
| 110 | 6.238 | 6.266<< | 8.452 | 8.479 |
| 110 | 6.238 | 6.266 | 8.452>> | 8.479 |
| 110 | 8.526 | 8.596 | 4.834<< | 4.904 |
| 110 | 6.236 | 6.268 | 8.449 | 8.481>> |
| 110 | 8.528 | 8.593 | 4.836 | 4.901<< |
| 111 | 7.497>> | 7.553 | 6.454 | 6.511 |
| 111 | 5.941<< | 5.961 | 8.924 | 8.944 |
| 111 | 7.495 | 7.555>> | 6.453 | 6.512 |
| 111 | 5.943 | 5.960<< | 8.925 | 8.942 |
| 111 | 5.943 | 5.960 | 8.925>> | 8.942 |
| 111 | 7.495 | 7.555 | 6.453<< | 6.512 |
| 111 | 5.941 | 5.961 | 8.924 | 8.944>> |
| 111 | 7.497 | 7.553 | 6.454 | 6.511<< |

| BARRA 111 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 111 | 7.488>> | 7.544 | 6.427 | 6.483 |
| 111 | 5.932<< | 5.953 | 8.896 | 8.916 |
| 111 | 7.486 | 7.546>> | 6.425 | 6.484 |
| 111 | 5.934 | 5.951<< | 8.897 | 8.915 |
| 111 | 5.934 | 5.951 | 8.897>> | 8.915 |
| 111 | 7.486 | 7.546 | 6.425<< | 6.484 |
| 111 | 5.932 | 5.953 | 8.896 | 8.916>> |
| 111 | 7.488 | 7.544 | 6.427 | 6.483<< |
| 112 | 6.235>> | 6.259 | 8.420 | 8.444 |
| 112 | 5.526<< | 5.534 | 9.544 | 9.552 |
| 112 | 6.234 | 6.260>> | 8.419 | 8.445 |
| 112 | 5.527 | 5.534<< | 9.545 | 9.552 |
| 112 | 5.527 | 5.534 | 9.545>> | 9.552 |
| 112 | 6.234 | 6.260 | 8.419<< | 8.445 |
| 112 | 5.526 | 5.534 | 9.544 | 9.552>> |
| 112 | 6.235 | 6.259 | 8.420 | 8.444<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 112 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 112 | 4.707>> | 4.697 | 6.530 | 6.521 |
| 112 | 3.984<< | 3.983 | 7.344 | 7.343 |
| 112 | 4.706 | 4.698>> | 6.530 | 6.521 |
| 112 | 3.985 | 3.983<< | 7.344 | 7.342 |
| 112 | 3.985 | 3.983 | 7.344>> | 7.342 |
| 112 | 4.706 | 4.698 | 6.530<< | 6.521 |
| 112 | 3.984 | 3.983 | 7.344 | 7.343>> |
| 112 | 4.707 | 4.697 | 6.530 | 6.521<< |
| 113 | 4.680>> | 4.585 | 6.655 | 6.561 |
| 113 | 4.589<< | 4.646 | 6.564 | 6.621 |
| 113 | 4.602 | 4.658>> | 6.578 | 6.633 |
| 113 | 4.657 | 4.573<< | 6.632 | 6.548 |
| 113 | 4.680 | 4.585 | 6.655>> | 6.561 |
| 113 | 4.589 | 4.646 | 6.564<< | 6.621 |
| 113 | 4.602 | 4.658 | 6.578 | 6.633>> |
| 113 | 4.657 | 4.573 | 6.632 | 6.548<< |

TITULO
=======
LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

FICHERO DE GEOMETRIA COMPLETA
==============================
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
================================
1

| Fich | Num. Nudos | Num. barras | Num. hipotesis | NOMBRE FICHERO |
|---|---|---|---|---|
| 1 | 120 | 119 | 161 | ESFec.TXT |

| Fich | Hipotesis | Caracter | Coeficiente |
|---|---|---|---|
| 1 | 1 | 1 | 1.0 |
| 1 | 2 | 1 | 1.0 |
| 1 | 3 | 1 | 1.0 |
| 1 | 4 | 3 | 1.0 |
| 1 | 5 | 3 | 1.0 |
| 1 | 6 | 3 | 1.0 |
| 1 | 7 | 2 | 0.5 |
| 1 | 8 | 2 | 0.5 |
| 1 | 9 | 2 | 0.5 |
| 1 | 10 | 2 | 0.5 |
| 1 | 11 | 2 | 0.5 |
| 1 | 12 | 2 | 0.5 |
| 1 | 13 | 2 | 0.5 |
| 1 | 14 | 2 | 0.5 |
| 1 | 15 | 2 | 0.5 |
| 1 | 16 | 2 | 0.5 |
| 1 | 17 | 2 | 0.5 |
| 1 | 18 | 2 | 0.5 |
| 1 | 19 | 4 | 0.0 |
| 1 | 20 | 5 | 0.0 |
| 1 | 21 | 4 | 0.0 |
| 1 | 22 | 5 | 0.0 |
| 1 | 23 | 4 | 0.0 |
| 1 | 24 | 5 | 0.0 |
| 1 | 25 | 4 | 0.0 |
| 1 | 26 | 5 | 0.0 |
| 1 | 27 | 4 | 0.0 |
| 1 | 28 | 5 | 0.0 |
| 1 | 29 | 4 | 0.0 |
| 1 | 30 | 5 | 0.0 |
| 1 | 31 | 4 | 0.0 |
| 1 | 32 | 5 | 0.0 |
| 1 | 33 | 4 | 0.0 |
| 1 | 34 | 5 | 0.0 |
| 1 | 35 | 4 | 0.0 |
| 1 | 36 | 5 | 0.0 |
| 1 | 37 | 4 | 0.0 |
| 1 | 38 | 5 | 0.0 |
| 1 | 39 | 4 | 0.0 |
| 1 | 40 | 5 | 0.0 |
| 1 | 41 | 6 | 0.0 |
| 1 | 42 | 7 | 0.0 |
| 1 | 43 | 6 | 0.0 |
| 1 | 44 | 7 | 0.0 |
| 1 | 45 | 6 | 0.0 |
| 1 | 46 | 7 | 0.0 |

| | | | |
|---|---|---|---|
| 1 | 47 | 6 | 0.0 |
| 1 | 48 | 7 | 0.0 |
| 1 | 49 | 6 | 0.0 |
| 1 | 50 | 7 | 0.0 |
| 1 | 51 | 6 | 0.0 |
| 1 | 52 | 7 | 0.0 |
| 1 | 53 | 6 | 0.0 |
| 1 | 54 | 7 | 0.0 |
| 1 | 55 | 6 | 0.0 |
| 1 | 56 | 7 | 0.0 |
| 1 | 57 | 6 | 0.0 |
| 1 | 58 | 7 | 0.0 |
| 1 | 59 | 6 | 0.0 |
| 1 | 60 | 7 | 0.0 |
| 1 | 61 | 6 | 0.0 |
| 1 | 62 | 7 | 0.0 |
| 1 | 63 | 6 | 0.0 |
| 1 | 64 | 7 | 0.0 |
| 1 | 65 | 6 | 0.0 |
| 1 | 66 | 7 | 0.0 |
| 1 | 67 | 6 | 0.0 |
| 1 | 68 | 7 | 0.0 |
| 1 | 69 | 6 | 0.0 |
| 1 | 70 | 7 | 0.0 |
| 1 | 71 | 6 | 0.0 |
| 1 | 72 | 7 | 0.0 |
| 1 | 73 | 6 | 0.0 |
| 1 | 74 | 7 | 0.0 |
| 1 | 75 | 6 | 0.0 |
| 1 | 76 | 7 | 0.0 |
| 1 | 77 | 6 | 0.0 |
| 1 | 78 | 7 | 0.0 |
| 1 | 79 | 6 | 0.0 |
| 1 | 80 | 7 | 0.0 |
| 1 | 81 | 6 | 0.0 |
| 1 | 82 | 7 | 0.0 |
| 1 | 83 | 6 | 0.0 |
| 1 | 84 | 7 | 0.0 |
| 1 | 85 | 6 | 0.0 |
| 1 | 86 | 7 | 0.0 |
| 1 | 87 | 6 | 0.0 |
| 1 | 88 | 7 | 0.0 |
| 1 | 89 | 6 | 0.0 |
| 1 | 90 | 7 | 0.0 |
| 1 | 91 | 6 | 0.0 |
| 1 | 92 | 7 | 0.0 |
| 1 | 93 | 6 | 0.0 |
| 1 | 94 | 7 | 0.0 |
| 1 | 95 | 6 | 0.0 |
| 1 | 96 | 7 | 0.0 |
| 1 | 97 | 8 | 0.8 |
| 1 | 98 | 9 | 0.8 |
| 1 | 99 | 8 | 0.8 |
| 1 | 100 | 9 | 0.8 |
| 1 | 101 | 8 | 0.8 |
| 1 | 102 | 9 | 0.8 |
| 1 | 103 | 8 | 0.8 |
| 1 | 104 | 9 | 0.8 |
| 1 | 105 | 8 | 0.8 |
| 1 | 106 | 9 | 0.8 |
| 1 | 107 | 8 | 0.8 |
| 1 | 108 | 9 | 0.8 |
| 1 | 109 | 8 | 0.8 |
| 1 | 110 | 9 | 0.8 |
| 1 | 111 | 8 | 0.8 |
| 1 | 112 | 9 | 0.8 |
| 1 | 113 | 8 | 0.8 |
| 1 | 114 | 9 | 0.8 |
| 1 | 115 | 8 | 0.8 |
| 1 | 116 | 9 | 0.8 |
| 1 | 117 | 8 | 0.8 |
| 1 | 118 | 9 | 0.8 |
| 1 | 119 | 8 | 0.8 |
| 1 | 120 | 9 | 0.8 |
| 1 | 121 | 8 | 0.8 |
| 1 | 122 | 9 | 0.8 |
| 1 | 123 | 8 | 0.8 |
| 1 | 124 | 9 | 0.8 |
| 1 | 125 | 8 | 0.8 |
| 1 | 126 | 9 | 0.8 |
| 1 | 127 | 8 | 0.8 |
| 1 | 128 | 9 | 0.8 |
| 1 | 129 | 8 | 0.8 |
| 1 | 130 | 9 | 0.8 |
| 1 | 131 | 8 | 0.8 |
| 1 | 132 | 9 | 0.8 |
| 1 | 133 | 8 | 0.8 |
| 1 | 134 | 9 | 0.8 |
| 1 | 135 | 8 | 0.8 |
| 1 | 136 | 9 | 0.8 |
| 1 | 137 | 8 | 0.8 |
| 1 | 138 | 9 | 0.8 |
| 1 | 139 | 8 | 0.8 |
| 1 | 140 | 9 | 0.8 |
| 1 | 141 | 2 | 0.5 |
| 1 | 142 | 1 | 22.309 |
| 1 | 143 | 1 | 3.187 |
| 1 | 144 | 1 | 3.187 |
| 1 | 145 | 1 | 12.748 |
| 1 | 146 | 1 | 3.187 |
| 1 | 147 | 1 | 3.187 |
| 1 | 148 | 1 | 7.430 |
| 1 | 149 | 1 | 7.430 |
| 1 | 150 | 1 | 7.430 |
| 1 | 151 | 1 | 7.430 |
| 1 | 152 | 1 | 7.430 |
| 1 | 153 | 1 | 7.430 |
| 1 | 154 | 1 | 7.430 |
| 1 | 155 | 1 | 7.430 |
| 1 | 156 | 1 | 7.430 |
| 1 | 157 | 1 | 7.430 |
| 1 | 158 | 1 | 7.430 |
| 1 | 159 | 1 | 7.430 |
| 1 | 160 | 1 | 7.430 |
| 1 | 161 | 1 | 7.430 |

PONDERACION DE TENSIONES

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 1 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 1 | 6.828>> | 6.734 | 6.250 | 6.157 |
| 1 | 6.733<< | 6.794 | 6.156 | 6.217 |
| 1 | 6.750 | 6.812>> | 6.172 | 6.234 |
| 1 | 6.805 | 6.722<< | 6.228 | 6.145 |
| 1 | 6.828 | 6.734 | 6.250>> | 6.157 |
| 1 | 6.733 | 6.794 | 6.156<< | 6.217 |
| 1 | 6.750 | 6.812 | 6.172 | 6.234>> |
| 1 | 6.805 | 6.722 | 6.228 | 6.145<< |
| 2 | 6.589>> | 6.571 | 6.478 | 6.460 |
| 2 | 5.819<< | 5.819 | 7.334 | 7.333 |
| 2 | 6.587 | 6.572>> | 6.477 | 6.462 |
| 2 | 5.821 | 5.817<< | 7.336 | 7.331 |
| 2 | 5.820 | 5.817 | 7.336>> | 7.333 |
| 2 | 6.589 | 6.572 | 6.477<< | 6.460 |
| 2 | 5.819 | 5.818 | 7.335 | 7.333>> |
| 2 | 6.589 | 6.572 | 6.477 | 6.460<< |

| BARRA 2 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 2 | 8.488>> | 8.495 | 8.367 | 8.374 |
| 2 | 7.731<< | 7.734 | 9.552 | 9.555 |
| 2 | 8.487 | 8.495>> | 8.367 | 8.375 |
| 2 | 7.731 | 7.733<< | 9.552 | 9.554 |
| 2 | 7.731 | 7.733 | 9.552>> | 9.554 |
| 2 | 8.487 | 8.495 | 8.367<< | 8.375 |
| 2 | 7.731 | 7.734 | 9.552 | 9.555>> |
| 2 | 8.488 | 8.495 | 8.367 | 8.374<< |
| 3 | 9.680>> | 9.699 | 6.495 | 6.514 |
| 3 | 7.985<< | 7.992 | 9.150 | 9.158 |
| 3 | 9.679 | 9.701>> | 6.493 | 6.515 |
| 3 | 7.986 | 7.991<< | 9.152 | 9.156 |
| 3 | 7.986 | 7.991 | 9.152>> | 9.156 |
| 3 | 9.679 | 9.701 | 6.493<< | 6.515 |
| 3 | 7.985 | 7.992 | 9.150 | 9.158>> |
| 3 | 9.680 | 9.699 | 6.495 | 6.514<< |

| BARRA 3 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 3 | 9.693>> | 9.712 | 6.530 | 6.548 |
| 3 | 7.997<< | 8.005 | 9.185 | 9.193 |
| 3 | 9.691 | 9.713>> | 6.528 | 6.550 |
| 3 | 7.999 | 8.003<< | 9.186 | 9.191 |
| 3 | 7.999 | 8.003 | 9.186>> | 9.191 |
| 3 | 9.691 | 9.713 | 6.528<< | 6.550 |
| 3 | 7.997 | 8.005 | 9.185 | 9.193>> |
| 3 | 9.693 | 9.712 | 6.530 | 6.548<< |
| 4 | 10.706>> | 10.735 | 4.938 | 4.967 |
| 4 | 8.180<< | 8.192 | 8.895 | 8.907 |
| 4 | 10.703 | 10.737>> | 4.936 | 4.970 |
| 4 | 8.182 | 8.190<< | 8.897 | 8.905 |
| 4 | 8.182 | 8.190 | 8.897>> | 8.905 |
| 4 | 10.703 | 10.737 | 4.936<< | 4.970 |
| 4 | 8.180 | 8.192 | 8.895 | 8.907>> |
| 4 | 10.706 | 10.735 | 4.938 | 4.967<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 4 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 4 | 10.716>> | 10.745 | 4.976 | 5.006 |
| 4 | 8.190<< | 8.202 | 8.933 | 8.945 |
| 4 | 10.713 | 10.748>> | 4.974 | 5.008 |
| 4 | 8.192 | 8.200<< | 8.935 | 8.943 |
| 4 | 8.192 | 8.200 | 8.935>> | 8.943 |
| 4 | 10.713 | 10.748 | 4.974<< | 5.008 |
| 4 | 8.190 | 8.202 | 8.933 | 8.945>> |
| 4 | 10.716 | 10.745 | 4.976 | 5.006<< |
| 5 | 11.509>> | 11.548 | 3.728 | 3.767 |
| 5 | 8.305<< | 8.322 | 8.748 | 8.765 |
| 5 | 11.506 | 11.551>> | 3.725 | 3.770 |
| 5 | 8.308 | 8.318<< | 8.751 | 8.762 |
| 5 | 8.308 | 8.318 | 8.751>> | 8.762 |
| 5 | 11.506 | 11.551 | 3.725<< | 3.770 |
| 5 | 8.305 | 8.322 | 8.748 | 8.765>> |
| 5 | 11.509 | 11.548 | 3.728 | 3.767<< |

| BARRA 5 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 5 | 11.517>> | 11.556 | 3.767 | 3.806 |
| 5 | 8.312<< | 8.330 | 8.787 | 8.804 |
| 5 | 11.514 | 11.559>> | 3.764 | 3.810 |
| 5 | 8.316 | 8.326<< | 8.790 | 8.801 |
| 5 | 8.316 | 8.326 | 8.790>> | 8.801 |
| 5 | 11.514 | 11.559 | 3.764<< | 3.810 |
| 5 | 8.312 | 8.330 | 8.787 | 8.804>> |
| 5 | 11.517 | 11.556 | 3.767 | 3.806<< |
| 6 | 12.089>> | 12.136 | 2.865 | 2.913 |
| 6 | 8.358<< | 8.380 | 8.710 | 8.732 |
| 6 | 12.085 | 12.141>> | 2.861 | 2.917 |
| 6 | 8.362 | 8.376<< | 8.714 | 8.727 |
| 6 | 8.362 | 8.376 | 8.714>> | 8.727 |
| 6 | 12.085 | 12.141 | 2.861<< | 2.917 |
| 6 | 8.358 | 8.380 | 8.710 | 8.732>> |
| 6 | 12.089 | 12.136 | 2.865 | 2.913<< |

| BARRA 6 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 6 | 12.096>> | 12.143 | 2.906 | 2.953 |
| 6 | 8.365<< | 8.386 | 8.751 | 8.772 |
| 6 | 12.091 | 12.147>> | 2.902 | 2.958 |
| 6 | 8.369 | 8.382<< | 8.755 | 8.768 |
| 6 | 8.369 | 8.382 | 8.755>> | 8.768 |
| 6 | 12.091 | 12.147 | 2.902<< | 2.958 |
| 6 | 8.365 | 8.386 | 8.751 | 8.772>> |
| 6 | 12.096 | 12.143 | 2.906 | 2.953<< |
| 7 | 12.450>> | 12.504 | 2.345 | 2.400 |
| 7 | 8.344<< | 8.371 | 8.776 | 8.803 |
| 7 | 12.444 | 12.509>> | 2.340 | 2.405 |
| 7 | 8.349 | 8.365<< | 8.782 | 8.798 |
| 7 | 8.349 | 8.365 | 8.782>> | 8.798 |
| 7 | 12.444 | 12.509 | 2.340<< | 2.405 |
| 7 | 8.344 | 8.371 | 8.776 | 8.803>> |
| 7 | 12.450 | 12.504 | 2.345 | 2.400<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 7 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 7 | 12.455>> | 12.510 | 2.386 | 2.440 |
| 7 | 8.350<< | 8.376 | 8.817 | 8.844 |
| 7 | 12.450 | 12.515>> | 2.381 | 2.446 |
| 7 | 8.355 | 8.371<< | 8.822 | 8.838 |
| 7 | 8.355 | 8.371 | 8.822>> | 8.838 |
| 7 | 12.450 | 12.515 | 2.381<< | 2.446 |
| 7 | 8.350 | 8.376 | 8.817 | 8.844>> |
| 7 | 12.455 | 12.510 | 2.386 | 2.440<< |
| 8 | 12.592>> | 12.653 | 2.164 | 2.225 |
| 8 | 8.264<< | 8.295 | 8.944 | 8.975 |
| 8 | 12.586 | 12.659>> | 2.158 | 2.232 |
| 8 | 8.270 | 8.289<< | 8.950 | 8.969 |
| 8 | 8.270 | 8.289 | 8.950>> | 8.969 |
| 8 | 12.586 | 12.659 | 2.158<< | 2.232 |
| 8 | 8.264 | 8.295 | 8.944 | 8.975>> |
| 8 | 12.592 | 12.653 | 2.164 | 2.225<< |

| BARRA 8 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 8 | 12.598>> | 12.659 | 2.211 | 2.272 |
| 8 | 8.270<< | 8.301 | 8.990 | 9.022 |
| 8 | 12.592 | 12.665>> | 2.205 | 2.278 |
| 8 | 8.276 | 8.295<< | 8.996 | 9.016 |
| 8 | 8.276 | 8.295 | 8.996>> | 9.016 |
| 8 | 12.592 | 12.665 | 2.205<< | 2.278 |
| 8 | 8.270 | 8.301 | 8.990 | 9.022>> |
| 8 | 12.598 | 12.659 | 2.211 | 2.272<< |
| 9 | 12.547>> | 12.614 | 2.283 | 2.349 |
| 9 | 8.149<< | 8.185 | 9.173 | 9.209 |
| 9 | 12.540 | 12.621>> | 2.276 | 2.356 |
| 9 | 8.156 | 8.178<< | 9.180 | 9.202 |
| 9 | 8.156 | 8.178 | 9.180>> | 9.202 |
| 9 | 12.540 | 12.621 | 2.276<< | 2.356 |
| 9 | 8.149 | 8.185 | 9.173 | 9.209>> |
| 9 | 12.547 | 12.614 | 2.283 | 2.349<< |

| BARRA 9 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 9 | 12.544>> | 12.611 | 2.279 | 2.345 |
| 9 | 8.146<< | 8.182 | 9.169 | 9.205 |
| 9 | 12.537 | 12.617>> | 2.272 | 2.352 |
| 9 | 8.153 | 8.175<< | 9.176 | 9.198 |
| 9 | 8.153 | 8.175 | 9.176>> | 9.198 |
| 9 | 12.537 | 12.617 | 2.272<< | 2.352 |
| 9 | 8.146 | 8.182 | 9.169 | 9.205>> |
| 9 | 12.544 | 12.611 | 2.279 | 2.345<< |
| 10 | 12.339>> | 12.410 | 2.593 | 2.664 |
| 10 | 8.023<< | 8.063 | 9.356 | 9.396 |
| 10 | 12.331 | 12.418>> | 2.585 | 2.672 |
| 10 | 8.030 | 8.055<< | 9.363 | 9.388 |
| 10 | 8.030 | 8.055 | 9.363>> | 9.388 |
| 10 | 12.331 | 12.418 | 2.585<< | 2.672 |
| 10 | 8.023 | 8.063 | 9.356 | 9.396>> |
| 10 | 12.339 | 12.410 | 2.593 | 2.664<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 10 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 10 | 12.330>> | 12.401 | 2.564 | 2.635 |
| 10 | 8.014<< | 8.054 | 9.327 | 9.367 |
| 10 | 12.322 | 12.409>> | 2.556 | 2.643 |
| 10 | 8.022 | 8.046<< | 9.334 | 9.359 |
| 10 | 8.022 | 8.046 | 9.334>> | 9.359 |
| 10 | 12.322 | 12.409 | 2.556<< | 2.643 |
| 10 | 8.014 | 8.054 | 9.327 | 9.367>> |
| 10 | 12.330 | 12.401 | 2.564 | 2.635<< |
| 11 | 11.969>> | 12.043 | 3.123 | 3.197 |
| 11 | 7.886<< | 7.931 | 9.520 | 9.565 |
| 11 | 11.960 | 12.052>> | 3.114 | 3.206 |
| 11 | 7.895 | 7.922<< | 9.528 | 9.556 |
| 11 | 7.895 | 7.922 | 9.528>> | 9.556 |
| 11 | 11.960 | 12.052 | 3.114<< | 3.206 |
| 11 | 7.886 | 7.931 | 9.520 | 9.565>> |
| 11 | 11.969 | 12.043 | 3.123 | 3.197<< |

| BARRA 11 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 11 | 11.958>> | 12.032 | 3.094 | 3.169 |
| 11 | 7.875<< | 7.920 | 9.491 | 9.537 |
| 11 | 11.949 | 12.040>> | 3.086 | 3.177 |
| 11 | 7.884 | 7.911<< | 9.500 | 9.528 |
| 11 | 7.884 | 7.911 | 9.500>> | 9.528 |
| 11 | 11.949 | 12.040 | 3.086<< | 3.177 |
| 11 | 7.875 | 7.920 | 9.491 | 9.537>> |
| 11 | 11.958 | 12.032 | 3.094 | 3.169<< |
| 12 | 11.435>> | 11.512 | 3.905 | 3.981 |
| 12 | 7.738<< | 7.788 | 9.698 | 9.748 |
| 12 | 11.426 | 11.521>> | 3.895 | 3.991 |
| 12 | 7.748 | 7.779<< | 9.708 | 9.738 |
| 12 | 7.748 | 7.779 | 9.708>> | 9.738 |
| 12 | 11.426 | 11.521 | 3.895<< | 3.991 |
| 12 | 7.738 | 7.788 | 9.698 | 9.748>> |
| 12 | 11.435 | 11.512 | 3.905 | 3.981<< |

| BARRA 12 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 12 | 10.937>> | 11.013 | 2.784 | 2.860 |
| 12 | 7.240<< | 7.290 | 8.576 | 8.626 |
| 12 | 10.927 | 11.023>> | 2.774 | 2.870 |
| 12 | 7.249 | 7.280<< | 8.586 | 8.617 |
| 12 | 7.249 | 7.280 | 8.586>> | 8.617 |
| 12 | 10.927 | 11.023 | 2.774<< | 2.870 |
| 12 | 7.240 | 7.290 | 8.576 | 8.626>> |
| 12 | 10.937 | 11.013 | 2.784 | 2.860<< |
| 13 | 10.291>> | 10.361 | 3.797 | 3.867 |
| 13 | 7.053<< | 7.116 | 8.851 | 8.913 |
| 13 | 10.190 | 10.376>> | 3.807 | 3.992 |
| 13 | 7.064 | 7.105<< | 8.861 | 8.903 |
| 13 | 7.064 | 7.105 | 8.861>> | 8.903 |
| 13 | 10.281 | 10.372 | 3.787<< | 3.878 |
| 13 | 7.053 | 7.116 | 8.851 | 8.913>> |
| 13 | 10.291 | 10.361 | 3.797 | 3.867<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 13 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 13 | 10.271>> | 10.341 | 3.775 | 3.845 |
| 13 | 7.033<< | 7.096 | 8.829 | 8.891 |
| 13 | 10.170 | 10.356>> | 3.785 | 3.970 |
| 13 | 7.044 | 7.085<< | 8.839 | 8.880 |
| 13 | 7.044 | 7.085 | 8.839>> | 8.880 |
| 13 | 10.261 | 10.352 | 3.765<< | 3.856 |
| 13 | 7.033 | 7.096 | 8.829 | 8.891>> |
| 13 | 10.271 | 10.341 | 3.775 | 3.845<< |
| 14 | 9.880>> | 9.452 | 5.022 | 4.594 |
| 14 | 6.622<< | 6.690 | 9.463 | 9.530 |
| 14 | 9.425 | 9.905>> | 4.569 | 5.049 |
| 14 | 6.634 | 6.678<< | 9.474 | 9.519 |
| 14 | 6.634 | 6.678 | 9.474>> | 9.519 |
| 14 | 9.425 | 9.905 | 4.569<< | 5.049 |
| 14 | 6.622 | 6.690 | 9.463 | 9.530>> |
| 14 | 9.880 | 9.452 | 5.022 | 4.594<< |

| BARRA 14 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 14 | 9.853>> | 9.425 | 5.007 | 4.579 |
| 14 | 6.596<< | 6.663 | 9.447 | 9.515 |
| 14 | 9.398 | 9.879>> | 4.553 | 5.034 |
| 14 | 6.607 | 6.652<< | 9.459 | 9.503 |
| 14 | 6.607 | 6.652 | 9.459>> | 9.503 |
| 14 | 9.398 | 9.879 | 4.553<< | 5.034 |
| 14 | 6.596 | 6.663 | 9.447 | 9.515>> |
| 14 | 9.853 | 9.425 | 5.007 | 4.579<< |
| 15 | 9.601>> | 9.108 | 5.483 | 4.990 |
| 15 | 5.996<< | 6.422 | 9.923 | 10.350 |
| 15 | 9.081 | 9.626>> | 4.965 | 5.510 |
| 15 | 6.311 | 6.108<< | 10.237 | 10.034 |
| 15 | 6.311 | 6.108 | 10.237>> | 10.034 |
| 15 | 9.549 | 9.531 | 4.956<< | 4.939 |
| 15 | 5.996 | 6.422 | 9.923 | 10.350>> |
| 15 | 9.589 | 9.491 | 4.997 | 4.898<< |

| BARRA 15 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 15 | 8.891>> | 8.807 | 4.697 | 4.613 |
| 15 | 5.553<< | 5.886 | 8.501 | 8.834 |
| 15 | 8.461 | 8.904>> | 4.666 | 5.109 |
| 15 | 5.793 | 5.648<< | 8.739 | 8.594 |
| 15 | 5.793 | 5.648 | 8.739>> | 8.594 |
| 15 | 8.859 | 8.840 | 4.664<< | 4.645 |
| 15 | 5.553 | 5.886 | 8.501 | 8.834>> |
| 15 | 8.891 | 8.807 | 4.697 | 4.613<< |
| 16 | 10.440>> | 10.373 | 2.733 | 2.666 |
| 16 | 6.006<< | 6.156 | 8.179 | 8.330 |
| 16 | 10.429 | 10.385>> | 2.721 | 2.677 |
| 16 | 6.017 | 6.144<< | 8.191 | 8.318 |
| 16 | 6.017 | 6.144 | 8.191>> | 8.318 |
| 16 | 10.429 | 10.385 | 2.721<< | 2.677 |
| 16 | 6.006 | 6.156 | 8.179 | 8.330>> |
| 16 | 10.440 | 10.373 | 2.733 | 2.666<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 16 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 16 | 10.545>> | 10.451 | 2.785 | 2.691 |
| 16 | 6.062<< | 6.250 | 8.127 | 8.315 |
| 16 | 10.506 | 10.490>> | 2.746 | 2.730 |
| 16 | 6.100 | 6.211<< | 8.166 | 8.276 |
| 16 | 6.074 | 6.212 | 8.168>> | 8.306 |
| 16 | 10.532 | 10.489 | 2.744<< | 2.701 |
| 16 | 6.063 | 6.224 | 8.156 | 8.317>> |
| 16 | 10.543 | 10.477 | 2.755 | 2.689<< |
| 17 | 9.872>> | 9.801 | 3.609 | 3.538 |
| 17 | 4.089<< | 4.255 | 10.643 | 10.809 |
| 17 | 9.859 | 9.814>> | 3.596 | 3.551 |
| 17 | 4.102 | 4.243<< | 10.655 | 10.796 |
| 17 | 4.102 | 4.243 | 10.655>> | 10.796 |
| 17 | 9.859 | 9.814 | 3.596<< | 3.551 |
| 17 | 4.089 | 4.255 | 10.643 | 10.809>> |
| 17 | 9.872 | 9.801 | 3.609 | 3.538<< |

| BARRA 17 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 17 | 9.801>> | 9.730 | 3.613 | 3.543 |
| 17 | 4.018<< | 4.185 | 10.647 | 10.813 |
| 17 | 9.788 | 9.743>> | 3.601 | 3.555 |
| 17 | 4.031 | 4.172<< | 10.660 | 10.801 |
| 17 | 4.031 | 4.172 | 10.660>> | 10.801 |
| 17 | 9.788 | 9.743 | 3.601<< | 3.555 |
| 17 | 4.018 | 4.185 | 10.647 | 10.813>> |
| 17 | 9.801 | 9.730 | 3.613 | 3.543<< |
| 18 | 10.394>> | 10.325 | 2.862 | 2.793 |
| 18 | 6.009<< | 6.174 | 8.134 | 8.299 |
| 18 | 10.380 | 10.339>> | 2.848 | 2.807 |
| 18 | 6.023 | 6.161<< | 8.148 | 8.285 |
| 18 | 6.023 | 6.161 | 8.148>> | 8.285 |
| 18 | 10.380 | 10.339 | 2.848<< | 2.807 |
| 18 | 6.009 | 6.174 | 8.134 | 8.299>> |
| 18 | 10.394 | 10.325 | 2.862 | 2.793<< |

| BARRA 18 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 18 | 10.180>> | 10.090 | 2.842 | 2.751 |
| 18 | 5.846<< | 6.012 | 8.124 | 8.290 |
| 18 | 10.148 | 10.122>> | 2.809 | 2.783 |
| 18 | 5.878 | 5.980<< | 8.156 | 8.258 |
| 18 | 5.860 | 5.980 | 8.158>> | 8.278 |
| 18 | 10.166 | 10.122 | 2.807<< | 2.763 |
| 18 | 5.846 | 5.994 | 8.144 | 8.292>> |
| 18 | 10.180 | 10.108 | 2.821 | 2.749<< |
| 19 | 8.433>> | 8.329 | 5.053 | 4.948 |
| 19 | 5.442<< | 5.623 | 8.599 | 8.780 |
| 19 | 8.383 | 8.378>> | 5.003 | 4.998 |
| 19 | 5.492 | 5.573<< | 8.649 | 8.730 |
| 19 | 5.475 | 5.574 | 8.651>> | 8.750 |
| 19 | 8.400 | 8.378 | 5.001<< | 4.978 |
| 19 | 5.443 | 5.606 | 8.619 | 8.783>> |
| 19 | 8.433 | 8.345 | 5.033 | 4.946<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA | | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|---|
| | 19 | 9.243>> | 9.123 | 5.119 | 4.999 |
| | 19 | 6.019<< | 6.248 | 9.695 | 9.923 |
| | 19 | 9.182 | 9.184>> | 5.058 | 5.060 |
| | 19 | 6.080 | 6.187<< | 9.755 | 9.862 |
| | 19 | 6.043 | 6.193 | 9.758>> | 9.909 |
| | 19 | 9.219 | 9.178 | 5.055<< | 5.013 |
| | 19 | 6.025 | 6.210 | 9.741 | 9.926>> |
| | 19 | 9.236 | 9.161 | 5.072 | 4.996<< |
| | 20 | 9.359>> | 8.890 | 5.384 | 4.915 |
| | 20 | 6.848<< | 6.978 | 8.530 | 8.660 |
| | 20 | 8.952 | 9.363>> | 4.892 | 5.304 |
| | 20 | 6.908 | 6.918<< | 8.590 | 8.599 |
| | 20 | 6.908 | 6.918 | 8.590>> | 8.599 |
| | 20 | 8.952 | 9.363 | 4.892<< | 5.304 |
| | 20 | 6.848 | 6.978 | 8.530 | 8.660>> |
| | 20 | 9.356 | 8.962 | 5.293 | 4.899<< |

| BARRA | | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|---|
| | 20 | 9.349>> | 8.880 | 5.371 | 4.902 |
| | 20 | 6.838<< | 6.968 | 8.516 | 8.646 |
| | 20 | 8.942 | 9.354>> | 4.878 | 5.290 |
| | 20 | 6.898 | 6.908<< | 8.576 | 8.586 |
| | 20 | 6.898 | 6.908 | 8.576>> | 8.586 |
| | 20 | 8.942 | 9.354 | 4.878<< | 5.290 |
| | 20 | 6.838 | 6.968 | 8.516 | 8.646>> |
| | 20 | 9.346 | 8.951 | 5.280 | 4.886<< |
| | 21 | 9.871>> | 9.911 | 3.907 | 3.947 |
| | 21 | 7.208<< | 7.307 | 7.980 | 8.078 |
| | 21 | 9.836 | 9.946>> | 3.872 | 3.982 |
| | 21 | 7.243 | 7.272<< | 8.015 | 8.043 |
| | 21 | 7.243 | 7.272 | 8.015>> | 8.043 |
| | 21 | 9.836 | 9.946 | 3.872<< | 3.982 |
| | 21 | 7.208 | 7.307 | 7.980 | 8.078>> |
| | 21 | 9.871 | 9.911 | 3.907 | 3.947<< |

| BARRA | | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|---|
| | 21 | 9.863>> | 9.904 | 3.885 | 3.925 |
| | 21 | 7.201<< | 7.299 | 7.958 | 8.056 |
| | 21 | 9.829 | 9.939>> | 3.850 | 3.960 |
| | 21 | 7.236 | 7.264<< | 7.993 | 8.021 |
| | 21 | 7.236 | 7.264 | 7.993>> | 8.021 |
| | 21 | 9.829 | 9.939 | 3.850<< | 3.960 |
| | 21 | 7.201 | 7.299 | 7.958 | 8.056>> |
| | 21 | 9.863 | 9.904 | 3.885 | 3.925<< |
| | 22 | 10.560>> | 10.609 | 2.789 | 2.837 |
| | 22 | 7.365<< | 7.450 | 7.719 | 7.804 |
| | 22 | 10.526 | 10.643>> | 2.754 | 2.872 |
| | 22 | 7.400 | 7.416<< | 7.753 | 7.770 |
| | 22 | 7.400 | 7.416 | 7.753>> | 7.770 |
| | 22 | 10.526 | 10.643 | 2.754<< | 2.872 |
| | 22 | 7.365 | 7.450 | 7.719 | 7.804>> |
| | 22 | 10.560 | 10.609 | 2.789 | 2.837<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA | | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|---|
| | 22 | 9.864>> | 9.912 | 2.919 | 2.967 |
| | 22 | 6.669<< | 6.754 | 7.849 | 7.934 |
| | 22 | 9.829 | 9.947>> | 2.884 | 3.001 |
| | 22 | 6.703 | 6.719<< | 7.883 | 7.899 |
| | 22 | 6.703 | 6.719 | 7.883>> | 7.899 |
| | 22 | 9.829 | 9.947 | 2.884<< | 3.001 |
| | 22 | 6.669 | 6.754 | 7.849 | 7.934>> |
| | 22 | 9.864 | 9.912 | 2.919 | 2.967<< |
| | 23 | 10.449>> | 10.498 | 2.006 | 2.055 |
| | 23 | 6.785<< | 6.864 | 7.676 | 7.755 |
| | 23 | 10.415 | 10.533>> | 1.972 | 2.089 |
| | 23 | 6.819 | 6.830<< | 7.710 | 7.721 |
| | 23 | 6.809 | 6.830 | 7.712>> | 7.734 |
| | 23 | 10.425 | 10.532 | 1.970<< | 2.077 |
| | 23 | 6.785 | 6.854 | 7.688 | 7.757>> |
| | 23 | 10.448 | 10.508 | 1.993 | 2.053<< |

| BARRA | | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|---|
| | 23 | 10.448>> | 10.497 | 2.022 | 2.071 |
| | 23 | 6.783<< | 6.863 | 7.692 | 7.771 |
| | 23 | 10.414 | 10.531>> | 1.988 | 2.105 |
| | 23 | 6.817 | 6.828<< | 7.726 | 7.737 |
| | 23 | 6.807 | 6.829 | 7.728>> | 7.750 |
| | 23 | 10.424 | 10.530 | 1.986<< | 2.093 |
| | 23 | 6.784 | 6.853 | 7.704 | 7.773>> |
| | 23 | 10.447 | 10.507 | 2.009 | 2.069<< |
| | 24 | 10.871>> | 10.928 | 1.352 | 1.410 |
| | 24 | 6.891<< | 6.955 | 7.543 | 7.608 |
| | 24 | 10.846 | 10.953>> | 1.327 | 1.435 |
| | 24 | 6.916 | 6.930<< | 7.568 | 7.583 |
| | 24 | 6.916 | 6.930 | 7.568>> | 7.583 |
| | 24 | 10.846 | 10.953 | 1.327<< | 1.435 |
| | 24 | 6.891 | 6.955 | 7.543 | 7.608>> |
| | 24 | 10.871 | 10.928 | 1.352 | 1.410<< |

| BARRA | | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|---|
| | 24 | 10.868>> | 10.926 | 1.368 | 1.426 |
| | 24 | 6.888<< | 6.953 | 7.560 | 7.624 |
| | 24 | 10.843 | 10.951>> | 1.344 | 1.451 |
| | 24 | 6.913 | 6.928<< | 7.585 | 7.599 |
| | 24 | 6.913 | 6.928 | 7.585>> | 7.599 |
| | 24 | 10.843 | 10.951 | 1.344<< | 1.451 |
| | 24 | 6.888 | 6.953 | 7.560 | 7.624>> |
| | 24 | 10.868 | 10.926 | 1.368 | 1.426<< |
| | 25 | 11.130>> | 11.184 | 0.965 | 1.020 |
| | 25 | 6.993<< | 7.053 | 7.402 | 7.462 |
| | 25 | 11.103 | 11.211>> | 0.939 | 1.046 |
| | 25 | 7.019 | 7.027<< | 7.429 | 7.436 |
| | 25 | 7.019 | 7.027 | 7.429>> | 7.436 |
| | 25 | 11.103 | 11.211 | 0.939<< | 1.046 |
| | 25 | 6.993 | 7.053 | 7.402 | 7.462>> |
| | 25 | 11.130 | 11.184 | 0.965 | 1.020<< |

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| BARRA 25 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 25 | 11.127>> | 11.182 | 0.977 | 1.032 |
| 25 | 6.990<< | 7.050 | 7.415 | 7.475 |
| 25 | 11.100 | 11.208>> | 0.951 | 1.059 |
| 25 | 7.017 | 7.024<< | 7.441 | 7.448 |
| 25 | 7.017 | 7.024 | 7.441>> | 7.448 |
| 25 | 11.100 | 11.208 | 0.951<< | 1.059 |
| 25 | 6.990 | 7.050 | 7.415 | 7.475>> |
| 25 | 11.127 | 11.182 | 0.977 | 1.032<< |
| 26 | 11.231>> | 11.282 | 0.820 | 0.871 |
| 26 | 7.054<< | 7.235 | 7.161 | 7.342 |
| 26 | 11.203 | 11.310>> | 0.792 | 0.899 |
| 26 | 7.238 | 7.051<< | 7.345 | 7.158 |
| 26 | 7.238 | 7.051 | 7.345>> | 7.158 |
| 26 | 11.203 | 11.310 | 0.792<< | 0.899 |
| 26 | 7.054 | 7.235 | 7.161 | 7.342>> |
| 26 | 11.231 | 11.282 | 0.820 | 0.871<< |

| BARRA 26 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 26 | 11.229>> | 11.280 | 0.827 | 0.878 |
| 26 | 7.051<< | 7.233 | 7.168 | 7.349 |
| 26 | 11.201 | 11.308>> | 0.799 | 0.906 |
| 26 | 7.235 | 7.049<< | 7.352 | 7.165 |
| 26 | 7.235 | 7.049 | 7.352>> | 7.165 |
| 26 | 11.201 | 11.308 | 0.799<< | 0.906 |
| 26 | 7.051 | 7.233 | 7.168 | 7.349>> |
| 26 | 11.229 | 11.280 | 0.827 | 0.878<< |
| 27 | 11.256>> | 11.303 | 0.790 | 0.837 |
| 27 | 7.042<< | 7.041 | 7.416 | 7.415 |
| 27 | 11.226 | 11.332>> | 0.761 | 0.867 |
| 27 | 7.071 | 7.012<< | 7.445 | 7.386 |
| 27 | 7.071 | 7.012 | 7.445>> | 7.386 |
| 27 | 11.226 | 11.332 | 0.761<< | 0.867 |
| 27 | 7.042 | 7.041 | 7.416 | 7.415>> |
| 27 | 11.256 | 11.303 | 0.790 | 0.837<< |

| BARRA 27 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 27 | 11.254>> | 11.301 | 0.793 | 0.840 |
| 27 | 7.040<< | 7.039 | 7.419 | 7.418 |
| 27 | 11.225 | 11.330>> | 0.764 | 0.870 |
| 27 | 7.069 | 7.010<< | 7.448 | 7.389 |
| 27 | 7.069 | 7.010 | 7.448>> | 7.389 |
| 27 | 11.225 | 11.330 | 0.764<< | 0.870 |
| 27 | 7.040 | 7.039 | 7.419 | 7.418>> |
| 27 | 11.254 | 11.301 | 0.793 | 0.840<< |
| 28 | 11.235>> | 11.278 | 0.828 | 0.871 |
| 28 | 6.911<< | 6.916 | 7.612 | 7.617 |
| 28 | 11.204 | 11.309>> | 0.797 | 0.902 |
| 28 | 6.942 | 6.885<< | 7.643 | 7.586 |
| 28 | 6.942 | 6.885 | 7.643>> | 7.586 |
| 28 | 11.204 | 11.309 | 0.797<< | 0.902 |
| 28 | 6.911 | 6.916 | 7.612 | 7.617>> |
| 28 | 11.235 | 11.278 | 0.828 | 0.871<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 28 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 28 | 11.234>> | 11.277 | 0.825 | 0.868 |
| 28 | 6.909<< | 6.914 | 7.610 | 7.615 |
| 28 | 11.203 | 11.308>> | 0.794 | 0.899 |
| 28 | 6.940 | 6.883<< | 7.641 | 7.584 |
| 28 | 6.940 | 6.883 | 7.641>> | 7.584 |
| 28 | 11.203 | 11.308 | 0.794<< | 0.899 |
| 28 | 6.909 | 6.914 | 7.610 | 7.615>> |
| 28 | 11.234 | 11.277 | 0.825 | 0.868<< |
| 29 | 11.139>> | 11.178 | 0.979 | 1.017 |
| 29 | 6.781<< | 6.791 | 7.804 | 7.814 |
| 29 | 11.107 | 11.210>> | 0.946 | 1.050 |
| 29 | 6.813 | 6.758<< | 7.837 | 7.782 |
| 29 | 6.813 | 6.758 | 7.837>> | 7.782 |
| 29 | 11.107 | 11.210 | 0.946<< | 1.050 |
| 29 | 6.781 | 6.791 | 7.804 | 7.814>> |
| 29 | 11.139 | 11.178 | 0.979 | 1.017<< |

| BARRA 29 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 29 | 11.138>> | 11.177 | 0.972 | 1.010 |
| 29 | 6.780<< | 6.790 | 7.797 | 7.807 |
| 29 | 11.105 | 11.209>> | 0.939 | 1.043 |
| 29 | 6.812 | 6.757<< | 7.830 | 7.775 |
| 29 | 6.812 | 6.757 | 7.830>> | 7.775 |
| 29 | 11.105 | 11.209 | 0.939<< | 1.043 |
| 29 | 6.780 | 6.790 | 7.797 | 7.807>> |
| 29 | 11.138 | 11.177 | 0.972 | 1.010<< |
| 30 | 10.886>> | 10.920 | 1.370 | 1.403 |
| 30 | 6.650<< | 6.666 | 7.992 | 8.007 |
| 30 | 10.852 | 10.954>> | 1.336 | 1.437 |
| 30 | 6.684 | 6.632<< | 8.026 | 7.973 |
| 30 | 6.684 | 6.632 | 8.026>> | 7.973 |
| 30 | 10.852 | 10.954 | 1.336<< | 1.437 |
| 30 | 6.650 | 6.666 | 7.992 | 8.007>> |
| 30 | 10.886 | 10.920 | 1.370 | 1.403<< |

| BARRA 30 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 30 | 10.885>> | 10.918 | 1.359 | 1.392 |
| 30 | 6.649<< | 6.664 | 7.980 | 7.996 |
| 30 | 10.851 | 10.952>> | 1.325 | 1.426 |
| 30 | 6.683 | 6.630<< | 8.014 | 7.962 |
| 30 | 6.683 | 6.630 | 8.014>> | 7.962 |
| 30 | 10.851 | 10.952 | 1.325<< | 1.426 |
| 30 | 6.649 | 6.664 | 7.980 | 7.996>> |
| 30 | 10.885 | 10.918 | 1.359 | 1.392<< |
| 31 | 10.472>> | 10.500 | 2.009 | 2.037 |
| 31 | 6.519<< | 6.540 | 8.177 | 8.197 |
| 31 | 10.437 | 10.535>> | 1.974 | 2.072 |
| 31 | 6.554 | 6.504<< | 8.212 | 8.162 |
| 31 | 6.554 | 6.504 | 8.212>> | 8.162 |
| 31 | 10.437 | 10.535 | 1.974<< | 2.072 |
| 31 | 6.519 | 6.540 | 8.177 | 8.197>> |
| 31 | 10.472 | 10.500 | 2.009 | 2.037<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 31 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 31 | 10.470>> | 10.498 | 1.996 | 2.023 |
| 31 | 6.517<< | 6.537 | 8.163 | 8.184 |
| 31 | 10.435 | 10.533>> | 1.960 | 2.059 |
| 31 | 6.552 | 6.502<< | 8.199 | 8.148 |
| 31 | 6.552 | 6.502 | 8.199>> | 8.148 |
| 31 | 10.435 | 10.533 | 1.960<< | 2.059 |
| 31 | 6.517 | 6.537 | 8.163 | 8.184>> |
| 31 | 10.470 | 10.498 | 1.996 | 2.023<< |
| 32 | 9.893>> | 9.913 | 2.904 | 2.924 |
| 32 | 6.382<< | 6.408 | 8.366 | 8.392 |
| 32 | 9.856 | 9.951>> | 2.867 | 2.961 |
| 32 | 6.419 | 6.371<< | 8.403 | 8.355 |
| 32 | 6.401 | 6.375 | 8.403>> | 8.377 |
| 32 | 9.875 | 9.946 | 2.867<< | 2.938 |
| 32 | 6.386 | 6.389 | 8.389 | 8.392>> |
| 32 | 9.889 | 9.932 | 2.881 | 2.924<< |

| BARRA 32 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 32 | 9.889>> | 9.909 | 2.889 | 2.909 |
| 32 | 6.378<< | 6.404 | 8.351 | 8.377 |
| 32 | 9.852 | 9.946>> | 2.852 | 2.946 |
| 32 | 6.415 | 6.366<< | 8.388 | 8.340 |
| 32 | 6.396 | 6.370 | 8.388>> | 8.363 |
| 32 | 9.870 | 9.942 | 2.852<< | 2.924 |
| 32 | 6.382 | 6.385 | 8.374 | 8.377>> |
| 32 | 9.885 | 9.928 | 2.866 | 2.909<< |
| 33 | 9.252>> | 9.269 | 3.885 | 3.902 |
| 33 | 6.137<< | 6.163 | 8.726 | 8.752 |
| 33 | 9.214 | 9.308>> | 3.846 | 3.940 |
| 33 | 6.175 | 6.124<< | 8.765 | 8.714 |
| 33 | 6.156 | 6.128 | 8.766>> | 8.738 |
| 33 | 9.233 | 9.304 | 3.845<< | 3.916 |
| 33 | 6.140 | 6.143 | 8.750 | 8.753>> |
| 33 | 9.248 | 9.289 | 3.860 | 3.901<< |

| BARRA 33 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 33 | 9.245>> | 9.262 | 3.871 | 3.888 |
| 33 | 6.129<< | 6.155 | 8.712 | 8.738 |
| 33 | 9.206 | 9.300>> | 3.832 | 3.926 |
| 33 | 6.168 | 6.117<< | 8.751 | 8.700 |
| 33 | 6.148 | 6.121 | 8.752>> | 8.724 |
| 33 | 9.226 | 9.297 | 3.831<< | 3.902 |
| 33 | 6.133 | 6.136 | 8.736 | 8.739>> |
| 33 | 9.241 | 9.282 | 3.846 | 3.887<< |
| 34 | 8.801>> | 8.360 | 5.148 | 4.707 |
| 34 | 5.720<< | 5.770 | 9.319 | 9.369 |
| 34 | 8.379 | 8.780>> | 4.729 | 5.130 |
| 34 | 5.780 | 5.711<< | 9.378 | 9.309 |
| 34 | 5.741 | 5.716 | 9.382>> | 9.357 |
| 34 | 8.417 | 8.775 | 4.724<< | 5.082 |
| 34 | 5.726 | 5.732 | 9.367 | 9.373>> |
| 34 | 8.796 | 8.398 | 5.100 | 4.703<< |

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| BARRA 34 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 34 | 8.789>> | 8.348 | 5.137 | 4.696 |
| 34 | 5.708<< | 5.758 | 9.308 | 9.358 |
| 34 | 8.366 | 8.768>> | 4.718 | 5.119 |
| 34 | 5.768 | 5.699<< | 9.367 | 9.298 |
| 34 | 5.729 | 5.704 | 9.372>> | 9.346 |
| 34 | 8.405 | 8.763 | 4.714<< | 5.071 |
| 34 | 5.714 | 5.720 | 9.356 | 9.362>> |
| 34 | 8.784 | 8.386 | 5.090 | 4.692<< |
| 35 | 8.622>> | 8.468 | 5.029 | 4.876 |
| 35 | 5.019<< | 5.150 | 10.278 | 10.409 |
| 35 | 8.561 | 8.529>> | 4.969 | 4.937 |
| 35 | 5.292 | 5.062<< | 10.315 | 10.084 |
| 35 | 5.042 | 5.095 | 10.342>> | 10.395 |
| 35 | 8.599 | 8.523 | 4.966<< | 4.890 |
| 35 | 5.025 | 5.112 | 10.325 | 10.412>> |
| 35 | 8.616 | 8.507 | 4.982 | 4.873<< |

| BARRA 35 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 35 | 8.105>> | 7.974 | 4.738 | 4.606 |
| 35 | 4.750<< | 4.846 | 8.803 | 8.899 |
| 35 | 8.056 | 8.022>> | 4.689 | 4.655 |
| 35 | 4.956 | 4.793<< | 8.810 | 8.647 |
| 35 | 4.767 | 4.800 | 8.854>> | 8.887 |
| 35 | 8.088 | 8.020 | 4.687<< | 4.618 |
| 35 | 4.753 | 4.815 | 8.839 | 8.901>> |
| 35 | 8.103 | 8.005 | 4.701 | 4.604<< |
| 36 | 9.534>> | 9.410 | 2.935 | 2.812 |
| 36 | 4.910<< | 4.993 | 8.634 | 8.717 |
| 36 | 9.331 | 9.459>> | 2.904 | 3.032 |
| 36 | 4.948 | 4.956<< | 8.671 | 8.679 |
| 36 | 4.927 | 4.958 | 8.672>> | 8.703 |
| 36 | 9.517 | 9.446 | 2.897<< | 2.826 |
| 36 | 4.912 | 4.973 | 8.657 | 8.718>> |
| 36 | 9.532 | 9.431 | 2.912 | 2.811<< |

| BARRA 36 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 36 | 9.637>> | 9.514 | 2.953 | 2.831 |
| 36 | 4.965<< | 5.063 | 8.603 | 8.702 |
| 36 | 9.432 | 9.567>> | 2.921 | 3.055 |
| 36 | 5.003 | 5.025<< | 8.641 | 8.664 |
| 36 | 4.982 | 5.027 | 8.642>> | 8.687 |
| 36 | 9.620 | 9.550 | 2.915<< | 2.846 |
| 36 | 4.966 | 5.042 | 8.627 | 8.703>> |
| 36 | 9.635 | 9.535 | 2.930 | 2.830<< |
| 37 | 8.836>> | 8.593 | 4.101 | 3.858 |
| 37 | 2.834<< | 2.932 | 11.295 | 11.393 |
| 37 | 8.652 | 8.777>> | 3.917 | 4.042 |
| 37 | 2.873 | 2.892<< | 11.334 | 11.353 |
| 37 | 2.851 | 2.894 | 11.335>> | 11.378 |
| 37 | 8.674 | 8.775 | 3.916<< | 4.017 |
| 37 | 2.836 | 2.910 | 11.319 | 11.394>> |
| 37 | 8.823 | 8.719 | 3.960 | 3.857<< |

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| BARRA 37 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 37 | 8.841>> | 8.598 | 4.092 | 3.849 |
| 37 | 2.839<< | 2.937 | 11.285 | 11.383 |
| 37 | 8.657 | 8.782>> | 3.908 | 4.033 |
| 37 | 2.878 | 2.898<< | 11.325 | 11.344 |
| 37 | 2.857 | 2.899 | 11.326>> | 11.369 |
| 37 | 8.679 | 8.780 | 3.907<< | 4.008 |
| 37 | 2.841 | 2.915 | 11.310 | 11.384>> |
| 37 | 8.828 | 8.724 | 3.951 | 3.847<< |
| 38 | 9.492>> | 9.282 | 3.233 | 3.023 |
| 38 | 4.864<< | 4.968 | 8.721 | 8.825 |
| 38 | 9.335 | 9.439>> | 3.076 | 3.180 |
| 38 | 4.900 | 4.932<< | 8.757 | 8.790 |
| 38 | 4.900 | 4.932 | 8.757>> | 8.790 |
| 38 | 9.335 | 9.439 | 3.076<< | 3.180 |
| 38 | 4.864 | 4.968 | 8.721 | 8.825>> |
| 38 | 9.492 | 9.282 | 3.233 | 3.023<< |

| BARRA 38 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 38 | 9.394>> | 9.176 | 3.193 | 2.975 |
| 38 | 4.813<< | 4.902 | 8.728 | 8.817 |
| 38 | 9.231 | 9.339>> | 3.030 | 3.138 |
| 38 | 4.849 | 4.866<< | 8.764 | 8.781 |
| 38 | 4.849 | 4.866 | 8.764>> | 8.781 |
| 38 | 9.231 | 9.339 | 3.030<< | 3.138 |
| 38 | 4.813 | 4.902 | 8.728 | 8.817>> |
| 38 | 9.394 | 9.176 | 3.193 | 2.975<< |
| 39 | 7.770>> | 7.585 | 5.194 | 5.009 |
| 39 | 4.514<< | 4.609 | 9.081 | 9.176 |
| 39 | 7.721 | 7.725>> | 5.045 | 5.050 |
| 39 | 4.547 | 4.576<< | 9.114 | 9.144 |
| 39 | 4.547 | 4.576 | 9.114>> | 9.144 |
| 39 | 7.721 | 7.725 | 5.045<< | 5.050 |
| 39 | 4.514 | 4.609 | 9.081 | 9.176>> |
| 39 | 7.770 | 7.585 | 5.194 | 5.009<< |

| BARRA 39 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 39 | 8.485>> | 8.266 | 5.333 | 5.114 |
| 39 | 4.988<< | 5.130 | 10.318 | 10.460 |
| 39 | 8.410 | 8.433>> | 5.140 | 5.163 |
| 39 | 5.043 | 5.076<< | 10.372 | 10.405 |
| 39 | 5.026 | 5.076 | 10.376>> | 10.426 |
| 39 | 8.426 | 8.432 | 5.136<< | 5.142 |
| 39 | 4.989 | 5.113 | 10.339 | 10.463>> |
| 39 | 8.463 | 8.396 | 5.173 | 5.105<< |
| 40 | 8.594>> | 8.344 | 5.202 | 4.952 |
| 40 | 5.715<< | 5.790 | 9.271 | 9.346 |
| 40 | 8.335 | 8.601>> | 4.946 | 5.212 |
| 40 | 5.766 | 5.739<< | 9.322 | 9.295 |
| 40 | 5.750 | 5.741 | 9.324>> | 9.315 |
| 40 | 8.351 | 8.599 | 4.944<< | 5.192 |
| 40 | 5.717 | 5.774 | 9.292 | 9.348>> |
| 40 | 8.592 | 8.361 | 5.181 | 4.950<< |

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| BARRA 40 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 40 | 8.602>> | 8.352 | 5.218 | 4.968 |
| 40 | 5.723<< | 5.798 | 9.287 | 9.362 |
| 40 | 8.342 | 8.609>> | 4.962 | 5.228 |
| 40 | 5.774 | 5.746<< | 9.339 | 9.311 |
| 40 | 5.757 | 5.749 | 9.340>> | 9.332 |
| 40 | 8.359 | 8.607 | 4.960<< | 5.208 |
| 40 | 5.725 | 5.781 | 9.308 | 9.364>> |
| 40 | 8.599 | 8.368 | 5.198 | 4.967<< |
| 41 | 9.162>> | 9.190 | 3.991 | 4.018 |
| 41 | 6.120<< | 6.175 | 8.695 | 8.749 |
| 41 | 9.133 | 9.218>> | 3.962 | 4.047 |
| 41 | 6.149 | 6.146<< | 8.723 | 8.720 |
| 41 | 6.149 | 6.146 | 8.723>> | 8.720 |
| 41 | 9.133 | 9.218 | 3.962<< | 4.047 |
| 41 | 6.120 | 6.175 | 8.695 | 8.749>> |
| 41 | 9.162 | 9.190 | 3.991 | 4.018<< |

| BARRA 41 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 41 | 9.165>> | 9.193 | 4.011 | 4.038 |
| 41 | 6.124<< | 6.178 | 8.714 | 8.769 |
| 41 | 9.137 | 9.222>> | 3.982 | 4.067 |
| 41 | 6.153 | 6.149<< | 8.743 | 8.740 |
| 41 | 6.153 | 6.149 | 8.743>> | 8.740 |
| 41 | 9.137 | 9.222 | 3.982<< | 4.067 |
| 41 | 6.124 | 6.178 | 8.714 | 8.769>> |
| 41 | 9.165 | 9.193 | 4.011 | 4.038<< |
| 42 | 9.796>> | 9.841 | 3.006 | 3.050 |
| 42 | 6.362<< | 6.412 | 8.349 | 8.399 |
| 42 | 9.772 | 9.866>> | 2.981 | 3.075 |
| 42 | 6.387 | 6.387<< | 8.374 | 8.374 |
| 42 | 6.387 | 6.387 | 8.374>> | 8.374 |
| 42 | 9.772 | 9.866 | 2.981<< | 3.075 |
| 42 | 6.362 | 6.412 | 8.349 | 8.399>> |
| 42 | 9.796 | 9.841 | 3.006 | 3.050<< |

| BARRA 42 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 42 | 10.006>> | 10.051 | 1.775 | 1.820 |
| 42 | 6.572<< | 6.621 | 7.118 | 7.168 |
| 42 | 9.981 | 10.075>> | 1.750 | 1.844 |
| 42 | 6.596 | 6.597<< | 7.143 | 7.143 |
| 42 | 6.596 | 6.597 | 7.143>> | 7.143 |
| 42 | 9.981 | 10.075 | 1.750<< | 1.844 |
| 42 | 6.572 | 6.621 | 7.118 | 7.168>> |
| 42 | 10.006 | 10.051 | 1.775 | 1.820<< |
| 43 | 10.581>> | 10.648 | 0.851 | 0.918 |
| 43 | 6.696<< | 6.735 | 6.939 | 6.977 |
| 43 | 10.567 | 10.662>> | 0.837 | 0.932 |
| 43 | 6.710 | 6.721<< | 6.953 | 6.963 |
| 43 | 6.710 | 6.721 | 6.953>> | 6.963 |
| 43 | 10.567 | 10.662 | 0.837<< | 0.932 |
| 43 | 6.696 | 6.735 | 6.939 | 6.977>> |
| 43 | 10.581 | 10.648 | 0.851 | 0.918<< |

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| BARRA 43 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 43 | 10.579>> | 10.647 | 0.869 | 0.937 |
| 43 | 6.695<< | 6.733 | 6.958 | 6.996 |
| 43 | 10.565 | 10.661>> | 0.855 | 0.950 |
| 43 | 6.709 | 6.719<< | 6.972 | 6.982 |
| 43 | 6.709 | 6.719 | 6.972>> | 6.982 |
| 43 | 10.565 | 10.661 | 0.855<< | 0.950 |
| 43 | 6.695 | 6.733 | 6.958 | 6.996>> |
| 43 | 10.579 | 10.647 | 0.869 | 0.937<< |
| 44 | 10.991>> | 11.070 | 0.213 | 0.292 |
| 44 | 6.811<< | 6.848 | 6.778 | 6.815 |
| 44 | 10.978 | 11.083>> | 0.199 | 0.305 |
| 44 | 6.824 | 6.835<< | 6.791 | 6.802 |
| 44 | 6.824 | 6.835 | 6.791>> | 6.802 |
| 44 | 10.978 | 11.083 | 0.199<< | 0.305 |
| 44 | 6.811 | 6.848 | 6.778 | 6.815>> |
| 44 | 10.991 | 11.070 | 0.213 | 0.292<< |

| BARRA 44 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 44 | 10.989>> | 11.068 | 0.229 | 0.308 |
| 44 | 6.808<< | 6.846 | 6.795 | 6.832 |
| 44 | 10.976 | 11.081>> | 0.216 | 0.321 |
| 44 | 6.822 | 6.832<< | 6.808 | 6.819 |
| 44 | 6.822 | 6.832 | 6.808>> | 6.819 |
| 44 | 10.976 | 11.081 | 0.216<< | 0.321 |
| 44 | 6.808 | 6.846 | 6.795 | 6.832>> |
| 44 | 10.989 | 11.068 | 0.229 | 0.308<< |
| 45 | 11.238>> | 11.328 | -0.174 | -0.084 |
| 45 | 6.922<< | 6.958 | 6.618 | 6.654 |
| 45 | 11.226 | 11.341>> | -0.186 | -0.071 |
| 45 | 6.935 | 6.946<< | 6.631 | 6.642 |
| 45 | 6.935 | 6.946 | 6.631>> | 6.642 |
| 45 | 11.226 | 11.341 | -0.186<< | -0.071 |
| 45 | 6.922 | 6.958 | 6.618 | 6.654>> |
| 45 | 11.238 | 11.328 | -0.174 | -0.084<< |

| BARRA 45 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 45 | 11.236>> | 11.326 | -0.161 | -0.071 |
| 45 | 6.920<< | 6.956 | 6.631 | 6.667 |
| 45 | 11.223 | 11.338>> | -0.174 | -0.059 |
| 45 | 6.932 | 6.943<< | 6.643 | 6.654 |
| 45 | 6.932 | 6.943 | 6.643>> | 6.654 |
| 45 | 11.223 | 11.338 | -0.174<< | -0.059 |
| 45 | 6.920 | 6.956 | 6.631 | 6.667>> |
| 45 | 11.236 | 11.326 | -0.161 | -0.071<< |
| 46 | 11.328>> | 11.428 | -0.318 | -0.218 |
| 46 | 7.032<< | 7.067 | 6.457 | 6.492 |
| 46 | 11.316 | 11.440>> | -0.330 | -0.206 |
| 46 | 7.044 | 7.055<< | 6.469 | 6.480 |
| 46 | 7.036 | 7.056 | 6.470>> | 6.490 |
| 46 | 11.324 | 11.439 | -0.331<< | -0.216 |
| 46 | 7.033 | 7.059 | 6.467 | 6.493>> |
| 46 | 11.327 | 11.436 | -0.328 | -0.219<< |

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| BARRA 46 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 46 | 11.326>> | 11.426 | -0.311 | -0.211 |
| 46 | 7.030<< | 7.065 | 6.464 | 6.499 |
| 46 | 11.314 | 11.438>> | -0.323 | -0.199 |
| 46 | 7.042 | 7.053<< | 6.476 | 6.487 |
| 46 | 7.034 | 7.054 | 6.477>> | 6.497 |
| 46 | 11.322 | 11.436 | -0.323<< | -0.209 |
| 46 | 7.031 | 7.057 | 6.474 | 6.500>> |
| 46 | 11.325 | 11.434 | -0.321 | -0.212<< |
| 47 | 11.342>> | 11.451 | -0.348 | -0.239 |
| 47 | 7.127<< | 7.187 | 6.280 | 6.341 |
| 47 | 11.331 | 11.463>> | -0.359 | -0.227 |
| 47 | 7.165 | 7.149<< | 6.319 | 6.302 |
| 47 | 7.157 | 7.149 | 6.322>> | 6.313 |
| 47 | 11.339 | 11.462 | -0.361<< | -0.238 |
| 47 | 7.127 | 7.179 | 6.291 | 6.343>> |
| 47 | 11.342 | 11.460 | -0.359 | -0.241<< |

| BARRA 47 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 47 | 11.340>> | 11.449 | -0.345 | -0.236 |
| 47 | 7.125<< | 7.186 | 6.283 | 6.344 |
| 47 | 11.329 | 11.461>> | -0.356 | -0.225 |
| 47 | 7.164 | 7.147<< | 6.322 | 6.305 |
| 47 | 7.155 | 7.147 | 6.324>> | 6.316 |
| 47 | 11.337 | 11.461 | -0.359<< | -0.235 |
| 47 | 7.125 | 7.177 | 6.294 | 6.346>> |
| 47 | 11.340 | 11.458 | -0.356 | -0.238<< |
| 48 | 11.311>> | 11.433 | -0.316 | -0.194 |
| 48 | 6.997<< | 7.039 | 6.507 | 6.549 |
| 48 | 11.303 | 11.441>> | -0.324 | -0.186 |
| 48 | 7.005 | 7.030<< | 6.515 | 6.540 |
| 48 | 7.000 | 7.031 | 6.516>> | 6.547 |
| 48 | 11.308 | 11.441 | -0.325<< | -0.192 |
| 48 | 6.997 | 7.034 | 6.513 | 6.550>> |
| 48 | 11.311 | 11.438 | -0.322 | -0.195<< |

| BARRA 48 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 48 | 11.310>> | 11.431 | -0.318 | -0.197 |
| 48 | 6.995<< | 7.038 | 6.504 | 6.546 |
| 48 | 11.302 | 11.440>> | -0.326 | -0.188 |
| 48 | 7.004 | 7.029<< | 6.513 | 6.538 |
| 48 | 6.999 | 7.029 | 6.514>> | 6.544 |
| 48 | 11.307 | 11.439 | -0.327<< | -0.195 |
| 48 | 6.996 | 7.033 | 6.511 | 6.547>> |
| 48 | 11.310 | 11.436 | -0.324 | -0.198<< |
| 49 | 11.205>> | 11.335 | -0.166 | -0.036 |
| 49 | 6.853<< | 6.907 | 6.711 | 6.765 |
| 49 | 11.197 | 11.343>> | -0.174 | -0.027 |
| 49 | 6.862 | 6.899<< | 6.719 | 6.756 |
| 49 | 6.857 | 6.900 | 6.719>> | 6.762 |
| 49 | 11.201 | 11.343 | -0.174<< | -0.033 |
| 49 | 6.854 | 6.903 | 6.716 | 6.765>> |
| 49 | 11.204 | 11.340 | -0.171 | -0.036<< |

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| BARRA 49 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 49 | 11.204>> | 11.334 | -0.173 | -0.043 |
| 49 | 6.852<< | 6.906 | 6.703 | 6.758 |
| 49 | 11.196 | 11.342>> | -0.181 | -0.034 |
| 49 | 6.860 | 6.898<< | 6.712 | 6.749 |
| 49 | 6.856 | 6.899 | 6.712>> | 6.755 |
| 49 | 11.200 | 11.342 | -0.181<< | -0.040 |
| 49 | 6.853 | 6.902 | 6.709 | 6.758>> |
| 49 | 11.203 | 11.338 | -0.178 | -0.043<< |
| 50 | 10.942>> | 11.080 | 0.225 | 0.363 |
| 50 | 6.709<< | 6.776 | 6.910 | 6.976 |
| 50 | 10.934 | 11.088>> | 0.217 | 0.371 |
| 50 | 6.718 | 6.767<< | 6.919 | 6.968 |
| 50 | 6.715 | 6.768 | 6.919>> | 6.972 |
| 50 | 10.937 | 11.088 | 0.216<< | 0.368 |
| 50 | 6.710 | 6.773 | 6.914 | 6.977>> |
| 50 | 10.942 | 11.083 | 0.222 | 0.363<< |

| BARRA 50 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 50 | 10.941>> | 11.079 | 0.214 | 0.352 |
| 50 | 6.708<< | 6.774 | 6.899 | 6.965 |
| 50 | 10.932 | 11.087>> | 0.206 | 0.360 |
| 50 | 6.716 | 6.766<< | 6.908 | 6.957 |
| 50 | 6.714 | 6.766 | 6.908>> | 6.960 |
| 50 | 10.935 | 11.087 | 0.205<< | 0.357 |
| 50 | 6.709 | 6.771 | 6.903 | 6.966>> |
| 50 | 10.940 | 11.082 | 0.210 | 0.352<< |
| 51 | 10.518>> | 10.663 | 0.864 | 1.009 |
| 51 | 6.564<< | 6.643 | 7.108 | 7.186 |
| 51 | 10.510 | 10.671>> | 0.855 | 1.017 |
| 51 | 6.573 | 6.634<< | 7.116 | 7.178 |
| 51 | 6.570 | 6.635 | 7.116>> | 7.181 |
| 51 | 10.513 | 10.671 | 0.855<< | 1.013 |
| 51 | 6.565 | 6.640 | 7.111 | 7.186>> |
| 51 | 10.517 | 10.666 | 0.860 | 1.008<< |

| BARRA 51 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 51 | 10.516>> | 10.661 | 0.850 | 0.995 |
| 51 | 6.562<< | 6.640 | 7.094 | 7.172 |
| 51 | 10.507 | 10.669>> | 0.842 | 1.003 |
| 51 | 6.570 | 6.632<< | 7.102 | 7.164 |
| 51 | 6.567 | 6.632 | 7.103>> | 7.168 |
| 51 | 10.510 | 10.668 | 0.842<< | 1.000 |
| 51 | 6.562 | 6.637 | 7.098 | 7.173>> |
| 51 | 10.515 | 10.664 | 0.846 | 0.995<< |
| 52 | 9.929>> | 10.074 | 1.763 | 1.909 |
| 52 | 6.413<< | 6.509 | 7.303 | 7.399 |
| 52 | 9.915 | 10.088>> | 1.750 | 1.923 |
| 52 | 6.427 | 6.495<< | 7.317 | 7.385 |
| 52 | 6.419 | 6.496 | 7.318>> | 7.396 |
| 52 | 9.923 | 10.087 | 1.749<< | 1.913 |
| 52 | 6.414 | 6.501 | 7.314 | 7.400>> |
| 52 | 9.928 | 10.083 | 1.753 | 1.908<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 52 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 52 | 9.924>> | 10.070 | 1.748 | 1.894 |
| 52 | 6.409<< | 6.505 | 7.289 | 7.384 |
| 52 | 9.911 | 10.084>> | 1.735 | 1.908 |
| 52 | 6.423 | 6.491<< | 7.302 | 7.370 |
| 52 | 6.415 | 6.492 | 7.303>> | 7.381 |
| 52 | 9.919 | 10.083 | 1.734<< | 1.898 |
| 52 | 6.410 | 6.497 | 7.299 | 7.385>> |
| 52 | 9.924 | 10.078 | 1.738 | 1.893<< |
| 53 | 9.243>> | 9.369 | 2.835 | 2.961 |
| 53 | 6.190<< | 6.322 | 7.583 | 7.715 |
| 53 | 9.230 | 9.382>> | 2.822 | 2.974 |
| 53 | 6.203 | 6.310<< | 7.595 | 7.702 |
| 53 | 6.200 | 6.310 | 7.596>> | 7.706 |
| 53 | 9.233 | 9.382 | 2.821<< | 2.970 |
| 53 | 6.191 | 6.319 | 7.587 | 7.715>> |
| 53 | 9.242 | 9.373 | 2.830 | 2.961<< |

| BARRA 53 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 53 | 9.235>> | 9.362 | 2.821 | 2.948 |
| 53 | 6.183<< | 6.315 | 7.569 | 7.701 |
| 53 | 9.223 | 9.375>> | 2.808 | 2.960 |
| 53 | 6.196 | 6.302<< | 7.581 | 7.688 |
| 53 | 6.192 | 6.303 | 7.582>> | 7.692 |
| 53 | 9.226 | 9.374 | 2.808<< | 2.956 |
| 53 | 6.183 | 6.312 | 7.573 | 7.701>> |
| 53 | 9.235 | 9.365 | 2.817 | 2.947<< |
| 54 | 8.754>> | 8.461 | 4.107 | 3.814 |
| 54 | 5.761<< | 5.939 | 8.167 | 8.345 |
| 54 | 8.215 | 8.853>> | 3.756 | 4.395 |
| 54 | 5.805 | 5.895<< | 8.211 | 8.301 |
| 54 | 5.802 | 5.895 | 8.212>> | 8.305 |
| 54 | 8.391 | 8.826 | 3.742<< | 4.177 |
| 54 | 5.761 | 5.935 | 8.172 | 8.346>> |
| 54 | 8.754 | 8.465 | 4.103 | 3.813<< |

| BARRA 54 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 54 | 8.742>> | 8.449 | 4.096 | 3.803 |
| 54 | 5.749<< | 5.927 | 8.157 | 8.334 |
| 54 | 8.203 | 8.841>> | 3.746 | 4.384 |
| 54 | 5.793 | 5.883<< | 8.201 | 8.290 |
| 54 | 5.790 | 5.883 | 8.201>> | 8.295 |
| 54 | 8.379 | 8.813 | 3.732<< | 4.166 |
| 54 | 5.749 | 5.923 | 8.161 | 8.335>> |
| 54 | 8.742 | 8.453 | 4.092 | 3.802<< |
| 55 | 8.577>> | 8.539 | 4.028 | 3.989 |
| 55 | 5.028<< | 5.542 | 8.850 | 9.363 |
| 55 | 8.532 | 8.584>> | 3.983 | 4.035 |
| 55 | 5.332 | 5.240<< | 9.151 | 9.059 |
| 55 | 5.329 | 5.240 | 9.152>> | 9.064 |
| 55 | 8.535 | 8.584 | 3.982<< | 4.030 |
| 55 | 5.041 | 5.356 | 9.084 | 9.399>> |
| 55 | 8.577 | 8.542 | 4.023 | 3.989<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 55 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 55 | 8.131>> | 8.103 | 3.958 | 3.930 |
| 55 | 4.842<< | 5.099 | 7.875 | 8.132 |
| 55 | 8.095 | 8.135>> | 3.927 | 3.966 |
| 55 | 5.063 | 5.021<< | 7.908 | 7.866 |
| 55 | 5.059 | 5.021 | 7.908>> | 7.870 |
| 55 | 8.099 | 8.135 | 3.926<< | 3.962 |
| 55 | 4.842 | 5.099 | 7.875 | 8.132>> |
| 55 | 8.131 | 8.103 | 3.958 | 3.930<< |
| 56 | 9.490>> | 9.494 | 2.217 | 2.220 |
| 56 | 4.952<< | 5.191 | 7.775 | 8.014 |
| 56 | 9.487 | 9.497>> | 2.213 | 2.224 |
| 56 | 4.955 | 5.188<< | 7.778 | 8.011 |
| 56 | 4.952 | 5.188 | 7.778>> | 8.014 |
| 56 | 9.490 | 9.497 | 2.213<< | 2.220 |
| 56 | 4.952 | 5.188 | 7.778 | 8.014>> |
| 56 | 9.490 | 9.497 | 2.213 | 2.220<< |

| BARRA 56 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 56 | 9.592>> | 9.597 | 2.233 | 2.239 |
| 56 | 5.004<< | 5.261 | 7.743 | 7.999 |
| 56 | 9.588 | 9.601>> | 2.230 | 2.243 |
| 56 | 5.008 | 5.257<< | 7.746 | 7.996 |
| 56 | 5.005 | 5.257 | 7.746>> | 7.999 |
| 56 | 9.591 | 9.601 | 2.230<< | 2.239 |
| 57 | 8.770>> | 8.776 | 3.271 | 3.276 |
| 57 | 2.862<< | 3.126 | 10.439 | 10.703 |
| 57 | 8.761 | 8.784>> | 3.262 | 3.285 |
| 57 | 2.862 | 3.126<< | 10.439 | 10.703 |
| 57 | 2.862 | 3.126 | 10.439>> | 10.703 |
| 57 | 8.761 | 8.784 | 3.262<< | 3.285 |
| 57 | 2.862 | 3.126 | 10.439 | 10.703>> |
| 57 | 8.770 | 8.776 | 3.271 | 3.276<< |

| BARRA 57 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 57 | 8.775>> | 8.781 | 3.262 | 3.267 |
| 57 | 2.867<< | 3.132 | 10.429 | 10.694 |
| 57 | 8.766 | 8.790>> | 3.253 | 3.276 |
| 57 | 2.867 | 3.132<< | 10.429 | 10.694 |
| 57 | 2.867 | 3.132 | 10.429>> | 10.694 |
| 57 | 8.766 | 8.790 | 3.253<< | 3.276 |
| 57 | 2.867 | 3.132 | 10.429 | 10.694>> |
| 57 | 8.775 | 8.781 | 3.262 | 3.267<< |
| 58 | 9.425>> | 9.435 | 2.437 | 2.446 |
| 58 | 4.841<< | 5.099 | 7.944 | 8.202 |
| 58 | 9.421 | 9.438>> | 2.433 | 2.450 |
| 58 | 4.845 | 5.095<< | 7.948 | 8.198 |
| 58 | 4.845 | 5.095 | 7.948>> | 8.198 |
| 58 | 9.421 | 9.438 | 2.433<< | 2.450 |
| 58 | 4.841 | 5.099 | 7.944 | 8.202>> |
| 58 | 9.425 | 9.435 | 2.437 | 2.446<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 58 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 58 | 9.325>> | 9.332 | 2.394 | 2.402 |
| 58 | 4.789<< | 5.031 | 7.950 | 8.192 |
| 58 | 9.321 | 9.336>> | 2.390 | 2.405 |
| 58 | 4.793 | 5.027<< | 7.954 | 8.188 |
| 58 | 4.793 | 5.027 | 7.954>> | 8.188 |
| 58 | 9.321 | 9.336 | 2.390<< | 2.405 |
| 58 | 4.789 | 5.031 | 7.950 | 8.192>> |
| 58 | 9.325 | 9.332 | 2.394 | 2.402<< |
| 59 | 7.764>> | 7.741 | 4.389 | 4.366 |
| 59 | 4.479<< | 4.738 | 8.303 | 8.562 |
| 59 | 7.732 | 7.772>> | 4.358 | 4.398 |
| 59 | 4.694 | 4.662<< | 8.335 | 8.303 |
| 59 | 4.511 | 4.707 | 8.335>> | 8.531 |
| 59 | 7.732 | 7.772 | 4.358<< | 4.398 |
| 59 | 4.479 | 4.738 | 8.303 | 8.562>> |
| 59 | 7.764 | 7.741 | 4.389 | 4.366<< |

| BARRA 59 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 59 | 8.409>> | 8.379 | 4.284 | 4.255 |
| 59 | 4.867<< | 5.375 | 9.115 | 9.623 |
| 59 | 8.367 | 8.420>> | 4.243 | 4.296 |
| 59 | 5.162 | 5.081<< | 9.407 | 9.327 |
| 59 | 5.162 | 5.081 | 9.407>> | 9.327 |
| 59 | 8.367 | 8.420 | 4.243<< | 4.296 |
| 59 | 4.878 | 5.195 | 9.341 | 9.658>> |
| 59 | 8.409 | 8.379 | 4.284 | 4.255<< |
| 60 | 8.503>> | 8.230 | 4.449 | 4.176 |
| 60 | 5.517<< | 5.696 | 8.522 | 8.701 |
| 60 | 7.977 | 8.600>> | 4.123 | 4.745 |
| 60 | 5.558 | 5.656<< | 8.562 | 8.660 |
| 60 | 5.558 | 5.656 | 8.562>> | 8.660 |
| 60 | 8.153 | 8.577 | 4.103<< | 4.526 |
| 60 | 5.517 | 5.696 | 8.522 | 8.701>> |
| 60 | 8.503 | 8.230 | 4.449 | 4.176<< |

| BARRA 60 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 60 | 8.510>> | 8.237 | 4.465 | 4.192 |
| 60 | 5.525<< | 5.703 | 8.538 | 8.717 |
| 60 | 7.985 | 8.607>> | 4.139 | 4.762 |
| 60 | 5.566 | 5.663<< | 8.579 | 8.676 |
| 60 | 5.566 | 5.663 | 8.579>> | 8.676 |
| 60 | 8.161 | 8.584 | 4.119<< | 4.543 |
| 60 | 5.525 | 5.703 | 8.538 | 8.717>> |
| 60 | 8.510 | 8.237 | 4.465 | 4.192<< |
| 61 | 8.930>> | 9.059 | 3.298 | 3.426 |
| 61 | 5.878<< | 6.015 | 8.042 | 8.178 |
| 61 | 8.918 | 9.071>> | 3.286 | 3.438 |
| 61 | 5.890 | 6.003<< | 8.054 | 8.167 |
| 61 | 5.887 | 6.003 | 8.054>> | 8.171 |
| 61 | 8.922 | 9.071 | 3.285<< | 3.434 |
| 61 | 5.878 | 6.012 | 8.046 | 8.179>> |
| 61 | 8.930 | 9.062 | 3.294 | 3.426<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 61 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 61 | 8.934>> | 9.062 | 3.317 | 3.446 |
| 61 | 5.882<< | 6.018 | 8.062 | 8.198 |
| 61 | 8.922 | 9.074>> | 3.306 | 3.458 |
| 61 | 5.894 | 6.007<< | 8.073 | 8.187 |
| 61 | 5.890 | 6.007 | 8.074>> | 8.191 |
| 61 | 8.925 | 9.074 | 3.305<< | 3.454 |
| 61 | 5.882 | 6.015 | 8.066 | 8.199>> |
| 61 | 8.934 | 9.066 | 3.313 | 3.445<< |
| 62 | 9.546>> | 9.696 | 2.337 | 2.487 |
| 62 | 6.034<< | 6.133 | 7.872 | 7.972 |
| 62 | 9.533 | 9.708>> | 2.324 | 2.500 |
| 62 | 6.047 | 6.121<< | 7.885 | 7.959 |
| 62 | 6.039 | 6.121 | 7.887>> | 7.969 |
| 62 | 9.541 | 9.708 | 2.323<< | 2.490 |
| 62 | 6.034 | 6.126 | 7.882 | 7.974>> |
| 62 | 9.545 | 9.703 | 2.327 | 2.485<< |

| BARRA 62 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 62 | 9.546>> | 9.696 | 2.357 | 2.507 |
| 62 | 6.034<< | 6.134 | 7.892 | 7.992 |
| 62 | 9.533 | 9.709>> | 2.344 | 2.520 |
| 62 | 6.047 | 6.121<< | 7.905 | 7.979 |
| 62 | 6.039 | 6.121 | 7.906>> | 7.989 |
| 62 | 9.541 | 9.708 | 2.342<< | 2.510 |
| 62 | 6.034 | 6.126 | 7.902 | 7.993>> |
| 62 | 9.546 | 9.704 | 2.347 | 2.505<< |
| 63 | 10.061>> | 10.211 | 1.555 | 1.704 |
| 63 | 6.111<< | 6.195 | 7.792 | 7.876 |
| 63 | 10.053 | 10.219>> | 1.547 | 1.712 |
| 63 | 6.119 | 6.187<< | 7.800 | 7.868 |
| 63 | 6.117 | 6.187 | 7.801>> | 7.871 |
| 63 | 10.056 | 10.219 | 1.546<< | 1.709 |
| 63 | 6.112 | 6.192 | 7.796 | 7.876>> |
| 63 | 10.061 | 10.214 | 1.551 | 1.704<< |

| BARRA 63 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 63 | 10.060>> | 10.209 | 1.573 | 1.723 |
| 63 | 6.110<< | 6.193 | 7.811 | 7.894 |
| 63 | 10.052 | 10.217>> | 1.565 | 1.731 |
| 63 | 6.118 | 6.185<< | 7.819 | 7.886 |
| 63 | 6.115 | 6.186 | 7.819>> | 7.890 |
| 63 | 10.055 | 10.217 | 1.565<< | 1.727 |
| 63 | 6.110 | 6.191 | 7.814 | 7.895>> |
| 63 | 10.060 | 10.212 | 1.570 | 1.722<< |
| 64 | 10.410>> | 10.554 | 1.035 | 1.179 |
| 64 | 6.182<< | 6.254 | 7.713 | 7.785 |
| 64 | 10.402 | 10.562>> | 1.027 | 1.187 |
| 64 | 6.190 | 6.246<< | 7.721 | 7.777 |
| 64 | 6.187 | 6.246 | 7.722>> | 7.781 |
| 64 | 10.405 | 10.562 | 1.027<< | 1.183 |
| 64 | 6.182 | 6.251 | 7.717 | 7.786>> |
| 64 | 10.410 | 10.556 | 1.032 | 1.178<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 64 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 64 | 10.408>> | 10.551 | 1.051 | 1.195 |
| 64 | 6.180<< | 6.252 | 7.730 | 7.802 |
| 64 | 10.400 | 10.559>> | 1.044 | 1.203 |
| 64 | 6.188 | 6.244<< | 7.738 | 7.794 |
| 64 | 6.185 | 6.244 | 7.738>> | 7.797 |
| 64 | 10.403 | 10.559 | 1.043<< | 1.200 |
| 64 | 6.180 | 6.249 | 7.733 | 7.802>> |
| 64 | 10.408 | 10.554 | 1.048 | 1.195<< |
| 65 | 10.596>> | 10.733 | 0.767 | 0.904 |
| 65 | 6.249<< | 6.310 | 7.635 | 7.696 |
| 65 | 10.588 | 10.741>> | 0.759 | 0.912 |
| 65 | 6.257 | 6.302<< | 7.643 | 7.688 |
| 65 | 6.251 | 6.303 | 7.644>> | 7.696 |
| 65 | 10.595 | 10.740 | 0.759<< | 0.903 |
| 65 | 6.251 | 6.303 | 7.644 | 7.696>> |
| 65 | 10.595 | 10.740 | 0.759 | 0.903<< |

| BARRA 65 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 65 | 10.594>> | 10.730 | 0.780 | 0.916 |
| 65 | 6.247<< | 6.307 | 7.648 | 7.708 |
| 65 | 10.586 | 10.738>> | 0.772 | 0.924 |
| 65 | 6.255 | 6.299<< | 7.656 | 7.700 |
| 65 | 6.248 | 6.300 | 7.656>> | 7.709 |
| 65 | 10.592 | 10.737 | 0.771<< | 0.916 |
| 65 | 6.248 | 6.300 | 7.656 | 7.709>> |
| 65 | 10.592 | 10.737 | 0.771 | 0.916<< |
| 66 | 10.625>> | 10.753 | 0.741 | 0.870 |
| 66 | 6.315<< | 6.364 | 7.556 | 7.605 |
| 66 | 10.617 | 10.761>> | 0.733 | 0.878 |
| 66 | 6.323 | 6.356<< | 7.564 | 7.597 |
| 66 | 6.316 | 6.357 | 7.565>> | 7.606 |
| 66 | 10.624 | 10.761 | 0.732<< | 0.869 |
| 66 | 6.316 | 6.357 | 7.565 | 7.606>> |
| 66 | 10.624 | 10.761 | 0.732 | 0.869<< |

| BARRA 66 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 66 | 10.622>> | 10.751 | 0.748 | 0.877 |
| 66 | 6.313<< | 6.362 | 7.563 | 7.612 |
| 66 | 10.614 | 10.759>> | 0.740 | 0.885 |
| 66 | 6.321 | 6.354<< | 7.571 | 7.604 |
| 66 | 6.314 | 6.355 | 7.572>> | 7.613 |
| 66 | 10.622 | 10.758 | 0.739<< | 0.876 |
| 66 | 6.314 | 6.355 | 7.572 | 7.613>> |
| 66 | 10.622 | 10.758 | 0.739 | 0.876<< |
| 67 | 10.578>> | 10.704 | 0.821 | 0.947 |
| 67 | 6.375<< | 6.411 | 7.483 | 7.520 |
| 67 | 10.575 | 10.706>> | 0.819 | 0.950 |
| 67 | 6.385 | 6.401<< | 7.493 | 7.509 |
| 67 | 6.381 | 6.401 | 7.494>> | 7.514 |
| 67 | 10.575 | 10.706 | 0.819<< | 0.950 |
| 67 | 6.375 | 6.411 | 7.483 | 7.520>> |
| 67 | 10.578 | 10.704 | 0.821 | 0.947<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 67 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 67 | 10.576>> | 10.702 | 0.824 | 0.950 |
| 67 | 6.373<< | 6.409 | 7.486 | 7.522 |
| 67 | 10.573 | 10.704>> | 0.822 | 0.953 |
| 67 | 6.383 | 6.399<< | 7.496 | 7.512 |
| 67 | 6.379 | 6.399 | 7.497>> | 7.517 |
| 67 | 10.573 | 10.704 | 0.822<< | 0.953 |
| 67 | 6.373 | 6.409 | 7.486 | 7.522>> |
| 67 | 10.576 | 10.702 | 0.824 | 0.950<< |
| 68 | 10.485>> | 10.597 | 0.984 | 1.095 |
| 68 | 6.191<< | 6.224 | 7.773 | 7.806 |
| 68 | 10.476 | 10.606>> | 0.975 | 1.104 |
| 68 | 6.200 | 6.215<< | 7.783 | 7.797 |
| 68 | 6.194 | 6.215 | 7.784>> | 7.806 |
| 68 | 10.483 | 10.606 | 0.973<< | 1.096 |
| 68 | 6.191 | 6.217 | 7.782 | 7.808>> |
| 68 | 10.485 | 10.604 | 0.975 | 1.093<< |

| BARRA 68 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 68 | 10.484>> | 10.595 | 0.982 | 1.093 |
| 68 | 6.190<< | 6.223 | 7.771 | 7.804 |
| 68 | 10.475 | 10.605>> | 0.972 | 1.102 |
| 68 | 6.199 | 6.213<< | 7.780 | 7.795 |
| 68 | 6.192 | 6.214 | 7.782>> | 7.803 |
| 68 | 10.482 | 10.604 | 0.971<< | 1.093 |
| 68 | 6.190 | 6.216 | 7.780 | 7.806>> |
| 68 | 10.484 | 10.602 | 0.973 | 1.091<< |
| 69 | 10.318>> | 10.420 | 1.252 | 1.355 |
| 69 | 6.004<< | 6.038 | 8.059 | 8.094 |
| 69 | 10.308 | 10.430>> | 1.242 | 1.364 |
| 69 | 6.013 | 6.028<< | 8.069 | 8.084 |
| 69 | 6.007 | 6.029 | 8.070>> | 8.092 |
| 69 | 10.314 | 10.429 | 1.242<< | 1.356 |
| 69 | 6.005 | 6.031 | 8.067 | 8.094>> |
| 69 | 10.316 | 10.427 | 1.244 | 1.354<< |

| BARRA 69 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 69 | 10.316>> | 10.419 | 1.245 | 1.347 |
| 69 | 6.002<< | 6.037 | 8.052 | 8.087 |
| 69 | 10.307 | 10.429>> | 1.235 | 1.357 |
| 69 | 6.012 | 6.027<< | 8.062 | 8.077 |
| 69 | 6.006 | 6.028 | 8.063>> | 8.085 |
| 69 | 10.313 | 10.428 | 1.235<< | 1.349 |
| 69 | 6.004 | 6.030 | 8.060 | 8.087>> |
| 69 | 10.315 | 10.426 | 1.237 | 1.347<< |
| 70 | 9.994>> | 10.086 | 1.760 | 1.853 |
| 70 | 5.816<< | 5.852 | 8.341 | 8.377 |
| 70 | 9.983 | 10.097>> | 1.750 | 1.864 |
| 70 | 5.826 | 5.841<< | 8.351 | 8.366 |
| 70 | 5.826 | 5.841 | 8.351>> | 8.366 |
| 70 | 9.983 | 10.097 | 1.750<< | 1.864 |
| 70 | 5.816 | 5.852 | 8.341 | 8.377>> |
| 70 | 9.994 | 10.086 | 1.760 | 1.853<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 70 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 70 | 9.992>> | 10.085 | 1.749 | 1.842 |
| 70 | 5.815<< | 5.850 | 8.330 | 8.366 |
| 70 | 9.982 | 10.095>> | 1.739 | 1.852 |
| 70 | 5.825 | 5.840<< | 8.340 | 8.355 |
| 70 | 5.825 | 5.840 | 8.340>> | 8.355 |
| 70 | 9.982 | 10.095 | 1.739<< | 1.852 |
| 70 | 5.815 | 5.850 | 8.330 | 8.366>> |
| 70 | 9.992 | 10.085 | 1.749 | 1.842<< |
| 71 | 9.508>> | 9.590 | 2.517 | 2.599 |
| 71 | 5.627<< | 5.664 | 8.620 | 8.657 |
| 71 | 9.497 | 9.601>> | 2.506 | 2.610 |
| 71 | 5.638 | 5.653<< | 8.631 | 8.647 |
| 71 | 5.638 | 5.653 | 8.631>> | 8.647 |
| 71 | 9.497 | 9.601 | 2.506<< | 2.610 |
| 71 | 5.627 | 5.664 | 8.620 | 8.657>> |
| 71 | 9.508 | 9.590 | 2.517 | 2.599<< |

| BARRA 71 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 71 | 9.506>> | 9.588 | 2.504 | 2.586 |
| 71 | 5.625<< | 5.662 | 8.607 | 8.644 |
| 71 | 9.495 | 9.599>> | 2.493 | 2.597 |
| 71 | 5.636 | 5.651<< | 8.618 | 8.633 |
| 71 | 5.636 | 5.651 | 8.618>> | 8.633 |
| 71 | 9.495 | 9.599 | 2.493<< | 2.597 |
| 71 | 5.625 | 5.662 | 8.607 | 8.644>> |
| 71 | 9.506 | 9.588 | 2.504 | 2.586<< |
| 72 | 8.858>> | 8.922 | 3.536 | 3.600 |
| 72 | 5.432<< | 5.477 | 8.897 | 8.942 |
| 72 | 8.840 | 8.940>> | 3.518 | 3.618 |
| 72 | 5.450 | 5.459<< | 8.915 | 8.924 |
| 72 | 5.444 | 5.460 | 8.916>> | 8.931 |
| 72 | 8.845 | 8.939 | 3.518<< | 3.611 |
| 72 | 5.433 | 5.471 | 8.904 | 8.943>> |
| 72 | 8.857 | 8.928 | 3.529 | 3.600<< |

| BARRA 72 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 72 | 8.853>> | 8.917 | 3.521 | 3.586 |
| 72 | 5.427<< | 5.473 | 8.882 | 8.928 |
| 72 | 8.835 | 8.936>> | 3.503 | 3.604 |
| 72 | 5.445 | 5.455<< | 8.900 | 8.910 |
| 72 | 5.440 | 5.456 | 8.901>> | 8.917 |
| 72 | 8.841 | 8.935 | 3.503<< | 3.597 |
| 72 | 5.428 | 5.467 | 8.889 | 8.928>> |
| 72 | 8.852 | 8.923 | 3.514 | 3.585<< |
| 73 | 8.158>> | 8.201 | 4.631 | 4.675 |
| 73 | 5.116<< | 5.171 | 9.355 | 9.410 |
| 73 | 8.136 | 8.223>> | 4.609 | 4.697 |
| 73 | 5.138 | 5.149<< | 9.377 | 9.388 |
| 73 | 5.138 | 5.149 | 9.377>> | 9.388 |
| 73 | 8.136 | 8.223 | 4.609<< | 4.697 |
| 73 | 5.116 | 5.171 | 9.355 | 9.410>> |
| 73 | 8.158 | 8.201 | 4.631 | 4.675<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 73 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 73 | 8.150>> | 8.194 | 4.617 | 4.661 |
| 73 | 5.109<< | 5.163 | 9.341 | 9.396 |
| 73 | 8.128 | 8.216>> | 4.595 | 4.683 |
| 73 | 5.130 | 5.141<< | 9.363 | 9.374 |
| 73 | 5.130 | 5.141 | 9.363>> | 9.374 |
| 73 | 8.128 | 8.216 | 4.595<< | 4.683 |
| 73 | 5.109 | 5.163 | 9.341 | 9.396>> |
| 73 | 8.150 | 8.194 | 4.617 | 4.661<< |
| 74 | 7.530>> | 7.272 | 5.970 | 5.711 |
| 74 | 4.641<< | 4.720 | 10.039 | 10.118 |
| 74 | 7.257 | 7.542>> | 5.700 | 5.985 |
| 74 | 4.688 | 4.673<< | 10.086 | 10.071 |
| 74 | 4.670 | 4.676 | 10.086>> | 10.093 |
| 74 | 7.275 | 7.539 | 5.699<< | 5.963 |
| 74 | 4.644 | 4.702 | 10.061 | 10.118>> |
| 74 | 7.527 | 7.289 | 5.948 | 5.711<< |

| BARRA 74 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 74 | 7.518>> | 7.260 | 5.959 | 5.701 |
| 74 | 4.629<< | 4.708 | 10.028 | 10.107 |
| 74 | 7.245 | 7.530>> | 5.689 | 5.974 |
| 74 | 4.676 | 4.661<< | 10.075 | 10.060 |
| 74 | 4.658 | 4.664 | 10.076>> | 10.082 |
| 74 | 7.263 | 7.527 | 5.689<< | 5.952 |
| 74 | 4.632 | 4.690 | 10.050 | 10.108>> |
| 74 | 7.515 | 7.277 | 5.937 | 5.700<< |
| 75 | 7.316>> | 7.139 | 6.169 | 5.993 |
| 75 | 3.835<< | 3.988 | 11.170 | 11.323 |
| 75 | 7.262 | 7.280>> | 6.004 | 6.023 |
| 75 | 4.120 | 3.938<< | 11.155 | 10.973 |
| 75 | 3.853 | 3.944 | 11.222>> | 11.312 |
| 75 | 7.293 | 7.275 | 6.001<< | 5.984 |
| 75 | 3.840 | 3.957 | 11.208 | 11.325>> |
| 75 | 7.306 | 7.262 | 6.015 | 5.971<< |

| BARRA 75 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 75 | 6.935>> | 6.789 | 5.601 | 5.456 |
| 75 | 3.694<< | 3.798 | 9.503 | 9.607 |
| 75 | 6.906 | 6.904>> | 5.479 | 5.477 |
| 75 | 3.721 | 3.771<< | 9.530 | 9.581 |
| 75 | 3.721 | 3.771 | 9.530>> | 9.581 |
| 75 | 6.906 | 6.904 | 5.479<< | 5.477 |
| 75 | 3.694 | 3.798 | 9.503 | 9.607>> |
| 75 | 6.932 | 6.877 | 5.505 | 5.450<< |
| 76 | 8.307>> | 8.130 | 3.916 | 3.739 |
| 76 | 3.744<< | 3.842 | 9.464 | 9.562 |
| 76 | 8.179 | 8.258>> | 3.788 | 3.867 |
| 76 | 3.774 | 3.813<< | 9.493 | 9.532 |
| 76 | 3.757 | 3.814 | 9.494>> | 9.551 |
| 76 | 8.196 | 8.257 | 3.787<< | 3.848 |
| 76 | 3.745 | 3.826 | 9.482 | 9.563>> |
| 76 | 8.306 | 8.147 | 3.897 | 3.738<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 76 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 76 | 8.405>> | 8.236 | 3.929 | 3.760 |
| 76 | 3.796<< | 3.909 | 9.431 | 9.543 |
| 76 | 8.283 | 8.359>> | 3.807 | 3.882 |
| 76 | 3.825 | 3.880<< | 9.460 | 9.514 |
| 76 | 3.809 | 3.881 | 9.461>> | 9.533 |
| 76 | 8.299 | 8.358 | 3.805<< | 3.864 |
| 76 | 3.797 | 3.893 | 9.449 | 9.545>> |
| 76 | 8.404 | 8.253 | 3.911 | 3.759<< |
| 77 | 7.587>> | 7.500 | 4.869 | 4.783 |
| 77 | 1.603<< | 1.689 | 12.230 | 12.317 |
| 77 | 7.457 | 7.531>> | 4.851 | 4.925 |
| 77 | 1.614 | 1.678<< | 12.242 | 12.305 |
| 77 | 1.614 | 1.678 | 12.242>> | 12.305 |
| 77 | 7.457 | 7.531 | 4.851<< | 4.925 |
| 77 | 1.603 | 1.689 | 12.230 | 12.317>> |
| 77 | 7.587 | 7.500 | 4.869 | 4.783<< |

| BARRA 77 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 77 | 7.592>> | 7.506 | 4.860 | 4.774 |
| 77 | 1.608<< | 1.695 | 12.221 | 12.308 |
| 77 | 7.463 | 7.537>> | 4.842 | 4.916 |
| 77 | 1.619 | 1.683<< | 12.232 | 12.296 |
| 77 | 1.619 | 1.683 | 12.232>> | 12.296 |
| 77 | 7.463 | 7.537 | 4.842<< | 4.916 |
| 77 | 1.608 | 1.695 | 12.221 | 12.308>> |
| 77 | 7.592 | 7.506 | 4.860 | 4.774<< |
| 78 | 8.318>> | 8.215 | 3.962 | 3.859 |
| 78 | 3.653<< | 3.763 | 9.611 | 9.722 |
| 78 | 8.287 | 8.246>> | 3.931 | 3.890 |
| 78 | 3.684 | 3.733<< | 9.642 | 9.691 |
| 78 | 3.664 | 3.733 | 9.644>> | 9.713 |
| 78 | 8.306 | 8.246 | 3.929<< | 3.868 |
| 78 | 3.653 | 3.744 | 9.633 | 9.724>> |
| 78 | 8.317 | 8.234 | 3.940 | 3.857<< |

| BARRA 78 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 78 | 8.219>> | 8.135 | 3.899 | 3.815 |
| 78 | 3.603<< | 3.680 | 9.641 | 9.717 |
| 78 | 8.208 | 8.146>> | 3.888 | 3.827 |
| 78 | 3.614 | 3.668<< | 9.652 | 9.706 |
| 78 | 3.614 | 3.668 | 9.652>> | 9.706 |
| 78 | 8.208 | 8.146 | 3.888<< | 3.827 |
| 78 | 3.603 | 3.680 | 9.641 | 9.717>> |
| 78 | 8.219 | 8.135 | 3.899 | 3.815<< |
| 79 | 6.721>> | 6.608 | 5.813 | 5.700 |
| 79 | 3.372<< | 3.485 | 9.873 | 9.986 |
| 79 | 6.677 | 6.651>> | 5.770 | 5.744 |
| 79 | 3.577 | 3.430<< | 9.882 | 9.735 |
| 79 | 3.384 | 3.443 | 9.920>> | 9.979 |
| 79 | 6.709 | 6.649 | 5.767<< | 5.707 |
| 79 | 3.373 | 3.454 | 9.909 | 9.989>> |
| 79 | 6.719 | 6.639 | 5.777 | 5.697<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 79 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 79 | 7.310>> | 7.175 | 6.130 | 5.995 |
| 79 | 3.713<< | 3.864 | 11.369 | 11.520 |
| 79 | 7.254 | 7.231>> | 6.074 | 6.051 |
| 79 | 3.987 | 3.773<< | 11.409 | 11.195 |
| 79 | 3.748 | 3.809 | 11.429>> | 11.490 |
| 79 | 7.275 | 7.230 | 6.070<< | 6.025 |
| 79 | 3.714 | 3.843 | 11.395 | 11.524>> |
| 79 | 7.309 | 7.196 | 6.104 | 5.991<< |
| 80 | 7.498>> | 7.077 | 6.204 | 5.783 |
| 80 | 4.422<< | 4.489 | 10.371 | 10.439 |
| 80 | 7.083 | 7.489>> | 5.793 | 6.198 |
| 80 | 4.478 | 4.433<< | 10.427 | 10.382 |
| 80 | 4.439 | 4.438 | 10.432>> | 10.431 |
| 80 | 7.122 | 7.484 | 5.788<< | 6.150 |
| 80 | 4.427 | 4.450 | 10.420 | 10.443>> |
| 80 | 7.493 | 7.116 | 6.155 | 5.779<< |

| BARRA 80 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 80 | 7.505>> | 7.085 | 6.220 | 5.799 |
| 80 | 4.429<< | 4.497 | 10.387 | 10.455 |
| 80 | 7.091 | 7.496>> | 5.809 | 6.215 |
| 80 | 4.485 | 4.441<< | 10.443 | 10.399 |
| 80 | 4.446 | 4.446 | 10.448>> | 10.447 |
| 80 | 7.130 | 7.491 | 5.804<< | 6.166 |
| 80 | 4.434 | 4.458 | 10.436 | 10.459>> |
| 80 | 7.500 | 7.124 | 6.171 | 5.795<< |
| 81 | 7.968>> | 8.003 | 4.916 | 4.951 |
| 81 | 4.856<< | 4.900 | 9.753 | 9.796 |
| 81 | 7.934 | 8.037>> | 4.882 | 4.985 |
| 81 | 4.890 | 4.866<< | 9.786 | 9.762 |
| 81 | 4.871 | 4.868 | 9.789>> | 9.786 |
| 81 | 7.953 | 8.035 | 4.880<< | 4.962 |
| 81 | 4.858 | 4.881 | 9.776 | 9.799>> |
| 81 | 7.966 | 8.022 | 4.893 | 4.949<< |

| BARRA 81 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 81 | 7.971>> | 8.007 | 4.936 | 4.971 |
| 81 | 4.860<< | 4.903 | 9.773 | 9.816 |
| 81 | 7.937 | 8.041>> | 4.902 | 5.005 |
| 81 | 4.894 | 4.869<< | 9.806 | 9.782 |
| 81 | 4.875 | 4.872 | 9.809>> | 9.806 |
| 81 | 7.956 | 8.039 | 4.900<< | 4.982 |
| 81 | 4.862 | 4.885 | 9.796 | 9.819>> |
| 81 | 7.969 | 8.026 | 4.913 | 4.969<< |
| 82 | 8.621>> | 8.667 | 3.911 | 3.956 |
| 82 | 5.123<< | 5.162 | 9.368 | 9.408 |
| 82 | 8.586 | 8.702>> | 3.876 | 3.991 |
| 82 | 5.158 | 5.128<< | 9.403 | 9.373 |
| 82 | 5.137 | 5.130 | 9.405>> | 9.399 |
| 82 | 8.608 | 8.699 | 3.873<< | 3.965 |
| 82 | 5.126 | 5.141 | 9.394 | 9.410>> |
| 82 | 8.619 | 8.688 | 3.884 | 3.954<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 82 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 82 | 8.622>> | 8.667 | 3.930 | 3.976 |
| 82 | 5.123<< | 5.163 | 9.388 | 9.427 |
| 82 | 8.587 | 8.702>> | 3.895 | 4.011 |
| 82 | 5.158 | 5.128<< | 9.423 | 9.392 |
| 82 | 5.137 | 5.131 | 9.425>> | 9.419 |
| 82 | 8.608 | 8.699 | 3.893<< | 3.984 |
| 82 | 5.126 | 5.142 | 9.414 | 9.430>> |
| 82 | 8.619 | 8.688 | 3.904 | 3.973<< |
| 83 | 9.214>> | 9.272 | 2.991 | 3.049 |
| 83 | 5.273<< | 5.305 | 9.163 | 9.195 |
| 83 | 9.184 | 9.302>> | 2.961 | 3.080 |
| 83 | 5.303 | 5.275<< | 9.193 | 9.165 |
| 83 | 5.287 | 5.278 | 9.194>> | 9.186 |
| 83 | 9.201 | 9.300 | 2.960<< | 3.059 |
| 83 | 5.276 | 5.289 | 9.184 | 9.196>> |
| 83 | 9.211 | 9.289 | 2.971 | 3.048<< |

| BARRA 83 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 83 | 9.213>> | 9.271 | 3.010 | 3.068 |
| 83 | 5.272<< | 5.304 | 9.182 | 9.214 |
| 83 | 9.182 | 9.301>> | 2.980 | 3.098 |
| 83 | 5.302 | 5.274<< | 9.212 | 9.184 |
| 83 | 5.285 | 5.277 | 9.213>> | 9.205 |
| 83 | 9.199 | 9.298 | 2.979<< | 3.078 |
| 83 | 5.275 | 5.287 | 9.203 | 9.215>> |
| 83 | 9.210 | 9.288 | 2.989 | 3.067<< |
| 84 | 9.640>> | 9.706 | 2.334 | 2.401 |
| 84 | 5.416<< | 5.444 | 8.962 | 8.990 |
| 84 | 9.611 | 9.735>> | 2.305 | 2.430 |
| 84 | 5.445 | 5.415<< | 8.991 | 8.961 |
| 84 | 5.430 | 5.419 | 8.991>> | 8.980 |
| 84 | 9.626 | 9.732 | 2.305<< | 2.411 |
| 84 | 5.420 | 5.429 | 8.981 | 8.990>> |
| 84 | 9.636 | 9.722 | 2.315 | 2.401<< |

| BARRA 84 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 84 | 9.637>> | 9.704 | 2.351 | 2.417 |
| 84 | 5.414<< | 5.442 | 8.979 | 9.007 |
| 84 | 9.608 | 9.733>> | 2.322 | 2.446 |
| 84 | 5.443 | 5.413<< | 9.008 | 8.978 |
| 84 | 5.427 | 5.416 | 9.008>> | 8.997 |
| 84 | 9.624 | 9.729 | 2.321<< | 2.427 |
| 84 | 5.417 | 5.426 | 8.998 | 9.007>> |
| 84 | 9.634 | 9.719 | 2.331 | 2.417<< |
| 85 | 9.902>> | 9.975 | 1.929 | 2.003 |
| 85 | 5.556<< | 5.580 | 8.762 | 8.787 |
| 85 | 9.874 | 10.003>> | 1.901 | 2.031 |
| 85 | 5.584 | 5.552<< | 8.790 | 8.759 |
| 85 | 5.583 | 5.552 | 8.790>> | 8.759 |
| 85 | 9.875 | 10.003 | 1.901<< | 2.030 |
| 85 | 5.556 | 5.579 | 8.763 | 8.787>> |
| 85 | 9.902 | 9.976 | 1.928 | 2.003<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 85 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 85 | 9.899>> | 9.973 | 1.942 | 2.015 |
| 85 | 5.553<< | 5.577 | 8.775 | 8.799 |
| 85 | 9.871 | 10.001>> | 1.914 | 2.043 |
| 85 | 5.581 | 5.549<< | 8.803 | 8.771 |
| 85 | 5.580 | 5.549 | 8.803>> | 8.772 |
| 85 | 9.872 | 10.001 | 1.914<< | 2.042 |
| 85 | 5.553 | 5.577 | 8.776 | 8.799>> |
| 85 | 9.899 | 9.973 | 1.941 | 2.015<< |
| 86 | 10.007>> | 10.087 | 1.765 | 1.845 |
| 86 | 5.694<< | 5.714 | 8.561 | 8.581 |
| 86 | 9.980 | 10.114>> | 1.738 | 1.872 |
| 86 | 5.721 | 5.687<< | 8.587 | 8.554 |
| 86 | 5.720 | 5.687 | 8.587>> | 8.555 |
| 86 | 9.981 | 10.114 | 1.738<< | 1.871 |
| 86 | 5.694 | 5.713 | 8.561 | 8.581>> |
| 86 | 10.007 | 10.088 | 1.764 | 1.845<< |

| BARRA 86 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 86 | 10.005>> | 10.085 | 1.772 | 1.852 |
| 86 | 5.692<< | 5.712 | 8.568 | 8.588 |
| 86 | 9.978 | 10.112>> | 1.746 | 1.879 |
| 86 | 5.718 | 5.685<< | 8.595 | 8.561 |
| 86 | 5.718 | 5.685 | 8.595>> | 8.562 |
| 86 | 9.979 | 10.112 | 1.745<< | 1.878 |
| 86 | 5.692 | 5.711 | 8.569 | 8.588>> |
| 86 | 10.005 | 10.085 | 1.772 | 1.852<< |
| 87 | 10.037>> | 10.123 | 1.714 | 1.800 |
| 87 | 5.830<< | 5.846 | 8.358 | 8.374 |
| 87 | 10.011 | 10.149>> | 1.688 | 1.826 |
| 87 | 5.855 | 5.820<< | 8.383 | 8.348 |
| 87 | 5.855 | 5.820 | 8.383>> | 8.349 |
| 87 | 10.012 | 10.149 | 1.688<< | 1.825 |
| 87 | 5.830 | 5.845 | 8.358 | 8.374>> |
| 87 | 10.037 | 10.124 | 1.714 | 1.800<< |

| BARRA 87 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 87 | 10.035>> | 10.121 | 1.717 | 1.803 |
| 87 | 5.828<< | 5.844 | 8.361 | 8.377 |
| 87 | 10.010 | 10.147>> | 1.691 | 1.829 |
| 87 | 5.853 | 5.818<< | 8.386 | 8.351 |
| 87 | 5.853 | 5.819 | 8.386>> | 8.352 |
| 87 | 10.010 | 10.147 | 1.691<< | 1.828 |
| 87 | 5.828 | 5.844 | 8.361 | 8.377>> |
| 87 | 10.035 | 10.122 | 1.716 | 1.803<< |
| 88 | 10.022>> | 10.114 | 1.731 | 1.823 |
| 88 | 5.868<< | 6.030 | 8.112 | 8.274 |
| 88 | 9.997 | 10.138>> | 1.706 | 1.847 |
| 88 | 6.016 | 5.882<< | 8.260 | 8.126 |
| 88 | 6.016 | 5.882 | 8.260>> | 8.126 |
| 88 | 9.997 | 10.138 | 1.706<< | 1.847 |
| 88 | 5.868 | 6.030 | 8.112 | 8.274>> |
| 88 | 10.022 | 10.114 | 1.731 | 1.823<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 88 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 88 | 10.020>> | 10.113 | 1.728 | 1.821 |
| 88 | 5.866<< | 6.029 | 8.109 | 8.272 |
| 88 | 9.996 | 10.137>> | 1.704 | 1.845 |
| 88 | 6.014 | 5.881<< | 8.258 | 8.124 |
| 88 | 6.014 | 5.881 | 8.258>> | 8.124 |
| 88 | 9.996 | 10.137 | 1.704<< | 1.845 |
| 88 | 5.866 | 6.029 | 8.109 | 8.272>> |
| 88 | 10.020 | 10.113 | 1.728 | 1.821<< |
| 89 | 9.929>> | 10.027 | 1.863 | 1.961 |
| 89 | 5.804<< | 5.876 | 8.323 | 8.394 |
| 89 | 9.906 | 10.051>> | 1.839 | 1.984 |
| 89 | 5.827 | 5.852<< | 8.346 | 8.371 |
| 89 | 5.827 | 5.852 | 8.346>> | 8.371 |
| 89 | 9.906 | 10.051 | 1.839<< | 1.984 |
| 89 | 5.804 | 5.876 | 8.323 | 8.394>> |
| 89 | 9.929 | 10.027 | 1.863 | 1.961<< |

| BARRA 89 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 89 | 9.928>> | 10.026 | 1.855 | 1.954 |
| 89 | 5.803<< | 5.874 | 8.316 | 8.387 |
| 89 | 9.905 | 10.050>> | 1.832 | 1.977 |
| 89 | 5.826 | 5.851<< | 8.339 | 8.364 |
| 89 | 5.826 | 5.851 | 8.339>> | 8.364 |
| 89 | 9.905 | 10.050 | 1.832<< | 1.977 |
| 89 | 5.803 | 5.874 | 8.316 | 8.387>> |
| 89 | 9.928 | 10.026 | 1.855 | 1.954<< |
| 90 | 9.680>> | 9.783 | 2.235 | 2.338 |
| 90 | 5.713<< | 5.790 | 8.448 | 8.526 |
| 90 | 9.658 | 9.806>> | 2.213 | 2.361 |
| 90 | 5.735 | 5.768<< | 8.471 | 8.503 |
| 90 | 5.735 | 5.768 | 8.471>> | 8.503 |
| 90 | 9.658 | 9.806 | 2.213<< | 2.361 |
| 90 | 5.713 | 5.790 | 8.448 | 8.526>> |
| 90 | 9.680 | 9.783 | 2.235 | 2.338<< |

| BARRA 90 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 90 | 9.679>> | 9.782 | 2.224 | 2.327 |
| 90 | 5.711<< | 5.789 | 8.437 | 8.515 |
| 90 | 9.656 | 9.804>> | 2.202 | 2.350 |
| 90 | 5.734 | 5.767<< | 8.460 | 8.492 |
| 90 | 5.734 | 5.767 | 8.460>> | 8.492 |
| 90 | 9.656 | 9.804 | 2.202<< | 2.350 |
| 90 | 5.711 | 5.789 | 8.437 | 8.515>> |
| 90 | 9.679 | 9.782 | 2.224 | 2.327<< |
| 91 | 9.270>> | 9.377 | 2.856 | 2.964 |
| 91 | 5.620<< | 5.704 | 8.572 | 8.655 |
| 91 | 9.248 | 9.398>> | 2.835 | 2.985 |
| 91 | 5.641 | 5.682<< | 8.593 | 8.634 |
| 91 | 5.641 | 5.682 | 8.593>> | 8.634 |
| 91 | 9.248 | 9.398 | 2.835<< | 2.985 |
| 91 | 5.620 | 5.704 | 8.572 | 8.655>> |
| 91 | 9.270 | 9.377 | 2.856 | 2.964<< |

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| BARRA 91 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 91 | 9.270>> | 9.377 | 2.860 | 2.968 |
| 91 | 5.620<< | 5.704 | 8.576 | 8.659 |
| 91 | 9.249 | 9.399>> | 2.839 | 2.989 |
| 91 | 5.642 | 5.683<< | 8.597 | 8.638 |
| 91 | 5.642 | 5.683 | 8.597>> | 8.638 |
| 91 | 9.249 | 9.399 | 2.839<< | 2.989 |
| 91 | 5.620 | 5.704 | 8.576 | 8.659>> |
| 91 | 9.270 | 9.377 | 2.860 | 2.968<< |
| 92 | 8.699>> | 8.804 | 3.753 | 3.858 |
| 92 | 5.526<< | 5.620 | 8.709 | 8.804 |
| 92 | 8.673 | 8.830>> | 3.727 | 3.884 |
| 92 | 5.551 | 5.595<< | 8.735 | 8.778 |
| 92 | 5.547 | 5.596 | 8.735>> | 8.784 |
| 92 | 8.678 | 8.829 | 3.727<< | 3.878 |
| 92 | 5.527 | 5.616 | 8.715 | 8.804>> |
| 92 | 8.698 | 8.809 | 3.747 | 3.858<< |

| BARRA 92 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 92 | 8.703>> | 8.808 | 3.781 | 3.886 |
| 92 | 5.530<< | 5.624 | 8.738 | 8.832 |
| 92 | 8.677 | 8.834>> | 3.755 | 3.912 |
| 92 | 5.555 | 5.599<< | 8.763 | 8.807 |
| 92 | 5.551 | 5.600 | 8.763>> | 8.812 |
| 92 | 8.682 | 8.833 | 3.755<< | 3.906 |
| 92 | 5.531 | 5.620 | 8.743 | 8.832>> |
| 92 | 8.702 | 8.813 | 3.776 | 3.886<< |
| 93 | 8.027>> | 8.116 | 4.855 | 4.944 |
| 93 | 5.388<< | 5.507 | 8.927 | 9.046 |
| 93 | 8.001 | 8.142>> | 4.829 | 4.970 |
| 93 | 5.414 | 5.481<< | 8.953 | 9.020 |
| 93 | 5.414 | 5.481 | 8.953>> | 9.020 |
| 93 | 8.001 | 8.142 | 4.829<< | 4.970 |
| 93 | 5.388 | 5.507 | 8.927 | 9.046>> |
| 93 | 8.027 | 8.116 | 4.855 | 4.944<< |

| BARRA 93 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 93 | 8.034>> | 8.123 | 4.877 | 4.966 |
| 93 | 5.395<< | 5.514 | 8.949 | 9.068 |
| 93 | 8.008 | 8.150>> | 4.850 | 4.992 |
| 93 | 5.421 | 5.488<< | 8.975 | 9.042 |
| 93 | 5.421 | 5.488 | 8.975>> | 9.042 |
| 93 | 8.008 | 8.150 | 4.850<< | 4.992 |
| 93 | 5.395 | 5.514 | 8.949 | 9.068>> |
| 93 | 8.034 | 8.123 | 4.877 | 4.966<< |
| 94 | 7.557>> | 7.078 | 6.347 | 5.868 |
| 94 | 5.038<< | 5.579 | 8.967 | 9.507 |
| 94 | 6.957 | 7.618>> | 5.823 | 6.484 |
| 94 | 5.105 | 5.143<< | 9.505 | 9.543 |
| 94 | 5.097 | 5.144 | 9.506>> | 9.554 |
| 94 | 7.124 | 7.589 | 5.814<< | 6.278 |
| 94 | 5.043 | 5.197 | 9.453 | 9.607>> |
| 94 | 7.547 | 7.168 | 6.234 | 5.856<< |

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| BARRA 94 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 94 | 7.567>> | 7.088 | 6.360 | 5.881 |
| 94 | 5.048<< | 5.588 | 8.980 | 9.520 |
| 94 | 6.967 | 7.628>> | 5.837 | 6.498 |
| 94 | 5.115 | 5.153<< | 9.518 | 9.557 |
| 94 | 5.106 | 5.154 | 9.519>> | 9.567 |
| 94 | 7.134 | 7.599 | 5.828<< | 6.292 |
| 94 | 5.053 | 5.207 | 9.466 | 9.621>> |
| 94 | 7.557 | 7.178 | 6.247 | 5.869<< |
| 95 | 7.456>> | 7.372 | 6.028 | 5.943 |
| 95 | 4.231<< | 4.517 | 10.578 | 10.864 |
| 95 | 7.403 | 7.425>> | 5.975 | 5.997 |
| 95 | 4.664 | 4.452<< | 10.540 | 10.328 |
| 95 | 4.284 | 4.464 | 10.631>> | 10.811 |
| 95 | 7.403 | 7.425 | 5.975<< | 5.996 |
| 95 | 4.231 | 4.517 | 10.578 | 10.864>> |
| 95 | 7.456 | 7.372 | 6.028 | 5.943<< |

| BARRA 95 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 95 | 7.089>> | 7.015 | 5.511 | 5.437 |
| 95 | 4.097<< | 4.328 | 9.037 | 9.268 |
| 95 | 7.047 | 7.058>> | 5.469 | 5.480 |
| 95 | 4.140 | 4.286<< | 9.079 | 9.225 |
| 95 | 4.139 | 4.286 | 9.079>> | 9.225 |
| 95 | 7.047 | 7.058 | 5.469<< | 5.480 |
| 95 | 4.097 | 4.328 | 9.037 | 9.268>> |
| 95 | 7.089 | 7.016 | 5.511 | 5.437<< |
| 96 | 8.614>> | 8.566 | 3.567 | 3.519 |
| 96 | 4.287<< | 4.495 | 8.842 | 9.049 |
| 96 | 8.600 | 8.580>> | 3.553 | 3.533 |
| 96 | 4.301 | 4.481<< | 8.856 | 9.036 |
| 96 | 4.301 | 4.481 | 8.856>> | 9.036 |
| 96 | 8.600 | 8.580 | 3.553<< | 3.533 |
| 96 | 4.287 | 4.495 | 8.842 | 9.049>> |
| 96 | 8.614 | 8.566 | 3.567 | 3.519<< |

| BARRA 96 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 96 | 8.835>> | 8.791 | 3.577 | 3.533 |
| 96 | 4.457<< | 4.682 | 8.801 | 9.026 |
| 96 | 8.821 | 8.805>> | 3.564 | 3.547 |
| 96 | 4.471 | 4.668<< | 8.815 | 9.013 |
| 96 | 4.471 | 4.668 | 8.815>> | 9.013 |
| 96 | 8.821 | 8.805 | 3.564<< | 3.547 |
| 96 | 4.457 | 4.682 | 8.801 | 9.026>> |
| 96 | 8.835 | 8.791 | 3.577 | 3.533<< |
| 97 | 8.143>> | 8.098 | 4.452 | 4.407 |
| 97 | 2.371<< | 2.601 | 11.430 | 11.660 |
| 97 | 8.130 | 8.111>> | 4.440 | 4.420 |
| 97 | 2.384 | 2.588<< | 11.443 | 11.647 |
| 97 | 2.384 | 2.588 | 11.443>> | 11.647 |
| 97 | 8.130 | 8.111 | 4.440<< | 4.420 |
| 97 | 2.371 | 2.601 | 11.430 | 11.660>> |
| 97 | 8.143 | 8.098 | 4.452 | 4.407<< |

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| BARRA 97 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 97 | 8.217>> | 8.172 | 4.431 | 4.386 |
| 97 | 2.445<< | 2.675 | 11.409 | 11.638 |
| 97 | 8.205 | 8.185>> | 4.418 | 4.399 |
| 97 | 2.458 | 2.662<< | 11.422 | 11.626 |
| 97 | 2.458 | 2.662 | 11.422>> | 11.626 |
| 97 | 8.205 | 8.185 | 4.418<< | 4.399 |
| 97 | 2.445 | 2.675 | 11.409 | 11.638>> |
| 97 | 8.217 | 8.172 | 4.431 | 4.386<< |
| 98 | 8.820>> | 8.747 | 3.701 | 3.629 |
| 98 | 4.346<< | 4.596 | 8.985 | 9.236 |
| 98 | 8.778 | 8.789>> | 3.659 | 3.671 |
| 98 | 4.388 | 4.554<< | 9.027 | 9.194 |
| 98 | 4.360 | 4.557 | 9.028>> | 9.224 |
| 98 | 8.805 | 8.786 | 3.659<< | 3.640 |
| 98 | 4.349 | 4.569 | 9.016 | 9.236>> |
| 98 | 8.817 | 8.775 | 3.671 | 3.628<< |

| BARRA 98 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 98 | 8.719>> | 8.650 | 3.655 | 3.586 |
| 98 | 4.293<< | 4.530 | 8.988 | 9.225 |
| 98 | 8.680 | 8.688>> | 3.617 | 3.625 |
| 98 | 4.331 | 4.492<< | 9.026 | 9.187 |
| 98 | 4.306 | 4.493 | 9.029>> | 9.216 |
| 98 | 8.705 | 8.687 | 3.614<< | 3.596 |
| 98 | 4.295 | 4.505 | 9.017 | 9.228>> |
| 98 | 8.717 | 8.675 | 3.626 | 3.584<< |
| 99 | 7.140>> | 7.076 | 5.631 | 5.568 |
| 99 | 3.807<< | 4.197 | 9.387 | 9.777 |
| 99 | 6.724 | 7.169>> | 5.603 | 6.048 |
| 99 | 4.052 | 3.953<< | 9.630 | 9.531 |
| 99 | 4.052 | 3.953 | 9.630>> | 9.531 |
| 99 | 7.104 | 7.111 | 5.596<< | 5.603 |
| 99 | 3.807 | 4.197 | 9.387 | 9.777>> |
| 99 | 7.140 | 7.076 | 5.631 | 5.568<< |

| BARRA 99 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 99 | 7.845>> | 7.401 | 6.379 | 5.935 |
| 99 | 4.252<< | 4.742 | 10.782 | 11.272 |
| 99 | 7.350 | 7.895>> | 5.885 | 6.431 |
| 99 | 4.573 | 4.422<< | 11.102 | 10.951 |
| 99 | 4.573 | 4.422 | 11.102>> | 10.951 |
| 99 | 7.797 | 7.808 | 5.872<< | 5.883 |
| 99 | 4.252 | 4.742 | 10.782 | 11.272>> |
| 99 | 7.841 | 7.764 | 5.916 | 5.840<< |
| 100 | 8.106>> | 7.698 | 5.927 | 5.518 |
| 100 | 4.861<< | 5.006 | 10.274 | 10.420 |
| 100 | 7.648 | 8.155>> | 5.470 | 5.978 |
| 100 | 4.901 | 4.966<< | 10.315 | 10.379 |
| 100 | 4.873 | 4.966 | 10.323>> | 10.416 |
| 100 | 7.889 | 8.116 | 5.452<< | 5.679 |
| 100 | 4.861 | 4.978 | 10.311 | 10.427>> |
| 100 | 8.106 | 7.726 | 5.891 | 5.511<< |

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| BARRA 100 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 100 | 8.134>> | 7.725 | 5.962 | 5.554 |
| 100 | 4.888<< | 5.034 | 10.310 | 10.455 |
| 100 | 7.675 | 8.183>> | 5.505 | 6.013 |
| 100 | 4.929 | 4.993<< | 10.350 | 10.414 |
| 100 | 4.900 | 4.993 | 10.358>> | 10.451 |
| 100 | 7.917 | 8.144 | 5.488<< | 5.715 |
| 100 | 4.889 | 5.005 | 10.346 | 10.462>> |
| 100 | 8.134 | 7.754 | 5.926 | 5.546<< |
| 101 | 8.563>> | 8.651 | 4.658 | 4.746 |
| 101 | 5.317<< | 5.424 | 9.691 | 9.798 |
| 101 | 8.456 | 8.669>> | 4.665 | 4.878 |
| 101 | 5.327 | 5.413<< | 9.702 | 9.787 |
| 101 | 5.327 | 5.413 | 9.702>> | 9.787 |
| 101 | 8.553 | 8.662 | 4.647<< | 4.757 |
| 101 | 5.317 | 5.424 | 9.691 | 9.798>> |
| 101 | 8.563 | 8.651 | 4.658 | 4.746<< |

| BARRA 101 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 101 | 8.589>> | 8.677 | 4.710 | 4.798 |
| 101 | 5.342<< | 5.449 | 9.743 | 9.850 |
| 101 | 8.481 | 8.694>> | 4.717 | 4.930 |
| 101 | 5.353 | 5.438<< | 9.754 | 9.840 |
| 101 | 5.353 | 5.438 | 9.754>> | 9.840 |
| 101 | 8.578 | 8.687 | 4.699<< | 4.809 |
| 101 | 5.342 | 5.449 | 9.743 | 9.850>> |
| 101 | 8.589 | 8.677 | 4.710 | 4.798<< |
| 102 | 9.256>> | 9.357 | 3.654 | 3.754 |
| 102 | 5.551<< | 5.635 | 9.447 | 9.530 |
| 102 | 9.246 | 9.367>> | 3.644 | 3.764 |
| 102 | 5.561 | 5.625<< | 9.457 | 9.521 |
| 102 | 5.561 | 5.625 | 9.457>> | 9.521 |
| 102 | 9.246 | 9.367 | 3.644<< | 3.764 |
| 102 | 5.551 | 5.635 | 9.447 | 9.530>> |
| 102 | 9.256 | 9.357 | 3.654 | 3.754<< |

| BARRA 102 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 102 | 9.273>> | 9.374 | 3.715 | 3.816 |
| 102 | 5.568<< | 5.652 | 9.508 | 9.592 |
| 102 | 9.263 | 9.384>> | 3.705 | 3.826 |
| 102 | 5.578 | 5.642<< | 9.518 | 9.582 |
| 102 | 5.578 | 5.642 | 9.518>> | 9.582 |
| 102 | 9.263 | 9.384 | 3.705<< | 3.826 |
| 102 | 5.568 | 5.652 | 9.508 | 9.592>> |
| 102 | 9.273 | 9.374 | 3.715 | 3.816<< |
| 103 | 9.828>> | 9.924 | 2.856 | 2.952 |
| 103 | 5.741<< | 5.817 | 9.249 | 9.324 |
| 103 | 9.819 | 9.933>> | 2.847 | 2.961 |
| 103 | 5.750 | 5.808<< | 9.258 | 9.315 |
| 103 | 5.750 | 5.808 | 9.258>> | 9.315 |
| 103 | 9.819 | 9.933 | 2.847<< | 2.961 |
| 103 | 5.741 | 5.817 | 9.249 | 9.324>> |
| 103 | 9.828 | 9.924 | 2.856 | 2.952<< |

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| BARRA 103 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 103 | 9.839>> | 9.935 | 2.923 | 3.019 |
| 103 | 5.752<< | 5.827 | 9.315 | 9.391 |
| 103 | 9.830 | 9.944>> | 2.914 | 3.028 |
| 103 | 5.761 | 5.819<< | 9.324 | 9.382 |
| 103 | 5.761 | 5.819 | 9.324>> | 9.382 |
| 103 | 9.830 | 9.944 | 2.914<< | 3.028 |
| 103 | 5.752 | 5.827 | 9.315 | 9.391>> |
| 103 | 9.839 | 9.935 | 2.923 | 3.019<< |
| 104 | 10.246>> | 10.336 | 2.296 | 2.386 |
| 104 | 5.929<< | 5.997 | 9.049 | 9.117 |
| 104 | 10.238 | 10.344>> | 2.288 | 2.394 |
| 104 | 5.937 | 5.989<< | 9.057 | 9.109 |
| 104 | 5.937 | 5.989 | 9.057>> | 9.109 |
| 104 | 10.238 | 10.344 | 2.288<< | 2.394 |
| 104 | 5.929 | 5.997 | 9.049 | 9.117>> |
| 104 | 10.246 | 10.336 | 2.296 | 2.386<< |

| BARRA 104 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 104 | 10.251>> | 10.341 | 2.346 | 2.436 |
| 104 | 5.934<< | 6.002 | 9.099 | 9.167 |
| 104 | 10.243 | 10.349>> | 2.337 | 2.444 |
| 104 | 5.942 | 5.994<< | 9.107 | 9.159 |
| 104 | 5.942 | 5.994 | 9.107>> | 9.159 |
| 104 | 10.243 | 10.349 | 2.337<< | 2.444 |
| 104 | 5.934 | 6.002 | 9.099 | 9.167>> |
| 104 | 10.251 | 10.341 | 2.346 | 2.436<< |
| 105 | 10.514>> | 10.598 | 1.943 | 2.027 |
| 105 | 6.120<< | 6.180 | 8.820 | 8.880 |
| 105 | 10.507 | 10.605>> | 1.936 | 2.034 |
| 105 | 6.127 | 6.172<< | 8.827 | 8.873 |
| 105 | 6.127 | 6.172 | 8.827>> | 8.873 |
| 105 | 10.507 | 10.605 | 1.936<< | 2.034 |
| 105 | 6.120 | 6.180 | 8.820 | 8.880>> |
| 105 | 10.514 | 10.598 | 1.943 | 2.027<< |

| BARRA 105 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 105 | 10.518>> | 10.601 | 1.906 | 1.989 |
| 105 | 6.123<< | 6.183 | 8.782 | 8.842 |
| 105 | 10.511 | 10.608>> | 1.899 | 1.996 |
| 105 | 6.130 | 6.176<< | 8.789 | 8.835 |
| 105 | 6.130 | 6.176 | 8.789>> | 8.835 |
| 105 | 10.511 | 10.608 | 1.899<< | 1.996 |
| 105 | 6.123 | 6.183 | 8.782 | 8.842>> |
| 105 | 10.518 | 10.601 | 1.906 | 1.989<< |
| 106 | 10.641>> | 10.717 | 1.723 | 1.799 |
| 106 | 6.321<< | 6.373 | 8.484 | 8.536 |
| 106 | 10.635 | 10.723>> | 1.717 | 1.805 |
| 106 | 6.327 | 6.366<< | 8.490 | 8.530 |
| 106 | 6.327 | 6.366 | 8.490>> | 8.530 |
| 106 | 10.635 | 10.723 | 1.717<< | 1.805 |
| 106 | 6.321 | 6.373 | 8.484 | 8.536>> |
| 106 | 10.641 | 10.717 | 1.723 | 1.799<< |

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| BARRA 106 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 106 | 10.641>> | 10.717 | 1.686 | 1.762 |
| 106 | 6.321<< | 6.373 | 8.448 | 8.500 |
| 106 | 10.635 | 10.723>> | 1.680 | 1.769 |
| 106 | 6.327 | 6.366<< | 8.454 | 8.493 |
| 106 | 6.327 | 6.366 | 8.454>> | 8.493 |
| 106 | 10.635 | 10.723 | 1.680<< | 1.769 |
| 106 | 6.321 | 6.373 | 8.448 | 8.500>> |
| 106 | 10.641 | 10.717 | 1.686 | 1.762<< |
| 107 | 10.563>> | 10.631 | 1.819 | 1.886 |
| 107 | 6.469<< | 6.513 | 8.227 | 8.271 |
| 107 | 10.558 | 10.636>> | 1.814 | 1.891 |
| 107 | 6.474 | 6.508<< | 8.232 | 8.266 |
| 107 | 6.474 | 6.508 | 8.232>> | 8.266 |
| 107 | 10.558 | 10.636 | 1.814<< | 1.891 |
| 107 | 6.469 | 6.513 | 8.227 | 8.271>> |
| 107 | 10.563 | 10.631 | 1.819 | 1.886<< |

| BARRA 107 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 107 | 10.560>> | 10.627 | 1.787 | 1.855 |
| 107 | 6.465<< | 6.509 | 8.195 | 8.239 |
| 107 | 10.554 | 10.632>> | 1.782 | 1.860 |
| 107 | 6.470 | 6.504<< | 8.200 | 8.234 |
| 107 | 6.470 | 6.504 | 8.200>> | 8.234 |
| 107 | 10.554 | 10.632 | 1.782<< | 1.860 |
| 107 | 6.465 | 6.509 | 8.195 | 8.239>> |
| 107 | 10.560 | 10.627 | 1.787 | 1.855<< |
| 108 | 10.220>> | 10.277 | 2.329 | 2.387 |
| 108 | 6.503<< | 6.540 | 8.145 | 8.182 |
| 108 | 10.215 | 10.282>> | 2.325 | 2.391 |
| 108 | 6.508 | 6.535<< | 8.150 | 8.178 |
| 108 | 6.508 | 6.535 | 8.150>> | 8.178 |
| 108 | 10.215 | 10.282 | 2.325<< | 2.391 |
| 108 | 6.503 | 6.540 | 8.145 | 8.182>> |
| 108 | 10.220 | 10.277 | 2.329 | 2.387<< |

| BARRA 108 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 108 | 10.215>> | 10.273 | 2.298 | 2.355 |
| 108 | 6.499<< | 6.535 | 8.114 | 8.150 |
| 108 | 10.211 | 10.277>> | 2.293 | 2.360 |
| 108 | 6.503 | 6.531<< | 8.118 | 8.146 |
| 108 | 6.503 | 6.531 | 8.118>> | 8.146 |
| 108 | 10.211 | 10.277 | 2.293<< | 2.360 |
| 108 | 6.499 | 6.535 | 8.114 | 8.150>> |
| 108 | 10.215 | 10.273 | 2.298 | 2.355<< |
| 109 | 9.614>> | 9.661 | 3.248 | 3.295 |
| 109 | 6.428<< | 6.457 | 8.234 | 8.263 |
| 109 | 9.611 | 9.664>> | 3.244 | 3.298 |
| 109 | 6.431 | 6.453<< | 8.238 | 8.260 |
| 109 | 6.431 | 6.453 | 8.238>> | 8.260 |
| 109 | 9.611 | 9.664 | 3.244<< | 3.298 |
| 109 | 6.428 | 6.457 | 8.234 | 8.263>> |
| 109 | 9.614 | 9.661 | 3.248 | 3.295<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 109 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 109 | 9.609>> | 9.656 | 3.217 | 3.264 |
| 109 | 6.422<< | 6.451 | 8.204 | 8.232 |
| 109 | 9.605 | 9.659>> | 3.214 | 3.267 |
| 109 | 6.426 | 6.448<< | 8.207 | 8.229 |
| 109 | 6.426 | 6.448 | 8.207>> | 8.229 |
| 109 | 9.605 | 9.659 | 3.214<< | 3.267 |
| 109 | 6.422 | 6.451 | 8.204 | 8.232>> |
| 109 | 9.609 | 9.656 | 3.217 | 3.264<< |
| 110 | 8.744>> | 8.779 | 4.579 | 4.614 |
| 110 | 6.240<< | 6.261 | 8.497 | 8.518 |
| 110 | 8.742 | 8.782>> | 4.576 | 4.616 |
| 110 | 6.243 | 6.259<< | 8.500 | 8.516 |
| 110 | 6.243 | 6.259 | 8.500>> | 8.516 |
| 110 | 8.742 | 8.782 | 4.576<< | 4.616 |
| 110 | 6.240 | 6.261 | 8.497 | 8.518>> |
| 110 | 8.744 | 8.779 | 4.579 | 4.614<< |

| BARRA 110 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 110 | 8.737>> | 8.773 | 4.549 | 4.584 |
| 110 | 6.233<< | 6.254 | 8.467 | 8.488 |
| 110 | 8.735 | 8.775>> | 4.546 | 4.586 |
| 110 | 6.236 | 6.252<< | 8.470 | 8.486 |
| 110 | 6.236 | 6.252 | 8.470>> | 8.486 |
| 110 | 8.735 | 8.775 | 4.546<< | 4.586 |
| 110 | 6.233 | 6.254 | 8.467 | 8.488>> |
| 110 | 8.737 | 8.773 | 4.549 | 4.584<< |
| 111 | 7.621>> | 7.644 | 6.304 | 6.327 |
| 111 | 5.940<< | 5.953 | 8.935 | 8.948 |
| 111 | 7.619 | 7.646>> | 6.302 | 6.328 |
| 111 | 5.941 | 5.951<< | 8.937 | 8.947 |
| 111 | 5.941 | 5.951 | 8.937>> | 8.947 |
| 111 | 7.619 | 7.646 | 6.302<< | 6.328 |
| 111 | 5.940 | 5.953 | 8.935 | 8.948>> |
| 111 | 7.621 | 7.644 | 6.304 | 6.327<< |

| BARRA 111 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 111 | 7.612>> | 7.635 | 6.276 | 6.299 |
| 111 | 5.931<< | 5.944 | 8.907 | 8.920 |
| 111 | 7.610 | 7.637>> | 6.274 | 6.300 |
| 111 | 5.932 | 5.942<< | 8.909 | 8.919 |
| 111 | 5.932 | 5.942 | 8.909>> | 8.919 |
| 111 | 7.610 | 7.637 | 6.274<< | 6.300 |
| 111 | 5.931 | 5.944 | 8.907 | 8.920>> |
| 111 | 7.612 | 7.635 | 6.276 | 6.299<< |
| 112 | 6.284>> | 6.292 | 8.363 | 8.372 |
| 112 | 5.525<< | 5.531 | 9.549 | 9.554 |
| 112 | 6.283 | 6.293>> | 8.363 | 8.372 |
| 112 | 5.526 | 5.530<< | 9.549 | 9.553 |
| 112 | 5.526 | 5.530 | 9.549>> | 9.553 |
| 112 | 6.283 | 6.293 | 8.363<< | 8.372 |
| 112 | 5.525 | 5.531 | 9.549 | 9.554>> |
| 112 | 6.284 | 6.292 | 8.363 | 8.372<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 112 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 112 | 4.753>> | 4.736 | 6.487 | 6.470 |
| 112 | 3.982<< | 3.981 | 7.346 | 7.345 |
| 112 | 4.752 | 4.737>> | 6.487 | 6.471 |
| 112 | 3.983 | 3.980<< | 7.347 | 7.344 |
| 112 | 3.983 | 3.980 | 7.347>> | 7.344 |
| 112 | 4.752 | 4.737 | 6.487<< | 6.471 |
| 112 | 3.982 | 3.981 | 7.346 | 7.345>> |
| 112 | 4.753 | 4.736 | 6.487 | 6.470<< |
| 113 | 4.680>> | 4.585 | 6.655 | 6.561 |
| 113 | 4.585<< | 4.646 | 6.560 | 6.621 |
| 113 | 4.602 | 4.663>> | 6.577 | 6.638 |
| 113 | 4.658 | 4.573<< | 6.633 | 6.548 |
| 113 | 4.680 | 4.585 | 6.655>> | 6.561 |
| 113 | 4.585 | 4.646 | 6.560<< | 6.621 |
| 113 | 4.602 | 4.663 | 6.577 | 6.638>> |
| 113 | 4.658 | 4.573 | 6.633 | 6.548<< |

## 7.2.4.Combinación Frecuente t=∞

TITULO
=======
LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

FICHERO DE GEOMETRIA COMPLETA
==============================
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
================================
1

| Fich | Num. Nudos | Num. barras | Num. hipotesis | NOMBRE FICHERO |
|---|---|---|---|---|
| 1 | 120 | 119 | 57 | ESFipf.TXT |

| Fich | Hipotesis | Caracter | Coeficiente |
|---|---|---|---|
| 1 | 1 | 1 | 1.0 |
| 1 | 2 | 1 | 0.4 |
| 1 | 3 | 1 | 1.0 |
| 1 | 4 | 3 | 1.0 |
| 1 | 5 | 3 | 1.0 |
| 1 | 6 | 3 | 1.0 |
| 1 | 7 | 2 | 0.5 |
| 1 | 8 | 2 | 0.5 |
| 1 | 9 | 2 | 0.5 |
| 1 | 10 | 2 | 0.5 |
| 1 | 11 | 2 | 0.5 |
| 1 | 12 | 2 | 0.5 |
| 1 | 13 | 2 | 0.5 |
| 1 | 14 | 2 | 0.5 |
| 1 | 15 | 2 | 0.5 |
| 1 | 16 | 2 | 0.5 |
| 1 | 17 | 2 | 0.5 |
| 1 | 18 | 2 | 0.5 |
| 1 | 19 | 4 | 0.8 |
| 1 | 20 | 5 | 0.8 |
| 1 | 21 | 4 | 0.8 |
| 1 | 22 | 5 | 0.8 |
| 1 | 23 | 4 | 0.8 |
| 1 | 24 | 5 | 0.8 |
| 1 | 25 | 4 | 0.8 |
| 1 | 26 | 5 | 0.8 |
| 1 | 27 | 4 | 0.8 |
| 1 | 28 | 5 | 0.8 |
| 1 | 29 | 4 | 0.8 |
| 1 | 30 | 5 | 0.8 |
| 1 | 31 | 4 | 0.8 |
| 1 | 32 | 5 | 0.8 |
| 1 | 33 | 4 | 0.8 |
| 1 | 34 | 5 | 0.8 |
| 1 | 35 | 4 | 0.8 |
| 1 | 36 | 5 | 0.8 |
| 1 | 37 | 2 | 0.5 |
| 1 | 38 | 1 | 17.780 |
| 1 | 39 | 1 | 2.540 |
| 1 | 40 | 1 | 2.540 |
| 1 | 41 | 1 | 10.160 |
| 1 | 42 | 1 | 2.540 |
| 1 | 43 | 1 | 2.540 |
| 1 | 44 | 1 | 5.818 |
| 1 | 45 | 1 | 5.818 |
| 1 | 46 | 1 | 5.818 |
| 1 | 47 | 1 | 5.818 |
| 1 | 48 | 1 | 5.818 |
| 1 | 49 | 1 | 5.818 |
| 1 | 50 | 1 | 5.818 |
| 1 | 51 | 1 | 5.818 |
| 1 | 52 | 1 | 5.818 |
| 1 | 53 | 1 | 5.818 |
| 1 | 54 | 1 | 5.818 |
| 1 | 55 | 1 | 5.818 |
| 1 | 56 | 1 | 5.818 |
| 1 | 57 | 1 | 5.818 |

PONDERACION DE TENSIONES

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 1 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 1 | 5.439>> | 5.324 | 4.977 | 4.862 |
| 1 | 5.339<< | 5.400 | 4.877 | 4.938 |
| 1 | 5.352 | 5.411>> | 4.890 | 4.948 |
| 1 | 5.426 | 5.315<< | 4.964 | 4.853 |
| 1 | 5.439 | 5.324 | 4.977>> | 4.862 |
| 1 | 5.339 | 5.400 | 4.877<< | 4.938 |
| 1 | 5.352 | 5.411 | 4.890 | 4.948>> |
| 1 | 5.426 | 5.315 | 4.964 | 4.853<< |
| 2 | 5.472>> | 5.451 | 4.853 | 4.832 |
| 2 | 4.694<< | 4.685 | 5.720 | 5.711 |
| 2 | 5.470 | 5.453>> | 4.851 | 4.834 |
| 2 | 4.696 | 4.683<< | 5.722 | 5.709 |
| 2 | 4.695 | 4.683 | 5.722>> | 5.710 |
| 2 | 5.471 | 5.453 | 4.851<< | 4.833 |
| 2 | 4.695 | 4.684 | 5.721 | 5.711>> |
| 2 | 5.471 | 5.453 | 4.851 | 4.832<< |

| BARRA 2 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 2 | 6.960>> | 6.987 | 6.230 | 6.257 |
| 2 | 6.205<< | 6.205 | 7.440 | 7.440 |
| 2 | 6.959 | 6.987>> | 6.229 | 6.257 |
| 2 | 6.206 | 6.204<< | 7.441 | 7.439 |
| 2 | 6.206 | 6.204 | 7.441>> | 7.439 |
| 2 | 6.959 | 6.987 | 6.229<< | 6.257 |
| 2 | 6.205 | 6.205 | 7.440 | 7.440>> |
| 2 | 6.960 | 6.987 | 6.230 | 6.257<< |
| 3 | 8.213>> | 8.276 | 4.232 | 4.295 |
| 3 | 6.490<< | 6.490 | 6.996 | 6.996 |
| 3 | 8.211 | 8.277>> | 4.230 | 4.296 |
| 3 | 6.492 | 6.488<< | 6.998 | 6.994 |
| 3 | 6.492 | 6.488 | 6.998>> | 6.994 |
| 3 | 8.211 | 8.277 | 4.230<< | 4.296 |
| 3 | 6.490 | 6.490 | 6.996 | 6.996>> |
| 3 | 8.213 | 8.276 | 4.232 | 4.295<< |

| BARRA 3 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 3 | 8.222>> | 8.285 | 4.259 | 4.322 |
| 3 | 6.500<< | 6.500 | 7.023 | 7.023 |
| 3 | 8.221 | 8.287>> | 4.257 | 4.324 |
| 3 | 6.501 | 6.498<< | 7.025 | 7.021 |
| 3 | 6.501 | 6.498 | 7.025>> | 7.021 |
| 3 | 8.221 | 8.287 | 4.257<< | 4.324 |
| 3 | 6.500 | 6.500 | 7.023 | 7.023>> |
| 3 | 8.222 | 8.285 | 4.259 | 4.322<< |
| 4 | 9.244>> | 9.337 | 2.629 | 2.722 |
| 4 | 6.698<< | 6.698 | 6.714 | 6.714 |
| 4 | 9.242 | 9.340>> | 2.626 | 2.724 |
| 4 | 6.700 | 6.695<< | 6.717 | 6.712 |
| 4 | 6.700 | 6.695 | 6.717>> | 6.712 |
| 4 | 9.242 | 9.340 | 2.626<< | 2.724 |
| 4 | 6.698 | 6.698 | 6.714 | 6.714>> |
| 4 | 9.244 | 9.337 | 2.629 | 2.722<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 4 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 4 | 9.252>> | 9.346 | 2.658 | 2.752 |
| 4 | 6.706<< | 6.706 | 6.744 | 6.744 |
| 4 | 9.250 | 9.348>> | 2.656 | 2.754 |
| 4 | 6.708 | 6.703<< | 6.747 | 6.742 |
| 4 | 6.708 | 6.703 | 6.747>> | 6.742 |
| 4 | 9.250 | 9.348 | 2.656<< | 2.754 |
| 4 | 6.706 | 6.706 | 6.744 | 6.744>> |
| 4 | 9.252 | 9.346 | 2.658 | 2.752<< |
| 5 | 10.046>> | 10.163 | 1.391 | 1.508 |
| 5 | 6.820<< | 6.820 | 6.566 | 6.566 |
| 5 | 10.043 | 10.167>> | 1.388 | 1.512 |
| 5 | 6.824 | 6.817<< | 6.569 | 6.563 |
| 5 | 6.824 | 6.817 | 6.569>> | 6.563 |
| 5 | 10.043 | 10.167 | 1.388<< | 1.512 |
| 5 | 6.820 | 6.820 | 6.566 | 6.566>> |
| 5 | 10.046 | 10.163 | 1.391 | 1.508<< |

| BARRA 5 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 5 | 10.052>> | 10.169 | 1.422 | 1.539 |
| 5 | 6.826<< | 6.826 | 6.597 | 6.597 |
| 5 | 10.049 | 10.173>> | 1.419 | 1.542 |
| 5 | 6.830 | 6.823<< | 6.600 | 6.593 |
| 5 | 6.830 | 6.823 | 6.600>> | 6.593 |
| 5 | 10.049 | 10.173 | 1.419<< | 1.542 |
| 5 | 6.826 | 6.826 | 6.597 | 6.597>> |
| 5 | 10.052 | 10.169 | 1.422 | 1.539<< |
| 6 | 10.617>> | 10.752 | 0.520 | 0.655 |
| 6 | 6.856<< | 6.856 | 6.551 | 6.551 |
| 6 | 10.612 | 10.756>> | 0.515 | 0.659 |
| 6 | 6.860 | 6.852<< | 6.555 | 6.547 |
| 6 | 6.860 | 6.852 | 6.555>> | 6.547 |
| 6 | 10.612 | 10.756 | 0.515<< | 0.659 |
| 6 | 6.856 | 6.856 | 6.551 | 6.551>> |
| 6 | 10.617 | 10.752 | 0.520 | 0.655<< |

| BARRA 6 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 6 | 10.622>> | 10.757 | 0.551 | 0.686 |
| 6 | 6.861<< | 6.861 | 6.583 | 6.583 |
| 6 | 10.618 | 10.761>> | 0.547 | 0.691 |
| 6 | 6.865 | 6.857<< | 6.587 | 6.579 |
| 6 | 6.865 | 6.857 | 6.587>> | 6.579 |
| 6 | 10.618 | 10.761 | 0.547<< | 0.691 |
| 6 | 6.861 | 6.861 | 6.583 | 6.583>> |
| 6 | 10.622 | 10.757 | 0.551 | 0.686<< |
| 7 | 10.959>> | 11.106 | 0.010 | 0.157 |
| 7 | 6.807<< | 6.808 | 6.666 | 6.666 |
| 7 | 10.954 | 11.112>> | 0.005 | 0.163 |
| 7 | 6.813 | 6.802<< | 6.671 | 6.661 |
| 7 | 6.813 | 6.802 | 6.671>> | 6.661 |
| 7 | 10.954 | 11.112 | 0.005<< | 0.163 |
| 7 | 6.807 | 6.808 | 6.666 | 6.666>> |
| 7 | 10.959 | 11.106 | 0.010 | 0.157<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 7 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 7 | 10.964>> | 11.111 | 0.042 | 0.189 |
| 7 | 6.812<< | 6.812 | 6.697 | 6.698 |
| 7 | 10.959 | 11.116>> | 0.037 | 0.194 |
| 7 | 6.817 | 6.807<< | 6.703 | 6.692 |
| 7 | 6.817 | 6.807 | 6.703>> | 6.692 |
| 7 | 10.959 | 11.116 | 0.037<< | 0.194 |
| 7 | 6.812 | 6.812 | 6.697 | 6.698>> |
| 7 | 10.964 | 11.111 | 0.042 | 0.189<< |
| 8 | 11.075>> | 11.228 | -0.139 | 0.014 |
| 8 | 6.677<< | 6.677 | 6.908 | 6.908 |
| 8 | 11.069 | 11.234>> | -0.145 | 0.020 |
| 8 | 6.683 | 6.671<< | 6.914 | 6.902 |
| 8 | 6.683 | 6.671 | 6.914>> | 6.902 |
| 8 | 11.069 | 11.234 | -0.145<< | 0.020 |
| 8 | 6.677 | 6.677 | 6.908 | 6.908>> |
| 8 | 11.075 | 11.228 | -0.139 | 0.014<< |

| BARRA 8 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 8 | 11.080>> | 11.233 | -0.103 | 0.050 |
| 8 | 6.681<< | 6.682 | 6.944 | 6.944 |
| 8 | 11.074 | 11.239>> | -0.109 | 0.056 |
| 8 | 6.687 | 6.676<< | 6.950 | 6.938 |
| 8 | 6.687 | 6.676 | 6.950>> | 6.938 |
| 8 | 11.074 | 11.239 | -0.109<< | 0.056 |
| 8 | 6.681 | 6.682 | 6.944 | 6.944>> |
| 8 | 11.080 | 11.233 | -0.103 | 0.050<< |
| 9 | 10.988>> | 11.141 | 0.039 | 0.193 |
| 9 | 6.488<< | 6.488 | 7.246 | 7.246 |
| 9 | 10.981 | 11.148>> | 0.032 | 0.200 |
| 9 | 6.495 | 6.481<< | 7.253 | 7.239 |
| 9 | 6.495 | 6.481 | 7.253>> | 7.239 |
| 9 | 10.981 | 11.148 | 0.032<< | 0.200 |
| 9 | 6.488 | 6.488 | 7.246 | 7.246>> |
| 9 | 10.988 | 11.141 | 0.039 | 0.193<< |

| BARRA 9 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 9 | 10.986>> | 11.139 | 0.037 | 0.190 |
| 9 | 6.485<< | 6.485 | 7.243 | 7.243 |
| 9 | 10.979 | 11.146>> | 0.030 | 0.197 |
| 9 | 6.492 | 6.478<< | 7.250 | 7.236 |
| 9 | 6.492 | 6.478 | 7.250>> | 7.236 |
| 9 | 10.979 | 11.146 | 0.030<< | 0.197 |
| 9 | 6.485 | 6.485 | 7.243 | 7.243>> |
| 9 | 10.986 | 11.139 | 0.037 | 0.190<< |
| 10 | 10.717>> | 10.864 | 0.463 | 0.610 |
| 10 | 6.259<< | 6.259 | 7.596 | 7.596 |
| 10 | 10.709 | 10.872>> | 0.455 | 0.618 |
| 10 | 6.266 | 6.251<< | 7.604 | 7.588 |
| 10 | 6.266 | 6.251 | 7.604>> | 7.588 |
| 10 | 10.709 | 10.872 | 0.455<< | 0.618 |
| 10 | 6.259 | 6.259 | 7.596 | 7.596>> |
| 10 | 10.717 | 10.864 | 0.463 | 0.610<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 10 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 10 | 10.710>> | 10.857 | 0.440 | 0.587 |
| 10 | 6.252<< | 6.252 | 7.573 | 7.573 |
| 10 | 10.702 | 10.865>> | 0.432 | 0.595 |
| 10 | 6.260 | 6.244<< | 7.581 | 7.566 |
| 10 | 6.260 | 6.244 | 7.581>> | 7.566 |
| 10 | 10.702 | 10.865 | 0.432<< | 0.595 |
| 10 | 6.252 | 6.252 | 7.573 | 7.573>> |
| 10 | 10.710 | 10.857 | 0.440 | 0.587<< |
| 11 | 10.263>> | 10.398 | 1.152 | 1.287 |
| 11 | 5.991<< | 5.991 | 7.979 | 7.980 |
| 11 | 10.254 | 10.407>> | 1.143 | 1.296 |
| 11 | 6.000 | 5.982<< | 7.988 | 7.971 |
| 11 | 6.000 | 5.982 | 7.988>> | 7.971 |
| 11 | 10.254 | 10.407 | 1.143<< | 1.296 |
| 11 | 5.991 | 5.991 | 7.979 | 7.980>> |
| 11 | 10.263 | 10.398 | 1.152 | 1.287<< |

| BARRA 11 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 11 | 10.254>> | 10.389 | 1.130 | 1.265 |
| 11 | 5.982<< | 5.982 | 7.957 | 7.958 |
| 11 | 10.246 | 10.398>> | 1.121 | 1.274 |
| 11 | 5.991 | 5.974<< | 7.966 | 7.949 |
| 11 | 5.991 | 5.974 | 7.966>> | 7.949 |
| 11 | 10.246 | 10.398 | 1.121<< | 1.274 |
| 11 | 5.982 | 5.982 | 7.957 | 7.958>> |
| 11 | 10.254 | 10.389 | 1.130 | 1.265<< |
| 12 | 9.625>> | 9.742 | 2.133 | 2.250 |
| 12 | 5.684<< | 5.684 | 8.422 | 8.422 |
| 12 | 9.615 | 9.752>> | 2.123 | 2.260 |
| 12 | 5.693 | 5.674<< | 8.432 | 8.413 |
| 12 | 5.693 | 5.674 | 8.432>> | 8.413 |
| 12 | 9.615 | 9.752 | 2.123<< | 2.260 |
| 12 | 5.684 | 5.684 | 8.422 | 8.422>> |
| 12 | 9.625 | 9.742 | 2.133 | 2.250<< |

| BARRA 12 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 12 | 9.228>> | 9.345 | 1.240 | 1.357 |
| 12 | 5.286<< | 5.287 | 7.529 | 7.529 |
| 12 | 9.218 | 9.355>> | 1.230 | 1.366 |
| 12 | 5.296 | 5.277<< | 7.538 | 7.519 |
| 12 | 5.296 | 5.277 | 7.538>> | 7.519 |
| 12 | 9.218 | 9.355 | 1.230<< | 1.366 |
| 12 | 5.286 | 5.287 | 7.529 | 7.529>> |
| 12 | 9.228 | 9.345 | 1.240 | 1.357<< |
| 13 | 8.455>> | 8.540 | 2.485 | 2.570 |
| 13 | 4.910<< | 4.918 | 8.106 | 8.114 |
| 13 | 8.444 | 8.551>> | 2.474 | 2.581 |
| 13 | 4.920 | 4.907<< | 8.116 | 8.103 |
| 13 | 4.920 | 4.907 | 8.116>> | 8.103 |
| 13 | 8.444 | 8.551 | 2.474<< | 2.581 |
| 13 | 4.910 | 4.918 | 8.106 | 8.114>> |
| 13 | 8.455 | 8.540 | 2.485 | 2.570<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 13 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 13 | 8.439>> | 8.524 | 2.468 | 2.553 |
| 13 | 4.894<< | 4.902 | 8.089 | 8.097 |
| 13 | 8.428 | 8.535>> | 2.457 | 2.563 |
| 13 | 4.905 | 4.892<< | 8.099 | 8.086 |
| 13 | 4.905 | 4.892 | 8.099>> | 8.086 |
| 13 | 8.428 | 8.535 | 2.457<< | 2.563 |
| 13 | 4.894 | 4.902 | 8.089 | 8.097>> |
| 13 | 8.439 | 8.524 | 2.468 | 2.553<< |
| 14 | 7.698>> | 7.753 | 3.661 | 3.716 |
| 14 | 4.263<< | 4.272 | 9.070 | 9.079 |
| 14 | 7.687 | 7.764>> | 3.649 | 3.727 |
| 14 | 4.275 | 4.261<< | 9.082 | 9.068 |
| 14 | 4.275 | 4.261 | 9.082>> | 9.068 |
| 14 | 7.687 | 7.764 | 3.649<< | 3.727 |
| 14 | 4.263 | 4.272 | 9.070 | 9.079>> |
| 14 | 7.698 | 7.753 | 3.661 | 3.716<< |

| BARRA 14 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 14 | 7.677>> | 7.732 | 3.649 | 3.704 |
| 14 | 4.243<< | 4.252 | 9.058 | 9.067 |
| 14 | 7.666 | 7.744>> | 3.637 | 3.715 |
| 14 | 4.254 | 4.240<< | 9.069 | 9.055 |
| 14 | 4.254 | 4.240 | 9.069>> | 9.055 |
| 14 | 7.666 | 7.744 | 3.637<< | 3.715 |
| 14 | 4.243 | 4.252 | 9.058 | 9.067>> |
| 14 | 7.677 | 7.732 | 3.649 | 3.704<< |
| 15 | 7.048>> | 6.638 | 5.224 | 4.814 |
| 15 | 3.335<< | 3.823 | 9.859 | 10.347 |
| 15 | 6.731 | 6.953>> | 4.909 | 5.132 |
| 15 | 3.671 | 3.489<< | 10.193 | 10.011 |
| 15 | 3.671 | 3.489 | 10.193>> | 10.011 |
| 15 | 6.731 | 6.953 | 4.909<< | 5.132 |
| 15 | 3.335 | 3.823 | 9.859 | 10.347>> |
| 15 | 7.048 | 6.638 | 5.224 | 4.814<< |

| BARRA 15 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 15 | 6.508>> | 6.176 | 4.710 | 4.377 |
| 15 | 3.069<< | 3.461 | 8.268 | 8.660 |
| 15 | 6.263 | 6.420>> | 4.466 | 4.623 |
| 15 | 3.232 | 3.201<< | 8.517 | 8.486 |
| 15 | 3.330 | 3.202 | 8.527>> | 8.399 |
| 15 | 6.263 | 6.420 | 4.466<< | 4.623 |
| 15 | 3.069 | 3.461 | 8.268 | 8.660>> |
| 15 | 6.483 | 6.260 | 4.593 | 4.370<< |
| 16 | 7.446>> | 7.230 | 3.381 | 3.164 |
| 16 | 2.911<< | 3.166 | 8.669 | 8.925 |
| 16 | 7.434 | 7.241>> | 3.369 | 3.176 |
| 16 | 2.923 | 3.155<< | 8.681 | 8.913 |
| 16 | 2.923 | 3.155 | 8.681>> | 8.913 |
| 16 | 7.434 | 7.241 | 3.369<< | 3.176 |
| 16 | 2.911 | 3.166 | 8.669 | 8.925>> |
| 16 | 7.446 | 7.230 | 3.381 | 3.164<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 16 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 16 | 7.520>> | 7.275 | 3.420 | 3.175 |
| 16 | 2.933<< | 3.229 | 8.601 | 8.896 |
| 16 | 7.481 | 7.314>> | 3.381 | 3.214 |
| 16 | 2.972 | 3.190<< | 8.639 | 8.857 |
| 16 | 2.946 | 3.191 | 8.642>> | 8.886 |
| 16 | 7.507 | 7.313 | 3.379<< | 3.185 |
| 16 | 2.934 | 3.203 | 8.630 | 8.898>> |
| 16 | 7.519 | 7.301 | 3.391 | 3.173<< |
| 17 | 6.700>> | 6.468 | 4.441 | 4.209 |
| 17 | 0.730<< | 0.974 | 11.441 | 11.686 |
| 17 | 6.687 | 6.480>> | 4.429 | 4.221 |
| 17 | 0.742 | 0.962<< | 11.453 | 11.673 |
| 17 | 0.742 | 0.962 | 11.453>> | 11.673 |
| 17 | 6.687 | 6.480 | 4.429<< | 4.221 |
| 17 | 0.730 | 0.974 | 11.441 | 11.686>> |
| 17 | 6.700 | 6.468 | 4.441 | 4.209<< |

| BARRA 17 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 17 | 6.645>> | 6.412 | 4.445 | 4.212 |
| 17 | 0.674<< | 0.919 | 11.444 | 11.689 |
| 17 | 6.632 | 6.425>> | 4.432 | 4.225 |
| 17 | 0.687 | 0.907<< | 11.457 | 11.677 |
| 17 | 0.687 | 0.907 | 11.457>> | 11.677 |
| 17 | 6.632 | 6.425 | 4.432<< | 4.225 |
| 17 | 0.674 | 0.919 | 11.444 | 11.689>> |
| 17 | 6.645 | 6.412 | 4.445 | 4.212<< |
| 18 | 7.371>> | 7.139 | 3.527 | 3.295 |
| 18 | 2.807<< | 3.069 | 8.732 | 8.994 |
| 18 | 7.357 | 7.153>> | 3.513 | 3.309 |
| 18 | 2.820 | 3.055<< | 8.745 | 8.980 |
| 18 | 2.820 | 3.055 | 8.745>> | 8.980 |
| 18 | 7.357 | 7.153 | 3.513<< | 3.309 |
| 18 | 2.807 | 3.069 | 8.732 | 8.994>> |
| 18 | 7.371 | 7.139 | 3.527 | 3.295<< |

| BARRA 18 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 18 | 7.213>> | 6.956 | 3.525 | 3.268 |
| 18 | 2.703<< | 2.955 | 8.743 | 8.995 |
| 18 | 7.181 | 6.989>> | 3.493 | 3.301 |
| 18 | 2.735 | 2.923<< | 8.775 | 8.963 |
| 18 | 2.717 | 2.923 | 8.777>> | 8.983 |
| 18 | 7.199 | 6.988 | 3.491<< | 3.280 |
| 18 | 2.703 | 2.937 | 8.763 | 8.997>> |
| 18 | 7.213 | 6.974 | 3.505 | 3.266<< |
| 19 | 6.062>> | 5.789 | 4.986 | 4.714 |
| 19 | 2.827<< | 3.109 | 8.530 | 8.812 |
| 19 | 5.722 | 5.852>> | 4.964 | 5.095 |
| 19 | 3.139 | 3.056<< | 8.545 | 8.463 |
| 19 | 2.860 | 3.060 | 8.583>> | 8.782 |
| 19 | 6.029 | 5.839 | 4.934<< | 4.743 |
| 19 | 2.828 | 3.092 | 8.550 | 8.814>> |
| 19 | 6.061 | 5.806 | 4.966 | 4.711<< |

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| BARRA 19 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 19 | 6.677>> | 6.370 | 5.321 | 5.015 |
| 19 | 3.185<< | 3.538 | 9.917 | 10.270 |
| 19 | 6.299 | 6.450>> | 5.324 | 5.475 |
| 19 | 3.530 | 3.469<< | 9.909 | 9.848 |
| 19 | 3.208 | 3.483 | 9.981>> | 10.256 |
| 19 | 6.653 | 6.425 | 5.258<< | 5.029 |
| 19 | 3.191 | 3.500 | 9.964 | 10.273>> |
| 19 | 6.670 | 6.408 | 5.275 | 5.012<< |
| 20 | 6.932>> | 6.516 | 5.063 | 4.648 |
| 20 | 4.390<< | 4.884 | 7.859 | 8.354 |
| 20 | 6.765 | 6.838>> | 4.698 | 4.771 |
| 20 | 4.779 | 4.497<< | 8.245 | 7.964 |
| 20 | 4.779 | 4.497 | 8.245>> | 7.964 |
| 20 | 6.765 | 6.838 | 4.698<< | 4.771 |
| 20 | 4.390 | 4.884 | 7.859 | 8.354>> |
| 20 | 6.932 | 6.516 | 5.063 | 4.648<< |

| BARRA 20 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 20 | 6.924>> | 6.508 | 5.053 | 4.637 |
| 20 | 4.383<< | 4.877 | 7.848 | 8.342 |
| 20 | 6.758 | 6.830>> | 4.687 | 4.760 |
| 20 | 4.771 | 4.490<< | 8.235 | 7.953 |
| 20 | 4.771 | 4.490 | 8.235>> | 7.953 |
| 20 | 6.758 | 6.830 | 4.687<< | 4.760 |
| 20 | 4.383 | 4.877 | 7.848 | 8.342>> |
| 20 | 6.924 | 6.508 | 5.053 | 4.637<< |
| 21 | 7.523>> | 7.520 | 3.591 | 3.588 |
| 21 | 5.136<< | 5.097 | 7.356 | 7.317 |
| 21 | 7.445 | 7.599>> | 3.513 | 3.667 |
| 21 | 5.195 | 5.039<< | 7.414 | 7.259 |
| 21 | 5.179 | 5.039 | 7.418>> | 7.278 |
| 21 | 7.445 | 7.599 | 3.513<< | 3.667 |
| 21 | 5.136 | 5.097 | 7.356 | 7.317>> |
| 21 | 7.523 | 7.520 | 3.591 | 3.588<< |

| BARRA 21 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 21 | 7.518>> | 7.515 | 3.574 | 3.571 |
| 21 | 5.130<< | 5.092 | 7.339 | 7.300 |
| 21 | 7.439 | 7.593>> | 3.496 | 3.650 |
| 21 | 5.189 | 5.033<< | 7.397 | 7.242 |
| 21 | 5.173 | 5.034 | 7.401>> | 7.261 |
| 21 | 7.439 | 7.593 | 3.496<< | 3.650 |
| 21 | 5.130 | 5.092 | 7.339 | 7.300>> |
| 21 | 7.518 | 7.515 | 3.574 | 3.571<< |
| 22 | 8.371>> | 8.384 | 2.225 | 2.237 |
| 22 | 5.403<< | 5.330 | 6.958 | 6.885 |
| 22 | 8.289 | 8.466>> | 2.142 | 2.319 |
| 22 | 5.466 | 5.288<< | 6.994 | 6.816 |
| 22 | 5.466 | 5.288 | 6.994>> | 6.816 |
| 22 | 8.289 | 8.466 | 2.142<< | 2.319 |
| 22 | 5.403 | 5.330 | 6.958 | 6.885>> |
| 22 | 8.371 | 8.384 | 2.225 | 2.237<< |

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| BARRA 22 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 22 | 7.817>> | 7.829 | 2.329 | 2.341 |
| 22 | 4.848<< | 4.775 | 7.061 | 6.989 |
| 22 | 7.734 | 7.911>> | 2.246 | 2.423 |
| 22 | 4.911 | 4.733<< | 7.098 | 6.919 |
| 22 | 4.911 | 4.733 | 7.098>> | 6.919 |
| 22 | 7.734 | 7.911 | 2.246<< | 2.423 |
| 22 | 4.848 | 4.775 | 7.061 | 6.989>> |
| 22 | 7.817 | 7.829 | 2.329 | 2.341<< |
| 23 | 8.561>> | 8.576 | 1.165 | 1.181 |
| 23 | 5.018<< | 4.933 | 6.812 | 6.728 |
| 23 | 8.475 | 8.662>> | 1.079 | 1.267 |
| 23 | 5.052 | 4.899<< | 6.847 | 6.694 |
| 23 | 5.042 | 4.900 | 6.848>> | 6.706 |
| 23 | 8.485 | 8.661 | 1.077<< | 1.254 |
| 23 | 5.018 | 4.923 | 6.825 | 6.729>> |
| 23 | 8.560 | 8.586 | 1.153 | 1.179<< |

| BARRA 23 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 23 | 8.560>> | 8.575 | 1.178 | 1.193 |
| 23 | 5.017<< | 4.932 | 6.825 | 6.740 |
| 23 | 8.474 | 8.661>> | 1.092 | 1.279 |
| 23 | 5.051 | 4.898<< | 6.859 | 6.706 |
| 23 | 5.041 | 4.898 | 6.861>> | 6.719 |
| 23 | 8.484 | 8.660 | 1.090<< | 1.267 |
| 23 | 5.017 | 4.922 | 6.837 | 6.742>> |
| 23 | 8.559 | 8.585 | 1.165 | 1.192<< |
| 24 | 9.144>> | 9.167 | 0.258 | 0.281 |
| 24 | 5.140<< | 5.034 | 6.660 | 6.554 |
| 24 | 9.063 | 9.248>> | 0.177 | 0.362 |
| 24 | 5.165 | 5.009<< | 6.685 | 6.529 |
| 24 | 5.165 | 5.009 | 6.685>> | 6.529 |
| 24 | 9.091 | 9.243 | 0.175<< | 0.327 |
| 24 | 5.140 | 5.034 | 6.660 | 6.554>> |
| 24 | 9.144 | 9.167 | 0.258 | 0.281<< |

| BARRA 24 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 24 | 9.142>> | 9.165 | 0.271 | 0.294 |
| 24 | 5.138<< | 5.032 | 6.673 | 6.567 |
| 24 | 9.061 | 9.246>> | 0.190 | 0.374 |
| 24 | 5.163 | 5.007<< | 6.698 | 6.542 |
| 24 | 5.163 | 5.007 | 6.698>> | 6.542 |
| 24 | 9.089 | 9.242 | 0.188<< | 0.340 |
| 24 | 5.138 | 5.032 | 6.673 | 6.567>> |
| 24 | 9.142 | 9.165 | 0.271 | 0.294<< |
| 25 | 9.567>> | 9.582 | -0.381 | -0.366 |
| 25 | 5.220<< | 5.102 | 6.560 | 6.443 |
| 25 | 9.481 | 9.668>> | -0.467 | -0.280 |
| 25 | 5.246 | 5.076<< | 6.587 | 6.416 |
| 25 | 5.246 | 5.076 | 6.587>> | 6.416 |
| 25 | 9.514 | 9.667 | -0.475<< | -0.322 |
| 25 | 5.220 | 5.102 | 6.560 | 6.443>> |
| 25 | 9.567 | 9.582 | -0.381 | -0.366<< |

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| BARRA 25 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 25 | 9.565>> | 9.580 | -0.371 | -0.356 |
| 25 | 5.218<< | 5.100 | 6.570 | 6.453 |
| 25 | 9.479 | 9.666>> | -0.458 | -0.270 |
| 25 | 5.244 | 5.074<< | 6.596 | 6.426 |
| 25 | 5.244 | 5.074 | 6.596>> | 6.426 |
| 25 | 9.512 | 9.665 | -0.466<< | -0.313 |
| 25 | 5.218 | 5.100 | 6.570 | 6.453>> |
| 25 | 9.565 | 9.580 | -0.371 | -0.356<< |
| 26 | 9.830>> | 9.832 | -0.768 | -0.766 |
| 26 | 5.259<< | 5.130 | 6.521 | 6.392 |
| 26 | 9.778 | 9.926>> | -0.874 | -0.725 |
| 26 | 5.287 | 5.102<< | 6.549 | 6.364 |
| 26 | 5.287 | 5.102 | 6.549>> | 6.364 |
| 26 | 9.778 | 9.926 | -0.874<< | -0.725 |
| 26 | 5.259 | 5.130 | 6.521 | 6.392>> |
| 26 | 9.830 | 9.832 | -0.768 | -0.766<< |

| BARRA 26 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 26 | 9.829>> | 9.830 | -0.762 | -0.761 |
| 26 | 5.257<< | 5.128 | 6.526 | 6.397 |
| 26 | 9.776 | 9.925>> | -0.868 | -0.720 |
| 26 | 5.285 | 5.100<< | 6.554 | 6.369 |
| 26 | 5.285 | 5.100 | 6.554>> | 6.369 |
| 26 | 9.776 | 9.925 | -0.868<< | -0.720 |
| 26 | 5.257 | 5.128 | 6.526 | 6.397>> |
| 26 | 9.829 | 9.830 | -0.762 | -0.761<< |
| 27 | 9.934>> | 9.917 | -0.903 | -0.919 |
| 27 | 5.257<< | 5.116 | 6.542 | 6.401 |
| 27 | 9.881 | 10.020>> | -1.020 | -0.881 |
| 27 | 5.286 | 5.086<< | 6.572 | 6.372 |
| 27 | 5.286 | 5.086 | 6.572>> | 6.372 |
| 27 | 9.881 | 10.020 | -1.020<< | -0.881 |
| 27 | 5.257 | 5.116 | 6.542 | 6.401>> |
| 27 | 9.934 | 9.917 | -0.903 | -0.919<< |

| BARRA 27 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 27 | 9.932>> | 9.915 | -0.900 | -0.917 |
| 27 | 5.255<< | 5.114 | 6.544 | 6.403 |
| 27 | 9.880 | 10.019>> | -1.018 | -0.878 |
| 27 | 5.285 | 5.085<< | 6.574 | 6.374 |
| 27 | 5.285 | 5.085 | 6.574>> | 6.374 |
| 27 | 9.880 | 10.019 | -1.018<< | -0.878 |
| 27 | 5.255 | 5.114 | 6.544 | 6.403>> |
| 27 | 9.932 | 9.915 | -0.900 | -0.917<< |
| 28 | 9.877>> | 9.837 | -0.785 | -0.825 |
| 28 | 5.214<< | 5.060 | 6.625 | 6.471 |
| 28 | 9.824 | 9.950>> | -0.914 | -0.789 |
| 28 | 5.245 | 5.029<< | 6.656 | 6.440 |
| 28 | 5.245 | 5.029 | 6.656>> | 6.440 |
| 28 | 9.824 | 9.950 | -0.914<< | -0.789 |
| 28 | 5.214 | 5.060 | 6.625 | 6.471>> |
| 28 | 9.877 | 9.837 | -0.785 | -0.825<< |

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| BARRA 28 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 28 | 9.876>> | 9.836 | -0.786 | -0.826 |
| 28 | 5.213<< | 5.059 | 6.623 | 6.469 |
| 28 | 9.823 | 9.948>> | -0.916 | -0.790 |
| 28 | 5.244 | 5.028<< | 6.654 | 6.438 |
| 28 | 5.244 | 5.028 | 6.654>> | 6.438 |
| 28 | 9.823 | 9.948 | -0.916<< | -0.790 |
| 28 | 5.213 | 5.059 | 6.623 | 6.469>> |
| 28 | 9.876 | 9.836 | -0.786 | -0.826<< |
| 29 | 9.663>> | 9.594 | -0.418 | -0.486 |
| 29 | 5.132<< | 4.965 | 6.765 | 6.599 |
| 29 | 9.610 | 9.716>> | -0.558 | -0.452 |
| 29 | 5.165 | 4.933<< | 6.798 | 6.566 |
| 29 | 5.165 | 4.933 | 6.798>> | 6.566 |
| 29 | 9.610 | 9.716 | -0.558<< | -0.452 |
| 29 | 5.132 | 4.965 | 6.765 | 6.599>> |
| 29 | 9.663 | 9.594 | -0.418 | -0.486<< |

| BARRA 29 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 29 | 9.662>> | 9.593 | -0.423 | -0.491 |
| 29 | 5.131<< | 4.965 | 6.760 | 6.593 |
| 29 | 9.609 | 9.715>> | -0.564 | -0.458 |
| 29 | 5.164 | 4.932<< | 6.792 | 6.561 |
| 29 | 5.164 | 4.932 | 6.792>> | 6.561 |
| 29 | 9.609 | 9.715 | -0.564<< | -0.458 |
| 29 | 5.131 | 4.965 | 6.760 | 6.593>> |
| 29 | 9.662 | 9.593 | -0.423 | -0.491<< |
| 30 | 9.289>> | 9.188 | 0.199 | 0.098 |
| 30 | 5.011<< | 4.831 | 6.965 | 6.784 |
| 30 | 9.237 | 9.318>> | 0.047 | 0.128 |
| 30 | 5.045 | 4.797<< | 6.999 | 6.750 |
| 30 | 5.045 | 4.797 | 6.999>> | 6.750 |
| 30 | 9.237 | 9.318 | 0.047<< | 0.128 |
| 30 | 5.011 | 4.831 | 6.965 | 6.784>> |
| 30 | 9.271 | 9.284 | 0.081 | 0.094<< |

| BARRA 30 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 30 | 9.288>> | 9.187 | 0.191 | 0.089 |
| 30 | 5.010<< | 4.830 | 6.956 | 6.775 |
| 30 | 9.236 | 9.317>> | 0.038 | 0.120 |
| 30 | 5.044 | 4.796<< | 6.990 | 6.741 |
| 30 | 5.044 | 4.796 | 6.990>> | 6.741 |
| 30 | 9.236 | 9.317 | 0.038<< | 0.120 |
| 30 | 5.010 | 4.830 | 6.956 | 6.775>> |
| 30 | 9.270 | 9.283 | 0.072 | 0.086<< |
| 31 | 8.757>> | 8.617 | 1.067 | 0.927 |
| 31 | 4.836<< | 4.687 | 7.187 | 7.038 |
| 31 | 8.705 | 8.757>> | 0.903 | 0.956 |
| 31 | 4.913 | 4.612<< | 7.262 | 6.961 |
| 31 | 4.913 | 4.612 | 7.262>> | 6.961 |
| 31 | 8.705 | 8.757 | 0.903<< | 0.956 |
| 31 | 4.836 | 4.687 | 7.187 | 7.038>> |
| 31 | 8.740 | 8.721 | 0.939 | 0.920<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 31 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 31 | 8.755>> | 8.615 | 1.057 | 0.917 |
| 31 | 4.834<< | 4.685 | 7.176 | 7.027 |
| 31 | 8.703 | 8.755>> | 0.893 | 0.945 |
| 31 | 4.911 | 4.610<< | 7.251 | 6.950 |
| 31 | 4.911 | 4.610 | 7.251>> | 6.950 |
| 31 | 8.703 | 8.755 | 0.893<< | 0.945 |
| 31 | 4.834 | 4.685 | 7.176 | 7.027>> |
| 31 | 8.738 | 8.719 | 0.928 | 0.910<< |
| 32 | 8.062>> | 7.879 | 2.192 | 2.009 |
| 32 | 4.592<< | 4.412 | 7.594 | 7.413 |
| 32 | 8.010 | 8.028>> | 2.016 | 2.034 |
| 32 | 4.629 | 4.375<< | 7.631 | 7.376 |
| 32 | 4.610 | 4.379 | 7.631>> | 7.399 |
| 32 | 8.028 | 8.024 | 2.016<< | 2.012 |
| 32 | 4.596 | 4.393 | 7.616 | 7.413>> |
| 32 | 8.043 | 8.009 | 2.031 | 1.997<< |

| BARRA 32 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 32 | 8.058>> | 7.876 | 2.180 | 1.997 |
| 32 | 4.589<< | 4.408 | 7.582 | 7.402 |
| 32 | 8.006 | 8.024>> | 2.005 | 2.023 |
| 32 | 4.626 | 4.371<< | 7.619 | 7.365 |
| 32 | 4.607 | 4.375 | 7.619>> | 7.387 |
| 32 | 8.025 | 8.020 | 2.005<< | 2.000 |
| 32 | 4.593 | 4.390 | 7.605 | 7.402>> |
| 32 | 8.039 | 8.006 | 2.019 | 1.986<< |
| 33 | 7.324>> | 7.072 | 3.413 | 3.160 |
| 33 | 4.183<< | 4.001 | 8.216 | 8.034 |
| 33 | 7.239 | 7.262>> | 3.193 | 3.216 |
| 33 | 4.221 | 3.963<< | 8.254 | 7.996 |
| 33 | 4.201 | 3.966 | 8.255>> | 8.020 |
| 33 | 7.259 | 7.258 | 3.192<< | 3.192 |
| 33 | 4.186 | 3.981 | 8.240 | 8.035>> |
| 33 | 7.307 | 7.211 | 3.240 | 3.144<< |

| BARRA 33 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 33 | 7.319>> | 7.066 | 3.402 | 3.149 |
| 33 | 4.177<< | 3.995 | 8.205 | 8.024 |
| 33 | 7.233 | 7.256>> | 3.182 | 3.205 |
| 33 | 4.215 | 3.957<< | 8.244 | 7.985 |
| 33 | 4.196 | 3.961 | 8.244>> | 8.009 |
| 33 | 7.253 | 7.253 | 3.182<< | 3.181 |
| 33 | 4.181 | 3.976 | 8.229 | 8.024>> |
| 33 | 7.301 | 7.205 | 3.229 | 3.133<< |
| 34 | 6.645>> | 6.483 | 4.335 | 4.173 |
| 34 | 3.573<< | 3.414 | 9.117 | 8.958 |
| 34 | 6.585 | 6.543>> | 4.276 | 4.233 |
| 34 | 3.633 | 3.354<< | 9.176 | 8.898 |
| 34 | 3.594 | 3.360 | 9.181>> | 8.946 |
| 34 | 6.624 | 6.538 | 4.271<< | 4.185 |
| 34 | 3.578 | 3.375 | 9.165 | 8.962>> |
| 34 | 6.640 | 6.522 | 4.287 | 4.169<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 34 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 34 | 6.635>> | 6.474 | 4.327 | 4.165 |
| 34 | 3.564<< | 3.404 | 9.109 | 8.949 |
| 34 | 6.576 | 6.533>> | 4.267 | 4.225 |
| 34 | 3.623 | 3.345<< | 9.168 | 8.890 |
| 34 | 3.585 | 3.350 | 9.172>> | 8.938 |
| 34 | 6.614 | 6.528 | 4.263<< | 4.177 |
| 34 | 3.569 | 3.366 | 9.156 | 8.953>> |
| 34 | 6.630 | 6.512 | 4.279 | 4.161<< |
| 35 | 5.882>> | 5.653 | 5.586 | 5.358 |
| 35 | 2.482<< | 2.507 | 10.557 | 10.583 |
| 35 | 5.821 | 5.714>> | 5.526 | 5.419 |
| 35 | 2.542 | 2.447<< | 10.618 | 10.522 |
| 35 | 2.504 | 2.453 | 10.621>> | 10.570 |
| 35 | 5.859 | 5.708 | 5.523<< | 5.371 |
| 35 | 2.488 | 2.469 | 10.604 | 10.586>> |
| 35 | 5.876 | 5.691 | 5.539 | 5.355<< |

| BARRA 35 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 35 | 5.542>> | 5.327 | 5.016 | 4.801 |
| 35 | 2.350<< | 2.351 | 8.841 | 8.842 |
| 35 | 5.318 | 5.383>> | 4.963 | 5.028 |
| 35 | 2.398 | 2.303<< | 8.889 | 8.794 |
| 35 | 2.366 | 2.305 | 8.892>> | 8.831 |
| 35 | 5.350 | 5.381 | 4.960<< | 4.991 |
| 35 | 2.352 | 2.320 | 8.877 | 8.845>> |
| 35 | 5.540 | 5.359 | 4.979 | 4.799<< |
| 36 | 6.147>> | 6.098 | 4.036 | 3.986 |
| 36 | 2.062<< | 2.015 | 9.281 | 9.234 |
| 36 | 6.110 | 6.135>> | 3.999 | 4.024 |
| 36 | 2.100 | 1.977<< | 9.319 | 9.196 |
| 36 | 2.079 | 1.979 | 9.320>> | 9.219 |
| 36 | 6.131 | 6.134 | 3.998<< | 4.001 |
| 36 | 2.064 | 1.994 | 9.305 | 9.234>> |
| 36 | 6.146 | 6.118 | 4.013 | 3.986<< |

| BARRA 36 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 36 | 6.219>> | 6.170 | 4.041 | 3.993 |
| 36 | 2.085<< | 2.057 | 9.238 | 9.210 |
| 36 | 6.181 | 6.208>> | 4.003 | 4.030 |
| 36 | 2.123 | 2.019<< | 9.276 | 9.172 |
| 36 | 2.102 | 2.021 | 9.276>> | 9.195 |
| 36 | 6.202 | 6.206 | 4.002<< | 4.007 |
| 36 | 2.087 | 2.036 | 9.261 | 9.210>> |
| 36 | 6.217 | 6.191 | 4.017 | 3.992<< |
| 37 | 5.271>> | 5.221 | 5.239 | 5.189 |
| 37 | -0.127<< | -0.197 | 12.078 | 12.009 |
| 37 | 5.232 | 5.260>> | 5.200 | 5.228 |
| 37 | -0.088 | -0.236<< | 12.117 | 11.969 |
| 37 | -0.110 | -0.234 | 12.119>> | 11.994 |
| 37 | 5.254 | 5.259 | 5.199<< | 5.204 |
| 37 | -0.126 | -0.219 | 12.103 | 12.010>> |
| 37 | 5.270 | 5.243 | 5.215 | 5.188<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 37 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 37 | 5.275>> | 5.225 | 5.232 | 5.182 |
| 37 | -0.123<< | -0.193 | 12.071 | 12.001 |
| 37 | 5.236 | 5.264>> | 5.193 | 5.221 |
| 37 | -0.084 | -0.232<< | 12.110 | 11.962 |
| 37 | -0.106 | -0.230 | 12.111>> | 11.987 |
| 37 | 5.258 | 5.263 | 5.192<< | 5.197 |
| 37 | -0.121 | -0.214 | 12.095 | 12.002>> |
| 37 | 5.274 | 5.247 | 5.208 | 5.181<< |
| 38 | 6.136>> | 6.090 | 4.140 | 4.095 |
| 38 | 2.017<< | 2.012 | 9.295 | 9.290 |
| 38 | 6.100 | 6.126>> | 4.104 | 4.131 |
| 38 | 2.053 | 1.977<< | 9.331 | 9.255 |
| 38 | 2.053 | 1.977 | 9.331>> | 9.255 |
| 38 | 6.100 | 6.126 | 4.104<< | 4.131 |
| 38 | 2.017 | 2.012 | 9.295 | 9.290>> |
| 38 | 6.136 | 6.090 | 4.140 | 4.095<< |

| BARRA 38 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 38 | 6.067>> | 6.020 | 4.117 | 4.069 |
| 38 | 1.998<< | 1.972 | 9.322 | 9.295 |
| 38 | 6.031 | 6.056>> | 4.081 | 4.106 |
| 38 | 2.035 | 1.936<< | 9.358 | 9.259 |
| 38 | 2.035 | 1.936 | 9.358>> | 9.259 |
| 38 | 6.031 | 6.056 | 4.081<< | 4.106 |
| 38 | 1.998 | 1.972 | 9.322 | 9.295>> |
| 38 | 6.067 | 6.020 | 4.117 | 4.069<< |
| 39 | 5.318>> | 5.065 | 5.323 | 5.070 |
| 39 | 2.188<< | 2.222 | 8.993 | 9.027 |
| 39 | 5.107 | 5.167>> | 5.215 | 5.276 |
| 39 | 2.221 | 2.189<< | 9.026 | 8.995 |
| 39 | 2.221 | 2.189 | 9.026>> | 8.995 |
| 39 | 5.107 | 5.167 | 5.215<< | 5.276 |
| 39 | 2.188 | 2.222 | 8.993 | 9.027>> |
| 39 | 5.318 | 5.065 | 5.323 | 5.070<< |

| BARRA 39 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 39 | 5.814>> | 5.534 | 5.762 | 5.482 |
| 39 | 2.479<< | 2.556 | 10.500 | 10.578 |
| 39 | 5.600 | 5.650>> | 5.673 | 5.723 |
| 39 | 2.533 | 2.502<< | 10.554 | 10.523 |
| 39 | 2.516 | 2.503 | 10.558>> | 10.544 |
| 39 | 5.617 | 5.649 | 5.669<< | 5.702 |
| 39 | 2.480 | 2.540 | 10.521 | 10.581>> |
| 39 | 5.813 | 5.550 | 5.741 | 5.478<< |
| 40 | 6.542>> | 6.364 | 4.497 | 4.319 |
| 40 | 3.643<< | 3.896 | 8.463 | 8.716 |
| 40 | 6.491 | 6.415>> | 4.446 | 4.371 |
| 40 | 3.855 | 3.530<< | 8.871 | 8.546 |
| 40 | 3.795 | 3.536 | 8.881>> | 8.622 |
| 40 | 6.507 | 6.413 | 4.444<< | 4.350 |
| 40 | 3.645 | 3.879 | 8.483 | 8.717>> |
| 40 | 6.540 | 6.381 | 4.477 | 4.318<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 40 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 40 | 6.548>> | 6.370 | 4.510 | 4.332 |
| 40 | 3.649<< | 3.902 | 8.475 | 8.728 |
| 40 | 6.497 | 6.421>> | 4.459 | 4.383 |
| 40 | 3.861 | 3.536<< | 8.884 | 8.559 |
| 40 | 3.800 | 3.542 | 8.894>> | 8.635 |
| 40 | 6.513 | 6.419 | 4.457<< | 4.363 |
| 40 | 3.651 | 3.885 | 8.496 | 8.730>> |
| 40 | 6.546 | 6.387 | 4.489 | 4.330<< |
| 41 | 7.163>> | 7.103 | 3.402 | 3.341 |
| 41 | 4.252<< | 4.216 | 7.905 | 7.869 |
| 41 | 7.073 | 7.178>> | 3.331 | 3.436 |
| 41 | 4.360 | 4.108<< | 8.013 | 7.761 |
| 41 | 4.360 | 4.108 | 8.013>> | 7.761 |
| 41 | 7.073 | 7.178 | 3.331<< | 3.436 |
| 41 | 4.252 | 4.216 | 7.905 | 7.869>> |
| 41 | 7.163 | 7.103 | 3.402 | 3.341<< |

| BARRA 41 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 41 | 7.166>> | 7.105 | 3.417 | 3.357 |
| 41 | 4.255<< | 4.219 | 7.920 | 7.885 |
| 41 | 7.075 | 7.180>> | 3.347 | 3.452 |
| 41 | 4.363 | 4.111<< | 8.029 | 7.777 |
| 41 | 4.363 | 4.111 | 8.029>> | 7.777 |
| 41 | 7.075 | 7.180 | 3.347<< | 3.452 |
| 41 | 4.255 | 4.219 | 7.920 | 7.885>> |
| 41 | 7.166 | 7.105 | 3.417 | 3.357<< |
| 42 | 7.840>> | 7.987 | 2.101 | 2.249 |
| 42 | 4.586<< | 4.579 | 7.367 | 7.360 |
| 42 | 7.815 | 8.012>> | 2.076 | 2.273 |
| 42 | 4.683 | 4.482<< | 7.464 | 7.263 |
| 42 | 4.683 | 4.482 | 7.464>> | 7.263 |
| 42 | 7.815 | 8.012 | 2.076<< | 2.273 |
| 42 | 4.591 | 4.547 | 7.407 | 7.363>> |
| 42 | 7.840 | 7.987 | 2.101 | 2.249<< |

| BARRA 42 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 42 | 8.007>> | 8.155 | 1.120 | 1.268 |
| 42 | 4.753<< | 4.746 | 6.386 | 6.379 |
| 42 | 7.982 | 8.179>> | 1.095 | 1.292 |
| 42 | 4.850 | 4.649<< | 6.483 | 6.282 |
| 42 | 4.850 | 4.649 | 6.483>> | 6.282 |
| 42 | 7.982 | 8.179 | 1.095<< | 1.292 |
| 42 | 4.758 | 4.714 | 6.426 | 6.381>> |
| 42 | 8.007 | 8.155 | 1.120 | 1.268<< |
| 43 | 8.702>> | 8.941 | -0.080 | 0.159 |
| 43 | 4.919<< | 4.900 | 6.143 | 6.125 |
| 43 | 8.688 | 8.955>> | -0.094 | 0.173 |
| 43 | 5.012 | 4.868<< | 6.158 | 6.015 |
| 43 | 5.012 | 4.868 | 6.158>> | 6.015 |
| 43 | 8.688 | 8.955 | -0.094<< | 0.173 |
| 43 | 4.919 | 4.900 | 6.143 | 6.125>> |
| 43 | 8.702 | 8.941 | -0.080 | 0.159<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 43 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 43 | 8.701>> | 8.940 | -0.066 | 0.174 |
| 43 | 4.918<< | 4.899 | 6.158 | 6.139 |
| 43 | 8.687 | 8.954>> | -0.080 | 0.188 |
| 43 | 5.010 | 4.867<< | 6.173 | 6.029 |
| 43 | 5.010 | 4.867 | 6.173>> | 6.029 |
| 43 | 8.687 | 8.954 | -0.080<< | 0.188 |
| 43 | 4.918 | 4.899 | 6.158 | 6.139>> |
| 43 | 8.701 | 8.940 | -0.066 | 0.174<< |
| 44 | 9.237>> | 9.551 | -0.996 | -0.682 |
| 44 | 5.032<< | 5.049 | 5.934 | 5.952 |
| 44 | 9.224 | 9.564>> | -1.009 | -0.669 |
| 44 | 5.045 | 5.036<< | 5.948 | 5.938 |
| 44 | 5.045 | 5.036 | 5.948>> | 5.938 |
| 44 | 9.224 | 9.564 | -1.009<< | -0.669 |
| 44 | 5.032 | 5.049 | 5.934 | 5.952>> |
| 44 | 9.237 | 9.551 | -0.996 | -0.682<< |

| BARRA 44 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 44 | 9.235>> | 9.549 | -0.983 | -0.669 |
| 44 | 5.030<< | 5.047 | 5.947 | 5.965 |
| 44 | 9.222 | 9.562>> | -0.996 | -0.656 |
| 44 | 5.043 | 5.034<< | 5.961 | 5.951 |
| 44 | 5.043 | 5.034 | 5.961>> | 5.951 |
| 44 | 9.222 | 9.562 | -0.996<< | -0.656 |
| 44 | 5.030 | 5.047 | 5.947 | 5.965>> |
| 44 | 9.235 | 9.549 | -0.983 | -0.669<< |
| 45 | 9.612>> | 9.993 | -1.657 | -1.276 |
| 45 | 5.103<< | 5.155 | 5.788 | 5.841 |
| 45 | 9.600 | 10.006>> | -1.669 | -1.263 |
| 45 | 5.115 | 5.143<< | 5.801 | 5.828 |
| 45 | 5.115 | 5.143 | 5.801>> | 5.828 |
| 45 | 9.600 | 10.006 | -1.669<< | -1.263 |
| 45 | 5.103 | 5.155 | 5.788 | 5.841>> |
| 45 | 9.612 | 9.993 | -1.657 | -1.276<< |

| BARRA 45 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 45 | 9.610>> | 9.991 | -1.647 | -1.266 |
| 45 | 5.101<< | 5.153 | 5.798 | 5.851 |
| 45 | 9.598 | 10.004>> | -1.660 | -1.253 |
| 45 | 5.113 | 5.141<< | 5.811 | 5.838 |
| 45 | 5.113 | 5.141 | 5.811>> | 5.838 |
| 45 | 9.598 | 10.004 | -1.660<< | -1.253 |
| 45 | 5.101 | 5.153 | 5.798 | 5.851>> |
| 45 | 9.610 | 9.991 | -1.647 | -1.266<< |
| 46 | 9.829>> | 10.270 | -2.064 | -1.624 |
| 46 | 5.133<< | 5.220 | 5.703 | 5.790 |
| 46 | 9.817 | 10.282>> | -2.076 | -1.612 |
| 46 | 5.145 | 5.208<< | 5.715 | 5.778 |
| 46 | 5.137 | 5.210 | 5.716>> | 5.788 |
| 46 | 9.825 | 10.281 | -2.077<< | -1.622 |
| 46 | 5.134 | 5.212 | 5.713 | 5.791>> |
| 46 | 9.828 | 10.278 | -2.074 | -1.624<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 46 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 46 | 9.828>> | 10.268 | -2.059 | -1.618 |
| 46 | 5.131<< | 5.219 | 5.709 | 5.796 |
| 46 | 9.816 | 10.280>> | -2.071 | -1.606 |
| 46 | 5.143 | 5.207<< | 5.721 | 5.784 |
| 46 | 5.135 | 5.208 | 5.721>> | 5.794 |
| 46 | 9.824 | 10.279 | -2.071<< | -1.616 |
| 46 | 5.133 | 5.211 | 5.718 | 5.796>> |
| 46 | 9.826 | 10.276 | -2.068 | -1.619<< |
| 47 | 9.891>> | 10.255 | -2.060 | -1.696 |
| 47 | 5.123<< | 5.244 | 5.678 | 5.800 |
| 47 | 9.876 | 10.391>> | -2.230 | -1.715 |
| 47 | 5.134 | 5.233<< | 5.690 | 5.788 |
| 47 | 5.126 | 5.233 | 5.692>> | 5.799 |
| 47 | 9.884 | 10.391 | -2.232<< | -1.725 |
| 47 | 5.123 | 5.236 | 5.689 | 5.802>> |
| 47 | 9.887 | 10.388 | -2.229 | -1.728<< |

| BARRA 47 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 47 | 9.890>> | 10.254 | -2.058 | -1.694 |
| 47 | 5.121<< | 5.243 | 5.681 | 5.802 |
| 47 | 9.875 | 10.390>> | -2.227 | -1.712 |
| 47 | 5.133 | 5.231<< | 5.692 | 5.791 |
| 47 | 5.124 | 5.231 | 5.694>> | 5.801 |
| 47 | 9.883 | 10.390 | -2.230<< | -1.723 |
| 47 | 5.121 | 5.234 | 5.691 | 5.804>> |
| 47 | 9.886 | 10.387 | -2.227 | -1.726<< |
| 48 | 9.802>> | 10.200 | -1.964 | -1.567 |
| 48 | 5.070<< | 5.223 | 5.720 | 5.873 |
| 48 | 9.780 | 10.336>> | -2.132 | -1.576 |
| 48 | 5.079 | 5.215<< | 5.728 | 5.864 |
| 48 | 5.073 | 5.215 | 5.729>> | 5.871 |
| 48 | 9.785 | 10.335 | -2.133<< | -1.582 |
| 48 | 5.070 | 5.218 | 5.726 | 5.874>> |
| 48 | 9.788 | 10.332 | -2.130 | -1.585<< |

| BARRA 48 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 48 | 9.801>> | 10.199 | -1.966 | -1.569 |
| 48 | 5.069<< | 5.222 | 5.718 | 5.871 |
| 48 | 9.778 | 10.335>> | -2.134 | -1.577 |
| 48 | 5.078 | 5.213<< | 5.727 | 5.863 |
| 48 | 5.072 | 5.214 | 5.728>> | 5.869 |
| 48 | 9.784 | 10.334 | -2.135<< | -1.584 |
| 48 | 5.069 | 5.217 | 5.725 | 5.872>> |
| 48 | 9.787 | 10.331 | -2.132 | -1.587<< |
| 49 | 9.556>> | 9.978 | -1.616 | -1.193 |
| 49 | 4.978<< | 5.165 | 5.816 | 6.003 |
| 49 | 9.524 | 10.116>> | -1.783 | -1.191 |
| 49 | 4.987 | 5.157<< | 5.825 | 5.994 |
| 49 | 4.982 | 5.158 | 5.825>> | 6.000 |
| 49 | 9.528 | 10.116 | -1.784<< | -1.196 |
| 49 | 4.979 | 5.161 | 5.822 | 6.003>> |
| 49 | 9.531 | 10.112 | -1.780 | -1.199<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 49 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 49 | 9.555>> | 9.978 | -1.621 | -1.199 |
| 49 | 4.978<< | 5.164 | 5.811 | 5.997 |
| 49 | 9.523 | 10.115>> | -1.789 | -1.196 |
| 49 | 4.986 | 5.156<< | 5.819 | 5.989 |
| 49 | 4.981 | 5.157 | 5.819>> | 5.994 |
| 49 | 9.527 | 10.115 | -1.789<< | -1.202 |
| 49 | 4.978 | 5.160 | 5.816 | 5.998>> |
| 49 | 9.530 | 10.111 | -1.786 | -1.205<< |
| 50 | 9.151>> | 9.594 | -1.018 | -0.575 |
| 50 | 4.847<< | 5.067 | 5.971 | 6.191 |
| 50 | 9.111 | 9.732>> | -1.184 | -0.562 |
| 50 | 4.856 | 5.059<< | 5.979 | 6.182 |
| 50 | 4.853 | 5.060 | 5.979>> | 6.186 |
| 50 | 9.113 | 9.732 | -1.184<< | -0.566 |
| 50 | 4.848 | 5.065 | 5.974 | 6.191>> |
| 50 | 9.150 | 9.597 | -1.021 | -0.575<< |

| BARRA 50 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 50 | 9.149>> | 9.593 | -1.027 | -0.583 |
| 50 | 4.846<< | 5.066 | 5.962 | 6.182 |
| 50 | 9.109 | 9.731>> | -1.192 | -0.571 |
| 50 | 4.855 | 5.058<< | 5.970 | 6.174 |
| 50 | 4.852 | 5.059 | 5.971>> | 6.177 |
| 50 | 9.112 | 9.730 | -1.192<< | -0.574 |
| 50 | 4.847 | 5.064 | 5.965 | 6.182>> |
| 50 | 9.149 | 9.595 | -1.030 | -0.583<< |
| 51 | 8.586>> | 9.045 | -0.169 | 0.290 |
| 51 | 4.676<< | 4.929 | 6.185 | 6.438 |
| 51 | 8.539 | 9.182>> | -0.331 | 0.312 |
| 51 | 4.684 | 4.921<< | 6.194 | 6.430 |
| 51 | 4.681 | 4.921 | 6.194>> | 6.434 |
| 51 | 8.542 | 9.182 | -0.332<< | 0.308 |
| 51 | 4.677 | 4.926 | 6.189 | 6.438>> |
| 51 | 8.585 | 9.048 | -0.172 | 0.290<< |

| BARRA 51 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 51 | 8.584>> | 9.043 | -0.179 | 0.280 |
| 51 | 4.674<< | 4.927 | 6.175 | 6.428 |
| 51 | 8.537 | 9.181>> | -0.342 | 0.301 |
| 51 | 4.683 | 4.919<< | 6.183 | 6.419 |
| 51 | 4.680 | 4.919 | 6.183>> | 6.423 |
| 51 | 8.540 | 9.180 | -0.342<< | 0.297 |
| 51 | 4.675 | 4.924 | 6.178 | 6.428>> |
| 51 | 8.584 | 9.046 | -0.183 | 0.279<< |
| 52 | 7.859>> | 8.323 | 0.944 | 1.407 |
| 52 | 4.461<< | 4.751 | 6.459 | 6.750 |
| 52 | 7.802 | 8.464>> | 0.779 | 1.442 |
| 52 | 4.474 | 4.738<< | 6.473 | 6.736 |
| 52 | 4.466 | 4.739 | 6.474>> | 6.746 |
| 52 | 7.810 | 8.463 | 0.778<< | 1.432 |
| 52 | 4.462 | 4.743 | 6.469 | 6.751>> |
| 52 | 7.858 | 8.331 | 0.933 | 1.406<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 52 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 52 | 7.856>> | 8.320 | 0.932 | 1.396 |
| 52 | 4.457<< | 4.748 | 6.447 | 6.738 |
| 52 | 7.798 | 8.461>> | 0.768 | 1.430 |
| 52 | 4.471 | 4.734<< | 6.461 | 6.724 |
| 52 | 4.463 | 4.735 | 6.462>> | 6.734 |
| 52 | 7.806 | 8.460 | 0.766<< | 1.420 |
| 52 | 4.458 | 4.740 | 6.457 | 6.739>> |
| 52 | 7.855 | 8.328 | 0.922 | 1.395<< |
| 53 | 7.082>> | 7.561 | 2.118 | 2.597 |
| 53 | 4.135<< | 4.482 | 6.877 | 7.224 |
| 53 | 6.978 | 7.621>> | 2.071 | 2.714 |
| 53 | 4.148 | 4.469<< | 6.890 | 7.212 |
| 53 | 4.145 | 4.470 | 6.891>> | 7.216 |
| 53 | 6.981 | 7.620 | 2.070<< | 2.710 |
| 53 | 4.136 | 4.479 | 6.882 | 7.225>> |
| 53 | 7.082 | 7.564 | 2.114 | 2.597<< |

| BARRA 53 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 53 | 7.076>> | 7.555 | 2.107 | 2.586 |
| 53 | 4.129<< | 4.476 | 6.867 | 7.213 |
| 53 | 6.972 | 7.615>> | 2.060 | 2.703 |
| 53 | 4.142 | 4.464<< | 6.879 | 7.201 |
| 53 | 4.139 | 4.464 | 6.880>> | 7.205 |
| 53 | 6.975 | 7.614 | 2.060<< | 2.699 |
| 53 | 4.130 | 4.473 | 6.871 | 7.214>> |
| 53 | 7.076 | 7.559 | 2.103 | 2.586<< |
| 54 | 6.420>> | 6.864 | 3.174 | 3.618 |
| 54 | 3.454<< | 4.276 | 7.311 | 8.134 |
| 54 | 6.376 | 6.908>> | 3.130 | 3.662 |
| 54 | 3.610 | 3.934<< | 7.705 | 8.029 |
| 54 | 3.607 | 3.934 | 7.706>> | 8.033 |
| 54 | 6.379 | 6.907 | 3.130<< | 3.658 |
| 54 | 3.454 | 4.272 | 7.316 | 8.134>> |
| 54 | 6.420 | 6.867 | 3.170 | 3.617<< |

| BARRA 54 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 54 | 6.411>> | 6.854 | 3.166 | 3.610 |
| 54 | 3.444<< | 4.266 | 7.303 | 8.125 |
| 54 | 6.366 | 6.898>> | 3.122 | 3.654 |
| 54 | 3.601 | 3.924<< | 7.697 | 8.020 |
| 54 | 3.597 | 3.924 | 7.698>> | 8.025 |
| 54 | 6.370 | 6.898 | 3.122<< | 3.650 |
| 54 | 3.444 | 4.263 | 7.307 | 8.126>> |
| 54 | 6.410 | 6.858 | 3.162 | 3.609<< |
| 55 | 5.810>> | 5.660 | 4.861 | 4.710 |
| 55 | 2.177<< | 3.026 | 9.243 | 10.092 |
| 55 | 5.594 | 6.117>> | 4.336 | 4.860 |
| 55 | 2.222 | 2.981<< | 9.288 | 10.046 |
| 55 | 2.219 | 2.981 | 9.289>> | 10.051 |
| 55 | 5.597 | 6.117 | 4.335<< | 4.855 |
| 55 | 2.177 | 3.022 | 9.248 | 10.092>> |
| 55 | 5.810 | 5.663 | 4.856 | 4.709<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 55 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 55 | 5.495>> | 5.401 | 4.417 | 4.323 |
| 55 | 2.144<< | 2.860 | 7.792 | 8.508 |
| 55 | 5.353 | 5.785>> | 4.020 | 4.452 |
| 55 | 2.179 | 2.828<< | 7.823 | 8.472 |
| 55 | 2.176 | 2.828 | 7.824>> | 8.476 |
| 55 | 5.356 | 5.785 | 4.020<< | 4.448 |
| 55 | 2.144 | 2.860 | 7.792 | 8.508>> |
| 55 | 5.495 | 5.401 | 4.417 | 4.323<< |
| 56 | 6.132>> | 6.141 | 3.487 | 3.497 |
| 56 | 1.777<< | 2.484 | 8.287 | 8.994 |
| 56 | 5.737 | 6.217>> | 3.475 | 3.955 |
| 56 | 1.781 | 2.481<< | 8.290 | 8.990 |
| 56 | 1.777 | 2.481 | 8.290>> | 8.994 |
| 56 | 5.741 | 6.217 | 3.475<< | 3.951 |
| 56 | 1.777 | 2.481 | 8.290 | 8.994>> |
| 56 | 6.131 | 6.145 | 3.483 | 3.497<< |

| BARRA 56 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 56 | 6.202>> | 6.213 | 3.491 | 3.502 |
| 56 | 1.795<< | 2.529 | 8.239 | 8.972 |
| 56 | 5.767 | 6.310>> | 3.439 | 3.982 |
| 56 | 1.799 | 2.525<< | 8.242 | 8.968 |
| 56 | 1.795 | 2.525 | 8.242>> | 8.972 |
| 56 | 5.770 | 6.310 | 3.438<< | 3.978 |
| 56 | 6.201 | 6.217 | 3.487 | 3.502<< |
| 57 | 5.247>> | 5.263 | 4.691 | 4.707 |
| 57 | -0.467<< | 0.278 | 11.082 | 11.827 |
| 57 | 5.247 | 5.263>> | 4.691 | 4.707 |
| 57 | -0.467 | 0.278<< | 11.082 | 11.827 |
| 57 | -0.467 | 0.278 | 11.082>> | 11.827 |
| 57 | 5.247 | 5.263 | 4.691<< | 4.707 |
| 57 | -0.467 | 0.278 | 11.082 | 11.827>> |
| 57 | 5.247 | 5.263 | 4.691 | 4.707<< |

| BARRA 57 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 57 | 5.251>> | 5.267 | 4.684 | 4.700 |
| 57 | -0.463<< | 0.282 | 11.075 | 11.820 |
| 57 | 5.251 | 5.267>> | 4.684 | 4.700 |
| 57 | -0.463 | 0.282<< | 11.075 | 11.820 |
| 57 | -0.463 | 0.282 | 11.075>> | 11.820 |
| 57 | 5.251 | 5.267 | 4.684<< | 4.700 |
| 57 | -0.463 | 0.282 | 11.075 | 11.820>> |
| 57 | 5.251 | 5.267 | 4.684 | 4.700<< |
| 58 | 6.090>> | 6.102 | 3.630 | 3.641 |
| 58 | 1.681<< | 2.419 | 8.375 | 9.114 |
| 58 | 5.655 | 6.196>> | 3.580 | 4.121 |
| 58 | 1.685 | 2.415<< | 8.379 | 9.110 |
| 58 | 1.685 | 2.415 | 8.379>> | 9.110 |
| 58 | 5.655 | 6.196 | 3.580<< | 4.121 |
| 58 | 1.681 | 2.419 | 8.375 | 9.114>> |
| 58 | 6.090 | 6.102 | 3.630 | 3.641<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 58 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 58 | 6.021>> | 6.031 | 3.606 | 3.616 |
| 58 | 1.664<< | 2.376 | 8.404 | 9.115 |
| 58 | 5.628 | 6.104>> | 3.598 | 4.074 |
| 58 | 1.668 | 2.372<< | 8.408 | 9.112 |
| 58 | 1.668 | 2.372 | 8.408>> | 9.112 |
| 58 | 5.628 | 6.104 | 3.598<< | 4.074 |
| 58 | 1.664 | 2.376 | 8.404 | 9.115>> |
| 58 | 6.021 | 6.031 | 3.606 | 3.616<< |
| 59 | 5.242>> | 5.150 | 4.713 | 4.621 |
| 59 | 1.888<< | 2.612 | 8.085 | 8.809 |
| 59 | 5.102 | 5.533>> | 4.318 | 4.749 |
| 59 | 1.920 | 2.581<< | 8.117 | 8.777 |
| 59 | 1.920 | 2.581 | 8.117>> | 8.777 |
| 59 | 5.102 | 5.533 | 4.318<< | 4.749 |
| 59 | 1.888 | 2.612 | 8.085 | 8.809>> |
| 59 | 5.242 | 5.150 | 4.713 | 4.621<< |

| BARRA 59 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 59 | 5.715>> | 5.570 | 5.007 | 4.862 |
| 59 | 2.078<< | 2.933 | 9.393 | 10.248 |
| 59 | 5.500 | 6.024>> | 4.486 | 5.010 |
| 59 | 2.120 | 2.892<< | 9.434 | 10.207 |
| 59 | 2.120 | 2.892 | 9.434>> | 10.207 |
| 59 | 5.500 | 6.024 | 4.486<< | 5.010 |
| 59 | 2.078 | 2.933 | 9.393 | 10.248>> |
| 59 | 5.715 | 5.570 | 5.007 | 4.862<< |
| 60 | 6.277>> | 6.733 | 3.362 | 3.819 |
| 60 | 3.309<< | 4.143 | 7.503 | 8.337 |
| 60 | 6.237 | 6.773>> | 3.322 | 3.859 |
| 60 | 3.483 | 3.802<< | 7.890 | 8.210 |
| 60 | 3.483 | 3.802 | 7.890>> | 8.210 |
| 60 | 6.237 | 6.773 | 3.322<< | 3.859 |
| 60 | 3.309 | 4.143 | 7.503 | 8.337>> |
| 60 | 6.277 | 6.733 | 3.362 | 3.819<< |

| BARRA 60 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 60 | 6.283>> | 6.739 | 3.375 | 3.831 |
| 60 | 3.315<< | 4.149 | 7.515 | 8.350 |
| 60 | 6.242 | 6.779>> | 3.335 | 3.872 |
| 60 | 3.489 | 3.808<< | 7.903 | 8.222 |
| 60 | 3.489 | 3.808 | 7.903>> | 8.222 |
| 60 | 6.242 | 6.779 | 3.335<< | 3.872 |
| 60 | 3.315 | 4.149 | 7.515 | 8.350>> |
| 60 | 6.283 | 6.739 | 3.375 | 3.831<< |
| 61 | 6.938>> | 7.337 | 2.428 | 2.827 |
| 61 | 3.906<< | 4.367 | 7.072 | 7.533 |
| 61 | 6.852 | 7.423>> | 2.342 | 2.913 |
| 61 | 3.999 | 4.313<< | 7.114 | 7.429 |
| 61 | 3.996 | 4.314 | 7.115>> | 7.433 |
| 61 | 6.855 | 7.423 | 2.341<< | 2.909 |
| 61 | 3.906 | 4.364 | 7.076 | 7.534>> |
| 61 | 6.938 | 7.340 | 2.424 | 2.826<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 61 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 61 | 6.941>> | 7.340 | 2.443 | 2.843 |
| 61 | 3.909<< | 4.369 | 7.088 | 7.549 |
| 61 | 6.855 | 7.426>> | 2.358 | 2.929 |
| 61 | 4.002 | 4.316<< | 7.130 | 7.444 |
| 61 | 3.999 | 4.316 | 7.131>> | 7.448 |
| 61 | 6.858 | 7.426 | 2.357<< | 2.925 |
| 61 | 3.909 | 4.366 | 7.092 | 7.549>> |
| 61 | 6.941 | 7.343 | 2.439 | 2.842<< |
| 62 | 7.688>> | 8.162 | 1.184 | 1.657 |
| 62 | 4.201<< | 4.597 | 6.715 | 7.111 |
| 62 | 7.569 | 8.175>> | 1.201 | 1.807 |
| 62 | 4.302 | 4.557<< | 6.738 | 6.993 |
| 62 | 4.295 | 4.557 | 6.740>> | 7.002 |
| 62 | 7.683 | 8.174 | 1.169<< | 1.660 |
| 62 | 4.201 | 4.589 | 6.725 | 7.113>> |
| 62 | 7.688 | 8.169 | 1.174 | 1.655<< |

| BARRA 62 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 62 | 7.689>> | 8.162 | 1.199 | 1.673 |
| 62 | 4.201<< | 4.597 | 6.731 | 7.127 |
| 62 | 7.569 | 8.175>> | 1.216 | 1.822 |
| 62 | 4.303 | 4.557<< | 6.753 | 7.008 |
| 62 | 4.295 | 4.558 | 6.755>> | 7.018 |
| 62 | 7.683 | 8.174 | 1.185<< | 1.676 |
| 62 | 4.201 | 4.590 | 6.740 | 7.129>> |
| 62 | 7.688 | 8.169 | 1.190 | 1.671<< |
| 63 | 8.380>> | 8.848 | 0.130 | 0.597 |
| 63 | 4.381<< | 4.732 | 6.508 | 6.859 |
| 63 | 8.372 | 8.856>> | 0.122 | 0.605 |
| 63 | 4.485 | 4.712<< | 6.505 | 6.733 |
| 63 | 4.386 | 4.724 | 6.517>> | 6.855 |
| 63 | 8.375 | 8.855 | 0.121<< | 0.602 |
| 63 | 4.381 | 4.729 | 6.512 | 6.860>> |
| 63 | 8.380 | 8.850 | 0.126 | 0.597<< |

| BARRA 63 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 63 | 8.379>> | 8.846 | 0.144 | 0.612 |
| 63 | 4.380<< | 4.731 | 6.523 | 6.874 |
| 63 | 8.371 | 8.854>> | 0.136 | 0.620 |
| 63 | 4.483 | 4.710<< | 6.520 | 6.747 |
| 63 | 4.385 | 4.723 | 6.531>> | 6.870 |
| 63 | 8.374 | 8.854 | 0.136<< | 0.616 |
| 63 | 4.380 | 4.728 | 6.526 | 6.875>> |
| 63 | 8.379 | 8.849 | 0.141 | 0.611<< |
| 64 | 8.908>> | 9.360 | -0.661 | -0.209 |
| 64 | 4.516<< | 4.827 | 6.362 | 6.673 |
| 64 | 8.900 | 9.368>> | -0.669 | -0.201 |
| 64 | 4.524 | 4.819<< | 6.370 | 6.665 |
| 64 | 4.521 | 4.819 | 6.371>> | 6.668 |
| 64 | 8.903 | 9.368 | -0.669<< | -0.204 |
| 64 | 4.516 | 4.824 | 6.366 | 6.674>> |
| 64 | 8.908 | 9.363 | -0.664 | -0.209<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 64 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 64 | 8.906>> | 9.359 | -0.648 | -0.196 |
| 64 | 4.514<< | 4.825 | 6.375 | 6.686 |
| 64 | 8.899 | 9.367>> | -0.656 | -0.188 |
| 64 | 4.522 | 4.817<< | 6.383 | 6.678 |
| 64 | 4.519 | 4.817 | 6.383>> | 6.681 |
| 64 | 8.901 | 9.366 | -0.656<< | -0.191 |
| 64 | 4.514 | 4.822 | 6.378 | 6.686>> |
| 64 | 8.906 | 9.361 | -0.651 | -0.196<< |
| 65 | 9.276>> | 9.708 | -1.197 | -0.766 |
| 65 | 4.609<< | 4.879 | 6.279 | 6.549 |
| 65 | 9.268 | 9.716>> | -1.205 | -0.758 |
| 65 | 4.617 | 4.871<< | 6.287 | 6.541 |
| 65 | 4.610 | 4.872 | 6.287>> | 6.550 |
| 65 | 9.275 | 9.714 | -1.206<< | -0.766 |
| 65 | 4.610 | 4.872 | 6.287 | 6.550>> |
| 65 | 9.275 | 9.714 | -1.206 | -0.766<< |

| BARRA 65 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 65 | 9.274>> | 9.706 | -1.188 | -0.756 |
| 65 | 4.607<< | 4.877 | 6.289 | 6.559 |
| 65 | 9.266 | 9.714>> | -1.196 | -0.748 |
| 65 | 4.615 | 4.869<< | 6.297 | 6.551 |
| 65 | 4.608 | 4.870 | 6.297>> | 6.559 |
| 65 | 9.273 | 9.712 | -1.196<< | -0.756<< |
| 66 | 9.484>> | 9.890 | -1.482 | -1.076 |
| 66 | 4.662<< | 4.891 | 6.256 | 6.485 |
| 66 | 9.476 | 9.898>> | -1.490 | -1.068 |
| 66 | 4.670 | 4.883<< | 6.264 | 6.477 |
| 66 | 4.663 | 4.883 | 6.265>> | 6.486 |
| 66 | 9.483 | 9.897 | -1.491<< | -1.077 |
| 66 | 4.663 | 4.883 | 6.265 | 6.486>> |
| 66 | 9.483 | 9.897 | -1.491 | -1.077<< |

| BARRA 66 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 66 | 9.482>> | 9.888 | -1.476 | -1.070 |
| 66 | 4.660<< | 4.889 | 6.262 | 6.491 |
| 66 | 9.474 | 9.896>> | -1.484 | -1.062 |
| 66 | 4.668 | 4.881<< | 6.270 | 6.483 |
| 66 | 4.661 | 4.881 | 6.271>> | 6.492 |
| 66 | 9.481 | 9.895 | -1.485<< | -1.071 |
| 66 | 4.661 | 4.881 | 6.271 | 6.492>> |
| 66 | 9.481 | 9.895 | -1.485 | -1.071<< |
| 67 | 9.531>> | 9.913 | -1.522 | -1.140 |
| 67 | 4.674<< | 4.855 | 6.302 | 6.483 |
| 67 | 9.529 | 9.915>> | -1.524 | -1.138 |
| 67 | 4.676 | 4.852<< | 6.304 | 6.480 |
| 67 | 4.676 | 4.852 | 6.304>> | 6.480 |
| 67 | 9.529 | 9.915 | -1.524<< | -1.138 |
| 67 | 4.674 | 4.855 | 6.302 | 6.483>> |
| 67 | 9.531 | 9.913 | -1.522 | -1.140<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 67 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 67 | 9.530>> | 9.911 | -1.519 | -1.138 |
| 67 | 4.672<< | 4.853 | 6.304 | 6.485 |
| 67 | 9.527 | 9.914>> | -1.522 | -1.135 |
| 67 | 4.675 | 4.851<< | 6.306 | 6.483 |
| 67 | 4.675 | 4.851 | 6.306>> | 6.483 |
| 67 | 9.527 | 9.914 | -1.522<< | -1.135 |
| 67 | 4.672 | 4.853 | 6.304 | 6.485>> |
| 67 | 9.530 | 9.911 | -1.519 | -1.138<< |
| 68 | 9.419>> | 9.759 | -1.293 | -0.954 |
| 68 | 4.644<< | 4.789 | 6.393 | 6.539 |
| 68 | 9.410 | 9.768>> | -1.303 | -0.945 |
| 68 | 4.653 | 4.780<< | 6.403 | 6.530 |
| 68 | 4.646 | 4.780 | 6.404>> | 6.538 |
| 68 | 9.417 | 9.768 | -1.304<< | -0.953 |
| 68 | 4.644 | 4.783 | 6.402 | 6.541>> |
| 68 | 9.419 | 9.766 | -1.302 | -0.956<< |

| BARRA 68 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 68 | 9.418>> | 9.758 | -1.295 | -0.956 |
| 68 | 4.643<< | 4.788 | 6.392 | 6.537 |
| 68 | 9.409 | 9.767>> | -1.304 | -0.946 |
| 68 | 4.652 | 4.779<< | 6.401 | 6.528 |
| 68 | 4.645 | 4.779 | 6.403>> | 6.537 |
| 68 | 9.416 | 9.767 | -1.306<< | -0.955 |
| 68 | 4.643 | 4.781 | 6.400 | 6.539>> |
| 68 | 9.418 | 9.764 | -1.304 | -0.957<< |
| 69 | 9.150>> | 9.449 | -0.826 | -0.527 |
| 69 | 4.574<< | 4.678 | 6.552 | 6.656 |
| 69 | 9.141 | 9.459>> | -0.835 | -0.517 |
| 69 | 4.584 | 4.668<< | 6.562 | 6.646 |
| 69 | 4.578 | 4.669 | 6.563>> | 6.654 |
| 69 | 9.147 | 9.458 | -0.836<< | -0.525 |
| 69 | 4.576 | 4.671 | 6.560 | 6.656>> |
| 69 | 9.149 | 9.455 | -0.834 | -0.527<< |

| BARRA 69 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 69 | 9.149>> | 9.448 | -0.831 | -0.533 |
| 69 | 4.574<< | 4.677 | 6.547 | 6.650 |
| 69 | 9.140 | 9.458>> | -0.841 | -0.523 |
| 69 | 4.583 | 4.667<< | 6.557 | 6.640 |
| 69 | 4.577 | 4.668 | 6.557>> | 6.648 |
| 69 | 9.146 | 9.457 | -0.841<< | -0.531 |
| 69 | 4.575 | 4.670 | 6.555 | 6.650>> |
| 69 | 9.148 | 9.454 | -0.839 | -0.533<< |
| 70 | 8.723>> | 8.976 | -0.109 | 0.144 |
| 70 | 4.466<< | 4.526 | 6.769 | 6.830 |
| 70 | 8.713 | 8.986>> | -0.119 | 0.154 |
| 70 | 4.476 | 4.516<< | 6.780 | 6.820 |
| 70 | 4.476 | 4.516 | 6.780>> | 6.820 |
| 70 | 8.713 | 8.986 | -0.119<< | 0.154 |
| 70 | 4.466 | 4.526 | 6.769 | 6.830>> |
| 70 | 8.723 | 8.976 | -0.109 | 0.144<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 70 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 70 | 8.722>> | 8.975 | -0.117 | 0.135 |
| 70 | 4.465<< | 4.525 | 6.761 | 6.821 |
| 70 | 8.712 | 8.985>> | -0.128 | 0.146 |
| 70 | 4.475 | 4.515<< | 6.771 | 6.811 |
| 70 | 4.475 | 4.515 | 6.771>> | 6.811 |
| 70 | 8.712 | 8.985 | -0.128<< | 0.146 |
| 70 | 4.465 | 4.525 | 6.761 | 6.821>> |
| 70 | 8.722 | 8.975 | -0.117 | 0.135<< |
| 71 | 8.137>> | 8.338 | 0.860 | 1.062 |
| 71 | 4.317<< | 4.334 | 7.047 | 7.064 |
| 71 | 8.126 | 8.349>> | 0.849 | 1.073 |
| 71 | 4.390 | 4.321<< | 7.042 | 6.973 |
| 71 | 4.328 | 4.323 | 7.058>> | 7.053 |
| 71 | 8.126 | 8.349 | 0.849<< | 1.073 |
| 71 | 4.317 | 4.334 | 7.047 | 7.064>> |
| 71 | 8.137 | 8.338 | 0.860 | 1.062<< |

| BARRA 71 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 71 | 8.135>> | 8.337 | 0.849 | 1.051 |
| 71 | 4.315<< | 4.332 | 7.036 | 7.053 |
| 71 | 8.124 | 8.348>> | 0.839 | 1.062 |
| 71 | 4.389 | 4.319<< | 7.032 | 6.962 |
| 71 | 4.326 | 4.321 | 7.047>> | 7.042 |
| 71 | 8.124 | 8.348 | 0.839<< | 1.062 |
| 71 | 4.315 | 4.332 | 7.036 | 7.053>> |
| 71 | 8.135 | 8.337 | 0.849 | 1.051<< |
| 72 | 7.388>> | 7.527 | 2.092 | 2.232 |
| 72 | 4.121<< | 4.133 | 7.345 | 7.357 |
| 72 | 7.370 | 7.546>> | 2.074 | 2.250 |
| 72 | 4.186 | 4.067<< | 7.410 | 7.291 |
| 72 | 4.181 | 4.068 | 7.411>> | 7.299 |
| 72 | 7.376 | 7.545 | 2.074<< | 2.243 |
| 72 | 4.124 | 4.097 | 7.389 | 7.363>> |
| 72 | 7.387 | 7.533 | 2.085 | 2.231<< |

| BARRA 72 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 72 | 7.385>> | 7.524 | 2.081 | 2.220 |
| 72 | 4.118<< | 4.129 | 7.334 | 7.345 |
| 72 | 7.367 | 7.542>> | 2.063 | 2.238 |
| 72 | 4.183 | 4.064<< | 7.399 | 7.280 |
| 72 | 4.177 | 4.065 | 7.399>> | 7.287 |
| 72 | 7.372 | 7.541 | 2.062<< | 2.231 |
| 72 | 4.121 | 4.094 | 7.378 | 7.351>> |
| 72 | 7.384 | 7.530 | 2.074 | 2.220<< |
| 73 | 6.630>> | 6.655 | 3.402 | 3.427 |
| 73 | 3.750<< | 3.729 | 7.947 | 7.927 |
| 73 | 6.584 | 6.687>> | 3.375 | 3.478 |
| 73 | 3.820 | 3.659<< | 8.017 | 7.857 |
| 73 | 3.820 | 3.659 | 8.017>> | 7.857 |
| 73 | 6.584 | 6.687 | 3.375<< | 3.478 |
| 73 | 3.750 | 3.729 | 7.947 | 7.927>> |
| 73 | 6.630 | 6.655 | 3.402 | 3.427<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 73 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 73 | 6.624>> | 6.649 | 3.391 | 3.416 |
| 73 | 3.744<< | 3.724 | 7.936 | 7.916 |
| 73 | 6.578 | 6.681>> | 3.364 | 3.467 |
| 73 | 3.814 | 3.654<< | 8.006 | 7.846 |
| 73 | 3.814 | 3.654 | 8.006>> | 7.846 |
| 73 | 6.578 | 6.681 | 3.364<< | 3.467 |
| 73 | 3.744 | 3.724 | 7.936 | 7.916>> |
| 73 | 6.624 | 6.649 | 3.391 | 3.416<< |
| 74 | 5.973>> | 5.883 | 4.553 | 4.464 |
| 74 | 3.082<< | 3.400 | 8.534 | 8.853 |
| 74 | 5.926 | 5.930>> | 4.507 | 4.510 |
| 74 | 3.278 | 3.047<< | 8.931 | 8.701 |
| 74 | 3.220 | 3.051 | 8.943>> | 8.774 |
| 74 | 5.944 | 5.926 | 4.506<< | 4.488 |
| 74 | 3.085 | 3.383 | 8.556 | 8.853>> |
| 74 | 5.969 | 5.901 | 4.532 | 4.463<< |

| BARRA 74 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 74 | 5.963>> | 5.874 | 4.545 | 4.455 |
| 74 | 3.073<< | 3.391 | 8.526 | 8.844 |
| 74 | 5.917 | 5.920>> | 4.498 | 4.502 |
| 74 | 3.269 | 3.038<< | 8.923 | 8.692 |
| 74 | 3.210 | 3.041 | 8.935>> | 8.766 |
| 74 | 5.934 | 5.917 | 4.498<< | 4.480 |
| 74 | 3.076 | 3.373 | 8.548 | 8.845>> |
| 74 | 5.960 | 5.891 | 4.523 | 4.455<< |
| 75 | 5.199>> | 5.012 | 5.860 | 5.673 |
| 75 | 1.870<< | 2.026 | 10.607 | 10.763 |
| 75 | 5.047 | 5.068>> | 5.830 | 5.851 |
| 75 | 1.919 | 1.977<< | 10.656 | 10.714 |
| 75 | 1.888 | 1.982 | 10.659>> | 10.752 |
| 75 | 5.181 | 5.056 | 5.808<< | 5.683 |
| 75 | 1.875 | 1.995 | 10.645 | 10.766>> |
| 75 | 5.194 | 5.043 | 5.822 | 5.670<< |

| BARRA 75 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 75 | 4.950>> | 4.782 | 5.209 | 5.041 |
| 75 | 1.827<< | 1.930 | 8.889 | 8.991 |
| 75 | 4.796 | 4.829>> | 5.156 | 5.189 |
| 75 | 1.853 | 1.903<< | 8.915 | 8.965 |
| 75 | 1.853 | 1.903 | 8.915>> | 8.965 |
| 75 | 4.796 | 4.829 | 5.156<< | 5.189 |
| 75 | 1.827 | 1.930 | 8.889 | 8.991>> |
| 75 | 4.950 | 4.782 | 5.209 | 5.041<< |
| 76 | 5.560>> | 5.522 | 4.265 | 4.226 |
| 76 | 1.457<< | 1.503 | 9.441 | 9.487 |
| 76 | 5.531 | 5.551>> | 4.235 | 4.256 |
| 76 | 1.486 | 1.473<< | 9.471 | 9.458 |
| 76 | 1.470 | 1.475 | 9.472>> | 9.476 |
| 76 | 5.547 | 5.550 | 4.234<< | 4.237 |
| 76 | 1.458 | 1.487 | 9.459 | 9.488>> |
| 76 | 5.559 | 5.538 | 4.246 | 4.225<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 76 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 76 | 5.630>> | 5.593 | 4.267 | 4.231 |
| 76 | 1.477<< | 1.544 | 9.395 | 9.461 |
| 76 | 5.601 | 5.622>> | 4.238 | 4.260 |
| 76 | 1.506 | 1.515<< | 9.424 | 9.432 |
| 76 | 1.490 | 1.515 | 9.425>> | 9.450 |
| 76 | 5.617 | 5.621 | 4.237<< | 4.242 |
| 76 | 1.478 | 1.528 | 9.413 | 9.463>> |
| 76 | 5.629 | 5.609 | 4.249 | 4.230<< |
| 77 | 4.654>> | 4.633 | 5.482 | 5.461 |
| 77 | -0.781<< | -0.796 | 12.338 | 12.324 |
| 77 | 4.642 | 4.645>> | 5.470 | 5.473 |
| 77 | -0.770 | -0.808<< | 12.350 | 12.312 |
| 77 | -0.770 | -0.808 | 12.350>> | 12.312 |
| 77 | 4.642 | 4.645 | 5.470<< | 5.473 |
| 77 | -0.781 | -0.796 | 12.338 | 12.324>> |
| 77 | 4.654 | 4.633 | 5.482 | 5.461<< |

| BARRA 77 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 77 | 4.658>> | 4.637 | 5.474 | 5.454 |
| 77 | -0.777<< | -0.792 | 12.331 | 12.317 |
| 77 | 4.646 | 4.649>> | 5.463 | 5.466 |
| 77 | -0.766 | -0.804<< | 12.343 | 12.305 |
| 77 | -0.766 | -0.804 | 12.343>> | 12.305 |
| 77 | 4.646 | 4.649 | 5.463<< | 5.466 |
| 77 | -0.777 | -0.792 | 12.331 | 12.317>> |
| 77 | 4.658 | 4.637 | 5.474 | 5.454<< |
| 78 | 5.540>> | 5.502 | 4.380 | 4.342 |
| 78 | 1.369<< | 1.422 | 9.545 | 9.598 |
| 78 | 5.510 | 5.532>> | 4.350 | 4.373 |
| 78 | 1.399 | 1.391<< | 9.575 | 9.567 |
| 78 | 1.380 | 1.391 | 9.578>> | 9.589 |
| 78 | 5.529 | 5.532 | 4.348<< | 4.351 |
| 78 | 1.369 | 1.403 | 9.566 | 9.600>> |
| 78 | 5.540 | 5.521 | 4.359 | 4.340<< |

| BARRA 78 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 78 | 5.473>> | 5.452 | 4.337 | 4.316 |
| 78 | 1.349<< | 1.364 | 9.592 | 9.607 |
| 78 | 5.461 | 5.463>> | 4.325 | 4.327 |
| 78 | 1.360 | 1.353<< | 9.603 | 9.596 |
| 78 | 1.360 | 1.353 | 9.603>> | 9.596 |
| 78 | 5.461 | 5.463 | 4.325<< | 4.327 |
| 78 | 1.349 | 1.364 | 9.592 | 9.607>> |
| 78 | 5.473 | 5.452 | 4.337 | 4.316<< |
| 79 | 4.778>> | 4.634 | 5.382 | 5.237 |
| 79 | 1.582<< | 1.674 | 9.189 | 9.281 |
| 79 | 4.735 | 4.677>> | 5.339 | 5.281 |
| 79 | 1.626 | 1.631<< | 9.232 | 9.237 |
| 79 | 1.595 | 1.633 | 9.236>> | 9.274 |
| 79 | 4.766 | 4.676 | 5.335<< | 5.245 |
| 79 | 1.584 | 1.643 | 9.225 | 9.284>> |
| 79 | 4.777 | 4.665 | 5.346 | 5.234<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 79 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 79 | 5.189>> | 5.039 | 5.833 | 5.683 |
| 79 | 1.784<< | 1.913 | 10.780 | 10.909 |
| 79 | 5.133 | 5.095>> | 5.777 | 5.739 |
| 79 | 1.840 | 1.857<< | 10.836 | 10.853 |
| 79 | 1.819 | 1.858 | 10.840>> | 10.879 |
| 79 | 5.154 | 5.093 | 5.773<< | 5.713 |
| 79 | 1.785 | 1.892 | 10.806 | 10.913>> |
| 79 | 5.188 | 5.059 | 5.807 | 5.678<< |
| 80 | 5.959>> | 5.885 | 4.536 | 4.462 |
| 80 | 2.896<< | 2.825 | 9.303 | 9.232 |
| 80 | 5.903 | 5.940>> | 4.481 | 4.518 |
| 80 | 2.953 | 2.769<< | 9.359 | 9.176 |
| 80 | 2.913 | 2.774 | 9.364>> | 9.224 |
| 80 | 5.942 | 5.935 | 4.476<< | 4.469 |
| 80 | 2.901 | 2.786 | 9.352 | 9.236>> |
| 80 | 5.954 | 5.924 | 4.488 | 4.457<< |

| BARRA 80 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 80 | 5.965>> | 5.890 | 4.549 | 4.475 |
| 80 | 2.902<< | 2.831 | 9.316 | 9.245 |
| 80 | 5.909 | 5.946>> | 4.493 | 4.531 |
| 80 | 2.958 | 2.775<< | 9.372 | 9.188 |
| 80 | 2.919 | 2.780 | 9.377>> | 9.237 |
| 80 | 5.948 | 5.941 | 4.489<< | 4.482 |
| 80 | 2.907 | 2.792 | 9.365 | 9.249>> |
| 80 | 5.960 | 5.929 | 4.501 | 4.470<< |
| 81 | 6.645>> | 6.507 | 3.571 | 3.433 |
| 81 | 3.525<< | 3.429 | 8.378 | 8.282 |
| 81 | 6.572 | 6.686>> | 3.363 | 3.477 |
| 81 | 3.559 | 3.395<< | 8.412 | 8.248 |
| 81 | 3.540 | 3.397 | 8.414>> | 8.271 |
| 81 | 6.590 | 6.684 | 3.360<< | 3.454 |
| 81 | 3.527 | 3.410 | 8.401 | 8.284>> |
| 81 | 6.627 | 6.647 | 3.397 | 3.417<< |

| BARRA 81 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 81 | 6.648>> | 6.510 | 3.586 | 3.448 |
| 81 | 3.527<< | 3.432 | 8.393 | 8.298 |
| 81 | 6.574 | 6.689>> | 3.378 | 3.493 |
| 81 | 3.561 | 3.398<< | 8.427 | 8.264 |
| 81 | 3.543 | 3.400 | 8.430>> | 8.287 |
| 81 | 6.593 | 6.686 | 3.376<< | 3.469 |
| 81 | 3.530 | 3.413 | 8.417 | 8.300>> |
| 81 | 6.630 | 6.650 | 3.413 | 3.432<< |
| 82 | 7.397>> | 7.338 | 2.319 | 2.260 |
| 82 | 3.924<< | 3.922 | 7.655 | 7.654 |
| 82 | 7.334 | 7.497>> | 2.133 | 2.296 |
| 82 | 4.028 | 3.819<< | 7.758 | 7.549 |
| 82 | 3.970 | 3.823 | 7.769>> | 7.623 |
| 82 | 7.355 | 7.494 | 2.130<< | 2.270 |
| 82 | 3.927 | 3.901 | 7.681 | 7.656>> |
| 82 | 7.394 | 7.359 | 2.292 | 2.258<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 82 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 82 | 7.397>> | 7.338 | 2.334 | 2.275 |
| 82 | 3.924<< | 3.923 | 7.671 | 7.669 |
| 82 | 7.334 | 7.497>> | 2.148 | 2.312 |
| 82 | 4.028 | 3.819<< | 7.774 | 7.565 |
| 82 | 3.970 | 3.823 | 7.785>> | 7.638 |
| 82 | 7.355 | 7.495 | 2.146<< | 2.285 |
| 82 | 3.927 | 3.902 | 7.697 | 7.671>> |
| 82 | 7.394 | 7.359 | 2.308 | 2.273<< |
| 83 | 8.106>> | 8.097 | 1.166 | 1.157 |
| 83 | 4.164<< | 4.190 | 7.262 | 7.288 |
| 83 | 8.037 | 8.253>> | 0.985 | 1.202 |
| 83 | 4.286 | 4.068<< | 7.383 | 7.165 |
| 83 | 4.269 | 4.071 | 7.384>> | 7.186 |
| 83 | 8.054 | 8.251 | 0.984<< | 1.181 |
| 83 | 4.167 | 4.173 | 7.283 | 7.289>> |
| 83 | 8.103 | 8.114 | 1.145 | 1.156<< |

| BARRA 83 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 83 | 8.105>> | 8.096 | 1.180 | 1.172 |
| 83 | 4.163<< | 4.188 | 7.277 | 7.302 |
| 83 | 8.036 | 8.252>> | 1.000 | 1.216 |
| 83 | 4.285 | 4.067<< | 7.398 | 7.180 |
| 83 | 4.268 | 4.070 | 7.399>> | 7.201 |
| 83 | 8.052 | 8.249 | 0.999<< | 1.196 |
| 83 | 4.166 | 4.172 | 7.298 | 7.303>> |
| 83 | 8.102 | 8.113 | 1.160 | 1.171<< |
| 84 | 8.651>> | 8.684 | 0.276 | 0.309 |
| 84 | 4.350<< | 4.346 | 7.023 | 7.019 |
| 84 | 8.574 | 8.840>> | 0.099 | 0.365 |
| 84 | 4.507 | 4.276<< | 7.069 | 6.838 |
| 84 | 4.491 | 4.280 | 7.069>> | 6.857 |
| 84 | 8.589 | 8.836 | 0.099<< | 0.346 |
| 84 | 4.353 | 4.331 | 7.042 | 7.019>> |
| 84 | 8.648 | 8.700 | 0.257 | 0.309<< |

| BARRA 84 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 84 | 8.649>> | 8.682 | 0.289 | 0.322 |
| 84 | 4.348<< | 4.344 | 7.036 | 7.032 |
| 84 | 8.572 | 8.838>> | 0.112 | 0.377 |
| 84 | 4.505 | 4.274<< | 7.082 | 6.851 |
| 84 | 4.489 | 4.278 | 7.082>> | 6.870 |
| 84 | 8.587 | 8.834 | 0.111<< | 0.358 |
| 84 | 4.351 | 4.329 | 7.055 | 7.032>> |
| 84 | 8.646 | 8.698 | 0.270 | 0.321<< |
| 85 | 9.036>> | 9.105 | -0.359 | -0.290 |
| 85 | 4.480<< | 4.496 | 6.806 | 6.821 |
| 85 | 8.951 | 9.258>> | -0.532 | -0.224 |
| 85 | 4.690 | 4.446<< | 6.810 | 6.566 |
| 85 | 4.507 | 4.468 | 6.834>> | 6.794 |
| 85 | 8.951 | 9.258 | -0.532<< | -0.225 |
| 85 | 4.480 | 4.495 | 6.806 | 6.821>> |
| 85 | 9.035 | 9.105 | -0.360 | -0.290<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 85 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 85 | 9.033>> | 9.103 | -0.350 | -0.280 |
| 85 | 4.478<< | 4.493 | 6.815 | 6.831 |
| 85 | 8.949 | 9.256>> | -0.522 | -0.215 |
| 85 | 4.688 | 4.444<< | 6.820 | 6.576 |
| 85 | 4.505 | 4.466 | 6.843>> | 6.804 |
| 85 | 8.949 | 9.256 | -0.523<< | -0.216 |
| 85 | 4.478 | 4.493 | 6.816 | 6.831>> |
| 85 | 9.033 | 9.103 | -0.350 | -0.281<< |
| 86 | 9.260>> | 9.361 | -0.743 | -0.643 |
| 86 | 4.570<< | 4.604 | 6.649 | 6.683 |
| 86 | 9.169 | 9.512>> | -0.911 | -0.568 |
| 86 | 4.597 | 4.577<< | 6.675 | 6.656 |
| 86 | 4.596 | 4.577 | 6.675>> | 6.657 |
| 86 | 9.170 | 9.512 | -0.911<< | -0.569 |
| 86 | 4.570 | 4.603 | 6.649 | 6.683>> |
| 86 | 9.260 | 9.361 | -0.744 | -0.643<< |

| BARRA 86 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 86 | 9.259>> | 9.359 | -0.738 | -0.637 |
| 86 | 4.568<< | 4.602 | 6.654 | 6.688 |
| 86 | 9.168 | 9.510>> | -0.905 | -0.563 |
| 86 | 4.595 | 4.575<< | 6.681 | 6.662 |
| 86 | 4.594 | 4.575 | 6.681>> | 6.662 |
| 86 | 9.168 | 9.510 | -0.905<< | -0.563 |
| 86 | 4.568 | 4.601 | 6.655 | 6.688>> |
| 86 | 9.258 | 9.360 | -0.738 | -0.637<< |
| 87 | 9.325>> | 9.452 | -0.875 | -0.748 |
| 87 | 4.618<< | 4.670 | 6.553 | 6.605 |
| 87 | 9.229 | 9.598>> | -1.036 | -0.666 |
| 87 | 4.644 | 4.645<< | 6.578 | 6.579 |
| 87 | 4.644 | 4.645 | 6.578>> | 6.580 |
| 87 | 9.230 | 9.598 | -1.036<< | -0.667 |
| 87 | 4.619 | 4.670 | 6.553 | 6.605>> |
| 87 | 9.325 | 9.452 | -0.876 | -0.748<< |

| BARRA 87 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 87 | 9.324>> | 9.451 | -0.873 | -0.746 |
| 87 | 4.617<< | 4.669 | 6.555 | 6.607 |
| 87 | 9.228 | 9.597>> | -1.033 | -0.664 |
| 87 | 4.643 | 4.643<< | 6.581 | 6.581 |
| 87 | 4.642 | 4.643 | 6.581>> | 6.582 |
| 87 | 9.228 | 9.597 | -1.033<< | -0.665 |
| 87 | 4.617 | 4.669 | 6.556 | 6.607>> |
| 87 | 9.323 | 9.451 | -0.873 | -0.746<< |
| 88 | 9.230>> | 9.378 | -0.754 | -0.605 |
| 88 | 4.626<< | 4.696 | 6.518 | 6.588 |
| 88 | 9.130 | 9.519>> | -0.906 | -0.518 |
| 88 | 4.651 | 4.671<< | 6.543 | 6.563 |
| 88 | 4.651 | 4.671 | 6.543>> | 6.563 |
| 88 | 9.130 | 9.519 | -0.906<< | -0.518 |
| 88 | 4.626 | 4.696 | 6.518 | 6.588>> |
| 88 | 9.230 | 9.378 | -0.754 | -0.605<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 88 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 88 | 9.229>> | 9.377 | -0.756 | -0.607 |
| 88 | 4.625<< | 4.695 | 6.516 | 6.586 |
| 88 | 9.129 | 9.518>> | -0.908 | -0.519 |
| 88 | 4.650 | 4.670<< | 6.541 | 6.561 |
| 88 | 4.650 | 4.670 | 6.541>> | 6.561 |
| 88 | 9.129 | 9.518 | -0.908<< | -0.519 |
| 88 | 4.625 | 4.695 | 6.516 | 6.586>> |
| 88 | 9.229 | 9.377 | -0.756 | -0.607<< |
| 89 | 8.976>> | 9.141 | -0.384 | -0.219 |
| 89 | 4.595<< | 4.682 | 6.541 | 6.628 |
| 89 | 8.875 | 9.275>> | -0.527 | -0.126 |
| 89 | 4.618 | 4.658<< | 6.565 | 6.605 |
| 89 | 4.618 | 4.658 | 6.565>> | 6.605 |
| 89 | 8.875 | 9.275 | -0.527<< | -0.126 |
| 89 | 4.595 | 4.682 | 6.541 | 6.628>> |
| 89 | 8.976 | 9.141 | -0.384 | -0.219<< |

| BARRA 89 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 89 | 8.975>> | 9.140 | -0.389 | -0.224 |
| 89 | 4.594<< | 4.681 | 6.536 | 6.622 |
| 89 | 8.874 | 9.275>> | -0.532 | -0.132 |
| 89 | 4.618 | 4.657<< | 6.559 | 6.599 |
| 89 | 4.618 | 4.657 | 6.559>> | 6.599 |
| 89 | 8.874 | 9.275 | -0.532<< | -0.132 |
| 89 | 4.594 | 4.681 | 6.536 | 6.622>> |
| 89 | 8.975 | 9.140 | -0.389 | -0.224<< |
| 90 | 8.565>> | 8.741 | 0.236 | 0.412 |
| 90 | 4.525<< | 4.628 | 6.623 | 6.726 |
| 90 | 8.435 | 8.871>> | 0.106 | 0.542 |
| 90 | 4.650 | 4.597<< | 6.628 | 6.575 |
| 90 | 4.547 | 4.606 | 6.645>> | 6.704 |
| 90 | 8.462 | 8.867 | 0.103<< | 0.508 |
| 90 | 4.525 | 4.628 | 6.623 | 6.726>> |
| 90 | 8.565 | 8.741 | 0.236 | 0.412<< |

| BARRA 90 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 90 | 8.564>> | 8.740 | 0.227 | 0.404 |
| 90 | 4.524<< | 4.627 | 6.614 | 6.717 |
| 90 | 8.434 | 8.870>> | 0.097 | 0.533 |
| 90 | 4.649 | 4.595<< | 6.619 | 6.566 |
| 90 | 4.546 | 4.605 | 6.636>> | 6.695 |
| 90 | 8.461 | 8.866 | 0.094<< | 0.500 |
| 90 | 4.524 | 4.627 | 6.614 | 6.717>> |
| 90 | 8.564 | 8.740 | 0.227 | 0.404<< |
| 91 | 7.994>> | 8.177 | 1.107 | 1.290 |
| 91 | 4.414<< | 4.533 | 6.764 | 6.884 |
| 91 | 7.869 | 8.301>> | 0.983 | 1.414 |
| 91 | 4.518 | 4.487<< | 6.795 | 6.763 |
| 91 | 4.518 | 4.487 | 6.795>> | 6.763 |
| 91 | 7.869 | 8.301 | 0.983<< | 1.414 |
| 91 | 4.414 | 4.533 | 6.764 | 6.884>> |
| 91 | 7.994 | 8.177 | 1.107 | 1.290<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 91 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 91 | 7.994>> | 8.177 | 1.110 | 1.293 |
| 91 | 4.414<< | 4.534 | 6.768 | 6.887 |
| 91 | 7.869 | 8.301>> | 0.986 | 1.418 |
| 91 | 4.519 | 4.487<< | 6.798 | 6.767 |
| 91 | 4.519 | 4.487 | 6.798>> | 6.767 |
| 91 | 7.869 | 8.301 | 0.986<< | 1.418 |
| 91 | 4.414 | 4.534 | 6.768 | 6.887>> |
| 91 | 7.994 | 8.177 | 1.110 | 1.293<< |
| 92 | 7.264>> | 7.443 | 2.252 | 2.431 |
| 92 | 4.262<< | 4.403 | 6.977 | 7.118 |
| 92 | 7.141 | 7.566>> | 2.129 | 2.554 |
| 92 | 4.351 | 4.335<< | 7.039 | 7.023 |
| 92 | 4.347 | 4.336 | 7.039>> | 7.028 |
| 92 | 7.146 | 7.565 | 2.129<< | 2.548 |
| 92 | 4.263 | 4.398 | 6.983 | 7.118>> |
| 92 | 7.263 | 7.448 | 2.246 | 2.431<< |

| BARRA 92 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 92 | 7.267>> | 7.446 | 2.274 | 2.453 |
| 92 | 4.265<< | 4.406 | 6.999 | 7.140 |
| 92 | 7.144 | 7.569>> | 2.151 | 2.576 |
| 92 | 4.354 | 4.339<< | 7.061 | 7.045 |
| 92 | 4.350 | 4.340 | 7.061>> | 7.051 |
| 92 | 7.149 | 7.568 | 2.151<< | 2.571 |
| 92 | 4.266 | 4.401 | 7.005 | 7.140>> |
| 92 | 7.266 | 7.451 | 2.268 | 2.453<< |
| 93 | 6.434>> | 6.591 | 3.601 | 3.758 |
| 93 | 4.013<< | 4.199 | 7.334 | 7.520 |
| 93 | 6.317 | 6.707>> | 3.485 | 3.875 |
| 93 | 4.083 | 4.115<< | 7.422 | 7.454 |
| 93 | 4.083 | 4.115 | 7.422>> | 7.454 |
| 93 | 6.317 | 6.707 | 3.485<< | 3.875 |
| 93 | 4.013 | 4.199 | 7.334 | 7.520>> |
| 93 | 6.434 | 6.591 | 3.601 | 3.758<< |

| BARRA 93 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 93 | 6.439>> | 6.596 | 3.618 | 3.775 |
| 93 | 4.019<< | 4.205 | 7.351 | 7.537 |
| 93 | 6.323 | 6.713>> | 3.502 | 3.892 |
| 93 | 4.089 | 4.121<< | 7.439 | 7.471 |
| 93 | 4.089 | 4.121 | 7.439>> | 7.471 |
| 93 | 6.323 | 6.713 | 3.502<< | 3.892 |
| 93 | 4.019 | 4.205 | 7.351 | 7.537>> |
| 93 | 6.439 | 6.596 | 3.618 | 3.775<< |
| 94 | 5.915>> | 5.538 | 5.118 | 4.741 |
| 94 | 3.291<< | 4.012 | 7.801 | 8.522 |
| 94 | 5.669 | 5.948>> | 4.662 | 4.941 |
| 94 | 3.704 | 3.600<< | 8.213 | 8.108 |
| 94 | 3.588 | 3.614 | 8.227>> | 8.253 |
| 94 | 5.677 | 5.948 | 4.660<< | 4.931 |
| 94 | 3.291 | 4.004 | 7.811 | 8.524>> |
| 94 | 5.914 | 5.546 | 5.108 | 4.740<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 94 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 94 | 5.923>> | 5.546 | 5.128 | 4.751 |
| 94 | 3.298<< | 4.020 | 7.812 | 8.533 |
| 94 | 5.676 | 5.956>> | 4.672 | 4.952 |
| 94 | 3.712 | 3.608<< | 8.223 | 8.119 |
| 94 | 3.596 | 3.622 | 8.238>> | 8.263 |
| 94 | 5.684 | 5.955 | 4.671<< | 4.942 |
| 94 | 3.299 | 4.012 | 7.822 | 8.535>> |
| 94 | 5.922 | 5.554 | 5.118 | 4.750<< |
| 95 | 5.675>> | 5.441 | 5.332 | 5.097 |
| 95 | 2.109<< | 2.703 | 9.828 | 10.421 |
| 95 | 5.110 | 5.509>> | 5.401 | 5.801 |
| 95 | 2.163 | 2.649<< | 9.881 | 10.368 |
| 95 | 2.162 | 2.649 | 9.881>> | 10.368 |
| 95 | 5.622 | 5.494 | 5.278<< | 5.150 |
| 95 | 2.109 | 2.702 | 9.828 | 10.421>> |
| 95 | 5.675 | 5.441 | 5.331 | 5.097<< |

| BARRA 95 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 95 | 5.389>> | 5.180 | 4.803 | 4.594 |
| 95 | 2.091<< | 2.582 | 8.263 | 8.754 |
| 95 | 5.347 | 5.222>> | 4.761 | 4.637 |
| 95 | 2.133 | 2.540<< | 8.305 | 8.712 |
| 95 | 2.133 | 2.540 | 8.305>> | 8.712 |
| 95 | 5.347 | 5.222 | 4.761<< | 4.636 |
| 95 | 2.091 | 2.582 | 8.263 | 8.754>> |
| 95 | 5.389 | 5.180 | 4.803 | 4.594<< |
| 96 | 6.368>> | 6.185 | 3.548 | 3.365 |
| 96 | 1.797<< | 2.257 | 8.691 | 9.151 |
| 96 | 6.354 | 6.199>> | 3.535 | 3.379 |
| 96 | 1.810 | 2.243<< | 8.705 | 9.138 |
| 96 | 1.810 | 2.243 | 8.705>> | 9.138 |
| 96 | 6.354 | 6.199 | 3.535<< | 3.379 |
| 96 | 1.797 | 2.257 | 8.691 | 9.151>> |
| 96 | 6.368 | 6.185 | 3.548 | 3.365<< |

| BARRA 96 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 96 | 6.531>> | 6.355 | 3.547 | 3.371 |
| 96 | 1.906<< | 2.395 | 8.635 | 9.125 |
| 96 | 6.518 | 6.369>> | 3.533 | 3.384 |
| 96 | 1.919 | 2.382<< | 8.649 | 9.111 |
| 96 | 1.919 | 2.382 | 8.649>> | 9.111 |
| 96 | 6.518 | 6.369 | 3.533<< | 3.384 |
| 96 | 1.906 | 2.395 | 8.635 | 9.125>> |
| 96 | 6.531 | 6.355 | 3.547 | 3.371<< |
| 97 | 5.732>> | 5.554 | 4.558 | 4.380 |
| 97 | -0.303<< | 0.179 | 11.432 | 11.914 |
| 97 | 5.720 | 5.567>> | 4.545 | 4.392 |
| 97 | -0.290 | 0.167<< | 11.445 | 11.901 |
| 97 | -0.290 | 0.167 | 11.445>> | 11.901 |
| 97 | 5.720 | 5.567 | 4.545<< | 4.392 |
| 97 | -0.303 | 0.179 | 11.432 | 11.914>> |
| 97 | 5.732 | 5.554 | 4.558 | 4.380<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 97 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 97 | 5.791>> | 5.612 | 4.541 | 4.363 |
| 97 | -0.244<< | 0.238 | 11.415 | 11.897 |
| 97 | 5.778 | 5.625>> | 4.529 | 4.376 |
| 97 | -0.232 | 0.225<< | 11.428 | 11.885 |
| 97 | -0.232 | 0.225 | 11.428>> | 11.885 |
| 97 | 5.778 | 5.625 | 4.529<< | 4.376 |
| 97 | -0.244 | 0.238 | 11.415 | 11.897>> |
| 97 | 5.791 | 5.612 | 4.541 | 4.363<< |
| 98 | 6.531>> | 6.334 | 3.628 | 3.431 |
| 98 | 1.882<< | 2.402 | 8.687 | 9.207 |
| 98 | 6.489 | 6.376>> | 3.586 | 3.473 |
| 98 | 1.924 | 2.361<< | 8.728 | 9.165 |
| 98 | 1.897 | 2.363 | 8.729>> | 9.195 |
| 98 | 6.516 | 6.373 | 3.585<< | 3.442 |
| 98 | 1.885 | 2.375 | 8.717 | 9.207>> |
| 98 | 6.528 | 6.361 | 3.597 | 3.430<< |

| BARRA 98 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 98 | 6.459>> | 6.267 | 3.599 | 3.407 |
| 98 | 1.862<< | 2.366 | 8.710 | 9.214 |
| 98 | 6.420 | 6.305>> | 3.561 | 3.445 |
| 98 | 1.900 | 2.328<< | 8.748 | 9.176 |
| 98 | 1.875 | 2.330 | 8.750>> | 9.205 |
| 98 | 6.445 | 6.304 | 3.558<< | 3.416 |
| 98 | 1.863 | 2.341 | 8.739 | 9.217>> |
| 98 | 6.457 | 6.292 | 3.570 | 3.404<< |
| 99 | 5.475>> | 5.193 | 4.955 | 4.673 |
| 99 | 1.979<< | 2.574 | 8.414 | 9.009 |
| 99 | 5.161 | 5.506>> | 4.643 | 4.988 |
| 99 | 2.203 | 2.276<< | 8.696 | 8.769 |
| 99 | 2.302 | 2.285 | 8.697>> | 8.681 |
| 99 | 5.161 | 5.506 | 4.643<< | 4.988 |
| 99 | 1.979 | 2.574 | 8.414 | 9.009>> |
| 99 | 5.449 | 5.271 | 4.847 | 4.669<< |

| BARRA 99 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 99 | 6.033>> | 5.680 | 5.315 | 4.962 |
| 99 | 2.255<< | 2.972 | 9.833 | 10.550 |
| 99 | 5.638 | 6.074>> | 4.922 | 5.357 |
| 99 | 2.659 | 2.603<< | 10.191 | 10.135 |
| 99 | 2.549 | 2.623 | 10.197>> | 10.270 |
| 99 | 5.638 | 6.074 | 4.922<< | 5.357 |
| 99 | 2.255 | 2.972 | 9.833 | 10.550>> |
| 99 | 6.033 | 5.680 | 5.315 | 4.962<< |
| 100 | 6.577>> | 6.803 | 3.728 | 3.954 |
| 100 | 3.161<< | 3.377 | 9.062 | 9.278 |
| 100 | 6.536 | 6.843>> | 3.687 | 3.994 |
| 100 | 3.251 | 3.319<< | 9.110 | 9.179 |
| 100 | 3.222 | 3.319 | 9.118>> | 9.215 |
| 100 | 6.565 | 6.843 | 3.680<< | 3.958 |
| 100 | 3.161 | 3.348 | 9.099 | 9.285>> |
| 100 | 6.577 | 6.831 | 3.691 | 3.946<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 100 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 100 | 6.598>> | 6.824 | 3.755 | 3.981 |
| 100 | 3.183<< | 3.398 | 9.090 | 9.305 |
| 100 | 6.558 | 6.865>> | 3.715 | 4.022 |
| 100 | 3.272 | 3.341<< | 9.138 | 9.206 |
| 100 | 3.244 | 3.341 | 9.146>> | 9.243 |
| 100 | 6.586 | 6.865 | 3.707<< | 3.985 |
| 100 | 3.183 | 3.369 | 9.126 | 9.313>> |
| 100 | 6.598 | 6.853 | 3.719 | 3.973<< |
| 101 | 7.334>> | 7.603 | 2.554 | 2.824 |
| 101 | 3.804<< | 3.976 | 8.177 | 8.349 |
| 101 | 7.323 | 7.614>> | 2.544 | 2.835 |
| 101 | 3.861 | 3.950<< | 8.195 | 8.284 |
| 101 | 3.861 | 3.950 | 8.195>> | 8.284 |
| 101 | 7.323 | 7.614 | 2.544<< | 2.835 |
| 101 | 3.804 | 3.976 | 8.177 | 8.349>> |
| 101 | 7.334 | 7.603 | 2.554 | 2.824<< |

| BARRA 101 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 101 | 7.353>> | 7.623 | 2.595 | 2.865 |
| 101 | 3.824<< | 3.996 | 8.218 | 8.389 |
| 101 | 7.343 | 7.634>> | 2.584 | 2.875 |
| 101 | 3.880 | 3.970<< | 8.236 | 8.325 |
| 101 | 3.880 | 3.970 | 8.236>> | 8.325 |
| 101 | 7.343 | 7.634 | 2.584<< | 2.875 |
| 101 | 3.824 | 3.996 | 8.218 | 8.389>> |
| 101 | 7.353 | 7.623 | 2.595 | 2.865<< |
| 102 | 8.128>> | 8.422 | 1.357 | 1.651 |
| 102 | 4.197<< | 4.339 | 7.675 | 7.817 |
| 102 | 8.119 | 8.431>> | 1.348 | 1.660 |
| 102 | 4.248 | 4.315<< | 7.691 | 7.758 |
| 102 | 4.248 | 4.315 | 7.691>> | 7.758 |
| 102 | 8.119 | 8.431 | 1.348<< | 1.660 |
| 102 | 4.197 | 4.339 | 7.675 | 7.817>> |
| 102 | 8.128 | 8.422 | 1.357 | 1.651<< |

| BARRA 102 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 102 | 8.142>> | 8.435 | 1.405 | 1.699 |
| 102 | 4.210<< | 4.352 | 7.723 | 7.865 |
| 102 | 8.132 | 8.445>> | 1.396 | 1.708 |
| 102 | 4.261 | 4.328<< | 7.739 | 7.806 |
| 102 | 4.261 | 4.328 | 7.739>> | 7.806 |
| 102 | 8.132 | 8.445 | 1.396<< | 1.708 |
| 102 | 4.210 | 4.352 | 7.723 | 7.865>> |
| 102 | 8.142 | 8.435 | 1.405 | 1.699<< |
| 103 | 8.781>> | 9.075 | 0.408 | 0.703 |
| 103 | 4.515<< | 4.644 | 7.265 | 7.394 |
| 103 | 8.772 | 9.084>> | 0.399 | 0.712 |
| 103 | 4.561 | 4.622<< | 7.280 | 7.340 |
| 103 | 4.561 | 4.622 | 7.280>> | 7.340 |
| 103 | 8.772 | 9.084 | 0.399<< | 0.712 |
| 103 | 4.515 | 4.644 | 7.265 | 7.394>> |
| 103 | 8.781 | 9.075 | 0.408 | 0.703<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 103 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 103 | 8.789>> | 9.083 | 0.461 | 0.755 |
| 103 | 4.523<< | 4.652 | 7.317 | 7.446 |
| 103 | 8.780 | 9.092>> | 0.452 | 0.764 |
| 103 | 4.570 | 4.630<< | 7.332 | 7.393 |
| 103 | 4.570 | 4.630 | 7.332>> | 7.393 |
| 103 | 8.780 | 9.092 | 0.452<< | 0.764 |
| 103 | 4.523 | 4.652 | 7.317 | 7.446>> |
| 103 | 8.789 | 9.083 | 0.461 | 0.755<< |
| 104 | 9.256>> | 9.546 | -0.261 | 0.028 |
| 104 | 4.800<< | 4.916 | 6.902 | 7.018 |
| 104 | 9.248 | 9.554>> | -0.269 | 0.037 |
| 104 | 4.842 | 4.897<< | 6.916 | 6.970 |
| 104 | 4.842 | 4.897 | 6.916>> | 6.970 |
| 104 | 9.248 | 9.554 | -0.269<< | 0.037 |
| 104 | 4.800 | 4.916 | 6.902 | 7.018>> |
| 104 | 9.256 | 9.546 | -0.261 | 0.028<< |

| BARRA 104 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 104 | 9.260>> | 9.550 | -0.222 | 0.067 |
| 104 | 4.804<< | 4.920 | 6.941 | 7.057 |
| 104 | 9.252 | 9.558>> | -0.231 | 0.075 |
| 104 | 4.846 | 4.900<< | 6.955 | 7.009 |
| 104 | 4.846 | 4.900 | 6.955>> | 7.009 |
| 104 | 9.252 | 9.558 | -0.231<< | 0.075 |
| 104 | 4.804 | 4.920 | 6.941 | 7.057>> |
| 104 | 9.260 | 9.550 | -0.222 | 0.067<< |
| 105 | 9.558>> | 9.838 | -0.674 | -0.395 |
| 105 | 5.057<< | 5.159 | 6.564 | 6.667 |
| 105 | 9.551 | 9.845>> | -0.681 | -0.388 |
| 105 | 5.094 | 5.142<< | 6.576 | 6.624 |
| 105 | 5.094 | 5.142 | 6.576>> | 6.624 |
| 105 | 9.551 | 9.845 | -0.681<< | -0.388 |
| 105 | 5.057 | 5.159 | 6.564 | 6.667>> |
| 105 | 9.558 | 9.838 | -0.674 | -0.395<< |

| BARRA 105 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 105 | 9.561>> | 9.840 | -0.704 | -0.424 |
| 105 | 5.060<< | 5.162 | 6.535 | 6.637 |
| 105 | 9.554 | 9.847>> | -0.711 | -0.417 |
| 105 | 5.097 | 5.145<< | 6.546 | 6.595 |
| 105 | 5.097 | 5.145 | 6.546>> | 6.595 |
| 105 | 9.554 | 9.847 | -0.711<< | -0.417 |
| 105 | 5.060 | 5.162 | 6.535 | 6.637>> |
| 105 | 9.561 | 9.840 | -0.704 | -0.424<< |
| 106 | 9.694>> | 9.956 | -0.889 | -0.626 |
| 106 | 5.291<< | 5.380 | 6.191 | 6.280 |
| 106 | 9.687 | 9.963>> | -0.895 | -0.620 |
| 106 | 5.323 | 5.365<< | 6.201 | 6.243 |
| 106 | 5.323 | 5.365 | 6.201>> | 6.243 |
| 106 | 9.687 | 9.963 | -0.895<< | -0.620 |
| 106 | 5.291 | 5.380 | 6.191 | 6.280>> |
| 106 | 9.694 | 9.956 | -0.889 | -0.626<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 106 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 106 | 9.694>> | 9.956 | -0.918 | -0.655 |
| 106 | 5.291<< | 5.380 | 6.162 | 6.251 |
| 106 | 9.687 | 9.963>> | -0.924 | -0.649 |
| 106 | 5.323 | 5.365<< | 6.173 | 6.214 |
| 106 | 5.323 | 5.365 | 6.173>> | 6.214 |
| 106 | 9.687 | 9.963 | -0.924<< | -0.649 |
| 106 | 5.291 | 5.380 | 6.162 | 6.251>> |
| 106 | 9.694 | 9.956 | -0.918 | -0.655<< |
| 107 | 9.612>> | 9.853 | -0.763 | -0.522 |
| 107 | 5.453<< | 5.529 | 5.927 | 6.003 |
| 107 | 9.607 | 9.858>> | -0.768 | -0.517 |
| 107 | 5.480 | 5.516<< | 5.936 | 5.971 |
| 107 | 5.480 | 5.516 | 5.936>> | 5.971 |
| 107 | 9.607 | 9.858 | -0.768<< | -0.517 |
| 107 | 5.453 | 5.529 | 5.927 | 6.003>> |
| 107 | 9.612 | 9.853 | -0.763 | -0.522<< |

| BARRA 107 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 107 | 9.609>> | 9.850 | -0.787 | -0.547 |
| 107 | 5.450<< | 5.526 | 5.902 | 5.978 |
| 107 | 9.604 | 9.855>> | -0.793 | -0.542 |
| 107 | 5.477 | 5.513<< | 5.911 | 5.947 |
| 107 | 5.477 | 5.513 | 5.911>> | 5.947 |
| 107 | 9.604 | 9.855 | -0.793<< | -0.542 |
| 107 | 5.450 | 5.526 | 5.902 | 5.978>> |
| 107 | 9.609 | 9.850 | -0.787 | -0.547<< |
| 108 | 9.267>> | 9.479 | -0.217 | -0.006 |
| 108 | 5.495<< | 5.557 | 5.849 | 5.912 |
| 108 | 9.263 | 9.483>> | -0.222 | -0.001 |
| 108 | 5.518 | 5.547<< | 5.857 | 5.886 |
| 108 | 5.518 | 5.547 | 5.857>> | 5.886 |
| 108 | 9.263 | 9.483 | -0.222<< | -0.001 |
| 108 | 5.495 | 5.557 | 5.849 | 5.912>> |
| 108 | 9.267 | 9.479 | -0.217 | -0.006<< |

| BARRA 108 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 108 | 9.263>> | 9.475 | -0.242 | -0.030 |
| 108 | 5.491<< | 5.554 | 5.825 | 5.887 |
| 108 | 9.259 | 9.479>> | -0.246 | -0.026 |
| 108 | 5.514 | 5.543<< | 5.832 | 5.861 |
| 108 | 5.514 | 5.543 | 5.832>> | 5.861 |
| 108 | 9.259 | 9.479 | -0.246<< | -0.026 |
| 108 | 5.491 | 5.554 | 5.825 | 5.887>> |
| 108 | 9.263 | 9.475 | -0.242 | -0.030<< |
| 109 | 8.661>> | 8.838 | 0.741 | 0.919 |
| 109 | 5.420<< | 5.469 | 5.953 | 6.002 |
| 109 | 8.657 | 8.841>> | 0.738 | 0.922 |
| 109 | 5.438 | 5.461<< | 5.959 | 5.982 |
| 109 | 5.438 | 5.461 | 5.959>> | 5.982 |
| 109 | 8.657 | 8.841 | 0.738<< | 0.922 |
| 109 | 5.420 | 5.469 | 5.953 | 6.002>> |
| 109 | 8.661 | 8.838 | 0.741 | 0.919<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 109 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 109 | 8.656>> | 8.834 | 0.717 | 0.895 |
| 109 | 5.416<< | 5.465 | 5.929 | 5.978 |
| 109 | 8.653 | 8.837>> | 0.714 | 0.898 |
| 109 | 5.434 | 5.457<< | 5.935 | 5.958 |
| 109 | 5.434 | 5.457 | 5.935>> | 5.958 |
| 109 | 8.653 | 8.837 | 0.714<< | 0.898 |
| 109 | 5.416 | 5.465 | 5.929 | 5.978>> |
| 109 | 8.656 | 8.834 | 0.717 | 0.895<< |
| 110 | 7.791>> | 7.928 | 2.117 | 2.254 |
| 110 | 5.226<< | 5.262 | 6.241 | 6.277 |
| 110 | 7.788 | 7.930>> | 2.115 | 2.257 |
| 110 | 5.240 | 5.256<< | 6.245 | 6.262 |
| 110 | 5.240 | 5.256 | 6.245>> | 6.262 |
| 110 | 7.788 | 7.930 | 2.115<< | 2.257 |
| 110 | 5.226 | 5.262 | 6.241 | 6.277>> |
| 110 | 7.791 | 7.928 | 2.117 | 2.254<< |

| BARRA 110 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 110 | 7.785>> | 7.922 | 2.094 | 2.231 |
| 110 | 5.221<< | 5.257 | 6.217 | 6.253 |
| 110 | 7.783 | 7.925>> | 2.092 | 2.233 |
| 110 | 5.234 | 5.251<< | 6.222 | 6.238 |
| 110 | 5.234 | 5.251 | 6.222>> | 6.238 |
| 110 | 7.783 | 7.925 | 2.092<< | 2.233 |
| 110 | 5.221 | 5.257 | 6.217 | 6.253>> |
| 110 | 7.785 | 7.922 | 2.094 | 2.231<< |
| 111 | 6.658>> | 6.748 | 3.910 | 4.000 |
| 111 | 4.913<< | 4.936 | 6.714 | 6.736 |
| 111 | 6.656 | 6.749>> | 3.909 | 4.002 |
| 111 | 4.922 | 4.932<< | 6.716 | 6.727 |
| 111 | 4.922 | 4.932 | 6.716>> | 6.727 |
| 111 | 6.656 | 6.749 | 3.909<< | 4.002 |
| 111 | 4.913 | 4.936 | 6.714 | 6.736>> |
| 111 | 6.658 | 6.748 | 3.910 | 4.000<< |

| BARRA 111 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 111 | 6.651>> | 6.741 | 3.888 | 3.979 |
| 111 | 4.907<< | 4.929 | 6.692 | 6.715 |
| 111 | 6.649 | 6.743>> | 3.887 | 3.980 |
| 111 | 4.915 | 4.925<< | 6.695 | 6.705 |
| 111 | 4.915 | 4.925 | 6.695>> | 6.705 |
| 111 | 6.649 | 6.743 | 3.887<< | 3.980 |
| 111 | 4.907 | 4.929 | 6.692 | 6.715>> |
| 111 | 6.651 | 6.741 | 3.888 | 3.979<< |
| 112 | 5.260>> | 5.298 | 6.122 | 6.159 |
| 112 | 4.481<< | 4.490 | 7.372 | 7.382 |
| 112 | 5.260 | 5.298>> | 6.121 | 6.160 |
| 112 | 4.484 | 4.488<< | 7.373 | 7.378 |
| 112 | 4.484 | 4.488 | 7.373>> | 7.378 |
| 112 | 5.260 | 5.298 | 6.121<< | 6.160 |
| 112 | 4.481 | 4.490 | 7.372 | 7.382>> |
| 112 | 5.260 | 5.298 | 6.122 | 6.159<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.IPF(t=inf)(1.00*G+0.4*LEV+0.90*P+0.8*SC+0.5*GT)

| BARRA 112 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 112 | 4.064>> | 4.053 | 4.780 | 4.769 |
| 112 | 3.265<< | 3.258 | 5.682 | 5.676 |
| 112 | 4.063 | 4.054>> | 4.779 | 4.769 |
| 112 | 3.265 | 3.258<< | 5.683 | 5.675 |
| 112 | 3.265 | 3.258 | 5.683>> | 5.675 |
| 112 | 4.063 | 4.054 | 4.779<< | 4.769 |
| 112 | 3.265 | 3.258 | 5.682 | 5.676>> |
| 112 | 4.064 | 4.053 | 4.780 | 4.769<< |
| 113 | 3.753>> | 3.627 | 5.282 | 5.156 |
| 113 | 3.645<< | 3.713 | 5.174 | 5.241 |
| 113 | 3.658 | 3.722>> | 5.187 | 5.250 |
| 113 | 3.740 | 3.618<< | 5.268 | 5.147 |
| 113 | 3.753 | 3.627 | 5.282>> | 5.156 |
| 113 | 3.645 | 3.713 | 5.174<< | 5.241 |
| 113 | 3.658 | 3.722 | 5.187 | 5.250>> |
| 113 | 3.740 | 3.618 | 5.268 | 5.147<< |

TITULO
=======
LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.40*LEV+1.00*P+0.8*SC+0.5*GT)

FICHERO DE GEOMETRIA COMPLETA
==============================
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
================================
1

| Fich | Num. Nudos | Num. barras | Num. hipotesis | NOMBRE FICHERO |
|---|---|---|---|---|
| 1 | 120 | 119 | 161 | ESFec.TXT |

| Fich | Hipotesis | Caracter | Coeficiente |
|---|---|---|---|
| 1 | 1 | 1 | 1.0 |
| 1 | 2 | 1 | 0.4 |
| 1 | 3 | 1 | 1.0 |
| 1 | 4 | 3 | 1.0 |
| 1 | 5 | 3 | 1.0 |
| 1 | 6 | 3 | 1.0 |
| 1 | 7 | 2 | 0.5 |
| 1 | 8 | 2 | 0.5 |
| 1 | 9 | 2 | 0.5 |
| 1 | 10 | 2 | 0.5 |
| 1 | 11 | 2 | 0.5 |
| 1 | 12 | 2 | 0.5 |
| 1 | 13 | 2 | 0.5 |
| 1 | 14 | 2 | 0.5 |
| 1 | 15 | 2 | 0.5 |
| 1 | 16 | 2 | 0.5 |
| 1 | 17 | 2 | 0.5 |
| 1 | 18 | 2 | 0.5 |
| 1 | 19 | 4 | 0.8 |
| 1 | 20 | 5 | 0.8 |
| 1 | 21 | 4 | 0.8 |
| 1 | 22 | 5 | 0.8 |
| 1 | 23 | 4 | 0.8 |
| 1 | 24 | 5 | 0.8 |
| 1 | 25 | 4 | 0.8 |
| 1 | 26 | 5 | 0.8 |
| 1 | 27 | 4 | 0.8 |
| 1 | 28 | 5 | 0.8 |
| 1 | 29 | 4 | 0.8 |
| 1 | 30 | 5 | 0.8 |
| 1 | 31 | 4 | 0.8 |
| 1 | 32 | 5 | 0.8 |
| 1 | 33 | 4 | 0.8 |
| 1 | 34 | 5 | 0.8 |
| 1 | 35 | 4 | 0.8 |
| 1 | 36 | 5 | 0.8 |
| 1 | 37 | 4 | 0.8 |
| 1 | 38 | 5 | 0.8 |
| 1 | 39 | 4 | 0.8 |
| 1 | 40 | 5 | 0.8 |
| 1 | 41 | 6 | 0.8 |
| 1 | 42 | 7 | 0.8 |
| 1 | 43 | 6 | 0.8 |
| 1 | 44 | 7 | 0.8 |
| 1 | 45 | 6 | 0.8 |
| 1 | 46 | 7 | 0.8 |
| 1 | 47 | 6 | 0.8 |
| 1 | 48 | 7 | 0.8 |
| 1 | 49 | 6 | 0.8 |
| 1 | 50 | 7 | 0.8 |
| 1 | 51 | 6 | 0.8 |
| 1 | 52 | 7 | 0.8 |
| 1 | 53 | 6 | 0.8 |
| 1 | 54 | 7 | 0.8 |
| 1 | 55 | 6 | 0.8 |
| 1 | 56 | 7 | 0.8 |
| 1 | 57 | 6 | 0.8 |
| 1 | 58 | 7 | 0.8 |
| 1 | 59 | 6 | 0.8 |
| 1 | 60 | 7 | 0.8 |
| 1 | 61 | 6 | 0.8 |
| 1 | 62 | 7 | 0.8 |
| 1 | 63 | 6 | 0.8 |
| 1 | 64 | 7 | 0.8 |
| 1 | 65 | 6 | 0.8 |
| 1 | 66 | 7 | 0.8 |
| 1 | 67 | 6 | 0.8 |
| 1 | 68 | 7 | 0.8 |
| 1 | 69 | 6 | 0.8 |
| 1 | 70 | 7 | 0.8 |
| 1 | 71 | 6 | 0.8 |
| 1 | 72 | 7 | 0.8 |
| 1 | 73 | 6 | 0.8 |
| 1 | 74 | 7 | 0.8 |
| 1 | 75 | 6 | 0.8 |
| 1 | 76 | 7 | 0.8 |
| 1 | 77 | 6 | 0.8 |
| 1 | 78 | 7 | 0.8 |
| 1 | 79 | 6 | 0.8 |
| 1 | 80 | 7 | 0.8 |
| 1 | 81 | 6 | 0.8 |
| 1 | 82 | 7 | 0.8 |
| 1 | 83 | 6 | 0.8 |
| 1 | 84 | 7 | 0.8 |
| 1 | 85 | 6 | 0.8 |
| 1 | 86 | 7 | 0.8 |
| 1 | 87 | 6 | 0.8 |
| 1 | 88 | 7 | 0.8 |
| 1 | 89 | 6 | 0.8 |
| 1 | 90 | 7 | 0.8 |
| 1 | 91 | 6 | 0.8 |
| 1 | 92 | 7 | 0.8 |
| 1 | 93 | 6 | 0.8 |
| 1 | 94 | 7 | 0.8 |
| 1 | 95 | 6 | 0.8 |
| 1 | 96 | 7 | 0.8 |
| 1 | 97 | 8 | 0.0 |
| 1 | 98 | 9 | 0.0 |
| 1 | 99 | 8 | 0.0 |
| 1 | 100 | 9 | 0.0 |
| 1 | 101 | 8 | 0.0 |
| 1 | 102 | 9 | 0.0 |
| 1 | 103 | 8 | 0.0 |
| 1 | 104 | 9 | 0.0 |
| 1 | 105 | 8 | 0.0 |
| 1 | 106 | 9 | 0.0 |
| 1 | 107 | 8 | 0.0 |
| 1 | 108 | 9 | 0.0 |
| 1 | 109 | 8 | 0.0 |
| 1 | 110 | 9 | 0.0 |

| | | | |
|---|---|---|---|
| 1 | 111 | 8 | 0.0 |
| 1 | 112 | 9 | 0.0 |
| 1 | 113 | 8 | 0.0 |
| 1 | 114 | 9 | 0.0 |
| 1 | 115 | 8 | 0.0 |
| 1 | 116 | 9 | 0.0 |
| 1 | 117 | 8 | 0.0 |
| 1 | 118 | 9 | 0.0 |
| 1 | 119 | 10 | 0.0 |
| 1 | 120 | 10 | 0.0 |
| 1 | 121 | 10 | 0.0 |
| 1 | 122 | 10 | 0.0 |
| 1 | 123 | 10 | 0.0 |
| 1 | 124 | 10 | 0.0 |
| 1 | 125 | 10 | 0.0 |
| 1 | 126 | 10 | 0.0 |
| 1 | 127 | 10 | 0.0 |
| 1 | 128 | 10 | 0.0 |
| 1 | 129 | 10 | 0.0 |
| 1 | 130 | 10 | 0.0 |
| 1 | 131 | 10 | 0.0 |
| 1 | 132 | 10 | 0.0 |
| 1 | 133 | 10 | 0.0 |
| 1 | 134 | 10 | 0.0 |
| 1 | 135 | 10 | 0.0 |
| 1 | 136 | 10 | 0.0 |
| 1 | 137 | 10 | 0.0 |
| 1 | 138 | 10 | 0.0 |
| 1 | 139 | 10 | 0.0 |
| 1 | 140 | 10 | 0.0 |
| 1 | 141 | 2 | 0.5 |
| 1 | 142 | 1 | 20.433 |
| 1 | 143 | 1 | 2.919 |
| 1 | 144 | 1 | 2.919 |
| 1 | 145 | 1 | 11.676 |
| 1 | 146 | 1 | 2.919 |
| 1 | 147 | 1 | 2.919 |
| 1 | 148 | 1 | 6.464 |
| 1 | 149 | 1 | 6.464 |
| 1 | 150 | 1 | 6.464 |
| 1 | 151 | 1 | 6.464 |
| 1 | 152 | 1 | 6.464 |
| 1 | 153 | 1 | 6.464 |
| 1 | 154 | 1 | 6.464 |
| 1 | 155 | 1 | 6.464 |
| 1 | 156 | 1 | 6.464 |
| 1 | 157 | 1 | 6.464 |
| 1 | 158 | 1 | 6.464 |
| 1 | 159 | 1 | 6.464 |
| 1 | 160 | 1 | 6.464 |
| 1 | 161 | 1 | 6.464 |

PONDERACION DE TENSIONES

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 1 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 1 | 6.163>> | 6.057 | 5.628 | 5.521 |
| 1 | 6.068<< | 6.130 | 5.532 | 5.594 |
| 1 | 6.081 | 6.139>> | 5.545 | 5.603 |
| 1 | 6.149 | 6.048<< | 5.613 | 5.512 |
| 1 | 6.163 | 6.057 | 5.628>> | 5.521 |
| 1 | 6.068 | 6.130 | 5.532<< | 5.594 |
| 1 | 6.081 | 6.139 | 5.545 | 5.603>> |
| 1 | 6.149 | 6.048 | 5.613 | 5.512<< |
| 2 | 6.014>> | 6.005 | 5.718 | 5.709 |
| 2 | 5.282<< | 5.279 | 6.545 | 6.542 |
| 2 | 6.012 | 6.007>> | 5.717 | 5.711 |
| 2 | 5.284 | 5.277<< | 6.547 | 6.540 |
| 2 | 5.282 | 5.277 | 6.547>> | 6.541 |
| 2 | 6.013 | 6.006 | 5.717<< | 5.710 |
| 2 | 5.282 | 5.278 | 6.546 | 6.542>> |
| 2 | 6.014 | 6.006 | 5.717 | 5.709<< |

| BARRA 2 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 2 | 7.716>> | 7.742 | 7.374 | 7.399 |
| 2 | 6.999<< | 7.004 | 8.518 | 8.523 |
| 2 | 7.716 | 7.743>> | 7.373 | 7.400 |
| 2 | 6.999 | 7.003<< | 8.519 | 8.523 |
| 2 | 6.999 | 7.003 | 8.519>> | 8.523 |
| 2 | 7.716 | 7.743 | 7.373<< | 7.400 |
| 2 | 6.999 | 7.004 | 8.518 | 8.523>> |
| 2 | 7.716 | 7.742 | 7.374 | 7.399<< |
| 3 | 8.833>> | 8.896 | 5.586 | 5.649 |
| 3 | 7.265<< | 7.277 | 8.095 | 8.107 |
| 3 | 8.832 | 8.898>> | 5.585 | 5.651 |
| 3 | 7.266 | 7.275<< | 8.097 | 8.106 |
| 3 | 7.266 | 7.275 | 8.097>> | 8.106 |
| 3 | 8.832 | 8.898 | 5.585<< | 5.651 |
| 3 | 7.265 | 7.277 | 8.095 | 8.107>> |
| 3 | 8.833 | 8.896 | 5.586 | 5.649<< |

| BARRA 3 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 3 | 8.844>> | 8.907 | 5.617 | 5.680 |
| 3 | 7.275<< | 7.288 | 8.125 | 8.137 |
| 3 | 8.843 | 8.909>> | 5.615 | 5.681 |
| 3 | 7.277 | 7.286<< | 8.127 | 8.136 |
| 3 | 7.277 | 7.286 | 8.127>> | 8.136 |
| 3 | 8.843 | 8.909 | 5.615<< | 5.681 |
| 3 | 7.275 | 7.288 | 8.125 | 8.137>> |
| 3 | 8.844 | 8.907 | 5.617 | 5.680<< |
| 4 | 9.741>> | 9.843 | 4.170 | 4.272 |
| 4 | 7.460<< | 7.480 | 7.828 | 7.847 |
| 4 | 9.739 | 9.845>> | 4.168 | 4.274 |
| 4 | 7.463 | 7.477<< | 7.830 | 7.845 |
| 4 | 7.463 | 7.477 | 7.830>> | 7.845 |
| 4 | 9.739 | 9.845 | 4.168<< | 4.274 |
| 4 | 7.460 | 7.480 | 7.828 | 7.847>> |
| 4 | 9.741 | 9.843 | 4.170 | 4.272<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 4 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 4 | 9.750>> | 9.851 | 4.203 | 4.305 |
| 4 | 7.469<< | 7.489 | 7.861 | 7.880 |
| 4 | 9.748 | 9.854>> | 4.201 | 4.307 |
| 4 | 7.472 | 7.486<< | 7.863 | 7.878 |
| 4 | 7.472 | 7.486 | 7.863>> | 7.878 |
| 4 | 9.748 | 9.854 | 4.201<< | 4.307 |
| 4 | 7.469 | 7.489 | 7.861 | 7.880>> |
| 4 | 9.750 | 9.851 | 4.203 | 4.305<< |
| 5 | 10.489>> | 10.623 | 3.011 | 3.144 |
| 5 | 7.577<< | 7.604 | 7.684 | 7.710 |
| 5 | 10.486 | 10.626>> | 3.007 | 3.147 |
| 5 | 7.580 | 7.600<< | 7.687 | 7.707 |
| 5 | 7.580 | 7.600 | 7.687>> | 7.707 |
| 5 | 10.486 | 10.626 | 3.007<< | 3.147 |
| 5 | 7.577 | 7.604 | 7.684 | 7.710>> |
| 5 | 10.489 | 10.623 | 3.011 | 3.144<< |

| BARRA 5 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 5 | 10.496>> | 10.630 | 3.045 | 3.178 |
| 5 | 7.584<< | 7.611 | 7.718 | 7.744 |
| 5 | 10.493 | 10.633>> | 3.041 | 3.182 |
| 5 | 7.587 | 7.607<< | 7.721 | 7.741 |
| 5 | 7.587 | 7.607 | 7.721>> | 7.741 |
| 5 | 10.493 | 10.633 | 3.041<< | 3.182 |
| 5 | 7.584 | 7.611 | 7.718 | 7.744>> |
| 5 | 10.496 | 10.630 | 3.045 | 3.178<< |
| 6 | 11.044>> | 11.207 | 2.154 | 2.316 |
| 6 | 7.613<< | 7.647 | 7.663 | 7.697 |
| 6 | 11.040 | 11.211>> | 2.150 | 2.320 |
| 6 | 7.617 | 7.643<< | 7.667 | 7.693 |
| 6 | 7.617 | 7.643 | 7.667>> | 7.693 |
| 6 | 11.040 | 11.211 | 2.150<< | 2.320 |
| 6 | 7.613 | 7.647 | 7.663 | 7.697>> |
| 6 | 11.044 | 11.207 | 2.154 | 2.316<< |

| BARRA 6 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 6 | 11.050>> | 11.212 | 2.189 | 2.352 |
| 6 | 7.619<< | 7.653 | 7.699 | 7.732 |
| 6 | 11.046 | 11.217>> | 2.185 | 2.356 |
| 6 | 7.623 | 7.648<< | 7.703 | 7.728 |
| 6 | 7.623 | 7.648 | 7.703>> | 7.728 |
| 6 | 11.046 | 11.217 | 2.185<< | 2.356 |
| 6 | 7.619 | 7.653 | 7.699 | 7.732>> |
| 6 | 11.050 | 11.212 | 2.189 | 2.352<< |
| 7 | 11.382>> | 11.569 | 1.640 | 1.827 |
| 7 | 7.572<< | 7.613 | 7.762 | 7.804 |
| 7 | 11.377 | 11.574>> | 1.635 | 1.832 |
| 7 | 7.577 | 7.608<< | 7.768 | 7.798 |
| 7 | 7.577 | 7.608 | 7.768>> | 7.798 |
| 7 | 11.377 | 11.574 | 1.635<< | 1.832 |
| 7 | 7.572 | 7.613 | 7.762 | 7.804>> |
| 7 | 11.382 | 11.569 | 1.640 | 1.827<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 7 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 7 | 11.387>> | 11.574 | 1.675 | 1.862 |
| 7 | 7.577<< | 7.618 | 7.798 | 7.839 |
| 7 | 11.382 | 11.579>> | 1.670 | 1.867 |
| 7 | 7.582 | 7.613<< | 7.803 | 7.834 |
| 7 | 7.582 | 7.613 | 7.803>> | 7.834 |
| 7 | 11.382 | 11.579 | 1.670<< | 1.867 |
| 7 | 7.577 | 7.618 | 7.798 | 7.839>> |
| 7 | 11.387 | 11.574 | 1.675 | 1.862<< |
| 8 | 11.469>> | 11.674 | 1.525 | 1.729 |
| 8 | 7.455<< | 7.503 | 7.979 | 8.027 |
| 8 | 11.463 | 11.680>> | 1.519 | 1.735 |
| 8 | 7.461 | 7.497<< | 7.985 | 8.021 |
| 8 | 7.461 | 7.497 | 7.985>> | 8.021 |
| 8 | 11.463 | 11.680 | 1.519<< | 1.735 |
| 8 | 7.455 | 7.503 | 7.979 | 8.027>> |
| 8 | 11.469 | 11.674 | 1.525 | 1.729<< |

| BARRA 8 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 8 | 11.475>> | 11.679 | 1.565 | 1.769 |
| 8 | 7.460<< | 7.508 | 8.019 | 8.067 |
| 8 | 11.468 | 11.685>> | 1.559 | 1.776 |
| 8 | 7.466 | 7.502<< | 8.025 | 8.061 |
| 8 | 7.466 | 7.502 | 8.025>> | 8.061 |
| 8 | 11.468 | 11.685 | 1.559<< | 1.776 |
| 8 | 7.460 | 7.508 | 8.019 | 8.067>> |
| 8 | 11.475 | 11.679 | 1.565 | 1.769<< |
| 9 | 11.373>> | 11.594 | 1.702 | 1.923 |
| 9 | 7.288<< | 7.344 | 8.276 | 8.332 |
| 9 | 11.366 | 11.601>> | 1.695 | 1.930 |
| 9 | 7.295 | 7.337<< | 8.283 | 8.325 |
| 9 | 7.295 | 7.337 | 8.283>> | 8.325 |
| 9 | 11.366 | 11.601 | 1.695<< | 1.930 |
| 9 | 7.288 | 7.344 | 8.276 | 8.332>> |
| 9 | 11.373 | 11.594 | 1.702 | 1.923<< |

| BARRA 9 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 9 | 11.371>> | 11.591 | 1.699 | 1.919 |
| 9 | 7.286<< | 7.341 | 8.273 | 8.329 |
| 9 | 11.364 | 11.598>> | 1.692 | 1.926 |
| 9 | 7.293 | 7.334<< | 8.280 | 8.322 |
| 9 | 7.293 | 7.334 | 8.280>> | 8.322 |
| 9 | 11.364 | 11.598 | 1.692<< | 1.926 |
| 9 | 7.286 | 7.341 | 8.273 | 8.329>> |
| 9 | 11.371 | 11.591 | 1.699 | 1.919<< |
| 10 | 11.103>> | 11.332 | 2.105 | 2.334 |
| 10 | 7.094<< | 7.156 | 8.563 | 8.626 |
| 10 | 11.095 | 11.340>> | 2.097 | 2.342 |
| 10 | 7.101 | 7.149<< | 8.571 | 8.618 |
| 10 | 7.101 | 7.149 | 8.571>> | 8.618 |
| 10 | 11.095 | 11.340 | 2.097<< | 2.342 |
| 10 | 7.094 | 7.156 | 8.563 | 8.626>> |
| 10 | 11.103 | 11.332 | 2.105 | 2.334<< |

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| BARRA 10 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 10 | 11.095>> | 11.324 | 2.080 | 2.309 |
| 10 | 7.086<< | 7.149 | 8.538 | 8.601 |
| 10 | 11.087 | 11.332>> | 2.072 | 2.317 |
| 10 | 7.094 | 7.141<< | 8.546 | 8.593 |
| 10 | 7.094 | 7.141 | 8.546>> | 8.593 |
| 10 | 11.087 | 11.332 | 2.072<< | 2.317 |
| 10 | 7.086 | 7.149 | 8.538 | 8.601>> |
| 10 | 11.095 | 11.324 | 2.080 | 2.309<< |
| 11 | 10.631>> | 10.863 | 2.799 | 3.031 |
| 11 | 6.872<< | 6.942 | 8.862 | 8.932 |
| 11 | 10.622 | 10.872>> | 2.791 | 3.040 |
| 11 | 6.880 | 6.933<< | 8.871 | 8.924 |
| 11 | 6.880 | 6.933 | 8.871>> | 8.924 |
| 11 | 10.622 | 10.872 | 2.791<< | 3.040 |
| 11 | 6.872 | 6.942 | 8.862 | 8.932>> |
| 11 | 10.631 | 10.863 | 2.799 | 3.031<< |

| BARRA 11 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 11 | 10.622>> | 10.853 | 2.775 | 3.006 |
| 11 | 6.862<< | 6.932 | 8.838 | 8.908 |
| 11 | 10.613 | 10.862>> | 2.766 | 3.015 |
| 11 | 6.871 | 6.923<< | 8.847 | 8.899 |
| 11 | 6.871 | 6.923 | 8.847>> | 8.899 |
| 11 | 10.613 | 10.862 | 2.766<< | 3.015 |
| 11 | 6.862 | 6.932 | 8.838 | 8.908>> |
| 11 | 10.622 | 10.853 | 2.775 | 3.006<< |
| 12 | 10.006>> | 10.236 | 3.736 | 3.966 |
| 12 | 6.622<< | 6.699 | 9.203 | 9.280 |
| 12 | 9.996 | 10.245>> | 3.726 | 3.976 |
| 12 | 6.631 | 6.689<< | 9.213 | 9.270 |
| 12 | 6.631 | 6.689 | 9.213>> | 9.270 |
| 12 | 9.996 | 10.245 | 3.726<< | 3.976 |
| 12 | 6.622 | 6.699 | 9.203 | 9.280>> |
| 12 | 10.006 | 10.236 | 3.736 | 3.966<< |

| BARRA 12 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 12 | 9.549>> | 9.780 | 2.710 | 2.940 |
| 12 | 6.166<< | 6.243 | 8.177 | 8.254 |
| 12 | 9.540 | 9.789>> | 2.701 | 2.950 |
| 12 | 6.175 | 6.233<< | 8.187 | 8.245 |
| 12 | 6.175 | 6.233 | 8.187>> | 8.245 |
| 12 | 9.540 | 9.789 | 2.701<< | 2.950 |
| 12 | 6.166 | 6.243 | 8.177 | 8.254>> |
| 12 | 9.549 | 9.780 | 2.710 | 2.940<< |
| 13 | 8.833>> | 9.051 | 3.843 | 4.060 |
| 13 | 5.858<< | 5.951 | 8.637 | 8.729 |
| 13 | 8.822 | 9.061>> | 3.832 | 4.071 |
| 13 | 5.869 | 5.940<< | 8.647 | 8.718 |
| 13 | 5.869 | 5.940 | 8.647>> | 8.718 |
| 13 | 8.822 | 9.061 | 3.832<< | 4.071 |
| 13 | 5.858 | 5.951 | 8.637 | 8.729>> |
| 13 | 8.833 | 9.051 | 3.843 | 4.060<< |

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| BARRA 13 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 13 | 8.816>> | 9.033 | 3.823 | 4.041 |
| 13 | 5.841<< | 5.933 | 8.617 | 8.710 |
| 13 | 8.805 | 9.044>> | 3.813 | 4.051 |
| 13 | 5.851 | 5.923<< | 8.628 | 8.699 |
| 13 | 5.851 | 5.923 | 8.628>> | 8.699 |
| 13 | 8.805 | 9.044 | 3.813<< | 4.051 |
| 13 | 5.841 | 5.933 | 8.617 | 8.710>> |
| 13 | 8.816 | 9.033 | 3.823 | 4.041<< |
| 14 | 8.421>> | 8.004 | 5.250 | 4.832 |
| 14 | 5.291<< | 5.392 | 9.463 | 9.564 |
| 14 | 8.094 | 8.495>> | 4.712 | 5.113 |
| 14 | 5.303 | 5.380<< | 9.475 | 9.552 |
| 14 | 5.303 | 5.380 | 9.475>> | 9.552 |
| 14 | 8.243 | 8.491 | 4.676<< | 4.924 |
| 14 | 5.291 | 5.392 | 9.463 | 9.564>> |
| 14 | 8.413 | 8.177 | 5.030 | 4.794<< |

| BARRA 14 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 14 | 8.398>> | 7.981 | 5.236 | 4.819 |
| 14 | 5.268<< | 5.369 | 9.450 | 9.550 |
| 14 | 8.071 | 8.472>> | 4.699 | 5.100 |
| 14 | 5.280 | 5.357<< | 9.461 | 9.539 |
| 14 | 5.280 | 5.357 | 9.461>> | 9.539 |
| 14 | 8.220 | 8.468 | 4.663<< | 4.911 |
| 14 | 5.268 | 5.369 | 9.450 | 9.550>> |
| 14 | 8.390 | 8.154 | 5.017 | 4.781<< |
| 15 | 8.107>> | 7.793 | 5.558 | 5.244 |
| 15 | 4.520<< | 4.942 | 10.204 | 10.626 |
| 15 | 7.635 | 8.084>> | 5.318 | 5.766 |
| 15 | 4.758 | 4.706<< | 10.440 | 10.388 |
| 15 | 4.758 | 4.706 | 10.440>> | 10.388 |
| 15 | 8.043 | 8.004 | 5.306<< | 5.267 |
| 15 | 4.520 | 4.942 | 10.204 | 10.626>> |
| 15 | 8.105 | 7.889 | 5.436 | 5.219<< |

| BARRA 15 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 15 | 7.474>> | 7.285 | 4.936 | 4.747 |
| 15 | 4.135<< | 4.480 | 8.599 | 8.944 |
| 15 | 7.075 | 7.440>> | 4.832 | 5.197 |
| 15 | 4.319 | 4.297<< | 8.782 | 8.759 |
| 15 | 4.319 | 4.297 | 8.782>> | 8.759 |
| 15 | 7.422 | 7.387 | 4.828<< | 4.793 |
| 15 | 4.135 | 4.480 | 8.599 | 8.944>> |
| 15 | 7.474 | 7.285 | 4.936 | 4.747<< |
| 16 | 8.647>> | 8.495 | 3.424 | 3.271 |
| 16 | 4.426<< | 4.669 | 8.384 | 8.627 |
| 16 | 8.569 | 8.533>> | 3.396 | 3.360 |
| 16 | 4.437 | 4.658<< | 8.395 | 8.616 |
| 16 | 4.437 | 4.658 | 8.395>> | 8.616 |
| 16 | 8.569 | 8.533 | 3.396<< | 3.360 |
| 16 | 4.426 | 4.669 | 8.384 | 8.627>> |
| 16 | 8.647 | 8.495 | 3.424 | 3.271<< |

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| BARRA | | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|---|
| | 16 | 8.733>> | 8.553 | 3.468 | 3.288 |
| | 16 | 4.471<< | 4.750 | 8.331 | 8.610 |
| | 16 | 8.622 | 8.619>> | 3.408 | 3.405 |
| | 16 | 4.510 | 4.711<< | 8.370 | 8.571 |
| | 16 | 4.484 | 4.712 | 8.372>> | 8.601 |
| | 16 | 8.648 | 8.618 | 3.406<< | 3.376 |
| | 16 | 4.472 | 4.724 | 8.360 | 8.612>> |
| | 16 | 8.732 | 8.579 | 3.439 | 3.286<< |
| | 17 | 7.962>> | 7.799 | 4.423 | 4.260 |
| | 17 | 2.576<< | 2.822 | 10.761 | 11.008 |
| | 17 | 7.949 | 7.811>> | 4.411 | 4.272 |
| | 17 | 2.588 | 2.809<< | 10.774 | 10.995 |
| | 17 | 2.588 | 2.809 | 10.774>> | 10.995 |
| | 17 | 7.949 | 7.811 | 4.411<< | 4.272 |
| | 17 | 2.576 | 2.822 | 10.761 | 11.008>> |
| | 17 | 7.962 | 7.799 | 4.423 | 4.260<< |

| BARRA | | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|---|
| | 17 | 7.900>> | 7.737 | 4.427 | 4.264 |
| | 17 | 2.514<< | 2.760 | 10.765 | 11.011 |
| | 17 | 7.888 | 7.749>> | 4.414 | 4.276 |
| | 17 | 2.527 | 2.748<< | 10.778 | 10.999 |
| | 17 | 2.527 | 2.748 | 10.778>> | 10.999 |
| | 17 | 7.888 | 7.749 | 4.414<< | 4.276 |
| | 17 | 2.514 | 2.760 | 10.765 | 11.011>> |
| | 17 | 7.900 | 7.737 | 4.427 | 4.264<< |
| | 18 | 8.591>> | 8.326 | 3.669 | 3.405 |
| | 18 | 4.493<< | 4.764 | 8.238 | 8.509 |
| | 18 | 8.496 | 8.457>> | 3.534 | 3.495 |
| | 18 | 4.800 | 4.713<< | 8.256 | 8.169 |
| | 18 | 4.800 | 4.713 | 8.256>> | 8.169 |
| | 18 | 8.496 | 8.457 | 3.534<< | 3.495 |
| | 18 | 4.493 | 4.764 | 8.238 | 8.509>> |
| | 18 | 8.591 | 8.326 | 3.669 | 3.405<< |

| BARRA | | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|---|
| | 18 | 8.412>> | 8.122 | 3.661 | 3.371 |
| | 18 | 4.358<< | 4.627 | 8.233 | 8.502 |
| | 18 | 8.305 | 8.269>> | 3.514 | 3.478 |
| | 18 | 4.686 | 4.552<< | 8.272 | 8.138 |
| | 18 | 4.668 | 4.552 | 8.274>> | 8.158 |
| | 18 | 8.323 | 8.269 | 3.512<< | 3.457 |
| | 18 | 4.358 | 4.609 | 8.254 | 8.504>> |
| | 18 | 8.411 | 8.140 | 3.641 | 3.369<< |
| | 19 | 7.060>> | 6.734 | 5.400 | 5.073 |
| | 19 | 4.063<< | 4.361 | 8.551 | 8.849 |
| | 19 | 6.976 | 6.942>> | 5.176 | 5.142 |
| | 19 | 4.370 | 4.232<< | 8.655 | 8.516 |
| | 19 | 4.353 | 4.232 | 8.657>> | 8.536 |
| | 19 | 6.993 | 6.941 | 5.174<< | 5.122 |
| | 19 | 4.064 | 4.345 | 8.571 | 8.852>> |
| | 19 | 7.055 | 6.824 | 5.299 | 5.068<< |

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| BARRA | | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|---|
| | 19 | 7.791>> | 7.423 | 5.731 | 5.363 |
| | 19 | 4.558<< | 4.922 | 9.832 | 10.196 |
| | 19 | 7.687 | 7.658>> | 5.460 | 5.432 |
| | 19 | 4.901 | 4.768<< | 9.933 | 9.801 |
| | 19 | 4.863 | 4.774 | 9.936>> | 9.847 |
| | 19 | 7.724 | 7.652 | 5.457<< | 5.385 |
| | 19 | 4.564 | 4.884 | 9.879 | 10.199>> |
| | 19 | 7.777 | 7.541 | 5.585 | 5.349<< |
| | 20 | 8.026>> | 7.650 | 5.376 | 5.000 |
| | 20 | 5.477<< | 5.942 | 8.271 | 8.737 |
| | 20 | 7.732 | 8.052>> | 4.944 | 5.264 |
| | 20 | 5.560 | 5.649<< | 8.622 | 8.712 |
| | 20 | 5.560 | 5.649 | 8.622>> | 8.712 |
| | 20 | 7.890 | 8.029 | 4.929<< | 5.068 |
| | 20 | 5.500 | 5.710 | 8.562 | 8.772>> |
| | 20 | 8.026 | 7.650 | 5.376 | 5.000<< |

| BARRA | | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|---|
| | 20 | 8.017>> | 7.641 | 5.364 | 4.989 |
| | 20 | 5.468<< | 5.934 | 8.259 | 8.724 |
| | 20 | 7.724 | 8.043>> | 4.932 | 5.252 |
| | 20 | 5.551 | 5.641<< | 8.610 | 8.700 |
| | 20 | 5.551 | 5.641 | 8.610>> | 8.700 |
| | 20 | 7.882 | 8.021 | 4.917<< | 5.056 |
| | 20 | 5.491 | 5.701 | 8.550 | 8.760>> |
| | 20 | 8.017 | 7.641 | 5.364 | 4.989<< |
| | 21 | 8.440>> | 8.457 | 4.204 | 4.221 |
| | 21 | 5.976<< | 6.147 | 7.844 | 8.016 |
| | 21 | 8.294 | 8.597>> | 4.065 | 4.368 |
| | 21 | 6.011 | 6.112<< | 7.879 | 7.981 |
| | 21 | 6.011 | 6.112 | 7.879>> | 7.981 |
| | 21 | 8.294 | 8.597 | 4.065<< | 4.368 |
| | 21 | 5.976 | 6.147 | 7.844 | 8.016>> |
| | 21 | 8.438 | 8.496 | 4.155 | 4.213<< |

| BARRA | | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|---|
| | 21 | 8.433>> | 8.450 | 4.184 | 4.201 |
| | 21 | 5.969<< | 6.141 | 7.825 | 7.997 |
| | 21 | 8.288 | 8.590>> | 4.046 | 4.348 |
| | 21 | 6.004 | 6.106<< | 7.860 | 7.962 |
| | 21 | 6.004 | 6.106 | 7.860>> | 7.962 |
| | 21 | 8.288 | 8.590 | 4.046<< | 4.348 |
| | 21 | 5.969 | 6.141 | 7.825 | 7.997>> |
| | 21 | 8.431 | 8.489 | 4.136 | 4.193<< |
| | 22 | 9.181>> | 9.242 | 2.963 | 3.024 |
| | 22 | 6.229<< | 6.381 | 7.446 | 7.598 |
| | 22 | 9.105 | 9.383>> | 2.805 | 3.083 |
| | 22 | 6.263 | 6.346<< | 7.480 | 7.563 |
| | 22 | 6.263 | 6.346 | 7.480>> | 7.563 |
| | 22 | 9.105 | 9.383 | 2.805<< | 3.083 |
| | 22 | 6.229 | 6.381 | 7.446 | 7.598>> |
| | 22 | 9.181 | 9.242 | 2.963 | 3.024<< |

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| BARRA 22 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 22 | 8.544>> | 8.605 | 3.083 | 3.144 |
| 22 | 5.591<< | 5.743 | 7.566 | 7.718 |
| 22 | 8.467 | 8.745>> | 2.925 | 3.203 |
| 22 | 5.626 | 5.709<< | 7.601 | 7.684 |
| 22 | 5.626 | 5.709 | 7.601>> | 7.684 |
| 22 | 8.467 | 8.745 | 2.925<< | 3.203 |
| 22 | 5.591 | 5.743 | 7.566 | 7.718>> |
| 22 | 8.544 | 8.605 | 3.083 | 3.144<< |
| 23 | 9.226>> | 9.452 | 1.810 | 2.036 |
| 23 | 5.784<< | 5.923 | 7.282 | 7.421 |
| 23 | 9.192 | 9.486>> | 1.776 | 2.070 |
| 23 | 5.818 | 5.889<< | 7.316 | 7.387 |
| 23 | 5.808 | 5.890 | 7.318>> | 7.400 |
| 23 | 9.202 | 9.485 | 1.774<< | 2.057 |
| 23 | 5.785 | 5.913 | 7.294 | 7.423>> |
| 23 | 9.225 | 9.462 | 1.797 | 2.034<< |

| BARRA 23 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 23 | 9.225>> | 9.450 | 1.824 | 2.050 |
| 23 | 5.783<< | 5.922 | 7.296 | 7.435 |
| 23 | 9.190 | 9.485>> | 1.789 | 2.084 |
| 23 | 5.817 | 5.888<< | 7.330 | 7.401 |
| 23 | 5.807 | 5.889 | 7.332>> | 7.414 |
| 23 | 9.200 | 9.484 | 1.788<< | 2.071 |
| 23 | 5.784 | 5.912 | 7.308 | 7.437>> |
| 23 | 9.224 | 9.460 | 1.811 | 2.048<< |
| 24 | 9.810>> | 10.059 | 0.882 | 1.131 |
| 24 | 5.949<< | 6.067 | 7.064 | 7.182 |
| 24 | 9.785 | 10.084>> | 0.857 | 1.156 |
| 24 | 6.398 | 6.004<< | 7.020 | 6.626 |
| 24 | 5.974 | 6.042 | 7.089>> | 7.157 |
| 24 | 9.785 | 10.084 | 0.857<< | 1.156 |
| 24 | 5.949 | 6.067 | 7.064 | 7.182>> |
| 24 | 9.810 | 10.059 | 0.882 | 1.131<< |

| BARRA 24 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 24 | 9.808>> | 10.057 | 0.897 | 1.145 |
| 24 | 5.947<< | 6.065 | 7.078 | 7.196 |
| 24 | 9.783 | 10.082>> | 0.872 | 1.170 |
| 24 | 6.396 | 6.002<< | 7.034 | 6.640 |
| 24 | 5.972 | 6.040 | 7.103>> | 7.171 |
| 24 | 9.783 | 10.082 | 0.872<< | 1.170 |
| 24 | 5.947 | 6.065 | 7.078 | 7.196>> |
| 24 | 9.808 | 10.057 | 0.897 | 1.145<< |
| 25 | 10.197>> | 10.451 | 0.284 | 0.538 |
| 25 | 6.093<< | 6.200 | 6.865 | 6.973 |
| 25 | 10.170 | 10.477>> | 0.258 | 0.565 |
| 25 | 6.459 | 6.078<< | 6.920 | 6.538 |
| 25 | 6.459 | 6.078 | 6.920>> | 6.538 |
| 25 | 10.170 | 10.477 | 0.258<< | 0.565 |
| 25 | 6.093 | 6.200 | 6.865 | 6.973>> |
| 25 | 10.197 | 10.451 | 0.284 | 0.538<< |

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| BARRA 25 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 25 | 10.194>> | 10.449 | 0.295 | 0.549 |
| 25 | 6.090<< | 6.198 | 6.876 | 6.983 |
| 25 | 10.168 | 10.475>> | 0.269 | 0.576 |
| 25 | 6.456 | 6.075<< | 6.930 | 6.549 |
| 25 | 6.456 | 6.075 | 6.930>> | 6.549 |
| 25 | 10.168 | 10.475 | 0.269<< | 0.576 |
| 25 | 6.090 | 6.198 | 6.876 | 6.983>> |
| 25 | 10.194 | 10.449 | 0.295 | 0.549<< |
| 26 | 10.405>> | 10.657 | -0.031 | 0.221 |
| 26 | 6.180<< | 6.339 | 6.670 | 6.829 |
| 26 | 10.377 | 10.685>> | -0.059 | 0.249 |
| 26 | 6.523 | 6.127<< | 6.846 | 6.449 |
| 26 | 6.499 | 6.131 | 6.847>> | 6.479 |
| 26 | 10.377 | 10.685 | -0.059<< | 0.249 |
| 26 | 6.180 | 6.339 | 6.670 | 6.829>> |
| 26 | 10.405 | 10.657 | -0.031 | 0.221<< |

| BARRA 26 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 26 | 10.403>> | 10.655 | -0.024 | 0.228 |
| 26 | 6.178<< | 6.337 | 6.676 | 6.835 |
| 26 | 10.375 | 10.683>> | -0.052 | 0.256 |
| 26 | 6.521 | 6.125<< | 6.852 | 6.455 |
| 26 | 6.497 | 6.129 | 6.853>> | 6.485 |
| 26 | 10.375 | 10.683 | -0.052<< | 0.256 |
| 26 | 6.178 | 6.337 | 6.676 | 6.835>> |
| 26 | 10.403 | 10.655 | -0.024 | 0.228<< |
| 27 | 10.503>> | 10.754 | -0.178 | 0.073 |
| 27 | 6.197<< | 6.330 | 6.680 | 6.813 |
| 27 | 10.474 | 10.783>> | -0.207 | 0.102 |
| 27 | 6.398 | 6.068<< | 6.959 | 6.629 |
| 27 | 6.230 | 6.100 | 6.965>> | 6.835 |
| 27 | 10.474 | 10.783 | -0.207<< | 0.102 |
| 27 | 6.200 | 6.129 | 6.936 | 6.865>> |
| 27 | 10.503 | 10.754 | -0.178 | 0.073<< |

| BARRA 27 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 27 | 10.501>> | 10.752 | -0.175 | 0.075 |
| 27 | 6.195<< | 6.329 | 6.682 | 6.816 |
| 27 | 10.472 | 10.781>> | -0.205 | 0.105 |
| 27 | 6.397 | 6.066<< | 6.962 | 6.631 |
| 27 | 6.228 | 6.098 | 6.968>> | 6.838 |
| 27 | 10.472 | 10.781 | -0.205<< | 0.105 |
| 27 | 6.199 | 6.128 | 6.938 | 6.867>> |
| 27 | 10.501 | 10.752 | -0.175 | 0.075<< |
| 28 | 10.410>> | 10.653 | -0.024 | 0.219 |
| 28 | 6.066<< | 6.004 | 7.133 | 7.071 |
| 28 | 10.379 | 10.684>> | -0.055 | 0.250 |
| 28 | 6.283 | 5.948<< | 7.144 | 6.810 |
| 28 | 6.097 | 5.973 | 7.164>> | 7.040 |
| 28 | 10.379 | 10.684 | -0.055<< | 0.250 |
| 28 | 6.066 | 6.004 | 7.133 | 7.071>> |
| 28 | 10.410 | 10.653 | -0.024 | 0.219<< |

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| BARRA 28 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 28 | 10.409>> | 10.652 | -0.026 | 0.217 |
| 28 | 6.065<< | 6.003 | 7.131 | 7.069 |
| 28 | 10.378 | 10.683>> | -0.057 | 0.248 |
| 28 | 6.281 | 5.947<< | 7.142 | 6.808 |
| 28 | 6.096 | 5.972 | 7.162>> | 7.038 |
| 28 | 10.378 | 10.683 | -0.057<< | 0.248 |
| 28 | 6.065 | 6.003 | 7.131 | 7.069>> |
| 28 | 10.409 | 10.652 | -0.026 | 0.217<< |
| 29 | 10.213>> | 10.446 | 0.292 | 0.525 |
| 29 | 5.915<< | 5.861 | 7.355 | 7.301 |
| 29 | 10.180 | 10.479>> | 0.259 | 0.558 |
| 29 | 6.149 | 5.811<< | 7.353 | 7.015 |
| 29 | 5.947 | 5.828 | 7.387>> | 7.269 |
| 29 | 10.180 | 10.479 | 0.259<< | 0.558 |
| 29 | 5.915 | 5.861 | 7.355 | 7.301>> |
| 29 | 10.213 | 10.446 | 0.292 | 0.525<< |

| BARRA 29 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 29 | 10.212>> | 10.445 | 0.286 | 0.519 |
| 29 | 5.914<< | 5.860 | 7.349 | 7.295 |
| 29 | 10.179 | 10.478>> | 0.253 | 0.552 |
| 29 | 6.148 | 5.810<< | 7.347 | 7.009 |
| 29 | 5.946 | 5.827 | 7.381>> | 7.263 |
| 29 | 10.179 | 10.478 | 0.253<< | 0.552 |
| 29 | 5.914 | 5.860 | 7.349 | 7.295>> |
| 29 | 10.212 | 10.445 | 0.286 | 0.519<< |
| 30 | 9.835>> | 10.054 | 0.891 | 1.110 |
| 30 | 5.744<< | 5.699 | 7.602 | 7.557 |
| 30 | 9.801 | 10.088>> | 0.857 | 1.144 |
| 30 | 5.997 | 5.656<< | 7.587 | 7.246 |
| 30 | 5.778 | 5.665 | 7.636>> | 7.523 |
| 30 | 9.801 | 10.088 | 0.857<< | 1.144 |
| 30 | 5.744 | 5.699 | 7.602 | 7.557>> |
| 30 | 9.835 | 10.054 | 0.891 | 1.110<< |

| BARRA 30 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 30 | 9.834>> | 10.053 | 0.881 | 1.100 |
| 30 | 5.743<< | 5.698 | 7.592 | 7.547 |
| 30 | 9.800 | 10.087>> | 0.847 | 1.134 |
| 30 | 5.995 | 5.655<< | 7.577 | 7.236 |
| 30 | 5.777 | 5.664 | 7.626>> | 7.513 |
| 30 | 9.800 | 10.087 | 0.847<< | 1.134 |
| 30 | 5.743 | 5.698 | 7.592 | 7.547>> |
| 30 | 9.834 | 10.053 | 0.881 | 1.100<< |
| 31 | 9.260>> | 9.458 | 1.803 | 2.001 |
| 31 | 5.554<< | 5.518 | 7.875 | 7.839 |
| 31 | 9.224 | 9.494>> | 1.767 | 2.036 |
| 31 | 5.825 | 5.480<< | 7.847 | 7.503 |
| 31 | 5.589 | 5.482 | 7.911>> | 7.803 |
| 31 | 9.224 | 9.494 | 1.767<< | 2.036 |
| 31 | 5.554 | 5.518 | 7.875 | 7.839>> |
| 31 | 9.260 | 9.458 | 1.803 | 2.001<< |

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| BARRA 31 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 31 | 9.258>> | 9.456 | 1.791 | 1.989 |
| 31 | 5.552<< | 5.516 | 7.864 | 7.827 |
| 31 | 9.222 | 9.492>> | 1.755 | 2.024 |
| 31 | 5.823 | 5.478<< | 7.836 | 7.491 |
| 31 | 5.587 | 5.480 | 7.899>> | 7.792 |
| 31 | 9.222 | 9.492 | 1.755<< | 2.024 |
| 31 | 5.552 | 5.516 | 7.864 | 7.827>> |
| 31 | 9.258 | 9.456 | 1.791 | 1.989<< |
| 32 | 8.545>> | 8.718 | 2.933 | 3.107 |
| 32 | 5.341<< | 5.313 | 8.182 | 8.154 |
| 32 | 8.508 | 8.755>> | 2.896 | 3.144 |
| 32 | 5.378 | 5.276<< | 8.219 | 8.117 |
| 32 | 5.359 | 5.280 | 8.219>> | 8.140 |
| 32 | 8.526 | 8.751 | 2.896<< | 3.121 |
| 32 | 5.345 | 5.294 | 8.204 | 8.154>> |
| 32 | 8.541 | 8.737 | 2.911 | 3.107<< |

| BARRA 32 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 32 | 8.541>> | 8.714 | 2.921 | 3.094 |
| 32 | 5.337<< | 5.309 | 8.169 | 8.141 |
| 32 | 8.504 | 8.751>> | 2.883 | 3.131 |
| 32 | 5.374 | 5.272<< | 8.206 | 8.104 |
| 32 | 5.355 | 5.276 | 8.206>> | 8.127 |
| 32 | 8.522 | 8.747 | 2.883<< | 3.108 |
| 32 | 5.341 | 5.291 | 8.191 | 8.141>> |
| 32 | 8.537 | 8.733 | 2.898 | 3.094<< |
| 33 | 7.846>> | 7.381 | 4.820 | 4.354 |
| 33 | 5.001<< | 4.977 | 8.687 | 8.663 |
| 33 | 7.774 | 7.997>> | 4.052 | 4.275 |
| 33 | 5.040 | 4.939<< | 8.726 | 8.625 |
| 33 | 5.020 | 4.942 | 8.726>> | 8.649 |
| 33 | 7.793 | 7.993 | 4.051<< | 4.251 |
| 33 | 5.005 | 4.957 | 8.711 | 8.664>> |
| 33 | 7.808 | 7.978 | 4.067 | 4.236<< |

| BARRA 33 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 33 | 7.840>> | 7.374 | 4.808 | 4.342 |
| 33 | 4.995<< | 4.971 | 8.675 | 8.651 |
| 33 | 7.767 | 7.990>> | 4.040 | 4.263 |
| 33 | 5.033 | 4.932<< | 8.713 | 8.613 |
| 33 | 5.013 | 4.936 | 8.714>> | 8.637 |
| 33 | 7.787 | 7.987 | 4.039<< | 4.239 |
| 33 | 4.998 | 4.951 | 8.699 | 8.652>> |
| 33 | 7.802 | 7.971 | 4.054 | 4.224<< |
| 34 | 7.509>> | 7.012 | 5.363 | 4.866 |
| 34 | 4.473<< | 4.476 | 9.453 | 9.456 |
| 34 | 7.126 | 7.478>> | 4.874 | 5.226 |
| 34 | 4.533 | 4.417<< | 9.512 | 9.396 |
| 34 | 4.494 | 4.422 | 9.516>> | 9.444 |
| 34 | 7.164 | 7.473 | 4.870<< | 5.178 |
| 34 | 4.478 | 4.438 | 9.500 | 9.460>> |
| 34 | 7.503 | 7.051 | 5.315 | 4.862<< |

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| BARRA 34 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 34 | 7.498>> | 7.002 | 5.353 | 4.857 |
| 34 | 4.462<< | 4.466 | 9.443 | 9.447 |
| 34 | 7.115 | 7.467>> | 4.865 | 5.217 |
| 34 | 4.522 | 4.406<< | 9.503 | 9.387 |
| 34 | 4.483 | 4.411 | 9.507>> | 9.435 |
| 34 | 7.154 | 7.462 | 4.861<< | 5.169 |
| 34 | 4.468 | 4.427 | 9.491 | 9.451>> |
| 34 | 7.493 | 7.040 | 5.305 | 4.853<< |
| 35 | 7.257>> | 6.801 | 5.678 | 5.222 |
| 35 | 3.567<< | 3.698 | 10.675 | 10.806 |
| 35 | 6.945 | 7.073>> | 5.417 | 5.545 |
| 35 | 4.062 | 3.605<< | 10.656 | 10.199 |
| 35 | 3.590 | 3.643 | 10.738>> | 10.792 |
| 35 | 7.194 | 7.041 | 5.388<< | 5.235 |
| 35 | 3.573 | 3.660 | 10.722 | 10.809>> |
| 35 | 7.237 | 6.908 | 5.547 | 5.217<< |

| BARRA 35 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 35 | 6.778>> | 6.381 | 5.145 | 4.748 |
| 35 | 3.344<< | 3.441 | 8.992 | 9.090 |
| 35 | 6.508 | 6.612>> | 4.918 | 5.022 |
| 35 | 3.786 | 3.377<< | 9.004 | 8.595 |
| 35 | 3.361 | 3.395 | 9.043>> | 9.078 |
| 35 | 6.730 | 6.597 | 4.906<< | 4.773 |
| 35 | 3.346 | 3.410 | 9.029 | 9.092>> |
| 35 | 6.775 | 6.413 | 5.108 | 4.746<< |
| 36 | 7.869>> | 7.487 | 3.761 | 3.378 |
| 36 | 3.415<< | 3.481 | 8.958 | 9.024 |
| 36 | 7.589 | 7.684>> | 3.578 | 3.674 |
| 36 | 3.453 | 3.444<< | 8.996 | 8.987 |
| 36 | 3.432 | 3.446 | 8.997>> | 9.010 |
| 36 | 7.609 | 7.682 | 3.578<< | 3.650 |
| 36 | 3.417 | 3.461 | 8.982 | 9.025>> |
| 36 | 7.867 | 7.507 | 3.737 | 3.377<< |

| BARRA 36 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 36 | 7.955>> | 7.571 | 3.773 | 3.389 |
| 36 | 3.457<< | 3.539 | 8.926 | 9.008 |
| 36 | 7.666 | 7.773>> | 3.582 | 3.689 |
| 36 | 3.495 | 3.501<< | 8.964 | 8.970 |
| 36 | 3.474 | 3.503 | 8.965>> | 8.993 |
| 36 | 7.687 | 7.772 | 3.582<< | 3.666 |
| 36 | 3.459 | 3.518 | 8.950 | 9.009>> |
| 36 | 7.954 | 7.592 | 3.750 | 3.388<< |
| 37 | 7.083>> | 6.684 | 4.891 | 4.493 |
| 37 | 1.420<< | 1.479 | 11.524 | 11.584 |
| 37 | 6.863 | 6.894>> | 4.683 | 4.713 |
| 37 | 1.459 | 1.440<< | 11.563 | 11.545 |
| 37 | 1.437 | 1.442 | 11.564>> | 11.569 |
| 37 | 6.885 | 6.892 | 4.682<< | 4.689 |
| 37 | 1.421 | 1.457 | 11.549 | 11.585>> |
| 37 | 7.081 | 6.706 | 4.867 | 4.492<< |

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| BARRA 37 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 37 | 7.087>> | 6.689 | 4.883 | 4.485 |
| 37 | 1.424<< | 1.484 | 11.516 | 11.576 |
| 37 | 6.868 | 6.898>> | 4.675 | 4.705 |
| 37 | 1.463 | 1.445<< | 11.555 | 11.536 |
| 37 | 1.442 | 1.446 | 11.556>> | 11.561 |
| 37 | 6.890 | 6.897 | 4.674<< | 4.681 |
| 37 | 1.426 | 1.462 | 11.541 | 11.577>> |
| 37 | 7.086 | 6.711 | 4.859 | 4.484<< |
| 38 | 7.790>> | 7.390 | 3.998 | 3.597 |
| 38 | 3.367<< | 3.474 | 9.009 | 9.116 |
| 38 | 7.576 | 7.652>> | 3.729 | 3.806 |
| 38 | 3.403 | 3.438<< | 9.045 | 9.080 |
| 38 | 3.403 | 3.438 | 9.045>> | 9.080 |
| 38 | 7.576 | 7.652 | 3.729<< | 3.806 |
| 38 | 3.367 | 3.474 | 9.009 | 9.116>> |
| 38 | 7.790 | 7.390 | 3.998 | 3.597<< |

| BARRA 38 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 38 | 7.711>> | 7.301 | 3.969 | 3.559 |
| 38 | 3.328<< | 3.419 | 9.021 | 9.111 |
| 38 | 7.498 | 7.567>> | 3.702 | 3.771 |
| 38 | 3.365 | 3.383<< | 9.057 | 9.075 |
| 38 | 3.365 | 3.383 | 9.057>> | 9.075 |
| 38 | 7.498 | 7.567 | 3.702<< | 3.771 |
| 38 | 3.328 | 3.419 | 9.021 | 9.111>> |
| 38 | 7.711 | 7.301 | 3.969 | 3.559<< |
| 39 | 6.460>> | 6.152 | 5.424 | 5.116 |
| 39 | 3.129<< | 3.255 | 9.213 | 9.338 |
| 39 | 6.347 | 6.365>> | 5.200 | 5.218 |
| 39 | 3.546 | 3.206<< | 9.210 | 8.870 |
| 39 | 3.162 | 3.222 | 9.246>> | 9.305 |
| 39 | 6.347 | 6.365 | 5.200<< | 5.218 |
| 39 | 3.129 | 3.255 | 9.213 | 9.338>> |
| 39 | 6.460 | 6.152 | 5.424 | 5.116<< |

| BARRA 39 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 39 | 7.102>> | 6.743 | 5.800 | 5.441 |
| 39 | 3.530<< | 3.705 | 10.681 | 10.857 |
| 39 | 6.954 | 6.993>> | 5.521 | 5.560 |
| 39 | 4.004 | 3.622<< | 10.655 | 10.273 |
| 39 | 3.567 | 3.652 | 10.739>> | 10.823 |
| 39 | 6.971 | 6.993 | 5.517<< | 5.539 |
| 39 | 3.531 | 3.689 | 10.702 | 10.860>> |
| 39 | 7.101 | 6.760 | 5.779 | 5.438<< |
| 40 | 7.309>> | 6.947 | 5.482 | 5.120 |
| 40 | 4.433<< | 4.531 | 9.374 | 9.471 |
| 40 | 7.095 | 7.341>> | 5.037 | 5.283 |
| 40 | 4.484 | 4.479<< | 9.425 | 9.420 |
| 40 | 4.468 | 4.481 | 9.427>> | 9.440 |
| 40 | 7.112 | 7.339 | 5.035<< | 5.262 |
| 40 | 4.435 | 4.514 | 9.394 | 9.473>> |
| 40 | 7.286 | 7.265 | 5.081 | 5.060<< |

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| BARRA 40 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 40 | 7.315>> | 6.953 | 5.496 | 5.134 |
| 40 | 4.439<< | 4.537 | 9.388 | 9.485 |
| 40 | 7.102 | 7.348>> | 5.051 | 5.297 |
| 40 | 4.491 | 4.486<< | 9.439 | 9.434 |
| 40 | 4.474 | 4.488 | 9.441>> | 9.455 |
| 40 | 7.118 | 7.346 | 5.049<< | 5.276 |
| 40 | 4.442 | 4.521 | 9.408 | 9.487>> |
| 40 | 7.293 | 7.272 | 5.095 | 5.074<< |
| 41 | 7.798>> | 7.797 | 4.282 | 4.282 |
| 41 | 4.950<< | 5.024 | 8.623 | 8.697 |
| 41 | 7.676 | 7.919>> | 4.160 | 4.404 |
| 41 | 4.978 | 4.995<< | 8.652 | 8.669 |
| 41 | 4.978 | 4.995 | 8.652>> | 8.669 |
| 41 | 7.676 | 7.919 | 4.160<< | 4.404 |
| 41 | 4.950 | 5.024 | 8.623 | 8.697>> |
| 41 | 7.798 | 7.797 | 4.282 | 4.282<< |

| BARRA 41 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 41 | 7.801>> | 7.800 | 4.300 | 4.299 |
| 41 | 4.953<< | 5.027 | 8.640 | 8.715 |
| 41 | 7.679 | 7.923>> | 4.177 | 4.421 |
| 41 | 4.981 | 4.998<< | 8.669 | 8.686 |
| 41 | 4.981 | 4.998 | 8.669>> | 8.686 |
| 41 | 7.679 | 7.923 | 4.177<< | 4.421 |
| 41 | 4.953 | 5.027 | 8.640 | 8.715>> |
| 41 | 7.801 | 7.800 | 4.300 | 4.299<< |
| 42 | 8.468>> | 8.552 | 3.152 | 3.237 |
| 42 | 5.285<< | 5.353 | 8.131 | 8.199 |
| 42 | 8.430 | 8.675>> | 3.005 | 3.250 |
| 42 | 5.310 | 5.328<< | 8.155 | 8.174 |
| 42 | 5.310 | 5.328 | 8.155>> | 8.174 |
| 42 | 8.430 | 8.675 | 3.005<< | 3.250 |
| 42 | 5.285 | 5.353 | 8.131 | 8.199>> |
| 42 | 8.455 | 8.650 | 3.030 | 3.226<< |

| BARRA 42 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 42 | 8.659>> | 8.744 | 2.024 | 2.108 |
| 42 | 5.477<< | 5.545 | 7.003 | 7.071 |
| 42 | 8.622 | 8.867>> | 1.877 | 2.122 |
| 42 | 5.502 | 5.520<< | 7.027 | 7.046 |
| 42 | 5.502 | 5.520 | 7.027>> | 7.046 |
| 42 | 8.622 | 8.867 | 1.877<< | 2.122 |
| 42 | 5.477 | 5.545 | 7.003 | 7.071>> |
| 42 | 8.647 | 8.842 | 1.902 | 2.098<< |
| 43 | 9.351>> | 9.600 | 0.737 | 0.985 |
| 43 | 5.678<< | 5.732 | 6.707 | 6.762 |
| 43 | 9.338 | 9.614>> | 0.723 | 0.999 |
| 43 | 5.692 | 5.718<< | 6.721 | 6.748 |
| 43 | 5.692 | 5.718 | 6.721>> | 6.748 |
| 43 | 9.338 | 9.614 | 0.723<< | 0.999 |
| 43 | 5.678 | 5.732 | 6.707 | 6.762>> |
| 43 | 9.351 | 9.600 | 0.737 | 0.985<< |

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| BARRA 43 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 43 | 9.350>> | 9.598 | 0.753 | 1.001 |
| 43 | 5.676<< | 5.731 | 6.723 | 6.778 |
| 43 | 9.336 | 9.612>> | 0.739 | 1.015 |
| 43 | 5.690 | 5.717<< | 6.737 | 6.764 |
| 43 | 5.690 | 5.717 | 6.737>> | 6.764 |
| 43 | 9.336 | 9.612 | 0.739<< | 1.015 |
| 43 | 5.676 | 5.731 | 6.723 | 6.778>> |
| 43 | 9.350 | 9.598 | 0.753 | 1.001<< |
| 44 | 9.916>> | 10.203 | -0.179 | 0.109 |
| 44 | 5.851<< | 5.902 | 6.455 | 6.507 |
| 44 | 9.903 | 10.217>> | -0.192 | 0.122 |
| 44 | 5.864 | 5.889<< | 6.469 | 6.493 |
| 44 | 5.864 | 5.889 | 6.469>> | 6.493 |
| 44 | 9.903 | 10.217 | -0.192<< | 0.122 |
| 44 | 5.851 | 5.902 | 6.455 | 6.507>> |
| 44 | 9.916 | 10.203 | -0.179 | 0.109<< |

| BARRA 44 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 44 | 9.914>> | 10.201 | -0.164 | 0.123 |
| 44 | 5.849<< | 5.900 | 6.470 | 6.521 |
| 44 | 9.901 | 10.214>> | -0.178 | 0.136 |
| 44 | 5.862 | 5.887<< | 6.483 | 6.508 |
| 44 | 5.862 | 5.887 | 6.483>> | 6.508 |
| 44 | 9.901 | 10.214 | -0.178<< | 0.136 |
| 44 | 5.849 | 5.900 | 6.470 | 6.521>> |
| 44 | 9.914 | 10.201 | -0.164 | 0.123<< |
| 45 | 10.282>> | 10.602 | -0.779 | -0.459 |
| 45 | 6.004<< | 6.051 | 6.233 | 6.281 |
| 45 | 10.269 | 10.614>> | -0.792 | -0.447 |
| 45 | 6.016 | 6.039<< | 6.246 | 6.269 |
| 45 | 6.016 | 6.039 | 6.246>> | 6.269 |
| 45 | 10.269 | 10.614 | -0.792<< | -0.447 |
| 45 | 6.004 | 6.051 | 6.233 | 6.281>> |
| 45 | 10.282 | 10.602 | -0.779 | -0.459<< |

| BARRA 45 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 45 | 10.280>> | 10.600 | -0.769 | -0.449 |
| 45 | 6.001<< | 6.049 | 6.244 | 6.292 |
| 45 | 10.267 | 10.612>> | -0.781 | -0.436 |
| 45 | 6.014 | 6.037<< | 6.257 | 6.279 |
| 45 | 6.014 | 6.037 | 6.257>> | 6.279 |
| 45 | 10.267 | 10.612 | -0.781<< | -0.436 |
| 45 | 6.001 | 6.049 | 6.244 | 6.292>> |
| 45 | 10.280 | 10.600 | -0.769 | -0.449<< |
| 46 | 10.469>> | 10.816 | -1.098 | -0.751 |
| 46 | 6.136<< | 6.180 | 6.039 | 6.083 |
| 46 | 10.457 | 10.828>> | -1.110 | -0.739 |
| 46 | 6.148 | 6.168<< | 6.051 | 6.071 |
| 46 | 6.140 | 6.170 | 6.051>> | 6.081 |
| 46 | 10.465 | 10.826 | -1.110<< | -0.749 |
| 46 | 6.137 | 6.172 | 6.048 | 6.084>> |
| 46 | 10.468 | 10.824 | -1.108 | -0.752<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 46 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 46 | 10.467>> | 10.814 | -1.092 | -0.745 |
| 46 | 6.134<< | 6.178 | 6.045 | 6.089 |
| 46 | 10.455 | 10.826>> | -1.103 | -0.733 |
| 46 | 6.146 | 6.166<< | 6.057 | 6.077 |
| 46 | 6.138 | 6.168 | 6.057>> | 6.087 |
| 46 | 10.463 | 10.824 | -1.104<< | -0.743 |
| 46 | 6.135 | 6.170 | 6.055 | 6.090>> |
| 46 | 10.466 | 10.822 | -1.101 | -0.746<< |
| 47 | 10.546>> | 10.919 | -1.248 | -0.876 |
| 47 | 6.227<< | 6.311 | 5.849 | 5.933 |
| 47 | 10.535 | 10.930>> | -1.259 | -0.864 |
| 47 | 6.268 | 6.270<< | 5.890 | 5.893 |
| 47 | 6.259 | 6.270 | 5.892>> | 5.903 |
| 47 | 10.543 | 10.930 | -1.262<< | -0.875 |
| 47 | 6.227 | 6.303 | 5.860 | 5.935>> |
| 47 | 10.546 | 10.927 | -1.259 | -0.878<< |

| BARRA 47 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 47 | 10.545>> | 10.917 | -1.246 | -0.873 |
| 47 | 6.225<< | 6.309 | 5.852 | 5.936 |
| 47 | 10.534 | 10.928>> | -1.257 | -0.862 |
| 47 | 6.266 | 6.269<< | 5.892 | 5.895 |
| 47 | 6.258 | 6.269 | 5.895>> | 5.906 |
| 47 | 10.542 | 10.928 | -1.259<< | -0.872 |
| 47 | 6.225 | 6.301 | 5.862 | 5.938>> |
| 47 | 10.545 | 10.925 | -1.256 | -0.875<< |
| 48 | 10.435>> | 10.829 | -1.102 | -0.708 |
| 48 | 6.078<< | 6.174 | 6.065 | 6.162 |
| 48 | 10.426 | 10.837>> | -1.111 | -0.699 |
| 48 | 6.087 | 6.166<< | 6.074 | 6.153 |
| 48 | 6.082 | 6.166 | 6.075>> | 6.159 |
| 48 | 10.431 | 10.837 | -1.111<< | -0.706 |
| 48 | 6.079 | 6.169 | 6.072 | 6.163>> |
| 48 | 10.434 | 10.834 | -1.108 | -0.709<< |

| BARRA 48 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 48 | 10.434>> | 10.828 | -1.104 | -0.710 |
| 48 | 6.077<< | 6.173 | 6.063 | 6.160 |
| 48 | 10.425 | 10.836>> | -1.112 | -0.701 |
| 48 | 6.086 | 6.165<< | 6.072 | 6.151 |
| 48 | 6.080 | 6.165 | 6.073>> | 6.158 |
| 48 | 10.430 | 10.836 | -1.113<< | -0.708 |
| 48 | 6.077 | 6.168 | 6.070 | 6.161>> |
| 48 | 10.433 | 10.833 | -1.110 | -0.711<< |
| 49 | 10.218>> | 10.631 | -0.792 | -0.379 |
| 49 | 5.903<< | 6.030 | 6.296 | 6.423 |
| 49 | 10.209 | 10.639>> | -0.800 | -0.370 |
| 49 | 5.911 | 6.021<< | 6.304 | 6.414 |
| 49 | 5.907 | 6.022 | 6.304>> | 6.420 |
| 49 | 10.214 | 10.638 | -0.800<< | -0.376 |
| 49 | 5.903 | 6.025 | 6.301 | 6.423>> |
| 49 | 10.217 | 10.635 | -0.797 | -0.379<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 49 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 49 | 10.217>> | 10.630 | -0.798 | -0.385 |
| 49 | 5.902<< | 6.029 | 6.289 | 6.416 |
| 49 | 10.208 | 10.638>> | -0.806 | -0.376 |
| 49 | 5.910 | 6.020<< | 6.298 | 6.408 |
| 49 | 5.906 | 6.021 | 6.298>> | 6.414 |
| 49 | 10.213 | 10.637 | -0.807<< | -0.382 |
| 49 | 5.902 | 6.024 | 6.295 | 6.417>> |
| 49 | 10.216 | 10.634 | -0.803 | -0.385<< |
| 50 | 9.821>> | 10.247 | -0.198 | 0.228 |
| 50 | 5.708<< | 5.866 | 6.551 | 6.709 |
| 50 | 9.813 | 10.255>> | -0.206 | 0.236 |
| 50 | 5.717 | 5.858<< | 6.559 | 6.701 |
| 50 | 5.714 | 5.859 | 6.559>> | 6.704 |
| 50 | 9.816 | 10.254 | -0.206<< | 0.233 |
| 50 | 5.709 | 5.864 | 6.554 | 6.709>> |
| 50 | 9.821 | 10.249 | -0.201 | 0.228<< |

| BARRA 50 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 50 | 9.820>> | 10.245 | -0.207 | 0.218 |
| 50 | 5.707<< | 5.865 | 6.541 | 6.699 |
| 50 | 9.812 | 10.254>> | -0.216 | 0.226 |
| 50 | 5.716 | 5.857<< | 6.550 | 6.691 |
| 50 | 5.713 | 5.857 | 6.550>> | 6.694 |
| 50 | 9.814 | 10.253 | -0.216<< | 0.223 |
| 50 | 5.708 | 5.862 | 6.545 | 6.699>> |
| 50 | 9.820 | 10.248 | -0.211 | 0.218<< |
| 51 | 9.227>> | 9.658 | 0.709 | 1.140 |
| 51 | 5.495<< | 5.684 | 6.833 | 7.022 |
| 51 | 9.219 | 9.666>> | 0.701 | 1.149 |
| 51 | 5.503 | 5.675<< | 6.841 | 7.014 |
| 51 | 5.500 | 5.676 | 6.842>> | 7.017 |
| 51 | 9.222 | 9.666 | 0.701<< | 1.145 |
| 51 | 5.495 | 5.681 | 6.837 | 7.022>> |
| 51 | 9.226 | 9.661 | 0.706 | 1.140<< |

| BARRA 51 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 51 | 9.225>> | 9.656 | 0.697 | 1.129 |
| 51 | 5.493<< | 5.682 | 6.821 | 7.010 |
| 51 | 9.217 | 9.664>> | 0.689 | 1.137 |
| 51 | 5.501 | 5.673<< | 6.830 | 7.002 |
| 51 | 5.498 | 5.674 | 6.830>> | 7.006 |
| 51 | 9.220 | 9.664 | 0.689<< | 1.133 |
| 51 | 5.493 | 5.679 | 6.825 | 7.010>> |
| 51 | 9.224 | 9.659 | 0.694 | 1.128<< |
| 52 | 8.494>> | 8.921 | 1.841 | 2.269 |
| 52 | 5.257<< | 5.482 | 7.142 | 7.367 |
| 52 | 8.480 | 8.935>> | 1.827 | 2.283 |
| 52 | 5.271 | 5.469<< | 7.155 | 7.353 |
| 52 | 5.263 | 5.470 | 7.156>> | 7.363 |
| 52 | 8.488 | 8.934 | 1.826<< | 2.272 |
| 52 | 5.258 | 5.474 | 7.152 | 7.368>> |
| 52 | 8.493 | 8.930 | 1.831 | 2.268<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 52 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 52 | 8.490>> | 8.918 | 1.828 | 2.256 |
| 52 | 5.253<< | 5.479 | 7.129 | 7.354 |
| 52 | 8.476 | 8.931>> | 1.814 | 2.270 |
| 52 | 5.267 | 5.465<< | 7.142 | 7.340 |
| 52 | 5.259 | 5.466 | 7.143>> | 7.350 |
| 52 | 8.484 | 8.930 | 1.813<< | 2.259 |
| 52 | 5.254 | 5.470 | 7.139 | 7.355>> |
| 52 | 8.489 | 8.926 | 1.818 | 2.255<< |
| 53 | 7.717>> | 8.088 | 3.104 | 3.476 |
| 53 | 4.930<< | 5.210 | 7.562 | 7.843 |
| 53 | 7.672 | 8.133>> | 3.060 | 3.521 |
| 53 | 4.942 | 5.197<< | 7.575 | 7.830 |
| 53 | 4.939 | 5.198 | 7.575>> | 7.834 |
| 53 | 7.675 | 8.132 | 3.060<< | 3.517 |
| 53 | 4.930 | 5.207 | 7.566 | 7.843>> |
| 53 | 7.716 | 8.092 | 3.100 | 3.475<< |

| BARRA 53 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 53 | 7.710>> | 8.082 | 3.092 | 3.464 |
| 53 | 4.923<< | 5.204 | 7.550 | 7.831 |
| 53 | 7.665 | 8.126>> | 3.048 | 3.509 |
| 53 | 4.936 | 5.191<< | 7.563 | 7.818 |
| 53 | 4.933 | 5.191 | 7.563>> | 7.822 |
| 53 | 7.669 | 8.126 | 3.047<< | 3.504 |
| 53 | 4.924 | 5.200 | 7.554 | 7.831>> |
| 53 | 7.710 | 8.085 | 3.088 | 3.463<< |
| 54 | 7.378>> | 7.274 | 4.218 | 4.114 |
| 54 | 4.321<< | 5.088 | 7.866 | 8.634 |
| 54 | 7.036 | 7.614>> | 3.879 | 4.456 |
| 54 | 4.423 | 4.679<< | 8.360 | 8.617 |
| 54 | 4.419 | 4.680 | 8.361>> | 8.621 |
| 54 | 7.145 | 7.608 | 3.856<< | 4.319 |
| 54 | 4.379 | 4.720 | 8.321 | 8.662>> |
| 54 | 7.377 | 7.277 | 4.214 | 4.114<< |

| BARRA 54 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 54 | 7.367>> | 7.263 | 4.209 | 4.105 |
| 54 | 4.310<< | 5.077 | 7.857 | 8.624 |
| 54 | 7.025 | 7.603>> | 3.870 | 4.447 |
| 54 | 4.412 | 4.669<< | 8.351 | 8.607 |
| 54 | 4.409 | 4.669 | 8.351>> | 8.612 |
| 54 | 7.134 | 7.597 | 3.847<< | 4.310 |
| 54 | 4.368 | 4.709 | 8.311 | 8.652>> |
| 54 | 7.367 | 7.267 | 4.204 | 4.104<< |
| 55 | 7.093>> | 7.032 | 4.581 | 4.520 |
| 55 | 3.370<< | 4.080 | 9.394 | 10.105 |
| 55 | 6.627 | 7.203>> | 4.492 | 5.069 |
| 55 | 3.738 | 3.931<< | 9.483 | 9.676 |
| 55 | 3.734 | 3.931 | 9.484>> | 9.681 |
| 55 | 7.044 | 7.146 | 4.449<< | 4.550 |
| 55 | 3.370 | 4.076 | 9.399 | 10.106>> |
| 55 | 7.086 | 7.105 | 4.490 | 4.509<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 55 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 55 | 6.697>> | 6.647 | 4.278 | 4.228 |
| 55 | 3.237<< | 3.837 | 7.982 | 8.581 |
| 55 | 6.310 | 6.766>> | 4.212 | 4.667 |
| 55 | 3.535 | 3.733<< | 8.041 | 8.239 |
| 55 | 3.532 | 3.733 | 8.042>> | 8.243 |
| 55 | 6.659 | 6.744 | 4.174<< | 4.259 |
| 55 | 3.237 | 3.837 | 7.982 | 8.581>> |
| 55 | 6.691 | 6.712 | 4.206 | 4.227<< |
| 56 | 7.723>> | 7.707 | 2.954 | 2.938 |
| 56 | 3.248<< | 3.838 | 8.000 | 8.590 |
| 56 | 7.667 | 7.731>> | 2.940 | 3.003 |
| 56 | 3.251 | 3.834<< | 8.004 | 8.587 |
| 56 | 3.248 | 3.834 | 8.004>> | 8.591 |
| 56 | 7.671 | 7.730 | 2.940<< | 2.999 |
| 56 | 3.248 | 3.834 | 8.004 | 8.591>> |
| 56 | 7.723 | 7.710 | 2.951 | 2.938<< |

| BARRA 56 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 56 | 7.807>> | 7.792 | 2.964 | 2.949 |
| 56 | 3.287<< | 3.896 | 7.966 | 8.575 |
| 56 | 7.746 | 7.817>> | 2.944 | 3.015 |
| 56 | 3.290 | 3.893<< | 7.969 | 8.572 |
| 56 | 3.287 | 3.893 | 7.969>> | 8.575 |
| 56 | 7.749 | 7.816 | 2.944<< | 3.011 |
| 56 | 3.287 | 3.893 | 7.969 | 8.575>> |
| 56 | 7.806 | 7.795 | 2.961 | 2.949<< |
| 57 | 6.919>> | 6.908 | 4.080 | 4.069 |
| 57 | 1.222<< | 1.845 | 10.557 | 11.180 |
| 57 | 6.910 | 6.917>> | 4.071 | 4.078 |
| 57 | 1.224 | 1.844<< | 10.558 | 11.179 |
| 57 | 1.224 | 1.844 | 10.558>> | 11.179 |
| 57 | 6.910 | 6.917 | 4.071<< | 4.078 |
| 57 | 1.222 | 1.845 | 10.557 | 11.180>> |
| 57 | 6.919 | 6.908 | 4.080 | 4.069<< |

| BARRA 57 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 57 | 6.924>> | 6.913 | 4.072 | 4.061 |
| 57 | 1.227<< | 1.850 | 10.549 | 11.172 |
| 57 | 6.915 | 6.922>> | 4.063 | 4.070 |
| 57 | 1.228 | 1.849<< | 10.550 | 11.171 |
| 57 | 1.228 | 1.849 | 10.550>> | 11.171 |
| 57 | 6.915 | 6.922 | 4.063<< | 4.070 |
| 57 | 1.227 | 1.850 | 10.549 | 11.172>> |
| 57 | 6.924 | 6.913 | 4.072 | 4.061<< |
| 58 | 7.674>> | 7.670 | 3.117 | 3.113 |
| 58 | 3.157<< | 3.771 | 8.121 | 8.735 |
| 58 | 7.617 | 7.693>> | 3.099 | 3.175 |
| 58 | 3.161 | 3.767<< | 8.125 | 8.732 |
| 58 | 3.161 | 3.767 | 8.125>> | 8.732 |
| 58 | 7.617 | 7.693 | 3.099<< | 3.175 |
| 58 | 3.157 | 3.771 | 8.121 | 8.735>> |
| 58 | 7.674 | 7.670 | 3.117 | 3.113<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 58 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 58 | 7.592>> | 7.586 | 3.085 | 3.080 |
| 58 | 3.120<< | 3.714 | 8.134 | 8.729 |
| 58 | 7.542 | 7.606>> | 3.074 | 3.139 |
| 58 | 3.124 | 3.710<< | 8.138 | 8.725 |
| 58 | 3.124 | 3.710 | 8.138>> | 8.725 |
| 58 | 7.542 | 7.606 | 3.074<< | 3.139 |
| 58 | 3.120 | 3.714 | 8.134 | 8.729>> |
| 58 | 7.592 | 7.586 | 3.085 | 3.080<< |
| 59 | 6.401>> | 6.370 | 4.608 | 4.577 |
| 59 | 2.949<< | 3.556 | 8.315 | 8.922 |
| 59 | 6.035 | 6.467>> | 4.564 | 4.996 |
| 59 | 3.242 | 3.454<< | 8.373 | 8.584 |
| 59 | 3.242 | 3.454 | 8.373>> | 8.584 |
| 59 | 6.367 | 6.460 | 4.511<< | 4.604 |
| 59 | 2.949 | 3.556 | 8.315 | 8.922>> |
| 59 | 6.399 | 6.428 | 4.543 | 4.572<< |

| BARRA 59 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 59 | 6.973>> | 6.932 | 4.747 | 4.707 |
| 59 | 3.256<< | 3.970 | 9.572 | 10.286 |
| 59 | 6.526 | 7.079>> | 4.685 | 5.238 |
| 59 | 3.619 | 3.827<< | 9.653 | 9.862 |
| 59 | 3.619 | 3.827 | 9.653>> | 9.862 |
| 59 | 6.926 | 7.038 | 4.626<< | 4.738 |
| 59 | 3.256 | 3.970 | 9.572 | 10.286>> |
| 59 | 6.967 | 6.996 | 4.667 | 4.696<< |
| 60 | 7.201>> | 7.121 | 4.442 | 4.362 |
| 60 | 4.155<< | 4.928 | 8.096 | 8.869 |
| 60 | 6.881 | 7.438>> | 4.125 | 4.683 |
| 60 | 4.254 | 4.525<< | 8.584 | 8.855 |
| 60 | 4.254 | 4.525 | 8.584>> | 8.855 |
| 60 | 6.981 | 7.436 | 4.100<< | 4.556 |
| 60 | 4.214 | 4.565 | 8.544 | 8.895>> |
| 60 | 7.201 | 7.121 | 4.442 | 4.362<< |

| BARRA 60 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 60 | 7.207>> | 7.128 | 4.456 | 4.376 |
| 60 | 4.162<< | 4.935 | 8.110 | 8.883 |
| 60 | 6.888 | 7.445>> | 4.139 | 4.697 |
| 60 | 4.261 | 4.532<< | 8.598 | 8.869 |
| 60 | 4.261 | 4.532 | 8.598>> | 8.869 |
| 60 | 6.988 | 7.443 | 4.114<< | 4.570 |
| 60 | 4.220 | 4.572 | 8.558 | 8.909>> |
| 60 | 7.207 | 7.128 | 4.456 | 4.376<< |
| 61 | 7.509>> | 7.888 | 3.400 | 3.779 |
| 61 | 4.721<< | 5.013 | 7.853 | 8.145 |
| 61 | 7.470 | 7.926>> | 3.362 | 3.817 |
| 61 | 4.733 | 5.002<< | 7.865 | 8.134 |
| 61 | 4.730 | 5.002 | 7.866>> | 8.138 |
| 61 | 7.474 | 7.926 | 3.361<< | 3.813 |
| 61 | 4.721 | 5.010 | 7.857 | 8.146>> |
| 61 | 7.509 | 7.891 | 3.396 | 3.778<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 61 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 61 | 7.512>> | 7.891 | 3.417 | 3.796 |
| 61 | 4.724<< | 5.016 | 7.871 | 8.163 |
| 61 | 7.474 | 7.929>> | 3.379 | 3.835 |
| 61 | 4.736 | 5.005<< | 7.882 | 8.151 |
| 61 | 4.733 | 5.005 | 7.883>> | 8.155 |
| 61 | 7.477 | 7.929 | 3.378<< | 3.831 |
| 61 | 4.725 | 5.013 | 7.875 | 8.163>> |
| 61 | 7.512 | 7.894 | 3.413 | 3.795<< |
| 62 | 8.243>> | 8.680 | 2.204 | 2.641 |
| 62 | 5.006<< | 5.244 | 7.501 | 7.739 |
| 62 | 8.230 | 8.693>> | 2.191 | 2.654 |
| 62 | 5.019 | 5.231<< | 7.514 | 7.726 |
| 62 | 5.012 | 5.231 | 7.516>> | 7.736 |
| 62 | 8.238 | 8.693 | 2.189<< | 2.644 |
| 62 | 5.007 | 5.236 | 7.511 | 7.740>> |
| 62 | 8.243 | 8.688 | 2.194 | 2.639<< |

| BARRA 62 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 62 | 8.243>> | 8.681 | 2.221 | 2.658 |
| 62 | 5.007<< | 5.244 | 7.518 | 7.756 |
| 62 | 8.231 | 8.693>> | 2.208 | 2.671 |
| 62 | 5.020 | 5.231<< | 7.531 | 7.743 |
| 62 | 5.012 | 5.232 | 7.533>> | 7.753 |
| 62 | 8.238 | 8.693 | 2.206<< | 2.661 |
| 62 | 5.007 | 5.237 | 7.528 | 7.758>> |
| 62 | 8.243 | 8.688 | 2.211 | 2.656<< |
| 63 | 8.930>> | 9.372 | 1.145 | 1.588 |
| 63 | 5.196<< | 5.400 | 7.266 | 7.470 |
| 63 | 8.922 | 9.380>> | 1.137 | 1.596 |
| 63 | 5.204 | 5.392<< | 7.274 | 7.462 |
| 63 | 5.202 | 5.392 | 7.275>> | 7.465 |
| 63 | 8.925 | 9.380 | 1.137<< | 1.592 |
| 63 | 5.197 | 5.397 | 7.270 | 7.470>> |
| 63 | 8.930 | 9.375 | 1.142 | 1.587<< |

| BARRA 63 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 63 | 8.928>> | 9.371 | 1.162 | 1.604 |
| 63 | 5.195<< | 5.399 | 7.283 | 7.486 |
| 63 | 8.920 | 9.379>> | 1.154 | 1.612 |
| 63 | 5.203 | 5.391<< | 7.291 | 7.478 |
| 63 | 5.200 | 5.391 | 7.291>> | 7.482 |
| 63 | 8.923 | 9.379 | 1.153<< | 1.608 |
| 63 | 5.195 | 5.396 | 7.286 | 7.487>> |
| 63 | 8.928 | 9.374 | 1.158 | 1.603<< |
| 64 | 9.474>> | 9.913 | 0.317 | 0.756 |
| 64 | 5.362<< | 5.536 | 7.061 | 7.235 |
| 64 | 9.466 | 9.921>> | 0.309 | 0.764 |
| 64 | 5.369 | 5.528<< | 7.069 | 7.227 |
| 64 | 5.367 | 5.528 | 7.069>> | 7.230 |
| 64 | 9.468 | 9.920 | 0.308<< | 0.760 |
| 64 | 5.362 | 5.533 | 7.064 | 7.235>> |
| 64 | 9.473 | 9.915 | 0.313 | 0.755<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 64 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 64 | 9.472>> | 9.911 | 0.331 | 0.770 |
| 64 | 5.359<< | 5.534 | 7.075 | 7.249 |
| 64 | 9.464 | 9.919>> | 0.323 | 0.778 |
| 64 | 5.367 | 5.526<< | 7.083 | 7.241 |
| 64 | 5.365 | 5.526 | 7.083>> | 7.245 |
| 64 | 9.466 | 9.918 | 0.322<< | 0.775 |
| 64 | 5.360 | 5.531 | 7.078 | 7.250>> |
| 64 | 9.471 | 9.913 | 0.328 | 0.769<< |
| 65 | 9.819>> | 10.248 | -0.198 | 0.231 |
| 65 | 5.506<< | 5.651 | 6.885 | 7.030 |
| 65 | 9.811 | 10.256>> | -0.206 | 0.239 |
| 65 | 5.514 | 5.643<< | 6.893 | 7.022 |
| 65 | 5.507 | 5.644 | 6.893>> | 7.030 |
| 65 | 9.818 | 10.255 | -0.207<< | 0.231 |
| 65 | 5.507 | 5.644 | 6.893 | 7.030>> |
| 65 | 9.818 | 10.255 | -0.207 | 0.231<< |

| BARRA 65 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 65 | 9.817>> | 10.246 | -0.187 | 0.242 |
| 65 | 5.503<< | 5.648 | 6.895 | 7.041 |
| 65 | 9.809 | 10.254>> | -0.195 | 0.250 |
| 65 | 5.511 | 5.640<< | 6.903 | 7.033 |
| 65 | 5.504 | 5.642 | 6.904>> | 7.041 |
| 65 | 9.816 | 10.253 | -0.196<< | 0.241 |
| 66 | 9.986>> | 10.398 | -0.429 | -0.017 |
| 66 | 5.629<< | 5.746 | 6.736 | 6.852 |
| 66 | 9.978 | 10.406>> | -0.437 | -0.009 |
| 66 | 5.637 | 5.738<< | 6.744 | 6.844 |
| 66 | 5.630 | 5.738 | 6.745>> | 6.853 |
| 66 | 9.985 | 10.406 | -0.438<< | -0.018 |
| 66 | 5.630 | 5.738 | 6.745 | 6.853>> |
| 66 | 9.985 | 10.406 | -0.438 | -0.018<< |

| BARRA 66 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 66 | 9.984>> | 10.396 | -0.423 | -0.011 |
| 66 | 5.627<< | 5.744 | 6.742 | 6.858 |
| 66 | 9.976 | 10.404>> | -0.431 | -0.003 |
| 66 | 5.635 | 5.736<< | 6.750 | 6.850 |
| 66 | 5.628 | 5.736 | 6.751>> | 6.859 |
| 66 | 9.983 | 10.404 | -0.432<< | -0.012 |
| 66 | 5.628 | 5.736 | 6.751 | 6.859>> |
| 66 | 9.983 | 10.404 | -0.432 | -0.012<< |
| 67 | 10.043>> | 10.444 | -0.501 | -0.099 |
| 67 | 5.733<< | 5.814 | 6.622 | 6.703 |
| 67 | 10.040 | 10.447>> | -0.503 | -0.097 |
| 67 | 5.757 | 5.782<< | 6.656 | 6.682 |
| 67 | 5.757 | 5.782 | 6.656>> | 6.682 |
| 67 | 10.040 | 10.447 | -0.503<< | -0.097 |
| 67 | 5.733 | 5.814 | 6.622 | 6.703>> |
| 67 | 10.043 | 10.444 | -0.501 | -0.099<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 67 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 67 | 10.041>> | 10.443 | -0.498 | -0.097 |
| 67 | 5.731<< | 5.813 | 6.625 | 6.706 |
| 67 | 10.039 | 10.445>> | -0.501 | -0.094 |
| 67 | 5.755 | 5.781<< | 6.659 | 6.684 |
| 67 | 5.755 | 5.781 | 6.659>> | 6.684 |
| 67 | 10.039 | 10.445 | -0.501<< | -0.094 |
| 67 | 5.731 | 5.813 | 6.625 | 6.706>> |
| 67 | 10.041 | 10.443 | -0.498 | -0.097<< |
| 68 | 9.910>> | 10.282 | -0.256 | 0.116 |
| 68 | 5.590<< | 5.631 | 6.897 | 6.937 |
| 68 | 9.900 | 10.291>> | -0.265 | 0.126 |
| 68 | 5.599 | 5.622<< | 6.906 | 6.928 |
| 68 | 5.592 | 5.622 | 6.908>> | 6.937 |
| 68 | 9.907 | 10.291 | -0.267<< | 0.117 |
| 68 | 5.590 | 5.624 | 6.906 | 6.939>> |
| 68 | 9.909 | 10.289 | -0.264 | 0.115<< |

| BARRA 68 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 68 | 9.908>> | 10.281 | -0.258 | 0.114 |
| 68 | 5.589<< | 5.630 | 6.895 | 6.935 |
| 68 | 9.899 | 10.290>> | -0.267 | 0.124 |
| 68 | 5.598 | 5.620<< | 6.904 | 6.926 |
| 68 | 5.591 | 5.620 | 6.906>> | 6.935 |
| 68 | 9.906 | 10.290 | -0.269<< | 0.115 |
| 68 | 5.589 | 5.623 | 6.904 | 6.937>> |
| 68 | 9.908 | 10.287 | -0.266 | 0.113<< |
| 69 | 9.672>> | 10.020 | 0.141 | 0.489 |
| 69 | 5.407<< | 5.451 | 7.173 | 7.218 |
| 69 | 9.662 | 10.030>> | 0.132 | 0.499 |
| 69 | 5.416 | 5.442<< | 7.183 | 7.209 |
| 69 | 5.410 | 5.443 | 7.184>> | 7.217 |
| 69 | 9.669 | 10.029 | 0.131<< | 0.491 |
| 69 | 5.408 | 5.445 | 7.181 | 7.219>> |
| 69 | 9.671 | 10.026 | 0.133 | 0.489<< |

| BARRA 69 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 69 | 9.671>> | 10.019 | 0.135 | 0.483 |
| 69 | 5.406<< | 5.450 | 7.167 | 7.212 |
| 69 | 9.661 | 10.029>> | 0.125 | 0.493 |
| 69 | 5.415 | 5.441<< | 7.177 | 7.202 |
| 69 | 5.409 | 5.442 | 7.177>> | 7.210 |
| 69 | 9.668 | 10.028 | 0.125<< | 0.485 |
| 69 | 5.407 | 5.444 | 7.175 | 7.213>> |
| 69 | 9.670 | 10.026 | 0.127 | 0.483<< |
| 70 | 9.256>> | 9.573 | 0.821 | 1.139 |
| 70 | 5.205<< | 5.254 | 7.475 | 7.524 |
| 70 | 9.245 | 9.584>> | 0.811 | 1.149 |
| 70 | 5.215 | 5.243<< | 7.485 | 7.514 |
| 70 | 5.215 | 5.243 | 7.485>> | 7.514 |
| 70 | 9.245 | 9.584 | 0.811<< | 1.149 |
| 70 | 5.205 | 5.254 | 7.475 | 7.524>> |
| 70 | 9.256 | 9.573 | 0.821 | 1.139<< |

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| BARRA 70 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 70 | 9.254>> | 9.572 | 0.811 | 1.129 |
| 70 | 5.204<< | 5.253 | 7.465 | 7.514 |
| 70 | 9.244 | 9.583>> | 0.801 | 1.140 |
| 70 | 5.214 | 5.242<< | 7.475 | 7.504 |
| 70 | 5.214 | 5.242 | 7.475>> | 7.504 |
| 70 | 9.244 | 9.583 | 0.801<< | 1.140 |
| 70 | 5.204 | 5.253 | 7.465 | 7.514>> |
| 70 | 9.254 | 9.572 | 0.811 | 1.129<< |
| 71 | 8.641>> | 8.922 | 1.814 | 2.096 |
| 71 | 4.983<< | 5.036 | 7.803 | 7.857 |
| 71 | 8.630 | 8.933>> | 1.803 | 2.106 |
| 71 | 4.994 | 5.026<< | 7.814 | 7.846 |
| 71 | 4.994 | 5.026 | 7.814>> | 7.846 |
| 71 | 8.630 | 8.933 | 1.803<< | 2.106 |
| 71 | 4.983 | 5.036 | 7.803 | 7.857>> |
| 71 | 8.641 | 8.922 | 1.814 | 2.096<< |

| BARRA 71 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 71 | 8.639>> | 8.920 | 1.803 | 2.084 |
| 71 | 4.981<< | 5.034 | 7.791 | 7.845 |
| 71 | 8.628 | 8.931>> | 1.792 | 2.095 |
| 71 | 4.992 | 5.024<< | 7.802 | 7.834 |
| 71 | 4.992 | 5.024 | 7.802>> | 7.834 |
| 71 | 8.628 | 8.931 | 1.792<< | 2.095 |
| 71 | 4.981 | 5.034 | 7.791 | 7.845>> |
| 71 | 8.639 | 8.920 | 1.803 | 2.084<< |
| 72 | 7.887>> | 8.122 | 3.033 | 3.267 |
| 72 | 4.737<< | 4.802 | 8.157 | 8.222 |
| 72 | 7.869 | 8.140>> | 3.015 | 3.285 |
| 72 | 4.755 | 4.783<< | 8.175 | 8.203 |
| 72 | 4.750 | 4.784 | 8.176>> | 8.211 |
| 72 | 7.875 | 8.139 | 3.014<< | 3.278 |
| 72 | 4.738 | 4.796 | 8.164 | 8.222>> |
| 72 | 7.886 | 8.127 | 3.026 | 3.267<< |

| BARRA 72 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 72 | 7.883>> | 8.118 | 3.020 | 3.255 |
| 72 | 4.734<< | 4.798 | 8.144 | 8.209 |
| 72 | 7.865 | 8.136>> | 3.002 | 3.273 |
| 72 | 4.752 | 4.780<< | 8.163 | 8.191 |
| 72 | 4.746 | 4.781 | 8.163>> | 8.198 |
| 72 | 7.871 | 8.135 | 3.001<< | 3.266 |
| 72 | 4.734 | 4.792 | 8.151 | 8.209>> |
| 72 | 7.882 | 8.124 | 3.013 | 3.254<< |
| 73 | 7.171>> | 7.247 | 4.333 | 4.408 |
| 73 | 4.353<< | 4.430 | 8.721 | 8.797 |
| 73 | 7.073 | 7.337>> | 4.244 | 4.509 |
| 73 | 4.375 | 4.408<< | 8.743 | 8.776 |
| 73 | 4.375 | 4.408 | 8.743>> | 8.776 |
| 73 | 7.081 | 7.337 | 4.242<< | 4.498 |
| 73 | 4.353 | 4.430 | 8.721 | 8.797>> |
| 73 | 7.171 | 7.247 | 4.333 | 4.408<< |

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| BARRA 73 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 73 | 7.165>> | 7.240 | 4.320 | 4.396 |
| 73 | 4.347<< | 4.423 | 8.709 | 8.785 |
| 73 | 7.066 | 7.331>> | 4.232 | 4.497 |
| 73 | 4.369 | 4.401<< | 8.731 | 8.764 |
| 73 | 4.369 | 4.401 | 8.731>> | 8.764 |
| 73 | 7.075 | 7.331 | 4.230<< | 4.486 |
| 73 | 4.347 | 4.423 | 8.709 | 8.785>> |
| 73 | 7.165 | 7.240 | 4.320 | 4.396<< |
| 74 | 6.649>> | 6.351 | 5.601 | 5.303 |
| 74 | 3.792<< | 3.895 | 9.539 | 9.642 |
| 74 | 6.461 | 6.724>> | 5.177 | 5.440 |
| 74 | 3.839 | 3.849<< | 9.585 | 9.595 |
| 74 | 3.821 | 3.852 | 9.586>> | 9.617 |
| 74 | 6.600 | 6.699 | 5.170<< | 5.269 |
| 74 | 3.796 | 3.878 | 9.560 | 9.642>> |
| 74 | 6.626 | 6.674 | 5.195 | 5.243<< |

| BARRA 74 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 74 | 6.639>> | 6.341 | 5.592 | 5.294 |
| 74 | 3.782<< | 3.885 | 9.529 | 9.632 |
| 74 | 6.451 | 6.713>> | 5.168 | 5.430 |
| 74 | 3.829 | 3.838<< | 9.576 | 9.585 |
| 74 | 3.811 | 3.842 | 9.577>> | 9.607 |
| 74 | 6.590 | 6.689 | 5.160<< | 5.259 |
| 74 | 3.785 | 3.867 | 9.551 | 9.633>> |
| 74 | 6.615 | 6.663 | 5.186 | 5.234<< |
| 75 | 6.345>> | 6.090 | 5.995 | 5.739 |
| 75 | 2.826<< | 3.036 | 10.881 | 11.091 |
| 75 | 6.267 | 6.223>> | 5.846 | 5.803 |
| 75 | 2.875 | 2.987<< | 10.930 | 11.042 |
| 75 | 2.844 | 2.992 | 10.933>> | 11.081 |
| 75 | 6.298 | 6.218 | 5.844<< | 5.764 |
| 75 | 2.831 | 3.005 | 10.920 | 11.094>> |
| 75 | 6.340 | 6.121 | 5.956 | 5.737<< |

| BARRA 75 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 75 | 5.981>> | 5.771 | 5.361 | 5.150 |
| 75 | 2.703<< | 2.858 | 9.163 | 9.317 |
| 75 | 5.930 | 5.873>> | 5.251 | 5.194 |
| 75 | 2.730 | 2.832<< | 9.189 | 9.291 |
| 75 | 2.730 | 2.832 | 9.189>> | 9.291 |
| 75 | 5.930 | 5.873 | 5.251<< | 5.194 |
| 75 | 2.703 | 2.858 | 9.163 | 9.317>> |
| 75 | 5.981 | 5.771 | 5.361 | 5.150<< |
| 76 | 7.055>> | 6.754 | 4.117 | 3.815 |
| 76 | 2.698<< | 2.820 | 9.226 | 9.348 |
| 76 | 6.961 | 6.899>> | 3.971 | 3.908 |
| 76 | 2.727 | 2.790<< | 9.256 | 9.319 |
| 76 | 2.711 | 2.791 | 9.257>> | 9.337 |
| 76 | 6.977 | 6.898 | 3.970<< | 3.890 |
| 76 | 2.699 | 2.804 | 9.245 | 9.349>> |
| 76 | 7.054 | 6.770 | 4.099 | 3.814<< |

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| BARRA 76 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 76 | 7.138>> | 6.842 | 4.126 | 3.830 |
| 76 | 2.738<< | 2.875 | 9.193 | 9.330 |
| 76 | 7.040 | 6.987>> | 3.976 | 3.922 |
| 76 | 2.767 | 2.846<< | 9.222 | 9.301 |
| 76 | 2.751 | 2.847 | 9.223>> | 9.319 |
| 76 | 7.056 | 6.986 | 3.974<< | 3.904 |
| 76 | 2.739 | 2.859 | 9.211 | 9.331>> |
| 76 | 7.138 | 6.858 | 4.108 | 3.829<< |
| 77 | 6.309>> | 6.000 | 5.188 | 4.879 |
| 77 | 0.660<< | 0.737 | 11.885 | 11.961 |
| 77 | 6.277 | 6.118>> | 5.058 | 4.900 |
| 77 | 0.672 | 0.725<< | 11.897 | 11.950 |
| 77 | 0.672 | 0.725 | 11.897>> | 11.950 |
| 77 | 6.277 | 6.118 | 5.058<< | 4.900 |
| 77 | 0.660 | 0.737 | 11.885 | 11.961>> |
| 77 | 6.303 | 6.104 | 5.071 | 4.872<< |

| BARRA 77 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 77 | 6.313>> | 6.004 | 5.180 | 4.871 |
| 77 | 0.665<< | 0.741 | 11.877 | 11.953 |
| 77 | 6.281 | 6.123>> | 5.050 | 4.892 |
| 77 | 0.677 | 0.729<< | 11.889 | 11.942 |
| 77 | 0.677 | 0.729 | 11.889>> | 11.942 |
| 77 | 6.281 | 6.123 | 5.050<< | 4.892 |
| 77 | 0.665 | 0.741 | 11.877 | 11.953>> |
| 77 | 6.307 | 6.109 | 5.063 | 4.864<< |
| 78 | 7.115>> | 6.797 | 4.178 | 3.860 |
| 78 | 2.629<< | 2.752 | 9.344 | 9.467 |
| 78 | 7.019 | 6.945>> | 4.023 | 3.950 |
| 78 | 2.659 | 2.722<< | 9.374 | 9.437 |
| 78 | 2.640 | 2.722 | 9.377>> | 9.459 |
| 78 | 7.038 | 6.945 | 4.021<< | 3.928 |
| 78 | 2.629 | 2.733 | 9.365 | 9.470>> |
| 78 | 7.108 | 6.916 | 4.045 | 3.853<< |

| BARRA 78 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 78 | 7.033>> | 6.735 | 4.125 | 3.828 |
| 78 | 2.591<< | 2.680 | 9.378 | 9.467 |
| 78 | 6.964 | 6.861>> | 3.997 | 3.894 |
| 78 | 2.602 | 2.669<< | 9.389 | 9.456 |
| 78 | 2.602 | 2.669 | 9.389>> | 9.456 |
| 78 | 6.964 | 6.861 | 3.997<< | 3.894 |
| 78 | 2.591 | 2.680 | 9.378 | 9.467>> |
| 78 | 7.026 | 6.834 | 4.013 | 3.822<< |
| 79 | 5.884>> | 5.555 | 5.602 | 5.272 |
| 79 | 2.460<< | 2.608 | 9.456 | 9.604 |
| 79 | 5.826 | 5.751>> | 5.388 | 5.313 |
| 79 | 2.504 | 2.564<< | 9.499 | 9.560 |
| 79 | 2.472 | 2.566 | 9.503>> | 9.596 |
| 79 | 5.857 | 5.749 | 5.385<< | 5.277 |
| 79 | 2.462 | 2.577 | 9.492 | 9.607>> |
| 79 | 5.875 | 5.680 | 5.460 | 5.265<< |

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| BARRA 79 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 79 | 6.439>> | 6.056 | 6.017 | 5.634 |
| 79 | 2.759<< | 2.948 | 11.018 | 11.207 |
| 79 | 6.359 | 6.280>> | 5.753 | 5.673 |
| 79 | 2.815 | 2.892<< | 11.074 | 11.150 |
| 79 | 2.794 | 2.893 | 11.078>> | 11.177 |
| 79 | 6.380 | 6.279 | 5.748<< | 5.647 |
| 79 | 2.760 | 2.927 | 11.044 | 11.211>> |
| 79 | 6.414 | 6.245 | 5.782 | 5.613<< |
| 80 | 6.705>> | 6.267 | 5.672 | 5.234 |
| 80 | 3.684<< | 3.732 | 9.757 | 9.805 |
| 80 | 6.337 | 6.718>> | 5.199 | 5.580 |
| 80 | 3.740 | 3.676<< | 9.813 | 9.749 |
| 80 | 3.701 | 3.681 | 9.818>> | 9.797 |
| 80 | 6.376 | 6.713 | 5.194<< | 5.531 |
| 80 | 3.689 | 3.693 | 9.806 | 9.809>> |
| 80 | 6.686 | 6.405 | 5.502 | 5.220<< |

| BARRA 80 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 80 | 6.712>> | 6.274 | 5.686 | 5.248 |
| 80 | 3.691<< | 3.738 | 9.771 | 9.819 |
| 80 | 6.343 | 6.724>> | 5.213 | 5.594 |
| 80 | 3.747 | 3.683<< | 9.827 | 9.763 |
| 80 | 3.708 | 3.687 | 9.832>> | 9.811 |
| 80 | 6.382 | 6.719 | 5.208<< | 5.545 |
| 80 | 3.696 | 3.699 | 9.820 | 9.823>> |
| 80 | 6.693 | 6.411 | 5.516 | 5.234<< |
| 81 | 7.067>> | 6.658 | 5.096 | 4.686 |
| 81 | 4.231<< | 4.252 | 8.964 | 8.984 |
| 81 | 6.994 | 7.262>> | 4.344 | 4.612 |
| 81 | 4.265 | 4.218<< | 8.998 | 8.950 |
| 81 | 4.247 | 4.220 | 9.000>> | 8.974 |
| 81 | 7.023 | 7.259 | 4.339<< | 4.575 |
| 81 | 4.234 | 4.233 | 8.987 | 8.987>> |
| 81 | 7.036 | 7.246 | 4.352 | 4.562<< |

| BARRA 81 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 81 | 7.070>> | 6.661 | 5.113 | 4.704 |
| 81 | 4.234<< | 4.255 | 8.981 | 9.002 |
| 81 | 6.997 | 7.265>> | 4.361 | 4.629 |
| 81 | 4.268 | 4.221<< | 9.015 | 8.968 |
| 81 | 4.250 | 4.223 | 9.018>> | 8.991 |
| 81 | 7.026 | 7.263 | 4.356<< | 4.593 |
| 81 | 4.237 | 4.236 | 9.005 | 9.004>> |
| 81 | 7.039 | 7.249 | 4.369 | 4.580<< |
| 82 | 7.789>> | 8.011 | 3.186 | 3.408 |
| 82 | 4.593<< | 4.606 | 8.432 | 8.445 |
| 82 | 7.754 | 8.046>> | 3.151 | 3.443 |
| 82 | 4.628 | 4.571<< | 8.467 | 8.410 |
| 82 | 4.607 | 4.574 | 8.469>> | 8.436 |
| 82 | 7.775 | 8.043 | 3.149<< | 3.417 |
| 82 | 4.596 | 4.585 | 8.458 | 8.447>> |
| 82 | 7.786 | 8.032 | 3.160 | 3.406<< |

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| BARRA 82 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 82 | 7.789>> | 8.011 | 3.203 | 3.425 |
| 82 | 4.594<< | 4.606 | 8.449 | 8.462 |
| 82 | 7.754 | 8.046>> | 3.169 | 3.460 |
| 82 | 4.629 | 4.571<< | 8.484 | 8.427 |
| 82 | 4.607 | 4.574 | 8.486>> | 8.453 |
| 82 | 7.776 | 8.044 | 3.166<< | 3.434 |
| 82 | 4.596 | 4.585 | 8.476 | 8.464>> |
| 82 | 7.787 | 8.033 | 3.177 | 3.423<< |
| 83 | 8.518>> | 8.775 | 2.024 | 2.280 |
| 83 | 4.822<< | 4.823 | 8.108 | 8.110 |
| 83 | 8.488 | 8.805>> | 1.994 | 2.310 |
| 83 | 4.852 | 4.793<< | 8.138 | 8.079 |
| 83 | 4.835 | 4.796 | 8.139>> | 8.100 |
| 83 | 8.505 | 8.802 | 1.993<< | 2.290 |
| 83 | 4.825 | 4.807 | 8.129 | 8.111>> |
| 83 | 8.516 | 8.792 | 2.003 | 2.279<< |

| BARRA 83 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 83 | 8.517>> | 8.773 | 2.040 | 2.296 |
| 83 | 4.821<< | 4.822 | 8.124 | 8.126 |
| 83 | 8.487 | 8.804>> | 2.010 | 2.327 |
| 83 | 4.851 | 4.792<< | 8.154 | 8.096 |
| 83 | 4.834 | 4.795 | 8.155>> | 8.116 |
| 83 | 8.504 | 8.801 | 2.009<< | 2.306 |
| 83 | 4.823 | 4.805 | 8.145 | 8.127>> |
| 83 | 8.514 | 8.790 | 2.020 | 2.295<< |
| 84 | 9.104>> | 9.388 | 1.091 | 1.374 |
| 84 | 5.025<< | 5.019 | 7.815 | 7.809 |
| 84 | 9.075 | 9.416>> | 1.062 | 1.403 |
| 84 | 5.054 | 4.990<< | 7.844 | 7.780 |
| 84 | 5.038 | 4.993 | 7.845>> | 7.799 |
| 84 | 9.091 | 9.413 | 1.062<< | 1.384 |
| 84 | 5.028 | 5.003 | 7.834 | 7.809>> |
| 84 | 9.101 | 9.403 | 1.072 | 1.374<< |

| BARRA 84 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 84 | 9.102>> | 9.385 | 1.105 | 1.389 |
| 84 | 5.023<< | 5.017 | 7.830 | 7.824 |
| 84 | 9.073 | 9.414>> | 1.076 | 1.418 |
| 84 | 5.052 | 4.988<< | 7.859 | 7.795 |
| 84 | 5.036 | 4.991 | 7.859>> | 7.814 |
| 84 | 9.089 | 9.411 | 1.076<< | 1.398 |
| 84 | 5.026 | 5.001 | 7.849 | 7.824>> |
| 84 | 9.099 | 9.401 | 1.086 | 1.388<< |
| 85 | 9.491>> | 9.795 | 0.473 | 0.776 |
| 85 | 5.207<< | 5.193 | 7.553 | 7.539 |
| 85 | 9.464 | 9.823>> | 0.445 | 0.804 |
| 85 | 5.422 | 5.162<< | 7.532 | 7.272 |
| 85 | 5.234 | 5.166 | 7.581>> | 7.512 |
| 85 | 9.464 | 9.823 | 0.445<< | 0.804 |
| 85 | 5.207 | 5.193 | 7.553 | 7.539>> |
| 85 | 9.491 | 9.796 | 0.472 | 0.776<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 85 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 85 | 9.489>> | 9.793 | 0.483 | 0.787 |
| 85 | 5.205<< | 5.191 | 7.563 | 7.550 |
| 85 | 9.461 | 9.821>> | 0.456 | 0.815 |
| 85 | 5.420 | 5.160<< | 7.543 | 7.283 |
| 85 | 5.232 | 5.163 | 7.591>> | 7.523 |
| 85 | 9.462 | 9.821 | 0.456<< | 0.814 |
| 85 | 5.205 | 5.190 | 7.564 | 7.550>> |
| 85 | 9.489 | 9.793 | 0.483 | 0.787<< |
| 86 | 9.699>> | 10.018 | 0.136 | 0.456 |
| 86 | 5.369<< | 5.348 | 7.317 | 7.296 |
| 86 | 9.672 | 10.045>> | 0.110 | 0.483 |
| 86 | 5.568 | 5.309<< | 7.311 | 7.052 |
| 86 | 5.395 | 5.321 | 7.344>> | 7.270 |
| 86 | 9.673 | 10.045 | 0.110<< | 0.482 |
| 86 | 5.369 | 5.347 | 7.318 | 7.296>> |
| 86 | 9.699 | 10.019 | 0.136 | 0.456<< |

| BARRA 86 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 86 | 9.697>> | 10.016 | 0.143 | 0.462 |
| 86 | 5.367<< | 5.346 | 7.323 | 7.302 |
| 86 | 9.670 | 10.043>> | 0.116 | 0.489 |
| 86 | 5.566 | 5.307<< | 7.317 | 7.059 |
| 86 | 5.393 | 5.319 | 7.350>> | 7.276 |
| 86 | 9.671 | 10.043 | 0.116<< | 0.488 |
| 86 | 5.367 | 5.345 | 7.324 | 7.302>> |
| 86 | 9.697 | 10.017 | 0.142 | 0.462<< |
| 87 | 9.798>> | 10.131 | -0.032 | 0.301 |
| 87 | 5.511<< | 5.482 | 7.109 | 7.080 |
| 87 | 9.772 | 10.156>> | -0.057 | 0.327 |
| 87 | 5.693 | 5.436<< | 7.118 | 6.860 |
| 87 | 5.536 | 5.456 | 7.135>> | 7.055 |
| 87 | 9.773 | 10.156 | -0.057<< | 0.326 |
| 87 | 5.511 | 5.482 | 7.110 | 7.081>> |
| 87 | 9.798 | 10.131 | -0.032 | 0.301<< |

| BARRA 87 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 87 | 9.796>> | 10.129 | -0.029 | 0.304 |
| 87 | 5.509<< | 5.480 | 7.112 | 7.083 |
| 87 | 9.770 | 10.155>> | -0.055 | 0.330 |
| 87 | 5.691 | 5.434<< | 7.120 | 6.863 |
| 87 | 5.534 | 5.455 | 7.137>> | 7.058 |
| 87 | 9.771 | 10.155 | -0.055<< | 0.329 |
| 87 | 5.509 | 5.480 | 7.112 | 7.083>> |
| 87 | 9.796 | 10.130 | -0.030 | 0.304<< |
| 88 | 9.706>> | 10.047 | 0.102 | 0.442 |
| 88 | 5.603<< | 5.588 | 6.948 | 6.933 |
| 88 | 9.682 | 10.071>> | 0.077 | 0.467 |
| 88 | 5.791 | 5.530<< | 6.970 | 6.709 |
| 88 | 5.627 | 5.563 | 6.973>> | 6.909 |
| 88 | 9.682 | 10.071 | 0.077<< | 0.467 |
| 88 | 5.603 | 5.588 | 6.948 | 6.933>> |
| 88 | 9.706 | 10.047 | 0.102 | 0.442<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 88 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 88 | 9.705>> | 10.045 | 0.100 | 0.440 |
| 88 | 5.601<< | 5.586 | 6.947 | 6.932 |
| 88 | 9.680 | 10.070>> | 0.075 | 0.465 |
| 88 | 5.789 | 5.529<< | 6.968 | 6.707 |
| 88 | 5.626 | 5.562 | 6.971>> | 6.907 |
| 88 | 9.680 | 10.070 | 0.075<< | 0.465 |
| 88 | 5.601 | 5.586 | 6.947 | 6.932>> |
| 88 | 9.705 | 10.045 | 0.100 | 0.440<< |
| 89 | 9.508>> | 9.857 | 0.396 | 0.745 |
| 89 | 5.663<< | 5.644 | 6.856 | 6.836 |
| 89 | 9.484 | 9.880>> | 0.373 | 0.768 |
| 89 | 5.812 | 5.582<< | 6.893 | 6.663 |
| 89 | 5.812 | 5.582 | 6.893>> | 6.663 |
| 89 | 9.484 | 9.880 | 0.373<< | 0.768 |
| 89 | 5.663 | 5.644 | 6.856 | 6.836>> |
| 89 | 9.508 | 9.857 | 0.396 | 0.745<< |

| BARRA 89 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 89 | 9.507>> | 9.856 | 0.390 | 0.739 |
| 89 | 5.662<< | 5.643 | 6.850 | 6.830 |
| 89 | 9.483 | 9.879>> | 0.366 | 0.762 |
| 89 | 5.811 | 5.581<< | 6.887 | 6.657 |
| 89 | 5.811 | 5.581 | 6.887>> | 6.657 |
| 89 | 9.483 | 9.879 | 0.366<< | 0.762 |
| 89 | 5.662 | 5.643 | 6.850 | 6.830>> |
| 89 | 9.507 | 9.856 | 0.390 | 0.739<< |
| 90 | 9.131>> | 9.481 | 0.974 | 1.323 |
| 90 | 5.706<< | 5.682 | 6.788 | 6.764 |
| 90 | 9.109 | 9.503>> | 0.951 | 1.346 |
| 90 | 5.838 | 5.612<< | 6.840 | 6.614 |
| 90 | 5.838 | 5.612 | 6.840>> | 6.614 |
| 90 | 9.109 | 9.503 | 0.951<< | 1.346 |
| 90 | 5.706 | 5.682 | 6.788 | 6.764>> |
| 90 | 9.131 | 9.481 | 0.974 | 1.323<< |

| BARRA 90 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 90 | 9.130>> | 9.480 | 0.964 | 1.314 |
| 90 | 5.704<< | 5.681 | 6.778 | 6.754 |
| 90 | 9.108 | 9.502>> | 0.942 | 1.336 |
| 90 | 5.837 | 5.611<< | 6.830 | 6.604 |
| 90 | 5.837 | 5.611 | 6.830>> | 6.604 |
| 90 | 9.108 | 9.502 | 0.942<< | 1.336 |
| 90 | 5.704 | 5.681 | 6.778 | 6.754>> |
| 90 | 9.130 | 9.480 | 0.964 | 1.314<< |
| 91 | 8.556>> | 8.900 | 1.865 | 2.209 |
| 91 | 5.725<< | 5.742 | 6.694 | 6.711 |
| 91 | 8.535 | 8.921>> | 1.844 | 2.230 |
| 91 | 5.844 | 5.623<< | 6.813 | 6.592 |
| 91 | 5.844 | 5.623 | 6.813>> | 6.592 |
| 91 | 8.535 | 8.921 | 1.844<< | 2.230 |
| 91 | 5.728 | 5.700 | 6.747 | 6.719>> |
| 91 | 8.556 | 8.900 | 1.865 | 2.209<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 91 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 91 | 8.557>> | 8.900 | 1.869 | 2.213 |
| 91 | 5.725<< | 5.742 | 6.698 | 6.715 |
| 91 | 8.535 | 8.922>> | 1.848 | 2.234 |
| 91 | 5.844 | 5.623<< | 6.817 | 6.596 |
| 91 | 5.844 | 5.623 | 6.817>> | 6.596 |
| 91 | 8.535 | 8.922 | 1.848<< | 2.234 |
| 91 | 5.728 | 5.700 | 6.751 | 6.722>> |
| 91 | 8.557 | 8.900 | 1.869 | 2.213<< |
| 92 | 7.854>> | 8.104 | 3.083 | 3.334 |
| 92 | 5.575<< | 6.297 | 6.031 | 6.753 |
| 92 | 7.822 | 8.202>> | 2.968 | 3.348 |
| 92 | 5.835 | 5.613<< | 6.832 | 6.610 |
| 92 | 5.831 | 5.614 | 6.832>> | 6.616 |
| 92 | 7.826 | 8.201 | 2.968<< | 3.342 |
| 92 | 5.575 | 6.292 | 6.036 | 6.753>> |
| 92 | 7.846 | 8.181 | 2.988 | 3.322<< |

| BARRA 92 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 92 | 7.857>> | 8.108 | 3.108 | 3.358 |
| 92 | 5.578<< | 6.300 | 6.055 | 6.777 |
| 92 | 7.825 | 8.205>> | 2.992 | 3.372 |
| 92 | 5.839 | 5.616<< | 6.857 | 6.635 |
| 92 | 5.834 | 5.617 | 6.857>> | 6.640 |
| 92 | 7.830 | 8.204 | 2.992<< | 3.367 |
| 92 | 5.579 | 6.296 | 6.061 | 6.778>> |
| 92 | 7.850 | 8.184 | 3.012 | 3.347<< |
| 93 | 7.143>> | 7.352 | 4.273 | 4.483 |
| 93 | 5.180<< | 5.971 | 6.587 | 7.378 |
| 93 | 7.046 | 7.416>> | 4.220 | 4.590 |
| 93 | 5.810 | 5.376<< | 7.172 | 6.739 |
| 93 | 5.775 | 5.379 | 7.178>> | 6.782 |
| 93 | 7.046 | 7.416 | 4.220<< | 4.590 |
| 93 | 5.180 | 5.971 | 6.587 | 7.378>> |
| 93 | 7.143 | 7.352 | 4.273 | 4.483<< |

| BARRA 93 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 93 | 7.149>> | 7.359 | 4.292 | 4.502 |
| 93 | 5.187<< | 5.978 | 6.606 | 7.397 |
| 93 | 7.052 | 7.422>> | 4.239 | 4.609 |
| 93 | 5.816 | 5.383<< | 7.191 | 6.758 |
| 93 | 5.781 | 5.386 | 7.197>> | 6.801 |
| 93 | 7.052 | 7.422 | 4.239<< | 4.609 |
| 93 | 5.187 | 5.978 | 6.606 | 7.397>> |
| 93 | 7.149 | 7.359 | 4.292 | 4.502<< |
| 94 | 6.811>> | 6.473 | 5.520 | 5.182 |
| 94 | 4.365<< | 4.902 | 8.211 | 8.748 |
| 94 | 6.619 | 6.914>> | 5.009 | 5.304 |
| 94 | 5.154 | 4.715<< | 8.230 | 7.790 |
| 94 | 4.618 | 4.748 | 8.337>> | 8.467 |
| 94 | 6.627 | 6.913 | 5.008<< | 5.293 |
| 94 | 4.366 | 4.893 | 8.222 | 8.749>> |
| 94 | 6.810 | 6.481 | 5.510 | 5.181<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 94 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 94 | 6.819>> | 6.481 | 5.531 | 5.193 |
| 94 | 4.374<< | 4.910 | 8.223 | 8.759 |
| 94 | 6.628 | 6.923>> | 5.021 | 5.315 |
| 94 | 5.163 | 4.724<< | 8.241 | 7.802 |
| 94 | 4.627 | 4.757 | 8.349>> | 8.479 |
| 94 | 6.636 | 6.922 | 5.019<< | 5.305 |
| 94 | 4.374 | 4.902 | 8.233 | 8.761>> |
| 94 | 6.819 | 6.490 | 5.521 | 5.192<< |
| 95 | 6.596>> | 6.293 | 5.834 | 5.532 |
| 95 | 3.323<< | 3.849 | 9.873 | 10.399 |
| 95 | 6.152 | 6.554>> | 5.625 | 6.026 |
| 95 | 3.617 | 3.743<< | 9.927 | 10.053 |
| 95 | 3.617 | 3.743 | 9.927>> | 10.053 |
| 95 | 6.498 | 6.525 | 5.565<< | 5.592 |
| 95 | 3.323 | 3.849 | 9.873 | 10.399>> |
| 95 | 6.584 | 6.381 | 5.726 | 5.522<< |

| BARRA 95 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 95 | 6.239>> | 5.967 | 5.269 | 4.998 |
| 95 | 3.207<< | 3.647 | 8.366 | 8.806 |
| 95 | 5.873 | 6.177>> | 5.100 | 5.404 |
| 95 | 3.470 | 3.559<< | 8.429 | 8.517 |
| 95 | 3.470 | 3.559 | 8.429>> | 8.517 |
| 95 | 6.159 | 6.174 | 5.046<< | 5.061 |
| 95 | 3.207 | 3.647 | 8.366 | 8.806>> |
| 95 | 6.239 | 5.967 | 5.269 | 4.998<< |
| 96 | 7.393>> | 7.170 | 3.767 | 3.544 |
| 96 | 3.311<< | 3.718 | 8.293 | 8.700 |
| 96 | 7.299 | 7.305>> | 3.632 | 3.637 |
| 96 | 3.585 | 3.695<< | 8.280 | 8.390 |
| 96 | 3.325 | 3.704 | 8.307>> | 8.686 |
| 96 | 7.299 | 7.305 | 3.632<< | 3.637 |
| 96 | 3.311 | 3.718 | 8.293 | 8.700>> |
| 96 | 7.393 | 7.170 | 3.767 | 3.544<< |

| BARRA 96 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 96 | 7.578>> | 7.363 | 3.769 | 3.553 |
| 96 | 3.452<< | 3.880 | 8.251 | 8.678 |
| 96 | 7.480 | 7.497>> | 3.630 | 3.646 |
| 96 | 3.723 | 3.863<< | 8.235 | 8.374 |
| 96 | 3.466 | 3.866 | 8.264>> | 8.665 |
| 96 | 7.480 | 7.497 | 3.630<< | 3.646 |
| 96 | 3.452 | 3.880 | 8.251 | 8.678>> |
| 96 | 7.578 | 7.363 | 3.769 | 3.553<< |
| 97 | 6.806>> | 6.690 | 4.631 | 4.515 |
| 97 | 1.387<< | 1.804 | 10.871 | 11.288 |
| 97 | 6.793 | 6.702>> | 4.619 | 4.528 |
| 97 | 1.399 | 1.791<< | 10.884 | 11.276 |
| 97 | 1.399 | 1.791 | 10.884>> | 11.276 |
| 97 | 6.793 | 6.702 | 4.619<< | 4.528 |
| 97 | 1.387 | 1.804 | 10.871 | 11.288>> |
| 97 | 6.806 | 6.690 | 4.631 | 4.515<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 97 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 97 | 6.871>> | 6.754 | 4.613 | 4.497 |
| 97 | 1.451<< | 1.869 | 10.853 | 11.270 |
| 97 | 6.858 | 6.767>> | 4.600 | 4.509 |
| 97 | 1.464 | 1.856<< | 10.865 | 11.257 |
| 97 | 1.464 | 1.856 | 10.865>> | 11.257 |
| 97 | 6.858 | 6.767 | 4.600<< | 4.509 |
| 97 | 1.451 | 1.869 | 10.853 | 11.270>> |
| 97 | 6.871 | 6.754 | 4.613 | 4.497<< |
| 98 | 7.557>> | 7.419 | 3.771 | 3.632 |
| 98 | 3.261<< | 3.703 | 8.539 | 8.982 |
| 98 | 7.448 | 7.487>> | 3.708 | 3.747 |
| 98 | 3.303 | 3.661<< | 8.581 | 8.940 |
| 98 | 3.276 | 3.664 | 8.582>> | 8.970 |
| 98 | 7.476 | 7.484 | 3.708<< | 3.716 |
| 98 | 3.264 | 3.676 | 8.570 | 8.982>> |
| 98 | 7.555 | 7.446 | 3.741 | 3.632<< |

| BARRA 98 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 98 | 7.473>> | 7.339 | 3.735 | 3.601 |
| 98 | 3.218<< | 3.649 | 8.545 | 8.976 |
| 98 | 7.376 | 7.401>> | 3.683 | 3.709 |
| 98 | 3.256 | 3.611<< | 8.583 | 8.937 |
| 98 | 3.231 | 3.612 | 8.585>> | 8.966 |
| 98 | 7.400 | 7.400 | 3.681<< | 3.680 |
| 98 | 3.219 | 3.624 | 8.574 | 8.978>> |
| 98 | 7.472 | 7.364 | 3.706 | 3.598<< |
| 99 | 6.249>> | 6.111 | 5.274 | 5.136 |
| 99 | 2.881<< | 3.378 | 8.859 | 9.356 |
| 99 | 6.200 | 6.212>> | 5.167 | 5.180 |
| 99 | 3.087 | 3.174<< | 9.064 | 9.150 |
| 99 | 3.087 | 3.174 | 9.064>> | 9.150 |
| 99 | 6.200 | 6.212 | 5.167<< | 5.180 |
| 99 | 2.881 | 3.378 | 8.859 | 9.356>> |
| 99 | 6.249 | 6.111 | 5.274 | 5.136<< |

| BARRA 99 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 99 | 6.897>> | 6.638 | 5.743 | 5.484 |
| 99 | 3.274<< | 3.868 | 10.296 | 10.889 |
| 99 | 6.832 | 6.848>> | 5.491 | 5.508 |
| 99 | 3.535 | 3.607<< | 10.556 | 10.628 |
| 99 | 3.535 | 3.607 | 10.556>> | 10.628 |
| 99 | 6.832 | 6.848 | 5.491<< | 5.508 |
| 99 | 3.274 | 3.868 | 10.296 | 10.889>> |
| 99 | 6.895 | 6.733 | 5.622 | 5.460<< |
| 100 | 7.022>> | 6.783 | 5.522 | 5.283 |
| 100 | 4.026<< | 4.272 | 9.569 | 9.814 |
| 100 | 6.976 | 6.992>> | 5.267 | 5.284 |
| 100 | 4.067 | 4.231<< | 9.609 | 9.774 |
| 100 | 4.038 | 4.232 | 9.617>> | 9.810 |
| 100 | 7.004 | 6.992 | 5.259<< | 5.247 |
| 100 | 4.026 | 4.243 | 9.605 | 9.822>> |
| 100 | 7.016 | 6.980 | 5.271 | 5.235<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 100 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 100 | 7.046>> | 6.806 | 5.553 | 5.314 |
| 100 | 4.050<< | 4.296 | 9.599 | 9.845 |
| 100 | 7.000 | 7.016>> | 5.298 | 5.314 |
| 100 | 4.091 | 4.255<< | 9.640 | 9.805 |
| 100 | 4.062 | 4.256 | 9.648>> | 9.841 |
| 100 | 7.028 | 7.016 | 5.290<< | 5.278 |
| 100 | 4.050 | 4.267 | 9.636 | 9.853>> |
| 100 | 7.040 | 7.004 | 5.302 | 5.266<< |
| 101 | 7.193>> | 7.068 | 5.177 | 5.052 |
| 101 | 4.592<< | 4.791 | 8.814 | 9.014 |
| 101 | 6.761 | 7.204>> | 5.123 | 5.567 |
| 101 | 4.602 | 4.781<< | 8.825 | 9.003 |
| 101 | 4.602 | 4.781 | 8.825>> | 9.003 |
| 101 | 7.181 | 7.160 | 5.063<< | 5.042 |
| 101 | 4.592 | 4.791 | 8.814 | 9.014>> |
| 101 | 7.192 | 7.149 | 5.074 | 5.031<< |

| BARRA 101 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 101 | 7.215>> | 7.090 | 5.222 | 5.097 |
| 101 | 4.614<< | 4.813 | 8.860 | 9.059 |
| 101 | 6.783 | 7.226>> | 5.169 | 5.612 |
| 101 | 4.624 | 4.803<< | 8.870 | 9.049 |
| 101 | 4.624 | 4.803 | 8.870>> | 9.049 |
| 101 | 7.203 | 7.182 | 5.108<< | 5.087 |
| 101 | 4.614 | 4.813 | 8.860 | 9.059>> |
| 101 | 7.214 | 7.171 | 5.119 | 5.077<< |
| 102 | 7.683>> | 7.451 | 4.631 | 4.399 |
| 102 | 4.918<< | 5.086 | 8.426 | 8.594 |
| 102 | 7.385 | 7.820>> | 4.242 | 4.677 |
| 102 | 4.928 | 5.076<< | 8.436 | 8.584 |
| 102 | 4.928 | 5.076 | 8.436>> | 8.584 |
| 102 | 7.385 | 7.820 | 4.242<< | 4.677 |
| 102 | 4.918 | 5.086 | 8.426 | 8.594>> |
| 102 | 7.681 | 7.525 | 4.536 | 4.380<< |

| BARRA 102 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 102 | 7.697>> | 7.466 | 4.684 | 4.452 |
| 102 | 4.933<< | 5.101 | 8.479 | 8.647 |
| 102 | 7.399 | 7.834>> | 4.295 | 4.731 |
| 102 | 4.943 | 5.091<< | 8.489 | 8.637 |
| 102 | 4.943 | 5.091 | 8.489>> | 8.637 |
| 102 | 7.399 | 7.834 | 4.295<< | 4.731 |
| 102 | 4.933 | 5.101 | 8.479 | 8.647>> |
| 102 | 7.696 | 7.540 | 4.589 | 4.433<< |
| 103 | 8.213>> | 8.019 | 3.833 | 3.638 |
| 103 | 5.182<< | 5.335 | 8.111 | 8.263 |
| 103 | 8.189 | 8.481>> | 3.248 | 3.540 |
| 103 | 5.191 | 5.326<< | 8.120 | 8.254 |
| 103 | 5.191 | 5.326 | 8.120>> | 8.254 |
| 103 | 8.189 | 8.481 | 3.248<< | 3.540 |
| 103 | 5.182 | 5.335 | 8.111 | 8.263>> |
| 103 | 8.198 | 8.472 | 3.257 | 3.531<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 103 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 103 | 8.223>> | 8.028 | 3.891 | 3.696 |
| 103 | 5.192<< | 5.344 | 8.169 | 8.321 |
| 103 | 8.199 | 8.490>> | 3.306 | 3.598 |
| 103 | 5.201 | 5.335<< | 8.178 | 8.312 |
| 103 | 5.201 | 5.335 | 8.178>> | 8.312 |
| 103 | 8.199 | 8.490 | 3.306<< | 3.598 |
| 103 | 5.192 | 5.344 | 8.169 | 8.321>> |
| 103 | 8.207 | 8.481 | 3.315 | 3.589<< |
| 104 | 8.767>> | 9.034 | 2.452 | 2.719 |
| 104 | 5.426<< | 5.563 | 7.823 | 7.960 |
| 104 | 8.759 | 9.042>> | 2.444 | 2.727 |
| 104 | 5.434 | 5.555<< | 7.831 | 7.952 |
| 104 | 5.434 | 5.555 | 7.831>> | 7.952 |
| 104 | 8.759 | 9.042 | 2.444<< | 2.727 |
| 104 | 5.426 | 5.563 | 7.823 | 7.960>> |
| 104 | 8.767 | 9.034 | 2.452 | 2.719<< |

| BARRA 104 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 104 | 8.771>> | 9.038 | 2.496 | 2.763 |
| 104 | 5.430<< | 5.567 | 7.866 | 8.003 |
| 104 | 8.763 | 9.046>> | 2.488 | 2.771 |
| 104 | 5.438 | 5.559<< | 7.874 | 7.995 |
| 104 | 5.438 | 5.559 | 7.874>> | 7.995 |
| 104 | 8.763 | 9.046 | 2.488<< | 2.771 |
| 104 | 5.430 | 5.567 | 7.866 | 8.003>> |
| 104 | 8.771 | 9.038 | 2.496 | 2.763<< |
| 105 | 9.146>> | 9.400 | 1.928 | 2.182 |
| 105 | 5.654<< | 5.775 | 7.539 | 7.659 |
| 105 | 9.139 | 9.407>> | 1.921 | 2.189 |
| 105 | 5.661 | 5.767<< | 7.546 | 7.652 |
| 105 | 5.661 | 5.767 | 7.546>> | 7.652 |
| 105 | 9.139 | 9.407 | 1.921<< | 2.189 |
| 105 | 5.654 | 5.775 | 7.539 | 7.659>> |
| 105 | 9.146 | 9.400 | 1.928 | 2.182<< |

| BARRA 105 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 105 | 9.149>> | 9.403 | 1.896 | 2.149 |
| 105 | 5.657<< | 5.777 | 7.506 | 7.627 |
| 105 | 9.142 | 9.410>> | 1.888 | 2.156 |
| 105 | 5.664 | 5.770<< | 7.513 | 7.619 |
| 105 | 5.664 | 5.770 | 7.513>> | 7.619 |
| 105 | 9.142 | 9.410 | 1.888<< | 2.156 |
| 105 | 5.657 | 5.777 | 7.506 | 7.627>> |
| 105 | 9.149 | 9.403 | 1.896 | 2.149<< |
| 106 | 9.374>> | 9.604 | 1.575 | 1.805 |
| 106 | 5.872<< | 5.977 | 7.190 | 7.295 |
| 106 | 9.368 | 9.611>> | 1.568 | 1.811 |
| 106 | 5.878 | 5.971<< | 7.197 | 7.289 |
| 106 | 5.878 | 5.971 | 7.197>> | 7.289 |
| 106 | 9.368 | 9.611 | 1.568<< | 1.811 |
| 106 | 5.872 | 5.977 | 7.190 | 7.295>> |
| 106 | 9.374 | 9.604 | 1.575 | 1.805<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 106 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 106 | 9.374>> | 9.604 | 1.543 | 1.773 |
| 106 | 5.872<< | 5.977 | 7.159 | 7.264 |
| 106 | 9.368 | 9.611>> | 1.537 | 1.779 |
| 106 | 5.878 | 5.971<< | 7.165 | 7.258 |
| 106 | 5.878 | 5.971 | 7.165>> | 7.258 |
| 106 | 9.368 | 9.611 | 1.537<< | 1.779 |
| 106 | 5.872 | 5.977 | 7.159 | 7.264>> |
| 106 | 9.374 | 9.604 | 1.543 | 1.773<< |
| 107 | 9.397>> | 9.606 | 1.535 | 1.743 |
| 107 | 6.026<< | 6.115 | 6.939 | 7.028 |
| 107 | 9.392 | 9.611>> | 1.530 | 1.748 |
| 107 | 6.031 | 6.110<< | 6.944 | 7.023 |
| 107 | 6.031 | 6.110 | 6.944>> | 7.023 |
| 107 | 9.392 | 9.611 | 1.530<< | 1.748 |
| 107 | 6.026 | 6.115 | 6.939 | 7.028>> |
| 107 | 9.397 | 9.606 | 1.535 | 1.743<< |

| BARRA 107 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 107 | 9.394>> | 9.602 | 1.507 | 1.716 |
| 107 | 6.022<< | 6.112 | 6.911 | 7.001 |
| 107 | 9.389 | 9.608>> | 1.502 | 1.721 |
| 107 | 6.028 | 6.107<< | 6.917 | 6.996 |
| 107 | 6.028 | 6.107 | 6.917>> | 6.996 |
| 107 | 9.389 | 9.608 | 1.502<< | 1.721 |
| 107 | 6.022 | 6.112 | 6.911 | 7.001>> |
| 107 | 9.394 | 9.602 | 1.507 | 1.716<< |
| 108 | 9.130>> | 9.310 | 1.954 | 2.135 |
| 108 | 6.062<< | 6.136 | 6.870 | 6.944 |
| 108 | 9.126 | 9.315>> | 1.950 | 2.139 |
| 108 | 6.066 | 6.131<< | 6.874 | 6.939 |
| 108 | 6.066 | 6.131 | 6.874>> | 6.939 |
| 108 | 9.126 | 9.315 | 1.950<< | 2.139 |
| 108 | 6.062 | 6.136 | 6.870 | 6.944>> |
| 108 | 9.130 | 9.310 | 1.954 | 2.135<< |

| BARRA 108 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 108 | 9.126>> | 9.306 | 1.927 | 2.107 |
| 108 | 6.058<< | 6.132 | 6.842 | 6.916 |
| 108 | 9.122 | 9.311>> | 1.923 | 2.112 |
| 108 | 6.063 | 6.128<< | 6.847 | 6.912 |
| 108 | 6.063 | 6.128 | 6.847>> | 6.912 |
| 108 | 9.122 | 9.311 | 1.923<< | 2.112 |
| 108 | 6.058 | 6.132 | 6.842 | 6.916>> |
| 108 | 9.126 | 9.306 | 1.927 | 2.107<< |
| 109 | 8.610>> | 8.758 | 2.772 | 2.920 |
| 109 | 5.984<< | 6.042 | 6.977 | 7.035 |
| 109 | 8.607 | 8.762>> | 2.769 | 2.923 |
| 109 | 5.988 | 6.039<< | 6.981 | 7.032 |
| 109 | 5.988 | 6.039 | 6.981>> | 7.032 |
| 109 | 8.607 | 8.762 | 2.769<< | 2.923 |
| 109 | 5.984 | 6.042 | 6.977 | 7.035>> |
| 109 | 8.610 | 8.758 | 2.772 | 2.920<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 109 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 109 | 8.606>> | 8.753 | 2.745 | 2.893 |
| 109 | 5.980<< | 6.038 | 6.951 | 7.009 |
| 109 | 8.602 | 8.757>> | 2.742 | 2.897 |
| 109 | 5.983 | 6.034<< | 6.954 | 7.005 |
| 109 | 5.983 | 6.034 | 6.954>> | 7.005 |
| 109 | 8.602 | 8.757 | 2.742<< | 2.897 |
| 109 | 5.980 | 6.038 | 6.951 | 7.009>> |
| 109 | 8.606 | 8.753 | 2.745 | 2.893<< |
| 110 | 7.862>> | 7.974 | 3.950 | 4.061 |
| 110 | 5.791<< | 5.833 | 7.265 | 7.308 |
| 110 | 7.860 | 7.977>> | 3.947 | 4.064 |
| 110 | 5.793 | 5.831<< | 7.268 | 7.305 |
| 110 | 5.793 | 5.831 | 7.268>> | 7.305 |
| 110 | 7.860 | 7.977 | 3.947<< | 4.064 |
| 110 | 5.791 | 5.833 | 7.265 | 7.308>> |
| 110 | 7.862 | 7.974 | 3.950 | 4.061<< |

| BARRA 110 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 110 | 7.856>> | 7.968 | 3.924 | 4.035 |
| 110 | 5.785<< | 5.827 | 7.239 | 7.282 |
| 110 | 7.854 | 7.971>> | 3.921 | 4.038 |
| 110 | 5.787 | 5.825<< | 7.242 | 7.279 |
| 110 | 5.787 | 5.825 | 7.242>> | 7.279 |
| 110 | 7.854 | 7.971 | 3.921<< | 4.038 |
| 110 | 5.785 | 5.827 | 7.239 | 7.282>> |
| 110 | 7.856 | 7.968 | 3.924 | 4.035<< |
| 111 | 6.920>> | 6.989 | 5.437 | 5.506 |
| 111 | 5.480<< | 5.507 | 7.734 | 7.761 |
| 111 | 6.918 | 6.990>> | 5.436 | 5.508 |
| 111 | 5.482 | 5.505<< | 7.736 | 7.759 |
| 111 | 5.482 | 5.505 | 7.736>> | 7.759 |
| 111 | 6.918 | 6.990 | 5.436<< | 5.508 |
| 111 | 5.480 | 5.507 | 7.734 | 7.761>> |
| 111 | 6.920 | 6.989 | 5.437 | 5.506<< |

| BARRA 111 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 111 | 6.912>> | 6.981 | 5.413 | 5.482 |
| 111 | 5.472<< | 5.499 | 7.710 | 7.736 |
| 111 | 6.910 | 6.983>> | 5.411 | 5.484 |
| 111 | 5.474 | 5.497<< | 7.711 | 7.735 |
| 111 | 5.474 | 5.497 | 7.711>> | 7.735 |
| 111 | 6.910 | 6.983 | 5.411<< | 5.484 |
| 111 | 5.472 | 5.499 | 7.710 | 7.736>> |
| 111 | 6.912 | 6.981 | 5.413 | 5.482<< |
| 112 | 5.716>> | 5.745 | 7.327 | 7.356 |
| 112 | 5.052<< | 5.063 | 8.385 | 8.396 |
| 112 | 5.716 | 5.745>> | 7.327 | 7.356 |
| 112 | 5.053 | 5.062<< | 8.385 | 8.395 |
| 112 | 5.053 | 5.062 | 8.385>> | 8.395 |
| 112 | 5.716 | 5.745 | 7.327<< | 7.356 |
| 112 | 5.052 | 5.063 | 8.385 | 8.396>> |
| 112 | 5.716 | 5.745 | 7.327 | 7.356<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 112 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 112 | 4.351>> | 4.338 | 5.694 | 5.681 |
| 112 | 3.670<< | 3.670 | 6.456 | 6.456 |
| 112 | 4.334 | 4.338>> | 5.694 | 5.698 |
| 112 | 3.670 | 3.669<< | 6.456 | 6.455 |
| 112 | 3.670 | 3.669 | 6.456>> | 6.455 |
| 112 | 4.350 | 4.338 | 5.693<< | 5.681 |
| 112 | 3.670 | 3.670 | 6.456 | 6.456>> |
| 112 | 4.351 | 4.338 | 5.694 | 5.681<< |
| 113 | 4.255>> | 4.150 | 5.914 | 5.809 |
| 113 | 4.161<< | 4.218 | 5.820 | 5.877 |
| 113 | 4.175 | 4.231>> | 5.833 | 5.889 |
| 113 | 4.241 | 4.141<< | 5.900 | 5.800 |
| 113 | 4.255 | 4.150 | 5.914>> | 5.809 |
| 113 | 4.161 | 4.218 | 5.820<< | 5.877 |
| 113 | 4.175 | 4.231 | 5.833 | 5.889>> |
| 113 | 4.241 | 4.141 | 5.900 | 5.800<< |

TITULO
=======
LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=i)(1.00*G+0.40*LEV+1.00*P+0.8*SC+0.5*GT)

FICHERO DE GEOMETRIA COMPLETA
==============================
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
================================
1

| Fich | Num. Nudos | Num. barras | Num. hipotesis | NOMBRE FICHERO |
|---|---|---|---|---|
| 1 | 120 | 119 | 161 | ESFec.TXT |

| Fich | Hipotesis | Caracter | Coeficiente |
|---|---|---|---|
| 1 | 1 | 1 | 1.0 |
| 1 | 2 | 1 | 0.4 |
| 1 | 3 | 1 | 1.0 |
| 1 | 4 | 3 | 1.0 |
| 1 | 5 | 3 | 1.0 |
| 1 | 6 | 3 | 1.0 |
| 1 | 7 | 2 | 0.5 |
| 1 | 8 | 2 | 0.5 |
| 1 | 9 | 2 | 0.5 |
| 1 | 10 | 2 | 0.5 |
| 1 | 11 | 2 | 0.5 |
| 1 | 12 | 2 | 0.5 |
| 1 | 13 | 2 | 0.5 |
| 1 | 14 | 2 | 0.5 |
| 1 | 15 | 2 | 0.5 |
| 1 | 16 | 2 | 0.5 |
| 1 | 17 | 2 | 0.5 |
| 1 | 18 | 2 | 0.5 |
| 1 | 19 | 4 | 0.0 |
| 1 | 20 | 5 | 0.8 |
| 1 | 21 | 4 | 0.0 |
| 1 | 22 | 5 | 0.8 |
| 1 | 23 | 4 | 0.0 |
| 1 | 24 | 5 | 0.8 |
| 1 | 25 | 4 | 0.0 |
| 1 | 26 | 5 | 0.8 |
| 1 | 27 | 4 | 0.0 |
| 1 | 28 | 5 | 0.8 |
| 1 | 29 | 4 | 0.0 |
| 1 | 30 | 5 | 0.8 |
| 1 | 31 | 4 | 0.0 |
| 1 | 32 | 5 | 0.8 |
| 1 | 33 | 4 | 0.0 |
| 1 | 34 | 5 | 0.8 |
| 1 | 35 | 4 | 0.0 |
| 1 | 36 | 5 | 0.8 |
| 1 | 37 | 4 | 0.0 |
| 1 | 38 | 5 | 0.8 |
| 1 | 39 | 4 | 0.0 |
| 1 | 40 | 5 | 0.8 |
| 1 | 41 | 6 | 0.0 |
| 1 | 42 | 7 | 0.8 |
| 1 | 43 | 6 | 0.0 |
| 1 | 44 | 7 | 0.8 |
| 1 | 45 | 6 | 0.0 |
| 1 | 46 | 7 | 0.8 |

| | | | |
|---|---|---|---|
| 1 | 47 | 6 | 0.0 |
| 1 | 48 | 7 | 0.8 |
| 1 | 49 | 6 | 0.0 |
| 1 | 50 | 7 | 0.8 |
| 1 | 51 | 6 | 0.0 |
| 1 | 52 | 7 | 0.8 |
| 1 | 53 | 6 | 0.0 |
| 1 | 54 | 7 | 0.8 |
| 1 | 55 | 6 | 0.0 |
| 1 | 56 | 7 | 0.8 |
| 1 | 57 | 6 | 0.0 |
| 1 | 58 | 7 | 0.8 |
| 1 | 59 | 6 | 0.0 |
| 1 | 60 | 7 | 0.8 |
| 1 | 61 | 6 | 0.0 |
| 1 | 62 | 7 | 0.8 |
| 1 | 63 | 6 | 0.0 |
| 1 | 64 | 7 | 0.8 |
| 1 | 65 | 6 | 0.0 |
| 1 | 66 | 7 | 0.8 |
| 1 | 67 | 6 | 0.0 |
| 1 | 68 | 7 | 0.8 |
| 1 | 69 | 6 | 0.0 |
| 1 | 70 | 7 | 0.8 |
| 1 | 71 | 6 | 0.0 |
| 1 | 72 | 7 | 0.8 |
| 1 | 73 | 6 | 0.0 |
| 1 | 74 | 7 | 0.8 |
| 1 | 75 | 6 | 0.0 |
| 1 | 76 | 7 | 0.8 |
| 1 | 77 | 6 | 0.0 |
| 1 | 78 | 7 | 0.8 |
| 1 | 79 | 6 | 0.0 |
| 1 | 80 | 7 | 0.8 |
| 1 | 81 | 6 | 0.0 |
| 1 | 82 | 7 | 0.8 |
| 1 | 83 | 6 | 0.0 |
| 1 | 84 | 7 | 0.8 |
| 1 | 85 | 6 | 0.0 |
| 1 | 86 | 7 | 0.8 |
| 1 | 87 | 6 | 0.0 |
| 1 | 88 | 7 | 0.8 |
| 1 | 89 | 6 | 0.0 |
| 1 | 90 | 7 | 0.8 |
| 1 | 91 | 6 | 0.0 |
| 1 | 92 | 7 | 0.8 |
| 1 | 93 | 6 | 0.0 |
| 1 | 94 | 7 | 0.8 |
| 1 | 95 | 6 | 0.0 |
| 1 | 96 | 7 | 0.8 |
| 1 | 97 | 8 | 0.8 |
| 1 | 98 | 9 | 0.0 |
| 1 | 99 | 8 | 0.8 |
| 1 | 100 | 9 | 0.0 |
| 1 | 101 | 8 | 0.8 |
| 1 | 102 | 9 | 0.0 |
| 1 | 103 | 8 | 0.8 |
| 1 | 104 | 9 | 0.0 |
| 1 | 105 | 8 | 0.8 |
| 1 | 106 | 9 | 0.0 |
| 1 | 107 | 8 | 0.8 |
| 1 | 108 | 9 | 0.0 |
| 1 | 109 | 8 | 0.8 |
| 1 | 110 | 9 | 0.0 |
| 1 | 111 | 8 | 0.8 |
| 1 | 112 | 9 | 0.0 |
| 1 | 113 | 8 | 0.8 |
| 1 | 114 | 9 | 0.0 |
| 1 | 115 | 8 | 0.8 |
| 1 | 116 | 9 | 0.0 |
| 1 | 117 | 8 | 0.8 |
| 1 | 118 | 9 | 0.0 |
| 1 | 119 | 8 | 0.8 |
| 1 | 120 | 10 | 0.0 |
| 1 | 121 | 8 | 0.8 |
| 1 | 122 | 10 | 0.0 |
| 1 | 123 | 8 | 0.8 |
| 1 | 124 | 10 | 0.0 |
| 1 | 125 | 8 | 0.8 |
| 1 | 126 | 10 | 0.0 |
| 1 | 127 | 8 | 0.8 |
| 1 | 128 | 10 | 0.0 |
| 1 | 129 | 8 | 0.8 |
| 1 | 130 | 10 | 0.0 |
| 1 | 131 | 8 | 0.8 |
| 1 | 132 | 10 | 0.0 |
| 1 | 133 | 8 | 0.8 |
| 1 | 134 | 10 | 0.0 |
| 1 | 135 | 8 | 0.8 |
| 1 | 136 | 10 | 0.0 |
| 1 | 137 | 8 | 0.8 |
| 1 | 138 | 10 | 0.0 |
| 1 | 139 | 8 | 0.8 |
| 1 | 140 | 10 | 0.0 |
| 1 | 141 | 2 | 0.5 |
| 1 | 142 | 1 | 20.433 |
| 1 | 143 | 1 | 2.919 |
| 1 | 144 | 1 | 2.919 |
| 1 | 145 | 1 | 11.676 |
| 1 | 146 | 1 | 2.919 |
| 1 | 147 | 1 | 2.919 |
| 1 | 148 | 1 | 6.464 |
| 1 | 149 | 1 | 6.464 |
| 1 | 150 | 1 | 6.464 |
| 1 | 151 | 1 | 6.464 |
| 1 | 152 | 1 | 6.464 |
| 1 | 153 | 1 | 6.464 |
| 1 | 154 | 1 | 6.464 |
| 1 | 155 | 1 | 6.464 |
| 1 | 156 | 1 | 6.464 |
| 1 | 157 | 1 | 6.464 |
| 1 | 158 | 1 | 6.464 |
| 1 | 159 | 1 | 6.464 |
| 1 | 160 | 1 | 6.464 |
| 1 | 161 | 1 | 6.464 |

PONDERACION DE TENSIONES

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 1 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 1 | 6.159>> | 6.065 | 5.624 | 5.530 |
| 1 | 6.068<< | 6.130 | 5.532 | 5.594 |
| 1 | 6.081 | 6.139>> | 5.545 | 5.603 |
| 1 | 6.136 | 6.053<< | 5.600 | 5.517 |
| 1 | 6.159 | 6.065 | 5.624>> | 5.530 |
| 1 | 6.068 | 6.130 | 5.532<< | 5.594 |
| 1 | 6.081 | 6.139 | 5.545 | 5.603>> |
| 1 | 6.136 | 6.053 | 5.600 | 5.517<< |
| 2 | 6.030>> | 6.016 | 5.706 | 5.691 |
| 2 | 5.279<< | 5.277 | 6.547 | 6.545 |
| 2 | 6.029 | 6.017>> | 5.705 | 5.693 |
| 2 | 5.281 | 5.275<< | 6.549 | 6.543 |
| 2 | 5.280 | 5.275 | 6.549>> | 6.544 |
| 2 | 6.030 | 6.017 | 5.705<< | 5.692 |
| 2 | 5.279 | 5.276 | 6.548 | 6.545>> |
| 2 | 6.030 | 6.017 | 5.705 | 5.691<< |

| BARRA 2 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 2 | 7.731>> | 7.755 | 7.354 | 7.378 |
| 2 | 6.997<< | 7.001 | 8.522 | 8.526 |
| 2 | 7.730 | 7.755>> | 7.353 | 7.378 |
| 2 | 6.998 | 7.001<< | 8.523 | 8.525 |
| 2 | 6.998 | 7.001 | 8.523>> | 8.525 |
| 2 | 7.730 | 7.755 | 7.353<< | 7.378 |
| 2 | 6.997 | 7.001 | 8.522 | 8.526>> |
| 2 | 7.731 | 7.755 | 7.354 | 7.378<< |
| 3 | 8.888>> | 8.939 | 5.517 | 5.568 |
| 3 | 7.261<< | 7.270 | 8.104 | 8.114 |
| 3 | 8.886 | 8.940>> | 5.515 | 5.570 |
| 3 | 7.262 | 7.269<< | 8.106 | 8.113 |
| 3 | 7.262 | 7.269 | 8.106>> | 8.113 |
| 3 | 8.886 | 8.940 | 5.515<< | 5.570 |
| 3 | 7.261 | 7.270 | 8.104 | 8.114>> |
| 3 | 8.888 | 8.939 | 5.517 | 5.568<< |

| BARRA 3 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 3 | 8.898>> | 8.950 | 5.547 | 5.598 |
| 3 | 7.271<< | 7.281 | 8.134 | 8.144 |
| 3 | 8.897 | 8.951>> | 5.546 | 5.600 |
| 3 | 7.273 | 7.280<< | 8.136 | 8.143 |
| 3 | 7.273 | 7.280 | 8.136>> | 8.143 |
| 3 | 8.897 | 8.951 | 5.546<< | 5.600 |
| 3 | 7.271 | 7.281 | 8.134 | 8.144>> |
| 3 | 8.898 | 8.950 | 5.547 | 5.598<< |
| 4 | 9.856>> | 9.924 | 4.034 | 4.101 |
| 4 | 7.454<< | 7.470 | 7.842 | 7.858 |
| 4 | 9.854 | 9.926>> | 4.031 | 4.104 |
| 4 | 7.457 | 7.468<< | 7.844 | 7.856 |
| 4 | 7.457 | 7.468 | 7.844>> | 7.856 |
| 4 | 9.854 | 9.926 | 4.031<< | 4.104 |
| 4 | 7.454 | 7.470 | 7.842 | 7.858>> |
| 4 | 9.856 | 9.924 | 4.034 | 4.101<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 4 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 4 | 9.865>> | 9.933 | 4.067 | 4.134 |
| 4 | 7.463<< | 7.479 | 7.875 | 7.891 |
| 4 | 9.863 | 9.935>> | 4.064 | 4.137 |
| 4 | 7.465 | 7.476<< | 7.878 | 7.889 |
| 4 | 7.465 | 7.476 | 7.878>> | 7.889 |
| 4 | 9.863 | 9.935 | 4.064<< | 4.137 |
| 4 | 7.463 | 7.479 | 7.875 | 7.891>> |
| 4 | 9.865 | 9.933 | 4.067 | 4.134<< |
| 5 | 10.626>> | 10.714 | 2.856 | 2.944 |
| 5 | 7.568<< | 7.590 | 7.703 | 7.725 |
| 5 | 10.623 | 10.717>> | 2.853 | 2.947 |
| 5 | 7.572 | 7.587<< | 7.707 | 7.722 |
| 5 | 7.572 | 7.587 | 7.707>> | 7.722 |
| 5 | 10.623 | 10.717 | 2.853<< | 2.947 |
| 5 | 7.568 | 7.590 | 7.703 | 7.725>> |
| 5 | 10.626 | 10.714 | 2.856 | 2.944<< |

| BARRA 5 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 5 | 10.633>> | 10.720 | 2.890 | 2.978 |
| 5 | 7.575<< | 7.597 | 7.737 | 7.759 |
| 5 | 10.630 | 10.724>> | 2.887 | 2.981 |
| 5 | 7.579 | 7.594<< | 7.741 | 7.756 |
| 5 | 7.579 | 7.594 | 7.741>> | 7.756 |
| 5 | 10.630 | 10.724 | 2.887<< | 2.981 |
| 5 | 7.575 | 7.597 | 7.737 | 7.759>> |
| 5 | 10.633 | 10.720 | 2.890 | 2.978<< |
| 6 | 11.183>> | 11.288 | 2.011 | 2.116 |
| 6 | 7.602<< | 7.630 | 7.688 | 7.716 |
| 6 | 11.179 | 11.293>> | 2.007 | 2.120 |
| 6 | 7.606 | 7.626<< | 7.692 | 7.712 |
| 6 | 7.606 | 7.626 | 7.692>> | 7.712 |
| 6 | 11.179 | 11.293 | 2.007<< | 2.120 |
| 6 | 7.602 | 7.630 | 7.688 | 7.716>> |
| 6 | 11.183 | 11.288 | 2.011 | 2.116<< |

| BARRA 6 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 6 | 11.189>> | 11.294 | 2.046 | 2.152 |
| 6 | 7.608<< | 7.636 | 7.723 | 7.751 |
| 6 | 11.184 | 11.298>> | 2.042 | 2.156 |
| 6 | 7.612 | 7.631<< | 7.728 | 7.747 |
| 6 | 7.612 | 7.631 | 7.728>> | 7.747 |
| 6 | 11.184 | 11.298 | 2.042<< | 2.156 |
| 6 | 7.608 | 7.636 | 7.723 | 7.751>> |
| 6 | 11.189 | 11.294 | 2.046 | 2.152<< |
| 7 | 11.517>> | 11.637 | 1.516 | 1.636 |
| 7 | 7.558<< | 7.592 | 7.793 | 7.826 |
| 7 | 11.511 | 11.642>> | 1.511 | 1.641 |
| 7 | 7.563 | 7.587<< | 7.798 | 7.821 |
| 7 | 7.563 | 7.587 | 7.798>> | 7.821 |
| 7 | 11.511 | 11.642 | 1.511<< | 1.641 |
| 7 | 7.558 | 7.592 | 7.793 | 7.826>> |
| 7 | 11.517 | 11.637 | 1.516 | 1.636<< |

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| BARRA 7 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 7 | 11.521>> | 11.642 | 1.551 | 1.672 |
| 7 | 7.563<< | 7.597 | 7.828 | 7.862 |
| 7 | 11.516 | 11.647>> | 1.546 | 1.677 |
| 7 | 7.568 | 7.592<< | 7.833 | 7.857 |
| 7 | 7.568 | 7.592 | 7.833>> | 7.857 |
| 7 | 11.516 | 11.647 | 1.546<< | 1.677 |
| 7 | 7.563 | 7.597 | 7.828 | 7.862>> |
| 7 | 11.521 | 11.642 | 1.551 | 1.672<< |
| 8 | 11.611>> | 11.742 | 1.398 | 1.529 |
| 8 | 7.439<< | 7.479 | 8.014 | 8.054 |
| 8 | 11.605 | 11.748>> | 1.392 | 1.535 |
| 8 | 7.445 | 7.473<< | 8.020 | 8.048 |
| 8 | 7.445 | 7.473 | 8.020>> | 8.048 |
| 8 | 11.605 | 11.748 | 1.392<< | 1.535 |
| 8 | 7.439 | 7.479 | 8.014 | 8.054>> |
| 8 | 11.611 | 11.742 | 1.398 | 1.529<< |

| BARRA 8 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 8 | 11.616>> | 11.747 | 1.438 | 1.569 |
| 8 | 7.444<< | 7.484 | 8.054 | 8.094 |
| 8 | 11.610 | 11.754>> | 1.432 | 1.575 |
| 8 | 7.450 | 7.478<< | 8.060 | 8.088 |
| 8 | 7.450 | 7.478 | 8.060>> | 8.088 |
| 8 | 11.610 | 11.754 | 1.432<< | 1.575 |
| 8 | 7.444 | 7.484 | 8.054 | 8.094>> |
| 8 | 11.616 | 11.747 | 1.438 | 1.569<< |
| 9 | 11.513>> | 11.654 | 1.586 | 1.727 |
| 9 | 7.270<< | 7.316 | 8.317 | 8.363 |
| 9 | 11.507 | 11.661>> | 1.579 | 1.734 |
| 9 | 7.277 | 7.309<< | 8.324 | 8.356 |
| 9 | 7.277 | 7.309 | 8.324>> | 8.356 |
| 9 | 11.507 | 11.661 | 1.579<< | 1.734 |
| 9 | 7.270 | 7.316 | 8.317 | 8.363>> |
| 9 | 11.513 | 11.654 | 1.586 | 1.727<< |

| BARRA 9 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 9 | 11.511>> | 11.651 | 1.583 | 1.723 |
| 9 | 7.268<< | 7.313 | 8.314 | 8.360 |
| 9 | 11.504 | 11.658>> | 1.576 | 1.730 |
| 9 | 7.275 | 7.306<< | 8.321 | 8.353 |
| 9 | 7.275 | 7.306 | 8.321>> | 8.353 |
| 9 | 11.504 | 11.658 | 1.576<< | 1.730 |
| 9 | 7.268 | 7.313 | 8.314 | 8.360>> |
| 9 | 11.511 | 11.651 | 1.583 | 1.723<< |
| 10 | 11.238>> | 11.384 | 2.001 | 2.147 |
| 10 | 7.073<< | 7.125 | 8.609 | 8.661 |
| 10 | 11.230 | 11.392>> | 1.993 | 2.154 |
| 10 | 7.081 | 7.117<< | 8.617 | 8.653 |
| 10 | 7.081 | 7.117 | 8.617>> | 8.653 |
| 10 | 11.230 | 11.392 | 1.993<< | 2.154 |
| 10 | 7.073 | 7.125 | 8.609 | 8.661>> |
| 10 | 11.238 | 11.384 | 2.001 | 2.147<< |

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| BARRA 10 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 10 | 11.230>> | 11.376 | 1.976 | 2.121 |
| 10 | 7.066<< | 7.117 | 8.584 | 8.636 |
| 10 | 11.223 | 11.384>> | 1.968 | 2.129 |
| 10 | 7.073 | 7.109<< | 8.592 | 8.628 |
| 10 | 7.073 | 7.109 | 8.592>> | 8.628 |
| 10 | 11.223 | 11.384 | 1.968<< | 2.129 |
| 10 | 7.066 | 7.117 | 8.584 | 8.636>> |
| 10 | 11.230 | 11.376 | 1.976 | 2.121<< |
| 11 | 10.773>> | 10.920 | 2.686 | 2.834 |
| 11 | 6.849<< | 6.907 | 8.914 | 8.971 |
| 11 | 10.764 | 10.929>> | 2.677 | 2.843 |
| 11 | 6.858 | 6.898<< | 8.922 | 8.962 |
| 11 | 6.858 | 6.898 | 8.922>> | 8.962 |
| 11 | 10.764 | 10.929 | 2.677<< | 2.843 |
| 11 | 6.849 | 6.907 | 8.914 | 8.971>> |
| 11 | 10.773 | 10.920 | 2.686 | 2.834<< |

| BARRA 11 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 11 | 10.763>> | 10.911 | 2.662 | 2.809 |
| 11 | 6.839<< | 6.897 | 8.889 | 8.947 |
| 11 | 10.754 | 10.920>> | 2.653 | 2.818 |
| 11 | 6.848 | 6.888<< | 8.898 | 8.938 |
| 11 | 6.848 | 6.888 | 8.898>> | 8.938 |
| 11 | 10.754 | 10.920 | 2.653<< | 2.818 |
| 11 | 6.839 | 6.897 | 8.889 | 8.947>> |
| 11 | 10.763 | 10.911 | 2.662 | 2.809<< |
| 12 | 10.140>> | 10.287 | 3.632 | 3.780 |
| 12 | 6.597<< | 6.660 | 9.259 | 9.323 |
| 12 | 10.130 | 10.297>> | 3.623 | 3.789 |
| 12 | 6.606 | 6.650<< | 9.269 | 9.313 |
| 12 | 6.606 | 6.650 | 9.269>> | 9.313 |
| 12 | 10.130 | 10.297 | 3.623<< | 3.789 |
| 12 | 6.597 | 6.660 | 9.259 | 9.323>> |
| 12 | 10.140 | 10.287 | 3.632 | 3.780<< |

| BARRA 12 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 12 | 9.684>> | 9.831 | 2.607 | 2.754 |
| 12 | 6.141<< | 6.204 | 8.234 | 8.297 |
| 12 | 9.674 | 9.841>> | 2.597 | 2.764 |
| 12 | 6.150 | 6.194<< | 8.243 | 8.287 |
| 12 | 6.150 | 6.194 | 8.243>> | 8.287 |
| 12 | 9.674 | 9.841 | 2.597<< | 2.764 |
| 12 | 6.141 | 6.204 | 8.234 | 8.297>> |
| 12 | 9.684 | 9.831 | 2.607 | 2.754<< |
| 13 | 8.941>> | 9.077 | 3.778 | 3.915 |
| 13 | 5.831<< | 5.908 | 8.698 | 8.776 |
| 13 | 8.840 | 9.092>> | 3.788 | 4.040 |
| 13 | 5.841 | 5.898<< | 8.709 | 8.765 |
| 13 | 5.841 | 5.898 | 8.709>> | 8.765 |
| 13 | 8.930 | 9.088 | 3.767<< | 3.925 |
| 13 | 5.831 | 5.908 | 8.698 | 8.776>> |
| 13 | 8.941 | 9.077 | 3.778 | 3.915<< |

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| BARRA 13 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 13 | 8.923>> | 9.060 | 3.759 | 3.896 |
| 13 | 5.814<< | 5.891 | 8.679 | 8.756 |
| 13 | 8.822 | 9.075>> | 3.768 | 4.020 |
| 13 | 5.824 | 5.880<< | 8.690 | 8.746 |
| 13 | 5.824 | 5.880 | 8.690>> | 8.746 |
| 13 | 8.913 | 9.071 | 3.748<< | 3.906 |
| 13 | 5.814 | 5.891 | 8.679 | 8.756>> |
| 13 | 8.923 | 9.060 | 3.759 | 3.896<< |
| 14 | 8.413>> | 8.121 | 5.103 | 4.810 |
| 14 | 5.262<< | 5.346 | 9.530 | 9.614 |
| 14 | 8.100 | 8.507>> | 4.696 | 5.102 |
| 14 | 5.273 | 5.334<< | 9.542 | 9.603 |
| 14 | 5.273 | 5.334 | 9.542>> | 9.603 |
| 14 | 8.249 | 8.502 | 4.660<< | 4.913 |
| 14 | 5.262 | 5.346 | 9.530 | 9.614>> |
| 14 | 8.413 | 8.121 | 5.103 | 4.810<< |

| BARRA 14 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 14 | 8.390>> | 8.098 | 5.089 | 4.797 |
| 14 | 5.239<< | 5.323 | 9.517 | 9.601 |
| 14 | 8.077 | 8.484>> | 4.683 | 5.089 |
| 14 | 5.250 | 5.311<< | 9.529 | 9.589 |
| 14 | 5.250 | 5.311 | 9.529>> | 9.589 |
| 14 | 8.226 | 8.479 | 4.647<< | 4.900 |
| 14 | 5.239 | 5.323 | 9.517 | 9.601>> |
| 14 | 8.390 | 8.098 | 5.089 | 4.797<< |
| 15 | 8.098>> | 7.919 | 5.399 | 5.220 |
| 15 | 4.481<< | 4.925 | 10.236 | 10.681 |
| 15 | 7.590 | 8.054>> | 5.368 | 5.832 |
| 15 | 4.726 | 4.656<< | 10.512 | 10.443 |
| 15 | 4.726 | 4.656 | 10.512>> | 10.443 |
| 15 | 8.058 | 7.959 | 5.359<< | 5.261 |
| 15 | 4.481 | 4.925 | 10.236 | 10.681>> |
| 15 | 8.098 | 7.919 | 5.399 | 5.220<< |

| BARRA 15 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 15 | 7.469>> | 7.312 | 4.906 | 4.750 |
| 15 | 4.110<< | 4.460 | 8.634 | 8.984 |
| 15 | 7.038 | 7.409>> | 4.875 | 5.246 |
| 15 | 4.289 | 4.250<< | 8.839 | 8.800 |
| 15 | 4.289 | 4.250 | 8.839>> | 8.800 |
| 15 | 7.436 | 7.345 | 4.874<< | 4.782 |
| 15 | 4.110 | 4.460 | 8.634 | 8.984>> |
| 15 | 7.469 | 7.312 | 4.906 | 4.750<< |
| 16 | 8.641>> | 8.524 | 3.391 | 3.274 |
| 16 | 4.279<< | 4.536 | 8.561 | 8.818 |
| 16 | 8.629 | 8.536>> | 3.379 | 3.286 |
| 16 | 4.291 | 4.525<< | 8.572 | 8.807 |
| 16 | 4.291 | 4.525 | 8.572>> | 8.807 |
| 16 | 8.629 | 8.536 | 3.379<< | 3.286 |
| 16 | 4.279 | 4.536 | 8.561 | 8.818>> |
| 16 | 8.641 | 8.524 | 3.391 | 3.274<< |

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| BARRA 16 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 16 | 8.727>> | 8.583 | 3.435 | 3.291 |
| 16 | 4.315<< | 4.620 | 8.499 | 8.804 |
| 16 | 8.688 | 8.621>> | 3.397 | 3.330 |
| 16 | 4.354 | 4.581<< | 8.538 | 8.765 |
| 16 | 4.328 | 4.582 | 8.540>> | 8.794 |
| 16 | 8.714 | 8.620 | 3.394<< | 3.301 |
| 16 | 4.316 | 4.594 | 8.528 | 8.806>> |
| 16 | 8.726 | 8.609 | 3.406 | 3.289<< |
| 17 | 7.955>> | 7.830 | 4.388 | 4.263 |
| 17 | 2.329<< | 2.611 | 11.032 | 11.315 |
| 17 | 7.943 | 7.843>> | 4.376 | 4.276 |
| 17 | 2.341 | 2.598<< | 11.045 | 11.302 |
| 17 | 2.341 | 2.598 | 11.045>> | 11.302 |
| 17 | 7.943 | 7.843 | 4.376<< | 4.276 |
| 17 | 2.329 | 2.611 | 11.032 | 11.315>> |
| 17 | 7.955 | 7.830 | 4.388 | 4.263<< |

| BARRA 17 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 17 | 7.894>> | 7.768 | 4.392 | 4.267 |
| 17 | 2.267<< | 2.549 | 11.036 | 11.318 |
| 17 | 7.881 | 7.781>> | 4.380 | 4.279 |
| 17 | 2.280 | 2.537<< | 11.049 | 11.306 |
| 17 | 2.280 | 2.537 | 11.049>> | 11.306 |
| 17 | 7.881 | 7.781 | 4.380<< | 4.279 |
| 17 | 2.267 | 2.549 | 11.036 | 11.318>> |
| 17 | 7.894 | 7.768 | 4.392 | 4.267<< |
| 18 | 8.568>> | 8.447 | 3.536 | 3.415 |
| 18 | 4.297<< | 4.581 | 8.471 | 8.755 |
| 18 | 8.555 | 8.461>> | 3.522 | 3.428 |
| 18 | 4.311 | 4.567<< | 8.485 | 8.741 |
| 18 | 4.311 | 4.567 | 8.485>> | 8.741 |
| 18 | 8.555 | 8.461 | 3.522<< | 3.428 |
| 18 | 4.297 | 4.581 | 8.471 | 8.755>> |
| 18 | 8.568 | 8.447 | 3.536 | 3.415<< |

| BARRA 18 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 18 | 8.388>> | 8.243 | 3.526 | 3.382 |
| 18 | 4.168<< | 4.443 | 8.473 | 8.747 |
| 18 | 8.355 | 8.276>> | 3.494 | 3.414 |
| 18 | 4.201 | 4.410<< | 8.505 | 8.715 |
| 18 | 4.183 | 4.411 | 8.507>> | 8.735 |
| 18 | 8.373 | 8.275 | 3.492<< | 3.393 |
| 18 | 4.169 | 4.425 | 8.493 | 8.749>> |
| 18 | 8.387 | 8.261 | 3.506 | 3.379<< |
| 19 | 7.019>> | 6.844 | 5.280 | 5.105 |
| 19 | 3.989<< | 4.278 | 8.663 | 8.952 |
| 19 | 6.969 | 6.894>> | 5.230 | 5.155 |
| 19 | 4.039 | 4.229<< | 8.712 | 8.902 |
| 19 | 4.022 | 4.229 | 8.715>> | 8.923 |
| 19 | 6.986 | 6.893 | 5.227<< | 5.135 |
| 19 | 3.989 | 4.262 | 8.683 | 8.955>> |
| 19 | 7.018 | 6.861 | 5.260 | 5.102<< |

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| BARRA 19 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 19 | 7.743>> | 7.545 | 5.589 | 5.391 |
| 19 | 4.470<< | 4.835 | 9.967 | 10.332 |
| 19 | 7.682 | 7.606>> | 5.529 | 5.452 |
| 19 | 4.531 | 4.775<< | 10.028 | 10.271 |
| 19 | 4.494 | 4.781 | 10.031>> | 10.318 |
| 19 | 7.720 | 7.600 | 5.526<< | 5.405 |
| 19 | 4.477 | 4.798 | 10.014 | 10.335>> |
| 19 | 7.737 | 7.583 | 5.543 | 5.388<< |
| 20 | 7.946>> | 7.591 | 5.474 | 5.119 |
| 20 | 5.466<< | 5.623 | 8.682 | 8.839 |
| 20 | 7.765 | 8.011>> | 4.987 | 5.233 |
| 20 | 5.527 | 5.563<< | 8.742 | 8.778 |
| 20 | 5.527 | 5.563 | 8.742>> | 8.778 |
| 20 | 7.765 | 8.011 | 4.987<< | 5.233 |
| 20 | 5.466 | 5.623 | 8.682 | 8.839>> |
| 20 | 7.943 | 7.662 | 5.383 | 5.103<< |

| BARRA 20 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 20 | 7.937>> | 7.582 | 5.462 | 5.107 |
| 20 | 5.458<< | 5.615 | 8.670 | 8.827 |
| 20 | 7.757 | 8.003>> | 4.975 | 5.221 |
| 20 | 5.518 | 5.555<< | 8.730 | 8.767 |
| 20 | 5.518 | 5.555 | 8.730>> | 8.767 |
| 20 | 7.757 | 8.003 | 4.975<< | 5.221 |
| 20 | 5.458 | 5.615 | 8.670 | 8.827>> |
| 20 | 7.934 | 7.654 | 5.372 | 5.091<< |
| 21 | 8.451>> | 8.565 | 4.063 | 4.177 |
| 21 | 5.945<< | 6.068 | 7.954 | 8.077 |
| 21 | 8.413 | 8.638>> | 3.979 | 4.204 |
| 21 | 5.980 | 6.033<< | 7.989 | 8.042 |
| 21 | 5.980 | 6.033 | 7.989>> | 8.042 |
| 21 | 8.413 | 8.638 | 3.979<< | 4.204 |
| 21 | 5.945 | 6.068 | 7.954 | 8.077>> |
| 21 | 8.448 | 8.603 | 4.014 | 4.169<< |

| BARRA 21 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 21 | 8.444>> | 8.558 | 4.043 | 4.158 |
| 21 | 5.939<< | 6.062 | 7.935 | 8.058 |
| 21 | 8.407 | 8.632>> | 3.960 | 4.184 |
| 21 | 5.974 | 6.026<< | 7.970 | 8.023 |
| 21 | 5.974 | 6.026 | 7.970>> | 8.023 |
| 21 | 8.407 | 8.632 | 3.960<< | 4.184 |
| 21 | 5.939 | 6.062 | 7.935 | 8.058>> |
| 21 | 8.442 | 8.597 | 3.995 | 4.150<< |
| 22 | 9.246>> | 9.379 | 2.771 | 2.903 |
| 22 | 6.201<< | 6.308 | 7.546 | 7.654 |
| 22 | 9.211 | 9.413>> | 2.736 | 2.938 |
| 22 | 6.235 | 6.274<< | 7.581 | 7.620 |
| 22 | 6.235 | 6.274 | 7.581>> | 7.620 |
| 22 | 9.211 | 9.413 | 2.736<< | 2.938 |
| 22 | 6.201 | 6.308 | 7.546 | 7.654>> |
| 22 | 9.246 | 9.379 | 2.771 | 2.903<< |

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| BARRA 22 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 22 | 8.608>> | 8.741 | 2.891 | 3.024 |
| 22 | 5.563<< | 5.671 | 7.667 | 7.774 |
| 22 | 8.574 | 8.776>> | 2.856 | 3.058 |
| 22 | 5.598 | 5.636<< | 7.701 | 7.740 |
| 22 | 5.598 | 5.636 | 7.701>> | 7.740 |
| 22 | 8.574 | 8.776 | 2.856<< | 3.058 |
| 22 | 5.563 | 5.671 | 7.667 | 7.774>> |
| 22 | 8.608 | 8.741 | 2.891 | 3.024<< |
| 23 | 9.304>> | 9.446 | 1.795 | 1.937 |
| 23 | 5.758<< | 5.858 | 7.373 | 7.472 |
| 23 | 9.270 | 9.481>> | 1.760 | 1.971 |
| 23 | 5.793 | 5.823<< | 7.407 | 7.438 |
| 23 | 5.783 | 5.824 | 7.409>> | 7.451 |
| 23 | 9.280 | 9.480 | 1.759<< | 1.959 |
| 23 | 5.759 | 5.848 | 7.386 | 7.474>> |
| 23 | 9.303 | 9.456 | 1.782 | 1.935<< |

| BARRA 23 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 23 | 9.303>> | 9.445 | 1.809 | 1.951 |
| 23 | 5.757<< | 5.857 | 7.387 | 7.486 |
| 23 | 9.269 | 9.480>> | 1.774 | 1.985 |
| 23 | 5.791 | 5.822<< | 7.421 | 7.452 |
| 23 | 5.781 | 5.823 | 7.423>> | 7.465 |
| 23 | 9.279 | 9.479 | 1.773<< | 1.972 |
| 23 | 5.758 | 5.846 | 7.400 | 7.488>> |
| 23 | 9.302 | 9.455 | 1.796 | 1.949<< |
| 24 | 9.840>> | 9.998 | 0.952 | 1.110 |
| 24 | 5.926<< | 6.008 | 7.146 | 7.227 |
| 24 | 9.815 | 10.023>> | 0.927 | 1.135 |
| 24 | 5.951 | 5.983<< | 7.170 | 7.203 |
| 24 | 5.951 | 5.983 | 7.170>> | 7.203 |
| 24 | 9.815 | 10.023 | 0.927<< | 1.135 |
| 24 | 5.926 | 6.008 | 7.146 | 7.227>> |
| 24 | 9.840 | 9.998 | 0.952 | 1.110<< |

| BARRA 24 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 24 | 9.837>> | 9.996 | 0.966 | 1.125 |
| 24 | 5.924<< | 6.006 | 7.160 | 7.242 |
| 24 | 9.813 | 10.021>> | 0.941 | 1.150 |
| 24 | 5.949 | 5.981<< | 7.185 | 7.217 |
| 24 | 5.949 | 5.981 | 7.185>> | 7.217 |
| 24 | 9.813 | 10.021 | 0.941<< | 1.150 |
| 24 | 5.924 | 6.006 | 7.160 | 7.242>> |
| 24 | 9.837 | 9.996 | 0.966 | 1.125<< |
| 25 | 10.186>> | 10.346 | 0.421 | 0.582 |
| 25 | 6.072<< | 6.148 | 6.938 | 7.013 |
| 25 | 10.159 | 10.372>> | 0.395 | 0.608 |
| 25 | 6.099 | 6.121<< | 6.964 | 6.986 |
| 25 | 6.099 | 6.121 | 6.964>> | 6.986 |
| 25 | 10.159 | 10.372 | 0.395<< | 0.608 |
| 25 | 6.072 | 6.148 | 6.938 | 7.013>> |
| 25 | 10.186 | 10.346 | 0.421 | 0.582<< |

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| BARRA 25 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 25 | 10.183>> | 10.344 | 0.432 | 0.593 |
| 25 | 6.070<< | 6.145 | 6.948 | 7.024 |
| 25 | 10.157 | 10.370>> | 0.406 | 0.619 |
| 25 | 6.097 | 6.119<< | 6.975 | 6.997 |
| 25 | 6.097 | 6.119 | 6.975>> | 6.997 |
| 25 | 10.157 | 10.370 | 0.406<< | 0.619 |
| 25 | 6.070 | 6.145 | 6.948 | 7.024>> |
| 25 | 10.183 | 10.344 | 0.432 | 0.593<< |
| 26 | 10.354>> | 10.514 | 0.167 | 0.327 |
| 26 | 6.163<< | 6.294 | 6.733 | 6.864 |
| 26 | 10.326 | 10.542>> | 0.139 | 0.355 |
| 26 | 6.343 | 6.169<< | 6.843 | 6.669 |
| 26 | 6.343 | 6.169 | 6.843>> | 6.669 |
| 26 | 10.326 | 10.542 | 0.139<< | 0.355 |
| 26 | 6.163 | 6.294 | 6.733 | 6.864>> |
| 26 | 10.354 | 10.514 | 0.167 | 0.327<< |

| BARRA 26 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 26 | 10.352>> | 10.512 | 0.173 | 0.334 |
| 26 | 6.161<< | 6.291 | 6.739 | 6.870 |
| 26 | 10.324 | 10.540>> | 0.145 | 0.361 |
| 26 | 6.341 | 6.167<< | 6.849 | 6.675 |
| 26 | 6.341 | 6.167 | 6.849>> | 6.675 |
| 26 | 10.324 | 10.540 | 0.145<< | 0.361 |
| 26 | 6.161 | 6.291 | 6.739 | 6.870>> |
| 26 | 10.352 | 10.512 | 0.173 | 0.334<< |
| 27 | 10.420>> | 10.578 | 0.070 | 0.227 |
| 27 | 6.169<< | 6.128 | 6.946 | 6.905 |
| 27 | 10.391 | 10.607>> | 0.040 | 0.257 |
| 27 | 6.199 | 6.098<< | 6.976 | 6.875 |
| 27 | 6.199 | 6.098 | 6.976>> | 6.875 |
| 27 | 10.391 | 10.607 | 0.040<< | 0.257 |
| 27 | 6.169 | 6.128 | 6.946 | 6.905>> |
| 27 | 10.420 | 10.578 | 0.070 | 0.227<< |

| BARRA 27 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 27 | 10.419>> | 10.576 | 0.072 | 0.230 |
| 27 | 6.168<< | 6.126 | 6.949 | 6.907 |
| 27 | 10.389 | 10.606>> | 0.043 | 0.259 |
| 27 | 6.197 | 6.097<< | 6.978 | 6.878 |
| 27 | 6.197 | 6.097 | 6.978>> | 6.878 |
| 27 | 10.389 | 10.606 | 0.043<< | 0.259 |
| 27 | 6.168 | 6.126 | 6.949 | 6.907>> |
| 27 | 10.419 | 10.576 | 0.072 | 0.230<< |
| 28 | 10.360>> | 10.512 | 0.171 | 0.323 |
| 28 | 6.033<< | 5.999 | 7.149 | 7.115 |
| 28 | 10.329 | 10.543>> | 0.140 | 0.354 |
| 28 | 6.064 | 5.968<< | 7.180 | 7.084 |
| 28 | 6.064 | 5.968 | 7.180>> | 7.084 |
| 28 | 10.329 | 10.543 | 0.140<< | 0.354 |
| 28 | 6.033 | 5.999 | 7.149 | 7.115>> |
| 28 | 10.360 | 10.512 | 0.171 | 0.323<< |

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| BARRA 28 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 28 | 10.359>> | 10.510 | 0.169 | 0.321 |
| 28 | 6.032<< | 5.998 | 7.147 | 7.113 |
| 28 | 10.328 | 10.541>> | 0.138 | 0.352 |
| 28 | 6.063 | 5.967<< | 7.178 | 7.082 |
| 28 | 6.063 | 5.967 | 7.178>> | 7.082 |
| 28 | 10.328 | 10.541 | 0.138<< | 0.352 |
| 28 | 6.032 | 5.998 | 7.147 | 7.113>> |
| 28 | 10.359 | 10.510 | 0.169 | 0.321<< |
| 29 | 10.200>> | 10.345 | 0.425 | 0.570 |
| 29 | 5.879<< | 5.852 | 7.376 | 7.349 |
| 29 | 10.168 | 10.377>> | 0.393 | 0.602 |
| 29 | 5.911 | 5.819<< | 7.409 | 7.317 |
| 29 | 5.911 | 5.819 | 7.409>> | 7.317 |
| 29 | 10.168 | 10.377 | 0.393<< | 0.602 |
| 29 | 5.879 | 5.852 | 7.376 | 7.349>> |
| 29 | 10.200 | 10.345 | 0.425 | 0.570<< |

| BARRA 29 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 29 | 10.200>> | 10.344 | 0.419 | 0.563 |
| 29 | 5.878<< | 5.851 | 7.370 | 7.343 |
| 29 | 10.167 | 10.376>> | 0.387 | 0.596 |
| 29 | 5.910 | 5.818<< | 7.403 | 7.311 |
| 29 | 5.910 | 5.818 | 7.403>> | 7.311 |
| 29 | 10.167 | 10.376 | 0.387<< | 0.596 |
| 29 | 5.878 | 5.851 | 7.370 | 7.343>> |
| 29 | 10.200 | 10.344 | 0.419 | 0.563<< |
| 30 | 9.864>> | 9.997 | 0.956 | 1.090 |
| 30 | 5.706<< | 5.686 | 7.628 | 7.609 |
| 30 | 9.830 | 10.031>> | 0.922 | 1.124 |
| 30 | 5.740 | 5.652<< | 7.662 | 7.575 |
| 30 | 5.740 | 5.652 | 7.662>> | 7.575 |
| 30 | 9.830 | 10.031 | 0.922<< | 1.124 |
| 30 | 5.706 | 5.686 | 7.628 | 7.609>> |
| 30 | 9.864 | 9.997 | 0.956 | 1.090<< |

| BARRA 30 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 30 | 9.863>> | 9.996 | 0.947 | 1.080 |
| 30 | 5.705<< | 5.685 | 7.619 | 7.599 |
| 30 | 9.829 | 10.030>> | 0.913 | 1.114 |
| 30 | 5.739 | 5.651<< | 7.653 | 7.565 |
| 30 | 5.739 | 5.651 | 7.653>> | 7.565 |
| 30 | 9.829 | 10.030 | 0.913<< | 1.114 |
| 30 | 5.705 | 5.685 | 7.619 | 7.599>> |
| 30 | 9.863 | 9.996 | 0.947 | 1.080<< |
| 31 | 9.338>> | 9.457 | 1.782 | 1.901 |
| 31 | 5.514<< | 5.501 | 7.907 | 7.895 |
| 31 | 9.303 | 9.493>> | 1.746 | 1.936 |
| 31 | 5.549 | 5.466<< | 7.943 | 7.859 |
| 31 | 5.549 | 5.466 | 7.943>> | 7.859 |
| 31 | 9.303 | 9.493 | 1.746<< | 1.936 |
| 31 | 5.514 | 5.501 | 7.907 | 7.895>> |
| 31 | 9.338 | 9.457 | 1.782 | 1.901<< |

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| BARRA 31 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 31 | 9.336>> | 9.455 | 1.770 | 1.889 |
| 31 | 5.512<< | 5.499 | 7.896 | 7.883 |
| 31 | 9.301 | 9.491>> | 1.735 | 1.925 |
| 31 | 5.547 | 5.464<< | 7.931 | 7.848 |
| 31 | 5.547 | 5.464 | 7.931>> | 7.848 |
| 31 | 9.301 | 9.491 | 1.735<< | 1.925 |
| 31 | 5.512 | 5.499 | 7.896 | 7.883>> |
| 31 | 9.336 | 9.455 | 1.770 | 1.889<< |
| 32 | 8.651>> | 8.753 | 2.859 | 2.961 |
| 32 | 5.298<< | 5.293 | 8.219 | 8.214 |
| 32 | 8.614 | 8.790>> | 2.822 | 2.998 |
| 32 | 5.335 | 5.256<< | 8.256 | 8.177 |
| 32 | 5.317 | 5.260 | 8.256>> | 8.199 |
| 32 | 8.633 | 8.786 | 2.822<< | 2.975 |
| 32 | 5.302 | 5.274 | 8.242 | 8.214>> |
| 32 | 8.647 | 8.772 | 2.836 | 2.961<< |

| BARRA 32 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 32 | 8.647>> | 8.749 | 2.846 | 2.948 |
| 32 | 5.295<< | 5.289 | 8.206 | 8.201 |
| 32 | 8.610 | 8.786>> | 2.809 | 2.985 |
| 32 | 5.332 | 5.252<< | 8.243 | 8.164 |
| 32 | 5.313 | 5.256 | 8.243>> | 8.186 |
| 32 | 8.629 | 8.782 | 2.809<< | 2.962 |
| 32 | 5.299 | 5.271 | 8.229 | 8.201>> |
| 32 | 8.643 | 8.768 | 2.823 | 2.948<< |
| 33 | 7.918>> | 7.999 | 4.009 | 4.090 |
| 33 | 4.956<< | 4.954 | 8.730 | 8.727 |
| 33 | 7.879 | 8.038>> | 3.970 | 4.129 |
| 33 | 4.995 | 4.915<< | 8.768 | 8.688 |
| 33 | 4.975 | 4.919 | 8.769>> | 8.712 |
| 33 | 7.899 | 8.034 | 3.970<< | 4.104 |
| 33 | 4.960 | 4.934 | 8.754 | 8.728>> |
| 33 | 7.914 | 8.019 | 3.985 | 4.089<< |

| BARRA 33 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 33 | 7.911>> | 7.993 | 3.997 | 4.078 |
| 33 | 4.950<< | 4.947 | 8.717 | 8.715 |
| 33 | 7.873 | 8.031>> | 3.958 | 4.116 |
| 33 | 4.988 | 4.909<< | 8.756 | 8.676 |
| 33 | 4.969 | 4.912 | 8.757>> | 8.700 |
| 33 | 7.893 | 8.027 | 3.957<< | 4.092 |
| 33 | 4.954 | 4.927 | 8.742 | 8.715>> |
| 33 | 7.908 | 8.012 | 3.973 | 4.077<< |
| 34 | 7.462>> | 7.083 | 5.286 | 4.907 |
| 34 | 4.426<< | 4.449 | 9.501 | 9.524 |
| 34 | 7.112 | 7.418>> | 4.954 | 5.261 |
| 34 | 4.486 | 4.390<< | 9.560 | 9.464 |
| 34 | 4.447 | 4.395 | 9.564>> | 9.512 |
| 34 | 7.150 | 7.413 | 4.950<< | 5.213 |
| 34 | 4.431 | 4.411 | 9.548 | 9.528>> |
| 34 | 7.457 | 7.121 | 5.238 | 4.902<< |

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| BARRA 34 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 34 | 7.451>> | 7.072 | 5.276 | 4.897 |
| 34 | 4.416<< | 4.439 | 9.491 | 9.514 |
| 34 | 7.101 | 7.408>> | 4.945 | 5.252 |
| 34 | 4.475 | 4.379<< | 9.551 | 9.455 |
| 34 | 4.437 | 4.384 | 9.555>> | 9.503 |
| 34 | 7.140 | 7.403 | 4.941<< | 5.204 |
| 34 | 4.421 | 4.400 | 9.539 | 9.518>> |
| 34 | 7.446 | 7.111 | 5.229 | 4.893<< |
| 35 | 7.211>> | 6.958 | 5.489 | 5.236 |
| 35 | 3.522<< | 3.718 | 10.663 | 10.858 |
| 35 | 7.150 | 7.019>> | 5.429 | 5.297 |
| 35 | 3.795 | 3.629<< | 10.700 | 10.534 |
| 35 | 3.544 | 3.663 | 10.726>> | 10.845 |
| 35 | 7.188 | 7.013 | 5.426<< | 5.250 |
| 35 | 3.528 | 3.679 | 10.710 | 10.861>> |
| 35 | 7.205 | 6.996 | 5.442 | 5.234<< |

| BARRA 35 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 35 | 6.742>> | 6.522 | 4.989 | 4.769 |
| 35 | 3.312<< | 3.455 | 8.989 | 9.131 |
| 35 | 6.694 | 6.571>> | 4.941 | 4.818 |
| 35 | 3.518 | 3.401<< | 8.996 | 8.879 |
| 35 | 3.329 | 3.409 | 9.040>> | 9.119 |
| 35 | 6.725 | 6.569 | 4.938<< | 4.781 |
| 35 | 3.315 | 3.423 | 9.025 | 9.134>> |
| 35 | 6.740 | 6.554 | 4.953 | 4.767<< |
| 36 | 7.834>> | 7.636 | 3.596 | 3.398 |
| 36 | 3.273<< | 3.401 | 9.075 | 9.202 |
| 36 | 7.631 | 7.684>> | 3.566 | 3.619 |
| 36 | 3.310 | 3.363<< | 9.112 | 9.165 |
| 36 | 3.290 | 3.365 | 9.113>> | 9.188 |
| 36 | 7.817 | 7.671 | 3.558<< | 3.412 |
| 36 | 3.275 | 3.380 | 9.098 | 9.203>> |
| 36 | 7.832 | 7.656 | 3.573 | 3.397<< |

| BARRA 36 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 36 | 7.920>> | 7.721 | 3.608 | 3.410 |
| 36 | 3.307<< | 3.460 | 9.035 | 9.188 |
| 36 | 7.715 | 7.774>> | 3.576 | 3.634 |
| 36 | 3.345 | 3.422<< | 9.073 | 9.150 |
| 36 | 3.324 | 3.424 | 9.074>> | 9.173 |
| 36 | 7.902 | 7.757 | 3.570<< | 3.424 |
| 36 | 3.309 | 3.439 | 9.059 | 9.189>> |
| 36 | 7.918 | 7.742 | 3.585 | 3.409<< |
| 37 | 7.047>> | 6.842 | 4.718 | 4.512 |
| 37 | 1.189<< | 1.338 | 11.714 | 11.863 |
| 37 | 6.875 | 6.921>> | 4.651 | 4.697 |
| 37 | 1.229 | 1.299<< | 11.754 | 11.824 |
| 37 | 1.207 | 1.300 | 11.755>> | 11.848 |
| 37 | 6.897 | 6.919 | 4.650<< | 4.672 |
| 37 | 1.191 | 1.316 | 11.739 | 11.864>> |
| 37 | 7.045 | 6.864 | 4.693 | 4.511<< |

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| BARRA 37 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 37 | 7.052>> | 6.846 | 4.710 | 4.504 |
| 37 | 1.194<< | 1.342 | 11.706 | 11.855 |
| 37 | 6.880 | 6.925>> | 4.643 | 4.689 |
| 37 | 1.233 | 1.303<< | 11.746 | 11.815 |
| 37 | 1.211 | 1.305 | 11.747>> | 11.840 |
| 37 | 6.902 | 6.924 | 4.642<< | 4.664 |
| 37 | 1.196 | 1.320 | 11.731 | 11.856>> |
| 37 | 7.050 | 6.868 | 4.685 | 4.503<< |
| 38 | 7.747>> | 7.526 | 3.849 | 3.628 |
| 38 | 3.220<< | 3.385 | 9.129 | 9.295 |
| 38 | 7.632 | 7.665>> | 3.707 | 3.741 |
| 38 | 3.255 | 3.349<< | 9.165 | 9.259 |
| 38 | 3.255 | 3.349 | 9.165>> | 9.259 |
| 38 | 7.632 | 7.665 | 3.707<< | 3.741 |
| 38 | 3.220 | 3.385 | 9.129 | 9.295>> |
| 38 | 7.747 | 7.526 | 3.849 | 3.628<< |

| BARRA 38 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 38 | 7.667>> | 7.438 | 3.819 | 3.591 |
| 38 | 3.188<< | 3.329 | 9.148 | 9.289 |
| 38 | 7.547 | 7.582>> | 3.673 | 3.708 |
| 38 | 3.224 | 3.292<< | 9.184 | 9.252 |
| 38 | 3.224 | 3.292 | 9.184>> | 9.252 |
| 38 | 7.547 | 7.582 | 3.673<< | 3.708 |
| 38 | 3.188 | 3.329 | 9.148 | 9.289>> |
| 38 | 7.667 | 7.438 | 3.819 | 3.591<< |
| 39 | 6.400>> | 6.195 | 5.381 | 5.176 |
| 39 | 3.102<< | 3.258 | 9.221 | 9.377 |
| 39 | 6.350 | 6.335>> | 5.233 | 5.217 |
| 39 | 3.135 | 3.225<< | 9.254 | 9.344 |
| 39 | 3.135 | 3.225 | 9.254>> | 9.344 |
| 39 | 6.350 | 6.335 | 5.233<< | 5.217 |
| 39 | 3.102 | 3.258 | 9.221 | 9.377>> |
| 39 | 6.400 | 6.195 | 5.381 | 5.176<< |

| BARRA 39 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 39 | 7.035>> | 6.793 | 5.755 | 5.512 |
| 39 | 3.490<< | 3.712 | 10.684 | 10.906 |
| 39 | 6.960 | 6.960>> | 5.562 | 5.561 |
| 39 | 3.544 | 3.658<< | 10.737 | 10.852 |
| 39 | 3.527 | 3.659 | 10.741>> | 10.873 |
| 39 | 6.977 | 6.959 | 5.558<< | 5.540 |
| 39 | 3.491 | 3.695 | 10.704 | 10.909>> |
| 39 | 7.014 | 6.923 | 5.595 | 5.504<< |
| 40 | 7.254>> | 7.102 | 5.299 | 5.147 |
| 40 | 4.405<< | 4.489 | 9.435 | 9.519 |
| 40 | 7.122 | 7.316>> | 5.061 | 5.255 |
| 40 | 4.456 | 4.438<< | 9.486 | 9.467 |
| 40 | 4.440 | 4.440 | 9.488>> | 9.488 |
| 40 | 7.139 | 7.314 | 5.059<< | 5.235 |
| 40 | 4.407 | 4.472 | 9.455 | 9.521>> |
| 40 | 7.252 | 7.118 | 5.278 | 5.145<< |

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| BARRA 40 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 40 | 7.260>> | 7.108 | 5.313 | 5.161 |
| 40 | 4.411<< | 4.495 | 9.449 | 9.533 |
| 40 | 7.129 | 7.323>> | 5.075 | 5.269 |
| 40 | 4.463 | 4.444<< | 9.500 | 9.482 |
| 40 | 4.446 | 4.446 | 9.502>> | 9.502 |
| 40 | 7.145 | 7.321 | 5.073<< | 5.249 |
| 40 | 4.414 | 4.479 | 9.469 | 9.535>> |
| 40 | 7.258 | 7.125 | 5.292 | 5.159<< |
| 41 | 7.827>> | 7.917 | 4.121 | 4.211 |
| 41 | 4.924<< | 4.986 | 8.679 | 8.741 |
| 41 | 7.782 | 7.970>> | 4.065 | 4.253 |
| 41 | 4.952 | 4.957<< | 8.708 | 8.713 |
| 41 | 4.952 | 4.957 | 8.708>> | 8.713 |
| 41 | 7.782 | 7.970 | 4.065<< | 4.253 |
| 41 | 4.924 | 4.986 | 8.679 | 8.741>> |
| 41 | 7.827 | 7.917 | 4.121 | 4.211<< |

| BARRA 41 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 41 | 7.830>> | 7.920 | 4.138 | 4.228 |
| 41 | 4.927<< | 4.989 | 8.697 | 8.759 |
| 41 | 7.785 | 7.973>> | 4.083 | 4.271 |
| 41 | 4.955 | 4.960<< | 8.725 | 8.730 |
| 41 | 4.955 | 4.960 | 8.725>> | 8.730 |
| 41 | 7.785 | 7.973 | 4.083<< | 4.271 |
| 41 | 4.927 | 4.989 | 8.697 | 8.759>> |
| 41 | 7.830 | 7.920 | 4.138 | 4.228<< |
| 42 | 8.560>> | 8.684 | 2.957 | 3.081 |
| 42 | 5.261<< | 5.318 | 8.182 | 8.239 |
| 42 | 8.535 | 8.709>> | 2.932 | 3.106 |
| 42 | 5.286 | 5.293<< | 8.207 | 8.214 |
| 42 | 5.286 | 5.293 | 8.207>> | 8.214 |
| 42 | 8.535 | 8.709 | 2.932<< | 3.106 |
| 42 | 5.261 | 5.318 | 8.182 | 8.239>> |
| 42 | 8.560 | 8.684 | 2.957 | 3.081<< |

| BARRA 42 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 42 | 8.752>> | 8.876 | 1.829 | 1.953 |
| 42 | 5.453<< | 5.510 | 7.054 | 7.111 |
| 42 | 8.727 | 8.901>> | 1.804 | 1.978 |
| 42 | 5.478 | 5.485<< | 7.079 | 7.086 |
| 42 | 5.478 | 5.485 | 7.079>> | 7.086 |
| 42 | 8.727 | 8.901 | 1.804<< | 1.978 |
| 42 | 5.453 | 5.510 | 7.054 | 7.111>> |
| 42 | 8.752 | 8.876 | 1.829 | 1.953<< |
| 43 | 9.432>> | 9.595 | 0.721 | 0.884 |
| 43 | 5.656<< | 5.700 | 6.754 | 6.798 |
| 43 | 9.418 | 9.609>> | 0.707 | 0.898 |
| 43 | 5.670 | 5.686<< | 6.768 | 6.784 |
| 43 | 5.670 | 5.686 | 6.768>> | 6.784 |
| 43 | 9.418 | 9.609 | 0.707<< | 0.898 |
| 43 | 5.656 | 5.700 | 6.754 | 6.798>> |
| 43 | 9.432 | 9.595 | 0.721 | 0.884<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 43 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 43 | 9.430>> | 9.593 | 0.737 | 0.900 |
| 43 | 5.655<< | 5.699 | 6.770 | 6.814 |
| 43 | 9.416 | 9.607>> | 0.723 | 0.914 |
| 43 | 5.669 | 5.685<< | 6.784 | 6.800 |
| 43 | 5.669 | 5.685 | 6.784>> | 6.800 |
| 43 | 9.416 | 9.607 | 0.723<< | 0.914 |
| 43 | 5.655 | 5.699 | 6.770 | 6.814>> |
| 43 | 9.430 | 9.593 | 0.737 | 0.900<< |
| 44 | 9.950>> | 10.140 | -0.107 | 0.083 |
| 44 | 5.832<< | 5.874 | 6.497 | 6.539 |
| 44 | 9.937 | 10.153>> | -0.120 | 0.096 |
| 44 | 5.845 | 5.860<< | 6.511 | 6.526 |
| 44 | 5.845 | 5.860 | 6.511>> | 6.526 |
| 44 | 9.937 | 10.153 | -0.120<< | 0.096 |
| 44 | 5.832 | 5.874 | 6.497 | 6.539>> |
| 44 | 9.950 | 10.140 | -0.107 | 0.083<< |

| BARRA 44 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 44 | 9.948>> | 10.138 | -0.093 | 0.097 |
| 44 | 5.830<< | 5.872 | 6.512 | 6.553 |
| 44 | 9.935 | 10.151>> | -0.106 | 0.110 |
| 44 | 5.843 | 5.858<< | 6.525 | 6.540 |
| 44 | 5.843 | 5.858 | 6.525>> | 6.540 |
| 44 | 9.935 | 10.151 | -0.106<< | 0.110 |
| 44 | 5.830 | 5.872 | 6.512 | 6.553>> |
| 44 | 9.948 | 10.138 | -0.093 | 0.097<< |
| 45 | 10.279>> | 10.491 | -0.637 | -0.424 |
| 45 | 5.987<< | 6.026 | 6.271 | 6.310 |
| 45 | 10.266 | 10.504>> | -0.649 | -0.412 |
| 45 | 5.999 | 6.013<< | 6.283 | 6.297 |
| 45 | 5.999 | 6.013 | 6.283>> | 6.297 |
| 45 | 10.266 | 10.504 | -0.649<< | -0.412 |
| 45 | 5.987 | 6.026 | 6.271 | 6.310>> |
| 45 | 10.279 | 10.491 | -0.637 | -0.424<< |

| BARRA 45 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 45 | 10.276>> | 10.489 | -0.626 | -0.414 |
| 45 | 5.984<< | 6.024 | 6.281 | 6.321 |
| 45 | 10.264 | 10.501>> | -0.639 | -0.401 |
| 45 | 5.997 | 6.011<< | 6.294 | 6.308 |
| 45 | 5.997 | 6.011 | 6.294>> | 6.308 |
| 45 | 10.264 | 10.501 | -0.639<< | -0.401 |
| 45 | 5.984 | 6.024 | 6.281 | 6.321>> |
| 45 | 10.276 | 10.489 | -0.626 | -0.414<< |
| 46 | 10.429>> | 10.663 | -0.891 | -0.657 |
| 46 | 6.121<< | 6.158 | 6.071 | 6.108 |
| 46 | 10.417 | 10.675>> | -0.903 | -0.646 |
| 46 | 6.133 | 6.146<< | 6.083 | 6.096 |
| 46 | 6.125 | 6.147 | 6.084>> | 6.106 |
| 46 | 10.425 | 10.673 | -0.904<< | -0.655 |
| 46 | 6.122 | 6.150 | 6.081 | 6.109>> |
| 46 | 10.428 | 10.671 | -0.901 | -0.658<< |

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| BARRA 46 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 46 | 10.427>> | 10.661 | -0.885 | -0.651 |
| 46 | 6.119<< | 6.156 | 6.077 | 6.114 |
| 46 | 10.415 | 10.673>> | -0.897 | -0.639 |
| 46 | 6.131 | 6.144<< | 6.089 | 6.102 |
| 46 | 6.123 | 6.145 | 6.090>> | 6.112 |
| 46 | 10.423 | 10.671 | -0.897<< | -0.649 |
| 46 | 6.120 | 6.148 | 6.087 | 6.115>> |
| 46 | 10.426 | 10.669 | -0.895 | -0.652<< |
| 47 | 10.479>> | 10.730 | -0.988 | -0.737 |
| 47 | 6.215<< | 6.292 | 5.877 | 5.954 |
| 47 | 10.468 | 10.742>> | -1.000 | -0.725 |
| 47 | 6.261 | 6.245<< | 5.924 | 5.908 |
| 47 | 6.253 | 6.245 | 5.927>> | 5.919 |
| 47 | 10.476 | 10.742 | -1.002<< | -0.736 |
| 47 | 6.215 | 6.284 | 5.888 | 5.957>> |
| 47 | 10.479 | 10.739 | -0.999 | -0.739<< |

| BARRA 47 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 47 | 10.477>> | 10.729 | -0.986 | -0.734 |
| 47 | 6.213<< | 6.290 | 5.880 | 5.957 |
| 47 | 10.466 | 10.740>> | -0.997 | -0.723 |
| 47 | 6.259 | 6.243<< | 5.927 | 5.911 |
| 47 | 6.251 | 6.243 | 5.929>> | 5.921 |
| 47 | 10.474 | 10.740 | -0.999<< | -0.733 |
| 47 | 6.213 | 6.282 | 5.890 | 5.959>> |
| 47 | 10.477 | 10.737 | -0.996 | -0.736<< |
| 48 | 10.403>> | 10.672 | -0.892 | -0.623 |
| 48 | 6.073<< | 6.142 | 6.108 | 6.178 |
| 48 | 10.394 | 10.680>> | -0.900 | -0.614 |
| 48 | 6.081 | 6.134<< | 6.117 | 6.169 |
| 48 | 6.076 | 6.134 | 6.118>> | 6.176 |
| 48 | 10.399 | 10.680 | -0.901<< | -0.621 |
| 48 | 6.073 | 6.137 | 6.115 | 6.179>> |
| 48 | 10.402 | 10.677 | -0.898 | -0.624<< |

| BARRA 48 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 48 | 10.401>> | 10.670 | -0.894 | -0.625 |
| 48 | 6.072<< | 6.141 | 6.106 | 6.176 |
| 48 | 10.393 | 10.679>> | -0.902 | -0.616 |
| 48 | 6.080 | 6.132<< | 6.115 | 6.167 |
| 48 | 6.075 | 6.133 | 6.116>> | 6.174 |
| 48 | 10.398 | 10.679 | -0.903<< | -0.623 |
| 48 | 6.072 | 6.136 | 6.113 | 6.177>> |
| 48 | 10.401 | 10.675 | -0.900 | -0.626<< |
| 49 | 10.227>> | 10.510 | -0.640 | -0.357 |
| 49 | 5.898<< | 5.990 | 6.347 | 6.439 |
| 49 | 10.218 | 10.518>> | -0.648 | -0.348 |
| 49 | 5.907 | 5.982<< | 6.356 | 6.431 |
| 49 | 5.902 | 5.983 | 6.356>> | 6.436 |
| 49 | 10.223 | 10.517 | -0.648<< | -0.354 |
| 49 | 5.899 | 5.986 | 6.353 | 6.439>> |
| 49 | 10.226 | 10.514 | -0.645 | -0.357<< |

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| BARRA 49 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 49 | 10.226>> | 10.509 | -0.646 | -0.363 |
| 49 | 5.898<< | 5.989 | 6.341 | 6.433 |
| 49 | 10.217 | 10.517>> | -0.654 | -0.354 |
| 49 | 5.906 | 5.981<< | 6.349 | 6.424 |
| 49 | 5.901 | 5.982 | 6.350>> | 6.430 |
| 49 | 10.222 | 10.517 | -0.655<< | -0.360 |
| 49 | 5.898 | 5.985 | 6.347 | 6.433>> |
| 49 | 10.225 | 10.513 | -0.651 | -0.363<< |
| 50 | 9.874>> | 10.167 | -0.111 | 0.183 |
| 50 | 5.706<< | 5.820 | 6.611 | 6.725 |
| 50 | 9.865 | 10.175>> | -0.119 | 0.191 |
| 50 | 5.714 | 5.812<< | 6.619 | 6.717 |
| 50 | 5.711 | 5.812 | 6.620>> | 6.721 |
| 50 | 9.868 | 10.175 | -0.119<< | 0.188 |
| 50 | 5.706 | 5.817 | 6.614 | 6.726>> |
| 50 | 9.873 | 10.170 | -0.114 | 0.182<< |

| BARRA 50 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 50 | 9.873>> | 10.166 | -0.120 | 0.173 |
| 50 | 5.704<< | 5.819 | 6.601 | 6.716 |
| 50 | 9.864 | 10.174>> | -0.129 | 0.181 |
| 50 | 5.713 | 5.811<< | 6.610 | 6.707 |
| 50 | 5.710 | 5.811 | 6.610>> | 6.711 |
| 50 | 9.867 | 10.174 | -0.129<< | 0.178 |
| 50 | 5.705 | 5.816 | 6.605 | 6.716>> |
| 50 | 9.872 | 10.169 | -0.124 | 0.173<< |
| 51 | 9.332>> | 9.632 | 0.714 | 1.013 |
| 51 | 5.493<< | 5.630 | 6.902 | 7.039 |
| 51 | 9.324 | 9.640>> | 0.705 | 1.022 |
| 51 | 5.501 | 5.622<< | 6.910 | 7.030 |
| 51 | 5.498 | 5.622 | 6.910>> | 7.034 |
| 51 | 9.327 | 9.639 | 0.705<< | 1.018 |
| 51 | 5.494 | 5.627 | 6.905 | 7.039>> |
| 51 | 9.332 | 9.635 | 0.710 | 1.013<< |

| BARRA 51 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 51 | 9.330>> | 9.630 | 0.702 | 1.002 |
| 51 | 5.491<< | 5.628 | 6.890 | 7.027 |
| 51 | 9.322 | 9.638>> | 0.694 | 1.010 |
| 51 | 5.499 | 5.620<< | 6.898 | 7.019 |
| 51 | 5.496 | 5.620 | 6.898>> | 7.022 |
| 51 | 9.325 | 9.637 | 0.693<< | 1.006 |
| 51 | 5.492 | 5.625 | 6.894 | 7.027>> |
| 51 | 9.330 | 9.633 | 0.698 | 1.001<< |
| 52 | 8.630>> | 8.928 | 1.795 | 2.093 |
| 52 | 5.257<< | 5.422 | 7.219 | 7.384 |
| 52 | 8.616 | 8.941>> | 1.782 | 2.107 |
| 52 | 5.271 | 5.408<< | 7.232 | 7.370 |
| 52 | 5.263 | 5.409 | 7.234>> | 7.380 |
| 52 | 8.624 | 8.940 | 1.780<< | 2.097 |
| 52 | 5.258 | 5.414 | 7.229 | 7.385>> |
| 52 | 8.629 | 8.936 | 1.785 | 2.092<< |

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| BARRA 52 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 52 | 8.626>> | 8.924 | 1.782 | 2.080 |
| 52 | 5.253<< | 5.418 | 7.206 | 7.371 |
| 52 | 8.612 | 8.937>> | 1.769 | 2.094 |
| 52 | 5.267 | 5.405<< | 7.219 | 7.357 |
| 52 | 5.259 | 5.405 | 7.221>> | 7.367 |
| 52 | 8.620 | 8.937 | 1.767<< | 2.084 |
| 52 | 5.254 | 5.410 | 7.216 | 7.372>> |
| 52 | 8.625 | 8.932 | 1.772 | 2.079<< |
| 53 | 7.859>> | 8.104 | 3.044 | 3.289 |
| 53 | 4.931<< | 5.143 | 7.648 | 7.860 |
| 53 | 7.823 | 8.125>> | 3.028 | 3.329 |
| 53 | 4.944 | 5.130<< | 7.661 | 7.847 |
| 53 | 4.940 | 5.130 | 7.661>> | 7.852 |
| 53 | 7.827 | 8.124 | 3.027<< | 3.325 |
| 53 | 4.931 | 5.139 | 7.652 | 7.861>> |
| 53 | 7.859 | 8.108 | 3.040 | 3.288<< |

| BARRA 53 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 53 | 7.853>> | 8.098 | 3.032 | 3.277 |
| 53 | 4.924<< | 5.136 | 7.636 | 7.848 |
| 53 | 7.817 | 8.118>> | 3.016 | 3.317 |
| 53 | 4.937 | 5.124<< | 7.649 | 7.835 |
| 53 | 4.934 | 5.124 | 7.649>> | 7.839 |
| 53 | 7.820 | 8.118 | 3.015<< | 3.313 |
| 53 | 4.925 | 5.133 | 7.640 | 7.848>> |
| 53 | 7.853 | 8.101 | 3.028 | 3.276<< |
| 54 | 7.375>> | 7.209 | 4.302 | 4.135 |
| 54 | 4.381<< | 4.649 | 8.410 | 8.679 |
| 54 | 6.885 | 7.509>> | 4.055 | 4.678 |
| 54 | 4.425 | 4.605<< | 8.454 | 8.634 |
| 54 | 4.422 | 4.605 | 8.455>> | 8.639 |
| 54 | 7.167 | 7.476 | 4.019<< | 4.327 |
| 54 | 4.381 | 4.646 | 8.415 | 8.679>> |
| 54 | 7.375 | 7.212 | 4.298 | 4.135<< |

| BARRA 54 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 54 | 7.365>> | 7.198 | 4.293 | 4.126 |
| 54 | 4.370<< | 4.639 | 8.401 | 8.669 |
| 54 | 6.875 | 7.498>> | 4.046 | 4.669 |
| 54 | 4.415 | 4.595<< | 8.445 | 8.625 |
| 54 | 4.411 | 4.595 | 8.446>> | 8.629 |
| 54 | 7.156 | 7.465 | 4.010<< | 4.318 |
| 54 | 4.371 | 4.635 | 8.406 | 8.670>> |
| 54 | 7.365 | 7.202 | 4.288 | 4.125<< |
| 55 | 7.099>> | 7.047 | 4.561 | 4.508 |
| 55 | 3.450<< | 3.969 | 9.514 | 10.033 |
| 55 | 7.054 | 7.092>> | 4.516 | 4.554 |
| 55 | 3.741 | 3.850<< | 9.586 | 9.694 |
| 55 | 3.738 | 3.850 | 9.587>> | 9.699 |
| 55 | 7.057 | 7.092 | 4.515<< | 4.549 |
| 55 | 3.450 | 3.965 | 9.519 | 10.034>> |
| 55 | 7.099 | 7.050 | 4.556 | 4.508<< |

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| BARRA 55 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 55 | 6.702>> | 6.661 | 4.261 | 4.220 |
| 55 | 3.315<< | 3.737 | 8.092 | 8.514 |
| 55 | 6.667 | 6.693>> | 4.230 | 4.256 |
| 55 | 3.536 | 3.659<< | 8.125 | 8.248 |
| 55 | 3.532 | 3.659 | 8.126>> | 8.252 |
| 55 | 6.670 | 6.693 | 4.230<< | 4.252 |
| 55 | 3.315 | 3.737 | 8.092 | 8.514>> |
| 55 | 6.702 | 6.661 | 4.261 | 4.220<< |
| 56 | 7.730>> | 7.721 | 2.937 | 2.928 |
| 56 | 3.224<< | 3.634 | 8.241 | 8.651 |
| 56 | 7.726 | 7.724>> | 2.934 | 2.932 |
| 56 | 3.227 | 3.630<< | 8.244 | 8.647 |
| 56 | 3.224 | 3.630 | 8.244>> | 8.651 |
| 56 | 7.729 | 7.724 | 2.934<< | 2.928 |
| 56 | 3.224 | 3.630 | 8.244 | 8.651>> |
| 56 | 7.729 | 7.724 | 2.934 | 2.928<< |

| BARRA 56 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 56 | 7.813>> | 7.806 | 2.947 | 2.940 |
| 56 | 3.256<< | 3.693 | 8.199 | 8.636 |
| 56 | 7.810 | 7.809>> | 2.944 | 2.943 |
| 56 | 3.260 | 3.689<< | 8.203 | 8.633 |
| 56 | 3.256 | 3.690 | 8.203>> | 8.636 |
| 56 | 7.813 | 7.809 | 2.944<< | 2.940 |
| 56 | 3.256 | 3.690 | 8.203 | 8.636>> |
| 56 | 7.813 | 7.809 | 2.944 | 2.940<< |
| 57 | 6.927>> | 6.923 | 4.063 | 4.059 |
| 57 | 1.121<< | 1.570 | 10.882 | 11.331 |
| 57 | 6.920 | 6.930>> | 4.056 | 4.066 |
| 57 | 1.122 | 1.569<< | 10.882 | 11.330 |
| 57 | 1.122 | 1.569 | 10.882>> | 11.330 |
| 57 | 6.920 | 6.930 | 4.056<< | 4.066 |
| 57 | 1.121 | 1.570 | 10.882 | 11.331>> |
| 57 | 6.927 | 6.923 | 4.063 | 4.059<< |

| BARRA 57 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 57 | 6.931>> | 6.928 | 4.055 | 4.051 |
| 57 | 1.126<< | 1.574 | 10.874 | 11.323 |
| 57 | 6.924 | 6.935>> | 4.047 | 4.058 |
| 57 | 1.126 | 1.574<< | 10.874 | 11.322 |
| 57 | 1.126 | 1.574 | 10.874>> | 11.322 |
| 57 | 6.924 | 6.935 | 4.047<< | 4.058 |
| 57 | 1.126 | 1.574 | 10.874 | 11.323>> |
| 57 | 6.931 | 6.928 | 4.055 | 4.051<< |
| 58 | 7.683>> | 7.682 | 3.102 | 3.102 |
| 58 | 3.130<< | 3.568 | 8.356 | 8.794 |
| 58 | 7.679 | 7.686>> | 3.098 | 3.105 |
| 58 | 3.133 | 3.564<< | 8.359 | 8.790 |
| 58 | 3.133 | 3.564 | 8.359>> | 8.790 |
| 58 | 7.679 | 7.686 | 3.098<< | 3.105 |
| 58 | 3.130 | 3.568 | 8.356 | 8.794>> |
| 58 | 7.683 | 7.682 | 3.102 | 3.102<< |

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| BARRA 58 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 58 | 7.600>> | 7.599 | 3.070 | 3.068 |
| 58 | 3.099<< | 3.510 | 8.375 | 8.786 |
| 58 | 7.596 | 7.602>> | 3.066 | 3.072 |
| 58 | 3.102 | 3.506<< | 8.379 | 8.782 |
| 58 | 3.102 | 3.506 | 8.379>> | 8.782 |
| 58 | 7.596 | 7.602 | 3.066<< | 3.072 |
| 58 | 3.099 | 3.510 | 8.375 | 8.786>> |
| 58 | 7.600 | 7.599 | 3.070 | 3.068<< |
| 59 | 6.409>> | 6.381 | 4.594 | 4.566 |
| 59 | 3.031<< | 3.455 | 8.426 | 8.851 |
| 59 | 6.377 | 6.413>> | 4.562 | 4.598 |
| 59 | 3.245 | 3.379<< | 8.458 | 8.591 |
| 59 | 3.062 | 3.423 | 8.458>> | 8.819 |
| 59 | 6.377 | 6.413 | 4.562<< | 4.598 |
| 59 | 3.031 | 3.455 | 8.426 | 8.851>> |
| 59 | 6.409 | 6.381 | 4.594 | 4.566<< |

| BARRA 59 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 59 | 6.980>> | 6.945 | 4.729 | 4.694 |
| 59 | 3.340<< | 3.859 | 9.691 | 10.209 |
| 59 | 6.939 | 6.986>> | 4.688 | 4.735 |
| 59 | 3.624 | 3.745<< | 9.757 | 9.878 |
| 59 | 3.624 | 3.745 | 9.757>> | 9.878 |
| 59 | 6.939 | 6.986 | 4.688<< | 4.735 |
| 59 | 3.340 | 3.859 | 9.691 | 10.209>> |
| 59 | 6.980 | 6.945 | 4.729 | 4.694<< |
| 60 | 7.200>> | 7.059 | 4.522 | 4.381 |
| 60 | 4.218<< | 4.489 | 8.640 | 8.911 |
| 60 | 6.724 | 7.340>> | 4.296 | 4.911 |
| 60 | 4.259 | 4.449<< | 8.680 | 8.870 |
| 60 | 4.259 | 4.449 | 8.680>> | 8.870 |
| 60 | 7.000 | 7.314 | 4.251<< | 4.565 |
| 60 | 4.218 | 4.489 | 8.640 | 8.911>> |
| 60 | 7.200 | 7.059 | 4.522 | 4.381<< |

| BARRA 60 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 60 | 7.206>> | 7.065 | 4.536 | 4.395 |
| 60 | 4.225<< | 4.496 | 8.654 | 8.925 |
| 60 | 6.730 | 7.346>> | 4.310 | 4.926 |
| 60 | 4.265 | 4.456<< | 8.694 | 8.884 |
| 60 | 4.265 | 4.456 | 8.694>> | 8.884 |
| 60 | 7.007 | 7.321 | 4.265<< | 4.579 |
| 60 | 4.225 | 4.496 | 8.654 | 8.925>> |
| 60 | 7.206 | 7.065 | 4.536 | 4.395<< |
| 61 | 7.652>> | 7.903 | 3.340 | 3.591 |
| 61 | 4.725<< | 4.944 | 7.941 | 8.160 |
| 61 | 7.618 | 7.922>> | 3.325 | 3.629 |
| 61 | 4.737 | 4.932<< | 7.953 | 8.148 |
| 61 | 4.733 | 4.933 | 7.953>> | 8.152 |
| 61 | 7.622 | 7.922 | 3.325<< | 3.625 |
| 61 | 4.725 | 4.941 | 7.945 | 8.161>> |
| 61 | 7.652 | 7.907 | 3.336 | 3.590<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 61 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 61 | 7.655>> | 7.906 | 3.357 | 3.608 |
| 61 | 4.728<< | 4.947 | 7.958 | 8.178 |
| 61 | 7.621 | 7.925>> | 3.343 | 3.647 |
| 61 | 4.740 | 4.935<< | 7.970 | 8.166 |
| 61 | 4.737 | 4.936 | 7.971>> | 8.170 |
| 61 | 7.625 | 7.925 | 3.342<< | 3.643 |
| 61 | 4.728 | 4.944 | 7.962 | 8.178>> |
| 61 | 7.655 | 7.910 | 3.353 | 3.608<< |
| 62 | 8.379>> | 8.685 | 2.160 | 2.466 |
| 62 | 5.009<< | 5.181 | 7.580 | 7.753 |
| 62 | 8.366 | 8.697>> | 2.147 | 2.479 |
| 62 | 5.022 | 5.169<< | 7.593 | 7.740 |
| 62 | 5.014 | 5.169 | 7.595>> | 7.750 |
| 62 | 8.374 | 8.697 | 2.146<< | 2.469 |
| 62 | 5.009 | 5.174 | 7.590 | 7.755>> |
| 62 | 8.379 | 8.692 | 2.151 | 2.464<< |

| BARRA 62 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 62 | 8.379>> | 8.685 | 2.177 | 2.483 |
| 62 | 5.009<< | 5.182 | 7.598 | 7.770 |
| 62 | 8.367 | 8.698>> | 2.165 | 2.496 |
| 62 | 5.022 | 5.169<< | 7.610 | 7.757 |
| 62 | 5.014 | 5.169 | 7.612>> | 7.767 |
| 62 | 8.374 | 8.697 | 2.163<< | 2.486 |
| 62 | 5.009 | 5.174 | 7.607 | 7.772>> |
| 62 | 8.379 | 8.693 | 2.168 | 2.481<< |
| 63 | 9.035>> | 9.343 | 1.153 | 1.461 |
| 63 | 5.198<< | 5.344 | 7.337 | 7.484 |
| 63 | 9.027 | 9.351>> | 1.146 | 1.469 |
| 63 | 5.205 | 5.336<< | 7.345 | 7.476 |
| 63 | 5.203 | 5.336 | 7.346>> | 7.479 |
| 63 | 9.030 | 9.351 | 1.145<< | 1.466 |
| 63 | 5.198 | 5.341 | 7.341 | 7.484>> |
| 63 | 9.035 | 9.346 | 1.150 | 1.461<< |

| BARRA 63 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 63 | 9.033>> | 9.341 | 1.170 | 1.478 |
| 63 | 5.196<< | 5.343 | 7.354 | 7.500 |
| 63 | 9.025 | 9.349>> | 1.162 | 1.486 |
| 63 | 5.204 | 5.335<< | 7.362 | 7.492 |
| 63 | 5.201 | 5.335 | 7.362>> | 7.496 |
| 63 | 9.028 | 9.349 | 1.161<< | 1.482 |
| 63 | 5.196 | 5.340 | 7.357 | 7.501>> |
| 63 | 9.033 | 9.344 | 1.166 | 1.477<< |
| 64 | 9.527>> | 9.830 | 0.407 | 0.711 |
| 64 | 5.362<< | 5.487 | 7.123 | 7.249 |
| 64 | 9.519 | 9.838>> | 0.399 | 0.718 |
| 64 | 5.370 | 5.479<< | 7.131 | 7.241 |
| 64 | 5.367 | 5.479 | 7.132>> | 7.244 |
| 64 | 9.521 | 9.838 | 0.399<< | 0.715 |
| 64 | 5.362 | 5.484 | 7.126 | 7.249>> |
| 64 | 9.527 | 9.833 | 0.404 | 0.710<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 64 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 64 | 9.525>> | 9.828 | 0.421 | 0.725 |
| 64 | 5.359<< | 5.485 | 7.138 | 7.263 |
| 64 | 9.517 | 9.836>> | 0.413 | 0.733 |
| 64 | 5.367 | 5.477<< | 7.145 | 7.255 |
| 64 | 5.365 | 5.477 | 7.146>> | 7.258 |
| 64 | 9.519 | 9.836 | 0.413<< | 0.729 |
| 64 | 5.360 | 5.482 | 7.141 | 7.263>> |
| 64 | 9.524 | 9.831 | 0.418 | 0.724<< |
| 65 | 9.829>> | 10.124 | -0.042 | 0.253 |
| 65 | 5.504<< | 5.609 | 6.939 | 7.043 |
| 65 | 9.821 | 10.132>> | -0.050 | 0.261 |
| 65 | 5.512 | 5.601<< | 6.947 | 7.035 |
| 65 | 5.506 | 5.602 | 6.947>> | 7.043 |
| 65 | 9.828 | 10.131 | -0.051<< | 0.252 |
| 65 | 5.506 | 5.602 | 6.947 | 7.043>> |
| 65 | 9.828 | 10.131 | -0.051 | 0.252<< |

| BARRA 65 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 65 | 9.827>> | 10.122 | -0.031 | 0.264 |
| 65 | 5.502<< | 5.606 | 6.950 | 7.054 |
| 65 | 9.819 | 10.130>> | -0.039 | 0.272 |
| 65 | 5.510 | 5.598<< | 6.958 | 7.046 |
| 65 | 5.503 | 5.599 | 6.958>> | 7.054 |
| 65 | 9.826 | 10.129 | -0.040 | 0.263<< |
| 66 | 9.954>> | 10.237 | -0.214 | 0.068 |
| 66 | 5.627<< | 5.710 | 6.782 | 6.865 |
| 66 | 9.946 | 10.245>> | -0.222 | 0.076 |
| 66 | 5.635 | 5.702<< | 6.790 | 6.857 |
| 66 | 5.628 | 5.703 | 6.791>> | 6.866 |
| 66 | 9.954 | 10.244 | -0.223<< | 0.067 |
| 66 | 5.628 | 5.703 | 6.791 | 6.866>> |
| 66 | 9.954 | 10.244 | -0.223 | 0.067<< |

| BARRA 66 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 66 | 9.952>> | 10.235 | -0.208 | 0.075 |
| 66 | 5.625<< | 5.708 | 6.788 | 6.871 |
| 66 | 9.944 | 10.243>> | -0.216 | 0.083 |
| 66 | 5.633 | 5.700<< | 6.796 | 6.863 |
| 66 | 5.626 | 5.701 | 6.797>> | 6.872 |
| 66 | 9.952 | 10.242 | -0.217<< | 0.074 |
| 66 | 5.626 | 5.701 | 6.797 | 6.872>> |
| 66 | 9.952 | 10.242 | -0.217 | 0.074<< |
| 67 | 9.978>> | 10.253 | -0.238 | 0.037 |
| 67 | 5.726<< | 5.786 | 6.660 | 6.721 |
| 67 | 9.975 | 10.256>> | -0.241 | 0.039 |
| 67 | 5.747 | 5.764<< | 6.682 | 6.700 |
| 67 | 5.743 | 5.765 | 6.683>> | 6.705 |
| 67 | 9.975 | 10.256 | -0.241<< | 0.039 |
| 67 | 5.726 | 5.786 | 6.660 | 6.721>> |
| 67 | 9.978 | 10.253 | -0.238 | 0.037<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 67 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 67 | 9.976>> | 10.252 | -0.236 | 0.040 |
| 67 | 5.724<< | 5.785 | 6.663 | 6.723 |
| 67 | 9.974 | 10.254>> | -0.238 | 0.042 |
| 67 | 5.745 | 5.763<< | 6.685 | 6.702 |
| 67 | 5.741 | 5.763 | 6.685>> | 6.707 |
| 67 | 9.974 | 10.254 | -0.238<< | 0.042 |
| 67 | 5.724 | 5.785 | 6.663 | 6.723>> |
| 67 | 9.976 | 10.252 | -0.236 | 0.040<< |
| 68 | 9.875>> | 10.127 | -0.049 | 0.204 |
| 68 | 5.574<< | 5.610 | 6.928 | 6.964 |
| 68 | 9.866 | 10.137>> | -0.058 | 0.213 |
| 68 | 5.583 | 5.601<< | 6.937 | 6.955 |
| 68 | 5.576 | 5.601 | 6.939>> | 6.964 |
| 68 | 9.872 | 10.136 | -0.060<< | 0.204 |
| 68 | 5.574 | 5.603 | 6.937 | 6.966>> |
| 68 | 9.875 | 10.134 | -0.057 | 0.202<< |

| BARRA 68 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 68 | 9.874>> | 10.126 | -0.051 | 0.202 |
| 68 | 5.573<< | 5.609 | 6.926 | 6.962 |
| 68 | 9.864 | 10.135>> | -0.060 | 0.211 |
| 68 | 5.582 | 5.599<< | 6.935 | 6.953 |
| 68 | 5.575 | 5.599 | 6.937>> | 6.962 |
| 68 | 9.871 | 10.135 | -0.062<< | 0.202 |
| 68 | 5.573 | 5.602 | 6.935 | 6.964>> |
| 68 | 9.873 | 10.133 | -0.059 | 0.200<< |
| 69 | 9.673>> | 9.907 | 0.286 | 0.519 |
| 69 | 5.388<< | 5.427 | 7.210 | 7.249 |
| 69 | 9.664 | 9.917>> | 0.276 | 0.529 |
| 69 | 5.398 | 5.417<< | 7.219 | 7.239 |
| 69 | 5.391 | 5.419 | 7.220>> | 7.247 |
| 69 | 9.670 | 9.916 | 0.275<< | 0.521 |
| 69 | 5.389 | 5.421 | 7.218 | 7.249>> |
| 69 | 9.672 | 9.913 | 0.278 | 0.519<< |

| BARRA 69 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 69 | 9.672>> | 9.906 | 0.279 | 0.513 |
| 69 | 5.387<< | 5.426 | 7.203 | 7.243 |
| 69 | 9.663 | 9.916>> | 0.270 | 0.523 |
| 69 | 5.397 | 5.416<< | 7.213 | 7.233 |
| 69 | 5.390 | 5.418 | 7.214>> | 7.241 |
| 69 | 9.669 | 9.915 | 0.269<< | 0.515 |
| 69 | 5.388 | 5.420 | 7.211 | 7.243>> |
| 69 | 9.671 | 9.912 | 0.271 | 0.512<< |
| 70 | 9.295>> | 9.507 | 0.895 | 1.107 |
| 70 | 5.184<< | 5.226 | 7.516 | 7.558 |
| 70 | 9.284 | 9.517>> | 0.885 | 1.118 |
| 70 | 5.194 | 5.216<< | 7.526 | 7.548 |
| 70 | 5.194 | 5.216 | 7.526>> | 7.548 |
| 70 | 9.284 | 9.517 | 0.885<< | 1.118 |
| 70 | 5.184 | 5.226 | 7.516 | 7.558>> |
| 70 | 9.295 | 9.507 | 0.895 | 1.107<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 70 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 70 | 9.293>> | 9.506 | 0.885 | 1.098 |
| 70 | 5.183<< | 5.225 | 7.506 | 7.548 |
| 70 | 9.283 | 9.516>> | 0.875 | 1.108 |
| 70 | 5.193 | 5.215<< | 7.517 | 7.538 |
| 70 | 5.193 | 5.215 | 7.517>> | 7.538 |
| 70 | 9.283 | 9.516 | 0.875<< | 1.108 |
| 70 | 5.183 | 5.225 | 7.506 | 7.548>> |
| 70 | 9.293 | 9.506 | 0.885 | 1.098<< |
| 71 | 8.726>> | 8.914 | 1.800 | 1.988 |
| 71 | 4.960<< | 5.006 | 7.849 | 7.894 |
| 71 | 8.716 | 8.925>> | 1.789 | 1.999 |
| 71 | 4.971 | 4.995<< | 7.860 | 7.884 |
| 71 | 4.971 | 4.995 | 7.860>> | 7.884 |
| 71 | 8.716 | 8.925 | 1.789<< | 1.999 |
| 71 | 4.960 | 5.006 | 7.849 | 7.894>> |
| 71 | 8.726 | 8.914 | 1.800 | 1.988<< |

| BARRA 71 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 71 | 8.724>> | 8.912 | 1.789 | 1.976 |
| 71 | 4.958<< | 5.004 | 7.837 | 7.883 |
| 71 | 8.714 | 8.923>> | 1.778 | 1.987 |
| 71 | 4.969 | 4.993<< | 7.848 | 7.872 |
| 71 | 4.969 | 4.993 | 7.848>> | 7.872 |
| 71 | 8.714 | 8.923 | 1.778<< | 1.987 |
| 71 | 4.958 | 5.004 | 7.837 | 7.883>> |
| 71 | 8.724 | 8.912 | 1.789 | 1.976<< |
| 72 | 7.998>> | 8.152 | 2.963 | 3.117 |
| 72 | 4.712<< | 4.767 | 8.208 | 8.263 |
| 72 | 7.980 | 8.170>> | 2.945 | 3.135 |
| 72 | 4.730 | 4.749<< | 8.226 | 8.245 |
| 72 | 4.725 | 4.750 | 8.227>> | 8.252 |
| 72 | 7.986 | 8.169 | 2.945<< | 3.128 |
| 72 | 4.713 | 4.762 | 8.215 | 8.264>> |
| 72 | 7.997 | 8.158 | 2.956 | 3.117<< |

| BARRA 72 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 72 | 7.994>> | 8.148 | 2.950 | 3.104 |
| 72 | 4.708<< | 4.764 | 8.195 | 8.250 |
| 72 | 7.976 | 8.166>> | 2.932 | 3.122 |
| 72 | 4.727 | 4.745<< | 8.213 | 8.232 |
| 72 | 4.721 | 4.746 | 8.214>> | 8.239 |
| 72 | 7.982 | 8.165 | 2.932<< | 3.115 |
| 72 | 4.709 | 4.758 | 8.202 | 8.251>> |
| 72 | 7.993 | 8.154 | 2.943 | 3.104<< |
| 73 | 7.226>> | 7.343 | 4.195 | 4.312 |
| 73 | 4.326<< | 4.392 | 8.777 | 8.843 |
| 73 | 7.193 | 7.383>> | 4.152 | 4.342 |
| 73 | 4.348 | 4.370<< | 8.799 | 8.821 |
| 73 | 4.348 | 4.370 | 8.799>> | 8.821 |
| 73 | 7.193 | 7.383 | 4.152<< | 4.342 |
| 73 | 4.326 | 4.392 | 8.777 | 8.843>> |
| 73 | 7.226 | 7.343 | 4.195 | 4.312<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 73 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 73 | 7.219>> | 7.336 | 4.183 | 4.300 |
| 73 | 4.320<< | 4.386 | 8.765 | 8.831 |
| 73 | 7.187 | 7.376>> | 4.140 | 4.330 |
| 73 | 4.341 | 4.364<< | 8.787 | 8.809 |
| 73 | 4.341 | 4.364 | 8.787>> | 8.809 |
| 73 | 7.187 | 7.376 | 4.140<< | 4.330 |
| 73 | 4.320 | 4.386 | 8.765 | 8.831>> |
| 73 | 7.219 | 7.336 | 4.183 | 4.300<< |
| 74 | 6.627>> | 6.464 | 5.463 | 5.299 |
| 74 | 3.763<< | 3.854 | 9.599 | 9.691 |
| 74 | 6.493 | 6.689>> | 5.213 | 5.409 |
| 74 | 3.810 | 3.808<< | 9.646 | 9.644 |
| 74 | 3.792 | 3.811 | 9.646>> | 9.666 |
| 74 | 6.510 | 6.686 | 5.212<< | 5.387 |
| 74 | 3.766 | 3.837 | 9.621 | 9.691>> |
| 74 | 6.624 | 6.482 | 5.441 | 5.299<< |

| BARRA 74 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 74 | 6.617>> | 6.454 | 5.453 | 5.290 |
| 74 | 3.752<< | 3.844 | 9.590 | 9.681 |
| 74 | 6.482 | 6.679>> | 5.203 | 5.400 |
| 74 | 3.799 | 3.797<< | 9.636 | 9.635 |
| 74 | 3.781 | 3.801 | 9.637>> | 9.656 |
| 74 | 6.500 | 6.676 | 5.202<< | 5.378 |
| 74 | 3.756 | 3.826 | 9.611 | 9.682>> |
| 74 | 6.614 | 6.471 | 5.432 | 5.289<< |
| 75 | 6.298>> | 6.118 | 5.972 | 5.792 |
| 75 | 2.793<< | 3.036 | 10.891 | 11.134 |
| 75 | 6.244 | 6.259>> | 5.807 | 5.822 |
| 75 | 3.078 | 2.985<< | 10.876 | 10.784 |
| 75 | 2.811 | 2.991 | 10.943>> | 11.123 |
| 75 | 6.275 | 6.254 | 5.804<< | 5.783 |
| 75 | 2.798 | 3.005 | 10.930 | 11.136>> |
| 75 | 6.288 | 6.241 | 5.818 | 5.770<< |

| BARRA 75 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 75 | 5.939>> | 5.792 | 5.340 | 5.193 |
| 75 | 2.682<< | 2.854 | 9.178 | 9.349 |
| 75 | 5.910 | 5.906>> | 5.218 | 5.214 |
| 75 | 2.709 | 2.828<< | 9.204 | 9.323 |
| 75 | 2.709 | 2.828 | 9.204>> | 9.323 |
| 75 | 5.910 | 5.906 | 5.218<< | 5.214 |
| 75 | 2.682 | 2.854 | 9.178 | 9.349>> |
| 75 | 5.936 | 5.880 | 5.244 | 5.188<< |
| 76 | 7.028>> | 6.873 | 3.985 | 3.830 |
| 76 | 2.565<< | 2.723 | 9.360 | 9.518 |
| 76 | 6.938 | 6.958>> | 3.904 | 3.924 |
| 76 | 2.594 | 2.693<< | 9.389 | 9.489 |
| 76 | 2.578 | 2.695 | 9.390>> | 9.507 |
| 76 | 6.954 | 6.957 | 3.903<< | 3.906 |
| 76 | 2.566 | 2.707 | 9.378 | 9.519>> |
| 76 | 7.027 | 6.889 | 3.967 | 3.829<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 76 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 76 | 7.112>> | 6.961 | 3.995 | 3.844 |
| 76 | 2.598<< | 2.780 | 9.319 | 9.501 |
| 76 | 7.024 | 7.042>> | 3.916 | 3.934 |
| 76 | 2.627 | 2.751<< | 9.348 | 9.472 |
| 76 | 2.611 | 2.752 | 9.349>> | 9.490 |
| 76 | 7.040 | 7.041 | 3.915<< | 3.916 |
| 76 | 2.598 | 2.764 | 9.337 | 9.502>> |
| 76 | 7.111 | 6.977 | 3.977 | 3.843<< |
| 77 | 6.291>> | 6.139 | 5.033 | 4.881 |
| 77 | 0.441<< | 0.586 | 12.085 | 12.229 |
| 77 | 6.161 | 6.170>> | 5.015 | 5.024 |
| 77 | 0.453 | 0.574<< | 12.096 | 12.217 |
| 77 | 0.453 | 0.574 | 12.096>> | 12.217 |
| 77 | 6.161 | 6.170 | 5.015<< | 5.024 |
| 77 | 0.441 | 0.586 | 12.085 | 12.229>> |
| 77 | 6.291 | 6.139 | 5.033 | 4.881<< |

| BARRA 77 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 77 | 6.295>> | 6.144 | 5.025 | 4.873 |
| 77 | 0.446<< | 0.590 | 12.076 | 12.221 |
| 77 | 6.166 | 6.175>> | 5.007 | 5.016 |
| 77 | 0.458 | 0.579<< | 12.088 | 12.209 |
| 77 | 0.458 | 0.579 | 12.088>> | 12.209 |
| 77 | 6.166 | 6.175 | 5.007<< | 5.016 |
| 77 | 0.446 | 0.590 | 12.076 | 12.221>> |
| 77 | 6.295 | 6.144 | 5.025 | 4.873<< |
| 78 | 7.096>> | 6.930 | 4.030 | 3.865 |
| 78 | 2.491<< | 2.664 | 9.461 | 9.634 |
| 78 | 7.065 | 6.961>> | 4.000 | 3.895 |
| 78 | 2.522 | 2.634<< | 9.492 | 9.604 |
| 78 | 2.503 | 2.634 | 9.494>> | 9.625 |
| 78 | 7.084 | 6.960 | 3.997<< | 3.873 |
| 78 | 2.491 | 2.645 | 9.483 | 9.637>> |
| 78 | 7.096 | 6.949 | 4.009 | 3.862<< |

| BARRA 78 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 78 | 7.014>> | 6.868 | 3.977 | 3.831 |
| 78 | 2.461<< | 2.590 | 9.503 | 9.632 |
| 78 | 7.003 | 6.879>> | 3.966 | 3.842 |
| 78 | 2.472 | 2.579<< | 9.514 | 9.621 |
| 78 | 2.472 | 2.579 | 9.514>> | 9.621 |
| 78 | 7.003 | 6.879 | 3.966<< | 3.842 |
| 78 | 2.461 | 2.590 | 9.503 | 9.632>> |
| 78 | 7.014 | 6.868 | 3.977 | 3.831<< |
| 79 | 5.864>> | 5.681 | 5.462 | 5.278 |
| 79 | 2.442<< | 2.612 | 9.461 | 9.631 |
| 79 | 5.821 | 5.724>> | 5.418 | 5.322 |
| 79 | 2.647 | 2.557<< | 9.470 | 9.380 |
| 79 | 2.455 | 2.570 | 9.508>> | 9.623 |
| 79 | 5.852 | 5.722 | 5.415<< | 5.286 |
| 79 | 2.444 | 2.581 | 9.497 | 9.634>> |
| 79 | 5.863 | 5.712 | 5.426 | 5.275<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 79 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 79 | 6.411>> | 6.195 | 5.846 | 5.630 |
| 79 | 2.729<< | 2.956 | 11.015 | 11.243 |
| 79 | 6.355 | 6.251>> | 5.790 | 5.687 |
| 79 | 3.003 | 2.865<< | 11.055 | 10.918 |
| 79 | 2.764 | 2.902 | 11.075>> | 11.213 |
| 79 | 6.376 | 6.250 | 5.786<< | 5.660 |
| 79 | 2.730 | 2.935 | 11.042 | 11.247>> |
| 79 | 6.410 | 6.216 | 5.820 | 5.626<< |
| 80 | 6.674>> | 6.325 | 5.607 | 5.258 |
| 80 | 3.644<< | 3.698 | 9.811 | 9.865 |
| 80 | 6.330 | 6.658>> | 5.277 | 5.604 |
| 80 | 3.700 | 3.642<< | 9.867 | 9.809 |
| 80 | 3.661 | 3.647 | 9.872>> | 9.858 |
| 80 | 6.370 | 6.653 | 5.272<< | 5.556 |
| 80 | 3.649 | 3.659 | 9.860 | 9.870>> |
| 80 | 6.669 | 6.364 | 5.559 | 5.254<< |

| BARRA 80 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 80 | 6.680>> | 6.331 | 5.621 | 5.272 |
| 80 | 3.651<< | 3.705 | 9.825 | 9.879 |
| 80 | 6.337 | 6.665>> | 5.291 | 5.619 |
| 80 | 3.707 | 3.649<< | 9.881 | 9.823 |
| 80 | 3.668 | 3.654 | 9.886>> | 9.872 |
| 80 | 6.376 | 6.660 | 5.286<< | 5.570 |
| 80 | 3.656 | 3.666 | 9.874 | 9.884>> |
| 80 | 6.675 | 6.370 | 5.573 | 5.268<< |
| 81 | 7.153>> | 7.261 | 4.300 | 4.409 |
| 81 | 4.194<< | 4.222 | 9.013 | 9.041 |
| 81 | 7.109 | 7.296>> | 4.269 | 4.455 |
| 81 | 4.227 | 4.188<< | 9.047 | 9.007 |
| 81 | 4.209 | 4.190 | 9.049>> | 9.031 |
| 81 | 7.138 | 7.293 | 4.264<< | 4.419 |
| 81 | 4.196 | 4.203 | 9.036 | 9.044>> |
| 81 | 7.151 | 7.280 | 4.277 | 4.406<< |

| BARRA 81 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 81 | 7.156>> | 7.264 | 4.318 | 4.426 |
| 81 | 4.197<< | 4.225 | 9.030 | 9.058 |
| 81 | 7.112 | 7.299>> | 4.286 | 4.473 |
| 81 | 4.231 | 4.191<< | 9.064 | 9.024 |
| 81 | 4.212 | 4.193 | 9.067>> | 9.048 |
| 81 | 7.141 | 7.296 | 4.281<< | 4.436 |
| 81 | 4.199 | 4.206 | 9.054 | 9.061>> |
| 81 | 7.154 | 7.283 | 4.294 | 4.423<< |
| 82 | 7.899>> | 8.041 | 3.118 | 3.260 |
| 82 | 4.558<< | 4.580 | 8.475 | 8.498 |
| 82 | 7.864 | 8.076>> | 3.083 | 3.295 |
| 82 | 4.593 | 4.545<< | 8.510 | 8.463 |
| 82 | 4.571 | 4.548 | 8.513>> | 8.489 |
| 82 | 7.885 | 8.073 | 3.081<< | 3.268 |
| 82 | 4.560 | 4.559 | 8.502 | 8.500>> |
| 82 | 7.896 | 8.062 | 3.092 | 3.257<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 82 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 82 | 7.899>> | 8.041 | 3.135 | 3.277 |
| 82 | 4.558<< | 4.580 | 8.493 | 8.515 |
| 82 | 7.864 | 8.076>> | 3.100 | 3.312 |
| 82 | 4.593 | 4.545<< | 8.527 | 8.480 |
| 82 | 4.572 | 4.548 | 8.530>> | 8.506 |
| 82 | 7.885 | 8.073 | 3.098<< | 3.285 |
| 82 | 4.561 | 4.559 | 8.519 | 8.517>> |
| 82 | 7.896 | 8.062 | 3.109 | 3.275<< |
| 83 | 8.600>> | 8.767 | 2.011 | 2.178 |
| 83 | 4.788<< | 4.801 | 8.146 | 8.159 |
| 83 | 8.570 | 8.797>> | 1.981 | 2.208 |
| 83 | 4.818 | 4.771<< | 8.176 | 8.129 |
| 83 | 4.802 | 4.774 | 8.177>> | 8.149 |
| 83 | 8.587 | 8.794 | 1.980<< | 2.187 |
| 83 | 4.791 | 4.784 | 8.167 | 8.160>> |
| 83 | 8.597 | 8.783 | 1.991 | 2.177<< |

| BARRA 83 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 83 | 8.599>> | 8.765 | 2.028 | 2.194 |
| 83 | 4.787<< | 4.800 | 8.162 | 8.175 |
| 83 | 8.569 | 8.795>> | 1.998 | 2.224 |
| 83 | 4.817 | 4.770<< | 8.192 | 8.145 |
| 83 | 4.800 | 4.772 | 8.193>> | 8.166 |
| 83 | 8.586 | 8.793 | 1.997<< | 2.204 |
| 83 | 4.790 | 4.783 | 8.183 | 8.176>> |
| 83 | 8.596 | 8.782 | 2.007 | 2.193<< |
| 84 | 9.138>> | 9.323 | 1.165 | 1.350 |
| 84 | 4.994<< | 5.000 | 7.848 | 7.855 |
| 84 | 9.109 | 9.352>> | 1.136 | 1.379 |
| 84 | 5.023 | 4.971<< | 7.877 | 7.826 |
| 84 | 5.007 | 4.975 | 7.877>> | 7.845 |
| 84 | 9.124 | 9.348 | 1.136<< | 1.360 |
| 84 | 4.997 | 4.985 | 7.867 | 7.855>> |
| 84 | 9.134 | 9.338 | 1.146 | 1.350<< |

| BARRA 84 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 84 | 9.136>> | 9.321 | 1.179 | 1.364 |
| 84 | 4.991<< | 4.998 | 7.862 | 7.869 |
| 84 | 9.107 | 9.350>> | 1.150 | 1.393 |
| 84 | 5.020 | 4.969<< | 7.891 | 7.840 |
| 84 | 5.005 | 4.973 | 7.891>> | 7.859 |
| 84 | 9.122 | 9.346 | 1.150<< | 1.374 |
| 84 | 4.995 | 4.983 | 7.881 | 7.869>> |
| 84 | 9.132 | 9.336 | 1.160 | 1.364<< |
| 85 | 9.485>> | 9.685 | 0.616 | 0.815 |
| 85 | 5.178<< | 5.178 | 7.580 | 7.581 |
| 85 | 9.457 | 9.713>> | 0.588 | 0.843 |
| 85 | 5.205 | 5.151<< | 7.608 | 7.553 |
| 85 | 5.205 | 5.151 | 7.608>> | 7.554 |
| 85 | 9.458 | 9.713 | 0.588<< | 0.843 |
| 85 | 5.178 | 5.178 | 7.581 | 7.581>> |
| 85 | 9.485 | 9.685 | 0.615 | 0.815<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 85 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 85 | 9.483>> | 9.683 | 0.626 | 0.826 |
| 85 | 5.175<< | 5.176 | 7.591 | 7.592 |
| 85 | 9.455 | 9.710>> | 0.598 | 0.854 |
| 85 | 5.203 | 5.148<< | 7.619 | 7.564 |
| 85 | 5.202 | 5.148 | 7.619>> | 7.565 |
| 85 | 9.455 | 9.710 | 0.598<< | 0.853 |
| 85 | 5.175 | 5.176 | 7.591 | 7.592>> |
| 85 | 9.483 | 9.683 | 0.626 | 0.826<< |
| 86 | 9.655>> | 9.867 | 0.343 | 0.554 |
| 86 | 5.342<< | 5.337 | 7.339 | 7.334 |
| 86 | 9.629 | 9.893>> | 0.316 | 0.581 |
| 86 | 5.368 | 5.310<< | 7.366 | 7.307 |
| 86 | 5.368 | 5.310 | 7.366>> | 7.308 |
| 86 | 9.629 | 9.893 | 0.316<< | 0.580 |
| 86 | 5.342 | 5.336 | 7.340 | 7.334>> |
| 86 | 9.655 | 9.867 | 0.342 | 0.554<< |

| BARRA 86 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 86 | 9.653>> | 9.865 | 0.349 | 0.560 |
| 86 | 5.340<< | 5.335 | 7.345 | 7.340 |
| 86 | 9.627 | 9.891>> | 0.322 | 0.587 |
| 86 | 5.366 | 5.308<< | 7.372 | 7.313 |
| 86 | 5.366 | 5.308 | 7.372>> | 7.314 |
| 86 | 9.627 | 9.891 | 0.322<< | 0.586 |
| 86 | 5.340 | 5.334 | 7.346 | 7.340>> |
| 86 | 9.653 | 9.865 | 0.348 | 0.560<< |
| 87 | 9.724>> | 9.946 | 0.225 | 0.447 |
| 87 | 5.485<< | 5.475 | 7.126 | 7.115 |
| 87 | 9.699 | 9.972>> | 0.200 | 0.472 |
| 87 | 5.511 | 5.449<< | 7.151 | 7.089 |
| 87 | 5.511 | 5.449 | 7.151>> | 7.090 |
| 87 | 9.699 | 9.972 | 0.200<< | 0.472 |
| 87 | 5.486 | 5.474 | 7.126 | 7.115>> |
| 87 | 9.724 | 9.946 | 0.225 | 0.447<< |

| BARRA 87 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 87 | 9.723>> | 9.944 | 0.228 | 0.449 |
| 87 | 5.484<< | 5.473 | 7.128 | 7.117 |
| 87 | 9.697 | 9.970>> | 0.202 | 0.475 |
| 87 | 5.509 | 5.447<< | 7.154 | 7.092 |
| 87 | 5.509 | 5.447 | 7.154>> | 7.092 |
| 87 | 9.698 | 9.970 | 0.202<< | 0.474 |
| 87 | 5.484 | 5.473 | 7.129 | 7.117>> |
| 87 | 9.723 | 9.945 | 0.227 | 0.449<< |
| 88 | 9.666>> | 9.895 | 0.306 | 0.535 |
| 88 | 5.506<< | 5.635 | 6.915 | 7.044 |
| 88 | 9.642 | 9.920>> | 0.282 | 0.560 |
| 88 | 5.626 | 5.556<< | 6.982 | 6.912 |
| 88 | 5.626 | 5.556 | 6.982>> | 6.912 |
| 88 | 9.642 | 9.920 | 0.282<< | 0.560 |
| 88 | 5.506 | 5.635 | 6.915 | 7.044>> |
| 88 | 9.666 | 9.895 | 0.306 | 0.535<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 88 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 88 | 9.665>> | 9.894 | 0.304 | 0.533 |
| 88 | 5.505<< | 5.634 | 6.913 | 7.042 |
| 88 | 9.641 | 9.918>> | 0.280 | 0.558 |
| 88 | 5.625 | 5.555<< | 6.980 | 6.910 |
| 88 | 5.625 | 5.555 | 6.980>> | 6.910 |
| 88 | 9.641 | 9.918 | 0.280<< | 0.558 |
| 88 | 5.505 | 5.634 | 6.913 | 7.042>> |
| 88 | 9.665 | 9.894 | 0.304 | 0.533<< |
| 89 | 9.509>> | 9.742 | 0.542 | 0.775 |
| 89 | 5.464<< | 5.620 | 6.942 | 7.097 |
| 89 | 9.486 | 9.765>> | 0.519 | 0.799 |
| 89 | 5.488 | 5.596<< | 6.966 | 7.074 |
| 89 | 5.488 | 5.596 | 6.966>> | 7.074 |
| 89 | 9.486 | 9.765 | 0.519<< | 0.799 |
| 89 | 5.464 | 5.620 | 6.942 | 7.097>> |
| 89 | 9.509 | 9.742 | 0.542 | 0.775<< |

| BARRA 89 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 89 | 9.508>> | 9.741 | 0.536 | 0.769 |
| 89 | 5.463<< | 5.619 | 6.936 | 7.091 |
| 89 | 9.485 | 9.765>> | 0.513 | 0.793 |
| 89 | 5.487 | 5.595<< | 6.960 | 7.068 |
| 89 | 5.487 | 5.595 | 6.960>> | 7.068 |
| 89 | 9.485 | 9.765 | 0.513<< | 0.793 |
| 89 | 5.463 | 5.619 | 6.936 | 7.091>> |
| 89 | 9.508 | 9.741 | 0.536 | 0.769<< |
| 90 | 9.174>> | 9.409 | 1.054 | 1.289 |
| 90 | 5.404<< | 5.586 | 6.994 | 7.176 |
| 90 | 9.152 | 9.432>> | 1.031 | 1.311 |
| 90 | 5.427 | 5.564<< | 7.017 | 7.154 |
| 90 | 5.427 | 5.564 | 7.017>> | 7.154 |
| 90 | 9.152 | 9.432 | 1.031<< | 1.311 |
| 90 | 5.404 | 5.586 | 6.994 | 7.176>> |
| 90 | 9.174 | 9.409 | 1.054 | 1.289<< |

| BARRA 90 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 90 | 9.173>> | 9.408 | 1.044 | 1.279 |
| 90 | 5.403<< | 5.585 | 6.985 | 7.166 |
| 90 | 9.150 | 9.430>> | 1.022 | 1.302 |
| 90 | 5.426 | 5.562<< | 7.007 | 7.144 |
| 90 | 5.426 | 5.562 | 7.007>> | 7.144 |
| 90 | 9.150 | 9.430 | 1.022<< | 1.302 |
| 90 | 5.403 | 5.585 | 6.985 | 7.166>> |
| 90 | 9.173 | 9.408 | 1.044 | 1.279<< |
| 91 | 8.649>> | 8.884 | 1.861 | 2.095 |
| 91 | 5.322<< | 5.575 | 7.021 | 7.274 |
| 91 | 8.628 | 8.905>> | 1.839 | 2.116 |
| 91 | 5.346 | 5.511<< | 7.095 | 7.260 |
| 91 | 5.346 | 5.511 | 7.095>> | 7.260 |
| 91 | 8.628 | 8.905 | 1.839<< | 2.116 |
| 91 | 5.325 | 5.532 | 7.074 | 7.281>> |
| 91 | 8.649 | 8.884 | 1.861 | 2.095<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 91 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 91 | 8.650>> | 8.884 | 1.864 | 2.099 |
| 91 | 5.322<< | 5.575 | 7.024 | 7.277 |
| 91 | 8.628 | 8.905>> | 1.843 | 2.120 |
| 91 | 5.346 | 5.511<< | 7.099 | 7.264 |
| 91 | 5.346 | 5.511 | 7.099>> | 7.264 |
| 91 | 8.628 | 8.905 | 1.843<< | 2.120 |
| 91 | 5.325 | 5.533 | 7.077 | 7.285>> |
| 91 | 8.650 | 8.884 | 1.864 | 2.099<< |
| 92 | 7.969>> | 8.194 | 2.937 | 3.162 |
| 92 | 5.210<< | 5.493 | 7.160 | 7.443 |
| 92 | 7.943 | 8.219>> | 2.911 | 3.187 |
| 92 | 5.250 | 5.438<< | 7.219 | 7.407 |
| 92 | 5.246 | 5.439 | 7.219>> | 7.412 |
| 92 | 7.948 | 8.218 | 2.911<< | 3.182 |
| 92 | 5.211 | 5.489 | 7.165 | 7.443>> |
| 92 | 7.968 | 8.198 | 2.931 | 3.162<< |

| BARRA 92 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 92 | 7.972>> | 8.197 | 2.962 | 3.186 |
| 92 | 5.214<< | 5.497 | 7.184 | 7.467 |
| 92 | 7.947 | 8.223>> | 2.936 | 3.212 |
| 92 | 5.254 | 5.442<< | 7.243 | 7.431 |
| 92 | 5.249 | 5.443 | 7.243>> | 7.437 |
| 92 | 7.951 | 8.222 | 2.936<< | 3.206 |
| 92 | 5.215 | 5.492 | 7.190 | 7.467>> |
| 92 | 7.971 | 8.202 | 2.956 | 3.186<< |
| 93 | 7.205>> | 7.411 | 4.181 | 4.387 |
| 93 | 5.010<< | 5.356 | 7.421 | 7.767 |
| 93 | 7.179 | 7.439>> | 4.152 | 4.413 |
| 93 | 5.138 | 5.139<< | 7.663 | 7.664 |
| 93 | 5.138 | 5.139 | 7.663>> | 7.664 |
| 93 | 7.179 | 7.439 | 4.152<< | 4.413 |
| 93 | 5.010 | 5.356 | 7.421 | 7.767>> |
| 93 | 7.205 | 7.411 | 4.181 | 4.387<< |

| BARRA 93 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 93 | 7.212>> | 7.417 | 4.200 | 4.406 |
| 93 | 5.017<< | 5.363 | 7.440 | 7.786 |
| 93 | 7.185 | 7.446>> | 4.171 | 4.432 |
| 93 | 5.144 | 5.145<< | 7.682 | 7.683 |
| 93 | 5.144 | 5.145 | 7.682>> | 7.683 |
| 93 | 7.185 | 7.446 | 4.171<< | 4.432 |
| 93 | 5.017 | 5.363 | 7.440 | 7.786>> |
| 93 | 7.212 | 7.417 | 4.200 | 4.406<< |
| 94 | 6.747>> | 6.387 | 5.647 | 5.287 |
| 94 | 4.420<< | 4.884 | 8.219 | 8.683 |
| 94 | 6.387 | 6.869>> | 5.131 | 5.613 |
| 94 | 4.486 | 4.449<< | 8.757 | 8.719 |
| 94 | 4.478 | 4.449 | 8.758>> | 8.729 |
| 94 | 6.554 | 6.840 | 5.121<< | 5.407 |
| 94 | 4.424 | 4.503 | 8.705 | 8.783>> |
| 94 | 6.738 | 6.477 | 5.535 | 5.274<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 94 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 94 | 6.756>> | 6.396 | 5.659 | 5.298 |
| 94 | 4.428<< | 4.892 | 8.230 | 8.694 |
| 94 | 6.396 | 6.878>> | 5.142 | 5.625 |
| 94 | 4.495 | 4.457<< | 8.768 | 8.730 |
| 94 | 4.487 | 4.458 | 8.770>> | 8.741 |
| 94 | 6.563 | 6.849 | 5.133<< | 5.419 |
| 94 | 4.433 | 4.511 | 8.716 | 8.794>> |
| 94 | 6.746 | 6.486 | 5.546 | 5.286<< |
| 95 | 6.555>> | 6.407 | 5.700 | 5.553 |
| 95 | 3.265<< | 3.730 | 10.041 | 10.506 |
| 95 | 6.501 | 6.460>> | 5.647 | 5.606 |
| 95 | 3.699 | 3.666<< | 10.003 | 9.970 |
| 95 | 3.319 | 3.677 | 10.094>> | 10.452 |
| 95 | 6.501 | 6.460 | 5.647<< | 5.606 |
| 95 | 3.265 | 3.730 | 10.041 | 10.506>> |
| 95 | 6.555 | 6.407 | 5.700 | 5.553<< |

| BARRA 95 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 95 | 6.203>> | 6.071 | 5.156 | 5.023 |
| 95 | 3.159<< | 3.535 | 8.507 | 8.883 |
| 95 | 6.161 | 6.113>> | 5.114 | 5.066 |
| 95 | 3.201 | 3.493<< | 8.549 | 8.841 |
| 95 | 3.201 | 3.493 | 8.549>> | 8.841 |
| 95 | 6.161 | 6.113 | 5.114<< | 5.066 |
| 95 | 3.159 | 3.535 | 8.507 | 8.883>> |
| 95 | 6.203 | 6.071 | 5.156 | 5.023<< |
| 96 | 7.373>> | 7.285 | 3.637 | 3.549 |
| 96 | 3.150<< | 3.505 | 8.562 | 8.917 |
| 96 | 7.359 | 7.299>> | 3.623 | 3.563 |
| 96 | 3.163 | 3.491<< | 8.576 | 8.903 |
| 96 | 3.163 | 3.491 | 8.576>> | 8.903 |
| 96 | 7.359 | 7.299 | 3.623<< | 3.563 |
| 96 | 3.150 | 3.505 | 8.562 | 8.917>> |
| 96 | 7.373 | 7.285 | 3.637 | 3.549<< |

| BARRA 96 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 96 | 7.560>> | 7.477 | 3.641 | 3.558 |
| 96 | 3.284<< | 3.667 | 8.514 | 8.897 |
| 96 | 7.547 | 7.491>> | 3.627 | 3.572 |
| 96 | 3.298 | 3.653<< | 8.528 | 8.883 |
| 96 | 3.298 | 3.653 | 8.528>> | 8.883 |
| 96 | 7.547 | 7.491 | 3.627<< | 3.572 |
| 96 | 3.284 | 3.667 | 8.514 | 8.897>> |
| 96 | 7.560 | 7.477 | 3.641 | 3.558<< |
| 97 | 6.803>> | 6.717 | 4.601 | 4.514 |
| 97 | 1.174<< | 1.558 | 11.177 | 11.561 |
| 97 | 6.791 | 6.730>> | 4.588 | 4.527 |
| 97 | 1.187 | 1.546<< | 11.189 | 11.548 |
| 97 | 1.187 | 1.546 | 11.189>> | 11.548 |
| 97 | 6.791 | 6.730 | 4.588<< | 4.527 |
| 97 | 1.174 | 1.558 | 11.177 | 11.561>> |
| 97 | 6.803 | 6.717 | 4.601 | 4.514<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 97 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 97 | 6.868>> | 6.781 | 4.582 | 4.496 |
| 97 | 1.239<< | 1.623 | 11.158 | 11.542 |
| 97 | 6.855 | 6.794>> | 4.570 | 4.509 |
| 97 | 1.252 | 1.610<< | 11.171 | 11.529 |
| 97 | 1.252 | 1.610 | 11.171>> | 11.529 |
| 97 | 6.855 | 6.794 | 4.570<< | 4.509 |
| 97 | 1.239 | 1.623 | 11.158 | 11.542>> |
| 97 | 6.868 | 6.781 | 4.582 | 4.496<< |
| 98 | 7.555>> | 7.444 | 3.742 | 3.631 |
| 98 | 3.138<< | 3.542 | 8.738 | 9.141 |
| 98 | 7.513 | 7.486>> | 3.701 | 3.674 |
| 98 | 3.180 | 3.500<< | 8.780 | 9.099 |
| 98 | 3.153 | 3.503 | 8.780>> | 9.130 |
| 98 | 7.540 | 7.483 | 3.700<< | 3.643 |
| 98 | 3.141 | 3.515 | 8.768 | 9.141>> |
| 98 | 7.552 | 7.471 | 3.712 | 3.631<< |

| BARRA 98 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 98 | 7.471>> | 7.364 | 3.707 | 3.600 |
| 98 | 3.105<< | 3.485 | 8.753 | 9.132 |
| 98 | 7.433 | 7.403>> | 3.668 | 3.638 |
| 98 | 3.143 | 3.447<< | 8.791 | 9.094 |
| 98 | 3.118 | 3.448 | 8.793>> | 9.123 |
| 98 | 7.458 | 7.401 | 3.666<< | 3.609 |
| 98 | 3.107 | 3.460 | 8.782 | 9.135>> |
| 98 | 7.470 | 7.389 | 3.678 | 3.597<< |
| 99 | 6.247>> | 6.135 | 5.247 | 5.135 |
| 99 | 2.888<< | 3.330 | 8.922 | 9.364 |
| 99 | 5.832 | 6.228>> | 5.219 | 5.615 |
| 99 | 3.072 | 3.112<< | 9.135 | 9.176 |
| 99 | 3.072 | 3.112 | 9.135>> | 9.176 |
| 99 | 6.212 | 6.170 | 5.212<< | 5.171 |
| 99 | 2.888 | 3.330 | 8.922 | 9.364>> |
| 99 | 6.247 | 6.135 | 5.247 | 5.135<< |

| BARRA 99 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 99 | 6.891>> | 6.759 | 5.589 | 5.457 |
| 99 | 3.271<< | 3.818 | 10.359 | 10.907 |
| 99 | 6.400 | 6.890>> | 5.559 | 6.048 |
| 99 | 3.520 | 3.541<< | 10.645 | 10.665 |
| 99 | 3.520 | 3.541 | 10.645>> | 10.665 |
| 99 | 6.848 | 6.803 | 5.546<< | 5.501 |
| 99 | 3.271 | 3.818 | 10.359 | 10.907>> |
| 99 | 6.891 | 6.759 | 5.589 | 5.457<< |
| 100 | 7.017>> | 6.895 | 5.380 | 5.258 |
| 100 | 4.012<< | 4.211 | 9.651 | 9.849 |
| 100 | 6.842 | 7.298>> | 4.913 | 5.370 |
| 100 | 4.053 | 4.170<< | 9.692 | 9.809 |
| 100 | 4.024 | 4.170 | 9.699>> | 9.845 |
| 100 | 6.871 | 7.298 | 4.906<< | 5.333 |
| 100 | 4.012 | 4.182 | 9.688 | 9.857>> |
| 100 | 7.017 | 6.923 | 5.344 | 5.250<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 100 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 100 | 7.041>> | 6.919 | 5.411 | 5.289 |
| 100 | 4.036<< | 4.234 | 9.682 | 9.880 |
| 100 | 6.866 | 7.322>> | 4.944 | 5.400 |
| 100 | 4.077 | 4.194<< | 9.722 | 9.840 |
| 100 | 4.048 | 4.194 | 9.730>> | 9.876 |
| 100 | 6.894 | 7.322 | 4.936<< | 5.364 |
| 100 | 4.036 | 4.206 | 9.718 | 9.888>> |
| 100 | 7.041 | 6.947 | 5.374 | 5.281<< |
| 101 | 7.379>> | 7.650 | 4.381 | 4.652 |
| 101 | 4.579<< | 4.735 | 8.890 | 9.046 |
| 101 | 7.272 | 7.668>> | 4.388 | 4.784 |
| 101 | 4.590 | 4.724<< | 8.901 | 9.036 |
| 101 | 4.590 | 4.724 | 8.901>> | 9.036 |
| 101 | 7.369 | 7.661 | 4.370<< | 4.663 |
| 101 | 4.579 | 4.735 | 8.890 | 9.046>> |
| 101 | 7.379 | 7.650 | 4.381 | 4.652<< |

| BARRA 101 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 101 | 7.401>> | 7.672 | 4.426 | 4.697 |
| 101 | 4.601<< | 4.757 | 8.936 | 9.092 |
| 101 | 7.294 | 7.690>> | 4.433 | 4.830 |
| 101 | 4.612 | 4.746<< | 8.946 | 9.081 |
| 101 | 4.612 | 4.746 | 8.946>> | 9.081 |
| 101 | 7.391 | 7.683 | 4.415<< | 4.708 |
| 101 | 4.601 | 4.757 | 8.936 | 9.092>> |
| 101 | 7.401 | 7.672 | 4.426 | 4.697<< |
| 102 | 8.072>> | 8.201 | 3.562 | 3.692 |
| 102 | 4.907<< | 5.035 | 8.495 | 8.623 |
| 102 | 7.975 | 8.263>> | 3.511 | 3.799 |
| 102 | 4.916 | 5.025<< | 8.505 | 8.613 |
| 102 | 4.916 | 5.025 | 8.505>> | 8.613 |
| 102 | 7.975 | 8.263 | 3.511<< | 3.799 |
| 102 | 4.907 | 5.035 | 8.495 | 8.623>> |
| 102 | 8.072 | 8.201 | 3.562 | 3.692<< |

| BARRA 102 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 102 | 8.086>> | 8.216 | 3.616 | 3.745 |
| 102 | 4.921<< | 5.049 | 8.548 | 8.676 |
| 102 | 7.989 | 8.278>> | 3.564 | 3.852 |
| 102 | 4.931 | 5.039<< | 8.558 | 8.667 |
| 102 | 4.931 | 5.039 | 8.558>> | 8.667 |
| 102 | 7.989 | 8.278 | 3.564<< | 3.852 |
| 102 | 4.921 | 5.049 | 8.548 | 8.676>> |
| 102 | 8.086 | 8.216 | 3.616 | 3.745<< |
| 103 | 8.751>> | 8.883 | 2.578 | 2.709 |
| 103 | 5.172<< | 5.288 | 8.174 | 8.290 |
| 103 | 8.742 | 8.892>> | 2.569 | 2.718 |
| 103 | 5.181 | 5.279<< | 8.183 | 8.281 |
| 103 | 5.181 | 5.279 | 8.183>> | 8.281 |
| 103 | 8.742 | 8.892 | 2.569<< | 2.718 |
| 103 | 5.172 | 5.288 | 8.174 | 8.290>> |
| 103 | 8.751 | 8.883 | 2.578 | 2.709<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 103 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 103 | 8.760>> | 8.892 | 2.636 | 2.767 |
| 103 | 5.181<< | 5.297 | 8.232 | 8.348 |
| 103 | 8.751 | 8.901>> | 2.627 | 2.776 |
| 103 | 5.190 | 5.288<< | 8.241 | 8.339 |
| 103 | 5.190 | 5.288 | 8.241>> | 8.339 |
| 103 | 8.751 | 8.901 | 2.627<< | 2.776 |
| 103 | 5.181 | 5.297 | 8.232 | 8.348>> |
| 103 | 8.760 | 8.892 | 2.636 | 2.767<< |
| 104 | 9.270>> | 9.402 | 1.841 | 1.973 |
| 104 | 5.417<< | 5.521 | 7.880 | 7.984 |
| 104 | 9.262 | 9.410>> | 1.833 | 1.981 |
| 104 | 5.425 | 5.513<< | 7.888 | 7.976 |
| 104 | 5.425 | 5.513 | 7.888>> | 7.976 |
| 104 | 9.262 | 9.410 | 1.833<< | 1.981 |
| 104 | 5.417 | 5.521 | 7.880 | 7.984>> |
| 104 | 9.270 | 9.402 | 1.841 | 1.973<< |

| BARRA 104 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 104 | 9.274>> | 9.406 | 1.885 | 2.016 |
| 104 | 5.421<< | 5.525 | 7.923 | 8.027 |
| 104 | 9.266 | 9.414>> | 1.877 | 2.024 |
| 104 | 5.429 | 5.517<< | 7.931 | 8.019 |
| 104 | 5.429 | 5.517 | 7.931>> | 8.019 |
| 104 | 9.266 | 9.414 | 1.877<< | 2.024 |
| 104 | 5.421 | 5.525 | 7.923 | 8.027>> |
| 104 | 9.274 | 9.406 | 1.885 | 2.016<< |
| 105 | 9.611>> | 9.738 | 1.366 | 1.494 |
| 105 | 5.645<< | 5.737 | 7.589 | 7.681 |
| 105 | 9.604 | 9.745>> | 1.359 | 1.501 |
| 105 | 5.652 | 5.730<< | 7.596 | 7.673 |
| 105 | 5.652 | 5.730 | 7.596>> | 7.673 |
| 105 | 9.604 | 9.745 | 1.359<< | 1.501 |
| 105 | 5.645 | 5.737 | 7.589 | 7.681>> |
| 105 | 9.611 | 9.738 | 1.366 | 1.494<< |

| BARRA 105 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 105 | 9.613>> | 9.741 | 1.333 | 1.461 |
| 105 | 5.648<< | 5.740 | 7.556 | 7.648 |
| 105 | 9.606 | 9.748>> | 1.326 | 1.468 |
| 105 | 5.655 | 5.733<< | 7.563 | 7.641 |
| 105 | 5.655 | 5.733 | 7.563>> | 7.641 |
| 105 | 9.606 | 9.748 | 1.326<< | 1.468 |
| 105 | 5.648 | 5.740 | 7.556 | 7.648>> |
| 105 | 9.613 | 9.741 | 1.333 | 1.461<< |
| 106 | 9.791>> | 9.916 | 1.059 | 1.185 |
| 106 | 5.865<< | 5.945 | 7.234 | 7.314 |
| 106 | 9.785 | 9.923>> | 1.053 | 1.191 |
| 106 | 5.871 | 5.938<< | 7.240 | 7.308 |
| 106 | 5.871 | 5.938 | 7.240>> | 7.308 |
| 106 | 9.785 | 9.923 | 1.053<< | 1.191 |
| 106 | 5.865 | 5.945 | 7.234 | 7.314>> |
| 106 | 9.791 | 9.916 | 1.059 | 1.185<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 106 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 106 | 9.791>> | 9.916 | 1.028 | 1.153 |
| 106 | 5.864<< | 5.945 | 7.202 | 7.282 |
| 106 | 9.785 | 9.923>> | 1.021 | 1.159 |
| 106 | 5.871 | 5.938<< | 7.208 | 7.276 |
| 106 | 5.871 | 5.938 | 7.208>> | 7.276 |
| 106 | 9.785 | 9.923 | 1.021<< | 1.159 |
| 106 | 5.864 | 5.945 | 7.202 | 7.282>> |
| 106 | 9.791 | 9.916 | 1.028 | 1.153<< |
| 107 | 9.765>> | 9.880 | 1.082 | 1.197 |
| 107 | 6.019<< | 6.088 | 6.976 | 7.044 |
| 107 | 9.759 | 9.885>> | 1.076 | 1.202 |
| 107 | 6.025 | 6.082<< | 6.981 | 7.039 |
| 107 | 6.025 | 6.082 | 6.981>> | 7.039 |
| 107 | 9.759 | 9.885 | 1.076<< | 1.202 |
| 107 | 6.019 | 6.088 | 6.976 | 7.044>> |
| 107 | 9.765 | 9.880 | 1.082 | 1.197<< |

| BARRA 107 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 107 | 9.762>> | 9.877 | 1.054 | 1.169 |
| 107 | 6.016<< | 6.084 | 6.948 | 7.017 |
| 107 | 9.756 | 9.882>> | 1.049 | 1.174 |
| 107 | 6.021 | 6.079<< | 6.954 | 7.011 |
| 107 | 6.021 | 6.079 | 6.954>> | 7.011 |
| 107 | 9.756 | 9.882 | 1.049<< | 1.174 |
| 107 | 6.016 | 6.084 | 6.948 | 7.017>> |
| 107 | 9.762 | 9.877 | 1.054 | 1.169<< |
| 108 | 9.459>> | 9.560 | 1.544 | 1.645 |
| 108 | 6.057<< | 6.113 | 6.900 | 6.956 |
| 108 | 9.454 | 9.564>> | 1.539 | 1.649 |
| 108 | 6.061 | 6.109<< | 6.905 | 6.952 |
| 108 | 6.061 | 6.109 | 6.905>> | 6.952 |
| 108 | 9.454 | 9.564 | 1.539<< | 1.649 |
| 108 | 6.057 | 6.113 | 6.900 | 6.956>> |
| 108 | 9.459 | 9.560 | 1.544 | 1.645<< |

| BARRA 108 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 108 | 9.455>> | 9.556 | 1.516 | 1.617 |
| 108 | 6.053<< | 6.109 | 6.873 | 6.929 |
| 108 | 9.451 | 9.560>> | 1.512 | 1.622 |
| 108 | 6.057 | 6.105<< | 6.877 | 6.925 |
| 108 | 6.057 | 6.105 | 6.877>> | 6.925 |
| 108 | 9.451 | 9.560 | 1.512<< | 1.622 |
| 108 | 6.053 | 6.109 | 6.873 | 6.929>> |
| 108 | 9.455 | 9.556 | 1.516 | 1.617<< |
| 109 | 8.894>> | 8.978 | 2.412 | 2.496 |
| 109 | 5.980<< | 6.025 | 7.001 | 7.046 |
| 109 | 8.890 | 8.981>> | 2.409 | 2.500 |
| 109 | 5.984 | 6.021<< | 7.005 | 7.042 |
| 109 | 5.984 | 6.021 | 7.005>> | 7.042 |
| 109 | 8.890 | 8.981 | 2.409<< | 2.500 |
| 109 | 5.980 | 6.025 | 7.001 | 7.046>> |
| 109 | 8.894 | 8.978 | 2.412 | 2.496<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 109 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 109 | 8.889>> | 8.973 | 2.386 | 2.470 |
| 109 | 5.976<< | 6.020 | 6.975 | 7.019 |
| 109 | 8.886 | 8.977>> | 2.382 | 2.473 |
| 109 | 5.979 | 6.016<< | 6.978 | 7.016 |
| 109 | 5.979 | 6.016 | 6.978>> | 7.016 |
| 109 | 8.886 | 8.977 | 2.382<< | 2.473 |
| 109 | 5.976 | 6.020 | 6.975 | 7.019>> |
| 109 | 8.889 | 8.973 | 2.386 | 2.470<< |
| 110 | 8.080>> | 8.145 | 3.670 | 3.735 |
| 110 | 5.788<< | 5.820 | 7.283 | 7.315 |
| 110 | 8.078 | 8.148>> | 3.667 | 3.738 |
| 110 | 5.790 | 5.817<< | 7.285 | 7.313 |
| 110 | 5.790 | 5.817 | 7.285>> | 7.313 |
| 110 | 8.078 | 8.148 | 3.667<< | 3.738 |
| 110 | 5.788 | 5.820 | 7.283 | 7.315>> |
| 110 | 8.080 | 8.145 | 3.670 | 3.735<< |

| BARRA 110 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 110 | 8.074>> | 8.139 | 3.644 | 3.709 |
| 110 | 5.782<< | 5.814 | 7.257 | 7.289 |
| 110 | 8.072 | 8.142>> | 3.641 | 3.711 |
| 110 | 5.784 | 5.812<< | 7.259 | 7.287 |
| 110 | 5.784 | 5.812 | 7.259>> | 7.287 |
| 110 | 8.072 | 8.142 | 3.641<< | 3.711 |
| 110 | 5.782 | 5.814 | 7.257 | 7.289>> |
| 110 | 8.074 | 8.139 | 3.644 | 3.709<< |
| 111 | 7.034>> | 7.090 | 5.276 | 5.332 |
| 111 | 5.478<< | 5.498 | 7.745 | 7.765 |
| 111 | 7.032 | 7.092>> | 5.274 | 5.334 |
| 111 | 5.480 | 5.497<< | 7.747 | 7.764 |
| 111 | 5.480 | 5.497 | 7.747>> | 7.764 |
| 111 | 7.032 | 7.092 | 5.274<< | 5.334 |
| 111 | 5.478 | 5.498 | 7.745 | 7.765>> |
| 111 | 7.034 | 7.090 | 5.276 | 5.332<< |

| BARRA 111 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 111 | 7.026>> | 7.082 | 5.252 | 5.308 |
| 111 | 5.470<< | 5.491 | 7.721 | 7.741 |
| 111 | 7.024 | 7.084>> | 5.250 | 5.310 |
| 111 | 5.472 | 5.489<< | 7.722 | 7.740 |
| 111 | 5.472 | 5.489 | 7.722>> | 7.740 |
| 111 | 7.024 | 7.084 | 5.250<< | 5.310 |
| 111 | 5.470 | 5.491 | 7.721 | 7.741>> |
| 111 | 7.026 | 7.082 | 5.252 | 5.308<< |
| 112 | 5.760>> | 5.784 | 7.265 | 7.289 |
| 112 | 5.051<< | 5.060 | 8.389 | 8.398 |
| 112 | 5.759 | 5.785>> | 7.264 | 7.290 |
| 112 | 5.052 | 5.059<< | 8.390 | 8.397 |
| 112 | 5.052 | 5.059 | 8.390>> | 8.397 |
| 112 | 5.759 | 5.785 | 7.264<< | 7.290 |
| 112 | 5.051 | 5.060 | 8.389 | 8.398>> |
| 112 | 5.760 | 5.784 | 7.265 | 7.289<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 112 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 112 | 4.391>> | 4.382 | 5.645 | 5.636 |
| 112 | 3.668<< | 3.667 | 6.459 | 6.458 |
| 112 | 4.390 | 4.382>> | 5.645 | 5.637 |
| 112 | 3.669 | 3.667<< | 6.459 | 6.457 |
| 112 | 3.669 | 3.667 | 6.459>> | 6.457 |
| 112 | 4.390 | 4.382 | 5.645<< | 5.637 |
| 112 | 3.668 | 3.667 | 6.459 | 6.458>> |
| 112 | 4.391 | 4.382 | 5.645 | 5.636<< |
| 113 | 4.252>> | 4.158 | 5.911 | 5.817 |
| 113 | 4.161<< | 4.218 | 5.820 | 5.877 |
| 113 | 4.175 | 4.231>> | 5.833 | 5.889 |
| 113 | 4.229 | 4.145<< | 5.888 | 5.804 |
| 113 | 4.252 | 4.158 | 5.911>> | 5.817 |
| 113 | 4.161 | 4.218 | 5.820<< | 5.877 |
| 113 | 4.175 | 4.231 | 5.833 | 5.889>> |
| 113 | 4.229 | 4.145 | 5.888 | 5.804<< |

TITULO
=======
LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=i)(1.00*G+0.40*LEV+1.00*P+0.8*SC+0.5*GT)

FICHERO DE GEOMETRIA COMPLETA
==============================
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
================================
1

| Fich | Num. Nudos | Num. barras | Num. hipotesis | NOMBRE FICHERO |
|---|---|---|---|---|
| 1 | 120 | 119 | 161 | ESFec.TXT |

| Fich | Hipotesis | Caracter | Coeficiente |
|---|---|---|---|
| 1 | 1 | 1 | 1.0 |
| 1 | 2 | 1 | 0.4 |
| 1 | 3 | 1 | 1.0 |
| 1 | 4 | 3 | 1.0 |
| 1 | 5 | 3 | 1.0 |
| 1 | 6 | 3 | 1.0 |
| 1 | 7 | 2 | 0.5 |
| 1 | 8 | 2 | 0.5 |
| 1 | 9 | 2 | 0.5 |
| 1 | 10 | 2 | 0.5 |
| 1 | 11 | 2 | 0.5 |
| 1 | 12 | 2 | 0.5 |
| 1 | 13 | 2 | 0.5 |
| 1 | 14 | 2 | 0.5 |
| 1 | 15 | 2 | 0.5 |
| 1 | 16 | 2 | 0.5 |
| 1 | 17 | 2 | 0.5 |
| 1 | 18 | 2 | 0.5 |
| 1 | 19 | 4 | 0.0 |
| 1 | 20 | 5 | 0.0 |
| 1 | 21 | 4 | 0.0 |
| 1 | 22 | 5 | 0.0 |
| 1 | 23 | 4 | 0.0 |
| 1 | 24 | 5 | 0.0 |
| 1 | 25 | 4 | 0.0 |
| 1 | 26 | 5 | 0.0 |
| 1 | 27 | 4 | 0.0 |
| 1 | 28 | 5 | 0.0 |
| 1 | 29 | 4 | 0.0 |
| 1 | 30 | 5 | 0.0 |
| 1 | 31 | 4 | 0.0 |
| 1 | 32 | 5 | 0.0 |
| 1 | 33 | 4 | 0.0 |
| 1 | 34 | 5 | 0.0 |
| 1 | 35 | 4 | 0.0 |
| 1 | 36 | 5 | 0.0 |
| 1 | 37 | 4 | 0.0 |
| 1 | 38 | 5 | 0.0 |
| 1 | 39 | 4 | 0.0 |
| 1 | 40 | 5 | 0.0 |
| 1 | 41 | 6 | 0.0 |
| 1 | 42 | 7 | 0.0 |
| 1 | 43 | 6 | 0.0 |
| 1 | 44 | 7 | 0.0 |
| 1 | 45 | 6 | 0.0 |
| 1 | 46 | 7 | 0.0 |

| | | | |
|---|---|---|---|
| 1 | 47 | 6 | 0.0 |
| 1 | 48 | 7 | 0.0 |
| 1 | 49 | 6 | 0.0 |
| 1 | 50 | 7 | 0.0 |
| 1 | 51 | 6 | 0.0 |
| 1 | 52 | 7 | 0.0 |
| 1 | 53 | 6 | 0.0 |
| 1 | 54 | 7 | 0.0 |
| 1 | 55 | 6 | 0.0 |
| 1 | 56 | 7 | 0.0 |
| 1 | 57 | 6 | 0.0 |
| 1 | 58 | 7 | 0.0 |
| 1 | 59 | 6 | 0.0 |
| 1 | 60 | 7 | 0.0 |
| 1 | 61 | 6 | 0.0 |
| 1 | 62 | 7 | 0.0 |
| 1 | 63 | 6 | 0.0 |
| 1 | 64 | 7 | 0.0 |
| 1 | 65 | 6 | 0.0 |
| 1 | 66 | 7 | 0.0 |
| 1 | 67 | 6 | 0.0 |
| 1 | 68 | 7 | 0.0 |
| 1 | 69 | 6 | 0.0 |
| 1 | 70 | 7 | 0.0 |
| 1 | 71 | 6 | 0.0 |
| 1 | 72 | 7 | 0.0 |
| 1 | 73 | 6 | 0.0 |
| 1 | 74 | 7 | 0.0 |
| 1 | 75 | 6 | 0.0 |
| 1 | 76 | 7 | 0.0 |
| 1 | 77 | 6 | 0.0 |
| 1 | 78 | 7 | 0.0 |
| 1 | 79 | 6 | 0.0 |
| 1 | 80 | 7 | 0.0 |
| 1 | 81 | 6 | 0.0 |
| 1 | 82 | 7 | 0.0 |
| 1 | 83 | 6 | 0.0 |
| 1 | 84 | 7 | 0.0 |
| 1 | 85 | 6 | 0.0 |
| 1 | 86 | 7 | 0.0 |
| 1 | 87 | 6 | 0.0 |
| 1 | 88 | 7 | 0.0 |
| 1 | 89 | 6 | 0.0 |
| 1 | 90 | 7 | 0.0 |
| 1 | 91 | 6 | 0.0 |
| 1 | 92 | 7 | 0.0 |
| 1 | 93 | 6 | 0.0 |
| 1 | 94 | 7 | 0.0 |
| 1 | 95 | 6 | 0.0 |
| 1 | 96 | 7 | 0.0 |
| 1 | 97 | 8 | 0.8 |
| 1 | 98 | 9 | 0.8 |
| 1 | 99 | 8 | 0.8 |
| 1 | 100 | 9 | 0.8 |
| 1 | 101 | 8 | 0.8 |
| 1 | 102 | 9 | 0.8 |
| 1 | 103 | 8 | 0.8 |
| 1 | 104 | 9 | 0.8 |
| 1 | 105 | 8 | 0.8 |
| 1 | 106 | 9 | 0.8 |
| 1 | 107 | 8 | 0.8 |
| 1 | 108 | 9 | 0.8 |
| 1 | 109 | 8 | 0.8 |
| 1 | 110 | 9 | 0.8 |
| 1 | 111 | 8 | 0.8 |
| 1 | 112 | 9 | 0.8 |
| 1 | 113 | 8 | 0.8 |
| 1 | 114 | 9 | 0.8 |
| 1 | 115 | 8 | 0.8 |
| 1 | 116 | 9 | 0.8 |
| 1 | 117 | 8 | 0.8 |
| 1 | 118 | 9 | 0.8 |
| 1 | 119 | 8 | 0.8 |
| 1 | 120 | 9 | 0.8 |
| 1 | 121 | 8 | 0.8 |
| 1 | 122 | 9 | 0.8 |
| 1 | 123 | 8 | 0.8 |
| 1 | 124 | 9 | 0.8 |
| 1 | 125 | 8 | 0.8 |
| 1 | 126 | 9 | 0.8 |
| 1 | 127 | 8 | 0.8 |
| 1 | 128 | 9 | 0.8 |
| 1 | 129 | 8 | 0.8 |
| 1 | 130 | 9 | 0.8 |
| 1 | 131 | 8 | 0.8 |
| 1 | 132 | 9 | 0.8 |
| 1 | 133 | 8 | 0.8 |
| 1 | 134 | 9 | 0.8 |
| 1 | 135 | 8 | 0.8 |
| 1 | 136 | 9 | 0.8 |
| 1 | 137 | 8 | 0.8 |
| 1 | 138 | 9 | 0.8 |
| 1 | 139 | 8 | 0.8 |
| 1 | 140 | 9 | 0.8 |
| 1 | 141 | 2 | 0.5 |
| 1 | 142 | 1 | 20.433 |
| 1 | 143 | 1 | 2.919 |
| 1 | 144 | 1 | 2.919 |
| 1 | 145 | 1 | 11.676 |
| 1 | 146 | 1 | 2.919 |
| 1 | 147 | 1 | 2.919 |
| 1 | 148 | 1 | 6.464 |
| 1 | 149 | 1 | 6.464 |
| 1 | 150 | 1 | 6.464 |
| 1 | 151 | 1 | 6.464 |
| 1 | 152 | 1 | 6.464 |
| 1 | 153 | 1 | 6.464 |
| 1 | 154 | 1 | 6.464 |
| 1 | 155 | 1 | 6.464 |
| 1 | 156 | 1 | 6.464 |
| 1 | 157 | 1 | 6.464 |
| 1 | 158 | 1 | 6.464 |
| 1 | 159 | 1 | 6.464 |
| 1 | 160 | 1 | 6.464 |
| 1 | 161 | 1 | 6.464 |

PONDERACION DE TENSIONES

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 1 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 1 | 6.159>> | 6.065 | 5.624 | 5.530 |
| 1 | 6.065<< | 6.125 | 5.529 | 5.590 |
| 1 | 6.081 | 6.143>> | 5.546 | 5.607 |
| 1 | 6.137 | 6.053<< | 5.601 | 5.518 |
| 1 | 6.159 | 6.065 | 5.624>> | 5.530 |
| 1 | 6.065 | 6.125 | 5.529<< | 5.590 |
| 1 | 6.081 | 6.143 | 5.546 | 5.607>> |
| 1 | 6.137 | 6.053 | 5.601 | 5.518<< |
| 2 | 6.046>> | 6.027 | 5.693 | 5.674 |
| 2 | 5.277<< | 5.275 | 6.549 | 6.548 |
| 2 | 6.045 | 6.029>> | 5.692 | 5.676 |
| 2 | 5.278 | 5.274<< | 6.551 | 6.546 |
| 2 | 5.277 | 5.274 | 6.551>> | 6.547 |
| 2 | 6.046 | 6.029 | 5.692<< | 5.675 |
| 2 | 5.277 | 5.274 | 6.550 | 6.548>> |
| 2 | 6.046 | 6.028 | 5.692 | 5.674<< |

| BARRA 2 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 2 | 7.753>> | 7.760 | 7.341 | 7.348 |
| 2 | 6.995<< | 6.999 | 8.526 | 8.529 |
| 2 | 7.752 | 7.760>> | 7.341 | 7.349 |
| 2 | 6.996 | 6.998<< | 8.526 | 8.528 |
| 2 | 6.996 | 6.998 | 8.526>> | 8.528 |
| 2 | 7.752 | 7.760 | 7.341<< | 7.349 |
| 2 | 6.995 | 6.999 | 8.526 | 8.529>> |
| 2 | 7.753 | 7.760 | 7.341 | 7.348<< |
| 3 | 8.952>> | 8.971 | 5.458 | 5.477 |
| 3 | 7.257<< | 7.264 | 8.113 | 8.121 |
| 3 | 8.951 | 8.973>> | 5.456 | 5.478 |
| 3 | 7.258 | 7.263<< | 8.115 | 8.119 |
| 3 | 7.258 | 7.263 | 8.115>> | 8.119 |
| 3 | 8.951 | 8.973 | 5.456<< | 5.478 |
| 3 | 7.257 | 7.264 | 8.113 | 8.121>> |
| 3 | 8.952 | 8.971 | 5.458 | 5.477<< |

| BARRA 3 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 3 | 8.963>> | 8.982 | 5.488 | 5.507 |
| 3 | 7.267<< | 7.275 | 8.143 | 8.151 |
| 3 | 8.961 | 8.983>> | 5.486 | 5.508 |
| 3 | 7.269 | 7.274<< | 8.145 | 8.150 |
| 3 | 7.269 | 7.274 | 8.145>> | 8.150 |
| 3 | 8.961 | 8.983 | 5.486<< | 5.508 |
| 3 | 7.267 | 7.275 | 8.143 | 8.151>> |
| 3 | 8.963 | 8.982 | 5.488 | 5.507<< |
| 4 | 9.974>> | 10.003 | 3.900 | 3.929 |
| 4 | 7.448<< | 7.460 | 7.856 | 7.869 |
| 4 | 9.971 | 10.006>> | 3.897 | 3.932 |
| 4 | 7.450 | 7.458<< | 7.859 | 7.866 |
| 4 | 7.450 | 7.458 | 7.859>> | 7.866 |
| 4 | 9.971 | 10.006 | 3.897<< | 3.932 |
| 4 | 7.448 | 7.460 | 7.856 | 7.869>> |
| 4 | 9.974 | 10.003 | 3.900 | 3.929<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 4 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 4 | 9.983>> | 10.012 | 3.933 | 3.962 |
| 4 | 7.457<< | 7.469 | 7.889 | 7.902 |
| 4 | 9.980 | 10.015>> | 3.930 | 3.965 |
| 4 | 7.459 | 7.467<< | 7.892 | 7.900 |
| 4 | 7.459 | 7.467 | 7.892>> | 7.900 |
| 4 | 9.980 | 10.015 | 3.930<< | 3.965 |
| 4 | 7.457 | 7.469 | 7.889 | 7.902>> |
| 4 | 9.983 | 10.012 | 3.933 | 3.962<< |
| 5 | 10.764>> | 10.803 | 2.703 | 2.742 |
| 5 | 7.560<< | 7.577 | 7.723 | 7.740 |
| 5 | 10.761 | 10.807>> | 2.700 | 2.745 |
| 5 | 7.563 | 7.574<< | 7.726 | 7.737 |
| 5 | 7.563 | 7.574 | 7.726>> | 7.737 |
| 5 | 10.761 | 10.807 | 2.700<< | 2.745 |
| 5 | 7.560 | 7.577 | 7.723 | 7.740>> |
| 5 | 10.764 | 10.803 | 2.703 | 2.742<< |

| BARRA 5 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 5 | 10.771>> | 10.810 | 2.737 | 2.776 |
| 5 | 7.567<< | 7.584 | 7.757 | 7.774 |
| 5 | 10.768 | 10.813>> | 2.734 | 2.780 |
| 5 | 7.570 | 7.580<< | 7.760 | 7.771 |
| 5 | 7.570 | 7.580 | 7.760>> | 7.771 |
| 5 | 10.768 | 10.813 | 2.734<< | 2.780 |
| 5 | 7.567 | 7.584 | 7.757 | 7.774>> |
| 5 | 10.771 | 10.810 | 2.737 | 2.776<< |
| 6 | 11.322>> | 11.369 | 1.868 | 1.916 |
| 6 | 7.591<< | 7.613 | 7.713 | 7.735 |
| 6 | 11.318 | 11.374>> | 1.864 | 1.920 |
| 6 | 7.595 | 7.609<< | 7.717 | 7.730 |
| 6 | 7.595 | 7.609 | 7.717>> | 7.730 |
| 6 | 11.318 | 11.374 | 1.864<< | 1.920 |
| 6 | 7.591 | 7.613 | 7.713 | 7.735>> |
| 6 | 11.322 | 11.369 | 1.868 | 1.916<< |

| BARRA 6 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 6 | 11.328>> | 11.375 | 1.904 | 1.951 |
| 6 | 7.597<< | 7.619 | 7.748 | 7.770 |
| 6 | 11.323 | 11.379>> | 1.900 | 1.955 |
| 6 | 7.601 | 7.614<< | 7.752 | 7.766 |
| 6 | 7.601 | 7.614 | 7.752>> | 7.766 |
| 6 | 11.323 | 11.379 | 1.900<< | 1.955 |
| 6 | 7.597 | 7.619 | 7.748 | 7.770>> |
| 6 | 11.328 | 11.375 | 1.904 | 1.951<< |
| 7 | 11.650>> | 11.705 | 1.391 | 1.446 |
| 7 | 7.545<< | 7.572 | 7.823 | 7.849 |
| 7 | 11.645 | 11.710>> | 1.386 | 1.451 |
| 7 | 7.550 | 7.566<< | 7.828 | 7.844 |
| 7 | 7.550 | 7.566 | 7.828>> | 7.844 |
| 7 | 11.645 | 11.710 | 1.386<< | 1.451 |
| 7 | 7.545 | 7.572 | 7.823 | 7.849>> |
| 7 | 11.650 | 11.705 | 1.391 | 1.446<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 7 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 7 | 11.655>> | 11.710 | 1.427 | 1.481 |
| 7 | 7.550<< | 7.576 | 7.858 | 7.885 |
| 7 | 11.650 | 11.715>> | 1.422 | 1.487 |
| 7 | 7.555 | 7.571<< | 7.863 | 7.879 |
| 7 | 7.555 | 7.571 | 7.863>> | 7.879 |
| 7 | 11.650 | 11.715 | 1.422<< | 1.487 |
| 7 | 7.550 | 7.576 | 7.858 | 7.885>> |
| 7 | 11.655 | 11.710 | 1.427 | 1.481<< |
| 8 | 11.751>> | 11.812 | 1.270 | 1.331 |
| 8 | 7.423<< | 7.454 | 8.049 | 8.081 |
| 8 | 11.745 | 11.818>> | 1.263 | 1.337 |
| 8 | 7.429 | 7.448<< | 8.055 | 8.075 |
| 8 | 7.429 | 7.448 | 8.055>> | 8.075 |
| 8 | 11.745 | 11.818 | 1.263<< | 1.337 |
| 8 | 7.423 | 7.454 | 8.049 | 8.081>> |
| 8 | 11.751 | 11.812 | 1.270 | 1.331<< |

| BARRA 8 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 8 | 11.756>> | 11.817 | 1.310 | 1.371 |
| 8 | 7.428<< | 7.460 | 8.089 | 8.121 |
| 8 | 11.750 | 11.823>> | 1.304 | 1.377 |
| 8 | 7.434 | 7.454<< | 8.096 | 8.115 |
| 8 | 7.434 | 7.454 | 8.096>> | 8.115 |
| 8 | 11.750 | 11.823 | 1.304<< | 1.377 |
| 8 | 7.428 | 7.460 | 8.089 | 8.121>> |
| 8 | 11.756 | 11.817 | 1.310 | 1.371<< |
| 9 | 11.650>> | 11.717 | 1.467 | 1.534 |
| 9 | 7.252<< | 7.288 | 8.358 | 8.394 |
| 9 | 11.644 | 11.724>> | 1.460 | 1.541 |
| 9 | 7.259 | 7.281<< | 8.365 | 8.387 |
| 9 | 7.259 | 7.281 | 8.365>> | 8.387 |
| 9 | 11.644 | 11.724 | 1.460<< | 1.541 |
| 9 | 7.252 | 7.288 | 8.358 | 8.394>> |
| 9 | 11.650 | 11.717 | 1.467 | 1.534<< |

| BARRA 9 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 9 | 11.648>> | 11.714 | 1.464 | 1.531 |
| 9 | 7.250<< | 7.286 | 8.355 | 8.390 |
| 9 | 11.641 | 11.721>> | 1.457 | 1.538 |
| 9 | 7.257 | 7.279<< | 8.361 | 8.383 |
| 9 | 7.257 | 7.279 | 8.361>> | 8.383 |
| 9 | 11.641 | 11.721 | 1.457<< | 1.538 |
| 9 | 7.250 | 7.286 | 8.355 | 8.390>> |
| 9 | 11.648 | 11.714 | 1.464 | 1.531<< |
| 10 | 11.369>> | 11.440 | 1.892 | 1.963 |
| 10 | 7.053<< | 7.093 | 8.655 | 8.696 |
| 10 | 11.361 | 11.448>> | 1.884 | 1.971 |
| 10 | 7.061 | 7.086<< | 8.663 | 8.688 |
| 10 | 7.061 | 7.086 | 8.663>> | 8.688 |
| 10 | 11.361 | 11.448 | 1.884<< | 1.971 |
| 10 | 7.053 | 7.093 | 8.655 | 8.696>> |
| 10 | 11.369 | 11.440 | 1.892 | 1.963<< |

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| BARRA 10 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 10 | 11.362>> | 11.432 | 1.867 | 1.938 |
| 10 | 7.045<< | 7.086 | 8.630 | 8.670 |
| 10 | 11.354 | 11.440>> | 1.859 | 1.946 |
| 10 | 7.053 | 7.078<< | 8.638 | 8.662 |
| 10 | 7.053 | 7.078 | 8.638>> | 8.662 |
| 10 | 11.354 | 11.440 | 1.859<< | 1.946 |
| 10 | 7.045 | 7.086 | 8.630 | 8.670>> |
| 10 | 11.362 | 11.432 | 1.867 | 1.938<< |
| 11 | 10.909>> | 10.983 | 2.568 | 2.642 |
| 11 | 6.826<< | 6.872 | 8.965 | 9.010 |
| 11 | 10.900 | 10.992>> | 2.559 | 2.651 |
| 11 | 6.835 | 6.863<< | 8.974 | 9.001 |
| 11 | 6.835 | 6.863 | 8.974>> | 9.001 |
| 11 | 10.900 | 10.992 | 2.559<< | 2.651 |
| 11 | 6.826 | 6.872 | 8.965 | 9.010>> |
| 11 | 10.909 | 10.983 | 2.568 | 2.642<< |

| BARRA 11 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 11 | 10.899>> | 10.973 | 2.543 | 2.618 |
| 11 | 6.816<< | 6.862 | 8.940 | 8.985 |
| 11 | 10.890 | 10.982>> | 2.535 | 2.626 |
| 11 | 6.825 | 6.853<< | 8.949 | 8.977 |
| 11 | 6.825 | 6.853 | 8.949>> | 8.977 |
| 11 | 10.890 | 10.982 | 2.535<< | 2.626 |
| 11 | 6.816 | 6.862 | 8.940 | 8.985>> |
| 11 | 10.899 | 10.973 | 2.543 | 2.618<< |
| 12 | 10.269>> | 10.345 | 3.523 | 3.599 |
| 12 | 6.572<< | 6.622 | 9.316 | 9.366 |
| 12 | 10.259 | 10.355>> | 3.513 | 3.609 |
| 12 | 6.581 | 6.612<< | 9.325 | 9.356 |
| 12 | 6.581 | 6.612 | 9.325>> | 9.356 |
| 12 | 10.259 | 10.355 | 3.513<< | 3.609 |
| 12 | 6.572 | 6.622 | 9.316 | 9.366>> |
| 12 | 10.269 | 10.345 | 3.523 | 3.599<< |

| BARRA 12 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 12 | 9.812>> | 9.889 | 2.497 | 2.574 |
| 12 | 6.116<< | 6.165 | 8.290 | 8.340 |
| 12 | 9.803 | 9.899>> | 2.487 | 2.583 |
| 12 | 6.125 | 6.156<< | 8.300 | 8.330 |
| 12 | 6.125 | 6.156 | 8.300>> | 8.330 |
| 12 | 9.803 | 9.899 | 2.487<< | 2.583 |
| 12 | 6.116 | 6.165 | 8.290 | 8.340>> |
| 12 | 9.812 | 9.889 | 2.497 | 2.574<< |
| 13 | 9.041>> | 9.111 | 3.707 | 3.777 |
| 13 | 5.803<< | 5.866 | 8.760 | 8.822 |
| 13 | 8.940 | 9.126>> | 3.716 | 3.902 |
| 13 | 5.814 | 5.855<< | 8.771 | 8.812 |
| 13 | 5.814 | 5.855 | 8.771>> | 8.812 |
| 13 | 9.031 | 9.122 | 3.696<< | 3.787 |
| 13 | 5.803 | 5.866 | 8.760 | 8.822>> |
| 13 | 9.041 | 9.111 | 3.707 | 3.777<< |

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| BARRA 13 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 13 | 9.024>> | 9.094 | 3.687 | 3.757 |
| 13 | 5.786<< | 5.849 | 8.741 | 8.803 |
| 13 | 8.923 | 9.109>> | 3.697 | 3.882 |
| 13 | 5.797 | 5.838<< | 8.751 | 8.793 |
| 13 | 5.797 | 5.838 | 8.751>> | 8.793 |
| 13 | 9.013 | 9.105 | 3.677<< | 3.768 |
| 13 | 5.786 | 5.849 | 8.741 | 8.803>> |
| 13 | 9.024 | 9.094 | 3.687 | 3.757<< |
| 14 | 8.489>> | 8.062 | 5.157 | 4.729 |
| 14 | 5.232<< | 5.300 | 9.597 | 9.665 |
| 14 | 8.035 | 8.515>> | 4.703 | 5.184 |
| 14 | 5.243 | 5.288<< | 9.609 | 9.654 |
| 14 | 5.243 | 5.288 | 9.609>> | 9.654 |
| 14 | 8.035 | 8.515 | 4.703<< | 5.184 |
| 14 | 5.232 | 5.300 | 9.597 | 9.665>> |
| 14 | 8.489 | 8.062 | 5.157 | 4.729<< |

| BARRA 14 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 14 | 8.467>> | 8.039 | 5.143 | 4.715 |
| 14 | 5.209<< | 5.277 | 9.584 | 9.652 |
| 14 | 8.012 | 8.492>> | 4.690 | 5.171 |
| 14 | 5.220 | 5.265<< | 9.595 | 9.640 |
| 14 | 5.220 | 5.265 | 9.595>> | 9.640 |
| 14 | 8.012 | 8.492 | 4.690<< | 5.171 |
| 14 | 5.209 | 5.277 | 9.584 | 9.652>> |
| 14 | 8.467 | 8.039 | 5.143 | 4.715<< |
| 15 | 8.054>> | 7.562 | 5.868 | 5.376 |
| 15 | 4.449<< | 4.876 | 10.309 | 10.735 |
| 15 | 7.535 | 8.080>> | 5.351 | 5.896 |
| 15 | 4.764 | 4.562<< | 10.622 | 10.420 |
| 15 | 4.764 | 4.562 | 10.622>> | 10.420 |
| 15 | 8.002 | 7.985 | 5.342<< | 5.325 |
| 15 | 4.449 | 4.876 | 10.309 | 10.735>> |
| 15 | 8.043 | 7.944 | 5.382 | 5.284<< |

| BARRA 15 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 15 | 7.418>> | 7.334 | 4.887 | 4.804 |
| 15 | 4.079<< | 4.413 | 8.691 | 9.025 |
| 15 | 6.987 | 7.431>> | 4.857 | 5.300 |
| 15 | 4.319 | 4.174<< | 8.930 | 8.785 |
| 15 | 4.319 | 4.174 | 8.930>> | 8.785 |
| 15 | 7.385 | 7.366 | 4.855<< | 4.836 |
| 15 | 4.079 | 4.413 | 8.691 | 9.025>> |
| 15 | 7.418 | 7.334 | 4.887 | 4.804<< |
| 16 | 8.627>> | 8.561 | 3.351 | 3.285 |
| 16 | 4.193<< | 4.344 | 8.798 | 8.949 |
| 16 | 8.616 | 8.573>> | 3.339 | 3.296 |
| 16 | 4.204 | 4.332<< | 8.810 | 8.937 |
| 16 | 4.204 | 4.332 | 8.810>> | 8.937 |
| 16 | 8.616 | 8.573 | 3.339<< | 3.296 |
| 16 | 4.193 | 4.344 | 8.798 | 8.949>> |
| 16 | 8.627 | 8.561 | 3.351 | 3.285<< |

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| BARRA 16 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 16 | 8.713>> | 8.620 | 3.395 | 3.302 |
| 16 | 4.230<< | 4.418 | 8.738 | 8.926 |
| 16 | 8.674 | 8.659>> | 3.356 | 3.341 |
| 16 | 4.269 | 4.380<< | 8.776 | 8.887 |
| 16 | 4.243 | 4.381 | 8.778>> | 8.916 |
| 16 | 8.700 | 8.658 | 3.354<< | 3.312 |
| 16 | 4.231 | 4.393 | 8.767 | 8.928>> |
| 16 | 8.712 | 8.646 | 3.366 | 3.300<< |
| 17 | 7.940>> | 7.870 | 4.345 | 4.275 |
| 17 | 2.158<< | 2.324 | 11.379 | 11.545 |
| 17 | 7.928 | 7.882>> | 4.333 | 4.287 |
| 17 | 2.171 | 2.312<< | 11.392 | 11.533 |
| 17 | 2.171 | 2.312 | 11.392>> | 11.533 |
| 17 | 7.928 | 7.882 | 4.333<< | 4.287 |
| 17 | 2.158 | 2.324 | 11.379 | 11.545>> |
| 17 | 7.940 | 7.870 | 4.345 | 4.275<< |

| BARRA 17 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 17 | 7.879>> | 7.808 | 4.349 | 4.279 |
| 17 | 2.096<< | 2.263 | 11.383 | 11.549 |
| 17 | 7.866 | 7.821>> | 4.337 | 4.291 |
| 17 | 2.109 | 2.250<< | 11.396 | 11.537 |
| 17 | 2.109 | 2.250 | 11.396>> | 11.537 |
| 17 | 7.866 | 7.821 | 4.337<< | 4.291 |
| 17 | 2.096 | 2.263 | 11.383 | 11.549>> |
| 17 | 7.879 | 7.808 | 4.349 | 4.279<< |
| 18 | 8.552>> | 8.483 | 3.497 | 3.429 |
| 18 | 4.167<< | 4.332 | 8.770 | 8.935 |
| 18 | 8.538 | 8.497>> | 3.484 | 3.443 |
| 18 | 4.181 | 4.318<< | 8.784 | 8.921 |
| 18 | 4.181 | 4.318 | 8.784>> | 8.921 |
| 18 | 8.538 | 8.497 | 3.484<< | 3.443 |
| 18 | 4.167 | 4.332 | 8.770 | 8.935>> |
| 18 | 8.552 | 8.483 | 3.497 | 3.429<< |

| BARRA 18 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 18 | 8.370>> | 8.280 | 3.487 | 3.396 |
| 18 | 4.036<< | 4.202 | 8.769 | 8.936 |
| 18 | 8.338 | 8.312>> | 3.454 | 3.429 |
| 18 | 4.068 | 4.170<< | 8.802 | 8.903 |
| 18 | 4.050 | 4.170 | 8.804>> | 8.924 |
| 18 | 8.356 | 8.312 | 3.452<< | 3.408 |
| 18 | 4.036 | 4.184 | 8.790 | 8.938>> |
| 18 | 8.370 | 8.298 | 3.466 | 3.394<< |
| 19 | 6.956>> | 6.851 | 5.278 | 5.173 |
| 19 | 3.965<< | 4.145 | 8.824 | 9.005 |
| 19 | 6.906 | 6.901>> | 5.228 | 5.223 |
| 19 | 4.014 | 4.096<< | 8.874 | 8.955 |
| 19 | 3.997 | 4.096 | 8.876>> | 8.975 |
| 19 | 6.923 | 6.900 | 5.226<< | 5.203 |
| 19 | 3.965 | 4.129 | 8.844 | 9.008>> |
| 19 | 6.955 | 6.868 | 5.258 | 5.171<< |

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| BARRA 19 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 19 | 7.675>> | 7.556 | 5.594 | 5.475 |
| 19 | 4.452<< | 4.681 | 10.170 | 10.399 |
| 19 | 7.614 | 7.617>> | 5.534 | 5.536 |
| 19 | 4.513 | 4.620<< | 10.231 | 10.338 |
| 19 | 4.475 | 4.626 | 10.234>> | 10.384 |
| 19 | 7.652 | 7.611 | 5.531<< | 5.489 |
| 19 | 4.458 | 4.643 | 10.217 | 10.401>> |
| 19 | 7.669 | 7.593 | 5.548 | 5.472<< |
| 20 | 7.931>> | 7.463 | 5.642 | 5.173 |
| 20 | 5.420<< | 5.550 | 8.788 | 8.918 |
| 20 | 7.524 | 7.936>> | 5.151 | 5.562 |
| 20 | 5.480 | 5.490<< | 8.848 | 8.858 |
| 20 | 5.480 | 5.490 | 8.848>> | 8.858 |
| 20 | 7.524 | 7.936 | 5.151<< | 5.562 |
| 20 | 5.420 | 5.550 | 8.788 | 8.918>> |
| 20 | 7.928 | 7.534 | 5.552 | 5.157<< |

| BARRA 20 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 20 | 7.922>> | 7.454 | 5.631 | 5.162 |
| 20 | 5.411<< | 5.542 | 8.776 | 8.907 |
| 20 | 7.516 | 7.927>> | 5.138 | 5.550 |
| 20 | 5.472 | 5.482<< | 8.836 | 8.846 |
| 20 | 5.472 | 5.482 | 8.836>> | 8.846 |
| 20 | 7.516 | 7.927 | 5.138<< | 5.550 |
| 20 | 5.411 | 5.542 | 8.776 | 8.907>> |
| 20 | 7.919 | 7.525 | 5.540 | 5.146<< |
| 21 | 8.565>> | 8.605 | 3.979 | 4.019 |
| 21 | 5.902<< | 6.001 | 8.052 | 8.151 |
| 21 | 8.530 | 8.640>> | 3.944 | 4.054 |
| 21 | 5.937 | 5.966<< | 8.087 | 8.116 |
| 21 | 5.937 | 5.966 | 8.087>> | 8.116 |
| 21 | 8.530 | 8.640 | 3.944<< | 4.054 |
| 21 | 5.902 | 6.001 | 8.052 | 8.151>> |
| 21 | 8.565 | 8.605 | 3.979 | 4.019<< |

| BARRA 21 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 21 | 8.558>> | 8.599 | 3.960 | 4.000 |
| 21 | 5.896<< | 5.994 | 8.033 | 8.132 |
| 21 | 8.523 | 8.634>> | 3.925 | 4.035 |
| 21 | 5.931 | 5.959<< | 8.068 | 8.097 |
| 21 | 5.931 | 5.959 | 8.068>> | 8.097 |
| 21 | 8.523 | 8.634 | 3.925<< | 4.035 |
| 21 | 5.896 | 5.994 | 8.033 | 8.132>> |
| 21 | 8.558 | 8.599 | 3.960 | 4.000<< |
| 22 | 9.357>> | 9.405 | 2.706 | 2.754 |
| 22 | 6.161<< | 6.247 | 7.636 | 7.721 |
| 22 | 9.322 | 9.440>> | 2.671 | 2.789 |
| 22 | 6.196 | 6.212<< | 7.670 | 7.687 |
| 22 | 6.196 | 6.212 | 7.670>> | 7.687 |
| 22 | 9.322 | 9.440 | 2.671<< | 2.789 |
| 22 | 6.161 | 6.247 | 7.636 | 7.721>> |
| 22 | 9.357 | 9.405 | 2.706 | 2.754<< |

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| BARRA 22 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 22 | 8.719>> | 8.768 | 2.826 | 2.874 |
| 22 | 5.524<< | 5.610 | 7.756 | 7.842 |
| 22 | 8.684 | 8.802>> | 2.791 | 2.909 |
| 22 | 5.558 | 5.575<< | 7.791 | 7.807 |
| 22 | 5.558 | 5.575 | 7.791>> | 7.807 |
| 22 | 8.684 | 8.802 | 2.791<< | 2.909 |
| 22 | 5.524 | 5.610 | 7.756 | 7.842>> |
| 22 | 8.719 | 8.768 | 2.826 | 2.874<< |
| 23 | 9.387>> | 9.437 | 1.784 | 1.833 |
| 23 | 5.723<< | 5.802 | 7.454 | 7.533 |
| 23 | 9.353 | 9.471>> | 1.750 | 1.868 |
| 23 | 5.757 | 5.768<< | 7.488 | 7.499 |
| 23 | 5.747 | 5.769 | 7.490>> | 7.512 |
| 23 | 9.363 | 9.470 | 1.748<< | 1.855 |
| 23 | 5.723 | 5.792 | 7.466 | 7.535>> |
| 23 | 9.386 | 9.447 | 1.771 | 1.832<< |

| BARRA 23 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 23 | 9.386>> | 9.435 | 1.798 | 1.847 |
| 23 | 5.721<< | 5.801 | 7.468 | 7.547 |
| 23 | 9.352 | 9.470>> | 1.764 | 1.881 |
| 23 | 5.756 | 5.767<< | 7.502 | 7.513 |
| 23 | 5.746 | 5.768 | 7.504>> | 7.526 |
| 23 | 9.362 | 9.469 | 1.762<< | 1.869 |
| 23 | 5.722 | 5.791 | 7.480 | 7.549>> |
| 23 | 9.385 | 9.446 | 1.785 | 1.845<< |
| 24 | 9.874>> | 9.932 | 1.027 | 1.085 |
| 24 | 5.894<< | 5.959 | 7.218 | 7.282 |
| 24 | 9.849 | 9.957>> | 1.002 | 1.110 |
| 24 | 5.919 | 5.934<< | 7.243 | 7.258 |
| 24 | 5.919 | 5.934 | 7.243>> | 7.258 |
| 24 | 9.849 | 9.957 | 1.002<< | 1.110 |
| 24 | 5.894 | 5.959 | 7.218 | 7.282>> |
| 24 | 9.874 | 9.932 | 1.027 | 1.085<< |

| BARRA 24 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 24 | 9.872>> | 9.930 | 1.041 | 1.099 |
| 24 | 5.892<< | 5.957 | 7.232 | 7.297 |
| 24 | 9.847 | 9.955>> | 1.016 | 1.124 |
| 24 | 5.917 | 5.932<< | 7.257 | 7.272 |
| 24 | 5.917 | 5.932 | 7.257>> | 7.272 |
| 24 | 9.847 | 9.955 | 1.016<< | 1.124 |
| 24 | 5.892 | 5.957 | 7.232 | 7.297>> |
| 24 | 9.872 | 9.930 | 1.041 | 1.099<< |
| 25 | 10.180>> | 10.236 | 0.564 | 0.619 |
| 25 | 6.044<< | 6.104 | 7.001 | 7.062 |
| 25 | 10.154 | 10.262>> | 0.538 | 0.646 |
| 25 | 6.070 | 6.078<< | 7.028 | 7.035 |
| 25 | 6.070 | 6.078 | 7.028>> | 7.035 |
| 25 | 10.154 | 10.262 | 0.538<< | 0.646 |
| 25 | 6.044 | 6.104 | 7.001 | 7.062>> |
| 25 | 10.180 | 10.236 | 0.564 | 0.619<< |

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| BARRA 25 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 25 | 10.178>> | 10.233 | 0.575 | 0.630 |
| 25 | 6.041<< | 6.102 | 7.012 | 7.072 |
| 25 | 10.152 | 10.260>> | 0.548 | 0.657 |
| 25 | 6.068 | 6.075<< | 7.038 | 7.046 |
| 25 | 6.068 | 6.075 | 7.038>> | 7.046 |
| 25 | 10.152 | 10.260 | 0.548<< | 0.657 |
| 25 | 6.041 | 6.102 | 7.012 | 7.072>> |
| 25 | 10.178 | 10.233 | 0.575 | 0.630<< |
| 26 | 10.311>> | 10.362 | 0.373 | 0.424 |
| 26 | 6.134<< | 6.315 | 6.713 | 6.895 |
| 26 | 10.283 | 10.390>> | 0.345 | 0.452 |
| 26 | 6.318 | 6.131<< | 6.898 | 6.711 |
| 26 | 6.318 | 6.131 | 6.898>> | 6.711 |
| 26 | 10.283 | 10.390 | 0.345<< | 0.452 |
| 26 | 6.134 | 6.315 | 6.713 | 6.895>> |
| 26 | 10.311 | 10.362 | 0.373 | 0.424<< |

| BARRA 26 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 26 | 10.309>> | 10.360 | 0.379 | 0.431 |
| 26 | 6.131<< | 6.313 | 6.720 | 6.901 |
| 26 | 10.281 | 10.388>> | 0.351 | 0.458 |
| 26 | 6.316 | 6.129<< | 6.904 | 6.717 |
| 26 | 6.316 | 6.129 | 6.904>> | 6.717 |
| 26 | 10.281 | 10.388 | 0.351<< | 0.458 |
| 26 | 6.131 | 6.313 | 6.720 | 6.901>> |
| 26 | 10.309 | 10.360 | 0.379 | 0.431<< |
| 27 | 10.346>> | 10.394 | 0.326 | 0.373 |
| 27 | 6.132<< | 6.132 | 6.951 | 6.951 |
| 27 | 10.317 | 10.423>> | 0.296 | 0.402 |
| 27 | 6.162 | 6.103<< | 6.980 | 6.922 |
| 27 | 6.162 | 6.103 | 6.980>> | 6.922 |
| 27 | 10.317 | 10.423 | 0.296<< | 0.402 |
| 27 | 6.132 | 6.132 | 6.951 | 6.951>> |
| 27 | 10.346 | 10.394 | 0.326 | 0.373<< |

| BARRA 27 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 27 | 10.345>> | 10.392 | 0.328 | 0.376 |
| 27 | 6.131<< | 6.131 | 6.954 | 6.954 |
| 27 | 10.315 | 10.422>> | 0.299 | 0.405 |
| 27 | 6.160 | 6.101<< | 6.983 | 6.924 |
| 27 | 6.160 | 6.101 | 6.983>> | 6.924 |
| 27 | 10.315 | 10.422 | 0.299<< | 0.405 |
| 27 | 6.131 | 6.131 | 6.954 | 6.954>> |
| 27 | 10.345 | 10.392 | 0.328 | 0.376<< |
| 28 | 10.318>> | 10.362 | 0.375 | 0.418 |
| 28 | 5.994<< | 5.999 | 7.159 | 7.165 |
| 28 | 10.287 | 10.393>> | 0.344 | 0.449 |
| 28 | 6.025 | 5.968<< | 7.190 | 7.134 |
| 28 | 6.025 | 5.968 | 7.190>> | 7.134 |
| 28 | 10.287 | 10.393 | 0.344<< | 0.449 |
| 28 | 5.994 | 5.999 | 7.159 | 7.165>> |
| 28 | 10.318 | 10.362 | 0.375 | 0.418<< |

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| BARRA 28 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 28 | 10.317>> | 10.361 | 0.373 | 0.416 |
| 28 | 5.993<< | 5.998 | 7.157 | 7.163 |
| 28 | 10.286 | 10.392>> | 0.342 | 0.447 |
| 28 | 6.024 | 5.967<< | 7.188 | 7.132 |
| 28 | 6.024 | 5.967 | 7.188>> | 7.132 |
| 28 | 10.286 | 10.392 | 0.342<< | 0.447 |
| 28 | 5.993 | 5.998 | 7.157 | 7.163>> |
| 28 | 10.317 | 10.361 | 0.373 | 0.416<< |
| 29 | 10.196>> | 10.235 | 0.567 | 0.606 |
| 29 | 5.838<< | 5.848 | 7.392 | 7.403 |
| 29 | 10.164 | 10.268>> | 0.534 | 0.638 |
| 29 | 5.870 | 5.816<< | 7.425 | 7.370 |
| 29 | 5.870 | 5.816 | 7.425>> | 7.370 |
| 29 | 10.164 | 10.268 | 0.534<< | 0.638 |
| 29 | 5.838 | 5.848 | 7.392 | 7.403>> |
| 29 | 10.196 | 10.235 | 0.567 | 0.606<< |

| BARRA 29 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 29 | 10.195>> | 10.234 | 0.560 | 0.599 |
| 29 | 5.837<< | 5.848 | 7.386 | 7.396 |
| 29 | 10.163 | 10.267>> | 0.528 | 0.632 |
| 29 | 5.869 | 5.815<< | 7.418 | 7.364 |
| 29 | 5.869 | 5.815 | 7.418>> | 7.364 |
| 29 | 10.163 | 10.267 | 0.528<< | 0.632 |
| 29 | 5.837 | 5.848 | 7.386 | 7.396>> |
| 29 | 10.195 | 10.234 | 0.560 | 0.599<< |
| 30 | 9.899>> | 9.933 | 1.028 | 1.062 |
| 30 | 5.663<< | 5.679 | 7.650 | 7.666 |
| 30 | 9.865 | 9.967>> | 0.994 | 1.096 |
| 30 | 5.697 | 5.645<< | 7.684 | 7.632 |
| 30 | 5.697 | 5.645 | 7.684>> | 7.632 |
| 30 | 9.865 | 9.967 | 0.994<< | 1.096 |
| 30 | 5.663 | 5.679 | 7.650 | 7.666>> |
| 30 | 9.899 | 9.933 | 1.028 | 1.062<< |

| BARRA 30 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 30 | 9.898>> | 9.932 | 1.019 | 1.053 |
| 30 | 5.662<< | 5.678 | 7.640 | 7.656 |
| 30 | 9.864 | 9.966>> | 0.985 | 1.086 |
| 30 | 5.696 | 5.644<< | 7.674 | 7.622 |
| 30 | 5.696 | 5.644 | 7.674>> | 7.622 |
| 30 | 9.864 | 9.966 | 0.985<< | 1.086 |
| 30 | 5.662 | 5.678 | 7.640 | 7.656>> |
| 30 | 9.898 | 9.932 | 1.019 | 1.053<< |
| 31 | 9.422>> | 9.450 | 1.767 | 1.795 |
| 31 | 5.469<< | 5.490 | 7.934 | 7.955 |
| 31 | 9.387 | 9.486>> | 1.732 | 1.831 |
| 31 | 5.504 | 5.454<< | 7.970 | 7.920 |
| 31 | 5.504 | 5.454 | 7.970>> | 7.920 |
| 31 | 9.387 | 9.486 | 1.732<< | 1.831 |
| 31 | 5.469 | 5.490 | 7.934 | 7.955>> |
| 31 | 9.422 | 9.450 | 1.767 | 1.795<< |

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| BARRA 31 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 31 | 9.420>> | 9.448 | 1.755 | 1.783 |
| 31 | 5.467<< | 5.488 | 7.923 | 7.944 |
| 31 | 9.385 | 9.484>> | 1.720 | 1.819 |
| 31 | 5.502 | 5.452<< | 7.958 | 7.908 |
| 31 | 5.502 | 5.452 | 7.958>> | 7.908 |
| 31 | 9.385 | 9.484 | 1.720<< | 1.819 |
| 31 | 5.467 | 5.488 | 7.923 | 7.944>> |
| 31 | 9.420 | 9.448 | 1.755 | 1.783<< |
| 32 | 8.762>> | 8.783 | 2.789 | 2.810 |
| 32 | 5.251<< | 5.278 | 8.252 | 8.278 |
| 32 | 8.725 | 8.820>> | 2.752 | 2.847 |
| 32 | 5.288 | 5.241<< | 8.289 | 8.241 |
| 32 | 5.270 | 5.245 | 8.289>> | 8.264 |
| 32 | 8.744 | 8.816 | 2.752<< | 2.825 |
| 32 | 5.255 | 5.259 | 8.274 | 8.278>> |
| 32 | 8.758 | 8.802 | 2.767 | 2.810<< |

| BARRA 32 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 32 | 8.759>> | 8.780 | 2.776 | 2.797 |
| 32 | 5.248<< | 5.274 | 8.239 | 8.265 |
| 32 | 8.722 | 8.817>> | 2.739 | 2.834 |
| 32 | 5.285 | 5.237<< | 8.276 | 8.228 |
| 32 | 5.266 | 5.241 | 8.276>> | 8.251 |
| 32 | 8.740 | 8.813 | 2.739<< | 2.812 |
| 32 | 5.252 | 5.255 | 8.261 | 8.265>> |
| 32 | 8.755 | 8.798 | 2.754 | 2.797<< |
| 33 | 8.023>> | 8.041 | 3.926 | 3.944 |
| 33 | 4.908<< | 4.934 | 8.768 | 8.795 |
| 33 | 7.984 | 8.079>> | 3.888 | 3.983 |
| 33 | 4.946 | 4.896<< | 8.806 | 8.756 |
| 33 | 4.926 | 4.899 | 8.807>> | 8.780 |
| 33 | 8.004 | 8.076 | 3.887<< | 3.958 |
| 33 | 4.911 | 4.915 | 8.792 | 8.795>> |
| 33 | 8.019 | 8.061 | 3.902 | 3.943<< |

| BARRA 33 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 33 | 8.016>> | 8.034 | 3.914 | 3.932 |
| 33 | 4.901<< | 4.928 | 8.756 | 8.782 |
| 33 | 7.978 | 8.073>> | 3.876 | 3.970 |
| 33 | 4.940 | 4.889<< | 8.794 | 8.744 |
| 33 | 4.920 | 4.893 | 8.795>> | 8.768 |
| 33 | 7.998 | 8.069 | 3.875<< | 3.946 |
| 33 | 4.905 | 4.908 | 8.780 | 8.783>> |
| 33 | 8.013 | 8.054 | 3.890 | 3.931<< |
| 34 | 7.456>> | 7.015 | 5.374 | 4.933 |
| 34 | 4.375<< | 4.426 | 9.544 | 9.595 |
| 34 | 7.033 | 7.435>> | 4.954 | 5.356 |
| 34 | 4.435 | 4.366<< | 9.604 | 9.535 |
| 34 | 4.396 | 4.371 | 9.608>> | 9.583 |
| 34 | 7.072 | 7.430 | 4.950<< | 5.308 |
| 34 | 4.381 | 4.387 | 9.592 | 9.599>> |
| 34 | 7.451 | 7.054 | 5.326 | 4.929<< |

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| BARRA 34 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 34 | 7.445>> | 7.005 | 5.364 | 4.924 |
| 34 | 4.365<< | 4.415 | 9.535 | 9.586 |
| 34 | 7.023 | 7.425>> | 4.945 | 5.347 |
| 34 | 4.425 | 4.356<< | 9.594 | 9.526 |
| 34 | 4.386 | 4.361 | 9.599>> | 9.574 |
| 34 | 7.062 | 7.420 | 4.941<< | 5.299 |
| 34 | 4.370 | 4.377 | 9.583 | 9.590>> |
| 34 | 7.440 | 7.043 | 5.317 | 4.920<< |
| 35 | 7.144>> | 6.991 | 5.466 | 5.313 |
| 35 | 3.541<< | 3.673 | 10.715 | 10.846 |
| 35 | 7.083 | 7.051>> | 5.406 | 5.374 |
| 35 | 3.814 | 3.584<< | 10.752 | 10.522 |
| 35 | 3.564 | 3.618 | 10.778>> | 10.832 |
| 35 | 7.121 | 7.046 | 5.403<< | 5.327 |
| 35 | 3.547 | 3.634 | 10.762 | 10.849>> |
| 35 | 7.138 | 7.029 | 5.419 | 5.310<< |

| BARRA 35 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 35 | 6.681>> | 6.550 | 4.965 | 4.834 |
| 35 | 3.326<< | 3.423 | 9.030 | 9.127 |
| 35 | 6.632 | 6.599>> | 4.917 | 4.883 |
| 35 | 3.532 | 3.370<< | 9.037 | 8.875 |
| 35 | 3.343 | 3.377 | 9.081>> | 9.115 |
| 35 | 6.664 | 6.596 | 4.914<< | 4.846 |
| 35 | 3.329 | 3.392 | 9.067 | 9.130>> |
| 35 | 6.679 | 6.582 | 4.928 | 4.832<< |
| 36 | 7.807>> | 7.684 | 3.545 | 3.422 |
| 36 | 3.183<< | 3.267 | 9.244 | 9.328 |
| 36 | 7.604 | 7.733>> | 3.514 | 3.643 |
| 36 | 3.221 | 3.230<< | 9.281 | 9.290 |
| 36 | 3.200 | 3.231 | 9.282>> | 9.313 |
| 36 | 7.790 | 7.720 | 3.507<< | 3.437 |
| 36 | 3.185 | 3.247 | 9.267 | 9.328>> |
| 36 | 7.805 | 7.705 | 3.522 | 3.422<< |

| BARRA 36 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 36 | 7.892>> | 7.770 | 3.556 | 3.435 |
| 36 | 3.220<< | 3.319 | 9.206 | 9.305 |
| 36 | 7.687 | 7.823>> | 3.524 | 3.659 |
| 36 | 3.258 | 3.281<< | 9.244 | 9.268 |
| 36 | 3.237 | 3.283 | 9.245>> | 9.291 |
| 36 | 7.875 | 7.806 | 3.518<< | 3.449 |
| 36 | 3.222 | 3.298 | 9.230 | 9.306>> |
| 36 | 7.890 | 7.791 | 3.533 | 3.434<< |
| 37 | 7.030>> | 6.788 | 4.780 | 4.538 |
| 37 | 1.029<< | 1.127 | 11.974 | 12.072 |
| 37 | 6.847 | 6.972>> | 4.597 | 4.722 |
| 37 | 1.068 | 1.088<< | 12.013 | 12.033 |
| 37 | 1.046 | 1.089 | 12.014>> | 12.058 |
| 37 | 6.869 | 6.970 | 4.596<< | 4.697 |
| 37 | 1.030 | 1.105 | 11.999 | 12.073>> |
| 37 | 7.017 | 6.915 | 4.639 | 4.536<< |

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| BARRA 37 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 37 | 7.035>> | 6.793 | 4.772 | 4.530 |
| 37 | 1.033<< | 1.132 | 11.966 | 12.064 |
| 37 | 6.852 | 6.977>> | 4.589 | 4.714 |
| 37 | 1.073 | 1.092<< | 12.005 | 12.025 |
| 37 | 1.051 | 1.094 | 12.006>> | 12.049 |
| 37 | 6.873 | 6.975 | 4.588<< | 4.689 |
| 37 | 1.035 | 1.110 | 11.990 | 12.065>> |
| 37 | 7.022 | 6.919 | 4.631 | 4.528<< |
| 38 | 7.759>> | 7.550 | 3.821 | 3.611 |
| 38 | 3.132<< | 3.236 | 9.309 | 9.413 |
| 38 | 7.602 | 7.707>> | 3.663 | 3.768 |
| 38 | 3.168 | 3.201<< | 9.345 | 9.377 |
| 38 | 3.168 | 3.201 | 9.345>> | 9.377 |
| 38 | 7.602 | 7.707 | 3.663<< | 3.768 |
| 38 | 3.132 | 3.236 | 9.309 | 9.413>> |
| 38 | 7.759 | 7.550 | 3.821 | 3.611<< |

| BARRA 38 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 38 | 7.679>> | 7.462 | 3.791 | 3.573 |
| 38 | 3.098<< | 3.188 | 9.325 | 9.415 |
| 38 | 7.517 | 7.625>> | 3.628 | 3.736 |
| 38 | 3.135 | 3.151<< | 9.362 | 9.379 |
| 38 | 3.135 | 3.151 | 9.362>> | 9.379 |
| 38 | 7.517 | 7.625 | 3.628<< | 3.736 |
| 38 | 3.098 | 3.188 | 9.325 | 9.415>> |
| 38 | 7.679 | 7.462 | 3.791 | 3.573<< |
| 39 | 6.376>> | 6.192 | 5.387 | 5.202 |
| 39 | 3.120<< | 3.215 | 9.274 | 9.370 |
| 39 | 6.327 | 6.332>> | 5.238 | 5.243 |
| 39 | 3.153 | 3.182<< | 9.307 | 9.337 |
| 39 | 3.153 | 3.182 | 9.307>> | 9.337 |
| 39 | 6.327 | 6.332 | 5.238<< | 5.243 |
| 39 | 3.120 | 3.215 | 9.274 | 9.370>> |
| 39 | 6.376 | 6.192 | 5.387 | 5.202<< |

| BARRA 39 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 39 | 7.010>> | 6.791 | 5.764 | 5.545 |
| 39 | 3.514<< | 3.655 | 10.750 | 10.891 |
| 39 | 6.935 | 6.959>> | 5.571 | 5.594 |
| 39 | 3.568 | 3.601<< | 10.803 | 10.837 |
| 39 | 3.551 | 3.602 | 10.807>> | 10.858 |
| 39 | 6.951 | 6.958 | 5.567<< | 5.573 |
| 39 | 3.514 | 3.639 | 10.770 | 10.895>> |
| 39 | 6.988 | 6.921 | 5.604 | 5.537<< |
| 40 | 7.253>> | 7.004 | 5.424 | 5.174 |
| 40 | 4.374<< | 4.450 | 9.494 | 9.569 |
| 40 | 6.994 | 7.261>> | 5.168 | 5.435 |
| 40 | 4.426 | 4.398<< | 9.545 | 9.517 |
| 40 | 4.409 | 4.401 | 9.547>> | 9.538 |
| 40 | 7.010 | 7.258 | 5.166<< | 5.414 |
| 40 | 4.376 | 4.433 | 9.514 | 9.571>> |
| 40 | 7.251 | 7.020 | 5.404 | 5.173<< |

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| BARRA 40 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 40 | 7.260>> | 7.010 | 5.438 | 5.189 |
| 40 | 4.381<< | 4.456 | 9.508 | 9.583 |
| 40 | 7.001 | 7.267>> | 5.182 | 5.449 |
| 40 | 4.432 | 4.405<< | 9.559 | 9.532 |
| 40 | 4.416 | 4.407 | 9.561>> | 9.552 |
| 40 | 7.017 | 7.265 | 5.180<< | 5.428 |
| 40 | 4.383 | 4.440 | 9.528 | 9.585>> |
| 40 | 7.258 | 7.027 | 5.418 | 5.187<< |
| 41 | 7.936>> | 7.965 | 4.029 | 4.057 |
| 41 | 4.895<< | 4.950 | 8.733 | 8.788 |
| 41 | 7.908 | 7.993>> | 4.001 | 4.086 |
| 41 | 4.924 | 4.921<< | 8.762 | 8.759 |
| 41 | 4.924 | 4.921 | 8.762>> | 8.759 |
| 41 | 7.908 | 7.993 | 4.001<< | 4.086 |
| 41 | 4.895 | 4.950 | 8.733 | 8.788>> |
| 41 | 7.936 | 7.965 | 4.029 | 4.057<< |

| BARRA 41 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 41 | 7.939>> | 7.968 | 4.047 | 4.075 |
| 41 | 4.898<< | 4.953 | 8.751 | 8.805 |
| 41 | 7.911 | 7.996>> | 4.018 | 4.103 |
| 41 | 4.927 | 4.924<< | 8.779 | 8.776 |
| 41 | 4.927 | 4.924 | 8.779>> | 8.776 |
| 41 | 7.911 | 7.996 | 4.018<< | 4.103 |
| 41 | 4.898 | 4.953 | 8.751 | 8.805>> |
| 41 | 7.939 | 7.968 | 4.047 | 4.075<< |
| 42 | 8.670>> | 8.714 | 2.888 | 2.933 |
| 42 | 5.235<< | 5.285 | 8.232 | 8.281 |
| 42 | 8.645 | 8.739>> | 2.863 | 2.958 |
| 42 | 5.260 | 5.260<< | 8.256 | 8.257 |
| 42 | 5.260 | 5.260 | 8.256>> | 8.257 |
| 42 | 8.645 | 8.739 | 2.863<< | 2.958 |
| 42 | 5.235 | 5.285 | 8.232 | 8.281>> |
| 42 | 8.670 | 8.714 | 2.888 | 2.933<< |

| BARRA 42 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 42 | 8.861>> | 8.906 | 1.760 | 1.805 |
| 42 | 5.427<< | 5.477 | 7.103 | 7.153 |
| 42 | 8.837 | 8.931>> | 1.735 | 1.829 |
| 42 | 5.452 | 5.452<< | 7.128 | 7.129 |
| 42 | 5.452 | 5.452 | 7.128>> | 7.129 |
| 42 | 8.837 | 8.931 | 1.735<< | 1.829 |
| 42 | 5.427 | 5.477 | 7.103 | 7.153>> |
| 42 | 8.861 | 8.906 | 1.760 | 1.805<< |
| 43 | 9.517>> | 9.584 | 0.710 | 0.777 |
| 43 | 5.632<< | 5.671 | 6.798 | 6.837 |
| 43 | 9.503 | 9.598>> | 0.696 | 0.791 |
| 43 | 5.646 | 5.657<< | 6.812 | 6.823 |
| 43 | 5.646 | 5.657 | 6.812>> | 6.823 |
| 43 | 9.503 | 9.598 | 0.696<< | 0.791 |
| 43 | 5.632 | 5.671 | 6.798 | 6.837>> |
| 43 | 9.517 | 9.584 | 0.710 | 0.777<< |

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| BARRA 43 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 43 | 9.516>> | 9.583 | 0.726 | 0.793 |
| 43 | 5.631<< | 5.669 | 6.815 | 6.853 |
| 43 | 9.502 | 9.597>> | 0.712 | 0.807 |
| 43 | 5.645 | 5.656<< | 6.829 | 6.839 |
| 43 | 5.645 | 5.656 | 6.829>> | 6.839 |
| 43 | 9.502 | 9.597 | 0.712<< | 0.807 |
| 43 | 5.631 | 5.669 | 6.815 | 6.853>> |
| 43 | 9.516 | 9.583 | 0.726 | 0.793<< |
| 44 | 9.991>> | 10.070 | -0.029 | 0.050 |
| 44 | 5.810<< | 5.848 | 6.537 | 6.574 |
| 44 | 9.978 | 10.083>> | -0.042 | 0.064 |
| 44 | 5.824 | 5.834<< | 6.550 | 6.561 |
| 44 | 5.824 | 5.834 | 6.550>> | 6.561 |
| 44 | 9.978 | 10.083 | -0.042<< | 0.064 |
| 44 | 5.810 | 5.848 | 6.537 | 6.574>> |
| 44 | 9.991 | 10.070 | -0.029 | 0.050<< |

| BARRA 44 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 44 | 9.989>> | 10.068 | -0.014 | 0.065 |
| 44 | 5.808<< | 5.845 | 6.551 | 6.588 |
| 44 | 9.975 | 10.081>> | -0.027 | 0.078 |
| 44 | 5.821 | 5.832<< | 6.564 | 6.575 |
| 44 | 5.821 | 5.832 | 6.564>> | 6.575 |
| 44 | 9.975 | 10.081 | -0.027<< | 0.078 |
| 44 | 5.808 | 5.845 | 6.551 | 6.588>> |
| 44 | 9.989 | 10.068 | -0.014 | 0.065<< |
| 45 | 10.283>> | 10.373 | -0.487 | -0.397 |
| 45 | 5.967<< | 6.003 | 6.305 | 6.341 |
| 45 | 10.271 | 10.385>> | -0.499 | -0.385 |
| 45 | 5.980 | 5.990<< | 6.318 | 6.329 |
| 45 | 5.980 | 5.990 | 6.318>> | 6.329 |
| 45 | 10.271 | 10.385 | -0.499<< | -0.385 |
| 45 | 5.967 | 6.003 | 6.305 | 6.341>> |
| 45 | 10.283 | 10.373 | -0.487 | -0.397<< |

| BARRA 45 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 45 | 10.281>> | 10.370 | -0.476 | -0.386 |
| 45 | 5.965<< | 6.001 | 6.316 | 6.352 |
| 45 | 10.268 | 10.383>> | -0.489 | -0.374 |
| 45 | 5.977 | 5.988<< | 6.329 | 6.339 |
| 45 | 5.977 | 5.988 | 6.329>> | 6.339 |
| 45 | 10.268 | 10.383 | -0.489<< | -0.374 |
| 45 | 5.965 | 6.001 | 6.316 | 6.352>> |
| 45 | 10.281 | 10.370 | -0.476 | -0.386<< |
| 46 | 10.400>> | 10.499 | -0.674 | -0.575 |
| 46 | 6.104<< | 6.138 | 6.101 | 6.136 |
| 46 | 10.388 | 10.511>> | -0.686 | -0.563 |
| 46 | 6.116 | 6.127<< | 6.113 | 6.124 |
| 46 | 6.108 | 6.128 | 6.114>> | 6.134 |
| 46 | 10.396 | 10.510 | -0.687<< | -0.572 |
| 46 | 6.105 | 6.131 | 6.111 | 6.136>> |
| 46 | 10.399 | 10.507 | -0.684 | -0.575<< |

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| BARRA 46 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 46 | 10.398>> | 10.497 | -0.668 | -0.568 |
| 46 | 6.102<< | 6.136 | 6.107 | 6.142 |
| 46 | 10.386 | 10.509>> | -0.680 | -0.556 |
| 46 | 6.114 | 6.125<< | 6.119 | 6.130 |
| 46 | 6.106 | 6.126 | 6.120>> | 6.140 |
| 46 | 10.394 | 10.508 | -0.680<< | -0.566 |
| 46 | 6.103 | 6.129 | 6.117 | 6.143>> |
| 46 | 10.397 | 10.505 | -0.678 | -0.569<< |
| 47 | 10.422>> | 10.531 | -0.718 | -0.609 |
| 47 | 6.207<< | 6.267 | 5.911 | 5.971 |
| 47 | 10.411 | 10.542>> | -0.729 | -0.598 |
| 47 | 6.246 | 6.229<< | 5.949 | 5.932 |
| 47 | 6.238 | 6.229 | 5.952>> | 5.943 |
| 47 | 10.419 | 10.542 | -0.731<< | -0.608 |
| 47 | 6.207 | 6.259 | 5.921 | 5.973>> |
| 47 | 10.422 | 10.539 | -0.728 | -0.611<< |

| BARRA 47 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 47 | 10.421>> | 10.530 | -0.715 | -0.606 |
| 47 | 6.205<< | 6.266 | 5.913 | 5.974 |
| 47 | 10.409 | 10.541>> | -0.727 | -0.595 |
| 47 | 6.244 | 6.227<< | 5.952 | 5.935 |
| 47 | 6.236 | 6.227 | 5.954>> | 5.945 |
| 47 | 10.418 | 10.541 | -0.729<< | -0.606 |
| 47 | 6.205 | 6.258 | 5.924 | 5.976>> |
| 47 | 10.421 | 10.538 | -0.726 | -0.609<< |
| 48 | 10.382>> | 10.503 | -0.670 | -0.550 |
| 48 | 6.068<< | 6.109 | 6.152 | 6.193 |
| 48 | 10.374 | 10.511>> | -0.679 | -0.541 |
| 48 | 6.076 | 6.101<< | 6.160 | 6.185 |
| 48 | 6.071 | 6.101 | 6.161>> | 6.191 |
| 48 | 10.379 | 10.511 | -0.680<< | -0.548 |
| 48 | 6.068 | 6.104 | 6.158 | 6.194>> |
| 48 | 10.382 | 10.508 | -0.677 | -0.551<< |

| BARRA 48 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 48 | 10.381>> | 10.502 | -0.672 | -0.552 |
| 48 | 6.066<< | 6.108 | 6.150 | 6.191 |
| 48 | 10.372 | 10.510>> | -0.681 | -0.543 |
| 48 | 6.075 | 6.100<< | 6.158 | 6.183 |
| 48 | 6.070 | 6.100 | 6.159>> | 6.189 |
| 48 | 10.378 | 10.510 | -0.682<< | -0.550 |
| 48 | 6.067 | 6.103 | 6.156 | 6.192>> |
| 48 | 10.381 | 10.507 | -0.679 | -0.553<< |
| 49 | 10.248>> | 10.377 | -0.476 | -0.347 |
| 49 | 5.896<< | 5.949 | 6.400 | 6.454 |
| 49 | 10.239 | 10.386>> | -0.484 | -0.338 |
| 49 | 5.904 | 5.941<< | 6.409 | 6.445 |
| 49 | 5.900 | 5.942 | 6.409>> | 6.451 |
| 49 | 10.244 | 10.385 | -0.485<< | -0.344 |
| 49 | 5.897 | 5.945 | 6.406 | 6.454>> |
| 49 | 10.247 | 10.382 | -0.482 | -0.347<< |

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| BARRA 49 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 49 | 10.247>> | 10.376 | -0.482 | -0.353 |
| 49 | 5.895<< | 5.948 | 6.394 | 6.448 |
| 49 | 10.238 | 10.385>> | -0.491 | -0.344 |
| 49 | 5.903 | 5.940<< | 6.402 | 6.439 |
| 49 | 5.899 | 5.941 | 6.403>> | 6.445 |
| 49 | 10.243 | 10.384 | -0.491<< | -0.350 |
| 49 | 5.896 | 5.944 | 6.399 | 6.448>> |
| 49 | 10.246 | 10.381 | -0.488 | -0.353<< |
| 50 | 9.938>> | 10.076 | -0.012 | 0.126 |
| 50 | 5.705<< | 5.771 | 6.674 | 6.739 |
| 50 | 9.930 | 10.084>> | -0.020 | 0.134 |
| 50 | 5.714 | 5.763<< | 6.682 | 6.731 |
| 50 | 5.711 | 5.763 | 6.682>> | 6.734 |
| 50 | 9.933 | 10.083 | -0.020<< | 0.131 |
| 50 | 5.706 | 5.768 | 6.677 | 6.739>> |
| 50 | 9.938 | 10.078 | -0.015 | 0.126<< |

| BARRA 50 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 50 | 9.937>> | 10.074 | -0.021 | 0.116 |
| 50 | 5.704<< | 5.770 | 6.664 | 6.730 |
| 50 | 9.929 | 10.083>> | -0.030 | 0.124 |
| 50 | 5.713 | 5.761<< | 6.672 | 6.721 |
| 50 | 5.710 | 5.762 | 6.673>> | 6.725 |
| 50 | 9.931 | 10.082 | -0.030<< | 0.121 |
| 50 | 5.705 | 5.767 | 6.668 | 6.730>> |
| 50 | 9.937 | 10.077 | -0.025 | 0.116<< |
| 51 | 9.449>> | 9.593 | 0.730 | 0.874 |
| 51 | 5.495<< | 5.573 | 6.974 | 7.052 |
| 51 | 9.441 | 9.602>> | 0.722 | 0.883 |
| 51 | 5.504 | 5.565<< | 6.982 | 7.043 |
| 51 | 5.501 | 5.565 | 6.983>> | 7.047 |
| 51 | 9.444 | 9.601 | 0.721<< | 0.879 |
| 51 | 5.496 | 5.570 | 6.978 | 7.052>> |
| 51 | 9.449 | 9.596 | 0.726 | 0.874<< |

| BARRA 51 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 51 | 9.447>> | 9.591 | 0.718 | 0.863 |
| 51 | 5.494<< | 5.571 | 6.962 | 7.040 |
| 51 | 9.439 | 9.600>> | 0.710 | 0.871 |
| 51 | 5.502 | 5.563<< | 6.971 | 7.032 |
| 51 | 5.499 | 5.563 | 6.971>> | 7.035 |
| 51 | 9.442 | 9.599 | 0.710<< | 0.867 |
| 51 | 5.494 | 5.568 | 6.966 | 7.040>> |
| 51 | 9.447 | 9.594 | 0.715 | 0.862<< |
| 52 | 8.777>> | 8.922 | 1.761 | 1.906 |
| 52 | 5.262<< | 5.357 | 7.301 | 7.396 |
| 52 | 8.763 | 8.936>> | 1.747 | 1.920 |
| 52 | 5.276 | 5.343<< | 7.315 | 7.382 |
| 52 | 5.267 | 5.344 | 7.316>> | 7.392 |
| 52 | 8.772 | 8.935 | 1.746<< | 1.909 |
| 52 | 5.263 | 5.349 | 7.311 | 7.397>> |
| 52 | 8.776 | 8.930 | 1.751 | 1.905<< |

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| BARRA 52 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 52 | 8.773>> | 8.918 | 1.748 | 1.893 |
| 52 | 5.258<< | 5.353 | 7.288 | 7.383 |
| 52 | 8.760 | 8.932>> | 1.734 | 1.907 |
| 52 | 5.272 | 5.339<< | 7.302 | 7.369 |
| 52 | 5.264 | 5.340 | 7.303>> | 7.379 |
| 52 | 8.768 | 8.931 | 1.733<< | 1.896 |
| 52 | 5.259 | 5.345 | 7.298 | 7.384>> |
| 52 | 8.773 | 8.926 | 1.738 | 1.892<< |
| 53 | 7.991>> | 8.116 | 2.992 | 3.118 |
| 53 | 4.938<< | 5.069 | 7.740 | 7.871 |
| 53 | 7.978 | 8.129>> | 2.979 | 3.130 |
| 53 | 4.951 | 5.057<< | 7.753 | 7.858 |
| 53 | 4.948 | 5.057 | 7.753>> | 7.862 |
| 53 | 7.981 | 8.129 | 2.979<< | 3.126 |
| 53 | 4.939 | 5.066 | 7.744 | 7.872>> |
| 53 | 7.990 | 8.120 | 2.988 | 3.117<< |

| BARRA 53 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 53 | 7.984>> | 8.110 | 2.980 | 3.106 |
| 53 | 4.932<< | 5.063 | 7.728 | 7.859 |
| 53 | 7.971 | 8.123>> | 2.967 | 3.118 |
| 53 | 4.944 | 5.050<< | 7.740 | 7.846 |
| 53 | 4.941 | 5.051 | 7.741>> | 7.850 |
| 53 | 7.975 | 8.122 | 2.966<< | 3.114 |
| 53 | 4.932 | 5.060 | 7.732 | 7.859>> |
| 53 | 7.984 | 8.113 | 2.975 | 3.105<< |
| 54 | 7.384>> | 7.090 | 4.452 | 4.157 |
| 54 | 4.391<< | 4.568 | 8.512 | 8.689 |
| 54 | 6.845 | 7.482>> | 4.100 | 4.738 |
| 54 | 4.435 | 4.524<< | 8.556 | 8.644 |
| 54 | 4.432 | 4.524 | 8.557>> | 8.649 |
| 54 | 7.021 | 7.454 | 4.087<< | 4.520 |
| 54 | 4.391 | 4.564 | 8.516 | 8.689>> |
| 54 | 7.384 | 7.093 | 4.447 | 4.157<< |

| BARRA 54 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 54 | 7.374>> | 7.080 | 4.442 | 4.148 |
| 54 | 4.380<< | 4.557 | 8.503 | 8.679 |
| 54 | 6.834 | 7.471>> | 4.091 | 4.729 |
| 54 | 4.425 | 4.513<< | 8.547 | 8.635 |
| 54 | 4.421 | 4.513 | 8.547>> | 8.639 |
| 54 | 7.010 | 7.444 | 4.078<< | 4.511 |
| 54 | 4.381 | 4.554 | 8.507 | 8.680>> |
| 54 | 7.374 | 7.083 | 4.437 | 4.147<< |
| 55 | 7.072>> | 7.032 | 4.587 | 4.547 |
| 55 | 3.523<< | 4.035 | 9.409 | 9.921 |
| 55 | 7.026 | 7.077>> | 4.542 | 4.593 |
| 55 | 3.827 | 3.733<< | 9.710 | 9.617 |
| 55 | 3.823 | 3.734 | 9.711>> | 9.622 |
| 55 | 7.030 | 7.077 | 4.541<< | 4.588 |
| 55 | 3.536 | 3.849 | 9.643 | 9.957>> |
| 55 | 7.071 | 7.036 | 4.582 | 4.547<< |

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| BARRA 55 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 55 | 6.676>> | 6.647 | 4.280 | 4.251 |
| 55 | 3.387<< | 3.643 | 8.197 | 8.453 |
| 55 | 6.640 | 6.679>> | 4.248 | 4.287 |
| 55 | 3.607 | 3.565<< | 8.230 | 8.187 |
| 55 | 3.604 | 3.565 | 8.230>> | 8.191 |
| 55 | 6.644 | 6.679 | 4.248<< | 4.283 |
| 55 | 3.387 | 3.643 | 8.197 | 8.453>> |
| 55 | 6.676 | 6.647 | 4.280 | 4.251<< |
| 56 | 7.734>> | 7.737 | 2.918 | 2.921 |
| 56 | 3.196<< | 3.434 | 8.476 | 8.715 |
| 56 | 7.730 | 7.741>> | 2.915 | 2.925 |
| 56 | 3.199 | 3.431<< | 8.480 | 8.712 |
| 56 | 3.196 | 3.431 | 8.480>> | 8.715 |
| 56 | 7.734 | 7.740 | 2.915<< | 2.921 |
| 56 | 3.196 | 3.431 | 8.480 | 8.715>> |
| 56 | 7.734 | 7.740 | 2.915 | 2.921<< |

| BARRA 56 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 56 | 7.818>> | 7.822 | 2.928 | 2.933 |
| 56 | 3.230<< | 3.486 | 8.437 | 8.693 |
| 56 | 7.814 | 7.826>> | 2.925 | 2.936 |
| 56 | 3.234 | 3.482<< | 8.441 | 8.689 |
| 56 | 3.231 | 3.482 | 8.441>> | 8.693 |
| 56 | 7.817 | 7.826 | 2.924<< | 2.933 |
| 57 | 6.934>> | 6.938 | 4.045 | 4.049 |
| 57 | 1.026<< | 1.289 | 11.212 | 11.475 |
| 57 | 6.925 | 6.947>> | 4.036 | 4.058 |
| 57 | 1.026 | 1.289<< | 11.212 | 11.475 |
| 57 | 1.026 | 1.289 | 11.212>> | 11.475 |
| 57 | 6.925 | 6.947 | 4.036<< | 4.058 |
| 57 | 1.026 | 1.289 | 11.212 | 11.475>> |
| 57 | 6.934 | 6.938 | 4.045 | 4.049<< |

| BARRA 57 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 57 | 6.938>> | 6.943 | 4.037 | 4.041 |
| 57 | 1.030<< | 1.294 | 11.204 | 11.467 |
| 57 | 6.930 | 6.952>> | 4.028 | 4.050 |
| 57 | 1.030 | 1.294<< | 11.204 | 11.467 |
| 57 | 1.030 | 1.294 | 11.204>> | 11.467 |
| 57 | 6.930 | 6.952 | 4.028<< | 4.050 |
| 57 | 1.030 | 1.294 | 11.204 | 11.467>> |
| 57 | 6.938 | 6.943 | 4.037 | 4.041<< |
| 58 | 7.689>> | 7.697 | 3.085 | 3.093 |
| 58 | 3.105<< | 3.361 | 8.592 | 8.849 |
| 58 | 7.685 | 7.701>> | 3.081 | 3.097 |
| 58 | 3.108 | 3.358<< | 8.596 | 8.845 |
| 58 | 3.108 | 3.358 | 8.596>> | 8.845 |
| 58 | 7.685 | 7.701 | 3.081<< | 3.097 |
| 58 | 3.105 | 3.361 | 8.592 | 8.849>> |
| 58 | 7.689 | 7.697 | 3.085 | 3.093<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 58 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 58 | 7.606>> | 7.613 | 3.053 | 3.059 |
| 58 | 3.071<< | 3.312 | 8.609 | 8.850 |
| 58 | 7.603 | 7.617>> | 3.049 | 3.063 |
| 58 | 3.075 | 3.308<< | 8.613 | 8.846 |
| 58 | 3.075 | 3.308 | 8.613>> | 8.846 |
| 58 | 7.603 | 7.617 | 3.049<< | 3.063 |
| 58 | 3.071 | 3.312 | 8.609 | 8.850>> |
| 58 | 7.606 | 7.613 | 3.053 | 3.059<< |
| 59 | 6.388>> | 6.364 | 4.615 | 4.591 |
| 59 | 3.104<< | 3.362 | 8.529 | 8.787 |
| 59 | 6.356 | 6.396>> | 4.583 | 4.623 |
| 59 | 3.318 | 3.286<< | 8.560 | 8.528 |
| 59 | 3.136 | 3.331 | 8.560>> | 8.755 |
| 59 | 6.356 | 6.396 | 4.583<< | 4.623 |
| 59 | 3.104 | 3.362 | 8.529 | 8.787>> |
| 59 | 6.388 | 6.364 | 4.615 | 4.591<< |

| BARRA 59 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 59 | 6.958>> | 6.928 | 4.757 | 4.726 |
| 59 | 3.416<< | 3.923 | 9.587 | 10.094 |
| 59 | 6.917 | 6.969>> | 4.716 | 4.768 |
| 59 | 3.712 | 3.630<< | 9.880 | 9.798 |
| 59 | 3.712 | 3.630 | 9.880>> | 9.798 |
| 59 | 6.917 | 6.969 | 4.716<< | 4.768 |
| 59 | 3.428 | 3.744 | 9.813 | 10.130>> |
| 59 | 6.958 | 6.928 | 4.757 | 4.726<< |
| 60 | 7.214>> | 6.941 | 4.669 | 4.395 |
| 60 | 4.229<< | 4.407 | 8.742 | 8.919 |
| 60 | 6.689 | 7.311>> | 4.343 | 4.964 |
| 60 | 4.270 | 4.367<< | 8.782 | 8.879 |
| 60 | 4.270 | 4.367 | 8.782>> | 8.879 |
| 60 | 6.865 | 7.288 | 4.323<< | 4.745 |
| 60 | 4.229 | 4.407 | 8.742 | 8.919>> |
| 60 | 7.214 | 6.941 | 4.669 | 4.395<< |

| BARRA 60 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 60 | 7.221>> | 6.947 | 4.683 | 4.409 |
| 60 | 4.236<< | 4.414 | 8.756 | 8.934 |
| 60 | 6.696 | 7.317>> | 4.357 | 4.978 |
| 60 | 4.276 | 4.373<< | 8.796 | 8.893 |
| 60 | 4.276 | 4.373 | 8.796>> | 8.893 |
| 60 | 6.872 | 7.294 | 4.337<< | 4.759 |
| 60 | 4.236 | 4.414 | 8.756 | 8.934>> |
| 60 | 7.221 | 6.947 | 4.683 | 4.409<< |
| 61 | 7.786>> | 7.914 | 3.290 | 3.418 |
| 61 | 4.734<< | 4.870 | 8.034 | 8.170 |
| 61 | 7.774 | 7.926>> | 3.278 | 3.429 |
| 61 | 4.746 | 4.858<< | 8.045 | 8.158 |
| 61 | 4.742 | 4.858 | 8.046>> | 8.162 |
| 61 | 7.777 | 7.925 | 3.277<< | 3.425 |
| 61 | 4.734 | 4.866 | 8.038 | 8.170>> |
| 61 | 7.786 | 7.917 | 3.285 | 3.417<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 61 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 61 | 7.789>> | 7.917 | 3.307 | 3.435 |
| 61 | 4.737<< | 4.873 | 8.051 | 8.187 |
| 61 | 7.777 | 7.929>> | 3.295 | 3.447 |
| 61 | 4.749 | 4.861<< | 8.063 | 8.175 |
| 61 | 4.745 | 4.861 | 8.064>> | 8.179 |
| 61 | 7.780 | 7.929 | 3.294<< | 3.443 |
| 61 | 4.737 | 4.870 | 8.055 | 8.188>> |
| 61 | 7.789 | 7.920 | 3.303 | 3.434<< |
| 62 | 8.528>> | 8.677 | 2.129 | 2.278 |
| 62 | 5.015<< | 5.115 | 7.664 | 7.763 |
| 62 | 8.515 | 8.690>> | 2.116 | 2.291 |
| 62 | 5.028 | 5.102<< | 7.677 | 7.750 |
| 62 | 5.021 | 5.102 | 7.678>> | 7.760 |
| 62 | 8.522 | 8.689 | 2.114<< | 2.281 |
| 62 | 5.016 | 5.107 | 7.674 | 7.765>> |
| 62 | 8.527 | 8.685 | 2.119 | 2.276<< |

| BARRA 62 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 62 | 8.528>> | 8.677 | 2.146 | 2.295 |
| 62 | 5.016<< | 5.115 | 7.681 | 7.780 |
| 62 | 8.515 | 8.690>> | 2.133 | 2.308 |
| 62 | 5.029 | 5.102<< | 7.694 | 7.767 |
| 62 | 5.021 | 5.102 | 7.696>> | 7.777 |
| 62 | 8.523 | 8.690 | 2.131<< | 2.298 |
| 62 | 5.016 | 5.107 | 7.691 | 7.782>> |
| 62 | 8.528 | 8.685 | 2.136 | 2.294<< |
| 63 | 9.152>> | 9.301 | 1.174 | 1.323 |
| 63 | 5.202<< | 5.285 | 7.411 | 7.495 |
| 63 | 9.144 | 9.309>> | 1.166 | 1.331 |
| 63 | 5.210 | 5.277<< | 7.419 | 7.487 |
| 63 | 5.207 | 5.277 | 7.420>> | 7.490 |
| 63 | 9.147 | 9.309 | 1.165<< | 1.328 |
| 63 | 5.202 | 5.282 | 7.415 | 7.495>> |
| 63 | 9.152 | 9.304 | 1.170 | 1.323<< |

| BARRA 63 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 63 | 9.151>> | 9.300 | 1.190 | 1.339 |
| 63 | 5.201<< | 5.284 | 7.428 | 7.511 |
| 63 | 9.143 | 9.308>> | 1.182 | 1.347 |
| 63 | 5.209 | 5.276<< | 7.436 | 7.503 |
| 63 | 5.206 | 5.276 | 7.436>> | 7.506 |
| 63 | 9.146 | 9.308 | 1.182<< | 1.344 |
| 63 | 5.201 | 5.281 | 7.431 | 7.511>> |
| 63 | 9.151 | 9.303 | 1.187 | 1.339<< |
| 64 | 9.592>> | 9.736 | 0.510 | 0.653 |
| 64 | 5.364<< | 5.436 | 7.188 | 7.260 |
| 64 | 9.584 | 9.744>> | 0.502 | 0.661 |
| 64 | 5.372 | 5.428<< | 7.196 | 7.252 |
| 64 | 5.369 | 5.428 | 7.196>> | 7.255 |
| 64 | 9.587 | 9.743 | 0.502<< | 0.658 |
| 64 | 5.364 | 5.433 | 7.191 | 7.260>> |
| 64 | 9.592 | 9.738 | 0.507 | 0.653<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 64 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 64 | 9.590>> | 9.733 | 0.524 | 0.667 |
| 64 | 5.362<< | 5.434 | 7.202 | 7.274 |
| 64 | 9.582 | 9.741>> | 0.516 | 0.675 |
| 64 | 5.370 | 5.426<< | 7.210 | 7.266 |
| 64 | 5.367 | 5.426 | 7.211>> | 7.269 |
| 64 | 9.585 | 9.741 | 0.516<< | 0.672 |
| 64 | 5.362 | 5.431 | 7.206 | 7.275>> |
| 64 | 9.590 | 9.736 | 0.521 | 0.667<< |
| 65 | 9.851>> | 9.988 | 0.126 | 0.262 |
| 65 | 5.505<< | 5.565 | 6.994 | 7.055 |
| 65 | 9.843 | 9.996>> | 0.118 | 0.270 |
| 65 | 5.513 | 5.557<< | 7.002 | 7.047 |
| 65 | 5.506 | 5.558 | 7.003>> | 7.055 |
| 65 | 9.850 | 9.995 | 0.118<< | 0.262 |
| 65 | 5.506 | 5.558 | 7.003 | 7.055>> |
| 65 | 9.850 | 9.995 | 0.118 | 0.262<< |

| BARRA 65 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 65 | 9.849>> | 9.986 | 0.137 | 0.273 |
| 65 | 5.502<< | 5.563 | 7.005 | 7.066 |
| 65 | 9.841 | 9.994>> | 0.129 | 0.281 |
| 65 | 5.510 | 5.555<< | 7.013 | 7.058 |
| 65 | 5.503 | 5.556 | 7.014>> | 7.066 |
| 65 | 9.848 | 9.992 | 0.128 | 0.273<< |
| 66 | 9.935>> | 10.064 | 0.013 | 0.142 |
| 66 | 5.625<< | 5.675 | 6.828 | 6.877 |
| 66 | 9.927 | 10.072>> | 0.005 | 0.150 |
| 66 | 5.633 | 5.667<< | 6.836 | 6.869 |
| 66 | 5.626 | 5.667 | 6.837>> | 6.878 |
| 66 | 9.934 | 10.071 | 0.004<< | 0.141 |
| 66 | 5.626 | 5.667 | 6.837 | 6.878>> |
| 66 | 9.934 | 10.071 | 0.004 | 0.141<< |

| BARRA 66 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 66 | 9.933>> | 10.062 | 0.019 | 0.148 |
| 66 | 5.623<< | 5.673 | 6.834 | 6.883 |
| 66 | 9.925 | 10.070>> | 0.011 | 0.156 |
| 66 | 5.631 | 5.665<< | 6.842 | 6.875 |
| 66 | 5.624 | 5.665 | 6.843>> | 6.884 |
| 66 | 9.932 | 10.069 | 0.010<< | 0.147 |
| 66 | 5.624 | 5.665 | 6.843 | 6.884>> |
| 66 | 9.932 | 10.069 | 0.010 | 0.147<< |
| 67 | 9.924>> | 10.051 | 0.035 | 0.162 |
| 67 | 5.721<< | 5.758 | 6.697 | 6.734 |
| 67 | 9.922 | 10.053>> | 0.033 | 0.164 |
| 67 | 5.732 | 5.748<< | 6.707 | 6.723 |
| 67 | 5.728 | 5.748 | 6.708>> | 6.729 |
| 67 | 9.922 | 10.053 | 0.033<< | 0.164 |
| 67 | 5.721 | 5.758 | 6.697 | 6.734>> |
| 67 | 9.924 | 10.051 | 0.035 | 0.162<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 67 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 67 | 9.923>> | 10.049 | 0.038 | 0.164 |
| 67 | 5.720<< | 5.757 | 6.700 | 6.736 |
| 67 | 9.920 | 10.052>> | 0.035 | 0.167 |
| 67 | 5.730 | 5.746<< | 6.710 | 6.726 |
| 67 | 5.726 | 5.747 | 6.711>> | 6.731 |
| 67 | 9.920 | 10.052 | 0.035<< | 0.167 |
| 67 | 5.720 | 5.757 | 6.700 | 6.736>> |
| 67 | 9.923 | 10.049 | 0.038 | 0.164<< |
| 68 | 9.851>> | 9.963 | 0.169 | 0.281 |
| 68 | 5.557<< | 5.590 | 6.958 | 6.992 |
| 68 | 9.841 | 9.972>> | 0.160 | 0.290 |
| 68 | 5.566 | 5.581<< | 6.968 | 6.982 |
| 68 | 5.559 | 5.581 | 6.969>> | 6.991 |
| 68 | 9.848 | 9.972 | 0.158<< | 0.281 |
| 68 | 5.557 | 5.583 | 6.967 | 6.993>> |
| 68 | 9.851 | 9.969 | 0.160 | 0.279<< |

| BARRA 68 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 68 | 9.849>> | 9.961 | 0.167 | 0.279 |
| 68 | 5.555<< | 5.589 | 6.956 | 6.990 |
| 68 | 9.840 | 9.971>> | 0.158 | 0.288 |
| 68 | 5.565 | 5.579<< | 6.966 | 6.981 |
| 68 | 5.558 | 5.580 | 6.968>> | 6.989 |
| 68 | 9.847 | 9.970 | 0.156<< | 0.279 |
| 68 | 5.555 | 5.582 | 6.965 | 6.992>> |
| 68 | 9.849 | 9.968 | 0.158 | 0.277<< |
| 69 | 9.683>> | 9.786 | 0.437 | 0.541 |
| 69 | 5.369<< | 5.404 | 7.245 | 7.280 |
| 69 | 9.673 | 9.796>> | 0.428 | 0.550 |
| 69 | 5.379 | 5.394<< | 7.255 | 7.270 |
| 69 | 5.372 | 5.395 | 7.255>> | 7.278 |
| 69 | 9.680 | 9.795 | 0.427<< | 0.542 |
| 69 | 5.370 | 5.397 | 7.253 | 7.280>> |
| 69 | 9.682 | 9.793 | 0.429 | 0.540<< |

| BARRA 69 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 69 | 9.682>> | 9.785 | 0.431 | 0.535 |
| 69 | 5.368<< | 5.403 | 7.239 | 7.274 |
| 69 | 9.672 | 9.795>> | 0.422 | 0.544 |
| 69 | 5.378 | 5.393<< | 7.249 | 7.264 |
| 69 | 5.371 | 5.394 | 7.249>> | 7.272 |
| 69 | 9.679 | 9.794 | 0.421<< | 0.536 |
| 69 | 5.369 | 5.396 | 7.247 | 7.274>> |
| 69 | 9.681 | 9.792 | 0.423 | 0.534<< |
| 70 | 9.340>> | 9.434 | 0.976 | 1.069 |
| 70 | 5.163<< | 5.199 | 7.556 | 7.593 |
| 70 | 9.330 | 9.444>> | 0.965 | 1.080 |
| 70 | 5.173 | 5.189<< | 7.567 | 7.582 |
| 70 | 5.173 | 5.189 | 7.567>> | 7.582 |
| 70 | 9.330 | 9.444 | 0.965<< | 1.080 |
| 70 | 5.163 | 5.199 | 7.556 | 7.593>> |
| 70 | 9.340 | 9.434 | 0.976 | 1.069<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 70 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 70 | 9.339>> | 9.433 | 0.966 | 1.060 |
| 70 | 5.162<< | 5.198 | 7.547 | 7.583 |
| 70 | 9.329 | 9.443>> | 0.956 | 1.070 |
| 70 | 5.172 | 5.188<< | 7.557 | 7.573 |
| 70 | 5.172 | 5.188 | 7.557>> | 7.573 |
| 70 | 9.329 | 9.443 | 0.956<< | 1.070 |
| 70 | 5.162 | 5.198 | 7.547 | 7.583>> |
| 70 | 9.339 | 9.433 | 0.966 | 1.060<< |
| 71 | 8.818>> | 8.901 | 1.792 | 1.875 |
| 71 | 4.937<< | 4.975 | 7.894 | 7.933 |
| 71 | 8.807 | 8.912>> | 1.781 | 1.886 |
| 71 | 4.948 | 4.964<< | 7.905 | 7.922 |
| 71 | 4.948 | 4.964 | 7.905>> | 7.922 |
| 71 | 8.807 | 8.912 | 1.781<< | 1.886 |
| 71 | 4.937 | 4.975 | 7.894 | 7.933>> |
| 71 | 8.818 | 8.901 | 1.792 | 1.875<< |

| BARRA 71 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 71 | 8.816>> | 8.899 | 1.780 | 1.863 |
| 71 | 4.935<< | 4.973 | 7.883 | 7.921 |
| 71 | 8.805 | 8.910>> | 1.769 | 1.874 |
| 71 | 4.946 | 4.962<< | 7.894 | 7.910 |
| 71 | 4.946 | 4.962 | 7.894>> | 7.910 |
| 71 | 8.805 | 8.910 | 1.769<< | 1.874 |
| 71 | 4.935 | 4.973 | 7.883 | 7.921>> |
| 71 | 8.816 | 8.899 | 1.780 | 1.863<< |
| 72 | 8.113>> | 8.178 | 2.898 | 2.963 |
| 72 | 4.687<< | 4.733 | 8.258 | 8.305 |
| 72 | 8.095 | 8.196>> | 2.880 | 2.981 |
| 72 | 4.705 | 4.715<< | 8.277 | 8.287 |
| 72 | 4.699 | 4.716 | 8.277>> | 8.294 |
| 72 | 8.101 | 8.195 | 2.879<< | 2.974 |
| 72 | 4.688 | 4.728 | 8.266 | 8.305>> |
| 72 | 8.112 | 8.184 | 2.891 | 2.962<< |

| BARRA 72 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 72 | 8.109>> | 8.174 | 2.885 | 2.950 |
| 72 | 4.683<< | 4.730 | 8.246 | 8.292 |
| 72 | 8.091 | 8.192>> | 2.867 | 2.968 |
| 72 | 4.701 | 4.711<< | 8.264 | 8.274 |
| 72 | 4.696 | 4.712 | 8.264>> | 8.281 |
| 72 | 8.097 | 8.192 | 2.866<< | 2.961 |
| 72 | 4.684 | 4.724 | 8.253 | 8.293>> |
| 72 | 8.108 | 8.180 | 2.878 | 2.950<< |
| 73 | 7.340>> | 7.385 | 4.108 | 4.153 |
| 73 | 4.299<< | 4.355 | 8.832 | 8.888 |
| 73 | 7.318 | 7.407>> | 4.086 | 4.175 |
| 73 | 4.321 | 4.333<< | 8.854 | 8.866 |
| 73 | 4.321 | 4.333 | 8.854>> | 8.866 |
| 73 | 7.318 | 7.407 | 4.086<< | 4.175 |
| 73 | 4.299 | 4.355 | 8.832 | 8.888>> |
| 73 | 7.340 | 7.385 | 4.108 | 4.153<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 73 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 73 | 7.334>> | 7.379 | 4.096 | 4.141 |
| 73 | 4.292<< | 4.348 | 8.820 | 8.876 |
| 73 | 7.312 | 7.401>> | 4.074 | 4.163 |
| 73 | 4.314 | 4.326<< | 8.842 | 8.854 |
| 73 | 4.314 | 4.326 | 8.842>> | 8.854 |
| 73 | 7.312 | 7.401 | 4.074<< | 4.163 |
| 73 | 4.292 | 4.348 | 8.820 | 8.876>> |
| 73 | 7.334 | 7.379 | 4.096 | 4.141<< |
| 74 | 6.623>> | 6.366 | 5.590 | 5.333 |
| 74 | 3.734<< | 3.814 | 9.660 | 9.740 |
| 74 | 6.350 | 6.636>> | 5.321 | 5.607 |
| 74 | 3.780 | 3.767<< | 9.706 | 9.693 |
| 74 | 3.762 | 3.770 | 9.707>> | 9.715 |
| 74 | 6.368 | 6.633 | 5.320<< | 5.585 |
| 74 | 3.737 | 3.796 | 9.681 | 9.740>> |
| 74 | 6.619 | 6.383 | 5.568 | 5.332<< |

| BARRA 74 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 74 | 6.612>> | 6.355 | 5.581 | 5.324 |
| 74 | 3.723<< | 3.803 | 9.650 | 9.730 |
| 74 | 6.339 | 6.626>> | 5.311 | 5.597 |
| 74 | 3.770 | 3.757<< | 9.697 | 9.683 |
| 74 | 3.752 | 3.760 | 9.698>> | 9.705 |
| 74 | 6.357 | 6.622 | 5.310<< | 5.575 |
| 74 | 3.726 | 3.785 | 9.672 | 9.731>> |
| 74 | 6.609 | 6.373 | 5.559 | 5.323<< |
| 75 | 6.301>> | 6.126 | 5.960 | 5.785 |
| 75 | 2.821<< | 2.975 | 10.961 | 11.115 |
| 75 | 6.247 | 6.267>> | 5.795 | 5.815 |
| 75 | 3.105 | 2.925<< | 10.946 | 10.765 |
| 75 | 2.839 | 2.931 | 11.013>> | 11.105 |
| 75 | 6.278 | 6.263 | 5.792<< | 5.776 |
| 75 | 2.825 | 2.944 | 10.999 | 11.118>> |
| 75 | 6.292 | 6.249 | 5.806 | 5.763<< |

| BARRA 75 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 75 | 5.944>> | 5.800 | 5.332 | 5.188 |
| 75 | 2.703<< | 2.809 | 9.234 | 9.339 |
| 75 | 5.915 | 5.914>> | 5.210 | 5.209 |
| 75 | 2.730 | 2.782<< | 9.260 | 9.313 |
| 75 | 2.730 | 2.782 | 9.260>> | 9.313 |
| 75 | 5.915 | 5.914 | 5.210<< | 5.209 |
| 75 | 2.703 | 2.809 | 9.234 | 9.339>> |
| 75 | 5.941 | 5.888 | 5.236 | 5.183<< |
| 76 | 7.042>> | 6.867 | 3.992 | 3.817 |
| 76 | 2.479<< | 2.579 | 9.540 | 9.640 |
| 76 | 6.914 | 6.995>> | 3.864 | 3.945 |
| 76 | 2.509 | 2.549<< | 9.570 | 9.611 |
| 76 | 2.492 | 2.550 | 9.571>> | 9.629 |
| 76 | 6.931 | 6.994 | 3.863<< | 3.927 |
| 76 | 2.480 | 2.563 | 9.559 | 9.641>> |
| 76 | 7.041 | 6.883 | 3.974 | 3.816<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 76 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 76 | 7.123>> | 6.956 | 4.000 | 3.832 |
| 76 | 2.514<< | 2.628 | 9.501 | 9.616 |
| 76 | 7.001 | 7.078>> | 3.877 | 3.954 |
| 76 | 2.543 | 2.599<< | 9.530 | 9.587 |
| 76 | 2.527 | 2.600 | 9.532>> | 9.605 |
| 76 | 7.017 | 7.077 | 3.876<< | 3.936 |
| 76 | 2.515 | 2.612 | 9.519 | 9.617>> |
| 76 | 7.122 | 6.972 | 3.982 | 3.831<< |
| 77 | 6.269>> | 6.184 | 4.985 | 4.900 |
| 77 | 0.285<< | 0.373 | 12.346 | 12.434 |
| 77 | 6.139 | 6.215>> | 4.967 | 5.043 |
| 77 | 0.296 | 0.361<< | 12.357 | 12.423 |
| 77 | 0.296 | 0.361 | 12.357>> | 12.423 |
| 77 | 6.139 | 6.215 | 4.967<< | 5.043 |
| 77 | 0.285 | 0.373 | 12.346 | 12.434>> |
| 77 | 6.269 | 6.184 | 4.985 | 4.900<< |

| BARRA 77 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 77 | 6.273>> | 6.189 | 4.977 | 4.892 |
| 77 | 0.289<< | 0.378 | 12.338 | 12.426 |
| 77 | 6.144 | 6.220>> | 4.959 | 5.035 |
| 77 | 0.301 | 0.366<< | 12.349 | 12.415 |
| 77 | 0.301 | 0.366 | 12.349>> | 12.415 |
| 77 | 6.144 | 6.220 | 4.959<< | 5.035 |
| 77 | 0.289 | 0.378 | 12.338 | 12.426>> |
| 77 | 6.273 | 6.189 | 4.977 | 4.892<< |
| 78 | 7.074>> | 6.973 | 3.984 | 3.884 |
| 78 | 2.409<< | 2.521 | 9.634 | 9.746 |
| 78 | 7.043 | 7.004>> | 3.954 | 3.914 |
| 78 | 2.440 | 2.491<< | 9.664 | 9.715 |
| 78 | 2.421 | 2.491 | 9.667>> | 9.737 |
| 78 | 7.062 | 7.004 | 3.951<< | 3.892 |
| 78 | 2.409 | 2.502 | 9.655 | 9.748>> |
| 78 | 7.074 | 6.992 | 3.963 | 3.881<< |

| BARRA 78 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 78 | 6.993>> | 6.910 | 3.932 | 3.850 |
| 78 | 2.377<< | 2.455 | 9.673 | 9.751 |
| 78 | 6.981 | 6.922>> | 3.921 | 3.861 |
| 78 | 2.388 | 2.444<< | 9.685 | 9.740 |
| 78 | 2.388 | 2.444 | 9.685>> | 9.740 |
| 78 | 6.981 | 6.922 | 3.921<< | 3.861 |
| 78 | 2.377 | 2.455 | 9.673 | 9.751>> |
| 78 | 6.993 | 6.910 | 3.932 | 3.850<< |
| 79 | 5.812>> | 5.700 | 5.445 | 5.333 |
| 79 | 2.463<< | 2.578 | 9.504 | 9.619 |
| 79 | 5.769 | 5.744>> | 5.402 | 5.377 |
| 79 | 2.668 | 2.523<< | 9.513 | 9.368 |
| 79 | 2.475 | 2.536 | 9.551>> | 9.612 |
| 79 | 5.800 | 5.742 | 5.398<< | 5.341 |
| 79 | 2.465 | 2.547 | 9.541 | 9.623>> |
| 79 | 5.811 | 5.732 | 5.409 | 5.330<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA | | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|---|
| | 79 | 6.353>> | 6.220 | 5.830 | 5.697 |
| | 79 | 2.756<< | 2.908 | 11.069 | 11.222 |
| | 79 | 6.297 | 6.276>> | 5.775 | 5.754 |
| | 79 | 3.030 | 2.817<< | 11.109 | 10.897 |
| | 79 | 2.791 | 2.854 | 11.129>> | 11.192 |
| | 79 | 6.318 | 6.275 | 5.770<< | 5.727 |
| | 79 | 2.757 | 2.887 | 11.096 | 11.226>> |
| | 79 | 6.352 | 6.241 | 5.804 | 5.693<< |
| | 80 | 6.676>> | 6.257 | 5.693 | 5.275 |
| | 80 | 3.600<< | 3.669 | 9.861 | 9.930 |
| | 80 | 6.261 | 6.669>> | 5.283 | 5.690 |
| | 80 | 3.656 | 3.613<< | 9.917 | 9.874 |
| | 80 | 3.617 | 3.618 | 9.921>> | 9.923 |
| | 80 | 6.301 | 6.664 | 5.278<< | 5.641 |
| | 80 | 3.605 | 3.630 | 9.910 | 9.935>> |
| | 80 | 6.671 | 6.296 | 5.645 | 5.270<< |

| BARRA | | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|---|
| | 80 | 6.682>> | 6.264 | 5.707 | 5.289 |
| | 80 | 3.606<< | 3.676 | 9.875 | 9.944 |
| | 80 | 6.268 | 6.675>> | 5.297 | 5.704 |
| | 80 | 3.663 | 3.620<< | 9.931 | 9.888 |
| | 80 | 3.623 | 3.625 | 9.936>> | 9.937 |
| | 80 | 6.307 | 6.670 | 5.292<< | 5.655 |
| | 80 | 3.611 | 3.637 | 9.924 | 9.949>> |
| | 80 | 6.677 | 6.303 | 5.659 | 5.284<< |
| | 81 | 7.263>> | 7.300 | 4.220 | 4.257 |
| | 81 | 4.151<< | 4.197 | 9.057 | 9.102 |
| | 81 | 7.229 | 7.334>> | 4.186 | 4.291 |
| | 81 | 4.185 | 4.163<< | 9.091 | 9.068 |
| | 81 | 4.166 | 4.165 | 9.093>> | 9.092 |
| | 81 | 7.248 | 7.332 | 4.184<< | 4.268 |
| | 81 | 4.153 | 4.178 | 9.080 | 9.105>> |
| | 81 | 7.261 | 7.319 | 4.197 | 4.255<< |

| BARRA | | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|---|
| | 81 | 7.266>> | 7.303 | 4.238 | 4.275 |
| | 81 | 4.154<< | 4.200 | 9.074 | 9.120 |
| | 81 | 7.232 | 7.337>> | 4.204 | 4.309 |
| | 81 | 4.188 | 4.166<< | 9.108 | 9.086 |
| | 81 | 4.169 | 4.168 | 9.111>> | 9.109 |
| | 81 | 7.251 | 7.335 | 4.201<< | 4.285 |
| | 81 | 4.156 | 4.181 | 9.098 | 9.122>> |
| | 81 | 7.264 | 7.322 | 4.214 | 4.272<< |
| | 82 | 8.016>> | 8.063 | 3.057 | 3.104 |
| | 82 | 4.517<< | 4.559 | 8.514 | 8.555 |
| | 82 | 7.981 | 8.098>> | 3.022 | 3.139 |
| | 82 | 4.552 | 4.524<< | 8.549 | 8.520 |
| | 82 | 4.531 | 4.526 | 8.551>> | 8.547 |
| | 82 | 8.002 | 8.095 | 3.019<< | 3.112 |
| | 82 | 4.520 | 4.537 | 8.540 | 8.558>> |
| | 82 | 8.013 | 8.084 | 3.030 | 3.102<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA | | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|---|
| | 82 | 8.016>> | 8.063 | 3.074 | 3.121 |
| | 82 | 4.518<< | 4.559 | 8.531 | 8.573 |
| | 82 | 7.981 | 8.098>> | 3.039 | 3.156 |
| | 82 | 4.553 | 4.524<< | 8.566 | 8.538 |
| | 82 | 4.531 | 4.527 | 8.568>> | 8.564 |
| | 82 | 8.002 | 8.095 | 3.036<< | 3.130 |
| | 82 | 4.520 | 4.538 | 8.557 | 8.575>> |
| | 82 | 8.013 | 8.084 | 3.047 | 3.119<< |
| | 83 | 8.690>> | 8.750 | 2.007 | 2.067 |
| | 83 | 4.750<< | 4.783 | 8.179 | 8.213 |
| | 83 | 8.660 | 8.781>> | 1.977 | 2.097 |
| | 83 | 4.780 | 4.753<< | 8.209 | 8.183 |
| | 83 | 4.763 | 4.756 | 8.210>> | 8.203 |
| | 83 | 8.677 | 8.778 | 1.976<< | 2.076 |
| | 83 | 4.753 | 4.767 | 8.200 | 8.214>> |
| | 83 | 8.688 | 8.767 | 1.986 | 2.066<< |

| BARRA | | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|---|
| | 83 | 8.689>> | 8.749 | 2.023 | 2.083 |
| | 83 | 4.749<< | 4.782 | 8.195 | 8.229 |
| | 83 | 8.659 | 8.779>> | 1.993 | 2.113 |
| | 83 | 4.779 | 4.752<< | 8.226 | 8.199 |
| | 83 | 4.762 | 4.755 | 8.227>> | 8.220 |
| | 83 | 8.676 | 8.776 | 1.992<< | 2.093 |
| | 83 | 4.751 | 4.765 | 8.216 | 8.230>> |
| | 83 | 8.686 | 8.766 | 2.003 | 2.082<< |
| | 84 | 9.180>> | 9.249 | 1.248 | 1.316 |
| | 84 | 4.957<< | 4.987 | 7.876 | 7.905 |
| | 84 | 9.151 | 9.278>> | 1.219 | 1.345 |
| | 84 | 4.986 | 4.958<< | 7.904 | 7.876 |
| | 84 | 4.970 | 4.961 | 7.905>> | 7.895 |
| | 84 | 9.167 | 9.274 | 1.218<< | 1.325 |
| | 84 | 4.960 | 4.971 | 7.895 | 7.905>> |
| | 84 | 9.177 | 9.264 | 1.228 | 1.315<< |

| BARRA | | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|---|
| | 84 | 9.178>> | 9.246 | 1.262 | 1.330 |
| | 84 | 4.955<< | 4.985 | 7.890 | 7.919 |
| | 84 | 9.149 | 9.275>> | 1.233 | 1.359 |
| | 84 | 4.984 | 4.956<< | 7.919 | 7.891 |
| | 84 | 4.968 | 4.959 | 7.919>> | 7.910 |
| | 84 | 9.165 | 9.272 | 1.233<< | 1.340 |
| | 84 | 4.958 | 4.969 | 7.909 | 7.920>> |
| | 84 | 9.175 | 9.262 | 1.243 | 1.330<< |
| | 85 | 9.489>> | 9.564 | 0.769 | 0.844 |
| | 85 | 5.143<< | 5.169 | 7.602 | 7.628 |
| | 85 | 9.461 | 9.592>> | 0.741 | 0.872 |
| | 85 | 5.171 | 5.141<< | 7.630 | 7.600 |
| | 85 | 5.170 | 5.141 | 7.630>> | 7.601 |
| | 85 | 9.462 | 9.592 | 0.741<< | 0.871 |
| | 85 | 5.143 | 5.168 | 7.603 | 7.628>> |
| | 85 | 9.489 | 9.565 | 0.768 | 0.844<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 85 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 85 | 9.487>> | 9.562 | 0.780 | 0.855 |
| 85 | 5.141<< | 5.166 | 7.613 | 7.638 |
| 85 | 9.459 | 9.590>> | 0.752 | 0.883 |
| 85 | 5.169 | 5.139<< | 7.641 | 7.611 |
| 85 | 5.168 | 5.139 | 7.641>> | 7.611 |
| 85 | 9.459 | 9.590 | 0.752<< | 0.882 |
| 85 | 5.141 | 5.166 | 7.613 | 7.638>> |
| 85 | 9.487 | 9.563 | 0.779 | 0.855<< |
| 86 | 9.622>> | 9.704 | 0.560 | 0.641 |
| 86 | 5.309<< | 5.331 | 7.355 | 7.377 |
| 86 | 9.596 | 9.731>> | 0.533 | 0.668 |
| 86 | 5.336 | 5.304<< | 7.382 | 7.350 |
| 86 | 5.335 | 5.304 | 7.382>> | 7.351 |
| 86 | 9.596 | 9.731 | 0.533<< | 0.668 |
| 86 | 5.309 | 5.330 | 7.356 | 7.377>> |
| 86 | 9.622 | 9.705 | 0.559 | 0.641<< |

| BARRA 86 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 86 | 9.620>> | 9.702 | 0.566 | 0.648 |
| 86 | 5.307<< | 5.329 | 7.362 | 7.383 |
| 86 | 9.594 | 9.729>> | 0.539 | 0.674 |
| 86 | 5.334 | 5.302<< | 7.388 | 7.357 |
| 86 | 5.333 | 5.302 | 7.388>> | 7.357 |
| 86 | 9.594 | 9.729 | 0.539<< | 0.674 |
| 86 | 5.307 | 5.328 | 7.362 | 7.383>> |
| 86 | 9.620 | 9.703 | 0.565 | 0.648<< |
| 87 | 9.662>> | 9.750 | 0.493 | 0.581 |
| 87 | 5.455<< | 5.473 | 7.137 | 7.154 |
| 87 | 9.637 | 9.776>> | 0.467 | 0.606 |
| 87 | 5.481 | 5.447<< | 7.162 | 7.129 |
| 87 | 5.480 | 5.447 | 7.162>> | 7.129 |
| 87 | 9.637 | 9.776 | 0.467<< | 0.606 |
| 87 | 5.455 | 5.472 | 7.137 | 7.154>> |
| 87 | 9.662 | 9.751 | 0.492 | 0.581<< |

| BARRA 87 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 87 | 9.661>> | 9.748 | 0.496 | 0.583 |
| 87 | 5.453<< | 5.471 | 7.139 | 7.157 |
| 87 | 9.635 | 9.774>> | 0.470 | 0.609 |
| 87 | 5.479 | 5.445<< | 7.165 | 7.131 |
| 87 | 5.478 | 5.446 | 7.165>> | 7.132 |
| 87 | 9.636 | 9.774 | 0.470<< | 0.608 |
| 87 | 5.453 | 5.471 | 7.140 | 7.157>> |
| 87 | 9.661 | 9.749 | 0.495 | 0.583<< |
| 88 | 9.638>> | 9.732 | 0.522 | 0.616 |
| 88 | 5.484<< | 5.649 | 6.903 | 7.068 |
| 88 | 9.614 | 9.757>> | 0.498 | 0.641 |
| 88 | 5.632 | 5.500<< | 7.052 | 6.920 |
| 88 | 5.632 | 5.500 | 7.052>> | 6.920 |
| 88 | 9.614 | 9.757 | 0.498<< | 0.641 |
| 88 | 5.484 | 5.649 | 6.903 | 7.068>> |
| 88 | 9.638 | 9.732 | 0.522 | 0.616<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 88 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 88 | 9.637>> | 9.731 | 0.521 | 0.614 |
| 88 | 5.483<< | 5.647 | 6.901 | 7.066 |
| 88 | 9.613 | 9.756>> | 0.496 | 0.639 |
| 88 | 5.631 | 5.499<< | 7.050 | 6.918 |
| 88 | 5.631 | 5.499 | 7.050>> | 6.918 |
| 88 | 9.613 | 9.756 | 0.496<< | 0.639 |
| 88 | 5.483 | 5.647 | 6.901 | 7.066>> |
| 88 | 9.637 | 9.731 | 0.521 | 0.614<< |
| 89 | 9.519>> | 9.619 | 0.697 | 0.797 |
| 89 | 5.394<< | 5.467 | 7.157 | 7.230 |
| 89 | 9.496 | 9.642>> | 0.674 | 0.820 |
| 89 | 5.417 | 5.443<< | 7.181 | 7.207 |
| 89 | 5.417 | 5.443 | 7.181>> | 7.207 |
| 89 | 9.496 | 9.642 | 0.674<< | 0.820 |
| 89 | 5.394 | 5.467 | 7.157 | 7.230>> |
| 89 | 9.519 | 9.619 | 0.697 | 0.797<< |

| BARRA 89 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 89 | 9.518>> | 9.618 | 0.691 | 0.791 |
| 89 | 5.393<< | 5.466 | 7.151 | 7.224 |
| 89 | 9.495 | 9.641>> | 0.667 | 0.814 |
| 89 | 5.416 | 5.442<< | 7.175 | 7.201 |
| 89 | 5.416 | 5.442 | 7.175>> | 7.201 |
| 89 | 9.495 | 9.641 | 0.667<< | 0.814 |
| 89 | 5.393 | 5.466 | 7.151 | 7.224>> |
| 89 | 9.518 | 9.618 | 0.691 | 0.791<< |
| 90 | 9.225>> | 9.329 | 1.142 | 1.246 |
| 90 | 5.257<< | 5.336 | 7.355 | 7.434 |
| 90 | 9.202 | 9.352>> | 1.119 | 1.269 |
| 90 | 5.280 | 5.314<< | 7.377 | 7.411 |
| 90 | 5.280 | 5.314 | 7.377>> | 7.411 |
| 90 | 9.202 | 9.352 | 1.119<< | 1.269 |
| 90 | 5.257 | 5.336 | 7.355 | 7.434>> |
| 90 | 9.225 | 9.329 | 1.142 | 1.246<< |

| BARRA 90 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 90 | 9.223>> | 9.328 | 1.132 | 1.237 |
| 90 | 5.256<< | 5.335 | 7.345 | 7.424 |
| 90 | 9.201 | 9.351>> | 1.110 | 1.259 |
| 90 | 5.278 | 5.313<< | 7.368 | 7.402 |
| 90 | 5.278 | 5.313 | 7.368>> | 7.402 |
| 90 | 9.201 | 9.351 | 1.110<< | 1.259 |
| 90 | 5.256 | 5.335 | 7.345 | 7.424>> |
| 90 | 9.223 | 9.328 | 1.132 | 1.237<< |
| 91 | 8.750>> | 8.859 | 1.864 | 1.973 |
| 91 | 5.101<< | 5.186 | 7.579 | 7.664 |
| 91 | 8.729 | 8.880>> | 1.842 | 1.994 |
| 91 | 5.122 | 5.164<< | 7.601 | 7.643 |
| 91 | 5.122 | 5.164 | 7.601>> | 7.643 |
| 91 | 8.729 | 8.880 | 1.842<< | 1.994 |
| 91 | 5.101 | 5.186 | 7.579 | 7.664>> |
| 91 | 8.750 | 8.859 | 1.864 | 1.973<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 91 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 91 | 8.751>> | 8.859 | 1.867 | 1.976 |
| 91 | 5.101<< | 5.186 | 7.583 | 7.668 |
| 91 | 8.729 | 8.881>> | 1.846 | 1.997 |
| 91 | 5.122 | 5.165<< | 7.604 | 7.647 |
| 91 | 5.122 | 5.165 | 7.604>> | 7.647 |
| 91 | 8.729 | 8.881 | 1.846<< | 1.997 |
| 91 | 5.101 | 5.186 | 7.583 | 7.668>> |
| 91 | 8.751 | 8.859 | 1.867 | 1.976<< |
| 92 | 8.098>> | 8.204 | 2.888 | 2.994 |
| 92 | 4.924<< | 5.020 | 7.844 | 7.940 |
| 92 | 8.072 | 8.230>> | 2.862 | 3.020 |
| 92 | 4.950 | 4.995<< | 7.870 | 7.914 |
| 92 | 4.945 | 4.996 | 7.870>> | 7.920 |
| 92 | 8.077 | 8.229 | 2.862<< | 3.014 |
| 92 | 4.925 | 5.016 | 7.850 | 7.940>> |
| 92 | 8.097 | 8.209 | 2.882 | 2.994<< |

| BARRA 92 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 92 | 8.101>> | 8.208 | 2.912 | 3.019 |
| 92 | 4.928<< | 5.024 | 7.869 | 7.965 |
| 92 | 8.075 | 8.233>> | 2.887 | 3.044 |
| 92 | 4.954 | 4.998<< | 7.894 | 7.939 |
| 92 | 4.949 | 4.999 | 7.895>> | 7.945 |
| 92 | 8.080 | 8.232 | 2.887<< | 3.039 |
| 92 | 4.929 | 5.019 | 7.874 | 7.965>> |
| 92 | 8.100 | 8.212 | 2.907 | 3.019<< |
| 93 | 7.324>> | 7.414 | 4.143 | 4.234 |
| 93 | 4.685<< | 4.805 | 8.216 | 8.336 |
| 93 | 7.298 | 7.441>> | 4.117 | 4.260 |
| 93 | 4.711 | 4.779<< | 8.242 | 8.310 |
| 93 | 4.711 | 4.779 | 8.242>> | 8.310 |
| 93 | 7.298 | 7.441 | 4.117<< | 4.260 |
| 93 | 4.685 | 4.805 | 8.216 | 8.336>> |
| 93 | 7.324 | 7.414 | 4.143 | 4.234<< |

| BARRA 93 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 93 | 7.331>> | 7.421 | 4.162 | 4.253 |
| 93 | 4.692<< | 4.812 | 8.235 | 8.355 |
| 93 | 7.304 | 7.447>> | 4.136 | 4.279 |
| 93 | 4.718 | 4.786<< | 8.261 | 8.329 |
| 93 | 4.718 | 4.786 | 8.261>> | 8.329 |
| 93 | 7.304 | 7.447 | 4.136<< | 4.279 |
| 93 | 4.692 | 4.812 | 8.235 | 8.355>> |
| 93 | 7.331 | 7.421 | 4.162 | 4.253<< |
| 94 | 6.733>> | 6.255 | 5.820 | 5.342 |
| 94 | 4.214<< | 4.756 | 8.439 | 8.981 |
| 94 | 6.133 | 6.795>> | 5.296 | 5.958 |
| 94 | 4.281 | 4.321<< | 8.978 | 9.018 |
| 94 | 4.273 | 4.321 | 8.979>> | 9.028 |
| 94 | 6.301 | 6.766 | 5.287<< | 5.753 |
| 94 | 4.219 | 4.375 | 8.926 | 9.081>> |
| 94 | 6.723 | 6.345 | 5.707 | 5.330<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 94 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 94 | 6.741>> | 6.264 | 5.831 | 5.354 |
| 94 | 4.223<< | 4.764 | 8.451 | 8.993 |
| 94 | 6.142 | 6.804>> | 5.308 | 5.970 |
| 94 | 4.289 | 4.329<< | 8.989 | 9.029 |
| 94 | 4.281 | 4.330 | 8.991>> | 9.039 |
| 94 | 6.309 | 6.775 | 5.299<< | 5.764 |
| 94 | 4.228 | 4.383 | 8.937 | 9.093>> |
| 94 | 6.732 | 6.354 | 5.719 | 5.341<< |
| 95 | 6.492>> | 6.408 | 5.716 | 5.632 |
| 95 | 3.266<< | 3.554 | 10.266 | 10.554 |
| 95 | 6.438 | 6.461>> | 5.663 | 5.686 |
| 95 | 3.699 | 3.489<< | 10.228 | 10.018 |
| 95 | 3.320 | 3.500 | 10.320>> | 10.500 |
| 95 | 6.439 | 6.461 | 5.663<< | 5.686 |
| 95 | 3.266 | 3.554 | 10.267 | 10.554>> |
| 95 | 6.492 | 6.408 | 5.716 | 5.632<< |

| BARRA 95 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 95 | 6.143>> | 6.071 | 5.162 | 5.089 |
| 95 | 3.151<< | 3.383 | 8.688 | 8.920 |
| 95 | 6.101 | 6.113>> | 5.120 | 5.132 |
| 95 | 3.194 | 3.341<< | 8.730 | 8.877 |
| 95 | 3.194 | 3.341 | 8.730>> | 8.877 |
| 95 | 6.101 | 6.113 | 5.120<< | 5.132 |
| 95 | 3.151 | 3.383 | 8.688 | 8.920>> |
| 95 | 6.143 | 6.071 | 5.162 | 5.089<< |
| 96 | 7.362>> | 7.315 | 3.604 | 3.558 |
| 96 | 3.035<< | 3.244 | 8.879 | 9.088 |
| 96 | 7.348 | 7.329>> | 3.590 | 3.572 |
| 96 | 3.049 | 3.230<< | 8.893 | 9.074 |
| 96 | 3.049 | 3.230 | 8.893>> | 9.074 |
| 96 | 7.348 | 7.329 | 3.590<< | 3.572 |
| 96 | 3.035 | 3.244 | 8.879 | 9.088>> |
| 96 | 7.362 | 7.315 | 3.604 | 3.558<< |

| BARRA 96 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 96 | 7.550>> | 7.507 | 3.609 | 3.566 |
| 96 | 3.172<< | 3.398 | 8.833 | 9.059 |
| 96 | 7.536 | 7.521>> | 3.595 | 3.580 |
| 96 | 3.186 | 3.385<< | 8.846 | 9.045 |
| 96 | 3.186 | 3.385 | 8.846>> | 9.045 |
| 96 | 7.536 | 7.521 | 3.595<< | 3.580 |
| 96 | 3.172 | 3.398 | 8.833 | 9.059>> |
| 96 | 7.550 | 7.507 | 3.609 | 3.566<< |
| 97 | 6.795>> | 6.750 | 4.564 | 4.520 |
| 97 | 1.023<< | 1.253 | 11.542 | 11.773 |
| 97 | 6.782 | 6.763>> | 4.551 | 4.533 |
| 97 | 1.035 | 1.240<< | 11.555 | 11.760 |
| 97 | 1.035 | 1.240 | 11.555>> | 11.760 |
| 97 | 6.782 | 6.763 | 4.551<< | 4.533 |
| 97 | 1.023 | 1.253 | 11.542 | 11.773>> |
| 97 | 6.795 | 6.750 | 4.564 | 4.520<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 97 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 97 | 6.859>> | 6.815 | 4.546 | 4.501 |
| 97 | 1.087<< | 1.318 | 11.523 | 11.754 |
| 97 | 6.846 | 6.828>> | 4.533 | 4.514 |
| 97 | 1.100 | 1.305<< | 11.536 | 11.741 |
| 97 | 1.100 | 1.305 | 11.536>> | 11.741 |
| 97 | 6.846 | 6.828 | 4.533<< | 4.514 |
| 97 | 1.087 | 1.318 | 11.523 | 11.754>> |
| 97 | 6.859 | 6.815 | 4.546 | 4.501<< |
| 98 | 7.547>> | 7.475 | 3.708 | 3.637 |
| 98 | 3.073<< | 3.324 | 8.993 | 9.244 |
| 98 | 7.505 | 7.517>> | 3.666 | 3.679 |
| 98 | 3.115 | 3.282<< | 9.034 | 9.202 |
| 98 | 3.088 | 3.285 | 9.035>> | 9.232 |
| 98 | 7.532 | 7.515 | 3.666<< | 3.648 |
| 98 | 3.076 | 3.297 | 9.023 | 9.244>> |
| 98 | 7.544 | 7.503 | 3.678 | 3.636<< |

| BARRA 98 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 98 | 7.463>> | 7.395 | 3.673 | 3.605 |
| 98 | 3.038<< | 3.276 | 9.006 | 9.244 |
| 98 | 7.425 | 7.434>> | 3.634 | 3.643 |
| 98 | 3.076 | 3.237<< | 9.044 | 9.205 |
| 98 | 3.051 | 3.239 | 9.047>> | 9.234 |
| 98 | 7.450 | 7.432 | 3.632<< | 3.614 |
| 98 | 3.039 | 3.251 | 9.035 | 9.246>> |
| 98 | 7.462 | 7.420 | 3.644 | 3.602<< |
| 99 | 6.208>> | 6.145 | 5.241 | 5.178 |
| 99 | 2.875<< | 3.266 | 8.996 | 9.387 |
| 99 | 5.792 | 6.238>> | 5.212 | 5.658 |
| 99 | 3.120 | 3.022<< | 9.239 | 9.141 |
| 99 | 3.120 | 3.022 | 9.239>> | 9.141 |
| 99 | 6.172 | 6.180 | 5.205<< | 5.213 |
| 99 | 2.875 | 3.266 | 8.996 | 9.387>> |
| 99 | 6.208 | 6.145 | 5.241 | 5.178<< |

| BARRA 99 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 99 | 6.852>> | 6.409 | 6.048 | 5.605 |
| 99 | 3.259<< | 3.750 | 10.451 | 10.942 |
| 99 | 6.356 | 6.903>> | 5.554 | 6.101 |
| 99 | 3.580 | 3.430<< | 10.770 | 10.621 |
| 99 | 3.580 | 3.430 | 10.770>> | 10.621 |
| 99 | 6.804 | 6.816 | 5.541<< | 5.553 |
| 99 | 3.259 | 3.750 | 10.451 | 10.942>> |
| 99 | 6.847 | 6.772 | 5.585 | 5.509<< |
| 100 | 7.246>> | 6.839 | 5.388 | 4.981 |
| 100 | 4.001<< | 4.147 | 9.736 | 9.882 |
| 100 | 6.788 | 7.296>> | 4.931 | 5.440 |
| 100 | 4.041 | 4.106<< | 9.776 | 9.841 |
| 100 | 4.013 | 4.107 | 9.784>> | 9.878 |
| 100 | 7.029 | 7.257 | 4.914<< | 5.142 |
| 100 | 4.001 | 4.118 | 9.772 | 9.890>> |
| 100 | 7.246 | 6.867 | 5.352 | 4.973<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 100 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 100 | 7.270>> | 6.862 | 5.419 | 5.011 |
| 100 | 4.025<< | 4.171 | 9.766 | 9.913 |
| 100 | 6.811 | 7.320>> | 4.962 | 5.470 |
| 100 | 4.065 | 4.130<< | 9.807 | 9.872 |
| 100 | 4.037 | 4.130 | 9.815>> | 9.908 |
| 100 | 7.053 | 7.281 | 4.944<< | 5.172 |
| 100 | 4.025 | 4.142 | 9.803 | 9.920>> |
| 100 | 7.270 | 6.891 | 5.383 | 5.004<< |
| 101 | 7.815>> | 7.904 | 3.935 | 4.024 |
| 101 | 4.568<< | 4.676 | 8.968 | 9.076 |
| 101 | 7.708 | 7.922>> | 3.942 | 4.157 |
| 101 | 4.579 | 4.665<< | 8.979 | 9.066 |
| 101 | 4.579 | 4.665 | 8.979>> | 9.066 |
| 101 | 7.804 | 7.915 | 3.924<< | 4.035 |
| 101 | 4.568 | 4.676 | 8.968 | 9.076>> |
| 101 | 7.815 | 7.904 | 3.935 | 4.024<< |

| BARRA 101 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 101 | 7.837>> | 7.926 | 3.981 | 4.069 |
| 101 | 4.590<< | 4.698 | 9.014 | 9.122 |
| 101 | 7.729 | 7.943>> | 3.988 | 4.202 |
| 101 | 4.601 | 4.687<< | 9.024 | 9.111 |
| 101 | 4.601 | 4.687 | 9.024>> | 9.111 |
| 101 | 7.826 | 7.936 | 3.970<< | 4.080 |
| 101 | 4.590 | 4.698 | 9.014 | 9.122>> |
| 101 | 7.837 | 7.926 | 3.981 | 4.069<< |
| 102 | 8.602>> | 8.703 | 2.773 | 2.875 |
| 102 | 4.897<< | 4.981 | 8.566 | 8.651 |
| 102 | 8.592 | 8.713>> | 2.763 | 2.884 |
| 102 | 4.907 | 4.971<< | 8.576 | 8.641 |
| 102 | 4.907 | 4.971 | 8.576>> | 8.641 |
| 102 | 8.592 | 8.713 | 2.763<< | 2.884 |
| 102 | 4.897 | 4.981 | 8.566 | 8.651>> |
| 102 | 8.602 | 8.703 | 2.773 | 2.875<< |

| BARRA 102 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 102 | 8.616>> | 8.718 | 2.826 | 2.928 |
| 102 | 4.912<< | 4.996 | 8.620 | 8.704 |
| 102 | 8.606 | 8.728>> | 2.817 | 2.938 |
| 102 | 4.921 | 4.986<< | 8.630 | 8.694 |
| 102 | 4.921 | 4.986 | 8.630>> | 8.694 |
| 102 | 8.606 | 8.728 | 2.817<< | 2.938 |
| 102 | 4.912 | 4.996 | 8.620 | 8.704>> |
| 102 | 8.616 | 8.718 | 2.826 | 2.928<< |
| 103 | 9.250>> | 9.346 | 1.846 | 1.943 |
| 103 | 5.163<< | 5.239 | 8.238 | 8.314 |
| 103 | 9.241 | 9.355>> | 1.837 | 1.951 |
| 103 | 5.172 | 5.230<< | 8.247 | 8.305 |
| 103 | 5.172 | 5.230 | 8.247>> | 8.305 |
| 103 | 9.241 | 9.355 | 1.837<< | 1.951 |
| 103 | 5.163 | 5.239 | 8.238 | 8.314>> |
| 103 | 9.250 | 9.346 | 1.846 | 1.943<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 103 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 103 | 9.259>> | 9.356 | 1.904 | 2.001 |
| 103 | 5.172<< | 5.248 | 8.296 | 8.372 |
| 103 | 9.250 | 9.364>> | 1.895 | 2.010 |
| 103 | 5.181 | 5.239<< | 8.305 | 8.363 |
| 103 | 5.181 | 5.239 | 8.305>> | 8.363 |
| 103 | 9.250 | 9.364 | 1.895<< | 2.010 |
| 103 | 5.172 | 5.248 | 8.296 | 8.372>> |
| 103 | 9.259 | 9.356 | 1.904 | 2.001<< |
| 104 | 9.726>> | 9.816 | 1.184 | 1.275 |
| 104 | 5.409<< | 5.477 | 7.938 | 8.006 |
| 104 | 9.718 | 9.825>> | 1.176 | 1.283 |
| 104 | 5.417 | 5.469<< | 7.946 | 7.998 |
| 104 | 5.417 | 5.469 | 7.946>> | 7.998 |
| 104 | 9.718 | 9.825 | 1.176<< | 1.283 |
| 104 | 5.409 | 5.477 | 7.938 | 8.006>> |
| 104 | 9.726 | 9.816 | 1.184 | 1.275<< |

| BARRA 104 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 104 | 9.730>> | 9.821 | 1.227 | 1.318 |
| 104 | 5.413<< | 5.481 | 7.981 | 8.049 |
| 104 | 9.722 | 9.829>> | 1.219 | 1.326 |
| 104 | 5.421 | 5.473<< | 7.989 | 8.041 |
| 104 | 5.421 | 5.473 | 7.989>> | 8.041 |
| 104 | 9.722 | 9.829 | 1.219<< | 1.326 |
| 104 | 5.413 | 5.481 | 7.981 | 8.049>> |
| 104 | 9.730 | 9.821 | 1.227 | 1.318<< |
| 105 | 10.033>> | 10.117 | 0.764 | 0.848 |
| 105 | 5.638<< | 5.699 | 7.640 | 7.700 |
| 105 | 10.026 | 10.124>> | 0.756 | 0.855 |
| 105 | 5.645 | 5.692<< | 7.647 | 7.693 |
| 105 | 5.645 | 5.692 | 7.647>> | 7.693 |
| 105 | 10.026 | 10.124 | 0.756<< | 0.855 |
| 105 | 5.638 | 5.699 | 7.640 | 7.700>> |
| 105 | 10.033 | 10.117 | 0.764 | 0.848<< |

| BARRA 105 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 105 | 10.036>> | 10.120 | 0.731 | 0.815 |
| 105 | 5.641<< | 5.702 | 7.607 | 7.667 |
| 105 | 10.029 | 10.127>> | 0.724 | 0.822 |
| 105 | 5.648 | 5.694<< | 7.614 | 7.660 |
| 105 | 5.648 | 5.694 | 7.614>> | 7.660 |
| 105 | 10.029 | 10.127 | 0.724<< | 0.822 |
| 105 | 5.641 | 5.702 | 7.607 | 7.667>> |
| 105 | 10.036 | 10.120 | 0.731 | 0.815<< |
| 106 | 10.179>> | 10.256 | 0.517 | 0.594 |
| 106 | 5.858<< | 5.911 | 7.279 | 7.331 |
| 106 | 10.173 | 10.262>> | 0.511 | 0.600 |
| 106 | 5.865 | 5.905<< | 7.285 | 7.325 |
| 106 | 5.865 | 5.905 | 7.285>> | 7.325 |
| 106 | 10.173 | 10.262 | 0.511<< | 0.600 |
| 106 | 5.858 | 5.911 | 7.279 | 7.331>> |
| 106 | 10.179 | 10.256 | 0.517 | 0.594<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 106 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 106 | 10.179>> | 10.256 | 0.486 | 0.562 |
| 106 | 5.858<< | 5.911 | 7.247 | 7.299 |
| 106 | 10.173 | 10.262>> | 0.479 | 0.568 |
| 106 | 5.865 | 5.905<< | 7.253 | 7.293 |
| 106 | 5.865 | 5.905 | 7.253>> | 7.293 |
| 106 | 10.173 | 10.262 | 0.479<< | 0.568 |
| 106 | 5.858 | 5.911 | 7.247 | 7.299>> |
| 106 | 10.179 | 10.256 | 0.486 | 0.562<< |
| 107 | 10.109>> | 10.177 | 0.606 | 0.674 |
| 107 | 6.014<< | 6.059 | 7.014 | 7.059 |
| 107 | 10.104 | 10.182>> | 0.601 | 0.679 |
| 107 | 6.019 | 6.054<< | 7.019 | 7.054 |
| 107 | 6.019 | 6.054 | 7.019>> | 7.054 |
| 107 | 10.104 | 10.182 | 0.601<< | 0.679 |
| 107 | 6.014 | 6.059 | 7.014 | 7.059>> |
| 107 | 10.109 | 10.177 | 0.606 | 0.674<< |

| BARRA 107 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 107 | 10.106>> | 10.173 | 0.579 | 0.646 |
| 107 | 6.011<< | 6.056 | 6.986 | 7.031 |
| 107 | 10.100 | 10.179>> | 0.573 | 0.652 |
| 107 | 6.016 | 6.050<< | 6.992 | 7.026 |
| 107 | 6.016 | 6.050 | 6.992>> | 7.026 |
| 107 | 10.100 | 10.179 | 0.573<< | 0.652 |
| 107 | 6.011 | 6.056 | 6.986 | 7.031>> |
| 107 | 10.106 | 10.173 | 0.579 | 0.646<< |
| 108 | 9.769>> | 9.827 | 1.116 | 1.174 |
| 108 | 6.053<< | 6.089 | 6.932 | 6.969 |
| 108 | 9.765 | 9.831>> | 1.111 | 1.178 |
| 108 | 6.057 | 6.085<< | 6.936 | 6.964 |
| 108 | 6.057 | 6.085 | 6.936>> | 6.964 |
| 108 | 9.765 | 9.831 | 1.111<< | 1.178 |
| 108 | 6.053 | 6.089 | 6.932 | 6.969>> |
| 108 | 9.769 | 9.827 | 1.116 | 1.174<< |

| BARRA 108 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 108 | 9.765>> | 9.823 | 1.088 | 1.146 |
| 108 | 6.049<< | 6.086 | 6.904 | 6.941 |
| 108 | 9.761 | 9.827>> | 1.084 | 1.150 |
| 108 | 6.053 | 6.081<< | 6.909 | 6.937 |
| 108 | 6.053 | 6.081 | 6.909>> | 6.937 |
| 108 | 9.761 | 9.827 | 1.084<< | 1.150 |
| 108 | 6.049 | 6.086 | 6.904 | 6.941>> |
| 108 | 9.765 | 9.823 | 1.088 | 1.146<< |
| 109 | 9.163>> | 9.210 | 2.039 | 2.087 |
| 109 | 5.977<< | 6.006 | 7.026 | 7.055 |
| 109 | 9.160 | 9.214>> | 2.036 | 2.090 |
| 109 | 5.980 | 6.003<< | 7.030 | 7.052 |
| 109 | 5.980 | 6.003 | 7.030>> | 7.052 |
| 109 | 9.160 | 9.214 | 2.036<< | 2.090 |
| 109 | 5.977 | 6.006 | 7.026 | 7.055>> |
| 109 | 9.163 | 9.210 | 2.039 | 2.087<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 109 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 109 | 9.159>> | 9.206 | 2.013 | 2.060 |
| 109 | 5.972<< | 6.001 | 7.000 | 7.029 |
| 109 | 9.155 | 9.209>> | 2.009 | 2.063 |
| 109 | 5.976 | 5.998<< | 7.003 | 7.025 |
| 109 | 5.976 | 5.998 | 7.003>> | 7.025 |
| 109 | 9.155 | 9.209 | 2.009<< | 2.063 |
| 109 | 5.972 | 6.001 | 7.000 | 7.029>> |
| 109 | 9.159 | 9.206 | 2.013 | 2.060<< |
| 110 | 8.289>> | 8.325 | 3.382 | 3.418 |
| 110 | 5.785<< | 5.806 | 7.301 | 7.322 |
| 110 | 8.287 | 8.327>> | 3.380 | 3.420 |
| 110 | 5.788 | 5.804<< | 7.304 | 7.320 |
| 110 | 5.788 | 5.804 | 7.304>> | 7.320 |
| 110 | 8.287 | 8.327 | 3.380<< | 3.420 |
| 110 | 5.785 | 5.806 | 7.301 | 7.322>> |
| 110 | 8.289 | 8.325 | 3.382 | 3.418<< |

| BARRA 110 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 110 | 8.283>> | 8.319 | 3.356 | 3.392 |
| 110 | 5.779<< | 5.800 | 7.275 | 7.296 |
| 110 | 8.281 | 8.321>> | 3.354 | 3.394 |
| 110 | 5.782 | 5.798<< | 7.277 | 7.294 |
| 110 | 5.782 | 5.798 | 7.277>> | 7.294 |
| 110 | 8.281 | 8.321 | 3.354<< | 3.394 |
| 110 | 5.779 | 5.800 | 7.275 | 7.296>> |
| 110 | 8.283 | 8.319 | 3.356 | 3.392<< |
| 111 | 7.158>> | 7.181 | 5.125 | 5.148 |
| 111 | 5.477<< | 5.490 | 7.757 | 7.770 |
| 111 | 7.156 | 7.183>> | 5.123 | 5.150 |
| 111 | 5.478 | 5.488<< | 7.758 | 7.768 |
| 111 | 5.478 | 5.488 | 7.758>> | 7.768 |
| 111 | 7.156 | 7.183 | 5.123<< | 5.150 |
| 111 | 5.477 | 5.490 | 7.757 | 7.770>> |
| 111 | 7.158 | 7.181 | 5.125 | 5.148<< |

| BARRA 111 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 111 | 7.150>> | 7.173 | 5.101 | 5.124 |
| 111 | 5.469<< | 5.482 | 7.732 | 7.746 |
| 111 | 7.148 | 7.175>> | 5.099 | 5.126 |
| 111 | 5.470 | 5.481<< | 7.734 | 7.744 |
| 111 | 5.470 | 5.481 | 7.734>> | 7.744 |
| 111 | 7.148 | 7.175 | 5.099<< | 5.126 |
| 111 | 5.469 | 5.482 | 7.732 | 7.746>> |
| 111 | 7.150 | 7.173 | 5.101 | 5.124<< |
| 112 | 5.809>> | 5.818 | 7.208 | 7.217 |
| 112 | 5.051<< | 5.056 | 8.394 | 8.399 |
| 112 | 5.808 | 5.818>> | 7.208 | 7.218 |
| 112 | 5.051 | 5.055<< | 8.395 | 8.399 |
| 112 | 5.051 | 5.055 | 8.395>> | 8.399 |
| 112 | 5.808 | 5.818 | 7.208<< | 7.218 |
| 112 | 5.051 | 5.056 | 8.394 | 8.399>> |
| 112 | 5.809 | 5.818 | 7.208 | 7.217<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-SW(t=i)(1.00*G+0.50*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 112 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 112 | 4.437>> | 4.420 | 5.602 | 5.586 |
| 112 | 3.666<< | 3.665 | 6.461 | 6.460 |
| 112 | 4.436 | 4.421>> | 5.602 | 5.586 |
| 112 | 3.667 | 3.664<< | 6.462 | 6.459 |
| 112 | 3.667 | 3.664 | 6.462>> | 6.459 |
| 112 | 4.436 | 4.421 | 5.602<< | 5.586 |
| 112 | 3.666 | 3.665 | 6.461 | 6.460>> |
| 112 | 4.437 | 4.420 | 5.602 | 5.586<< |
| 113 | 4.252>> | 4.158 | 5.911 | 5.816 |
| 113 | 4.158<< | 4.218 | 5.816 | 5.877 |
| 113 | 4.175 | 4.236>> | 5.833 | 5.894 |
| 113 | 4.230 | 4.145<< | 5.889 | 5.804 |
| 113 | 4.252 | 4.158 | 5.911>> | 5.816 |
| 113 | 4.158 | 4.218 | 5.816<< | 5.877 |
| 113 | 4.175 | 4.236 | 5.833 | 5.894>> |
| 113 | 4.230 | 4.145 | 5.889 | 5.804<< |

### 7.2.5. Fatiga:Combinación Frecuente t=∞(Pret·0.85)

TITULO
=======
LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.40*LEV+1.00*P+0.8*SC+0.5*GT)

FICHERO DE GEOMETRIA COMPLETA
==============================
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
================================
1

| Fich | Num. Nudos | Num. barras | Num. hipotesis | NOMBRE FICHERO |
|---|---|---|---|---|
| 1 | 120 | 119 | 161 | ESFec.TXT |

| Fich | Hipotesis | Caracter | Coeficiente |
|---|---|---|---|
| 1 | 1 | 1 | 1.0 |
| 1 | 2 | 1 | 0.4 |
| 1 | 3 | 1 | 1.0 |
| 1 | 4 | 3 | 1.0 |
| 1 | 5 | 3 | 1.0 |
| 1 | 6 | 3 | 1.0 |
| 1 | 7 | 2 | 0.5 |
| 1 | 8 | 2 | 0.5 |
| 1 | 9 | 2 | 0.5 |
| 1 | 10 | 2 | 0.5 |
| 1 | 11 | 2 | 0.5 |
| 1 | 12 | 2 | 0.5 |
| 1 | 13 | 2 | 0.5 |
| 1 | 14 | 2 | 0.5 |
| 1 | 15 | 2 | 0.5 |
| 1 | 16 | 2 | 0.5 |
| 1 | 17 | 2 | 0.5 |
| 1 | 18 | 2 | 0.5 |
| 1 | 19 | 4 | 0.8 |
| 1 | 20 | 5 | 0.8 |
| 1 | 21 | 4 | 0.8 |
| 1 | 22 | 5 | 0.8 |
| 1 | 23 | 4 | 0.8 |
| 1 | 24 | 5 | 0.8 |
| 1 | 25 | 4 | 0.8 |
| 1 | 26 | 5 | 0.8 |
| 1 | 27 | 4 | 0.8 |
| 1 | 28 | 5 | 0.8 |
| 1 | 29 | 4 | 0.8 |
| 1 | 30 | 5 | 0.8 |
| 1 | 31 | 4 | 0.8 |
| 1 | 32 | 5 | 0.8 |
| 1 | 33 | 4 | 0.8 |
| 1 | 34 | 5 | 0.8 |
| 1 | 35 | 4 | 0.8 |
| 1 | 36 | 5 | 0.8 |
| 1 | 37 | 4 | 0.8 |
| 1 | 38 | 5 | 0.8 |
| 1 | 39 | 4 | 0.8 |
| 1 | 40 | 5 | 0.8 |
| 1 | 41 | 6 | 0.8 |
| 1 | 42 | 7 | 0.8 |
| 1 | 43 | 6 | 0.8 |
| 1 | 44 | 7 | 0.8 |
| 1 | 45 | 6 | 0.8 |
| 1 | 46 | 7 | 0.8 |

| | | | |
|---|---|---|---|
| 1 | 47 | 6 | 0.8 |
| 1 | 48 | 7 | 0.8 |
| 1 | 49 | 6 | 0.8 |
| 1 | 50 | 7 | 0.8 |
| 1 | 51 | 6 | 0.8 |
| 1 | 52 | 7 | 0.8 |
| 1 | 53 | 6 | 0.8 |
| 1 | 54 | 7 | 0.8 |
| 1 | 55 | 6 | 0.8 |
| 1 | 56 | 7 | 0.8 |
| 1 | 57 | 6 | 0.8 |
| 1 | 58 | 7 | 0.8 |
| 1 | 59 | 6 | 0.8 |
| 1 | 60 | 7 | 0.8 |
| 1 | 61 | 6 | 0.8 |
| 1 | 62 | 7 | 0.8 |
| 1 | 63 | 6 | 0.8 |
| 1 | 64 | 7 | 0.8 |
| 1 | 65 | 6 | 0.8 |
| 1 | 66 | 7 | 0.8 |
| 1 | 67 | 6 | 0.8 |
| 1 | 68 | 7 | 0.8 |
| 1 | 69 | 6 | 0.8 |
| 1 | 70 | 7 | 0.8 |
| 1 | 71 | 6 | 0.8 |
| 1 | 72 | 7 | 0.8 |
| 1 | 73 | 6 | 0.8 |
| 1 | 74 | 7 | 0.8 |
| 1 | 75 | 6 | 0.8 |
| 1 | 76 | 7 | 0.8 |
| 1 | 77 | 6 | 0.8 |
| 1 | 78 | 7 | 0.8 |
| 1 | 79 | 6 | 0.8 |
| 1 | 80 | 7 | 0.8 |
| 1 | 81 | 6 | 0.8 |
| 1 | 82 | 7 | 0.8 |
| 1 | 83 | 6 | 0.8 |
| 1 | 84 | 7 | 0.8 |
| 1 | 85 | 6 | 0.8 |
| 1 | 86 | 7 | 0.8 |
| 1 | 87 | 6 | 0.8 |
| 1 | 88 | 7 | 0.8 |
| 1 | 89 | 6 | 0.8 |
| 1 | 90 | 7 | 0.8 |
| 1 | 91 | 6 | 0.8 |
| 1 | 92 | 7 | 0.8 |
| 1 | 93 | 6 | 0.8 |
| 1 | 94 | 7 | 0.8 |
| 1 | 95 | 6 | 0.8 |
| 1 | 96 | 7 | 0.8 |
| 1 | 97 | 8 | 0.0 |
| 1 | 98 | 9 | 0.0 |
| 1 | 99 | 8 | 0.0 |
| 1 | 100 | 9 | 0.0 |
| 1 | 101 | 8 | 0.0 |
| 1 | 102 | 9 | 0.0 |
| 1 | 103 | 8 | 0.0 |
| 1 | 104 | 9 | 0.0 |
| 1 | 105 | 8 | 0.0 |
| 1 | 106 | 9 | 0.0 |
| 1 | 107 | 8 | 0.0 |
| 1 | 108 | 9 | 0.0 |
| 1 | 109 | 8 | 0.0 |
| 1 | 110 | 9 | 0.0 |
| 1 | 111 | 8 | 0.0 |
| 1 | 112 | 9 | 0.0 |
| 1 | 113 | 8 | 0.0 |
| 1 | 114 | 9 | 0.0 |
| 1 | 115 | 8 | 0.0 |
| 1 | 116 | 9 | 0.0 |
| 1 | 117 | 8 | 0.0 |
| 1 | 118 | 9 | 0.0 |
| 1 | 119 | 10 | 0.0 |
| 1 | 120 | 10 | 0.0 |
| 1 | 121 | 10 | 0.0 |
| 1 | 122 | 10 | 0.0 |
| 1 | 123 | 10 | 0.0 |
| 1 | 124 | 10 | 0.0 |
| 1 | 125 | 10 | 0.0 |
| 1 | 126 | 10 | 0.0 |
| 1 | 127 | 10 | 0.0 |
| 1 | 128 | 10 | 0.0 |
| 1 | 129 | 10 | 0.0 |
| 1 | 130 | 10 | 0.0 |
| 1 | 131 | 10 | 0.0 |
| 1 | 132 | 10 | 0.0 |
| 1 | 133 | 10 | 0.0 |
| 1 | 134 | 10 | 0.0 |
| 1 | 135 | 10 | 0.0 |
| 1 | 136 | 10 | 0.0 |
| 1 | 137 | 10 | 0.0 |
| 1 | 138 | 10 | 0.0 |
| 1 | 139 | 10 | 0.0 |
| 1 | 140 | 10 | 0.0 |
| 1 | 141 | 2 | 0.5 |
| 1 | 142 | 1 | 17.368 |
| 1 | 143 | 1 | 2.481 |
| 1 | 144 | 1 | 2.481 |
| 1 | 145 | 1 | 9.925 |
| 1 | 146 | 1 | 2.481 |
| 1 | 147 | 1 | 2.481 |
| 1 | 148 | 1 | 5.494 |
| 1 | 149 | 1 | 5.494 |
| 1 | 150 | 1 | 5.494 |
| 1 | 151 | 1 | 5.494 |
| 1 | 152 | 1 | 5.494 |
| 1 | 153 | 1 | 5.494 |
| 1 | 154 | 1 | 5.494 |
| 1 | 155 | 1 | 5.494 |
| 1 | 156 | 1 | 5.494 |
| 1 | 157 | 1 | 5.494 |
| 1 | 158 | 1 | 5.494 |
| 1 | 159 | 1 | 5.494 |
| 1 | 160 | 1 | 5.494 |
| 1 | 161 | 1 | 5.494 |

PONDERACION DE TENSIONES

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.40*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 1 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 1 | 5.255>> | 5.149 | 4.800 | 4.694 |
| 1 | 5.160<< | 5.222 | 4.705 | 4.767 |
| 1 | 5.173 | 5.231>> | 4.718 | 4.776 |
| 1 | 5.241 | 5.140<< | 4.786 | 4.685 |
| 1 | 5.255 | 5.149 | 4.800>> | 4.694 |
| 1 | 5.160 | 5.222 | 4.705<< | 4.767 |
| 1 | 5.173 | 5.231 | 4.718 | 4.776>> |
| 1 | 5.241 | 5.140 | 4.786 | 4.685<< |
| 2 | 5.290>> | 5.281 | 4.658 | 4.649 |
| 2 | 4.558<< | 4.555 | 5.485 | 5.482 |
| 2 | 5.288 | 5.283>> | 4.657 | 4.651 |
| 2 | 4.560 | 4.554<< | 5.487 | 5.480 |
| 2 | 4.559 | 4.554 | 5.487>> | 5.481 |
| 2 | 5.290 | 5.283 | 4.657<< | 4.650 |
| 2 | 4.558 | 4.554 | 5.486 | 5.482>> |
| 2 | 5.290 | 5.282 | 4.657 | 4.649<< |

| BARRA 2 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 2 | 6.735>> | 6.760 | 5.989 | 6.015 |
| 2 | 6.017<< | 6.022 | 7.133 | 7.138 |
| 2 | 6.734 | 6.761>> | 5.988 | 6.015 |
| 2 | 6.017 | 6.021<< | 7.134 | 7.138 |
| 2 | 6.017 | 6.021 | 7.134>> | 7.138 |
| 2 | 6.734 | 6.761 | 5.988<< | 6.015 |
| 2 | 6.017 | 6.022 | 7.133 | 7.138>> |
| 2 | 6.735 | 6.760 | 5.989 | 6.015<< |
| 3 | 7.887>> | 7.950 | 4.146 | 4.209 |
| 3 | 6.318<< | 6.330 | 6.655 | 6.667 |
| 3 | 7.885 | 7.951>> | 4.145 | 4.211 |
| 3 | 6.320 | 6.329<< | 6.656 | 6.665 |
| 3 | 6.320 | 6.329 | 6.656>> | 6.665 |
| 3 | 7.885 | 7.951 | 4.145<< | 4.211 |
| 3 | 6.318 | 6.330 | 6.655 | 6.667>> |
| 3 | 7.887 | 7.950 | 4.146 | 4.209<< |

| BARRA 3 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 3 | 7.896>> | 7.959 | 4.172 | 4.235 |
| 3 | 6.327<< | 6.340 | 6.680 | 6.693 |
| 3 | 7.894 | 7.961>> | 4.170 | 4.236 |
| 3 | 6.329 | 6.338<< | 6.682 | 6.691 |
| 3 | 6.329 | 6.338 | 6.682>> | 6.691 |
| 3 | 7.894 | 7.961 | 4.170<< | 4.236 |
| 3 | 6.327 | 6.340 | 6.680 | 6.693>> |
| 3 | 7.896 | 7.959 | 4.172 | 4.235<< |
| 4 | 8.819>> | 8.921 | 2.684 | 2.786 |
| 4 | 6.539<< | 6.558 | 6.342 | 6.361 |
| 4 | 8.817 | 8.923>> | 2.682 | 2.788 |
| 4 | 6.541 | 6.556<< | 6.344 | 6.359 |
| 4 | 6.541 | 6.556 | 6.344>> | 6.359 |
| 4 | 8.817 | 8.923 | 2.682<< | 2.788 |
| 4 | 6.539 | 6.558 | 6.342 | 6.361>> |
| 4 | 8.819 | 8.921 | 2.684 | 2.786<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.40*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 4 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 4 | 8.827>> | 8.929 | 2.712 | 2.814 |
| 4 | 6.546<< | 6.566 | 6.370 | 6.390 |
| 4 | 8.824 | 8.931>> | 2.710 | 2.816 |
| 4 | 6.549 | 6.563<< | 6.373 | 6.387 |
| 4 | 6.549 | 6.563 | 6.373>> | 6.387 |
| 4 | 8.824 | 8.931 | 2.710<< | 2.816 |
| 4 | 6.546 | 6.566 | 6.370 | 6.390>> |
| 4 | 8.827 | 8.929 | 2.712 | 2.814<< |
| 5 | 9.583>> | 9.716 | 1.494 | 1.628 |
| 5 | 6.670<< | 6.697 | 6.167 | 6.194 |
| 5 | 9.579 | 9.720>> | 1.491 | 1.631 |
| 5 | 6.674 | 6.694<< | 6.170 | 6.191 |
| 5 | 6.674 | 6.694 | 6.170>> | 6.191 |
| 5 | 9.579 | 9.720 | 1.491<< | 1.631 |
| 5 | 6.670 | 6.697 | 6.167 | 6.194>> |
| 5 | 9.583 | 9.716 | 1.494 | 1.628<< |

| BARRA 5 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 5 | 9.588>> | 9.722 | 1.523 | 1.657 |
| 5 | 6.676<< | 6.703 | 6.196 | 6.223 |
| 5 | 9.585 | 9.726>> | 1.520 | 1.660 |
| 5 | 6.680 | 6.700<< | 6.199 | 6.220 |
| 5 | 6.680 | 6.700 | 6.199>> | 6.220 |
| 5 | 9.585 | 9.726 | 1.520<< | 1.660 |
| 5 | 6.676 | 6.703 | 6.196 | 6.223>> |
| 5 | 9.588 | 9.722 | 1.523 | 1.657<< |
| 6 | 10.144>> | 10.306 | 0.621 | 0.784 |
| 6 | 6.712<< | 6.747 | 6.131 | 6.165 |
| 6 | 10.139 | 10.311>> | 0.617 | 0.788 |
| 6 | 6.717 | 6.742<< | 6.135 | 6.160 |
| 6 | 6.717 | 6.742 | 6.135>> | 6.160 |
| 6 | 10.139 | 10.311 | 0.617<< | 0.788 |
| 6 | 6.712 | 6.747 | 6.131 | 6.165>> |
| 6 | 10.144 | 10.306 | 0.621 | 0.784<< |

| BARRA 6 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 6 | 10.148>> | 10.311 | 0.651 | 0.814 |
| 6 | 6.717<< | 6.751 | 6.161 | 6.195 |
| 6 | 10.144 | 10.315>> | 0.647 | 0.818 |
| 6 | 6.721 | 6.747<< | 6.165 | 6.191 |
| 6 | 6.721 | 6.747 | 6.165>> | 6.191 |
| 6 | 10.144 | 10.315 | 0.647<< | 0.818 |
| 6 | 6.717 | 6.751 | 6.161 | 6.195>> |
| 6 | 10.148 | 10.311 | 0.651 | 0.814<< |
| 7 | 10.478>> | 10.665 | 0.107 | 0.294 |
| 7 | 6.667<< | 6.709 | 6.229 | 6.271 |
| 7 | 10.473 | 10.670>> | 0.102 | 0.299 |
| 7 | 6.672 | 6.703<< | 6.234 | 6.265 |
| 7 | 6.672 | 6.703 | 6.234>> | 6.265 |
| 7 | 10.473 | 10.670 | 0.102<< | 0.299 |
| 7 | 6.667 | 6.709 | 6.229 | 6.271>> |
| 7 | 10.478 | 10.665 | 0.107 | 0.294<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.40*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 7 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 7 | 10.482>> | 10.669 | 0.137 | 0.324 |
| 7 | 6.671<< | 6.713 | 6.259 | 6.300 |
| 7 | 10.477 | 10.674>> | 0.132 | 0.329 |
| 7 | 6.676 | 6.708<< | 6.264 | 6.295 |
| 7 | 6.676 | 6.708 | 6.264>> | 6.295 |
| 7 | 10.477 | 10.674 | 0.132<< | 0.329 |
| 7 | 6.671 | 6.713 | 6.259 | 6.300>> |
| 7 | 10.482 | 10.669 | 0.137 | 0.324<< |
| 8 | 10.551>> | 10.756 | 0.007 | 0.211 |
| 8 | 6.536<< | 6.585 | 6.460 | 6.509 |
| 8 | 10.545 | 10.762>> | 0.000 | 0.217 |
| 8 | 6.542 | 6.579<< | 6.466 | 6.503 |
| 8 | 6.542 | 6.579 | 6.466>> | 6.503 |
| 8 | 10.545 | 10.762 | 0.000<< | 0.217 |
| 8 | 6.536 | 6.585 | 6.460 | 6.509>> |
| 8 | 10.551 | 10.756 | 0.007 | 0.211<< |

| BARRA 8 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 8 | 10.555>> | 10.760 | 0.041 | 0.245 |
| 8 | 6.541<< | 6.589 | 6.494 | 6.543 |
| 8 | 10.549 | 10.766>> | 0.035 | 0.251 |
| 8 | 6.547 | 6.583<< | 6.500 | 6.537 |
| 8 | 6.547 | 6.583 | 6.500>> | 6.537 |
| 8 | 10.549 | 10.766 | 0.035<< | 0.251 |
| 8 | 6.541 | 6.589 | 6.494 | 6.543>> |
| 8 | 10.555 | 10.760 | 0.041 | 0.245<< |
| 9 | 10.427>> | 10.648 | 0.220 | 0.440 |
| 9 | 6.342<< | 6.398 | 6.794 | 6.850 |
| 9 | 10.420 | 10.655>> | 0.213 | 0.447 |
| 9 | 6.349 | 6.391<< | 6.801 | 6.843 |
| 9 | 6.349 | 6.391 | 6.801>> | 6.843 |
| 9 | 10.420 | 10.655 | 0.213<< | 0.447 |
| 9 | 6.342 | 6.398 | 6.794 | 6.850>> |
| 9 | 10.427 | 10.648 | 0.220 | 0.440<< |

| BARRA 9 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 9 | 10.425>> | 10.646 | 0.217 | 0.438 |
| 9 | 6.340<< | 6.396 | 6.791 | 6.847 |
| 9 | 10.418 | 10.653>> | 0.210 | 0.445 |
| 9 | 6.347 | 6.389<< | 6.798 | 6.840 |
| 9 | 6.347 | 6.389 | 6.798>> | 6.840 |
| 9 | 10.418 | 10.653 | 0.210<< | 0.445 |
| 9 | 6.340 | 6.396 | 6.791 | 6.847>> |
| 9 | 10.425 | 10.646 | 0.217 | 0.438<< |
| 10 | 10.112>> | 10.342 | 0.693 | 0.923 |
| 10 | 6.103<< | 6.166 | 7.151 | 7.215 |
| 10 | 10.104 | 10.349>> | 0.685 | 0.931 |
| 10 | 6.111 | 6.158<< | 7.159 | 7.207 |
| 10 | 6.111 | 6.158 | 7.159>> | 7.207 |
| 10 | 10.104 | 10.349 | 0.685<< | 0.931 |
| 10 | 6.103 | 6.166 | 7.151 | 7.215>> |
| 10 | 10.112 | 10.342 | 0.693 | 0.923<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.40*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 10 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 10 | 10.105>> | 10.335 | 0.672 | 0.901 |
| 10 | 6.096<< | 6.159 | 7.130 | 7.193 |
| 10 | 10.098 | 10.343>> | 0.664 | 0.909 |
| 10 | 6.104 | 6.152<< | 7.138 | 7.186 |
| 10 | 6.104 | 6.152 | 7.138>> | 7.186 |
| 10 | 10.098 | 10.343 | 0.664<< | 0.909 |
| 10 | 6.096 | 6.159 | 7.130 | 7.193>> |
| 10 | 10.105 | 10.335 | 0.672 | 0.901<< |
| 11 | 9.578>> | 9.810 | 1.490 | 1.722 |
| 11 | 5.819<< | 5.889 | 7.553 | 7.624 |
| 11 | 9.569 | 9.819>> | 1.481 | 1.731 |
| 11 | 5.827 | 5.881<< | 7.562 | 7.615 |
| 11 | 5.827 | 5.881 | 7.562>> | 7.615 |
| 11 | 9.569 | 9.819 | 1.481<< | 1.731 |
| 11 | 5.819 | 5.889 | 7.553 | 7.624>> |
| 11 | 9.578 | 9.810 | 1.490 | 1.722<< |

| BARRA 11 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 11 | 9.570>> | 9.802 | 1.469 | 1.701 |
| 11 | 5.810<< | 5.881 | 7.532 | 7.603 |
| 11 | 9.561 | 9.811>> | 1.460 | 1.710 |
| 11 | 5.819 | 5.872<< | 7.541 | 7.594 |
| 11 | 5.819 | 5.872 | 7.541>> | 7.594 |
| 11 | 9.561 | 9.811 | 1.460<< | 1.710 |
| 11 | 5.810 | 5.881 | 7.532 | 7.603>> |
| 11 | 9.570 | 9.802 | 1.469 | 1.701<< |
| 12 | 8.873>> | 9.104 | 2.556 | 2.787 |
| 12 | 5.489<< | 5.567 | 8.023 | 8.101 |
| 12 | 8.864 | 9.114>> | 2.546 | 2.796 |
| 12 | 5.499 | 5.558<< | 8.033 | 8.091 |
| 12 | 5.499 | 5.558 | 8.033>> | 8.091 |
| 12 | 8.864 | 9.114 | 2.546<< | 2.796 |
| 12 | 5.489 | 5.567 | 8.023 | 8.101>> |
| 12 | 8.873 | 9.104 | 2.556 | 2.787<< |

| BARRA 12 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 12 | 8.486>> | 8.716 | 1.684 | 1.915 |
| 12 | 5.102<< | 5.180 | 7.151 | 7.229 |
| 12 | 8.476 | 8.726>> | 1.674 | 1.925 |
| 12 | 5.111 | 5.170<< | 7.161 | 7.219 |
| 12 | 5.111 | 5.170 | 7.161>> | 7.219 |
| 12 | 8.476 | 8.726 | 1.674<< | 1.925 |
| 12 | 5.102 | 5.180 | 7.151 | 7.229>> |
| 12 | 8.486 | 8.716 | 1.684 | 1.915<< |
| 13 | 7.671>> | 7.890 | 2.969 | 3.187 |
| 13 | 4.697<< | 4.790 | 7.763 | 7.856 |
| 13 | 7.661 | 7.900>> | 2.958 | 3.198 |
| 13 | 4.707 | 4.779<< | 7.773 | 7.845 |
| 13 | 4.707 | 4.779 | 7.773>> | 7.845 |
| 13 | 7.661 | 7.900 | 2.958<< | 3.198 |
| 13 | 4.697 | 4.790 | 7.763 | 7.856>> |
| 13 | 7.671 | 7.890 | 2.969 | 3.187<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.40*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 13 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 13 | 7.657>> | 7.875 | 2.952 | 3.171 |
| 13 | 4.682<< | 4.775 | 7.746 | 7.839 |
| 13 | 7.646 | 7.885>> | 2.942 | 3.181 |
| 13 | 4.692 | 4.764<< | 7.757 | 7.829 |
| 13 | 4.692 | 4.764 | 7.757>> | 7.829 |
| 13 | 7.646 | 7.885 | 2.942<< | 3.181 |
| 13 | 4.682 | 4.775 | 7.746 | 7.839>> |
| 13 | 7.657 | 7.875 | 2.952 | 3.171<< |
| 14 | 7.147>> | 6.730 | 4.558 | 4.141 |
| 14 | 4.017<< | 4.118 | 8.772 | 8.873 |
| 14 | 6.820 | 7.222>> | 4.021 | 4.423 |
| 14 | 4.029 | 4.107<< | 8.783 | 8.861 |
| 14 | 4.029 | 4.107 | 8.783>> | 8.861 |
| 14 | 6.969 | 7.218 | 3.985<< | 4.234 |
| 14 | 4.017 | 4.118 | 8.772 | 8.873>> |
| 14 | 7.139 | 6.904 | 4.339 | 4.103<< |

| BARRA 14 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 14 | 7.128>> | 6.711 | 4.547 | 4.130 |
| 14 | 3.998<< | 4.099 | 8.760 | 8.861 |
| 14 | 6.801 | 7.202>> | 4.009 | 4.411 |
| 14 | 4.009 | 4.087<< | 8.772 | 8.850 |
| 14 | 4.009 | 4.087 | 8.772>> | 8.850 |
| 14 | 6.949 | 7.198 | 3.973<< | 4.222 |
| 14 | 3.998 | 4.099 | 8.760 | 8.861>> |
| 14 | 7.120 | 6.884 | 4.327 | 4.092<< |
| 15 | 6.704>> | 6.391 | 5.074 | 4.761 |
| 15 | 3.117<< | 3.540 | 9.720 | 10.143 |
| 15 | 6.232 | 6.682>> | 4.834 | 5.283 |
| 15 | 3.355 | 3.304<< | 9.956 | 9.905 |
| 15 | 3.355 | 3.304 | 9.956>> | 9.905 |
| 15 | 6.640 | 6.602 | 4.822<< | 4.784 |
| 15 | 3.117 | 3.540 | 9.720 | 10.143>> |
| 15 | 6.702 | 6.486 | 4.952 | 4.736<< |

| BARRA 15 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 15 | 6.179>> | 5.991 | 4.457 | 4.269 |
| 15 | 2.840<< | 3.186 | 8.120 | 8.466 |
| 15 | 5.780 | 6.146>> | 4.353 | 4.719 |
| 15 | 3.025 | 3.003<< | 8.303 | 8.281 |
| 15 | 3.025 | 3.003 | 8.303>> | 8.281 |
| 15 | 6.128 | 6.093 | 4.349<< | 4.315 |
| 15 | 2.840 | 3.186 | 8.120 | 8.466>> |
| 15 | 6.179 | 5.991 | 4.457 | 4.269<< |
| 16 | 7.005>> | 6.853 | 3.383 | 3.232 |
| 16 | 2.784<< | 3.028 | 8.343 | 8.588 |
| 16 | 6.927 | 6.892>> | 3.356 | 3.321 |
| 16 | 2.795 | 3.016<< | 8.355 | 8.576 |
| 16 | 2.795 | 3.016 | 8.355>> | 8.576 |
| 16 | 6.927 | 6.892 | 3.356<< | 3.321 |
| 16 | 2.784 | 3.028 | 8.343 | 8.588>> |
| 16 | 7.005 | 6.853 | 3.383 | 3.232<< |

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| BARRA 16 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 16 | 7.073>> | 6.894 | 3.420 | 3.240 |
| 16 | 2.810<< | 3.090 | 8.283 | 8.563 |
| 16 | 6.962 | 6.960>> | 3.359 | 3.357 |
| 16 | 2.849 | 3.051<< | 8.321 | 8.524 |
| 16 | 2.823 | 3.053 | 8.324>> | 8.553 |
| 16 | 6.988 | 6.958 | 3.357<< | 3.328 |
| 16 | 2.811 | 3.064 | 8.312 | 8.565>> |
| 16 | 7.072 | 6.919 | 3.390 | 3.238<< |
| 17 | 6.228>> | 6.066 | 4.467 | 4.305 |
| 17 | 0.842<< | 1.089 | 10.806 | 11.053 |
| 17 | 6.215 | 6.078>> | 4.455 | 4.317 |
| 17 | 0.854 | 1.076<< | 10.818 | 11.040 |
| 17 | 0.854 | 1.076 | 10.818>> | 11.040 |
| 17 | 6.215 | 6.078 | 4.455<< | 4.317 |
| 17 | 0.842 | 1.089 | 10.806 | 11.053>> |
| 17 | 6.228 | 6.066 | 4.467 | 4.305<< |

| BARRA 17 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 17 | 6.176>> | 6.013 | 4.471 | 4.308 |
| 17 | 0.789<< | 1.036 | 10.809 | 11.056 |
| 17 | 6.163 | 6.026>> | 4.458 | 4.321 |
| 17 | 0.802 | 1.024<< | 10.821 | 11.043 |
| 17 | 0.802 | 1.024 | 10.821>> | 11.043 |
| 17 | 6.163 | 6.026 | 4.458<< | 4.321 |
| 17 | 0.789 | 1.036 | 10.809 | 11.056>> |
| 17 | 6.176 | 6.013 | 4.471 | 4.308<< |
| 18 | 6.941>> | 6.678 | 3.618 | 3.355 |
| 18 | 2.844<< | 3.115 | 8.187 | 8.458 |
| 18 | 6.847 | 6.808>> | 3.483 | 3.444 |
| 18 | 3.151 | 3.064<< | 8.204 | 8.118 |
| 18 | 3.151 | 3.064 | 8.204>> | 8.118 |
| 18 | 6.847 | 6.808 | 3.483<< | 3.444 |
| 18 | 2.844 | 3.115 | 8.187 | 8.458>> |
| 18 | 6.941 | 6.678 | 3.618 | 3.355<< |

| BARRA 18 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 18 | 6.795>> | 6.506 | 3.620 | 3.331 |
| 18 | 2.741<< | 3.011 | 8.192 | 8.462 |
| 18 | 6.689 | 6.654>> | 3.473 | 3.438 |
| 18 | 3.069 | 2.936<< | 8.231 | 8.097 |
| 18 | 3.051 | 2.936 | 8.233>> | 8.118 |
| 18 | 6.707 | 6.653 | 3.470<< | 3.417 |
| 18 | 2.741 | 2.993 | 8.212 | 8.464>> |
| 18 | 6.795 | 6.524 | 3.600 | 3.329<< |
| 19 | 5.807>> | 5.481 | 4.900 | 4.574 |
| 19 | 2.810<< | 3.109 | 8.051 | 8.350 |
| 19 | 5.723 | 5.690>> | 4.676 | 4.643 |
| 19 | 3.117 | 2.979<< | 8.154 | 8.017 |
| 19 | 3.100 | 2.980 | 8.157>> | 8.037 |
| 19 | 5.740 | 5.689 | 4.673<< | 4.623 |
| 19 | 2.811 | 3.092 | 8.071 | 8.353>> |
| 19 | 5.802 | 5.571 | 4.799 | 4.568<< |

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| BARRA 19 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 19 | 6.415>> | 6.048 | 5.265 | 4.897 |
| 19 | 3.181<< | 3.546 | 9.366 | 9.731 |
| 19 | 6.310 | 6.282>> | 4.994 | 4.966 |
| 19 | 3.524 | 3.393<< | 9.466 | 9.335 |
| 19 | 3.486 | 3.399 | 9.469>> | 9.382 |
| 19 | 6.348 | 6.276 | 4.991<< | 4.919 |
| 19 | 3.187 | 3.508 | 9.412 | 9.733>> |
| 19 | 6.400 | 6.165 | 5.118 | 4.884<< |
| 20 | 6.784>> | 6.410 | 4.699 | 4.324 |
| 20 | 4.235<< | 4.701 | 7.594 | 8.060 |
| 20 | 6.491 | 6.811>> | 4.267 | 4.587 |
| 20 | 4.318 | 4.409<< | 7.945 | 8.035 |
| 20 | 4.318 | 4.409 | 7.945>> | 8.035 |
| 20 | 6.649 | 6.789 | 4.252<< | 4.391 |
| 20 | 4.258 | 4.469 | 7.885 | 8.096>> |
| 20 | 6.784 | 6.410 | 4.699 | 4.324<< |

| BARRA 20 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 20 | 6.777>> | 6.402 | 4.689 | 4.314 |
| 20 | 4.228<< | 4.694 | 7.584 | 8.050 |
| 20 | 6.484 | 6.804>> | 4.257 | 4.577 |
| 20 | 4.311 | 4.402<< | 7.935 | 8.025 |
| 20 | 4.311 | 4.402 | 7.935>> | 8.025 |
| 20 | 6.642 | 6.781 | 4.241<< | 4.381 |
| 20 | 4.251 | 4.462 | 7.875 | 8.086>> |
| 20 | 6.777 | 6.402 | 4.689 | 4.314<< |
| 21 | 7.316>> | 7.334 | 3.347 | 3.365 |
| 21 | 4.852<< | 5.024 | 6.988 | 7.160 |
| 21 | 7.170 | 7.474>> | 3.209 | 3.512 |
| 21 | 4.887 | 4.989<< | 7.023 | 7.125 |
| 21 | 4.887 | 4.989 | 7.023>> | 7.125 |
| 21 | 7.170 | 7.474 | 3.209<< | 3.512 |
| 21 | 4.852 | 5.024 | 6.988 | 7.160>> |
| 21 | 7.314 | 7.372 | 3.298 | 3.357<< |

| BARRA 21 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 21 | 7.310>> | 7.328 | 3.331 | 3.349 |
| 21 | 4.846<< | 5.019 | 6.972 | 7.144 |
| 21 | 7.165 | 7.468>> | 3.192 | 3.496 |
| 21 | 4.881 | 4.984<< | 7.007 | 7.109 |
| 21 | 4.881 | 4.984 | 7.007>> | 7.109 |
| 21 | 7.165 | 7.468 | 3.192<< | 3.496 |
| 21 | 4.846 | 5.019 | 6.972 | 7.144>> |
| 21 | 7.308 | 7.367 | 3.282 | 3.341<< |
| 22 | 8.155>> | 8.218 | 1.958 | 2.020 |
| 22 | 5.203<< | 5.356 | 6.441 | 6.594 |
| 22 | 8.079 | 8.358>> | 1.800 | 2.079 |
| 22 | 5.237 | 5.321<< | 6.475 | 6.559 |
| 22 | 5.237 | 5.321 | 6.475>> | 6.559 |
| 22 | 8.079 | 8.358 | 1.800<< | 2.079 |
| 22 | 5.203 | 5.356 | 6.441 | 6.594>> |
| 22 | 8.155 | 8.218 | 1.958 | 2.020<< |

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| BARRA 22 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 22 | 7.614>> | 7.676 | 2.060 | 2.122 |
| 22 | 4.661<< | 4.814 | 6.543 | 6.696 |
| 22 | 7.537 | 7.816>> | 1.902 | 2.181 |
| 22 | 4.695 | 4.779<< | 6.578 | 6.662 |
| 22 | 4.695 | 4.779 | 6.578>> | 6.662 |
| 22 | 7.537 | 7.816 | 1.902<< | 2.181 |
| 22 | 4.661 | 4.814 | 6.543 | 6.696>> |
| 22 | 7.614 | 7.676 | 2.060 | 2.122<< |
| 23 | 8.374>> | 8.601 | 0.665 | 0.892 |
| 23 | 4.932<< | 5.073 | 6.137 | 6.277 |
| 23 | 8.340 | 8.635>> | 0.630 | 0.926 |
| 23 | 4.966 | 5.038<< | 6.171 | 6.243 |
| 23 | 4.956 | 5.039 | 6.173>> | 6.255 |
| 23 | 8.350 | 8.634 | 0.629<< | 0.913 |
| 23 | 4.933 | 5.063 | 6.149 | 6.279>> |
| 23 | 8.373 | 8.611 | 0.652 | 0.890<< |

| BARRA 23 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 23 | 8.373>> | 8.600 | 0.676 | 0.903 |
| 23 | 4.931<< | 5.072 | 6.148 | 6.289 |
| 23 | 8.339 | 8.634>> | 0.642 | 0.937 |
| 23 | 4.965 | 5.037<< | 6.183 | 6.255 |
| 23 | 4.955 | 5.038 | 6.184>> | 6.267 |
| 23 | 8.349 | 8.633 | 0.640<< | 0.925 |
| 23 | 4.932 | 5.062 | 6.161 | 6.291>> |
| 23 | 8.372 | 8.610 | 0.664 | 0.902<< |
| 24 | 9.019>> | 9.269 | -0.360 | -0.110 |
| 24 | 5.158<< | 5.277 | 5.822 | 5.941 |
| 24 | 8.994 | 9.294>> | -0.384 | -0.085 |
| 24 | 5.607 | 5.214<< | 5.778 | 5.385 |
| 24 | 5.183 | 5.253 | 5.847>> | 5.916 |
| 24 | 8.994 | 9.294 | -0.384<< | -0.085 |
| 24 | 5.158 | 5.277 | 5.822 | 5.941>> |
| 24 | 9.019 | 9.269 | -0.360 | -0.110<< |

| BARRA 24 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 24 | 9.018>> | 9.267 | -0.348 | -0.098 |
| 24 | 5.157<< | 5.276 | 5.834 | 5.953 |
| 24 | 8.993 | 9.292>> | -0.372 | -0.073 |
| 24 | 5.605 | 5.212<< | 5.790 | 5.397 |
| 24 | 5.181 | 5.251 | 5.859>> | 5.928 |
| 24 | 8.993 | 9.292 | -0.372<< | -0.073 |
| 24 | 5.157 | 5.276 | 5.834 | 5.953>> |
| 24 | 9.018 | 9.267 | -0.348 | -0.098<< |
| 25 | 9.448>> | 9.704 | -1.026 | -0.771 |
| 25 | 5.344<< | 5.453 | 5.555 | 5.664 |
| 25 | 9.422 | 9.730>> | -1.052 | -0.744 |
| 25 | 5.710 | 5.330<< | 5.610 | 5.229 |
| 25 | 5.710 | 5.330 | 5.610>> | 5.229 |
| 25 | 9.422 | 9.730 | -1.052<< | -0.744 |
| 25 | 5.344 | 5.453 | 5.555 | 5.664>> |
| 25 | 9.448 | 9.704 | -1.026 | -0.771<< |

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| BARRA 25 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 25 | 9.446>> | 9.702 | -1.017 | -0.761 |
| 25 | 5.342<< | 5.451 | 5.564 | 5.673 |
| 25 | 9.420 | 9.728>> | -1.043 | -0.735 |
| 25 | 5.708 | 5.328<< | 5.619 | 5.239 |
| 25 | 5.708 | 5.328 | 5.619>> | 5.239 |
| 25 | 9.420 | 9.728 | -1.043<< | -0.735 |
| 25 | 5.342 | 5.451 | 5.564 | 5.673>> |
| 25 | 9.446 | 9.702 | -1.017 | -0.761<< |
| 26 | 9.681>> | 9.934 | -1.380 | -1.127 |
| 26 | 5.456<< | 5.616 | 5.321 | 5.481 |
| 26 | 9.653 | 9.962>> | -1.408 | -1.099 |
| 26 | 5.799 | 5.404<< | 5.497 | 5.101 |
| 26 | 5.775 | 5.408 | 5.498>> | 5.131 |
| 26 | 9.653 | 9.962 | -1.408<< | -1.099 |
| 26 | 5.456 | 5.616 | 5.321 | 5.481>> |
| 26 | 9.681 | 9.934 | -1.380 | -1.127<< |

| BARRA 26 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 26 | 9.680>> | 9.933 | -1.374 | -1.121 |
| 26 | 5.455<< | 5.614 | 5.326 | 5.486 |
| 26 | 9.652 | 9.961>> | -1.402 | -1.093 |
| 26 | 5.798 | 5.402<< | 5.502 | 5.106 |
| 26 | 5.774 | 5.407 | 5.503>> | 5.136 |
| 26 | 9.652 | 9.961 | -1.402<< | -1.093 |
| 26 | 5.455 | 5.614 | 5.326 | 5.486>> |
| 26 | 9.680 | 9.933 | -1.374 | -1.121<< |
| 27 | 9.785>> | 10.037 | -1.537 | -1.285 |
| 27 | 5.479<< | 5.613 | 5.321 | 5.456 |
| 27 | 9.756 | 10.066>> | -1.566 | -1.256 |
| 27 | 5.681 | 5.351<< | 5.600 | 5.271 |
| 27 | 5.512 | 5.383 | 5.606>> | 5.477 |
| 27 | 9.756 | 10.066 | -1.566<< | -1.256 |
| 27 | 5.483 | 5.413 | 5.577 | 5.507>> |
| 27 | 9.785 | 10.037 | -1.537 | -1.285<< |

| BARRA 27 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 27 | 9.784>> | 10.035 | -1.535 | -1.283 |
| 27 | 5.477<< | 5.612 | 5.323 | 5.458 |
| 27 | 9.754 | 10.065>> | -1.564 | -1.254 |
| 27 | 5.679 | 5.349<< | 5.603 | 5.273 |
| 27 | 5.511 | 5.382 | 5.608>> | 5.479 |
| 27 | 9.754 | 10.065 | -1.564<< | -1.254 |
| 27 | 5.481 | 5.411 | 5.579 | 5.509>> |
| 27 | 9.784 | 10.035 | -1.535 | -1.283<< |
| 28 | 9.680>> | 9.924 | -1.364 | -1.120 |
| 28 | 5.336<< | 5.275 | 5.793 | 5.732 |
| 28 | 9.649 | 9.955>> | -1.395 | -1.089 |
| 28 | 5.553 | 5.219<< | 5.804 | 5.471 |
| 28 | 5.367 | 5.244 | 5.824>> | 5.701 |
| 28 | 9.649 | 9.955 | -1.395<< | -1.089 |
| 28 | 5.336 | 5.275 | 5.793 | 5.732>> |
| 28 | 9.680 | 9.924 | -1.364 | -1.120<< |

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| BARRA 28 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 28 | 9.679>> | 9.923 | -1.366 | -1.121 |
| 28 | 5.335<< | 5.274 | 5.792 | 5.730 |
| 28 | 9.648 | 9.954>> | -1.397 | -1.091 |
| 28 | 5.552 | 5.218<< | 5.802 | 5.469 |
| 28 | 5.366 | 5.243 | 5.822>> | 5.699 |
| 28 | 9.648 | 9.954 | -1.397<< | -1.091 |
| 28 | 5.335 | 5.274 | 5.792 | 5.730>> |
| 28 | 9.679 | 9.923 | -1.366 | -1.121<< |
| 29 | 9.452>> | 9.686 | -0.999 | -0.765 |
| 29 | 5.154<< | 5.101 | 6.064 | 6.011 |
| 29 | 9.419 | 9.719>> | -1.032 | -0.732 |
| 29 | 5.388 | 5.051<< | 6.062 | 5.725 |
| 29 | 5.186 | 5.068 | 6.096>> | 5.979 |
| 29 | 9.419 | 9.719 | -1.032<< | -0.732 |
| 29 | 5.154 | 5.101 | 6.064 | 6.011>> |
| 29 | 9.452 | 9.686 | -0.999 | -0.765<< |

| BARRA 29 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 29 | 9.451>> | 9.686 | -1.005 | -0.770 |
| 29 | 5.153<< | 5.100 | 6.058 | 6.006 |
| 29 | 9.419 | 9.718>> | -1.037 | -0.737 |
| 29 | 5.387 | 5.051<< | 6.056 | 5.720 |
| 29 | 5.185 | 5.068 | 6.091>> | 5.973 |
| 29 | 9.419 | 9.718 | -1.037<< | -0.737 |
| 29 | 5.153 | 5.100 | 6.058 | 6.006>> |
| 29 | 9.451 | 9.686 | -1.005 | -0.770<< |
| 30 | 9.025>> | 9.245 | -0.322 | -0.102 |
| 30 | 4.934<< | 4.890 | 6.389 | 6.345 |
| 30 | 8.991 | 9.279>> | -0.356 | -0.068 |
| 30 | 5.186 | 4.846<< | 6.374 | 6.034 |
| 30 | 4.968 | 4.856 | 6.423>> | 6.311 |
| 30 | 8.991 | 9.279 | -0.356<< | -0.068 |
| 30 | 4.934 | 4.890 | 6.389 | 6.345>> |
| 30 | 9.025 | 9.245 | -0.322 | -0.102<< |

| BARRA 30 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 30 | 9.024>> | 9.244 | -0.330 | -0.110 |
| 30 | 4.933<< | 4.889 | 6.381 | 6.337 |
| 30 | 8.990 | 9.278>> | -0.364 | -0.076 |
| 30 | 5.185 | 4.845<< | 6.365 | 6.026 |
| 30 | 4.967 | 4.855 | 6.415>> | 6.303 |
| 30 | 8.990 | 9.278 | -0.364<< | -0.076 |
| 30 | 4.933 | 4.889 | 6.381 | 6.337>> |
| 30 | 9.024 | 9.244 | -0.330 | -0.110<< |
| 31 | 8.382>> | 8.581 | 0.697 | 0.896 |
| 31 | 4.676<< | 4.640 | 6.770 | 6.735 |
| 31 | 8.346 | 8.616>> | 0.661 | 0.932 |
| 31 | 4.946 | 4.603<< | 6.742 | 6.399 |
| 31 | 4.711 | 4.605 | 6.805>> | 6.699 |
| 31 | 8.346 | 8.616 | 0.661<< | 0.932 |
| 31 | 4.676 | 4.640 | 6.770 | 6.735>> |
| 31 | 8.382 | 8.581 | 0.697 | 0.896<< |

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| BARRA 31 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 31 | 8.380>> | 8.579 | 0.687 | 0.886 |
| 31 | 4.674<< | 4.639 | 6.760 | 6.725 |
| 31 | 8.344 | 8.615>> | 0.652 | 0.922 |
| 31 | 4.945 | 4.601<< | 6.732 | 6.389 |
| 31 | 4.709 | 4.603 | 6.795>> | 6.689 |
| 31 | 8.344 | 8.615 | 0.652<< | 0.922 |
| 31 | 4.674 | 4.639 | 6.760 | 6.725>> |
| 31 | 8.380 | 8.579 | 0.687 | 0.886<< |
| 32 | 7.580>> | 7.755 | 1.964 | 2.138 |
| 32 | 4.377<< | 4.350 | 7.212 | 7.185 |
| 32 | 7.543 | 7.792>> | 1.927 | 2.175 |
| 32 | 4.414 | 4.313<< | 7.249 | 7.148 |
| 32 | 4.395 | 4.317 | 7.249>> | 7.171 |
| 32 | 7.562 | 7.788 | 1.926<< | 2.153 |
| 32 | 4.381 | 4.331 | 7.235 | 7.185>> |
| 32 | 7.576 | 7.774 | 1.941 | 2.138<< |

| BARRA 32 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 32 | 7.577>> | 7.752 | 1.953 | 2.127 |
| 32 | 4.373<< | 4.347 | 7.201 | 7.174 |
| 32 | 7.540 | 7.789>> | 1.916 | 2.164 |
| 32 | 4.410 | 4.310<< | 7.238 | 7.137 |
| 32 | 4.392 | 4.314 | 7.238>> | 7.160 |
| 32 | 7.559 | 7.785 | 1.916<< | 2.142 |
| 32 | 4.377 | 4.328 | 7.224 | 7.174>> |
| 32 | 7.573 | 7.771 | 1.930 | 2.127<< |
| 33 | 6.778>> | 6.314 | 4.014 | 3.550 |
| 33 | 3.933<< | 3.911 | 7.882 | 7.859 |
| 33 | 6.706 | 6.930>> | 3.247 | 3.471 |
| 33 | 3.972 | 3.872<< | 7.920 | 7.820 |
| 33 | 3.952 | 3.876 | 7.921>> | 7.844 |
| 33 | 6.725 | 6.926 | 3.246<< | 3.447 |
| 33 | 3.937 | 3.891 | 7.906 | 7.860>> |
| 33 | 6.741 | 6.911 | 3.261 | 3.432<< |

| BARRA 33 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 33 | 6.773>> | 6.308 | 4.004 | 3.540 |
| 33 | 3.928<< | 3.905 | 7.871 | 7.848 |
| 33 | 6.700 | 6.925>> | 3.236 | 3.461 |
| 33 | 3.966 | 3.866<< | 7.910 | 7.810 |
| 33 | 3.947 | 3.870 | 7.911>> | 7.834 |
| 33 | 6.720 | 6.921 | 3.236<< | 3.437 |
| 33 | 3.931 | 3.885 | 7.895 | 7.849>> |
| 33 | 6.735 | 6.906 | 3.251 | 3.421<< |
| 34 | 6.320>> | 5.825 | 4.749 | 4.254 |
| 34 | 3.284<< | 3.288 | 8.839 | 8.844 |
| 34 | 5.937 | 6.290>> | 4.261 | 4.614 |
| 34 | 3.344 | 3.229<< | 8.899 | 8.784 |
| 34 | 3.305 | 3.234 | 8.903>> | 8.832 |
| 34 | 5.975 | 6.285 | 4.257<< | 4.566 |
| 34 | 3.289 | 3.250 | 8.887 | 8.848>> |
| 34 | 6.314 | 5.863 | 4.701 | 4.250<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.40*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 34 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 34 | 6.311>> | 5.816 | 4.741 | 4.246 |
| 34 | 3.275<< | 3.279 | 8.831 | 8.836 |
| 34 | 5.928 | 6.281>> | 4.253 | 4.606 |
| 34 | 3.335 | 3.220<< | 8.891 | 8.776 |
| 34 | 3.296 | 3.225 | 8.895>> | 8.824 |
| 34 | 5.966 | 6.276 | 4.249<< | 4.558 |
| 34 | 3.280 | 3.241 | 8.879 | 8.840>> |
| 34 | 6.306 | 5.854 | 4.694 | 4.242<< |
| 35 | 5.929>> | 5.474 | 5.284 | 4.829 |
| 35 | 2.239<< | 2.372 | 10.281 | 10.413 |
| 35 | 5.617 | 5.746>> | 5.024 | 5.153 |
| 35 | 2.734 | 2.279<< | 10.262 | 9.806 |
| 35 | 2.262 | 2.317 | 10.345>> | 10.400 |
| 35 | 5.867 | 5.715 | 4.994<< | 4.842 |
| 35 | 2.246 | 2.334 | 10.328 | 10.416>> |
| 35 | 5.909 | 5.581 | 5.153 | 4.825<< |

| BARRA 35 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 35 | 5.537>> | 5.142 | 4.734 | 4.338 |
| 35 | 2.103<< | 2.202 | 8.581 | 8.679 |
| 35 | 5.267 | 5.373>> | 4.507 | 4.612 |
| 35 | 2.545 | 2.138<< | 8.592 | 8.185 |
| 35 | 2.120 | 2.156 | 8.632>> | 8.668 |
| 35 | 5.490 | 5.358 | 4.495<< | 4.363 |
| 35 | 2.106 | 2.170 | 8.618 | 8.682>> |
| 35 | 5.535 | 5.173 | 4.697 | 4.335<< |
| 36 | 6.289>> | 5.907 | 3.779 | 3.397 |
| 36 | 1.835<< | 1.902 | 8.976 | 9.043 |
| 36 | 6.008 | 6.104>> | 3.596 | 3.693 |
| 36 | 1.872 | 1.864<< | 9.014 | 9.006 |
| 36 | 1.852 | 1.866 | 9.015>> | 9.029 |
| 36 | 6.029 | 6.103 | 3.595<< | 3.669 |
| 36 | 1.837 | 1.881 | 9.000 | 9.044>> |
| 36 | 6.287 | 5.928 | 3.755 | 3.396<< |

| BARRA 36 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 36 | 6.356>> | 5.973 | 3.784 | 3.400 |
| 36 | 1.858<< | 1.941 | 8.937 | 9.019 |
| 36 | 6.067 | 6.175>> | 3.593 | 3.701 |
| 36 | 1.896 | 1.903<< | 8.975 | 8.981 |
| 36 | 1.875 | 1.905 | 8.975>> | 9.005 |
| 36 | 6.088 | 6.173 | 3.592<< | 3.677 |
| 36 | 1.860 | 1.920 | 8.960 | 9.020>> |
| 36 | 6.354 | 5.994 | 3.760 | 3.399<< |
| 37 | 5.418>> | 5.021 | 4.984 | 4.586 |
| 37 | -0.245<< | -0.184 | 11.617 | 11.677 |
| 37 | 5.199 | 5.230>> | 4.776 | 4.807 |
| 37 | -0.205 | -0.223<< | 11.656 | 11.638 |
| 37 | -0.227 | -0.222 | 11.657>> | 11.663 |
| 37 | 5.221 | 5.229 | 4.774<< | 4.782 |
| 37 | -0.243 | -0.206 | 11.641 | 11.678>> |
| 37 | 5.417 | 5.043 | 4.959 | 4.585<< |

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| BARRA 37 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 37 | 5.422>> | 5.025 | 4.977 | 4.579 |
| 37 | -0.241<< | -0.180 | 11.610 | 11.670 |
| 37 | 5.203 | 5.234>> | 4.769 | 4.800 |
| 37 | -0.202 | -0.219<< | 11.649 | 11.631 |
| 37 | -0.223 | -0.218 | 11.650>> | 11.656 |
| 37 | 5.225 | 5.233 | 4.768<< | 4.776 |
| 37 | -0.239 | -0.202 | 11.634 | 11.672>> |
| 37 | 5.421 | 5.047 | 4.952 | 4.578<< |
| 38 | 6.204>> | 5.805 | 3.992 | 3.592 |
| 38 | 1.781<< | 1.889 | 9.003 | 9.111 |
| 38 | 5.990 | 6.067>> | 3.723 | 3.801 |
| 38 | 1.817 | 1.853<< | 9.039 | 9.075 |
| 38 | 1.817 | 1.853 | 9.039>> | 9.075 |
| 38 | 5.990 | 6.067 | 3.723<< | 3.801 |
| 38 | 1.781 | 1.889 | 9.003 | 9.111>> |
| 38 | 6.204 | 5.805 | 3.992 | 3.592<< |

| BARRA 38 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 38 | 6.144>> | 5.735 | 3.974 | 3.565 |
| 38 | 1.761<< | 1.852 | 9.025 | 9.117 |
| 38 | 5.930 | 6.000>> | 3.707 | 3.777 |
| 38 | 1.797 | 1.816<< | 9.062 | 9.081 |
| 38 | 1.797 | 1.816 | 9.062>> | 9.081 |
| 38 | 5.930 | 6.000 | 3.707<< | 3.777 |
| 38 | 1.761 | 1.852 | 9.025 | 9.117>> |
| 38 | 6.144 | 5.735 | 3.974 | 3.565<< |
| 39 | 5.251>> | 4.943 | 4.977 | 4.669 |
| 39 | 1.920<< | 2.046 | 8.765 | 8.892 |
| 39 | 5.137 | 5.156>> | 4.753 | 4.772 |
| 39 | 2.336 | 1.998<< | 8.763 | 8.424 |
| 39 | 1.953 | 2.013 | 8.798>> | 8.859 |
| 39 | 5.137 | 5.156 | 4.753<< | 4.772 |
| 39 | 1.920 | 2.046 | 8.765 | 8.892>> |
| 39 | 5.251 | 4.943 | 4.977 | 4.669<< |

| BARRA 39 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 39 | 5.778>> | 5.421 | 5.399 | 5.041 |
| 39 | 2.206<< | 2.383 | 10.280 | 10.457 |
| 39 | 5.631 | 5.671>> | 5.120 | 5.160 |
| 39 | 2.681 | 2.300<< | 10.254 | 9.873 |
| 39 | 2.244 | 2.330 | 10.338>> | 10.424 |
| 39 | 5.648 | 5.670 | 5.116<< | 5.139 |
| 39 | 2.207 | 2.366 | 10.301 | 10.460>> |
| 39 | 5.778 | 5.437 | 5.378 | 5.038<< |
| 40 | 6.125>> | 5.764 | 4.863 | 4.502 |
| 40 | 3.249<< | 3.348 | 8.755 | 8.854 |
| 40 | 5.912 | 6.159>> | 4.418 | 4.665 |
| 40 | 3.301 | 3.297<< | 8.806 | 8.802 |
| 40 | 3.284 | 3.299 | 8.808>> | 8.823 |
| 40 | 5.928 | 6.156 | 4.416<< | 4.644 |
| 40 | 3.252 | 3.332 | 8.775 | 8.855>> |
| 40 | 6.103 | 6.083 | 4.462 | 4.442<< |

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| BARRA 40 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 40 | 6.131>> | 5.770 | 4.875 | 4.514 |
| 40 | 3.255<< | 3.354 | 8.767 | 8.866 |
| 40 | 5.917 | 6.164>> | 4.430 | 4.677 |
| 40 | 3.306 | 3.303<< | 8.818 | 8.814 |
| 40 | 3.290 | 3.305 | 8.820>> | 8.835 |
| 40 | 5.934 | 6.162 | 4.428<< | 4.656 |
| 40 | 3.257 | 3.337 | 8.787 | 8.867>> |
| 40 | 6.108 | 6.089 | 4.474 | 4.454<< |
| 41 | 6.736>> | 6.736 | 3.471 | 3.471 |
| 41 | 3.887<< | 3.963 | 7.811 | 7.887 |
| 41 | 6.614 | 6.858>> | 3.348 | 3.593 |
| 41 | 3.916 | 3.934<< | 7.840 | 7.858 |
| 41 | 3.916 | 3.934 | 7.840>> | 7.858 |
| 41 | 6.614 | 6.858 | 3.348<< | 3.593 |
| 41 | 3.887 | 3.963 | 7.811 | 7.887>> |
| 41 | 6.736 | 6.736 | 3.471 | 3.471<< |

| BARRA 41 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 41 | 6.738>> | 6.738 | 3.486 | 3.486 |
| 41 | 3.890<< | 3.966 | 7.826 | 7.902 |
| 41 | 6.616 | 6.861>> | 3.363 | 3.608 |
| 41 | 3.919 | 3.937<< | 7.855 | 7.873 |
| 41 | 3.919 | 3.937 | 7.855>> | 7.873 |
| 41 | 6.616 | 6.861 | 3.363<< | 3.608 |
| 41 | 3.890 | 3.966 | 7.826 | 7.902>> |
| 41 | 6.738 | 6.738 | 3.486 | 3.486<< |
| 42 | 7.509>> | 7.595 | 2.175 | 2.261 |
| 42 | 4.327<< | 4.396 | 7.154 | 7.223 |
| 42 | 7.472 | 7.718>> | 2.029 | 2.275 |
| 42 | 4.351 | 4.371<< | 7.179 | 7.199 |
| 42 | 4.351 | 4.371 | 7.179>> | 7.199 |
| 42 | 7.472 | 7.718 | 2.029<< | 2.275 |
| 42 | 4.327 | 4.396 | 7.154 | 7.223>> |
| 42 | 7.497 | 7.693 | 2.054 | 2.250<< |

| BARRA 42 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 42 | 7.672>> | 7.758 | 1.217 | 1.302 |
| 42 | 4.490<< | 4.559 | 6.195 | 6.264 |
| 42 | 7.635 | 7.881>> | 1.070 | 1.316 |
| 42 | 4.515 | 4.534<< | 6.220 | 6.240 |
| 42 | 4.515 | 4.534 | 6.220>> | 6.240 |
| 42 | 7.635 | 7.881 | 1.070<< | 1.316 |
| 42 | 4.490 | 4.559 | 6.195 | 6.264>> |
| 42 | 7.660 | 7.856 | 1.095 | 1.291<< |
| 43 | 8.451>> | 8.700 | -0.205 | 0.044 |
| 43 | 4.777<< | 4.833 | 5.765 | 5.821 |
| 43 | 8.437 | 8.714>> | -0.219 | 0.058 |
| 43 | 4.791 | 4.819<< | 5.779 | 5.807 |
| 43 | 4.791 | 4.819 | 5.779>> | 5.807 |
| 43 | 8.437 | 8.714 | -0.219<< | 0.058 |
| 43 | 4.777 | 4.833 | 5.765 | 5.821>> |
| 43 | 8.451 | 8.700 | -0.205 | 0.044<< |

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| BARRA 43 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 43 | 8.450>> | 8.699 | -0.191 | 0.058 |
| 43 | 4.776<< | 4.831 | 5.779 | 5.835 |
| 43 | 8.436 | 8.713>> | -0.205 | 0.072 |
| 43 | 4.790 | 4.818<< | 5.793 | 5.821 |
| 43 | 4.790 | 4.818 | 5.793>> | 5.821 |
| 43 | 8.436 | 8.713 | -0.205<< | 0.072 |
| 43 | 4.776 | 4.831 | 5.779 | 5.835>> |
| 43 | 8.450 | 8.699 | -0.191 | 0.058<< |
| | | | | |
| 44 | 9.084>> | 9.372 | -1.230 | -0.941 |
| 44 | 5.019<< | 5.072 | 5.404 | 5.456 |
| 44 | 9.071 | 9.386>> | -1.243 | -0.928 |
| 44 | 5.033 | 5.058<< | 5.417 | 5.443 |
| 44 | 5.033 | 5.058 | 5.417>> | 5.443 |
| 44 | 9.071 | 9.386 | -1.243<< | -0.928 |
| 44 | 5.019 | 5.072 | 5.404 | 5.456>> |
| 44 | 9.084 | 9.372 | -1.230 | -0.941<< |

| BARRA 44 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 44 | 9.082>> | 9.371 | -1.217 | -0.929 |
| 44 | 5.018<< | 5.070 | 5.416 | 5.468 |
| 44 | 9.069 | 9.384>> | -1.231 | -0.916 |
| 44 | 5.031 | 5.056<< | 5.430 | 5.455 |
| 44 | 5.031 | 5.056 | 5.430>> | 5.455 |
| 44 | 9.069 | 9.384 | -1.231<< | -0.916 |
| 44 | 5.018 | 5.070 | 5.416 | 5.468>> |
| 44 | 9.082 | 9.371 | -1.217 | -0.929<< |
| | | | | |
| 45 | 9.501>> | 9.822 | -1.911 | -1.590 |
| 45 | 5.222<< | 5.271 | 5.102 | 5.150 |
| 45 | 9.488 | 9.834>> | -1.923 | -1.577 |
| 45 | 5.235 | 5.259<< | 5.114 | 5.138 |
| 45 | 5.235 | 5.259 | 5.114>> | 5.138 |
| 45 | 9.488 | 9.834 | -1.923<< | -1.577 |
| 45 | 5.222 | 5.271 | 5.102 | 5.150>> |
| 45 | 9.501 | 9.822 | -1.911 | -1.590<< |

| BARRA 45 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 45 | 9.499>> | 9.820 | -1.902 | -1.581 |
| 45 | 5.220<< | 5.269 | 5.111 | 5.160 |
| 45 | 9.486 | 9.832>> | -1.914 | -1.568 |
| 45 | 5.233 | 5.257<< | 5.123 | 5.147 |
| 45 | 5.233 | 5.257 | 5.123>> | 5.147 |
| 45 | 9.486 | 9.832 | -1.914<< | -1.568 |
| 45 | 5.220 | 5.269 | 5.111 | 5.160>> |
| 45 | 9.499 | 9.820 | -1.902 | -1.581<< |
| | | | | |
| 46 | 9.720>> | 10.068 | -2.280 | -1.933 |
| 46 | 5.387<< | 5.432 | 4.856 | 4.901 |
| 46 | 9.708 | 10.079>> | -2.292 | -1.921 |
| 46 | 5.399 | 5.420<< | 4.868 | 4.889 |
| 46 | 5.391 | 5.422 | 4.868>> | 4.899 |
| 46 | 9.716 | 10.078 | -2.293<< | -1.931 |
| 46 | 5.388 | 5.424 | 4.866 | 4.902>> |
| 46 | 9.719 | 10.075 | -2.290 | -1.934<< |

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| BARRA 46 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 46 | 9.718>> | 10.066 | -2.275 | -1.928 |
| 46 | 5.385<< | 5.431 | 4.861 | 4.906 |
| 46 | 9.707 | 10.078>> | -2.287 | -1.916 |
| 46 | 5.397 | 5.419<< | 4.873 | 4.895 |
| 46 | 5.389 | 5.420 | 4.874>> | 4.904 |
| 46 | 9.714 | 10.077 | -2.288<< | -1.926 |
| 46 | 5.386 | 5.423 | 4.871 | 4.907>> |
| 46 | 9.717 | 10.074 | -2.285 | -1.929<< |
| | | | | |
| 47 | 9.811>> | 10.185 | -2.453 | -2.080 |
| 47 | 5.492<< | 5.577 | 4.644 | 4.729 |
| 47 | 9.800 | 10.196>> | -2.464 | -2.069 |
| 47 | 5.533 | 5.536<< | 4.685 | 4.688 |
| 47 | 5.524 | 5.536 | 4.687>> | 4.699 |
| 47 | 9.808 | 10.196 | -2.466<< | -2.079 |
| 47 | 5.492 | 5.569 | 4.655 | 4.731>> |
| 47 | 9.811 | 10.193 | -2.464 | -2.082<< |

| BARRA 47 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 47 | 9.810>> | 10.183 | -2.451 | -2.078 |
| 47 | 5.491<< | 5.575 | 4.646 | 4.731 |
| 47 | 9.799 | 10.194>> | -2.462 | -2.067 |
| 47 | 5.531 | 5.535<< | 4.687 | 4.691 |
| 47 | 5.523 | 5.535 | 4.689>> | 4.701 |
| 47 | 9.807 | 10.194 | -2.464<< | -2.077 |
| 47 | 5.491 | 5.567 | 4.657 | 4.733>> |
| 47 | 9.810 | 10.191 | -2.461 | -2.080<< |
| | | | | |
| 48 | 9.695>> | 10.090 | -2.300 | -1.905 |
| 48 | 5.339<< | 5.436 | 4.867 | 4.964 |
| 48 | 9.687 | 10.099>> | -2.309 | -1.897 |
| 48 | 5.347 | 5.427<< | 4.876 | 4.956 |
| 48 | 5.342 | 5.428 | 4.877>> | 4.962 |
| 48 | 9.692 | 10.099 | -2.310<< | -1.903 |
| 48 | 5.339 | 5.431 | 4.874 | 4.965>> |
| 48 | 9.695 | 10.095 | -2.307 | -1.906<< |

| BARRA 48 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 48 | 9.694>> | 10.089 | -2.302 | -1.907 |
| 48 | 5.338<< | 5.435 | 4.865 | 4.962 |
| 48 | 9.686 | 10.098>> | -2.310 | -1.898 |
| 48 | 5.346 | 5.426<< | 4.874 | 4.954 |
| 48 | 5.341 | 5.427 | 4.875>> | 4.960 |
| 48 | 9.691 | 10.098 | -2.311<< | -1.905 |
| 48 | 5.338 | 5.430 | 4.872 | 4.963>> |
| 48 | 9.694 | 10.094 | -2.308 | -1.908<< |
| | | | | |
| 49 | 9.455>> | 9.869 | -1.954 | -1.540 |
| 49 | 5.140<< | 5.268 | 5.134 | 5.262 |
| 49 | 9.447 | 9.878>> | -1.962 | -1.531 |
| 49 | 5.149 | 5.260<< | 5.142 | 5.253 |
| 49 | 5.144 | 5.261 | 5.143>> | 5.259 |
| 49 | 9.451 | 9.877 | -1.962<< | -1.537 |
| 49 | 5.141 | 5.264 | 5.139 | 5.262>> |
| 49 | 9.455 | 9.874 | -1.959 | -1.540<< |

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| BARRA 49 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 49 | 9.454>> | 9.868 | -1.959 | -1.545 |
| 49 | 5.140<< | 5.267 | 5.129 | 5.256 |
| 49 | 9.446 | 9.877>> | -1.967 | -1.537 |
| 49 | 5.148 | 5.259<< | 5.137 | 5.248 |
| 49 | 5.144 | 5.260 | 5.137>> | 5.253 |
| 49 | 9.451 | 9.876 | -1.967<< | -1.542 |
| 49 | 5.140 | 5.263 | 5.134 | 5.257>> |
| 49 | 9.454 | 9.873 | -1.964 | -1.545<< |
| 50 | 9.017>> | 9.444 | -1.294 | -0.868 |
| 50 | 4.905<< | 5.063 | 5.455 | 5.614 |
| 50 | 9.009 | 9.452>> | -1.302 | -0.859 |
| 50 | 4.913 | 5.055<< | 5.463 | 5.605 |
| 50 | 4.910 | 5.055 | 5.463>> | 5.609 |
| 50 | 9.012 | 9.451 | -1.302<< | -0.863 |
| 50 | 4.905 | 5.061 | 5.458 | 5.614>> |
| 50 | 9.017 | 9.446 | -1.297 | -0.868<< |

| BARRA 50 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 50 | 9.016>> | 9.442 | -1.302 | -0.876 |
| 50 | 4.904<< | 5.062 | 5.447 | 5.605 |
| 50 | 9.008 | 9.451>> | -1.310 | -0.867 |
| 50 | 4.912 | 5.054<< | 5.455 | 5.597 |
| 50 | 4.909 | 5.055 | 5.455>> | 5.600 |
| 50 | 9.011 | 9.450 | -1.310<< | -0.871 |
| 50 | 4.904 | 5.060 | 5.450 | 5.606>> |
| 50 | 9.016 | 9.445 | -1.305 | -0.876<< |
| 51 | 8.363>> | 8.795 | -0.292 | 0.140 |
| 51 | 4.631<< | 4.820 | 5.832 | 6.022 |
| 51 | 8.355 | 8.803>> | -0.300 | 0.149 |
| 51 | 4.639 | 4.812<< | 5.841 | 6.013 |
| 51 | 4.636 | 4.813 | 5.841>> | 6.017 |
| 51 | 8.358 | 8.803 | -0.300<< | 0.145 |
| 51 | 4.631 | 4.817 | 5.836 | 6.022>> |
| 51 | 8.363 | 8.798 | -0.295 | 0.140<< |

| BARRA 51 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 51 | 8.361>> | 8.793 | -0.302 | 0.130 |
| 51 | 4.629<< | 4.819 | 5.822 | 6.012 |
| 51 | 8.353 | 8.802>> | -0.310 | 0.139 |
| 51 | 4.638 | 4.810<< | 5.831 | 6.003 |
| 51 | 4.635 | 4.811 | 5.831>> | 6.007 |
| 51 | 8.356 | 8.801 | -0.310<< | 0.135 |
| 51 | 4.630 | 4.816 | 5.826 | 6.012>> |
| 51 | 8.361 | 8.796 | -0.305 | 0.130<< |
| 52 | 7.552>> | 7.981 | 0.964 | 1.392 |
| 52 | 4.316<< | 4.541 | 6.264 | 6.490 |
| 52 | 7.538 | 7.994>> | 0.950 | 1.406 |
| 52 | 4.329 | 4.528<< | 6.278 | 6.476 |
| 52 | 4.321 | 4.529 | 6.279>> | 6.487 |
| 52 | 7.546 | 7.993 | 0.949<< | 1.396 |
| 52 | 4.317 | 4.533 | 6.275 | 6.491>> |
| 52 | 7.551 | 7.989 | 0.954 | 1.391<< |

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| BARRA 52 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 52 | 7.549>> | 7.977 | 0.953 | 1.381 |
| 52 | 4.313<< | 4.538 | 6.253 | 6.479 |
| 52 | 7.535 | 7.991>> | 0.939 | 1.395 |
| 52 | 4.326 | 4.525<< | 6.267 | 6.465 |
| 52 | 4.318 | 4.525 | 6.268>> | 6.476 |
| 52 | 7.543 | 7.990 | 0.938<< | 1.385 |
| 52 | 4.313 | 4.530 | 6.264 | 6.480>> |
| 52 | 7.548 | 7.985 | 0.943 | 1.380<< |
| 53 | 6.679>> | 7.052 | 2.379 | 2.751 |
| 53 | 3.893<< | 4.173 | 6.837 | 7.118 |
| 53 | 6.635 | 7.096>> | 2.335 | 2.796 |
| 53 | 3.905 | 4.161<< | 6.850 | 7.105 |
| 53 | 3.902 | 4.161 | 6.850>> | 7.109 |
| 53 | 6.638 | 7.096 | 2.334<< | 2.792 |
| 53 | 3.893 | 4.170 | 6.841 | 7.118>> |
| 53 | 6.679 | 7.055 | 2.375 | 2.751<< |

| BARRA 53 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 53 | 6.674>> | 7.046 | 2.369 | 2.741 |
| 53 | 3.887<< | 4.168 | 6.827 | 7.108 |
| 53 | 6.629 | 7.090>> | 2.325 | 2.786 |
| 53 | 3.900 | 4.155<< | 6.839 | 7.095 |
| 53 | 3.896 | 4.156 | 6.840>> | 7.099 |
| 53 | 6.633 | 7.090 | 2.324<< | 2.782 |
| 53 | 3.887 | 4.165 | 6.831 | 7.108>> |
| 53 | 6.673 | 7.050 | 2.364 | 2.740<< |
| 54 | 6.227>> | 6.124 | 3.673 | 3.569 |
| 54 | 3.170<< | 3.938 | 7.321 | 8.089 |
| 54 | 5.886 | 6.464>> | 3.334 | 3.912 |
| 54 | 3.272 | 3.529<< | 7.815 | 8.072 |
| 54 | 3.269 | 3.530 | 7.815>> | 8.076 |
| 54 | 5.994 | 6.457 | 3.311<< | 3.774 |
| 54 | 3.228 | 3.570 | 7.775 | 8.117>> |
| 54 | 6.227 | 6.127 | 3.668 | 3.569<< |

| BARRA 54 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 54 | 6.218>> | 6.115 | 3.665 | 3.561 |
| 54 | 3.161<< | 3.929 | 7.313 | 8.081 |
| 54 | 5.876 | 6.454>> | 3.326 | 3.904 |
| 54 | 3.263 | 3.520<< | 7.807 | 8.064 |
| 54 | 3.260 | 3.521 | 7.807>> | 8.068 |
| 54 | 5.985 | 6.448 | 3.303<< | 3.766 |
| 54 | 3.219 | 3.561 | 7.767 | 8.109>> |
| 54 | 6.218 | 6.118 | 3.660 | 3.560<< |
| 55 | 5.812>> | 5.751 | 4.243 | 4.182 |
| 55 | 2.089<< | 2.800 | 9.056 | 9.767 |
| 55 | 5.346 | 5.923>> | 4.154 | 4.731 |
| 55 | 2.457 | 2.650<< | 9.145 | 9.339 |
| 55 | 2.453 | 2.650 | 9.146>> | 9.343 |
| 55 | 5.763 | 5.866 | 4.111<< | 4.213 |
| 55 | 2.089 | 2.796 | 9.061 | 9.768>> |
| 55 | 5.805 | 5.824 | 4.152 | 4.171<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.40*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 55 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 55 | 5.491>> | 5.442 | 3.909 | 3.860 |
| 55 | 2.032<< | 2.632 | 7.613 | 8.213 |
| 55 | 5.105 | 5.561>> | 3.843 | 4.299 |
| 55 | 2.329 | 2.528<< | 7.673 | 7.871 |
| 55 | 2.326 | 2.528 | 7.673>> | 7.875 |
| 55 | 5.454 | 5.539 | 3.805<< | 3.890 |
| 55 | 2.032 | 2.632 | 7.613 | 8.213>> |
| 55 | 5.486 | 5.507 | 3.837 | 3.858<< |
| 56 | 6.192>> | 6.176 | 2.997 | 2.981 |
| 56 | 1.716<< | 2.307 | 8.043 | 8.633 |
| 56 | 6.136 | 6.200>> | 2.982 | 3.046 |
| 56 | 1.720 | 2.303<< | 8.047 | 8.630 |
| 56 | 1.717 | 2.304 | 8.047>> | 8.634 |
| 56 | 6.139 | 6.200 | 2.982<< | 3.042 |
| 56 | 1.717 | 2.304 | 8.047 | 8.634>> |
| 56 | 6.191 | 6.179 | 2.993 | 2.981<< |

| BARRA 56 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 56 | 6.257>> | 6.242 | 3.000 | 2.985 |
| 56 | 1.737<< | 2.347 | 8.001 | 8.611 |
| 56 | 6.196 | 6.267>> | 2.979 | 3.051 |
| 56 | 1.740 | 2.343<< | 8.004 | 8.607 |
| 56 | 1.737 | 2.344 | 8.005>> | 8.611 |
| 56 | 6.199 | 6.267 | 2.979<< | 3.047 |
| 56 | 1.737 | 2.344 | 8.005 | 8.611>> |
| 56 | 6.257 | 6.246 | 2.996 | 2.985<< |
| 57 | 5.312>> | 5.301 | 4.188 | 4.178 |
| 57 | -0.385<< | 0.238 | 10.665 | 11.289 |
| 57 | 5.303 | 5.311>> | 4.179 | 4.187 |
| 57 | -0.384 | 0.237<< | 10.666 | 11.287 |
| 57 | -0.384 | 0.237 | 10.666>> | 11.287 |
| 57 | 5.303 | 5.311 | 4.179<< | 4.187 |
| 57 | -0.385 | 0.238 | 10.665 | 11.289>> |
| 57 | 5.312 | 5.301 | 4.188 | 4.178<< |

| BARRA 57 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 57 | 5.316>> | 5.305 | 4.181 | 4.171 |
| 57 | -0.381<< | 0.242 | 10.658 | 11.282 |
| 57 | 5.307 | 5.314>> | 4.172 | 4.180 |
| 57 | -0.380 | 0.241<< | 10.660 | 11.280 |
| 57 | -0.380 | 0.241 | 10.660>> | 11.280 |
| 57 | 5.307 | 5.314 | 4.172<< | 4.180 |
| 57 | -0.381 | 0.242 | 10.658 | 11.282>> |
| 57 | 5.316 | 5.305 | 4.181 | 4.171<< |
| 58 | 6.145>> | 6.141 | 3.127 | 3.124 |
| 58 | 1.628<< | 2.242 | 8.132 | 8.746 |
| 58 | 6.087 | 6.164>> | 3.109 | 3.185 |
| 58 | 1.632 | 2.238<< | 8.135 | 8.742 |
| 58 | 1.632 | 2.238 | 8.135>> | 8.742 |
| 58 | 6.087 | 6.164 | 3.109<< | 3.185 |
| 58 | 1.628 | 2.242 | 8.132 | 8.746>> |
| 58 | 6.145 | 6.141 | 3.127 | 3.124<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.40*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 58 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 58 | 6.080>> | 6.076 | 3.106 | 3.101 |
| 58 | 1.609<< | 2.203 | 8.155 | 8.750 |
| 58 | 6.031 | 6.096>> | 3.095 | 3.160 |
| 58 | 1.613 | 2.199<< | 8.159 | 8.746 |
| 58 | 1.613 | 2.199 | 8.159>> | 8.746 |
| 58 | 6.031 | 6.096 | 3.095<< | 3.160 |
| 58 | 1.609 | 2.203 | 8.155 | 8.750>> |
| 58 | 6.080 | 6.076 | 3.106 | 3.101<< |
| 59 | 5.241>> | 5.210 | 4.186 | 4.155 |
| 59 | 1.788<< | 2.396 | 7.893 | 8.501 |
| 59 | 4.874 | 5.307>> | 4.142 | 4.575 |
| 59 | 2.082 | 2.294<< | 7.950 | 8.163 |
| 59 | 2.082 | 2.294 | 7.950>> | 8.163 |
| 59 | 5.207 | 5.300 | 4.089<< | 4.182 |
| 59 | 1.788 | 2.396 | 7.893 | 8.501>> |
| 59 | 5.239 | 5.268 | 4.121 | 4.150<< |

| BARRA 59 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 59 | 5.710>> | 5.670 | 4.379 | 4.339 |
| 59 | 1.994<< | 2.709 | 9.203 | 9.919 |
| 59 | 5.263 | 5.817>> | 4.317 | 4.870 |
| 59 | 2.356 | 2.566<< | 9.285 | 9.494 |
| 59 | 2.356 | 2.566 | 9.285>> | 9.494 |
| 59 | 5.663 | 5.776 | 4.257<< | 4.370 |
| 59 | 1.994 | 2.709 | 9.203 | 9.919>> |
| 59 | 5.705 | 5.735 | 4.298 | 4.328<< |
| 60 | 6.078>> | 5.999 | 3.857 | 3.777 |
| 60 | 3.032<< | 3.806 | 7.510 | 8.284 |
| 60 | 5.758 | 6.316>> | 3.540 | 4.098 |
| 60 | 3.131 | 3.403<< | 7.999 | 8.270 |
| 60 | 3.131 | 3.403 | 7.999>> | 8.270 |
| 60 | 5.858 | 6.314 | 3.515<< | 3.971 |
| 60 | 3.091 | 3.443 | 7.958 | 8.311>> |
| 60 | 6.078 | 5.999 | 3.857 | 3.777<< |

| BARRA 60 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 60 | 6.084>> | 6.004 | 3.869 | 3.789 |
| 60 | 3.038<< | 3.811 | 7.523 | 8.296 |
| 60 | 5.764 | 6.322>> | 3.552 | 4.110 |
| 60 | 3.137 | 3.408<< | 8.011 | 8.282 |
| 60 | 3.137 | 3.408 | 8.011>> | 8.282 |
| 60 | 5.864 | 6.320 | 3.527<< | 3.983 |
| 60 | 3.096 | 3.448 | 7.970 | 8.323>> |
| 60 | 6.084 | 6.004 | 3.869 | 3.789<< |
| 61 | 6.507>> | 6.886 | 2.623 | 3.002 |
| 61 | 3.719<< | 4.012 | 7.076 | 7.369 |
| 61 | 6.468 | 6.924>> | 2.585 | 3.041 |
| 61 | 3.731 | 4.000<< | 7.088 | 7.357 |
| 61 | 3.728 | 4.000 | 7.089>> | 7.361 |
| 61 | 6.471 | 6.924 | 2.584<< | 3.037 |
| 61 | 3.719 | 4.009 | 7.080 | 7.370>> |
| 61 | 6.507 | 6.889 | 2.619 | 3.001<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.40*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 61 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 61 | 6.510>> | 6.889 | 2.637 | 3.017 |
| 61 | 3.722<< | 4.014 | 7.091 | 7.384 |
| 61 | 6.471 | 6.927>> | 2.599 | 3.055 |
| 61 | 3.734 | 4.003<< | 7.103 | 7.372 |
| 61 | 3.730 | 4.003 | 7.103>> | 7.376 |
| 61 | 6.474 | 6.927 | 2.599<< | 3.051 |
| 61 | 3.722 | 4.011 | 7.095 | 7.384>> |
| 61 | 6.510 | 6.892 | 2.633 | 3.016<< |
| 62 | 7.344>> | 7.782 | 1.262 | 1.700 |
| 62 | 4.108<< | 4.346 | 6.560 | 6.798 |
| 62 | 7.331 | 7.795>> | 1.250 | 1.713 |
| 62 | 4.120 | 4.333<< | 6.573 | 6.785 |
| 62 | 4.113 | 4.333 | 6.574>> | 6.795 |
| 62 | 7.339 | 7.795 | 1.248<< | 1.703 |
| 62 | 4.108 | 4.338 | 6.569 | 6.800>> |
| 62 | 7.344 | 7.790 | 1.253 | 1.699<< |

| BARRA 62 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 62 | 7.344>> | 7.782 | 1.277 | 1.715 |
| 62 | 4.108<< | 4.346 | 6.574 | 6.812 |
| 62 | 7.332 | 7.795>> | 1.264 | 1.728 |
| 62 | 4.121 | 4.333<< | 6.587 | 6.800 |
| 62 | 4.113 | 4.333 | 6.589>> | 6.809 |
| 62 | 7.339 | 7.795 | 1.262<< | 1.718 |
| 62 | 4.108 | 4.338 | 6.584 | 6.814>> |
| 62 | 7.344 | 7.790 | 1.267 | 1.713<< |
| 63 | 8.117>> | 8.560 | 0.067 | 0.511 |
| 63 | 4.383<< | 4.587 | 6.189 | 6.393 |
| 63 | 8.109 | 8.568>> | 0.060 | 0.518 |
| 63 | 4.391 | 4.579<< | 6.197 | 6.385 |
| 63 | 4.388 | 4.580 | 6.197>> | 6.388 |
| 63 | 8.111 | 8.567 | 0.059<< | 0.515 |
| 63 | 4.383 | 4.585 | 6.192 | 6.393>> |
| 63 | 8.116 | 8.562 | 0.064 | 0.510<< |

| BARRA 63 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 63 | 8.116>> | 8.559 | 0.081 | 0.524 |
| 63 | 4.382<< | 4.586 | 6.203 | 6.407 |
| 63 | 8.108 | 8.567>> | 0.073 | 0.532 |
| 63 | 4.390 | 4.578<< | 6.210 | 6.399 |
| 63 | 4.387 | 4.579 | 6.211>> | 6.402 |
| 63 | 8.110 | 8.566 | 0.073<< | 0.529 |
| 63 | 4.382 | 4.584 | 6.206 | 6.407>> |
| 63 | 8.115 | 8.561 | 0.078 | 0.524<< |
| 64 | 8.729>> | 9.168 | -0.870 | -0.430 |
| 64 | 4.617<< | 4.792 | 5.874 | 6.050 |
| 64 | 8.721 | 9.176>> | -0.878 | -0.422 |
| 64 | 4.625 | 4.784<< | 5.882 | 6.042 |
| 64 | 4.622 | 4.784 | 5.883>> | 6.045 |
| 64 | 8.723 | 9.176 | -0.878<< | -0.425 |
| 64 | 4.617 | 4.789 | 5.878 | 6.050>> |
| 64 | 8.728 | 9.171 | -0.873 | -0.430<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.40*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 64 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 64 | 8.727>> | 9.167 | -0.858 | -0.418 |
| 64 | 4.615<< | 4.790 | 5.887 | 6.062 |
| 64 | 8.719 | 9.175>> | -0.866 | -0.410 |
| 64 | 4.623 | 4.782<< | 5.895 | 6.054 |
| 64 | 4.620 | 4.782 | 5.895>> | 6.057 |
| 64 | 8.722 | 9.174 | -0.866<< | -0.413 |
| 64 | 4.615 | 4.787 | 5.890 | 6.062>> |
| 64 | 8.727 | 9.169 | -0.861 | -0.418<< |
| 65 | 9.124>> | 9.554 | -1.464 | -1.034 |
| 65 | 4.811<< | 4.957 | 5.619 | 5.765 |
| 65 | 9.116 | 9.562>> | -1.472 | -1.026 |
| 65 | 4.819 | 4.949<< | 5.627 | 5.757 |
| 65 | 4.812 | 4.950 | 5.627>> | 5.765 |
| 65 | 9.123 | 9.561 | -1.472<< | -1.034 |
| 65 | 4.812 | 4.950 | 5.627 | 5.765>> |
| 65 | 9.123 | 9.561 | -1.472 | -1.034<< |

| BARRA 65 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 65 | 9.122>> | 9.552 | -1.455 | -1.025 |
| 65 | 4.809<< | 4.955 | 5.628 | 5.774 |
| 65 | 9.114 | 9.560>> | -1.463 | -1.017 |
| 65 | 4.817 | 4.947<< | 5.636 | 5.766 |
| 65 | 4.810 | 4.948 | 5.636>> | 5.774 |
| 65 | 9.121 | 9.559 | -1.463<< | -1.025 |
| 65 | 4.810 | 4.948 | 5.636 | 5.774>> |
| 65 | 9.121 | 9.559 | -1.463 | -1.025<< |
| 66 | 9.323>> | 9.736 | -1.746 | -1.332 |
| 66 | 4.966<< | 5.083 | 5.420 | 5.537 |
| 66 | 9.315 | 9.744>> | -1.754 | -1.324 |
| 66 | 4.974 | 5.075<< | 5.428 | 5.529 |
| 66 | 4.967 | 5.076 | 5.429>> | 5.538 |
| 66 | 9.322 | 9.743 | -1.755<< | -1.333 |
| 66 | 4.967 | 5.076 | 5.429 | 5.538>> |
| 66 | 9.322 | 9.743 | -1.755 | -1.333<< |

| BARRA 66 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 66 | 9.321>> | 9.734 | -1.740 | -1.327 |
| 66 | 4.965<< | 5.082 | 5.425 | 5.542 |
| 66 | 9.313 | 9.742>> | -1.748 | -1.319 |
| 66 | 4.973 | 5.074<< | 5.433 | 5.534 |
| 66 | 4.965 | 5.074 | 5.434>> | 5.543 |
| 66 | 9.320 | 9.742 | -1.750<< | -1.328 |
| 66 | 4.965 | 5.074 | 5.434 | 5.543>> |
| 66 | 9.320 | 9.742 | -1.750 | -1.328<< |
| 67 | 9.393>> | 9.795 | -1.838 | -1.436 |
| 67 | 5.083<< | 5.165 | 5.284 | 5.367 |
| 67 | 9.390 | 9.798>> | -1.841 | -1.433 |
| 67 | 5.107 | 5.133<< | 5.319 | 5.345 |
| 67 | 5.107 | 5.133 | 5.319>> | 5.345 |
| 67 | 9.390 | 9.798 | -1.841<< | -1.433 |
| 67 | 5.083 | 5.165 | 5.284 | 5.367>> |
| 67 | 9.393 | 9.795 | -1.838 | -1.436<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.40*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 67 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 67 | 9.391>> | 9.794 | -1.836 | -1.434 |
| 67 | 5.082<< | 5.164 | 5.287 | 5.369 |
| 67 | 9.389 | 9.796>> | -1.839 | -1.431 |
| 67 | 5.106 | 5.132<< | 5.321 | 5.347 |
| 67 | 5.106 | 5.132 | 5.321>> | 5.347 |
| 67 | 9.389 | 9.796 | -1.839<< | -1.431 |
| 67 | 5.082 | 5.164 | 5.287 | 5.369>> |
| 67 | 9.391 | 9.794 | -1.836 | -1.434<< |
| 68 | 9.255>> | 9.628 | -1.586 | -1.213 |
| 68 | 4.935<< | 4.977 | 5.567 | 5.608 |
| 68 | 9.246 | 9.637>> | -1.595 | -1.204 |
| 68 | 4.945 | 4.968<< | 5.576 | 5.599 |
| 68 | 4.938 | 4.968 | 5.578>> | 5.608 |
| 68 | 9.252 | 9.637 | -1.597<< | -1.212 |
| 68 | 4.935 | 4.970 | 5.575 | 5.610>> |
| 68 | 9.255 | 9.635 | -1.595 | -1.215<< |

| BARRA 68 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 68 | 9.254>> | 9.627 | -1.588 | -1.214 |
| 68 | 4.934<< | 4.976 | 5.565 | 5.607 |
| 68 | 9.245 | 9.636>> | -1.597 | -1.205 |
| 68 | 4.944 | 4.967<< | 5.574 | 5.597 |
| 68 | 4.937 | 4.967 | 5.576>> | 5.606 |
| 68 | 9.251 | 9.636 | -1.599<< | -1.214 |
| 68 | 4.934 | 4.969 | 5.574 | 5.608>> |
| 68 | 9.254 | 9.634 | -1.596 | -1.216<< |
| 69 | 8.994>> | 9.343 | -1.152 | -0.802 |
| 69 | 4.728<< | 4.774 | 5.881 | 5.926 |
| 69 | 8.984 | 9.352>> | -1.161 | -0.793 |
| 69 | 4.738 | 4.764<< | 5.890 | 5.917 |
| 69 | 4.732 | 4.766 | 5.891>> | 5.925 |
| 69 | 8.990 | 9.351 | -1.162<< | -0.801 |
| 69 | 4.729 | 4.768 | 5.889 | 5.927>> |
| 69 | 8.993 | 9.349 | -1.160 | -0.803<< |

| BARRA 69 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 69 | 8.993>> | 9.342 | -1.157 | -0.808 |
| 69 | 4.727<< | 4.773 | 5.875 | 5.921 |
| 69 | 8.983 | 9.352>> | -1.167 | -0.798 |
| 69 | 4.737 | 4.764<< | 5.885 | 5.911 |
| 69 | 4.731 | 4.765 | 5.885>> | 5.919 |
| 69 | 8.990 | 9.351 | -1.167<< | -0.806 |
| 69 | 4.729 | 4.767 | 5.883 | 5.922>> |
| 69 | 8.992 | 9.348 | -1.165 | -0.808<< |
| 70 | 8.535>> | 8.854 | -0.405 | -0.086 |
| 70 | 4.484<< | 4.534 | 6.249 | 6.299 |
| 70 | 8.525 | 8.864>> | -0.416 | -0.076 |
| 70 | 4.495 | 4.524<< | 6.259 | 6.288 |
| 70 | 4.495 | 4.524 | 6.259>> | 6.288 |
| 70 | 8.525 | 8.864 | -0.416<< | -0.076 |
| 70 | 4.484 | 4.534 | 6.249 | 6.299>> |
| 70 | 8.535 | 8.854 | -0.405 | -0.086<< |

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| BARRA 70 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 70 | 8.534>> | 8.853 | -0.413 | -0.094 |
| 70 | 4.483<< | 4.533 | 6.240 | 6.291 |
| 70 | 8.524 | 8.863>> | -0.424 | -0.084 |
| 70 | 4.494 | 4.523<< | 6.251 | 6.280 |
| 70 | 4.494 | 4.523 | 6.251>> | 6.280 |
| 70 | 8.524 | 8.863 | -0.424<< | -0.084 |
| 70 | 4.483 | 4.533 | 6.240 | 6.291>> |
| 70 | 8.534 | 8.853 | -0.413 | -0.094<< |
| 71 | 7.860>> | 8.142 | 0.684 | 0.966 |
| 71 | 4.202<< | 4.257 | 6.673 | 6.727 |
| 71 | 7.849 | 8.153>> | 0.673 | 0.977 |
| 71 | 4.213 | 4.246<< | 6.684 | 6.717 |
| 71 | 4.213 | 4.246 | 6.684>> | 6.717 |
| 71 | 7.849 | 8.153 | 0.673<< | 0.977 |
| 71 | 4.202 | 4.257 | 6.673 | 6.727>> |
| 71 | 7.860 | 8.142 | 0.684 | 0.966<< |

| BARRA 71 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 71 | 7.858>> | 8.140 | 0.674 | 0.957 |
| 71 | 4.200<< | 4.255 | 6.663 | 6.717 |
| 71 | 7.847 | 8.151>> | 0.663 | 0.967 |
| 71 | 4.211 | 4.244<< | 6.674 | 6.707 |
| 71 | 4.211 | 4.244 | 6.674>> | 6.707 |
| 71 | 7.847 | 8.151 | 0.663<< | 0.967 |
| 71 | 4.200 | 4.255 | 6.663 | 6.717>> |
| 71 | 7.858 | 8.140 | 0.674 | 0.957<< |
| 72 | 7.028>> | 7.263 | 2.027 | 2.263 |
| 72 | 3.878<< | 3.943 | 7.151 | 7.217 |
| 72 | 7.010 | 7.282>> | 2.009 | 2.281 |
| 72 | 3.896 | 3.925<< | 7.170 | 7.199 |
| 72 | 3.890 | 3.926 | 7.170>> | 7.206 |
| 72 | 7.015 | 7.281 | 2.008<< | 2.274 |
| 72 | 3.879 | 3.938 | 7.158 | 7.217>> |
| 72 | 7.027 | 7.269 | 2.020 | 2.262<< |

| BARRA 72 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 72 | 7.025>> | 7.260 | 2.016 | 2.252 |
| 72 | 3.875<< | 3.940 | 7.140 | 7.206 |
| 72 | 7.006 | 7.278>> | 1.998 | 2.270 |
| 72 | 3.893 | 3.922<< | 7.159 | 7.188 |
| 72 | 3.887 | 3.923 | 7.159>> | 7.195 |
| 72 | 7.012 | 7.277 | 1.997<< | 2.263 |
| 72 | 3.876 | 3.934 | 7.147 | 7.206>> |
| 72 | 7.024 | 7.266 | 2.009 | 2.251<< |
| 73 | 6.216>> | 6.292 | 3.479 | 3.556 |
| 73 | 3.398<< | 3.475 | 7.868 | 7.945 |
| 73 | 6.117 | 6.383>> | 3.391 | 3.657 |
| 73 | 3.420 | 3.453<< | 7.890 | 7.924 |
| 73 | 3.420 | 3.453 | 7.890>> | 7.924 |
| 73 | 6.126 | 6.383 | 3.389<< | 3.646 |
| 73 | 3.398 | 3.475 | 7.868 | 7.945>> |
| 73 | 6.216 | 6.292 | 3.479 | 3.556<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.40*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 73 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 73 | 6.210>> | 6.287 | 3.469 | 3.546 |
| 73 | 3.392<< | 3.470 | 7.858 | 7.935 |
| 73 | 6.111 | 6.377>> | 3.381 | 3.647 |
| 73 | 3.414 | 3.448<< | 7.880 | 7.913 |
| 73 | 3.414 | 3.448 | 7.880>> | 7.913 |
| 73 | 6.120 | 6.377 | 3.378<< | 3.635 |
| 73 | 3.392 | 3.470 | 7.858 | 7.935>> |
| 73 | 6.210 | 6.287 | 3.469 | 3.546<< |
| 74 | 5.580>> | 5.283 | 4.928 | 4.632 |
| 74 | 2.723<< | 2.827 | 8.866 | 8.970 |
| 74 | 5.392 | 5.655>> | 4.505 | 4.769 |
| 74 | 2.770 | 2.780<< | 8.913 | 8.924 |
| 74 | 2.752 | 2.784 | 8.914>> | 8.946 |
| 74 | 5.531 | 5.631 | 4.497<< | 4.598 |
| 74 | 2.726 | 2.809 | 8.888 | 8.971>> |
| 74 | 5.556 | 5.606 | 4.523 | 4.572<< |

| BARRA 74 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 74 | 5.571>> | 5.274 | 4.920 | 4.624 |
| 74 | 2.714<< | 2.818 | 8.858 | 8.962 |
| 74 | 5.383 | 5.646>> | 4.497 | 4.761 |
| 74 | 2.761 | 2.772<< | 8.905 | 8.916 |
| 74 | 2.743 | 2.775 | 8.906>> | 8.938 |
| 74 | 5.522 | 5.622 | 4.489<< | 4.590 |
| 74 | 2.717 | 2.800 | 8.880 | 8.963>> |
| 74 | 5.547 | 5.597 | 4.515 | 4.564<< |
| 75 | 5.145>> | 4.890 | 5.530 | 5.276 |
| 75 | 1.625<< | 1.837 | 10.417 | 10.628 |
| 75 | 5.066 | 5.023>> | 5.382 | 5.339 |
| 75 | 1.675 | 1.788<< | 10.466 | 10.579 |
| 75 | 1.643 | 1.792 | 10.469>> | 10.618 |
| 75 | 5.097 | 5.019 | 5.379<< | 5.301 |
| 75 | 1.630 | 1.806 | 10.455 | 10.631>> |
| 75 | 5.140 | 4.922 | 5.492 | 5.274<< |

| BARRA 75 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 75 | 4.852>> | 4.642 | 4.895 | 4.686 |
| 75 | 1.574<< | 1.730 | 8.697 | 8.853 |
| 75 | 4.801 | 4.744>> | 4.786 | 4.729 |
| 75 | 1.600 | 1.703<< | 8.723 | 8.826 |
| 75 | 1.600 | 1.703 | 8.723>> | 8.826 |
| 75 | 4.801 | 4.744 | 4.786<< | 4.729 |
| 75 | 1.574 | 1.730 | 8.697 | 8.853>> |
| 75 | 4.852 | 4.642 | 4.895 | 4.686<< |
| 76 | 5.600>> | 5.299 | 4.064 | 3.763 |
| 76 | 1.242<< | 1.365 | 9.173 | 9.296 |
| 76 | 5.505 | 5.445>> | 3.917 | 3.856 |
| 76 | 1.272 | 1.336<< | 9.202 | 9.266 |
| 76 | 1.256 | 1.337 | 9.203>> | 9.285 |
| 76 | 5.522 | 5.443 | 3.916<< | 3.838 |
| 76 | 1.243 | 1.349 | 9.191 | 9.297>> |
| 76 | 5.599 | 5.315 | 4.045 | 3.762<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.40*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 76 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 76 | 5.664>> | 5.369 | 4.065 | 3.770 |
| 76 | 1.264<< | 1.402 | 9.132 | 9.270 |
| 76 | 5.566 | 5.514>> | 3.914 | 3.863 |
| 76 | 1.293 | 1.373<< | 9.161 | 9.241 |
| 76 | 1.277 | 1.374 | 9.162>> | 9.259 |
| 76 | 5.582 | 5.513 | 3.913<< | 3.844 |
| 76 | 1.265 | 1.386 | 9.150 | 9.271>> |
| 76 | 5.663 | 5.385 | 4.047 | 3.769<< |
| 77 | 4.777>> | 4.469 | 5.201 | 4.893 |
| 77 | -0.872<< | -0.794 | 11.897 | 11.975 |
| 77 | 4.744 | 4.587>> | 5.071 | 4.914 |
| 77 | -0.860 | -0.806<< | 11.909 | 11.963 |
| 77 | -0.860 | -0.806 | 11.909>> | 11.963 |
| 77 | 4.744 | 4.587 | 5.071<< | 4.914 |
| 77 | -0.872 | -0.794 | 11.897 | 11.975>> |
| 77 | 4.771 | 4.573 | 5.083 | 4.886<< |

| BARRA 77 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 77 | 4.780>> | 4.473 | 5.194 | 4.886 |
| 77 | -0.868<< | -0.790 | 11.891 | 11.968 |
| 77 | 4.748 | 4.591>> | 5.064 | 4.907 |
| 77 | -0.856 | -0.802<< | 11.902 | 11.956 |
| 77 | -0.856 | -0.802 | 11.902>> | 11.956 |
| 77 | 4.748 | 4.591 | 5.064<< | 4.907 |
| 77 | -0.868 | -0.790 | 11.891 | 11.968>> |
| 77 | 4.774 | 4.577 | 5.076 | 4.879<< |
| 78 | 5.659>> | 5.342 | 4.095 | 3.778 |
| 78 | 1.172<< | 1.297 | 9.261 | 9.386 |
| 78 | 5.562 | 5.490>> | 3.940 | 3.868 |
| 78 | 1.203 | 1.267<< | 9.291 | 9.355 |
| 78 | 1.184 | 1.267 | 9.294>> | 9.377 |
| 78 | 5.581 | 5.490 | 3.937<< | 3.846 |
| 78 | 1.172 | 1.278 | 9.282 | 9.388>> |
| 78 | 5.651 | 5.460 | 3.962 | 3.771<< |

| BARRA 78 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 78 | 5.594>> | 5.299 | 4.052 | 3.756 |
| 78 | 1.152<< | 1.243 | 9.305 | 9.396 |
| 78 | 5.526 | 5.424>> | 3.924 | 3.823 |
| 78 | 1.164 | 1.232<< | 9.316 | 9.385 |
| 78 | 1.164 | 1.232 | 9.316>> | 9.385 |
| 78 | 5.526 | 5.424 | 3.924<< | 3.823 |
| 78 | 1.152 | 1.243 | 9.305 | 9.396>> |
| 78 | 5.588 | 5.398 | 3.941 | 3.751<< |
| 79 | 4.795>> | 4.467 | 5.088 | 4.760 |
| 79 | 1.371<< | 1.520 | 8.943 | 9.092 |
| 79 | 4.737 | 4.663>> | 4.875 | 4.801 |
| 79 | 1.414 | 1.476<< | 8.986 | 9.048 |
| 79 | 1.383 | 1.478 | 8.990>> | 9.084 |
| 79 | 4.768 | 4.661 | 4.872<< | 4.765 |
| 79 | 1.372 | 1.489 | 8.979 | 9.095>> |
| 79 | 4.785 | 4.592 | 4.947 | 4.754<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.40*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 79 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 79 | 5.252>> | 4.870 | 5.530 | 5.149 |
| 79 | 1.572<< | 1.762 | 10.531 | 10.721 |
| 79 | 5.172 | 5.094>> | 5.266 | 5.188 |
| 79 | 1.628 | 1.706<< | 10.587 | 10.665 |
| 79 | 1.607 | 1.708 | 10.591>> | 10.692 |
| 79 | 5.193 | 5.093 | 5.262<< | 5.162 |
| 79 | 1.573 | 1.741 | 10.558 | 10.726>> |
| 79 | 5.227 | 5.059 | 5.295 | 5.128<< |
| 80 | 5.656>> | 5.219 | 4.971 | 4.535 |
| 80 | 2.635<< | 2.684 | 9.057 | 9.106 |
| 80 | 5.287 | 5.669>> | 4.498 | 4.881 |
| 80 | 2.691 | 2.628<< | 9.112 | 9.049 |
| 80 | 2.651 | 2.633 | 9.117>> | 9.098 |
| 80 | 5.326 | 5.665 | 4.494<< | 4.832 |
| 80 | 2.640 | 2.644 | 9.105 | 9.110>> |
| 80 | 5.637 | 5.356 | 4.801 | 4.521<< |

| BARRA 80 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 80 | 5.661>> | 5.225 | 4.983 | 4.547 |
| 80 | 2.640<< | 2.689 | 9.069 | 9.117 |
| 80 | 5.293 | 5.675>> | 4.510 | 4.893 |
| 80 | 2.696 | 2.633<< | 9.124 | 9.061 |
| 80 | 2.657 | 2.638 | 9.129>> | 9.110 |
| 80 | 5.332 | 5.670 | 4.506<< | 4.844 |
| 80 | 2.645 | 2.650 | 9.117 | 9.122>> |
| 80 | 5.642 | 5.362 | 4.813 | 4.533<< |
| 81 | 6.136>> | 5.728 | 4.207 | 3.799 |
| 81 | 3.301<< | 3.322 | 8.075 | 8.096 |
| 81 | 6.063 | 6.332>> | 3.455 | 3.724 |
| 81 | 3.335 | 3.288<< | 8.108 | 8.062 |
| 81 | 3.316 | 3.291 | 8.111>> | 8.086 |
| 81 | 6.092 | 6.330 | 3.450<< | 3.688 |
| 81 | 3.303 | 3.304 | 8.098 | 8.099>> |
| 81 | 6.105 | 6.317 | 3.463 | 3.674<< |

| BARRA 81 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 81 | 6.139>> | 5.731 | 4.222 | 3.813 |
| 81 | 3.303<< | 3.325 | 8.089 | 8.111 |
| 81 | 6.066 | 6.335>> | 3.469 | 3.739 |
| 81 | 3.337 | 3.291<< | 8.123 | 8.077 |
| 81 | 3.318 | 3.293 | 8.126>> | 8.101 |
| 81 | 6.095 | 6.333 | 3.464<< | 3.702 |
| 81 | 3.305 | 3.306 | 8.113 | 8.114>> |
| 81 | 6.108 | 6.320 | 3.477 | 3.689<< |
| 82 | 6.960>> | 7.183 | 2.136 | 2.359 |
| 82 | 3.764<< | 3.778 | 7.382 | 7.396 |
| 82 | 6.925 | 7.218>> | 2.101 | 2.394 |
| 82 | 3.799 | 3.743<< | 7.416 | 7.361 |
| 82 | 3.778 | 3.746 | 7.419>> | 7.387 |
| 82 | 6.946 | 7.215 | 2.099<< | 2.368 |
| 82 | 3.767 | 3.757 | 7.408 | 7.398>> |
| 82 | 6.957 | 7.204 | 2.110 | 2.357<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.40*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 82 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 82 | 6.960>> | 7.183 | 2.150 | 2.374 |
| 82 | 3.764<< | 3.778 | 7.396 | 7.410 |
| 82 | 6.925 | 7.218>> | 2.115 | 2.409 |
| 82 | 3.799 | 3.743<< | 7.431 | 7.375 |
| 82 | 3.778 | 3.746 | 7.433>> | 7.402 |
| 82 | 6.946 | 7.215 | 2.113<< | 2.382 |
| 82 | 3.767 | 3.757 | 7.422 | 7.413>> |
| 82 | 6.957 | 7.204 | 2.124 | 2.371<< |
| 83 | 7.773>> | 8.031 | 0.840 | 1.098 |
| 83 | 4.076<< | 4.079 | 6.924 | 6.927 |
| 83 | 7.743 | 8.061>> | 0.810 | 1.128 |
| 83 | 4.106 | 4.049<< | 6.955 | 6.897 |
| 83 | 4.090 | 4.052 | 6.956>> | 6.918 |
| 83 | 7.760 | 8.058 | 0.809<< | 1.107 |
| 83 | 4.079 | 4.062 | 6.945 | 6.928>> |
| 83 | 7.770 | 8.047 | 0.820 | 1.097<< |

| BARRA 83 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 83 | 7.772>> | 8.029 | 0.854 | 1.112 |
| 83 | 4.075<< | 4.078 | 6.938 | 6.941 |
| 83 | 7.742 | 8.059>> | 0.824 | 1.142 |
| 83 | 4.105 | 4.048<< | 6.968 | 6.911 |
| 83 | 4.089 | 4.051 | 6.969>> | 6.931 |
| 83 | 7.758 | 8.057 | 0.823<< | 1.121 |
| 83 | 4.078 | 4.061 | 6.959 | 6.942>> |
| 83 | 7.769 | 8.046 | 0.833 | 1.111<< |
| 84 | 8.425>> | 8.709 | -0.198 | 0.087 |
| 84 | 4.346<< | 4.341 | 6.526 | 6.522 |
| 84 | 8.396 | 8.738>> | -0.227 | 0.116 |
| 84 | 4.375 | 4.312<< | 6.555 | 6.493 |
| 84 | 4.359 | 4.315 | 6.556>> | 6.512 |
| 84 | 8.412 | 8.735 | -0.227<< | 0.097 |
| 84 | 4.349 | 4.325 | 6.545 | 6.522>> |
| 84 | 8.422 | 8.725 | -0.217 | 0.086<< |

| BARRA 84 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 84 | 8.423>> | 8.708 | -0.186 | 0.099 |
| 84 | 4.344<< | 4.339 | 6.538 | 6.534 |
| 84 | 8.394 | 8.737>> | -0.215 | 0.128 |
| 84 | 4.373 | 4.310<< | 6.567 | 6.505 |
| 84 | 4.357 | 4.313 | 6.568>> | 6.524 |
| 84 | 8.410 | 8.733 | -0.215<< | 0.109 |
| 84 | 4.347 | 4.323 | 6.558 | 6.534>> |
| 84 | 8.420 | 8.723 | -0.205 | 0.098<< |
| 85 | 8.860>> | 9.165 | -0.893 | -0.588 |
| 85 | 4.576<< | 4.563 | 6.187 | 6.175 |
| 85 | 8.832 | 9.193>> | -0.921 | -0.560 |
| 85 | 4.791 | 4.532<< | 6.167 | 5.908 |
| 85 | 4.603 | 4.536 | 6.215>> | 6.148 |
| 85 | 8.833 | 9.193 | -0.921<< | -0.561 |
| 85 | 4.576 | 4.563 | 6.188 | 6.175>> |
| 85 | 8.860 | 9.166 | -0.894 | -0.588<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.40*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 85 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 85 | 8.858>> | 9.163 | -0.884 | -0.579 |
| 85 | 4.574<< | 4.561 | 6.196 | 6.184 |
| 85 | 8.830 | 9.191>> | -0.911 | -0.551 |
| 85 | 4.789 | 4.530<< | 6.176 | 5.917 |
| 85 | 4.601 | 4.534 | 6.224>> | 6.157 |
| 85 | 8.831 | 9.191 | -0.912<< | -0.552 |
| 85 | 4.574 | 4.561 | 6.197 | 6.184>> |
| 85 | 8.858 | 9.164 | -0.884 | -0.579<< |
| 86 | 9.098>> | 9.418 | -1.276 | -0.956 |
| 86 | 4.767<< | 4.748 | 5.904 | 5.884 |
| 86 | 9.071 | 9.445>> | -1.303 | -0.929 |
| 86 | 4.966 | 4.709<< | 5.898 | 5.641 |
| 86 | 4.794 | 4.721 | 5.931>> | 5.858 |
| 86 | 9.071 | 9.445 | -1.303<< | -0.930 |
| 86 | 4.768 | 4.747 | 5.905 | 5.884>> |
| 86 | 9.097 | 9.419 | -1.277 | -0.956<< |

| BARRA 86 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 86 | 9.096>> | 9.416 | -1.271 | -0.951 |
| 86 | 4.766<< | 4.746 | 5.909 | 5.890 |
| 86 | 9.069 | 9.443>> | -1.298 | -0.924 |
| 86 | 4.965 | 4.707<< | 5.903 | 5.646 |
| 86 | 4.792 | 4.719 | 5.936>> | 5.864 |
| 86 | 9.070 | 9.443 | -1.298<< | -0.924 |
| 86 | 4.766 | 4.745 | 5.910 | 5.890>> |
| 86 | 9.096 | 9.417 | -1.272 | -0.951<< |
| 87 | 9.208>> | 9.542 | -1.463 | -1.129 |
| 87 | 4.921<< | 4.893 | 5.678 | 5.651 |
| 87 | 9.182 | 9.568>> | -1.488 | -1.103 |
| 87 | 5.103 | 4.847<< | 5.686 | 5.430 |
| 87 | 4.946 | 4.868 | 5.704>> | 5.626 |
| 87 | 9.183 | 9.567 | -1.488<< | -1.103 |
| 87 | 4.921 | 4.893 | 5.679 | 5.651>> |
| 87 | 9.208 | 9.542 | -1.463 | -1.129<< |

| BARRA 87 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 87 | 9.206>> | 9.540 | -1.461 | -1.126 |
| 87 | 4.919<< | 4.892 | 5.680 | 5.653 |
| 87 | 9.181 | 9.566>> | -1.486 | -1.101 |
| 87 | 5.101 | 4.845<< | 5.689 | 5.432 |
| 87 | 4.944 | 4.866 | 5.706>> | 5.628 |
| 87 | 9.181 | 9.566 | -1.486<< | -1.101 |
| 87 | 4.919 | 4.891 | 5.681 | 5.653>> |
| 87 | 9.206 | 9.541 | -1.461 | -1.126<< |
| 88 | 9.109>> | 9.451 | -1.319 | -0.977 |
| 88 | 5.006<< | 4.992 | 5.528 | 5.514 |
| 88 | 9.085 | 9.475>> | -1.343 | -0.953 |
| 88 | 5.194 | 4.934<< | 5.549 | 5.290 |
| 88 | 5.030 | 4.967 | 5.553>> | 5.490 |
| 88 | 9.085 | 9.475 | -1.343<< | -0.953 |
| 88 | 5.006 | 4.992 | 5.528 | 5.514>> |
| 88 | 9.109 | 9.451 | -1.319 | -0.977<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.40*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 88 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 88 | 9.108>> | 9.450 | -1.320 | -0.979 |
| 88 | 5.005<< | 4.991 | 5.526 | 5.513 |
| 88 | 9.084 | 9.474>> | -1.345 | -0.954 |
| 88 | 5.193 | 4.933<< | 5.548 | 5.288 |
| 88 | 5.029 | 4.966 | 5.551>> | 5.488 |
| 88 | 9.084 | 9.474 | -1.345<< | -0.954 |
| 88 | 5.005 | 4.991 | 5.526 | 5.513>> |
| 88 | 9.108 | 9.450 | -1.320 | -0.979<< |
| 89 | 8.885>> | 9.235 | -0.984 | -0.634 |
| 89 | 5.041<< | 5.023 | 5.476 | 5.457 |
| 89 | 8.862 | 9.259>> | -1.007 | -0.611 |
| 89 | 5.190 | 4.961<< | 5.513 | 5.284 |
| 89 | 5.190 | 4.961 | 5.513>> | 5.284 |
| 89 | 8.862 | 9.259 | -1.007<< | -0.611 |
| 89 | 5.041 | 5.023 | 5.476 | 5.457>> |
| 89 | 8.885 | 9.235 | -0.984 | -0.634<< |

| BARRA 89 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 89 | 8.884>> | 9.234 | -0.989 | -0.639 |
| 89 | 5.040<< | 5.022 | 5.470 | 5.452 |
| 89 | 8.861 | 9.258>> | -1.013 | -0.616 |
| 89 | 5.189 | 4.960<< | 5.508 | 5.279 |
| 89 | 5.189 | 4.960 | 5.508>> | 5.279 |
| 89 | 8.861 | 9.258 | -1.013<< | -0.616 |
| 89 | 5.040 | 5.022 | 5.470 | 5.452>> |
| 89 | 8.884 | 9.234 | -0.989 | -0.639<< |
| 90 | 8.465>> | 8.816 | -0.336 | 0.014 |
| 90 | 5.039<< | 5.016 | 5.478 | 5.455 |
| 90 | 8.443 | 8.838>> | -0.359 | 0.036 |
| 90 | 5.172 | 4.947<< | 5.529 | 5.305 |
| 90 | 5.172 | 4.947 | 5.529>> | 5.305 |
| 90 | 8.443 | 8.838 | -0.359<< | 0.036 |
| 90 | 5.039 | 5.016 | 5.478 | 5.455>> |
| 90 | 8.465 | 8.816 | -0.336 | 0.014<< |

| BARRA 90 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 90 | 8.464>> | 8.815 | -0.345 | 0.006 |
| 90 | 5.038<< | 5.015 | 5.469 | 5.447 |
| 90 | 8.442 | 8.837>> | -0.367 | 0.028 |
| 90 | 5.171 | 4.946<< | 5.521 | 5.297 |
| 90 | 5.171 | 4.946 | 5.521>> | 5.297 |
| 90 | 8.442 | 8.837 | -0.367<< | 0.028 |
| 90 | 5.038 | 5.015 | 5.469 | 5.447>> |
| 90 | 8.464 | 8.815 | -0.345 | 0.006<< |
| 91 | 7.827>> | 8.172 | 0.654 | 0.999 |
| 91 | 4.996<< | 5.014 | 5.483 | 5.501 |
| 91 | 7.806 | 8.193>> | 0.633 | 1.020 |
| 91 | 5.115 | 4.895<< | 5.602 | 5.382 |
| 91 | 5.115 | 4.895 | 5.602>> | 5.382 |
| 91 | 7.806 | 8.193 | 0.633<< | 1.020 |
| 91 | 4.999 | 4.972 | 5.536 | 5.509>> |
| 91 | 7.827 | 8.172 | 0.654 | 0.999<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.40*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 91 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 91 | 7.828>> | 8.172 | 0.658 | 1.002 |
| 91 | 4.996<< | 5.014 | 5.486 | 5.504 |
| 91 | 7.806 | 8.194>> | 0.636 | 1.023 |
| 91 | 5.115 | 4.895<< | 5.605 | 5.385 |
| 91 | 5.115 | 4.895 | 5.605>> | 5.385 |
| 91 | 7.806 | 8.194 | 0.636<< | 1.023 |
| 91 | 4.999 | 4.972 | 5.539 | 5.512>> |
| 91 | 7.828 | 8.172 | 0.658 | 1.002<< |
| 92 | 7.044>> | 7.295 | 1.997 | 2.249 |
| 92 | 4.765<< | 5.488 | 4.945 | 5.668 |
| 92 | 7.012 | 7.393>> | 1.882 | 2.263 |
| 92 | 5.025 | 4.804<< | 5.747 | 5.525 |
| 92 | 5.021 | 4.805 | 5.747>> | 5.531 |
| 92 | 7.016 | 7.392 | 1.882<< | 2.258 |
| 92 | 4.766 | 5.483 | 4.951 | 5.668>> |
| 92 | 7.036 | 7.372 | 1.902 | 2.237<< |

| BARRA 92 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 92 | 7.047>> | 7.298 | 2.018 | 2.270 |
| 92 | 4.768<< | 5.491 | 4.966 | 5.689 |
| 92 | 7.015 | 7.396>> | 1.903 | 2.284 |
| 92 | 5.028 | 4.807<< | 5.768 | 5.546 |
| 92 | 5.024 | 4.808 | 5.768>> | 5.552 |
| 92 | 7.019 | 7.395 | 1.903<< | 2.279 |
| 92 | 4.769 | 5.486 | 4.972 | 5.689>> |
| 92 | 7.039 | 7.375 | 1.923 | 2.258<< |
| 93 | 6.232>> | 6.443 | 3.340 | 3.550 |
| 93 | 4.270<< | 5.062 | 5.653 | 6.445 |
| 93 | 6.135 | 6.506>> | 3.286 | 3.657 |
| 93 | 4.899 | 4.467<< | 6.239 | 5.806 |
| 93 | 4.865 | 4.470 | 6.244>> | 5.850 |
| 93 | 6.135 | 6.506 | 3.286<< | 3.657 |
| 93 | 4.270 | 5.062 | 5.653 | 6.445>> |
| 93 | 6.232 | 6.443 | 3.340 | 3.550<< |

| BARRA 93 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 93 | 6.238>> | 6.449 | 3.356 | 3.567 |
| 93 | 4.276<< | 5.068 | 5.669 | 6.461 |
| 93 | 6.141 | 6.512>> | 3.302 | 3.673 |
| 93 | 4.905 | 4.472<< | 6.255 | 5.822 |
| 93 | 4.870 | 4.475 | 6.260>> | 5.866 |
| 93 | 6.141 | 6.512 | 3.302<< | 3.673 |
| 93 | 4.276 | 5.068 | 5.669 | 6.461>> |
| 93 | 6.238 | 6.449 | 3.356 | 3.567<< |
| 94 | 5.780>> | 5.443 | 4.769 | 4.432 |
| 94 | 3.335<< | 3.872 | 7.460 | 7.998 |
| 94 | 5.589 | 5.885>> | 4.258 | 4.554 |
| 94 | 4.124 | 3.686<< | 7.479 | 7.040 |
| 94 | 3.588 | 3.719 | 7.586>> | 7.717 |
| 94 | 5.597 | 5.884 | 4.257<< | 4.543 |
| 94 | 3.335 | 3.864 | 7.471 | 7.999>> |
| 94 | 5.780 | 5.451 | 4.759 | 4.430<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.40*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 94 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 94 | 5.788>> | 5.451 | 4.779 | 4.442 |
| 94 | 3.342<< | 3.879 | 7.470 | 8.008 |
| 94 | 5.596 | 5.892>> | 4.268 | 4.564 |
| 94 | 4.131 | 3.693<< | 7.488 | 7.050 |
| 94 | 3.595 | 3.726 | 7.596>> | 7.727 |
| 94 | 5.604 | 5.891 | 4.266<< | 4.553 |
| 94 | 3.343 | 3.871 | 7.481 | 8.009>> |
| 94 | 5.787 | 5.459 | 4.768 | 4.440<< |
| 95 | 5.426>> | 5.124 | 5.297 | 4.995 |
| 95 | 2.153<< | 2.680 | 9.336 | 9.863 |
| 95 | 4.982 | 5.385>> | 5.087 | 5.490 |
| 95 | 2.447 | 2.574<< | 9.390 | 9.516 |
| 95 | 2.447 | 2.574 | 9.390>> | 9.517 |
| 95 | 5.328 | 5.356 | 5.028<< | 5.056 |
| 95 | 2.153 | 2.680 | 9.336 | 9.863>> |
| 95 | 5.414 | 5.212 | 5.188 | 4.986<< |

| BARRA 95 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 95 | 5.135>> | 4.865 | 4.746 | 4.475 |
| 95 | 2.104<< | 2.544 | 7.843 | 8.283 |
| 95 | 4.770 | 5.074>> | 4.577 | 4.881 |
| 95 | 2.367 | 2.456<< | 7.905 | 7.995 |
| 95 | 2.367 | 2.456 | 7.905>> | 7.995 |
| 95 | 5.056 | 5.072 | 4.523<< | 4.539 |
| 95 | 2.104 | 2.544 | 7.843 | 8.283>> |
| 95 | 5.135 | 4.865 | 4.746 | 4.475<< |
| 96 | 5.955>> | 5.733 | 3.666 | 3.444 |
| 96 | 1.873<< | 2.281 | 8.192 | 8.600 |
| 96 | 5.861 | 5.868>> | 3.531 | 3.537 |
| 96 | 2.147 | 2.258<< | 8.179 | 8.290 |
| 96 | 1.887 | 2.267 | 8.206>> | 8.586 |
| 96 | 5.861 | 5.868 | 3.531<< | 3.537 |
| 96 | 1.873 | 2.281 | 8.192 | 8.600>> |
| 96 | 5.955 | 5.733 | 3.666 | 3.444<< |

| BARRA 96 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 96 | 6.106>> | 5.892 | 3.661 | 3.447 |
| 96 | 1.981<< | 2.409 | 8.143 | 8.572 |
| 96 | 6.009 | 6.026>> | 3.522 | 3.540 |
| 96 | 2.252 | 2.392<< | 8.128 | 8.268 |
| 96 | 1.995 | 2.396 | 8.157>> | 8.558 |
| 96 | 6.009 | 6.026 | 3.522<< | 3.540 |
| 96 | 1.981 | 2.409 | 8.143 | 8.572>> |
| 96 | 6.106 | 5.892 | 3.661 | 3.447<< |
| 97 | 5.272>> | 5.156 | 4.603 | 4.488 |
| 97 | -0.147<< | 0.271 | 10.843 | 11.261 |
| 97 | 5.259 | 5.169>> | 4.590 | 4.500 |
| 97 | -0.135 | 0.258<< | 10.856 | 11.248 |
| 97 | -0.135 | 0.258 | 10.856>> | 11.248 |
| 97 | 5.259 | 5.169 | 4.590<< | 4.500 |
| 97 | -0.147 | 0.271 | 10.843 | 11.261>> |
| 97 | 5.272 | 5.156 | 4.603 | 4.488<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.40*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 97 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 97 | 5.327>> | 5.211 | 4.587 | 4.472 |
| 97 | -0.092<< | 0.326 | 10.827 | 11.245 |
| 97 | 5.314 | 5.224>> | 4.575 | 4.485 |
| 97 | -0.080 | 0.313<< | 10.840 | 11.232 |
| 97 | -0.080 | 0.313 | 10.840>> | 11.232 |
| 97 | 5.314 | 5.224 | 4.575<< | 4.485 |
| 97 | -0.092 | 0.326 | 10.827 | 11.245>> |
| 97 | 5.327 | 5.211 | 4.587 | 4.472<< |
| 98 | 6.099>> | 5.960 | 3.639 | 3.500 |
| 98 | 1.802<< | 2.245 | 8.407 | 8.850 |
| 98 | 5.989 | 6.029>> | 3.576 | 3.615 |
| 98 | 1.844 | 2.203<< | 8.449 | 8.808 |
| 98 | 1.817 | 2.206 | 8.449>> | 8.838 |
| 98 | 6.017 | 6.026 | 3.575<< | 3.584 |
| 98 | 1.805 | 2.218 | 8.437 | 8.850>> |
| 98 | 6.096 | 5.987 | 3.608 | 3.500<< |

| BARRA 98 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 98 | 6.032>> | 5.899 | 3.613 | 3.480 |
| 98 | 1.777<< | 2.209 | 8.423 | 8.855 |
| 98 | 5.935 | 5.961>> | 3.562 | 3.588 |
| 98 | 1.815 | 2.170<< | 8.461 | 8.816 |
| 98 | 1.790 | 2.172 | 8.464>> | 8.845 |
| 98 | 5.959 | 5.960 | 3.559<< | 3.559 |
| 98 | 1.778 | 2.184 | 8.452 | 8.857>> |
| 98 | 6.031 | 5.924 | 3.584 | 3.477<< |
| 99 | 5.161>> | 5.024 | 4.707 | 4.570 |
| 99 | 1.793<< | 2.291 | 8.292 | 8.790 |
| 99 | 5.111 | 5.124>> | 4.601 | 4.614 |
| 99 | 1.999 | 2.086<< | 8.497 | 8.584 |
| 99 | 1.999 | 2.086 | 8.497>> | 8.584 |
| 99 | 5.111 | 5.124 | 4.601<< | 4.614 |
| 99 | 1.793 | 2.291 | 8.292 | 8.790>> |
| 99 | 5.161 | 5.024 | 4.707 | 4.570<< |

| BARRA 99 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 99 | 5.699>> | 5.441 | 5.184 | 4.926 |
| 99 | 2.076<< | 2.671 | 9.737 | 10.331 |
| 99 | 5.634 | 5.652>> | 4.932 | 4.949 |
| 99 | 2.338 | 2.410<< | 9.997 | 10.069 |
| 99 | 2.338 | 2.410 | 9.997>> | 10.069 |
| 99 | 5.634 | 5.652 | 4.932<< | 4.949 |
| 99 | 2.076 | 2.671 | 9.737 | 10.331>> |
| 99 | 5.697 | 5.536 | 5.063 | 4.902<< |
| 100 | 5.957>> | 5.718 | 4.757 | 4.518 |
| 100 | 2.961<< | 3.208 | 8.803 | 9.050 |
| 100 | 5.911 | 5.928>> | 4.501 | 4.519 |
| 100 | 3.002 | 3.167<< | 8.844 | 9.009 |
| 100 | 2.973 | 3.167 | 8.851>> | 9.045 |
| 100 | 5.940 | 5.928 | 4.494<< | 4.482 |
| 100 | 2.962 | 3.179 | 8.840 | 9.057>> |
| 100 | 5.951 | 5.916 | 4.505 | 4.470<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.40*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 100 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 100 | 5.977>> | 5.739 | 4.783 | 4.544 |
| 100 | 2.982<< | 3.228 | 8.829 | 9.076 |
| 100 | 5.931 | 5.948>> | 4.527 | 4.545 |
| 100 | 3.022 | 3.188<< | 8.870 | 9.035 |
| 100 | 2.994 | 3.188 | 8.877>> | 9.072 |
| 100 | 5.960 | 5.948 | 4.520<< | 4.508 |
| 100 | 2.982 | 3.199 | 8.866 | 9.083>> |
| 100 | 5.972 | 5.937 | 4.531 | 4.496<< |
| 101 | 6.240>> | 6.115 | 4.228 | 4.103 |
| 101 | 3.638<< | 3.839 | 7.865 | 8.066 |
| 101 | 5.808 | 6.252>> | 4.174 | 4.618 |
| 101 | 3.649 | 3.828<< | 7.876 | 8.055 |
| 101 | 3.649 | 3.828 | 7.876>> | 8.055 |
| 101 | 6.228 | 6.207 | 4.114<< | 4.094 |
| 101 | 3.638 | 3.839 | 7.865 | 8.066>> |
| 101 | 6.238 | 6.197 | 4.125 | 4.083<< |

| BARRA 101 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 101 | 6.258>> | 6.134 | 4.266 | 4.142 |
| 101 | 3.657<< | 3.857 | 7.904 | 8.104 |
| 101 | 5.826 | 6.270>> | 4.213 | 4.657 |
| 101 | 3.668 | 3.846<< | 7.915 | 8.093 |
| 101 | 3.668 | 3.846 | 7.915>> | 8.093 |
| 101 | 6.246 | 6.226 | 4.152<< | 4.132 |
| 101 | 3.657 | 3.857 | 7.904 | 8.104>> |
| 101 | 6.257 | 6.215 | 4.163 | 4.121<< |
| 102 | 6.822>> | 6.591 | 3.524 | 3.293 |
| 102 | 4.058<< | 4.227 | 7.319 | 7.488 |
| 102 | 6.524 | 6.960>> | 3.136 | 3.572 |
| 102 | 4.068 | 4.217<< | 7.329 | 7.478 |
| 102 | 4.068 | 4.217 | 7.329>> | 7.478 |
| 102 | 6.524 | 6.960 | 3.136<< | 3.572 |
| 102 | 4.058 | 4.227 | 7.319 | 7.488>> |
| 102 | 6.821 | 6.665 | 3.430 | 3.274<< |

| BARRA 102 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 102 | 6.835>> | 6.604 | 3.570 | 3.338 |
| 102 | 4.071<< | 4.239 | 7.365 | 7.533 |
| 102 | 6.537 | 6.973>> | 3.181 | 3.617 |
| 102 | 4.080 | 4.229<< | 7.375 | 7.523 |
| 102 | 4.080 | 4.229 | 7.375>> | 7.523 |
| 102 | 6.537 | 6.973 | 3.181<< | 3.617 |
| 102 | 4.071 | 4.239 | 7.365 | 7.533>> |
| 102 | 6.834 | 6.678 | 3.475 | 3.320<< |
| 103 | 7.429>> | 7.234 | 2.597 | 2.403 |
| 103 | 4.398<< | 4.550 | 6.875 | 7.028 |
| 103 | 7.405 | 7.697>> | 2.013 | 2.305 |
| 103 | 4.407 | 4.542<< | 6.884 | 7.019 |
| 103 | 4.407 | 4.542 | 6.884>> | 7.019 |
| 103 | 7.405 | 7.697 | 2.013<< | 2.305 |
| 103 | 4.398 | 4.550 | 6.875 | 7.028>> |
| 103 | 7.414 | 7.688 | 2.022 | 2.296<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.40*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 103 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 103 | 7.437>> | 7.242 | 2.647 | 2.453 |
| 103 | 4.406<< | 4.558 | 6.925 | 7.077 |
| 103 | 7.412 | 7.705>> | 2.062 | 2.354 |
| 103 | 4.414 | 4.549<< | 6.934 | 7.068 |
| 103 | 4.414 | 4.549 | 6.934>> | 7.068 |
| 103 | 7.412 | 7.705 | 2.062<< | 2.354 |
| 103 | 4.406 | 4.558 | 6.925 | 7.077>> |
| 103 | 7.421 | 7.696 | 2.071 | 2.345<< |
| 104 | 8.040>> | 8.307 | 1.117 | 1.384 |
| 104 | 4.699<< | 4.836 | 6.488 | 6.625 |
| 104 | 8.032 | 8.315>> | 1.109 | 1.392 |
| 104 | 4.707 | 4.828<< | 6.496 | 6.617 |
| 104 | 4.707 | 4.828 | 6.496>> | 6.617 |
| 104 | 8.032 | 8.315 | 1.109<< | 1.392 |
| 104 | 4.699 | 4.836 | 6.488 | 6.625>> |
| 104 | 8.040 | 8.307 | 1.117 | 1.384<< |

| BARRA 104 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 104 | 8.043>> | 8.310 | 1.154 | 1.421 |
| 104 | 4.702<< | 4.839 | 6.525 | 6.662 |
| 104 | 8.035 | 8.318>> | 1.146 | 1.429 |
| 104 | 4.710 | 4.831<< | 6.533 | 6.654 |
| 104 | 4.710 | 4.831 | 6.533>> | 6.654 |
| 104 | 8.035 | 8.318 | 1.146<< | 1.429 |
| 104 | 4.702 | 4.839 | 6.525 | 6.662>> |
| 104 | 8.043 | 8.310 | 1.154 | 1.421<< |
| 105 | 8.457>> | 8.711 | 0.526 | 0.780 |
| 105 | 4.965<< | 5.086 | 6.136 | 6.257 |
| 105 | 8.450 | 8.718>> | 0.519 | 0.787 |
| 105 | 4.972 | 5.079<< | 6.143 | 6.250 |
| 105 | 4.972 | 5.079 | 6.143>> | 6.250 |
| 105 | 8.450 | 8.718 | 0.519<< | 0.787 |
| 105 | 4.965 | 5.086 | 6.136 | 6.257>> |
| 105 | 8.457 | 8.711 | 0.526 | 0.780<< |

| BARRA 105 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 105 | 8.460>> | 8.714 | 0.498 | 0.752 |
| 105 | 4.967<< | 5.088 | 6.108 | 6.229 |
| 105 | 8.452 | 8.721>> | 0.491 | 0.759 |
| 105 | 4.974 | 5.081<< | 6.115 | 6.222 |
| 105 | 4.974 | 5.081 | 6.115>> | 6.222 |
| 105 | 8.452 | 8.721 | 0.491<< | 0.759 |
| 105 | 4.967 | 5.088 | 6.108 | 6.229>> |
| 105 | 8.460 | 8.714 | 0.498 | 0.752<< |
| 106 | 8.704>> | 8.934 | 0.148 | 0.378 |
| 106 | 5.201<< | 5.307 | 5.763 | 5.869 |
| 106 | 8.698 | 8.940>> | 0.141 | 0.384 |
| 106 | 5.207 | 5.301<< | 5.770 | 5.863 |
| 106 | 5.207 | 5.301 | 5.770>> | 5.863 |
| 106 | 8.698 | 8.940 | 0.141<< | 0.384 |
| 106 | 5.201 | 5.307 | 5.763 | 5.869>> |
| 106 | 8.704 | 8.934 | 0.148 | 0.378<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.40*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 106 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 106 | 8.704>> | 8.934 | 0.121 | 0.351 |
| 106 | 5.201<< | 5.307 | 5.736 | 5.842 |
| 106 | 8.698 | 8.940>> | 0.114 | 0.357 |
| 106 | 5.207 | 5.301<< | 5.743 | 5.836 |
| 106 | 5.207 | 5.301 | 5.743>> | 5.836 |
| 106 | 8.698 | 8.940 | 0.114<< | 0.357 |
| 106 | 5.201 | 5.307 | 5.736 | 5.842>> |
| 106 | 8.704 | 8.934 | 0.121 | 0.351<< |
| 107 | 8.733>> | 8.942 | 0.102 | 0.311 |
| 107 | 5.362<< | 5.452 | 5.506 | 5.596 |
| 107 | 8.728 | 8.947>> | 0.097 | 0.316 |
| 107 | 5.367 | 5.446<< | 5.512 | 5.591 |
| 107 | 5.367 | 5.446 | 5.512>> | 5.591 |
| 107 | 8.728 | 8.947 | 0.097<< | 0.316 |
| 107 | 5.362 | 5.452 | 5.506 | 5.596>> |
| 107 | 8.733 | 8.942 | 0.102 | 0.311<< |

| BARRA 107 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 107 | 8.731>> | 8.939 | 0.079 | 0.288 |
| 107 | 5.359<< | 5.449 | 5.483 | 5.573 |
| 107 | 8.725 | 8.945>> | 0.074 | 0.293 |
| 107 | 5.364 | 5.444<< | 5.488 | 5.567 |
| 107 | 5.364 | 5.444 | 5.488>> | 5.567 |
| 107 | 8.725 | 8.945 | 0.074<< | 0.293 |
| 107 | 5.359 | 5.449 | 5.483 | 5.573>> |
| 107 | 8.731 | 8.939 | 0.079 | 0.288<< |
| 108 | 8.469>> | 8.650 | 0.522 | 0.703 |
| 108 | 5.401<< | 5.475 | 5.437 | 5.511 |
| 108 | 8.465 | 8.654>> | 0.518 | 0.707 |
| 108 | 5.406 | 5.471<< | 5.442 | 5.507 |
| 108 | 5.406 | 5.471 | 5.442>> | 5.507 |
| 108 | 8.465 | 8.654 | 0.518<< | 0.707 |
| 108 | 5.401 | 5.475 | 5.437 | 5.511>> |
| 108 | 8.469 | 8.650 | 0.522 | 0.703<< |

| BARRA 108 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 108 | 8.466>> | 8.647 | 0.499 | 0.679 |
| 108 | 5.398<< | 5.472 | 5.414 | 5.488 |
| 108 | 8.462 | 8.651>> | 0.494 | 0.684 |
| 108 | 5.402 | 5.468<< | 5.418 | 5.484 |
| 108 | 5.402 | 5.468 | 5.418>> | 5.484 |
| 108 | 8.462 | 8.651 | 0.494<< | 0.684 |
| 108 | 5.398 | 5.472 | 5.414 | 5.488>> |
| 108 | 8.466 | 8.647 | 0.499 | 0.679<< |
| 109 | 7.948>> | 8.096 | 1.347 | 1.495 |
| 109 | 5.322<< | 5.381 | 5.552 | 5.610 |
| 109 | 7.945 | 8.100>> | 1.343 | 1.498 |
| 109 | 5.326 | 5.377<< | 5.555 | 5.607 |
| 109 | 5.326 | 5.377 | 5.555>> | 5.607 |
| 109 | 7.945 | 8.100 | 1.343<< | 1.498 |
| 109 | 5.322 | 5.381 | 5.552 | 5.610>> |
| 109 | 7.948 | 8.096 | 1.347 | 1.495<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.40*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 109 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 109 | 7.944>> | 8.092 | 1.324 | 1.472 |
| 109 | 5.318<< | 5.377 | 5.529 | 5.588 |
| 109 | 7.941 | 8.096>> | 1.321 | 1.475 |
| 109 | 5.322 | 5.373<< | 5.533 | 5.584 |
| 109 | 5.322 | 5.373 | 5.533>> | 5.584 |
| 109 | 7.941 | 8.096 | 1.321<< | 1.475 |
| 109 | 5.318 | 5.377 | 5.529 | 5.588>> |
| 109 | 7.944 | 8.092 | 1.324 | 1.472<< |
| | | | | |
| 110 | 7.195>> | 7.307 | 2.537 | 2.649 |
| 110 | 5.124<< | 5.166 | 5.853 | 5.896 |
| 110 | 7.193 | 7.310>> | 2.535 | 2.652 |
| 110 | 5.126 | 5.164<< | 5.856 | 5.893 |
| 110 | 5.126 | 5.164 | 5.856>> | 5.893 |
| 110 | 7.193 | 7.310 | 2.535<< | 2.652 |
| 110 | 5.124 | 5.166 | 5.853 | 5.896>> |
| 110 | 7.195 | 7.307 | 2.537 | 2.649<< |

| BARRA 110 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 110 | 7.190>> | 7.302 | 2.515 | 2.627 |
| 110 | 5.118<< | 5.161 | 5.831 | 5.873 |
| 110 | 7.188 | 7.304>> | 2.513 | 2.630 |
| 110 | 5.121 | 5.159<< | 5.833 | 5.871 |
| 110 | 5.121 | 5.159 | 5.833>> | 5.871 |
| 110 | 7.188 | 7.304 | 2.513<< | 2.630 |
| 110 | 5.118 | 5.161 | 5.831 | 5.873>> |
| 110 | 7.190 | 7.302 | 2.515 | 2.627<< |
| | | | | |
| 111 | 6.244>> | 6.313 | 4.044 | 4.113 |
| 111 | 4.804<< | 4.831 | 6.341 | 6.368 |
| 111 | 6.242 | 6.314>> | 4.042 | 4.115 |
| 111 | 4.806 | 4.829<< | 6.343 | 6.366 |
| 111 | 4.806 | 4.829 | 6.343>> | 6.366 |
| 111 | 6.242 | 6.314 | 4.042<< | 4.115 |
| 111 | 4.804 | 4.831 | 6.341 | 6.368>> |
| 111 | 6.244 | 6.313 | 4.044 | 4.113<< |

| BARRA 111 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 111 | 6.237>> | 6.306 | 4.023 | 4.093 |
| 111 | 4.797<< | 4.824 | 6.320 | 6.347 |
| 111 | 6.235 | 6.308>> | 4.022 | 4.094 |
| 111 | 4.799 | 4.823<< | 6.322 | 6.346 |
| 111 | 4.799 | 4.823 | 6.322>> | 6.346 |
| 111 | 6.235 | 6.308 | 4.022<< | 4.094 |
| 111 | 4.797 | 4.824 | 6.320 | 6.347>> |
| 111 | 6.237 | 6.306 | 4.023 | 4.093<< |
| | | | | |
| 112 | 5.028>> | 5.056 | 5.960 | 5.988 |
| 112 | 4.363<< | 4.374 | 7.017 | 7.028 |
| 112 | 5.027 | 5.057>> | 5.959 | 5.989 |
| 112 | 4.364 | 4.374<< | 7.017 | 7.027 |
| 112 | 4.364 | 4.374 | 7.017>> | 7.027 |
| 112 | 5.027 | 5.057 | 5.959<< | 5.989 |
| 112 | 4.363 | 4.374 | 7.017 | 7.028>> |
| 112 | 5.028 | 5.056 | 5.960 | 5.988<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.EC71-71(t=i)(1.00*G+0.40*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 112 | A | B | C | D |
|---|---|---|---|---|
| | (N/mm2) | (N/mm2) | (N/mm2) | (N/mm2) |
| 112 | 3.870>> | 3.857 | 4.646 | 4.632 |
| 112 | 3.189<< | 3.189 | 5.407 | 5.407 |
| 112 | 3.854 | 3.858>> | 4.646 | 4.650 |
| 112 | 3.190 | 3.189<< | 5.408 | 5.407 |
| 112 | 3.190 | 3.189 | 5.408>> | 5.407 |
| 112 | 3.870 | 3.858 | 4.645<< | 4.633 |
| 112 | 3.189 | 3.189 | 5.407 | 5.407>> |
| 112 | 3.870 | 3.857 | 4.646 | 4.632<< |
| | | | | |
| 113 | 3.634>> | 3.529 | 5.044 | 4.939 |
| 113 | 3.540<< | 3.597 | 4.949 | 5.006 |
| 113 | 3.553 | 3.609>> | 4.963 | 5.019 |
| 113 | 3.620 | 3.519<< | 5.030 | 4.929 |
| 113 | 3.634 | 3.529 | 5.044>> | 4.939 |
| 113 | 3.540 | 3.597 | 4.949<< | 5.006 |
| 113 | 3.553 | 3.609 | 4.963 | 5.019>> |
| 113 | 3.620 | 3.519 | 5.030 | 4.929<< |

## 7.3. ANÁLISIS EN E.L.U.: SOLICITACIONES NORMALES

### 7.3.1. Esfuerzos de Pretensado

Discretización: (6 vanos)

CASOS DE CARGA RIERUSSA

Fichero 1: Cargas según IPF

CASo # 1 PESO PROPIO
CASo # 2 LEVANTAMIENTO DE APOYOS
CASo # 3 CARGA PERMANENTE CARACTERISTICA
CASo # 4 VALOR MAXIMO DEL BALASTO
CASo # 5 VALOR MINIMO DEL BALASTO
CASo # 6 DESBALASTADO 50 POR CIENTO
CASo # 7 SC PASEOS VANO 1 DERECHA
CASo # 8 SC PASEOS VANO 2 DERECHA
CASo # 9 SC PASEOS VANO 3 DERECHA
CASo # 10 SC PASEOS VANO 4 DERECHA
CASo # 11 SC PASEOS VANO 5 DERECHA
CASo # 12 SC PASEOS VANO 6 DERECHA
CASo # 13 SC PASEOS VANO 1 IZQUIERDA
CASo # 14 SC PASEOS VANO 2 IZQUIERDA
CASo # 15 SC PASEOS VANO 3 IZQUIERDA
CASo # 16 SC PASEOS VANO 4 IZQUIERDA
CASo # 17 SC PASEOS VANO 5 IZQUIERDA
CASo # 18 SC PASEOS VANO 6 IZQUIERDA
CASo # 19 TREN B POS. 1 DERECHA
CASo # 20 TREN B POS. 1 IZQUIERDA
CASo # 21 TREN B POS. 2 DERECHA
CASo # 22 TREN B POS. 2 IZQUIERDA
CASo # 23 TREN B POS. 3 DERECHA
CASo # 24 TREN B POS. 3 IZQUIERDA
CASo # 25 TREN B POS. 4 DERECHA
CASo # 26 TREN B POS. 4 IZQUIERDA
CASo # 27 TREN B POS. 5 DERECHA
CASo # 28 TREN B POS. 5 IZQUIERDA
CASo # 29 TREN B POS. 6 DERECHA
CASo # 30 TREN B POS. 6 IZQUIERDA
CASo # 31 TREN B POS. 7 DERECHA
CASo # 32 TREN B POS. 7 IZQUIERDA
CASo # 33 TREN B POS. 8 DERECHA
CASo # 34 TREN B POS. 8 IZQUIERDA
CASo # 35 TREN B POS. 9 DERECHA
CASo # 36 TREN B POS. 9 IZQUIERDA
CASo # 37 GRAD.(5.8 C)
CASo # 38 LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Superior. Est B
CASo # 39 LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Superior 8. Est B
CASo # 40 LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Superior 9. Est B
CASo # 41 LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Inferior. Est B
CASo # 42 LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Inferior 5. Est B
CASo # 43 LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Inferior 6. Est B
CASo # 44 LAV GELIDA. V-Riera de la Rierussa. Tendon 1 (Servicio). Est C
CASo # 45 LAV GELIDA. V-Riera de la Rierussa. Tendon 2 (Servicio). Est B
CASo # 46 LAV GELIDA. V-Riera de la Rierussa. Tendon 3 (Servicio). Est C
CASo # 47 LAV GELIDA. V-Riera de la Rierussa. Tendon 4 (Servicio). Est C
CASo # 48 LAV GELIDA. V-Riera de la Rierussa. Tendon 5 (Servicio). Est C
CASo # 49 LAV GELIDA. V-Riera de la Rierussa. Tendon 6 (Servicio). Est C
CASo # 50 LAV GELIDA. V-Riera de la Rierussa. Tendon 7 (Servicio). Est C
CASo # 51 LAV GELIDA. V-Riera de la Rierussa. Tendon 8 (Servicio). Est C
CASo # 52 LAV GELIDA. V-Riera de la Rierussa. Tendon 9 (Servicio). Est C
CASo # 53 LAV GELIDA. V-Riera de la Rierussa. Tendon 10 (Servicio). Est C
CASo # 54 LAV GELIDA. V-Riera de la Rierussa. Tendon 11 (Servicio). Est C
CASo # 55 LAV GELIDA. V-Riera de la Rierussa. Tendon 12 (Servicio). Est C
CASo # 56 LAV GELIDA. V-Riera de la Rierussa. Tendon 13 (Servicio). Est C
CASo # 57 LAV GELIDA. V-Riera de la Rierussa. Tendon 14 (Servicio). Est C

Fichero 2: Cargas según EC

CASo # 1 PESO PROPIO
CASo # 2 LEVANTAMIENTO DE APOYOS
CASo # 3 CARGA PERMANENTE CARACTERISTICA
CASo # 4 VALOR MAXIMO DEL BALASTO
CASo # 5 VALOR MINIMO DEL BALASTO
CASo # 6 DESBALASTADO 50 POR CIENTO
CASo # 7 SC PASEOS VANO 1 DERECHA
CASo # 8 SC PASEOS VANO 2 DERECHA
CASo # 9 SC PASEOS VANO 3 DERECHA
CASo # 10 SC PASEOS VANO 4 DERECHA
CASo # 11 SC PASEOS VANO 5 DERECHA
CASo # 12 SC PASEOS VANO 6 DERECHA
CASo # 13 SC PASEOS VANO 1 IZQUIERDA
CASo # 14 SC PASEOS VANO 2 IZQUIERDA
CASo # 15 SC PASEOS VANO 3 IZQUIERDA
CASo # 16 SC PASEOS VANO 4 IZQUIERDA
CASo # 17 SC PASEOS VANO 5 IZQUIERDA
CASo # 18 SC PASEOS VANO 6 IZQUIERDA
CASo # 19 TREN 71 SC UNIFORME POS. 1 DERECHA
CASo # 20 TREN 71 SC UNIFORME POS. 1 IZQUIERDA
CASo # 21 TREN 71 SC UNIFORME POS. 2 DERECHA
CASo # 22 TREN 71 SC UNIFORME POS. 2 IZQUIERDA
CASo # 23 TREN 71 SC UNIFORME POS. 3 DERECHA
CASo # 24 TREN 71 SC UNIFORME POS. 3 IZQUIERDA
CASo # 25 TREN 71 SC UNIFORME POS. 4 DERECHA
CASo # 26 TREN 71 SC UNIFORME POS. 4 IZQUIERDA
CASo # 27 TREN 71 SC UNIFORME POS. 5 DERECHA
CASo # 28 TREN 71 SC UNIFORME POS. 5 IZQUIERDA
CASo # 29 TREN 71 SC UNIFORME POS. 6 DERECHA
CASo # 30 TREN 71 SC UNIFORME POS. 6 IZQUIERDA
CASo # 31 TREN 71 SC UNIFORME POS. 7 DERECHA
CASo # 32 TREN 71 SC UNIFORME POS. 7 IZQUIERDA
CASo # 33 TREN 71 SC UNIFORME POS. 8 DERECHA
CASo # 34 TREN 71 SC UNIFORME POS. 8 IZQUIERDA
CASo # 35 TREN 71 SC UNIFORME POS. 9 DERECHA
CASo # 36 TREN 71 SC UNIFORME POS. 9 IZQUIERDA
CASo # 37 TREN 71 SC UNIFORME POS. 10 DERECHA
CASo # 38 TREN 71 SC UNIFORME POS. 10 IZQUIERDA
CASo # 39 TREN 71 SC UNIFORME POS. 11 DERECHA
CASo # 40 TREN 71 SC UNIFORME POS. 11 IZQUIERDA
CASo # 41 CARRO TREN 71 POSICION 1 DERECHA 300 km/h
CASo # 42 CARRO TREN 71 POSICION 1 IZQUIERDA 300 km/h
CASo # 43 CARRO TREN 71 POSICION 2 DERECHA 300 km/h
CASo # 44 CARRO TREN 71 POSICION 2 IZQUIERDA 300 km/h
CASo # 45 CARRO TREN 71 POSICION 3 DERECHA 300 km/h
CASo # 46 CARRO TREN 71 POSICION 3 IZQUIERDA 300 km/h
CASo # 47 CARRO TREN 71 POSICION 4 DERECHA 300 km/h
CASo # 48 CARRO TREN 71 POSICION 4 IZQUIERDA 300 km/h
CASo # 49 CARRO TREN 71 POSICION 5 DERECHA 300 km/h
CASo # 50 CARRO TREN 71 POSICION 5 IZQUIERDA 300 km/h
CASo # 51 CARRO TREN 71 POSICION 6 DERECHA 300 km/h
CASo # 52 CARRO TREN 71 POSICION 6 IZQUIERDA 300 km/h
CASo # 53 CARRO TREN 71 POSICION 7 DERECHA 300 km/h
CASo # 54 CARRO TREN 71 POSICION 7 IZQUIERDA 300 km/h
CASo # 55 CARRO TREN 71 POSICION 8 DERECHA 300 km/h
CASo # 56 CARRO TREN 71 POSICION 8 IZQUIERDA 300 km/h
CASo # 57 CARRO TREN 71 POSICION 9 DERECHA 300 km/h
CASo # 58 CARRO TREN 71 POSICION 9 IZQUIERDA 300 km/h
CASo # 59 CARRO TREN 71 POSICION 10 DERECHA 300 km/h
CASo # 60 CARRO TREN 71 POSICION 10 IZQUIERDA 300 km/h
CASo # 61 CARRO TREN 71 POSICION 11 DERECHA 300 km/h

CASo # 62 CARRO TREN 71 POSICION 11 IZQUIERDA 300 km/h
CASo # 63 CARRO TREN 71 POSICION 12 DERECHA 300 km/h
CASo # 64 CARRO TREN 71 POSICION 12 IZQUIERDA 300 km/h
CASo # 65 CARRO TREN 71 POSICION 13 DERECHA 300 km/h
CASo # 66 CARRO TREN 71 POSICION 13 IZQUIERDA 300 km/h
CASo # 67 CARRO TREN 71 POSICION 14 DERECHA 300 km/h
CASo # 68 CARRO TREN 71 POSICION 14 IZQUIERDA 300 km/h
CASo # 69 CARRO TREN 71 POSICION 15 DERECHA 300 km/h
CASo # 70 CARRO TREN 71 POSICION 15 IZQUIERDA 300 km/h
CASo # 71 CARRO TREN 71 POSICION 16 DERECHA 300 km/h
CASo # 72 CARRO TREN 71 POSICION 16 IZQUIERDA 300 km/h
CASo # 73 CARRO TREN 71 POSICION 17 DERECHA 300 km/h
CASo # 74 CARRO TREN 71 POSICION 17 IZQUIERDA 300 km/h
CASo # 75 CARRO TREN 71 POSICION 18 DERECHA 300 km/h
CASo # 76 CARRO TREN 71 POSICION 18 IZQUIERDA 300 km/h
CASo # 77 CARRO TREN 71 POSICION 19 DERECHA 300 km/h
CASo # 78 CARRO TREN 71 POSICION 19 IZQUIERDA 300 km/h
CASo # 79 CARRO TREN 71 POSICION 20 DERECHA 300 km/h
CASo # 80 CARRO TREN 71 POSICION 20 IZQUIERDA 300 km/h
CASo # 81 CARRO TREN 71 POSICION 21 DERECHA 300 km/h
CASo # 82 CARRO TREN 71 POSICION 21 IZQUIERDA 300 km/h
CASo # 83 CARRO TREN 71 POSICION 22 DERECHA 300 km/h
CASo # 84 CARRO TREN 71 POSICION 22 IZQUIERDA 300 km/h
CASo # 85 CARRO TREN 71 POSICION 23 DERECHA 300 km/h
CASo # 86 CARRO TREN 71 POSICION 23 IZQUIERDA 300 km/h
CASo # 87 CARRO TREN 71 POSICION 24 DERECHA 300 km/h
CASo # 88 CARRO TREN 71 POSICION 24 IZQUIERDA 300 km/h
CASo # 89 CARRO TREN 71 POSICION 25 DERECHA 300 km/h
CASo # 90 CARRO TREN 71 POSICION 25 IZQUIERDA 300 km/h
CASo # 91 CARRO TREN 71 POSICION 26 DERECHA 300 km/h
CASo # 92 CARRO TREN 71 POSICION 26 IZQUIERDA 300 km/h
CASo # 93 CARRO TREN 71 POSICION 27 DERECHA 300 km/h
CASo # 94 CARRO TREN 71 POSICION 27 IZQUIERDA 300 km/h
CASo # 95 CARRO TREN 71 POSICION 28 DERECHA 300 km/h
CASo # 96 CARRO TREN 71 POSICION 28 IZQUIERDA 300 km/h
CASo # 97 TREN SW0 POSICION 1 DERECHA 80 km/h
CASo # 98 TREN SW0 POSICION 1 IZQUIERDA 80 km/h
CASo # 99 TREN SW0 POSICION 2 DERECHA 80 km/h
CASo # 100 TREN SW0 POSICION 2 IZQUIERDA 80 km/h
CASo # 101 TREN SW0 POSICION 3 DERECHA 80 km/h
CASo # 102 TREN SW0 POSICION 3 IZQUIERDA 80 km/h
CASo # 103 TREN SW0 POSICION 4 DERECHA 80 km/h
CASo # 104 TREN SW0 POSICION 4 IZQUIERDA 80 km/h
CASo # 105 TREN SW0 POSICION 5 DERECHA 80 km/h
CASo # 106 TREN SW0 POSICION 5 IZQUIERDA 80 km/h
CASo # 107 TREN SW0 POSICION 6 DERECHA 80 km/h
CASo # 108 TREN SW0 POSICION 6 IZQUIERDA 80 km/h
CASo # 109 TREN SW0 POSICION 7 DERECHA 80 km/h
CASo # 110 TREN SW0 POSICION 7 IZQUIERDA 80 km/h
CASo # 111 TREN SW0 POSICION 8 DERECHA 80 km/h
CASo # 112 TREN SW0 POSICION 8 IZQUIERDA 80 km/h
CASo # 113 TREN SW0 POSICION 9 DERECHA 80 km/h
CASo # 114 TREN SW0 POSICION 9 IZQUIERDA 80 km/h
CASo # 115 TREN SW0 POSICION 10 DERECHA 80 km/h
CASo # 116 TREN SW0 POSICION 10 IZQUIERDA 80 km/h
CASo # 117 TREN SW0 POSICION 11 DERECHA 80 km/h
CASo # 118 TREN SW0 POSICION 11 IZQUIERDA 80 km/h
CASo # 119 TREN SW2 POSICION 1 DERECHA 80 km/h
CASo # 120 TREN SW2 POSICION 1 IZQUIERDA 80 km/h
CASo # 121 TREN SW2 POSICION 2 DERECHA 80 km/h
CASo # 122 TREN SW2 POSICION 2 IZQUIERDA 80 km/h
CASo # 123 TREN SW2 POSICION 3 DERECHA 80 km/h
CASo # 124 TREN SW2 POSICION 3 IZQUIERDA 80 km/h
CASo # 125 TREN SW2 POSICION 4 DERECHA 80 km/h
CASo # 126 TREN SW2 POSICION 4 IZQUIERDA 80 km/h
CASo # 127 TREN SW2 POSICION 5 DERECHA 80 km/h
CASo # 128 TREN SW2 POSICION 5 IZQUIERDA 80 km/h
CASo # 129 TREN SW2 POSICION 6 DERECHA 80 km/h
CASo # 130 TREN SW2 POSICION 6 IZQUIERDA 80 km/h
CASo # 131 TREN SW2 POSICION 7 DERECHA 80 km/h
CASo # 132 TREN SW2 POSICION 7 IZQUIERDA 80 km/h
CASo # 133 TREN SW2 POSICION 8 DERECHA 80 km/h
CASo # 134 TREN SW2 POSICION 8 IZQUIERDA 80 km/h
CASo # 135 TREN SW2 POSICION 9 DERECHA 80 km/h
CASo # 136 TREN SW2 POSICION 9 IZQUIERDA 80 km/h
CASo # 137 TREN SW2 POSICION 10 DERECHA 80 km/h
CASo # 138 TREN SW2 POSICION 10 IZQUIERDA 80 km/h
CASo # 139 TREN SW2 POSICION 11 DERECHA 80 km/h
CASo # 140 TREN SW2 POSICION 11 IZQUIERDA 80 km/h
CASo # 141 GRAD.(5.8 C)
CASo # 142 LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Superior. Est B
CASo # 143 LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Superior 8. Est B
CASo # 144 LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Superior 9. Est B
CASo # 145 LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Inferior. Est B
CASo # 146 LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Inferior 5. Est B
CASo # 147 LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Inferior 6. Est B
CASo # 148 LAV GELIDA. V-Riera de la Rierussa. Tendon 1 (Servicio). Est C
CASo # 149 LAV GELIDA. V-Riera de la Rierussa. Tendon 2 (Servicio). Est B
CASo # 150 LAV GELIDA. V-Riera de la Rierussa. Tendon 3 (Servicio). Est C
CASo # 151 LAV GELIDA. V-Riera de la Rierussa. Tendon 4 (Servicio). Est C
CASo # 152 LAV GELIDA. V-Riera de la Rierussa. Tendon 5 (Servicio). Est C
CASo # 153 LAV GELIDA. V-Riera de la Rierussa. Tendon 6 (Servicio). Est C
CASo # 154 LAV GELIDA. V-Riera de la Rierussa. Tendon 7 (Servicio). Est C
CASo # 155 LAV GELIDA. V-Riera de la Rierussa. Tendon 8 (Servicio). Est C
CASo # 156 LAV GELIDA. V-Riera de la Rierussa. Tendon 9 (Servicio). Est C
CASo # 157 LAV GELIDA. V-Riera de la Rierussa. Tendon 10 (Servicio). Est C
CASo # 158 LAV GELIDA. V-Riera de la Rierussa. Tendon 11 (Servicio). Est C
CASo # 159 LAV GELIDA. V-Riera de la Rierussa. Tendon 12 (Servicio). Est C
CASo # 160 LAV GELIDA. V-Riera de la Rierussa. Tendon 13 (Servicio). Est C
CASo # 161 LAV GELIDA. V-Riera de la Rierussa. Tendon 14 (Servicio). Est C

### 7.3.2. Esfuerzos exteriores

```
TITULO
=======
LAV-Gelida. V.Rierussa. ELU Mext.IPF(t=inf)(1.35*G+0.54*LEV+1.5*SC+0.9*GT)

FICHERO DE GEOMETRIA COMPLETA
=============================
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
================================
1
```

| Fich | Num. Nudos | Num. barras | Num. hipotesis | NOMBRE FICHERO |
|---|---|---|---|---|
| 1 | 120 | 119 | 57 | ESFipf.TXT |

| Fich | Hipotesis | Caracter | Coeficiente |
|---|---|---|---|
| 1 | 1 | 1 | 1.35 |
| 1 | 2 | 1 | 0.54 |
| 1 | 3 | 1 | 1.35 |
| 1 | 4 | 3 | 1.35 |
| 1 | 5 | 3 | 1.35 |
| 1 | 6 | 3 | 1.35 |
| 1 | 7 | 2 | 0.75 |
| 1 | 8 | 2 | 0.75 |
| 1 | 9 | 2 | 0.75 |
| 1 | 10 | 2 | 0.75 |
| 1 | 11 | 2 | 0.75 |
| 1 | 12 | 2 | 0.75 |
| 1 | 13 | 2 | 0.75 |
| 1 | 14 | 2 | 0.75 |
| 1 | 15 | 2 | 0.75 |
| 1 | 16 | 2 | 0.75 |
| 1 | 17 | 2 | 0.75 |
| 1 | 18 | 2 | 0.75 |
| 1 | 19 | 4 | 1.50 |
| 1 | 20 | 5 | 1.50 |
| 1 | 21 | 4 | 1.50 |
| 1 | 22 | 5 | 1.50 |
| 1 | 23 | 4 | 1.50 |
| 1 | 24 | 5 | 1.50 |
| 1 | 25 | 4 | 1.50 |
| 1 | 26 | 5 | 1.50 |
| 1 | 27 | 4 | 1.50 |
| 1 | 28 | 5 | 1.50 |
| 1 | 29 | 4 | 1.50 |
| 1 | 30 | 5 | 1.50 |
| 1 | 31 | 4 | 1.50 |
| 1 | 32 | 5 | 1.50 |
| 1 | 33 | 4 | 1.50 |
| 1 | 34 | 5 | 1.50 |
| 1 | 35 | 4 | 1.50 |
| 1 | 36 | 5 | 1.50 |
| 1 | 37 | 2 | 0.90 |
| 1 | 38 | 1 | 0.0 |
| 1 | 39 | 1 | 0.0 |
| 1 | 40 | 1 | 0.0 |
| 1 | 41 | 1 | 0.0 |
| 1 | 42 | 1 | 0.0 |
| 1 | 43 | 1 | 0.0 |
| 1 | 44 | 1 | 0.0 |
| 1 | 45 | 1 | 0.0 |
| 1 | 46 | 1 | 0.0 |
| 1 | 47 | 1 | 0.0 |
| 1 | 48 | 1 | 0.0 |
| 1 | 49 | 1 | 0.0 |
| 1 | 50 | 1 | 0.0 |
| 1 | 51 | 1 | 0.0 |
| 1 | 52 | 1 | 0.0 |
| 1 | 53 | 1 | 0.0 |
| 1 | 54 | 1 | 0.0 |
| 1 | 55 | 1 | 0.0 |
| 1 | 56 | 1 | 0.0 |
| 1 | 57 | 1 | 0.0 |

PONDERACION DE ESFUERZOS

LAV-Gelida. V.Rierussa. ELU Mext.IPF(t=inf)(1.35*G+0.54*LEV+1.5*SC+0.9*GT)

| BARRA | 1 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| | 1 | 1009.12 | 82.63 | 9580.39 | 6012.4 | 0.0>> | -633.3 |
| | 1 | 967.23 | 142.38 | 9182.67 | -11565.0 | -0.0<< | 1218.2 |
| | 2 | 1271.67 | 222.44 | 12072.80 | -5205.3 | 18934.0>> | 217.0 |
| | 2 | 367.12 | -3.19 | 3485.17 | -1211.5 | 5833.7<< | 134.1 |

| BARRA | 2 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| | 2 | 0.11 | 222.44 | 12139.57 | -5190.4 | 18936.5>> | -329.4 |
| | 2 | 0.01 | -3.19 | 3504.44 | -1216.1 | 5834.2<< | 6.4 |
| | 3 | 0.11 | 189.05 | 10078.28 | -4640.7 | 42265.2>> | -761.5 |
| | 3 | 0.01 | -3.19 | 2616.88 | -1194.5 | 12261.6<< | 13.1 |

| BARRA | 3 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| | 3 | 0.01 | 189.05 | 10078.28 | -4660.8 | 42263.0>> | -761.5 |
| | 3 | 0.00 | -3.19 | 2616.88 | -1200.3 | 12261.0<< | 13.1 |
| | 4 | 0.01 | 155.66 | 8016.97 | -4111.1 | 61263.0>> | -1123.5 |
| | 4 | 0.00 | -3.19 | 1729.31 | -1178.7 | 16824.5<< | 19.9 |

| BARRA | 4 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| | 4 | 0.16 | 155.66 | 8016.97 | -4052.8 | 61266.9>> | -1123.5 |
| | 4 | 0.01 | -3.19 | 1729.31 | -1162.7 | 16825.7<< | 19.9 |
| | 5 | 0.16 | 122.27 | 5955.68 | -3503.1 | 75938.2>> | -1415.3 |
| | 5 | 0.01 | -3.19 | 841.75 | -1141.2 | 19525.2<< | 26.6 |

| BARRA | 5 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| | 5 | 0.11 | 122.27 | 5955.68 | -3539.2 | 75936.5>> | -1415.3 |
| | 5 | 0.01 | -3.19 | 841.75 | -1150.4 | 19524.7<< | 26.6 |
| | 6 | 0.11 | 88.88 | 3894.36 | -2989.5 | 86279.1>> | -1637.1 |
| | 6 | 0.01 | -3.19 | -45.83 | -1128.9 | 20360.4<< | 33.3 |

| BARRA | 6 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| | 6 | 0.14 | 88.88 | 3894.36 | -2948.4 | 86280.5>> | -1637.1 |
| | 6 | 0.01 | -3.19 | -45.83 | -1119.2 | 20360.9<< | 33.3 |
| | 7 | 0.14 | 55.49 | 1833.07 | -2398.7 | 92294.3>> | -1788.6 |
| | 7 | 0.01 | -3.19 | -933.39 | -1097.6 | 19332.8<< | 40.0 |

LAV-Gelida. V.Rierussa. ELU Mext.IPF(t=inf)(1.35*G+0.54*LEV+1.5*SC+0.9*GT)

| BARRA | 7 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| | 7 | 0.14 | 55.49 | 1833.07 | -2398.7 | 92294.3>> | -1788.6 |
| | 7 | 0.01 | -3.19 | -933.39 | -1097.6 | 19332.8<< | 40.0 |
| | 8 | 0.14 | 22.10 | -228.23 | -1849.0 | 93979.4>> | -1870.1 |
| | 8 | 0.01 | -3.19 | -1820.96 | -1076.0 | 16440.7<< | 46.7 |

| BARRA | 8 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| | 8 | 0.15 | 22.10 | -228.23 | -1804.3 | 93980.2>> | -1870.1 |
| | 8 | 0.00 | -3.19 | -1820.96 | -1068.2 | 16441.2<< | 46.7 |
| | 9 | 0.15 | -11.29 | -2289.55 | -1254.5 | 91336.5>> | -1881.5 |
| | 9 | 0.00 | -3.19 | -2708.53 | -1046.6 | 11685.2<< | 53.4 |

| BARRA | 9 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| | 9 | 0.15 | -11.29 | -2289.55 | -1254.5 | 91336.5>> | -1881.5 |
| | 9 | 0.00 | -3.19 | -2708.53 | -1046.6 | 11685.2<< | 53.4 |
| | 10 | 0.15 | -44.68 | -4350.85 | -704.8 | 84364.1>> | -1822.7 |
| | 10 | 0.00 | -3.19 | -3596.10 | -1025.0 | 5065.3<< | 60.1 |

| BARRA | 10 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| | 10 | 0.12 | -44.68 | -4350.85 | -664.7 | 84364.5>> | -1822.7 |
| | 10 | 0.00 | -3.19 | -3596.10 | -1022.7 | 5065.8<< | 60.1 |
| | 11 | 0.12 | -78.07 | -6412.14 | -115.0 | 73063.3>> | -1693.8 |
| | 11 | 0.00 | -3.19 | -4483.66 | -1001.1 | -3418.0<< | 66.9 |

| BARRA | 11 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| | 11 | 0.17 | -78.07 | -6412.14 | -149.7 | 73063.3>> | -1693.8 |
| | 11 | 0.00 | -3.19 | -4483.66 | -999.4 | -3418.4<< | 66.9 |
| | 12 | 0.17 | -111.46 | -8473.46 | 400.0 | 57433.3>> | -1494.9 |
| | 12 | 0.00 | -3.19 | -5371.25 | -977.9 | -13766.1<< | 73.6 |

| BARRA | 12 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| | 12 | 0.07 | -111.46 | -8473.46 | 454.7 | 57432.9>> | -1494.9 |
| | 12 | 0.03 | -3.19 | -5371.25 | -991.0 | -13765.2<< | 73.6 |
| | 13 | 0.07 | -147.62 | -9071.86 | 953.0 | 37938.8>> | -1160.4 |
| | 13 | 0.03 | -0.42 | -7721.70 | -918.0 | -26441.3<< | 14.9 |

LAV-Gelida. V.Rierussa. ELU Mext.IPF(t=inf)(1.35*G+0.54*LEV+1.5*SC+0.9*GT)

| BARRA 13 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 13 | 0.12 | -147.62 | -9071.86 | 934.9 | 37939.2>> | -1160.4 |
| 13 | 0.00 | -0.42 | -7721.70 | -905.4 | -26441.7<< | 14.9 |
| 14 | 0.12 | -181.01 | -10886.64 | 1450.1 | 16982.8>> | -815.4 |
| 14 | 0.00 | -0.42 | -8855.80 | -849.3 | -43848.1<< | 15.9 |

| BARRA 14 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 14 | 0.04 | -181.01 | -10886.64 | 1458.2 | 16982.1>> | -815.4 |
| 14 | 0.03 | -0.42 | -8855.80 | -870.2 | -43847.7<< | 15.9 |
| 15 | -0.20 | -87.05 | -6494.49 | -161.6 | -6213.5>> | 2508.4 |
| 15 | 0.03 | -0.42 | -9989.91 | -814.1 | -63635.8<< | 16.8 |

| BARRA 15 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 15 | 487.07 | -87.05 | -6476.19 | -349.3 | -6213.5>> | 2489.2 |
| 15 | 749.53 | -0.42 | -9961.75 | -813.0 | -63635.8<< | -44.4 |
| 16 | 553.57 | -87.05 | -7360.33 | -328.7 | -20628.4>> | 2672.4 |
| 16 | 1390.48 | -135.56 | -18476.84 | 2325.5 | -98646.0<< | -3258.4 |

| BARRA 16 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 16 | -0.24 | -87.05 | -7381.11 | -137.1 | -20628.3>> | 2689.5 |
| 16 | 0.25 | -135.56 | -18529.09 | 2027.5 | -98646.9<< | -3423.7 |
| 17 | -0.24 | -87.05 | -8452.25 | -115.5 | -37253.4>> | 2872.3 |
| 17 | 0.25 | -168.95 | -20773.95 | 2577.2 | -139915.3<< | -3104.0 |

| BARRA 17 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 17 | -0.23 | 13.26 | 7924.77 | -1187.3 | -37253.4>> | 2872.3 |
| 17 | 0.28 | 117.55 | 20403.75 | -5034.8 | -139914.9<< | -3104.0 |
| 18 | -0.23 | 13.26 | 6853.62 | -1165.7 | -21736.0>> | 2844.5 |
| 18 | 0.28 | 89.83 | 18308.81 | -4567.3 | -99266.5<< | -3321.7 |

| BARRA 18 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 18 | 513.98 | 13.26 | 6834.32 | -959.3 | -21735.4>> | 2924.7 |
| 18 | 1373.97 | 89.83 | 18257.18 | -4850.7 | -99264.3<< | -2966.2 |
| 19 | 433.38 | 13.26 | 5763.17 | -937.7 | -8470.6>> | 2896.8 |
| 19 | 1216.32 | 62.05 | 16162.24 | -4381.9 | -63021.5<< | -3126.1 |

LAV-Gelida. V.Rierussa. ELU Mext.IPF(t=inf)(1.35*G+0.54*LEV+1.5*SC+0.9*GT)

| BARRA 19 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 19 | -0.23 | 13.26 | 5779.46 | -1148.3 | -8471.1>> | 2818.3 |
| 19 | 0.30 | 62.05 | 16207.96 | -4105.0 | -63023.5<< | -3446.0 |
| 20 | -0.08 | 194.02 | 10446.07 | -4153.6 | 5765.5>> | -201.5 |
| 20 | -0.03 | -91.53 | 8383.42 | -1613.7 | -32701.0<< | 993.2 |

| BARRA 20 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 20 | 0.11 | 194.02 | 10446.07 | -4148.1 | 5769.5>> | -201.5 |
| 20 | -0.12 | -91.53 | 8383.42 | -1644.8 | -32699.4<< | 993.2 |
| 21 | 0.10 | 78.03 | 9898.38 | -3386.6 | 26775.0>> | -728.5 |
| 21 | -0.12 | -94.31 | 7174.36 | -1547.7 | -16363.6<< | 1188.3 |

| BARRA 21 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 21 | 0.07 | 78.03 | 9898.38 | -3399.4 | 26773.4>> | -728.5 |
| 21 | -0.06 | -94.31 | 7174.36 | -1539.9 | -16364.3<< | 1188.3 |
| 22 | 0.12 | 66.94 | 9565.12 | -3104.3 | 48168.3>> | -1384.2 |
| 22 | -0.08 | -62.37 | 4398.74 | -1223.5 | -5214.6<< | 1192.0 |

| BARRA 22 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 22 | 0.13 | 66.94 | 9565.12 | -3081.3 | 48169.7>> | -1384.2 |
| 22 | -0.12 | -62.37 | 4398.74 | -1225.9 | -5214.0<< | 1192.0 |
| 23 | 0.13 | 39.22 | 7653.74 | -2613.8 | 66249.7>> | -1495.6 |
| 23 | -0.12 | -65.14 | 3436.18 | -1163.4 | 3012.8<< | 1325.9 |

| BARRA 23 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 23 | 0.13 | 39.22 | 7653.74 | -2613.8 | 66249.7>> | -1495.6 |
| 23 | -0.12 | -65.14 | 3436.18 | -1163.4 | 3012.8<< | 1325.9 |
| 24 | 0.13 | 11.50 | 5742.38 | -2146.3 | 80315.7>> | -1548.9 |
| 24 | -0.12 | -67.92 | 2473.65 | -1100.9 | 9218.1<< | 1465.7 |

| BARRA 24 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 24 | 0.15 | 11.50 | 5742.38 | -2108.1 | 80316.7>> | -1548.9 |
| 24 | -0.15 | -67.92 | 2473.65 | -1096.5 | 9218.7<< | 1465.7 |
| 25 | 0.15 | -16.22 | 3830.99 | -1640.6 | 90368.8>> | -1543.9 |
| 25 | -0.15 | -70.68 | 1511.11 | -1034.0 | 13402.7<< | 1611.2 |

LAV-Gelida. V.Rierussa. ELU Mext.IPF(t=inf)(1.35*G+0.54*LEV+1.5*SC+0.9*GT)

| BARRA 25 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 25 | 0.15 | -16.22 | 3830.99 | -1640.6 | 90368.8>> | -1543.9 |
| 25 | -0.15 | -70.68 | 1511.11 | -1034.0 | 13402.7<< | 1611.2 |
| 26 | 0.15 | -43.94 | 1919.61 | -1173.1 | 96407.0>> | -1480.7 |
| 26 | -0.15 | -73.47 | 548.57 | -971.4 | 15565.4<< | 1762.6 |

| BARRA 26 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 26 | 0.14 | -43.94 | 1919.61 | -1127.2 | 96407.6>> | -1480.7 |
| 26 | -0.18 | -73.47 | 548.57 | -964.0 | 15565.8<< | 1762.6 |
| 27 | 0.14 | -71.66 | 8.22 | -659.7 | 98431.8>> | -1359.3 |
| 27 | -0.18 | -76.23 | -413.99 | -901.5 | 15707.1<< | 1919.8 |

| BARRA 27 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 27 | 0.15 | -71.66 | 8.22 | -706.6 | 98431.5>> | -1359.3 |
| 27 | -0.15 | -76.23 | -413.99 | -909.0 | 15706.7<< | 1919.8 |
| 28 | 0.15 | -99.38 | -1903.15 | -239.0 | 96441.8>> | -1179.7 |
| 28 | -0.15 | -79.00 | -1376.54 | -846.5 | 13826.6<< | 2082.8 |

| BARRA 28 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 28 | 0.07 | -99.38 | -1903.15 | -147.2 | 96442.0>> | -1179.7 |
| 28 | -0.21 | -79.00 | -1376.54 | -833.3 | 13827.4<< | 2082.8 |
| 29 | 0.07 | -127.10 | -3814.53 | 320.3 | 90438.3>> | -941.9 |
| 29 | -0.21 | -81.78 | -2339.08 | -770.8 | 9926.0<< | 2251.6 |

| BARRA 29 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 29 | 0.14 | -127.10 | -3814.53 | 277.2 | 90438.4>> | -941.9 |
| 29 | -0.18 | -81.78 | -2339.08 | -775.5 | 9925.6<< | 2251.6 |
| 30 | 0.14 | -154.82 | -5725.93 | 744.7 | 80420.8>> | -645.8 |
| 30 | -0.18 | -84.54 | -3301.64 | -713.0 | 4002.8<< | 2426.3 |

| BARRA 30 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 30 | 0.04 | -154.82 | -5725.93 | 783.0 | 80420.5>> | -645.8 |
| 30 | -0.22 | -84.54 | -3301.64 | -711.1 | 4003.2<< | 2426.3 |
| 31 | 0.04 | -182.54 | -7637.29 | 1250.5 | 66388.9>> | -291.5 |
| 31 | -0.22 | -87.33 | -4264.18 | -648.5 | -3941.0<< | 2606.8 |

LAV-Gelida. V.Rierussa. ELU Mext.IPF(t=inf)(1.35*G+0.54*LEV+1.5*SC+0.9*GT)

| BARRA 31 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 31 | 0.04 | -182.54 | -7637.29 | 1250.5 | 66388.9>> | -291.5 |
| 31 | -0.22 | -87.33 | -4264.18 | -648.5 | -3941.0<< | 2606.8 |
| 32 | 0.04 | -210.26 | -9548.71 | 1718.0 | 48343.3>> | 120.9 |
| 32 | -0.21 | 13.38 | -5684.61 | -830.1 | -14613.8<< | 2455.9 |

| BARRA 32 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 32 | -0.05 | -210.26 | -9548.71 | 1741.0 | 48342.5>> | 120.9 |
| 32 | -0.19 | 13.38 | -5684.61 | -837.1 | -14613.3<< | 2455.9 |
| 33 | -0.04 | -322.36 | -9089.38 | 2378.1 | 27787.7>> | 396.2 |
| 33 | -0.19 | 9.56 | -8108.60 | -647.6 | -28871.5<< | 2467.8 |

| BARRA 33 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 33 | -0.04 | -322.36 | -9089.38 | 2378.1 | 27787.7>> | 396.2 |
| 33 | -0.19 | 9.56 | -8108.60 | -647.6 | -28871.5<< | 2467.8 |
| 34 | -0.04 | -350.08 | -10754.26 | 2811.0 | 6951.6>> | 1102.2 |
| 34 | -0.19 | 9.56 | -9242.72 | -591.5 | -47090.7<< | 2447.8 |

| BARRA 34 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 34 | -0.04 | -350.08 | -10754.26 | 2811.0 | 6951.6>> | 1102.2 |
| 34 | -0.19 | 9.56 | -9242.72 | -591.5 | -47090.7<< | 2447.8 |
| 35 | -0.04 | -377.80 | -12200.68 | 3242.6 | -17185.6>> | 1866.5 |
| 35 | 0.05 | -225.49 | -16481.71 | 2685.3 | -73331.6<< | 290.5 |

| BARRA 35 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 35 | 915.12 | -377.80 | -12166.32 | 3085.2 | -17187.1>> | 2103.9 |
| 35 | 1236.46 | -225.49 | -16435.30 | 2621.1 | -73332.9<< | 488.5 |
| 36 | 624.95 | -2.64 | -8306.73 | 210.8 | -36475.3>> | 56.0 |
| 36 | 1394.08 | -253.27 | -18530.26 | 3090.0 | -110151.2<< | 992.7 |

| BARRA 36 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 36 | 0.00 | -2.64 | -8330.20 | 214.2 | -36475.3>> | 40.0 |
| 36 | -0.06 | -253.27 | -18582.63 | 3155.4 | -110151.2<< | 758.1 |
| 37 | 0.00 | -2.64 | -9400.85 | 235.8 | -55084.4>> | 45.5 |
| 37 | -0.06 | -280.99 | -20676.59 | 3622.7 | -151354.5<< | 1318.8 |

LAV-Gelida. V.Rierussa. ELU Mext.IPF(t=inf)(1.35*G+0.54*LEV+1.5*SC+0.9*GT)

| BARRA 37 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 37 | 0.00 | 5.82 | 9343.68 | -231.0 | -55084.4>> | 45.5 |
| 37 | 0.03 | 439.65 | 20883.10 | -4173.2 | -151353.8<< | 1318.8 |
| 38 | 0.00 | 5.82 | 8272.54 | -209.5 | -36586.9>> | 33.3 |
| 38 | 0.03 | 411.93 | 18788.15 | -3705.7 | -109698.1<< | 424.7 |

| BARRA 38 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 38 | 620.65 | 5.82 | 8249.23 | -206.4 | -36586.9>> | 49.0 |
| 38 | 1409.59 | 411.93 | 18735.22 | -3663.4 | -109698.1<< | 701.5 |
| 39 | 906.97 | 567.46 | 12058.08 | -3509.6 | -18545.3>> | 2831.5 |
| 39 | 1251.97 | 384.14 | 16640.22 | -3194.5 | -72448.1<< | -136.7 |

| BARRA 39 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 39 | -0.23 | 567.46 | 12092.13 | -3712.1 | -18545.3>> | 2560.2 |
| 39 | 0.03 | 384.14 | 16687.25 | -3175.3 | -72448.1<< | -376.0 |
| 40 | -0.23 | 539.74 | 10649.25 | -3280.6 | 5337.8>> | 1397.7 |
| 40 | -0.26 | 247.38 | 8944.07 | -671.2 | -43167.2<< | 2558.4 |

| BARRA 40 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 40 | 0.03 | 539.74 | 10649.25 | -3278.1 | 5339.3>> | 1397.7 |
| 40 | -0.17 | 247.38 | 8944.07 | -691.8 | -43166.9<< | 2558.4 |
| 41 | 0.03 | 512.02 | 8984.40 | -2845.1 | 25955.2>> | 293.4 |
| 41 | -0.17 | 244.62 | 7734.97 | -594.7 | -25653.4<< | 2041.8 |

| BARRA 41 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 41 | 0.03 | 512.02 | 8984.40 | -2845.1 | 25955.2>> | 293.4 |
| 41 | -0.17 | 244.62 | 7734.97 | -594.7 | -25653.4<< | 2041.8 |
| 42 | 0.14 | 467.22 | 9816.04 | -2521.0 | 46875.5>> | -2079.6 |
| 42 | -0.07 | 203.91 | 4925.21 | -183.7 | -12764.9<< | 740.4 |

| BARRA 42 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 42 | 0.14 | 467.22 | 9816.04 | -2521.0 | 46875.5>> | -2079.6 |
| 42 | -0.07 | 203.91 | 4925.21 | -183.7 | -12764.9<< | 740.4 |
| 43 | 0.14 | 425.64 | 7904.64 | -2001.6 | 65482.7>> | -3017.1 |
| 43 | -0.07 | 201.13 | 3962.64 | -121.2 | -3432.4<< | 315.2 |

LAV-Gelida. V.Rierussa. ELU Mext.IPF(t=inf)(1.35*G+0.54*LEV+1.5*SC+0.9*GT)

| BARRA 43 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 43 | 0.33 | 425.64 | 7904.64 | -1970.4 | 65483.7>> | -3017.1 |
| 43 | 0.02 | 201.13 | 3962.64 | -122.8 | -3432.3<< | 315.2 |
| 44 | 0.33 | 384.06 | 5993.23 | -1450.9 | 80076.9>> | -3867.3 |
| 44 | 0.02 | 198.36 | 3000.08 | -60.3 | 3878.8<< | -104.3 |

| BARRA 44 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 44 | 0.33 | 384.06 | 5993.23 | -1450.9 | 80076.9>> | -3867.3 |
| 44 | 0.02 | 198.36 | 3000.08 | -60.3 | 3878.8<< | -104.3 |
| 45 | 0.33 | 342.48 | 4081.81 | -931.4 | 90656.0>> | -4630.2 |
| 45 | 0.02 | 195.60 | 2037.50 | 2.2 | 9168.4<< | -517.9 |

| BARRA 45 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 45 | 0.49 | 342.48 | 4081.81 | -888.2 | 90656.4>> | -4630.2 |
| 45 | 0.13 | 195.60 | 2037.50 | 6.6 | 9168.4<< | -517.9 |
| 46 | 0.49 | 300.90 | 2170.36 | -368.8 | 97221.4>> | -5305.7 |
| 46 | 0.13 | 192.81 | 1074.93 | 69.1 | 12436.6<< | -925.7 |

| BARRA 46 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 46 | 0.49 | 300.90 | 2170.36 | -368.8 | 97221.4>> | -5305.7 |
| 46 | 0.13 | 192.81 | 1074.93 | 69.1 | 12436.6<< | -925.7 |
| 47 | 0.49 | 259.32 | 258.95 | 150.7 | 99772.3>> | -5893.9 |
| 47 | 0.13 | 190.05 | 112.37 | 131.7 | 13683.3<< | -1327.7 |

| BARRA 47 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 47 | 0.49 | 259.32 | 258.95 | 150.7 | 99772.3>> | -5893.9 |
| 47 | 0.13 | 190.05 | 112.37 | 131.7 | 13683.3<< | -1327.7 |
| 48 | 0.49 | 217.74 | -1652.45 | 670.2 | 98309.0>> | -6394.8 |
| 48 | 0.13 | 187.27 | -850.19 | 194.2 | 12908.6<< | -1723.8 |

| BARRA 48 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 48 | 0.49 | 217.74 | -1652.45 | 670.2 | 98309.0>> | -6394.8 |
| 48 | 0.13 | 187.27 | -850.19 | 194.2 | 12908.6<< | -1723.8 |
| 49 | 0.49 | 176.16 | -3563.90 | 1189.7 | 92831.7>> | -6808.4 |
| 49 | 0.13 | 184.50 | -1812.76 | 256.7 | 10112.4<< | -2114.2 |

LAV-Gelida. V.Rierussa. ELU Mext.IPF(t=inf)(1.35*G+0.54*LEV+1.5*SC+0.9*GT)

| BARRA 49 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 49 | 0.57 | 176.16 | -3563.90 | 1233.9 | 92831.1>> | -6808.4 |
| 49 | 0.20 | 184.50 | -1812.76 | 261.5 | 10112.3<< | -2114.2 |
| 50 | 0.57 | 134.58 | -5475.32 | 1753.4 | 83339.6>> | -7134.6 |
| 50 | 0.20 | 181.72 | -2775.32 | 324.1 | 5294.6<< | -2498.7 |

| BARRA 50 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 50 | 0.64 | 134.57 | -5475.32 | 1793.1 | 83338.8>> | -7134.6 |
| 50 | 0.30 | 181.72 | -2775.32 | 326.6 | 5294.4<< | -2498.7 |
| 51 | 0.64 | 92.99 | -7386.77 | 2312.6 | 69833.0>> | -7373.5 |
| 51 | 0.30 | 178.95 | -3737.89 | 389.1 | -1544.8<< | -2877.4 |

| BARRA 51 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 51 | 0.64 | 92.99 | -7386.77 | 2312.6 | 69833.0>> | -7373.5 |
| 51 | 0.30 | 178.95 | -3737.89 | 389.1 | -1544.8<< | -2877.4 |
| 52 | 0.64 | 51.41 | -9298.20 | 2832.1 | 52313.1>> | -7525.1 |
| 52 | 0.30 | 176.19 | -4700.47 | 451.6 | -10405.5<< | -3250.3 |

| BARRA 52 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 52 | 0.64 | 51.41 | -9298.20 | 2832.3 | 52313.1>> | -7525.1 |
| 52 | 0.30 | 176.19 | -4700.47 | 451.6 | -10405.5<< | -3250.3 |
| 53 | 0.49 | -12.14 | -8604.46 | 3261.8 | 31909.1>> | -5758.4 |
| 53 | 0.31 | 181.88 | -7157.57 | 727.9 | -21994.8<< | -3829.9 |

| BARRA 53 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 53 | 0.49 | -12.14 | -8604.46 | 3261.7 | 31909.1>> | -5758.4 |
| 53 | 0.31 | 181.88 | -7157.57 | 728.0 | -21994.8<< | -3829.9 |
| 54 | 0.49 | -39.86 | -10269.39 | 3694.7 | 12090.8>> | -5703.7 |
| 54 | 0.31 | 179.11 | -8366.70 | 825.1 | -38296.0<< | -4208.9 |

| BARRA 54 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 54 | 0.48 | -39.86 | -10269.39 | 3700.4 | 12089.0>> | -5703.7 |
| 54 | 0.40 | 179.11 | -8366.70 | 806.8 | -38296.4<< | -4208.9 |
| 55 | 0.48 | -67.58 | -11715.29 | 4132.0 | -11047.7>> | -5590.9 |
| 55 | 0.81 | 132.14 | -16283.63 | 3595.4 | -66834.5<< | -9295.4 |

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| BARRA 55 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 55 | 879.39 | -67.58 | -11682.24 | 4539.8 | -11047.7>> | -5265.1 |
| 55 | 1222.43 | 132.14 | -16237.67 | 4282.7 | -66834.5<< | -8999.4 |
| 56 | 599.08 | 5.83 | -7962.74 | 251.5 | -31101.2>> | -167.8 |
| 56 | 1380.05 | 104.35 | -18332.68 | 4751.5 | -103237.6<< | -9248.4 |

| BARRA 56 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 56 | 0.01 | 5.83 | -7985.27 | 223.4 | -31101.3>> | -186.2 |
| 56 | 0.84 | 104.35 | -18384.58 | 3995.1 | -103239.5<< | -9578.8 |
| 57 | 0.01 | 5.83 | -9056.44 | 245.0 | -48995.9>> | -198.4 |
| 57 | 0.84 | 76.63 | -20479.60 | 4462.6 | -144048.9<< | -9768.9 |

| BARRA 57 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 57 | 0.01 | -5.23 | 8931.56 | -237.1 | -48995.9>> | -198.4 |
| 57 | 0.84 | -48.31 | 20352.43 | -4659.9 | -144048.1<< | -9768.9 |
| 58 | 0.01 | -5.23 | 7860.36 | -215.5 | -31363.5>> | -187.4 |
| 58 | 0.84 | -76.03 | 18257.38 | -4192.3 | -103505.8<< | -9638.3 |

| BARRA 58 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 58 | 589.72 | -5.23 | 7838.22 | -229.0 | -31363.5>> | -170.7 |
| 58 | 1370.55 | -76.03 | 18205.88 | -4903.6 | -103505.8<< | -9296.6 |
| 59 | 870.03 | 93.41 | 11558.55 | -4721.4 | -11612.3>> | -5298.9 |
| 59 | 1212.91 | -103.84 | 16110.84 | -4434.8 | -67369.6<< | -9107.3 |

| BARRA 59 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 59 | 0.49 | 93.41 | 11591.22 | -4316.1 | -11610.3>> | -5638.2 |
| 59 | 0.79 | -103.84 | 16156.42 | -3771.1 | -67367.8<< | -9414.4 |
| 60 | 0.49 | 65.68 | 10145.42 | -3884.5 | 11265.0>> | -5805.2 |
| 60 | 0.48 | -220.05 | 8238.19 | -1085.5 | -39091.3<< | -5635.4 |

| BARRA 60 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 60 | 0.49 | 65.68 | 10145.42 | -3884.5 | 11265.0>> | -5805.2 |
| 60 | 0.48 | -220.05 | 8238.19 | -1085.5 | -39091.3<< | -5635.4 |
| 61 | 0.49 | 37.96 | 8480.49 | -3451.5 | 30823.3>> | -5914.1 |
| 61 | 0.48 | -222.81 | 7029.05 | -988.5 | -23059.8<< | -5170.4 |

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| BARRA 61 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 61 | 0.51 | 37.96 | 8480.49 | -3436.8 | 30824.9>> | -5914.1 |
| 61 | 0.36 | -222.81 | 7029.05 | -999.5 | -23059.4<< | -5170.4 |
| 62 | 0.49 | -38.80 | 9170.95 | -2703.2 | 50984.9>> | -5613.1 |
| 62 | 0.34 | -218.28 | 4572.50 | -715.4 | -11725.5<< | -4492.2 |

| BARRA 62 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 62 | 0.49 | -38.80 | 9170.95 | -2702.9 | 50984.9>> | -5613.1 |
| 62 | 0.34 | -218.28 | 4572.50 | -715.5 | -11725.5<< | -4492.2 |
| 63 | 0.49 | -66.51 | 7260.40 | -2235.6 | 68230.7>> | -5502.6 |
| 63 | 0.34 | -221.05 | 3610.37 | -653.0 | -3137.0<< | -4031.1 |

| BARRA 63 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 63 | 0.49 | -66.51 | 7260.40 | -2236.0 | 68230.6>> | -5502.6 |
| 63 | 0.34 | -221.05 | 3610.37 | -652.9 | -3137.0<< | -4031.1 |
| 64 | 0.49 | -94.23 | 5348.91 | -1768.4 | 81471.2>> | -5333.9 |
| 64 | 0.34 | -223.83 | 2647.78 | -590.4 | 3434.5<< | -3563.9 |

| BARRA 64 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 64 | 0.43 | -94.23 | 5348.91 | -1729.7 | 81472.0>> | -5333.9 |
| 64 | 0.24 | -223.83 | 2647.78 | -588.8 | 3434.8<< | -3563.9 |
| 65 | 0.43 | -121.95 | 3437.42 | -1262.1 | 90698.3>> | -5106.9 |
| 65 | 0.24 | -226.61 | 1685.17 | -526.3 | 7984.7<< | -3091.0 |

| BARRA 65 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 65 | 0.43 | -121.95 | 3437.42 | -1262.1 | 90698.3>> | -5106.9 |
| 65 | 0.24 | -226.61 | 1685.17 | -526.3 | 7984.7<< | -3091.0 |
| 66 | 0.43 | -149.67 | 1525.94 | -794.6 | 95910.2>> | -4821.7 |
| 66 | 0.24 | -229.37 | 722.57 | -463.7 | 10513.0<< | -2612.1 |

| BARRA 66 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 66 | 0.43 | -149.67 | 1525.94 | -794.6 | 95910.2>> | -4821.7 |
| 66 | 0.24 | -229.37 | 722.57 | -463.7 | 10513.0<< | -2612.1 |
| 67 | 0.43 | -177.39 | -385.55 | -327.1 | 97107.7>> | -4478.3 |
| 67 | 0.24 | -232.14 | -240.02 | -401.2 | 11019.7<< | -2127.5 |

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| BARRA 67 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 67 | 0.34 | -177.39 | -385.55 | -280.8 | 97107.8>> | -4478.3 |
| 67 | 0.13 | -232.14 | -240.02 | -395.9 | 11019.9<< | -2127.5 |
| 68 | 0.34 | -205.11 | -2297.04 | 186.7 | 94290.9>> | -4076.6 |
| 68 | 0.13 | -234.92 | -1202.63 | -333.4 | 9505.1<< | -1637.0 |

| BARRA 68 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 68 | 0.34 | -205.11 | -2297.04 | 186.7 | 94290.9>> | -4076.6 |
| 68 | 0.13 | -234.92 | -1202.63 | -333.4 | 9505.1<< | -1637.0 |
| 69 | 0.34 | -232.84 | -4208.53 | 654.2 | 87459.6>> | -3616.8 |
| 69 | 0.13 | -237.69 | -2165.23 | -270.9 | 5968.6<< | -1140.8 |

| BARRA 69 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 69 | 0.34 | -232.84 | -4208.53 | 654.7 | 87459.6>> | -3616.8 |
| 69 | 0.13 | -237.69 | -2165.23 | -270.9 | 5968.6<< | -1140.8 |
| 70 | 0.34 | -260.55 | -6119.13 | 1122.0 | 76619.9>> | -3099.0 |
| 70 | 0.13 | -240.47 | -3127.39 | -208.4 | 413.6<< | -638.9 |

| BARRA 70 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 70 | 0.24 | -260.55 | -6119.13 | 1158.1 | 76619.4>> | -3099.0 |
| 70 | 0.03 | -240.47 | -3127.39 | -208.2 | 413.7<< | -638.9 |
| 71 | 0.24 | -288.27 | -8030.61 | 1625.6 | 61761.0>> | -2522.7 |
| 71 | 0.03 | -243.23 | -4090.00 | -145.6 | -7165.1<< | -131.0 |

| BARRA 71 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 71 | 0.24 | -288.27 | -8030.61 | 1625.6 | 61761.0>> | -2522.7 |
| 71 | 0.03 | -243.23 | -4090.00 | -145.6 | -7165.1<< | -131.0 |
| 72 | 0.24 | -315.99 | -9942.13 | 2093.1 | 42888.2>> | -1888.2 |
| 72 | 0.03 | -246.00 | -5052.61 | -83.1 | -16765.5<< | 382.8 |

| BARRA 72 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 72 | 0.08 | -315.99 | -9942.13 | 2113.6 | 42887.2>> | -1888.2 |
| 72 | -0.11 | -246.00 | -5052.61 | -91.1 | -16765.5<< | 382.8 |
| 73 | 0.03 | -484.85 | -9110.45 | 2680.7 | 21719.2>> | -619.9 |
| 73 | -0.12 | -219.78 | -7864.10 | 413.9 | -29949.7<< | 1146.2 |

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| BARRA 73 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 73 | 0.03 | -484.85 | -9110.45 | 2680.7 | 21719.2>> | -619.9 |
| 73 | -0.12 | -219.78 | -7864.10 | 413.9 | -29949.7<< | 1146.2 |
| 74 | 0.03 | -512.57 | -10775.43 | 3113.7 | 837.3>> | 427.4 |
| 74 | -0.12 | -222.54 | -9073.26 | 510.9 | -47735.3<< | 1610.6 |

| BARRA 74 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 74 | 0.03 | -512.57 | -10775.43 | 3113.7 | 837.3>> | 427.4 |
| 74 | -0.12 | -222.54 | -9073.26 | 510.9 | -47735.3<< | 1610.6 |
| 75 | 0.03 | -540.28 | -12218.48 | 3545.3 | -23314.8>> | 1533.0 |
| 75 | 0.21 | -357.19 | -16812.44 | 2989.5 | -77219.7<< | -1333.4 |

| BARRA 75 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 75 | 916.82 | -540.28 | -12184.05 | 3409.0 | -23316.5>> | 1793.9 |
| 75 | 1261.88 | -357.19 | -16765.03 | 3044.0 | -77221.1<< | -1108.1 |
| 76 | 630.25 | -5.23 | -8373.48 | 208.4 | -41566.4>> | 26.3 |
| 76 | 1419.52 | -384.97 | -18859.13 | 3512.7 | -114717.8<< | -326.9 |

| BARRA 76 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 76 | 0.00 | -5.23 | -8397.16 | 210.1 | -41566.4>> | 10.6 |
| 76 | 0.05 | -384.97 | -18912.48 | 3478.9 | -114717.7<< | -589.6 |
| 77 | 0.00 | -5.23 | -9468.38 | 231.6 | -60326.9>> | 21.6 |
| 77 | 0.05 | -412.69 | -21007.59 | 3946.5 | -156637.5<< | 247.9 |

| BARRA 77 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 77 | 0.00 | 3.39 | 9393.26 | -210.1 | -60326.9>> | 21.6 |
| 77 | 0.09 | 319.66 | 20675.26 | -3561.4 | -156636.9<< | 247.9 |
| 78 | 0.00 | 3.39 | 8322.02 | -188.5 | -41724.1>> | 14.5 |
| 78 | 0.09 | 291.94 | 18580.11 | -3093.9 | -115414.9<< | -394.2 |

| BARRA 78 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 78 | 624.30 | 3.39 | 8298.57 | -186.9 | -41724.1>> | 28.6 |
| 78 | 1393.94 | 291.94 | 18527.75 | -3114.7 | -115414.9<< | -161.1 |
| 79 | 915.42 | 434.07 | 12168.97 | -3065.6 | -22597.5>> | 1251.6 |
| 79 | 1236.34 | 264.16 | 16432.61 | -2645.9 | -78599.2<< | -746.6 |

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| BARRA 79 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 79 | -0.07 | 434.07 | 12203.38 | -3150.8 | -22597.5>> | 1018.1 |
| 79 | 0.09 | 264.16 | 16479.05 | -2582.4 | -78599.2<< | -943.0 |
| 80 | -0.07 | 406.35 | 10757.03 | -2719.4 | 1546.0>> | 135.6 |
| 80 | -0.12 | -16.85 | 9233.18 | 642.1 | -52316.2<< | 1414.3 |

| BARRA 80 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 80 | -0.07 | 406.35 | 10757.03 | -2719.4 | 1546.1>> | 135.6 |
| 80 | -0.12 | -16.85 | 9233.18 | 641.7 | -52316.2<< | 1414.3 |
| 81 | -0.07 | 378.63 | 9092.83 | -2286.6 | 22380.5>> | -688.3 |
| 81 | -0.12 | -16.85 | 8099.50 | 697.8 | -34123.8<< | 1449.7 |

| BARRA 81 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 81 | 0.11 | 378.63 | 9092.83 | -2276.1 | 22381.5>> | -688.3 |
| 81 | -0.13 | -16.85 | 8099.50 | 681.8 | -34124.1<< | 1449.7 |
| 82 | 0.11 | 339.64 | 9550.05 | -1732.6 | 43004.3>> | -1564.4 |
| 82 | -0.13 | -21.78 | 5672.51 | 869.1 | -19880.9<< | 1514.4 |

| BARRA 82 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 82 | 0.25 | 339.64 | 9550.05 | -1712.2 | 43005.1>> | -1564.4 |
| 82 | -0.13 | -21.78 | 5672.51 | 859.7 | -19881.3<< | 1514.4 |
| 83 | 0.25 | 298.05 | 7638.49 | -1192.6 | 61055.1>> | -2234.0 |
| 83 | -0.02 | 114.70 | 4257.37 | 430.4 | -9285.3<< | 556.5 |

| BARRA 83 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 83 | 0.11 | 298.05 | 7638.49 | -1221.7 | 61054.5>> | -2234.0 |
| 83 | -0.08 | 114.70 | 4257.37 | 434.9 | -9285.0<< | 556.5 |
| 84 | 0.11 | 256.47 | 5726.96 | -702.2 | 75089.6>> | -2816.3 |
| 84 | -0.08 | 111.94 | 3294.72 | 497.4 | -1354.6<< | 318.6 |

| BARRA 84 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 84 | 0.36 | 256.47 | 5726.96 | -630.1 | 75090.3>> | -2816.3 |
| 84 | 0.04 | 111.94 | 3294.72 | 496.1 | -1355.0<< | 318.6 |
| 85 | 0.36 | 214.90 | 3816.27 | -110.8 | 85107.1>> | -3311.0 |
| 85 | 0.04 | 109.15 | 2332.53 | 558.6 | 4551.5<< | 86.5 |

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| BARRA 85 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 85 | 0.25 | 214.90 | 3816.27 | -152.0 | 85107.0>> | -3311.0 |
| 85 | -0.02 | 109.15 | 2332.53 | 556.4 | 4551.7<< | 86.5 |
| 86 | 0.25 | 173.32 | 1904.68 | 367.5 | 91114.7>> | -3718.7 |
| 86 | -0.02 | 106.39 | 1369.90 | 618.9 | 8439.7<< | -139.9 |

| BARRA 86 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 86 | 0.34 | 173.32 | 1904.68 | 410.9 | 91114.5>> | -3718.7 |
| 86 | 0.04 | 106.39 | 1369.90 | 622.9 | 8439.4<< | -139.9 |
| 87 | 0.34 | 131.74 | -6.89 | 930.5 | 93107.4>> | -4039.0 |
| 87 | 0.04 | 103.62 | 407.23 | 685.5 | 10305.6<< | -360.4 |

| BARRA 87 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 87 | 0.34 | 131.74 | -6.89 | 930.5 | 93107.4>> | -4039.0 |
| 87 | 0.04 | 103.62 | 407.23 | 685.5 | 10305.6<< | -360.4 |
| 88 | 0.34 | 90.15 | -1918.47 | 1450.0 | 91085.6>> | -4272.0 |
| 88 | 0.04 | 100.84 | -555.42 | 748.0 | 10150.0<< | -575.1 |

| BARRA 88 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 88 | 0.39 | 90.15 | -1918.47 | 1493.3 | 91084.9>> | -4272.0 |
| 88 | 0.09 | 100.84 | -555.42 | 752.8 | 10149.6<< | -575.1 |
| 89 | 0.39 | 48.57 | -3830.07 | 2012.9 | 85048.2>> | -4417.6 |
| 89 | 0.09 | 98.08 | -1518.07 | 815.4 | 7972.2<< | -784.0 |

| BARRA 89 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 89 | 0.39 | 48.57 | -3830.07 | 2013.5 | 85048.2>> | -4417.6 |
| 89 | 0.09 | 98.08 | -1518.07 | 815.4 | 7972.2<< | -784.0 |
| 90 | 0.39 | 7.00 | -5740.76 | 2532.8 | 75002.4>> | -4475.9 |
| 90 | 0.09 | 95.29 | -2480.25 | 877.9 | 3775.4<< | -986.9 |

| BARRA 90 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 90 | 0.39 | 7.00 | -5740.76 | 2532.2 | 75002.4>> | -4475.9 |
| 90 | 0.09 | 95.29 | -2480.25 | 877.9 | 3775.4<< | -986.9 |
| 91 | 0.39 | -34.59 | -7652.37 | 3051.8 | 60937.9>> | -4446.9 |
| 91 | 0.09 | 92.53 | -3442.92 | 940.5 | -2444.7<< | -1184.2 |

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| BARRA 91 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 91 | 0.36 | -34.59 | -7652.37 | 3080.8 | 60936.4>> | -4446.9 |
| 91 | 0.12 | 92.53 | -3442.92 | 939.3 | -2445.1<< | -1184.2 |
| 92 | 0.36 | -76.17 | -9563.95 | 3600.3 | 42856.9>> | -4330.6 |
| 92 | 0.12 | 89.76 | -4405.58 | 1001.8 | -10687.2<< | -1375.6 |

| BARRA 92 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 92 | 0.36 | -76.17 | -9563.95 | 3600.6 | 42856.9>> | -4330.6 |
| 92 | 0.12 | 89.76 | -4405.58 | 1001.7 | -10687.1<< | -1375.6 |
| 93 | 0.21 | -57.66 | -9899.93 | 3434.6 | 21401.1>> | -2468.7 |
| 93 | 0.04 | 113.64 | -7176.53 | 1596.9 | -21766.3<< | -651.1 |

| BARRA 93 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 93 | 0.21 | -57.66 | -9899.93 | 3434.4 | 21401.1>> | -2468.7 |
| 93 | 0.04 | 113.64 | -7176.53 | 1597.1 | -21766.3<< | -651.1 |
| 94 | 0.25 | -156.41 | -10451.54 | 4227.7 | 345.4>> | -2565.9 |
| 94 | 0.04 | 110.88 | -8385.76 | 1694.2 | -38108.8<< | -886.8 |

| BARRA 94 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 94 | 0.18 | -156.41 | -10451.54 | 4227.8 | 343.3>> | -2565.9 |
| 94 | 0.10 | 110.88 | -8385.76 | 1676.0 | -38109.6<< | -886.8 |
| 95 | -0.19 | -21.62 | -5792.12 | 1168.2 | -14080.6>> | 2104.2 |
| 95 | 0.54 | -4.68 | -16201.23 | 4197.2 | -68242.8<< | -6273.6 |

| BARRA 95 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 95 | 434.31 | -21.62 | -5775.82 | 1007.0 | -14080.6>> | 2185.9 |
| 95 | 1215.86 | -4.68 | -16155.54 | 4656.0 | -68242.8<< | -5941.1 |
| 96 | 514.92 | -21.62 | -6847.11 | 1028.7 | -27374.0>> | 2231.5 |
| 96 | 1373.49 | -32.49 | -18250.77 | 5124.9 | -104476.5<< | -5901.9 |

| BARRA 96 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 96 | -0.20 | -21.62 | -6866.42 | 1179.9 | -27374.6>> | 2148.0 |
| 96 | 0.52 | -32.49 | -18302.38 | 4617.1 | -104478.8<< | -6269.7 |
| 97 | -0.20 | -21.62 | -7937.21 | 1201.5 | -42913.3>> | 2193.5 |
| 97 | 0.52 | -60.20 | -20396.61 | 5084.5 | -145099.3<< | -6172.4 |

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| BARRA 97 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 97 | -0.19 | 66.46 | 8623.93 | 247.4 | -42913.2>> | 2193.5 |
| 97 | 0.52 | 75.40 | 20946.00 | -2363.4 | -145098.5<< | -6172.4 |
| 98 | -0.19 | 66.46 | 7552.62 | 269.0 | -25925.3>> | 2053.9 |
| 98 | 0.52 | 42.01 | 18700.80 | -1813.6 | -103463.2<< | -6295.7 |

| BARRA 98 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 98 | 566.39 | 66.46 | 7531.36 | 422.3 | -25925.3>> | 2027.9 |
| 98 | 1403.37 | 42.01 | 18648.08 | -2280.8 | -103463.2<< | -6141.9 |
| 99 | 499.86 | 66.46 | 6646.86 | 442.9 | -11142.5>> | 1888.0 |
| 99 | 761.58 | -74.90 | 10121.13 | 1204.2 | -68237.5<< | -2249.8 |

| BARRA 99 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 99 | -0.17 | 66.46 | 6665.64 | 294.6 | -11142.7>> | 1915.9 |
| 99 | 0.16 | -74.90 | 10149.75 | 1336.5 | -68238.1<< | -2153.1 |
| 100 | 0.27 | 93.83 | 11069.68 | -1373.8 | 12587.7>> | -3124.0 |
| 100 | 0.16 | -74.90 | 9016.01 | 1392.6 | -48120.6<< | -1995.9 |

| BARRA 100 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 100 | 0.27 | 93.83 | 11069.68 | -1373.9 | 12587.7>> | -3124.0 |
| 100 | 0.16 | -74.90 | 9016.01 | 1393.1 | -48120.6<< | -1995.9 |
| 101 | 0.27 | 60.43 | 9254.64 | -858.7 | 33931.5>> | -3285.9 |
| 101 | 0.16 | -74.90 | 7881.74 | 1449.2 | -30375.2<< | -1838.5 |

| BARRA 101 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 101 | 0.27 | 60.43 | 9254.64 | -858.7 | 33931.5>> | -3285.9 |
| 101 | 0.16 | -74.90 | 7881.74 | 1449.2 | -30375.2<< | -1838.5 |
| 102 | 0.28 | 21.37 | 8653.00 | -351.9 | 53878.0>> | -3502.7 |
| 102 | 0.15 | -69.23 | 5534.04 | 1513.8 | -17427.0<< | -1556.3 |

| BARRA 102 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 102 | 0.30 | 21.37 | 8653.00 | -325.8 | 53878.2>> | -3502.7 |
| 102 | 0.13 | -69.23 | 5534.04 | 1505.4 | -17427.7<< | -1556.3 |
| 103 | 0.30 | -12.01 | 6592.34 | 223.7 | 69880.8>> | -3512.5 |
| 103 | 0.13 | -69.23 | 4646.75 | 1526.9 | -6741.2<< | -1410.9 |

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| BARRA 103 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 103 | 0.30 | -12.01 | 6592.34 | 223.1 | 69880.8>> | -3512.5 |
| 103 | 0.13 | -69.23 | 4646.75 | 1527.0 | -6741.2<< | -1410.9 |
| 104 | 0.30 | -45.41 | 4530.71 | 772.9 | 81561.9>> | -3452.2 |
| 104 | 0.13 | -69.23 | 3759.03 | 1548.6 | 2086.3<< | -1265.5 |

| BARRA 104 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 104 | 0.27 | -45.41 | 4530.71 | 811.7 | 81561.6>> | -3452.2 |
| 104 | 0.09 | -69.23 | 3759.03 | 1549.6 | 2085.5<< | -1265.5 |
| 105 | 0.27 | -78.80 | 2469.07 | 1361.5 | 88912.6>> | -3321.8 |
| 105 | 0.09 | -69.23 | 2871.32 | 1571.1 | 9048.6<< | -1120.1 |

| BARRA 105 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 105 | 0.28 | -78.80 | 2469.07 | 1362.3 | 88912.6>> | -3321.8 |
| 105 | 0.09 | -69.23 | 2871.32 | 1571.2 | 9048.6<< | -1120.1 |
| 106 | 0.28 | -112.19 | 408.37 | 1911.9 | 91933.0>> | -3121.3 |
| 106 | 0.09 | -69.23 | 1984.01 | 1592.8 | 14145.1<< | -974.7 |

| BARRA 106 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 106 | 0.28 | -112.19 | 408.37 | 1911.1 | 91933.0>> | -3121.3 |
| 106 | 0.09 | -69.23 | 1984.01 | 1592.7 | 14145.2<< | -974.7 |
| 107 | 0.28 | -145.58 | -1653.27 | 2460.8 | 90625.6>> | -2850.6 |
| 107 | 0.09 | -69.23 | 1096.29 | 1614.2 | 17380.0<< | -829.3 |

| BARRA 107 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 107 | 0.19 | -145.58 | -1653.27 | 2504.0 | 90624.4>> | -2850.6 |
| 107 | 0.04 | -69.23 | 1096.29 | 1622.5 | 17379.3<< | -829.3 |
| 108 | 0.19 | -178.97 | -3714.97 | 3053.8 | 84986.7>> | -2509.7 |
| 108 | 0.04 | -69.23 | 208.57 | 1644.1 | 18749.6<< | -683.9 |

| BARRA 108 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 108 | 0.19 | -178.97 | -3714.97 | 3054.6 | 84986.7>> | -2509.7 |
| 108 | 0.04 | -69.23 | 208.57 | 1644.3 | 18749.6<< | -683.9 |
| 109 | 0.19 | -212.36 | -5775.65 | 3604.1 | 75024.5>> | -2098.9 |
| 109 | 0.04 | -69.23 | -678.73 | 1665.8 | 18256.0<< | -538.5 |

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| BARRA 109 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 109 | 0.19 | -212.36 | -5775.65 | 3603.4 | 75024.6>> | -2098.9 |
| 109 | 0.04 | -69.23 | -678.73 | 1665.7 | 18256.0<< | -538.5 |
| 110 | 0.19 | -245.75 | -7837.32 | 4153.2 | 60728.4>> | -1617.9 |
| 110 | 0.04 | -69.23 | -1566.48 | 1687.2 | 15898.1<< | -393.1 |

| BARRA 110 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 110 | 0.09 | -245.75 | -7837.32 | 4182.7 | 60726.3>> | -1617.9 |
| 110 | 0.01 | -69.23 | -1566.48 | 1694.9 | 15897.3<< | -393.1 |
| 111 | 0.09 | -279.13 | -9898.05 | 4732.3 | 42109.5>> | -1066.9 |
| 111 | 0.01 | -69.23 | -2453.78 | 1716.5 | 11677.3<< | -247.7 |

| BARRA 111 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 111 | 0.09 | -279.13 | -9898.05 | 4731.9 | 42109.6>> | -1066.9 |
| 111 | 0.03 | -69.23 | -2453.78 | 1716.4 | 11677.3<< | -247.7 |
| 112 | 0.09 | -312.53 | -11959.74 | 5281.7 | 19154.5>> | -445.5 |
| 112 | 0.03 | -69.23 | -3341.52 | 1738.0 | 5591.1<< | -102.3 |

| BARRA 112 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 112 | 1252.51 | -312.53 | -11893.97 | 5308.4 | 19152.0>> | 111.1 |
| 112 | 349.94 | -69.23 | -3323.14 | 1741.8 | 5590.2<< | 80.6 |
| 113 | 868.15 | -9.67 | -8243.75 | -8397.6 | 1.4>> | -884.4 |
| 113 | 992.69 | -382.94 | -9426.76 | 15372.6 | -2.5<< | 1618.9 |

| BARRA 201 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 201 | 8403.83 | 284.32 | -0.01 | 0.0 | 0.2>> | 14659.1 |
| 201 | 9234.34 | 82.55 | 0.00 | 0.0 | -0.1<< | -5258.1 |
| 1 | 6737.57 | 3.70 | 0.00 | 0.0 | 0.0>> | 454.0 |
| 1 | 6338.53 | 3.62 | 0.00 | 0.0 | 0.0<< | 446.7 |

| BARRA 202 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 202 | 21419.61 | -8.74 | 0.00 | 0.0 | 0.0>> | 591.2 |
| 202 | 21161.62 | -8.52 | 0.00 | 0.0 | 0.0<< | 576.7 |
| 17 | 21419.61 | -8.74 | 0.00 | 0.0 | 0.0>> | 753.9 |
| 17 | 21161.62 | -8.52 | 0.00 | 0.0 | 0.0<< | 735.2 |

LAV-Gelida. V.Rierussa. ELU Mext.IPF(t=inf)(1.35*G+0.54*LEV+1.5*SC+0.9*GT)

| BARRA 203 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 203 | 22503.11 | 16.12 | 0.00 | 0.0 | 0.0>> | 1167.2 |
| 203 | 21880.44 | 15.72 | 0.00 | 0.0 | 0.0<< | 1138.3 |
| 37 | 22503.11 | 16.12 | 0.00 | 0.0 | 0.0>> | 842.4 |
| 37 | 21880.44 | 15.72 | 0.00 | 0.0 | 0.0<< | 821.7 |

| BARRA 204 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 204 | 21673.39 | -20.90 | 0.00 | 0.0 | 0.0>> | 5.2 |
| 204 | 21160.51 | -20.39 | 0.00 | 0.0 | 0.0<< | 5.0 |
| 57 | 21673.39 | -20.90 | 0.00 | 0.0 | 0.0>> | 917.0 |
| 57 | 21160.51 | -20.39 | 0.00 | 0.0 | 0.0<< | 894.4 |

| BARRA 205 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 205 | 22622.85 | 16.26 | 0.00 | 0.0 | 0.0>> | 1160.4 |
| 205 | 22000.14 | 15.87 | 0.00 | 0.0 | 0.0<< | 1131.3 |
| 77 | 22622.85 | 16.26 | 0.00 | 0.0 | 0.0>> | 808.7 |
| 77 | 22000.14 | 15.87 | 0.00 | 0.0 | 0.0<< | 788.2 |

| BARRA 206 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 206 | 21592.37 | -13.66 | 0.00 | 0.0 | 0.0>> | 404.4 |
| 206 | 21334.53 | -13.32 | 0.00 | 0.0 | 0.0<< | 394.2 |
| 97 | 21592.37 | -13.66 | 0.00 | 0.0 | 0.0>> | 727.3 |
| 97 | 21334.53 | -13.32 | 0.00 | 0.0 | 0.0<< | 708.9 |

| BARRA 207 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 207 | 6570.93 | 7.19 | 0.00 | 0.0 | 0.0>> | 580.0 |
| 207 | 6171.80 | 7.01 | 0.00 | 0.0 | 0.0<< | 570.2 |
| 113 | 6570.93 | 7.19 | 0.00 | 0.0 | 0.0>> | 496.3 |
| 113 | 6171.80 | 7.01 | 0.00 | 0.0 | 0.0<< | 488.6 |

```
TITULO
=======
LAV-Gelida. V.Rierussa. ELU Mext.EC71-71(t=i)(1.35*G+0.54*LEV+1.45*SC+0.9*GT)

FICHERO DE GEOMETRIA COMPLETA
=============================
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
================================
1
```

| Fich | Num. Nudos | Num. barras | Num. hipotesis | NOMBRE FICHERO |
|---|---|---|---|---|
| 1 | 120 | 119 | 161 | ESFec.TXT |

| Fich | Hipotesis | Caracter | Coeficiente |
|---|---|---|---|
| 1 | 1 | 1 | 1.35 |
| 1 | 2 | 1 | 0.54 |
| 1 | 3 | 1 | 1.35 |
| 1 | 4 | 3 | 1.35 |
| 1 | 5 | 3 | 1.35 |
| 1 | 6 | 3 | 1.35 |
| 1 | 7 | 2 | 0.75 |
| 1 | 8 | 2 | 0.75 |
| 1 | 9 | 2 | 0.75 |
| 1 | 10 | 2 | 0.75 |
| 1 | 11 | 2 | 0.75 |
| 1 | 12 | 2 | 0.75 |
| 1 | 13 | 2 | 0.75 |
| 1 | 14 | 2 | 0.75 |
| 1 | 15 | 2 | 0.75 |
| 1 | 16 | 2 | 0.75 |
| 1 | 17 | 2 | 0.75 |
| 1 | 18 | 2 | 0.75 |
| 1 | 19 | 4 | 1.45 |
| 1 | 20 | 5 | 1.45 |
| 1 | 21 | 4 | 1.45 |
| 1 | 22 | 5 | 1.45 |
| 1 | 23 | 4 | 1.45 |
| 1 | 24 | 5 | 1.45 |
| 1 | 25 | 4 | 1.45 |
| 1 | 26 | 5 | 1.45 |
| 1 | 27 | 4 | 1.45 |
| 1 | 28 | 5 | 1.45 |
| 1 | 29 | 4 | 1.45 |
| 1 | 30 | 5 | 1.45 |
| 1 | 31 | 4 | 1.45 |
| 1 | 32 | 5 | 1.45 |
| 1 | 33 | 4 | 1.45 |
| 1 | 34 | 5 | 1.45 |
| 1 | 35 | 4 | 1.45 |
| 1 | 36 | 5 | 1.45 |
| 1 | 37 | 4 | 1.45 |
| 1 | 38 | 5 | 1.45 |
| 1 | 39 | 4 | 1.45 |
| 1 | 40 | 5 | 1.45 |
| 1 | 41 | 6 | 1.45 |
| 1 | 42 | 7 | 1.45 |
| 1 | 43 | 6 | 1.45 |
| 1 | 44 | 7 | 1.45 |
| 1 | 45 | 6 | 1.45 |
| 1 | 46 | 7 | 1.45 |
| 1 | 47 | 6 | 1.45 |
| 1 | 48 | 7 | 1.45 |
| 1 | 49 | 6 | 1.45 |
| 1 | 50 | 7 | 1.45 |
| 1 | 51 | 6 | 1.45 |
| 1 | 52 | 7 | 1.45 |
| 1 | 53 | 6 | 1.45 |
| 1 | 54 | 7 | 1.45 |
| 1 | 55 | 6 | 1.45 |
| 1 | 56 | 7 | 1.45 |
| 1 | 57 | 6 | 1.45 |
| 1 | 58 | 7 | 1.45 |
| 1 | 59 | 6 | 1.45 |
| 1 | 60 | 7 | 1.45 |
| 1 | 61 | 6 | 1.45 |
| 1 | 62 | 7 | 1.45 |
| 1 | 63 | 6 | 1.45 |
| 1 | 64 | 7 | 1.45 |
| 1 | 65 | 6 | 1.45 |
| 1 | 66 | 7 | 1.45 |
| 1 | 67 | 6 | 1.45 |
| 1 | 68 | 7 | 1.45 |
| 1 | 69 | 6 | 1.45 |
| 1 | 70 | 7 | 1.45 |
| 1 | 71 | 6 | 1.45 |
| 1 | 72 | 7 | 1.45 |
| 1 | 73 | 6 | 1.45 |
| 1 | 74 | 7 | 1.45 |
| 1 | 75 | 6 | 1.45 |
| 1 | 76 | 7 | 1.45 |
| 1 | 77 | 6 | 1.45 |
| 1 | 78 | 7 | 1.45 |
| 1 | 79 | 6 | 1.45 |
| 1 | 80 | 7 | 1.45 |
| 1 | 81 | 6 | 1.45 |
| 1 | 82 | 7 | 1.45 |
| 1 | 83 | 6 | 1.45 |
| 1 | 84 | 7 | 1.45 |
| 1 | 85 | 6 | 1.45 |
| 1 | 86 | 7 | 1.45 |
| 1 | 87 | 6 | 1.45 |
| 1 | 88 | 7 | 1.45 |
| 1 | 89 | 6 | 1.45 |
| 1 | 90 | 7 | 1.45 |
| 1 | 91 | 6 | 1.45 |
| 1 | 92 | 7 | 1.45 |
| 1 | 93 | 6 | 1.45 |
| 1 | 94 | 7 | 1.45 |
| 1 | 95 | 6 | 1.45 |
| 1 | 96 | 7 | 1.45 |
| 1 | 97 | 8 | 0.0 |
| 1 | 98 | 9 | 0.0 |
| 1 | 99 | 8 | 0.0 |
| 1 | 100 | 9 | 0.0 |
| 1 | 101 | 8 | 0.0 |
| 1 | 102 | 9 | 0.0 |
| 1 | 103 | 8 | 0.0 |
| 1 | 104 | 9 | 0.0 |
| 1 | 105 | 8 | 0.0 |
| 1 | 106 | 9 | 0.0 |
| 1 | 107 | 8 | 0.0 |
| 1 | 108 | 9 | 0.0 |
| 1 | 109 | 8 | 0.0 |
| 1 | 110 | 9 | 0.0 |

| | | | |
|---|---|---|---|
| 1 | 111 | 8 | 0.0 |
| 1 | 112 | 9 | 0.0 |
| 1 | 113 | 8 | 0.0 |
| 1 | 114 | 9 | 0.0 |
| 1 | 115 | 8 | 0.0 |
| 1 | 116 | 9 | 0.0 |
| 1 | 117 | 8 | 0.0 |
| 1 | 118 | 9 | 0.0 |
| 1 | 119 | 10 | 0.0 |
| 1 | 120 | 10 | 0.0 |
| 1 | 121 | 10 | 0.0 |
| 1 | 122 | 10 | 0.0 |
| 1 | 123 | 10 | 0.0 |
| 1 | 124 | 10 | 0.0 |
| 1 | 125 | 10 | 0.0 |
| 1 | 126 | 10 | 0.0 |
| 1 | 127 | 10 | 0.0 |
| 1 | 128 | 10 | 0.0 |
| 1 | 129 | 10 | 0.0 |
| 1 | 130 | 10 | 0.0 |
| 1 | 131 | 10 | 0.0 |
| 1 | 132 | 10 | 0.0 |
| 1 | 133 | 10 | 0.0 |
| 1 | 134 | 10 | 0.0 |
| 1 | 135 | 10 | 0.0 |
| 1 | 136 | 10 | 0.0 |
| 1 | 137 | 10 | 0.0 |
| 1 | 138 | 10 | 0.0 |
| 1 | 139 | 10 | 0.0 |
| 1 | 140 | 10 | 0.0 |
| 1 | 141 | 2 | 0.9 |
| 1 | 142 | 1 | 0.0 |
| 1 | 143 | 1 | 0.0 |
| 1 | 144 | 1 | 0.0 |
| 1 | 145 | 1 | 0.0 |
| 1 | 146 | 1 | 0.0 |
| 1 | 147 | 1 | 0.0 |
| 1 | 148 | 1 | 0.0 |
| 1 | 149 | 1 | 0.0 |
| 1 | 150 | 1 | 0.0 |
| 1 | 151 | 1 | 0.0 |
| 1 | 152 | 1 | 0.0 |
| 1 | 153 | 1 | 0.0 |
| 1 | 154 | 1 | 0.0 |
| 1 | 155 | 1 | 0.0 |
| 1 | 156 | 1 | 0.0 |
| 1 | 157 | 1 | 0.0 |
| 1 | 158 | 1 | 0.0 |
| 1 | 159 | 1 | 0.0 |
| 1 | 160 | 1 | 0.0 |
| 1 | 161 | 1 | 0.0 |

PONDERACION DE ESFUERZOS

LAV-Gelida. V.Rierussa. ELU Mext.EC71-71(t=i)(1.35*G+0.54*LEV+1.45*SC+0.9*GT)

| BARRA | | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| | 1 | 919.28 | 21.53 | 8727.53 | 4126.7 | 0.0>> | -434.7 |
| | 1 | 956.37 | 207.53 | 9079.51 | -9886.0 | -0.0<< | 1041.3 |
| | 2 | 1158.03 | 220.52 | 10993.68 | -3552.4 | 18004.3>> | 70.2 |
| | 2 | 375.52 | 35.85 | 3565.10 | -946.0 | 5954.2<< | 47.2 |

| BARRA | | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| | 2 | 0.12 | 220.52 | 11054.49 | -3531.6 | 18006.0>> | -302.3 |
| | 2 | 0.01 | 35.85 | 3584.82 | -942.9 | 5954.7<< | -52.2 |
| | 3 | 0.12 | 193.96 | 9015.59 | -3042.3 | 38939.3>> | -733.2 |
| | 3 | 0.01 | 35.85 | 2697.26 | -921.3 | 12550.8<< | -127.4 |

| BARRA | | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| | 3 | 0.01 | 193.96 | 9015.59 | -3060.9 | 38937.8>> | -733.2 |
| | 3 | 0.00 | 35.85 | 2697.26 | -927.3 | 12550.4<< | -127.4 |
| | 4 | 0.00 | 187.68 | 7387.80 | -2861.8 | 55761.2>> | -1181.7 |
| | 4 | 0.00 | 35.85 | 1809.69 | -905.7 | 17282.7<< | -202.7 |

| BARRA | | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| | 4 | 0.19 | 187.68 | 7387.80 | -2808.7 | 55763.9>> | -1181.7 |
| | 4 | 0.03 | 35.85 | 1809.69 | -889.3 | 17283.5<< | -202.7 |
| | 5 | 0.19 | 169.84 | 5636.64 | -2461.5 | 69439.6>> | -1557.1 |
| | 5 | 0.03 | 35.85 | 922.13 | -867.7 | 20151.9<< | -278.0 |

| BARRA | | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| | 5 | 0.10 | 169.84 | 5636.64 | -2494.5 | 69438.4>> | -1557.1 |
| | 5 | 0.01 | 35.85 | 922.13 | -877.3 | 20151.5<< | -278.0 |
| | 6 | 0.10 | 152.01 | 3885.45 | -2147.3 | 79436.6>> | -1895.1 |
| | 6 | 0.01 | 35.85 | 34.55 | -855.7 | 21156.0<< | -353.3 |

| BARRA | | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| | 6 | 0.19 | 152.01 | 3885.45 | -2109.5 | 79437.6>> | -1895.1 |
| | 6 | 0.03 | 35.85 | 34.55 | -845.6 | 21156.4<< | -353.3 |
| | 7 | 0.19 | 124.66 | 1821.27 | -1620.2 | 85263.9>> | -2180.5 |
| | 7 | 0.03 | 35.85 | -853.01 | -824.0 | 20297.0<< | -428.6 |

LAV-Gelida. V.Rierussa. ELU Mext.EC71-71(t=i)(1.35*G+0.54*LEV+1.45*SC+0.9*GT)

| BARRA 7 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 7 | 0.19 | 124.66 | 1821.27 | -1620.2 | 85263.9>> | -2180.5 |
| 7 | 0.03 | 35.85 | -853.01 | -824.0 | 20297.0<< | -428.6 |
| 8 | 0.19 | 71.53 | -1094.90 | -697.8 | 86272.2>> | -2394.0 |
| 8 | 0.03 | 35.85 | -1740.58 | -802.5 | 17573.7<< | -503.9 |

| BARRA 8 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 8 | 0.20 | 71.53 | -1094.90 | -656.8 | 86272.5>> | -2394.0 |
| 8 | 0.04 | 35.85 | -1740.58 | -794.1 | 17574.1<< | -503.9 |
| 9 | 0.22 | 65.98 | -2492.74 | -569.5 | 83236.8>> | -2584.3 |
| 9 | 0.04 | 35.85 | -2628.15 | -772.5 | 12986.9<< | -579.1 |

| BARRA 9 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 9 | 0.22 | 65.98 | -2492.74 | -569.5 | 83236.8>> | -2584.3 |
| 9 | 0.04 | 35.85 | -2628.15 | -772.5 | 12986.9<< | -579.1 |
| 10 | 0.22 | 39.39 | -4531.65 | -80.2 | 75896.3>> | -2696.1 |
| 10 | 0.04 | 35.85 | -3515.72 | -751.0 | 6535.8<< | -654.4 |

| BARRA 10 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 10 | 0.23 | 39.39 | -4531.65 | -44.1 | 75896.3>> | -2696.1 |
| 10 | 0.07 | 35.85 | -3515.72 | -747.9 | 6536.2<< | -654.4 |
| 11 | 0.23 | 6.80 | -6769.85 | 543.3 | 63764.7>> | -2736.5 |
| 11 | 0.07 | 35.85 | -4403.28 | -726.3 | -1778.8<< | -729.7 |

| BARRA 11 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 11 | 0.23 | 6.80 | -6769.85 | 513.0 | 63765.0>> | -2736.5 |
| 11 | 0.04 | 35.85 | -4403.28 | -725.4 | -1779.2<< | -729.7 |
| 12 | 0.23 | -11.03 | -8521.04 | 860.2 | 47709.5>> | -2732.1 |
| 12 | 0.04 | 35.85 | -5290.87 | -703.8 | -11958.0<< | -805.0 |

| BARRA 12 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 12 | 0.22 | -11.03 | -8521.04 | 905.6 | 47708.7>> | -2732.1 |
| 12 | 0.10 | 35.85 | -5290.87 | -715.2 | -11957.4<< | -805.0 |
| 13 | 0.22 | -31.63 | -8809.30 | 1201.4 | 28440.2>> | -2624.9 |
| 13 | 0.10 | 38.62 | -7641.32 | -642.3 | -24464.7<< | -945.6 |

LAV-Gelida. V.Rierussa. ELU Mext.EC71-71(t=i)(1.35*G+0.54*LEV+1.45*SC+0.9*GT)

| BARRA 13 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 13 | 0.23 | -31.63 | -8809.30 | 1187.9 | 28440.8>> | -2624.9 |
| 13 | 0.07 | 38.62 | -7641.32 | -630.6 | -24465.0<< | -945.6 |
| 14 | 0.23 | -9.59 | -9167.59 | 790.9 | 9900.5>> | -2724.1 |
| 14 | 0.07 | 38.62 | -8775.42 | -574.5 | -41702.6<< | -1026.7 |

| BARRA 14 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 14 | 0.25 | -9.59 | -9167.59 | 795.6 | 9900.1>> | -2724.1 |
| 14 | 0.10 | 38.62 | -8775.42 | -594.4 | -41702.4<< | -1026.7 |
| 15 | -0.06 | -36.33 | -6717.61 | -346.9 | -5793.2>> | 840.5 |
| 15 | 0.10 | 38.62 | -9909.53 | -538.3 | -61321.6<< | -1107.8 |

| BARRA 15 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 15 | 503.96 | -36.33 | -6698.68 | -409.0 | -5793.2>> | 812.1 |
| 15 | 743.58 | 38.62 | -9881.59 | -453.6 | -61321.6<< | -1145.0 |
| 16 | 554.96 | -56.91 | -7377.99 | -209.9 | -21175.8>> | 1747.8 |
| 16 | 1204.30 | -30.59 | -16003.15 | 1437.2 | -92040.7<< | -3013.6 |

| BARRA 16 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 16 | -0.17 | -56.91 | -7398.82 | -88.3 | -21175.8>> | 1758.6 |
| 16 | 0.25 | -30.57 | -16048.41 | 1163.2 | -92041.3<< | -3112.9 |
| 17 | -0.17 | -56.91 | -8469.96 | -66.7 | -37838.1>> | 1878.1 |
| 17 | 0.25 | -48.44 | -17983.14 | 1510.4 | -127774.5<< | -3030.0 |

| BARRA 17 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 17 | -0.16 | 39.39 | 7989.23 | -866.0 | -37838.0>> | 1878.1 |
| 17 | 0.25 | 138.93 | 19415.19 | -3884.4 | -127774.3<< | -3030.0 |
| 18 | -0.16 | 39.39 | 6918.09 | -844.4 | -22185.2>> | 1795.4 |
| 18 | 0.27 | 85.66 | 16566.89 | -3070.9 | -89544.3<< | -3331.1 |

| BARRA 18 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 18 | 518.90 | 39.39 | 6898.60 | -717.9 | -22184.8>> | 1854.5 |
| 18 | 1243.26 | 85.66 | 16520.17 | -3354.7 | -89542.8<< | -3088.1 |
| 19 | 465.36 | 23.76 | 6186.02 | -714.3 | -7530.2>> | 1003.9 |
| 19 | 1097.67 | 67.76 | 14585.42 | -3006.5 | -56789.4<< | -3249.7 |

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| BARRA 19 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 19 | -0.07 | 23.76 | 6203.52 | -784.0 | -7530.6>> | 947.5 |
| 19 | 0.29 | 67.76 | 14626.68 | -2727.2 | -56790.8<< | -3466.1 |
| 20 | 0.03 | 133.32 | 9394.24 | -2785.4 | 8430.3>> | -955.8 |
| 20 | 0.19 | -68.36 | 8509.46 | -214.9 | -31791.3<< | -1735.7 |

| BARRA 20 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 20 | 0.14 | 133.32 | 9394.24 | -2777.4 | 8432.9>> | -955.8 |
| 20 | 0.10 | -68.36 | 8509.46 | -245.2 | -31791.1<< | -1735.7 |
| 21 | 0.16 | 161.21 | 9076.68 | -2995.5 | 26733.3>> | -1117.9 |
| 21 | 0.10 | -68.36 | 7375.37 | -189.1 | -15111.9<< | -1592.2 |

| BARRA 21 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 21 | 0.09 | 161.21 | 9076.68 | -3008.3 | 26731.8>> | -1117.9 |
| 21 | 0.16 | -68.36 | 7375.37 | -181.9 | -15112.0<< | -1592.2 |
| 22 | 0.22 | 103.24 | 9657.44 | -2383.2 | 47582.1>> | -2803.6 |
| 22 | 0.16 | -64.53 | 4988.31 | 98.7 | -3073.6<< | -1400.3 |

| BARRA 22 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 22 | 0.25 | 103.24 | 9657.44 | -2360.6 | 47583.2>> | -2803.6 |
| 22 | 0.10 | -64.53 | 4988.31 | 97.2 | -3073.7<< | -1400.3 |
| 23 | 0.25 | 85.40 | 7906.24 | -2013.4 | 66025.2>> | -3001.7 |
| 23 | 0.10 | -64.53 | 4100.71 | 118.8 | 6469.9<< | -1264.7 |

| BARRA 23 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 23 | 0.25 | 85.40 | 7906.24 | -2013.4 | 66025.2>> | -3001.7 |
| 23 | 0.10 | -64.53 | 4100.71 | 118.8 | 6469.9<< | -1264.7 |
| 24 | 0.25 | 50.51 | 5592.21 | -1524.1 | 80685.0>> | -3159.1 |
| 24 | 0.10 | -64.53 | 3213.16 | 140.4 | 14149.5<< | -1129.2 |

| BARRA 24 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 24 | 0.28 | 50.51 | 5592.21 | -1485.7 | 80685.7>> | -3159.1 |
| 24 | 0.07 | -64.53 | 3213.16 | 147.1 | 14149.5<< | -1129.2 |
| 25 | 0.28 | 23.92 | 3553.29 | -996.4 | 90490.3>> | -3243.4 |
| 25 | 0.07 | -64.53 | 2325.58 | 168.7 | 19965.2<< | -993.7 |

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| BARRA 25 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 25 | 0.28 | 23.92 | 3553.29 | -996.4 | 90490.3>> | -3243.4 |
| 25 | 0.07 | -64.53 | 2325.58 | 168.7 | 19965.2<< | -993.7 |
| 26 | 0.28 | 13.19 | 1888.92 | -735.2 | 95776.5>> | -3241.9 |
| 26 | -0.09 | 25.47 | 50.73 | -539.8 | 23754.7<< | 895.4 |

| BARRA 26 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 26 | 0.28 | 13.19 | 1888.92 | -689.6 | 95776.9>> | -3241.9 |
| 26 | -0.07 | 25.47 | 50.73 | -528.5 | 23755.0<< | 895.4 |
| 27 | 0.28 | -13.37 | -150.01 | -200.3 | 97804.5>> | -3247.9 |
| 27 | -0.09 | 39.52 | -1182.25 | -615.9 | 22544.3<< | 1053.3 |

| BARRA 27 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 27 | 0.28 | -13.37 | -150.01 | -246.8 | 97804.4>> | -3247.9 |
| 27 | -0.10 | 39.52 | -1182.25 | -626.6 | 22544.0<< | 1053.3 |
| 28 | 0.28 | -39.92 | -2188.92 | 242.5 | 95111.6>> | -3184.7 |
| 28 | -0.10 | 39.52 | -2069.83 | -605.0 | 19129.3<< | 970.4 |

| BARRA 28 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 28 | 0.23 | -39.92 | -2188.92 | 333.0 | 95111.4>> | -3184.7 |
| 28 | -0.07 | 39.52 | -2069.83 | -586.8 | 19129.9<< | 970.4 |
| 29 | 0.25 | -50.73 | -3854.09 | 594.4 | 89199.0>> | -3099.5 |
| 29 | -0.07 | 39.52 | -2957.40 | -565.2 | 13851.2<< | 887.4 |

| BARRA 29 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 29 | 0.28 | -50.73 | -3854.09 | 551.9 | 89199.3>> | -3099.5 |
| 29 | -0.09 | 39.52 | -2957.40 | -571.8 | 13851.0<< | 887.4 |
| 30 | 0.28 | -77.28 | -5893.01 | 1041.2 | 78727.8>> | -2958.0 |
| 30 | -0.09 | 39.52 | -3844.99 | -550.2 | 6708.4<< | 804.5 |

| BARRA 30 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 30 | 0.25 | -77.28 | -5893.01 | 1078.7 | 78727.3>> | -2958.0 |
| 30 | -0.07 | 39.52 | -3844.99 | -547.0 | 6708.6<< | 804.5 |
| 31 | 0.25 | -112.50 | -8218.27 | 1709.4 | 63389.4>> | -2742.9 |
| 31 | -0.07 | 39.52 | -4732.56 | -525.4 | -2297.9<< | 721.5 |

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| BARRA 31 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 31 | 0.25 | -112.50 | -8218.27 | 1709.4 | 63389.4>> | -2742.9 |
| 31 | -0.07 | 39.52 | -4732.56 | -525.4 | -2297.9<< | 721.5 |
| 32 | 0.25 | -130.36 | -9969.49 | 2056.6 | 44292.0>> | -2487.8 |
| 32 | -0.07 | 39.52 | -5620.14 | -503.9 | -13168.4<< | 638.6 |

| BARRA 32 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 32 | 0.19 | -130.36 | -9969.49 | 2077.6 | 44291.0>> | -2487.8 |
| 32 | -0.03 | 39.52 | -5620.14 | -510.2 | -13168.1<< | 638.6 |
| 33 | 0.19 | -198.08 | -9629.44 | 2441.6 | 23119.9>> | -2186.7 |
| 33 | -0.03 | 35.70 | -8044.14 | -320.6 | -27290.9<< | 595.6 |

| BARRA 33 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 33 | 0.19 | -198.08 | -9629.44 | 2441.6 | 23119.9>> | -2186.7 |
| 33 | -0.03 | 35.70 | -8044.14 | -320.6 | -27290.9<< | 595.6 |
| 34 | 0.19 | -169.31 | -9949.43 | 1961.2 | 3513.6>> | -1875.0 |
| 34 | -0.03 | 35.70 | -9178.26 | -264.5 | -45374.7<< | 520.7 |

| BARRA 34 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 34 | 0.19 | -169.31 | -9949.43 | 1961.2 | 3513.6>> | -1875.0 |
| 34 | -0.03 | 35.70 | -9178.26 | -264.5 | -45374.7<< | 520.7 |
| 35 | -0.15 | -28.84 | -7202.35 | -295.7 | -11933.0>> | 1814.8 |
| 35 | 0.13 | -113.70 | -15202.58 | 2056.6 | -70216.6<< | -918.1 |

| BARRA 35 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 35 | 540.19 | -28.84 | -7182.07 | -436.7 | -11932.9>> | 1787.1 |
| 35 | 1140.61 | -113.70 | -15159.72 | 2086.4 | -70217.6<< | -763.8 |
| 36 | 605.81 | -43.96 | -8055.17 | -275.3 | -28745.6>> | 2645.3 |
| 36 | 1286.18 | -131.59 | -17094.51 | 2434.6 | -104180.9<< | -505.5 |

| BARRA 36 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 36 | -0.22 | -43.96 | -8077.92 | -76.2 | -28745.6>> | 2658.5 |
| 36 | 0.07 | -131.59 | -17142.83 | 2389.5 | -104180.9<< | -686.7 |
| 37 | -0.22 | -43.96 | -9148.56 | -54.6 | -46825.1>> | 2750.8 |
| 37 | 0.07 | -149.42 | -19076.68 | 2736.5 | -142194.0<< | -391.7 |

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| BARRA 37 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 37 | -0.19 | 164.10 | 8383.56 | -651.2 | -46824.9>> | 2750.8 |
| 37 | 0.13 | 298.99 | 19972.23 | -3384.4 | -142193.5<< | -391.7 |
| 38 | -0.17 | 144.50 | 7452.97 | -563.7 | -30262.5>> | 2188.2 |
| 38 | 0.13 | 238.44 | 17159.07 | -2557.7 | -103956.6<< | -1024.0 |

| BARRA 38 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 38 | 559.01 | 144.50 | 7431.98 | -398.0 | -30262.5>> | 2224.3 |
| 38 | 1287.49 | 238.44 | 17110.73 | -2627.3 | -103956.6<< | -829.2 |
| 39 | 541.64 | 11.72 | 7199.28 | -103.7 | -13785.6>> | 83.4 |
| 39 | 1141.90 | 220.55 | 15175.93 | -2279.1 | -69959.1<< | -1312.5 |

| BARRA 39 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 39 | -0.00 | 11.72 | 7219.62 | -109.7 | -13785.6>> | 75.3 |
| 39 | 0.13 | 220.55 | 15218.81 | -2174.2 | -69959.1<< | -1479.7 |
| 40 | -0.06 | 345.67 | 9766.34 | -2367.3 | 2907.2>> | -221.4 |
| 40 | 0.07 | -8.70 | 9114.17 | 155.4 | -44494.8<< | -620.0 |

| BARRA 40 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 40 | 0.12 | 345.67 | 9766.34 | -2366.0 | 2908.3>> | -221.4 |
| 40 | 0.04 | -8.70 | 9114.17 | 134.1 | -44494.8<< | -620.0 |
| 41 | 0.10 | 376.60 | 9443.23 | -2581.8 | 22108.0>> | -857.2 |
| 41 | 0.04 | -8.70 | 7980.05 | 190.2 | -26545.4<< | -601.7 |

| BARRA 41 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 41 | 0.10 | 376.60 | 9443.23 | -2581.8 | 22108.0>> | -857.2 |
| 41 | 0.04 | -8.70 | 7980.05 | 190.2 | -26545.4<< | -601.7 |
| 42 | 0.19 | 229.69 | 10025.56 | -2101.9 | 43444.4>> | -2560.1 |
| 42 | 0.04 | -17.17 | 5537.35 | 425.2 | -12570.2<< | -566.5 |

| BARRA 42 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 42 | 0.19 | 229.69 | 10025.56 | -2101.9 | 43444.4>> | -2560.1 |
| 42 | 0.04 | -17.17 | 5537.35 | 425.2 | -12570.2<< | -566.5 |
| 43 | 0.19 | 211.85 | 8274.34 | -1754.7 | 62659.8>> | -3023.7 |
| 43 | 0.04 | -17.17 | 4649.75 | 446.8 | -1873.4<< | -530.4 |

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| BARRA 43 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 43 | 0.29 | 211.85 | 8274.34 | -1724.8 | 62660.7>> | -3023.7 |
| 43 | 0.03 | -17.17 | 4649.75 | 445.9 | -1873.6<< | -530.4 |
| 44 | 0.29 | 177.03 | 5963.10 | -1235.6 | 78088.2>> | -3446.5 |
| 44 | 0.03 | -17.17 | 3762.17 | 467.5 | 6959.1<< | -494.3 |

| BARRA 44 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 44 | 0.29 | 177.03 | 5963.10 | -1235.6 | 78088.2>> | -3446.5 |
| 44 | 0.03 | -17.17 | 3762.17 | 467.5 | 6959.1<< | -494.3 |
| 45 | 0.29 | 150.48 | 3924.14 | -746.2 | 88663.0>> | -3796.2 |
| 45 | 0.03 | -17.17 | 2874.56 | 489.1 | 13927.9<< | -458.2 |

| BARRA 45 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 45 | 0.36 | 150.48 | 3924.14 | -704.0 | 88663.4>> | -3796.2 |
| 45 | 0.04 | -17.17 | 2874.56 | 495.7 | 13927.7<< | -458.2 |
| 46 | 0.39 | 140.29 | 2261.23 | -443.0 | 94718.5>> | -4077.7 |
| 46 | 0.04 | -17.17 | 1986.96 | 517.3 | 19032.5<< | -422.1 |

| BARRA 46 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 46 | 0.39 | 140.29 | 2261.23 | -443.0 | 94718.5>> | -4077.7 |
| 46 | 0.04 | -17.17 | 1986.96 | 517.3 | 19032.5<< | -422.1 |
| 47 | 0.39 | 113.74 | 222.28 | 46.4 | 97519.2>> | -4350.2 |
| 47 | 0.04 | -17.17 | 1099.36 | 538.8 | 22273.3<< | -386.0 |

| BARRA 47 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 47 | 0.39 | 113.74 | 222.28 | 46.4 | 97519.2>> | -4350.2 |
| 47 | 0.04 | -17.17 | 1099.36 | 538.8 | 22273.3<< | -386.0 |
| 48 | 0.39 | 87.17 | -1816.66 | 535.7 | 95599.4>> | -4553.7 |
| 48 | 0.07 | 163.83 | -1722.42 | -365.8 | 19612.0<< | -1034.0 |

| BARRA 48 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 48 | 0.39 | 87.17 | -1816.66 | 535.7 | 95599.4>> | -4553.7 |
| 48 | 0.07 | 163.83 | -1722.42 | -365.8 | 19612.0<< | -1034.0 |
| 49 | 0.36 | 76.89 | -3479.77 | 796.6 | 90462.7>> | -4755.4 |
| 49 | 0.07 | 163.83 | -2610.02 | -344.2 | 15062.8<< | -1378.0 |

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| BARRA 49 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 49 | 0.41 | 76.89 | -3479.77 | 839.7 | 90462.3>> | -4755.4 |
| 49 | 0.13 | 163.83 | -2610.02 | -337.1 | 15062.9<< | -1378.0 |
| 50 | 0.41 | 50.33 | -5518.70 | 1329.0 | 80767.9>> | -4881.5 |
| 50 | 0.13 | 163.83 | -3497.62 | -315.5 | 8649.6<< | -1722.0 |

| BARRA 50 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 50 | 0.43 | 50.33 | -5518.70 | 1367.5 | 80767.2>> | -4881.5 |
| 50 | 0.22 | 163.83 | -3497.62 | -311.4 | 8649.8<< | -1722.0 |
| 51 | 0.43 | 15.01 | -7846.85 | 1999.6 | 66203.3>> | -4934.0 |
| 51 | 0.22 | 163.83 | -4385.21 | -289.8 | 372.4<< | -2066.1 |

| BARRA 51 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 51 | 0.43 | 15.01 | -7846.85 | 1999.6 | 66203.3>> | -4934.0 |
| 51 | 0.22 | 163.83 | -4385.21 | -289.8 | 372.4<< | -2066.1 |
| 52 | 0.43 | -2.84 | -9598.10 | 2346.8 | 47885.4>> | -4946.8 |
| 52 | 0.22 | 163.83 | -5272.83 | -268.2 | -9769.0<< | -2410.1 |

| BARRA 52 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 52 | 0.43 | -2.84 | -9598.10 | 2347.0 | 47885.3>> | -4946.8 |
| 52 | 0.22 | 163.83 | -5272.83 | -268.3 | -9769.0<< | -2410.1 |
| 53 | 0.41 | -48.84 | -9063.21 | 2934.4 | 26887.1>> | -4731.3 |
| 53 | 0.23 | 172.30 | -7654.98 | -32.8 | -22481.1<< | -2966.7 |

| BARRA 53 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 53 | 0.42 | -48.84 | -9063.21 | 2934.3 | 26887.1>> | -4731.3 |
| 53 | 0.23 | 172.30 | -7654.98 | -32.8 | -22481.1<< | -2966.7 |
| 54 | 0.43 | -19.59 | -9372.54 | 2451.5 | 8543.7>> | -4781.7 |
| 54 | 0.23 | 172.30 | -8789.15 | 23.4 | -39748.2<< | -3328.5 |

| BARRA 54 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 54 | 0.42 | -19.59 | -9372.54 | 2455.6 | 8542.5>> | -4781.7 |
| 54 | 0.30 | 172.30 | -8789.15 | 4.4 | -39748.2<< | -3328.5 |
| 55 | 0.07 | 46.24 | -6844.28 | -116.7 | -6917.0>> | -682.5 |
| 55 | 0.63 | 116.03 | -14826.02 | 2509.8 | -63391.9<< | -7437.8 |

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| BARRA 55 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 55 | 513.54 | 46.24 | -6824.99 | -65.2 | -6917.0>> | -689.3 |
| 55 | 1112.92 | 116.03 | -14784.20 | 3060.7 | -63391.9<< | -7228.5 |
| 56 | 579.77 | 24.75 | -7706.60 | 83.1 | -23114.6>> | 161.3 |
| 56 | 1258.48 | 98.13 | -16719.01 | 3408.9 | -96565.3<< | -7454.1 |

| BARRA 56 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 56 | -0.02 | 24.75 | -7728.38 | 83.9 | -23114.6>> | 154.7 |
| 56 | 0.66 | 98.13 | -16766.32 | 2794.1 | -96566.6<< | -7688.8 |
| 57 | -0.00 | -16.89 | -8082.36 | 772.8 | -40468.3>> | -35.9 |
| 57 | 0.66 | 80.28 | -18701.16 | 3141.3 | -133809.4<< | -7876.1 |

| BARRA 57 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 57 | -0.00 | -21.57 | 8674.71 | -121.4 | -40468.2>> | -35.9 |
| 57 | 0.66 | -24.23 | 19447.31 | -3721.0 | -133808.8<< | -7876.1 |
| 58 | -0.00 | -21.57 | 7603.51 | -99.8 | -23375.2>> | 9.4 |
| 58 | 0.66 | -77.82 | 16641.16 | -2882.8 | -96822.4<< | -7739.1 |

| BARRA 58 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 58 | 570.43 | -21.57 | 7582.10 | -98.8 | -23375.2>> | 16.9 |
| 58 | 1249.13 | -77.82 | 16594.22 | -3455.3 | -96822.4<< | -7501.0 |
| 59 | 505.85 | -40.48 | 6722.71 | -199.6 | -7497.7>> | -787.0 |
| 59 | 1103.56 | -95.72 | 14659.38 | -3107.1 | -63911.7<< | -7318.3 |

| BARRA 59 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 59 | 0.06 | -40.48 | 6741.70 | -143.5 | -7497.7>> | -799.7 |
| 59 | 0.62 | -95.72 | 14700.85 | -2579.8 | -63910.5<< | -7530.8 |
| 60 | 0.39 | 36.83 | 9271.03 | -2801.2 | 7650.3>> | -4700.5 |
| 60 | 0.29 | -161.47 | 8661.37 | -32.6 | -40504.3<< | -3443.8 |

| BARRA 60 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 60 | 0.39 | 36.83 | 9271.03 | -2801.2 | 7650.3>> | -4700.5 |
| 60 | 0.29 | -161.47 | 8661.37 | -32.6 | -40504.3<< | -3443.8 |
| 61 | 0.39 | 64.90 | 8943.04 | -3020.2 | 25828.9>> | -4698.3 |
| 61 | 0.29 | -161.47 | 7527.21 | 23.5 | -23505.4<< | -3104.7 |

LAV-Gelida. V.Rierussa. ELU Mext.EC71-71(t=i)(1.35*G+0.54*LEV+1.45*SC+0.9*GT)

| BARRA 61 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 61 | 0.42 | 64.89 | 8943.04 | -3007.9 | 25830.4>> | -4698.3 |
| 61 | 0.20 | -161.47 | 7527.21 | 12.3 | -23505.4<< | -3104.7 |
| 62 | 0.42 | 15.79 | 9477.43 | -2362.8 | 46591.9>> | -5035.9 |
| 62 | 0.19 | -154.17 | 5145.64 | 255.4 | -11046.5<< | -2558.2 |

| BARRA 62 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 62 | 0.42 | 15.79 | 9477.43 | -2362.5 | 46591.9>> | -5035.9 |
| 62 | 0.19 | -154.17 | 5145.64 | 255.4 | -11046.5<< | -2558.2 |
| 63 | 0.42 | -2.04 | 7727.01 | -2015.5 | 64649.1>> | -5050.4 |
| 63 | 0.19 | -154.17 | 4258.44 | 276.9 | -1176.3<< | -2234.6 |

| BARRA 63 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 63 | 0.42 | -2.04 | 7727.01 | -2015.8 | 64649.1>> | -5050.4 |
| 63 | 0.19 | -154.17 | 4258.44 | 276.9 | -1176.3<< | -2234.6 |
| 64 | 0.42 | -36.75 | 5418.49 | -1526.3 | 78921.8>> | -5023.9 |
| 64 | 0.19 | -154.17 | 3370.82 | 298.5 | 6834.9<< | -1910.8 |

| BARRA 64 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 64 | 0.42 | -36.75 | 5418.49 | -1488.8 | 78922.5>> | -5023.9 |
| 64 | 0.13 | -154.17 | 3370.82 | 301.8 | 6834.8<< | -1910.8 |
| 65 | 0.42 | -63.32 | 3379.48 | -999.5 | 88345.2>> | -4924.4 |
| 65 | 0.13 | -154.17 | 2483.19 | 323.3 | 12982.0<< | -1587.1 |

| BARRA 65 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 65 | 0.42 | -63.32 | 3379.48 | -999.5 | 88345.2>> | -4924.4 |
| 65 | 0.13 | -154.17 | 2483.19 | 323.3 | 12982.0<< | -1587.1 |
| 66 | 0.41 | -73.63 | 1716.47 | -738.9 | 93242.5>> | -4749.1 |
| 66 | 0.13 | -154.17 | 1595.57 | 344.9 | 17265.0<< | -1263.3 |

| BARRA 66 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 66 | 0.41 | -73.63 | 1716.47 | -738.9 | 93242.5>> | -4749.1 |
| 66 | 0.13 | -154.17 | 1595.57 | 344.9 | 17265.0<< | -1263.3 |
| 67 | 0.41 | -100.18 | -322.51 | -249.6 | 94890.4>> | -4572.2 |
| 67 | 0.01 | 22.57 | -1226.13 | -605.4 | 19613.4<< | -360.0 |

LAV-Gelida. V.Rierussa. ELU Mext.EC71-71(t=i)(1.35*G+0.54*LEV+1.45*SC+0.9*GT)

| BARRA 67 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 67 | 0.35 | -100.18 | -322.51 | -204.4 | 94890.5>> | -4572.2 |
| 67 | 0.04 | 22.57 | -1226.13 | -596.1 | 19613.7<< | -360.0 |
| 68 | 0.35 | -126.74 | -2361.51 | 284.9 | 91817.6>> | -4326.2 |
| 68 | 0.04 | 22.57 | -2113.76 | -574.5 | 16106.6<< | -407.4 |

| BARRA 68 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 68 | 0.35 | -126.74 | -2361.51 | 284.9 | 91817.6>> | -4326.2 |
| 68 | 0.04 | 22.57 | -2113.76 | -574.5 | 16106.6<< | -407.4 |
| 69 | 0.36 | -136.96 | -4024.39 | 545.6 | 85524.7>> | -4070.5 |
| 69 | 0.04 | 22.57 | -3001.38 | -552.9 | 10735.3<< | -454.7 |

| BARRA 69 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 69 | 0.36 | -136.96 | -4024.39 | 546.1 | 85524.7>> | -4070.5 |
| 69 | 0.04 | 22.57 | -3001.38 | -552.8 | 10735.3<< | -454.7 |
| 70 | 0.36 | -163.53 | -6062.85 | 1035.4 | 74683.4>> | -3747.4 |
| 70 | 0.04 | 22.57 | -3888.60 | -531.3 | 3503.8<< | -502.0 |

| BARRA 70 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 70 | 0.30 | -163.53 | -6062.85 | 1070.5 | 74682.9>> | -3747.4 |
| 70 | 0.06 | 22.57 | -3888.60 | -529.7 | 3504.0<< | -502.0 |
| 71 | 0.30 | -198.92 | -8393.86 | 1703.9 | 58963.8>> | -3350.5 |
| 71 | 0.06 | 22.57 | -4776.22 | -508.1 | -5594.7<< | -549.4 |

| BARRA 71 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 71 | 0.30 | -198.92 | -8393.86 | 1703.9 | 58963.8>> | -3350.5 |
| 71 | 0.06 | 22.57 | -4776.22 | -508.1 | -5594.7<< | -549.4 |
| 72 | 0.30 | -216.79 | -10145.16 | 2051.2 | 39496.4>> | -2914.0 |
| 72 | 0.06 | 22.57 | -5663.86 | -486.5 | -16557.7<< | -596.8 |

| BARRA 72 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 72 | 0.19 | -216.79 | -10145.16 | 2070.0 | 39495.4>> | -2914.0 |
| 72 | 0.06 | 22.57 | -5663.86 | -494.4 | -16557.4<< | -596.8 |
| 73 | 0.09 | -356.85 | -9563.45 | 2533.4 | 17930.5>> | -1506.9 |
| 73 | 0.06 | 15.27 | -8107.56 | -268.5 | -30831.5<< | -683.0 |

CASOS DE CARGA RIERUSSA

Fichero 1: Cargas según IPF

CASo # 1 PESO PROPIO
CASo # 2 LEVANTAMIENTO DE APOYOS
CASo # 3 CARGA PERMANENTE CARACTERISTICA
CASo # 4 VALOR MAXIMO DEL BALASTO
CASo # 5 VALOR MINIMO DEL BALASTO
CASo # 6 DESBALASTADO 50 POR CIENTO
CASo # 7 SC PASEOS VANO 1 DERECHA
CASo # 8 SC PASEOS VANO 2 DERECHA
CASo # 9 SC PASEOS VANO 3 DERECHA
CASo # 10 SC PASEOS VANO 4 DERECHA
CASo # 11 SC PASEOS VANO 5 DERECHA
CASo # 12 SC PASEOS VANO 6 DERECHA
CASo # 13 SC PASEOS VANO 1 IZQUIERDA
CASo # 14 SC PASEOS VANO 2 IZQUIERDA
CASo # 15 SC PASEOS VANO 3 IZQUIERDA
CASo # 16 SC PASEOS VANO 4 IZQUIERDA
CASo # 17 SC PASEOS VANO 5 IZQUIERDA
CASo # 18 SC PASEOS VANO 6 IZQUIERDA
CASo # 19 TREN B POS. 1 DERECHA
CASo # 20 TREN B POS. 1 IZQUIERDA
CASo # 21 TREN B POS. 2 DERECHA
CASo # 22 TREN B POS. 2 IZQUIERDA
CASo # 23 TREN B POS. 3 DERECHA
CASo # 24 TREN B POS. 3 IZQUIERDA
CASo # 25 TREN B POS. 4 DERECHA
CASo # 26 TREN B POS. 4 IZQUIERDA
CASo # 27 TREN B POS. 5 DERECHA
CASo # 28 TREN B POS. 5 IZQUIERDA
CASo # 29 TREN B POS. 6 DERECHA
CASo # 30 TREN B POS. 6 IZQUIERDA
CASo # 31 TREN B POS. 7 DERECHA
CASo # 32 TREN B POS. 7 IZQUIERDA
CASo # 33 TREN B POS. 8 DERECHA
CASo # 34 TREN B POS. 8 IZQUIERDA
CASo # 35 TREN B POS. 9 DERECHA
CASo # 36 TREN B POS. 9 IZQUIERDA
CASo # 37 GRAD.(5.8 C)
CASo # 38 LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Superior. Est B
CASo # 39 LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Superior 8. Est B
CASo # 40 LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Superior 9. Est B
CASo # 41 LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Inferior. Est B
CASo # 42 LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Inferior 5. Est B
CASo # 43 LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Inferior 6. Est B
CASo # 44 LAV GELIDA. V-Riera de la Rierussa. Tendon 1 (Servicio). Est C
CASo # 45 LAV GELIDA. V-Riera de la Rierussa. Tendon 2 (Servicio). Est B
CASo # 46 LAV GELIDA. V-Riera de la Rierussa. Tendon 3 (Servicio). Est C
CASo # 47 LAV GELIDA. V-Riera de la Rierussa. Tendon 4 (Servicio). Est C
CASo # 48 LAV GELIDA. V-Riera de la Rierussa. Tendon 5 (Servicio). Est C
CASo # 49 LAV GELIDA. V-Riera de la Rierussa. Tendon 6 (Servicio). Est C
CASo # 50 LAV GELIDA. V-Riera de la Rierussa. Tendon 7 (Servicio). Est C
CASo # 51 LAV GELIDA. V-Riera de la Rierussa. Tendon 8 (Servicio). Est C
CASo # 52 LAV GELIDA. V-Riera de la Rierussa. Tendon 9 (Servicio). Est C
CASo # 53 LAV GELIDA. V-Riera de la Rierussa. Tendon 10 (Servicio). Est C
CASo # 54 LAV GELIDA. V-Riera de la Rierussa. Tendon 11 (Servicio). Est C
CASo # 55 LAV GELIDA. V-Riera de la Rierussa. Tendon 12 (Servicio). Est C
CASo # 56 LAV GELIDA. V-Riera de la Rierussa. Tendon 13 (Servicio). Est C
CASo # 57 LAV GELIDA. V-Riera de la Rierussa. Tendon 14 (Servicio). Est C

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Fichero 2: Cargas según EC
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CASo # 1 PESO PROPIO
CASo # 2 LEVANTAMIENTO DE APOYOS
CASo # 3 CARGA PERMANENTE CARACTERISTICA
CASo # 4 VALOR MAXIMO DEL BALASTO
CASo # 5 VALOR MINIMO DEL BALASTO
CASo # 6 DESBALASTADO 50 POR CIENTO
CASo # 7 SC PASEOS VANO 1 DERECHA
CASo # 8 SC PASEOS VANO 2 DERECHA
CASo # 9 SC PASEOS VANO 3 DERECHA
CASo # 10 SC PASEOS VANO 4 DERECHA
CASo # 11 SC PASEOS VANO 5 DERECHA
CASo # 12 SC PASEOS VANO 6 DERECHA
CASo # 13 SC PASEOS VANO 1 IZQUIERDA
CASo # 14 SC PASEOS VANO 2 IZQUIERDA
CASo # 15 SC PASEOS VANO 3 IZQUIERDA
CASo # 16 SC PASEOS VANO 4 IZQUIERDA
CASo # 17 SC PASEOS VANO 5 IZQUIERDA
CASo # 18 SC PASEOS VANO 6 IZQUIERDA
CASo # 19 TREN 71 SC UNIFORME POS. 1 DERECHA
CASo # 20 TREN 71 SC UNIFORME POS. 1 IZQUIERDA
CASo # 21 TREN 71 SC UNIFORME POS. 2 DERECHA
CASo # 22 TREN 71 SC UNIFORME POS. 2 IZQUIERDA
CASo # 23 TREN 71 SC UNIFORME POS. 3 DERECHA
CASo # 24 TREN 71 SC UNIFORME POS. 3 IZQUIERDA
CASo # 25 TREN 71 SC UNIFORME POS. 4 DERECHA
CASo # 26 TREN 71 SC UNIFORME POS. 4 IZQUIERDA
CASo # 27 TREN 71 SC UNIFORME POS. 5 DERECHA
CASo # 28 TREN 71 SC UNIFORME POS. 5 IZQUIERDA
CASo # 29 TREN 71 SC UNIFORME POS. 6 DERECHA
CASo # 30 TREN 71 SC UNIFORME POS. 6 IZQUIERDA
CASo # 31 TREN 71 SC UNIFORME POS. 7 DERECHA
CASo # 32 TREN 71 SC UNIFORME POS. 7 IZQUIERDA
CASo # 33 TREN 71 SC UNIFORME POS. 8 DERECHA
CASo # 34 TREN 71 SC UNIFORME POS. 8 IZQUIERDA
CASo # 35 TREN 71 SC UNIFORME POS. 9 DERECHA
CASo # 36 TREN 71 SC UNIFORME POS. 9 IZQUIERDA
CASo # 37 TREN 71 SC UNIFORME POS. 10 DERECHA
CASo # 38 TREN 71 SC UNIFORME POS. 10 IZQUIERDA
CASo # 39 TREN 71 SC UNIFORME POS. 11 DERECHA
CASo # 40 TREN 71 SC UNIFORME POS. 11 IZQUIERDA
CASo # 41 CARRO TREN 71 POSICION   1 DERECHA 300 km/h
CASo #  42 CARRO TREN 71 POSICION   1 IZQUIERDA 300 km/h
CASo #  43 CARRO TREN 71 POSICION   2 DERECHA 300 km/h
CASo #  44 CARRO TREN 71 POSICION   2 IZQUIERDA 300 km/h
CASo #  45 CARRO TREN 71 POSICION   3 DERECHA 300 km/h
CASo #  46 CARRO TREN 71 POSICION   3 IZQUIERDA 300 km/h
CASo #  47 CARRO TREN 71 POSICION   4 DERECHA 300 km/h
CASo #  48 CARRO TREN 71 POSICION   4 IZQUIERDA 300 km/h
CASo #  49 CARRO TREN 71 POSICION   5 DERECHA 300 km/h
CASo #  50 CARRO TREN 71 POSICION   5 IZQUIERDA 300 km/h
CASo #  51 CARRO TREN 71 POSICION   6 DERECHA 300 km/h
CASo #  52 CARRO TREN 71 POSICION   6 IZQUIERDA 300 km/h
CASo #  53 CARRO TREN 71 POSICION   7 DERECHA 300 km/h
CASo #  54 CARRO TREN 71 POSICION   7 IZQUIERDA 300 km/h
CASo #  55 CARRO TREN 71 POSICION   8 DERECHA 300 km/h
CASo #  56 CARRO TREN 71 POSICION   8 IZQUIERDA 300 km/h
CASo #  57 CARRO TREN 71 POSICION   9 DERECHA 300 km/h
CASo #  58 CARRO TREN 71 POSICION   9 IZQUIERDA 300 km/h
CASo #  59 CARRO TREN 71 POSICION  10 DERECHA 300 km/h
CASo #  60 CARRO TREN 71 POSICION  10 IZQUIERDA 300 km/h
CASo #  61 CARRO TREN 71 POSICION  11 DERECHA 300 km/h
CASo #  62 CARRO TREN 71 POSICION  11 IZQUIERDA 300 km/h
CASo #  63 CARRO TREN 71 POSICION  12 DERECHA 300 km/h
CASo #  64 CARRO TREN 71 POSICION  12 IZQUIERDA 300 km/h
CASo #  65 CARRO TREN 71 POSICION  13 DERECHA 300 km/h
CASo #  66 CARRO TREN 71 POSICION  13 IZQUIERDA 300 km/h
CASo #  67 CARRO TREN 71 POSICION  14 DERECHA 300 km/h
CASo #  68 CARRO TREN 71 POSICION  14 IZQUIERDA 300 km/h
CASo #  69 CARRO TREN 71 POSICION  15 DERECHA 300 km/h
CASo #  70 CARRO TREN 71 POSICION  15 IZQUIERDA 300 km/h
CASo #  71 CARRO TREN 71 POSICION  16 DERECHA 300 km/h
CASo #  72 CARRO TREN 71 POSICION  16 IZQUIERDA 300 km/h
CASo #  73 CARRO TREN 71 POSICION  17 DERECHA 300 km/h
CASo #  74 CARRO TREN 71 POSICION  17 IZQUIERDA 300 km/h
CASo #  75 CARRO TREN 71 POSICION  18 DERECHA 300 km/h
CASo #  76 CARRO TREN 71 POSICION  18 IZQUIERDA 300 km/h
CASo #  77 CARRO TREN 71 POSICION  19 DERECHA 300 km/h
CASo #  78 CARRO TREN 71 POSICION  19 IZQUIERDA 300 km/h
CASo #  79 CARRO TREN 71 POSICION  20 DERECHA 300 km/h
CASo #  80 CARRO TREN 71 POSICION  20 IZQUIERDA 300 km/h
CASo #  81 CARRO TREN 71 POSICION  21 DERECHA 300 km/h
CASo #  82 CARRO TREN 71 POSICION  21 IZQUIERDA 300 km/h
CASo #  83 CARRO TREN 71 POSICION  22 DERECHA 300 km/h
CASo #  84 CARRO TREN 71 POSICION  22 IZQUIERDA 300 km/h
CASo #  85 CARRO TREN 71 POSICION  23 DERECHA 300 km/h
CASo #  86 CARRO TREN 71 POSICION  23 IZQUIERDA 300 km/h
CASo #  87 CARRO TREN 71 POSICION  24 DERECHA 300 km/h
CASo #  88 CARRO TREN 71 POSICION  24 IZQUIERDA 300 km/h
CASo #  89 CARRO TREN 71 POSICION  25 DERECHA 300 km/h
CASo #  90 CARRO TREN 71 POSICION  25 IZQUIERDA 300 km/h
CASo #  91 CARRO TREN 71 POSICION  26 DERECHA 300 km/h
CASo #  92 CARRO TREN 71 POSICION  26 IZQUIERDA 300 km/h
CASo #  93 CARRO TREN 71 POSICION  27 DERECHA 300 km/h
CASo #  94 CARRO TREN 71 POSICION  27 IZQUIERDA 300 km/h
CASo #  95 CARRO TREN 71 POSICION  28 DERECHA 300 km/h
CASo #  96 CARRO TREN 71 POSICION  28 IZQUIERDA 300 km/h
CASo #  97 TREN SW0 POSICION   1 DERECHA  80 km/h
CASo #  98 TREN SW0 POSICION   1 IZQUIERDA  80 km/h
CASo #  99 TREN SW0 POSICION   2 DERECHA  80 km/h
CASo #  100 TREN SW0 POSICION   2 IZQUIERDA  80 km/h
CASo #  101 TREN SW0 POSICION   3 DERECHA  80 km/h
CASo #  102 TREN SW0 POSICION   3 IZQUIERDA  80 km/h
CASo #  103 TREN SW0 POSICION   4 DERECHA  80 km/h
CASo #  104 TREN SW0 POSICION   4 IZQUIERDA  80 km/h
CASo #  105 TREN SW0 POSICION   5 DERECHA  80 km/h
CASo #  106 TREN SW0 POSICION   5 IZQUIERDA  80 km/h
CASo #  107 TREN SW0 POSICION   6 DERECHA  80 km/h
CASo #  108 TREN SW0 POSICION   6 IZQUIERDA  80 km/h
CASo #  109 TREN SW0 POSICION   7 DERECHA  80 km/h
CASo #  110 TREN SW0 POSICION   7 IZQUIERDA  80 km/h
CASo #  111 TREN SW0 POSICION   8 DERECHA  80 km/h
CASo # 112  TREN SW0 POSICION   8 IZQUIERDA  80 km/h
CASo # 113  TREN SW0 POSICION   9 DERECHA  80 km/h
CASo # 114  TREN SW0 POSICION   9 IZQUIERDA  80 km/h
CASo # 115  TREN SW0 POSICION  10 DERECHA  80 km/h
CASo # 116  TREN SW0 POSICION  10 IZQUIERDA  80 km/h
CASo # 117 TREN SW0 POSICION  11 DERECHA  80 km/h
CASo # 118 TREN SW0 POSICION  11 IZQUIERDA  80 km/h
CASo # 119 TREN SW2 POSICION   1 DERECHA  80 km/h
CASo # 120 TREN SW2 POSICION   1 IZQUIERDA  80 km/h
CASo # 121  TREN SW2 POSICION   2 DERECHA  80 km/h
CASo # 122  TREN SW2 POSICION   2 IZQUIERDA  80 km/h
CASo # 123  TREN SW2 POSICION   3 DERECHA  80 km/h
CASo # 124  TREN SW2 POSICION   3 IZQUIERDA  80 km/h
CASo # 125  TREN SW2 POSICION   4 DERECHA  80 km/h
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CASo # 126  TREN SW2 POSICION   4 IZQUIERDA  80 km/h
CASo # 127  TREN SW2 POSICION   5 DERECHA  80 km/h
CASo # 128  TREN SW2 POSICION   5 IZQUIERDA  80 km/h
CASo # 129  TREN SW2 POSICION   6 DERECHA  80 km/h
CASo # 130  TREN SW2 POSICION   6 IZQUIERDA  80 km/h
CASo # 131  TREN SW2 POSICION   7 DERECHA  80 km/h
CASo # 132  TREN SW2 POSICION   7 IZQUIERDA  80 km/h
CASo # 133  TREN SW2 POSICION   8 DERECHA  80 km/h
CASo # 134  TREN SW2 POSICION   8 IZQUIERDA  80 km/h
CASo # 135  TREN SW2 POSICION   9 DERECHA  80 km/h
CASo # 136  TREN SW2 POSICION   9 IZQUIERDA  80 km/h
CASo # 137  TREN SW2 POSICION  10 DERECHA  80 km/h
CASo # 138  TREN SW2 POSICION  10 IZQUIERDA  80 km/h
CASo # 139  TREN SW2 POSICION  11 DERECHA  80 km/h
CASo # 140  TREN SW2 POSICION  11 IZQUIERDA  80 km/h
CASo # 141 GRAD.(5.8 C)
CASo # 142  LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Superior.  Est B
CASo # 143  LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Superior 8.  Est B
CASo # 144  LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Superior 9.  Est B
CASo # 145  LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Inferior.  Est B
CASo # 146  LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Inferior 5.  Est B
CASo # 147  LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Inferior 6.  Est B
CASo # 148  LAV GELIDA. V-Riera de la Rierussa. Tendon 1 (Servicio).  Est C
CASo # 149  LAV GELIDA. V-Riera de la Rierussa. Tendon 2 (Servicio).  Est B
CASo # 150  LAV GELIDA. V-Riera de la Rierussa. Tendon 3 (Servicio).  Est C
CASo # 151  LAV GELIDA. V-Riera de la Rierussa. Tendon 4 (Servicio).  Est C
CASo # 152  LAV GELIDA. V-Riera de la Rierussa. Tendon 5 (Servicio).  Est C
CASo # 153  LAV GELIDA. V-Riera de la Rierussa. Tendon 6 (Servicio).  Est C
CASo # 154  LAV GELIDA. V-Riera de la Rierussa. Tendon 7 (Servicio).  Est C
CASo # 155  LAV GELIDA. V-Riera de la Rierussa. Tendon 8 (Servicio).  Est C
CASo # 156  LAV GELIDA. V-Riera de la Rierussa. Tendon 9 (Servicio).  Est C
CASo # 157  LAV GELIDA. V-Riera de la Rierussa. Tendon 10 (Servicio).  Est C
CASo # 158  LAV GELIDA. V-Riera de la Rierussa. Tendon 11 (Servicio).  Est C
CASo # 159  LAV GELIDA. V-Riera de la Rierussa. Tendon 12 (Servicio).  Est C
CASo # 160  LAV GELIDA. V-Riera de la Rierussa. Tendon 13 (Servicio).  Est C
CASo # 161  LAV GELIDA. V-Riera de la Rierussa. Tendon 14 (Servicio).  Est C
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LAV-Gelida. V.Rierussa. ELU Mext.EC71-71(t=i)(1.35*G+0.54*LEV+1.45*SC+0.9*GT)

| BARRA 73 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 73 | 0.09 | -356.85 | -9563.45 | 2533.4 | 17930.5>> | -1506.9 |
| 73 | 0.06 | 15.27 | -8107.56 | -268.5 | -30831.5<< | -683.0 |
| 74 | 0.10 | -324.99 | -9868.17 | 2052.1 | -1449.4>> | -919.6 |
| 74 | 0.06 | 15.27 | -9241.75 | -212.4 | -49049.8<< | -715.1 |

| BARRA 74 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 74 | 0.10 | -324.99 | -9868.17 | 2052.1 | -1449.4>> | -919.6 |
| 74 | 0.06 | 15.27 | -9241.75 | -212.4 | -49049.8<< | -715.1 |
| 75 | -0.04 | -131.80 | -6692.66 | 276.8 | -19321.5>> | 962.3 |
| 75 | 0.22 | -204.47 | -15343.91 | 2073.9 | -74727.2<< | -1908.2 |

| BARRA 75 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 75 | 502.23 | -131.80 | -6673.80 | 194.4 | -19321.7>> | 979.6 |
| 75 | 1151.75 | -204.47 | -15300.62 | 2175.3 | -74728.2<< | -1749.9 |
| 76 | 568.73 | -135.96 | -7558.25 | 394.2 | -35278.2>> | 1857.3 |
| 76 | 1297.32 | -222.37 | -17234.61 | 2523.4 | -108973.5<< | -1300.6 |

| BARRA 76 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 76 | -0.16 | -135.96 | -7579.63 | 532.7 | -35278.2>> | 1822.5 |
| 76 | 0.13 | -222.37 | -17283.36 | 2419.3 | -108973.5<< | -1486.3 |
| 77 | -0.17 | -154.41 | -8509.95 | 623.1 | -52091.9>> | 2297.1 |
| 77 | 0.13 | -281.86 | -20092.97 | 3263.1 | -147454.3<< | -937.7 |

| BARRA 77 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 77 | -0.19 | 34.21 | 9141.95 | 75.9 | -52092.0>> | 2297.1 |
| 77 | 0.13 | 181.18 | 19073.61 | -2678.2 | -147453.9<< | -937.7 |
| 78 | -0.19 | 34.21 | 8070.71 | 97.4 | -34017.0>> | 2225.3 |
| 78 | 0.13 | 163.35 | 17138.67 | -2331.0 | -109427.4<< | -1299.4 |

| BARRA 78 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 78 | 605.28 | 34.21 | 8047.98 | 264.1 | -34017.0>> | 2211.7 |
| 78 | 1285.85 | 163.35 | 17090.35 | -2421.9 | -109427.4<< | -1120.9 |
| 79 | 541.25 | 24.39 | 7195.92 | 181.5 | -17247.6>> | 1425.2 |
| 79 | 1140.31 | 145.45 | 15155.42 | -2073.7 | -75470.4<< | -1446.1 |

LAV-Gelida. V.Rierussa. ELU Mext.EC71-71(t=i)(1.35*G+0.54*LEV+1.45*SC+0.9*GT)

| BARRA 79 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 79 | -0.12 | 24.39 | 7216.25 | 74.1 | -17247.6>> | 1434.8 |
| 79 | 0.13 | 145.45 | 15198.26 | -1959.4 | -75470.4<< | -1597.5 |
| 80 | 0.16 | 216.54 | 9972.61 | -2133.1 | -1899.9>> | -2192.3 |
| 80 | 0.00 | -31.55 | 9169.19 | 331.8 | -50610.3<< | 6.8 |

| BARRA 80 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 80 | 0.16 | 216.54 | 9972.61 | -2133.1 | -1899.9>> | -2192.3 |
| 80 | 0.00 | -31.55 | 9169.19 | 331.4 | -50610.2<< | 6.8 |
| 81 | 0.13 | 245.50 | 9635.71 | -2349.4 | 17778.7>> | -2613.7 |
| 81 | 0.00 | -31.55 | 8035.51 | 387.5 | -32552.2<< | 73.1 |

| BARRA 81 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 81 | 0.26 | 245.50 | 9635.71 | -2341.1 | 17779.8>> | -2613.7 |
| 81 | -0.01 | -31.55 | 8035.51 | 372.3 | -32552.3<< | 73.1 |
| 82 | 0.23 | 163.98 | 9973.00 | -1986.1 | 38997.2>> | -2978.9 |
| 82 | -0.01 | -36.48 | 5608.52 | 559.6 | -18443.5<< | 168.7 |

| BARRA 82 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 82 | 0.29 | 163.98 | 9973.00 | -1967.6 | 38998.2>> | -2978.9 |
| 82 | -0.03 | -36.48 | 5608.52 | 550.8 | -18443.8<< | 168.7 |
| 83 | 0.29 | 146.13 | 8221.63 | -1620.3 | 58104.6>> | -3304.5 |
| 83 | -0.03 | -36.48 | 4720.87 | 572.4 | -7596.7<< | 245.4 |

| BARRA 83 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 83 | 0.26 | 146.13 | 8221.63 | -1648.0 | 58103.8>> | -3304.5 |
| 83 | -0.01 | -36.48 | 4720.87 | 576.0 | -7596.4<< | 245.4 |
| 84 | 0.26 | 111.50 | 5915.88 | -1158.7 | 73410.4>> | -3589.0 |
| 84 | -0.01 | -36.48 | 3833.20 | 597.6 | 1386.3<< | 322.0 |

| BARRA 84 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 84 | 0.35 | 111.50 | 5915.88 | -1088.2 | 73411.5>> | -3589.0 |
| 84 | -0.04 | -36.48 | 3833.20 | 598.9 | 1385.7<< | 322.0 |
| 85 | 0.35 | 84.94 | 3877.37 | -598.9 | 83866.5>> | -3800.5 |
| 85 | -0.04 | -36.48 | 2945.96 | 620.5 | 8501.3<< | 398.6 |

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| BARRA 85 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 85 | 0.29 | 84.94 | 3877.37 | -639.5 | 83866.2>> | -3800.5 |
| 85 | -0.03 | -36.48 | 2945.96 | 616.4 | 8501.6<< | 398.6 |
| 86 | 0.29 | 74.50 | 2212.42 | -378.1 | 89796.8>> | -3957.2 |
| 86 | -0.03 | -36.48 | 2058.29 | 638.0 | 13756.6<< | 475.2 |

| BARRA 86 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 86 | 0.33 | 74.50 | 2212.42 | -335.3 | 89797.0>> | -3957.2 |
| 86 | -0.04 | -36.48 | 2058.29 | 644.5 | 13756.3<< | 475.2 |
| 87 | 0.33 | 47.94 | 173.37 | 154.0 | 92477.7>> | -4091.0 |
| 87 | -0.04 | -36.48 | 1170.61 | 666.1 | 17147.1<< | 551.9 |

| BARRA 87 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 87 | 0.33 | 47.94 | 173.37 | 154.0 | 92477.7>> | -4091.0 |
| 87 | -0.04 | -36.48 | 1170.61 | 666.1 | 17147.1<< | 551.9 |
| 88 | 0.33 | 21.36 | -1865.66 | 643.3 | 90437.4>> | -4155.8 |
| 88 | -0.03 | -19.38 | -60.63 | 576.1 | 18341.9<< | 389.7 |

| BARRA 88 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 88 | 0.35 | 21.36 | -1865.66 | 686.3 | 90437.0>> | -4155.8 |
| 88 | -0.03 | -19.38 | -60.63 | 584.8 | 18341.6<< | 389.7 |
| 89 | 0.36 | 10.90 | -3530.02 | 948.1 | 85172.8>> | -4230.9 |
| 89 | -0.03 | -19.38 | -948.31 | 606.4 | 17282.1<< | 430.5 |

| BARRA 89 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 89 | 0.36 | 10.90 | -3530.02 | 948.8 | 85172.8>> | -4230.9 |
| 89 | -0.03 | -19.38 | -948.31 | 606.5 | 17282.1<< | 430.5 |
| 90 | 0.36 | -15.66 | -5568.50 | 1438.0 | 75360.0>> | -4217.9 |
| 90 | -0.03 | -19.38 | -1835.56 | 628.1 | 14360.1<< | 471.2 |

| BARRA 90 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 90 | 0.36 | -15.66 | -5568.50 | 1437.5 | 75359.9>> | -4217.9 |
| 90 | -0.03 | -19.38 | -1835.56 | 628.0 | 14360.1<< | 471.2 |
| 91 | 0.36 | -51.13 | -7902.39 | 2072.0 | 60666.7>> | -4131.2 |
| 91 | -0.03 | -19.38 | -2723.24 | 649.6 | 9572.9<< | 512.0 |

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| BARRA 91 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 91 | 0.32 | -51.13 | -7902.39 | 2100.9 | 60665.6>> | -4131.2 |
| 91 | -0.04 | -19.38 | -2723.24 | 654.1 | 9572.6<< | 512.0 |
| 92 | 0.32 | -68.98 | -9653.78 | 2448.1 | 42229.3>> | -4005.0 |
| 92 | -0.04 | -19.38 | -3610.92 | 675.7 | 2920.9<< | 552.7 |

| BARRA 92 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 92 | 0.32 | -68.98 | -9653.78 | 2448.5 | 42229.3>> | -4005.0 |
| 92 | -0.04 | -19.38 | -3610.92 | 675.7 | 2920.9<< | 552.7 |
| 93 | 0.23 | -125.95 | -9078.83 | 3087.1 | 21289.2>> | -2733.8 |
| 93 | 0.45 | 15.57 | -10949.76 | 2122.0 | -8479.2<< | -5329.6 |

| BARRA 93 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 93 | 0.23 | -125.95 | -9078.83 | 3086.9 | 21289.2>> | -2733.8 |
| 93 | 0.45 | 15.57 | -10949.76 | 2122.1 | -8479.2<< | -5329.6 |
| 94 | 0.25 | -96.47 | -9377.68 | 2604.9 | 3062.5>> | -2661.4 |
| 94 | 0.45 | -2.30 | -12673.58 | 2469.3 | -33286.9<< | -5343.5 |

| BARRA 94 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 94 | 0.19 | -96.47 | -9377.68 | 2606.4 | 3061.2>> | -2661.4 |
| 94 | 0.45 | -2.30 | -12673.58 | 2453.5 | -33288.1<< | -5343.5 |
| 95 | -0.03 | -14.55 | -6191.90 | 573.6 | -13054.2>> | 268.7 |
| 95 | 0.45 | -20.13 | -14619.79 | 2802.1 | -61976.0<< | -5319.9 |

| BARRA 95 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 95 | 464.48 | -14.55 | -6174.46 | 551.8 | -13054.2>> | 311.0 |
| 95 | 1097.16 | -20.13 | -14578.57 | 3193.3 | -61976.0<< | -5094.7 |
| 96 | 519.80 | -36.31 | -6910.90 | 792.3 | -27816.8>> | 1297.5 |
| 96 | 1242.73 | -38.02 | -16513.57 | 3541.5 | -94719.6<< | -5033.4 |

| BARRA 96 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 96 | -0.12 | -36.31 | -6930.41 | 873.9 | -27817.2>> | 1234.4 |
| 96 | 0.43 | -38.02 | -16560.30 | 3108.1 | -94721.1<< | -5284.9 |
| 97 | -0.12 | -36.31 | -8001.21 | 895.5 | -43490.3>> | 1310.7 |
| 97 | 0.43 | -89.79 | -19404.94 | 3941.0 | -132925.6<< | -5154.3 |

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| BARRA 97 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 97 | -0.12 | 39.72 | 8641.39 | 168.7 | -43490.2>> | 1310.7 |
| 97 | 0.43 | -15.94 | 18139.46 | -1369.6 | -132925.0<< | -5154.3 |
| 98 | -0.12 | 39.72 | 7570.09 | 190.3 | -26465.6>> | 1227.3 |
| 98 | 0.43 | -33.78 | 16204.43 | -1022.3 | -96858.6<< | -5102.1 |

| BARRA 98 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 98 | 567.77 | 39.72 | 7548.76 | 281.8 | -26465.6>> | 1209.5 |
| 98 | 1216.00 | -33.78 | 16158.76 | -1402.2 | -96858.6<< | -5011.0 |
| 99 | 518.23 | 17.89 | 6889.24 | 233.7 | -10707.6>> | 274.4 |
| 99 | 755.60 | -85.80 | 10041.40 | 505.1 | -65936.7<< | -2512.4 |

| BARRA 99 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 99 | -0.04 | 17.89 | 6908.73 | 207.3 | -10707.7>> | 291.2 |
| 99 | 0.19 | -85.80 | 10069.79 | 660.2 | -65937.0<< | -2467.5 |
| 100 | -0.04 | 9.17 | 5705.94 | 371.0 | 2788.2>> | 255.1 |
| 100 | 0.19 | -85.80 | 8936.05 | 716.3 | -45987.3<< | -2287.3 |

| BARRA 100 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 100 | -0.04 | 9.17 | 5705.94 | 371.0 | 2788.2>> | 255.1 |
| 100 | 0.19 | -85.80 | 8936.05 | 716.7 | -45987.3<< | -2287.3 |
| 101 | -0.04 | 48.69 | 5918.02 | -100.7 | 14699.4>> | 341.4 |
| 101 | 0.19 | -85.80 | 7801.78 | 772.8 | -28409.8<< | -2107.0 |

| BARRA 101 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 101 | -0.04 | 48.69 | 5918.02 | -100.7 | 14699.4>> | 341.4 |
| 101 | 0.19 | -85.80 | 7801.78 | 772.8 | -28409.8<< | -2107.0 |
| 102 | 0.27 | -10.21 | 9347.44 | 201.5 | 29191.6>> | -3212.4 |
| 102 | 0.17 | -80.13 | 5454.07 | 837.4 | -15629.6<< | -1801.8 |

| BARRA 102 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 102 | 0.27 | -10.21 | 9347.44 | 215.7 | 29191.4>> | -3212.4 |
| 102 | 0.14 | -80.13 | 5454.07 | 829.9 | -15630.0<< | -1801.8 |
| 103 | 0.27 | -28.06 | 7596.82 | 562.8 | 46977.4>> | -3172.3 |
| 103 | 0.14 | -80.13 | 4566.79 | 851.4 | -5111.3<< | -1633.6 |

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| BARRA 103 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 103 | 0.27 | -28.06 | 7596.82 | 562.4 | 46977.4>> | -3172.3 |
| 103 | 0.14 | -80.13 | 4566.79 | 851.5 | -5111.3<< | -1633.6 |
| 104 | 0.27 | -60.06 | 5377.98 | 1051.8 | 60814.0>> | -3086.1 |
| 104 | 0.14 | -80.13 | 3679.06 | 873.1 | 3548.3<< | -1465.2 |

| BARRA 104 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 104 | 0.23 | -60.06 | 5377.98 | 1080.8 | 60813.5>> | -3086.1 |
| 104 | 0.12 | -80.13 | 3679.06 | 874.7 | 3547.8<< | -1465.2 |
| 105 | 0.23 | -86.62 | 3338.86 | 1570.1 | 69871.1>> | -2929.2 |
| 105 | 0.12 | -80.13 | 2791.36 | 896.3 | 10343.0<< | -1296.9 |

| BARRA 105 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 105 | 0.23 | -86.62 | 3338.86 | 1570.7 | 69871.1>> | -2929.2 |
| 105 | 0.12 | -80.13 | 2791.36 | 896.4 | 10343.0<< | -1296.9 |
| 106 | 0.23 | -89.39 | 1941.43 | 1622.7 | 74669.8>> | -2655.6 |
| 106 | 0.12 | -80.13 | 1904.05 | 918.0 | 15271.7<< | -1128.6 |

| BARRA 106 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 106 | 0.23 | -89.39 | 1941.43 | 1622.0 | 74669.8>> | -2655.6 |
| 106 | 0.12 | -80.13 | 1904.05 | 917.9 | 15271.7<< | -1128.6 |
| 107 | 0.23 | -142.50 | -974.91 | 2544.4 | 75333.6>> | -2401.4 |
| 107 | 0.12 | -80.13 | 1016.33 | 939.4 | 18338.6<< | -960.2 |

| BARRA 107 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 107 | 0.16 | -142.50 | -974.91 | 2580.3 | 75332.4>> | -2401.4 |
| 107 | 0.06 | -80.13 | 1016.33 | 948.2 | 18338.2<< | -960.2 |
| 108 | 0.16 | -170.34 | -3056.26 | 3091.1 | 71227.6>> | -2076.8 |
| 108 | 0.06 | -80.13 | 128.61 | 969.7 | 19540.6<< | -791.9 |

| BARRA 108 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 108 | 0.16 | -170.34 | -3056.26 | 3091.7 | 71227.5>> | -2076.8 |
| 108 | 0.06 | -80.13 | 128.61 | 969.9 | 19540.6<< | -791.9 |
| 109 | 0.16 | -188.18 | -4806.91 | 3438.8 | 62973.6>> | -1700.4 |
| 109 | 0.06 | -80.13 | -758.70 | 991.5 | 18879.2<< | -623.6 |

LAV-Gelida. V.Rierussa. ELU Mext.EC71-71(t=i)(1.35*G+0.54*LEV+1.45*SC+0.9*GT)

| BARRA 109 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 109 | 0.16 | -188.18 | -4806.91 | 3438.2 | 62973.7>> | -1700.4 |
| 109 | 0.06 | -80.13 | -758.70 | 991.3 | 18879.2<< | -623.6 |
| 110 | 0.16 | -206.04 | -6558.42 | 3785.5 | 51037.9>> | -1286.4 |
| 110 | 0.06 | -80.13 | -1646.44 | 1012.9 | 16353.3<< | -455.3 |

| BARRA 110 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 110 | 0.07 | -206.04 | -6558.42 | 3810.3 | 51036.1>> | -1286.4 |
| 110 | 0.03 | -80.13 | -1646.44 | 1020.8 | 16352.9<< | -455.3 |
| 111 | 0.06 | -211.13 | -8169.54 | 3974.7 | 36005.0>> | -797.6 |
| 111 | 0.03 | -80.13 | -2533.74 | 1042.4 | 11964.9<< | -287.0 |

| BARRA 111 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 111 | 0.06 | -211.13 | -8169.54 | 3974.4 | 36005.1>> | -797.6 |
| 111 | 0.03 | -80.13 | -2533.74 | 1042.3 | 11965.0<< | -287.0 |
| 112 | 0.06 | -237.70 | -10208.67 | 4463.6 | 16791.8>> | -328.8 |
| 112 | 0.03 | -80.13 | -3421.49 | 1063.8 | 5710.8<< | -118.6 |

| BARRA 112 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 112 | 1069.12 | -237.70 | -10152.53 | 4481.5 | 16789.7>> | 141.3 |
| 112 | 358.31 | -80.13 | -3402.65 | 1073.1 | 5710.3<< | -6.3 |
| 113 | 843.86 | 2.44 | -8013.14 | -7220.9 | 1.2>> | -760.4 |
| 113 | 968.46 | -270.67 | -9196.68 | 12436.9 | -2.0<< | 1309.8 |

| BARRA 201 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 201 | 10859.67 | 146.00 | -0.03 | 0.0 | 0.3>> | 4415.9 |
| 201 | 6426.06 | -43.06 | 0.03 | 0.0 | -0.2<< | 591.8 |
| 1 | 6737.57 | 3.70 | 0.00 | 0.0 | 0.0>> | 454.0 |
| 1 | 6338.53 | 3.62 | 0.00 | 0.0 | 0.0<< | 446.7 |

| BARRA 202 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 202 | 21419.61 | -8.74 | 0.00 | 0.0 | 0.0>> | 591.2 |
| 202 | 21161.62 | -8.52 | 0.00 | 0.0 | 0.0<< | 576.7 |
| 17 | 21419.61 | -8.74 | 0.00 | 0.0 | 0.0>> | 753.9 |
| 17 | 21161.62 | -8.52 | 0.00 | 0.0 | 0.0<< | 735.2 |

LAV-Gelida. V.Rierussa. ELU Mext.EC71-71(t=i)(1.35*G+0.54*LEV+1.45*SC+0.9*GT)

| BARRA 203 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 203 | 22503.11 | 16.12 | 0.00 | 0.0 | 0.0>> | 1167.2 |
| 203 | 21880.44 | 15.72 | 0.00 | 0.0 | 0.0<< | 1138.3 |
| 37 | 22503.11 | 16.12 | 0.00 | 0.0 | 0.0>> | 842.4 |
| 37 | 21880.44 | 15.72 | 0.00 | 0.0 | 0.0<< | 821.7 |

| BARRA 204 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 204 | 21673.39 | -20.90 | 0.00 | 0.0 | 0.0>> | 5.2 |
| 204 | 21160.51 | -20.39 | 0.00 | 0.0 | 0.0<< | 5.0 |
| 57 | 21673.39 | -20.90 | 0.00 | 0.0 | 0.0>> | 917.0 |
| 57 | 21160.51 | -20.39 | 0.00 | 0.0 | 0.0<< | 894.4 |

| BARRA 205 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 205 | 22622.85 | 16.26 | 0.00 | 0.0 | 0.0>> | 1160.4 |
| 205 | 22000.14 | 15.87 | 0.00 | 0.0 | 0.0<< | 1131.3 |
| 77 | 22622.85 | 16.26 | 0.00 | 0.0 | 0.0>> | 808.7 |
| 77 | 22000.14 | 15.87 | 0.00 | 0.0 | 0.0<< | 788.2 |

| BARRA 206 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 206 | 21592.37 | -13.66 | 0.00 | 0.0 | 0.0>> | 404.4 |
| 206 | 21334.53 | -13.32 | 0.00 | 0.0 | 0.0<< | 394.2 |
| 97 | 21592.37 | -13.66 | 0.00 | 0.0 | 0.0>> | 727.3 |
| 97 | 21334.53 | -13.32 | 0.00 | 0.0 | 0.0<< | 708.9 |

| BARRA 207 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 207 | 6570.93 | 7.19 | 0.00 | 0.0 | 0.0>> | 580.0 |
| 207 | 6171.80 | 7.01 | 0.00 | 0.0 | 0.0<< | 570.2 |
| 113 | 6570.93 | 7.19 | 0.00 | 0.0 | 0.0>> | 496.3 |
| 113 | 6171.80 | 7.01 | 0.00 | 0.0 | 0.0<< | 488.6 |

TITULO
=======
LAV-Gelida. V.Rierussa. ELU ECSW-71(t=i)(1.35*G+0.54*LEV+(1.45*71oSW0 o 1.20*SW2)+0.9*GT)

FICHERO DE GEOMETRIA COMPLETA
==============================
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
================================
1

| Fich | Num. Nudos | Num. barras | Num. hipotesis | NOMBRE FICHERO |
|---|---|---|---|---|
| 1 | 120 | 119 | 161 | ESFec.TXT |

| Fich | Hipotesis | Caracter | Coeficiente |
|---|---|---|---|
| 1 | 1 | 1 | 1.35 |
| 1 | 2 | 1 | 0.54 |
| 1 | 3 | 1 | 1.35 |
| 1 | 4 | 3 | 1.35 |
| 1 | 5 | 3 | 1.35 |
| 1 | 6 | 3 | 1.35 |
| 1 | 7 | 2 | 0.75 |
| 1 | 8 | 2 | 0.75 |
| 1 | 9 | 2 | 0.75 |
| 1 | 10 | 2 | 0.75 |
| 1 | 11 | 2 | 0.75 |
| 1 | 12 | 2 | 0.75 |
| 1 | 13 | 2 | 0.75 |
| 1 | 14 | 2 | 0.75 |
| 1 | 15 | 2 | 0.75 |
| 1 | 16 | 2 | 0.75 |
| 1 | 17 | 2 | 0.75 |
| 1 | 18 | 2 | 0.75 |
| 1 | 19 | 4 | 0.0 |
| 1 | 20 | 5 | 1.45 |
| 1 | 21 | 4 | 0.0 |
| 1 | 22 | 5 | 1.45 |
| 1 | 23 | 4 | 0.0 |
| 1 | 24 | 5 | 1.45 |
| 1 | 25 | 4 | 0.0 |
| 1 | 26 | 5 | 1.45 |
| 1 | 27 | 4 | 0.0 |
| 1 | 28 | 5 | 1.45 |
| 1 | 29 | 4 | 0.0 |
| 1 | 30 | 5 | 1.45 |
| 1 | 31 | 4 | 0.0 |
| 1 | 32 | 5 | 1.45 |
| 1 | 33 | 4 | 0.0 |
| 1 | 34 | 5 | 1.45 |
| 1 | 35 | 4 | 0.0 |
| 1 | 36 | 5 | 1.45 |
| 1 | 37 | 4 | 0.0 |
| 1 | 38 | 5 | 1.45 |
| 1 | 39 | 4 | 0.0 |
| 1 | 40 | 5 | 1.45 |
| 1 | 41 | 6 | 0.0 |
| 1 | 42 | 7 | 1.45 |
| 1 | 43 | 6 | 0.0 |
| 1 | 44 | 7 | 1.45 |
| 1 | 45 | 6 | 0.0 |
| 1 | 46 | 7 | 1.45 |
| 1 | 47 | 6 | 0.0 |
| 1 | 48 | 7 | 1.45 |
| 1 | 49 | 6 | 0.0 |
| 1 | 50 | 7 | 1.45 |
| 1 | 51 | 6 | 0.0 |
| 1 | 52 | 7 | 1.45 |
| 1 | 53 | 6 | 0.0 |
| 1 | 54 | 7 | 1.45 |
| 1 | 55 | 6 | 0.0 |
| 1 | 56 | 7 | 1.45 |
| 1 | 57 | 6 | 0.0 |
| 1 | 58 | 7 | 1.45 |
| 1 | 59 | 6 | 0.0 |
| 1 | 60 | 7 | 1.45 |
| 1 | 61 | 6 | 0.0 |
| 1 | 62 | 7 | 1.45 |
| 1 | 63 | 6 | 0.0 |
| 1 | 64 | 7 | 1.45 |
| 1 | 65 | 6 | 0.0 |
| 1 | 66 | 7 | 1.45 |
| 1 | 67 | 6 | 0.0 |
| 1 | 68 | 7 | 1.45 |
| 1 | 69 | 6 | 0.0 |
| 1 | 70 | 7 | 1.45 |
| 1 | 71 | 6 | 0.0 |
| 1 | 72 | 7 | 1.45 |
| 1 | 73 | 6 | 0.0 |
| 1 | 74 | 7 | 1.45 |
| 1 | 75 | 6 | 0.0 |
| 1 | 76 | 7 | 1.45 |
| 1 | 77 | 6 | 0.0 |
| 1 | 78 | 7 | 1.45 |
| 1 | 79 | 6 | 0.0 |
| 1 | 80 | 7 | 1.45 |
| 1 | 81 | 6 | 0.0 |
| 1 | 82 | 7 | 1.45 |
| 1 | 83 | 6 | 0.0 |
| 1 | 84 | 7 | 1.45 |
| 1 | 85 | 6 | 0.0 |
| 1 | 86 | 7 | 1.45 |
| 1 | 87 | 6 | 0.0 |
| 1 | 88 | 7 | 1.45 |
| 1 | 89 | 6 | 0.0 |
| 1 | 90 | 7 | 1.45 |
| 1 | 91 | 6 | 0.0 |
| 1 | 92 | 7 | 1.45 |
| 1 | 93 | 6 | 0.0 |
| 1 | 94 | 7 | 1.45 |
| 1 | 95 | 6 | 0.0 |
| 1 | 96 | 7 | 1.45 |
| 1 | 97 | 8 | 1.45 |
| 1 | 98 | 9 | 0.00 |
| 1 | 99 | 8 | 1.45 |
| 1 | 100 | 9 | 0.00 |
| 1 | 101 | 8 | 1.45 |
| 1 | 102 | 9 | 0.00 |
| 1 | 103 | 8 | 1.45 |
| 1 | 104 | 9 | 0.00 |
| 1 | 105 | 8 | 1.45 |
| 1 | 106 | 9 | 0.00 |
| 1 | 107 | 8 | 1.45 |
| 1 | 108 | 9 | 0.00 |
| 1 | 109 | 8 | 1.45 |
| 1 | 110 | 9 | 0.00 |

| | | | |
|---|---|---|---|
| 1 | 111 | 8 | 1.45 |
| 1 | 112 | 9 | 0.00 |
| 1 | 113 | 8 | 1.45 |
| 1 | 114 | 9 | 0.00 |
| 1 | 115 | 8 | 1.45 |
| 1 | 116 | 9 | 0.00 |
| 1 | 117 | 8 | 1.45 |
| 1 | 118 | 9 | 0.00 |
| 1 | 119 | 8 | 1.20 |
| 1 | 120 | 10 | 0.00 |
| 1 | 121 | 8 | 1.20 |
| 1 | 122 | 10 | 0.00 |
| 1 | 123 | 8 | 1.20 |
| 1 | 124 | 10 | 0.00 |
| 1 | 125 | 8 | 1.20 |
| 1 | 126 | 10 | 0.00 |
| 1 | 127 | 8 | 1.20 |
| 1 | 128 | 10 | 0.00 |
| 1 | 129 | 8 | 1.20 |
| 1 | 130 | 10 | 0.00 |
| 1 | 131 | 8 | 1.20 |
| 1 | 132 | 10 | 0.00 |
| 1 | 133 | 8 | 1.20 |
| 1 | 134 | 10 | 0.00 |
| 1 | 135 | 8 | 1.20 |
| 1 | 136 | 10 | 0.00 |
| 1 | 137 | 8 | 1.20 |
| 1 | 138 | 10 | 0.00 |
| 1 | 139 | 8 | 1.20 |
| 1 | 140 | 10 | 0.00 |
| 1 | 141 | 2 | 0.9 |
| 1 | 142 | 1 | 0.00 |
| 1 | 143 | 1 | 0.00 |
| 1 | 144 | 1 | 0.00 |
| 1 | 145 | 1 | 0.00 |
| 1 | 146 | 1 | 0.00 |
| 1 | 147 | 1 | 0.00 |
| 1 | 148 | 1 | 0.00 |
| 1 | 149 | 1 | 0.00 |
| 1 | 150 | 1 | 0.00 |
| 1 | 151 | 1 | 0.00 |
| 1 | 152 | 1 | 0.00 |
| 1 | 153 | 1 | 0.00 |
| 1 | 154 | 1 | 0.00 |
| 1 | 155 | 1 | 0.00 |
| 1 | 156 | 1 | 0.00 |
| 1 | 157 | 1 | 0.00 |
| 1 | 158 | 1 | 0.00 |
| 1 | 159 | 1 | 0.00 |
| 1 | 160 | 1 | 0.00 |
| 1 | 161 | 1 | 0.00 |

PONDERACION DE ESFUERZOS

LAV-Gelida. V.Rierussa. ELU ECSW-71(t=i)(1.35*G+0.54*LEV+(1.45*71oSW0 o 1.20*SW2)+0.9*GT)

| BARRA | | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| | 1 | 919.28 | 21.53 | 8727.53 | 4126.7 | 0.0>> | -434.7 |
| | 1 | 969.68 | 167.19 | 9205.90 | -10091.5 | -0.0<< | 1063.0 |
| | 2 | 1180.42 | 191.74 | 11206.27 | -4066.2 | 18239.9>> | 144.6 |
| | 2 | 372.91 | 28.97 | 3540.30 | -801.4 | 5916.8<< | 42.4 |

| BARRA | | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| | 2 | 0.09 | 191.74 | 11268.25 | -4050.2 | 18241.9>> | -282.2 |
| | 2 | 0.01 | 28.97 | 3559.89 | -798.6 | 5917.2<< | -41.8 |
| | 3 | 0.09 | 176.05 | 9177.93 | -3500.8 | 39640.2>> | -666.2 |
| | 3 | 0.01 | 28.97 | 2672.33 | -777.1 | 12461.1<< | -102.6 |

| BARRA | | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| | 3 | 0.01 | 176.05 | 9177.93 | -3519.7 | 39638.5>> | -666.2 |
| | 3 | 0.00 | 28.97 | 2672.33 | -783.0 | 12460.7<< | -102.6 |
| | 4 | 0.00 | 163.13 | 7293.24 | -2475.7 | 56733.6>> | -956.0 |
| | 4 | 0.00 | 28.97 | 1784.76 | -761.4 | 17140.6<< | -163.5 |

| BARRA | | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| | 4 | 0.16 | 163.13 | 7293.24 | -2421.7 | 56735.9>> | -956.0 |
| | 4 | 0.03 | 28.97 | 1784.76 | -745.1 | 17141.3<< | -163.5 |
| | 5 | 0.16 | 151.80 | 5346.80 | -1605.2 | 70008.0>> | -1286.7 |
| | 5 | 0.03 | 28.97 | 897.21 | -723.5 | 19957.4<< | -224.3 |

| BARRA | | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| | 5 | 0.07 | 151.80 | 5346.80 | -1638.5 | 70007.2>> | -1286.7 |
| | 5 | 0.01 | 28.97 | 897.21 | -733.0 | 19957.0<< | -224.3 |
| | 6 | 0.07 | 140.48 | 3400.33 | -822.0 | 79191.6>> | -1593.6 |
| | 6 | 0.01 | 28.97 | 9.62 | -711.4 | 20909.2<< | -285.1 |

| BARRA | | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| | 6 | 0.16 | 140.48 | 3400.33 | -784.3 | 79192.0>> | -1593.6 |
| | 6 | 0.03 | 28.97 | 9.62 | -701.5 | 20909.5<< | -285.1 |
| | 7 | 0.16 | 124.41 | 1297.38 | -234.9 | 84041.8>> | -1869.2 |
| | 7 | 0.03 | 28.97 | -877.94 | -679.9 | 19997.8<< | -346.0 |

LAV-Gelida. V.Rierussa. ELU ECSW-71(t=i)(1.35*G+0.54*LEV+(1.45*71oSW0 o 1.20*SW2)+0.9*GT)

| BARRA 7 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 7 | 0.16 | 124.41 | 1297.38 | -234.9 | 84041.8>> | -1869.2 |
| 7 | 0.03 | 28.97 | -877.94 | -679.9 | 19997.8<< | -346.0 |
| 8 | 0.10 | 32.25 | -803.89 | -1166.7 | 84357.5>> | -1299.9 |
| 8 | 0.03 | 28.97 | -1765.51 | -658.3 | 17222.2<< | -406.8 |

| BARRA 8 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 8 | 0.10 | 32.25 | -803.89 | -1126.5 | 84358.0>> | -1299.9 |
| 8 | 0.03 | 28.97 | -1765.51 | -650.1 | 17222.4<< | -406.8 |
| 9 | 0.10 | 26.58 | -2461.63 | -132.6 | 81294.7>> | -1374.9 |
| 9 | 0.03 | 28.97 | -2653.08 | -628.6 | 12582.9<< | -467.6 |

| BARRA 9 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 9 | 0.10 | 26.58 | -2461.63 | -132.6 | 81294.7>> | -1374.9 |
| 9 | 0.03 | 28.97 | -2653.08 | -628.6 | 12582.9<< | -467.6 |
| 10 | 0.10 | 11.04 | -4439.92 | 119.3 | 74065.6>> | -1415.0 |
| 10 | 0.03 | 28.97 | -3540.65 | -607.0 | 6079.5<< | -528.5 |

| BARRA 10 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 10 | 0.11 | 11.04 | -4439.92 | 154.6 | 74065.5>> | -1415.0 |
| 10 | 0.06 | 28.97 | -3540.65 | -604.1 | 6079.8<< | -528.5 |
| 11 | 0.11 | -7.50 | -6517.83 | 222.0 | 62427.4>> | -1414.7 |
| 11 | 0.06 | 28.97 | -4428.21 | -582.5 | -2287.5<< | -589.3 |

| BARRA 11 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 11 | 0.12 | -7.50 | -6517.83 | 192.3 | 62427.5>> | -1414.7 |
| 11 | 0.03 | 28.97 | -4428.21 | -581.4 | -2287.8<< | -589.3 |
| 12 | 0.20 | 49.96 | -7991.33 | -732.1 | 47225.2>> | -2748.7 |
| 12 | 0.03 | 28.97 | -5315.79 | -559.8 | -12519.0<< | -650.1 |

| BARRA 12 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 12 | 0.26 | 49.96 | -7991.33 | -687.1 | 47225.9>> | -2748.7 |
| 12 | 0.09 | 28.97 | -5315.79 | -571.8 | -12518.5<< | -650.1 |
| 13 | 0.26 | 35.86 | -8474.86 | 78.0 | 28864.8>> | -2776.4 |
| 13 | 0.09 | 31.73 | -7666.25 | -498.8 | -25078.2<< | -776.3 |

LAV-Gelida. V.Rierussa. ELU ECSW-71(t=i)(1.35*G+0.54*LEV+(1.45*71oSW0 o 1.20*SW2)+0.9*GT)

| BARRA 13 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 13 | 0.23 | 35.86 | -8474.86 | 64.2 | 28864.8>> | -2776.4 |
| 13 | 0.06 | 31.73 | -7666.25 | -486.9 | -25078.4<< | -776.3 |
| 14 | 0.22 | 38.92 | -9601.64 | 2133.0 | 10052.5>> | -2783.6 |
| 14 | 0.06 | 31.73 | -8800.34 | -430.8 | -42368.4<< | -842.9 |

| BARRA 14 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 14 | 0.26 | 38.92 | -9601.64 | 2137.8 | 10051.5>> | -2783.6 |
| 14 | 0.09 | 31.73 | -8800.34 | -450.9 | -42368.2<< | -842.9 |
| 15 | -0.12 | -56.20 | -6607.85 | 333.9 | -6056.0>> | 1516.2 |
| 15 | 0.09 | 31.73 | -9934.45 | -394.8 | -62039.8<< | -909.5 |

| BARRA 15 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 15 | 495.65 | -56.20 | -6589.22 | 219.3 | -6056.0>> | 1537.0 |
| 15 | 745.44 | 31.73 | -9906.45 | -325.5 | -62039.8<< | -936.6 |
| 16 | 554.46 | -42.12 | -7370.99 | -126.0 | -20959.1>> | 1295.7 |
| 16 | 1223.93 | -6.29 | -16265.03 | 2421.7 | -90735.9<< | -2137.7 |

| BARRA 16 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 16 | -0.13 | -42.12 | -7391.80 | -38.5 | -20959.1>> | 1301.5 |
| 16 | 0.19 | -6.27 | -16311.01 | 2211.3 | -90736.9<< | -2313.4 |
| 17 | -0.13 | -42.12 | -8462.94 | -16.9 | -37606.7>> | 1389.9 |
| 17 | 0.19 | -15.20 | -17950.99 | 1720.2 | -126712.2<< | -2290.8 |

| BARRA 17 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 17 | -0.12 | 31.97 | 7964.51 | -730.3 | -37606.6>> | 1389.9 |
| 17 | 0.19 | 40.03 | 18827.45 | -1545.4 | -126712.0<< | -2290.8 |
| 18 | -0.12 | 31.97 | 6893.36 | -708.7 | -22005.8>> | 1322.8 |
| 18 | 0.20 | 19.21 | 16730.64 | -2845.6 | -89151.9<< | -2349.4 |

| BARRA 18 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 18 | 517.07 | 31.97 | 6873.94 | -617.9 | -22005.4>> | 1373.0 |
| 18 | 1255.43 | 19.21 | 16683.46 | -3056.2 | -89150.6<< | -2126.1 |
| 19 | 449.96 | 48.35 | 5982.00 | -536.3 | -8029.6>> | 1535.5 |
| 19 | 1122.45 | 9.50 | 14916.02 | -3202.4 | -55788.9<< | -2156.9 |

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| BARRA 19 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 19 | -0.13 | 48.35 | 5998.92 | -646.2 | -8029.9>> | 1490.9 |
| 19 | 0.20 | 9.50 | 14958.22 | -3004.9 | -55790.4<< | -2391.0 |
| 20 | 0.17 | 16.54 | 10624.36 | -3728.9 | 7169.9>> | -2169.7 |
| 20 | 0.26 | -91.39 | 8491.63 | -89.7 | -31340.6<< | -2448.4 |

| BARRA 20 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 20 | 0.19 | 16.54 | 10624.36 | -3722.1 | 7173.4>> | -2169.7 |
| 20 | 0.16 | -91.39 | 8491.63 | -119.5 | -31340.5<< | -2448.4 |
| 21 | 0.20 | 20.11 | 9518.00 | -1989.2 | 27776.2>> | -2216.5 |
| 21 | 0.16 | -91.39 | 7357.53 | -63.4 | -14698.7<< | -2256.4 |

| BARRA 21 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 21 | 0.19 | 20.11 | 9518.00 | -2002.4 | 27775.3>> | -2216.5 |
| 21 | 0.22 | -91.39 | 7357.53 | -56.4 | -14698.7<< | -2256.4 |
| 22 | 0.14 | 57.95 | 9486.91 | -1877.2 | 48789.8>> | -1945.9 |
| 22 | 0.22 | -87.56 | 4970.48 | 224.2 | -2697.8<< | -2016.2 |

| BARRA 22 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 22 | 0.17 | 57.95 | 9486.91 | -1853.9 | 48790.7>> | -1945.9 |
| 22 | 0.16 | -87.56 | 4970.48 | 222.9 | -2697.9<< | -2016.2 |
| 23 | 0.17 | 46.63 | 7540.44 | -1037.4 | 66669.5>> | -2055.6 |
| 23 | 0.16 | -87.56 | 4082.88 | 244.5 | 6808.2<< | -1832.3 |

| BARRA 23 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 23 | 0.17 | 46.63 | 7540.44 | -1037.4 | 66669.5>> | -2055.6 |
| 23 | 0.16 | -87.56 | 4082.88 | 244.5 | 6808.2<< | -1832.3 |
| 24 | 0.17 | 26.78 | 5312.54 | -488.0 | 80408.3>> | -2140.1 |
| 24 | 0.16 | -87.56 | 3195.32 | 266.0 | 14450.4<< | -1648.4 |

| BARRA 24 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 24 | 0.17 | 26.78 | 5312.54 | -449.7 | 80408.6>> | -2140.1 |
| 24 | 0.12 | -87.56 | 3195.32 | 273.0 | 14450.3<< | -1648.4 |
| 25 | 0.17 | 11.07 | 3222.21 | 99.8 | 89471.0>> | -2182.9 |
| 25 | 0.12 | -87.56 | 2307.75 | 294.5 | 20228.5<< | -1464.5 |

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| BARRA 25 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 25 | 0.17 | 11.07 | 3222.21 | 99.8 | 89471.0>> | -2182.9 |
| 25 | 0.12 | -87.56 | 2307.75 | 294.5 | 20228.5<< | -1464.5 |
| 26 | 0.17 | -0.48 | 1452.18 | 706.3 | 94063.5>> | -2206.3 |
| 26 | -0.09 | 47.12 | -146.79 | -600.1 | 23688.5<< | 871.8 |

| BARRA 26 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 26 | 0.19 | -0.48 | 1452.18 | 751.1 | 94063.1>> | -2206.3 |
| 26 | -0.07 | 47.12 | -146.79 | -588.9 | 23688.8<< | 871.8 |
| 27 | 0.19 | -13.77 | -148.13 | -7.0 | 95533.3>> | -2194.4 |
| 27 | -0.07 | 32.09 | -1206.97 | -481.4 | 22256.1<< | 721.0 |

| BARRA 27 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 27 | 0.17 | -13.77 | -148.13 | -52.5 | 95533.3>> | -2194.4 |
| 27 | -0.07 | 32.09 | -1206.97 | -491.9 | 22255.8<< | 721.0 |
| 28 | 0.17 | -27.03 | -1748.41 | -810.6 | 93423.4>> | -2147.9 |
| 28 | -0.07 | 32.09 | -2094.56 | -470.4 | 18789.2<< | 653.6 |

| BARRA 28 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 28 | 0.16 | -27.03 | -1748.41 | -721.7 | 93424.2>> | -2147.9 |
| 28 | -0.04 | 32.09 | -2094.56 | -452.5 | 18789.7<< | 653.6 |
| 29 | 0.16 | -38.68 | -3528.20 | -90.1 | 88197.0>> | -2089.5 |
| 29 | -0.04 | 32.09 | -2982.13 | -430.9 | 13459.1<< | 586.2 |

| BARRA 29 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 29 | 0.19 | -38.68 | -3528.20 | -132.1 | 88196.9>> | -2089.5 |
| 29 | -0.07 | 32.09 | -2982.13 | -437.3 | 13458.9<< | 586.2 |
| 30 | 0.19 | -54.37 | -5618.52 | 417.4 | 78474.3>> | -1988.2 |
| 30 | -0.07 | 32.09 | -3869.71 | -415.8 | 6264.4<< | 518.9 |

| BARRA 30 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 30 | 0.16 | -54.37 | -5618.52 | 454.7 | 78474.1>> | -1988.2 |
| 30 | -0.04 | 32.09 | -3869.71 | -412.7 | 6264.6<< | 518.9 |
| 31 | 0.16 | -74.38 | -7852.02 | 738.4 | 64069.4>> | -1845.1 |
| 31 | -0.04 | 32.09 | -4757.28 | -391.2 | -2793.9<< | 451.5 |

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| BARRA 31 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 31 | 0.16 | -74.38 | -7852.02 | 738.4 | 64069.4>> | -1845.1 |
| 31 | -0.04 | 32.09 | -4757.28 | -391.2 | -2793.9<< | 451.5 |
| 32 | 0.16 | -85.71 | -9798.52 | 1554.9 | 45536.0>> | -1677.0 |
| 32 | -0.04 | 32.09 | -5644.87 | -369.6 | -13716.3<< | 384.1 |

| BARRA 32 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 32 | 0.13 | -85.71 | -9798.52 | 1576.6 | 45535.3>> | -1677.0 |
| 32 | -0.01 | 32.09 | -5644.87 | -376.1 | -13716.1<< | 384.1 |
| 33 | 0.13 | -44.06 | -9931.36 | 2012.6 | 24411.4>> | -1450.9 |
| 33 | -0.01 | 28.27 | -8068.86 | -186.6 | -27890.8<< | 356.7 |

| BARRA 33 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 33 | 0.13 | -44.06 | -9931.36 | 2012.6 | 24411.4>> | -1450.9 |
| 33 | -0.01 | 28.27 | -8068.86 | -186.6 | -27890.8<< | 356.7 |
| 34 | 0.12 | -42.64 | -11038.97 | 4230.7 | 2867.7>> | -1361.8 |
| 34 | -0.01 | 28.27 | -9202.98 | -130.5 | -46026.5<< | 297.4 |

| BARRA 34 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 34 | 0.12 | -42.64 | -11038.97 | 4230.7 | 2867.7>> | -1361.8 |
| 34 | -0.01 | 28.27 | -9202.98 | -130.5 | -46026.5<< | 297.4 |
| 35 | -0.17 | -42.57 | -7096.50 | 346.2 | -12235.1>> | 2072.5 |
| 35 | -0.07 | -32.06 | -12891.40 | -4339.6 | -68822.5<< | 1067.7 |

| BARRA 35 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 35 | 532.22 | -42.57 | -7076.51 | 183.9 | -12235.2>> | 2092.2 |
| 35 | 967.07 | -32.06 | -12855.08 | -4440.2 | -68820.4<< | 736.7 |
| 36 | 605.37 | -32.83 | -8048.68 | -146.5 | -28546.7>> | 1954.3 |
| 36 | 1293.92 | -45.38 | -17197.11 | 2639.5 | -101963.5<< | -690.7 |

| BARRA 36 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 36 | -0.16 | -32.83 | -8071.41 | 0.4 | -28546.7>> | 1959.8 |
| 36 | 0.09 | -45.38 | -17245.71 | 2579.9 | -101963.4<< | -886.7 |
| 37 | -0.16 | -32.83 | -9142.05 | 21.9 | -46612.5>> | 2028.7 |
| 37 | 0.09 | -54.30 | -18884.95 | 2089.0 | -139883.3<< | -782.1 |

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| BARRA 37 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 37 | -0.15 | 119.62 | 8359.91 | -585.9 | -46612.4>> | 2028.7 |
| 37 | 0.11 | 133.58 | 19344.13 | -1339.1 | -139883.2<< | -782.1 |
| 38 | -0.15 | 125.14 | 7358.99 | -639.9 | -30140.4>> | 1802.8 |
| 38 | 0.11 | 111.62 | 17264.89 | -2660.4 | -101818.6<< | -1037.6 |

| BARRA 38 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 38 | 551.98 | 125.14 | 7338.27 | -502.8 | -30140.4>> | 1845.7 |
| 38 | 1295.41 | 111.62 | 17216.25 | -2730.8 | -101818.6<< | -835.1 |
| 39 | 534.13 | 19.23 | 7100.42 | 124.4 | -14501.1>> | 804.8 |
| 39 | 965.33 | 64.53 | 12831.28 | 4413.6 | -68160.9<< | 153.8 |

| BARRA 39 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 39 | -0.06 | 19.23 | 7120.47 | 63.7 | -14501.1>> | 811.8 |
| 39 | -0.03 | 64.53 | 12867.53 | 4389.6 | -68160.9<< | 484.5 |
| 40 | 0.13 | 92.51 | 10965.56 | -3532.1 | 2040.8>> | -1704.4 |
| 40 | 0.06 | -3.24 | 9137.14 | 52.7 | -45109.5<< | -465.5 |

| BARRA 40 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 40 | 0.17 | 92.51 | 10965.56 | -3531.2 | 2042.4>> | -1704.4 |
| 40 | 0.04 | -3.24 | 9137.14 | 31.2 | -45109.5<< | -465.5 |
| 41 | 0.17 | 98.00 | 9856.41 | -1796.3 | 23421.2>> | -1885.4 |
| 41 | 0.04 | -3.24 | 8003.02 | 87.3 | -27111.9<< | -458.7 |

| BARRA 41 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 41 | 0.17 | 98.00 | 9856.41 | -1796.3 | 23421.2>> | -1885.4 |
| 41 | 0.04 | -3.24 | 8003.02 | 87.3 | -27111.9<< | -458.7 |
| 42 | 0.15 | 151.15 | 9853.92 | -1650.5 | 44671.2>> | -1756.5 |
| 42 | 0.04 | -11.72 | 5560.32 | 322.3 | -13088.4<< | -434.9 |

| BARRA 42 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 42 | 0.15 | 151.15 | 9853.92 | -1650.5 | 44671.2>> | -1756.5 |
| 42 | 0.04 | -11.72 | 5560.32 | 322.3 | -13088.4<< | -434.9 |
| 43 | 0.15 | 139.84 | 7907.43 | -834.0 | 63321.1>> | -2062.0 |
| 43 | 0.04 | -11.72 | 4672.72 | 343.9 | -2343.5<< | -410.3 |

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| BARRA 43 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 43 | 0.19 | 139.84 | 7907.43 | -803.8 | 63321.6>> | -2062.0 |
| 43 | 0.03 | -11.72 | 4672.72 | 342.7 | -2343.6<< | -410.3 |
| 44 | 0.19 | 120.02 | 5680.91 | -254.4 | 77828.6>> | -2342.1 |
| 44 | 0.03 | -11.72 | 3785.14 | 364.3 | 6537.4<< | -385.6 |

| BARRA 44 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 44 | 0.19 | 120.02 | 5680.91 | -254.4 | 77828.6>> | -2342.1 |
| 44 | 0.03 | -11.72 | 3785.14 | 364.3 | 6537.4<< | -385.6 |
| 45 | 0.19 | 104.34 | 3590.53 | 295.1 | 87660.4>> | -2580.6 |
| 45 | 0.03 | -11.72 | 2897.53 | 385.9 | 13554.4<< | -361.0 |

| BARRA 45 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 45 | 0.25 | 104.34 | 3590.53 | 336.9 | 87660.2>> | -2580.6 |
| 45 | 0.03 | -11.72 | 2897.53 | 392.3 | 13554.2<< | -361.0 |
| 46 | 0.26 | 94.21 | 1823.54 | 939.0 | 93022.4>> | -2798.6 |
| 46 | 0.03 | -11.72 | 2009.93 | 413.9 | 18707.3<< | -336.3 |

| BARRA 46 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 46 | 0.26 | 94.21 | 1823.54 | 939.0 | 93022.4>> | -2798.6 |
| 46 | 0.03 | -11.72 | 2009.93 | 413.9 | 18707.3<< | -336.3 |
| 47 | 0.26 | 80.92 | 223.22 | 180.9 | 95268.0>> | -2985.3 |
| 47 | 0.03 | -11.72 | 1122.33 | 435.5 | 21996.3<< | -311.7 |

| BARRA 47 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 47 | 0.26 | 80.92 | 223.22 | 180.9 | 95268.0>> | -2985.3 |
| 47 | 0.03 | -11.72 | 1122.33 | 435.5 | 21996.3<< | -311.7 |
| 48 | 0.26 | 67.64 | -1377.09 | -577.3 | 93933.6>> | -3137.6 |
| 48 | 0.06 | 119.34 | -1746.07 | -307.6 | 19278.1<< | -728.5 |

| BARRA 48 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 48 | 0.26 | 67.64 | -1377.09 | -577.3 | 93933.6>> | -3137.6 |
| 48 | 0.06 | 119.34 | -1746.07 | -307.6 | 19278.1<< | -728.5 |
| 49 | 0.25 | 57.39 | -3158.18 | 63.4 | 89480.0>> | -3285.2 |
| 49 | 0.06 | 119.34 | -2633.67 | -286.0 | 14679.2<< | -979.1 |

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| BARRA 49 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 49 | 0.27 | 57.39 | -3158.18 | 106.0 | 89479.9>> | -3285.2 |
| 49 | 0.09 | 119.34 | -2633.67 | -279.0 | 14679.3<< | -979.1 |
| 50 | 0.27 | 41.70 | -5248.55 | 655.5 | 80529.7>> | -3385.5 |
| 50 | 0.09 | 119.34 | -3521.27 | -257.4 | 8216.4<< | -1229.6 |

| BARRA 50 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 50 | 0.30 | 41.70 | -5248.55 | 693.9 | 80529.4>> | -3385.5 |
| 50 | 0.14 | 119.34 | -3521.27 | -253.5 | 8216.5<< | -1229.6 |
| 51 | 0.30 | 21.62 | -7483.53 | 974.7 | 66895.4>> | -3443.9 |
| 51 | 0.14 | 119.34 | -4408.86 | -232.0 | -110.5<< | -1480.2 |

| BARRA 51 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 51 | 0.30 | 21.62 | -7483.53 | 974.7 | 66895.4>> | -3443.9 |
| 51 | 0.14 | 119.34 | -4408.86 | -232.0 | -110.5<< | -1480.2 |
| 52 | 0.30 | 10.30 | -9430.06 | 1791.3 | 49135.4>> | -3477.5 |
| 52 | 0.14 | 119.34 | -5296.48 | -210.4 | -10301.6<< | -1730.8 |

| BARRA 52 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 52 | 0.30 | 10.30 | -9430.06 | 1791.4 | 49135.4>> | -3477.5 |
| 52 | 0.14 | 119.34 | -5296.48 | -210.4 | -10301.6<< | -1730.8 |
| 53 | 0.25 | 14.72 | -9485.86 | 1939.1 | 28150.1>> | -2926.4 |
| 53 | 0.16 | 127.81 | -7678.63 | 25.0 | -23063.4<< | -2194.0 |

| BARRA 53 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 53 | 0.26 | 14.72 | -9485.86 | 1939.0 | 28150.1>> | -2926.4 |
| 53 | 0.16 | 127.81 | -7678.63 | 25.1 | -23063.4<< | -2194.0 |
| 54 | 0.26 | 20.86 | -10588.15 | 4169.2 | 7578.9>> | -3040.5 |
| 54 | 0.16 | 127.81 | -8812.79 | 81.2 | -40380.1<< | -2462.4 |

| BARRA 54 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 54 | 0.26 | 20.86 | -10588.15 | 4172.8 | 7576.9>> | -3040.5 |
| 54 | 0.23 | 127.81 | -8812.79 | 62.0 | -40380.1<< | -2462.4 |
| 55 | -0.02 | 20.76 | -6742.97 | 485.9 | -7283.6>> | 80.2 |
| 55 | 0.14 | 52.83 | -12507.81 | -4209.9 | -62156.5<< | -1652.9 |

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| BARRA 55 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 55 | 505.87 | 20.76 | -6723.97 | 478.5 | -7283.6>> | 116.4 |
| 55 | 938.50 | 52.83 | -12472.55 | -4074.1 | -62156.5<< | -1964.1 |
| 56 | 579.32 | 21.04 | -7700.39 | 122.7 | -22921.1>> | 68.5 |
| 56 | 1266.22 | 53.83 | -16825.82 | 3103.3 | -94534.1<< | -3907.4 |

| BARRA 56 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 56 | -0.00 | 21.04 | -7722.16 | 116.5 | -22921.2>> | 59.1 |
| 56 | 0.35 | 53.83 | -16873.42 | 2756.4 | -94535.4<< | -4129.1 |
| 57 | -0.00 | 74.17 | -8435.10 | -503.0 | -40262.6>> | 61.8 |
| 57 | 0.35 | 44.90 | -18513.47 | 2265.3 | -131693.5<< | -4232.8 |

| BARRA 57 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 57 | -0.00 | 70.19 | 8291.83 | -1372.8 | -40262.5>> | 61.8 |
| 57 | 0.36 | -24.89 | 18832.41 | -1494.7 | -131693.2<< | -4232.8 |
| 58 | -0.00 | -18.02 | 7597.32 | -126.5 | -23182.7>> | -38.2 |
| 58 | 0.36 | -43.71 | 16756.65 | -2813.0 | -94776.9<< | -4135.8 |

| BARRA 58 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 58 | 569.97 | -18.02 | 7575.92 | -129.1 | -23182.7>> | -28.6 |
| 58 | 1257.48 | -43.71 | 16709.40 | -3115.4 | -94776.9<< | -3913.1 |
| 59 | 497.34 | -19.13 | 6610.60 | -16.2 | -7835.9>> | -63.3 |
| 59 | 929.02 | -46.48 | 12346.36 | 4099.9 | -62654.9<< | -2055.0 |

| BARRA 59 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 59 | -0.00 | -19.13 | 6629.26 | -15.1 | -7835.9>> | -64.3 |
| 59 | 0.14 | -46.50 | 12381.28 | 4212.7 | -62656.9<< | -1741.6 |
| 60 | 0.26 | -17.23 | 10472.08 | -3681.4 | 6744.9>> | -3106.7 |
| 60 | 0.21 | -119.00 | 8684.90 | -86.7 | -41132.3<< | -2532.8 |

| BARRA 60 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 60 | 0.26 | -17.23 | 10472.08 | -3681.4 | 6744.9>> | -3106.7 |
| 60 | 0.21 | -119.00 | 8684.90 | -86.7 | -41132.3<< | -2532.8 |
| 61 | 0.26 | -10.36 | 9360.45 | -1945.6 | 27097.1>> | -2983.4 |
| 61 | 0.21 | -119.00 | 7550.74 | -30.6 | -24083.9<< | -2282.9 |

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| BARRA 61 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 61 | 0.25 | -10.36 | 9360.45 | -1932.8 | 27098.0>> | -2983.4 |
| 61 | 0.14 | -119.00 | 7550.74 | -42.1 | -24083.9<< | -2282.9 |
| 62 | 0.29 | -1.97 | 9303.34 | -1816.0 | 47827.8>> | -3546.9 |
| 62 | 0.13 | -111.70 | 5169.17 | 201.0 | -11575.7<< | -1825.7 |

| BARRA 62 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 62 | 0.29 | -1.97 | 9303.34 | -1815.7 | 47827.8>> | -3546.9 |
| 62 | 0.13 | -111.70 | 5169.17 | 200.9 | -11575.7<< | -1825.7 |
| 63 | 0.29 | -13.29 | 7357.72 | -999.6 | 65314.6>> | -3530.9 |
| 63 | 0.13 | -111.70 | 4281.98 | 222.5 | -1656.1<< | -1591.2 |

| BARRA 63 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 63 | 0.29 | -13.29 | 7357.72 | -999.9 | 65314.6>> | -3530.9 |
| 63 | 0.13 | -111.70 | 4281.98 | 222.5 | -1656.1<< | -1591.2 |
| 64 | 0.29 | -33.06 | 5132.52 | -450.7 | 78664.7>> | -3489.3 |
| 64 | 0.13 | -111.70 | 3394.35 | 244.1 | 6404.6<< | -1356.6 |

| BARRA 64 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 64 | 0.29 | -33.06 | 5132.52 | -413.2 | 78664.9>> | -3489.3 |
| 64 | 0.09 | -111.70 | 3394.35 | 247.1 | 6404.5<< | -1356.6 |
| 65 | 0.29 | -48.76 | 3042.10 | 136.3 | 87340.9>> | -3406.2 |
| 65 | 0.09 | -111.70 | 2506.73 | 268.7 | 12601.0<< | -1122.1 |

| BARRA 65 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 65 | 0.29 | -48.76 | 3042.10 | 136.3 | 87340.9>> | -3406.2 |
| 65 | 0.09 | -111.70 | 2506.73 | 268.7 | 12601.0<< | -1122.1 |
| 66 | 0.27 | -58.91 | 1277.36 | 732.3 | 91546.0>> | -3278.0 |
| 66 | 0.09 | -111.70 | 1619.10 | 290.3 | 16933.4<< | -887.5 |

| BARRA 66 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 66 | 0.27 | -58.91 | 1277.36 | 732.3 | 91546.0>> | -3278.0 |
| 66 | 0.09 | -111.70 | 1619.10 | 290.3 | 16933.4<< | -887.5 |
| 67 | 0.27 | -72.19 | -322.99 | -25.8 | 92640.2>> | -3143.1 |
| 67 | 0.01 | 16.49 | -1249.24 | -484.9 | 19334.5<< | -320.3 |

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| BARRA 67 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 67 | 0.25 | -72.19 | -322.99 | 18.3 | 92640.2>> | -3143.1 |
| 67 | 0.04 | 16.49 | -1249.24 | -475.7 | 19334.7<< | -320.3 |
| 68 | 0.25 | -85.48 | -1923.36 | -739.8 | 90154.2>> | -2973.7 |
| 68 | 0.04 | 16.49 | -2136.88 | -454.1 | 15779.1<< | -354.9 |

| BARRA 68 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 68 | 0.25 | -85.48 | -1923.36 | -739.8 | 90154.2>> | -2973.7 |
| 68 | 0.04 | 16.49 | -2136.88 | -454.1 | 15779.1<< | -354.9 |
| 69 | 0.25 | -95.70 | -3706.67 | -92.8 | 84543.2>> | -2774.8 |
| 69 | 0.04 | 16.49 | -3024.49 | -432.5 | 10359.3<< | -389.6 |

| BARRA 69 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 69 | 0.25 | -95.70 | -3706.67 | -92.3 | 84543.2>> | -2774.8 |
| 69 | 0.04 | 16.49 | -3024.49 | -432.5 | 10359.3<< | -389.6 |
| 70 | 0.25 | -111.39 | -5796.34 | 456.6 | 74442.1>> | -2553.6 |
| 70 | 0.04 | 16.49 | -3911.71 | -410.9 | 3079.2<< | -424.1 |

| BARRA 70 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 70 | 0.20 | -111.39 | -5796.34 | 491.6 | 74441.8>> | -2553.6 |
| 70 | 0.04 | 16.49 | -3911.71 | -409.5 | 3079.4<< | -424.1 |
| 71 | 0.20 | -131.48 | -8032.78 | 770.1 | 59651.0>> | -2290.5 |
| 71 | 0.04 | 16.49 | -4799.33 | -387.9 | -6067.9<< | -458.8 |

| BARRA 71 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 71 | 0.20 | -131.48 | -8032.78 | 770.1 | 59651.0>> | -2290.5 |
| 71 | 0.04 | 16.49 | -4799.33 | -387.9 | -6067.9<< | -458.8 |
| 72 | 0.20 | -142.82 | -9979.38 | 1586.7 | 40736.8>> | -2002.5 |
| 72 | 0.04 | 16.49 | -5686.97 | -366.3 | -17079.4<< | -493.4 |

| BARRA 72 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 72 | 0.12 | -142.82 | -9979.38 | 1606.1 | 40736.0>> | -2002.5 |
| 72 | 0.04 | 16.49 | -5686.97 | -374.4 | -17079.2<< | -493.4 |
| 73 | 0.15 | -93.31 | -9981.77 | 1773.9 | 19249.4>> | -1979.0 |
| 73 | 0.04 | 9.19 | -8130.67 | -148.6 | -31401.8<< | -566.9 |

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| BARRA 73 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 73 | 0.15 | -93.31 | -9981.77 | 1773.9 | 19249.4>> | -1979.0 |
| 73 | 0.04 | 9.19 | -8130.67 | -148.6 | -31401.8<< | -566.9 |
| 74 | 0.15 | -88.51 | -11081.79 | 4005.8 | -2357.1>> | -1783.0 |
| 74 | 0.04 | 9.19 | -9264.86 | -92.5 | -49668.6<< | -586.1 |

| BARRA 74 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 74 | 0.15 | -88.51 | -11081.79 | 4005.8 | -2357.1>> | -1783.0 |
| 74 | 0.04 | 9.19 | -9264.86 | -92.5 | -49668.6<< | -586.1 |
| 75 | -0.07 | 32.14 | -6922.15 | -145.7 | -19696.2>> | 565.4 |
| 75 | -0.03 | -61.04 | -12993.96 | -4402.7 | -72961.3<< | 397.3 |

| BARRA 75 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 75 | 519.51 | 32.14 | -6902.64 | -197.2 | -19696.2>> | 552.1 |
| 75 | 975.21 | -61.04 | -12957.34 | -4455.2 | -72959.2<< | 63.1 |
| 76 | 561.71 | -117.59 | -7464.49 | 504.7 | -35149.1>> | 1513.6 |
| 76 | 1304.70 | -104.15 | -17332.78 | 2657.5 | -106828.3<< | -1067.5 |

| BARRA 76 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 76 | -0.13 | -117.59 | -7485.60 | 617.1 | -35149.1>> | 1471.4 |
| 76 | 0.11 | -104.15 | -17381.81 | 2570.5 | -106828.3<< | -1263.9 |
| 77 | -0.13 | -111.93 | -8486.42 | 561.6 | -51880.2>> | 1691.8 |
| 77 | 0.11 | -126.77 | -19459.32 | 1224.1 | -145131.1<< | -1003.3 |

| BARRA 77 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 77 | -0.15 | 26.01 | 9135.48 | 0.1 | -51880.3>> | 1691.8 |
| 77 | 0.11 | 71.67 | 18887.67 | -2075.3 | -145130.6<< | -1003.3 |
| 78 | -0.15 | 26.01 | 8064.24 | 21.7 | -33818.8>> | 1637.2 |
| 78 | 0.11 | 62.75 | 17247.51 | -2566.4 | -107185.0<< | -1144.4 |

| BARRA 78 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 78 | 604.84 | 26.01 | 8041.52 | 144.4 | -33818.8>> | 1630.9 |
| 78 | 1293.99 | 62.75 | 17198.90 | -2645.1 | -107185.0<< | -948.7 |
| 79 | 532.51 | 32.23 | 7079.85 | 281.2 | -17536.0>> | 1699.0 |
| 79 | 966.54 | 30.42 | 12848.36 | 4436.7 | -74052.8<< | 493.6 |

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| BARRA 79 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 79 | -0.15 | 32.23 | 7099.84 | 152.9 | -17536.0>> | 1715.3 |
| 79 | -0.07 | 30.42 | 12884.67 | 4387.2 | -74052.8<< | 825.0 |
| 80 | 0.13 | 64.24 | 11044.94 | -3682.7 | -2478.4>> | -1588.2 |
| 80 | 0.01 | -22.82 | 9193.75 | 189.4 | -51257.8<< | -65.7 |

| BARRA 80 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 80 | 0.13 | 64.24 | 11044.94 | -3682.7 | -2478.3>> | -1588.2 |
| 80 | 0.01 | -22.82 | 9193.75 | 189.0 | -51257.8<< | -65.7 |
| 81 | 0.12 | 67.25 | 9929.25 | -1959.1 | 19086.1>> | -1693.7 |
| 81 | 0.01 | -22.82 | 8060.07 | 245.1 | -33148.1<< | -17.7 |

| BARRA 81 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 81 | 0.16 | 67.25 | 9929.25 | -1950.2 | 19087.0>> | -1693.7 |
| 81 | -0.01 | -22.82 | 8060.07 | 229.6 | -33148.3<< | -17.7 |
| 82 | 0.16 | 108.39 | 9796.41 | -1511.8 | 40222.3>> | -2071.7 |
| 82 | -0.01 | -27.75 | 5633.08 | 416.9 | -18987.8<< | 59.5 |

| BARRA 82 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 82 | 0.20 | 108.39 | 9796.41 | -1492.7 | 40223.0>> | -2071.7 |
| 82 | -0.01 | -27.75 | 5633.08 | 407.8 | -18988.0<< | 59.5 |
| 83 | 0.20 | 97.06 | 7849.73 | -676.1 | 58753.5>> | -2287.4 |
| 83 | -0.01 | -27.75 | 4745.43 | 429.4 | -8089.4<< | 117.8 |

| BARRA 83 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 83 | 0.17 | 97.06 | 7849.73 | -704.0 | 58753.1>> | -2287.4 |
| 83 | -0.01 | -27.75 | 4745.43 | 433.3 | -8089.2<< | 117.8 |
| 84 | 0.17 | 77.34 | 5625.90 | -154.5 | 73134.3>> | -2477.5 |
| 84 | -0.01 | -27.75 | 3857.77 | 454.9 | 945.1<< | 176.2 |

| BARRA 84 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 84 | 0.25 | 77.34 | 5625.90 | -84.3 | 73134.4>> | -2477.5 |
| 84 | -0.03 | -27.75 | 3857.77 | 455.8 | 944.7<< | 176.2 |
| 85 | 0.25 | 61.65 | 3536.17 | 464.6 | 82839.0>> | -2626.0 |
| 85 | -0.03 | -27.75 | 2970.52 | 477.3 | 8111.8<< | 234.4 |

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| BARRA 85 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 85 | 0.20 | 61.65 | 3536.17 | 424.6 | 82839.2>> | -2626.0 |
| 85 | -0.01 | -27.75 | 2970.52 | 473.4 | 8112.0<< | 234.4 |
| 86 | 0.20 | 50.41 | 1772.77 | 1012.3 | 88077.2>> | -2736.0 |
| 86 | -0.01 | -27.75 | 2082.85 | 495.0 | 13418.6<< | 292.7 |

| BARRA 86 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 86 | 0.23 | 50.41 | 1772.77 | 1054.3 | 88076.8>> | -2736.0 |
| 86 | -0.03 | -27.75 | 2082.85 | 501.4 | 13418.4<< | 292.7 |
| 87 | 0.23 | 37.15 | 172.35 | 296.2 | 90207.1>> | -2830.6 |
| 87 | -0.03 | -27.75 | 1195.17 | 523.0 | 16860.7<< | 351.0 |

| BARRA 87 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 87 | 0.23 | 37.15 | 172.35 | 296.2 | 90207.1>> | -2830.6 |
| 87 | -0.03 | -27.75 | 1195.17 | 523.0 | 16860.7<< | 351.0 |
| 88 | 0.23 | 23.85 | -1428.05 | -462.0 | 88756.8>> | -2890.6 |
| 88 | -0.03 | -41.84 | 135.83 | 636.2 | 18272.9<< | 460.9 |

| BARRA 88 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 88 | 0.25 | 23.85 | -1428.05 | -419.7 | 88757.0>> | -2890.6 |
| 88 | -0.04 | -41.84 | 135.83 | 644.9 | 18272.6<< | 460.9 |
| 89 | 0.25 | 12.48 | -3214.50 | 229.4 | 84175.8>> | -2920.9 |
| 89 | 0.25 | 193.15 | -1618.86 | -904.1 | 16215.3<< | -2472.5 |

| BARRA 89 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 89 | 0.25 | 12.48 | -3214.50 | 230.0 | 84175.8>> | -2920.9 |
| 89 | 0.25 | 193.15 | -1618.86 | -904.0 | 16215.3<< | -2472.5 |
| 90 | 0.25 | -3.19 | -5304.22 | 779.0 | 75102.9>> | -2926.7 |
| 90 | 0.25 | 193.15 | -2506.11 | -882.4 | 11885.6<< | -2878.0 |

| BARRA 90 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 90 | 0.25 | -3.19 | -5304.22 | 778.4 | 75103.0>> | -2926.7 |
| 90 | 0.25 | 193.15 | -2506.11 | -882.5 | 11885.6<< | -2878.0 |
| 91 | 0.25 | -23.33 | -7542.15 | 1054.9 | 61339.0>> | -2890.5 |
| 91 | 0.25 | 193.15 | -3393.79 | -860.9 | 5690.0<< | -3283.6 |

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| BARRA 91 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 91 | 0.22 | -23.33 | -7542.15 | 1084.1 | 61338.5>> | -2890.5 |
| 91 | 0.32 | 193.15 | -3393.79 | -858.2 | 5690.4<< | -3283.6 |
| 92 | 0.22 | -34.67 | -9488.85 | 1900.7 | 43453.6>> | -2829.6 |
| 92 | 0.32 | 193.15 | -4281.47 | -836.6 | -2369.7<< | -3689.2 |

| BARRA 92 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 92 | 0.23 | -34.67 | -9488.85 | 1901.1 | 43453.6>> | -2829.6 |
| 92 | 0.32 | 193.15 | -4281.47 | -836.7 | -2369.7<< | -3689.2 |
| 93 | 0.22 | -7.42 | -9524.17 | 2015.3 | 22355.0>> | -2686.9 |
| 93 | 0.13 | 35.38 | -9142.06 | -3281.6 | -14002.8<< | -1625.9 |

| BARRA 93 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 93 | 0.20 | -7.42 | -9524.17 | 2015.1 | 22355.0>> | -2686.9 |
| 93 | 0.13 | 35.38 | -9142.06 | -3281.5 | -14002.8<< | -1625.9 |
| 94 | 0.20 | -4.14 | -10621.29 | 4245.3 | 1776.8>> | -2661.3 |
| 94 | 0.13 | 26.44 | -10571.09 | -3772.7 | -34704.3<< | -1690.8 |

| BARRA 94 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 94 | 0.20 | -4.14 | -10621.29 | 4246.1 | 1774.8>> | -2661.3 |
| 94 | 0.14 | 26.44 | -10571.09 | -3789.2 | -34702.5<< | -1690.8 |
| 95 | -0.10 | -44.22 | -5999.36 | 1143.1 | -13594.9>> | 1035.7 |
| 95 | 0.28 | 13.52 | -14955.92 | 3073.3 | -61018.3<< | -3306.4 |

| BARRA 95 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 95 | 449.95 | -44.22 | -5982.46 | 1062.2 | -13594.9>> | 1118.5 |
| 95 | 1122.20 | 13.52 | -14913.74 | 3312.7 | -61018.3<< | -3066.5 |
| 96 | 517.99 | -27.59 | -6886.41 | 675.5 | -27638.8>> | 921.8 |
| 96 | 1254.38 | 3.88 | -16670.63 | 3134.3 | -94365.1<< | -3084.3 |

| BARRA 96 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 96 | -0.09 | -27.59 | -6905.85 | 729.4 | -27639.2>> | 868.5 |
| 96 | 0.28 | 3.88 | -16717.79 | 2848.4 | -94366.5<< | -3310.7 |
| 97 | -0.09 | -27.59 | -7976.64 | 751.0 | -43260.7>> | 926.4 |
| 97 | 0.28 | -17.81 | -18812.53 | 1514.3 | -131887.2<< | -3268.4 |

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| BARRA 97 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 97 | -0.09 | 28.07 | 8634.43 | 98.9 | -43260.6>> | 926.4 |
| 97 | 0.27 | -14.30 | 18116.16 | -1674.7 | -131886.9<< | -3268.4 |
| 98 | -0.09 | 28.07 | 7563.13 | 120.5 | -26250.6>> | 867.5 |
| 98 | 0.27 | -23.21 | 16475.93 | -2165.8 | -95559.8<< | -3229.1 |

| BARRA 98 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 98 | 567.27 | 28.07 | 7541.83 | 185.2 | -26250.6>> | 856.0 |
| 98 | 1236.21 | -23.21 | 16429.50 | -2401.9 | -95559.8<< | -3057.5 |
| 99 | 509.19 | 38.08 | 6769.78 | 288.4 | -10975.7>> | 966.5 |
| 99 | 757.42 | -65.72 | 10066.14 | 378.1 | -66651.5<< | -1922.6 |

| BARRA 99 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 99 | -0.09 | 38.08 | 6788.91 | 209.8 | -10975.8>> | 985.4 |
| 99 | 0.14 | -65.72 | 10094.60 | 488.9 | -66651.8<< | -1888.9 |
| 100 | 0.39 | -169.17 | 7950.11 | -4144.4 | 4299.1>> | -4717.6 |
| 100 | 0.14 | -65.72 | 8960.86 | 545.0 | -46649.9<< | -1750.9 |

| BARRA 100 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 100 | 0.39 | -169.17 | 7950.11 | -4144.4 | 4299.1>> | -4717.6 |
| 100 | 0.14 | -65.72 | 8960.86 | 545.4 | -46649.9<< | -1750.9 |
| 101 | 0.39 | -154.58 | 7108.40 | -1940.3 | 19965.3>> | -4375.0 |
| 101 | 0.14 | -65.72 | 7826.59 | 601.5 | -29020.4<< | -1612.8 |

| BARRA 101 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 101 | 0.39 | -154.58 | 7108.40 | -1940.3 | 19965.3>> | -4375.0 |
| 101 | 0.14 | -65.72 | 7826.59 | 601.5 | -29020.4<< | -1612.8 |
| 102 | 0.23 | -43.27 | 8481.38 | -76.2 | 36148.2>> | -2603.0 |
| 102 | 0.13 | -60.05 | 5478.88 | 666.2 | -16188.0<< | -1349.8 |

| BARRA 102 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 102 | 0.22 | -43.27 | 8481.38 | -58.7 | 36148.2>> | -2603.0 |
| 102 | 0.12 | -60.05 | 5478.88 | 658.3 | -16188.4<< | -1349.8 |
| 103 | 0.09 | 20.57 | 7001.77 | -996.2 | 52362.2>> | -1147.5 |
| 103 | 0.12 | -60.05 | 4591.59 | 679.9 | -5617.6<< | -1223.7 |

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| BARRA 103 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 103 | 0.09 | 20.57 | 7001.77 | -996.6 | 52362.2>> | -1147.5 |
| 103 | 0.12 | -60.05 | 4591.59 | 680.0 | -5617.6<< | -1223.7 |
| 104 | 0.09 | 2.33 | 4933.38 | -744.9 | 65001.6>> | -1174.8 |
| 104 | 0.12 | -60.05 | 3703.87 | 701.5 | 3094.1<< | -1097.6 |

| BARRA 104 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 104 | 0.09 | 2.33 | 4933.38 | -714.0 | 65001.9>> | -1174.8 |
| 104 | 0.09 | -60.05 | 3703.87 | 703.0 | 3093.7<< | -1097.6 |
| 105 | 0.09 | -13.20 | 2954.83 | -461.8 | 73237.6>> | -1161.9 |
| 105 | 0.09 | -60.05 | 2816.17 | 724.6 | 9940.9<< | -971.4 |

| BARRA 105 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 105 | 0.09 | -13.20 | 2954.83 | -461.1 | 73237.6>> | -1161.9 |
| 105 | 0.09 | -60.05 | 2816.17 | 724.7 | 9940.9<< | -971.4 |
| 106 | 0.19 | -92.57 | 1731.98 | -58.8 | 77346.6>> | -2072.2 |
| 106 | 0.09 | -60.05 | 1928.85 | 746.2 | 14921.7<< | -845.3 |

| BARRA 106 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 106 | 0.19 | -92.57 | 1731.98 | -59.5 | 77346.6>> | -2072.2 |
| 106 | 0.09 | -60.05 | 1928.85 | 746.1 | 14921.7<< | -845.3 |
| 107 | 0.19 | -121.52 | -797.23 | -324.0 | 78152.7>> | -1842.1 |
| 107 | 0.09 | -60.05 | 1041.14 | 767.7 | 18040.8<< | -719.2 |

| BARRA 107 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 107 | 0.13 | -121.52 | -797.23 | -286.8 | 78152.8>> | -1842.1 |
| 107 | 0.04 | -60.05 | 1041.14 | 776.3 | 18040.4<< | -719.2 |
| 108 | 0.13 | -137.85 | -2908.96 | 222.4 | 74325.0>> | -1571.7 |
| 108 | 0.04 | -60.05 | 153.42 | 797.8 | 19294.9<< | -593.0 |

| BARRA 108 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 108 | 0.12 | -137.85 | -2908.96 | 223.0 | 74325.0>> | -1571.7 |
| 108 | 0.04 | -60.05 | 153.42 | 798.0 | 19294.9<< | -593.0 |
| 109 | 0.12 | -149.17 | -4854.84 | 1039.3 | 66175.4>> | -1270.4 |
| 109 | 0.04 | -60.05 | -733.89 | 819.6 | 18685.6<< | -466.9 |

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| BARRA 109 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 109 | 0.13 | -149.17 | -4854.84 | 1038.7 | 66175.4>> | -1270.4 |
| 109 | 0.04 | -60.05 | -733.89 | 819.4 | 18685.6<< | -466.9 |
| 110 | 0.13 | -160.50 | -6801.64 | 1855.3 | 53933.9>> | -945.1 |
| 110 | 0.04 | -60.05 | -1621.63 | 841.0 | 16211.8<< | -340.8 |

| BARRA 110 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 110 | 0.06 | -160.50 | -6801.64 | 1881.5 | 53933.0>> | -945.1 |
| 110 | 0.03 | -60.05 | -1621.63 | 848.9 | 16211.4<< | -340.8 |
| 111 | 0.06 | -170.50 | -8677.72 | 2986.0 | 37898.6>> | -653.7 |
| 111 | 0.03 | -60.05 | -2508.93 | 870.4 | 11875.6<< | -214.6 |

| BARRA 111 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 111 | 0.06 | -170.50 | -8677.72 | 2985.7 | 37898.7>> | -653.7 |
| 111 | 0.03 | -60.05 | -2508.93 | 870.3 | 11875.6<< | -214.6 |
| 112 | 0.06 | -186.19 | -10768.36 | 3535.4 | 17520.2>> | -280.4 |
| 112 | 0.03 | -60.05 | -3396.68 | 891.9 | 5673.5<< | -88.5 |

| BARRA 112 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 112 | 1127.74 | -186.19 | -10709.13 | 3553.6 | 17518.5>> | 92.3 |
| 112 | 355.71 | -60.05 | -3377.99 | 898.9 | 5673.1<< | 5.7 |
| 113 | 843.86 | 2.44 | -8013.14 | -7220.9 | 1.2>> | -760.4 |
| 113 | 1015.73 | -207.30 | -9645.38 | 11138.0 | -1.8<< | 1173.0 |

| BARRA 201 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 201 | 9101.40 | -7.50 | -0.01 | 0.0 | 0.2>> | -6312.7 |
| 201 | 6345.30 | 10.11 | 0.01 | 0.0 | -0.1<< | 548.5 |
| 1 | 6737.57 | 3.70 | 0.00 | 0.0 | 0.0>> | 454.0 |
| 1 | 6338.53 | 3.62 | 0.00 | 0.0 | 0.0<< | 446.7 |

| BARRA 202 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 202 | 21419.61 | -8.74 | 0.00 | 0.0 | 0.0>> | 591.2 |
| 202 | 21161.62 | -8.52 | 0.00 | 0.0 | 0.0<< | 576.7 |
| 17 | 21419.61 | -8.74 | 0.00 | 0.0 | 0.0>> | 753.9 |
| 17 | 21161.62 | -8.52 | 0.00 | 0.0 | 0.0<< | 735.2 |

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| BARRA 203 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 203 | 22503.11 | 16.12 | 0.00 | 0.0 | 0.0>> | 1167.2 |
| 203 | 21880.44 | 15.72 | 0.00 | 0.0 | 0.0<< | 1138.3 |
| 37 | 22503.11 | 16.12 | 0.00 | 0.0 | 0.0>> | 842.4 |
| 37 | 21880.44 | 15.72 | 0.00 | 0.0 | 0.0<< | 821.7 |

| BARRA 204 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 204 | 21673.39 | -20.90 | 0.00 | 0.0 | 0.0>> | 5.2 |
| 204 | 21160.51 | -20.39 | 0.00 | 0.0 | 0.0<< | 5.0 |
| 57 | 21673.39 | -20.90 | 0.00 | 0.0 | 0.0>> | 917.0 |
| 57 | 21160.51 | -20.39 | 0.00 | 0.0 | 0.0<< | 894.4 |

| BARRA 205 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 205 | 22622.85 | 16.26 | 0.00 | 0.0 | 0.0>> | 1160.4 |
| 205 | 22000.14 | 15.87 | 0.00 | 0.0 | 0.0<< | 1131.3 |
| 77 | 22622.85 | 16.26 | 0.00 | 0.0 | 0.0>> | 808.7 |
| 77 | 22000.14 | 15.87 | 0.00 | 0.0 | 0.0<< | 788.2 |

| BARRA 206 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 206 | 21592.37 | -13.66 | 0.00 | 0.0 | 0.0>> | 404.4 |
| 206 | 21334.53 | -13.32 | 0.00 | 0.0 | 0.0<< | 394.2 |
| 97 | 21592.37 | -13.66 | 0.00 | 0.0 | 0.0>> | 727.3 |
| 97 | 21334.53 | -13.32 | 0.00 | 0.0 | 0.0<< | 708.9 |

| BARRA 207 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 207 | 6570.93 | 7.19 | 0.00 | 0.0 | 0.0>> | 580.0 |
| 207 | 6171.80 | 7.01 | 0.00 | 0.0 | 0.0<< | 570.2 |
| 113 | 6570.93 | 7.19 | 0.00 | 0.0 | 0.0>> | 496.3 |
| 113 | 6171.80 | 7.01 | 0.00 | 0.0 | 0.0<< | 488.6 |

TITULO
=======
LAV-Gelida. V.Rierussa. ELU ECSW-SW(t=i)(1.35*G+0.54*LEV+(1.45*SWO o 1.20 SW2)+0.9*GT)

FICHERO DE GEOMETRIA COMPLETA
==============================
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
================================
1

| Fich | Num. Nudos | Num. barras | Num. hipotesis | NOMBRE FICHERO |
|---|---|---|---|---|
| 1 | 120 | 119 | 161 | ESFec.TXT |

| Fich | Hipotesis | Caracter | Coeficiente |
|---|---|---|---|
| 1 | 1 | 1 | 1.35 |
| 1 | 2 | 1 | 0.54 |
| 1 | 3 | 1 | 1.35 |
| 1 | 4 | 3 | 1.35 |
| 1 | 5 | 3 | 1.35 |
| 1 | 6 | 3 | 1.35 |
| 1 | 7 | 2 | 0.75 |
| 1 | 8 | 2 | 0.75 |
| 1 | 9 | 2 | 0.75 |
| 1 | 10 | 2 | 0.75 |
| 1 | 11 | 2 | 0.75 |
| 1 | 12 | 2 | 0.75 |
| 1 | 13 | 2 | 0.75 |
| 1 | 14 | 2 | 0.75 |
| 1 | 15 | 2 | 0.75 |
| 1 | 16 | 2 | 0.75 |
| 1 | 17 | 2 | 0.75 |
| 1 | 18 | 2 | 0.75 |
| 1 | 19 | 4 | 0.0 |
| 1 | 20 | 5 | 0.0 |
| 1 | 21 | 4 | 0.0 |
| 1 | 22 | 5 | 0.0 |
| 1 | 23 | 4 | 0.0 |
| 1 | 24 | 5 | 0.0 |
| 1 | 25 | 4 | 0.0 |
| 1 | 26 | 5 | 0.0 |
| 1 | 27 | 4 | 0.0 |
| 1 | 28 | 5 | 0.0 |
| 1 | 29 | 4 | 0.0 |
| 1 | 30 | 5 | 0.0 |
| 1 | 31 | 4 | 0.0 |
| 1 | 32 | 5 | 0.0 |
| 1 | 33 | 4 | 0.0 |
| 1 | 34 | 5 | 0.0 |
| 1 | 35 | 4 | 0.0 |
| 1 | 36 | 5 | 0.0 |
| 1 | 37 | 4 | 0.0 |
| 1 | 38 | 5 | 0.0 |
| 1 | 39 | 4 | 0.0 |
| 1 | 40 | 5 | 0.0 |
| 1 | 41 | 6 | 0.0 |
| 1 | 42 | 7 | 0.0 |
| 1 | 43 | 6 | 0.0 |
| 1 | 44 | 7 | 0.0 |
| 1 | 45 | 6 | 0.0 |
| 1 | 46 | 7 | 0.0 |

| | | | |
|---|---|---|---|
| 1 | 47 | 6 | 0.0 |
| 1 | 48 | 7 | 0.0 |
| 1 | 49 | 6 | 0.0 |
| 1 | 50 | 7 | 0.0 |
| 1 | 51 | 6 | 0.0 |
| 1 | 52 | 7 | 0.0 |
| 1 | 53 | 6 | 0.0 |
| 1 | 54 | 7 | 0.0 |
| 1 | 55 | 6 | 0.0 |
| 1 | 56 | 7 | 0.0 |
| 1 | 57 | 6 | 0.0 |
| 1 | 58 | 7 | 0.0 |
| 1 | 59 | 6 | 0.0 |
| 1 | 60 | 7 | 0.0 |
| 1 | 61 | 6 | 0.0 |
| 1 | 62 | 7 | 0.0 |
| 1 | 63 | 6 | 0.0 |
| 1 | 64 | 7 | 0.0 |
| 1 | 65 | 6 | 0.0 |
| 1 | 66 | 7 | 0.0 |
| 1 | 67 | 6 | 0.0 |
| 1 | 68 | 7 | 0.0 |
| 1 | 69 | 6 | 0.0 |
| 1 | 70 | 7 | 0.0 |
| 1 | 71 | 6 | 0.0 |
| 1 | 72 | 7 | 0.0 |
| 1 | 73 | 6 | 0.0 |
| 1 | 74 | 7 | 0.0 |
| 1 | 75 | 6 | 0.0 |
| 1 | 76 | 7 | 0.0 |
| 1 | 77 | 6 | 0.0 |
| 1 | 78 | 7 | 0.0 |
| 1 | 79 | 6 | 0.0 |
| 1 | 80 | 7 | 0.0 |
| 1 | 81 | 6 | 0.0 |
| 1 | 82 | 7 | 0.0 |
| 1 | 83 | 6 | 0.0 |
| 1 | 84 | 7 | 0.0 |
| 1 | 85 | 6 | 0.0 |
| 1 | 86 | 7 | 0.0 |
| 1 | 87 | 6 | 0.0 |
| 1 | 88 | 7 | 0.0 |
| 1 | 89 | 6 | 0.0 |
| 1 | 90 | 7 | 0.0 |
| 1 | 91 | 6 | 0.0 |
| 1 | 92 | 7 | 0.0 |
| 1 | 93 | 6 | 0.0 |
| 1 | 94 | 7 | 0.0 |
| 1 | 95 | 6 | 0.0 |
| 1 | 96 | 7 | 0.0 |
| 1 | 97 | 8 | 1.45 |
| 1 | 98 | 9 | 1.45 |
| 1 | 99 | 8 | 1.45 |
| 1 | 100 | 9 | 1.45 |
| 1 | 101 | 8 | 1.45 |
| 1 | 102 | 9 | 1.45 |
| 1 | 103 | 8 | 1.45 |
| 1 | 104 | 9 | 1.45 |
| 1 | 105 | 8 | 1.45 |
| 1 | 106 | 9 | 1.45 |
| 1 | 107 | 8 | 1.45 |
| 1 | 108 | 9 | 1.45 |
| 1 | 109 | 8 | 1.45 |
| 1 | 110 | 9 | 1.45 |
| 1 | 111 | 8 | 1.45 |
| 1 | 112 | 9 | 1.45 |
| 1 | 113 | 8 | 1.45 |
| 1 | 114 | 9 | 1.45 |
| 1 | 115 | 8 | 1.45 |
| 1 | 116 | 9 | 1.45 |
| 1 | 117 | 8 | 1.45 |
| 1 | 118 | 9 | 1.45 |
| 1 | 119 | 8 | 1.20 |
| 1 | 120 | 9 | 1.20 |
| 1 | 121 | 8 | 1.20 |
| 1 | 122 | 9 | 1.20 |
| 1 | 123 | 8 | 1.20 |
| 1 | 124 | 9 | 1.20 |
| 1 | 125 | 8 | 1.20 |
| 1 | 126 | 9 | 1.20 |
| 1 | 127 | 8 | 1.20 |
| 1 | 128 | 9 | 1.20 |
| 1 | 129 | 8 | 1.20 |
| 1 | 130 | 9 | 1.20 |
| 1 | 131 | 8 | 1.20 |
| 1 | 132 | 9 | 1.20 |
| 1 | 133 | 8 | 1.20 |
| 1 | 134 | 9 | 1.20 |
| 1 | 135 | 8 | 1.20 |
| 1 | 136 | 9 | 1.20 |
| 1 | 137 | 8 | 1.20 |
| 1 | 138 | 9 | 1.20 |
| 1 | 139 | 8 | 1.20 |
| 1 | 140 | 9 | 1.20 |
| 1 | 141 | 2 | 0.9 |
| 1 | 142 | 1 | 0.00 |
| 1 | 143 | 1 | 0.00 |
| 1 | 144 | 1 | 0.00 |
| 1 | 145 | 1 | 0.00 |
| 1 | 146 | 1 | 0.00 |
| 1 | 147 | 1 | 0.00 |
| 1 | 148 | 1 | 0.00 |
| 1 | 149 | 1 | 0.00 |
| 1 | 150 | 1 | 0.00 |
| 1 | 151 | 1 | 0.00 |
| 1 | 152 | 1 | 0.00 |
| 1 | 153 | 1 | 0.00 |
| 1 | 154 | 1 | 0.00 |
| 1 | 155 | 1 | 0.00 |
| 1 | 156 | 1 | 0.00 |
| 1 | 157 | 1 | 0.00 |
| 1 | 158 | 1 | 0.00 |
| 1 | 159 | 1 | 0.00 |
| 1 | 160 | 1 | 0.00 |
| 1 | 161 | 1 | 0.00 |

PONDERACION DE ESFUERZOS

LAV-Gelida. V.Rierussa. ELU ECSW-SW(t=i)(1.35*G+0.54*LEV+(1.45*SW0 o 1.20 SW2)+0.9*GT)

| BARRA | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 1 | 1011.55 | -87.58 | 9603.46 | 6831.1 | 0.0>> | -719.6 |
| 1 | 969.68 | 167.19 | 9205.90 | -10091.5 | -0.0<< | 1063.0 |
| 2 | 1202.81 | 73.59 | 11419.07 | -2689.0 | 18475.9>> | 197.5 |
| 2 | 370.30 | 22.12 | 3515.57 | -546.8 | 5879.5<< | 25.8 |

| BARRA 2 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 2 | 0.03 | 73.59 | 11482.22 | -2686.1 | 18477.2>> | -85.3 |
| 2 | 0.01 | 22.12 | 3535.03 | -543.7 | 5879.8<< | -31.6 |
| 3 | 0.03 | 68.78 | 9340.49 | -2317.9 | 40341.1>> | -234.8 |
| 3 | 0.01 | 22.12 | 2647.47 | -522.1 | 12371.4<< | -78.1 |

| BARRA 3 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 3 | 0.00 | 68.78 | 9340.49 | -2337.2 | 40339.9>> | -234.8 |
| 3 | 0.00 | 22.12 | 2647.47 | -528.0 | 12371.1<< | -78.1 |
| 4 | 0.00 | 63.98 | 7198.77 | -1969.0 | 57706.2>> | -374.1 |
| 4 | 0.00 | 22.12 | 1759.90 | -506.4 | 16998.9<< | -124.5 |

| BARRA 4 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 4 | 0.06 | 63.98 | 7198.77 | -1914.0 | 57708.0>> | -374.1 |
| 4 | 0.03 | 22.12 | 1759.90 | -490.3 | 16999.3<< | -124.5 |
| 5 | 0.06 | 59.16 | 5057.06 | -1545.9 | 70576.6>> | -503.5 |
| 5 | 0.03 | 22.12 | 872.34 | -468.7 | 19763.2<< | -171.0 |

| BARRA 5 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 5 | 0.03 | 59.16 | 5057.06 | -1579.5 | 70575.9>> | -503.5 |
| 5 | 0.01 | 22.12 | 872.34 | -478.1 | 19762.9<< | -171.0 |
| 6 | 0.03 | 54.35 | 2915.30 | -1211.4 | 78946.9>> | -622.7 |
| 6 | 0.01 | 22.12 | -15.25 | -456.5 | 20662.9<< | -217.5 |

| BARRA 6 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 6 | 0.06 | 54.35 | 2915.30 | -1173.8 | 78947.5>> | -622.7 |
| 6 | 0.03 | 22.12 | -15.25 | -446.7 | 20663.1<< | -217.5 |
| 7 | 0.06 | 49.55 | 773.60 | -805.7 | 82820.8>> | -731.7 |
| 7 | 0.03 | 22.12 | -902.80 | -425.1 | 19699.1<< | -264.0 |

LAV-Gelida. V.Rierussa. ELU ECSW-SW(t=i)(1.35*G+0.54*LEV+(1.45*SW0 o 1.20 SW2)+0.9*GT)

| BARRA 7 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 7 | 0.06 | 49.55 | 773.60 | -805.7 | 82820.8>> | -731.7 |
| 7 | 0.03 | 22.12 | -902.80 | -425.1 | 19699.1<< | -264.0 |
| 8 | 0.04 | 31.82 | -512.96 | -593.3 | 82443.1>> | -649.4 |
| 8 | 0.03 | 22.12 | -1790.37 | -403.5 | 16871.3<< | -310.4 |

| BARRA 8 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 8 | 0.06 | 31.82 | -512.96 | -554.1 | 82443.4>> | -649.4 |
| 8 | 0.03 | 22.12 | -1790.37 | -395.5 | 16871.5<< | -310.4 |
| 9 | 0.06 | 27.33 | -2430.64 | -254.4 | 79352.6>> | -711.5 |
| 9 | 0.03 | 22.12 | -2677.95 | -373.9 | 12179.7<< | -356.9 |

| BARRA 9 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 9 | 0.06 | 27.33 | -2430.64 | -254.4 | 79352.6>> | -711.5 |
| 9 | 0.03 | 22.12 | -2677.95 | -373.9 | 12179.7<< | -356.9 |
| 10 | 0.06 | 22.84 | -4348.30 | 45.3 | 72234.7>> | -764.2 |
| 10 | 0.03 | 22.12 | -3565.52 | -352.3 | 5624.1<< | -403.4 |

| BARRA 10 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 10 | 0.06 | 22.84 | -4348.30 | 79.7 | 72234.7>> | -764.2 |
| 10 | 0.04 | 22.12 | -3565.52 | -349.7 | 5624.3<< | -403.4 |
| 11 | 0.06 | 18.35 | -6265.95 | 379.4 | 61089.7>> | -807.4 |
| 11 | 0.04 | 22.12 | -4453.07 | -328.1 | -2795.3<< | -449.9 |

| BARRA 11 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 11 | 0.06 | 18.35 | -6265.95 | 350.3 | 61089.9>> | -807.4 |
| 11 | 0.03 | 22.12 | -4453.07 | -326.8 | -2795.5<< | -449.9 |
| 12 | 0.07 | 37.63 | -7461.57 | 291.3 | 46744.6>> | -1184.6 |
| 12 | 0.03 | 22.12 | -5340.66 | -305.2 | -13078.9<< | -496.4 |

| BARRA 12 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 12 | 0.13 | 37.63 | -7461.57 | 335.8 | 46744.3>> | -1184.6 |
| 12 | 0.07 | 22.12 | -5340.66 | -317.7 | -13078.6<< | -496.4 |
| 13 | 0.13 | 30.05 | -8140.37 | 652.6 | 29290.7>> | -1193.2 |
| 13 | 0.07 | 24.89 | -7691.12 | -244.7 | -25690.5<< | -608.2 |

LAV-Gelida. V.Rierussa. ELU ECSW-SW(t=i)(1.35*G+0.54*LEV+(1.45*SW0 o 1.20 SW2)+0.9*GT)

| BARRA 13 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 13 | 0.10 | 30.05 | -8140.37 | 638.6 | 29291.0>> | -1193.2 |
| 13 | 0.04 | 24.89 | -7691.12 | -232.5 | -25690.6<< | -608.2 |
| 14 | 0.10 | 25.24 | -10035.57 | 972.2 | 10206.2>> | -1251.3 |
| 14 | 0.04 | 24.89 | -8825.21 | -176.4 | -43032.8<< | -660.5 |

| BARRA 14 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 14 | 0.13 | 25.24 | -10035.57 | 977.1 | 10205.8>> | -1251.3 |
| 14 | 0.07 | 24.89 | -8825.21 | -196.8 | -43032.7<< | -660.5 |
| 15 | -0.03 | -20.83 | -6498.17 | 23.1 | -6320.0>> | 601.2 |
| 15 | 0.07 | 24.89 | -9959.32 | -140.7 | -62756.5<< | -712.7 |

| BARRA 15 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 15 | 487.50 | -20.83 | -6479.84 | -22.0 | -6320.0>> | 601.3 |
| 15 | 747.28 | 24.89 | -9931.24 | -86.8 | -62756.5<< | -721.3 |
| 16 | 554.00 | -20.83 | -7363.98 | -1.4 | -20742.6>> | 645.0 |
| 16 | 1243.58 | 23.37 | -16527.03 | 1488.6 | -89434.3<< | -1527.8 |

| BARRA 16 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 16 | -0.06 | -20.83 | -7384.79 | 37.1 | -20742.6>> | 643.3 |
| 16 | 0.15 | 23.37 | -16573.75 | 1327.2 | -89435.0<< | -1635.2 |
| 17 | -0.06 | -20.83 | -8455.94 | 58.6 | -37375.4>> | 687.0 |
| 17 | 0.15 | 23.37 | -17918.97 | 1383.3 | -125652.5<< | -1684.2 |

| BARRA 17 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 17 | -0.04 | 20.95 | 7939.83 | -512.4 | -37375.4>> | 687.0 |
| 17 | 0.15 | -12.27 | 18239.52 | -2313.2 | -125652.3<< | -1684.2 |
| 18 | -0.04 | 20.95 | 6868.69 | -490.8 | -21826.4>> | 643.1 |
| 18 | 0.15 | -12.27 | 16894.30 | -2257.1 | -88761.6<< | -1658.5 |

| BARRA 18 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 18 | 515.29 | 20.95 | 6849.32 | -451.5 | -21826.1>> | 678.9 |
| 18 | 1267.65 | -12.27 | 16846.65 | -2417.3 | -88760.5<< | -1481.3 |
| 19 | 434.69 | 20.95 | 5778.17 | -429.9 | -8529.7>> | 634.8 |
| 19 | 1147.25 | -13.78 | 15246.53 | -2277.5 | -54790.8<< | -1454.9 |

LAV-Gelida. V.Rierussa. ELU ECSW-SW(t=i)(1.35*G+0.54*LEV+(1.45*SW0 o 1.20 SW2)+0.9*GT)

| BARRA 19 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 19 | -0.04 | 20.95 | 5794.52 | -472.3 | -8529.9>> | 600.7 |
| 19 | 0.15 | -13.78 | 15289.66 | -2135.8 | -54791.9<< | -1621.7 |
| 20 | 0.07 | 20.24 | 11853.83 | -2069.2 | 5911.3>> | -882.4 |
| 20 | 0.13 | -45.45 | 8473.72 | -286.6 | -30887.8<< | -1191.2 |

| BARRA 20 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 20 | 0.09 | 20.24 | 11853.83 | -2063.6 | 5913.2>> | -882.4 |
| 20 | 0.07 | -45.45 | 8473.72 | -316.0 | -30887.5<< | -1191.2 |
| 21 | 0.09 | 15.44 | 9958.63 | -1730.0 | 28816.5>> | -919.8 |
| 21 | 0.07 | -45.45 | 7339.62 | -259.9 | -14283.3<< | -1095.7 |

| BARRA 21 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 21 | 0.09 | 15.44 | 9958.63 | -1743.7 | 28815.7>> | -919.8 |
| 21 | 0.10 | -45.45 | 7339.62 | -253.1 | -14283.4<< | -1095.7 |
| 22 | 0.09 | 6.80 | 9316.37 | -1634.6 | 49998.1>> | -995.5 |
| 22 | 0.10 | -41.62 | 4952.57 | 27.5 | -2320.1<< | -951.9 |

| BARRA 22 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 22 | 0.09 | 6.80 | 9316.37 | -1610.8 | 49998.9>> | -995.5 |
| 22 | 0.07 | -41.62 | 4952.57 | 26.4 | -2320.1<< | -951.9 |
| 23 | 0.09 | 2.00 | 7174.62 | -1242.7 | 67314.5>> | -1004.7 |
| 23 | 0.07 | -41.62 | 4064.97 | 48.0 | 7148.4<< | -864.5 |

| BARRA 23 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 23 | 0.09 | 2.00 | 7174.62 | -1242.7 | 67314.5>> | -1004.7 |
| 23 | 0.07 | -41.62 | 4064.97 | 48.0 | 7148.4<< | -864.5 |
| 24 | 0.09 | -2.82 | 5032.89 | -874.5 | 80132.5>> | -1003.8 |
| 24 | 0.07 | -41.62 | 3177.41 | 69.5 | 14753.0<< | -777.1 |

| BARRA 24 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 24 | 0.07 | -2.82 | 5032.89 | -836.4 | 80132.9>> | -1003.8 |
| 24 | 0.06 | -41.62 | 3177.41 | 76.6 | 14753.0<< | -777.1 |
| 25 | 0.07 | -7.63 | 2891.15 | -468.2 | 88453.2>> | -992.8 |
| 25 | 0.06 | -41.62 | 2289.84 | 98.1 | 20493.6<< | -689.6 |

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| BARRA 25 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 25 | 0.07 | -7.63 | 2891.15 | -468.2 | 88453.2>> | -992.8 |
| 25 | 0.06 | -41.62 | 2289.84 | 98.1 | 20493.6<< | -689.6 |
| 26 | 0.07 | -11.14 | 1015.43 | -184.8 | 92351.6>> | -972.1 |
| 26 | -0.03 | 21.07 | -344.07 | -298.1 | 23623.0<< | 293.7 |

| BARRA 26 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 26 | 0.09 | -11.14 | 1015.43 | -140.8 | 92351.7>> | -972.1 |
| 26 | -0.03 | 21.07 | -344.07 | -286.9 | 23623.1<< | 293.7 |
| 27 | 0.09 | -11.14 | -146.26 | -84.7 | 93264.3>> | -948.7 |
| 27 | -0.03 | 21.07 | -1231.65 | -265.3 | 21968.6<< | 249.5 |

| BARRA 27 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 27 | 0.07 | -11.14 | -146.26 | -129.1 | 93264.3>> | -948.7 |
| 27 | -0.03 | 21.07 | -1231.65 | -275.8 | 21968.4<< | 249.5 |
| 28 | 0.07 | -11.14 | -1307.93 | -73.0 | 91737.4>> | -925.2 |
| 28 | -0.03 | 21.07 | -2119.23 | -254.2 | 18450.0<< | 205.3 |

| BARRA 28 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 28 | 0.07 | -11.14 | -1307.93 | 14.3 | 91737.4>> | -925.2 |
| 28 | 0.00 | 21.07 | -2119.23 | -236.6 | 18450.2<< | 205.3 |
| 29 | 0.07 | -14.74 | -3202.31 | 303.7 | 87195.8>> | -899.0 |
| 29 | 0.00 | 21.07 | -3006.81 | -215.1 | 13067.8<< | 161.0 |

| BARRA 29 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 29 | 0.09 | -14.74 | -3202.31 | 262.2 | 87195.9>> | -899.0 |
| 29 | -0.03 | 21.07 | -3006.81 | -221.3 | 13067.7<< | 161.0 |
| 30 | 0.09 | -19.55 | -5344.07 | 630.4 | 78222.1>> | -863.0 |
| 30 | -0.03 | 21.07 | -3894.39 | -199.7 | 5821.4<< | 116.8 |

| BARRA 30 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 30 | 0.07 | -19.55 | -5344.07 | 667.6 | 78221.8>> | -863.0 |
| 30 | 0.00 | 21.07 | -3894.39 | -196.9 | 5821.5<< | 116.8 |
| 31 | 0.07 | -24.36 | -7485.81 | 1035.8 | 64750.2>> | -816.9 |
| 31 | 0.00 | 21.07 | -4781.96 | -175.4 | -3288.8<< | 72.6 |

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| BARRA 31 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 31 | 0.07 | -24.36 | -7485.81 | 1035.8 | 64750.2>> | -816.9 |
| 31 | 0.00 | 21.07 | -4781.96 | -175.4 | -3288.8<< | 72.6 |
| 32 | 0.07 | -29.18 | -9627.58 | 1403.9 | 46780.9>> | -760.6 |
| 32 | 0.00 | 21.07 | -5669.55 | -153.8 | -14263.0<< | 28.4 |

| BARRA 32 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 32 | 0.06 | -29.18 | -9627.58 | 1426.1 | 46780.3>> | -760.6 |
| 32 | 0.01 | 21.07 | -5669.55 | -160.6 | -14262.9<< | 28.4 |
| 33 | 0.06 | -30.17 | -10232.91 | 1626.3 | 25701.4>> | -734.3 |
| 33 | 0.01 | 17.25 | -8093.54 | 28.9 | -28489.5<< | 24.1 |

| BARRA 33 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 33 | 0.06 | -30.17 | -10232.91 | 1626.3 | 25701.4>> | -734.3 |
| 33 | 0.01 | 17.25 | -8093.54 | 28.9 | -28489.5<< | 24.1 |
| 34 | 0.06 | -34.99 | -12128.16 | 1959.9 | 2221.9>> | -665.9 |
| 34 | 0.01 | 17.25 | -9227.66 | 85.0 | -46677.0<< | -12.1 |

| BARRA 34 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 34 | 0.06 | -34.99 | -12128.16 | 1959.9 | 2221.9>> | -665.9 |
| 34 | 0.01 | 17.25 | -9227.66 | 85.0 | -46677.0<< | -12.1 |
| 35 | -0.07 | -16.96 | -6990.73 | 89.7 | -12539.1>> | 942.0 |
| 35 | 0.01 | 17.25 | -10580.20 | 142.6 | -67441.6<< | -48.2 |

| BARRA 35 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 35 | 524.39 | -16.96 | -6971.02 | 12.8 | -12539.2>> | 945.6 |
| 35 | 793.80 | 17.25 | -10550.39 | 113.8 | -67441.6<< | -39.8 |
| 36 | 604.97 | -16.96 | -8042.19 | 34.5 | -28347.9>> | 981.4 |
| 36 | 1301.63 | -9.82 | -17299.76 | 2039.4 | -99751.2<< | -584.6 |

| BARRA 36 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 36 | -0.07 | -16.96 | -8064.92 | 107.9 | -28347.9>> | 976.0 |
| 36 | 0.07 | -9.82 | -17348.63 | 1989.5 | -99751.2<< | -735.9 |
| 37 | -0.07 | -16.96 | -9135.57 | 129.5 | -46400.1>> | 1011.6 |
| 37 | 0.07 | -9.82 | -18693.24 | 2045.6 | -137577.8<< | -715.3 |

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| BARRA 37 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 37 | -0.07 | 62.11 | 8336.31 | -448.8 | -46400.0>> | 1011.6 |
| 37 | 0.08 | 46.34 | 18715.95 | -2132.9 | -137577.5<< | -715.3 |
| 38 | -0.07 | 62.11 | 7265.16 | -427.3 | -30018.1>> | 881.2 |
| 38 | 0.08 | 46.34 | 17370.71 | -2076.8 | -99685.7<< | -812.6 |

| BARRA 38 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 38 | 545.01 | 62.11 | 7244.70 | -360.0 | -30018.1>> | 910.8 |
| 38 | 1303.32 | 46.34 | 17321.77 | -2131.9 | -99685.7<< | -654.5 |
| 39 | 526.73 | 9.59 | 7001.56 | -97.6 | -15217.2>> | 329.7 |
| 39 | 789.01 | 2.43 | 10486.58 | -206.5 | -66379.5<< | -348.1 |

| BARRA 39 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 39 | -0.03 | 9.59 | 7021.34 | -122.0 | -15217.2>> | 321.5 |
| 39 | 0.04 | 2.43 | 10516.21 | -179.8 | -66379.5<< | -362.6 |
| 40 | 0.04 | 61.50 | 12164.17 | -1976.1 | 1174.6>> | -600.9 |
| 40 | 0.04 | 2.43 | 9160.06 | -122.2 | -45723.0<< | -367.7 |

| BARRA 40 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 40 | 0.07 | 61.50 | 12164.17 | -1975.6 | 1175.5>> | -600.9 |
| 40 | 0.03 | 2.43 | 9160.06 | -144.0 | -45722.9<< | -367.7 |
| 41 | 0.07 | 56.69 | 10268.95 | -1642.0 | 24731.0>> | -725.0 |
| 41 | 0.03 | 2.43 | 8025.94 | -87.9 | -27677.2<< | -372.7 |

| BARRA 41 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 41 | 0.07 | 56.69 | 10268.95 | -1642.0 | 24731.0>> | -725.0 |
| 41 | 0.03 | 2.43 | 8025.94 | -87.9 | -27677.2<< | -372.7 |
| 42 | 0.07 | 60.35 | 9682.30 | -1487.2 | 45898.7>> | -855.8 |
| 42 | 0.03 | -6.05 | 5583.25 | 147.1 | -13605.6<< | -360.9 |

| BARRA 42 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 42 | 0.07 | 60.35 | 9682.30 | -1487.2 | 45898.7>> | -855.8 |
| 42 | 0.03 | -6.05 | 5583.25 | 147.1 | -13605.6<< | -360.9 |
| 43 | 0.07 | 55.55 | 7540.53 | -1119.1 | 63983.1>> | -977.5 |
| 43 | 0.03 | -6.05 | 4695.65 | 168.7 | -2812.5<< | -348.1 |

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| BARRA 43 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 43 | 0.09 | 55.55 | 7540.53 | -1088.6 | 63983.7>> | -977.5 |
| 43 | 0.03 | -6.05 | 4695.65 | 167.4 | -2812.5<< | -348.1 |
| 44 | 0.09 | 50.74 | 5398.72 | -720.5 | 77570.3>> | -1089.1 |
| 44 | 0.03 | -6.05 | 3808.06 | 188.9 | 6116.6<< | -335.4 |

| BARRA 44 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 44 | 0.09 | 50.74 | 5398.72 | -720.5 | 77570.3>> | -1089.1 |
| 44 | 0.03 | -6.05 | 3808.06 | 188.9 | 6116.6<< | -335.4 |
| 45 | 0.09 | 45.92 | 3256.95 | -352.3 | 86659.0>> | -1190.5 |
| 45 | 0.03 | -6.05 | 2920.45 | 210.5 | 13181.8<< | -322.6 |

| BARRA 45 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 45 | 0.12 | 45.92 | 3256.95 | -311.1 | 86659.2>> | -1190.5 |
| 45 | 0.03 | -6.05 | 2920.45 | 216.8 | 13181.6<< | -322.6 |
| 46 | 0.12 | 42.44 | 1385.86 | -29.3 | 91328.5>> | -1282.3 |
| 46 | 0.03 | -6.05 | 2032.85 | 238.3 | 18382.8<< | -309.8 |

| BARRA 46 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 46 | 0.12 | 42.44 | 1385.86 | -29.3 | 91328.5>> | -1282.3 |
| 46 | 0.03 | -6.05 | 2032.85 | 238.3 | 18382.8<< | -309.8 |
| 47 | 0.12 | 42.44 | 224.16 | 26.8 | 93019.1>> | -1371.3 |
| 47 | 0.03 | -6.05 | 1145.26 | 259.9 | 21719.9<< | -297.1 |

| BARRA 47 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 47 | 0.12 | 42.44 | 224.16 | 26.8 | 93019.1>> | -1371.3 |
| 47 | 0.03 | -6.05 | 1145.26 | 259.9 | 21719.9<< | -297.1 |
| 48 | 0.12 | 42.44 | -937.52 | 83.0 | 92270.1>> | -1460.5 |
| 48 | 0.04 | 61.84 | -1769.68 | -179.7 | 18945.1<< | -417.1 |

| BARRA 48 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 48 | 0.12 | 42.44 | -937.52 | 83.0 | 92270.1>> | -1460.5 |
| 48 | 0.04 | 61.84 | -1769.68 | -179.7 | 18945.1<< | -417.1 |
| 49 | 0.12 | 38.82 | -2836.62 | 374.0 | 88498.8>> | -1546.7 |
| 49 | 0.04 | 61.84 | -2657.27 | -158.2 | 14296.7<< | -547.0 |

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| BARRA 49 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 49 | 0.13 | 38.82 | -2836.62 | 416.1 | 88498.6>> | -1546.7 |
| 49 | 0.04 | 61.84 | -2657.27 | -151.4 | 14296.8<< | -547.0 |
| 50 | 0.13 | 34.02 | -4978.43 | 784.3 | 80292.5>> | -1623.1 |
| 50 | 0.04 | 61.84 | -3544.87 | -129.8 | 7784.3<< | -676.8 |

| BARRA 50 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 50 | 0.16 | 34.02 | -4978.43 | 822.5 | 80292.1>> | -1623.1 |
| 50 | 0.09 | 61.84 | -3544.87 | -126.1 | 7784.3<< | -676.8 |
| 51 | 0.16 | 29.20 | -7120.23 | 1190.7 | 67588.0>> | -1689.5 |
| 51 | 0.09 | 61.84 | -4432.47 | -104.5 | -592.2<< | -806.6 |

| BARRA 51 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 51 | 0.16 | 29.20 | -7120.23 | 1190.7 | 67588.0>> | -1689.5 |
| 51 | 0.09 | 61.84 | -4432.47 | -104.5 | -592.2<< | -806.6 |
| 52 | 0.16 | 24.39 | -9262.04 | 1558.8 | 50386.0>> | -1745.7 |
| 52 | 0.09 | 61.84 | -5320.08 | -82.9 | -10832.9<< | -936.5 |

| BARRA 52 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 52 | 0.16 | 24.39 | -9262.04 | 1559.0 | 50385.9>> | -1745.7 |
| 52 | 0.09 | 61.84 | -5320.08 | -83.0 | -10832.9<< | -936.5 |
| 53 | 0.14 | 11.10 | -9907.87 | 1713.1 | 29410.1>> | -1579.1 |
| 53 | 0.10 | 70.31 | -7702.24 | 152.4 | -23644.2<< | -1278.9 |

| BARRA 53 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 53 | 0.14 | 11.10 | -9907.87 | 1713.0 | 29410.2>> | -1579.1 |
| 53 | 0.10 | 70.31 | -7702.24 | 152.5 | -23644.2<< | -1278.9 |
| 54 | 0.14 | 6.29 | -11803.14 | 2046.6 | 6612.7>> | -1597.4 |
| 54 | 0.10 | 70.31 | -8836.40 | 208.7 | -41010.5<< | -1426.6 |

| BARRA 54 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 54 | 0.14 | 6.29 | -11803.14 | 2049.8 | 6611.7>> | -1597.4 |
| 54 | 0.14 | 70.31 | -8836.40 | 189.1 | -41010.6<< | -1426.6 |
| 55 | -0.00 | 15.96 | -6641.73 | 159.0 | -7651.6>> | -65.4 |
| 55 | 0.14 | 70.31 | -10189.53 | 246.7 | -60936.9<< | -1574.2 |

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| BARRA 55 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 55 | 498.29 | 15.96 | -6623.02 | 163.5 | -7651.6>> | -53.3 |
| 55 | 764.57 | 70.31 | -10160.80 | 364.1 | -60936.9<< | -1551.2 |
| 56 | 578.87 | 15.96 | -7694.19 | 185.1 | -22727.8>> | -86.9 |
| 56 | 1274.14 | 54.76 | -16932.61 | 2340.1 | -92508.4<< | -2504.2 |

| BARRA 56 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 56 | 0.01 | 15.96 | -7715.94 | 167.2 | -22727.9>> | -100.5 |
| 56 | 0.23 | 54.76 | -16980.51 | 2101.6 | -92509.4<< | -2672.7 |
| 57 | 0.01 | 15.96 | -8787.11 | 188.8 | -40056.9>> | -134.0 |
| 57 | 0.23 | 54.76 | -18325.79 | 2157.7 | -129582.8<< | -2787.7 |

| BARRA 57 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 57 | 0.01 | 8.46 | 7909.74 | -509.4 | -40056.9>> | -134.0 |
| 57 | 0.23 | -48.10 | 18217.43 | -2196.3 | -129582.5<< | -2787.7 |
| 58 | 0.01 | -14.12 | 7591.13 | -167.2 | -22990.5>> | -150.7 |
| 58 | 0.23 | -48.10 | 16872.12 | -2140.1 | -92736.6<< | -2686.7 |

| BARRA 58 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 58 | 569.51 | -14.12 | 7569.74 | -178.1 | -22990.5>> | -137.8 |
| 58 | 1266.03 | -48.10 | 16824.57 | -2335.7 | -92736.6<< | -2518.5 |
| 59 | 488.90 | -14.12 | 6498.56 | -156.4 | -8176.3>> | -108.0 |
| 59 | 754.99 | -65.36 | 10033.25 | -349.2 | -61418.0<< | -1592.1 |

| BARRA 59 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 59 | 0.01 | -14.12 | 6516.90 | -151.8 | -8176.2>> | -119.5 |
| 59 | 0.14 | -65.38 | 10061.62 | -258.0 | -61417.8<< | -1613.8 |
| 60 | 0.14 | -2.35 | 11672.51 | -2048.8 | 5838.5>> | -1603.0 |
| 60 | 0.14 | -65.37 | 8708.36 | -200.5 | -41758.8<< | -1476.6 |

| BARRA 60 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 60 | 0.14 | -2.35 | 11672.51 | -2048.8 | 5838.5>> | -1603.0 |
| 60 | 0.14 | -65.37 | 8708.36 | -200.5 | -41758.8<< | -1476.6 |
| 61 | 0.14 | -7.15 | 9777.21 | -1715.2 | 28361.9>> | -1593.1 |
| 61 | 0.14 | -65.37 | 7574.20 | -144.4 | -24661.1<< | -1339.4 |

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| BARRA 61 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 61 | 0.13 | -7.15 | 9777.21 | -1701.7 | 28362.8>> | -1593.1 |
| 61 | 0.08 | -65.37 | 7574.20 | -156.1 | -24661.1<< | -1339.4 |
| 62 | 0.14 | -19.27 | 9129.30 | -1555.0 | 49064.3>> | -1780.3 |
| 62 | 0.07 | -58.07 | 5192.63 | 87.0 | -12103.5<< | -994.8 |

| BARRA 62 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 62 | 0.14 | -19.27 | 9129.30 | -1554.8 | 49064.3>> | -1780.3 |
| 62 | 0.07 | -58.07 | 5192.63 | 86.9 | -12103.5<< | -994.8 |
| 63 | 0.14 | -24.07 | 6988.46 | -1186.8 | 65980.9>> | -1734.8 |
| 63 | 0.07 | -58.07 | 4305.44 | 108.4 | -2134.7<< | -872.9 |

| BARRA 63 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 63 | 0.14 | -24.07 | 6988.46 | -1187.1 | 65980.9>> | -1734.8 |
| 63 | 0.07 | -58.07 | 4305.44 | 108.5 | -2134.7<< | -872.9 |
| 64 | 0.14 | -28.88 | 4846.60 | -819.0 | 78408.4>> | -1679.2 |
| 64 | 0.07 | -58.07 | 3417.81 | 130.0 | 5975.2<< | -751.0 |

| BARRA 64 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 64 | 0.13 | -28.88 | 4846.60 | -781.7 | 78408.8>> | -1679.2 |
| 64 | 0.04 | -58.07 | 3417.81 | 132.9 | 5975.2<< | -751.0 |
| 65 | 0.13 | -33.70 | 2704.74 | -413.5 | 86338.2>> | -1613.5 |
| 65 | 0.04 | -58.07 | 2530.19 | 154.5 | 12221.0<< | -629.0 |

| BARRA 65 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 65 | 0.13 | -33.70 | 2704.74 | -413.5 | 86338.2>> | -1613.5 |
| 65 | 0.04 | -58.07 | 2530.19 | 154.5 | 12221.0<< | -629.0 |
| 66 | 0.13 | -37.16 | 838.27 | -133.2 | 89850.7>> | -1538.1 |
| 66 | 0.04 | -58.07 | 1642.56 | 176.0 | 16602.7<< | -507.1 |

| BARRA 66 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 66 | 0.13 | -37.16 | 838.27 | -133.2 | 89850.7>> | -1538.1 |
| 66 | 0.04 | -58.07 | 1642.56 | 176.0 | 16602.7<< | -507.1 |
| 67 | 0.13 | -37.16 | -323.45 | -77.1 | 90391.3>> | -1460.1 |
| 67 | 0.01 | 8.69 | -1272.31 | -279.4 | 19056.3<< | -305.4 |

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| BARRA 67 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 67 | 0.13 | -37.16 | -323.45 | -34.0 | 90391.3>> | -1460.1 |
| 67 | 0.04 | 8.69 | -1272.31 | -270.3 | 19056.4<< | -305.4 |
| 68 | 0.13 | -37.16 | -1485.20 | 22.1 | 88492.2>> | -1382.1 |
| 68 | 0.04 | 8.69 | -2159.95 | -248.7 | 15452.3<< | -323.6 |

| BARRA 68 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 68 | 0.13 | -37.16 | -1485.20 | 22.1 | 88492.2>> | -1382.1 |
| 68 | 0.04 | 8.69 | -2159.95 | -248.7 | 15452.3<< | -323.6 |
| 69 | 0.13 | -40.80 | -3388.97 | 314.6 | 83563.1>> | -1301.2 |
| 69 | 0.04 | 8.69 | -3047.56 | -227.1 | 9984.1<< | -341.8 |

| BARRA 69 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 69 | 0.13 | -40.80 | -3388.97 | 315.1 | 83563.1>> | -1301.2 |
| 69 | 0.04 | 8.69 | -3047.56 | -227.1 | 9984.1<< | -341.8 |
| 70 | 0.13 | -45.61 | -5529.85 | 683.0 | 74202.1>> | -1210.5 |
| 70 | 0.04 | 8.69 | -3934.78 | -205.5 | 2655.6<< | -360.0 |

| BARRA 70 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 70 | 0.10 | -45.61 | -5529.85 | 718.0 | 74201.8>> | -1210.5 |
| 70 | 0.04 | 8.69 | -3934.78 | -204.3 | 2655.7<< | -360.0 |
| 71 | 0.10 | -50.43 | -7671.71 | 1086.1 | 60339.1>> | -1109.7 |
| 71 | 0.04 | 8.69 | -4822.40 | -182.7 | -6540.0<< | -378.3 |

| BARRA 71 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 71 | 0.10 | -50.43 | -7671.71 | 1086.1 | 60339.1>> | -1109.7 |
| 71 | 0.04 | 8.69 | -4822.40 | -182.7 | -6540.0<< | -378.3 |
| 72 | 0.10 | -55.24 | -9813.61 | 1454.2 | 41978.1>> | -998.8 |
| 72 | 0.04 | 8.69 | -5710.04 | -161.1 | -17599.9<< | -396.5 |

| BARRA 72 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 72 | 0.06 | -55.24 | -9813.61 | 1474.2 | 41977.4>> | -998.8 |
| 72 | 0.03 | 8.69 | -5710.04 | -169.5 | -17599.9<< | -396.5 |
| 73 | 0.06 | -52.75 | -10399.46 | 1638.1 | 20564.7>> | -838.9 |
| 73 | 0.03 | 1.39 | -8153.74 | 56.4 | -31970.9<< | -453.6 |

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| BARRA 73 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 73 | 0.06 | -52.75 | -10399.46 | 1638.1 | 20564.7>> | -838.9 |
| 73 | 0.03 | 1.39 | -8153.74 | 56.4 | -31970.9<< | -453.6 |
| 74 | 0.06 | -57.55 | -12294.82 | 1971.7 | -3266.3>> | -723.0 |
| 74 | 0.03 | 1.39 | -9287.93 | 112.5 | -50286.1<< | -456.5 |

| BARRA 74 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 74 | 0.06 | -57.55 | -12294.82 | 1971.7 | -3266.3>> | -723.0 |
| 74 | 0.03 | 1.39 | -9287.93 | 112.5 | -50286.1<< | -456.5 |
| 75 | -0.03 | -8.51 | -7151.05 | 120.4 | -20074.1>> | 306.8 |
| 75 | 0.03 | 1.38 | -10644.02 | 170.0 | -71209.9<< | -459.4 |

| BARRA 75 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 75 | 536.71 | -8.51 | -7130.90 | 87.4 | -20074.2>> | 314.3 |
| 75 | 798.92 | 1.38 | -10614.01 | 169.7 | -71210.0<< | -447.9 |
| 76 | 554.73 | -58.30 | -7370.89 | 362.4 | -35019.8>> | 740.0 |
| 76 | 1312.07 | -40.66 | -17430.96 | 2087.0 | -104688.7<< | -831.9 |

| BARRA 76 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 76 | -0.06 | -58.30 | -7391.73 | 417.1 | -35019.7>> | 710.7 |
| 76 | 0.08 | -40.66 | -17480.27 | 2019.4 | -104688.7<< | -986.2 |
| 77 | -0.06 | -58.30 | -8462.96 | 438.7 | -51668.7>> | 833.1 |
| 77 | 0.08 | -40.66 | -18825.63 | 2075.5 | -142813.3<< | -900.8 |

| BARRA 77 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 77 | -0.07 | 14.07 | 9129.03 | -104.2 | -51668.7>> | 833.1 |
| 77 | 0.08 | 21.69 | 18701.77 | -2023.7 | -142812.9<< | -900.8 |
| 78 | -0.07 | 14.07 | 8057.79 | -82.6 | -33620.8>> | 803.6 |
| 78 | 0.08 | 21.69 | 17356.40 | -1967.6 | -104948.2<< | -946.3 |

| BARRA 78 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 78 | 604.42 | 14.07 | 8035.09 | -22.1 | -33620.8>> | 807.5 |
| 78 | 1302.14 | 21.69 | 17307.49 | -2033.1 | -104948.2<< | -796.1 |
| 79 | 523.85 | 14.07 | 6963.83 | -0.5 | -17825.9>> | 777.9 |
| 79 | 793.07 | -12.45 | 10541.28 | -106.1 | -72651.8<< | -255.8 |

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| BARRA 79 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 79 | -0.07 | 14.07 | 6983.51 | -58.9 | -17825.9>> | 775.7 |
| 79 | 0.03 | -12.45 | 10571.08 | -86.6 | -72651.8<< | -263.0 |
| 80 | 0.06 | 45.97 | 12116.90 | -1911.0 | -3055.2>> | -799.4 |
| 80 | 0.03 | -12.45 | 9218.26 | -29.0 | -51903.8<< | -236.9 |

| BARRA 80 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 80 | 0.06 | 45.97 | 12116.90 | -1911.0 | -3055.2>> | -799.4 |
| 80 | 0.03 | -12.45 | 9218.26 | -29.4 | -51903.8<< | -236.9 |
| 81 | 0.06 | 41.15 | 10222.41 | -1577.6 | 20392.2>> | -890.8 |
| 81 | 0.03 | -12.45 | 8084.58 | 26.7 | -33742.8<< | -210.7 |

| BARRA 81 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 81 | 0.07 | 41.15 | 10222.41 | -1568.0 | 20392.9>> | -890.8 |
| 81 | 0.01 | -12.45 | 8084.58 | 10.9 | -33742.8<< | -210.7 |
| 82 | 0.07 | 41.27 | 9619.81 | -1365.6 | 41448.3>> | -1001.5 |
| 82 | 0.01 | -17.38 | 5657.59 | 198.2 | -19530.9<< | -155.2 |

| BARRA 82 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 82 | 0.10 | 41.27 | 9619.81 | -1345.9 | 41449.0>> | -1001.5 |
| 82 | 0.01 | -17.38 | 5657.59 | 188.9 | -19531.0<< | -155.2 |
| 83 | 0.10 | 36.47 | 7477.85 | -977.7 | 59403.5>> | -1083.1 |
| 83 | 0.01 | -17.38 | 4769.94 | 210.5 | -8580.9<< | -118.7 |

| BARRA 83 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 83 | 0.09 | 36.47 | 7477.85 | -1006.0 | 59403.0>> | -1083.1 |
| 83 | 0.01 | -17.38 | 4769.94 | 214.6 | -8580.8<< | -118.7 |
| 84 | 0.09 | 31.65 | 5335.92 | -637.8 | 72858.8>> | -1154.6 |
| 84 | 0.01 | -17.38 | 3882.27 | 236.2 | 504.9<< | -82.1 |

| BARRA 84 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 84 | 0.13 | 31.65 | 5335.92 | -567.9 | 72859.4>> | -1154.6 |
| 84 | 0.01 | -17.38 | 3882.27 | 236.7 | 504.7<< | -82.1 |
| 85 | 0.13 | 26.84 | 3194.96 | -199.9 | 81813.6>> | -1216.0 |
| 85 | 0.01 | -17.38 | 2995.02 | 258.2 | 7723.3<< | -45.6 |

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| BARRA 85 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 85 | 0.10 | 26.84 | 3194.96 | -239.5 | 81813.5>> | -1216.0 |
| 85 | 0.01 | -17.38 | 2995.02 | 254.5 | 7723.4<< | -45.6 |
| 86 | 0.10 | 23.40 | 1333.11 | 39.7 | 86358.4>> | -1267.7 |
| 86 | 0.01 | -17.38 | 2107.36 | 276.1 | 13081.4<< | -9.1 |

| BARRA 86 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 86 | 0.12 | 23.40 | 1333.11 | 80.8 | 86358.4>> | -1267.7 |
| 86 | 0.01 | -17.38 | 2107.36 | 282.3 | 13081.3<< | -9.1 |
| 87 | 0.12 | 23.40 | 171.32 | 136.9 | 87938.3>> | -1316.8 |
| 87 | 0.01 | -17.38 | 1219.68 | 303.9 | 16575.1<< | 27.5 |

| BARRA 87 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 87 | 0.12 | 23.40 | 171.32 | 136.9 | 87938.3>> | -1316.8 |
| 87 | 0.01 | -17.38 | 1219.68 | 303.9 | 16575.1<< | 27.5 |
| 88 | 0.12 | 23.40 | -990.47 | 193.0 | 87078.1>> | -1365.9 |
| 88 | 0.01 | -17.38 | 332.01 | 325.5 | 18204.6<< | 64.0 |

| BARRA 88 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 88 | 0.12 | 23.40 | -990.47 | 234.5 | 87078.0>> | -1365.9 |
| 88 | -0.00 | -17.38 | 332.01 | 334.1 | 18204.4<< | 64.0 |
| 89 | 0.12 | 19.73 | -2899.00 | 528.2 | 83180.1>> | -1412.1 |
| 89 | 0.09 | 48.12 | -2288.26 | -64.9 | 15149.6<< | -870.3 |

| BARRA 89 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 89 | 0.12 | 19.73 | -2899.00 | 528.8 | 83180.1>> | -1412.1 |
| 89 | 0.09 | 48.12 | -2288.26 | -64.8 | 15149.6<< | -870.3 |
| 90 | 0.12 | 14.93 | -5039.96 | 896.8 | 74847.2>> | -1448.5 |
| 90 | 0.09 | 48.12 | -3175.50 | -43.2 | 9414.7<< | -971.3 |

| BARRA 90 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 90 | 0.12 | 14.93 | -5039.96 | 896.2 | 74847.2>> | -1448.5 |
| 90 | 0.09 | 48.12 | -3175.50 | -43.3 | 9414.7<< | -971.3 |
| 91 | 0.12 | 10.12 | -7181.95 | 1264.4 | 62012.6>> | -1474.8 |
| 91 | 0.09 | 48.12 | -4063.18 | -21.7 | 1813.1<< | -1072.4 |

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| BARRA 91 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 91 | 0.11 | 10.12 | -7181.95 | 1293.9 | 62012.0>> | -1474.8 |
| 91 | 0.10 | 48.12 | -4063.18 | -20.9 | 1813.1<< | -1072.4 |
| 92 | 0.11 | 5.31 | -9323.95 | 1662.1 | 44678.5>> | -1491.0 |
| 92 | 0.10 | 48.12 | -4950.86 | 0.7 | -7652.9<< | -1173.4 |

| BARRA 92 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 92 | 0.13 | 5.31 | -9323.95 | 1662.4 | 44678.5>> | -1491.0 |
| 92 | 0.10 | 48.12 | -4950.86 | 0.7 | -7652.8<< | -1173.4 |
| 93 | 0.12 | -4.43 | -9968.84 | 1770.0 | 23417.6>> | -1353.9 |
| 93 | 0.12 | 53.04 | -7334.24 | 282.7 | -19537.3<< | -1417.4 |

| BARRA 93 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 93 | 0.10 | -4.43 | -9968.84 | 1769.8 | 23417.6>> | -1353.9 |
| 93 | 0.12 | 53.04 | -7334.24 | 282.8 | -19537.3<< | -1417.4 |
| 94 | 0.10 | -9.24 | -11864.27 | 2103.5 | 489.8>> | -1339.6 |
| 94 | 0.12 | 53.04 | -8468.48 | 338.9 | -36132.2<< | -1528.8 |

| BARRA 94 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 94 | 0.12 | -9.24 | -11864.27 | 2103.7 | 488.8>> | -1339.6 |
| 94 | 0.13 | 53.04 | -8468.48 | 321.7 | -36132.4<< | -1528.8 |
| 95 | -0.03 | -17.22 | -5807.04 | 497.6 | -14136.4>> | 314.4 |
| 95 | 0.18 | 27.22 | -15291.94 | 2180.9 | -60063.1<< | -2213.7 |

| BARRA 95 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 95 | 435.58 | -17.22 | -5790.68 | 472.7 | -14136.4>> | 350.8 |
| 95 | 1147.31 | 27.22 | -15248.83 | 2340.9 | -60063.1<< | -2043.9 |
| 96 | 516.19 | -17.22 | -6861.98 | 494.3 | -27461.0>> | 387.1 |
| 96 | 1266.09 | 25.84 | -16827.58 | 2472.8 | -94013.1<< | -2098.7 |

| BARRA 96 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 96 | -0.03 | -17.22 | -6881.34 | 508.7 | -27461.3>> | 349.0 |
| 96 | 0.21 | 25.84 | -16875.17 | 2262.9 | -94014.2<< | -2278.3 |
| 97 | -0.03 | -17.22 | -7952.14 | 530.2 | -43031.3>> | 385.2 |
| 97 | 0.21 | 25.84 | -18219.94 | 2319.0 | -130851.9<< | -2332.6 |

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| BARRA 97 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 97 | -0.04 | 11.67 | 8627.47 | 1.7 | -43031.3>> | 385.2 |
| 97 | 0.18 | -42.90 | 18093.00 | -1333.6 | -130851.5<< | -2332.6 |
| 98 | -0.04 | 11.67 | 7556.17 | 23.2 | -26035.9>> | 360.6 |
| 98 | 0.18 | -42.90 | 16747.57 | -1277.4 | -94263.5<< | -2242.5 |

| BARRA 98 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 98 | 566.80 | 11.67 | 7534.89 | 50.3 | -26035.9>> | 357.9 |
| 98 | 1256.50 | -42.90 | 16700.38 | -1442.1 | -94263.5<< | -2140.3 |
| 99 | 500.27 | 11.67 | 6650.39 | 70.9 | -11245.7>> | 333.4 |
| 99 | 759.21 | -43.65 | 10090.82 | 145.1 | -67364.8<< | -1267.5 |

| BARRA 99 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 99 | -0.03 | 11.67 | 6669.19 | 40.2 | -11245.7>> | 337.7 |
| 99 | 0.09 | -43.65 | 10119.35 | 207.2 | -67364.9<< | -1253.0 |
| 100 | 0.13 | -34.10 | 10193.62 | -925.9 | 5818.9>> | -1488.2 |
| 100 | 0.09 | -43.65 | 8985.61 | 263.3 | -47311.2<< | -1161.4 |

| BARRA 100 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 100 | 0.13 | -34.10 | 10193.62 | -925.9 | 5818.9>> | -1488.2 |
| 100 | 0.09 | -43.65 | 8985.61 | 263.7 | -47311.2<< | -1161.4 |
| 101 | 0.13 | -38.92 | 8298.16 | -592.3 | 25238.3>> | -1411.4 |
| 101 | 0.09 | -43.65 | 7851.34 | 319.8 | -29629.6<< | -1069.7 |

| BARRA 101 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 101 | 0.13 | -38.92 | 8298.16 | -592.3 | 25238.3>> | -1411.4 |
| 101 | 0.09 | -43.65 | 7851.34 | 319.8 | -29629.6<< | -1069.7 |
| 102 | 0.14 | -49.40 | 7616.07 | -267.2 | 43091.4>> | -1449.6 |
| 102 | 0.07 | -37.98 | 5503.63 | 384.4 | -16745.3<< | -853.1 |

| BARRA 102 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 102 | 0.12 | -49.40 | 7616.07 | -246.3 | 43091.5>> | -1449.6 |
| 102 | 0.07 | -37.98 | 5503.63 | 376.3 | -16745.5<< | -853.1 |
| 103 | 0.07 | -27.90 | 6407.72 | -309.3 | 57732.5>> | -999.4 |
| 103 | 0.07 | -37.98 | 4616.35 | 397.9 | -6122.9<< | -773.3 |

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| BARRA 103 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 103 | 0.07 | -27.90 | 6407.72 | -309.7 | 57732.5>> | -999.4 |
| 103 | 0.07 | -37.98 | 4616.35 | 397.9 | -6122.9<< | -773.3 |
| 104 | 0.07 | -32.39 | 4489.76 | -10.0 | 69176.8>> | -936.1 |
| 104 | 0.07 | -37.98 | 3728.63 | 419.5 | 2640.8<< | -693.6 |

| BARRA 104 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 104 | 0.07 | -32.39 | 4489.76 | 22.9 | 69176.8>> | -936.1 |
| 104 | 0.06 | -37.98 | 3728.63 | 420.8 | 2640.6<< | -693.6 |
| 105 | 0.07 | -36.87 | 2571.78 | 322.6 | 76592.7>> | -863.4 |
| 105 | 0.06 | -37.98 | 2840.92 | 442.4 | 9539.8<< | -613.8 |

| BARRA 105 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 105 | 0.07 | -36.87 | 2571.78 | 323.3 | 76592.6>> | -863.4 |
| 105 | 0.06 | -37.98 | 2840.92 | 442.4 | 9539.8<< | -613.8 |
| 106 | 0.10 | -56.51 | 1523.29 | 470.6 | 80015.9>> | -997.7 |
| 106 | 0.06 | -37.98 | 1953.61 | 464.0 | 14572.5<< | -534.0 |

| BARRA 106 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 106 | 0.09 | -56.51 | 1523.29 | 469.9 | 80015.9>> | -997.7 |
| 106 | 0.06 | -37.98 | 1953.61 | 463.9 | 14572.5<< | -534.0 |
| 107 | 0.09 | -61.32 | -618.79 | 838.1 | 80965.8>> | -874.0 |
| 107 | 0.06 | -37.98 | 1065.89 | 485.4 | 17743.5<< | -454.2 |

| BARRA 107 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 107 | 0.06 | -61.32 | -618.79 | 876.6 | 80965.4>> | -874.0 |
| 107 | 0.03 | -37.98 | 1065.89 | 493.9 | 17743.3<< | -454.2 |
| 108 | 0.06 | -66.12 | -2760.90 | 1244.8 | 77416.1>> | -740.1 |
| 108 | 0.03 | -37.98 | 178.17 | 515.4 | 19049.7<< | -374.5 |

| BARRA 108 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 108 | 0.04 | -66.12 | -2760.90 | 1245.5 | 77416.1>> | -740.1 |
| 108 | 0.03 | -37.98 | 178.17 | 515.6 | 19049.7<< | -374.5 |
| 109 | 0.04 | -70.93 | -4902.00 | 1613.5 | 69372.4>> | -596.3 |
| 109 | 0.03 | -37.98 | -709.13 | 537.2 | 18492.3<< | -294.7 |

LAV-Gelida. V.Rierussa. ELU ECSW-SW(t=i)(1.35*G+0.54*LEV+(1.45*SW0 o 1.20 SW2)+0.9*GT)

| BARRA 109 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 109 | 0.06 | -70.93 | -4902.00 | 1612.9 | 69372.4>> | -596.3 |
| 109 | 0.03 | -37.98 | -709.13 | 537.0 | 18492.4<< | -294.7 |
| 110 | 0.06 | -75.73 | -7044.11 | 1981.1 | 56826.7>> | -442.2 |
| 110 | 0.03 | -37.98 | -1596.88 | 558.6 | 16070.6<< | -214.9 |

| BARRA 110 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 110 | 0.03 | -75.73 | -7044.11 | 2008.6 | 56825.8>> | -442.2 |
| 110 | 0.01 | -37.98 | -1596.88 | 566.4 | 16070.3<< | -214.9 |
| 111 | 0.03 | -80.55 | -9185.23 | 2376.7 | 39789.8>> | -278.2 |
| 111 | 0.01 | -37.98 | -2484.18 | 588.0 | 11786.4<< | -135.1 |

| BARRA 111 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 111 | 0.03 | -80.55 | -9185.23 | 2376.3 | 39789.8>> | -278.2 |
| 111 | 0.01 | -37.98 | -2484.18 | 587.9 | 11786.4<< | -135.1 |
| 112 | 0.03 | -85.36 | -11327.36 | 2744.5 | 18247.5>> | -103.9 |
| 112 | 0.01 | -37.98 | -3371.93 | 609.4 | 5636.3<< | -55.4 |

| BARRA 112 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 112 | 1186.31 | -85.36 | -11265.06 | 2748.9 | 18246.3>> | 185.0 |
| 112 | 353.13 | -37.98 | -3353.37 | 614.6 | 5636.0<< | 9.1 |
| 113 | 891.07 | 115.14 | -8461.17 | -7881.3 | 1.3>> | -830.0 |
| 113 | 1015.73 | -207.30 | -9645.38 | 11138.0 | -1.8<< | 1173.0 |

| BARRA 201 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 201 | 9654.84 | -87.93 | 0.00 | 0.0 | 0.0>> | -7722.5 |
| 201 | 6338.53 | 3.62 | 0.00 | 0.0 | 0.0<< | 481.4 |
| 1 | 6737.57 | 3.70 | 0.00 | 0.0 | 0.0>> | 454.0 |
| 1 | 6338.53 | 3.62 | 0.00 | 0.0 | 0.0<< | 446.7 |

| BARRA 202 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 202 | 21419.61 | -8.74 | 0.00 | 0.0 | 0.0>> | 591.2 |
| 202 | 21161.62 | -8.52 | 0.00 | 0.0 | 0.0<< | 576.7 |
| 17 | 21419.61 | -8.74 | 0.00 | 0.0 | 0.0>> | 753.9 |
| 17 | 21161.62 | -8.52 | 0.00 | 0.0 | 0.0<< | 735.2 |

LAV-Gelida. V.Rierussa. ELU ECSW-SW(t=i)(1.35*G+0.54*LEV+(1.45*SW0 o 1.20 SW2)+0.9*GT)

| BARRA 203 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 203 | 22503.11 | 16.12 | 0.00 | 0.0 | 0.0>> | 1167.2 |
| 203 | 21880.44 | 15.72 | 0.00 | 0.0 | 0.0<< | 1138.3 |
| 37 | 22503.11 | 16.12 | 0.00 | 0.0 | 0.0>> | 842.4 |
| 37 | 21880.44 | 15.72 | 0.00 | 0.0 | 0.0<< | 821.7 |

| BARRA 204 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 204 | 21673.39 | -20.90 | 0.00 | 0.0 | 0.0>> | 5.2 |
| 204 | 21160.51 | -20.39 | 0.00 | 0.0 | 0.0<< | 5.0 |
| 57 | 21673.39 | -20.90 | 0.00 | 0.0 | 0.0>> | 917.0 |
| 57 | 21160.51 | -20.39 | 0.00 | 0.0 | 0.0<< | 894.4 |

| BARRA 205 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 205 | 22622.85 | 16.26 | 0.00 | 0.0 | 0.0>> | 1160.4 |
| 205 | 22000.14 | 15.87 | 0.00 | 0.0 | 0.0<< | 1131.3 |
| 77 | 22622.85 | 16.26 | 0.00 | 0.0 | 0.0>> | 808.7 |
| 77 | 22000.14 | 15.87 | 0.00 | 0.0 | 0.0<< | 788.2 |

| BARRA 206 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 206 | 21592.37 | -13.66 | 0.00 | 0.0 | 0.0>> | 404.4 |
| 206 | 21334.53 | -13.32 | 0.00 | 0.0 | 0.0<< | 394.2 |
| 97 | 21592.37 | -13.66 | 0.00 | 0.0 | 0.0>> | 727.3 |
| 97 | 21334.53 | -13.32 | 0.00 | 0.0 | 0.0<< | 708.9 |

| BARRA 207 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 207 | 6570.93 | 7.19 | 0.00 | 0.0 | 0.0>> | 580.0 |
| 207 | 6171.80 | 7.01 | 0.00 | 0.0 | 0.0<< | 570.2 |
| 113 | 6570.93 | 7.19 | 0.00 | 0.0 | 0.0>> | 496.3 |
| 113 | 6171.80 | 7.01 | 0.00 | 0.0 | 0.0<< | 488.6 |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 82 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 82 | 8.505>> | 8.645 | 3.992 | 4.132 |
| 82 | 5.164<< | 5.184 | 9.349 | 9.370 |
| 82 | 8.470 | 8.680>> | 3.957 | 4.167 |
| 82 | 5.198 | 5.149<< | 9.384 | 9.335 |
| 82 | 5.177 | 5.152 | 9.386>> | 9.361 |
| 82 | 8.491 | 8.677 | 3.954<< | 4.140 |
| 82 | 5.166 | 5.163 | 9.375 | 9.372>> |
| 82 | 8.502 | 8.666 | 3.965 | 4.129<< |
| 83 | 9.124>> | 9.289 | 2.996 | 3.160 |
| 83 | 5.312<< | 5.323 | 9.130 | 9.141 |
| 83 | 9.094 | 9.319>> | 2.965 | 3.190 |
| 83 | 5.342 | 5.293<< | 9.160 | 9.111 |
| 83 | 5.325 | 5.296 | 9.161>> | 9.132 |
| 83 | 9.111 | 9.316 | 2.964<< | 3.170 |
| 83 | 5.315 | 5.306 | 9.151 | 9.142>> |
| 83 | 9.121 | 9.305 | 2.975 | 3.159<< |

| BARRA 83 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 83 | 9.122>> | 9.287 | 3.014 | 3.179 |
| 83 | 5.310<< | 5.321 | 9.149 | 9.160 |
| 83 | 9.092 | 9.317>> | 2.984 | 3.209 |
| 83 | 5.340 | 5.291<< | 9.179 | 9.130 |
| 83 | 5.324 | 5.294 | 9.180>> | 9.151 |
| 83 | 9.109 | 9.314 | 2.983<< | 3.188 |
| 83 | 5.313 | 5.305 | 9.170 | 9.161>> |
| 83 | 9.120 | 9.304 | 2.994 | 3.178<< |
| 84 | 9.597>> | 9.780 | 2.251 | 2.435 |
| 84 | 5.453<< | 5.458 | 8.935 | 8.940 |
| 84 | 9.568 | 9.809>> | 2.222 | 2.464 |
| 84 | 5.482 | 5.429<< | 8.964 | 8.911 |
| 84 | 5.466 | 5.432 | 8.964>> | 8.930 |
| 84 | 9.583 | 9.806 | 2.222<< | 2.445 |
| 84 | 5.456 | 5.442 | 8.954 | 8.940>> |
| 84 | 9.594 | 9.796 | 2.232 | 2.435<< |

| BARRA 84 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 84 | 9.594>> | 9.778 | 2.268 | 2.451 |
| 84 | 5.450<< | 5.455 | 8.951 | 8.956 |
| 84 | 9.565 | 9.807>> | 2.239 | 2.480 |
| 84 | 5.479 | 5.426<< | 8.980 | 8.927 |
| 84 | 5.464 | 5.430 | 8.980>> | 8.946 |
| 84 | 9.581 | 9.803 | 2.239<< | 2.461 |
| 84 | 5.454 | 5.440 | 8.970 | 8.956>> |
| 84 | 9.591 | 9.793 | 2.249 | 2.451<< |
| 85 | 9.898>> | 10.096 | 1.776 | 1.974 |
| 85 | 5.590<< | 5.590 | 8.740 | 8.740 |
| 85 | 9.870 | 10.124>> | 1.748 | 2.002 |
| 85 | 5.618 | 5.562<< | 8.768 | 8.712 |
| 85 | 5.618 | 5.562 | 8.768>> | 8.713 |
| 85 | 9.870 | 10.124 | 1.748<< | 2.001 |
| 85 | 5.590 | 5.589 | 8.741 | 8.740>> |
| 85 | 9.898 | 10.097 | 1.775 | 1.974<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 85 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 85 | 9.895>> | 10.093 | 1.788 | 1.987 |
| 85 | 5.588<< | 5.587 | 8.753 | 8.752 |
| 85 | 9.867 | 10.121>> | 1.761 | 2.015 |
| 85 | 5.616 | 5.559<< | 8.781 | 8.724 |
| 85 | 5.615 | 5.559 | 8.781>> | 8.725 |
| 85 | 9.868 | 10.121 | 1.761<< | 2.014 |
| 85 | 5.588 | 5.586 | 8.754 | 8.752>> |
| 85 | 9.895 | 10.094 | 1.788 | 1.987<< |
| 86 | 10.040>> | 10.250 | 1.548 | 1.758 |
| 86 | 5.726<< | 5.720 | 8.544 | 8.538 |
| 86 | 10.013 | 10.277>> | 1.521 | 1.785 |
| 86 | 5.753 | 5.693<< | 8.571 | 8.511 |
| 86 | 5.753 | 5.693 | 8.571>> | 8.512 |
| 86 | 10.014 | 10.276 | 1.521<< | 1.784 |
| 86 | 5.726 | 5.719 | 8.545 | 8.538>> |
| 86 | 10.040 | 10.250 | 1.547 | 1.758<< |

| BARRA 86 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 86 | 10.038>> | 10.248 | 1.555 | 1.765 |
| 86 | 5.724<< | 5.718 | 8.551 | 8.545 |
| 86 | 10.011 | 10.274>> | 1.528 | 1.792 |
| 86 | 5.751 | 5.691<< | 8.578 | 8.518 |
| 86 | 5.750 | 5.691 | 8.578>> | 8.519 |
| 86 | 10.011 | 10.274 | 1.528<< | 1.791 |
| 86 | 5.724 | 5.717 | 8.552 | 8.545>> |
| 86 | 10.038 | 10.248 | 1.555 | 1.765<< |
| 87 | 10.099>> | 10.319 | 1.446 | 1.666 |
| 87 | 5.860<< | 5.848 | 8.347 | 8.334 |
| 87 | 10.074 | 10.345>> | 1.421 | 1.692 |
| 87 | 5.886 | 5.822<< | 8.372 | 8.309 |
| 87 | 5.885 | 5.822 | 8.372>> | 8.309 |
| 87 | 10.074 | 10.345 | 1.421<< | 1.691 |
| 87 | 5.860 | 5.847 | 8.347 | 8.334>> |
| 87 | 10.099 | 10.320 | 1.446 | 1.666<< |

| BARRA 87 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 87 | 10.097>> | 10.317 | 1.449 | 1.669 |
| 87 | 5.858<< | 5.846 | 8.350 | 8.337 |
| 87 | 10.072 | 10.343>> | 1.424 | 1.695 |
| 87 | 5.884 | 5.820<< | 8.375 | 8.312 |
| 87 | 5.884 | 5.820 | 8.375>> | 8.312 |
| 87 | 10.072 | 10.343 | 1.424<< | 1.694 |
| 87 | 5.858 | 5.846 | 8.350 | 8.337>> |
| 87 | 10.097 | 10.318 | 1.449 | 1.669<< |
| 88 | 10.050>> | 10.277 | 1.514 | 1.742 |
| 88 | 5.889<< | 6.017 | 8.123 | 8.250 |
| 88 | 10.025 | 10.301>> | 1.490 | 1.766 |
| 88 | 6.010 | 5.938<< | 8.190 | 8.118 |
| 88 | 6.010 | 5.938 | 8.190>> | 8.118 |
| 88 | 10.025 | 10.301 | 1.490<< | 1.766 |
| 88 | 5.889 | 6.017 | 8.123 | 8.250>> |
| 88 | 10.050 | 10.277 | 1.514 | 1.742<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 88 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 88 | 10.048>> | 10.275 | 1.512 | 1.739 |
| 88 | 5.888<< | 6.015 | 8.121 | 8.248 |
| 88 | 10.024 | 10.300>> | 1.488 | 1.764 |
| 88 | 6.008 | 5.936<< | 8.188 | 8.116 |
| 88 | 6.008 | 5.936 | 8.188>> | 8.116 |
| 88 | 10.024 | 10.300 | 1.488<< | 1.764 |
| 88 | 5.888 | 6.015 | 8.121 | 8.248>> |
| 88 | 10.048 | 10.275 | 1.512 | 1.739<< |
| 89 | 9.919>> | 10.151 | 1.708 | 1.939 |
| 89 | 5.874<< | 6.028 | 8.108 | 8.262 |
| 89 | 9.896 | 10.174>> | 1.684 | 1.963 |
| 89 | 5.898 | 6.005<< | 8.131 | 8.238 |
| 89 | 5.898 | 6.005 | 8.131>> | 8.238 |
| 89 | 9.896 | 10.174 | 1.684<< | 1.963 |
| 89 | 5.874 | 6.028 | 8.108 | 8.262>> |
| 89 | 9.919 | 10.151 | 1.708 | 1.939<< |

| BARRA 89 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 89 | 9.918>> | 10.150 | 1.701 | 1.932 |
| 89 | 5.873<< | 6.027 | 8.101 | 8.254 |
| 89 | 9.894 | 10.173>> | 1.677 | 1.956 |
| 89 | 5.897 | 6.004<< | 8.124 | 8.231 |
| 89 | 5.897 | 6.004 | 8.124>> | 8.231 |
| 89 | 9.894 | 10.173 | 1.677<< | 1.956 |
| 89 | 5.873 | 6.027 | 8.101 | 8.254>> |
| 89 | 9.918 | 10.150 | 1.701 | 1.932<< |
| 90 | 9.629>> | 9.863 | 2.147 | 2.381 |
| 90 | 5.860<< | 6.040 | 8.088 | 8.268 |
| 90 | 9.607 | 9.886>> | 2.125 | 2.403 |
| 90 | 5.882 | 6.018<< | 8.110 | 8.246 |
| 90 | 5.882 | 6.018 | 8.110>> | 8.246 |
| 90 | 9.607 | 9.886 | 2.125<< | 2.403 |
| 90 | 5.860 | 6.040 | 8.088 | 8.268>> |
| 90 | 9.629 | 9.863 | 2.147 | 2.381<< |

| BARRA 90 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 90 | 9.628>> | 9.862 | 2.136 | 2.370 |
| 90 | 5.859<< | 6.039 | 8.077 | 8.257 |
| 90 | 9.606 | 9.884>> | 2.114 | 2.392 |
| 90 | 5.881 | 6.016<< | 8.099 | 8.235 |
| 90 | 5.881 | 6.016 | 8.099>> | 8.235 |
| 90 | 9.606 | 9.884 | 2.114<< | 2.392 |
| 90 | 5.859 | 6.039 | 8.077 | 8.257>> |
| 90 | 9.628 | 9.862 | 2.136 | 2.370<< |
| 91 | 9.169>> | 9.401 | 2.853 | 3.086 |
| 91 | 5.841<< | 6.092 | 8.013 | 8.265 |
| 91 | 9.147 | 9.423>> | 2.832 | 3.107 |
| 91 | 5.865 | 6.029<< | 8.087 | 8.251 |
| 91 | 5.865 | 6.029 | 8.087>> | 8.251 |
| 91 | 9.147 | 9.423 | 2.832<< | 3.107 |
| 91 | 5.844 | 6.050 | 8.066 | 8.272>> |
| 91 | 9.169 | 9.401 | 2.853 | 3.086<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 91 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 91 | 9.169>> | 9.402 | 2.858 | 3.090 |
| 91 | 5.841<< | 6.093 | 8.017 | 8.269 |
| 91 | 9.148 | 9.423>> | 2.836 | 3.111 |
| 91 | 5.865 | 6.029<< | 8.092 | 8.255 |
| 91 | 5.865 | 6.029 | 8.092>> | 8.255 |
| 91 | 9.148 | 9.423 | 2.836<< | 3.111 |
| 91 | 5.844 | 6.050 | 8.070 | 8.277>> |
| 91 | 9.169 | 9.402 | 2.858 | 3.090<< |
| 92 | 8.570>> | 8.794 | 3.802 | 4.026 |
| 92 | 5.812<< | 6.093 | 8.025 | 8.306 |
| 92 | 8.544 | 8.819>> | 3.776 | 4.051 |
| 92 | 5.852 | 6.038<< | 8.084 | 8.270 |
| 92 | 5.847 | 6.039 | 8.084>> | 8.276 |
| 92 | 8.549 | 8.818 | 3.776<< | 4.046 |
| 92 | 5.813 | 6.089 | 8.030 | 8.306>> |
| 92 | 8.569 | 8.798 | 3.796 | 4.025<< |

| BARRA 92 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 92 | 8.574>> | 8.798 | 3.830 | 4.054 |
| 92 | 5.816<< | 6.097 | 8.053 | 8.335 |
| 92 | 8.549 | 8.823>> | 3.805 | 4.080 |
| 92 | 5.856 | 6.042<< | 8.112 | 8.299 |
| 92 | 5.851 | 6.043 | 8.112>> | 8.304 |
| 92 | 8.553 | 8.822 | 3.805<< | 4.074 |
| 92 | 5.817 | 6.093 | 8.059 | 8.335>> |
| 92 | 8.573 | 8.802 | 3.825 | 4.054<< |
| 93 | 7.908>> | 8.113 | 4.892 | 5.097 |
| 93 | 5.713<< | 6.058 | 8.132 | 8.477 |
| 93 | 7.882 | 8.141>> | 4.864 | 5.123 |
| 93 | 5.841 | 5.841<< | 8.375 | 8.374 |
| 93 | 5.841 | 5.841 | 8.375>> | 8.374 |
| 93 | 7.882 | 8.141 | 4.864<< | 5.123 |
| 93 | 5.713 | 6.058 | 8.132 | 8.477>> |
| 93 | 7.908 | 8.113 | 4.892 | 5.097<< |

| BARRA 93 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 93 | 7.916>> | 8.120 | 4.914 | 5.119 |
| 93 | 5.721<< | 6.065 | 8.154 | 8.499 |
| 93 | 7.889 | 8.148>> | 4.886 | 5.145 |
| 93 | 5.848 | 5.848<< | 8.396 | 8.396 |
| 93 | 5.848 | 5.848 | 8.396>> | 8.396 |
| 93 | 7.889 | 8.148 | 4.886<< | 5.145 |
| 93 | 5.721 | 6.065 | 8.154 | 8.499>> |
| 93 | 7.916 | 8.120 | 4.914 | 5.119<< |
| 94 | 7.571>> | 7.210 | 6.174 | 5.813 |
| 94 | 5.244<< | 5.706 | 8.746 | 9.208 |
| 94 | 7.211 | 7.692>> | 5.658 | 6.139 |
| 94 | 5.310 | 5.271<< | 9.284 | 9.245 |
| 94 | 5.302 | 5.272 | 9.285>> | 9.255 |
| 94 | 7.378 | 7.663 | 5.649<< | 5.933 |
| 94 | 5.248 | 5.325 | 9.232 | 9.309>> |
| 94 | 7.562 | 7.300 | 6.062 | 5.800<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 94 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 94 | 7.581>> | 7.220 | 6.187 | 5.826 |
| 94 | 5.254<< | 5.716 | 8.759 | 9.222 |
| 94 | 7.221 | 7.702>> | 5.671 | 6.152 |
| 94 | 5.320 | 5.281<< | 9.297 | 9.258 |
| 94 | 5.312 | 5.282 | 9.298>> | 9.268 |
| 94 | 7.388 | 7.673 | 5.662<< | 5.947 |
| 94 | 5.258 | 5.335 | 9.245 | 9.322>> |
| 94 | 7.572 | 7.310 | 6.075 | 5.813<< |
| 95 | 7.519>> | 7.370 | 6.012 | 5.863 |
| 95 | 4.230<< | 4.694 | 10.352 | 10.816 |
| 95 | 7.466 | 7.424>> | 5.959 | 5.917 |
| 95 | 4.663 | 4.629<< | 10.314 | 10.280 |
| 95 | 4.283 | 4.641 | 10.406>> | 10.763 |
| 95 | 7.466 | 7.424 | 5.959<< | 5.917 |
| 95 | 4.230 | 4.694 | 10.353 | 10.816>> |
| 95 | 7.519 | 7.371 | 6.012 | 5.863<< |

| BARRA 95 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 95 | 7.149>> | 7.015 | 5.505 | 5.371 |
| 95 | 4.105<< | 4.480 | 8.856 | 9.231 |
| 95 | 7.106 | 7.058>> | 5.463 | 5.414 |
| 95 | 4.147 | 4.438<< | 8.898 | 9.189 |
| 95 | 4.147 | 4.438 | 8.898>> | 9.189 |
| 95 | 7.107 | 7.058 | 5.463<< | 5.414 |
| 95 | 4.105 | 4.480 | 8.856 | 9.231>> |
| 95 | 7.149 | 7.016 | 5.505 | 5.371<< |
| 96 | 8.625>> | 8.536 | 3.600 | 3.511 |
| 96 | 4.401<< | 4.755 | 8.525 | 8.879 |
| 96 | 8.611 | 8.550>> | 3.586 | 3.525 |
| 96 | 4.415 | 4.741<< | 8.539 | 8.865 |
| 96 | 4.415 | 4.741 | 8.539>> | 8.865 |
| 96 | 8.611 | 8.550 | 3.586<< | 3.525 |
| 96 | 4.401 | 4.755 | 8.525 | 8.879>> |
| 96 | 8.625 | 8.536 | 3.600 | 3.511<< |

| BARRA 96 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 96 | 8.845>> | 8.761 | 3.610 | 3.525 |
| 96 | 4.569<< | 4.951 | 8.483 | 8.864 |
| 96 | 8.832 | 8.775>> | 3.596 | 3.539 |
| 96 | 4.583 | 4.937<< | 8.496 | 8.850 |
| 96 | 4.583 | 4.937 | 8.496>> | 8.850 |
| 96 | 8.832 | 8.775 | 3.596<< | 3.539 |
| 96 | 4.569 | 4.951 | 8.483 | 8.864>> |
| 96 | 8.845 | 8.761 | 3.610 | 3.525<< |
| 97 | 8.152>> | 8.064 | 4.489 | 4.402 |
| 97 | 2.523<< | 2.906 | 11.065 | 11.448 |
| 97 | 8.139 | 8.077>> | 4.476 | 4.414 |
| 97 | 2.536 | 2.893<< | 11.078 | 11.435 |
| 97 | 2.536 | 2.893 | 11.078>> | 11.435 |
| 97 | 8.139 | 8.077 | 4.476<< | 4.414 |
| 97 | 2.523 | 2.906 | 11.065 | 11.448>> |
| 97 | 8.152 | 8.064 | 4.489 | 4.402<< |

LAV-Gelida. V.Rierussa. ELS Comb Frec.ECSW-71(t=0)(1.00*G+1.00*LEV+1.00*P+0.8*SC+0.5*GT)

| BARRA 97 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 97 | 8.226>> | 8.139 | 4.468 | 4.380 |
| 97 | 2.597<< | 2.980 | 11.043 | 11.427 |
| 97 | 8.213 | 8.151>> | 4.455 | 4.393 |
| 97 | 2.610 | 2.967<< | 11.056 | 11.414 |
| 97 | 2.610 | 2.967 | 11.056>> | 11.414 |
| 97 | 8.213 | 8.151 | 4.455<< | 4.393 |
| 97 | 2.597 | 2.980 | 11.043 | 11.427>> |
| 97 | 8.226 | 8.139 | 4.468 | 4.380<< |
| 98 | 8.828>> | 8.716 | 3.735 | 3.623 |
| 98 | 4.411<< | 4.814 | 8.731 | 9.133 |
| 98 | 8.786 | 8.758>> | 3.693 | 3.665 |
| 98 | 4.453 | 4.772<< | 8.773 | 9.091 |
| 98 | 4.426 | 4.775 | 8.773>> | 9.121 |
| 98 | 8.813 | 8.755 | 3.693<< | 3.635 |
| 98 | 4.414 | 4.787 | 8.761 | 9.133>> |
| 98 | 8.825 | 8.743 | 3.705 | 3.623<< |

| BARRA 98 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 98 | 8.726>> | 8.619 | 3.689 | 3.582 |
| 98 | 4.360<< | 4.739 | 8.735 | 9.114 |
| 98 | 8.688 | 8.657>> | 3.651 | 3.620 |
| 98 | 4.399 | 4.701<< | 8.773 | 9.076 |
| 98 | 4.374 | 4.703 | 8.776>> | 9.105 |
| 98 | 8.713 | 8.656 | 3.648<< | 3.591 |
| 98 | 4.362 | 4.714 | 8.764 | 9.117>> |
| 98 | 8.725 | 8.644 | 3.660 | 3.579<< |
| 99 | 7.179>> | 7.066 | 5.638 | 5.525 |
| 99 | 3.820<< | 4.261 | 9.313 | 9.754 |
| 99 | 6.764 | 7.159>> | 5.610 | 6.005 |
| 99 | 4.004 | 4.043<< | 9.526 | 9.566 |
| 99 | 4.004 | 4.043 | 9.526>> | 9.566 |
| 99 | 7.144 | 7.101 | 5.603<< | 5.561 |
| 99 | 3.820 | 4.261 | 9.313 | 9.754>> |
| 99 | 7.179 | 7.066 | 5.638 | 5.525<< |

| BARRA 99 | A (N/mm2) | B (N/mm2) | C (N/mm2) | D (N/mm2) |
|---|---|---|---|---|
| 99 | 7.885>> | 7.751 | 5.921 | 5.787 |
| 99 | 4.264<< | 4.811 | 10.691 | 11.237 |
| 99 | 7.393 | 7.882>> | 5.890 | 6.379 |
| 99 | 4.514 | 4.533<< | 10.976 | 10.996 |
| 99 | 4.514 | 4.533 | 10.976>> | 10.996 |
| 99 | 7.841 | 7.795 | 5.877<< | 5.831 |
| 99 | 4.264 | 4.811 | 10.691 | 11.237>> |
| 99 | 7.885 | 7.751 | 5.921 | 5.787<< |
| 100 | 7.877>> | 7.754 | 5.919 | 5.796 |
| 100 | 4.872<< | 5.070 | 10.190 | 10.387 |
| 100 | 7.702 | 8.157>> | 5.452 | 5.907 |
| 100 | 4.913 | 5.029<< | 10.230 | 10.347 |
| 100 | 4.884 | 5.030 | 10.238>> | 10.383 |
| 100 | 7.731 | 8.157 | 5.444<< | 5.871 |
| 100 | 4.873 | 5.041 | 10.226 | 10.395>> |
| 100 | 7.877 | 7.783 | 5.882 | 5.788<< |

## 7.4. ANÁLISIS EN E.L.U.: SOLICITACIONES TANGENTES

### 7.4.1.E.L.U. de Flexocompresión

#### 7.4.1.1. Esfuerzos de Pretensado

TITULO
=======
LAV-Gelida. V.Rierussa. ELU Pretensado.

FICHERO DE GEOMETRIA COMPLETA
==============================
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
================================
1

| Fich | Num. Nudos | Num. barras | Num. hipotesis | NOMBRE FICHERO |
|---|---|---|---|---|
| 1 | 120 | 119 | 57 | ESFipf.TXT |

| Fich | Hipotesis | Caracter | Coeficiente |
|---|---|---|---|
| 1 | 1 | 1 | 0.00 |
| 1 | 2 | 1 | 0.00 |
| 1 | 3 | 1 | 0.00 |
| 1 | 4 | 3 | 0.00 |
| 1 | 5 | 3 | 0.00 |
| 1 | 6 | 3 | 0.00 |
| 1 | 7 | 2 | 0.00 |
| 1 | 8 | 2 | 0.00 |
| 1 | 9 | 2 | 0.00 |
| 1 | 10 | 2 | 0.00 |
| 1 | 11 | 2 | 0.00 |
| 1 | 12 | 2 | 0.00 |
| 1 | 13 | 2 | 0.00 |
| 1 | 14 | 2 | 0.00 |
| 1 | 15 | 2 | 0.00 |
| 1 | 16 | 2 | 0.00 |
| 1 | 17 | 2 | 0.00 |
| 1 | 18 | 2 | 0.00 |
| 1 | 19 | 4 | 0.00 |
| 1 | 20 | 5 | 0.00 |
| 1 | 21 | 4 | 0.00 |
| 1 | 22 | 5 | 0.00 |
| 1 | 23 | 4 | 0.00 |
| 1 | 24 | 5 | 0.00 |
| 1 | 25 | 4 | 0.00 |
| 1 | 26 | 5 | 0.00 |
| 1 | 27 | 4 | 0.00 |
| 1 | 28 | 5 | 0.00 |
| 1 | 29 | 4 | 0.00 |
| 1 | 30 | 5 | 0.00 |
| 1 | 31 | 4 | 0.00 |
| 1 | 32 | 5 | 0.00 |
| 1 | 33 | 4 | 0.00 |
| 1 | 34 | 5 | 0.00 |
| 1 | 35 | 4 | 0.00 |
| 1 | 36 | 5 | 0.00 |
| 1 | 37 | 2 | 0.00 |
| 1 | 38 | 1 | 20.433 |
| 1 | 39 | 1 | 2.919 |
| 1 | 40 | 1 | 2.919 |
| 1 | 41 | 1 | 11.676 |
| 1 | 42 | 1 | 2.919 |
| 1 | 43 | 1 | 2.919 |
| 1 | 44 | 1 | 6.464 |
| 1 | 45 | 1 | 6.464 |
| 1 | 46 | 1 | 6.464 |
| 1 | 47 | 1 | 6.464 |
| 1 | 48 | 1 | 6.464 |
| 1 | 49 | 1 | 6.464 |
| 1 | 50 | 1 | 6.464 |
| 1 | 51 | 1 | 6.464 |
| 1 | 52 | 1 | 6.464 |
| 1 | 53 | 1 | 6.464 |
| 1 | 54 | 1 | 6.464 |
| 1 | 55 | 1 | 6.464 |
| 1 | 56 | 1 | 6.464 |
| 1 | 57 | 1 | 6.464 |

COMBINACION DE ESFUERZOS

LAV-Gelida. V.Rierussa. ELU Pretensado.

| BAR. | NUDO | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 66296.78 | -1.39 | -8561.46 | -11.73 | 2424.64 | 1.32 |
| 1 | 2 | 66296.78 | -1.39 | -8561.46 | -11.73 | -10488.53 | 3.42 |
| 2 | 2 | 66968.01 | -1.39 | -1318.67 | -11.91 | -10531.07 | 2.12 |
| 2 | 3 | 66968.01 | -1.39 | -1318.67 | -11.91 | -13299.81 | 5.15 |
| 3 | 3 | 67130.52 | -1.39 | -1033.74 | -12.35 | -13372.99 | 5.15 |
| 3 | 4 | 67130.52 | -1.39 | -1033.74 | -12.35 | -15543.51 | 7.84 |
| 4 | 4 | 67292.11 | -1.39 | -733.29 | -10.40 | -15636.40 | 7.84 |
| 4 | 5 | 67292.11 | -1.39 | -733.29 | -10.40 | -17176.14 | 10.51 |
| 5 | 5 | 67446.41 | -1.39 | -439.63 | -11.91 | -17279.69 | 10.51 |
| 5 | 6 | 67446.41 | -1.39 | -439.63 | -11.91 | -18202.61 | 13.39 |
| 6 | 6 | 67598.51 | -1.39 | -133.82 | -10.21 | -18315.82 | 13.39 |
| 6 | 7 | 67598.51 | -1.39 | -133.82 | -10.21 | -18596.64 | 16.16 |
| 7 | 7 | 67746.08 | -1.39 | 176.71 | -10.21 | -18712.02 | 16.16 |
| 7 | 8 | 67746.08 | -1.39 | 176.71 | -10.21 | -18340.75 | 19.18 |
| 8 | 8 | 67912.33 | -1.39 | 606.05 | -7.94 | -18473.32 | 19.18 |
| 8 | 9 | 67912.33 | -1.39 | 606.05 | -7.94 | -17200.34 | 22.01 |
| 9 | 9 | 67886.73 | -1.39 | 1168.16 | -7.94 | -17198.65 | 22.01 |
| 9 | 10 | 67886.73 | -1.39 | 1168.16 | -7.94 | -14745.33 | 24.96 |
| 10 | 10 | 67758.49 | -1.39 | 1723.03 | -5.13 | -14679.14 | 24.96 |
| 10 | 11 | 67758.49 | -1.39 | 1723.03 | -5.13 | -11060.52 | 27.73 |
| 11 | 11 | 67621.45 | -1.39 | 2259.93 | -8.59 | -11004.41 | 27.73 |
| 11 | 12 | 67621.45 | -1.39 | 2259.93 | -8.59 | -6258.16 | 30.68 |
| 12 | 12 | 61636.27 | -1.39 | 2789.46 | -1.22 | -4096.09 | 30.68 |
| 12 | 13 | 61636.27 | -1.39 | 2789.46 | -1.22 | 1761.73 | 33.52 |
| 13 | 13 | 61476.80 | -1.39 | 3321.90 | -5.13 | 1769.04 | 33.52 |
| 13 | 14 | 61476.80 | -1.39 | 3321.90 | -5.13 | 8745.38 | 36.26 |
| 14 | 14 | 61307.77 | -1.39 | 3845.55 | -1.05 | 8709.44 | 36.26 |
| 14 | 15 | 61307.77 | -1.39 | 3845.55 | -1.05 | 16785.25 | 39.21 |
| 15 | 15 | 71018.94 | -1.39 | 11036.65 | -3.79 | 18143.66 | 39.11 |
| 15 | 16 | 71018.94 | -1.39 | 11036.65 | -3.79 | 41386.24 | 41.82 |
| 16 | 16 | 72049.84 | -1.39 | 2161.87 | 4.11 | 41702.13 | 41.91 |
| 16 | 17 | 72049.84 | -1.39 | 2161.87 | 4.11 | 46242.23 | 44.86 |
| 17 | 17 | 71677.32 | -0.06 | -2412.04 | -24.68 | 45945.61 | 44.86 |
| 17 | 18 | 71677.32 | -0.06 | -2412.04 | -24.68 | 40880.45 | 45.02 |
| 18 | 18 | 69946.41 | -0.06 | -11750.84 | -15.91 | 40198.10 | 46.37 |
| 18 | 19 | 69946.41 | -0.06 | -11750.84 | -15.91 | 15451.22 | 46.63 |

LAV-Gelida. V.Rierussa. ELU Pretensado.

| BAR. | NUDO | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| 19 | 19 | 59972.63 | -0.06 | -4127.06 | -24.96 | 15753.02 | 45.34 |
| 19 | 20 | 59972.63 | -0.06 | -4127.06 | -24.96 | 7086.23 | 45.60 |
| 20 | 20 | 59885.95 | -0.06 | -3545.69 | -13.57 | 7097.92 | 45.60 |
| 20 | 21 | 59885.95 | -0.06 | -3545.69 | -13.57 | -347.99 | 46.01 |
| 21 | 21 | 59785.11 | -0.06 | -2956.89 | -19.46 | -299.09 | 46.01 |
| 21 | 22 | 59785.11 | -0.06 | -2956.89 | -19.46 | -6508.49 | 46.08 |
| 22 | 22 | 56775.48 | -0.06 | -2384.30 | -13.50 | -9383.97 | 46.08 |
| 22 | 23 | 56775.48 | -0.06 | -2384.30 | -13.50 | -14390.61 | 46.52 |
| 23 | 23 | 56817.04 | -0.06 | -1833.77 | -13.50 | -14447.75 | 46.52 |
| 23 | 24 | 56817.04 | -0.06 | -1833.77 | -13.50 | -18298.57 | 46.75 |
| 24 | 24 | 56854.80 | -0.06 | -1270.36 | -7.41 | -18360.69 | 46.75 |
| 24 | 25 | 56854.80 | -0.06 | -1270.36 | -7.41 | -21028.31 | 47.09 |
| 25 | 25 | 56879.61 | -0.06 | -704.70 | -7.41 | -21077.96 | 47.09 |
| 25 | 26 | 56879.61 | -0.06 | -704.70 | -7.41 | -22557.48 | 47.50 |
| 26 | 26 | 56890.22 | -0.13 | -142.78 | -0.91 | -22588.84 | 47.50 |
| 26 | 27 | 56890.22 | -0.13 | -142.78 | -0.91 | -22888.45 | 47.57 |
| 27 | 27 | 56890.29 | -0.13 | 419.39 | -7.59 | -22904.29 | 47.57 |
| 27 | 28 | 56890.29 | -0.13 | 419.39 | -7.59 | -22023.46 | 47.85 |
| 28 | 28 | 56877.04 | -0.13 | 991.45 | 5.94 | -22020.55 | 47.85 |
| 28 | 29 | 56877.04 | -0.13 | 991.45 | 5.94 | -19938.43 | 48.27 |
| 29 | 29 | 56850.66 | -0.06 | 1561.90 | -0.91 | -19918.64 | 48.27 |
| 29 | 30 | 56850.66 | -0.06 | 1561.90 | -0.91 | -16638.24 | 48.46 |
| 30 | 30 | 56811.10 | -0.06 | 2129.89 | 6.17 | -16605.98 | 48.46 |
| 30 | 31 | 56811.10 | -0.06 | 2129.89 | 6.17 | -12133.18 | 48.59 |
| 31 | 31 | 56759.90 | -0.13 | 2683.99 | 6.17 | -12096.27 | 48.59 |
| 31 | 32 | 56759.90 | -0.13 | 2683.99 | 6.17 | -6459.68 | 49.01 |
| 32 | 32 | 56695.20 | -0.06 | 3243.90 | 13.31 | -6424.97 | 49.01 |
| 32 | 33 | 56695.20 | -0.06 | 3243.90 | 13.31 | 387.65 | 49.34 |
| 33 | 33 | 56618.41 | -0.06 | 3798.32 | 13.31 | 409.11 | 49.34 |
| 33 | 34 | 56618.41 | -0.06 | 3798.32 | 13.31 | 8385.76 | 49.57 |
| 34 | 34 | 56529.86 | -0.06 | 4346.46 | 13.31 | 8381.37 | 49.57 |
| 34 | 35 | 56529.86 | -0.06 | 4346.46 | 13.31 | 17509.28 | 49.86 |
| 35 | 35 | 66416.11 | -0.06 | 11055.01 | 17.13 | 18910.87 | 51.37 |
| 35 | 36 | 66416.11 | -0.06 | 11055.01 | 17.13 | 42192.71 | 51.66 |
| 36 | 36 | 67472.30 | -0.06 | 2152.84 | 21.35 | 42526.71 | 50.21 |
| 36 | 37 | 67472.30 | -0.06 | 2152.84 | 21.35 | 47045.73 | 50.40 |
| 37 | 37 | 67460.67 | 0.49 | -2595.75 | -19.14 | 47102.88 | 50.40 |
| 37 | 38 | 67460.67 | 0.49 | -2595.75 | -19.14 | 41651.33 | 49.67 |

LAV-Gelida. V.Rierussa. ELU Pretensado.

| BAR. | NUDO | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| 38 | 38 | 66317.75 | 0.49 | -11631.75 | -15.34 | 41423.60 | 50.99 |
| 38 | 39 | 66317.75 | 0.49 | -11631.75 | -15.34 | 16927.63 | 49.79 |
| 39 | 39 | 56546.92 | 0.49 | -4335.54 | -19.16 | 17253.41 | 48.84 |
| 39 | 40 | 56546.92 | 0.49 | -4335.54 | -19.16 | 8148.82 | 47.64 |
| 40 | 40 | 56631.14 | 0.49 | -3795.34 | -11.45 | 8120.19 | 47.64 |
| 40 | 41 | 56631.14 | 0.49 | -3795.34 | -11.45 | 149.45 | 46.68 |
| 41 | 41 | 56707.29 | 0.49 | -3240.02 | -11.45 | 95.09 | 46.68 |
| 41 | 42 | 56707.29 | 0.49 | -3240.02 | -11.45 | -6709.22 | 45.75 |
| 42 | 42 | 53849.05 | 0.49 | -2688.96 | -11.45 | -1700.25 | 45.75 |
| 42 | 43 | 53849.05 | 0.49 | -2688.96 | -11.45 | -7347.45 | 44.75 |
| 43 | 43 | 53898.30 | 0.49 | -2139.14 | -4.54 | -7414.35 | 44.75 |
| 43 | 44 | 53898.30 | 0.49 | -2139.14 | -4.54 | -11906.78 | 43.55 |
| 44 | 44 | 53935.99 | 0.49 | -1575.86 | -4.54 | -11969.03 | 43.55 |
| 44 | 45 | 53935.99 | 0.49 | -1575.86 | -4.54 | -15278.36 | 42.87 |
| 45 | 45 | 53960.75 | 0.49 | -1010.20 | 2.06 | -15328.00 | 42.87 |
| 45 | 46 | 53960.75 | 0.49 | -1010.20 | 2.06 | -17449.57 | 41.93 |
| 46 | 46 | 53971.48 | 0.49 | -448.35 | 2.06 | -17480.66 | 41.93 |
| 46 | 47 | 53971.48 | 0.49 | -448.35 | 2.06 | -18422.44 | 40.97 |
| 47 | 47 | 53971.41 | 0.49 | 113.89 | 2.06 | -18438.34 | 40.97 |
| 47 | 48 | 53971.41 | 0.49 | 113.89 | 2.06 | -18199.18 | 39.90 |
| 48 | 48 | 53958.29 | 0.49 | 685.89 | 2.06 | -18196.34 | 39.90 |
| 48 | 49 | 53958.29 | 0.49 | 685.89 | 2.06 | -16756.05 | 38.88 |
| 49 | 49 | 53931.79 | 0.49 | 1256.40 | 7.91 | -16736.27 | 38.88 |
| 49 | 50 | 53931.79 | 0.49 | 1256.40 | 7.91 | -14097.65 | 38.17 |
| 50 | 50 | 53892.23 | 0.49 | 1824.33 | 13.70 | -14065.46 | 38.17 |
| 50 | 51 | 53892.23 | 0.49 | 1824.33 | 13.70 | -10234.52 | 36.94 |
| 51 | 51 | 53841.10 | 0.49 | 2378.42 | 13.70 | -10197.55 | 36.94 |
| 51 | 52 | 53841.10 | 0.49 | 2378.42 | 13.70 | -5202.66 | 36.39 |
| 52 | 52 | 53776.20 | 0.49 | 2939.76 | 13.94 | -5167.69 | 36.39 |
| 52 | 53 | 53776.20 | 0.49 | 2939.76 | 13.94 | 1002.98 | 35.13 |
| 53 | 53 | 53699.60 | 0.49 | 3492.82 | 13.70 | 1024.25 | 35.13 |
| 53 | 54 | 53699.60 | 0.49 | 3492.82 | 13.70 | 8359.06 | 34.09 |
| 54 | 54 | 53611.11 | 0.49 | 4040.84 | 18.83 | 8354.73 | 34.09 |
| 54 | 55 | 53611.11 | 0.49 | 4040.84 | 18.83 | 16841.03 | 33.44 |
| 55 | 55 | 63528.93 | 0.49 | 10531.01 | 16.44 | 18242.55 | 34.72 |
| 55 | 56 | 63528.93 | 0.49 | 10531.01 | 16.44 | 40421.37 | 33.63 |
| 56 | 56 | 64553.82 | 0.49 | 1846.37 | 23.57 | 40755.36 | 32.27 |
| 56 | 57 | 64553.82 | 0.49 | 1846.37 | 23.57 | 44632.85 | 31.44 |

LAV-Gelida. V.Rierussa. ELU Pretensado.

| BAR. | NUDO | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| 57 | 57 | 64542.05 | -0.36 | -2373.93 | -18.27 | 44689.93 | 31.44 |
| 57 | 58 | 64542.05 | -0.36 | -2373.93 | -18.27 | 39704.14 | 32.53 |
| 58 | 58 | 63424.04 | -0.36 | -11190.98 | -15.68 | 39476.29 | 33.67 |
| 58 | 59 | 63424.04 | -0.36 | -11190.98 | -15.68 | 15907.67 | 34.69 |
| 59 | 59 | 53627.98 | -0.36 | -4113.65 | -13.71 | 16233.46 | 33.35 |
| 59 | 60 | 53627.98 | -0.36 | -4113.65 | -13.71 | 7594.58 | 34.34 |
| 60 | 60 | 53712.14 | -0.36 | -3573.46 | -13.71 | 7566.01 | 34.34 |
| 60 | 61 | 53712.14 | -0.36 | -3573.46 | -13.71 | 61.45 | 35.35 |
| 61 | 61 | 53788.35 | -0.36 | -3018.20 | -8.67 | 7.15 | 35.35 |
| 61 | 62 | 53788.35 | -0.36 | -3018.20 | -8.67 | -6331.22 | 36.40 |
| 62 | 62 | 53848.98 | -0.36 | -2468.31 | -8.76 | -6395.34 | 36.40 |
| 62 | 63 | 53848.98 | -0.36 | -2468.31 | -8.76 | -11576.18 | 37.40 |
| 63 | 63 | 53898.30 | -0.36 | -1917.38 | -8.67 | -11643.27 | 37.40 |
| 63 | 64 | 53898.30 | -0.36 | -1917.38 | -8.67 | -15669.96 | 38.47 |
| 64 | 64 | 53936.05 | -0.36 | -1354.04 | -3.62 | -15731.96 | 38.47 |
| 64 | 65 | 53936.05 | -0.36 | -1354.04 | -3.62 | -18575.48 | 39.56 |
| 65 | 65 | 53960.88 | -0.36 | -788.31 | -3.62 | -18625.12 | 39.56 |
| 65 | 66 | 53960.88 | -0.36 | -788.31 | -3.62 | -20280.48 | 40.51 |
| 66 | 66 | 53971.48 | -0.36 | -226.53 | -3.62 | -20311.64 | 40.51 |
| 66 | 67 | 53971.48 | -0.36 | -226.53 | -3.62 | -20787.31 | 41.53 |
| 67 | 67 | 53971.54 | -0.36 | 335.65 | 1.65 | -20803.08 | 41.53 |
| 67 | 68 | 53971.54 | -0.36 | 335.65 | 1.65 | -20098.02 | 42.46 |
| 68 | 68 | 53958.36 | -0.36 | 907.71 | 1.65 | -20095.24 | 42.46 |
| 68 | 69 | 53958.36 | -0.36 | 907.71 | 1.65 | -18188.68 | 43.50 |
| 69 | 69 | 53931.86 | -0.36 | 1478.80 | 1.57 | -18168.90 | 43.50 |
| 69 | 70 | 53931.86 | -0.36 | 1478.80 | 1.57 | -15064.35 | 44.59 |
| 70 | 70 | 53892.43 | -0.36 | 2046.02 | 6.74 | -15032.23 | 44.59 |
| 70 | 71 | 53892.43 | -0.36 | 2046.02 | 6.74 | -10735.00 | 45.47 |
| 71 | 71 | 53841.10 | -0.36 | 2600.11 | 6.74 | -10698.02 | 45.47 |
| 71 | 72 | 53841.10 | -0.36 | 2600.11 | 6.74 | -5237.24 | 46.63 |
| 72 | 72 | 53776.52 | -0.36 | 3159.90 | 12.22 | -5202.46 | 46.63 |
| 72 | 73 | 53776.52 | -0.36 | 3159.90 | 12.22 | 1434.22 | 47.54 |
| 73 | 73 | 53699.73 | -0.36 | 3714.38 | 12.22 | 1455.49 | 47.54 |
| 73 | 74 | 53699.73 | -0.36 | 3714.38 | 12.22 | 9256.75 | 48.66 |
| 74 | 74 | 53611.24 | -0.36 | 4262.53 | 12.22 | 9252.42 | 48.66 |
| 74 | 75 | 53611.24 | -0.36 | 4262.53 | 12.22 | 18204.51 | 49.75 |
| 75 | 75 | 63510.95 | -0.36 | 10756.83 | 14.07 | 19606.04 | 50.54 |
| 75 | 76 | 63510.95 | -0.36 | 10756.83 | 14.07 | 42250.49 | 51.63 |

LAV-Gelida. V.Rierussa. ELU Pretensado.

| BAR. | NUDO | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| 76 | 76 | 64553.63 | -0.36 | 2068.00 | 17.73 | 42584.87 | 50.47 |
| 76 | 77 | 64553.63 | -0.36 | 2068.00 | 17.73 | 46928.30 | 51.50 |
| 77 | 77 | 64541.80 | 0.40 | -2500.14 | -13.01 | 46985.31 | 51.50 |
| 77 | 78 | 64541.80 | 0.40 | -2500.14 | -13.01 | 41734.52 | 50.70 |
| 78 | 78 | 63414.55 | 0.40 | -11316.62 | -9.12 | 41506.80 | 51.33 |
| 78 | 79 | 63414.55 | 0.40 | -11316.62 | -9.12 | 17672.65 | 50.24 |
| 79 | 79 | 53627.91 | 0.40 | -4239.73 | -12.96 | 17998.37 | 49.59 |
| 79 | 80 | 53627.91 | 0.40 | -4239.73 | -12.96 | 9094.05 | 48.60 |
| 80 | 80 | 53711.75 | 0.40 | -3701.28 | -12.92 | 9065.61 | 48.60 |
| 80 | 81 | 53711.75 | 0.40 | -3701.28 | -12.92 | 1295.88 | 47.65 |
| 81 | 81 | 53788.22 | 0.40 | -3144.28 | -7.45 | 1241.39 | 47.65 |
| 81 | 82 | 53788.22 | 0.40 | -3144.28 | -7.45 | -5362.32 | 46.66 |
| 82 | 82 | 53849.05 | 0.40 | -2593.22 | -1.93 | -5426.39 | 46.66 |
| 82 | 83 | 53849.05 | 0.40 | -2593.22 | -1.93 | -10872.81 | 45.64 |
| 83 | 83 | 53898.24 | 0.40 | -2043.53 | -7.23 | -10939.59 | 45.64 |
| 83 | 84 | 53898.24 | 0.40 | -2043.53 | -7.23 | -15231.54 | 44.52 |
| 84 | 84 | 53935.86 | 0.40 | -1480.90 | 3.20 | -15293.66 | 44.52 |
| 84 | 85 | 53935.86 | 0.40 | -1480.90 | 3.20 | -18402.56 | 43.71 |
| 85 | 85 | 53960.62 | 0.40 | -914.59 | -1.93 | -18452.34 | 43.71 |
| 85 | 86 | 53960.62 | 0.40 | -914.59 | -1.93 | -20373.11 | 42.69 |
| 86 | 86 | 53971.41 | 0.40 | -352.80 | 2.99 | -20404.21 | 42.69 |
| 86 | 87 | 53971.41 | 0.40 | -352.80 | 2.99 | -21145.16 | 41.67 |
| 87 | 87 | 53971.35 | 0.40 | 209.44 | 2.99 | -21161.00 | 41.67 |
| 87 | 88 | 53971.35 | 0.40 | 209.44 | 2.99 | -20721.40 | 40.95 |
| 88 | 88 | 53958.16 | 0.40 | 781.37 | 7.97 | -20718.56 | 40.95 |
| 88 | 89 | 53958.16 | 0.40 | 781.37 | 7.97 | -19077.52 | 39.86 |
| 89 | 89 | 53931.66 | 0.40 | 1352.47 | 8.02 | -19057.81 | 39.86 |
| 89 | 90 | 53931.66 | 0.40 | 1352.47 | 8.02 | -16218.46 | 38.84 |
| 90 | 90 | 53892.23 | 0.40 | 1919.68 | 7.97 | -16186.46 | 38.84 |
| 90 | 91 | 53892.23 | 0.40 | 1919.68 | 7.97 | -12154.69 | 37.66 |
| 91 | 91 | 53906.13 | 0.40 | 2481.34 | 12.78 | -12167.88 | 37.66 |
| 91 | 92 | 53906.13 | 0.40 | 2481.34 | 12.78 | -6956.34 | 36.91 |
| 92 | 92 | 54010.20 | 0.40 | 3068.53 | 12.94 | -7036.76 | 36.91 |
| 92 | 93 | 54010.20 | 0.40 | 3068.53 | 12.94 | -595.10 | 35.89 |
| 93 | 93 | 54110.32 | 0.40 | 3657.59 | 12.78 | -643.19 | 35.89 |
| 93 | 94 | 54110.32 | 0.40 | 3657.59 | 12.78 | 7038.54 | 34.99 |
| 94 | 94 | 54196.43 | 0.40 | 4250.60 | 17.18 | 7027.81 | 34.99 |
| 94 | 95 | 54196.43 | 0.40 | 4250.60 | 17.18 | 15955.22 | 34.14 |

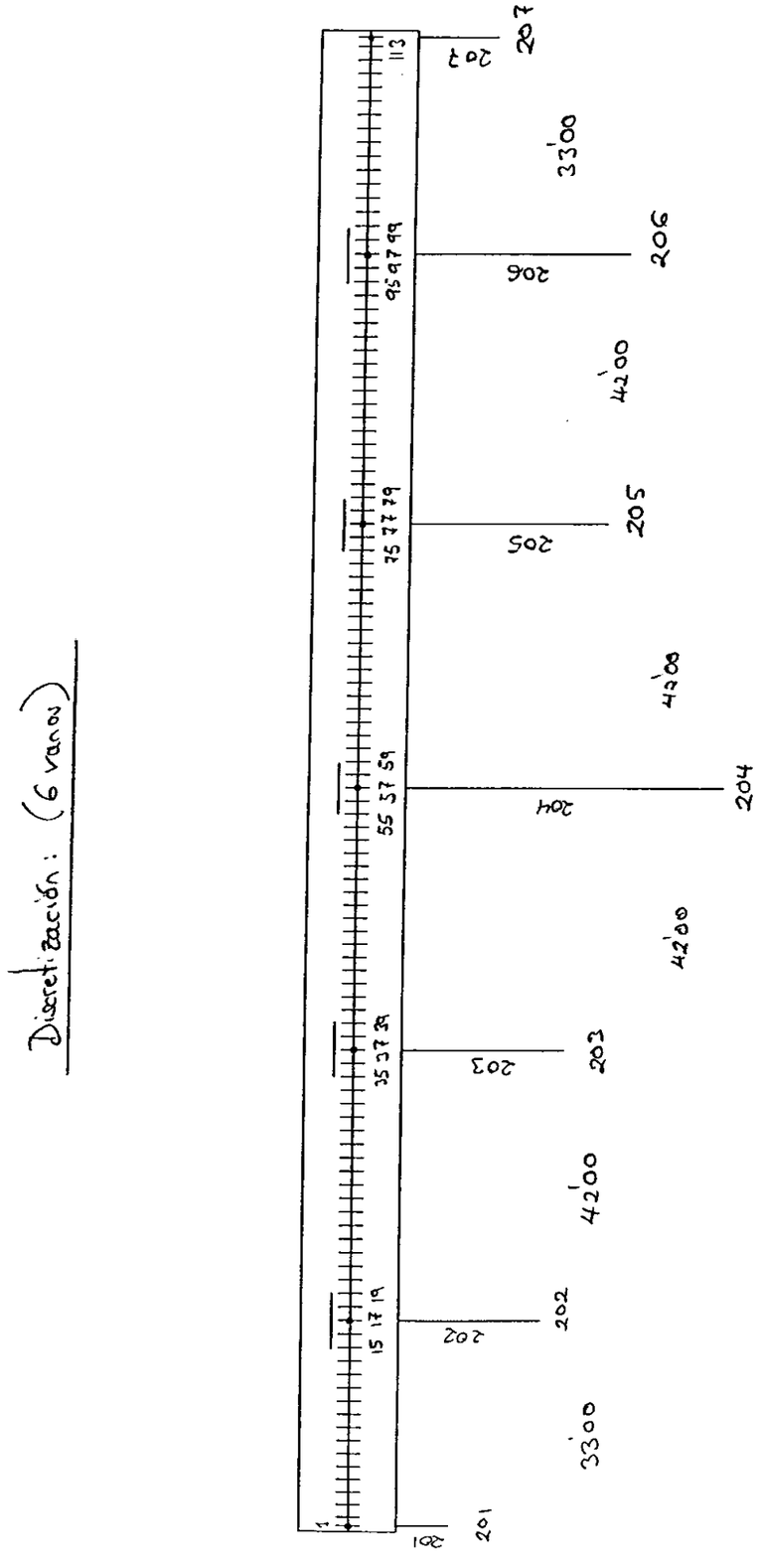
LAV-Gelida. V.Rierussa. ELU Pretensado.

| BAR. | NUDO | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| 95 | 95 | 64371.87 | 0.40 | 10828.02 | 14.52 | 17454.16 | 35.25 |
| 95 | 96 | 64371.87 | 0.40 | 10828.02 | 14.52 | 40260.39 | 34.19 |
| 96 | 96 | 66009.78 | 0.40 | 2021.68 | 21.55 | 41090.83 | 33.12 |
| 96 | 97 | 66009.78 | 0.40 | 2021.68 | 21.55 | 45334.79 | 32.11 |
| 97 | 97 | 66327.86 | 1.02 | -2749.07 | -1.18 | 45710.86 | 32.11 |
| 97 | 98 | 66327.86 | 1.02 | -2749.07 | -1.18 | 39936.93 | 30.14 |
| 98 | 98 | 65203.88 | 1.02 | -11421.91 | 1.26 | 39718.96 | 30.08 |
| 98 | 99 | 65203.88 | 1.02 | -11421.91 | 1.26 | 15661.70 | 28.13 |
| 99 | 99 | 55688.25 | 1.02 | -4087.18 | 2.86 | 16076.56 | 28.05 |
| 99 | 100 | 55688.25 | 1.02 | -4087.18 | 2.86 | 7496.15 | 26.03 |
| 100 | 100 | 55921.99 | 1.02 | -3534.77 | 2.83 | 7470.42 | 26.03 |
| 100 | 101 | 55921.99 | 1.02 | -3534.77 | 2.83 | 46.03 | 24.14 |
| 101 | 101 | 56195.80 | 1.02 | -2970.40 | 2.83 | -42.72 | 24.14 |
| 101 | 102 | 56195.80 | 1.02 | -2970.40 | 2.83 | -6281.79 | 21.82 |
| 102 | 102 | 56458.24 | 1.02 | -2392.13 | 5.73 | -6428.32 | 21.82 |
| 102 | 103 | 56458.24 | 1.02 | -2392.13 | 5.73 | -11450.68 | 19.87 |
| 103 | 103 | 56707.75 | 1.02 | -1803.91 | 5.77 | -11635.81 | 19.87 |
| 103 | 104 | 56707.75 | 1.02 | -1803.91 | 5.77 | -15424.53 | 17.85 |
| 104 | 104 | 56878.92 | 1.02 | -1198.10 | 8.16 | -15572.88 | 17.85 |
| 104 | 105 | 56878.92 | 1.02 | -1198.10 | 8.16 | -18089.54 | 15.81 |
| 105 | 105 | 56780.80 | 1.02 | -577.43 | 8.07 | -17954.51 | 15.81 |
| 105 | 106 | 56780.80 | 1.02 | -577.43 | 8.07 | -19166.98 | 13.73 |
| 106 | 106 | 56671.10 | 1.02 | -204.65 | 8.16 | -19046.36 | 13.73 |
| 106 | 107 | 56671.10 | 1.02 | -204.65 | 8.16 | -19476.51 | 11.63 |
| 107 | 107 | 56558.76 | 1.02 | -74.91 | 9.73 | -19384.20 | 11.63 |
| 107 | 108 | 56558.76 | 1.02 | -74.91 | 9.73 | -19541.47 | 9.68 |
| 108 | 108 | 56443.50 | 1.02 | 58.37 | 9.53 | -19452.33 | 9.68 |
| 108 | 109 | 56443.50 | 1.02 | 58.37 | 9.53 | -19330.13 | 7.73 |
| 109 | 109 | 56326.57 | 1.02 | 183.06 | 9.73 | -19246.68 | 7.73 |
| 109 | 110 | 56326.57 | 1.02 | 183.06 | 9.73 | -18862.32 | 5.44 |
| 110 | 110 | 56204.66 | 1.02 | 305.43 | 10.56 | -18785.15 | 5.44 |
| 110 | 111 | 56204.66 | 1.02 | 305.43 | 10.56 | -18144.17 | 3.49 |
| 111 | 111 | 56079.97 | 1.02 | 429.79 | 10.56 | -18081.27 | 3.49 |
| 111 | 112 | 56079.97 | 1.02 | 429.79 | 10.56 | -17178.87 | 1.38 |
| 112 | 112 | 55619.67 | 1.02 | 6388.07 | 10.28 | -17144.92 | 2.57 |
| 112 | 113 | 55619.67 | 1.02 | 6388.07 | 10.28 | -7507.81 | 0.98 |
| 201 | 201 | 330.36 | -1.39 | 0.00 | 0.00 | 0.00 | -1.42 |
| 201 | 1 | 330.36 | -1.39 | 0.00 | 0.00 | 0.00 | 11.64 |

LAV-Gelida. V.Rierussa. ELU Pretensado.

| BAR. | NUDO | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|---|
| 202 | 202 | -192.01 | 1.36 | 0.00 | 0.00 | 0.00 | 51.35 |
| 202 | 17 | -192.01 | 1.36 | 0.00 | 0.00 | 0.00 | 28.81 |
| 203 | 203 | -305.62 | 0.65 | 0.00 | 0.00 | 0.00 | 60.11 |
| 203 | 37 | -305.62 | 0.65 | 0.00 | 0.00 | 0.00 | 48.31 |
| 204 | 204 | 222.09 | -0.97 | 0.00 | 0.00 | 0.00 | 1.10 |
| 204 | 57 | 222.09 | -0.97 | 0.00 | 0.00 | 0.00 | 41.82 |
| 205 | 205 | -126.47 | 0.89 | 0.00 | 0.00 | 0.00 | 56.74 |
| 205 | 77 | -126.47 | 0.89 | 0.00 | 0.00 | 0.00 | 36.31 |
| 206 | 206 | -200.16 | 0.47 | 0.00 | 0.00 | 0.00 | 34.52 |
| 206 | 97 | -200.16 | 0.47 | 0.00 | 0.00 | 0.00 | 22.49 |
| 207 | 207 | 271.81 | -1.02 | 0.00 | 0.00 | 0.00 | -0.86 |
| 207 | 113 | 271.81 | -1.02 | 0.00 | 0.00 | 0.00 | 10.32 |

## 7.4.2.E.L.U. de Cortante y Torsión



VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 77 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 77 | 64541.89 | 18223.32>> | -3582.6 | -103776.6 | 62.07 | 82.05 | 2.01 | 45.66 | 0.326 |
| 77 | 64541.80 | 6844.92<< | -214.9 | -19216.6 | 0.00 | 4.92 | 0.12 | 17.15 | 0.062 |
| 77 | 64541.68 | 10791.85 | 9018.5>> | -49205.1 | 20.20 | 206.54 | 5.07 | 27.04 | 0.203 |
| 77 | 64541.71 | 13338.96 | -12657.2<< | -61570.1 | 34.55 | 289.87 | 7.11 | 33.43 | 0.312 |
| 78 | 64541.89 | 16128.17>> | -3115.1 | -67704.2 | 50.27 | 71.34 | 1.75 | 40.41 | 0.266 |
| 78 | 64541.80 | 5773.68<< | -193.3 | -5965.8 | 0.00 | 4.43 | 0.11 | 14.47 | 0.047 |
| 78 | 64541.68 | 9331.94 | 8282.9>> | -28073.1 | 11.97 | 189.69 | 4.66 | 23.38 | 0.166 |
| 78 | 64541.71 | 11632.50 | -11432.5<< | -35347.6 | 24.94 | 261.83 | 6.43 | 29.15 | 0.255 |

| BARRA 78 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 78 | 64812.12 | 7259.18>> | -3132.0 | -67931.9 | 0.19 | 71.82 | 1.76 | 18.19 | 0.081 |
| 78 | 64035.23 | -3066.12<< | -187.9 | -6193.5 | 0.00 | 4.29 | 0.11 | 7.68 | 0.017 |
| 78 | 64302.03 | 482.12 | 8369.8>> | -28300.9 | 0.00 | 191.46 | 4.71 | 1.21 | 0.065 |
| 78 | 64474.69 | 2776.18 | -11257.9<< | -35575.3 | 0.00 | 257.74 | 6.33 | 6.96 | 0.119 |
| 79 | 64654.51 | 5164.05>> | -2663.2 | -54849.1 | 6.01 | 62.81 | 1.21 | 13.32 | 0.256 |
| 79 | 63954.66 | -4137.37<< | -166.2 | -13779.0 | 0.84 | 3.91 | 0.08 | 10.67 | 0.174 |
| 79 | 64192.23 | -977.81 | 7632.2>> | -28822.6 | 0.00 | 179.56 | 3.49 | 2.52 | 0.128 |
| 79 | 64346.34 | 1069.71 | -10029.8<< | -31525.1 | 0.00 | 236.16 | 4.58 | 2.76 | 0.172 |

| BARRA 79 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 79 | 53628.01 | 12287.51>> | -2603.6 | -54523.4 | 48.15 | 57.75 | 1.26 | 31.70 | 0.678 |
| 79 | 53627.92 | 2959.81<< | -171.2 | -13453.3 | 0.00 | 3.80 | 0.08 | 7.64 | 0.111 |
| 79 | 53627.80 | 6128.31 | 7540.7>> | -28496.9 | 14.22 | 167.27 | 3.66 | 15.81 | 0.368 |
| 79 | 53627.84 | 8181.61 | -10133.0<< | -31199.4 | 25.53 | 224.77 | 4.91 | 21.11 | 0.529 |
| 80 | 53628.01 | 10375.99>> | -2136.0 | -30724.5 | 37.62 | 47.38 | 1.04 | 26.77 | 0.548 |
| 80 | 53627.92 | 2072.18<< | -149.6 | -8169.2 | 0.00 | 3.32 | 0.07 | 5.35 | 0.071 |
| 80 | 53627.80 | 4852.00 | 6805.1>> | -16966.5 | 7.19 | 150.95 | 3.30 | 12.52 | 0.288 |
| 80 | 53627.84 | 6658.74 | -8908.4<< | -15615.5 | 17.14 | 197.61 | 4.32 | 17.18 | 0.420 |

| BARRA 80 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 80 | 53711.85 | 10914.44>> | -2136.3 | -30752.9 | 40.55 | 47.41 | 1.04 | 28.16 | 0.582 |
| 80 | 53711.76 | 2610.63<< | -149.7 | -8197.7 | 0.00 | 3.32 | 0.07 | 6.73 | 0.095 |
| 80 | 53711.64 | 5390.45 | 6805.0>> | -16995.0 | 10.13 | 151.03 | 3.30 | 13.91 | 0.316 |
| 80 | 53711.68 | 7197.19 | -8908.5<< | -15643.9 | 20.08 | 197.71 | 4.32 | 18.57 | 0.451 |
| 81 | 53711.85 | 9003.80>> | -1668.9 | -9846.8 | 30.03 | 37.04 | 0.81 | 23.23 | 0.457 |
| 81 | 53711.76 | 1723.38<< | -128.1 | -3648.7 | 0.00 | 2.84 | 0.06 | 4.45 | 0.057 |
| 81 | 53711.64 | 4114.72 | 6069.8>> | -7018.3 | 3.11 | 134.71 | 2.94 | 10.62 | 0.238 |
| 81 | 53711.68 | 5675.04 | -7684.4<< | -2133.2 | 11.70 | 170.54 | 3.72 | 14.64 | 0.345 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 81 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 81 | 53788.40 | 9560.80>> | -1668.7 | -9900.5 | 33.06 | 37.05 | 0.81 | 24.66 | 0.492 |
| 81 | 53788.22 | 2280.38<< | -125.0 | -3703.1 | 0.00 | 2.78 | 0.06 | 5.88 | 0.080 |
| 81 | 53788.06 | 4671.73 | 6071.4>> | -7075.7 | 6.15 | 134.81 | 2.94 | 12.05 | 0.267 |
| 81 | 53788.35 | 6232.05 | -7680.5<< | -2184.1 | 14.74 | 170.53 | 3.72 | 16.08 | 0.376 |
| 82 | 53788.40 | 7649.24>> | -1201.2 | 8171.9 | 22.54 | 26.67 | 0.58 | 19.73 | 0.371 |
| 82 | 53788.22 | 1392.73<< | -103.4 | 154.1 | 0.00 | 2.30 | 0.05 | 3.59 | 0.043 |
| 82 | 53788.06 | 3395.40 | 5335.9>> | 1395.7 | 0.00 | 118.47 | 2.58 | 8.76 | 0.192 |
| 82 | 53788.35 | 4709.15 | -6455.9<< | 9305.3 | 6.36 | 143.34 | 3.13 | 12.15 | 0.275 |

| BARRA 82 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 82 | 53849.32 | 8200.29>> | -1189.2 | 8108.4 | 25.55 | 26.41 | 0.58 | 21.16 | 0.403 |
| 82 | 53849.05 | 1943.79<< | -95.3 | 90.0 | 0.00 | 2.12 | 0.05 | 5.01 | 0.066 |
| 82 | 53848.84 | 3946.45 | 5344.6>> | 1329.1 | 2.15 | 118.71 | 2.59 | 10.18 | 0.219 |
| 82 | 53849.38 | 5260.21 | -6443.4<< | 9244.3 | 9.38 | 143.12 | 3.12 | 13.57 | 0.304 |
| 83 | 53849.32 | 6288.73>> | -721.6 | 23323.5 | 15.03 | 16.03 | 0.35 | 16.22 | 0.288 |
| 83 | 53849.05 | 1056.14<< | -73.7 | 3240.2 | 0.00 | 1.64 | 0.04 | 2.72 | 0.031 |
| 83 | 53848.84 | 2670.13 | 4609.0>> | 8277.2 | 0.00 | 102.37 | 2.23 | 6.89 | 0.148 |
| 83 | 53849.38 | 3737.32 | -5218.7<< | 18692.6 | 1.00 | 115.92 | 2.53 | 9.64 | 0.207 |

| BARRA 83 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 83 | 53898.42 | 6838.43>> | -743.2 | 23256.4 | 18.04 | 16.51 | 0.36 | 17.64 | 0.319 |
| 83 | 53898.24 | 1605.83<< | -85.7 | 3173.4 | 0.00 | 1.90 | 0.04 | 4.14 | 0.052 |
| 83 | 53898.08 | 3219.83 | 4594.6>> | 8212.6 | 0.00 | 102.08 | 2.22 | 8.31 | 0.173 |
| 83 | 53898.36 | 4287.02 | -5238.1<< | 18623.4 | 4.01 | 116.38 | 2.54 | 11.06 | 0.235 |
| 84 | 53898.42 | 4926.90>> | -275.7 | 35611.1 | 7.53 | 6.13 | 0.13 | 12.71 | 0.210 |
| 84 | 53898.24 | 718.17<< | -64.1 | 5613.8 | 0.00 | 1.42 | 0.03 | 1.85 | 0.019 |
| 84 | 53898.08 | 1943.50 | 3859.1>> | 13634.5 | 0.00 | 85.74 | 1.87 | 5.01 | 0.106 |
| 84 | 53898.36 | 2764.15 | -4013.4<< | 26027.7 | 0.00 | 89.17 | 1.94 | 7.13 | 0.144 |

| BARRA 84 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 84 | 53936.17 | 5489.53>> | -216.5 | 35549.2 | 10.61 | 4.81 | 0.10 | 14.16 | 0.240 |
| 84 | 53935.88 | 1280.79<< | -33.7 | 5551.7 | 0.00 | 0.75 | 0.02 | 3.30 | 0.039 |
| 84 | 53935.59 | 2554.32 | 3898.3>> | 20152.2 | 0.00 | 86.63 | 1.89 | 6.59 | 0.133 |
| 84 | 53936.40 | 3278.58 | -3964.5<< | 19386.0 | 0.00 | 88.10 | 1.92 | 8.46 | 0.168 |
| 85 | 53936.17 | 3578.84>> | 250.9 | 45067.4 | 0.11 | 5.57 | 0.12 | 9.23 | 0.141 |
| 85 | 53935.88 | 393.55<< | -12.1 | 7309.0 | 0.00 | 0.27 | 0.01 | 1.02 | 0.009 |
| 85 | 53935.59 | 1278.58 | 3163.1>> | 24175.1 | 0.00 | 70.29 | 1.53 | 3.30 | 0.071 |
| 85 | 53936.40 | 1756.38 | -2740.4<< | 24670.6 | 0.00 | 60.90 | 1.33 | 4.53 | 0.084 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 85 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 85 | 53960.89 | 4145.15>> | 215.0 | 45017.7 | 3.21 | 4.78 | 0.10 | 10.69 | 0.169 |
| 85 | 53960.62 | 959.86<< | -29.7 | 7259.2 | 0.00 | 0.66 | 0.01 | 2.48 | 0.027 |
| 85 | 53960.41 | 1796.69 | 3139.5>> | 17442.2 | 0.00 | 69.78 | 1.52 | 4.64 | 0.091 |
| 85 | 53960.95 | 2370.89 | -2768.5<< | 31304.1 | 0.00 | 61.53 | 1.34 | 6.12 | 0.111 |
| 86 | 53960.89 | 2233.56>> | 682.6 | 51716.1 | 0.00 | 15.17 | 0.33 | 5.76 | 0.082 |
| 86 | 53960.88 | -219.92<< | -89.7 | 45397.6 | 0.00 | 1.99 | 0.04 | 0.57 | 0.005 |
| 86 | 53960.41 | 801.32 | 2412.1>> | 27907.9 | 0.00 | 53.61 | 1.17 | 2.07 | 0.044 |
| 86 | 53960.95 | 567.00 | -1552.0<< | 26652.0 | 0.00 | 34.49 | 0.75 | 1.46 | 0.027 |

| BARRA 86 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 86 | 53971.71 | 2795.35>> | 721.8 | 51684.7 | 0.00 | 16.04 | 0.35 | 7.21 | 0.108 |
| 86 | 53971.80 | 341.87<< | -53.4 | 45366.5 | 0.00 | 1.19 | 0.03 | 0.88 | 0.008 |
| 86 | 53971.14 | 1411.30 | 2441.1>> | 34661.5 | 0.00 | 54.26 | 1.18 | 3.64 | 0.067 |
| 86 | 53971.93 | 1080.60 | -1525.8<< | 19835.8 | 0.00 | 33.91 | 0.74 | 2.79 | 0.044 |
| 87 | 53971.28 | 990.10>> | 1024.9 | 10802.3 | 0.00 | 22.78 | 0.50 | 2.55 | 0.036 |
| 87 | 53971.80 | -1297.46<< | 379.6 | 45989.1 | 0.00 | 8.44 | 0.18 | 3.35 | 0.042 |
| 87 | 53971.70 | -81.99 | 2074.7>> | 37334.3 | 0.00 | 46.12 | 1.00 | 0.21 | 0.020 |
| 87 | 53971.38 | 273.17 | -832.4<< | 24519.8 | 0.00 | 18.50 | 0.40 | 0.70 | 0.012 |

| BARRA 87 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 87 | 53971.21 | 1552.34>> | 1024.9 | 10786.4 | 0.00 | 22.78 | 0.50 | 4.00 | 0.057 |
| 87 | 53971.74 | -735.22<< | 379.6 | 45973.2 | 0.00 | 8.44 | 0.18 | 1.90 | 0.022 |
| 87 | 53971.63 | 480.25 | 2074.7>> | 37318.5 | 0.00 | 46.12 | 1.00 | 1.24 | 0.030 |
| 87 | 53971.32 | 835.41 | -832.4<< | 24503.9 | 0.00 | 18.50 | 0.40 | 2.16 | 0.029 |
| 88 | 53971.21 | 630.25>> | 1000.0 | 4678.4 | 0.00 | 22.23 | 0.48 | 1.63 | 0.024 |
| 88 | 53971.74 | -2612.38<< | 893.7 | 50857.4 | 0.00 | 19.86 | 0.43 | 6.74 | 0.101 |
| 88 | 53971.63 | -1042.65 | 3299.4>> | 36727.6 | 0.00 | 73.34 | 1.60 | 2.69 | 0.064 |
| 88 | 53971.32 | -440.94 | -1567.9<< | 24917.9 | 0.00 | 34.85 | 0.76 | 1.14 | 0.024 |

| BARRA 88 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 88 | 53958.01 | 1202.18>> | 1017.1 | 4680.7 | 0.00 | 22.61 | 0.49 | 3.10 | 0.043 |
| 88 | 53958.64 | -2040.44<< | 932.7 | 50859.8 | 0.00 | 20.73 | 0.45 | 5.26 | 0.076 |
| 88 | 53958.55 | -470.72 | 3331.8>> | 36728.9 | 0.00 | 74.05 | 1.61 | 1.21 | 0.045 |
| 88 | 53958.13 | 131.00 | -1541.2<< | 24921.5 | 0.00 | 34.25 | 0.75 | 0.34 | 0.015 |
| 89 | 53958.01 | 314.50>> | 1038.6 | 6273.4 | 0.00 | 23.08 | 0.50 | 0.81 | 0.015 |
| 89 | 53958.64 | -3952.05<< | 1400.3 | 44566.9 | 2.15 | 31.12 | 0.68 | 10.20 | 0.170 |
| 89 | 53958.55 | -1993.64 | 4556.4>> | 34140.9 | 0.00 | 101.27 | 2.20 | 5.14 | 0.118 |
| 89 | 53958.13 | -1145.36 | -2276.8<< | 23856.3 | 0.00 | 50.60 | 1.10 | 2.95 | 0.055 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 89 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 89 | 53931.51 | 885.60>> | 1038.9 | 6293.1 | 0.00 | 23.09 | 0.50 | 2.28 | 0.032 |
| 89 | 53932.14 | -3380.95<< | 1400.8 | 44586.6 | 0.00 | 31.13 | 0.68 | 8.72 | 0.142 |
| 89 | 53932.05 | -1422.54 | 4556.9>> | 34160.6 | 0.00 | 101.26 | 2.21 | 3.67 | 0.095 |
| 89 | 53931.63 | -574.27 | -2276.4<< | 23876.0 | 0.00 | 50.59 | 1.10 | 1.48 | 0.035 |
| 90 | 53931.51 | -1.65>> | 1060.4 | 7221.1 | 0.00 | 23.57 | 0.51 | 0.00 | 0.008 |
| 90 | 53932.14 | -5291.63<< | 1868.1 | 35483.9 | 9.53 | 41.51 | 0.90 | 13.65 | 0.244 |
| 90 | 53932.05 | -2944.74 | 5781.0>> | 29576.8 | 0.00 | 128.47 | 2.80 | 7.60 | 0.177 |
| 90 | 53931.63 | -1850.01 | -3011.6<< | 21331.6 | 0.00 | 66.92 | 1.46 | 4.77 | 0.091 |

| BARRA 90 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 90 | 53892.08 | 565.57>> | 1060.2 | 7253.1 | 0.00 | 23.56 | 0.51 | 1.46 | 0.022 |
| 90 | 53892.71 | -4724.41<< | 1867.7 | 35515.9 | 6.42 | 41.49 | 0.90 | 12.19 | 0.214 |
| 90 | 53892.62 | -2377.53 | 5780.6>> | 29608.8 | 0.00 | 128.43 | 2.80 | 6.13 | 0.152 |
| 90 | 53892.20 | -1282.79 | -3011.9<< | 21363.5 | 0.00 | 66.92 | 1.46 | 3.31 | 0.069 |
| 91 | 53892.08 | -322.11>> | 1081.8 | 7508.6 | 0.00 | 24.03 | 0.52 | 0.83 | 0.015 |
| 91 | 53892.71 | -6636.01<< | 2335.2 | 23585.9 | 16.93 | 51.88 | 1.13 | 17.12 | 0.324 |
| 91 | 53892.62 | -3900.45 | 7005.3>> | 23016.1 | 1.89 | 155.64 | 3.39 | 10.06 | 0.242 |
| 91 | 53892.20 | -2559.15 | -3747.5<< | 17328.9 | 0.00 | 83.26 | 1.81 | 6.60 | 0.131 |

| BARRA 91 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 91 | 53905.95 | 239.55>> | 1095.9 | 7495.0 | 0.00 | 24.35 | 0.53 | 0.62 | 0.013 |
| 91 | 53906.64 | -6074.36<< | 2357.1 | 23571.6 | 13.84 | 52.37 | 1.14 | 15.67 | 0.293 |
| 91 | 53906.57 | -3338.79 | 7026.8>> | 22999.6 | 0.00 | 156.13 | 3.40 | 8.61 | 0.215 |
| 91 | 53906.07 | -1997.49 | -3728.6<< | 17317.6 | 0.00 | 82.85 | 1.80 | 5.15 | 0.107 |
| 92 | 53905.95 | -648.13>> | 1117.5 | 7065.9 | 0.00 | 24.83 | 0.54 | 1.67 | 0.025 |
| 92 | 53906.64 | -7985.94<< | 2824.6 | 8806.4 | 24.35 | 62.76 | 1.37 | 20.60 | 0.409 |
| 92 | 53906.57 | -4861.71 | 8251.5>> | 14388.0 | 7.17 | 183.34 | 3.99 | 12.54 | 0.311 |
| 92 | 53906.07 | -3273.84 | -4464.2<< | 11781.9 | 0.00 | 99.19 | 2.16 | 8.45 | 0.174 |

| BARRA 92 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 92 | 54010.02 | -60.94>> | 1117.8 | 6985.5 | 0.00 | 24.85 | 0.54 | 0.16 | 0.010 |
| 92 | 54010.72 | -7398.75<< | 2824.9 | 8726.0 | 21.08 | 62.81 | 1.37 | 19.09 | 0.374 |
| 92 | 54010.64 | -4274.52 | 8251.8>> | 14307.5 | 3.91 | 183.46 | 3.99 | 11.03 | 0.281 |
| 92 | 54010.14 | -2686.66 | -4463.9<< | 11701.6 | 0.00 | 99.24 | 2.16 | 6.93 | 0.147 |
| 93 | 54010.02 | -948.22>> | 1139.4 | 5926.2 | 0.00 | 25.33 | 0.55 | 2.45 | 0.036 |
| 93 | 54010.72 | -9309.49<< | 3292.2 | -8811.6 | 31.59 | 73.20 | 1.59 | 24.02 | 0.496 |
| 93 | 54010.64 | -5796.73 | 9476.0>> | 3736.3 | 12.28 | 210.67 | 4.58 | 14.95 | 0.382 |
| 93 | 54010.14 | -3962.44 | -5199.1<< | 4722.4 | 2.20 | 115.59 | 2.51 | 10.22 | 0.218 |

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| BARRA 93 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 93 | 54110.14 | -359.15>> | 1139.2 | 5878.1 | 0.00 | 25.34 | 0.55 | 0.93 | 0.017 |
| 93 | 54110.83 | -8720.42<< | 3292.1 | -8859.7 | 28.31 | 73.24 | 1.59 | 22.50 | 0.459 |
| 93 | 54110.77 | -5207.66 | 9475.8>> | 3688.3 | 9.01 | 210.79 | 4.58 | 13.43 | 0.350 |
| 93 | 54110.27 | -3373.37 | -5199.3<< | 4674.2 | 0.00 | 115.66 | 2.51 | 8.70 | 0.189 |
| 94 | 54110.14 | -1246.83>> | 1160.7 | 4191.4 | 0.00 | 25.82 | 0.56 | 3.22 | 0.047 |
| 94 | 54110.83 | -10632.02<< | 3759.7 | -29182.6 | 38.81 | 83.64 | 1.82 | 27.43 | 0.585 |
| 94 | 54110.77 | -6730.60 | 10700.5>> | -8848.8 | 17.38 | 238.04 | 5.17 | 17.36 | 0.455 |
| 94 | 54110.27 | -4649.73 | -5934.9<< | -3751.3 | 5.95 | 132.03 | 2.87 | 12.00 | 0.264 |

| BARRA 94 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 94 | 54196.24 | -653.82>> | 1163.8 | 4180.1 | 0.00 | 25.90 | 0.56 | 1.69 | 0.026 |
| 94 | 54196.97 | -10039.02<< | 3746.9 | -29195.1 | 35.51 | 83.39 | 1.81 | 25.90 | 0.547 |
| 94 | 54196.94 | -6137.59 | 10697.3>> | -8864.6 | 14.09 | 238.09 | 5.17 | 15.83 | 0.421 |
| 94 | 54196.32 | -4056.72 | -5935.6<< | -3759.2 | 2.67 | 132.11 | 2.87 | 10.47 | 0.234 |
| 95 | 54196.24 | -1541.52>> | 1185.4 | 1874.6 | 0.00 | 26.38 | 0.57 | 3.98 | 0.058 |
| 95 | 54196.97 | -11950.63<< | 4214.4 | -52287.5 | 46.01 | 93.80 | 2.04 | 30.83 | 0.677 |
| 95 | 54196.94 | -7660.53 | 11922.0>> | -23354.7 | 22.46 | 265.35 | 5.76 | 19.76 | 0.530 |
| 95 | 54196.32 | -5333.11 | -6671.2<< | -13620.0 | 9.68 | 148.48 | 3.22 | 13.76 | 0.312 |

| BARRA 95 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 95 | 64806.19 | 5052.20>> | 1021.6 | 3373.5 | 5.39 | 24.11 | 0.47 | 13.03 | 0.231 |
| 95 | 65587.73 | -5327.52<< | 4670.5 | -50788.6 | 6.62 | 110.69 | 2.12 | 13.74 | 0.293 |
| 95 | 65265.89 | -1049.50 | 12333.8>> | -21855.8 | 0.00 | 291.81 | 5.61 | 2.71 | 0.213 |
| 95 | 65123.50 | 834.10 | -6728.3<< | -21884.4 | 0.00 | 159.07 | 3.06 | 2.15 | 0.109 |
| 96 | 64886.80 | 3980.91>> | 1043.2 | 12886.4 | 0.00 | 23.93 | 0.59 | 9.98 | 0.027 |
| 96 | 65745.36 | -7422.75<< | 5139.4 | -64216.1 | 0.75 | 118.38 | 2.87 | 18.60 | 0.100 |
| 96 | 65394.28 | -2756.04 | 13562.0>> | -25863.5 | 0.00 | 311.86 | 7.59 | 6.91 | 0.156 |
| 96 | 65233.34 | -625.88 | -7465.9<< | -21665.1 | 0.00 | 171.55 | 4.18 | 1.57 | 0.055 |

| BARRA 96 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 96 | 66009.57 | -4844.73>> | 1201.5 | 13716.2 | 0.00 | 27.71 | 0.67 | 12.14 | 0.038 |
| 96 | 66010.29 | -16280.70<< | 4638.7 | -63387.9 | 50.21 | 106.98 | 2.59 | 40.80 | 0.283 |
| 96 | 66010.02 | -11161.91 | 13127.3>> | -14338.5 | 21.57 | 302.74 | 7.33 | 27.97 | 0.274 |
| 96 | 66009.65 | -9026.11 | -7412.5<< | -10146.9 | 9.62 | 170.95 | 4.14 | 22.62 | 0.151 |
| 97 | 66009.57 | -5915.53>> | 1223.1 | 2421.5 | 0.00 | 28.21 | 0.68 | 14.82 | 0.052 |
| 97 | 66010.29 | -18374.93<< | 5106.0 | -99764.5 | 61.93 | 117.76 | 2.85 | 46.04 | 0.344 |
| 97 | 66010.02 | -12867.64 | 14351.5>> | -39561.4 | 31.11 | 330.98 | 8.01 | 32.24 | 0.332 |
| 97 | 66009.65 | -10485.39 | -8147.7<< | -30627.4 | 17.79 | 187.90 | 4.55 | 26.27 | 0.187 |

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| BARRA 97 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 97 | 66328.39 | 18196.93>> | -2364.6 | -99387.6 | 60.72 | 54.61 | 1.32 | 45.60 | 0.31º |
| 97 | 66327.66 | 5874.85<< | 246.3 | 2797.7 | 0.00 | 5.69 | 0.14 | 14.72 | 0.049 |
| 97 | 66328.04 | 10985.35 | 8572.2>> | -45599.0 | 20.43 | 197.99 | 4.78 | 27.53 | 0.203 |
| 97 | 66328.10 | 13181.49 | -10244.4<< | -54126.3 | 32.70 | 236.61 | 5.71 | 33.03 | 0.273 |
| 98 | 66328.39 | 15951.72>> | -1814.8 | -63526.3 | 48.18 | 41.92 | 1.01 | 39.97 | 0.256 |
| 98 | 66327.66 | 4803.55<< | 267.8 | 14011.6 | 0.00 | 6.19 | 0.15 | 12.04 | 0.035 |
| 98 | 66328.04 | 9450.37 | 7701.4>> | -24138.4 | 11.85 | 177.88 | 4.29 | 23.68 | 0.162 |
| 98 | 66328.10 | 11399.94 | -8802.4<< | -28312.1 | 22.75 | 203.31 | 4.91 | 28.57 | 0.214 |

| BARRA 98 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 98 | 66607.24 | 7226.17>> | -2279.5 | -63744.3 | 0.00 | 52.72 | 1.27 | 18.11 | 0.076 |
| 98 | 65770.27 | -3890.55<< | 423.6 | 13793.6 | 0.00 | 9.76 | 0.24 | 9.75 | 0.025 |
| 98 | 66119.19 | 743.17 | 7518.3>> | -24356.3 | 0.00 | 173.48 | 4.19 | 1.86 | 0.056 |
| 98 | 66265.52 | 2687.23 | -8997.2<< | -28530.0 | 0.00 | 207.74 | 5.02 | 6.73 | 0.086 |
| 99 | 66438.36 | 4980.95>> | -1728.2 | -50888.6 | 4.63 | 41.14 | 0.78 | 12.85 | 0.236 |
| 99 | 65689.68 | -4961.86<< | 445.2 | 4471.1 | 4.71 | 10.56 | 0.20 | 12.80 | 0.222 |
| 99 | 66003.73 | -791.82 | 6645.1>> | -24407.5 | 0.00 | 157.82 | 3.01 | 2.04 | 0.106 |
| 99 | 66131.51 | 905.68 | -7551.0<< | -24746.2 | 0.00 | 179.46 | 3.42 | 2.34 | 0.125 |

| BARRA 99 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 99 | 55688.79 | 12362.08>> | -1289.2 | -50473.1 | 47.51 | 28.94 | 0.62 | 31.89 | 0.673 |
| 99 | 55688.09 | 2391.12<< | 298.5 | 4885.8 | 0.00 | 6.70 | 0.14 | 6.17 | 0.087 |
| 99 | 55688.45 | 6333.60 | 6822.0>> | -17102.3 | 14.70 | 153.16 | 3.27 | 16.34 | 0.371 |
| 99 | 55688.50 | 8514.65 | -7372.6<< | -31221.4 | 26.57 | 165.52 | 3.53 | 21.97 | 0.508 |
| 100 | 55688.79 | 10301.44>> | -739.7 | -26684.2 | 36.30 | 16.61 | 0.35 | 26.58 | 0.532 |
| 100 | 55688.09 | 1503.83<< | 320.1 | 8974.1 | 0.00 | 7.19 | 0.15 | 3.88 | 0.049 |
| 100 | 55688.45 | 4982.87 | 5951.7>> | -5223.9 | 7.35 | 133.62 | 2.85 | 12.85 | 0.284 |
| 100 | 55688.50 | 6917.46 | -5931.2<< | -15023.0 | 17.88 | 133.16 | 2.84 | 17.85 | 0.391 |

| BARRA 100 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 100 | 55922.51 | 10853.85>> | -739.4 | -26709.9 | 39.20 | 16.62 | 0.35 | 28.00 | 0.568 |
| 100 | 55921.82 | 2056.25<< | 320.0 | 8948.4 | 0.00 | 7.19 | 0.15 | 5.30 | 0.072 |
| 100 | 55922.18 | 5535.28 | 5951.8>> | -5249.6 | 10.29 | 133.80 | 2.85 | 14.28 | 0.314 |
| 100 | 55922.24 | 7469.87 | -5931.0<< | -15048.8 | 20.81 | 133.34 | 2.84 | 19.27 | 0.424 |
| 101 | 55922.51 | 8792.23>> | -189.6 | -6078.5 | 27.99 | 4.26 | 0.09 | 22.68 | 0.434 |
| 101 | 55921.82 | 1168.57<< | 341.6 | 12334.7 | 0.00 | 7.68 | 0.16 | 3.01 | 0.037 |
| 101 | 55922.18 | 4183.92 | 5081.1>> | 4957.0 | 2.95 | 114.23 | 2.43 | 10.79 | 0.229 |
| 101 | 55922.24 | 5871.92 | -4488.9<< | -1037.9 | 12.12 | 100.92 | 2.15 | 15.15 | 0.311 |

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| BARRA 101 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 101 | 56196.33 | 9356.61>> | -189.6 | -6167.3 | 30.95 | 4.27 | 0.09 | 24.14 | 0.469 |
| 101 | 56195.64 | 1732.94<< | 341.6 | 12246.0 | 0.00 | 7.69 | 0.16 | 4.47 | 0.059 |
| 101 | 56196.00 | 4748.29 | 5081.1>> | 4868.2 | 5.94 | 114.41 | 2.43 | 12.25 | 0.259 |
| 101 | 56196.06 | 6436.29 | -4488.9<< | -1126.7 | 15.10 | 101.08 | 2.14 | 16.60 | 0.343 |
| 102 | 56196.33 | 7294.98>> | 360.2 | 11319.4 | 19.76 | 8.11 | 0.17 | 18.82 | 0.345 |
| 102 | 56195.64 | 845.22<< | 363.2 | 14953.2 | 0.00 | 8.18 | 0.17 | 2.18 | 0.025 |
| 102 | 56196.00 | 3396.91 | 4210.3>> | 13421.7 | 0.00 | 94.80 | 2.01 | 8.76 | 0.178 |
| 102 | 56196.04 | 4816.63 | -3075.4<< | 15719.1 | 6.31 | 69.25 | 1.47 | 12.43 | 0.235 |

| BARRA 102 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 102 | 56458.73 | 7873.25>> | 371.6 | 11172.6 | 22.81 | 8.38 | 0.18 | 20.31 | 0.380 |
| 102 | 56458.14 | 1423.49<< | 376.4 | 14806.5 | 0.00 | 8.49 | 0.18 | 3.67 | 0.047 |
| 102 | 56458.44 | 3975.18 | 4222.8>> | 13273.1 | 1.68 | 95.23 | 2.01 | 10.26 | 0.207 |
| 102 | 56458.47 | 5394.90 | -3061.8<< | 15574.0 | 9.38 | 69.05 | 1.46 | 13.92 | 0.266 |
| 103 | 56458.73 | 5812.59>> | 921.2 | 25537.8 | 11.64 | 20.77 | 0.44 | 15.00 | 0.265 |
| 103 | 56458.14 | 536.20<< | 398.0 | 16863.0 | 0.00 | 8.97 | 0.19 | 1.38 | 0.016 |
| 103 | 56458.39 | 3521.16 | 3406.8>> | 30051.9 | 0.00 | 76.83 | 1.62 | 9.08 | 0.174 |
| 103 | 56458.47 | 2793.27 | -1715.1<< | 20479.9 | 0.00 | 38.68 | 0.82 | 7.21 | 0.118 |

| BARRA 103 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 103 | 56708.25 | 6400.82>> | 920.9 | 25352.7 | 14.75 | 20.80 | 0.44 | 16.51 | 0.299 |
| 103 | 56707.65 | 1124.43<< | 397.8 | 16677.9 | 0.00 | 8.98 | 0.19 | 2.90 | 0.036 |
| 103 | 56707.91 | 4109.39 | 3406.5>> | 29866.8 | 2.35 | 76.93 | 1.62 | 10.60 | 0.203 |
| 103 | 56707.99 | 3381.49 | -1715.3<< | 20294.8 | 0.00 | 38.74 | 0.82 | 8.72 | 0.146 |
| 104 | 56708.25 | 4339.19>> | 1470.7 | 36631.7 | 3.60 | 33.21 | 0.70 | 11.19 | 0.192 |
| 104 | 56707.65 | 236.71<< | 419.3 | 18107.4 | 0.00 | 9.47 | 0.20 | 0.61 | 0.007 |
| 104 | 56708.17 | 2405.63 | 2803.9>> | 29075.3 | 0.00 | 63.32 | 1.34 | 6.21 | 0.114 |
| 104 | 56707.69 | 1282.01 | -1139.7<< | 3063.6 | 0.00 | 25.74 | 0.54 | 3.31 | 0.048 |

| BARRA 104 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 104 | 56879.34 | 4945.00>> | 1497.8 | 36482.6 | 6.83 | 33.86 | 0.71 | 12.76 | 0.224 |
| 104 | 56878.84 | 842.51<< | 437.7 | 17958.9 | 0.00 | 9.89 | 0.21 | 2.17 | 0.026 |
| 104 | 56879.23 | 3011.44 | 2827.5>> | 28925.6 | 0.00 | 63.91 | 1.35 | 7.77 | 0.142 |
| 104 | 56878.89 | 1887.81 | -1128.5<< | 2915.8 | 0.00 | 25.51 | 0.54 | 4.87 | 0.072 |
| 105 | 56879.34 | 2883.34>> | 2047.6 | 44703.5 | 0.00 | 46.29 | 0.97 | 7.44 | 0.127 |
| 105 | 56878.84 | -45.19<< | 459.3 | 18796.0 | 0.00 | 10.38 | 0.22 | 0.12 | 0.003 |
| 105 | 56879.32 | 1547.97 | 4241.6>> | 37374.3 | 0.00 | 95.88 | 2.02 | 3.99 | 0.096 |
| 105 | 56878.87 | 1311.39 | -1779.5<< | 25781.6 | 0.00 | 40.23 | 0.85 | 3.38 | 0.056 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 105 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 105 | 56781.23 | 3504.01>> | 2048.1 | 44838.5 | 0.00 | 46.27 | 0.97 | 9.04 | 0.156 |
| 105 | 56780.72 | 575.48<< | 459.5 | 18931.0 | 0.00 | 10.38 | 0.22 | 1.48 | 0.017 |
| 105 | 56781.21 | 2168.64 | 4242.1>> | 37509.3 | 0.00 | 95.84 | 2.02 | 5.59 | 0.122 |
| 105 | 56780.74 | 1932.06 | -1779.2<< | 25916.6 | 0.00 | 40.20 | 0.85 | 4.98 | 0.081 |
| 106 | 56780.89 | 1633.95>> | 1734.7 | 3443.9 | 0.00 | 39.19 | 0.83 | 4.22 | 0.068 |
| 106 | 56781.08 | -396.42<< | 1786.1 | 64300.2 | 0.00 | 40.35 | 0.85 | 1.02 | 0.025 |
| 106 | 56781.21 | 571.41 | 5683.5>> | 40385.3 | 0.00 | 128.40 | 2.71 | 1.47 | 0.081 |
| 106 | 56780.74 | 581.28 | -2649.5<< | 28554.6 | 0.00 | 59.86 | 1.26 | 1.50 | 0.040 |

| BARRA 106 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 106 | 56671.19 | 2006.73>> | 1734.6 | 3564.5 | 0.00 | 39.16 | 0.83 | 5.18 | 0.084 |
| 106 | 56671.38 | -23.64<< | 1785.4 | 64420.9 | 0.00 | 40.31 | 0.85 | 0.06 | 0.016 |
| 106 | 56671.50 | 944.19 | 5683.0>> | 40505.9 | 0.00 | 128.31 | 2.71 | 2.44 | 0.094 |
| 106 | 56671.05 | 954.06 | -2649.9<< | 28675.1 | 0.00 | 59.83 | 1.26 | 2.46 | 0.053 |
| 107 | 56671.19 | 891.64>> | 1622.4 | -2096.5 | 0.00 | 36.63 | 0.77 | 2.30 | 0.039 |
| 107 | 56671.38 | -1857.92<< | 2469.0 | 71149.1 | 0.00 | 55.75 | 1.18 | 4.79 | 0.086 |
| 107 | 56671.50 | -653.78 | 7125.2>> | 40810.6 | 0.00 | 160.87 | 3.39 | 1.69 | 0.106 |
| 107 | 56671.05 | -397.34 | -3520.6<< | 29259.5 | 0.00 | 79.49 | 1.68 | 1.03 | 0.046 |

| BARRA 107 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 107 | 56558.80 | 1021.37>> | 1632.2 | -2004.9 | 0.00 | 36.83 | 0.78 | 2.63 | 0.044 |
| 107 | 56558.95 | -1728.18<< | 2513.7 | 71240.2 | 0.00 | 56.72 | 1.20 | 4.46 | 0.081 |
| 107 | 56559.03 | -524.04 | 7155.4>> | 40899.5 | 0.00 | 161.45 | 3.41 | 1.35 | 0.102 |
| 107 | 56558.73 | -267.61 | -3495.9<< | 29353.5 | 0.00 | 78.88 | 1.67 | 0.69 | 0.042 |
| 108 | 56558.80 | 133.66>> | 1653.8 | -791.9 | 0.00 | 37.32 | 0.79 | 0.34 | 0.017 |
| 108 | 56558.95 | -3789.88<< | 3063.5 | 65445.3 | 0.66 | 69.12 | 1.46 | 9.78 | 0.183 |
| 108 | 56559.03 | -2122.05 | 8597.6>> | 38120.7 | 0.00 | 193.99 | 4.10 | 5.47 | 0.186 |
| 108 | 56558.73 | -1619.02 | -4366.6<< | 27372.2 | 0.00 | 98.53 | 2.08 | 4.18 | 0.101 |

| BARRA 108 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 108 | 56443.55 | 266.94>> | 1653.8 | -702.7 | 0.00 | 37.29 | 0.79 | 0.69 | 0.020 |
| 108 | 56443.70 | -3656.60<< | 3064.1 | 65534.4 | 0.00 | 69.09 | 1.46 | 9.43 | 0.176 |
| 108 | 56443.77 | -1988.76 | 8597.9>> | 38209.7 | 0.00 | 193.87 | 4.10 | 5.13 | 0.180 |
| 108 | 56443.47 | -1485.73 | -4366.4<< | 27461.4 | 0.00 | 98.46 | 2.08 | 3.83 | 0.095 |
| 109 | 56443.55 | -620.36>> | 1675.3 | -1074.1 | 0.00 | 37.78 | 0.80 | 1.60 | 0.030 |
| 109 | 56443.70 | -5717.28<< | 3613.6 | 55694.4 | 11.13 | 81.48 | 1.72 | 14.75 | 0.291 |
| 109 | 56443.77 | -3585.98 | 10039.4>> | 32357.6 | 0.00 | 226.37 | 4.79 | 9.25 | 0.278 |
| 109 | 56443.47 | -2836.50 | -5236.7<< | 22924.1 | 0.00 | 118.08 | 2.50 | 7.32 | 0.166 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 109 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 109 | 56326.61 | -495.67>> | 1675.4 | -990.6 | 0.00 | 37.75 | 0.80 | 1.28 | 0.026 |
| 109 | 56326.77 | -5592.59<< | 3613.2 | 55777.9 | 10.49 | 81.42 | 1.72 | 14.43 | 0.284 |
| 109 | 56326.84 | -3461.29 | 10039.1>> | 32441.2 | 0.00 | 226.22 | 4.79 | 8.93 | 0.272 |
| 109 | 56326.54 | -2711.81 | -5236.9<< | 23007.5 | 0.00 | 118.01 | 2.50 | 7.00 | 0.160 |
| 110 | 56326.61 | -1383.41>> | 1697.0 | -2964.2 | 0.00 | 38.24 | 0.81 | 3.57 | 0.058 |
| 110 | 56326.77 | -7654.26<< | 4163.0 | 41866.0 | 21.67 | 93.81 | 1.99 | 19.75 | 0.410 |
| 110 | 56326.84 | -5059.28 | 11481.2>> | 23492.8 | 7.59 | 258.71 | 5.48 | 13.05 | 0.379 |
| 110 | 56326.54 | -4063.23 | -6107.7<< | 15892.2 | 2.19 | 137.63 | 2.91 | 10.48 | 0.239 |

| BARRA 110 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 110 | 56204.68 | -1261.05>> | 1705.5 | -2887.8 | 0.00 | 38.40 | 0.81 | 3.25 | 0.053 |
| 110 | 56204.75 | -7531.89<< | 4193.3 | 41941.2 | 21.05 | 94.42 | 2.00 | 19.43 | 0.403 |
| 110 | 56204.77 | -4936.92 | 11502.6>> | 23564.4 | 6.96 | 259.01 | 5.49 | 12.74 | 0.372 |
| 110 | 56204.66 | -3940.87 | -6090.0<< | 15972.4 | 1.56 | 137.13 | 2.91 | 10.17 | 0.232 |
| 111 | 56204.68 | -2148.35>> | 1727.1 | -6466.9 | 0.00 | 38.89 | 0.82 | 5.54 | 0.090 |
| 111 | 56204.75 | -9592.62<< | 4742.8 | 23965.3 | 32.23 | 106.80 | 2.27 | 24.75 | 0.537 |
| 111 | 56204.77 | -6534.17 | 12944.1>> | 11523.0 | 15.63 | 291.47 | 6.18 | 16.86 | 0.487 |
| 111 | 56204.66 | -5291.65 | -6960.3<< | 6280.8 | 8.89 | 156.73 | 3.32 | 13.65 | 0.316 |

| BARRA 111 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 111 | 56080.00 | -2023.98>> | 1727.0 | -6404.0 | 0.00 | 38.86 | 0.83 | 5.22 | 0.084 |
| 111 | 56080.06 | -9468.25<< | 4742.5 | 24028.3 | 31.60 | 106.71 | 2.27 | 24.43 | 0.529 |
| 111 | 56080.08 | -6409.80 | 12943.8>> | 11586.0 | 15.00 | 291.26 | 6.19 | 16.54 | 0.479 |
| 111 | 56079.97 | -5167.28 | -6960.6<< | 6343.6 | 8.25 | 156.62 | 3.33 | 13.33 | 0.309 |
| 112 | 56080.00 | -2911.73>> | 1748.5 | -11587.8 | 0.00 | 39.35 | 0.84 | 7.51 | 0.124 |
| 112 | 56080.06 | -11529.94<< | 5292.2 | 1975.7 | 42.80 | 119.08 | 2.53 | 29.74 | 0.669 |
| 112 | 56080.08 | -8007.79 | 14386.0>> | -3555.7 | 23.67 | 323.71 | 6.88 | 20.66 | 0.599 |
| 112 | 56079.97 | -6518.71 | -7831.3<< | -5929.3 | 15.59 | 176.22 | 3.74 | 16.82 | 0.398 |

| BARRA 112 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 112 | 55969.61 | 3064.93>> | 1752.1 | -11554.7 | 0.00 | 39.40 | 0.84 | 7.91 | 0.131 |
| 112 | 56872.19 | -5505.89<< | 5318.7 | 2007.1 | 9.86 | 120.22 | 2.53 | 14.20 | 0.304 |
| 112 | 56503.29 | -2003.13 | 14360.7>> | -3528.6 | 0.00 | 323.93 | 6.85 | 5.17 | 0.282 |
| 112 | 56347.39 | -522.21 | -7775.5<< | -5891.7 | 0.00 | 175.23 | 3.71 | 1.35 | 0.112 |
| 113 | 56050.21 | 2299.68>> | 1767.6 | -7508.1 | 0.00 | 38.80 | 1.04 | 5.76 | 0.015 |
| 113 | 57041.09 | -7109.68<< | 5713.6 | -7508.7 | 2.42 | 126.07 | 3.33 | 17.82 | 0.097 |
| 113 | 56637.31 | -3275.70 | 15396.5>> | -7510.3 | 0.00 | 339.02 | 9.00 | 8.21 | 0.188 |
| 113 | 56462.86 | -1618.66 | -8400.9<< | -7506.4 | 0.00 | 184.81 | 4.92 | 4.06 | 0.068 |

TITULO
=======
LAV-Gelida. V.Rierussa. ELU EC71-71(t=i)(1.35*G+0.54*LEV+1.00*P+1.45*SC+0.9*GT)

FICHERO DE GEOMETRIA COMPLETA
==============================
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
================================
1

| Fich | Num. Nudos | Num. barras | Num. hipotesis | NOMBRE FICHERO |
|---|---|---|---|---|
| 1 | 120 | 119 | 161 | ESFec.TXT |

| Fich | Hipotesis | Caracter | Coeficiente |
|---|---|---|---|
| 1 | 1 | 1 | 1.35 |
| 1 | 2 | 1 | 0.54 |
| 1 | 3 | 1 | 1.35 |
| 1 | 4 | 3 | 1.35 |
| 1 | 5 | 3 | 1.35 |
| 1 | 6 | 3 | 1.35 |
| 1 | 7 | 2 | 0.75 |
| 1 | 8 | 2 | 0.75 |
| 1 | 9 | 2 | 0.75 |
| 1 | 10 | 2 | 0.75 |
| 1 | 11 | 2 | 0.75 |
| 1 | 12 | 2 | 0.75 |
| 1 | 13 | 2 | 0.75 |
| 1 | 14 | 2 | 0.75 |
| 1 | 15 | 2 | 0.75 |
| 1 | 16 | 2 | 0.75 |
| 1 | 17 | 2 | 0.75 |
| 1 | 18 | 2 | 0.75 |
| 1 | 19 | 4 | 1.45 |
| 1 | 20 | 5 | 1.45 |
| 1 | 21 | 4 | 1.45 |
| 1 | 22 | 5 | 1.45 |
| 1 | 23 | 4 | 1.45 |
| 1 | 24 | 5 | 1.45 |
| 1 | 25 | 4 | 1.45 |
| 1 | 26 | 5 | 1.45 |
| 1 | 27 | 4 | 1.45 |
| 1 | 28 | 5 | 1.45 |
| 1 | 29 | 4 | 1.45 |
| 1 | 30 | 5 | 1.45 |
| 1 | 31 | 4 | 1.45 |
| 1 | 32 | 5 | 1.45 |
| 1 | 33 | 4 | 1.45 |
| 1 | 34 | 5 | 1.45 |
| 1 | 35 | 4 | 1.45 |
| 1 | 36 | 5 | 1.45 |
| 1 | 37 | 4 | 1.45 |
| 1 | 38 | 5 | 1.45 |
| 1 | 39 | 4 | 1.45 |
| 1 | 40 | 5 | 1.45 |
| 1 | 41 | 6 | 1.45 |
| 1 | 42 | 7 | 1.45 |
| 1 | 43 | 6 | 1.45 |
| 1 | 44 | 7 | 1.45 |
| 1 | 45 | 6 | 1.45 |
| 1 | 46 | 7 | 1.45 |

| | | | |
|---|---|---|---|
| 1 | 47 | 6 | 1.45 |
| 1 | 48 | 7 | 1.45 |
| 1 | 49 | 6 | 1.45 |
| 1 | 50 | 7 | 1.45 |
| 1 | 51 | 6 | 1.45 |
| 1 | 52 | 7 | 1.45 |
| 1 | 53 | 6 | 1.45 |
| 1 | 54 | 7 | 1.45 |
| 1 | 55 | 6 | 1.45 |
| 1 | 56 | 7 | 1.45 |
| 1 | 57 | 6 | 1.45 |
| 1 | 58 | 7 | 1.45 |
| 1 | 59 | 6 | 1.45 |
| 1 | 60 | 7 | 1.45 |
| 1 | 61 | 6 | 1.45 |
| 1 | 62 | 7 | 1.45 |
| 1 | 63 | 6 | 1.45 |
| 1 | 64 | 7 | 1.45 |
| 1 | 65 | 6 | 1.45 |
| 1 | 66 | 7 | 1.45 |
| 1 | 67 | 6 | 1.45 |
| 1 | 68 | 7 | 1.45 |
| 1 | 69 | 6 | 1.45 |
| 1 | 70 | 7 | 1.45 |
| 1 | 71 | 6 | 1.45 |
| 1 | 72 | 7 | 1.45 |
| 1 | 73 | 6 | 1.45 |
| 1 | 74 | 7 | 1.45 |
| 1 | 75 | 6 | 1.45 |
| 1 | 76 | 7 | 1.45 |
| 1 | 77 | 6 | 1.45 |
| 1 | 78 | 7 | 1.45 |
| 1 | 79 | 6 | 1.45 |
| 1 | 80 | 7 | 1.45 |
| 1 | 81 | 6 | 1.45 |
| 1 | 82 | 7 | 1.45 |
| 1 | 83 | 6 | 1.45 |
| 1 | 84 | 7 | 1.45 |
| 1 | 85 | 6 | 1.45 |
| 1 | 86 | 7 | 1.45 |
| 1 | 87 | 6 | 1.45 |
| 1 | 88 | 7 | 1.45 |
| 1 | 89 | 6 | 1.45 |
| 1 | 90 | 7 | 1.45 |
| 1 | 91 | 6 | 1.45 |
| 1 | 92 | 7 | 1.45 |
| 1 | 93 | 6 | 1.45 |
| 1 | 94 | 7 | 1.45 |
| 1 | 95 | 6 | 1.45 |
| 1 | 96 | 7 | 1.45 |
| 1 | 97 | 8 | 0.0 |
| 1 | 98 | 9 | 0.0 |
| 1 | 99 | 8 | 0.0 |
| 1 | 100 | 9 | 0.0 |
| 1 | 101 | 8 | 0.0 |
| 1 | 102 | 9 | 0.0 |
| 1 | 103 | 8 | 0.0 |
| 1 | 104 | 9 | 0.0 |
| 1 | 105 | 8 | 0.0 |
| 1 | 106 | 9 | 0.0 |
| 1 | 107 | 8 | 0.0 |
| 1 | 108 | 9 | 0.0 |
| 1 | 109 | 8 | 0.0 |
| 1 | 110 | 9 | 0.0 |
| 1 | 111 | 8 | 0.0 |
| 1 | 112 | 9 | 0.0 |
| 1 | 113 | 8 | 0.0 |
| 1 | 114 | 9 | 0.0 |
| 1 | 115 | 8 | 0.0 |
| 1 | 116 | 9 | 0.0 |
| 1 | 117 | 8 | 0.0 |
| 1 | 118 | 9 | 0.0 |
| 1 | 119 | 10 | 0.0 |
| 1 | 120 | 10 | 0.0 |
| 1 | 121 | 10 | 0.0 |
| 1 | 122 | 10 | 0.0 |
| 1 | 123 | 10 | 0.0 |
| 1 | 124 | 10 | 0.0 |
| 1 | 125 | 10 | 0.0 |
| 1 | 126 | 10 | 0.0 |
| 1 | 127 | 10 | 0.0 |
| 1 | 128 | 10 | 0.0 |
| 1 | 129 | 10 | 0.0 |
| 1 | 130 | 10 | 0.0 |
| 1 | 131 | 10 | 0.0 |
| 1 | 132 | 10 | 0.0 |
| 1 | 133 | 10 | 0.0 |
| 1 | 134 | 10 | 0.0 |
| 1 | 135 | 10 | 0.0 |
| 1 | 136 | 10 | 0.0 |
| 1 | 137 | 10 | 0.0 |
| 1 | 138 | 10 | 0.0 |
| 1 | 139 | 10 | 0.0 |
| 1 | 140 | 10 | 0.0 |
| 1 | 141 | 2 | 0.9 |
| 1 | 142 | 1 | 20.433 |
| 1 | 143 | 1 | 2.919 |
| 1 | 144 | 1 | 2.919 |
| 1 | 145 | 1 | 11.676 |
| 1 | 146 | 1 | 2.919 |
| 1 | 147 | 1 | 2.919 |
| 1 | 148 | 1 | 6.464 |
| 1 | 149 | 1 | 6.464 |
| 1 | 150 | 1 | 6.464 |
| 1 | 151 | 1 | 6.464 |
| 1 | 152 | 1 | 6.464 |
| 1 | 153 | 1 | 6.464 |
| 1 | 154 | 1 | 6.464 |
| 1 | 155 | 1 | 6.464 |
| 1 | 156 | 1 | 6.464 |
| 1 | 157 | 1 | 6.464 |
| 1 | 158 | 1 | 6.464 |
| 1 | 159 | 1 | 6.464 |
| 1 | 160 | 1 | 6.464 |
| 1 | 161 | 1 | 6.464 |

PONDERACION DE ESFUERZOS

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 1 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 67647.89 | 4265.52>> | -4037.6 | 2424.6 | 0.00 | 93.83 | 2.24 | 10.69 | 0.048 |
| 1 | 66752.88 | -4231.26<< | -973.2 | 2424.6 | 0.00 | 22.52 | 0.54 | 10.60 | 0.030 |
| 1 | 67134.16 | -611.48 | 7479.3>> | 2424.7 | 0.00 | 173.40 | 4.15 | 1.53 | 0.055 |
| 1 | 67308.49 | 1043.46 | -12594.1<< | 2424.6 | 0.00 | 292.22 | 6.99 | 2.61 | 0.130 |
| 2 | 67454.82 | 2432.23>> | -3564.1 | 7515.8 | 0.00 | 85.28 | 1.60 | 6.27 | 0.129 |
| 2 | 66672.31 | -4996.36<< | -957.7 | -4534.3 | 4.66 | 22.82 | 0.43 | 12.89 | 0.229 |
| 2 | 67006.63 | -1822.63 | 6621.6>> | 609.0 | 0.00 | 158.08 | 2.98 | 4.70 | 0.147 |
| 2 | 67162.38 | -343.77 | -11247.5<< | 2972.3 | 0.00 | 268.72 | 5.06 | 0.89 | 0.171 |

| BARRA 2 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 2 | 66968.13 | 9735.82>> | -3543.5 | 7474.9 | 28.85 | 84.58 | 1.60 | 25.12 | 0.549 |
| 2 | 66968.02 | 2266.15<< | -954.8 | -4576.4 | 0.00 | 22.79 | 0.43 | 5.85 | 0.090 |
| 2 | 66968.03 | 5457.41 | 6674.4>> | 563.3 | 6.95 | 159.30 | 3.01 | 14.08 | 0.333 |
| 2 | 66968.09 | 6943.28 | -11291.9<< | 2933.4 | 14.55 | 269.52 | 5.09 | 17.91 | 0.498 |
| 3 | 66968.11 | 7820.31>> | -3202.6 | 25109.9 | 19.04 | 76.44 | 1.44 | 20.17 | 0.422 |
| 3 | 66968.02 | 1378.59<< | -933.2 | -749.0 | 0.00 | 22.27 | 0.42 | 3.56 | 0.052 |
| 3 | 66968.02 | 4179.20 | 6027.0>> | 10282.6 | 0.40 | 143.85 | 2.72 | 10.78 | 0.252 |
| 3 | 66968.09 | 5418.42 | -10282.0<< | 15513.7 | 6.75 | 245.41 | 4.63 | 13.98 | 0.391 |

| BARRA 3 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 67130.52 | 8105.25>> | -3221.4 | 25035.1 | 20.45 | 76.95 | 1.45 | 20.91 | 0.440 |
| 3 | 67130.52 | 1663.53<< | -939.6 | -822.6 | 0.00 | 22.45 | 0.42 | 4.29 | 0.063 |
| 3 | 67130.53 | 4464.14 | 6015.3>> | 10212.3 | 1.83 | 143.69 | 2.71 | 11.52 | 0.267 |
| 3 | 67130.53 | 5704.55 | -10296.3<< | 15439.9 | 8.17 | 245.96 | 4.64 | 14.72 | 0.408 |
| 4 | 67130.52 | 6354.07>> | -2874.1 | 40217.7 | 11.49 | 68.66 | 1.29 | 16.39 | 0.329 |
| 4 | 67130.53 | 573.72<< | -659.5 | 7223.1 | 0.00 | 15.75 | 0.30 | 1.48 | 0.020 |
| 4 | 67130.53 | 3066.76 | 5902.8>> | 20502.6 | 0.00 | 141.00 | 2.66 | 7.91 | 0.193 |
| 4 | 67130.55 | 4060.62 | -9650.1<< | 28075.9 | 0.00 | 230.52 | 4.34 | 10.48 | 0.306 |

| BARRA 4 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 4 | 67292.30 | 6654.52>> | -2819.1 | 40127.5 | 12.99 | 67.40 | 1.27 | 17.17 | 0.346 |
| 4 | 67292.13 | 874.17<< | -635.9 | 7130.9 | 0.00 | 15.20 | 0.29 | 2.26 | 0.030 |
| 4 | 67292.10 | 3367.21 | 5939.1>> | 20404.1 | 0.00 | 141.99 | 2.67 | 8.69 | 0.209 |
| 4 | 67292.25 | 4361.07 | -9606.5<< | 27992.2 | 1.26 | 229.67 | 4.32 | 11.25 | 0.321 |
| 5 | 67292.30 | 4903.35>> | -2471.9 | 52263.4 | 4.03 | 59.10 | 1.11 | 12.65 | 0.241 |
| 5 | 67292.13 | 180.32<< | -710.2 | 8374.7 | 0.00 | 16.98 | 0.32 | 0.47 | 0.009 |
| 5 | 67292.10 | 2267.97 | 5055.3>> | 26389.4 | 0.00 | 120.86 | 2.27 | 5.85 | 0.143 |
| 5 | 67292.25 | 3015.30 | -8449.9<< | 35805.8 | 0.00 | 202.01 | 3.80 | 7.78 | 0.232 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 5 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 5 | 67446.51 | 5197.01>> | -2506.4 | 52158.7 | 5.50 | 59.97 | 1.13 | 13.41 | 0.259 |
| 5 | 67446.44 | 473.98<< | -723.9 | 8270.8 | 0.00 | 17.32 | 0.33 | 1.22 | 0.017 |
| 5 | 67446.41 | 2561.63 | 5033.0>> | 26288.3 | 0.00 | 120.42 | 2.26 | 6.61 | 0.156 |
| 5 | 67446.50 | 3308.96 | -8476.6<< | 35698.2 | 0.00 | 202.81 | 3.81 | 8.54 | 0.247 |
| 6 | 67446.51 | 3445.82>> | -2159.2 | 61234.0 | 0.00 | 51.66 | 0.97 | 8.89 | 0.160 |
| 6 | 67446.44 | -413.61<< | -702.3 | 8334.5 | 0.00 | 16.80 | 0.32 | 1.07 | 0.015 |
| 6 | 67446.41 | 1365.50 | 4425.4>> | 30412.0 | 0.00 | 105.88 | 1.99 | 3.52 | 0.095 |
| 6 | 67446.50 | 1866.31 | -7500.2<< | 41132.5 | 0.00 | 179.45 | 3.37 | 4.81 | 0.163 |

| BARRA 6 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 6 | 67598.70 | 3751.64>> | -2119.7 | 61121.8 | 0.00 | 50.76 | 0.95 | 9.68 | 0.176 |
| 6 | 67598.53 | -107.80<< | -688.0 | 8221.6 | 0.00 | 16.47 | 0.31 | 0.28 | 0.007 |
| 6 | 67598.50 | 1671.31 | 4450.3>> | 30296.7 | 0.00 | 106.56 | 2.00 | 4.31 | 0.108 |
| 6 | 67598.65 | 2172.12 | -7470.2<< | 41022.8 | 0.00 | 178.87 | 3.36 | 5.60 | 0.176 |
| 7 | 67598.67 | 1813.41>> | -1599.2 | 64917.0 | 0.00 | 38.29 | 0.72 | 4.68 | 0.077 |
| 7 | 67598.53 | -995.35<< | -666.4 | 7063.5 | 0.00 | 15.96 | 0.30 | 2.57 | 0.034 |
| 7 | 67598.50 | 318.71 | 3575.6>> | 32303.5 | 0.00 | 85.62 | 1.61 | 0.82 | 0.046 |
| 7 | 67598.65 | 572.98 | -6084.7<< | 43822.5 | 0.00 | 145.70 | 2.73 | 1.48 | 0.091 |

| BARRA 7 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 7 | 67746.24 | 2123.94>> | -1599.2 | 64801.6 | 0.00 | 38.32 | 0.72 | 5.48 | 0.091 |
| 7 | 67746.10 | -684.82<< | -666.4 | 6948.1 | 0.00 | 15.97 | 0.30 | 1.77 | 0.023 |
| 7 | 67746.07 | 629.24 | 3575.6>> | 32188.2 | 0.00 | 85.68 | 1.60 | 1.62 | 0.056 |
| 7 | 67746.22 | 883.51 | -6084.7<< | 43707.1 | 0.00 | 145.81 | 2.73 | 2.28 | 0.101 |
| 8 | 67746.05 | 946.14>> | -948.8 | 32815.0 | 0.00 | 22.74 | 0.43 | 2.44 | 0.035 |
| 8 | 67746.15 | -2185.96<< | -681.5 | 20843.2 | 0.00 | 16.33 | 0.31 | 5.64 | 0.084 |
| 8 | 67746.09 | -581.90 | 3753.6>> | 35478.7 | 0.00 | 89.95 | 1.68 | 1.50 | 0.057 |
| 8 | 67746.22 | -574.10 | -6062.0<< | 47270.0 | 0.00 | 145.26 | 2.72 | 1.48 | 0.090 |

| BARRA 8 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 8 | 67912.30 | 1375.47>> | -922.2 | 32682.8 | 0.00 | 22.12 | 0.41 | 3.55 | 0.052 |
| 8 | 67912.41 | -1756.62<< | -660.6 | 20710.9 | 0.00 | 15.84 | 0.30 | 4.53 | 0.065 |
| 8 | 67912.30 | -152.56 | 3781.5>> | 35344.3 | 0.00 | 90.69 | 1.70 | 0.39 | 0.045 |
| 8 | 67912.53 | -144.76 | -6028.5<< | 47140.2 | 0.00 | 144.58 | 2.70 | 0.37 | 0.078 |
| 9 | 67912.30 | -341.76>> | -358.4 | 23007.7 | 0.00 | 8.59 | 0.16 | 0.88 | 0.010 |
| 9 | 67912.59 | -3674.68<< | -833.1 | 46439.0 | 0.00 | 19.98 | 0.37 | 9.48 | 0.158 |
| 9 | 67912.29 | -1904.69 | 2524.6>> | 28691.2 | 0.00 | 60.55 | 1.13 | 4.91 | 0.092 |
| 9 | 67912.54 | -2143.39 | -3718.4<< | 40243.1 | 0.00 | 89.18 | 1.67 | 5.53 | 0.118 |

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| BARRA 9 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 9 | 67886.70 | 220.35>> | -358.4 | 23009.4 | 0.00 | 8.59 | 0.16 | 0.57 | 0.007 |
| 9 | 67887.00 | -3112.57<< | -833.1 | 46440.7 | 0.00 | 19.98 | 0.37 | 8.03 | 0.129 |
| 9 | 67886.70 | -1342.58 | 2524.6>> | 28692.9 | 0.00 | 60.54 | 1.13 | 3.46 | 0.068 |
| 9 | 67886.95 | -1581.28 | -3718.4<< | 40244.8 | 0.00 | 89.17 | 1.67 | 4.08 | 0.094 |
| 10 | 67886.70 | -667.23>> | -336.8 | 22540.4 | 0.00 | 8.08 | 0.15 | 1.72 | 0.020 |
| 10 | 67887.00 | -4810.39<< | -512.5 | 38172.7 | 3.42 | 12.29 | 0.23 | 12.41 | 0.215 |
| 10 | 67886.95 | -2496.79 | 2049.0>> | 24960.0 | 0.00 | 49.13 | 0.92 | 6.44 | 0.113 |
| 10 | 67886.73 | -2980.82 | -2898.3<< | 35753.1 | 0.00 | 69.50 | 1.30 | 7.69 | 0.147 |

| BARRA 10 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 10 | 67758.44 | -112.36>> | -316.2 | 22606.7 | 0.00 | 7.58 | 0.14 | 0.29 | 0.004 |
| 10 | 67758.78 | -4255.52<< | -484.5 | 38239.1 | 0.62 | 11.61 | 0.22 | 10.98 | 0.185 |
| 10 | 67758.75 | -1941.92 | 2070.7>> | 25025.2 | 0.00 | 49.62 | 0.93 | 5.01 | 0.088 |
| 10 | 67758.47 | -2425.95 | -2871.4<< | 35820.6 | 0.00 | 68.81 | 1.29 | 6.26 | 0.120 |
| 11 | 67758.44 | -999.91>> | -294.7 | 21439.1 | 0.00 | 7.06 | 0.13 | 2.58 | 0.031 |
| 11 | 67758.78 | -6193.73<< | -129.5 | 29308.4 | 10.51 | 3.10 | 0.06 | 15.98 | 0.291 |
| 11 | 67758.75 | -3231.57 | 3046.6>> | 20614.1 | 0.00 | 73.01 | 1.37 | 8.34 | 0.161 |
| 11 | 67758.47 | -3962.08 | -3470.8<< | 30133.4 | 0.00 | 83.17 | 1.56 | 10.22 | 0.204 |

| BARRA 11 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 11 | 67621.42 | -463.01>> | -313.6 | 21495.0 | 0.00 | 7.51 | 0.14 | 1.19 | 0.013 |
| 11 | 67621.73 | -5656.83<< | -152.2 | 29364.5 | 7.80 | 3.64 | 0.07 | 14.59 | 0.260 |
| 11 | 67621.68 | -2694.67 | 3028.1>> | 20671.6 | 0.00 | 72.51 | 1.36 | 6.95 | 0.134 |
| 11 | 67621.47 | -3425.18 | -3493.8<< | 30187.9 | 0.00 | 83.67 | 1.57 | 8.84 | 0.176 |
| 12 | 67621.42 | -1350.60>> | -292.0 | 19591.2 | 0.00 | 6.99 | 0.13 | 3.48 | 0.045 |
| 12 | 67621.73 | -7408.02<< | 195.0 | 15646.7 | 16.74 | 4.67 | 0.09 | 19.11 | 0.364 |
| 12 | 67621.68 | -5107.16 | 3984.6>> | 16106.0 | 5.00 | 95.42 | 1.79 | 13.18 | 0.273 |
| 12 | 67621.47 | -3651.46 | -4081.6<< | 19131.9 | 0.00 | 97.74 | 1.83 | 9.42 | 0.196 |

| BARRA 12 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 12 | 61636.20 | -821.07>> | -260.0 | 21753.5 | 0.00 | 6.04 | 0.12 | 2.12 | 0.024 |
| 12 | 61636.56 | -6878.49<< | 223.3 | 17808.6 | 15.79 | 5.18 | 0.10 | 17.75 | 0.326 |
| 12 | 61636.55 | -4338.02 | 4014.4>> | 23655.5 | 2.42 | 93.17 | 1.86 | 11.19 | 0.227 |
| 12 | 61636.21 | -3361.54 | -4051.2<< | 15906.6 | 0.00 | 94.02 | 1.88 | 8.67 | 0.177 |
| 13 | 61636.20 | -1708.62>> | -238.5 | 19097.3 | 0.00 | 5.53 | 0.11 | 4.41 | 0.058 |
| 13 | 61636.56 | -8629.67<< | 570.5 | 1524.9 | 25.01 | 13.24 | 0.26 | 22.26 | 0.435 |
| 13 | 61636.55 | -5780.65 | 4990.8>> | 13030.8 | 10.01 | 115.83 | 2.31 | 14.91 | 0.319 |
| 13 | 61636.21 | -4557.63 | -4658.8<< | 7591.4 | 3.57 | 108.13 | 2.16 | 11.76 | 0.247 |

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| BARRA 13 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 13 | 61476.76 | -1176.18>> | -250.6 | 19104.5 | 0.00 | 5.81 | 0.12 | 3.03 | 0.037 |
| 13 | 61477.09 | -8097.23<< | 566.6 | 1532.5 | 22.26 | 13.14 | 0.26 | 20.89 | 0.402 |
| 13 | 61477.06 | -5487.81 | 4983.1>> | 7146.1 | 8.51 | 115.55 | 2.31 | 14.16 | 0.303 |
| 13 | 61476.78 | -3785.58 | -4667.1<< | 13490.8 | 0.00 | 108.23 | 2.16 | 9.77 | 0.207 |
| 14 | 61476.76 | -2032.87>> | -520.1 | 15704.6 | 0.00 | 12.06 | 0.24 | 5.24 | 0.074 |
| 14 | 61477.09 | -9848.40<< | 913.8 | -17310.1 | 31.49 | 21.19 | 0.42 | 25.41 | 0.515 |
| 14 | 61477.06 | -6915.01 | 6506.7>> | -5891.8 | 16.03 | 150.88 | 3.02 | 17.84 | 0.408 |
| 14 | 61476.78 | -4966.27 | -6112.9<< | 4286.3 | 5.76 | 141.75 | 2.83 | 12.81 | 0.291 |

| BARRA 14 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 14 | 61307.71 | -1509.22>> | -512.7 | 15668.9 | 0.00 | 11.88 | 0.24 | 3.89 | 0.052 |
| 14 | 61308.05 | -9324.76<< | 905.5 | -17346.5 | 28.79 | 20.98 | 0.42 | 24.06 | 0.481 |
| 14 | 61308.05 | -6151.75 | 6505.2>> | 466.6 | 12.06 | 150.71 | 3.02 | 15.87 | 0.363 |
| 14 | 61307.71 | -4682.23 | -6112.4<< | -2144.3 | 4.31 | 141.61 | 2.84 | 12.08 | 0.275 |
| 15 | 61307.63 | -2479.11>> | -109.8 | 10019.2 | 0.00 | 2.54 | 0.05 | 6.40 | 0.091 |
| 15 | 61308.05 | -11075.93<< | 1252.7 | -38767.1 | 38.03 | 29.02 | 0.58 | 28.57 | 0.599 |
| 15 | 61308.05 | -7738.26 | 7214.6>> | -14275.7 | 20.43 | 167.15 | 3.35 | 19.96 | 0.468 |
| 15 | 61307.71 | -6022.20 | -6310.9<< | -13541.7 | 11.38 | 146.21 | 2.93 | 15.54 | 0.352 |

| BARRA 15 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 15 | 71493.33 | 4729.81>> | -235.3 | 11377.6 | 2.21 | 5.74 | 0.10 | 12.20 | 0.211 |
| 15 | 72138.73 | -3842.74<< | 1496.4 | -37408.7 | 0.00 | 36.65 | 0.66 | 9.91 | 0.176 |
| 15 | 71888.34 | -514.49 | 7443.5>> | -12917.3 | 0.00 | 182.07 | 3.27 | 1.33 | 0.112 |
| 15 | 71759.23 | 1196.73 | -6360.9<< | -12183.2 | 0.00 | 155.49 | 2.80 | 3.09 | 0.119 |
| 16 | 71573.90 | 3658.66>> | -213.7 | 20210.4 | 0.00 | 5.06 | 0.12 | 9.17 | 0.023 |
| 16 | 72307.15 | -6081.30<< | 1872.4 | -43738.0 | 0.00 | 44.45 | 1.02 | 15.24 | 0.058 |
| 16 | 72023.82 | -2315.15 | 8179.3>> | -17934.9 | 0.00 | 193.91 | 4.44 | 5.80 | 0.074 |
| 16 | 71876.09 | -357.55 | -6563.8<< | -13341.6 | 0.00 | 155.50 | 3.57 | 0.90 | 0.045 |

| BARRA 16 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 16 | 72049.66 | -5236.94>> | -84.2 | 20526.4 | 0.00 | 2.00 | 0.05 | 13.12 | 0.041 |
| 16 | 72050.15 | -15004.50<< | 1575.6 | -43422.9 | 39.65 | 37.36 | 0.86 | 37.60 | 0.235 |
| 16 | 72050.17 | -11163.85 | 7887.6>> | -15649.4 | 18.75 | 187.01 | 4.28 | 27.97 | 0.202 |
| 16 | 72049.67 | -9264.51 | -6471.5<< | -13022.6 | 8.41 | 153.44 | 3.51 | 23.22 | 0.148 |
| 17 | 72049.66 | -6308.09>> | -62.6 | 8404.2 | 0.00 | 1.48 | 0.03 | 15.81 | 0.055 |
| 17 | 72050.15 | -17229.77<< | 2066.8 | -77055.4 | 51.76 | 49.00 | 1.12 | 43.17 | 0.297 |
| 17 | 72050.17 | -12933.91 | 9825.9>> | -40846.8 | 28.38 | 232.97 | 5.34 | 32.41 | 0.267 |
| 17 | 72049.70 | -10724.17 | -8186.0<< | -31863.8 | 16.36 | 194.09 | 4.44 | 26.87 | 0.196 |

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| BARRA 17 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 17 | 71677.59 | 17554.85>> | -4234.7 | -77612.5 | 53.76 | 100.24 | 2.30 | 43.99 | 0.320 |
| 17 | 71677.16 | 5577.19<< | -890.7 | 8107.6 | 0.00 | 21.08 | 0.48 | 13.98 | 0.047 |
| 17 | 71677.64 | 10499.46 | 8689.5>> | -32153.5 | 15.30 | 205.68 | 4.73 | 26.31 | 0.198 |
| 17 | 71677.34 | 13241.19 | -13789.2<< | -51103.8 | 30.25 | 326.40 | 7.50 | 33.18 | 0.338 |
| 18 | 71677.59 | 15332.37>> | -3745.4 | -43308.7 | 41.65 | 88.66 | 2.04 | 38.42 | 0.257 |
| 18 | 71677.16 | 4506.05<< | -869.1 | 18695.2 | 0.00 | 20.57 | 0.47 | 11.29 | 0.033 |
| 18 | 71677.64 | 8975.92 | 7814.8>> | -11818.2 | 6.99 | 184.98 | 4.25 | 22.49 | 0.158 |
| 18 | 71677.34 | 11471.12 | -12403.7<< | -25269.7 | 20.60 | 293.60 | 6.75 | 28.74 | 0.274 |

| BARRA 18 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 18 | 71278.04 | 5943.53>> | -4040.6 | -43989.2 | 0.00 | 95.47 | 2.20 | 14.89 | 0.070 |
| 18 | 70465.30 | -4852.24<< | -733.8 | 18013.3 | 0.00 | 17.27 | 0.40 | 12.16 | 0.037 |
| 18 | 70831.26 | 7.06 | 7560.3>> | -23131.8 | 0.00 | 178.28 | 4.13 | 0.02 | 0.056 |
| 18 | 70988.05 | 2093.16 | -12419.2<< | -25946.2 | 0.00 | 293.06 | 6.78 | 5.25 | 0.135 |
| 19 | 71112.64 | 3745.55>> | -3485.0 | -38908.9 | 0.00 | 84.92 | 1.54 | 9.66 | 0.195 |
| 19 | 70384.71 | -5923.38<< | -712.2 | 6666.6 | 8.46 | 17.29 | 0.32 | 15.28 | 0.283 |
| 19 | 70717.55 | -1504.22 | 6555.6>> | -27268.4 | 0.00 | 159.44 | 2.90 | 3.88 | 0.134 |
| 19 | 70855.77 | 335.32 | -10837.2<< | -25951.1 | 0.00 | 263.75 | 4.79 | 0.87 | 0.165 |

| BARRA 19 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 19 | 59972.89 | 11413.18>> | -3213.7 | -38608.7 | 40.39 | 73.91 | 1.50 | 29.44 | 0.641 |
| 19 | 59972.48 | 1716.86<< | -848.0 | 6968.0 | 0.00 | 19.50 | 0.40 | 4.43 | 0.063 |
| 19 | 59972.87 | 6101.75 | 6795.4>> | -25624.7 | 12.18 | 156.29 | 3.18 | 15.74 | 0.363 |
| 19 | 59972.64 | 7993.29 | -10860.6<< | -25654.5 | 22.22 | 249.79 | 5.08 | 20.62 | 0.542 |
| 20 | 59972.89 | 9661.97>> | -2866.5 | -16479.6 | 31.09 | 65.93 | 1.34 | 24.93 | 0.523 |
| 20 | 59972.48 | 829.29<< | -826.4 | 9641.5 | 0.00 | 19.01 | 0.39 | 2.14 | 0.029 |
| 20 | 59972.86 | 4815.64 | 6369.4>> | -11962.1 | 5.34 | 146.49 | 2.98 | 12.42 | 0.285 |
| 20 | 59972.65 | 6460.65 | -10008.4<< | -8279.0 | 14.08 | 230.19 | 4.68 | 16.67 | 0.436 |

| BARRA 20 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 20 | 59886.30 | 10243.34>> | -2877.6 | -16465.2 | 34.21 | 66.15 | 1.35 | 26.43 | 0.560 |
| 20 | 59885.83 | 1410.66<< | -812.6 | 9654.0 | 0.00 | 18.68 | 0.38 | 3.64 | 0.051 |
| 20 | 59886.18 | 5040.60 | 6365.1>> | -4262.8 | 6.56 | 146.33 | 2.98 | 13.00 | 0.297 |
| 20 | 59885.95 | 7042.02 | -10011.6<< | -8257.8 | 17.20 | 230.15 | 4.68 | 18.17 | 0.470 |
| 21 | 59886.30 | 8492.17>> | -2530.4 | 3207.4 | 24.91 | 58.17 | 1.18 | 21.91 | 0.445 |
| 21 | 59885.83 | 523.09<< | -791.0 | 11684.5 | 0.00 | 18.18 | 0.37 | 1.35 | 0.019 |
| 21 | 59886.18 | 3855.73 | 5725.6>> | 5089.9 | 0.26 | 131.62 | 2.68 | 9.95 | 0.225 |
| 21 | 59885.95 | 5610.61 | -9014.3<< | 5039.0 | 9.59 | 207.23 | 4.22 | 14.47 | 0.371 |

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| BARRA 21 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 21 | 59785.44 | 9080.98>> | -2538.0 | 3255.1 | 28.07 | 58.31 | 1.19 | 23.43 | 0.48¹ |
| 21 | 59784.96 | 1111.89<< | -802.6 | 11733.1 | 0.00 | 18.44 | 0.38 | 2.87 | 0.039 |
| 21 | 59785.35 | 4800.95 | 5717.9>> | -1803.7 | 5.31 | 131.37 | 2.68 | 12.39 | 0.274 |
| 21 | 59785.15 | 6199.41 | -9022.8<< | 5083.6 | 12.75 | 207.31 | 4.22 | 15.99 | 0.404 |
| 22 | 59785.44 | 7329.79>> | -2190.8 | 20486.6 | 18.76 | 50.33 | 1.03 | 18.91 | 0.370 |
| 22 | 59784.96 | 224.32<< | -781.1 | 13136.2 | 0.00 | 17.95 | 0.37 | 0.58 | 0.010 |
| 22 | 59785.35 | 3604.83 | 5110.3>> | 7022.5 | 0.00 | 117.41 | 2.39 | 9.30 | 0.203 |
| 22 | 59785.15 | 4756.77 | -8046.4<< | 16587.7 | 5.08 | 184.87 | 3.77 | 12.27 | 0.308 |

| BARRA 22 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 22 | 56775.83 | 7902.38>> | -2171.9 | 17612.1 | 22.85 | 49.07 | 1.03 | 20.39 | 0.400 |
| 22 | 56775.37 | 796.90<< | -765.7 | 10261.1 | 0.00 | 17.30 | 0.36 | 2.06 | 0.027 |
| 22 | 56775.70 | 3821.00 | 5124.8>> | 10341.3 | 0.78 | 115.78 | 2.44 | 9.86 | 0.212 |
| 22 | 56775.49 | 5329.35 | -8029.4<< | 13716.1 | 8.94 | 181.40 | 3.82 | 13.75 | 0.336 |
| 23 | 56775.83 | 6151.17>> | -1824.7 | 32368.9 | 13.38 | 41.22 | 0.87 | 15.87 | 0.294 |
| 23 | 56775.37 | -90.70<< | -744.2 | 11003.1 | 0.00 | 16.81 | 0.35 | 0.23 | 0.007 |
| 23 | 56775.70 | 2624.86 | 4517.2>> | 17109.9 | 0.00 | 102.05 | 2.15 | 6.77 | 0.146 |
| 23 | 56775.49 | 3886.68 | -7053.0<< | 23393.4 | 1.13 | 159.34 | 3.36 | 10.03 | 0.244 |

| BARRA 23 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 23 | 56817.39 | 6701.70>> | -1824.7 | 32311.7 | 16.34 | 41.23 | 0.87 | 17.29 | 0.325 |
| 23 | 56816.93 | 459.84<< | -744.2 | 10945.9 | 0.00 | 16.82 | 0.35 | 1.19 | 0.016 |
| 23 | 56817.25 | 3175.40 | 4517.2>> | 17052.8 | 0.00 | 102.07 | 2.15 | 8.19 | 0.172 |
| 23 | 56817.05 | 4437.21 | -7053.0<< | 23336.2 | 4.10 | 159.38 | 3.36 | 11.45 | 0.273 |
| 24 | 56817.38 | 4749.62>> | -1420.3 | 41985.0 | 5.79 | 32.09 | 0.68 | 12.25 | 0.213 |
| 24 | 56816.93 | -427.71<< | -722.6 | 10979.8 | 0.00 | 16.33 | 0.34 | 1.10 | 0.015 |
| 24 | 56817.25 | 1878.86 | 3788.1>> | 21184.7 | 0.00 | 85.60 | 1.80 | 4.85 | 0.104 |
| 24 | 56817.03 | 2894.12 | -5897.9<< | 29858.7 | 0.00 | 133.27 | 2.81 | 7.47 | 0.179 |

| BARRA 24 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 24 | 56855.14 | 5313.02>> | -1385.5 | 41923.6 | 8.83 | 31.31 | 0.66 | 13.71 | 0.243 |
| 24 | 56854.70 | 135.69<< | -702.6 | 10918.0 | 0.00 | 15.88 | 0.33 | 0.35 | 0.007 |
| 24 | 56854.96 | 2442.26 | 3813.0>> | 21120.7 | 0.00 | 86.18 | 1.81 | 6.30 | 0.128 |
| 24 | 56854.78 | 3457.52 | -5868.9<< | 29799.4 | 0.00 | 132.65 | 2.79 | 8.92 | 0.205 |
| 25 | 56855.14 | 3561.84>> | -1038.3 | 51242.4 | 0.00 | 23.47 | 0.49 | 9.19 | 0.148 |
| 25 | 56854.70 | -751.88<< | -681.0 | 10271.2 | 0.00 | 15.39 | 0.32 | 1.94 | 0.025 |
| 25 | 56854.96 | 1246.15 | 3205.4>> | 24993.8 | 0.00 | 72.45 | 1.53 | 3.21 | 0.071 |
| 25 | 56854.78 | 2014.87 | -4892.4<< | 35545.6 | 0.00 | 110.58 | 2.33 | 5.20 | 0.125 |

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| BARRA 25 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 25 | 56879.96 | 4127.51>> | -1038.3 | 51192.8 | 2.41 | 23.47 | 0.49 | 10.65 | 0.177 |
| 25 | 56879.51 | -186.22<< | -681.0 | 10221.5 | 0.00 | 15.39 | 0.32 | 0.48 | 0.008 |
| 25 | 56879.77 | 1811.82 | 3205.4>> | 24944.1 | 0.00 | 72.46 | 1.52 | 4.67 | 0.093 |
| 25 | 56879.59 | 2580.53 | -4892.4<< | 35496.0 | 0.00 | 110.59 | 2.33 | 6.66 | 0.150 |
| 26 | 56879.95 | 2174.61>> | -634.2 | 55100.4 | 0.00 | 14.34 | 0.30 | 5.61 | 0.080 |
| 26 | 56879.51 | -1073.79<< | -659.4 | 8898.9 | 0.00 | 14.91 | 0.31 | 2.77 | 0.036 |
| 26 | 56879.77 | 514.85 | 2476.0>> | 26032.5 | 0.00 | 55.97 | 1.18 | 1.33 | 0.036 |
| 26 | 56879.58 | 1037.05 | -3737.5<< | 37939.7 | 0.00 | 84.49 | 1.78 | 2.68 | 0.070 |

| BARRA 26 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 26 | 56890.55 | 2736.53>> | -590.8 | 55069.3 | 0.00 | 13.36 | 0.28 | 7.06 | 0.105 |
| 26 | 56890.13 | -511.87<< | -638.0 | 8867.8 | 0.00 | 14.42 | 0.30 | 1.32 | 0.017 |
| 26 | 56890.30 | 1028.27 | 2505.8>> | 32990.5 | 0.00 | 56.65 | 1.19 | 2.65 | 0.054 |
| 26 | 56890.22 | 1647.45 | -3702.4<< | 30919.6 | 0.00 | 83.70 | 1.76 | 4.25 | 0.093 |
| 27 | 56890.55 | 1016.60>> | -200.2 | 50642.4 | 0.00 | 4.53 | 0.10 | 2.62 | 0.030 |
| 27 | 56890.19 | -1884.18<< | -286.2 | 26132.7 | 0.00 | 6.47 | 0.14 | 4.86 | 0.065 |
| 27 | 56890.41 | -361.93 | 2534.9>> | 21519.2 | 0.00 | 57.30 | 1.21 | 0.93 | 0.033 |
| 27 | 56889.96 | -345.96 | -3197.9<< | 22960.4 | 0.00 | 72.29 | 1.52 | 0.89 | 0.040 |

| BARRA 27 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 27 | 56890.62 | 1578.77>> | -241.9 | 50626.4 | 0.00 | 5.47 | 0.12 | 4.07 | 0.052 |
| 27 | 56890.24 | -1322.01<< | -316.2 | 26116.7 | 0.00 | 7.15 | 0.15 | 3.41 | 0.042 |
| 27 | 56890.56 | 248.73 | 2510.2>> | 14615.9 | 0.00 | 56.75 | 1.19 | 0.64 | 0.029 |
| 27 | 56889.95 | 167.72 | -3229.6<< | 29831.7 | 0.00 | 73.01 | 1.54 | 0.43 | 0.036 |
| 28 | 56890.36 | 133.79>> | 224.3 | 4922.5 | 0.00 | 5.07 | 0.11 | 0.35 | 0.004 |
| 28 | 56890.47 | -3026.73<< | -75.1 | 57911.8 | 0.00 | 1.70 | 0.04 | 7.81 | 0.115 |
| 28 | 56890.87 | -1206.64 | 2954.7>> | 31216.2 | 0.00 | 66.80 | 1.41 | 3.11 | 0.066 |
| 28 | 56889.87 | -1534.15 | -3268.9<< | 46014.3 | 0.00 | 73.90 | 1.56 | 3.96 | 0.083 |

| BARRA 28 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 28 | 56877.05 | 705.85>> | 263.5 | 4925.1 | 0.00 | 5.96 | 0.13 | 1.82 | 0.020 |
| 28 | 56877.22 | -2454.67<< | 14.5 | 57914.8 | 0.00 | 0.33 | 0.01 | 6.33 | 0.088 |
| 28 | 56877.41 | -683.06 | 3022.3>> | 38003.1 | 0.00 | 68.32 | 1.44 | 1.76 | 0.048 |
| 28 | 56876.74 | -913.60 | -3193.9<< | 39233.5 | 0.00 | 72.20 | 1.52 | 2.36 | 0.058 |
| 29 | 56877.05 | -181.72>> | 285.1 | 5475.5 | 0.00 | 6.44 | 0.14 | 0.47 | 0.005 |
| 29 | 56877.22 | -4406.76<< | 419.7 | 53442.1 | 3.92 | 9.49 | 0.20 | 11.37 | 0.186 |
| 29 | 56877.40 | -2503.22 | 3995.0>> | 39421.8 | 0.00 | 90.31 | 1.90 | 6.46 | 0.134 |
| 29 | 56876.74 | -1931.60 | -3673.7<< | 25572.0 | 0.00 | 83.04 | 1.75 | 4.98 | 0.104 |

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| BARRA 29 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 29 | 56850.70 | 388.73>> | 266.1 | 5495.5 | 0.00 | 6.01 | 0.13 | 1.00 | 0.010 |
| 29 | 56850.86 | -3836.31<< | 377.9 | 53462.1 | 0.84 | 8.54 | 0.18 | 9.90 | 0.156 |
| 29 | 56851.12 | -1932.77 | 3959.9>> | 39443.5 | 0.00 | 89.50 | 1.88 | 4.99 | 0.108 |
| 29 | 56850.30 | -1361.15 | -3702.3<< | 25590.0 | 0.00 | 83.67 | 1.76 | 3.51 | 0.081 |
| 30 | 56850.70 | -498.85>> | 287.7 | 5380.2 | 0.00 | 6.50 | 0.14 | 1.29 | 0.014 |
| 30 | 56850.86 | -5587.51<< | 725.1 | 43567.3 | 10.31 | 16.39 | 0.35 | 14.41 | 0.252 |
| 30 | 56851.12 | -3375.43 | 4936.3>> | 33870.2 | 0.00 | 111.57 | 2.35 | 8.71 | 0.188 |
| 30 | 56850.30 | -2557.28 | -4309.9<< | 21476.0 | 0.00 | 97.41 | 2.05 | 6.60 | 0.140 |

| BARRA 30 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 30 | 56811.11 | 69.14>> | 305.3 | 5412.3 | 0.00 | 6.90 | 0.15 | 0.18 | 0.003 |
| 30 | 56811.29 | -5019.52<< | 760.8 | 43599.2 | 7.25 | 17.19 | 0.36 | 12.95 | 0.221 |
| 30 | 56811.46 | -2807.43 | 4967.4>> | 33900.1 | 0.00 | 112.24 | 2.36 | 7.24 | 0.161 |
| 30 | 56810.79 | -1989.29 | -4284.7<< | 21510.3 | 0.00 | 96.82 | 2.04 | 5.13 | 0.115 |
| 31 | 56811.11 | -818.43>> | 326.8 | 4625.5 | 0.00 | 7.39 | 0.16 | 2.11 | 0.024 |
| 31 | 56811.30 | -6972.39<< | 1164.7 | 33371.6 | 17.81 | 26.32 | 0.55 | 17.99 | 0.334 |
| 31 | 56811.48 | -4350.93 | 6122.3>> | 27565.9 | 3.63 | 138.34 | 2.91 | 11.22 | 0.254 |
| 31 | 56810.79 | -3286.25 | -5014.1<< | 17152.9 | 0.00 | 113.30 | 2.39 | 8.48 | 0.184 |

| BARRA 31 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 31 | 56759.92 | -264.34>> | 326.8 | 4662.5 | 0.00 | 7.38 | 0.16 | 0.68 | 0.007 |
| 31 | 56760.11 | -6418.30<< | 1164.7 | 33408.6 | 14.83 | 26.31 | 0.55 | 16.56 | 0.302 |
| 31 | 56760.28 | -3796.84 | 6122.3>> | 27602.8 | 0.65 | 138.30 | 2.91 | 9.80 | 0.226 |
| 31 | 56759.59 | -2732.16 | -5014.1<< | 17189.8 | 0.00 | 113.26 | 2.39 | 7.05 | 0.158 |
| 32 | 56759.92 | -1151.92>> | 348.4 | 3175.5 | 0.00 | 7.87 | 0.17 | 2.97 | 0.036 |
| 32 | 56760.11 | -8169.55<< | 1511.9 | 18091.2 | 24.30 | 34.15 | 0.72 | 21.08 | 0.409 |
| 32 | 56760.28 | -5239.53 | 7098.7>> | 18114.6 | 8.45 | 160.36 | 3.38 | 13.52 | 0.316 |
| 32 | 56759.59 | -3928.29 | -5621.7<< | 10196.3 | 1.36 | 126.99 | 2.68 | 10.13 | 0.225 |

| BARRA 32 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 32 | 56695.20 | -592.01>> | 360.1 | 3210.1 | 0.00 | 8.13 | 0.17 | 1.53 | 0.017 |
| 32 | 56695.36 | -7609.64<< | 1530.7 | 18125.2 | 21.30 | 34.57 | 0.73 | 19.63 | 0.375 |
| 32 | 56695.47 | -4679.62 | 7117.5>> | 18145.9 | 5.44 | 160.72 | 3.39 | 12.07 | 0.286 |
| 32 | 56694.94 | -3368.37 | -5606.6<< | 10233.7 | 0.00 | 126.60 | 2.67 | 8.69 | 0.197 |
| 33 | 56695.20 | -1479.58>> | 381.7 | 1035.1 | 0.00 | 8.62 | 0.18 | 3.82 | 0.049 |
| 33 | 56695.36 | -9360.81<< | 1877.9 | 306.3 | 30.77 | 42.41 | 0.89 | 24.15 | 0.486 |
| 33 | 56695.47 | -6122.26 | 8093.9>> | 6804.1 | 13.25 | 182.77 | 3.85 | 15.79 | 0.381 |
| 33 | 56694.94 | -4564.48 | -6214.2<< | 1904.3 | 4.82 | 140.32 | 2.96 | 11.78 | 0.266 |

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| BARRA 33 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 33 | 56618.41 | -925.16>> | 381.7 | 1056.6 | 0.00 | 8.62 | 0.18 | 2.39 | 0.028 |
| 33 | 56618.57 | -8806.39<< | 1877.9 | 327.7 | 27.80 | 42.39 | 0.89 | 22.72 | 0.452 |
| 33 | 56618.68 | -5567.84 | 8093.9>> | 6825.6 | 10.27 | 182.69 | 3.86 | 14.36 | 0.350 |
| 33 | 56618.15 | -4010.06 | -6214.2<< | 1925.8 | 1.84 | 140.26 | 2.96 | 10.35 | 0.238 |
| 34 | 56618.41 | -1812.76>> | 403.3 | -1818.2 | 0.00 | 9.10 | 0.19 | 4.68 | 0.063 |
| 34 | 56618.57 | -10557.60<< | 2225.1 | -20004.7 | 37.28 | 50.22 | 1.06 | 27.24 | 0.566 |
| 34 | 56618.68 | -6993.65 | 9617.5>> | -6380.8 | 17.99 | 217.08 | 4.58 | 18.04 | 0.456 |
| 34 | 56618.15 | -5189.38 | -7660.0<< | -7750.4 | 8.22 | 172.90 | 3.65 | 13.39 | 0.322 |

| BARRA 34 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 34 | 56529.86 | -1264.61>> | 403.3 | -1822.6 | 0.00 | 9.10 | 0.19 | 3.26 | 0.041 |
| 34 | 56530.02 | -10009.45<< | 2225.1 | -20009.1 | 34.35 | 50.20 | 1.06 | 25.82 | 0.531 |
| 34 | 56530.13 | -6445.51 | 9617.5>> | -6385.2 | 15.05 | 216.97 | 4.58 | 16.63 | 0.424 |
| 34 | 56529.60 | -4641.23 | -7660.0<< | -7754.8 | 5.28 | 172.81 | 3.65 | 11.97 | 0.293 |
| 35 | 56529.86 | -2152.19>> | 424.8 | -5410.1 | 0.00 | 9.58 | 0.20 | 5.55 | 0.077 |
| 35 | 56530.02 | -11760.66<< | 2572.4 | -42867.9 | 43.84 | 58.03 | 1.23 | 30.34 | 0.649 |
| 35 | 56530.13 | -8032.03 | 10326.9>> | -21749.0 | 23.64 | 232.97 | 4.92 | 20.72 | 0.529 |
| 35 | 56529.60 | -5981.20 | -7858.5<< | -19070.6 | 12.53 | 177.29 | 3.75 | 15.43 | 0.369 |

| BARRA 35 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 35 | 66903.62 | 4574.67>> | 389.5 | -4008.7 | 2.44 | 9.29 | 0.18 | 11.80 | 0.201 |
| 35 | 67624.62 | -5006.71<< | 2628.2 | -41467.5 | 4.48 | 62.94 | 1.18 | 12.92 | 0.249 |
| 35 | 67344.92 | -1288.59 | 10444.9>> | -20352.3 | 0.00 | 249.78 | 4.70 | 3.32 | 0.190 |
| 35 | 67190.69 | 756.42 | -8080.5<< | -17665.3 | 0.00 | 193.09 | 3.64 | 1.95 | 0.129 |
| 36 | 66984.20 | 3503.50>> | 411.1 | 4497.8 | 0.00 | 9.53 | 0.23 | 8.78 | 0.021 |
| 36 | 67790.19 | -7207.09<< | 2918.6 | -49456.8 | 0.00 | 67.87 | 1.62 | 18.06 | 0.079 |
| 36 | 67464.12 | -2872.52 | 11089.2>> | -26820.2 | 0.00 | 257.49 | 6.15 | 7.20 | 0.118 |
| 36 | 67295.99 | -643.73 | -8237.1<< | -21480.3 | 0.00 | 191.11 | 4.57 | 1.61 | 0.064 |

| BARRA 36 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 36 | 67472.25 | -5420.01>> | 453.6 | 4831.8 | 0.00 | 10.53 | 0.25 | 13.58 | 0.043 |
| 36 | 67472.41 | -16160.87<< | 2844.0 | -49122.8 | 48.65 | 66.04 | 1.58 | 40.50 | 0.268 |
| 36 | 67472.45 | -11814.07 | 11007.9>> | -26486.2 | 24.49 | 255.61 | 6.10 | 29.60 | 0.255 |
| 36 | 67472.02 | -9578.93 | -7998.6<< | -21146.2 | 12.07 | 185.73 | 4.43 | 24.00 | 0.169 |
| 37 | 67472.25 | -6490.65>> | 475.2 | -7668.5 | 0.00 | 11.03 | 0.26 | 16.26 | 0.058 |
| 37 | 67472.41 | -18390.86<< | 3336.8 | -85183.5 | 61.04 | 77.48 | 1.85 | 46.08 | 0.332 |
| 37 | 67472.47 | -13716.56 | 12777.7>> | -51027.2 | 35.07 | 296.71 | 7.08 | 34.37 | 0.326 |
| 37 | 67472.04 | -11172.10 | -9617.9<< | -38694.7 | 20.93 | 223.33 | 5.33 | 28.00 | 0.221 |

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| BARRA 37 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 37 | 67460.84 | 17949.82>> | -3738.7 | -85132.6 | 58.60 | 86.81 | 2.07 | 44.98 | 0.323 |
| 37 | 67460.48 | 5771.67<< | -661.3 | -5592.3 | 0.00 | 15.35 | 0.37 | 14.46 | 0.048 |
| 37 | 67460.79 | 10656.01 | 9393.6>> | -38637.2 | 18.06 | 218.11 | 5.21 | 26.70 | 0.208 |
| 37 | 67460.54 | 13164.72 | -13577.2<< | -50969.7 | 32.01 | 315.25 | 7.53 | 32.99 | 0.327 |
| 38 | 67460.84 | 15727.32>> | -3249.4 | -50008.1 | 46.25 | 75.45 | 1.80 | 39.41 | 0.259 |
| 38 | 67460.48 | 4700.53<< | -639.7 | 5403.4 | 0.00 | 14.85 | 0.35 | 11.78 | 0.035 |
| 38 | 67460.79 | 9132.45 | 8519.0>> | -17977.7 | 9.60 | 197.80 | 4.72 | 22.88 | 0.167 |
| 38 | 67460.54 | 11394.63 | -12191.7<< | -25300.6 | 22.17 | 283.08 | 6.76 | 28.55 | 0.265 |

| BARRA 38 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 38 | 67692.59 | 6639.69>> | -3337.5 | -50235.8 | 0.00 | 77.58 | 1.85 | 16.64 | 0.074 |
| 38 | 66864.99 | -4356.02<< | -453.8 | 5175.7 | 0.00 | 10.51 | 0.25 | 10.92 | 0.030 |
| 38 | 67202.20 | 122.87 | 8419.5>> | -20043.1 | 0.00 | 195.26 | 4.67 | 0.31 | 0.066 |
| 38 | 67371.72 | 2378.64 | -11989.6<< | -27364.2 | 0.00 | 278.28 | 6.65 | 5.96 | 0.128 |
| 39 | 67526.77 | 4436.20>> | -2779.8 | -43574.5 | 1.60 | 66.54 | 1.25 | 11.44 | 0.220 |
| 39 | 66784.38 | -5427.17<< | -432.1 | -5125.7 | 6.84 | 10.30 | 0.19 | 14.00 | 0.248 |
| 39 | 67088.28 | -1391.19 | 7419.7>> | -23878.2 | 0.00 | 177.20 | 3.34 | 3.59 | 0.142 |
| 39 | 67239.24 | 618.04 | -10410.5<< | -26710.4 | 0.00 | 248.82 | 4.68 | 1.59 | 0.165 |

| BARRA 39 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 39 | 56547.04 | 11777.80>> | -2675.2 | -43248.7 | 43.92 | 60.36 | 1.28 | 30.38 | 0.651 |
| 39 | 56546.73 | 1886.56<< | -592.2 | -4799.9 | 0.00 | 13.36 | 0.28 | 4.87 | 0.067 |
| 39 | 56547.03 | 5874.34 | 7515.1>> | -21840.0 | 11.95 | 169.56 | 3.58 | 15.15 | 0.357 |
| 39 | 56546.76 | 7889.26 | -10569.8<< | -24673.8 | 22.86 | 238.48 | 5.04 | 20.35 | 0.525 |
| 40 | 56547.04 | 10026.57>> | -2328.0 | -20353.3 | 34.44 | 52.52 | 1.11 | 25.87 | 0.533 |
| 40 | 56546.73 | 998.95<< | -570.7 | -1769.8 | 0.00 | 12.88 | 0.27 | 2.58 | 0.032 |
| 40 | 56547.02 | 4586.18 | 7079.8>> | -8557.8 | 4.97 | 159.73 | 3.37 | 11.83 | 0.281 |
| 40 | 56546.79 | 6354.60 | -9710.8<< | -7419.6 | 14.55 | 219.10 | 4.63 | 16.39 | 0.420 |

| BARRA 40 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 40 | 56631.39 | 10566.77>> | -2333.8 | -20380.9 | 37.33 | 52.68 | 1.11 | 27.26 | 0.568 |
| 40 | 56631.02 | 1539.14<< | -567.7 | -1798.2 | 0.00 | 12.82 | 0.27 | 3.97 | 0.053 |
| 40 | 56631.22 | 5126.38 | 7079.5>> | -8589.8 | 7.88 | 159.80 | 3.37 | 13.23 | 0.309 |
| 40 | 56631.20 | 6894.79 | -9710.5<< | -7443.6 | 17.45 | 219.19 | 4.63 | 17.79 | 0.451 |
| 41 | 56631.39 | 8815.56>> | -1986.6 | -29.1 | 27.85 | 44.84 | 0.95 | 22.74 | 0.453 |
| 41 | 56631.02 | 651.56<< | -546.2 | 501.8 | 0.00 | 12.33 | 0.26 | 1.68 | 0.020 |
| 41 | 56631.22 | 3940.08 | 6444.3>> | 940.0 | 1.45 | 145.47 | 3.07 | 10.16 | 0.238 |
| 41 | 56631.20 | 5461.95 | -8716.1<< | 5541.0 | 9.69 | 196.75 | 4.15 | 14.09 | 0.354 |

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| BARRA 41 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 41 | 56707.54 | 9370.89>> | -1986.6 | -83.5 | 30.82 | 44.86 | 0.95 | 24.18 | 0.488 |
| 41 | 56707.17 | 1206.88<< | -546.2 | 447.5 | 0.00 | 12.33 | 0.26 | 3.11 | 0.040 |
| 41 | 56707.37 | 4495.40 | 6444.3>> | 885.6 | 4.44 | 145.53 | 3.07 | 11.60 | 0.266 |
| 41 | 56707.35 | 6017.28 | -8716.1<< | 5486.6 | 12.68 | 196.83 | 4.15 | 15.52 | 0.385 |
| 42 | 56707.54 | 7619.67>> | -1639.4 | 17756.9 | 21.35 | 37.02 | 0.78 | 19.66 | 0.377 |
| 42 | 56707.17 | 319.31<< | -524.6 | 2049.9 | 0.00 | 11.85 | 0.25 | 0.82 | 0.010 |
| 42 | 56707.37 | 3299.29 | 5836.7>> | 9070.1 | 0.00 | 131.81 | 2.78 | 8.51 | 0.197 |
| 42 | 56707.35 | 4574.62 | -7739.7<< | 16608.3 | 4.87 | 174.78 | 3.69 | 11.80 | 0.291 |

| BARRA 42 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 42 | 53849.30 | 8170.73>> | -1639.4 | 22765.9 | 25.39 | 36.41 | 0.79 | 21.08 | 0.406 |
| 42 | 53848.93 | 870.37<< | -524.6 | 7058.9 | 0.00 | 11.65 | 0.25 | 2.25 | 0.027 |
| 42 | 53849.13 | 3850.35 | 5836.7>> | 14079.1 | 1.62 | 129.64 | 2.83 | 9.93 | 0.222 |
| 42 | 53849.11 | 5125.67 | -7739.7<< | 21617.3 | 8.64 | 171.91 | 3.75 | 13.22 | 0.317 |
| 43 | 53849.30 | 6419.51>> | -1292.2 | 38085.8 | 15.75 | 28.70 | 0.63 | 16.56 | 0.301 |
| 43 | 53848.93 | -17.23<< | -503.0 | 7954.4 | 0.00 | 11.17 | 0.24 | 0.04 | 0.003 |
| 43 | 53849.13 | 2654.20 | 5229.1>> | 20908.8 | 0.00 | 116.15 | 2.53 | 6.85 | 0.156 |
| 43 | 53849.11 | 3682.99 | -6763.3<< | 30866.3 | 0.70 | 150.22 | 3.27 | 9.50 | 0.228 |

| BARRA 43 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 43 | 53898.62 | 6969.34>> | -1263.7 | 38019.6 | 18.76 | 28.08 | 0.61 | 17.98 | 0.332 |
| 43 | 53898.29 | 532.60<< | -488.8 | 7887.7 | 0.00 | 10.86 | 0.24 | 1.37 | 0.016 |
| 43 | 53898.33 | 3204.03 | 5249.5>> | 20839.4 | 0.00 | 116.63 | 2.54 | 8.27 | 0.182 |
| 43 | 53898.57 | 4232.81 | -6738.2<< | 30802.7 | 3.71 | 149.71 | 3.26 | 10.92 | 0.255 |
| 44 | 53898.62 | 5018.73>> | -859.7 | 48241.4 | 8.03 | 19.10 | 0.42 | 12.95 | 0.220 |
| 44 | 53898.29 | -354.99<< | -467.2 | 8074.1 | 0.00 | 10.38 | 0.23 | 0.92 | 0.011 |
| 44 | 53898.33 | 1908.22 | 4522.6>> | 25024.5 | 0.00 | 100.48 | 2.19 | 4.92 | 0.114 |
| 44 | 53898.57 | 2690.44 | -5585.8<< | 36889.2 | 0.00 | 124.11 | 2.70 | 6.94 | 0.163 |

| BARRA 44 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 44 | 53936.31 | 5582.00>> | -859.7 | 48179.2 | 11.12 | 19.11 | 0.42 | 14.40 | 0.250 |
| 44 | 53935.98 | 208.29<< | -467.2 | 8011.9 | 0.00 | 10.38 | 0.23 | 0.54 | 0.007 |
| 44 | 53936.02 | 2471.49 | 4522.6>> | 24962.2 | 0.00 | 100.50 | 2.19 | 6.38 | 0.138 |
| 44 | 53936.25 | 3253.71 | -5585.8<< | 36826.9 | 0.00 | 124.13 | 2.70 | 8.39 | 0.189 |
| 45 | 53936.31 | 3830.79>> | -512.5 | 58062.9 | 1.49 | 11.39 | 0.25 | 9.88 | 0.155 |
| 45 | 53935.98 | -679.32<< | -445.6 | 7517.3 | 0.00 | 9.90 | 0.22 | 1.75 | 0.020 |
| 45 | 53936.02 | 1275.33 | 3915.0>> | 28896.5 | 0.00 | 87.00 | 1.89 | 3.29 | 0.080 |
| 45 | 53936.25 | 1811.04 | -4609.4<< | 42145.1 | 0.00 | 102.43 | 2.23 | 4.67 | 0.111 |

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| BARRA 45 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 45 | 53961.17 | 4396.45>> | -471.0 | 58013.5 | 4.60 | 10.47 | 0.23 | 11.34 | 0.184 |
| 45 | 53960.82 | -113.66<< | -428.2 | 7467.9 | 0.00 | 9.52 | 0.21 | 0.29 | 0.005 |
| 45 | 53960.75 | 1840.99 | 3942.6>> | 28845.0 | 0.00 | 87.63 | 1.91 | 4.75 | 0.103 |
| 45 | 53961.21 | 2376.71 | -4575.5<< | 42097.7 | 0.00 | 101.70 | 2.21 | 6.13 | 0.135 |
| 46 | 53961.14 | 2445.63>> | -68.0 | 62469.3 | 0.00 | 1.51 | 0.03 | 6.31 | 0.087 |
| 46 | 53960.82 | -1001.26<< | -406.6 | 6297.1 | 0.00 | 9.04 | 0.20 | 2.58 | 0.031 |
| 46 | 53960.73 | 545.07 | 3215.3>> | 29986.4 | 0.00 | 71.46 | 1.56 | 1.41 | 0.046 |
| 46 | 53961.19 | 834.20 | -3423.5<< | 44104.6 | 0.00 | 76.09 | 1.66 | 2.15 | 0.058 |

| BARRA 46 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 46 | 53971.87 | 3007.48>> | -68.0 | 62438.2 | 0.00 | 1.51 | 0.03 | 7.76 | 0.113 |
| 46 | 53971.55 | -439.41<< | -406.6 | 6266.0 | 0.00 | 9.04 | 0.20 | 1.13 | 0.013 |
| 46 | 53971.46 | 1106.92 | 3215.3>> | 29955.3 | 0.00 | 71.47 | 1.56 | 2.86 | 0.065 |
| 46 | 53971.92 | 1396.05 | -3423.5<< | 44073.5 | 0.00 | 76.10 | 1.66 | 3.60 | 0.078 |
| 47 | 53971.87 | 1256.24>> | 279.3 | 66915.1 | 0.00 | 6.21 | 0.14 | 3.24 | 0.039 |
| 47 | 53971.57 | -1795.49<< | -16.5 | 15438.4 | 0.00 | 0.37 | 0.01 | 4.63 | 0.059 |
| 47 | 53971.60 | -276.48 | 3277.6>> | 18472.2 | 0.00 | 72.85 | 1.59 | 0.71 | 0.039 |
| 47 | 53971.45 | -233.84 | -3133.7<< | 32949.8 | 0.00 | 69.65 | 1.52 | 0.60 | 0.036 |

| BARRA 47 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 47 | 53971.80 | 1818.48>> | 279.3 | 66899.2 | 0.00 | 6.21 | 0.14 | 4.69 | 0.062 |
| 47 | 53971.51 | -1233.25<< | -16.5 | 15422.5 | 0.00 | 0.37 | 0.01 | 3.18 | 0.037 |
| 47 | 53971.53 | 285.76 | 3277.6>> | 18456.3 | 0.00 | 72.85 | 1.59 | 0.74 | 0.039 |
| 47 | 53971.39 | 328.40 | -3133.7<< | 32933.9 | 0.00 | 69.65 | 1.52 | 0.85 | 0.039 |
| 48 | 53971.45 | 389.72>> | 561.7 | 12387.0 | 0.00 | 12.49 | 0.27 | 1.01 | 0.012 |
| 48 | 53971.80 | -2922.73<< | 416.8 | 56297.7 | 0.00 | 9.26 | 0.20 | 7.54 | 0.111 |
| 48 | 53971.93 | -1319.30 | 3859.0>> | 42732.3 | 0.00 | 85.78 | 1.87 | 3.40 | 0.081 |
| 48 | 53971.33 | -1086.07 | -3214.2<< | 40912.8 | 0.00 | 71.44 | 1.56 | 2.80 | 0.064 |

| BARRA 48 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 48 | 53958.33 | 961.72>> | 561.7 | 12389.8 | 0.00 | 12.48 | 0.27 | 2.48 | 0.031 |
| 48 | 53958.68 | -2350.73<< | 416.8 | 56300.5 | 0.00 | 9.26 | 0.20 | 6.06 | 0.085 |
| 48 | 53958.81 | -747.31 | 3859.0>> | 42735.2 | 0.00 | 85.77 | 1.87 | 1.93 | 0.061 |
| 48 | 53958.21 | -514.07 | -3214.2<< | 40915.6 | 0.00 | 71.44 | 1.56 | 1.33 | 0.045 |
| 49 | 53958.33 | 74.13>> | 583.3 | 13477.4 | 0.00 | 12.96 | 0.28 | 0.19 | 0.005 |
| 49 | 53958.71 | -4301.38<< | 820.0 | 52048.2 | 4.07 | 18.22 | 0.40 | 11.10 | 0.182 |
| 49 | 53958.82 | -2286.38 | 4846.1>> | 36580.0 | 0.00 | 107.71 | 2.34 | 5.90 | 0.134 |
| 49 | 53958.23 | -1806.62 | -3704.4<< | 35508.7 | 0.00 | 82.33 | 1.79 | 4.66 | 0.098 |

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| BARRA 49 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 49 | 53931.80 | 644.64>> | 603.5 | 13496.9 | 0.00 | 13.41 | 0.29 | 1.66 | 0.020 |
| 49 | 53932.30 | -3730.87<< | 858.6 | 52067.6 | 0.94 | 19.08 | 0.42 | 9.62 | 0.154 |
| 49 | 53932.28 | -1699.73 | 4879.9>> | 42874.4 | 0.00 | 108.44 | 2.36 | 4.38 | 0.110 |
| 49 | 53931.83 | -1252.25 | -3676.2<< | 29253.3 | 0.00 | 81.69 | 1.78 | 3.23 | 0.076 |
| 50 | 53931.80 | -242.96>> | 625.1 | 13918.8 | 0.00 | 13.89 | 0.30 | 0.63 | 0.009 |
| 50 | 53932.30 | -5482.08<< | 1205.8 | 42393.7 | 10.57 | 26.80 | 0.58 | 14.14 | 0.248 |
| 50 | 53932.28 | -3142.41 | 5856.4>> | 37790.0 | 0.00 | 130.14 | 2.83 | 8.11 | 0.188 |
| 50 | 53931.83 | -2448.39 | -4283.8<< | 25367.5 | 0.00 | 95.20 | 2.07 | 6.32 | 0.134 |

| BARRA 50 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 50 | 53892.27 | 324.97>> | 644.2 | 13950.6 | 0.00 | 14.31 | 0.31 | 0.84 | 0.011 |
| 50 | 53892.82 | -4914.16<< | 1238.5 | 42425.3 | 7.46 | 27.52 | 0.60 | 12.68 | 0.218 |
| 50 | 53892.71 | -2574.48 | 5886.9>> | 37819.5 | 0.00 | 130.79 | 2.85 | 6.64 | 0.162 |
| 50 | 53892.39 | -1880.47 | -4259.3<< | 25401.7 | 0.00 | 94.63 | 2.06 | 4.85 | 0.109 |
| 51 | 53892.27 | -562.63>> | 665.8 | 13700.8 | 0.00 | 14.79 | 0.32 | 1.45 | 0.018 |
| 51 | 53892.82 | -6864.98<< | 1643.6 | 32424.7 | 18.19 | 36.52 | 0.80 | 17.71 | 0.330 |
| 51 | 53892.71 | -4116.99 | 7039.8>> | 31977.2 | 3.08 | 156.40 | 3.41 | 10.62 | 0.253 |
| 51 | 53892.39 | -3176.40 | -4985.6<< | 21275.4 | 0.00 | 110.77 | 2.41 | 8.19 | 0.177 |

| BARRA 51 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 51 | 53841.14 | -8.54>> | 665.8 | 13737.7 | 0.00 | 14.79 | 0.32 | 0.02 | 0.005 |
| 51 | 53841.69 | -6310.89<< | 1643.6 | 32461.7 | 15.16 | 36.50 | 0.80 | 16.28 | 0.298 |
| 51 | 53841.58 | -3562.90 | 7039.8>> | 32014.1 | 0.04 | 156.36 | 3.41 | 9.19 | 0.226 |
| 51 | 53841.27 | -2622.30 | -4985.6<< | 21312.4 | 0.00 | 110.73 | 2.41 | 6.77 | 0.151 |
| 52 | 53841.14 | -896.15>> | 687.4 | 12787.8 | 0.00 | 15.27 | 0.33 | 2.31 | 0.029 |
| 52 | 53841.69 | -8062.13<< | 1990.8 | 17369.4 | 24.79 | 44.22 | 0.96 | 20.80 | 0.404 |
| 52 | 53841.58 | -5005.59 | 8016.2>> | 23016.9 | 7.98 | 178.04 | 3.88 | 12.91 | 0.315 |
| 52 | 53841.27 | -3818.46 | -5593.2<< | 14549.3 | 1.45 | 124.23 | 2.71 | 9.85 | 0.217 |

| BARRA 52 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 52 | 53776.25 | -334.82>> | 687.7 | 12822.7 | 0.00 | 15.27 | 0.33 | 0.86 | 0.012 |
| 52 | 53776.79 | -7500.80<< | 1991.1 | 17404.3 | 21.73 | 44.21 | 0.96 | 19.35 | 0.370 |
| 52 | 53776.68 | -4444.26 | 8016.6>> | 23051.8 | 4.91 | 177.98 | 3.88 | 11.47 | 0.285 |
| 52 | 53776.37 | -3257.13 | -5592.9<< | 14584.3 | 0.00 | 124.17 | 2.71 | 8.40 | 0.189 |
| 53 | 53776.25 | -1221.99>> | 709.3 | 11188.7 | 0.00 | 15.75 | 0.34 | 3.15 | 0.041 |
| 53 | 53776.79 | -9251.20<< | 2338.1 | -177.7 | 31.36 | 51.91 | 1.13 | 23.87 | 0.480 |
| 53 | 53776.68 | -5886.26 | 8992.6>> | 12209.3 | 12.84 | 199.65 | 4.36 | 15.19 | 0.378 |
| 53 | 53776.37 | -4452.71 | -6200.2<< | 6492.4 | 4.95 | 137.66 | 3.00 | 11.49 | 0.258 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 53 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 53 | 53699.64 | -668.93>> | 709.0 | 11210.0 | 0.00 | 15.73 | 0.34 | 1.73 | 0.022 |
| 53 | 53700.19 | -8698.14<< | 2337.9 | -156.4 | 28.35 | 51.88 | 1.13 | 22.44 | 0.446 |
| 53 | 53700.08 | -5333.20 | 8992.3>> | 12230.6 | 9.82 | 199.56 | 4.36 | 13.76 | 0.348 |
| 53 | 53699.77 | -3899.65 | -6200.5<< | 6513.6 | 1.93 | 137.60 | 3.00 | 10.06 | 0.230 |
| 54 | 53699.64 | -1556.56>> | 730.6 | 8872.7 | 0.00 | 16.21 | 0.35 | 4.02 | 0.054 |
| 54 | 53700.19 | -10449.41<< | 2685.1 | -20262.6 | 37.99 | 59.59 | 1.30 | 26.96 | 0.559 |
| 54 | 53700.08 | -6757.67 | 10515.9>> | -483.7 | 17.66 | 233.37 | 5.10 | 17.43 | 0.453 |
| 54 | 53699.77 | -5077.59 | -7646.3<< | -2931.3 | 8.41 | 169.69 | 3.71 | 13.10 | 0.313 |

| BARRA 54 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 54 | 53611.12 | -1008.54>> | 735.9 | 8868.1 | 0.00 | 16.32 | 0.36 | 2.60 | 0.034 |
| 54 | 53611.76 | -9901.39<< | 2676.6 | -20268.2 | 35.01 | 59.37 | 1.30 | 25.54 | 0.524 |
| 54 | 53611.55 | -6209.66 | 10516.8>> | -493.0 | 14.67 | 233.26 | 5.10 | 16.02 | 0.421 |
| 54 | 53611.38 | -4529.57 | -7646.6<< | -2931.9 | 5.42 | 169.60 | 3.71 | 11.69 | 0.284 |
| 55 | 53611.12 | -1896.14>> | 757.5 | 5818.2 | 0.00 | 16.80 | 0.37 | 4.89 | 0.068 |
| 55 | 53611.76 | -11652.64<< | 3023.9 | -42900.7 | 44.66 | 67.07 | 1.47 | 30.06 | 0.641 |
| 55 | 53611.55 | -7796.21 | 11226.2>> | -15366.3 | 23.41 | 249.00 | 5.44 | 20.11 | 0.525 |
| 55 | 53611.38 | -5869.55 | -7845.1<< | -14018.0 | 12.80 | 174.01 | 3.80 | 15.14 | 0.359 |

| BARRA 55 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 55 | 63974.37 | 4610.76>> | 760.9 | 7219.8 | 3.30 | 17.88 | 0.35 | 11.89 | 0.204 |
| 55 | 64706.93 | -5118.18<< | 3582.6 | -41499.2 | 5.76 | 84.52 | 1.63 | 13.20 | 0.265 |
| 55 | 64417.41 | -1272.62 | 11569.1>> | -13964.8 | 0.00 | 272.51 | 5.28 | 3.28 | 0.207 |
| 55 | 64272.71 | 648.55 | -7585.9<< | -12616.5 | 0.00 | 178.55 | 3.47 | 1.67 | 0.116 |
| 56 | 64054.95 | 3539.59>> | 782.6 | 15802.5 | 0.00 | 17.88 | 0.44 | 8.87 | 0.022 |
| 56 | 64871.70 | -7307.87<< | 3873.6 | -49630.5 | 0.44 | 88.85 | 2.17 | 18.31 | 0.087 |
| 56 | 64536.60 | -2856.60 | 12214.7>> | -20383.3 | 0.00 | 279.73 | 6.87 | 7.16 | 0.134 |
| 56 | 64377.99 | -751.27 | -7726.9<< | -16644.6 | 0.00 | 176.82 | 4.35 | 1.88 | 0.058 |

| BARRA 56 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 56 | 64553.82 | -5164.81>> | 774.8 | 16136.1 | 0.00 | 17.75 | 0.44 | 12.94 | 0.040 |
| 56 | 64554.51 | -16042.99<< | 3239.0 | -49298.1 | 49.78 | 74.18 | 1.82 | 40.20 | 0.265 |
| 56 | 64554.21 | -11579.14 | 11868.8>> | -20054.9 | 24.63 | 271.83 | 6.67 | 29.02 | 0.261 |
| 56 | 64554.16 | -9467.82 | -8019.1<< | -16306.8 | 12.73 | 183.66 | 4.51 | 23.72 | 0.165 |
| 57 | 64553.82 | -6235.98>> | 796.4 | 4164.6 | 0.00 | 18.24 | 0.45 | 15.63 | 0.054 |
| 57 | 64554.51 | -18276.80<< | 3733.3 | -85140.0 | 62.37 | 85.50 | 2.10 | 45.80 | 0.328 |
| 57 | 64554.24 | -13477.09 | 13629.9>> | -44064.0 | 35.32 | 312.17 | 7.66 | 33.77 | 0.332 |
| 57 | 64554.17 | -11056.63 | -9633.5<< | -33579.3 | 21.69 | 220.64 | 5.41 | 27.71 | 0.217 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 57 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 57 | 64542.75 | 17635.35>> | -4063.4 | -85028.9 | 58.76 | 93.06 | 2.28 | 44.19 | 0.313 |
| 57 | 64542.04 | 5581.99<< | -855.9 | 4220.2 | 0.00 | 19.60 | 0.48 | 13.99 | 0.046 |
| 57 | 64542.44 | 10415.88 | 9260.9>> | -33522.8 | 18.08 | 212.09 | 5.21 | 26.10 | 0.199 |
| 57 | 64542.43 | 12835.41 | -13951.5<< | -44005.5 | 31.71 | 319.52 | 7.84 | 32.16 | 0.323 |
| 58 | 64542.75 | 15412.79>> | -3574.1 | -50581.4 | 46.24 | 81.85 | 2.01 | 38.62 | 0.251 |
| 58 | 64542.04 | 4510.80<< | -834.3 | 14817.8 | 0.00 | 19.11 | 0.47 | 11.30 | 0.033 |
| 58 | 64542.44 | 8892.27 | 8386.3>> | -13375.9 | 9.50 | 192.06 | 4.71 | 22.28 | 0.159 |
| 58 | 64542.43 | 11065.26 | -12566.0<< | -19036.0 | 21.74 | 287.79 | 7.06 | 27.73 | 0.262 |

| BARRA 58 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 58 | 64759.14 | 6545.57>> | -4171.2 | -50809.2 | 0.00 | 95.63 | 2.34 | 16.40 | 0.078 |
| 58 | 63940.54 | -4325.66<< | -825.2 | 14590.0 | 0.00 | 18.85 | 0.47 | 10.84 | 0.030 |
| 58 | 64274.25 | 104.94 | 8072.6>> | -15490.3 | 0.00 | 184.64 | 4.54 | 0.26 | 0.061 |
| 58 | 64432.66 | 2210.32 | -12874.2<< | -19263.9 | 0.00 | 294.69 | 7.24 | 5.54 | 0.140 |
| 59 | 64592.98 | 4337.22>> | -3617.4 | -44351.0 | 1.74 | 85.29 | 1.65 | 11.19 | 0.223 |
| 59 | 63859.93 | -5396.84<< | -803.6 | 4352.0 | 7.42 | 18.87 | 0.37 | 13.92 | 0.248 |
| 59 | 64160.13 | -1411.54 | 7080.0>> | -19366.1 | 0.00 | 166.54 | 3.24 | 3.64 | 0.136 |
| 59 | 64300.00 | 447.27 | -11306.3<< | -18967.0 | 0.00 | 266.16 | 5.17 | 1.15 | 0.174 |

| BARRA 59 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 59 | 53628.63 | 11458.49>> | -3077.0 | -44023.7 | 43.58 | 68.26 | 1.49 | 29.56 | 0.629 |
| 59 | 53627.98 | 1696.85<< | -810.1 | 4678.2 | 0.00 | 17.97 | 0.39 | 4.38 | 0.061 |
| 59 | 53628.25 | 5631.76 | 7345.4>> | -17286.7 | 11.49 | 162.94 | 3.56 | 14.53 | 0.338 |
| 59 | 53628.39 | 7557.52 | -11009.4<< | -18636.0 | 22.09 | 244.22 | 5.34 | 19.50 | 0.507 |
| 60 | 53628.63 | 9707.23>> | -2729.8 | -21798.3 | 33.94 | 60.55 | 1.32 | 25.04 | 0.513 |
| 60 | 53627.98 | 809.25<< | -788.6 | 7310.0 | 0.00 | 17.49 | 0.38 | 2.09 | 0.027 |
| 60 | 53628.23 | 4344.51 | 6905.1>> | -4508.9 | 4.39 | 153.17 | 3.35 | 11.21 | 0.263 |
| 60 | 53628.41 | 6023.69 | -10148.1<< | -2072.9 | 13.64 | 225.11 | 4.92 | 15.54 | 0.405 |

| BARRA 60 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 60 | 53712.79 | 10247.43>> | -2729.8 | -21826.8 | 36.87 | 60.58 | 1.32 | 26.44 | 0.547 |
| 60 | 53712.14 | 1349.45<< | -788.6 | 7281.4 | 0.00 | 17.50 | 0.38 | 3.48 | 0.047 |
| 60 | 53712.39 | 4884.71 | 6905.1>> | -4537.5 | 7.35 | 153.25 | 3.35 | 12.60 | 0.291 |
| 60 | 53712.57 | 6563.89 | -10148.1<< | -2101.4 | 16.59 | 225.22 | 4.92 | 16.93 | 0.435 |
| 61 | 53712.79 | 8496.16>> | -2382.6 | -2144.9 | 27.23 | 52.88 | 1.15 | 21.92 | 0.434 |
| 61 | 53712.14 | 461.82<< | -767.0 | 9183.4 | 0.00 | 17.02 | 0.37 | 1.19 | 0.016 |
| 61 | 53712.39 | 3696.95 | 6274.3>> | 4482.5 | 0.81 | 139.25 | 3.04 | 9.54 | 0.221 |
| 61 | 53712.57 | 5129.60 | -9156.6<< | 10186.1 | 8.70 | 203.22 | 4.44 | 13.23 | 0.340 |

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| BARRA 61 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 61 | 53788.94 | 9051.42>> | -2378.6 | -2198.1 | 30.26 | 52.81 | 1.15 | 23.35 | 0.468 |
| 61 | 53788.38 | 1017.08<< | -757.6 | 9129.5 | 0.00 | 16.82 | 0.37 | 2.62 | 0.034 |
| 61 | 53788.49 | 4252.21 | 6281.5>> | 4425.2 | 3.85 | 139.47 | 3.04 | 10.97 | 0.249 |
| 61 | 53788.82 | 5684.86 | -9146.7<< | 10136.2 | 11.73 | 203.09 | 4.43 | 14.67 | 0.370 |
| 62 | 53788.94 | 7300.13>> | -2031.4 | 14972.3 | 20.62 | 45.10 | 0.98 | 18.83 | 0.359 |
| 62 | 53788.38 | 129.46<< | -736.0 | 10333.7 | 0.00 | 16.34 | 0.36 | 0.33 | 0.007 |
| 62 | 53788.49 | 3056.03 | 5673.8>> | 12099.6 | 0.00 | 125.98 | 2.75 | 7.88 | 0.181 |
| 62 | 53788.82 | 4242.13 | -8170.3<< | 20560.4 | 3.79 | 181.41 | 3.96 | 10.94 | 0.277 |

| BARRA 62 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 62 | 53849.58 | 7850.03>> | -2031.4 | 14908.2 | 23.62 | 45.12 | 0.98 | 20.25 | 0.391 |
| 62 | 53849.02 | 679.35<< | -736.0 | 10269.6 | 0.00 | 16.35 | 0.36 | 1.75 | 0.023 |
| 62 | 53849.13 | 3605.92 | 5673.8>> | 12035.4 | 0.28 | 126.02 | 2.75 | 9.30 | 0.207 |
| 62 | 53849.46 | 4792.02 | -8170.2<< | 20496.3 | 6.80 | 181.47 | 3.96 | 12.36 | 0.306 |
| 63 | 53849.58 | 6099.58>> | -1684.3 | 29549.6 | 13.99 | 37.41 | 0.82 | 15.74 | 0.287 |
| 63 | 53849.02 | -207.84<< | -714.4 | 10764.9 | 0.00 | 15.87 | 0.35 | 0.54 | 0.009 |
| 63 | 53849.13 | 2410.32 | 5066.5>> | 18350.3 | 0.00 | 112.53 | 2.45 | 6.22 | 0.143 |
| 63 | 53849.46 | 3349.98 | -7194.2<< | 29042.3 | 0.00 | 159.79 | 3.48 | 8.64 | 0.218 |

| BARRA 63 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 63 | 53898.90 | 6650.50>> | -1684.4 | 29482.5 | 17.01 | 37.42 | 0.82 | 17.16 | 0.318 |
| 63 | 53898.34 | 343.08<< | -714.5 | 10697.8 | 0.00 | 15.87 | 0.35 | 0.89 | 0.012 |
| 63 | 53898.45 | 2961.25 | 5066.4>> | 18283.2 | 0.00 | 112.57 | 2.45 | 7.64 | 0.168 |
| 63 | 53898.78 | 3900.91 | -7194.3<< | 28975.2 | 1.89 | 159.84 | 3.48 | 10.06 | 0.245 |
| 64 | 53898.90 | 4699.79>> | -1280.4 | 39024.4 | 6.28 | 28.45 | 0.62 | 12.12 | 0.207 |
| 64 | 53898.34 | -544.54<< | -692.9 | 10486.3 | 0.00 | 15.39 | 0.34 | 1.40 | 0.018 |
| 64 | 53898.45 | 1665.37 | 4339.6>> | 21953.3 | 0.00 | 96.42 | 2.10 | 4.30 | 0.101 |
| 64 | 53898.78 | 2358.45 | -6042.0<< | 34359.4 | 0.00 | 134.24 | 2.92 | 6.08 | 0.155 |

| BARRA 64 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 64 | 53936.55 | 5263.13>> | -1249.4 | 38963.0 | 9.37 | 27.76 | 0.60 | 13.58 | 0.236 |
| 64 | 53936.07 | 18.80<< | -675.4 | 10424.6 | 0.00 | 15.01 | 0.33 | 0.05 | 0.005 |
| 64 | 53936.06 | 2228.70 | 4362.6>> | 21889.3 | 0.00 | 96.95 | 2.11 | 5.75 | 0.125 |
| 64 | 53936.55 | 2921.79 | -6013.1<< | 34300.3 | 0.00 | 133.63 | 2.91 | 7.54 | 0.180 |
| 65 | 53936.55 | 3511.84>> | -902.1 | 48177.5 | 0.00 | 20.05 | 0.44 | 9.06 | 0.143 |
| 65 | 53936.07 | -868.83<< | -653.8 | 9532.2 | 0.00 | 14.53 | 0.32 | 2.24 | 0.028 |
| 65 | 53936.06 | 1032.52 | 3754.9>> | 25313.9 | 0.00 | 83.44 | 1.82 | 2.66 | 0.069 |
| 65 | 53936.55 | 1479.06 | -5036.7<< | 38921.7 | 0.00 | 111.93 | 2.44 | 3.82 | 0.104 |

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| BARRA 65 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 65 | 53961.37 | 4077.57>> | -902.1 | 48127.8 | 2.84 | 20.05 | 0.44 | 10.52 | 0.171 |
| 65 | 53960.89 | -303.10<< | -653.8 | 9482.5 | 0.00 | 14.53 | 0.32 | 0.78 | 0.011 |
| 65 | 53960.88 | 1598.25 | 3754.9>> | 25264.3 | 0.00 | 83.46 | 1.82 | 4.12 | 0.091 |
| 65 | 53961.38 | 2044.79 | -5036.7<< | 38872.0 | 0.00 | 111.95 | 2.44 | 5.28 | 0.127 |
| 66 | 53961.36 | 2126.95>> | -498.4 | 51904.0 | 0.00 | 11.08 | 0.24 | 5.49 | 0.076 |
| 66 | 53960.89 | -1190.72<< | -632.3 | 7914.1 | 0.00 | 14.05 | 0.31 | 3.07 | 0.040 |
| 66 | 53960.88 | 302.42 | 3028.2>> | 25890.9 | 0.00 | 67.31 | 1.47 | 0.78 | 0.037 |
| 66 | 53961.36 | 502.39 | -3884.6<< | 40177.2 | 0.00 | 86.34 | 1.88 | 1.30 | 0.053 |

| BARRA 66 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 66 | 53971.95 | 2688.73>> | -498.4 | 51872.9 | 0.00 | 11.08 | 0.24 | 6.94 | 0.101 |
| 66 | 53971.49 | -628.94<< | -632.3 | 7882.9 | 0.00 | 14.05 | 0.31 | 1.62 | 0.020 |
| 66 | 53971.48 | 864.21 | 3028.2>> | 25859.8 | 0.00 | 67.31 | 1.47 | 2.23 | 0.054 |
| 66 | 53971.96 | 1064.17 | -3884.6<< | 40146.0 | 0.00 | 86.35 | 1.88 | 2.75 | 0.072 |
| 67 | 53971.62 | 997.72>> | 0.5 | 10514.3 | 0.00 | 0.01 | 0.00 | 2.57 | 0.028 |
| 67 | 53971.91 | -2052.50<< | -401.5 | 61838.3 | 0.00 | 8.92 | 0.19 | 5.30 | 0.072 |
| 67 | 53971.57 | -521.17 | 3112.0>> | 13460.2 | 0.00 | 69.17 | 1.51 | 1.34 | 0.044 |
| 67 | 53971.56 | -567.66 | -3390.4<< | 27917.2 | 0.00 | 75.36 | 1.64 | 1.46 | 0.049 |

| BARRA 67 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 67 | 53971.66 | 1559.89>> | 20.6 | 10498.5 | 0.00 | 0.46 | 0.01 | 4.02 | 0.050 |
| 67 | 53971.92 | -1490.33<< | -356.9 | 61822.7 | 0.00 | 7.93 | 0.17 | 3.84 | 0.049 |
| 67 | 53971.52 | 24.98 | 3134.8>> | 19654.5 | 0.00 | 69.68 | 1.52 | 0.06 | 0.032 |
| 67 | 53971.68 | 10.54 | -3363.1<< | 21691.5 | 0.00 | 74.75 | 1.63 | 0.03 | 0.035 |
| 68 | 53971.61 | 199.71>> | 398.9 | 768.5 | 0.00 | 8.87 | 0.19 | 0.52 | 0.006 |
| 68 | 53971.92 | -3241.63<< | -9.7 | 56854.0 | 0.00 | 0.21 | 0.00 | 8.36 | 0.124 |
| 68 | 53971.96 | -1636.21 | 3501.9>> | 42867.5 | 0.00 | 77.84 | 1.69 | 4.22 | 0.089 |
| 68 | 53971.56 | -1346.14 | -3450.2<< | 28770.4 | 0.00 | 76.69 | 1.67 | 3.47 | 0.077 |

| BARRA 68 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 68 | 53958.43 | 771.78>> | 398.9 | 771.2 | 0.00 | 8.87 | 0.19 | 1.99 | 0.023 |
| 68 | 53958.73 | -2669.57<< | -9.7 | 56856.8 | 0.00 | 0.21 | 0.00 | 6.89 | 0.097 |
| 68 | 53958.78 | -1064.15 | 3501.9>> | 42870.3 | 0.00 | 77.83 | 1.69 | 2.75 | 0.067 |
| 68 | 53958.38 | -774.08 | -3450.2<< | 28773.1 | 0.00 | 76.68 | 1.67 | 2.00 | 0.056 |
| 69 | 53958.43 | -115.84>> | 420.5 | 1460.3 | 0.00 | 9.35 | 0.20 | 0.30 | 0.004 |
| 69 | 53958.73 | -4620.29<< | 394.0 | 51923.6 | 5.83 | 8.76 | 0.19 | 11.92 | 0.195 |
| 69 | 53958.77 | -2603.90 | 4486.5>> | 36033.1 | 0.00 | 99.72 | 2.17 | 6.72 | 0.143 |
| 69 | 53958.36 | -2067.27 | -3937.4<< | 22803.3 | 0.00 | 87.51 | 1.91 | 5.33 | 0.112 |

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| BARRA 69 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 69 | 53931.93 | 455.26>> | 420.5 | 1480.1 | 0.00 | 9.34 | 0.20 | 1.17 | 0.013 |
| 69 | 53932.23 | -4049.20<< | 394.3 | 51943.4 | 2.69 | 8.76 | 0.19 | 10.45 | 0.165 |
| 69 | 53932.27 | -2032.80 | 4486.7>> | 36052.8 | 0.00 | 99.71 | 2.17 | 5.24 | 0.118 |
| 69 | 53931.86 | -1496.17 | -3937.2<< | 22823.1 | 0.00 | 87.49 | 1.91 | 3.86 | 0.089 |
| 70 | 53931.93 | -431.96>> | 442.1 | 1504.9 | 0.00 | 9.82 | 0.21 | 1.11 | 0.013 |
| 70 | 53932.23 | -5799.67<< | 741.3 | 41606.6 | 12.32 | 16.47 | 0.36 | 14.96 | 0.261 |
| 70 | 53932.27 | -3474.88 | 5462.8>> | 30272.5 | 0.00 | 121.39 | 2.64 | 8.96 | 0.198 |
| 70 | 53931.86 | -2691.81 | -4544.6<< | 18427.8 | 0.00 | 100.99 | 2.20 | 6.94 | 0.148 |

| BARRA 70 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 70 | 53892.41 | 135.25>> | 455.0 | 1536.8 | 0.00 | 10.11 | 0.22 | 0.35 | 0.005 |
| 70 | 53892.74 | -5232.46<< | 773.2 | 41638.4 | 9.21 | 17.18 | 0.37 | 13.50 | 0.230 |
| 70 | 53892.67 | -2907.66 | 5489.3>> | 30302.0 | 0.00 | 121.96 | 2.66 | 7.50 | 0.171 |
| 70 | 53892.50 | -2124.60 | -4523.6<< | 18462.1 | 0.00 | 100.50 | 2.19 | 5.48 | 0.123 |
| 71 | 53892.41 | -752.37>> | 476.6 | 889.0 | 0.00 | 10.59 | 0.23 | 1.94 | 0.023 |
| 71 | 53892.74 | -7183.33<< | 1177.2 | 30960.8 | 19.94 | 26.15 | 0.57 | 18.53 | 0.343 |
| 71 | 53892.67 | -4450.18 | 6641.4>> | 23756.0 | 4.91 | 147.55 | 3.21 | 11.48 | 0.264 |
| 71 | 53892.50 | -3420.56 | -5250.2<< | 13819.1 | 0.00 | 116.65 | 2.54 | 8.82 | 0.192 |

| BARRA 71 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 71 | 53841.09 | -198.28>> | 476.6 | 926.0 | 0.00 | 10.59 | 0.23 | 0.51 | 0.007 |
| 71 | 53841.42 | -6629.23<< | 1177.2 | 30997.8 | 16.91 | 26.15 | 0.57 | 17.10 | 0.311 |
| 71 | 53841.34 | -3896.09 | 6641.4>> | 23793.0 | 1.87 | 147.51 | 3.22 | 10.05 | 0.236 |
| 71 | 53841.17 | -2866.46 | -5250.2<< | 13856.1 | 0.00 | 116.61 | 2.54 | 7.39 | 0.166 |
| 72 | 53841.09 | -1085.92>> | 498.2 | -422.3 | 0.00 | 11.06 | 0.24 | 2.80 | 0.035 |
| 72 | 53841.42 | -8380.56<< | 1524.4 | 15236.4 | 26.55 | 33.86 | 0.74 | 21.62 | 0.418 |
| 72 | 53841.34 | -5338.85 | 7617.9>> | 14095.7 | 9.81 | 169.20 | 3.69 | 13.77 | 0.326 |
| 72 | 53841.17 | -4062.67 | -5857.9<< | 6580.1 | 2.79 | 130.11 | 2.84 | 10.48 | 0.233 |

| BARRA 72 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 72 | 53776.42 | -526.13>> | 505.9 | -387.8 | 0.00 | 11.23 | 0.25 | 1.36 | 0.016 |
| 72 | 53776.75 | -7820.78<< | 1539.6 | 15270.5 | 23.49 | 34.18 | 0.75 | 20.18 | 0.384 |
| 72 | 53776.57 | -4779.06 | 7632.5>> | 14126.8 | 6.75 | 169.46 | 3.70 | 12.33 | 0.297 |
| 72 | 53776.61 | -3502.89 | -5846.8<< | 6617.7 | 0.00 | 129.81 | 2.83 | 9.04 | 0.205 |
| 73 | 53776.42 | -1413.77>> | 527.5 | -2424.5 | 0.00 | 11.71 | 0.26 | 3.65 | 0.047 |
| 73 | 53776.75 | -9572.10<< | 1886.9 | -2993.2 | 33.13 | 41.89 | 0.91 | 24.69 | 0.495 |
| 73 | 53776.57 | -6221.81 | 8609.0>> | 2575.3 | 14.69 | 191.14 | 4.17 | 16.05 | 0.391 |
| 73 | 53776.61 | -4699.10 | -6454.5<< | -1994.8 | 6.31 | 143.30 | 3.13 | 12.12 | 0.274 |

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| BARRA 73 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 73 | 53699.63 | -859.29>> | 527.5 | -2403.2 | 0.00 | 11.71 | 0.26 | 2.22 | 0.027 |
| 73 | 53699.96 | -9017.62<< | 1886.9 | -2971.9 | 30.11 | 41.87 | 0.91 | 23.26 | 0.460 |
| 73 | 53699.78 | -5667.33 | 8609.0>> | 2596.6 | 11.66 | 191.05 | 4.17 | 14.62 | 0.360 |
| 73 | 53699.82 | -4144.62 | -6454.5<< | -1973.5 | 3.28 | 143.24 | 3.13 | 10.69 | 0.246 |
| 74 | 53699.63 | -1746.94>> | 549.1 | -5139.5 | 0.00 | 12.19 | 0.27 | 4.51 | 0.061 |
| 74 | 53699.96 | -10768.93<< | 2234.1 | -23749.0 | 39.75 | 49.58 | 1.08 | 27.78 | 0.574 |
| 74 | 53699.78 | -7090.45 | 10132.6>> | -10819.0 | 19.50 | 224.86 | 4.91 | 18.29 | 0.465 |
| 74 | 53699.82 | -5321.17 | -7900.3<< | -11932.2 | 9.75 | 175.32 | 3.83 | 13.73 | 0.330 |

| BARRA 74 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 74 | 53611.13 | -1198.80>> | 549.1 | -5143.9 | 0.00 | 12.18 | 0.27 | 3.09 | 0.039 |
| 74 | 53611.47 | -10220.78<< | 2234.1 | -23753.4 | 36.77 | 49.55 | 1.08 | 26.37 | 0.539 |
| 74 | 53611.29 | -6542.30 | 10132.6>> | -10823.4 | 16.51 | 224.74 | 4.91 | 16.88 | 0.434 |
| 74 | 53611.32 | -4773.02 | -7900.3<< | -11936.6 | 6.76 | 175.23 | 3.83 | 12.31 | 0.300 |
| 75 | 53611.13 | -2086.42>> | 570.7 | -8593.5 | 0.00 | 12.66 | 0.28 | 5.38 | 0.075 |
| 75 | 53611.47 | -11972.11<< | 2581.3 | -47057.7 | 46.42 | 57.25 | 1.25 | 30.89 | 0.656 |
| 75 | 53611.29 | -8128.90 | 10842.1>> | -26400.4 | 25.25 | 240.48 | 5.26 | 20.97 | 0.538 |
| 75 | 53611.32 | -6113.05 | -8098.9<< | -23538.9 | 14.14 | 179.63 | 3.93 | 15.77 | 0.376 |

| BARRA 75 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 75 | 63987.30 | 4425.78>> | 434.2 | -7192.3 | 2.33 | 10.20 | 0.20 | 11.42 | 0.191 |
| 75 | 64729.54 | -5432.00<< | 2696.2 | -45657.5 | 7.38 | 63.61 | 1.23 | 14.01 | 0.271 |
| 75 | 64440.84 | -1599.67 | 10745.1>> | -25004.1 | 0.00 | 253.13 | 4.91 | 4.13 | 0.206 |
| 75 | 64289.80 | 410.49 | -8008.0<< | -22133.5 | 0.00 | 188.50 | 3.66 | 1.06 | 0.115 |
| 76 | 64067.88 | 3355.07>> | 455.8 | 997.5 | 0.00 | 10.41 | 0.26 | 8.41 | 0.020 |
| 76 | 64894.00 | -7616.46<< | 2990.6 | -54434.6 | 2.17 | 68.61 | 1.68 | 19.09 | 0.086 |
| 76 | 64564.63 | -3243.99 | 11393.7>> | -33963.0 | 0.00 | 260.97 | 6.40 | 8.13 | 0.125 |
| 76 | 64394.96 | -987.43 | -8155.9<< | -26603.6 | 0.00 | 186.65 | 4.59 | 2.47 | 0.064 |

| BARRA 76 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 76 | 64553.46 | -5354.70>> | 609.5 | 1331.9 | 0.00 | 13.96 | 0.34 | 13.42 | 0.042 |
| 76 | 64553.79 | -16357.29<< | 2863.1 | -54100.2 | 51.55 | 65.57 | 1.61 | 40.99 | 0.270 |
| 76 | 64553.51 | -11911.91 | 11543.6>> | -31764.7 | 26.51 | 264.38 | 6.49 | 29.85 | 0.263 |
| 76 | 64553.70 | -9709.50 | -8239.0<< | -26269.2 | 14.10 | 188.70 | 4.63 | 24.33 | 0.172 |
| 77 | 64553.46 | -6425.92>> | 631.0 | -11038.6 | 0.00 | 14.45 | 0.35 | 16.10 | 0.057 |
| 77 | 64553.79 | -18591.16<< | 3358.6 | -90603.3 | 64.14 | 76.92 | 1.89 | 46.59 | 0.334 |
| 77 | 64553.54 | -13807.73 | 13307.2>> | -56464.4 | 37.19 | 304.78 | 7.48 | 34.60 | 0.334 |
| 77 | 64553.71 | -11298.21 | -9853.8<< | -44094.6 | 23.05 | 225.68 | 5.54 | 28.31 | 0.225 |

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| BARRA 77 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 77 | 64541.97 | 18053.63>> | -3515.5 | -90459.4 | 61.12 | 80.51 | 1.98 | 45.24 | 0.320 |
| 77 | 64541.64 | 6488.82<< | 1.8 | -11211.5 | 0.00 | 0.04 | 0.00 | 16.26 | 0.057 |
| 77 | 64541.64 | 10832.38 | 9292.6>> | -44039.5 | 20.43 | 212.82 | 5.22 | 27.14 | 0.208 |
| 77 | 64541.98 | 13379.84 | -12877.5<< | -56404.9 | 34.78 | 294.92 | 7.24 | 33.53 | 0.317 |
| 78 | 64541.97 | 15831.01>> | -3026.2 | -55131.6 | 48.59 | 69.30 | 1.70 | 39.67 | 0.258 |
| 78 | 64541.64 | 5417.58<< | 23.4 | 1291.5 | 0.00 | 0.54 | 0.01 | 13.58 | 0.042 |
| 78 | 64541.64 | 9308.73 | 8418.0>> | -23016.5 | 11.84 | 192.79 | 4.73 | 23.33 | 0.167 |
| 78 | 64541.98 | 11609.63 | -11492.0<< | -30290.7 | 24.81 | 263.19 | 6.46 | 29.09 | 0.256 |

| BARRA 78 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 78 | 64789.91 | 6962.85>> | -3142.9 | -55359.3 | 0.00 | 72.06 | 1.76 | 17.45 | 0.076 |
| 78 | 64008.36 | -3421.19<< | 178.7 | 1063.7 | 0.00 | 4.08 | 0.10 | 8.57 | 0.020 |
| 78 | 64304.89 | 521.09 | 8582.3>> | -25138.4 | 0.00 | 196.33 | 4.83 | 1.31 | 0.068 |
| 78 | 64473.25 | 2753.37 | -11592.2<< | -30518.4 | 0.00 | 265.40 | 6.52 | 6.90 | 0.124 |
| 79 | 64623.06 | 4744.95>> | -2591.5 | -47954.9 | 3.84 | 61.11 | 1.18 | 12.24 | 0.232 |
| 79 | 63927.80 | -4492.44<< | 200.3 | -7269.6 | 2.69 | 4.71 | 0.09 | 11.59 | 0.193 |
| 79 | 64190.47 | -1000.21 | 7571.5>> | -28104.2 | 0.00 | 178.13 | 3.46 | 2.58 | 0.128 |
| 79 | 64340.26 | 985.52 | -10008.3<< | -29044.3 | 0.00 | 235.65 | 4.57 | 2.54 | 0.169 |

| BARRA 79 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 79 | 53628.06 | 11867.25>> | -2465.8 | -47629.2 | 45.83 | 54.70 | 1.20 | 30.62 | 0.648 |
| 79 | 53627.76 | 2603.71<< | 51.6 | -6943.9 | 0.00 | 1.14 | 0.02 | 6.72 | 0.094 |
| 79 | 53627.70 | 6105.84 | 7401.1>> | -27778.5 | 14.10 | 164.18 | 3.59 | 15.75 | 0.365 |
| 79 | 53628.09 | 8097.19 | -9879.1<< | -28718.6 | 25.07 | 219.14 | 4.79 | 20.89 | 0.520 |
| 80 | 53628.06 | 10115.93>> | -2118.6 | -24544.7 | 36.19 | 47.00 | 1.03 | 26.10 | 0.531 |
| 80 | 53627.76 | 1716.07<< | 73.1 | -2407.7 | 0.00 | 1.62 | 0.04 | 4.43 | 0.056 |
| 80 | 53627.73 | 4756.27 | 6959.5>> | -12360.0 | 6.66 | 154.38 | 3.37 | 12.27 | 0.285 |
| 80 | 53628.11 | 6563.36 | -9018.6<< | -11009.9 | 16.62 | 200.06 | 4.37 | 16.93 | 0.416 |

| BARRA 80 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 80 | 53711.90 | 10654.38>> | -2118.8 | -24573.1 | 39.11 | 47.02 | 1.03 | 27.49 | 0.566 |
| 80 | 53711.60 | 2254.52<< | 73.1 | -2436.1 | 0.00 | 1.62 | 0.04 | 5.82 | 0.079 |
| 80 | 53711.57 | 5294.72 | 6959.4>> | -12388.5 | 9.61 | 154.45 | 3.37 | 13.66 | 0.314 |
| 80 | 53711.95 | 7101.81 | -9018.7<< | -11038.3 | 19.55 | 200.16 | 4.37 | 18.32 | 0.447 |
| 81 | 53711.90 | 8903.86>> | -1771.7 | -4044.8 | 29.48 | 39.32 | 0.86 | 22.97 | 0.452 |
| 81 | 53711.60 | 1367.27<< | 94.7 | 1365.3 | 0.00 | 2.10 | 0.05 | 3.53 | 0.042 |
| 81 | 53711.57 | 4106.07 | 6332.4>> | -2514.2 | 3.06 | 140.54 | 3.07 | 10.59 | 0.242 |
| 81 | 53711.95 | 5666.74 | -8029.9<< | 2370.8 | 11.65 | 178.21 | 3.89 | 14.62 | 0.350 |

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| BARRA 81 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 81 | 53788.45 | 9460.87>> | -1768.7 | -4098.5 | 32.51 | 39.27 | 0.86 | 24.41 | 0.486 |
| 81 | 53788.07 | 1924.28<< | 100.2 | 1310.8 | 0.00 | 2.22 | 0.05 | 4.96 | 0.065 |
| 81 | 53788.02 | 4663.08 | 6336.1>> | -2571.7 | 6.11 | 140.68 | 3.07 | 12.03 | 0.271 |
| 81 | 53788.56 | 6223.75 | -8024.0<< | 2320.0 | 14.70 | 178.16 | 3.89 | 16.06 | 0.381 |
| 82 | 53788.45 | 7709.51>> | -1421.5 | 13932.2 | 22.87 | 31.56 | 0.69 | 19.89 | 0.376 |
| 82 | 53788.07 | 1036.63<< | 121.7 | 4420.1 | 0.00 | 2.70 | 0.06 | 2.67 | 0.030 |
| 82 | 53788.02 | 3466.85 | 5728.4>> | 5965.6 | 0.00 | 127.19 | 2.77 | 8.94 | 0.201 |
| 82 | 53788.56 | 4780.95 | -7047.5<< | 13876.1 | 6.76 | 156.48 | 3.41 | 12.33 | 0.288 |

| BARRA 82 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 82 | 53849.32 | 8260.57>> | -1406.8 | 13868.9 | 25.88 | 31.25 | 0.68 | 21.31 | 0.409 |
| 82 | 53848.93 | 1587.68<< | 131.9 | 4356.0 | 0.00 | 2.93 | 0.06 | 4.10 | 0.051 |
| 82 | 53848.79 | 4017.91 | 5739.3>> | 5898.8 | 2.54 | 127.48 | 2.78 | 10.37 | 0.229 |
| 82 | 53849.53 | 5332.00 | -7032.8<< | 13815.4 | 9.77 | 156.21 | 3.41 | 13.76 | 0.317 |
| 83 | 53849.32 | 6509.21>> | -1059.5 | 29378.7 | 16.25 | 23.53 | 0.51 | 16.79 | 0.303 |
| 83 | 53848.93 | 700.03<< | 153.5 | 6758.3 | 0.00 | 3.41 | 0.07 | 1.81 | 0.019 |
| 83 | 53848.79 | 2821.67 | 5131.7>> | 13081.1 | 0.00 | 113.98 | 2.48 | 7.28 | 0.162 |
| 83 | 53849.53 | 3889.22 | -6056.3<< | 23498.6 | 1.83 | 134.52 | 2.93 | 10.03 | 0.227 |

| BARRA 83 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 83 | 53898.47 | 7058.91>> | -1084.0 | 29311.5 | 19.25 | 24.08 | 0.52 | 18.21 | 0.335 |
| 83 | 53898.09 | 1249.73<< | 139.8 | 6691.6 | 0.00 | 3.11 | 0.07 | 3.22 | 0.038 |
| 83 | 53898.04 | 3371.37 | 5114.9>> | 13016.8 | 0.00 | 113.64 | 2.48 | 8.70 | 0.188 |
| 83 | 53898.58 | 4438.91 | -6078.0<< | 23429.0 | 4.85 | 135.04 | 2.94 | 11.45 | 0.255 |
| 84 | 53898.45 | 5106.06>> | -678.9 | 39710.7 | 8.51 | 15.08 | 0.33 | 13.17 | 0.223 |
| 84 | 53898.09 | 362.06<< | 161.4 | 8384.1 | 0.00 | 3.59 | 0.08 | 0.93 | 0.009 |
| 84 | 53898.04 | 2074.40 | 4385.4>> | 17547.9 | 0.00 | 97.43 | 2.12 | 5.35 | 0.119 |
| 84 | 53898.56 | 2895.37 | -4921.8<< | 29942.9 | 0.00 | 109.35 | 2.38 | 7.47 | 0.163 |

| BARRA 84 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 84 | 53936.18 | 5668.69>> | -615.8 | 39649.1 | 11.60 | 13.69 | 0.30 | 14.62 | 0.253 |
| 84 | 53935.74 | 924.69<< | 194.5 | 8321.8 | 0.00 | 4.32 | 0.09 | 2.39 | 0.027 |
| 84 | 53935.55 | 2685.22 | 4428.3>> | 24065.0 | 0.00 | 98.41 | 2.14 | 6.93 | 0.146 |
| 84 | 53936.48 | 3409.81 | -4869.1<< | 23302.0 | 0.00 | 108.20 | 2.36 | 8.80 | 0.186 |
| 85 | 53936.18 | 3918.12>> | -268.7 | 49711.5 | 1.97 | 5.97 | 0.13 | 10.11 | 0.158 |
| 85 | 53935.74 | 37.44<< | 216.1 | 9331.6 | 0.00 | 4.80 | 0.10 | 0.10 | 0.002 |
| 85 | 53935.55 | 1489.56 | 3820.9>> | 28446.8 | 0.00 | 84.91 | 1.85 | 3.84 | 0.087 |
| 85 | 53936.48 | 1967.67 | -3893.0<< | 28946.2 | 0.00 | 86.51 | 1.88 | 5.08 | 0.108 |

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| BARRA 85 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 85 | 53960.89 | 4484.43>> | -306.7 | 49661.6 | 5.08 | 6.82 | 0.15 | 11.57 | 0.187 |
| 85 | 53960.51 | 603.75<< | 197.5 | 9281.9 | 0.00 | 4.39 | 0.10 | 1.56 | 0.016 |
| 85 | 53960.36 | 2007.67 | 3795.3>> | 21714.2 | 0.00 | 84.35 | 1.84 | 5.18 | 0.108 |
| 85 | 53961.10 | 2582.18 | -3923.2<< | 35579.2 | 0.00 | 87.20 | 1.90 | 6.66 | 0.135 |
| 86 | 53960.89 | 2532.42>> | 98.6 | 54291.4 | 0.00 | 2.19 | 0.05 | 6.53 | 0.091 |
| 86 | 53960.51 | -283.91<< | 219.1 | 9617.9 | 0.00 | 4.87 | 0.11 | 0.73 | 0.007 |
| 86 | 53960.36 | 992.09 | 3073.9>> | 31232.4 | 0.00 | 68.32 | 1.49 | 2.56 | 0.059 |
| 86 | 53961.10 | 758.08 | -2774.8<< | 29980.0 | 0.00 | 61.67 | 1.34 | 1.96 | 0.047 |

| BARRA 86 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 86 | 53971.71 | 3094.21>> | 139.1 | 54260.2 | 0.00 | 3.09 | 0.07 | 7.98 | 0.117 |
| 86 | 53971.29 | 277.87<< | 238.3 | 9586.7 | 0.00 | 5.30 | 0.12 | 0.72 | 0.007 |
| 86 | 53971.10 | 1602.07 | 3104.4>> | 37985.8 | 0.00 | 69.00 | 1.50 | 4.13 | 0.082 |
| 86 | 53972.04 | 1271.67 | -2747.0<< | 23164.4 | 0.00 | 61.06 | 1.33 | 3.28 | 0.065 |
| 87 | 53971.44 | 1384.48>> | 358.8 | 22563.8 | 0.00 | 7.97 | 0.17 | 3.57 | 0.045 |
| 87 | 53971.83 | -1505.95<< | 306.1 | 47004.8 | 0.00 | 6.80 | 0.15 | 3.89 | 0.049 |
| 87 | 53971.16 | -120.43 | 3178.7>> | 43607.1 | 0.00 | 70.66 | 1.54 | 0.31 | 0.034 |
| 87 | 53971.99 | -204.27 | -2254.6<< | 28353.0 | 0.00 | 50.11 | 1.09 | 0.53 | 0.025 |

| BARRA 87 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 87 | 53971.38 | 1946.72>> | 358.8 | 22548.0 | 0.00 | 7.97 | 0.17 | 5.02 | 0.067 |
| 87 | 53971.77 | -943.71<< | 306.1 | 46988.9 | 0.00 | 6.80 | 0.15 | 2.43 | 0.028 |
| 87 | 53971.10 | 441.81 | 3178.7>> | 43591.3 | 0.00 | 70.66 | 1.54 | 1.14 | 0.042 |
| 87 | 53971.93 | 357.97 | -2254.6<< | 28337.1 | 0.00 | 50.11 | 1.09 | 0.92 | 0.029 |
| 88 | 53971.30 | 566.26>> | 691.6 | 5309.9 | 0.00 | 15.37 | 0.33 | 1.46 | 0.019 |
| 88 | 53971.77 | -2660.65<< | 699.9 | 51603.4 | 0.00 | 15.56 | 0.34 | 6.86 | 0.101 |
| 88 | 53971.61 | -1255.82 | 3747.0>> | 42705.8 | 0.00 | 83.29 | 1.81 | 3.24 | 0.077 |
| 88 | 53971.34 | -739.06 | -2268.0<< | 30755.7 | 0.00 | 50.41 | 1.10 | 1.91 | 0.041 |

| BARRA 88 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 88 | 53958.12 | 1138.19>> | 708.9 | 5312.4 | 0.00 | 15.76 | 0.34 | 2.94 | 0.038 |
| 88 | 53958.63 | -2088.72<< | 739.3 | 51605.9 | 0.00 | 16.43 | 0.36 | 5.39 | 0.077 |
| 88 | 53958.49 | -683.89 | 3782.2>> | 42706.9 | 0.00 | 84.06 | 1.83 | 1.76 | 0.058 |
| 88 | 53958.16 | -167.13 | -2238.5<< | 30759.5 | 0.00 | 49.75 | 1.08 | 0.43 | 0.024 |
| 89 | 53958.12 | 250.51>> | 730.5 | 6770.7 | 0.00 | 16.24 | 0.35 | 0.65 | 0.010 |
| 89 | 53958.63 | -4041.37<< | 1144.2 | 47871.0 | 2.64 | 25.43 | 0.55 | 10.43 | 0.172 |
| 89 | 53958.48 | -2224.43 | 4766.1>> | 36700.4 | 0.00 | 105.93 | 2.31 | 5.74 | 0.131 |
| 89 | 53958.16 | -1461.09 | -2725.7<< | 26096.6 | 0.00 | 60.58 | 1.32 | 3.77 | 0.072 |

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| BARRA 89 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 89 | 53931.61 | 821.61>> | 730.7 | 6790.4 | 0.00 | 16.24 | 0.35 | 2.12 | 0.027 |
| 89 | 53932.12 | -3470.28<< | 1144.7 | 47890.8 | 0.00 | 25.44 | 0.55 | 8.95 | 0.143 |
| 89 | 53931.97 | -1653.33 | 4766.6>> | 36720.1 | 0.00 | 105.92 | 2.31 | 4.27 | 0.107 |
| 89 | 53931.66 | -890.00 | -2725.3<< | 26116.4 | 0.00 | 60.56 | 1.32 | 2.30 | 0.051 |
| 90 | 53931.61 | -65.64>> | 752.3 | 7584.1 | 0.00 | 16.72 | 0.36 | 0.17 | 0.006 |
| 90 | 53932.12 | -5220.83<< | 1491.9 | 38768.5 | 9.14 | 33.15 | 0.72 | 13.47 | 0.237 |
| 90 | 53931.97 | -3095.46 | 5742.6>> | 31735.8 | 0.00 | 127.61 | 2.78 | 7.99 | 0.184 |
| 90 | 53931.66 | -2085.67 | -3332.7<< | 22993.2 | 0.00 | 74.06 | 1.61 | 5.38 | 0.105 |

| BARRA 90 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 90 | 53892.18 | 501.58>> | 752.1 | 7616.1 | 0.00 | 16.71 | 0.36 | 1.29 | 0.017 |
| 90 | 53892.69 | -4653.62<< | 1491.4 | 38800.5 | 6.03 | 33.13 | 0.72 | 12.01 | 0.207 |
| 90 | 53892.54 | -2528.24 | 5742.2>> | 31767.9 | 0.00 | 127.58 | 2.78 | 6.52 | 0.158 |
| 90 | 53892.23 | -1518.46 | -3333.0<< | 23025.1 | 0.00 | 74.05 | 1.61 | 3.92 | 0.082 |
| 91 | 53892.18 | -386.10>> | 773.7 | 7737.3 | 0.00 | 17.19 | 0.37 | 1.00 | 0.014 |
| 91 | 53892.71 | -6605.88<< | 1895.2 | 29322.8 | 16.76 | 42.11 | 0.92 | 17.04 | 0.318 |
| 91 | 53892.56 | -4071.49 | 6897.7>> | 26010.5 | 2.83 | 153.25 | 3.34 | 10.50 | 0.249 |
| 91 | 53892.23 | -2815.16 | -4063.1<< | 19647.2 | 0.00 | 90.27 | 1.97 | 7.26 | 0.147 |

| BARRA 91 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 91 | 53906.04 | 175.55>> | 787.9 | 7723.8 | 0.00 | 17.51 | 0.38 | 0.45 | 0.009 |
| 91 | 53906.59 | -6044.23<< | 1919.8 | 29308.7 | 13.67 | 42.66 | 0.93 | 15.59 | 0.286 |
| 91 | 53906.50 | -3509.84 | 6920.6>> | 25994.1 | 0.00 | 153.77 | 3.35 | 9.05 | 0.221 |
| 91 | 53906.10 | -2253.51 | -4043.2<< | 19635.9 | 0.00 | 89.83 | 1.96 | 5.81 | 0.122 |
| 92 | 53906.04 | -712.12>> | 809.5 | 7160.4 | 0.00 | 17.99 | 0.39 | 1.84 | 0.024 |
| 92 | 53906.59 | -7795.62<< | 2267.0 | 14775.0 | 23.30 | 50.37 | 1.10 | 20.11 | 0.391 |
| 92 | 53906.50 | -4952.66 | 7897.2>> | 17107.3 | 7.67 | 175.47 | 3.82 | 12.78 | 0.310 |
| 92 | 53906.10 | -3449.76 | -4650.8<< | 13646.7 | 0.00 | 103.34 | 2.25 | 8.90 | 0.185 |

| BARRA 92 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 92 | 54010.11 | -124.94>> | 809.8 | 7080.0 | 0.00 | 18.00 | 0.39 | 0.32 | 0.008 |
| 92 | 54010.66 | -7208.43<< | 2267.4 | 14694.6 | 20.04 | 50.41 | 1.10 | 18.60 | 0.357 |
| 92 | 54010.59 | -4365.47 | 7897.5>> | 17026.8 | 4.41 | 175.58 | 3.82 | 11.26 | 0.280 |
| 92 | 54010.17 | -2862.57 | -4650.5<< | 13566.4 | 0.00 | 103.39 | 2.25 | 7.38 | 0.158 |
| 93 | 54010.11 | -1012.21>> | 831.3 | 5886.4 | 0.00 | 18.48 | 0.40 | 2.61 | 0.035 |
| 93 | 54010.66 | -8959.01<< | 2614.4 | -2275.4 | 29.66 | 58.13 | 1.26 | 23.11 | 0.465 |
| 93 | 54010.59 | -5807.62 | 8873.6>> | 6348.8 | 12.34 | 197.28 | 4.29 | 14.98 | 0.372 |
| 93 | 54010.17 | -4058.26 | -5257.9<< | 6301.9 | 2.72 | 116.90 | 2.54 | 10.47 | 0.224 |

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| BARRA 93 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 93 | 54110.23 | -423.14>> | 831.1 | 5838.2 | 0.00 | 18.49 | 0.40 | 1.09 | 0.016 |
| 93 | 54110.79 | -8369.95<< | 2614.3 | -2323.5 | 26.38 | 58.16 | 1.26 | 21.59 | 0.430 |
| 93 | 54110.70 | -5218.55 | 8873.3>> | 6300.7 | 9.07 | 197.39 | 4.29 | 13.46 | 0.340 |
| 93 | 54110.30 | -3469.20 | -5258.1<< | 6253.8 | 0.00 | 116.97 | 2.54 | 8.95 | 0.195 |
| 94 | 54110.23 | -1310.82>> | 852.7 | 4017.2 | 0.00 | 18.97 | 0.41 | 3.38 | 0.046 |
| 94 | 54110.79 | -10121.35<< | 2961.5 | -21742.1 | 36.00 | 65.88 | 1.43 | 26.11 | 0.542 |
| 94 | 54110.70 | -6640.33 | 10397.0>> | -6173.5 | 16.88 | 231.29 | 5.03 | 17.13 | 0.445 |
| 94 | 54110.30 | -4644.41 | -6704.0<< | -2287.3 | 5.92 | 149.13 | 3.24 | 11.98 | 0.276 |

| BARRA 94 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 94 | 54196.32 | -717.82>> | 855.7 | 4006.0 | 0.00 | 19.04 | 0.41 | 1.85 | 0.025 |
| 94 | 54196.89 | -9528.34<< | 2952.2 | -21754.2 | 32.71 | 65.71 | 1.43 | 24.58 | 0.505 |
| 94 | 54196.84 | -6047.32 | 10395.1>> | -6189.2 | 13.60 | 231.36 | 5.02 | 15.60 | 0.411 |
| 94 | 54196.40 | -4051.40 | -6704.0<< | -2294.9 | 2.64 | 149.21 | 3.24 | 10.45 | 0.245 |
| 95 | 54196.32 | -1605.51>> | 877.3 | 1566.1 | 0.00 | 19.52 | 0.42 | 4.14 | 0.058 |
| 95 | 54196.89 | -11279.75<< | 3299.5 | -43605.8 | 42.33 | 73.44 | 1.59 | 29.10 | 0.621 |
| 95 | 54196.84 | -7633.98 | 11104.7>> | -20732.1 | 22.31 | 247.16 | 5.37 | 19.69 | 0.514 |
| 95 | 54196.40 | -5391.50 | -6902.7<< | -12386.9 | 10.00 | 153.63 | 3.34 | 13.91 | 0.318 |

| BARRA 95 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 95 | 64811.07 | 4988.42>> | 785.2 | 3065.1 | 5.06 | 18.53 | 0.36 | 12.87 | 0.225 |
| 95 | 65537.34 | -4658.55<< | 3695.0 | -42106.9 | 3.18 | 87.54 | 1.68 | 12.02 | 0.243 |
| 95 | 65263.81 | -1023.03 | 11445.3>> | -19233.2 | 0.00 | 270.79 | 5.20 | 2.64 | 0.196 |
| 95 | 65121.99 | 855.40 | -6961.6<< | -19295.0 | 0.00 | 164.59 | 3.17 | 2.21 | 0.113 |
| 96 | 64891.68 | 3917.12>> | 806.8 | 12443.6 | 0.00 | 18.51 | 0.45 | 9.82 | 0.026 |
| 96 | 65701.34 | -6837.77<< | 3989.6 | -49128.1 | 0.00 | 91.87 | 2.23 | 17.13 | 0.081 |
| 96 | 65382.91 | -2605.93 | 12093.0>> | -25008.2 | 0.00 | 278.06 | 6.77 | 6.53 | 0.131 |
| 96 | 65226.05 | -528.37 | -7092.2<< | -22314.1 | 0.00 | 162.95 | 3.97 | 1.32 | 0.050 |

| BARRA 96 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 96 | 66009.66 | -4908.73>> | 895.5 | 13273.6 | 0.00 | 20.65 | 0.50 | 12.30 | 0.038 |
| 96 | 66010.23 | -15694.08<< | 3536.0 | -48299.3 | 46.93 | 81.55 | 1.97 | 39.33 | 0.259 |
| 96 | 66010.24 | -11450.27 | 11716.0>> | -24183.4 | 23.18 | 270.20 | 6.54 | 28.69 | 0.257 |
| 96 | 66009.72 | -8960.51 | -7032.2<< | -10860.6 | 9.25 | 162.18 | 3.93 | 22.45 | 0.145 |
| 97 | 66009.66 | -5979.52>> | 917.1 | 1844.5 | 0.00 | 21.15 | 0.51 | 14.98 | 0.051 |
| 97 | 66010.23 | -17929.93<< | 4032.5 | -83403.1 | 59.44 | 93.00 | 2.25 | 44.93 | 0.323 |
| 97 | 66010.29 | -13342.26 | 13483.9>> | -47832.5 | 33.77 | 310.97 | 7.53 | 33.43 | 0.328 |
| 97 | 66009.70 | -10606.05 | -8652.5<< | -29026.5 | 18.46 | 199.54 | 4.83 | 26.58 | 0.196 |

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| BARRA 97 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 97 | 66328.32 | 16817.38>> | -2166.8 | -82687.5 | 53.01 | 50.05 | 1.21 | 42.14 | 0.280 |
| 97 | 66327.74 | 5892.32<< | 167.6 | 2220.7 | 0.00 | 3.87 | 0.09 | 14.77 | 0.049 |
| 97 | 66327.83 | 10736.59 | 7399.7>> | -51803.7 | 19.04 | 170.91 | 4.12 | 26.90 | 0.183 |
| 97 | 66328.48 | 12944.55 | -8551.3<< | -60718.5 | 31.38 | 197.51 | 4.77 | 32.44 | 0.244 |
| 98 | 66328.32 | 14594.70>> | -1677.5 | -49963.3 | 40.60 | 38.74 | 0.93 | 36.57 | 0.221 |
| 98 | 66327.74 | 4821.01<< | 189.1 | 13471.3 | 0.00 | 4.37 | 0.11 | 12.08 | 0.035 |
| 98 | 66327.83 | 9212.88 | 6525.0>> | -30985.3 | 10.53 | 150.71 | 3.64 | 23.09 | 0.144 |
| 98 | 66328.48 | 11174.27 | -7165.7<< | -35521.7 | 21.49 | 165.50 | 3.99 | 28.00 | 0.189 |

| BARRA 98 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 98 | 66505.38 | 5872.97>> | -2083.8 | -50181.2 | 0.00 | 48.17 | 1.16 | 14.72 | 0.055 |
| 98 | 65771.65 | -3873.15<< | 283.1 | 13253.4 | 0.00 | 6.52 | 0.16 | 9.71 | 0.025 |
| 98 | 66105.88 | 569.68 | 6563.6>> | -33164.9 | 0.00 | 151.44 | 3.66 | 1.43 | 0.044 |
| 98 | 66253.73 | 2525.37 | -7708.9<< | -37699.3 | 0.00 | 177.99 | 4.30 | 6.33 | 0.068 |
| 99 | 66335.49 | 3615.00>> | -1490.7 | -44365.6 | 0.00 | 35.46 | 0.67 | 9.33 | 0.161 |
| 99 | 65691.06 | -4944.45<< | 304.7 | 3967.5 | 4.62 | 7.23 | 0.14 | 12.76 | 0.220 |
| 99 | 65989.93 | -971.68 | 5484.7>> | -35675.9 | 0.00 | 130.25 | 2.48 | 2.51 | 0.095 |
| 99 | 66119.21 | 737.46 | -6015.3<< | -36351.8 | 0.00 | 142.95 | 2.72 | 1.90 | 0.095 |

| BARRA 99 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 99 | 55688.67 | 10992.27>> | -1137.0 | -43950.2 | 40.06 | 25.53 | 0.54 | 28.36 | 0.581 |
| 99 | 55688.15 | 2408.59<< | 215.3 | 4382.3 | 0.00 | 4.83 | 0.10 | 6.21 | 0.087 |
| 99 | 55688.24 | 6089.72 | 5441.7>> | -26541.7 | 13.38 | 122.17 | 2.61 | 15.71 | 0.337 |
| 99 | 55688.79 | 8282.58 | -5544.0<< | -41001.6 | 25.31 | 124.47 | 2.66 | 21.37 | 0.466 |
| 100 | 55688.67 | 9241.64>> | -789.9 | -22711.5 | 30.53 | 17.73 | 0.38 | 23.84 | 0.466 |
| 100 | 55688.21 | 1458.98<< | 374.9 | 9871.8 | 0.00 | 8.42 | 0.18 | 3.76 | 0.048 |
| 100 | 55688.22 | 4801.52 | 5041.3>> | -12693.3 | 6.36 | 113.18 | 2.41 | 12.39 | 0.261 |
| 100 | 55688.80 | 6747.91 | -4707.8<< | -22808.5 | 16.96 | 105.69 | 2.26 | 17.41 | 0.364 |

| BARRA 100 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 100 | 55922.40 | 9794.05>> | -789.6 | -22737.3 | 33.44 | 17.75 | 0.38 | 25.27 | 0.501 |
| 100 | 55921.94 | 2011.39<< | 374.9 | 9846.1 | 0.00 | 8.43 | 0.18 | 5.19 | 0.071 |
| 100 | 55921.96 | 5353.93 | 5041.5>> | -12719.0 | 9.31 | 113.34 | 2.41 | 13.81 | 0.291 |
| 100 | 55922.54 | 7300.33 | -4707.5<< | -22834.3 | 19.88 | 105.83 | 2.25 | 18.83 | 0.396 |
| 101 | 55922.40 | 8042.62>> | -442.3 | -4006.1 | 23.92 | 9.94 | 0.21 | 20.75 | 0.390 |
| 101 | 55921.94 | 1134.96<< | 390.5 | 13161.7 | 0.00 | 8.78 | 0.19 | 2.93 | 0.036 |
| 101 | 55921.96 | 4163.30 | 4416.6>> | -2718.8 | 2.83 | 99.29 | 2.11 | 10.74 | 0.219 |
| 101 | 55922.54 | 5863.10 | -3719.8<< | -9005.0 | 12.07 | 83.63 | 1.78 | 15.13 | 0.300 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 101 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 101 | 56196.22 | 8606.99>> | -442.3 | -4094.8 | 26.88 | 9.96 | 0.21 | 22.20 | 0.425 |
| 101 | 56195.76 | 1699.34<< | 390.5 | 13072.9 | 0.00 | 8.79 | 0.19 | 4.38 | 0.058 |
| 101 | 56195.78 | 4727.67 | 4416.6>> | -2807.5 | 5.83 | 99.45 | 2.11 | 12.20 | 0.248 |
| 101 | 56196.36 | 6427.47 | -3719.8<< | -9093.7 | 15.05 | 83.76 | 1.78 | 16.58 | 0.332 |
| 102 | 56196.22 | 6855.54>> | -95.1 | 12143.1 | 17.38 | 2.14 | 0.05 | 17.69 | 0.318 |
| 102 | 56195.76 | 811.62<< | 412.1 | 15709.5 | 0.00 | 9.28 | 0.20 | 2.09 | 0.025 |
| 102 | 56195.78 | 3531.36 | 3808.9>> | 5865.5 | 0.00 | 85.76 | 1.82 | 9.11 | 0.179 |
| 102 | 56196.36 | 4984.60 | -2743.3<< | 2890.5 | 7.22 | 61.77 | 1.31 | 12.86 | 0.240 |

| BARRA 102 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 102 | 56458.63 | 7433.81>> | -83.3 | 11996.6 | 20.43 | 1.88 | 0.04 | 19.18 | 0.352 |
| 102 | 56458.22 | 1389.89<< | 425.6 | 15562.8 | 0.00 | 9.60 | 0.20 | 3.59 | 0.046 |
| 102 | 56458.27 | 4109.63 | 3817.7>> | 5717.1 | 2.41 | 86.09 | 1.82 | 10.60 | 0.208 |
| 102 | 56458.68 | 5562.87 | -2735.9<< | 2745.3 | 10.29 | 61.70 | 1.30 | 14.35 | 0.272 |
| 103 | 56458.63 | 5683.18>> | 263.8 | 25764.7 | 10.94 | 5.95 | 0.13 | 14.66 | 0.253 |
| 103 | 56458.22 | 502.60<< | 447.2 | 17548.8 | 0.00 | 10.08 | 0.21 | 1.30 | 0.015 |
| 103 | 56458.27 | 3880.88 | 3237.5>> | 17792.7 | 1.17 | 73.01 | 1.54 | 10.01 | 0.189 |
| 103 | 56458.18 | 1897.80 | -2309.0<< | 4610.7 | 0.00 | 52.07 | 1.10 | 4.90 | 0.086 |

| BARRA 103 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 103 | 56708.14 | 6271.41>> | 263.6 | 25579.6 | 14.05 | 5.95 | 0.13 | 16.18 | 0.286 |
| 103 | 56707.75 | 1090.82<< | 447.0 | 17363.7 | 0.00 | 10.09 | 0.21 | 2.81 | 0.035 |
| 103 | 56707.80 | 4469.10 | 3237.3>> | 17607.5 | 4.30 | 73.11 | 1.54 | 11.53 | 0.220 |
| 103 | 56707.69 | 2486.03 | -2309.1<< | 4425.6 | 0.00 | 52.15 | 1.10 | 6.41 | 0.111 |
| 104 | 56708.13 | 4333.08>> | 749.6 | 34665.2 | 3.56 | 16.93 | 0.36 | 11.18 | 0.185 |
| 104 | 56707.75 | 203.10<< | 468.6 | 18722.6 | 0.00 | 10.58 | 0.22 | 0.52 | 0.007 |
| 104 | 56708.13 | 2392.65 | 2939.9>> | 32667.2 | 0.00 | 66.39 | 1.40 | 6.17 | 0.115 |
| 104 | 56707.69 | 1350.83 | -1796.0<< | 8560.5 | 0.00 | 40.56 | 0.86 | 3.48 | 0.058 |

| BARRA 104 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 104 | 56879.25 | 4938.88>> | 775.8 | 34516.5 | 6.80 | 17.54 | 0.37 | 12.74 | 0.217 |
| 104 | 56878.92 | 808.91<< | 487.2 | 18574.0 | 0.00 | 11.01 | 0.23 | 2.09 | 0.025 |
| 104 | 56879.19 | 2998.46 | 2965.2>> | 32517.4 | 0.00 | 67.03 | 1.41 | 7.74 | 0.143 |
| 104 | 56878.92 | 1956.64 | -1782.2<< | 8413.0 | 0.00 | 40.29 | 0.85 | 5.05 | 0.082 |
| 105 | 56879.25 | 3260.41>> | 832.2 | 43059.9 | 0.00 | 18.81 | 0.40 | 8.41 | 0.132 |
| 105 | 56878.92 | -78.80<< | 508.8 | 19340.6 | 0.00 | 11.50 | 0.24 | 0.20 | 0.004 |
| 105 | 56879.24 | 1732.40 | 4458.0>> | 36615.5 | 0.00 | 100.77 | 2.12 | 4.47 | 0.107 |
| 105 | 56878.87 | 1488.51 | -3083.6<< | 25148.3 | 0.00 | 69.70 | 1.47 | 3.84 | 0.078 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 105 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 105 | 56781.13 | 3881.08>> | 832.7 | 43194.9 | 1.10 | 18.81 | 0.40 | 10.01 | 0.162 |
| 105 | 56780.81 | 541.88<< | 509.0 | 19475.6 | 0.00 | 11.50 | 0.24 | 1.40 | 0.017 |
| 105 | 56781.12 | 2353.08 | 4458.4>> | 36750.6 | 0.00 | 100.72 | 2.12 | 6.07 | 0.133 |
| 105 | 56780.74 | 2109.18 | -3083.3<< | 25283.4 | 0.00 | 69.66 | 1.47 | 5.44 | 0.104 |
| 106 | 56780.94 | 1967.67>> | 633.5 | 17774.3 | 0.00 | 14.31 | 0.30 | 5.08 | 0.071 |
| 106 | 56780.81 | -1155.16<< | 908.1 | 29514.4 | 0.00 | 20.52 | 0.43 | 2.98 | 0.041 |
| 106 | 56781.12 | 364.85 | 6294.2>> | 44027.0 | 0.00 | 142.20 | 3.00 | 0.94 | 0.084 |
| 106 | 56780.74 | 367.39 | -4030.9<< | 32304.9 | 0.00 | 91.07 | 1.92 | 0.95 | 0.052 |

| BARRA 106 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 106 | 56671.24 | 2340.45>> | 633.3 | 17894.9 | 0.00 | 14.30 | 0.30 | 6.04 | 0.087 |
| 106 | 56671.10 | -782.38<< | 907.7 | 29635.0 | 0.00 | 20.49 | 0.43 | 2.02 | 0.028 |
| 106 | 56671.42 | 737.63 | 6293.7>> | 44147.7 | 0.00 | 142.10 | 3.00 | 1.90 | 0.096 |
| 106 | 56671.05 | 740.17 | -4031.2<< | 32425.5 | 0.00 | 91.02 | 1.92 | 1.91 | 0.063 |
| 107 | 56671.20 | 824.80>> | 796.4 | 4272.0 | 0.00 | 17.98 | 0.38 | 2.13 | 0.028 |
| 107 | 56671.10 | -1506.33<< | 994.3 | 36077.8 | 0.00 | 22.45 | 0.47 | 3.89 | 0.055 |
| 107 | 56671.40 | -800.20 | 6408.6>> | 40032.3 | 0.00 | 144.69 | 3.05 | 2.06 | 0.100 |
| 107 | 56671.02 | -551.20 | -3605.2<< | 28573.0 | 0.00 | 81.40 | 1.72 | 1.42 | 0.052 |

| BARRA 107 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 107 | 56558.82 | 954.53>> | 809.3 | 4363.9 | 0.00 | 18.26 | 0.39 | 2.46 | 0.033 |
| 107 | 56558.76 | -1376.60<< | 1022.4 | 36169.6 | 0.00 | 23.07 | 0.49 | 3.55 | 0.051 |
| 107 | 56558.96 | -670.47 | 6438.5>> | 40121.6 | 0.00 | 145.28 | 3.07 | 1.73 | 0.096 |
| 107 | 56558.70 | -421.46 | -3580.7<< | 28667.0 | 0.00 | 80.79 | 1.71 | 1.09 | 0.047 |
| 108 | 56558.82 | 66.81>> | 830.9 | 5436.6 | 0.00 | 18.75 | 0.40 | 0.17 | 0.007 |
| 108 | 56558.92 | -3131.18<< | 3100.8 | 51686.1 | 0.00 | 69.97 | 1.48 | 8.08 | 0.151 |
| 108 | 56558.96 | -2113.38 | 7415.0>> | 37198.0 | 0.00 | 167.31 | 3.53 | 5.45 | 0.167 |
| 108 | 56558.70 | -1617.78 | -4188.5<< | 26525.5 | 0.00 | 94.51 | 2.00 | 4.17 | 0.098 |

| BARRA 108 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 108 | 56443.56 | 200.10>> | 830.9 | 5525.7 | 0.00 | 18.74 | 0.40 | 0.52 | 0.010 |
| 108 | 56443.67 | -2997.89<< | 3101.2 | 51775.2 | 0.00 | 69.93 | 1.48 | 7.73 | 0.144 |
| 108 | 56443.71 | -1980.09 | 7415.4>> | 37287.1 | 0.00 | 167.21 | 3.54 | 5.11 | 0.161 |
| 108 | 56443.45 | -1484.49 | -4188.2<< | 26614.7 | 0.00 | 94.44 | 2.00 | 3.83 | 0.093 |
| 109 | 56443.56 | -687.20>> | 852.5 | 5014.1 | 0.00 | 19.22 | 0.41 | 1.77 | 0.024 |
| 109 | 56443.67 | -4748.54<< | 3448.3 | 43643.5 | 5.88 | 77.76 | 1.64 | 12.25 | 0.237 |
| 109 | 56443.71 | -3422.30 | 8391.5>> | 31615.9 | 0.00 | 189.22 | 4.00 | 8.83 | 0.243 |
| 109 | 56443.45 | -2680.24 | -4795.7<< | 22242.6 | 0.00 | 108.14 | 2.29 | 6.91 | 0.152 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 109 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 109 | 56326.63 | -562.51>> | 852.4 | 5097.6 | 0.00 | 19.21 | 0.41 | 1.45 | 0.020 |
| 109 | 56326.73 | -4623.85<< | 3448.0 | 43727.0 | 5.23 | 77.69 | 1.65 | 11.93 | 0.230 |
| 109 | 56326.77 | -3297.61 | 8391.2>> | 31699.4 | 0.00 | 189.08 | 4.00 | 8.51 | 0.236 |
| 109 | 56326.51 | -2555.55 | -4795.8<< | 22326.0 | 0.00 | 108.07 | 2.29 | 6.59 | 0.147 |
| 110 | 56326.63 | -1239.72>> | 583.0 | 3062.7 | 0.00 | 13.14 | 0.28 | 3.20 | 0.041 |
| 110 | 56326.73 | -6375.36<< | 3795.2 | 32175.6 | 14.73 | 85.52 | 1.81 | 16.45 | 0.331 |
| 110 | 56326.77 | -4635.24 | 9914.9>> | 23297.3 | 5.30 | 223.42 | 4.73 | 11.96 | 0.329 |
| 110 | 56326.51 | -3646.63 | -6241.7<< | 15741.4 | 0.00 | 140.65 | 2.98 | 9.41 | 0.220 |

| BARRA 110 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 110 | 56204.69 | -1117.35>> | 594.5 | 3139.6 | 0.00 | 13.39 | 0.28 | 2.88 | 0.037 |
| 110 | 56204.73 | -6253.00<< | 3820.8 | 32250.9 | 14.11 | 86.04 | 1.82 | 16.13 | 0.324 |
| 110 | 56204.73 | -4512.88 | 9936.2>> | 23369.6 | 4.66 | 223.74 | 4.75 | 11.64 | 0.323 |
| 110 | 56204.66 | -3524.26 | -6224.1<< | 15821.6 | 0.00 | 140.15 | 2.97 | 9.09 | 0.213 |
| 111 | 56204.69 | -2228.31>> | 1052.9 | -6179.2 | 0.00 | 23.71 | 0.50 | 5.75 | 0.086 |
| 111 | 56204.73 | -8003.66<< | 4168.0 | 17285.5 | 23.61 | 93.85 | 1.99 | 20.65 | 0.431 |
| 111 | 56204.73 | -6165.01 | 10271.7>> | 9713.8 | 13.63 | 231.30 | 4.91 | 15.90 | 0.419 |
| 111 | 56204.66 | -4929.91 | -5859.2<< | 4499.6 | 6.93 | 131.94 | 2.80 | 12.72 | 0.280 |

| BARRA 111 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 111 | 56080.00 | -2103.95>> | 1052.8 | -6116.3 | 0.00 | 23.69 | 0.50 | 5.43 | 0.081 |
| 111 | 56080.05 | -7879.29<< | 4167.6 | 17348.5 | 22.98 | 93.78 | 1.99 | 20.33 | 0.423 |
| 111 | 56080.05 | -6040.65 | 10271.5>> | 9776.8 | 12.99 | 231.13 | 4.91 | 15.58 | 0.411 |
| 111 | 56079.97 | -4805.54 | -5859.4<< | 4562.4 | 6.28 | 131.85 | 2.80 | 12.40 | 0.273 |
| 112 | 56080.00 | -2991.69>> | 1074.4 | -11468.1 | 0.00 | 24.18 | 0.51 | 7.72 | 0.121 |
| 112 | 56080.03 | -9778.88<< | 4474.2 | -387.0 | 33.29 | 100.68 | 2.14 | 25.23 | 0.544 |
| 112 | 56080.05 | -7483.56 | 11248.0>> | -4426.7 | 20.83 | 253.10 | 5.38 | 19.31 | 0.511 |
| 112 | 56079.97 | -6001.89 | -6467.1<< | -6787.9 | 12.78 | 145.52 | 3.09 | 15.48 | 0.347 |

| BARRA 112 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 112 | 55977.98 | 2985.42>> | 1083.4 | -11434.7 | 0.00 | 24.36 | 0.52 | 7.70 | 0.121 |
| 112 | 56688.79 | -3764.46<< | 4491.8 | -355.2 | 0.49 | 101.43 | 2.14 | 9.71 | 0.200 |
| 112 | 56449.22 | -1489.57 | 11227.5>> | -4386.3 | 0.00 | 253.17 | 5.35 | 3.84 | 0.204 |
| 112 | 56293.27 | -8.25 | -6427.4<< | -6750.9 | 0.00 | 144.80 | 3.07 | 0.02 | 0.078 |
| 113 | 56058.57 | 2220.17>> | 1098.9 | -7508.0 | 0.00 | 24.12 | 0.64 | 5.56 | 0.012 |
| 113 | 56883.60 | -5614.31<< | 4973.7 | -7508.6 | 0.00 | 109.66 | 2.90 | 14.07 | 0.070 |
| 113 | 56613.74 | -3051.78 | 12464.0>> | -7509.8 | 0.00 | 274.41 | 7.29 | 7.65 | 0.136 |
| 113 | 56439.23 | -1394.23 | -7235.1<< | -7506.6 | 0.00 | 159.15 | 4.23 | 3.49 | 0.053 |

```
TITULO
=======
LAV-Gelida. V.Rierussa. ELU ECSW-71(t=i)(1.35*G+0.54*LEV+1.00*P+(1.45*SW0o71 o 1.20*SW2)+0.9*GT)

FICHERO DE GEOMETRIA COMPLETA
=============================
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
================================
1

Fich    Num. Nudos     Num. barras     Num. hipotesis    NOMBRE FICHERO
=========================================================================
  1        120             119              161          ESFec.TXT

Fich     Hipotesis       Caracter       Coeficiente
=================================================
  1          1              1              1.35
  1          2              1              0.54
  1          3              1              1.35
  1          4              3              1.35
  1          5              3              1.35
  1          6              3              1.35
  1          7              2              0.75
  1          8              2              0.75
  1          9              2              0.75
  1          10             2              0.75
  1          11             2              0.75
  1          12             2              0.75
  1          13             2              0.75
  1          14             2              0.75
  1          15             2              0.75
  1          16             2              0.75
  1          17             2              0.75
  1          18             2              0.75
  1          19             4              0.0
  1          20             5              1.45
  1          21             4              0.0
  1          22             5              1.45
  1          23             4              0.0
  1          24             5              1.45
  1          25             4              0.0
  1          26             5              1.45
  1          27             4              0.0
  1          28             5              1.45
  1          29             4              0.0
  1          30             5              1.45
  1          31             4              0.0
  1          32             5              1.45
  1          33             4              0.0
  1          34             5              1.45
  1          35             4              0.0
  1          36             5              1.45
  1          37             4              0.0
  1          38             5              1.45
  1          39             4              0.0
  1          40             5              1.45
  1          41             6              0.0
  1          42             7              1.45
  1          43             6              0.0
  1          44             7              1.45
  1          45             6              0.0
  1          46             7              1.45
  1          47             6              0.0
  1          48             7              1.45
  1          49             6              0.0
  1          50             7              1.45
  1          51             6              0.0
  1          52             7              1.45
  1          53             6              0.0
  1          54             7              1.45
  1          55             6              0.0
  1          56             7              1.45
  1          57             6              0.0
  1          58             7              1.45
  1          59             6              0.0
  1          60             7              1.45
  1          61             6              0.0
  1          62             7              1.45
  1          63             6              0.0
  1          64             7              1.45
  1          65             6              0.0
  1          66             7              1.45
  1          67             6              0.0
  1          68             7              1.45
  1          69             6              0.0
  1          70             7              1.45
  1          71             6              0.0
  1          72             7              1.45
  1          73             6              0.0
  1          74             7              1.45
  1          75             6              0.0
  1          76             7              1.45
  1          77             6              0.0
  1          78             7              1.45
  1          79             6              0.0
  1          80             7              1.45
  1          81             6              0.0
  1          82             7              1.45
  1          83             6              0.0
  1          84             7              1.45
  1          85             6              0.0
  1          86             7              1.45
  1          87             6              0.0
  1          88             7              1.45
  1          89             6              0.0
  1          90             7              1.45
  1          91             6              0.0
  1          92             7              1.45
  1          93             6              0.0
  1          94             7              1.45
  1          95             6              0.0
  1          96             7              1.45
  1          97             8              1.45
  1          98             9              0.0
  1          99             8              1.45
  1          100            9              0.0
  1          101            8              1.45
  1          102            9              0.0
  1          103            8              1.45
  1          104            9              0.0
  1          105            8              1.45
  1          106            9              0.0
  1          107            8              1.45
  1          108            9              0.0
  1          109            8              1.45
  1          110            9              0.0
```

| | | | |
|---|---|---|---|
| 1 | 111 | 8 | 1.45 |
| 1 | 112 | 9 | 0.0 |
| 1 | 113 | 8 | 1.45 |
| 1 | 114 | 9 | 0.0 |
| 1 | 115 | 8 | 1.45 |
| 1 | 116 | 9 | 0.0 |
| 1 | 117 | 8 | 1.45 |
| 1 | 118 | 9 | 0.0 |
| 1 | 119 | 8 | 1.20 |
| 1 | 120 | 10 | 0.0 |
| 1 | 121 | 8 | 1.20 |
| 1 | 122 | 10 | 0.0 |
| 1 | 123 | 8 | 1.20 |
| 1 | 124 | 10 | 0.0 |
| 1 | 125 | 8 | 1.20 |
| 1 | 126 | 10 | 0.0 |
| 1 | 127 | 8 | 1.20 |
| 1 | 128 | 10 | 0.0 |
| 1 | 129 | 8 | 1.20 |
| 1 | 130 | 10 | 0.0 |
| 1 | 131 | 8 | 1.20 |
| 1 | 132 | 10 | 0.0 |
| 1 | 133 | 8 | 1.20 |
| 1 | 134 | 10 | 0.0 |
| 1 | 135 | 8 | 1.20 |
| 1 | 136 | 10 | 0.0 |
| 1 | 137 | 8 | 1.20 |
| 1 | 138 | 10 | 0.0 |
| 1 | 139 | 8 | 1.20 |
| 1 | 140 | 10 | 0.0 |
| 1 | 141 | 2 | 0.9 |
| 1 | 142 | 1 | 20.433 |
| 1 | 143 | 1 | 2.919 |
| 1 | 144 | 1 | 2.919 |
| 1 | 145 | 1 | 11.676 |
| 1 | 146 | 1 | 2.919 |
| 1 | 147 | 1 | 2.919 |
| 1 | 148 | 1 | 6.464 |
| 1 | 149 | 1 | 6.464 |
| 1 | 150 | 1 | 6.464 |
| 1 | 151 | 1 | 6.464 |
| 1 | 152 | 1 | 6.464 |
| 1 | 153 | 1 | 6.464 |
| 1 | 154 | 1 | 6.464 |
| 1 | 155 | 1 | 6.464 |
| 1 | 156 | 1 | 6.464 |
| 1 | 157 | 1 | 6.464 |
| 1 | 158 | 1 | 6.464 |
| 1 | 159 | 1 | 6.464 |
| 1 | 160 | 1 | 6.464 |
| 1 | 161 | 1 | 6.464 |

PONDERACION DE ESFUERZOS

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 1 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 67661.20 | 4391.92>> | -4243.1 | 2424.6 | 0.00 | 98.61 | 2.35 | 11.01 | 0.051 |
| 1 | 66750.27 | -4256.05<< | -828.7 | 2424.6 | 0.00 | 19.18 | 0.46 | 10.66 | 0.030 |
| 1 | 67133.90 | -614.09 | 7473.2>> | 2424.7 | 0.00 | 173.26 | 4.15 | 1.54 | 0.055 |
| 1 | 67356.73 | 1501.60 | -11105.3<< | 2424.6 | 0.00 | 257.73 | 6.16 | 3.76 | 0.108 |
| 2 | 67477.21 | 2644.81>> | -4077.9 | 7751.4 | 0.00 | 97.58 | 1.83 | 6.82 | 0.146 |
| 2 | 66669.70 | -5021.15<< | -813.2 | -4571.7 | 4.78 | 19.38 | 0.37 | 12.95 | 0.229 |
| 2 | 67006.36 | -1825.25 | 6615.5>> | 605.1 | 0.00 | 157.93 | 2.98 | 4.71 | 0.147 |
| 2 | 67219.71 | 200.56 | -10067.0<< | 3708.3 | 0.00 | 240.59 | 4.53 | 0.52 | 0.146 |

| BARRA 2 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 2 | 66968.09 | 9949.58>> | -4062.2 | 7710.8 | 29.94 | 96.96 | 1.83 | 25.67 | 0.570 |
| 2 | 66968.02 | 2241.22<< | -810.5 | -4613.8 | 0.00 | 19.35 | 0.37 | 5.78 | 0.087 |
| 2 | 66968.03 | 5454.63 | 6668.1>> | 559.1 | 6.93 | 159.15 | 3.00 | 14.07 | 0.332 |
| 2 | 66968.09 | 7490.61 | -10098.6<< | 3668.8 | 17.36 | 241.03 | 4.55 | 19.32 | 0.510 |
| 3 | 66968.08 | 7921.02>> | -3285.4 | 26075.8 | 19.56 | 78.42 | 1.48 | 20.43 | 0.429 |
| 3 | 66968.02 | 1353.67<< | -789.0 | -838.8 | 0.00 | 18.83 | 0.36 | 3.49 | 0.049 |
| 3 | 66968.02 | 4176.43 | 6020.7>> | 10272.6 | 0.39 | 143.70 | 2.71 | 10.77 | 0.252 |
| 3 | 66968.09 | 5852.70 | -8652.9<< | 17679.8 | 8.97 | 206.53 | 3.90 | 15.10 | 0.388 |

| BARRA 3 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 67130.52 | 8205.95>> | -3304.6 | 26001.1 | 20.97 | 78.94 | 1.49 | 21.17 | 0.448 |
| 3 | 67130.52 | 1638.60<< | -795.3 | -912.3 | 0.00 | 19.00 | 0.36 | 4.23 | 0.061 |
| 3 | 67130.53 | 4461.36 | 6009.1>> | 10202.3 | 1.81 | 143.54 | 2.71 | 11.51 | 0.267 |
| 3 | 67130.52 | 6138.82 | -8668.2<< | 17606.8 | 10.39 | 207.06 | 3.90 | 15.84 | 0.405 |
| 4 | 67130.52 | 6259.50>> | -2488.1 | 41190.1 | 11.01 | 59.44 | 1.12 | 16.15 | 0.319 |
| 4 | 67130.53 | 649.83<< | -1186.7 | 4338.5 | 0.00 | 28.35 | 0.53 | 1.68 | 0.027 |
| 4 | 67130.53 | 3265.25 | 5401.5>> | 18315.5 | 0.00 | 129.03 | 2.43 | 8.42 | 0.196 |
| 4 | 67130.53 | 3905.85 | -8211.2<< | 26022.0 | 0.00 | 196.15 | 3.70 | 10.08 | 0.273 |

| BARRA 4 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 4 | 67292.27 | 6559.95>> | -2432.1 | 41099.5 | 12.50 | 58.14 | 1.09 | 16.92 | 0.336 |
| 4 | 67292.15 | 950.28<< | -1165.8 | 4246.7 | 0.00 | 27.87 | 0.52 | 2.45 | 0.037 |
| 4 | 67292.12 | 3565.69 | 5435.7>> | 18217.4 | 0.00 | 129.95 | 2.45 | 9.20 | 0.211 |
| 4 | 67292.30 | 4206.30 | -8169.7<< | 25936.9 | 0.47 | 195.32 | 3.67 | 10.85 | 0.288 |
| 5 | 67292.21 | 4705.09>> | -1390.3 | 51319.9 | 3.02 | 33.24 | 0.63 | 12.14 | 0.218 |
| 5 | 67292.15 | 159.58<< | -963.9 | 5480.5 | 0.00 | 23.04 | 0.43 | 0.41 | 0.011 |
| 5 | 67292.12 | 2369.60 | 4828.1>> | 24449.6 | 0.00 | 115.43 | 2.17 | 6.11 | 0.144 |
| 5 | 67292.30 | 2777.28 | -6841.2<< | 33338.1 | 0.00 | 163.56 | 3.08 | 7.16 | 0.194 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 5 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 5 | 67446.45 | 4998.75>> | -1424.4 | 51215.6 | 4.49 | 34.08 | 0.64 | 12.90 | 0.234 |
| 5 | 67446.44 | 453.24<< | -976.2 | 5376.5 | 0.00 | 23.36 | 0.44 | 1.17 | 0.019 |
| 5 | 67446.41 | 2663.26 | 4806.8>> | 24348.4 | 0.00 | 115.01 | 2.16 | 6.87 | 0.158 |
| 5 | 67446.52 | 3070.94 | -6866.7<< | 33231.3 | 0.00 | 164.29 | 3.09 | 7.92 | 0.209 |
| 6 | 67446.45 | 3164.31>> | -905.4 | 59787.1 | 0.00 | 21.66 | 0.41 | 8.16 | 0.132 |
| 6 | 67446.44 | -434.34<< | -954.6 | 5396.6 | 0.00 | 22.84 | 0.43 | 1.12 | 0.018 |
| 6 | 67446.41 | 1467.14 | 4199.1>> | 28685.6 | 0.00 | 100.47 | 1.89 | 3.78 | 0.096 |
| 6 | 67446.52 | 1545.05 | -5718.5<< | 38078.4 | 0.00 | 136.82 | 2.57 | 3.99 | 0.121 |

| BARRA 6 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 6 | 67598.61 | 3470.13>> | -866.6 | 59674.4 | 0.00 | 20.75 | 0.39 | 8.95 | 0.147 |
| 6 | 67598.55 | -128.53<< | -941.7 | 5283.8 | 0.00 | 22.55 | 0.42 | 0.33 | 0.010 |
| 6 | 67598.52 | 1772.95 | 4223.2>> | 28570.4 | 0.00 | 101.12 | 1.90 | 4.57 | 0.109 |
| 6 | 67598.70 | 1850.86 | -5690.0<< | 37967.9 | 0.00 | 136.25 | 2.56 | 4.77 | 0.134 |
| 7 | 67598.70 | 1588.88>> | -2433.2 | 52114.2 | 0.00 | 58.26 | 1.09 | 4.10 | 0.077 |
| 7 | 67598.55 | -1016.09<< | -920.1 | 4082.2 | 0.00 | 22.03 | 0.41 | 2.62 | 0.037 |
| 7 | 67598.52 | 420.34 | 3348.5>> | 30790.6 | 0.00 | 80.18 | 1.50 | 1.08 | 0.046 |
| 7 | 67598.70 | 744.98 | -5101.8<< | 34145.2 | 0.00 | 122.16 | 2.29 | 1.92 | 0.081 |

| BARRA 7 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 7 | 67746.27 | 1899.41>> | -2433.2 | 51998.8 | 0.00 | 58.31 | 1.09 | 4.90 | 0.090 |
| 7 | 67746.12 | -705.56<< | -920.1 | 3966.8 | 0.00 | 22.05 | 0.41 | 1.82 | 0.026 |
| 7 | 67746.09 | 730.87 | 3348.5>> | 30675.3 | 0.00 | 80.24 | 1.50 | 1.89 | 0.056 |
| 7 | 67746.27 | 1055.51 | -5101.8<< | 34029.8 | 0.00 | 122.25 | 2.29 | 2.72 | 0.093 |
| 8 | 67746.30 | 844.53>> | -3009.7 | 32942.1 | 0.00 | 72.12 | 1.35 | 2.18 | 0.056 |
| 8 | 67746.13 | -2014.98<< | -1245.9 | 13897.3 | 0.00 | 29.86 | 0.56 | 5.20 | 0.082 |
| 8 | 67746.07 | -288.54 | 3215.8>> | 30258.3 | 0.00 | 77.06 | 1.44 | 0.74 | 0.040 |
| 8 | 67746.29 | -283.99 | -5182.7<< | 38960.9 | 0.00 | 124.19 | 2.33 | 0.73 | 0.068 |

| BARRA 8 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 8 | 67912.65 | 1273.87>> | -2983.0 | 32811.0 | 0.00 | 71.54 | 1.34 | 3.29 | 0.071 |
| 8 | 67912.38 | -1585.64<< | -1228.3 | 13765.3 | 0.00 | 29.46 | 0.55 | 4.09 | 0.063 |
| 8 | 67912.27 | 140.80 | 3241.2>> | 30124.1 | 0.00 | 77.73 | 1.45 | 0.36 | 0.037 |
| 8 | 67912.63 | 145.35 | -5153.2<< | 38830.8 | 0.00 | 123.59 | 2.31 | 0.37 | 0.064 |
| 9 | 67912.63 | -231.94>> | -3485.8 | 27956.8 | 0.00 | 83.60 | 1.56 | 0.60 | 0.043 |
| 9 | 67912.51 | -3269.43<< | -1431.3 | 44661.1 | 0.00 | 34.33 | 0.64 | 8.43 | 0.143 |
| 9 | 67912.26 | -1467.47 | 1575.3>> | 24045.1 | 0.00 | 37.78 | 0.71 | 3.79 | 0.062 |
| 9 | 67912.63 | -1347.10 | -4747.9<< | 37886.7 | 0.00 | 113.87 | 2.13 | 3.48 | 0.099 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 9 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 9 | 67887.04 | 330.17>> | -3485.8 | 27958.5 | 0.00 | 83.59 | 1.56 | 0.85 | 0.045 |
| 9 | 67886.91 | -2707.32<< | -1431.3 | 44662.8 | 0.00 | 34.32 | 0.64 | 6.98 | 0.116 |
| 9 | 67886.66 | -905.36 | 1575.3>> | 24046.8 | 0.00 | 37.77 | 0.71 | 2.34 | 0.040 |
| 9 | 67887.03 | -784.99 | -4747.9<< | 37888.3 | 0.00 | 113.85 | 2.13 | 2.03 | 0.078 |
| 10 | 67886.66 | -685.89>> | -84.6 | 22198.4 | 0.00 | 2.03 | 0.04 | 1.77 | 0.019 |
| 10 | 67886.91 | -4515.08<< | -862.3 | 37104.9 | 1.92 | 20.68 | 0.39 | 11.65 | 0.203 |
| 10 | 67886.84 | -2255.08 | 1590.4>> | 24124.8 | 0.00 | 38.14 | 0.71 | 5.82 | 0.096 |
| 10 | 67886.95 | -2934.09 | -3419.7<< | 48229.5 | 0.00 | 82.00 | 1.53 | 7.57 | 0.151 |

| BARRA 10 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 10 | 67758.38 | -131.02>> | -64.2 | 22264.7 | 0.00 | 1.54 | 0.03 | 0.34 | 0.003 |
| 10 | 67758.68 | -3960.21<< | -834.8 | 37171.6 | 0.00 | 20.00 | 0.37 | 10.22 | 0.173 |
| 10 | 67758.63 | -1700.21 | 1611.7>> | 24190.2 | 0.00 | 38.62 | 0.72 | 4.39 | 0.072 |
| 10 | 67758.77 | -2379.22 | -3386.9<< | 48297.3 | 0.00 | 81.16 | 1.52 | 6.14 | 0.124 |
| 11 | 67758.38 | -1018.57>> | -42.6 | 21057.8 | 0.00 | 1.02 | 0.02 | 2.63 | 0.031 |
| 11 | 67758.68 | -5888.11<< | -342.0 | 27851.1 | 8.95 | 8.20 | 0.15 | 15.19 | 0.275 |
| 11 | 67758.63 | -2979.55 | 2725.3>> | 19276.7 | 0.00 | 65.31 | 1.22 | 7.69 | 0.144 |
| 11 | 67758.62 | -4000.07 | -3574.1<< | 29358.7 | 0.00 | 85.65 | 1.60 | 10.32 | 0.207 |

| BARRA 11 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 11 | 67621.38 | -481.67>> | -61.3 | 21113.9 | 0.00 | 1.47 | 0.03 | 1.24 | 0.012 |
| 11 | 67621.63 | -5351.21<< | -364.0 | 27907.0 | 6.24 | 8.72 | 0.16 | 13.81 | 0.244 |
| 11 | 67621.56 | -2442.65 | 2707.4>> | 19334.1 | 0.00 | 64.84 | 1.22 | 6.30 | 0.118 |
| 11 | 67621.57 | -3463.17 | -3596.8<< | 29413.1 | 0.00 | 86.13 | 1.62 | 8.93 | 0.180 |
| 12 | 67621.38 | -1369.26>> | -39.8 | 19170.9 | 0.00 | 0.95 | 0.02 | 3.53 | 0.044 |
| 12 | 67621.63 | -7185.64<< | 155.0 | 14743.7 | 15.60 | 3.71 | 0.07 | 18.54 | 0.351 |
| 12 | 67621.56 | -4938.38 | 3835.7>> | 15210.4 | 4.14 | 91.86 | 1.72 | 12.74 | 0.262 |
| 12 | 67621.57 | -3689.45 | -4184.5<< | 18277.3 | 0.00 | 100.21 | 1.88 | 9.52 | 0.200 |

| BARRA 12 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 12 | 61636.14 | -839.73>> | -8.2 | 21332.9 | 0.00 | 0.19 | 0.00 | 2.17 | 0.023 |
| 12 | 61636.47 | -6656.11<< | 182.4 | 16905.6 | 14.62 | 4.23 | 0.08 | 17.17 | 0.313 |
| 12 | 61636.43 | -4169.24 | 3864.8>> | 22759.9 | 1.53 | 89.70 | 1.79 | 10.76 | 0.216 |
| 12 | 61636.40 | -3399.53 | -4154.9<< | 15052.2 | 0.00 | 96.43 | 1.93 | 8.77 | 0.181 |
| 13 | 61636.14 | -1727.28>> | 13.4 | 18637.5 | 0.00 | 0.31 | 0.01 | 4.46 | 0.058 |
| 13 | 61636.47 | -8490.53<< | 701.4 | 1001.5 | 24.28 | 16.28 | 0.32 | 21.90 | 0.427 |
| 13 | 61636.43 | -5695.12 | 5013.0>> | 12402.3 | 9.56 | 116.35 | 2.32 | 14.69 | 0.315 |
| 13 | 61636.40 | -4595.62 | -4762.5<< | 6657.2 | 3.77 | 110.53 | 2.21 | 11.86 | 0.251 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 13 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 13 | 61476.70 | -1194.84>> | 1.4 | 18644.8 | 0.00 | 0.03 | 0.00 | 3.08 | 0.036 |
| 13 | 61477.00 | -7958.09<< | 697.8 | 1009.2 | 21.53 | 16.18 | 0.32 | 20.53 | 0.394 |
| 13 | 61476.94 | -5402.28 | 5005.6>> | 6517.6 | 8.06 | 116.07 | 2.32 | 13.94 | 0.298 |
| 13 | 61476.93 | -3823.57 | -4770.4<< | 12556.6 | 0.00 | 110.62 | 2.21 | 9.86 | 0.211 |
| 14 | 61476.70 | -2066.97>> | 570.2 | 15204.9 | 0.00 | 13.22 | 0.26 | 5.33 | 0.076 |
| 14 | 61477.00 | -9792.51<< | 1216.8 | -17628.7 | 31.20 | 28.22 | 0.56 | 25.26 | 0.515 |
| 14 | 61476.94 | -6912.72 | 6700.9>> | -6428.2 | 16.02 | 155.39 | 3.11 | 17.83 | 0.410 |
| 14 | 61476.93 | -5237.50 | -4797.0<< | 3139.7 | 7.19 | 111.24 | 2.22 | 13.51 | 0.286 |

| BARRA 14 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 14 | 61307.65 | -1543.32>> | 577.4 | 15168.7 | 0.00 | 13.38 | 0.27 | 3.98 | 0.054 |
| 14 | 61307.97 | -9268.86<< | 1208.4 | -17665.2 | 28.50 | 28.00 | 0.56 | 23.91 | 0.481 |
| 14 | 61307.94 | -6149.46 | 6699.2>> | -69.8 | 12.05 | 155.21 | 3.11 | 15.86 | 0.366 |
| 14 | 61307.89 | -4953.45 | -4797.0<< | -3291.5 | 5.74 | 111.14 | 2.23 | 12.78 | 0.270 |
| 15 | 61307.66 | -2472.09>> | -57.8 | 10221.1 | 0.00 | 1.34 | 0.03 | 6.38 | 0.090 |
| 15 | 61307.97 | -11103.28<< | 1727.4 | -39055.8 | 38.17 | 40.02 | 0.80 | 28.64 | 0.606 |
| 15 | 61307.94 | -7673.42 | 7191.7>> | -14835.7 | 20.08 | 166.62 | 3.34 | 19.80 | 0.463 |
| 15 | 61307.84 | -6185.44 | -5277.0<< | -21668.0 | 12.24 | 122.26 | 2.45 | 15.96 | 0.346 |

| BARRA 15 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 15 | 71492.84 | 4736.81>> | -151.4 | 11579.6 | 2.24 | 3.70 | 0.07 | 12.22 | 0.211 |
| 15 | 72140.70 | -3870.03<< | 1899.2 | -37697.4 | 0.00 | 46.51 | 0.83 | 9.98 | 0.182 |
| 15 | 71883.36 | -449.84 | 7320.9>> | -13477.3 | 0.00 | 179.07 | 3.22 | 1.16 | 0.108 |
| 15 | 71771.60 | 1033.97 | -5205.8<< | -20309.6 | 0.00 | 127.26 | 2.29 | 2.67 | 0.095 |
| 16 | 71573.41 | 3665.67>> | -129.8 | 20427.1 | 0.00 | 3.07 | 0.07 | 9.19 | 0.023 |
| 16 | 72284.80 | -5785.81<< | 1674.5 | -45892.8 | 0.00 | 39.74 | 0.91 | 14.50 | 0.053 |
| 16 | 72031.30 | -2414.51 | 8407.6>> | -19150.4 | 0.00 | 199.33 | 4.57 | 6.05 | 0.078 |
| 16 | 71886.81 | -497.67 | -5880.3<< | -17685.2 | 0.00 | 139.32 | 3.20 | 1.25 | 0.038 |

| BARRA 16 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 16 | 72049.71 | -5229.92>> | -34.4 | 20743.0 | 0.00 | 0.81 | 0.02 | 13.11 | 0.041 |
| 16 | 72050.03 | -14708.14<< | 1477.5 | -45577.6 | 38.04 | 35.03 | 0.80 | 36.86 | 0.227 |
| 16 | 72050.22 | -11263.48 | 8097.9>> | -16865.0 | 19.29 | 192.00 | 4.40 | 28.22 | 0.206 |
| 16 | 72049.89 | -9405.04 | -5955.7<< | -17366.5 | 9.18 | 141.21 | 3.23 | 23.57 | 0.145 |
| 17 | 72049.71 | -6301.07>> | -12.8 | 8635.6 | 0.00 | 0.30 | 0.01 | 15.79 | 0.055 |
| 17 | 72049.96 | -16952.47<< | 3657.8 | -64554.1 | 50.26 | 86.73 | 1.99 | 42.48 | 0.299 |
| 17 | 72050.22 | -13083.55 | 10090.7>> | -42430.8 | 29.20 | 239.25 | 5.48 | 32.79 | 0.274 |
| 17 | 72049.89 | -10930.00 | -6834.0<< | -38611.6 | 17.48 | 162.03 | 3.71 | 27.39 | 0.184 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 17 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 17 | 71677.27 | 17027.01>> | -3430.9 | -71324.4 | 50.88 | 81.21 | 1.87 | 42.67 | 0 299 |
| 17 | 71677.20 | 5552.47<< | -754.9 | 8339.0 | 0.00 | 17.87 | 0.41 | 13.91 | 0.046 |
| 17 | 71677.49 | 10517.87 | 8516.0>> | -32735.5 | 15.40 | 201.58 | 4.63 | 26.36 | 0.196 |
| 17 | 71677.37 | 13050.79 | -11472.9<< | -47897.8 | 29.21 | 271.57 | 6.24 | 32.70 | 0.294 |
| 18 | 71677.27 | 15243.16>> | -4189.0 | -37554.5 | 41.16 | 99.16 | 2.28 | 38.20 | 0.258 |
| 18 | 71677.20 | 4481.33<< | -733.4 | 18874.7 | 0.00 | 17.36 | 0.40 | 11.23 | 0.033 |
| 18 | 71677.67 | 9049.21 | 7799.4>> | -12733.7 | 7.39 | 184.62 | 4.24 | 22.68 | 0.159 |
| 18 | 71677.37 | 11719.35 | -11334.8<< | -21888.9 | 21.95 | 268.30 | 6.16 | 29.37 | 0.262 |

| BARRA 18 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 18 | 71271.03 | 5854.58>> | -4175.6 | -38234.8 | 0.00 | 98.66 | 2.28 | 14.67 | 0.070 |
| 18 | 70463.47 | -4876.90<< | -633.8 | 18192.7 | 0.00 | 14.92 | 0.35 | 12.22 | 0.037 |
| 18 | 70833.30 | 33.48 | 7512.6>> | -22610.3 | 0.00 | 177.15 | 4.10 | 0.08 | 0.055 |
| 18 | 71006.71 | 2340.67 | -11365.4<< | -22565.9 | 0.00 | 268.21 | 6.20 | 5.87 | 0.120 |
| 19 | 71122.67 | 3882.87>> | -4521.8 | -30418.2 | 0.00 | 110.19 | 2.00 | 10.02 | 0.217 |
| 19 | 70382.88 | -5948.05<< | -612.1 | 6794.1 | 8.58 | 14.86 | 0.27 | 15.34 | 0.283 |
| 19 | 70716.28 | -1522.01 | 6623.6>> | -26780.2 | 0.00 | 161.09 | 2.93 | 3.93 | 0.136 |
| 19 | 70891.47 | 809.11 | -10685.2<< | -19125.9 | 0.00 | 260.09 | 4.72 | 2.09 | 0.178 |

| BARRA 19 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 19 | 59972.57 | 11550.87>> | -4525.4 | -30118.6 | 41.13 | 104.08 | 2.12 | 29.80 | 0.668 |
| 19 | 59972.52 | 1692.13<< | -713.4 | 7095.5 | 0.00 | 16.41 | 0.33 | 4.37 | 0.061 |
| 19 | 59972.90 | 6130.70 | 6893.7>> | -26475.2 | 12.33 | 158.55 | 3.22 | 15.82 | 0.366 |
| 19 | 59972.68 | 8468.42 | -10660.7<< | -18829.2 | 24.75 | 245.19 | 4.98 | 21.85 | 0.568 |
| 20 | 59972.57 | 9604.38>> | -3708.9 | -7905.4 | 30.78 | 85.30 | 1.73 | 24.78 | 0.530 |
| 20 | 59972.52 | 804.56<< | -691.8 | 9717.1 | 0.00 | 15.91 | 0.32 | 2.08 | 0.027 |
| 20 | 59972.90 | 4934.59 | 6286.1>> | -14856.5 | 5.97 | 144.58 | 2.94 | 12.73 | 0.290 |
| 20 | 59972.70 | 6740.50 | -9339.2<< | -661.0 | 15.57 | 214.80 | 4.37 | 17.39 | 0.441 |

| BARRA 20 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 20 | 59886.02 | 10185.75>> | -3711.8 | -7890.2 | 33.91 | 85.33 | 1.74 | 26.28 | 0.567 |
| 20 | 59885.86 | 1385.93<< | -677.9 | 9729.5 | 0.00 | 15.58 | 0.32 | 3.58 | 0.048 |
| 20 | 59886.22 | 5159.56 | 6279.1>> | -7157.1 | 7.19 | 144.35 | 2.94 | 13.31 | 0.302 |
| 20 | 59886.04 | 7321.87 | -9335.2<< | -640.5 | 18.69 | 214.60 | 4.37 | 18.89 | 0.475 |
| 21 | 59886.02 | 8239.31>> | -2895.3 | 11456.4 | 23.56 | 66.56 | 1.35 | 21.26 | 0.434 |
| 21 | 59885.86 | 498.36<< | -656.3 | 11708.1 | 0.00 | 15.09 | 0.31 | 1.29 | 0.017 |
| 21 | 59886.22 | 3963.45 | 5671.5>> | 2422.2 | 0.83 | 130.38 | 2.65 | 10.22 | 0.230 |
| 21 | 59886.04 | 5695.19 | -7868.7<< | 13039.0 | 10.04 | 180.89 | 3.68 | 14.69 | 0.357 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 21 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 21 | 59785.14 | 8828.11>> | -2906.8 | 11503.9 | 26.73 | 66.79 | 1.36 | 22.77 | 0.470 |
| 21 | 59785.01 | 1087.17<< | -668.0 | 11756.7 | 0.00 | 15.35 | 0.31 | 2.80 | 0.037 |
| 21 | 59785.38 | 4908.67 | 5665.1>> | -4471.4 | 5.88 | 130.16 | 2.65 | 12.66 | 0.279 |
| 21 | 59785.19 | 6283.99 | -7880.9<< | 13084.1 | 13.20 | 181.07 | 3.69 | 16.21 | 0.390 |
| 22 | 59785.33 | 6954.87>> | -680.9 | 18697.1 | 16.77 | 15.65 | 0.32 | 17.94 | 0.332 |
| 22 | 59785.01 | 199.60<< | -646.4 | 13107.9 | 0.00 | 14.85 | 0.30 | 0.51 | 0.008 |
| 22 | 59785.38 | 3712.55 | 5057.5>> | 4581.1 | 0.00 | 116.20 | 2.37 | 9.58 | 0.208 |
| 22 | 59784.95 | 4040.19 | -6922.2<< | 16591.0 | 1.27 | 159.04 | 3.24 | 10.42 | 0.253 |

| BARRA 22 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 22 | 56775.68 | 7527.45>> | -663.0 | 15821.9 | 20.82 | 14.98 | 0.32 | 19.42 | 0.362 |
| 22 | 56775.39 | 772.18<< | -631.1 | 10232.7 | 0.00 | 14.26 | 0.30 | 1.99 | 0.025 |
| 22 | 56775.74 | 3928.73 | 5070.9>> | 7899.9 | 1.36 | 114.56 | 2.41 | 10.14 | 0.217 |
| 22 | 56775.38 | 4612.78 | -6905.2<< | 13718.8 | 5.06 | 156.00 | 3.29 | 11.90 | 0.280 |
| 23 | 56775.68 | 5693.00>> | -144.0 | 29703.9 | 10.90 | 3.25 | 0.07 | 14.69 | 0.253 |
| 23 | 56775.39 | -115.42<< | -609.5 | 10922.7 | 0.00 | 13.77 | 0.29 | 0.30 | 0.006 |
| 23 | 56775.74 | 2732.58 | 4463.3>> | 14894.7 | 0.00 | 100.83 | 2.12 | 7.05 | 0.150 |
| 23 | 56775.38 | 3464.87 | -6767.1<< | 22200.8 | 0.00 | 152.88 | 3.22 | 8.94 | 0.219 |

| BARRA 23 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 23 | 56817.24 | 6243.53>> | -144.0 | 29646.8 | 13.87 | 3.25 | 0.07 | 16.11 | 0.284 |
| 23 | 56816.95 | 435.12<< | -609.5 | 10865.6 | 0.00 | 13.77 | 0.29 | 1.12 | 0.014 |
| 23 | 56817.30 | 3283.12 | 4463.3>> | 14837.6 | 0.00 | 100.86 | 2.12 | 8.47 | 0.176 |
| 23 | 56816.94 | 4015.41 | -6767.1<< | 22143.6 | 1.82 | 152.92 | 3.22 | 10.36 | 0.247 |
| 24 | 56817.24 | 4308.68>> | 253.5 | 39551.5 | 3.40 | 5.73 | 0.12 | 11.12 | 0.179 |
| 24 | 56816.95 | -452.44<< | -588.0 | 10847.6 | 0.00 | 13.29 | 0.28 | 1.17 | 0.015 |
| 24 | 56817.39 | 1873.01 | 4108.8>> | 33370.9 | 0.00 | 92.85 | 1.96 | 4.83 | 0.108 |
| 24 | 56816.94 | 2647.94 | -6042.2<< | 29236.9 | 0.00 | 136.53 | 2.88 | 6.83 | 0.169 |

| BARRA 24 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 24 | 56854.98 | 4872.08>> | 287.2 | 39489.3 | 6.44 | 6.49 | 0.14 | 12.57 | 0.209 |
| 24 | 56854.72 | 110.97<< | -567.9 | 10785.7 | 0.00 | 12.84 | 0.27 | 0.29 | 0.006 |
| 24 | 56855.07 | 2436.42 | 4139.5>> | 33306.8 | 0.00 | 93.56 | 1.97 | 6.29 | 0.133 |
| 24 | 56854.77 | 3211.34 | -6013.5<< | 29177.7 | 0.00 | 135.91 | 2.86 | 8.28 | 0.195 |
| 25 | 56854.98 | 3037.65>> | 806.2 | 47794.7 | 0.00 | 18.22 | 0.38 | 7.84 | 0.121 |
| 25 | 56854.72 | -776.61<< | -546.4 | 10086.9 | 0.00 | 12.35 | 0.26 | 2.00 | 0.025 |
| 25 | 56855.07 | 750.28 | 4839.5>> | 36653.0 | 0.00 | 109.38 | 2.30 | 1.94 | 0.075 |
| 25 | 56854.77 | 1685.43 | -4865.3<< | 34319.5 | 0.00 | 109.96 | 2.31 | 4.35 | 0.110 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 25 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 25 | 56879.80 | 3603.32>> | 806.2 | 47745.1 | 0.00 | 18.22 | 0.38 | 9.30 | 0.148 |
| 25 | 56879.54 | -210.94<< | -546.4 | 10037.3 | 0.00 | 12.35 | 0.26 | 0.54 | 0.008 |
| 25 | 56879.89 | 1315.95 | 4839.5>> | 36603.4 | 0.00 | 109.40 | 2.30 | 3.39 | 0.095 |
| 25 | 56879.59 | 2251.10 | -4865.3<< | 34269.8 | 0.00 | 109.98 | 2.31 | 5.81 | 0.134 |
| 26 | 56879.55 | 1695.74>> | -2396.1 | 43203.7 | 0.00 | 54.16 | 1.14 | 4.37 | 0.078 |
| 26 | 56879.54 | -1098.51<< | -524.8 | 8662.7 | 0.00 | 11.86 | 0.25 | 2.83 | 0.036 |
| 26 | 56879.89 | -174.72 | 4627.0>> | 36324.1 | 0.00 | 104.59 | 2.20 | 0.45 | 0.055 |
| 26 | 56879.55 | 895.61 | -3987.6<< | 29336.5 | 0.00 | 90.14 | 1.90 | 2.31 | 0.068 |

| BARRA 26 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 26 | 56890.28 | 2257.65>> | -2358.3 | 43173.5 | 0.00 | 53.31 | 1.12 | 5.82 | 0.102 |
| 26 | 56890.15 | -536.60<< | -503.5 | 8631.6 | 0.00 | 11.38 | 0.24 | 1.38 | 0.016 |
| 26 | 56890.39 | 338.71 | 4661.6>> | 43281.0 | 0.00 | 105.38 | 2.22 | 0.87 | 0.060 |
| 26 | 56890.29 | 1506.02 | -3956.6<< | 22316.6 | 0.00 | 89.44 | 1.88 | 3.89 | 0.091 |
| 27 | 56890.28 | 832.48>> | -2806.1 | 38050.4 | 0.00 | 63.44 | 1.33 | 2.15 | 0.051 |
| 27 | 56890.16 | -1682.24<< | -1126.3 | 20375.9 | 0.00 | 25.46 | 0.54 | 4.34 | 0.064 |
| 27 | 56890.48 | -777.59 | 4092.6>> | 26584.5 | 0.00 | 92.52 | 1.95 | 2.01 | 0.066 |
| 27 | 56890.29 | 84.25 | -4218.0<< | 28051.2 | 0.00 | 95.35 | 2.01 | 0.22 | 0.048 |

| BARRA 27 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 27 | 56890.23 | 1394.65>> | -2841.8 | 38033.2 | 0.00 | 64.24 | 1.35 | 3.60 | 0.072 |
| 27 | 56890.21 | -1120.07<< | -1153.5 | 20359.5 | 0.00 | 26.08 | 0.55 | 2.89 | 0.042 |
| 27 | 56890.66 | -166.92 | 4065.5>> | 19681.9 | 0.00 | 91.91 | 1.93 | 0.43 | 0.047 |
| 27 | 56890.24 | 597.93 | -4252.0<< | 34922.0 | 0.00 | 96.12 | 2.02 | 1.54 | 0.062 |
| 28 | 56890.25 | 227.27>> | -3482.3 | 15168.4 | 0.00 | 78.72 | 1.66 | 0.59 | 0.041 |
| 28 | 56890.17 | -2552.20<< | -1554.4 | 35501.1 | 0.00 | 35.14 | 0.74 | 6.58 | 0.106 |
| 28 | 56890.70 | -1349.71 | 3868.1>> | 18331.7 | 0.00 | 87.44 | 1.84 | 3.48 | 0.083 |
| 28 | 56890.16 | -822.51 | -4700.5<< | 52060.5 | 0.00 | 106.26 | 2.24 | 2.12 | 0.075 |

| BARRA 28 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 28 | 56877.21 | 799.34>> | -3433.3 | 15174.6 | 0.00 | 77.61 | 1.63 | 2.06 | 0.057 |
| 28 | 56876.98 | -1980.14<< | -1486.1 | 35505.5 | 0.00 | 33.59 | 0.71 | 5.11 | 0.080 |
| 28 | 56877.21 | -826.14 | 3923.3>> | 25117.7 | 0.00 | 88.68 | 1.87 | 2.13 | 0.065 |
| 28 | 56877.13 | -201.95 | -4619.8<< | 45281.1 | 0.00 | 104.43 | 2.20 | 0.52 | 0.056 |
| 29 | 56877.08 | -199.55>> | 411.0 | 5588.9 | 0.00 | 9.29 | 0.20 | 0.51 | 0.006 |
| 29 | 56877.14 | -3856.24<< | -1054.7 | 50700.3 | 0.94 | 23.84 | 0.50 | 9.95 | 0.163 |
| 29 | 56877.24 | -2504.21 | 4478.0>> | 33784.3 | 0.00 | 101.22 | 2.13 | 6.46 | 0.140 |
| 29 | 56877.13 | -1423.70 | -4801.7<< | 37345.9 | 0.00 | 108.54 | 2.28 | 3.67 | 0.099 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 29 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 29 | 56850.73 | 370.90>> | 392.0 | 5608.9 | 0.00 | 8.86 | 0.19 | 0.96 | 0.011 |
| 29 | 56850.74 | -3285.80<< | -1095.2 | 50719.6 | 0.00 | 24.75 | 0.52 | 8.48 | 0.135 |
| 29 | 56850.94 | -1933.76 | 4445.6>> | 33806.2 | 0.00 | 100.48 | 2.12 | 4.99 | 0.115 |
| 29 | 56850.65 | -853.25 | -4835.8<< | 37363.4 | 0.00 | 109.29 | 2.30 | 2.20 | 0.078 |
| 30 | 56850.73 | -516.69>> | 413.6 | 5456.2 | 0.00 | 9.35 | 0.20 | 1.33 | 0.015 |
| 30 | 56850.74 | -5120.24<< | -576.2 | 41893.5 | 7.78 | 13.02 | 0.27 | 13.21 | 0.225 |
| 30 | 56850.94 | -3459.66 | 5593.8>> | 28143.5 | 0.00 | 126.43 | 2.66 | 8.93 | 0.201 |
| 30 | 56850.50 | -2587.08 | -4252.6<< | 20921.7 | 0.00 | 96.11 | 2.02 | 6.67 | 0.141 |

| BARRA 30 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 30 | 56811.14 | 51.30>> | 431.2 | 5488.3 | 0.00 | 9.74 | 0.21 | 0.13 | 0.003 |
| 30 | 56811.20 | -4552.24<< | -541.2 | 41926.0 | 4.72 | 12.23 | 0.26 | 11.74 | 0.194 |
| 30 | 56811.30 | -2891.67 | 5622.2>> | 28173.0 | 0.00 | 127.04 | 2.68 | 7.46 | 0.174 |
| 30 | 56811.01 | -2019.09 | -4227.7<< | 20956.0 | 0.00 | 95.53 | 2.01 | 5.21 | 0.115 |
| 31 | 56811.14 | -836.27>> | 452.8 | 4664.0 | 0.00 | 10.23 | 0.22 | 2.16 | 0.026 |
| 31 | 56811.20 | -6487.52<< | -144.0 | 31516.1 | 15.19 | 3.25 | 0.07 | 16.74 | 0.298 |
| 31 | 56811.30 | -4251.95 | 6327.9>> | 20574.4 | 3.10 | 142.99 | 3.01 | 10.97 | 0.252 |
| 31 | 56811.01 | -3316.06 | -4957.1<< | 16536.0 | 0.00 | 112.01 | 2.36 | 8.55 | 0.185 |

| BARRA 31 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 31 | 56759.95 | -282.17>> | 452.8 | 4700.9 | 0.00 | 10.23 | 0.22 | 0.73 | 0.009 |
| 31 | 56760.01 | -5933.42<< | -144.0 | 31553.0 | 12.21 | 3.25 | 0.07 | 15.31 | 0.266 |
| 31 | 56760.11 | -3697.85 | 6327.9>> | 20611.3 | 0.11 | 142.94 | 3.01 | 9.54 | 0.224 |
| 31 | 56759.82 | -2761.96 | -4957.1<< | 16572.9 | 0.00 | 111.98 | 2.36 | 7.13 | 0.159 |
| 32 | 56759.95 | -1169.76>> | 474.4 | 3176.5 | 0.00 | 10.72 | 0.23 | 3.02 | 0.038 |
| 32 | 56760.01 | -7767.90<< | 375.0 | 17166.5 | 22.13 | 8.47 | 0.18 | 20.04 | 0.374 |
| 32 | 56760.11 | -4845.77 | 6466.0>> | 11640.5 | 6.32 | 146.06 | 3.08 | 12.50 | 0.285 |
| 32 | 56759.82 | -3958.09 | -5564.7<< | 9516.9 | 1.52 | 125.70 | 2.65 | 10.21 | 0.225 |

| BARRA 32 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 32 | 56695.20 | -609.85>> | 486.1 | 3211.0 | 0.00 | 10.98 | 0.23 | 1.57 | 0.019 |
| 32 | 56695.31 | -7207.99<< | 393.4 | 17201.0 | 19.12 | 8.88 | 0.19 | 18.60 | 0.341 |
| 32 | 56695.31 | -4285.86 | 6481.7>> | 11672.2 | 3.31 | 146.36 | 3.09 | 11.06 | 0.256 |
| 32 | 56695.20 | -3398.18 | -5550.0<< | 9554.3 | 0.00 | 125.33 | 2.64 | 8.77 | 0.197 |
| 33 | 56695.20 | -1497.42>> | 507.7 | 998.7 | 0.00 | 11.46 | 0.24 | 3.86 | 0.051 |
| 33 | 56695.31 | -9042.42<< | 912.4 | 138.1 | 29.05 | 20.60 | 0.43 | 23.33 | 0.456 |
| 33 | 56695.41 | -6424.18 | 7664.9>> | 8095.7 | 14.88 | 173.08 | 3.65 | 16.57 | 0.391 |
| 33 | 56695.20 | -4594.28 | -6157.6<< | 1162.3 | 4.98 | 139.05 | 2.93 | 11.85 | 0.267 |

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| BARRA 33 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 33 | 56618.41 | -943.00>> | 507.7 | 1020.1 | 0.00 | 11.46 | 0.24 | 2.43 | 0.030 |
| 33 | 56618.52 | -8488.00<< | 912.4 | 159.6 | 26.08 | 20.59 | 0.43 | 21.90 | 0.422 |
| 33 | 56618.62 | -5869.76 | 7664.9>> | 8117.1 | 11.90 | 173.01 | 3.65 | 15.14 | 0.359 |
| 33 | 56618.41 | -4039.87 | -6157.6<< | 1183.8 | 2.00 | 138.98 | 2.93 | 10.42 | 0.238 |
| 34 | 56618.41 | -1830.60>> | 529.2 | -1892.2 | 0.00 | 11.95 | 0.25 | 4.72 | 0.064 |
| 34 | 56618.46 | -10360.61<< | 3643.1 | -7809.4 | 36.22 | 82.23 | 1.74 | 26.73 | 0.571 |
| 34 | 56618.62 | -7490.86 | 9657.8>> | -5928.4 | 20.68 | 217.99 | 4.60 | 19.32 | 0.485 |
| 34 | 56618.38 | -5480.50 | -6231.7<< | -14980.2 | 9.80 | 140.66 | 2.97 | 14.14 | 0.316 |

| BARRA 34 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 34 | 56529.86 | -1282.45>> | 529.2 | -1896.6 | 0.00 | 11.94 | 0.25 | 3.31 | 0.043 |
| 34 | 56529.91 | -9812.47<< | 3643.1 | -7813.8 | 33.29 | 82.19 | 1.74 | 25.31 | 0.536 |
| 34 | 56530.07 | -6942.71 | 9657.8>> | -5932.8 | 17.74 | 217.88 | 4.60 | 17.91 | 0.453 |
| 34 | 56529.83 | -4932.35 | -6231.7<< | -14984.6 | 6.85 | 140.59 | 2.97 | 12.72 | 0.286 |
| 35 | 56529.86 | -2170.02>> | 550.8 | -5521.5 | 0.00 | 12.43 | 0.26 | 5.60 | 0.079 |
| 35 | 56529.91 | -11758.93<< | 4459.7 | -30464.0 | 43.83 | 100.61 | 2.13 | 30.34 | 0.673 |
| 35 | 56530.07 | -8724.49 | 10836.5>> | -22545.7 | 27.39 | 244.47 | 5.17 | 22.51 | 0.580 |
| 35 | 56529.83 | -6128.46 | -6839.3<< | -26598.4 | 13.33 | 154.29 | 3.26 | 15.81 | 0.361 |

| BARRA 35 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 35 | 66904.95 | 4556.88>> | 514.1 | -4120.1 | 2.35 | 12.27 | 0.23 | 11.76 | 0.201 |
| 35 | 67624.38 | -5005.02<< | 4423.1 | -29064.5 | 4.48 | 105.92 | 1.99 | 12.91 | 0.274 |
| 35 | 67396.90 | -1979.11 | 10948.1>> | -21149.3 | 0.00 | 261.88 | 4.92 | 5.11 | 0.228 |
| 35 | 67180.54 | 891.20 | -6909.2<< | -17100.5 | 0.00 | 165.09 | 3.11 | 2.30 | 0.115 |
| 36 | 66985.52 | 3485.71>> | 535.7 | 4348.9 | 0.00 | 12.41 | 0.30 | 8.73 | 0.021 |
| 36 | 67772.28 | -6970.95<< | 4536.9 | -39363.3 | 0.00 | 105.50 | 2.51 | 17.47 | 0.088 |
| 36 | 67508.45 | -3461.42 | 11268.5>> | -29087.6 | 0.00 | 261.70 | 6.25 | 8.67 | 0.126 |
| 36 | 67284.34 | -488.52 | -7518.5<< | -16676.2 | 0.00 | 174.43 | 4.17 | 1.22 | 0.055 |

| BARRA 36 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 36 | 67472.25 | -5437.84>> | 583.2 | 4682.9 | 0.00 | 13.54 | 0.32 | 13.63 | 0.044 |
| 36 | 67472.27 | -15924.06<< | 4590.6 | -39029.3 | 47.33 | 106.60 | 2.54 | 39.90 | 0.275 |
| 36 | 67472.47 | -12404.64 | 11167.2>> | -28753.6 | 27.78 | 259.31 | 6.19 | 31.08 | 0.270 |
| 36 | 67472.31 | -9705.69 | -7471.5<< | -25028.2 | 12.78 | 173.49 | 4.14 | 24.32 | 0.165 |
| 37 | 67472.25 | -6508.49>> | 604.7 | -7854.9 | 0.00 | 14.04 | 0.34 | 16.31 | 0.058 |
| 37 | 67472.27 | -17711.37<< | 3825.9 | -74229.3 | 57.27 | 88.84 | 2.12 | 44.38 | 0.317 |
| 37 | 67472.47 | -13731.25 | 11852.5>> | -56187.9 | 35.15 | 275.22 | 6.57 | 34.41 | 0.311 |
| 37 | 67472.31 | -11365.97 | -8259.1<< | -44887.2 | 22.00 | 191.78 | 4.58 | 28.48 | 0.207 |

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| BARRA 37 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 37 | 67460.66 | 17304.90>> | -3496.7 | -74833.8 | 55.02 | 81.19 | 1.94 | 43.36 | 0.303 |
| 37 | 67460.52 | 5748.02<< | -595.9 | -5379.8 | 0.00 | 13.84 | 0.33 | 14.40 | 0.048 |
| 37 | 67460.82 | 10812.13 | 9107.0>> | -43797.7 | 18.93 | 211.46 | 5.05 | 27.09 | 0.207 |
| 37 | 67460.72 | 13304.83 | -11570.4<< | -57163.0 | 32.78 | 268.66 | 6.41 | 33.34 | 0.297 |
| 38 | 67460.66 | 15521.04>> | -4254.9 | -40484.5 | 45.10 | 98.80 | 2.36 | 38.89 | 0.262 |
| 38 | 67460.52 | 4676.88<< | -574.4 | 5566.3 | 0.00 | 13.34 | 0.32 | 11.72 | 0.034 |
| 38 | 67460.82 | 9288.57 | 8232.3>> | -22810.3 | 10.46 | 191.15 | 4.56 | 23.28 | 0.166 |
| 38 | 67460.72 | 11973.37 | -11432.3<< | -30620.6 | 25.38 | 265.45 | 6.34 | 30.00 | 0.265 |

| BARRA 38 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 38 | 67676.93 | 6434.00>> | -4177.6 | -40712.3 | 0.00 | 97.10 | 2.31 | 16.12 | 0.077 |
| 38 | 66863.26 | -4379.61<< | -435.8 | 5338.6 | 0.00 | 10.09 | 0.24 | 10.97 | 0.030 |
| 38 | 67209.50 | 219.09 | 8090.2>> | -23038.0 | 0.00 | 187.63 | 4.49 | 0.55 | 0.062 |
| 38 | 67415.32 | 2955.74 | -11417.3<< | -32684.2 | 0.00 | 265.05 | 6.33 | 7.41 | 0.124 |
| 39 | 67528.01 | 4454.86>> | -4512.0 | -31621.7 | 1.69 | 108.00 | 2.03 | 11.49 | 0.245 |
| 39 | 66782.65 | -5450.77<< | -414.1 | -5012.5 | 6.96 | 9.88 | 0.19 | 14.06 | 0.250 |
| 39 | 67095.58 | -1294.97 | 7090.3>> | -26670.5 | 0.00 | 169.34 | 3.19 | 3.34 | 0.133 |
| 39 | 67299.72 | 1419.49 | -10730.2<< | -27952.6 | 0.00 | 256.54 | 4.83 | 3.66 | 0.200 |

| BARRA 39 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 39 | 56546.89 | 11796.52>> | -4555.8 | -31295.9 | 44.02 | 102.79 | 2.17 | 30.43 | 0.677 |
| 39 | 56546.77 | 1862.91<< | -533.9 | -4686.7 | 0.00 | 12.05 | 0.25 | 4.81 | 0.066 |
| 39 | 56547.06 | 6030.46 | 7228.7>> | -26344.7 | 12.80 | 163.09 | 3.45 | 15.56 | 0.361 |
| 39 | 56546.97 | 8693.00 | -10723.0<< | -25916.1 | 27.22 | 241.93 | 5.11 | 22.43 | 0.576 |
| 40 | 56546.89 | 9850.01>> | -3739.3 | -8566.3 | 33.48 | 84.37 | 1.78 | 25.41 | 0.540 |
| 40 | 56546.77 | 975.30<< | -512.4 | -1706.3 | 0.00 | 11.56 | 0.24 | 2.52 | 0.031 |
| 40 | 56547.06 | 4834.31 | 6621.0>> | -14936.2 | 6.32 | 149.38 | 3.16 | 12.47 | 0.287 |
| 40 | 56547.00 | 6963.05 | -9394.7<< | -7179.0 | 17.85 | 211.96 | 4.48 | 17.96 | 0.450 |

| BARRA 40 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 40 | 56631.21 | 10390.20>> | -3739.6 | -8593.1 | 36.37 | 84.41 | 1.78 | 26.80 | 0.574 |
| 40 | 56631.05 | 1515.49<< | -509.4 | -1734.7 | 0.00 | 11.50 | 0.24 | 3.91 | 0.051 |
| 40 | 56631.25 | 5374.50 | 6617.7>> | -14967.9 | 9.22 | 149.38 | 3.15 | 13.87 | 0.316 |
| 40 | 56631.28 | 7503.24 | -9394.3<< | -7203.2 | 20.74 | 212.06 | 4.48 | 19.36 | 0.482 |
| 41 | 56631.31 | 8481.76>> | -947.5 | -218.2 | 26.04 | 21.39 | 0.45 | 21.88 | 0.422 |
| 41 | 56631.05 | 627.91<< | -487.8 | 515.6 | 0.00 | 11.01 | 0.23 | 1.62 | 0.019 |
| 41 | 56631.29 | 3941.56 | 6521.6>> | 887.1 | 1.46 | 147.21 | 3.11 | 10.17 | 0.239 |
| 41 | 56631.28 | 5875.13 | -7930.6<< | 6854.2 | 11.93 | 179.02 | 3.78 | 15.16 | 0.364 |

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| BARRA 41 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 41 | 56707.46 | 9037.08>> | -947.5 | -272.6 | 29.02 | 21.40 | 0.45 | 23.31 | 0 456 |
| 41 | 56707.20 | 1183.23<< | -487.8 | 461.3 | 0.00 | 11.02 | 0.23 | 3.05 | 0.038 |
| 41 | 56707.44 | 4496.88 | 6521.6>> | 832.8 | 4.45 | 147.28 | 3.11 | 11.60 | 0.267 |
| 41 | 56707.43 | 6430.45 | -7930.6<< | 6799.8 | 14.91 | 179.10 | 3.78 | 16.59 | 0.395 |
| 42 | 56707.46 | 7202.60>> | -428.5 | 16779.4 | 19.09 | 9.68 | 0.20 | 18.58 | 0.341 |
| 42 | 56707.20 | 295.66<< | -466.2 | 2014.0 | 0.00 | 10.53 | 0.22 | 0.76 | 0.009 |
| 42 | 56707.44 | 3300.77 | 5914.0>> | 9020.4 | 0.00 | 133.55 | 2.82 | 8.52 | 0.198 |
| 42 | 56707.25 | 4218.07 | -7011.4<< | 10252.2 | 2.94 | 158.34 | 3.34 | 10.88 | 0.261 |

| BARRA 42 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 42 | 53849.22 | 7753.66>> | -428.5 | 21788.4 | 23.09 | 9.52 | 0.21 | 20.00 | 0.370 |
| 42 | 53848.96 | 846.72<< | -466.2 | 7023.0 | 0.00 | 10.36 | 0.23 | 2.18 | 0.026 |
| 42 | 53849.20 | 3851.83 | 5914.0>> | 14029.3 | 1.63 | 131.36 | 2.86 | 9.94 | 0.223 |
| 42 | 53849.01 | 4769.12 | -7011.4<< | 15261.2 | 6.67 | 155.73 | 3.39 | 12.30 | 0.287 |
| 43 | 53849.22 | 5919.20>> | 90.5 | 36145.0 | 13.00 | 2.01 | 0.04 | 15.27 | 0.262 |
| 43 | 53848.96 | -40.88<< | -444.6 | 7868.9 | 0.00 | 9.88 | 0.22 | 0.11 | 0.003 |
| 43 | 53849.20 | 2655.68 | 5306.4>> | 20862.2 | 0.00 | 117.86 | 2.57 | 6.85 | 0.157 |
| 43 | 53849.01 | 3621.21 | -6873.3<< | 24071.0 | 0.36 | 152.66 | 3.33 | 9.34 | 0.226 |

| BARRA 43 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 43 | 53898.48 | 6469.03>> | 118.1 | 36078.1 | 16.01 | 2.62 | 0.06 | 16.69 | 0.293 |
| 43 | 53898.29 | 508.95<< | -430.5 | 7802.2 | 0.00 | 9.56 | 0.21 | 1.31 | 0.015 |
| 43 | 53898.41 | 3205.51 | 5326.7>> | 20792.8 | 0.00 | 118.35 | 2.58 | 8.27 | 0.183 |
| 43 | 53898.40 | 4171.04 | -6851.4<< | 24007.4 | 3.37 | 152.22 | 3.32 | 10.76 | 0.253 |
| 44 | 53898.48 | 4534.87>> | 517.9 | 46449.6 | 5.37 | 11.51 | 0.25 | 11.70 | 0.191 |
| 44 | 53898.29 | -378.64<< | -408.9 | 7938.9 | 0.00 | 9.08 | 0.20 | 0.98 | 0.011 |
| 44 | 53898.41 | 1909.70 | 4599.9>> | 24980.9 | 0.00 | 102.20 | 2.23 | 4.93 | 0.115 |
| 44 | 53898.40 | 2801.73 | -6121.2<< | 31425.2 | 0.00 | 136.00 | 2.96 | 7.23 | 0.176 |

| BARRA 44 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 44 | 53936.16 | 5098.14>> | 517.9 | 46387.3 | 8.46 | 11.51 | 0.25 | 13.15 | 0.221 |
| 44 | 53935.98 | 184.64<< | -408.9 | 7876.6 | 0.00 | 9.09 | 0.20 | 0.48 | 0.006 |
| 44 | 53936.09 | 2472.97 | 4599.9>> | 24918.7 | 0.00 | 102.22 | 2.23 | 6.38 | 0.139 |
| 44 | 53936.09 | 3365.00 | -6121.2<< | 31362.9 | 0.00 | 136.03 | 2.96 | 8.68 | 0.202 |
| 45 | 53936.16 | 3263.68>> | 1036.9 | 55167.5 | 0.00 | 23.04 | 0.50 | 8.42 | 0.132 |
| 45 | 53935.98 | -702.97<< | -387.3 | 7332.4 | 0.00 | 8.61 | 0.19 | 1.81 | 0.021 |
| 45 | 53936.23 | 756.77 | 5196.6>> | 40934.8 | 0.00 | 115.48 | 2.51 | 1.95 | 0.080 |
| 45 | 53936.09 | 1839.08 | -4973.0<< | 36827.4 | 0.00 | 110.51 | 2.41 | 4.74 | 0.117 |

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| BARRA 45 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 45 | 53960.97 | 3829.35>> | 1077.1 | 55117.4 | 1.48 | 23.94 | 0.52 | 9.88 | 0.160 |
| 45 | 53960.80 | -137.31<< | -370.0 | 7283.0 | 0.00 | 8.22 | 0.18 | 0.35 | 0.005 |
| 45 | 53960.94 | 1322.43 | 5230.0>> | 40882.6 | 0.00 | 116.24 | 2.53 | 3.41 | 0.100 |
| 45 | 53960.98 | 2404.74 | -4941.6<< | 36780.2 | 0.00 | 109.83 | 2.39 | 6.20 | 0.141 |
| 46 | 53960.76 | 1918.05>> | 1559.1 | 39822.7 | 0.00 | 34.65 | 0.75 | 4.95 | 0.077 |
| 46 | 53960.80 | -1024.91<< | -348.4 | 6062.5 | 0.00 | 7.74 | 0.17 | 2.64 | 0.031 |
| 46 | 53960.93 | -164.85 | 5012.6>> | 40611.6 | 0.00 | 111.41 | 2.43 | 0.43 | 0.060 |
| 46 | 53960.93 | 1053.29 | -4142.4<< | 32062.7 | 0.00 | 92.07 | 2.00 | 2.72 | 0.075 |

| BARRA 46 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 46 | 53971.49 | 2479.90>> | 1559.1 | 39791.6 | 0.00 | 34.65 | 0.75 | 6.40 | 0.102 |
| 46 | 53971.53 | -463.06<< | -348.4 | 6031.4 | 0.00 | 7.74 | 0.17 | 1.19 | 0.013 |
| 46 | 53971.65 | 397.00 | 5012.6>> | 40580.5 | 0.00 | 111.42 | 2.43 | 1.02 | 0.066 |
| 46 | 53971.66 | 1615.14 | -4142.4<< | 32031.6 | 0.00 | 92.08 | 2.00 | 4.17 | 0.097 |
| 47 | 53971.49 | 1023.43>> | 1068.0 | 43470.0 | 0.00 | 23.74 | 0.52 | 2.64 | 0.037 |
| 47 | 53971.53 | -1584.96<< | -945.0 | 9639.9 | 0.00 | 21.00 | 0.46 | 4.09 | 0.058 |
| 47 | 53971.77 | -711.16 | 4477.6>> | 23793.1 | 0.00 | 99.53 | 2.17 | 1.83 | 0.068 |
| 47 | 53971.61 | 192.01 | -4405.7<< | 38032.2 | 0.00 | 97.93 | 2.13 | 0.50 | 0.052 |

| BARRA 47 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 47 | 53971.43 | 1585.67>> | 1068.0 | 43454.1 | 0.00 | 23.74 | 0.52 | 4.09 | 0.059 |
| 47 | 53971.47 | -1022.72<< | -945.0 | 9624.0 | 0.00 | 21.00 | 0.46 | 2.64 | 0.036 |
| 47 | 53971.71 | -148.92 | 4477.6>> | 23777.2 | 0.00 | 99.53 | 2.17 | 0.38 | 0.052 |
| 47 | 53971.55 | 754.25 | -4405.7<< | 38016.3 | 0.00 | 97.93 | 2.13 | 1.95 | 0.068 |
| 48 | 53971.44 | 412.69>> | 458.4 | 12158.2 | 0.00 | 10.19 | 0.22 | 1.06 | 0.012 |
| 48 | 53971.43 | -2433.57<< | -1404.8 | 33593.4 | 0.00 | 31.22 | 0.68 | 6.28 | 0.098 |
| 48 | 53971.71 | -1548.88 | 4348.3>> | 30531.6 | 0.00 | 96.65 | 2.10 | 4.00 | 0.097 |
| 48 | 53971.49 | -380.20 | -4895.3<< | 46944.7 | 0.00 | 108.81 | 2.37 | 0.98 | 0.064 |

| BARRA 48 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 48 | 53958.32 | 984.69>> | 458.4 | 12161.0 | 0.00 | 10.19 | 0.22 | 2.54 | 0.031 |
| 48 | 53958.30 | -1861.57<< | -1404.8 | 33596.2 | 0.00 | 31.22 | 0.68 | 4.80 | 0.073 |
| 48 | 53958.59 | -976.88 | 4348.3>> | 30534.4 | 0.00 | 96.64 | 2.10 | 2.52 | 0.075 |
| 48 | 53958.37 | 191.80 | -4895.3<< | 46947.5 | 0.00 | 108.80 | 2.37 | 0.49 | 0.059 |
| 49 | 53958.32 | 97.09>> | 479.9 | 13296.8 | 0.00 | 10.67 | 0.23 | 0.25 | 0.005 |
| 49 | 53958.49 | -3750.14<< | -906.8 | 49189.4 | 1.04 | 20.16 | 0.44 | 9.67 | 0.155 |
| 49 | 53958.62 | -2330.29 | 5033.4>> | 31143.2 | 0.00 | 111.87 | 2.44 | 6.01 | 0.139 |
| 49 | 53958.39 | -1309.39 | -5074.0<< | 47265.4 | 0.00 | 112.77 | 2.46 | 3.38 | 0.098 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 49 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 49 | 53931.80 | 667.61>> | 500.1 | 13316.4 | 0.00 | 11.11 | 0.24 | 1.72 | 0.020 |
| 49 | 53932.04 | -3179.63<< | -869.6 | 49209.6 | 0.00 | 19.32 | 0.42 | 8.20 | 0.127 |
| 49 | 53932.05 | -1743.64 | 5064.7>> | 37437.6 | 0.00 | 112.55 | 2.45 | 4.50 | 0.114 |
| 49 | 53931.96 | -755.01 | -5040.3<< | 41010.6 | 0.00 | 112.01 | 2.44 | 1.95 | 0.077 |
| 50 | 53931.80 | -219.99>> | 521.7 | 13786.5 | 0.00 | 11.59 | 0.25 | 0.57 | 0.008 |
| 50 | 53932.04 | -5014.09<< | -350.6 | 40606.0 | 8.00 | 7.79 | 0.17 | 12.94 | 0.215 |
| 50 | 53932.05 | -3269.57 | 6212.9>> | 32173.6 | 0.00 | 138.06 | 3.01 | 8.43 | 0.199 |
| 50 | 53931.87 | -2475.65 | -4432.5<< | 24816.5 | 0.00 | 98.50 | 2.15 | 6.39 | 0.137 |

| BARRA 50 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 50 | 53892.26 | 347.94>> | 540.7 | 13818.4 | 0.00 | 12.01 | 0.26 | 0.90 | 0.011 |
| 50 | 53892.53 | -4446.16<< | -318.7 | 40638.3 | 4.89 | 7.08 | 0.15 | 11.47 | 0.185 |
| 50 | 53892.47 | -2701.64 | 6240.7>> | 32202.8 | 0.00 | 138.65 | 3.02 | 6.97 | 0.173 |
| 50 | 53892.42 | -1907.73 | -4408.2<< | 24850.7 | 0.00 | 97.94 | 2.13 | 4.92 | 0.112 |
| 51 | 53892.26 | -539.66>> | 562.3 | 13616.8 | 0.00 | 12.49 | 0.27 | 1.39 | 0.017 |
| 51 | 53892.53 | -6380.44<< | 81.6 | 30453.6 | 15.53 | 1.81 | 0.04 | 16.46 | 0.288 |
| 51 | 53892.47 | -4060.17 | 6941.1>> | 25004.3 | 2.76 | 154.21 | 3.36 | 10.47 | 0.249 |
| 51 | 53892.42 | -3203.66 | -5134.5<< | 20667.2 | 0.00 | 114.07 | 2.49 | 8.26 | 0.180 |

| BARRA 51 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 51 | 53841.13 | 14.43>> | 562.3 | 13653.8 | 0.00 | 12.49 | 0.27 | 0.04 | 0.004 |
| 51 | 53841.40 | -5826.34<< | 81.6 | 30490.5 | 12.49 | 1.81 | 0.04 | 15.03 | 0.257 |
| 51 | 53841.34 | -3506.08 | 6941.1>> | 25041.3 | 0.00 | 154.17 | 3.36 | 9.04 | 0.222 |
| 51 | 53841.29 | -2649.56 | -5134.5<< | 20704.1 | 0.00 | 114.04 | 2.49 | 6.84 | 0.155 |
| 52 | 53841.13 | -873.18>> | 583.9 | 12752.0 | 0.00 | 12.97 | 0.28 | 2.25 | 0.028 |
| 52 | 53841.40 | -7660.83<< | 600.6 | 16328.4 | 22.59 | 13.34 | 0.29 | 19.76 | 0.366 |
| 52 | 53841.34 | -4654.01 | 7079.3>> | 16472.9 | 6.04 | 157.23 | 3.43 | 12.01 | 0.282 |
| 52 | 53841.29 | -3845.72 | -5742.2<< | 13883.8 | 1.60 | 127.54 | 2.78 | 9.92 | 0.220 |

| BARRA 52 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 52 | 53776.23 | -311.85>> | 584.2 | 12787.0 | 0.00 | 12.97 | 0.28 | 0.80 | 0.010 |
| 52 | 53776.50 | -7099.49<< | 601.0 | 16363.4 | 19.52 | 13.34 | 0.29 | 18.32 | 0.333 |
| 52 | 53776.44 | -4092.67 | 7079.6>> | 16507.8 | 2.97 | 157.18 | 3.43 | 10.56 | 0.253 |
| 52 | 53776.38 | -3284.39 | -5741.9<< | 13918.8 | 0.00 | 127.48 | 2.78 | 8.47 | 0.193 |
| 53 | 53776.23 | -1199.03>> | 605.8 | 11201.2 | 0.00 | 13.45 | 0.29 | 3.09 | 0.040 |
| 53 | 53776.50 | -8933.12<< | 1119.8 | -463.7 | 29.61 | 24.86 | 0.54 | 23.05 | 0.447 |
| 53 | 53776.52 | -6308.90 | 7997.2>> | 13472.4 | 15.17 | 177.55 | 3.87 | 16.28 | 0.386 |
| 53 | 53776.38 | -4479.97 | -6349.2<< | 5769.6 | 5.10 | 140.96 | 3.08 | 11.56 | 0.261 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 53 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 53 | 53699.63 | -645.97>> | 605.5 | 11222.5 | 0.00 | 13.44 | 0.29 | 1.67 | 0.020 |
| 53 | 53699.90 | -8380.05<< | 1119.5 | -442.4 | 26.60 | 24.84 | 0.54 | 21.62 | 0.413 |
| 53 | 53699.92 | -5755.84 | 7996.9>> | 13493.7 | 12.15 | 177.47 | 3.88 | 14.85 | 0.355 |
| 53 | 53699.79 | -3926.91 | -6349.5<< | 5790.9 | 2.08 | 140.91 | 3.08 | 10.13 | 0.233 |
| 54 | 53699.63 | -1533.59>> | 627.1 | 8933.4 | 0.00 | 13.92 | 0.30 | 3.96 | 0.053 |
| 54 | 53699.83 | -10282.31<< | 3880.2 | -8563.2 | 37.07 | 86.11 | 1.88 | 26.53 | 0.564 |
| 54 | 53699.92 | -7375.59 | 9989.9>> | -313.3 | 21.07 | 221.69 | 4.84 | 19.03 | 0.479 |
| 54 | 53699.72 | -5369.39 | -6460.0<< | -10234.9 | 10.02 | 143.36 | 3.13 | 13.85 | 0.310 |

| BARRA 54 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 54 | 53611.13 | -985.57>> | 632.5 | 8928.8 | 0.00 | 14.03 | 0.31 | 2.54 | 0.032 |
| 54 | 53611.31 | -9734.30<< | 3877.3 | -8569.4 | 34.09 | 86.00 | 1.88 | 25.11 | 0.529 |
| 54 | 53611.42 | -6827.57 | 9990.8>> | -322.4 | 18.08 | 221.60 | 4.84 | 17.61 | 0.448 |
| 54 | 53611.29 | -4821.37 | -6463.7<< | -10236.1 | 7.03 | 143.37 | 3.13 | 12.44 | 0.281 |
| 55 | 53611.13 | -1873.17>> | 654.0 | 5927.2 | 0.00 | 14.51 | 0.32 | 4.83 | 0.067 |
| 55 | 53611.31 | -11680.82<< | 4693.8 | -31056.1 | 44.82 | 104.11 | 2.28 | 30.13 | 0.665 |
| 55 | 53611.42 | -8609.41 | 11169.6>> | -16698.5 | 27.89 | 247.74 | 5.42 | 22.21 | 0.573 |
| 55 | 53611.29 | -6017.50 | -7071.4<< | -21617.3 | 13.62 | 156.84 | 3.43 | 15.52 | 0.355 |

| BARRA 55 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 55 | 63972.64 | 4633.67>> | 659.1 | 7328.7 | 3.42 | 15.49 | 0.30 | 11.95 | 0.204 |
| 55 | 64708.60 | -5146.34<< | 4846.2 | -29654.5 | 5.90 | 114.33 | 2.21 | 13.28 | 0.285 |
| 55 | 64478.30 | -2083.56 | 11399.3>> | -15296.9 | 0.00 | 268.60 | 5.20 | 5.38 | 0.238 |
| 55 | 64283.71 | 501.03 | -6881.6<< | -20215.7 | 0.00 | 161.98 | 3.14 | 1.29 | 0.100 |
| 56 | 64053.22 | 3562.50>> | 680.7 | 15959.6 | 0.00 | 15.55 | 0.38 | 8.93 | 0.022 |
| 56 | 64855.94 | -7104.61<< | 4972.1 | -40201.8 | 0.00 | 114.04 | 2.79 | 17.80 | 0.093 |
| 56 | 64589.66 | -3563.57 | 11714.8>> | -23436.5 | 0.00 | 268.35 | 6.58 | 8.93 | 0.133 |
| 56 | 64387.52 | -878.69 | -7490.9<< | -20613.2 | 0.00 | 171.43 | 4.21 | 2.20 | 0.056 |

| BARRA 56 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 56 | 64553.82 | -5141.84>> | 670.5 | 16293.3 | 0.00 | 15.36 | 0.38 | 12.88 | 0.040 |
| 56 | 64553.96 | -15839.12<< | 4796.2 | -39870.1 | 48.63 | 109.85 | 2.70 | 39.69 | 0.272 |
| 56 | 64554.11 | -12288.09 | 11468.9>> | -23108.0 | 28.62 | 262.67 | 6.45 | 30.79 | 0.270 |
| 56 | 64554.07 | -9595.61 | -7723.1<< | -20275.6 | 13.45 | 176.88 | 4.34 | 24.04 | 0.164 |
| 57 | 64553.82 | -6213.02>> | 692.1 | 4370.1 | 0.00 | 15.85 | 0.39 | 15.57 | 0.054 |
| 57 | 64553.96 | -17628.65<< | 4028.7 | -74915.2 | 58.72 | 92.27 | 2.26 | 44.17 | 0.313 |
| 57 | 64554.11 | -13613.97 | 12154.1>> | -50312.3 | 36.10 | 278.37 | 6.83 | 34.11 | 0.310 |
| 57 | 64554.07 | -11252.60 | -8501.5<< | -39862.2 | 22.79 | 194.71 | 4.78 | 28.20 | 0.206 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 57 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 57 | 64542.23 | 16994.61>> | -3626.6 | -74858.7 | 55.15 | 83.06 | 2.04 | 42.59 | 0.292 |
| 57 | 64542.06 | 5558.88<< | -734.4 | 4426.7 | 0.00 | 16.82 | 0.41 | 13.93 | 0.045 |
| 57 | 64542.31 | 10605.16 | 8994.8>> | -39771.3 | 19.15 | 206.00 | 5.06 | 26.57 | 0.199 |
| 57 | 64542.32 | 12979.70 | -11696.8<< | -50288.5 | 32.53 | 267.88 | 6.57 | 32.52 | 0.289 |
| 58 | 64542.23 | 15210.67>> | -4384.7 | -41169.0 | 45.10 | 100.42 | 2.46 | 38.12 | 0.252 |
| 58 | 64542.06 | 4487.68<< | -712.8 | 14975.8 | 0.00 | 16.32 | 0.40 | 11.25 | 0.032 |
| 58 | 64542.31 | 9081.55 | 8120.2>> | -19226.8 | 10.56 | 185.97 | 4.56 | 22.76 | 0.159 |
| 58 | 64542.32 | 11648.17 | -11558.7<< | -24428.2 | 25.03 | 264.72 | 6.50 | 29.19 | 0.258 |

| BARRA 58 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 58 | 64743.46 | 6344.06>> | -4526.1 | -41396.8 | 0.00 | 103.76 | 2.54 | 15.90 | 0.078 |
| 58 | 63938.81 | -4348.70<< | -709.7 | 14747.9 | 0.00 | 16.21 | 0.40 | 10.90 | 0.030 |
| 58 | 64283.72 | 232.21 | 7888.6>> | -19454.7 | 0.00 | 180.44 | 4.44 | 0.58 | 0.058 |
| 58 | 64476.29 | 2791.60 | -11761.2<< | -24656.1 | 0.00 | 269.27 | 6.61 | 7.00 | 0.127 |
| 59 | 64594.19 | 4360.16>> | -4846.4 | -32500.3 | 1.86 | 114.26 | 2.21 | 11.25 | 0.242 |
| 59 | 63858.21 | -5419.88<< | -688.1 | 4461.5 | 7.54 | 16.16 | 0.32 | 13.98 | 0.248 |
| 59 | 64169.60 | -1284.27 | 6896.0>> | -23062.5 | 0.00 | 162.22 | 3.15 | 3.31 | 0.128 |
| 59 | 64360.51 | 1252.99 | -11067.2<< | -20272.3 | 0.00 | 260.61 | 5.05 | 3.23 | 0.198 |

| BARRA 59 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 59 | 53628.19 | 11481.45>> | -4715.8 | -32172.3 | 43.71 | 104.61 | 2.29 | 29.62 | 0.652 |
| 59 | 53628.00 | 1673.74<< | -689.5 | 4787.6 | 0.00 | 15.30 | 0.33 | 4.32 | 0.059 |
| 59 | 53628.18 | 5821.05 | 7089.6>> | -22740.0 | 12.53 | 157.27 | 3.44 | 15.02 | 0.344 |
| 59 | 53628.26 | 8365.51 | -10873.5<< | -19941.3 | 26.54 | 241.20 | 5.27 | 21.58 | 0.553 |
| 60 | 53628.19 | 9534.90>> | -3899.2 | -10103.6 | 32.99 | 86.49 | 1.89 | 24.60 | 0.517 |
| 60 | 53628.00 | 786.14<< | -668.0 | 7370.9 | 0.00 | 14.82 | 0.32 | 2.03 | 0.026 |
| 60 | 53628.18 | 4624.90 | 6482.0>> | -11771.0 | 5.94 | 143.79 | 3.14 | 11.93 | 0.271 |
| 60 | 53628.27 | 6636.39 | -9542.8<< | -1886.4 | 17.02 | 211.68 | 4.63 | 17.12 | 0.429 |

| BARRA 60 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 60 | 53712.35 | 10075.09>> | -3899.2 | -10132.2 | 35.93 | 86.54 | 1.89 | 25.99 | 0.551 |
| 60 | 53712.16 | 1326.34<< | -668.0 | 7342.3 | 0.00 | 14.82 | 0.32 | 3.42 | 0.045 |
| 60 | 53712.34 | 5165.10 | 6482.0>> | -11799.5 | 8.89 | 143.86 | 3.14 | 13.32 | 0.299 |
| 60 | 53712.43 | 7176.59 | -9542.8<< | -1915.0 | 19.97 | 211.79 | 4.62 | 18.51 | 0.460 |
| 61 | 53712.48 | 8171.96>> | -1131.1 | -2435.3 | 25.45 | 25.10 | 0.55 | 21.08 | 0.401 |
| 61 | 53712.16 | 438.71<< | -646.4 | 9195.8 | 0.00 | 14.35 | 0.31 | 1.13 | 0.015 |
| 61 | 53712.42 | 3724.62 | 6353.0>> | 3749.6 | 0.96 | 141.00 | 3.08 | 9.61 | 0.223 |
| 61 | 53712.43 | 5547.02 | -8082.0<< | 11454.3 | 10.99 | 179.37 | 3.92 | 14.31 | 0.345 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 61 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 61 | 53788.65 | 8727.21>> | -1127.3 | -2489.1 | 28.47 | 25.03 | 0.55 | 22.51 | 0.435 |
| 61 | 53788.36 | 993.97<< | -637.0 | 9141.8 | 0.00 | 14.14 | 0.31 | 2.56 | 0.032 |
| 61 | 53788.54 | 4279.88 | 6359.8>> | 3692.3 | 4.00 | 141.21 | 3.08 | 11.04 | 0.251 |
| 61 | 53788.65 | 6102.27 | -8071.5<< | 11403.8 | 14.03 | 179.22 | 3.91 | 15.74 | 0.375 |
| 62 | 53788.65 | 6892.67>> | -608.2 | 13913.0 | 18.38 | 13.50 | 0.29 | 17.78 | 0.321 |
| 62 | 53788.36 | 106.34<< | -615.4 | 10297.4 | 0.00 | 13.66 | 0.30 | 0.27 | 0.006 |
| 62 | 53788.54 | 3083.70 | 5752.2>> | 11424.8 | 0.00 | 127.72 | 2.79 | 7.96 | 0.183 |
| 62 | 53788.59 | 3898.13 | -7228.3<< | 14051.0 | 1.90 | 160.49 | 3.50 | 10.06 | 0.245 |

| BARRA 62 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 62 | 53849.29 | 7442.57>> | -608.2 | 13848.9 | 21.38 | 13.51 | 0.29 | 19.20 | 0.353 |
| 62 | 53849.00 | 656.24<< | -615.4 | 10233.3 | 0.00 | 13.67 | 0.30 | 1.69 | 0.021 |
| 62 | 53849.16 | 3633.59 | 5752.2>> | 11360.6 | 0.43 | 127.76 | 2.79 | 9.37 | 0.210 |
| 62 | 53849.22 | 4448.02 | -7228.2<< | 13987.0 | 4.91 | 160.55 | 3.50 | 11.48 | 0.273 |
| 63 | 53849.29 | 5608.91>> | -89.4 | 27547.7 | 11.29 | 1.99 | 0.04 | 14.47 | 0.245 |
| 63 | 53849.00 | -230.96<< | -593.9 | 10680.1 | 0.00 | 13.19 | 0.29 | 0.60 | 0.008 |
| 63 | 53849.16 | 2437.99 | 5144.8>> | 17733.6 | 0.00 | 114.27 | 2.49 | 6.29 | 0.145 |
| 63 | 53849.22 | 3300.62 | -7090.2<< | 22120.1 | 0.00 | 157.48 | 3.43 | 8.51 | 0.214 |

| BARRA 63 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 63 | 53898.61 | 6159.84>> | -89.5 | 27480.6 | 14.31 | 1.99 | 0.04 | 15.89 | 0.276 |
| 63 | 53898.32 | 319.97<< | -593.9 | 10613.0 | 0.00 | 13.19 | 0.29 | 0.83 | 0.011 |
| 63 | 53898.50 | 2988.92 | 5144.8>> | 17666.5 | 0.00 | 114.31 | 2.49 | 7.71 | 0.170 |
| 63 | 53898.54 | 3851.55 | -7090.3<< | 22053.0 | 1.61 | 157.53 | 3.43 | 9.94 | 0.241 |
| 64 | 53898.61 | 4225.60>> | 310.4 | 37197.9 | 3.67 | 6.90 | 0.15 | 10.90 | 0.174 |
| 64 | 53898.32 | -567.66<< | -572.3 | 10353.0 | 0.00 | 12.72 | 0.28 | 1.46 | 0.018 |
| 64 | 53898.50 | 1693.03 | 4418.0>> | 21394.8 | 0.00 | 98.16 | 2.14 | 4.37 | 0.103 |
| 64 | 53898.54 | 2480.39 | -6355.3<< | 28797.9 | 0.00 | 141.20 | 3.08 | 6.40 | 0.165 |

| BARRA 64 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 64 | 53936.30 | 4788.94>> | 340.6 | 37135.7 | 6.76 | 7.57 | 0.16 | 12.35 | 0.203 |
| 64 | 53936.07 | -4.32<< | -554.9 | 10291.2 | 0.00 | 12.33 | 0.27 | 0.01 | 0.004 |
| 64 | 53936.12 | 2256.37 | 4440.6>> | 21330.7 | 0.00 | 98.68 | 2.15 | 5.82 | 0.127 |
| 64 | 53936.34 | 3043.73 | -6329.0<< | 28739.0 | 0.00 | 140.65 | 3.06 | 7.85 | 0.190 |
| 65 | 53936.30 | 2954.40>> | 859.6 | 45266.9 | 0.00 | 19.10 | 0.42 | 7.62 | 0.116 |
| 65 | 53936.07 | -891.94<< | -533.3 | 9350.3 | 0.00 | 11.85 | 0.26 | 2.30 | 0.028 |
| 65 | 53936.21 | 525.59 | 5092.0>> | 36973.3 | 0.00 | 113.16 | 2.46 | 1.36 | 0.071 |
| 65 | 53936.34 | 1517.75 | -5180.8<< | 33529.0 | 0.00 | 115.13 | 2.51 | 3.92 | 0.107 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 65 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 65 | 53961.12 | 3520.13>> | 859.6 | 45217.3 | 0.00 | 19.11 | 0.42 | 9.08 | 0.143 |
| 65 | 53960.89 | -326.21<< | -533.3 | 9300.6 | 0.00 | 11.85 | 0.26 | 0.84 | 0.010 |
| 65 | 53961.03 | 1091.32 | 5092.0>> | 36923.7 | 0.00 | 113.17 | 2.46 | 2.82 | 0.090 |
| 65 | 53961.16 | 2083.48 | -5180.8<< | 33479.4 | 0.00 | 115.15 | 2.51 | 5.37 | 0.130 |
| 66 | 53960.93 | 1634.45>> | 1372.9 | 29176.4 | 0.00 | 30.51 | 0.66 | 4.22 | 0.064 |
| 66 | 53960.89 | -1213.84<< | -511.7 | 7683.7 | 0.00 | 11.37 | 0.25 | 3.13 | 0.039 |
| 66 | 53961.03 | -393.52 | 4869.0>> | 36165.3 | 0.00 | 108.22 | 2.36 | 1.02 | 0.064 |
| 66 | 53961.12 | 738.29 | -4341.6<< | 28047.0 | 0.00 | 96.50 | 2.10 | 1.90 | 0.067 |

| BARRA 66 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 66 | 53971.53 | 2196.24>> | 1372.9 | 29145.3 | 0.00 | 30.52 | 0.66 | 5.67 | 0.087 |
| 66 | 53971.49 | -652.05<< | -511.7 | 7652.5 | 0.00 | 11.37 | 0.25 | 1.68 | 0.020 |
| 66 | 53971.63 | 168.26 | 4869.0>> | 36134.1 | 0.00 | 108.23 | 2.36 | 0.43 | 0.058 |
| 66 | 53971.71 | 1300.07 | -4341.6<< | 28015.9 | 0.00 | 96.50 | 2.10 | 3.35 | 0.087 |
| 67 | 53971.56 | 785.05>> | 903.4 | 4691.1 | 0.00 | 20.08 | 0.44 | 2.03 | 0.028 |
| 67 | 53971.49 | -1822.88<< | -1139.3 | 38408.6 | 0.00 | 25.32 | 0.55 | 4.70 | 0.069 |
| 67 | 53971.69 | -940.87 | 4360.9>> | 18469.1 | 0.00 | 96.93 | 2.11 | 2.43 | 0.074 |
| 67 | 53971.73 | -124.06 | -4602.7<< | 33344.3 | 0.00 | 102.31 | 2.23 | 0.32 | 0.053 |

| BARRA 67 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 67 | 53971.58 | 1347.22>> | 920.8 | 4674.9 | 0.00 | 20.47 | 0.45 | 3.48 | 0.048 |
| 67 | 53971.55 | -1260.70<< | -1105.8 | 38393.4 | 0.00 | 24.58 | 0.54 | 3.25 | 0.047 |
| 67 | 53971.66 | -394.73 | 4386.0>> | 24662.8 | 0.00 | 97.49 | 2.12 | 1.02 | 0.057 |
| 67 | 53971.85 | 454.14 | -4572.8<< | 27119.2 | 0.00 | 101.64 | 2.21 | 1.17 | 0.061 |
| 68 | 53971.58 | 223.25>> | 344.1 | 535.7 | 0.00 | 7.65 | 0.17 | 0.58 | 0.006 |
| 68 | 53971.55 | -2717.24<< | -1596.9 | 34216.4 | 0.00 | 35.50 | 0.77 | 7.01 | 0.113 |
| 68 | 53971.71 | -1850.30 | 4235.9>> | 30756.8 | 0.00 | 94.15 | 2.05 | 4.77 | 0.107 |
| 68 | 53971.73 | -623.93 | -5069.0<< | 35187.6 | 0.00 | 112.67 | 2.45 | 1.61 | 0.073 |

| BARRA 68 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 68 | 53958.40 | 795.31>> | 344.1 | 538.5 | 0.00 | 7.65 | 0.17 | 2.05 | 0.023 |
| 68 | 53958.37 | -2145.18<< | -1596.9 | 34219.2 | 0.00 | 35.49 | 0.77 | 5.53 | 0.087 |
| 68 | 53958.52 | -1278.24 | 4235.9>> | 30759.6 | 0.00 | 94.15 | 2.05 | 3.30 | 0.085 |
| 68 | 53958.55 | -51.86 | -5069.0<< | 35190.4 | 0.00 | 112.66 | 2.45 | 0.13 | 0.058 |
| 69 | 53958.40 | -92.30>> | 365.7 | 1276.9 | 0.00 | 8.13 | 0.18 | 0.24 | 0.004 |
| 69 | 53958.56 | -4058.43<< | -1117.1 | 49088.0 | 2.74 | 24.83 | 0.54 | 10.47 | 0.172 |
| 69 | 53958.55 | -2638.16 | 4881.3>> | 30671.0 | 0.00 | 108.49 | 2.36 | 6.81 | 0.150 |
| 69 | 53958.55 | -1555.42 | -5240.9<< | 34989.0 | 0.00 | 116.48 | 2.54 | 4.01 | 0.109 |

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| BARRA 69 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 69 | 53931.89 | 478.79>> | 365.7 | 1296.7 | 0.00 | 8.13 | 0.18 | 1.24 | 0.013 |
| 69 | 53932.05 | -3487.34<< | -1116.8 | 49107.8 | 0.00 | 24.82 | 0.54 | 9.00 | 0.144 |
| 69 | 53932.05 | -2067.06 | 4881.5>> | 30690.7 | 0.00 | 108.48 | 2.36 | 5.33 | 0.125 |
| 69 | 53932.05 | -984.32 | -5240.6<< | 35008.9 | 0.00 | 116.46 | 2.54 | 2.54 | 0.088 |
| 70 | 53931.89 | -408.43>> | 387.3 | 1370.8 | 0.00 | 8.61 | 0.19 | 1.05 | 0.012 |
| 70 | 53932.05 | -5321.03<< | -598.0 | 39863.1 | 9.69 | 13.29 | 0.29 | 13.73 | 0.233 |
| 70 | 53932.05 | -3592.35 | 6029.2>> | 24751.1 | 0.18 | 133.98 | 2.92 | 9.27 | 0.212 |
| 70 | 53931.92 | -2691.52 | -4690.9<< | 18414.9 | 0.00 | 104.24 | 2.27 | 6.94 | 0.150 |

| BARRA 70 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 70 | 53892.41 | 158.79>> | 400.2 | 1402.8 | 0.00 | 8.89 | 0.19 | 0.41 | 0.005 |
| 70 | 53892.61 | -4753.82<< | -567.0 | 39895.5 | 6.58 | 12.60 | 0.27 | 12.26 | 0.203 |
| 70 | 53892.50 | -3025.13 | 6053.1>> | 24780.4 | 0.00 | 134.48 | 2.93 | 7.80 | 0.185 |
| 70 | 53892.55 | -2124.31 | -4670.0<< | 18449.2 | 0.00 | 103.75 | 2.26 | 5.48 | 0.125 |
| 71 | 53892.41 | -728.84>> | 421.8 | 804.4 | 0.00 | 9.37 | 0.20 | 1.88 | 0.022 |
| 71 | 53892.61 | -6688.14<< | -166.9 | 29060.5 | 17.22 | 3.71 | 0.08 | 17.25 | 0.306 |
| 71 | 53892.50 | -4381.88 | 6749.2>> | 16904.5 | 4.53 | 149.95 | 3.27 | 11.30 | 0.262 |
| 71 | 53892.55 | -3420.27 | -5396.6<< | 13806.9 | 0.00 | 119.90 | 2.61 | 8.82 | 0.194 |

| BARRA 71 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 71 | 53841.09 | -174.74>> | 421.8 | 841.4 | 0.00 | 9.37 | 0.20 | 0.45 | 0.006 |
| 71 | 53841.29 | -6134.04<< | -166.9 | 29097.4 | 14.19 | 3.71 | 0.08 | 15.82 | 0.275 |
| 71 | 53841.18 | -3827.79 | 6749.2>> | 16941.5 | 1.50 | 149.90 | 3.27 | 9.87 | 0.234 |
| 71 | 53841.22 | -2866.18 | -5396.6<< | 13843.9 | 0.00 | 119.86 | 2.61 | 7.39 | 0.168 |
| 72 | 53841.09 | -1062.38>> | 443.4 | -457.6 | 0.00 | 9.85 | 0.21 | 2.74 | 0.033 |
| 72 | 53841.29 | -7968.61<< | 352.2 | 14288.6 | 24.28 | 7.82 | 0.17 | 20.56 | 0.382 |
| 72 | 53841.18 | -4975.76 | 6887.3>> | 7697.2 | 7.81 | 152.97 | 3.33 | 12.84 | 0.296 |
| 72 | 53841.22 | -4062.39 | -6004.3<< | 6568.5 | 2.79 | 133.36 | 2.91 | 10.48 | 0.235 |

| BARRA 72 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 72 | 53776.43 | -502.60>> | 451.1 | -423.0 | 0.00 | 10.02 | 0.22 | 1.30 | 0.015 |
| 72 | 53776.66 | -7408.83<< | 366.9 | 14323.3 | 21.22 | 8.15 | 0.18 | 19.11 | 0.349 |
| 72 | 53776.45 | -4415.98 | 6898.9>> | 7728.7 | 4.75 | 153.17 | 3.34 | 11.39 | 0.266 |
| 72 | 53776.66 | -3502.60 | -5993.2<< | 6606.1 | 0.00 | 133.06 | 2.90 | 9.04 | 0.207 |
| 73 | 53776.43 | -1390.24>> | 472.7 | -2410.3 | 0.00 | 10.49 | 0.23 | 3.59 | 0.046 |
| 73 | 53776.66 | -9243.41<< | 886.0 | -3162.7 | 31.32 | 19.67 | 0.43 | 23.85 | 0.464 |
| 73 | 53776.63 | -6640.14 | 7849.5>> | 3894.2 | 16.99 | 174.27 | 3.80 | 17.13 | 0.402 |
| 73 | 53776.66 | -4698.81 | -6600.8<< | -2005.7 | 6.31 | 146.55 | 3.20 | 12.12 | 0.277 |

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| BARRA 73 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 73 | 53699.64 | -835.76>> | 472.7 | -2389.1 | 0.00 | 10.49 | 0.23 | 2.16 | 0.026 |
| 73 | 53699.87 | -8688.93<< | 886.0 | -3141.4 | 28.30 | 19.66 | 0.43 | 22.42 | 0.430 |
| 73 | 53699.84 | -6085.66 | 7849.5>> | 3915.5 | 13.96 | 174.19 | 3.80 | 15.70 | 0.371 |
| 73 | 53699.88 | -4144.33 | -6600.8<< | -1984.5 | 3.27 | 146.48 | 3.20 | 10.69 | 0.248 |
| 74 | 53699.64 | -1723.41>> | 494.3 | -5076.0 | 0.00 | 10.97 | 0.24 | 4.45 | 0.059 |
| 74 | 53699.76 | -10597.51<< | 3717.8 | -11946.3 | 38.81 | 82.51 | 1.80 | 27.34 | 0.582 |
| 74 | 53699.84 | -7704.06 | 9842.5>> | -10583.7 | 22.87 | 218.42 | 4.77 | 19.87 | 0.496 |
| 74 | 53699.83 | -5579.11 | -6671.9<< | -18311.8 | 11.17 | 148.06 | 3.23 | 14.39 | 0.325 |

| BARRA 74 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 74 | 53611.15 | -1175.26>> | 494.3 | -5080.3 | 0.00 | 10.96 | 0.24 | 3.03 | 0.038 |
| 74 | 53611.27 | -10049.36<< | 3717.8 | -11950.7 | 35.83 | 82.46 | 1.80 | 25.93 | 0.547 |
| 74 | 53611.34 | -7155.91 | 9842.5>> | -10588.1 | 19.89 | 218.31 | 4.77 | 18.46 | 0.464 |
| 74 | 53611.33 | -5030.96 | -6671.9<< | -18316.1 | 8.18 | 147.98 | 3.23 | 12.98 | 0.295 |
| 75 | 53611.15 | -2062.88>> | 515.8 | -8480.6 | 0.00 | 11.44 | 0.25 | 5.32 | 0.073 |
| 75 | 53611.27 | -11995.97<< | 4534.4 | -35100.1 | 46.55 | 100.57 | 2.20 | 30.95 | 0.683 |
| 75 | 53611.34 | -8937.79 | 11021.3>> | -27658.9 | 29.70 | 244.45 | 5.34 | 23.06 | 0.590 |
| 75 | 53611.33 | -6227.15 | -7279.5<< | -30138.0 | 14.77 | 161.46 | 3.53 | 16.06 | 0.370 |

| BARRA 75 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 75 | 63985.59 | 4449.23>> | 411.6 | -7079.3 | 2.46 | 9.67 | 0.19 | 11.48 | 0.192 |
| 75 | 64731.15 | -5455.82<< | 4488.0 | -33700.8 | 7.50 | 105.89 | 2.05 | 14.07 | 0.297 |
| 75 | 64501.74 | -2406.27 | 11043.7>> | -26262.7 | 0.00 | 260.25 | 5.04 | 6.21 | 0.246 |
| 75 | 64298.39 | 296.73 | -7168.2<< | -28733.0 | 0.00 | 168.74 | 3.27 | 0.77 | 0.099 |
| 76 | 64066.17 | 3378.52>> | 433.2 | 1159.9 | 0.00 | 9.90 | 0.24 | 8.47 | 0.020 |
| 76 | 64878.18 | -7408.86<< | 4603.4 | -44886.2 | 1.01 | 105.60 | 2.58 | 18.57 | 0.094 |
| 76 | 64617.55 | -3944.43 | 11356.3>> | -36929.9 | 0.00 | 260.18 | 6.38 | 9.88 | 0.131 |
| 76 | 64402.17 | -1082.39 | -7777.3<< | -29560.0 | 0.00 | 178.00 | 4.37 | 2.71 | 0.060 |

| BARRA 76 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 76 | 64553.50 | -5331.16>> | 548.0 | 1494.2 | 0.00 | 12.55 | 0.31 | 13.36 | 0.042 |
| 76 | 64553.59 | -16149.08<< | 4666.6 | -44551.8 | 50.38 | 106.88 | 2.62 | 40.47 | 0.278 |
| 76 | 64553.70 | -12614.35 | 11342.8>> | -34731.6 | 30.46 | 259.79 | 6.38 | 31.61 | 0.275 |
| 76 | 64553.76 | -9804.73 | -7909.6<< | -29225.6 | 14.63 | 181.15 | 4.45 | 24.57 | 0.170 |
| 77 | 64553.50 | -6402.39>> | 569.5 | -10826.9 | 0.00 | 13.04 | 0.32 | 16.04 | 0.056 |
| 77 | 64553.59 | -17938.69<< | 3896.6 | -80249.0 | 60.46 | 89.25 | 2.19 | 44.95 | 0.320 |
| 77 | 64553.70 | -13940.29 | 12028.1>> | -62622.0 | 37.93 | 275.48 | 6.76 | 34.93 | 0.316 |
| 77 | 64553.76 | -11459.58 | -8689.3<< | -49243.2 | 23.96 | 199.01 | 4.88 | 28.72 | 0.213 |

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| BARRA 77 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 77 | 64541.81 | 17379.32>> | -3346.6 | -79573.1 | 57.32 | 76.64 | 1.88 | 43.55 | 0.301 |
| 77 | 64541.83 | 6334.93<< | -920.0 | -12356.1 | 0.00 | 21.07 | 0.52 | 15.87 | 0.056 |
| 77 | 64541.83 | 11020.83 | 8760.6>> | -50196.7 | 21.49 | 200.63 | 4.92 | 27.62 | 0.205 |
| 77 | 64541.95 | 13395.45 | -11283.9<< | -61554.2 | 34.87 | 258.42 | 6.34 | 33.57 | 0.292 |
| 78 | 64541.81 | 15595.32>> | -4104.7 | -45073.7 | 47.27 | 94.01 | 2.31 | 39.08 | 0.260 |
| 78 | 64541.83 | 5263.69<< | -898.4 | -176.4 | 0.00 | 20.57 | 0.50 | 13.19 | 0.042 |
| 78 | 64541.83 | 9497.18 | 7885.9>> | -28777.9 | 12.91 | 180.60 | 4.43 | 23.80 | 0.164 |
| 78 | 64541.95 | 12063.86 | -11145.8<< | -34819.4 | 27.37 | 255.26 | 6.27 | 30.23 | 0.260 |

| BARRA 78 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 78 | 64772.07 | 6727.85>> | -4065.5 | -45301.4 | 0.00 | 93.21 | 2.28 | 16.86 | 0.080 |
| 78 | 63997.01 | -3574.66<< | -896.2 | -404.1 | 0.00 | 20.47 | 0.51 | 8.96 | 0.023 |
| 78 | 64293.16 | 365.35 | 7884.2>> | -20309.9 | 0.00 | 180.35 | 4.44 | 0.92 | 0.059 |
| 78 | 64507.30 | 3206.33 | -11243.6<< | -35047.1 | 0.00 | 257.46 | 6.32 | 8.03 | 0.122 |
| 79 | 64622.47 | 4739.12>> | -4398.5 | -35562.5 | 3.81 | 103.72 | 2.01 | 12.23 | 0.256 |
| 79 | 63916.44 | -4645.91<< | -874.6 | -9060.7 | 3.50 | 20.55 | 0.40 | 11.99 | 0.207 |
| 79 | 64178.75 | -1155.95 | 6873.3>> | -23603.7 | 0.00 | 161.70 | 3.14 | 2.98 | 0.123 |
| 79 | 64391.56 | 1667.64 | -10544.1<< | -29789.6 | 0.00 | 248.33 | 4.81 | 4.30 | 0.205 |

| BARRA 79 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 79 | 53627.92 | 11861.38>> | -4408.1 | -35236.8 | 45.80 | 97.78 | 2.14 | 30.60 | 0.673 |
| 79 | 53627.95 | 2449.82<< | -854.6 | -8735.0 | 0.00 | 18.96 | 0.41 | 6.32 | 0.093 |
| 79 | 53627.93 | 6232.01 | 6865.6>> | -31380.8 | 14.79 | 152.30 | 3.33 | 16.08 | 0.363 |
| 79 | 53628.07 | 8781.23 | -10427.2<< | -29463.9 | 28.83 | 231.30 | 5.06 | 22.65 | 0.571 |
| 80 | 53627.92 | 9914.77>> | -3591.5 | -12369.7 | 35.08 | 79.67 | 1.74 | 25.58 | 0.537 |
| 80 | 53627.95 | 1562.18<< | -833.0 | -4521.9 | 0.00 | 18.48 | 0.40 | 4.03 | 0.056 |
| 80 | 53627.93 | 5035.82 | 6258.0>> | -19548.5 | 8.20 | 138.82 | 3.03 | 12.99 | 0.289 |
| 80 | 53628.10 | 7052.11 | -9097.4<< | -10523.6 | 19.31 | 201.80 | 4.41 | 18.19 | 0.446 |

| BARRA 80 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 80 | 53711.76 | 10453.22>> | -3591.6 | -12398.1 | 38.01 | 79.71 | 1.74 | 26.97 | 0.571 |
| 80 | 53711.79 | 2100.63<< | -833.0 | -4550.4 | 0.00 | 18.49 | 0.40 | 5.42 | 0.078 |
| 80 | 53711.77 | 5574.27 | 6257.8>> | -19577.0 | 11.14 | 138.88 | 3.03 | 14.38 | 0.318 |
| 80 | 53711.94 | 7590.56 | -9097.5<< | -10552.0 | 22.25 | 201.91 | 4.41 | 19.58 | 0.477 |
| 81 | 53711.87 | 8578.45>> | -852.2 | -4213.2 | 27.68 | 18.91 | 0.41 | 22.13 | 0.423 |
| 81 | 53711.79 | 1213.39<< | -811.5 | -1071.9 | 0.00 | 18.01 | 0.39 | 3.13 | 0.042 |
| 81 | 53711.81 | 4136.16 | 6183.7>> | -3266.1 | 3.23 | 137.24 | 3.00 | 10.67 | 0.241 |
| 81 | 53711.94 | 5960.28 | -7639.6<< | 3678.1 | 13.27 | 169.55 | 3.70 | 15.38 | 0.360 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 81 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 81 | 53788.35 | 9135.45>> | -849.3 | -4267.3 | 30.72 | 18.86 | 0.41 | 23.57 | 0.457 |
| 81 | 53788.32 | 1770.39<< | -807.1 | -1126.0 | 0.00 | 17.92 | 0.39 | 4.57 | 0.064 |
| 81 | 53788.23 | 4693.16 | 6187.0>> | -3323.5 | 6.27 | 137.37 | 3.00 | 12.11 | 0.270 |
| 81 | 53788.46 | 6517.28 | -7633.0<< | 3627.2 | 16.31 | 169.48 | 3.70 | 16.81 | 0.392 |
| 82 | 53788.35 | 7300.85>> | -330.2 | 12992.5 | 20.62 | 7.33 | 0.16 | 18.83 | 0.343 |
| 82 | 53788.32 | 882.74<< | -785.5 | 1660.1 | 0.00 | 17.44 | 0.38 | 2.28 | 0.030 |
| 82 | 53788.23 | 3496.94 | 5579.3>> | 5277.0 | 0.00 | 123.88 | 2.70 | 9.02 | 0.201 |
| 82 | 53788.38 | 4393.83 | -6493.0<< | 7426.1 | 4.63 | 144.17 | 3.14 | 11.34 | 0.259 |

| BARRA 82 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 82 | 53849.18 | 7851.90>> | -316.0 | 12928.6 | 23.63 | 7.02 | 0.15 | 20.26 | 0.375 |
| 82 | 53849.22 | 1433.79<< | -776.7 | 1596.3 | 0.00 | 17.25 | 0.38 | 3.70 | 0.050 |
| 82 | 53848.99 | 4048.00 | 5589.9>> | 5210.2 | 2.71 | 124.16 | 2.71 | 10.44 | 0.228 |
| 82 | 53849.32 | 4944.88 | -6481.4<< | 7365.1 | 7.64 | 143.96 | 3.14 | 12.76 | 0.288 |
| 83 | 53849.18 | 6017.29>> | 203.1 | 27492.8 | 13.54 | 4.51 | 0.10 | 15.52 | 0.269 |
| 83 | 53849.22 | 546.14<< | -755.1 | 3675.5 | 0.00 | 16.77 | 0.37 | 1.41 | 0.019 |
| 83 | 53848.99 | 2851.76 | 4982.2>> | 12455.7 | 0.00 | 110.66 | 2.41 | 7.36 | 0.162 |
| 83 | 53849.32 | 3796.88 | -6343.3<< | 16544.9 | 1.33 | 140.89 | 3.07 | 9.80 | 0.227 |

| BARRA 83 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 83 | 53898.37 | 6566.99>> | 179.5 | 27426.1 | 16.55 | 3.99 | 0.09 | 16.94 | 0.299 |
| 83 | 53898.34 | 1095.84<< | -767.3 | 3608.4 | 0.00 | 17.05 | 0.37 | 2.83 | 0.037 |
| 83 | 53898.25 | 3401.46 | 4965.8>> | 12391.3 | 0.00 | 110.33 | 2.40 | 8.78 | 0.187 |
| 83 | 53898.39 | 4346.58 | -6361.7<< | 16475.1 | 4.34 | 141.34 | 3.08 | 11.21 | 0.255 |
| 84 | 53898.37 | 4631.67>> | 576.7 | 37998.3 | 5.91 | 12.81 | 0.28 | 11.95 | 0.197 |
| 84 | 53898.34 | 208.17<< | -745.7 | 4977.6 | 0.00 | 16.57 | 0.36 | 0.54 | 0.009 |
| 84 | 53898.25 | 2104.49 | 4236.3>> | 16985.6 | 0.00 | 94.12 | 2.05 | 5.43 | 0.118 |
| 84 | 53898.39 | 2973.60 | -5622.3<< | 24257.5 | 0.00 | 124.92 | 2.72 | 7.67 | 0.176 |

| BARRA 84 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 84 | 53936.00 | 5194.29>> | 638.2 | 37935.5 | 8.99 | 14.18 | 0.31 | 13.40 | 0.227 |
| 84 | 53936.09 | 770.80<< | -715.9 | 4916.2 | 0.00 | 15.91 | 0.35 | 1.99 | 0.026 |
| 84 | 53935.72 | 2715.31 | 4278.6>> | 23502.8 | 0.00 | 95.08 | 2.07 | 7.00 | 0.146 |
| 84 | 53936.26 | 3488.03 | -5575.0<< | 17617.3 | 0.00 | 123.89 | 2.70 | 9.00 | 0.200 |
| 85 | 53936.00 | 3360.51>> | 1157.0 | 46914.7 | 0.00 | 25.71 | 0.56 | 8.67 | 0.138 |
| 85 | 53936.09 | -116.45<< | -694.4 | 5602.9 | 0.00 | 15.43 | 0.34 | 0.30 | 0.007 |
| 85 | 53935.87 | 971.79 | 4907.9>> | 40129.8 | 0.00 | 109.07 | 2.38 | 2.51 | 0.083 |
| 85 | 53936.26 | 1962.68 | -4427.2<< | 23338.3 | 0.00 | 98.39 | 2.14 | 5.06 | 0.115 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 85 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 85 | 53960.76 | 3926.83>> | 1120.3 | 46865.5 | 2.01 | 24.90 | 0.54 | 10.13 | 0.166 |
| 85 | 53960.80 | 449.86<< | -711.1 | 5552.9 | 0.00 | 15.81 | 0.34 | 1.16 | 0.015 |
| 85 | 53960.72 | 1489.91 | 4876.7>> | 33397.8 | 0.00 | 108.39 | 2.36 | 3.84 | 0.102 |
| 85 | 53960.89 | 2577.19 | -4454.7<< | 29971.0 | 0.00 | 99.01 | 2.16 | 6.65 | 0.142 |
| 86 | 53960.56 | 2052.95>> | 1510.4 | 31844.1 | 0.00 | 33.57 | 0.73 | 5.30 | 0.082 |
| 86 | 53960.91 | -547.76<< | 3151.2 | 15547.6 | 0.00 | 70.04 | 1.52 | 1.41 | 0.045 |
| 86 | 53960.72 | 287.65 | 4654.0>> | 41511.2 | 0.00 | 103.44 | 2.25 | 0.74 | 0.058 |
| 86 | 53960.85 | 906.51 | -3761.1<< | 17144.3 | 0.00 | 83.59 | 1.82 | 2.34 | 0.065 |

| BARRA 86 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 86 | 53971.34 | 2614.74>> | 1540.2 | 31812.3 | 0.00 | 34.23 | 0.75 | 6.75 | 0.107 |
| 86 | 53971.63 | 14.03<< | 3173.3 | 15515.0 | 0.00 | 70.53 | 1.54 | 0.04 | 0.032 |
| 86 | 53971.43 | 897.63 | 4689.4>> | 48263.7 | 0.00 | 104.23 | 2.27 | 2.32 | 0.077 |
| 86 | 53971.78 | 1420.10 | -3739.3<< | 10329.2 | 0.00 | 83.12 | 1.81 | 3.66 | 0.083 |
| 87 | 53971.40 | 1179.93>> | 1154.8 | 16779.3 | 0.00 | 25.67 | 0.56 | 3.04 | 0.044 |
| 87 | 53971.48 | -1322.53<< | 2830.1 | 34315.6 | 0.00 | 62.91 | 1.37 | 3.41 | 0.068 |
| 87 | 53971.47 | -545.16 | 4156.4>> | 48632.7 | 0.00 | 92.39 | 2.01 | 1.41 | 0.058 |
| 87 | 53971.73 | 238.95 | -4085.4<< | 16139.1 | 0.00 | 90.81 | 1.98 | 0.62 | 0.049 |

| BARRA 87 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 87 | 53971.34 | 1742.17>> | 1154.8 | 16763.4 | 0.00 | 25.67 | 0.56 | 4.49 | 0.066 |
| 87 | 53971.42 | -760.29<< | 2830.1 | 34299.7 | 0.00 | 62.91 | 1.37 | 1.96 | 0.048 |
| 87 | 53971.41 | 17.07 | 4156.4>> | 48616.9 | 0.00 | 92.39 | 2.01 | 0.04 | 0.045 |
| 87 | 53971.67 | 801.19 | -4085.4<< | 16123.2 | 0.00 | 90.81 | 1.98 | 2.07 | 0.066 |
| 88 | 53971.32 | 590.82>> | 548.4 | 5075.1 | 0.00 | 12.19 | 0.27 | 1.52 | 0.018 |
| 88 | 53971.42 | -2182.44<< | 2385.5 | 39609.0 | 0.00 | 53.02 | 1.15 | 5.63 | 0.098 |
| 88 | 53971.52 | -1113.76 | 3922.4>> | 34006.0 | 0.00 | 87.18 | 1.90 | 2.87 | 0.074 |
| 88 | 53971.55 | -313.35 | -4662.1<< | 32896.0 | 0.00 | 103.63 | 2.26 | 0.81 | 0.059 |

| BARRA 88 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 88 | 53958.13 | 1162.75>> | 565.7 | 5077.7 | 0.00 | 12.57 | 0.27 | 3.00 | 0.038 |
| 88 | 53958.16 | -1610.51<< | 2419.2 | 39610.7 | 0.00 | 53.77 | 1.17 | 4.15 | 0.074 |
| 88 | 53958.29 | -541.83 | 3953.4>> | 34006.9 | 0.00 | 87.87 | 1.91 | 1.40 | 0.055 |
| 88 | 53958.47 | 258.58 | -4631.5<< | 32901.0 | 0.00 | 102.94 | 2.24 | 0.67 | 0.057 |
| 89 | 53958.13 | 275.08>> | 587.3 | 6587.6 | 0.00 | 13.05 | 0.28 | 0.71 | 0.010 |
| 89 | 53958.41 | -3523.24<< | -760.3 | 44462.3 | 0.00 | 16.90 | 0.37 | 9.09 | 0.142 |
| 89 | 53958.32 | -1905.18 | 4695.6>> | 35396.4 | 0.00 | 104.36 | 2.27 | 4.91 | 0.116 |
| 89 | 53958.47 | -1248.29 | -4801.4<< | 33338.8 | 0.00 | 106.72 | 2.32 | 3.22 | 0.091 |

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| BARRA 89 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 89 | 53931.63 | 846.17>> | 587.5 | 6607.3 | 0.00 | 13.06 | 0.28 | 2.18 | 0.027 |
| 89 | 53931.91 | -2952.14<< | -759.8 | 44482.1 | 0.00 | 16.88 | 0.37 | 7.62 | 0.115 |
| 89 | 53931.82 | -1334.09 | 4696.0>> | 35416.1 | 0.00 | 104.36 | 2.27 | 3.44 | 0.093 |
| 89 | 53931.96 | -677.19 | -4801.0<< | 33358.5 | 0.00 | 106.69 | 2.32 | 1.75 | 0.071 |
| 90 | 53931.63 | -41.08>> | 609.1 | 7452.5 | 0.00 | 13.53 | 0.29 | 0.11 | 0.005 |
| 90 | 53931.91 | -4785.91<< | -241.0 | 36360.2 | 6.74 | 5.35 | 0.12 | 12.35 | 0.202 |
| 90 | 53931.82 | -2859.42 | 5843.8>> | 31014.6 | 0.00 | 129.86 | 2.83 | 7.38 | 0.174 |
| 90 | 53931.96 | -2362.73 | -4101.3<< | 30167.9 | 0.00 | 91.14 | 1.98 | 6.10 | 0.127 |

| BARRA 90 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 90 | 53892.20 | 526.14>> | 608.9 | 7484.5 | 0.00 | 13.53 | 0.29 | 1.36 | 0.017 |
| 90 | 53892.48 | -4218.69<< | -241.4 | 36392.1 | 3.64 | 5.36 | 0.12 | 10.88 | 0.173 |
| 90 | 53892.39 | -2292.20 | 5843.4>> | 31046.6 | 0.00 | 129.82 | 2.83 | 5.91 | 0.149 |
| 90 | 53892.54 | -1795.51 | -4101.7<< | 30199.8 | 0.00 | 91.13 | 1.99 | 4.63 | 0.103 |
| 91 | 53892.20 | -361.54>> | 630.4 | 7657.3 | 0.00 | 14.01 | 0.31 | 0.93 | 0.012 |
| 91 | 53892.48 | -6153.78<< | 155.3 | 26672.6 | 14.28 | 3.45 | 0.08 | 15.88 | 0.276 |
| 91 | 53892.39 | -3647.23 | 6535.6>> | 24711.1 | 0.49 | 145.20 | 3.16 | 9.41 | 0.222 |
| 91 | 53892.43 | -3197.35 | -4498.0<< | 11746.1 | 0.00 | 99.93 | 2.18 | 8.25 | 0.171 |

| BARRA 91 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 91 | 53906.07 | 200.12>> | 644.6 | 7643.8 | 0.00 | 14.32 | 0.31 | 0.52 | 0.008 |
| 91 | 53906.39 | -5592.12<< | 178.6 | 26659.3 | 11.19 | 3.97 | 0.09 | 14.43 | 0.245 |
| 91 | 53906.24 | -3085.58 | 6558.0>> | 24694.8 | 0.00 | 145.71 | 3.17 | 7.96 | 0.196 |
| 91 | 53906.36 | -2635.70 | -4481.8<< | 11735.1 | 0.00 | 99.58 | 2.17 | 6.80 | 0.145 |
| 92 | 53906.07 | -687.56>> | 666.2 | 7132.0 | 0.00 | 14.80 | 0.32 | 1.77 | 0.022 |
| 92 | 53906.39 | -7426.77<< | 697.7 | 12987.8 | 21.28 | 15.50 | 0.34 | 19.16 | 0.353 |
| 92 | 53906.24 | -4233.60 | 6696.1>> | 17008.7 | 3.71 | 148.78 | 3.24 | 10.92 | 0.254 |
| 92 | 53906.36 | -3831.95 | -5089.5<< | 4943.2 | 1.51 | 113.08 | 2.46 | 9.89 | 0.210 |

| BARRA 92 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 92 | 54010.14 | -100.37>> | 666.5 | 7051.6 | 0.00 | 14.82 | 0.32 | 0.26 | 0.006 |
| 92 | 54010.46 | -6839.58<< | 698.0 | 12907.4 | 18.01 | 15.52 | 0.34 | 17.64 | 0.319 |
| 92 | 54010.31 | -3646.41 | 6696.4>> | 16928.2 | 0.46 | 148.88 | 3.24 | 9.41 | 0.225 |
| 92 | 54010.43 | -3244.76 | -5089.2<< | 4862.9 | 0.00 | 113.15 | 2.46 | 8.37 | 0.182 |
| 93 | 54010.14 | -987.65>> | 688.1 | 5909.5 | 0.00 | 15.30 | 0.33 | 2.55 | 0.033 |
| 93 | 54010.32 | -8714.44<< | 2928.3 | 5932.3 | 28.32 | 65.10 | 1.42 | 22.48 | 0.454 |
| 93 | 54010.51 | -5899.21 | 7679.3>> | 14322.8 | 12.84 | 170.73 | 3.71 | 15.22 | 0.358 |
| 93 | 54010.43 | -4440.46 | -5696.6<< | -3203.9 | 4.82 | 126.65 | 2.76 | 11.46 | 0.250 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 93 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 93 | 54110.27 | -398.58>> | 687.9 | 5861.4 | 0.00 | 15.30 | 0.33 | 1.03 | 0.014 |
| 93 | 54110.44 | -8125.38<< | 2928.1 | 5884.2 | 25.04 | 65.14 | 1.42 | 20.96 | 0.419 |
| 93 | 54110.63 | -5310.15 | 7679.0>> | 14274.8 | 9.58 | 170.82 | 3.71 | 13.70 | 0.326 |
| 93 | 54110.55 | -3851.39 | -5696.8<< | -3252.0 | 1.56 | 126.73 | 2.75 | 9.94 | 0.220 |
| 94 | 54110.27 | -1286.26>> | 709.4 | 4091.9 | 0.00 | 15.78 | 0.34 | 3.32 | 0.044 |
| 94 | 54110.44 | -10072.06<< | 3744.7 | -13225.8 | 35.73 | 83.30 | 1.81 | 25.98 | 0.549 |
| 94 | 54110.63 | -6927.21 | 9672.1>> | 1403.1 | 18.46 | 215.16 | 4.68 | 17.87 | 0.449 |
| 94 | 54110.55 | -5047.65 | -6304.4<< | -12597.4 | 8.13 | 140.25 | 3.05 | 13.02 | 0.291 |

| BARRA 94 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 94 | 54196.36 | -693.25>> | 712.4 | 4080.8 | 0.00 | 15.86 | 0.34 | 1.79 | 0.023 |
| 94 | 54196.51 | -9479.05<< | 3739.5 | -13238.3 | 32.44 | 83.23 | 1.81 | 24.45 | 0.512 |
| 94 | 54196.75 | -6334.20 | 9673.8>> | 1387.8 | 15.17 | 215.31 | 4.67 | 16.34 | 0.415 |
| 94 | 54196.72 | -4454.65 | -6309.4<< | -12605.2 | 4.86 | 140.43 | 3.05 | 11.49 | 0.260 |
| 95 | 54196.36 | -1580.95>> | 734.0 | 1692.5 | 0.00 | 16.34 | 0.35 | 4.08 | 0.056 |
| 95 | 54196.51 | -11425.78<< | 4556.1 | -35191.6 | 43.13 | 101.40 | 2.20 | 29.48 | 0.648 |
| 95 | 54196.75 | -8116.17 | 10852.7>> | -13962.8 | 24.96 | 241.55 | 5.24 | 20.94 | 0.539 |
| 95 | 54196.72 | -5650.92 | -6917.1<< | -23217.6 | 11.42 | 153.95 | 3.34 | 14.58 | 0.333 |

| BARRA 95 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 95 | 64809.25 | 5012.91>> | 668.4 | 3191.5 | 5.19 | 15.78 | 0.30 | 12.93 | 0.226 |
| 95 | 65547.91 | -4804.19<< | 4614.3 | -33692.6 | 3.93 | 109.33 | 2.09 | 12.39 | 0.263 |
| 95 | 65299.88 | -1503.88 | 11109.3>> | -12463.9 | 0.00 | 262.89 | 5.05 | 3.88 | 0.209 |
| 95 | 65141.36 | 602.00 | -6687.2<< | -30099.2 | 0.00 | 158.11 | 3.04 | 1.55 | 0.100 |
| 96 | 64889.86 | 3941.61>> | 690.0 | 12621.6 | 0.00 | 15.83 | 0.39 | 9.88 | 0.026 |
| 96 | 65694.52 | -6752.65<< | 4722.1 | -43443.0 | 0.00 | 108.74 | 2.64 | 16.92 | 0.086 |
| 96 | 65410.81 | -2978.13 | 11416.3>> | -19258.8 | 0.00 | 262.54 | 6.39 | 7.46 | 0.123 |
| 96 | 65244.29 | -768.41 | -7193.5<< | -29937.4 | 0.00 | 165.30 | 4.03 | 1.93 | 0.052 |

| BARRA 96 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 96 | 66009.68 | -4884.16>> | 751.0 | 13451.6 | 0.00 | 17.32 | 0.42 | 12.24 | 0.037 |
| 96 | 66009.77 | -15608.69<< | 4651.6 | -42614.9 | 46.45 | 107.28 | 2.60 | 39.11 | 0.266 |
| 96 | 66010.13 | -11823.52 | 11133.7>> | -18433.7 | 25.27 | 256.77 | 6.21 | 29.63 | 0.256 |
| 96 | 66010.11 | -9321.92 | -7407.9<< | -20335.2 | 11.27 | 170.84 | 4.14 | 23.36 | 0.156 |
| 97 | 66009.68 | -5954.96>> | 772.5 | 2074.1 | 0.00 | 17.82 | 0.43 | 14.92 | 0.051 |
| 97 | 66009.77 | -17399.00<< | 3879.8 | -77166.7 | 56.47 | 89.48 | 2.17 | 43.60 | 0.307 |
| 97 | 66010.13 | -13147.50 | 11819.0>> | -44652.0 | 32.68 | 272.57 | 6.60 | 32.95 | 0.296 |
| 97 | 66009.88 | -10906.63 | -8075.6<< | -38763.0 | 20.14 | 186.24 | 4.51 | 27.33 | 0.195 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 97 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 97 | 66328.02 | 16529.97>> | -3166.4 | -70268.9 | 51.41 | 73.13 | 1.76 | 41.42 | 0.279 |
| 97 | 66327.77 | 5885.36<< | 97.7 | 2450.3 | 0.00 | 2.26 | 0.05 | 14.75 | 0.049 |
| 97 | 66327.89 | 10939.54 | 6763.3>> | -58503.2 | 20.17 | 156.21 | 3.77 | 27.41 | 0.180 |
| 97 | 66328.18 | 12657.15 | -9550.9<< | -48300.0 | 29.77 | 220.59 | 5.32 | 31.72 | 0.251 |
| 98 | 66328.15 | 14296.55>> | -968.0 | -52144.7 | 38.93 | 22.36 | 0.54 | 35.82 | 0.211 |
| 98 | 66327.77 | 4814.05<< | 119.3 | 13686.3 | 0.00 | 2.76 | 0.07 | 12.06 | 0.035 |
| 98 | 66327.89 | 9415.84 | 5888.7>> | -37258.6 | 11.66 | 136.01 | 3.28 | 23.59 | 0.141 |
| 98 | 66328.18 | 10835.39 | -8105.0<< | -23629.2 | 19.59 | 187.20 | 4.52 | 27.15 | 0.194 |

| BARRA 98 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 98 | 66482.82 | 5575.68>> | -1208.0 | -52362.7 | 0.00 | 27.92 | 0.67 | 13.97 | 0.047 |
| 98 | 65771.16 | -3880.08<< | 186.5 | 13468.3 | 0.00 | 4.30 | 0.10 | 9.72 | 0.024 |
| 98 | 66116.44 | 708.75 | 5858.5>> | -37476.5 | 0.00 | 135.18 | 3.27 | 1.78 | 0.037 |
| 98 | 66227.99 | 2187.49 | -8367.4<< | -25806.8 | 0.00 | 193.17 | 4.67 | 5.48 | 0.074 |
| 99 | 66337.17 | 3639.36>> | -1805.5 | -44655.3 | 0.00 | 42.95 | 0.82 | 9.39 | 0.165 |
| 99 | 65690.57 | -4951.38<< | 208.1 | 4167.8 | 4.66 | 4.93 | 0.09 | 12.77 | 0.219 |
| 99 | 66000.48 | -832.61 | 4779.6>> | -39694.5 | 0.00 | 113.52 | 2.16 | 2.15 | 0.079 |
| 99 | 66082.14 | 251.15 | -6974.2<< | -24652.8 | 0.00 | 165.70 | 3.16 | 0.65 | 0.095 |

| BARRA 99 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 99 | 55688.51 | 11016.67>> | -1592.2 | -44239.6 | 40.19 | 35.75 | 0.76 | 28.42 | 0.587 |
| 99 | 55688.18 | 2401.63<< | 143.8 | 4582.6 | 0.00 | 3.23 | 0.07 | 6.20 | 0.086 |
| 99 | 55688.28 | 6292.68 | 4799.7>> | -32388.4 | 14.48 | 107.76 | 2.30 | 16.23 | 0.339 |
| 99 | 55688.37 | 7794.84 | -6896.8<< | -29301.9 | 22.66 | 154.84 | 3.30 | 20.11 | 0.457 |
| 100 | 55688.51 | 9182.83>> | -1073.3 | -23037.1 | 30.21 | 24.10 | 0.51 | 23.69 | 0.465 |
| 100 | 55688.16 | 1483.13<< | -32.0 | 9376.0 | 0.00 | 0.72 | 0.02 | 3.83 | 0.047 |
| 100 | 55688.36 | 5050.04 | 4370.2>> | -13817.3 | 7.72 | 98.12 | 2.09 | 13.03 | 0.264 |
| 100 | 55688.38 | 6310.04 | -6245.9<< | -11989.8 | 14.57 | 140.23 | 2.99 | 16.28 | 0.361 |

| BARRA 100 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 100 | 55922.25 | 9735.24>> | -1073.1 | -23062.8 | 33.12 | 24.12 | 0.51 | 25.11 | 0.500 |
| 100 | 55921.90 | 2035.55<< | -32.1 | 9350.2 | 0.00 | 0.72 | 0.02 | 5.25 | 0.070 |
| 100 | 55922.10 | 5602.45 | 4370.4>> | -13843.0 | 10.66 | 98.25 | 2.09 | 14.45 | 0.295 |
| 100 | 55922.11 | 6862.46 | -6245.8<< | -12015.5 | 17.50 | 140.41 | 2.99 | 17.70 | 0.393 |
| 101 | 55922.25 | 7900.55>> | -554.0 | -4542.6 | 23.15 | 12.45 | 0.27 | 20.38 | 0.382 |
| 101 | 55921.90 | 1153.49<< | 0.7 | 12704.8 | 0.00 | 0.02 | 0.00 | 2.98 | 0.034 |
| 101 | 55922.10 | 4200.99 | 4312.5>> | -3646.5 | 3.04 | 96.95 | 2.06 | 10.84 | 0.219 |
| 101 | 55922.11 | 5341.97 | -5086.2<< | 806.6 | 9.24 | 114.34 | 2.43 | 13.78 | 0.290 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 101 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 101 | 56196.07 | 8464.93>> | -554.0 | -4631.3 | 26.11 | 12.47 | 0.26 | 21.84 | 0.417 |
| 101 | 56195.72 | 1717.87<< | 0.7 | 12616.1 | 0.00 | 0.02 | 0.00 | 4.43 | 0.056 |
| 101 | 56195.92 | 4765.36 | 4312.5>> | -3735.3 | 6.03 | 97.10 | 2.06 | 12.29 | 0.249 |
| 101 | 56195.93 | 5906.34 | -5086.2<< | 717.9 | 12.23 | 114.52 | 2.43 | 15.24 | 0.322 |
| 102 | 56196.07 | 6630.21>> | -34.9 | 11220.8 | 16.16 | 0.79 | 0.02 | 17.10 | 0.305 |
| 102 | 56195.72 | 830.15<< | 22.3 | 15291.6 | 0.00 | 0.50 | 0.01 | 2.14 | 0.023 |
| 102 | 56195.92 | 3569.06 | 3704.7>> | 5017.0 | 0.00 | 83.42 | 1.77 | 9.21 | 0.180 |
| 102 | 56195.93 | 4380.21 | -3937.8<< | 11520.2 | 3.94 | 88.67 | 1.88 | 11.30 | 0.224 |

| BARRA 102 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 102 | 56458.48 | 7208.48>> | -23.5 | 11074.3 | 19.21 | 0.53 | 0.01 | 18.60 | 0.338 |
| 102 | 56458.18 | 1408.42<< | 35.6 | 15145.1 | 0.00 | 0.80 | 0.02 | 3.63 | 0.044 |
| 102 | 56458.38 | 4147.33 | 3713.1>> | 4868.6 | 2.62 | 83.73 | 1.77 | 10.70 | 0.209 |
| 102 | 56458.33 | 4958.48 | -3926.3<< | 11375.6 | 7.01 | 88.54 | 1.87 | 12.79 | 0.254 |
| 103 | 56458.48 | 5374.65>> | 495.3 | 24282.0 | 9.27 | 11.17 | 0.24 | 13.87 | 0.238 |
| 103 | 56458.18 | 521.13<< | 57.2 | 17170.0 | 0.00 | 1.29 | 0.03 | 1.34 | 0.013 |
| 103 | 56458.38 | 3918.57 | 3132.9>> | 17023.3 | 1.38 | 70.65 | 1.49 | 10.11 | 0.190 |
| 103 | 56458.33 | 2466.12 | -2805.6<< | 15479.9 | 0.00 | 63.27 | 1.34 | 6.36 | 0.116 |

| BARRA 103 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 103 | 56708.01 | 5962.87>> | 495.1 | 24096.8 | 12.38 | 11.18 | 0.24 | 15.38 | 0.270 |
| 103 | 56707.70 | 1109.35<< | 57.0 | 16984.8 | 0.00 | 1.29 | 0.03 | 2.86 | 0.033 |
| 103 | 56707.89 | 4506.79 | 3132.7>> | 16838.2 | 4.50 | 70.74 | 1.49 | 11.63 | 0.220 |
| 103 | 56707.84 | 3054.34 | -2805.8<< | 15294.8 | 0.00 | 63.36 | 1.34 | 7.88 | 0.144 |
| 104 | 56708.01 | 4034.72>> | 739.1 | 33570.6 | 1.95 | 16.69 | 0.35 | 10.41 | 0.169 |
| 104 | 56707.70 | 221.63<< | 78.6 | 18382.7 | 0.00 | 1.77 | 0.04 | 0.57 | 0.005 |
| 104 | 56708.15 | 1781.92 | 3206.2>> | 31704.8 | 0.00 | 72.41 | 1.53 | 4.60 | 0.092 |
| 104 | 56707.84 | 1774.78 | -1692.0<< | 20366.3 | 0.00 | 38.21 | 0.81 | 4.58 | 0.073 |

| BARRA 104 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 104 | 56879.14 | 4640.53>> | 764.8 | 33421.9 | 5.18 | 17.29 | 0.36 | 11.97 | 0.201 |
| 104 | 56878.89 | 827.44<< | 97.1 | 18234.3 | 0.00 | 2.19 | 0.05 | 2.13 | 0.023 |
| 104 | 56879.20 | 2387.73 | 3231.0>> | 31554.9 | 0.00 | 73.04 | 1.54 | 6.16 | 0.118 |
| 104 | 56879.02 | 2380.59 | -1672.5<< | 20218.7 | 0.00 | 37.81 | 0.80 | 6.14 | 0.099 |
| 105 | 56879.14 | 2842.30>> | 1830.8 | 41246.5 | 0.00 | 41.39 | 0.87 | 7.33 | 0.122 |
| 105 | 56879.23 | -202.76<< | 3507.4 | 24266.9 | 0.00 | 79.29 | 1.67 | 0.52 | 0.041 |
| 105 | 56879.24 | 926.36 | 5193.1>> | 34165.1 | 0.00 | 117.39 | 2.47 | 2.39 | 0.086 |
| 105 | 56878.86 | 1043.57 | -1697.9<< | 20432.1 | 0.00 | 38.38 | 0.81 | 2.69 | 0.045 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 105 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 105 | 56781.02 | 3462.97>> | 1831.3 | 41381.5 | 0.00 | 41.37 | 0.87 | 8.93 | 0.152 |
| 105 | 56781.11 | 417.91<< | 3507.8 | 24401.9 | 0.00 | 79.25 | 1.67 | 1.08 | 0.046 |
| 105 | 56781.13 | 1547.04 | 5193.5>> | 34300.1 | 0.00 | 117.33 | 2.47 | 3.99 | 0.109 |
| 105 | 56780.73 | 1664.25 | -1697.7<< | 20567.1 | 0.00 | 38.35 | 0.81 | 4.29 | 0.069 |
| 106 | 56780.91 | 1785.67>> | 1631.1 | 10821.1 | 0.00 | 36.85 | 0.78 | 4.61 | 0.073 |
| 106 | 56781.11 | -1061.42<< | 3274.2 | 29640.9 | 0.00 | 73.97 | 1.56 | 2.74 | 0.065 |
| 106 | 56781.13 | 71.18 | 5558.8>> | 35654.3 | 0.00 | 125.58 | 2.65 | 0.18 | 0.066 |
| 106 | 56780.73 | 66.41 | -3054.7<< | 27029.3 | 0.00 | 69.01 | 1.45 | 0.17 | 0.032 |

| BARRA 106 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 106 | 56671.21 | 2158.45>> | 1630.9 | 10941.7 | 0.00 | 36.82 | 0.78 | 5.57 | 0.089 |
| 106 | 56671.41 | -688.64<< | 3273.9 | 29761.5 | 0.00 | 73.92 | 1.56 | 1.78 | 0.052 |
| 106 | 56671.42 | 443.96 | 5558.4>> | 35774.9 | 0.00 | 125.50 | 2.65 | 1.15 | 0.076 |
| 106 | 56671.04 | 439.19 | -3055.0<< | 27149.8 | 0.00 | 68.98 | 1.46 | 1.13 | 0.041 |
| 107 | 56671.20 | 843.13>> | 954.4 | 1268.7 | 0.00 | 21.55 | 0.45 | 2.18 | 0.030 |
| 107 | 56671.41 | -1517.86<< | 3657.9 | 36219.6 | 0.00 | 82.59 | 1.74 | 3.92 | 0.087 |
| 107 | 56671.41 | -904.34 | 5132.2>> | 31170.7 | 0.00 | 115.87 | 2.44 | 2.33 | 0.084 |
| 107 | 56671.04 | -651.84 | -3468.6<< | 26997.3 | 0.00 | 78.31 | 1.65 | 1.68 | 0.053 |

| BARRA 107 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 107 | 56558.82 | 972.86>> | 965.8 | 1360.5 | 0.00 | 21.79 | 0.46 | 2.51 | 0.035 |
| 107 | 56558.95 | -1388.12<< | 3685.9 | 36310.2 | 0.00 | 83.17 | 1.76 | 3.58 | 0.082 |
| 107 | 56558.95 | -774.61 | 5157.8>> | 31260.5 | 0.00 | 116.38 | 2.46 | 2.00 | 0.080 |
| 107 | 56558.71 | -522.11 | -3444.9<< | 27091.2 | 0.00 | 77.73 | 1.64 | 1.35 | 0.049 |
| 108 | 56558.82 | 85.14>> | 987.4 | 2471.7 | 0.00 | 22.28 | 0.47 | 0.22 | 0.009 |
| 108 | 56558.83 | -3194.19<< | 291.6 | 53411.9 | 0.00 | 6.58 | 0.14 | 8.24 | 0.124 |
| 108 | 56558.95 | -1890.79 | 5784.4>> | 35071.4 | 0.00 | 130.52 | 2.76 | 4.88 | 0.132 |
| 108 | 56558.71 | -1718.43 | -4052.7<< | 24738.3 | 0.00 | 91.44 | 1.93 | 4.43 | 0.100 |

| BARRA 108 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 108 | 56443.56 | 218.43>> | 987.4 | 2560.9 | 0.00 | 22.26 | 0.47 | 0.56 | 0.012 |
| 108 | 56443.58 | -3060.90<< | 292.1 | 53501.0 | 0.00 | 6.59 | 0.14 | 7.90 | 0.118 |
| 108 | 56443.70 | -1757.50 | 5784.7>> | 35160.5 | 0.00 | 130.44 | 2.76 | 4.53 | 0.127 |
| 108 | 56443.46 | -1585.14 | -4052.5<< | 24827.5 | 0.00 | 91.38 | 1.93 | 4.09 | 0.095 |
| 109 | 56443.56 | -668.87>> | 1008.9 | 2087.7 | 0.00 | 22.75 | 0.48 | 1.73 | 0.025 |
| 109 | 56443.58 | -4894.77<< | 810.9 | 45149.7 | 6.67 | 18.29 | 0.39 | 12.63 | 0.214 |
| 109 | 56443.70 | -3282.91 | 6932.5>> | 29869.3 | 0.00 | 156.32 | 3.31 | 8.47 | 0.213 |
| 109 | 56443.46 | -2780.89 | -4659.9<< | 20244.2 | 0.00 | 105.07 | 2.22 | 7.17 | 0.155 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 109 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 109 | 56326.63 | -544.18>> | 1009.0 | 2171.1 | 0.00 | 22.74 | 0.48 | 1.40 | 0.021 |
| 109 | 56326.64 | -4770.08<< | 810.5 | 45233.2 | 6.03 | 18.26 | 0.39 | 12.31 | 0.208 |
| 109 | 56326.77 | -3158.22 | 6932.3>> | 29952.8 | 0.00 | 156.21 | 3.31 | 8.15 | 0.207 |
| 109 | 56326.53 | -2656.20 | -4660.0<< | 20327.6 | 0.00 | 105.01 | 2.22 | 6.85 | 0.149 |
| 110 | 56326.63 | -1326.66>> | 1577.7 | 135.2 | 0.00 | 35.55 | 0.75 | 3.42 | 0.054 |
| 110 | 56326.70 | -6618.58<< | 1865.1 | 35071.6 | 16.05 | 42.03 | 0.89 | 17.07 | 0.321 |
| 110 | 56326.77 | -4579.12 | 8627.8>> | 21755.9 | 4.99 | 194.42 | 4.12 | 11.81 | 0.305 |
| 110 | 56326.53 | -3852.54 | -5267.8<< | 13492.0 | 1.05 | 118.70 | 2.51 | 9.94 | 0.216 |

| BARRA 110 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 110 | 56204.69 | -1204.29>> | 1587.7 | 211.6 | 0.00 | 35.75 | 0.76 | 3.11 | 0.050 |
| 110 | 56204.72 | -6496.22<< | 1892.1 | 35147.8 | 15.43 | 42.61 | 0.90 | 16.76 | 0.314 |
| 110 | 56204.73 | -4456.76 | 8648.4>> | 21828.9 | 4.36 | 194.74 | 4.13 | 11.50 | 0.299 |
| 110 | 56204.66 | -3730.18 | -5251.2<< | 13571.7 | 0.42 | 118.25 | 2.51 | 9.62 | 0.209 |
| 111 | 56204.69 | -2203.51>> | 881.0 | -6268.6 | 0.00 | 19.84 | 0.42 | 5.68 | 0.083 |
| 111 | 56204.72 | -8442.11<< | 2708.4 | 19466.9 | 25.98 | 60.99 | 1.29 | 21.78 | 0.438 |
| 111 | 56204.72 | -6696.92 | 8747.2>> | 12231.7 | 16.51 | 196.97 | 4.18 | 17.28 | 0.423 |
| 111 | 56204.66 | -4925.92 | -5858.7<< | 4485.2 | 6.90 | 131.92 | 2.80 | 12.71 | 0.280 |

| BARRA 111 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 111 | 56080.00 | -2079.14>> | 880.9 | -6205.7 | 0.00 | 19.82 | 0.42 | 5.36 | 0.078 |
| 111 | 56080.03 | -8317.74<< | 2708.0 | 19529.8 | 25.36 | 60.94 | 1.29 | 21.46 | 0.431 |
| 111 | 56080.03 | -6572.55 | 8746.9>> | 12294.6 | 15.88 | 196.82 | 4.18 | 16.96 | 0.416 |
| 111 | 56079.97 | -4801.56 | -5858.9<< | 4548.1 | 6.26 | 131.83 | 2.80 | 12.39 | 0.273 |
| 112 | 56080.00 | -2966.88>> | 902.4 | -11505.3 | 0.00 | 20.31 | 0.43 | 7.65 | 0.118 |
| 112 | 56080.03 | -10338.57<< | 3545.9 | 341.3 | 36.33 | 79.79 | 1.69 | 26.67 | 0.567 |
| 112 | 56080.03 | -8210.78 | 10192.8>> | -3231.2 | 24.78 | 229.36 | 4.87 | 21.18 | 0.537 |
| 112 | 56079.97 | -5997.90 | -6466.6<< | -6793.9 | 12.76 | 145.51 | 3.09 | 15.47 | 0.347 |

| BARRA 112 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 112 | 55975.38 | 3010.09>> | 909.2 | -11471.8 | 0.00 | 20.45 | 0.43 | 7.77 | 0.120 |
| 112 | 56747.42 | -4321.05<< | 3563.9 | 373.6 | 3.49 | 80.50 | 1.70 | 11.15 | 0.216 |
| 112 | 56525.39 | -2212.77 | 10164.9>> | -3190.3 | 0.00 | 229.31 | 4.85 | 5.71 | 0.216 |
| 112 | 56292.85 | -4.26 | -6425.4<< | -6756.9 | 0.00 | 144.76 | 3.07 | 0.01 | 0.078 |
| 113 | 56055.98 | 2244.84>> | 924.7 | -7508.0 | 0.00 | 20.30 | 0.54 | 5.63 | 0.011 |
| 113 | 56930.87 | -6063.01<< | 3674.9 | -7508.4 | 0.00 | 81.04 | 2.15 | 15.19 | 0.065 |
| 113 | 56661.01 | -3500.48 | 11165.1>> | -7509.6 | 0.00 | 245.88 | 6.53 | 8.77 | 0.120 |
| 113 | 56438.80 | -1390.24 | -7233.0<< | -7506.6 | 0.00 | 159.10 | 4.23 | 3.48 | 0.053 |

TITULO
=======
LAV-Gelida. V.Rierussa. ELU ECSW-SW(t=i)(1.35*G+0.54*LEV+1.00*P+(1.45*SW0 o 1.20*SW2)+0.9*GT)

FICHERO DE GEOMETRIA COMPLETA
==============================
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
================================
1

| Fich | Num. Nudos | Num. barras | Num. hipotesis | NOMBRE FICHERO |
|---|---|---|---|---|
| 1 | 120 | 119 | 161 | ESFec.TXT |

| Fich | Hipotesis | Caracter | Coeficiente |
|---|---|---|---|
| 1 | 1 | 1 | 1.35 |
| 1 | 2 | 1 | 0.54 |
| 1 | 3 | 1 | 1.35 |
| 1 | 4 | 3 | 1.35 |
| 1 | 5 | 3 | 1.35 |
| 1 | 6 | 3 | 1.35 |
| 1 | 7 | 2 | 0.75 |
| 1 | 8 | 2 | 0.75 |
| 1 | 9 | 2 | 0.75 |
| 1 | 10 | 2 | 0.75 |
| 1 | 11 | 2 | 0.75 |
| 1 | 12 | 2 | 0.75 |
| 1 | 13 | 2 | 0.75 |
| 1 | 14 | 2 | 0.75 |
| 1 | 15 | 2 | 0.75 |
| 1 | 16 | 2 | 0.75 |
| 1 | 17 | 2 | 0.75 |
| 1 | 18 | 2 | 0.75 |
| 1 | 19 | 4 | 0.0 |
| 1 | 20 | 5 | 0.0 |
| 1 | 21 | 4 | 0.0 |
| 1 | 22 | 5 | 0.0 |
| 1 | 23 | 4 | 0.0 |
| 1 | 24 | 5 | 0.0 |
| 1 | 25 | 4 | 0.0 |
| 1 | 26 | 5 | 0.0 |
| 1 | 27 | 4 | 0.0 |
| 1 | 28 | 5 | 0.0 |
| 1 | 29 | 4 | 0.0 |
| 1 | 30 | 5 | 0.0 |
| 1 | 31 | 4 | 0.0 |
| 1 | 32 | 5 | 0.0 |
| 1 | 33 | 4 | 0.0 |
| 1 | 34 | 5 | 0.0 |
| 1 | 35 | 4 | 0.0 |
| 1 | 36 | 5 | 0.0 |
| 1 | 37 | 4 | 0.0 |
| 1 | 38 | 5 | 0.0 |
| 1 | 39 | 4 | 0.0 |
| 1 | 40 | 5 | 0.0 |
| 1 | 41 | 6 | 0.0 |
| 1 | 42 | 7 | 0.0 |
| 1 | 43 | 6 | 0.0 |
| 1 | 44 | 7 | 0.0 |
| 1 | 45 | 6 | 0.0 |
| 1 | 46 | 7 | 0.0 |

| | | | |
|---|---|---|---|
| 1 | 47 | 6 | 0.0 |
| 1 | 48 | 7 | 0.0 |
| 1 | 49 | 6 | 0.0 |
| 1 | 50 | 7 | 0.0 |
| 1 | 51 | 6 | 0.0 |
| 1 | 52 | 7 | 0.0 |
| 1 | 53 | 6 | 0.0 |
| 1 | 54 | 7 | 0.0 |
| 1 | 55 | 6 | 0.0 |
| 1 | 56 | 7 | 0.0 |
| 1 | 57 | 6 | 0.0 |
| 1 | 58 | 7 | 0.0 |
| 1 | 59 | 6 | 0.0 |
| 1 | 60 | 7 | 0.0 |
| 1 | 61 | 6 | 0.0 |
| 1 | 62 | 7 | 0.0 |
| 1 | 63 | 6 | 0.0 |
| 1 | 64 | 7 | 0.0 |
| 1 | 65 | 6 | 0.0 |
| 1 | 66 | 7 | 0.0 |
| 1 | 67 | 6 | 0.0 |
| 1 | 68 | 7 | 0.0 |
| 1 | 69 | 6 | 0.0 |
| 1 | 70 | 7 | 0.0 |
| 1 | 71 | 6 | 0.0 |
| 1 | 72 | 7 | 0.0 |
| 1 | 73 | 6 | 0.0 |
| 1 | 74 | 7 | 0.0 |
| 1 | 75 | 6 | 0.0 |
| 1 | 76 | 7 | 0.0 |
| 1 | 77 | 6 | 0.0 |
| 1 | 78 | 7 | 0.0 |
| 1 | 79 | 6 | 0.0 |
| 1 | 80 | 7 | 0.0 |
| 1 | 81 | 6 | 0.0 |
| 1 | 82 | 7 | 0.0 |
| 1 | 83 | 6 | 0.0 |
| 1 | 84 | 7 | 0.0 |
| 1 | 85 | 6 | 0.0 |
| 1 | 86 | 7 | 0.0 |
| 1 | 87 | 6 | 0.0 |
| 1 | 88 | 7 | 0.0 |
| 1 | 89 | 6 | 0.0 |
| 1 | 90 | 7 | 0.0 |
| 1 | 91 | 6 | 0.0 |
| 1 | 92 | 7 | 0.0 |
| 1 | 93 | 6 | 0.0 |
| 1 | 94 | 7 | 0.0 |
| 1 | 95 | 6 | 0.0 |
| 1 | 96 | 7 | 0.0 |
| 1 | 97 | 8 | 1.45 |
| 1 | 98 | 9 | 1.45 |
| 1 | 99 | 8 | 1.45 |
| 1 | 100 | 9 | 1.45 |
| 1 | 101 | 8 | 1.45 |
| 1 | 102 | 9 | 1.45 |
| 1 | 103 | 8 | 1.45 |
| 1 | 104 | 9 | 1.45 |
| 1 | 105 | 8 | 1.45 |
| 1 | 106 | 9 | 1.45 |
| 1 | 107 | 8 | 1.45 |
| 1 | 108 | 9 | 1.45 |
| 1 | 109 | 8 | 1.45 |
| 1 | 110 | 9 | 1.45 |
| 1 | 111 | 8 | 1.45 |
| 1 | 112 | 9 | 1.45 |
| 1 | 113 | 8 | 1.45 |
| 1 | 114 | 9 | 1.45 |
| 1 | 115 | 8 | 1.45 |
| 1 | 116 | 9 | 1.45 |
| 1 | 117 | 8 | 1.45 |
| 1 | 118 | 9 | 1.45 |
| 1 | 119 | 8 | 1.20 |
| 1 | 120 | 9 | 1.20 |
| 1 | 121 | 8 | 1.20 |
| 1 | 122 | 9 | 1.20 |
| 1 | 123 | 8 | 1.20 |
| 1 | 124 | 9 | 1.20 |
| 1 | 125 | 8 | 1.20 |
| 1 | 126 | 9 | 1.20 |
| 1 | 127 | 8 | 1.20 |
| 1 | 128 | 9 | 1.20 |
| 1 | 129 | 8 | 1.20 |
| 1 | 130 | 9 | 1.20 |
| 1 | 131 | 8 | 1.20 |
| 1 | 132 | 9 | 1.20 |
| 1 | 133 | 8 | 1.20 |
| 1 | 134 | 9 | 1.20 |
| 1 | 135 | 8 | 1.20 |
| 1 | 136 | 9 | 1.20 |
| 1 | 137 | 8 | 1.20 |
| 1 | 138 | 9 | 1.20 |
| 1 | 139 | 8 | 1.20 |
| 1 | 140 | 9 | 1.20 |
| 1 | 141 | 2 | 0.9 |
| 1 | 142 | 1 | 20.433 |
| 1 | 143 | 1 | 2.919 |
| 1 | 144 | 1 | 2.919 |
| 1 | 145 | 1 | 11.676 |
| 1 | 146 | 1 | 2.919 |
| 1 | 147 | 1 | 2.919 |
| 1 | 148 | 1 | 6.464 |
| 1 | 149 | 1 | 6.464 |
| 1 | 150 | 1 | 6.464 |
| 1 | 151 | 1 | 6.464 |
| 1 | 152 | 1 | 6.464 |
| 1 | 153 | 1 | 6.464 |
| 1 | 154 | 1 | 6.464 |
| 1 | 155 | 1 | 6.464 |
| 1 | 156 | 1 | 6.464 |
| 1 | 157 | 1 | 6.464 |
| 1 | 158 | 1 | 6.464 |
| 1 | 159 | 1 | 6.464 |
| 1 | 160 | 1 | 6.464 |
| 1 | 161 | 1 | 6.464 |

PONDERACION DE ESFUERZOS

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 1 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 67674.52 | 4518.52>> | -2965.1 | 2424.6 | 0.00 | 68.92 | 1.64 | 11.32 | 0.043 |
| 1 | 66747.66 | -4280.79<< | -574.0 | 2424.6 | 0.00 | 13.28 | 0.32 | 10.73 | 0.030 |
| 1 | 67182.08 | -156.59 | 7918.9>> | 2424.7 | 0.00 | 183.63 | 4.40 | 0.39 | 0.059 |
| 1 | 67356.47 | 1499.00 | -11107.7<< | 2424.6 | 0.00 | 257.79 | 6.16 | 3.76 | 0.108 |
| 2 | 67499.60 | 2857.62>> | -2700.7 | 7987.4 | 0.00 | 64.63 | 1.21 | 7.37 | 0.138 |
| 2 | 66667.09 | -5045.89<< | -558.5 | -4609.0 | 4.91 | 13.31 | 0.25 | 13.02 | 0.228 |
| 2 | 67063.61 | -1281.54 | 7160.4>> | 1340.1 | 0.00 | 170.99 | 3.22 | 3.31 | 0.133 |
| 2 | 67219.45 | 197.96 | -10069.3<< | 3704.4 | 0.00 | 240.64 | 4.53 | 0.51 | 0.146 |

| BARRA 2 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 2 | 66968.03 | 10163.55>> | -2698.0 | 7946.1 | 31.04 | 64.40 | 1.22 | 26.22 | 0.566 |
| 2 | 66968.02 | 2216.36<< | -555.6 | -4651.3 | 0.00 | 13.26 | 0.25 | 5.72 | 0.084 |
| 2 | 66967.95 | 6001.34 | 7196.2>> | 1293.9 | 9.73 | 171.76 | 3.24 | 15.48 | 0.372 |
| 2 | 66968.09 | 7489.03 | -10100.6<< | 3666.4 | 17.35 | 241.08 | 4.55 | 19.32 | 0.510 |
| 3 | 66968.03 | 8021.82>> | -2329.8 | 27041.3 | 20.08 | 55.61 | 1.05 | 20.69 | 0.423 |
| 3 | 66968.02 | 1328.80<< | -534.0 | -928.4 | 0.00 | 12.75 | 0.24 | 3.43 | 0.046 |
| 3 | 66967.95 | 4609.96 | 6140.2>> | 12436.3 | 2.61 | 146.55 | 2.77 | 11.89 | 0.277 |
| 3 | 66968.09 | 5851.11 | -8654.9<< | 17674.1 | 8.96 | 206.58 | 3.90 | 15.09 | 0.388 |

| BARRA 3 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 67130.52 | 8306.75>> | -2349.5 | 26967.0 | 21.48 | 56.13 | 1.06 | 21.43 | 0.442 |
| 3 | 67130.52 | 1613.73<< | -540.4 | -1001.8 | 0.00 | 12.91 | 0.24 | 4.16 | 0.058 |
| 3 | 67130.52 | 4894.89 | 6127.5>> | 12366.0 | 4.03 | 146.37 | 2.76 | 12.63 | 0.293 |
| 3 | 67130.52 | 6136.04 | -8670.1<< | 17596.8 | 10.38 | 207.11 | 3.90 | 15.83 | 0.405 |
| 4 | 67130.52 | 6165.03>> | -1981.4 | 42162.7 | 10.53 | 47.33 | 0.89 | 15.90 | 0.307 |
| 4 | 67130.52 | 726.16<< | -518.8 | 1455.4 | 0.00 | 12.39 | 0.23 | 1.87 | 0.023 |
| 4 | 67130.52 | 3110.35 | 5540.4>> | 16261.6 | 0.00 | 132.35 | 2.49 | 8.02 | 0.190 |
| 4 | 67130.52 | 4104.36 | -7883.0<< | 23835.3 | 0.00 | 188.31 | 3.55 | 10.59 | 0.278 |

| BARRA 4 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 4 | 67292.17 | 6465.48>> | -1924.4 | 42071.6 | 12.02 | 46.01 | 0.87 | 16.68 | 0.324 |
| 4 | 67292.14 | 1026.61<< | -500.7 | 1362.9 | 0.00 | 11.97 | 0.23 | 2.65 | 0.034 |
| 4 | 67291.99 | 3410.80 | 5572.6>> | 16163.4 | 0.00 | 133.23 | 2.51 | 8.80 | 0.206 |
| 4 | 67292.30 | 4404.81 | -7843.5<< | 23749.9 | 1.49 | 187.52 | 3.53 | 11.36 | 0.294 |
| 5 | 67292.15 | 4506.74>> | -1507.1 | 50376.9 | 2.01 | 36.03 | 0.68 | 11.63 | 0.208 |
| 5 | 67292.14 | 139.05<< | -479.1 | 2587.0 | 0.00 | 11.45 | 0.22 | 0.36 | 0.006 |
| 5 | 67291.99 | 2131.46 | 4745.7>> | 21982.9 | 0.00 | 113.46 | 2.13 | 5.50 | 0.132 |
| 5 | 67292.30 | 2878.94 | -6695.3<< | 31398.0 | 0.00 | 160.07 | 3.01 | 7.43 | 0.197 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 5 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 5 | 67446.43 | 4800.40>> | -1540.8 | 50272.6 | 3.47 | 36.86 | 0.69 | 12.38 | 0.225 |
| 5 | 67446.42 | 432.71<< | -490.0 | 2483.2 | 0.00 | 11.72 | 0.22 | 1.12 | 0.014 |
| 5 | 67446.35 | 2425.12 | 4725.6>> | 21881.6 | 0.00 | 113.07 | 2.12 | 6.26 | 0.145 |
| 5 | 67446.50 | 3172.60 | -6720.0<< | 31291.3 | 0.00 | 160.78 | 3.02 | 8.18 | 0.212 |
| 6 | 67446.43 | 2882.73>> | -1241.1 | 58340.2 | 0.00 | 29.69 | 0.56 | 7.44 | 0.122 |
| 6 | 67446.42 | -454.88<< | -468.4 | 2460.3 | 0.00 | 11.21 | 0.21 | 1.17 | 0.014 |
| 6 | 67446.35 | 1145.75 | 3898.6>> | 25631.3 | 0.00 | 93.28 | 1.75 | 2.96 | 0.079 |
| 6 | 67446.50 | 1646.70 | -5571.8<< | 36351.8 | 0.00 | 133.31 | 2.50 | 4.25 | 0.123 |

| BARRA 6 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 6 | 67598.55 | 3188.54>> | -1202.9 | 58227.6 | 0.00 | 28.80 | 0.54 | 8.23 | 0.137 |
| 6 | 67598.54 | -149.06<< | -456.9 | 2347.3 | 0.00 | 10.94 | 0.21 | 0.38 | 0.006 |
| 6 | 67598.39 | 1451.56 | 3921.2>> | 25516.3 | 0.00 | 93.89 | 1.76 | 3.74 | 0.091 |
| 6 | 67598.70 | 1952.52 | -5544.1<< | 36241.3 | 0.00 | 132.75 | 2.49 | 5.04 | 0.136 |
| 7 | 67598.56 | 1364.84>> | -1329.9 | 39319.3 | 0.00 | 31.84 | 0.60 | 3.52 | 0.055 |
| 7 | 67598.54 | -1036.62<< | -435.3 | 1102.5 | 0.00 | 10.42 | 0.20 | 2.67 | 0.034 |
| 7 | 67598.37 | 592.04 | 3545.0>> | 21114.9 | 0.00 | 84.88 | 1.59 | 1.53 | 0.054 |
| 7 | 67598.70 | 846.63 | -4955.9<< | 32632.1 | 0.00 | 118.67 | 2.23 | 2.18 | 0.083 |

| BARRA 7 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 7 | 67746.13 | 1675.37>> | -1329.9 | 39203.9 | 0.00 | 31.87 | 0.60 | 4.32 | 0.068 |
| 7 | 67746.11 | -726.09<< | -435.3 | 987.1 | 0.00 | 10.43 | 0.20 | 1.87 | 0.023 |
| 7 | 67745.94 | 902.57 | 3545.0>> | 20999.6 | 0.00 | 84.95 | 1.59 | 2.33 | 0.065 |
| 7 | 67746.27 | 1157.16 | -4955.9<< | 32516.7 | 0.00 | 118.76 | 2.22 | 2.99 | 0.094 |
| 8 | 67746.13 | 743.93>> | -1145.5 | 33078.2 | 0.00 | 27.45 | 0.51 | 1.92 | 0.030 |
| 8 | 67746.11 | -1843.89<< | -542.1 | 6954.9 | 0.00 | 12.99 | 0.24 | 4.76 | 0.068 |
| 8 | 67745.94 | 1.21 | 3484.6>> | 21948.7 | 0.00 | 83.50 | 1.56 | 0.00 | 0.038 |
| 8 | 67746.27 | 9.28 | -4817.8<< | 33741.6 | 0.00 | 115.45 | 2.16 | 0.02 | 0.057 |

| BARRA 8 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 8 | 67912.41 | 1173.27>> | -1118.7 | 32946.2 | 0.00 | 26.83 | 0.50 | 3.03 | 0.045 |
| 8 | 67912.36 | -1414.55<< | -527.8 | 6822.6 | 0.00 | 12.66 | 0.24 | 3.65 | 0.049 |
| 8 | 67912.12 | 430.55 | 3506.0>> | 21814.4 | 0.00 | 84.08 | 1.57 | 1.11 | 0.049 |
| 8 | 67912.63 | 438.62 | -4790.7<< | 33611.4 | 0.00 | 114.89 | 2.15 | 1.13 | 0.067 |
| 9 | 67912.41 | -121.06>> | -969.8 | 32913.5 | 0.00 | 23.26 | 0.43 | 0.31 | 0.010 |
| 9 | 67912.42 | -2864.28<< | -582.1 | 42882.8 | 0.00 | 13.96 | 0.26 | 7.39 | 0.115 |
| 9 | 67912.12 | -671.48 | 3038.8>> | 21686.2 | 0.00 | 72.88 | 1.36 | 1.73 | 0.050 |
| 9 | 67912.63 | -909.96 | -4118.3<< | 33241.1 | 0.00 | 98.77 | 1.85 | 2.35 | 0.073 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 9 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 9 | 67886.82 | 441.05>> | -969.8 | 32915.2 | 0.00 | 23.26 | 0.43 | 1.14 | 0.018 |
| 9 | 67886.83 | -2302.17<< | -582.1 | 42884.4 | 0.00 | 13.96 | 0.26 | 5.94 | 0.088 |
| 9 | 67886.52 | -109.37 | 3038.8>> | 21687.9 | 0.00 | 72.87 | 1.36 | 0.28 | 0.034 |
| 9 | 67887.03 | -347.85 | -4118.3<< | 33242.8 | 0.00 | 98.76 | 1.85 | 0.90 | 0.055 |
| 10 | 67886.70 | -704.64>> | -114.9 | 21855.4 | 0.00 | 2.75 | 0.05 | 1.82 | 0.020 |
| 10 | 67886.83 | -4219.85<< | -282.4 | 36036.5 | 0.41 | 6.77 | 0.13 | 10.89 | 0.182 |
| 10 | 67886.70 | -2208.12 | 2473.9>> | 36598.8 | 0.00 | 59.32 | 1.11 | 5.70 | 0.105 |
| 10 | 67886.91 | -2692.46 | -3068.9<< | 47393.8 | 0.00 | 73.59 | 1.38 | 6.95 | 0.135 |

| BARRA 10 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 10 | 67758.45 | -149.77>> | -94.6 | 21921.6 | 0.00 | 2.27 | 0.04 | 0.39 | 0.003 |
| 10 | 67758.60 | -3664.98<< | -255.4 | 36102.8 | 0.00 | 6.12 | 0.11 | 9.45 | 0.152 |
| 10 | 67758.44 | -1653.25 | 2501.2>> | 36663.8 | 0.00 | 59.94 | 1.12 | 4.27 | 0.081 |
| 10 | 67758.72 | -2137.59 | -3036.5<< | 47461.4 | 0.00 | 72.77 | 1.36 | 5.51 | 0.109 |
| 11 | 67758.45 | -1037.32>> | -73.1 | 20675.4 | 0.00 | 1.75 | 0.03 | 2.68 | 0.031 |
| 11 | 67758.60 | -5582.63<< | 44.3 | 26393.1 | 7.39 | 1.06 | 0.02 | 14.40 | 0.255 |
| 11 | 67758.55 | -3017.40 | 3265.9>> | 18503.4 | 0.00 | 78.26 | 1.47 | 7.78 | 0.153 |
| 11 | 67758.56 | -3748.18 | -3416.8<< | 28021.1 | 0.00 | 81.88 | 1.53 | 9.67 | 0.192 |

| BARRA 11 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 11 | 67621.42 | -500.42>> | -91.6 | 20731.5 | 0.00 | 2.19 | 0.04 | 1.29 | 0.013 |
| 11 | 67621.55 | -5045.73<< | 23.0 | 26449.2 | 4.68 | 0.55 | 0.01 | 13.02 | 0.225 |
| 11 | 67621.50 | -2480.50 | 3248.4>> | 18561.1 | 0.00 | 77.79 | 1.46 | 6.40 | 0.127 |
| 11 | 67621.52 | -3211.28 | -3438.8<< | 28075.6 | 0.00 | 82.35 | 1.54 | 8.28 | 0.165 |
| 12 | 67621.42 | -1388.01>> | -70.1 | 18749.1 | 0.00 | 1.68 | 0.03 | 3.58 | 0.045 |
| 12 | 67621.55 | -6963.40<< | 322.7 | 13840.0 | 14.47 | 7.73 | 0.14 | 17.96 | 0.338 |
| 12 | 67621.50 | -4976.23 | 4376.7>> | 14357.8 | 4.33 | 104.81 | 1.97 | 12.84 | 0.271 |
| 12 | 67621.52 | -3520.81 | -4245.8<< | 17381.3 | 0.00 | 101.68 | 1.91 | 9.08 | 0.192 |

| BARRA 12 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 12 | 61636.24 | -858.48>> | -38.9 | 20911.2 | 0.00 | 0.90 | 0.02 | 2.21 | 0.024 |
| 12 | 61636.41 | -6433.87<< | 349.2 | 16001.8 | 13.45 | 8.10 | 0.16 | 16.60 | 0.301 |
| 12 | 61636.33 | -4207.09 | 4404.9>> | 21906.9 | 1.73 | 102.23 | 2.04 | 10.85 | 0.225 |
| 12 | 61636.39 | -3230.89 | -4217.2<< | 14156.3 | 0.00 | 97.88 | 1.95 | 8.34 | 0.173 |
| 13 | 61636.24 | -1746.03>> | -17.3 | 18176.4 | 0.00 | 0.40 | 0.01 | 4.50 | 0.059 |
| 13 | 61636.41 | -8351.52<< | 648.9 | 477.1 | 23.55 | 15.06 | 0.30 | 21.55 | 0.418 |
| 13 | 61636.33 | -5732.97 | 5553.1>> | 11469.7 | 9.76 | 128.88 | 2.57 | 14.79 | 0.325 |
| 13 | 61636.39 | -4510.22 | -5044.1<< | 6028.0 | 3.32 | 117.07 | 2.34 | 11.64 | 0.250 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 13 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 13 | 61476.76 | -1213.59>> | -29.0 | 18183.7 | 0.00 | 0.67 | 0.01 | 3.13 | 0.037 |
| 13 | 61476.91 | -7819.08<< | 645.6 | 484.7 | 20.80 | 14.97 | 0.30 | 20.17 | 0.385 |
| 13 | 61476.85 | -5440.13 | 5546.1>> | 5585.3 | 8.26 | 128.61 | 2.57 | 14.03 | 0.308 |
| 13 | 61476.88 | -3738.17 | -5051.6<< | 11927.3 | 0.00 | 117.14 | 2.34 | 9.64 | 0.210 |
| 14 | 61476.76 | -2101.16>> | -7.5 | 14703.5 | 0.00 | 0.17 | 0.00 | 5.42 | 0.074 |
| 14 | 61476.91 | -9736.75<< | 945.3 | -17948.7 | 30.90 | 21.92 | 0.44 | 25.12 | 0.508 |
| 14 | 61476.85 | -7183.81 | 6253.4>> | -7572.6 | 17.45 | 145.01 | 2.90 | 18.53 | 0.420 |
| 14 | 61476.88 | -5235.33 | -5297.5<< | 2602.3 | 7.18 | 122.84 | 2.46 | 13.51 | 0.293 |

| BARRA 14 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 14 | 61307.73 | -1577.52>> | -0.5 | 14667.6 | 0.00 | 0.01 | 0.00 | 4.07 | 0.051 |
| 14 | 61307.90 | -9213.10<< | 936.6 | -17985.1 | 28.20 | 21.70 | 0.43 | 23.77 | 0.475 |
| 14 | 61307.82 | -6420.56 | 6251.1>> | -1214.0 | 13.48 | 144.82 | 2.90 | 16.56 | 0.374 |
| 14 | 61307.87 | -4951.29 | -5297.8<< | -3828.7 | 5.73 | 122.74 | 2.46 | 12.77 | 0.278 |
| 15 | 61307.73 | -2465.09>> | 21.0 | 10422.9 | 0.00 | 0.49 | 0.01 | 6.36 | 0.090 |
| 15 | 61307.90 | -11130.76<< | 1236.3 | -39346.0 | 38.32 | 28.64 | 0.57 | 28.72 | 0.602 |
| 15 | 61307.87 | -7836.54 | 6928.5>> | -22956.7 | 20.94 | 160.52 | 3.22 | 20.22 | 0.469 |
| 15 | 61307.82 | -6120.72 | -5702.2<< | -22229.0 | 11.89 | 132.11 | 2.65 | 15.79 | 0.349 |

| BARRA 15 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 15 | 71492.37 | 4743.82>> | -26.8 | 11781.3 | 2.28 | 0.66 | 0.01 | 12.24 | 0.211 |
| 15 | 72142.70 | -3897.44<< | 1348.3 | -37987.6 | 0.00 | 33.02 | 0.59 | 10.05 | 0.177 |
| 15 | 71895.51 | -612.51 | 6982.3>> | -21598.3 | 0.00 | 170.80 | 3.07 | 1.58 | 0.108 |
| 15 | 71766.73 | 1098.49 | -5650.7<< | -20870.5 | 0.00 | 138.14 | 2.49 | 2.83 | 0.104 |
| 16 | 71572.94 | 3672.67>> | -5.2 | 20643.7 | 0.00 | 0.12 | 0.00 | 9.20 | 0.023 |
| 16 | 72262.52 | -5490.38<< | 1484.8 | -48048.1 | 0.00 | 35.24 | 0.81 | 13.76 | 0.048 |
| 16 | 72041.75 | -2554.59 | 8405.2>> | -23491.4 | 0.00 | 199.28 | 4.56 | 6.40 | 0.079 |
| 16 | 71894.15 | -596.91 | -6704.4<< | -18897.4 | 0.00 | 158.85 | 3.64 | 1.50 | 0.047 |

| BARRA 16 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 16 | 72049.79 | -5222.92>> | 41.2 | 20959.5 | 0.00 | 0.98 | 0.02 | 13.09 | 0.041 |
| 16 | 72049.99 | -14411.88<< | 1331.3 | -47732.8 | 36.43 | 31.56 | 0.72 | 36.11 | 0.219 |
| 16 | 72050.12 | -11467.81 | 8173.1>> | -23179.3 | 20.40 | 193.78 | 4.44 | 28.74 | 0.212 |
| 16 | 72049.77 | -9504.57 | -6671.6<< | -18578.3 | 9.72 | 158.18 | 3.62 | 23.82 | 0.154 |
| 17 | 72049.79 | -6294.06>> | 62.8 | 8866.8 | 0.00 | 1.49 | 0.03 | 15.77 | 0.055 |
| 17 | 72049.98 | -16675.87<< | 2135.0 | -52070.1 | 48.75 | 50.62 | 1.16 | 41.79 | 0.282 |
| 17 | 72050.12 | -13289.29 | 9618.8>> | -49174.2 | 30.32 | 228.06 | 5.22 | 33.30 | 0.272 |
| 17 | 72049.77 | -11079.52 | -7727.6<< | -40191.6 | 18.29 | 183.22 | 4.20 | 27.76 | 0.198 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 17 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 17 | 71677.40 | 16499.60>> | -2965.4 | -65047.3 | 48.01 | 70.19 | 1.61 | 41.35 | 0.282 |
| 17 | 71677.28 | 5527.79<< | -537.1 | 8570.2 | 0.00 | 12.71 | 0.29 | 13.85 | 0.045 |
| 17 | 71677.41 | 10683.54 | 8334.4>> | -39478.9 | 16.30 | 197.28 | 4.53 | 26.77 | 0.197 |
| 17 | 71677.38 | 13069.19 | -11453.8<< | -48480.2 | 29.31 | 271.11 | 6.23 | 32.75 | 0.294 |
| 18 | 71677.40 | 15154.38>> | -2909.3 | -31810.3 | 40.68 | 68.86 | 1.58 | 37.97 | 0.246 |
| 18 | 71677.28 | 4456.65<< | -515.5 | 19054.1 | 0.00 | 12.20 | 0.28 | 11.17 | 0.032 |
| 18 | 71677.59 | 9653.52 | 8432.0>> | -18554.6 | 10.69 | 199.59 | 4.59 | 24.19 | 0.178 |
| 18 | 71677.26 | 11792.53 | -11433.2<< | -22800.8 | 22.35 | 270.63 | 6.22 | 29.55 | 0.265 |

| BARRA 18 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 18 | 71264.43 | 5766.04>> | -2992.2 | -32491.3 | 0.00 | 70.70 | 1.63 | 14.45 | 0.060 |
| 18 | 70461.69 | -4901.52<< | -467.4 | 18372.0 | 0.00 | 11.00 | 0.26 | 12.28 | 0.037 |
| 18 | 70851.84 | 280.68 | 8166.8>> | -19240.9 | 0.00 | 192.60 | 4.46 | 0.70 | 0.063 |
| 18 | 71012.10 | 2413.67 | -11364.0<< | -23477.7 | 0.00 | 268.19 | 6.20 | 6.05 | 0.120 |
| 19 | 71133.10 | 4020.58>> | -2806.7 | -21939.5 | 0.00 | 68.40 | 1.24 | 10.37 | 0.200 |
| 19 | 70381.10 | -5972.67<< | -445.8 | 6921.5 | 8.71 | 10.82 | 0.20 | 15.41 | 0.283 |
| 19 | 70751.85 | -1048.57 | 7809.6>> | -19968.6 | 0.00 | 189.97 | 3.45 | 2.71 | 0.137 |
| 19 | 70893.52 | 837.89 | -10772.0<< | -19973.0 | 0.00 | 262.21 | 4.76 | 2.16 | 0.181 |

| BARRA 19 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 19 | 59972.70 | 11688.95>> | -2737.7 | -21639.0 | 41.86 | 62.97 | 1.28 | 30.16 | 0.654 |
| 19 | 59972.59 | 1667.45<< | -497.2 | 7223.1 | 0.00 | 11.44 | 0.23 | 4.30 | 0.058 |
| 19 | 59972.90 | 6605.48 | 8044.9>> | -19662.9 | 14.85 | 185.03 | 3.76 | 17.04 | 0.412 |
| 19 | 59972.57 | 8497.27 | -10840.4<< | -19676.3 | 24.90 | 249.32 | 5.07 | 21.92 | 0.573 |
| 20 | 59972.70 | 9547.20>> | -2369.6 | 659.1 | 30.48 | 54.50 | 1.11 | 24.63 | 0.509 |
| 20 | 59972.59 | 779.88<< | -475.6 | 9792.9 | 0.00 | 10.94 | 0.22 | 2.01 | 0.024 |
| 20 | 59972.90 | 5214.10 | 6989.0>> | -7252.3 | 7.46 | 160.74 | 3.27 | 13.45 | 0.316 |
| 20 | 59972.57 | 6859.33 | -9394.7<< | -3551.8 | 16.20 | 216.07 | 4.39 | 17.70 | 0.449 |

| BARRA 20 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 20 | 59886.04 | 10128.57>> | -2364.3 | 673.1 | 33.60 | 54.35 | 1.11 | 26.13 | 0.546 |
| 20 | 59885.91 | 1361.26<< | -461.7 | 9805.0 | 0.00 | 10.61 | 0.22 | 3.51 | 0.046 |
| 20 | 59886.11 | 5795.47 | 6986.7>> | -7247.2 | 10.57 | 160.61 | 3.27 | 14.95 | 0.348 |
| 20 | 59885.95 | 7440.70 | -9393.4<< | -3531.2 | 19.32 | 215.94 | 4.39 | 19.20 | 0.483 |
| 21 | 59886.04 | 7986.85>> | -1996.2 | 19694.5 | 22.22 | 45.89 | 0.93 | 20.60 | 0.407 |
| 21 | 59885.91 | 473.68<< | -440.1 | 11731.8 | 0.00 | 10.12 | 0.21 | 1.22 | 0.014 |
| 21 | 59886.11 | 4404.08 | 5930.7>> | 3462.5 | 3.18 | 136.34 | 2.77 | 11.36 | 0.256 |
| 21 | 59885.95 | 5802.79 | -7947.7<< | 10374.7 | 10.61 | 182.71 | 3.72 | 14.97 | 0.364 |

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| BARRA 21 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 21 | 59785.20 | 8575.65>> | -2011.6 | 19742.5 | 25.39 | 46.22 | 0.94 | 22.12 | 0.444 |
| 21 | 59785.07 | 1062.49<< | -451.8 | 11780.5 | 0.00 | 10.38 | 0.21 | 2.74 | 0.034 |
| 21 | 59785.32 | 4992.88 | 5923.0>> | 3514.2 | 6.33 | 136.09 | 2.77 | 12.88 | 0.288 |
| 21 | 59785.08 | 6391.60 | -7958.7<< | 10419.8 | 13.77 | 182.86 | 3.73 | 16.49 | 0.398 |
| 22 | 59785.25 | 6579.75>> | -1280.4 | 16903.9 | 14.77 | 29.42 | 0.60 | 16.97 | 0.316 |
| 22 | 59785.07 | 174.92<< | -430.2 | 13079.8 | 0.00 | 9.88 | 0.20 | 0.45 | 0.006 |
| 22 | 59785.49 | 2996.39 | 5205.9>> | 4568.9 | 0.00 | 119.61 | 2.44 | 7.73 | 0.175 |
| 22 | 59784.84 | 4147.80 | -7000.0<< | 14152.6 | 1.84 | 160.83 | 3.28 | 10.70 | 0.260 |

| BARRA 22 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 22 | 56775.61 | 7152.33>> | -1263.3 | 14029.0 | 18.80 | 28.54 | 0.60 | 18.45 | 0.346 |
| 22 | 56775.44 | 747.50<< | -414.9 | 10204.6 | 0.00 | 9.37 | 0.20 | 1.93 | 0.022 |
| 22 | 56775.76 | 3568.97 | 5217.1>> | 1690.9 | 0.00 | 117.86 | 2.48 | 9.21 | 0.201 |
| 22 | 56775.29 | 4720.38 | -6984.2<< | 11280.5 | 5.64 | 157.78 | 3.32 | 12.18 | 0.286 |
| 23 | 56775.61 | 5234.63>> | -963.6 | 27035.9 | 8.42 | 21.77 | 0.46 | 13.50 | 0.234 |
| 23 | 56775.44 | -140.10<< | -393.3 | 10842.8 | 0.00 | 8.89 | 0.19 | 0.36 | 0.005 |
| 23 | 56775.76 | 2667.60 | 5156.7>> | 8239.8 | 0.00 | 116.50 | 2.45 | 6.88 | 0.157 |
| 23 | 56775.29 | 3572.47 | -6846.1<< | 19988.5 | 0.00 | 154.66 | 3.26 | 9.22 | 0.226 |

| BARRA 23 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 23 | 56817.16 | 5785.17>> | -963.6 | 26978.7 | 11.39 | 21.77 | 0.46 | 14.92 | 0.265 |
| 23 | 56817.00 | 410.44<< | -393.3 | 10785.6 | 0.00 | 8.89 | 0.19 | 1.06 | 0.012 |
| 23 | 56817.32 | 3218.13 | 5156.7>> | 8182.7 | 0.00 | 116.52 | 2.45 | 8.30 | 0.183 |
| 23 | 56816.85 | 4123.01 | -6846.1<< | 19931.3 | 2.40 | 154.70 | 3.26 | 10.64 | 0.253 |
| 24 | 56817.16 | 3867.52>> | -663.9 | 37114.3 | 1.02 | 15.00 | 0.32 | 9.98 | 0.160 |
| 24 | 56817.00 | -477.12<< | -371.7 | 10715.7 | 0.00 | 8.40 | 0.18 | 1.23 | 0.014 |
| 24 | 56817.41 | 1983.63 | 5025.6>> | 28035.7 | 0.00 | 113.56 | 2.39 | 5.12 | 0.125 |
| 24 | 56816.81 | 2641.93 | -6418.0<< | 41427.8 | 0.00 | 145.03 | 3.05 | 6.82 | 0.175 |

| BARRA 24 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^β +(Td/Tu1)^β |
|---|---|---|---|---|---|---|---|---|---|
| 24 | 56854.91 | 4430.92>> | -631.4 | 37052.5 | 4.06 | 14.27 | 0.30 | 11.43 | 0.189 |
| 24 | 56854.77 | 86.29<< | -351.8 | 10653.8 | 0.00 | 7.95 | 0.17 | 0.22 | 0.003 |
| 24 | 56855.06 | 2547.03 | 5053.8>> | 27971.2 | 0.00 | 114.22 | 2.40 | 6.57 | 0.150 |
| 24 | 56854.68 | 3205.34 | -6383.5<< | 41368.7 | 0.00 | 144.28 | 3.04 | 8.27 | 0.201 |
| 25 | 56854.91 | 2513.24>> | -331.7 | 44344.1 | 0.00 | 7.50 | 0.16 | 6.48 | 0.093 |
| 25 | 56854.77 | -801.29<< | -330.3 | 9903.2 | 0.00 | 7.46 | 0.16 | 2.07 | 0.024 |
| 25 | 56855.06 | 777.65 | 5534.4>> | 31462.3 | 0.00 | 125.09 | 2.63 | 2.01 | 0.086 |
| 25 | 56854.68 | 1189.39 | -6230.8<< | 45983.3 | 0.00 | 140.83 | 2.96 | 3.07 | 0.111 |

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| BARRA 25 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 25 | 56879.72 | 3078.90>> | -331.7 | 44294.4 | 0.00 | 7.50 | 0.16 | 7.94 | 0.119 |
| 25 | 56879.58 | -235.62<< | -330.3 | 9853.6 | 0.00 | 7.47 | 0.16 | 0.61 | 0.007 |
| 25 | 56879.88 | 1343.32 | 5534.4>> | 31412.7 | 0.00 | 125.11 | 2.63 | 3.47 | 0.106 |
| 25 | 56879.49 | 1755.05 | -6230.8<< | 45933.7 | 0.00 | 140.85 | 2.96 | 4.53 | 0.133 |
| 26 | 56879.63 | 1217.96>> | -932.5 | 31303.2 | 0.00 | 21.08 | 0.44 | 3.14 | 0.044 |
| 26 | 56879.58 | -1123.19<< | -308.7 | 8427.1 | 0.00 | 6.98 | 0.15 | 2.90 | 0.035 |
| 26 | 56879.89 | 40.61 | 5450.1>> | 24503.5 | 0.00 | 123.20 | 2.59 | 0.10 | 0.064 |
| 26 | 56879.45 | 205.89 | -5746.7<< | 39632.4 | 0.00 | 129.90 | 2.73 | 0.53 | 0.072 |

| BARRA 26 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 26 | 56890.26 | 1779.88>> | -900.4 | 31272.2 | 0.00 | 20.35 | 0.43 | 4.59 | 0.066 |
| 26 | 56890.19 | -561.28<< | -287.4 | 8395.9 | 0.00 | 6.50 | 0.14 | 1.45 | 0.016 |
| 26 | 56890.35 | 554.03 | 5479.1>> | 31460.1 | 0.00 | 123.86 | 2.61 | 1.43 | 0.078 |
| 26 | 56890.19 | 816.30 | -5710.7<< | 32613.2 | 0.00 | 129.10 | 2.72 | 2.11 | 0.090 |
| 27 | 56890.26 | 649.47>> | -801.0 | 25455.4 | 0.00 | 18.11 | 0.38 | 1.68 | 0.023 |
| 27 | 56890.19 | -1480.14<< | -309.2 | 14620.5 | 0.00 | 6.99 | 0.15 | 3.82 | 0.049 |
| 27 | 56890.35 | -347.33 | 5418.7>> | 31677.3 | 0.00 | 122.50 | 2.58 | 0.90 | 0.071 |
| 27 | 56890.19 | -331.61 | -5572.6<< | 33122.4 | 0.00 | 125.98 | 2.65 | 0.86 | 0.073 |

| BARRA 27 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 27 | 56890.30 | 1211.65>> | -830.6 | 25439.1 | 0.00 | 18.78 | 0.40 | 3.13 | 0.043 |
| 27 | 56890.25 | -917.97<< | -333.7 | 14604.6 | 0.00 | 7.54 | 0.16 | 2.37 | 0.028 |
| 27 | 56890.56 | 263.34 | 5389.2>> | 24775.4 | 0.00 | 121.83 | 2.56 | 0.68 | 0.068 |
| 27 | 56890.13 | 182.07 | -5609.1<< | 39992.6 | 0.00 | 126.80 | 2.67 | 0.47 | 0.070 |
| 28 | 56890.30 | 321.99>> | -808.6 | 25425.4 | 0.00 | 18.28 | 0.38 | 0.83 | 0.013 |
| 28 | 56890.25 | -2077.56<< | -278.1 | 13083.6 | 0.00 | 6.29 | 0.13 | 5.36 | 0.073 |
| 28 | 56890.59 | -638.03 | 5458.8>> | 24381.0 | 0.00 | 123.40 | 2.60 | 1.65 | 0.080 |
| 28 | 56890.09 | -965.81 | -5601.0<< | 39170.9 | 0.00 | 126.62 | 2.66 | 2.49 | 0.093 |

| BARRA 28 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 28 | 56877.11 | 894.05>> | -749.9 | 25429.0 | 0.00 | 16.95 | 0.36 | 2.31 | 0.030 |
| 28 | 56877.04 | -1505.50<< | -231.1 | 13086.8 | 0.00 | 5.22 | 0.11 | 3.88 | 0.049 |
| 28 | 56877.07 | -114.46 | 5519.8>> | 31165.5 | 0.00 | 124.77 | 2.63 | 0.30 | 0.067 |
| 28 | 56877.11 | -345.26 | -5532.5<< | 32392.3 | 0.00 | 125.06 | 2.63 | 0.89 | 0.073 |
| 29 | 56877.07 | -217.46>> | 214.8 | 5703.9 | 0.00 | 4.86 | 0.10 | 0.56 | 0.005 |
| 29 | 56877.09 | -3305.66<< | 93.0 | 47953.4 | 0.00 | 2.10 | 0.04 | 8.53 | 0.128 |
| 29 | 56877.11 | -1996.30 | 5839.7>> | 45558.2 | 0.00 | 132.00 | 2.78 | 5.15 | 0.138 |
| 29 | 56877.09 | -1424.89 | -5488.0<< | 31705.8 | 0.00 | 124.05 | 2.61 | 3.68 | 0.109 |

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| BARRA 29 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 29 | 56850.68 | 352.99>> | 195.8 | 5723.7 | 0.00 | 4.42 | 0.09 | 0.91 | 0.009 |
| 29 | 56850.70 | -2735.22<< | 53.8 | 47973.2 | 0.00 | 1.22 | 0.03 | 7.06 | 0.101 |
| 29 | 56850.84 | -1425.86 | 5801.6>> | 45580.8 | 0.00 | 131.12 | 2.76 | 3.68 | 0.114 |
| 29 | 56850.59 | -854.44 | -5519.5<< | 31723.0 | 0.00 | 124.75 | 2.63 | 2.20 | 0.088 |
| 30 | 56850.68 | -534.60>> | 217.4 | 5533.4 | 0.00 | 4.91 | 0.10 | 1.38 | 0.014 |
| 30 | 56850.70 | -4652.90<< | 353.5 | 40216.0 | 5.26 | 7.99 | 0.17 | 12.00 | 0.198 |
| 30 | 56850.93 | -3489.39 | 6011.9>> | 27591.0 | 0.00 | 135.88 | 2.86 | 9.00 | 0.209 |
| 30 | 56850.44 | -2671.52 | -5155.6<< | 15191.4 | 0.00 | 116.52 | 2.45 | 6.89 | 0.157 |

| BARRA 30 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 30 | 56811.13 | 33.40>> | 235.0 | 5565.6 | 0.00 | 5.31 | 0.11 | 0.09 | 0.002 |
| 30 | 56811.16 | -4084.91<< | 387.6 | 40248.0 | 2.20 | 8.76 | 0.18 | 10.54 | 0.169 |
| 30 | 56811.27 | -2921.40 | 6040.1>> | 27620.4 | 0.00 | 136.48 | 2.87 | 7.54 | 0.182 |
| 30 | 56810.99 | -2103.53 | -5133.4<< | 15226.1 | 0.00 | 115.99 | 2.44 | 5.43 | 0.132 |
| 31 | 56811.13 | -854.17>> | 256.6 | 4703.7 | 0.00 | 5.80 | 0.12 | 2.20 | 0.025 |
| 31 | 56811.16 | -6002.59<< | 687.3 | 29656.0 | 12.57 | 15.53 | 0.33 | 15.49 | 0.274 |
| 31 | 56811.27 | -4281.68 | 6745.8>> | 19959.3 | 3.26 | 152.43 | 3.21 | 11.05 | 0.260 |
| 31 | 56810.99 | -3217.28 | -5624.5<< | 9541.4 | 0.00 | 127.09 | 2.68 | 8.30 | 0.190 |

| BARRA 31 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 31 | 56759.93 | -300.08>> | 256.6 | 4740.7 | 0.00 | 5.80 | 0.12 | 0.77 | 0.008 |
| 31 | 56759.96 | -5448.50<< | 687.3 | 29692.9 | 9.58 | 15.53 | 0.33 | 14.06 | 0.243 |
| 31 | 56760.07 | -3727.58 | 6745.8>> | 19996.3 | 0.28 | 152.38 | 3.21 | 9.62 | 0.232 |
| 31 | 56759.79 | -2663.19 | -5624.5<< | 9578.4 | 0.00 | 127.05 | 2.68 | 6.87 | 0.164 |
| 32 | 56759.93 | -1187.66>> | 278.1 | 3178.7 | 0.00 | 6.28 | 0.13 | 3.06 | 0.037 |
| 32 | 56759.96 | -7366.20<< | 987.0 | 16237.4 | 19.96 | 22.30 | 0.47 | 19.00 | 0.355 |
| 32 | 56760.07 | -4875.50 | 6883.9>> | 10963.0 | 6.48 | 155.50 | 3.28 | 12.58 | 0.293 |
| 32 | 56759.79 | -3564.56 | -5684.9<< | 3039.2 | 0.00 | 128.42 | 2.71 | 9.20 | 0.208 |

| BARRA 32 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 32 | 56695.20 | -627.75>> | 289.9 | 3213.3 | 0.00 | 6.55 | 0.14 | 1.62 | 0.018 |
| 32 | 56695.27 | -6806.29<< | 1005.0 | 16271.6 | 16.95 | 22.69 | 0.48 | 17.56 | 0.323 |
| 32 | 56695.24 | -4315.59 | 6899.3>> | 10994.5 | 3.47 | 155.79 | 3.29 | 11.13 | 0.264 |
| 32 | 56695.20 | -3004.65 | -5673.3<< | 3076.7 | 0.00 | 128.11 | 2.70 | 7.75 | 0.180 |
| 33 | 56695.20 | -1515.32>> | 311.4 | 963.3 | 0.00 | 7.03 | 0.15 | 3.91 | 0.050 |
| 33 | 56695.27 | -8723.96<< | 1304.7 | -35.1 | 27.33 | 29.46 | 0.62 | 22.51 | 0.440 |
| 33 | 56695.34 | -6453.91 | 8082.5>> | 7355.5 | 15.04 | 182.51 | 3.85 | 16.65 | 0.399 |
| 33 | 56695.13 | -4895.83 | -6543.8<< | 2452.3 | 6.61 | 147.77 | 3.12 | 12.63 | 0.289 |

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| BARRA 33 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 33 | 56618.41 | -960.91>> | 311.4 | 984.8 | 0.00 | 7.03 | 0.15 | 2.48 | 0.029 |
| 33 | 56618.48 | -8169.54<< | 1304.7 | -13.6 | 24.35 | 29.45 | 0.62 | 21.08 | 0.406 |
| 33 | 56618.55 | -5899.49 | 8082.5>> | 7377.0 | 12.07 | 182.43 | 3.85 | 15.22 | 0.368 |
| 33 | 56618.34 | -4341.41 | -6543.8<< | 2473.8 | 3.63 | 147.70 | 3.12 | 11.20 | 0.260 |
| 34 | 56618.41 | -1848.50>> | 333.0 | -1965.1 | 0.00 | 7.52 | 0.16 | 4.77 | 0.064 |
| 34 | 56618.46 | -10164.34<< | 2175.0 | 4367.2 | 35.15 | 49.09 | 1.04 | 26.22 | 0.540 |
| 34 | 56618.57 | -7781.87 | 9137.9>> | -13155.1 | 22.26 | 206.25 | 4.35 | 20.08 | 0.494 |
| 34 | 56618.31 | -5977.31 | -7066.3<< | -14528.5 | 12.49 | 159.49 | 3.37 | 15.42 | 0.356 |

| BARRA 34 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 34 | 56529.86 | -1300.36>> | 333.0 | -1969.5 | 0.00 | 7.51 | 0.16 | 3.35 | 0.042 |
| 34 | 56529.91 | -9616.19<< | 2175.0 | 4362.9 | 32.22 | 49.07 | 1.04 | 24.81 | 0.505 |
| 34 | 56530.02 | -7233.73 | 9137.9>> | -13159.5 | 19.32 | 206.15 | 4.36 | 18.66 | 0.461 |
| 34 | 56529.76 | -5429.16 | -7066.3<< | -14532.9 | 9.54 | 159.41 | 3.37 | 14.01 | 0.326 |
| 35 | 56529.86 | -2187.93>> | 354.6 | -5632.0 | 0.00 | 8.00 | 0.17 | 5.64 | 0.078 |
| 35 | 56529.91 | -11757.93<< | 2543.1 | -18080.2 | 43.82 | 57.37 | 1.21 | 30.33 | 0.648 |
| 35 | 56530.02 | -8871.64 | 10583.6>> | -30070.2 | 28.19 | 238.76 | 5.05 | 22.89 | 0.585 |
| 35 | 56529.76 | -6820.56 | -8122.3<< | -27395.1 | 17.08 | 183.24 | 3.87 | 17.60 | 0.421 |

| BARRA 35 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 35 | 66906.31 | 4539.03>> | 332.6 | -4230.6 | 2.26 | 7.94 | 0.15 | 11.71 | 0.199 |
| 35 | 67624.38 | -5004.02<< | 2562.8 | -16679.8 | 4.47 | 61.37 | 1.15 | 12.91 | 0.248 |
| 35 | 67386.90 | -1844.57 | 10668.2>> | -20590.9 | 0.00 | 255.17 | 4.80 | 4.76 | 0.217 |
| 35 | 67232.42 | 201.05 | -8236.3<< | -17896.6 | 0.00 | 196.85 | 3.71 | 0.52 | 0.115 |
| 36 | 66986.89 | 3467.86>> | 354.2 | 4200.8 | 0.00 | 8.21 | 0.20 | 8.69 | 0.021 |
| 36 | 67754.66 | -6735.56<< | 2742.4 | -29287.6 | 0.00 | 63.76 | 1.52 | 16.88 | 0.071 |
| 36 | 67501.62 | -3369.19 | 11323.5>> | -26203.8 | 0.00 | 262.97 | 6.28 | 8.44 | 0.126 |
| 36 | 67328.56 | -1077.04 | -8690.3<< | -18941.9 | 0.00 | 201.66 | 4.82 | 2.70 | 0.072 |

| BARRA 36 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 36 | 67472.28 | -5455.75>> | 379.6 | 4534.8 | 0.00 | 8.82 | 0.21 | 13.67 | 0.043 |
| 36 | 67472.34 | -15688.00<< | 2720.2 | -28953.6 | 46.02 | 63.17 | 1.51 | 39.31 | 0.255 |
| 36 | 67472.41 | -12594.21 | 11242.3>> | -34545.0 | 28.83 | 261.05 | 6.23 | 31.56 | 0.276 |
| 36 | 67472.25 | -10295.87 | -8604.9<< | -27294.0 | 16.06 | 199.81 | 4.77 | 25.80 | 0.190 |
| 37 | 67472.28 | -6526.39>> | 401.2 | -8040.5 | 0.00 | 9.32 | 0.22 | 16.35 | 0.058 |
| 37 | 67472.34 | -17032.61<< | 2776.3 | -63294.3 | 53.49 | 64.47 | 1.54 | 42.68 | 0.291 |
| 37 | 67472.41 | -13925.04 | 11380.3>> | -62377.3 | 36.22 | 264.26 | 6.31 | 34.89 | 0.309 |
| 37 | 67472.25 | -11380.29 | -8665.3<< | -50043.4 | 22.08 | 201.21 | 4.80 | 28.52 | 0.213 |

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| BARRA 37 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 37 | 67460.71 | 16660.69>> | -2862.7 | -64554.2 | 51.43 | 66.47 | 1.59 | 41.75 | 0.281 |
| 37 | 67460.60 | 5724.42<< | -458.9 | -5167.4 | 0.00 | 10.65 | 0.25 | 14.34 | 0.047 |
| 37 | 67460.73 | 10951.62 | 8831.4>> | -49986.9 | 19.71 | 205.06 | 4.90 | 27.44 | 0.206 |
| 37 | 67460.69 | 13460.84 | -11654.7<< | -62319.1 | 33.65 | 270.61 | 6.46 | 33.73 | 0.302 |
| 38 | 67460.71 | 15315.46>> | -2806.7 | -30978.8 | 43.96 | 65.17 | 1.56 | 38.38 | 0.246 |
| 38 | 67460.60 | 4653.27<< | -437.3 | 5729.0 | 0.00 | 10.15 | 0.24 | 11.66 | 0.034 |
| 38 | 67460.73 | 9866.70 | 8771.0>> | -28127.6 | 13.68 | 203.66 | 4.86 | 24.72 | 0.184 |
| 38 | 67460.69 | 12129.38 | -11516.6<< | -35449.2 | 26.25 | 267.41 | 6.39 | 30.39 | 0.270 |

| BARRA 38 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 38 | 67661.58 | 6229.00>> | -2816.3 | -31206.6 | 0.00 | 65.45 | 1.56 | 15.61 | 0.064 |
| 38 | 66861.55 | -4403.14<< | -366.3 | 5501.3 | 0.00 | 8.48 | 0.20 | 11.03 | 0.030 |
| 38 | 67252.80 | 795.59 | 8688.6>> | -28355.3 | 0.00 | 201.55 | 4.82 | 1.99 | 0.071 |
| 38 | 67422.52 | 3051.89 | -11471.3<< | -35676.9 | 0.00 | 266.31 | 6.36 | 7.65 | 0.126 |
| 39 | 67529.55 | 4474.20>> | -2629.1 | -19687.4 | 1.79 | 62.93 | 1.18 | 11.54 | 0.220 |
| 39 | 66780.94 | -5474.30<< | -344.7 | -4899.3 | 7.08 | 8.22 | 0.16 | 14.12 | 0.250 |
| 39 | 67155.76 | -494.12 | 8210.3>> | -27913.3 | 0.00 | 196.15 | 3.70 | 1.27 | 0.122 |
| 39 | 67306.92 | 1515.64 | -10784.3<< | -30742.8 | 0.00 | 257.84 | 4.85 | 3.91 | 0.205 |

| BARRA 39 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 39 | 56546.96 | 11815.91>> | -2607.9 | -19361.6 | 44.13 | 58.84 | 1.24 | 30.48 | 0.653 |
| 39 | 56546.84 | 1839.31<< | -406.0 | -4573.5 | 0.00 | 9.16 | 0.19 | 4.75 | 0.064 |
| 39 | 56546.98 | 6833.56 | 8279.6>> | -27587.5 | 17.15 | 186.81 | 3.95 | 17.63 | 0.424 |
| 39 | 56546.94 | 8849.00 | -10806.0<< | -30417.0 | 28.06 | 243.80 | 5.15 | 22.83 | 0.587 |
| 40 | 56546.96 | 9674.12>> | -2239.8 | 3203.7 | 32.53 | 50.53 | 1.07 | 24.96 | 0.510 |
| 40 | 56546.84 | 951.69<< | -384.4 | -1642.6 | 0.00 | 8.67 | 0.18 | 2.46 | 0.029 |
| 40 | 56546.98 | 5442.12 | 7223.6>> | -14697.5 | 9.61 | 162.98 | 3.44 | 14.04 | 0.329 |
| 40 | 56546.94 | 7211.04 | -9360.3<< | -13553.3 | 19.19 | 211.19 | 4.46 | 18.60 | 0.464 |

| BARRA 40 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 40 | 56631.21 | 10214.32>> | -2234.5 | 3176.1 | 35.42 | 50.44 | 1.06 | 26.35 | 0.544 |
| 40 | 56631.10 | 1491.89<< | -381.4 | -1671.1 | 0.00 | 8.61 | 0.18 | 3.85 | 0.050 |
| 40 | 56631.15 | 5982.32 | 7220.4>> | -14729.5 | 12.51 | 162.99 | 3.44 | 15.43 | 0.359 |
| 40 | 56631.23 | 7751.24 | -9362.9<< | -13577.5 | 22.09 | 211.35 | 4.46 | 20.00 | 0.496 |
| 41 | 56631.24 | 8147.84>> | -1363.2 | -412.1 | 24.23 | 30.77 | 0.65 | 21.02 | 0.406 |
| 41 | 56631.10 | 604.30<< | -359.8 | 529.7 | 0.00 | 8.12 | 0.17 | 1.56 | 0.017 |
| 41 | 56631.19 | 4354.10 | 6675.9>> | 2196.9 | 3.70 | 150.70 | 3.18 | 11.23 | 0.262 |
| 41 | 56631.21 | 5876.52 | -8294.7<< | 6804.0 | 11.94 | 187.24 | 3.95 | 15.16 | 0.370 |

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| BARRA 41 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 41 | 56707.39 | 8703.16>> | -1363.2 | -466.5 | 27.21 | 30.78 | 0.65 | 22.45 | 0.440 |
| 41 | 56707.25 | 1159.63<< | -359.8 | 475.3 | 0.00 | 8.13 | 0.17 | 2.99 | 0.037 |
| 41 | 56707.34 | 4909.42 | 6675.9>> | 2142.5 | 6.68 | 150.76 | 3.18 | 12.67 | 0.292 |
| 41 | 56707.36 | 6431.84 | -8294.7<< | 6749.7 | 14.92 | 187.32 | 3.95 | 16.59 | 0.401 |
| 42 | 56707.39 | 6785.44>> | -1063.5 | 15796.8 | 16.83 | 24.02 | 0.51 | 17.51 | 0.322 |
| 42 | 56707.25 | 272.06<< | -338.2 | 1978.5 | 0.00 | 7.64 | 0.16 | 0.70 | 0.008 |
| 42 | 56707.45 | 2944.35 | 6004.8>> | 2659.9 | 0.00 | 135.61 | 2.86 | 7.60 | 0.183 |
| 42 | 56707.18 | 4219.45 | -7375.5<< | 10205.0 | 2.95 | 166.56 | 3.51 | 10.89 | 0.266 |

| BARRA 42 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 42 | 53849.15 | 7336.50>> | -1063.5 | 20805.8 | 20.80 | 23.62 | 0.51 | 18.93 | 0.351 |
| 42 | 53849.01 | 823.11<< | -338.2 | 6987.5 | 0.00 | 7.51 | 0.16 | 2.12 | 0.024 |
| 42 | 53849.21 | 3495.41 | 6004.8>> | 7668.9 | 0.00 | 133.38 | 2.91 | 9.02 | 0.207 |
| 42 | 53848.95 | 4770.51 | -7375.5<< | 15213.9 | 6.68 | 163.82 | 3.57 | 12.31 | 0.292 |
| 43 | 53849.15 | 5418.79>> | -763.8 | 34199.0 | 10.25 | 16.96 | 0.37 | 13.98 | 0.240 |
| 43 | 53849.01 | -64.49<< | -316.7 | 7783.8 | 0.00 | 7.03 | 0.15 | 0.17 | 0.003 |
| 43 | 53849.21 | 2594.03 | 5944.4>> | 14062.7 | 0.00 | 132.03 | 2.88 | 6.69 | 0.164 |
| 43 | 53848.95 | 3622.59 | -7237.4<< | 24026.7 | 0.37 | 160.75 | 3.50 | 9.35 | 0.232 |

| BARRA 43 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 43 | 53898.40 | 5968.61>> | -737.1 | 34132.4 | 13.26 | 16.38 | 0.36 | 15.40 | 0.270 |
| 43 | 53898.29 | 485.34<< | -302.5 | 7717.1 | 0.00 | 6.72 | 0.15 | 1.25 | 0.013 |
| 43 | 53898.36 | 3143.86 | 5961.5>> | 13993.0 | 0.00 | 132.45 | 2.89 | 8.11 | 0.189 |
| 43 | 53898.33 | 4172.42 | -7215.5<< | 23963.2 | 3.38 | 160.31 | 3.49 | 10.76 | 0.259 |
| 44 | 53898.40 | 4050.90>> | -437.4 | 44653.1 | 2.71 | 9.72 | 0.21 | 10.45 | 0.166 |
| 44 | 53898.29 | -402.24<< | -280.9 | 7804.2 | 0.00 | 6.24 | 0.14 | 1.04 | 0.011 |
| 44 | 53898.36 | 2021.09 | 5451.8>> | 19512.5 | 0.00 | 121.13 | 2.64 | 5.21 | 0.132 |
| 44 | 53898.33 | 2803.12 | -6485.3<< | 31383.9 | 0.00 | 144.09 | 3.14 | 7.23 | 0.181 |

| BARRA 44 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 44 | 53936.09 | 4614.17>> | -437.4 | 44590.9 | 5.80 | 9.72 | 0.21 | 11.90 | 0.195 |
| 44 | 53935.98 | 161.03<< | -280.9 | 7742.0 | 0.00 | 6.24 | 0.14 | 0.42 | 0.004 |
| 44 | 53936.05 | 2584.37 | 5451.8>> | 19450.3 | 0.00 | 121.15 | 2.64 | 6.67 | 0.156 |
| 44 | 53936.02 | 3366.39 | -6485.3<< | 31321.7 | 0.00 | 144.12 | 3.14 | 8.68 | 0.208 |
| 45 | 53936.09 | 2696.46>> | -137.7 | 52267.3 | 0.00 | 3.06 | 0.07 | 6.96 | 0.099 |
| 45 | 53935.98 | -726.58<< | -259.3 | 7148.2 | 0.00 | 5.76 | 0.13 | 1.87 | 0.020 |
| 45 | 53936.18 | 784.92 | 5829.2>> | 35612.9 | 0.00 | 129.54 | 2.82 | 2.02 | 0.090 |
| 45 | 53935.94 | 1320.46 | -6275.6<< | 48867.7 | 0.00 | 139.46 | 3.04 | 3.41 | 0.116 |

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| BARRA 45 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 45 | 53960.86 | 3262.12>> | -98.9 | 52217.7 | 0.00 | 2.20 | 0.05 | 8.42 | 0.125 |
| 45 | 53960.79 | -160.92<< | -242.1 | 7098.7 | 0.00 | 5.38 | 0.12 | 0.42 | 0.004 |
| 45 | 53960.85 | 1350.59 | 5860.0>> | 35560.5 | 0.00 | 130.25 | 2.84 | 3.48 | 0.110 |
| 45 | 53960.84 | 1886.12 | -6238.5<< | 48821.0 | 0.00 | 138.66 | 3.02 | 4.87 | 0.138 |
| 46 | 53960.77 | 1390.29>> | 204.7 | 17168.0 | 0.00 | 4.55 | 0.10 | 3.59 | 0.044 |
| 46 | 53960.79 | -1048.51<< | -220.5 | 5828.7 | 0.00 | 4.90 | 0.11 | 2.70 | 0.031 |
| 46 | 53960.87 | 54.30 | 5811.3>> | 28562.8 | 0.00 | 129.16 | 2.81 | 0.14 | 0.069 |
| 46 | 53960.79 | 343.33 | -5827.6<< | 42691.0 | 0.00 | 129.53 | 2.82 | 0.89 | 0.076 |

| BARRA 46 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 46 | 53971.50 | 1952.14>> | 204.7 | 17136.9 | 0.00 | 4.55 | 0.10 | 5.04 | 0.067 |
| 46 | 53971.52 | -486.66<< | -220.5 | 5797.6 | 0.00 | 4.90 | 0.11 | 1.26 | 0.013 |
| 46 | 53971.59 | 616.15 | 5811.3>> | 28531.7 | 0.00 | 129.17 | 2.81 | 1.59 | 0.084 |
| 46 | 53971.51 | 905.18 | -5827.6<< | 42659.9 | 0.00 | 129.53 | 2.82 | 2.34 | 0.094 |
| 47 | 53971.50 | 790.44>> | 260.8 | 20016.5 | 0.00 | 5.80 | 0.13 | 2.04 | 0.023 |
| 47 | 53971.52 | -1374.26<< | -199.0 | 3843.3 | 0.00 | 4.42 | 0.10 | 3.55 | 0.043 |
| 47 | 53971.64 | -285.23 | 5753.6>> | 28877.8 | 0.00 | 127.89 | 2.78 | 0.74 | 0.073 |
| 47 | 53971.46 | -242.74 | -5692.3<< | 43356.4 | 0.00 | 126.52 | 2.75 | 0.63 | 0.072 |

| BARRA 47 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 47 | 53971.44 | 1352.68>> | 260.8 | 20000.6 | 0.00 | 5.80 | 0.13 | 3.49 | 0.043 |
| 47 | 53971.46 | -812.02<< | -199.0 | 3827.4 | 0.00 | 4.42 | 0.10 | 2.09 | 0.023 |
| 47 | 53971.57 | 277.01 | 5753.6>> | 28861.9 | 0.00 | 127.89 | 2.78 | 0.71 | 0.073 |
| 47 | 53971.40 | 319.50 | -5692.3<< | 43340.5 | 0.00 | 126.52 | 2.75 | 0.82 | 0.073 |
| 48 | 53971.44 | 435.62>> | 282.8 | 11930.0 | 0.00 | 6.29 | 0.14 | 1.12 | 0.012 |
| 48 | 53971.46 | -1944.23<< | -143.3 | 10881.6 | 0.00 | 3.18 | 0.07 | 5.02 | 0.066 |
| 48 | 53971.57 | -842.92 | 5891.4>> | 36565.9 | 0.00 | 130.95 | 2.85 | 2.17 | 0.093 |
| 48 | 53971.40 | -609.83 | -5752.3<< | 34737.4 | 0.00 | 127.86 | 2.78 | 1.57 | 0.083 |

| BARRA 48 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 48 | 53958.32 | 1007.62>> | 282.8 | 11932.8 | 0.00 | 6.29 | 0.14 | 2.60 | 0.030 |
| 48 | 53958.34 | -1372.23<< | -143.3 | 10884.5 | 0.00 | 3.18 | 0.07 | 3.54 | 0.043 |
| 48 | 53958.46 | -270.92 | 5891.4>> | 36568.7 | 0.00 | 130.94 | 2.85 | 0.70 | 0.075 |
| 48 | 53958.28 | -37.83 | -5752.3<< | 34740.2 | 0.00 | 127.85 | 2.78 | 0.10 | 0.068 |
| 49 | 53958.32 | 120.02>> | 304.4 | 13116.8 | 0.00 | 6.76 | 0.15 | 0.31 | 0.004 |
| 49 | 53958.40 | -3198.79<< | 182.7 | 46327.1 | 0.00 | 4.06 | 0.09 | 8.25 | 0.122 |
| 49 | 53958.49 | -1833.00 | 6323.8>> | 42902.3 | 0.00 | 140.55 | 3.06 | 4.73 | 0.137 |
| 49 | 53958.28 | -1353.41 | -5790.5<< | 41824.1 | 0.00 | 128.70 | 2.80 | 3.49 | 0.110 |

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| BARRA 49 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 49 | 53931.80 | 690.53>> | 324.4 | 13136.4 | 0.00 | 7.21 | 0.16 | 1.78 | 0.020 |
| 49 | 53931.93 | -2628.27<< | 218.6 | 46346.8 | 0.00 | 4.86 | 0.11 | 6.78 | 0.096 |
| 49 | 53931.91 | -1246.35 | 6360.6>> | 49196.1 | 0.00 | 141.35 | 3.08 | 3.22 | 0.114 |
| 49 | 53931.88 | -799.04 | -5759.3<< | 35569.7 | 0.00 | 127.99 | 2.79 | 2.06 | 0.089 |
| 50 | 53931.80 | -197.07>> | 346.0 | 13654.6 | 0.00 | 7.69 | 0.17 | 0.51 | 0.006 |
| 50 | 53931.93 | -4545.99<< | 518.3 | 38813.6 | 5.43 | 11.52 | 0.25 | 11.73 | 0.192 |
| 50 | 53931.96 | -3296.74 | 6561.4>> | 31624.4 | 0.00 | 145.81 | 3.18 | 8.50 | 0.206 |
| 50 | 53931.79 | -2602.92 | -5370.9<< | 19195.7 | 0.00 | 119.35 | 2.60 | 6.72 | 0.156 |

| BARRA 50 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 50 | 53892.26 | 370.86>> | 365.0 | 13686.7 | 0.00 | 8.11 | 0.18 | 0.96 | 0.010 |
| 50 | 53892.41 | -3978.06<< | 549.3 | 38845.5 | 2.31 | 12.20 | 0.27 | 10.26 | 0.163 |
| 50 | 53892.35 | -2728.81 | 6589.0>> | 31653.5 | 0.00 | 146.39 | 3.19 | 7.04 | 0.180 |
| 50 | 53892.35 | -2034.99 | -5349.3<< | 19230.4 | 0.00 | 118.85 | 2.59 | 5.25 | 0.131 |
| 51 | 53892.26 | -516.74>> | 386.6 | 13533.2 | 0.00 | 8.59 | 0.19 | 1.33 | 0.015 |
| 51 | 53892.41 | -5895.80<< | 849.0 | 28477.2 | 12.86 | 18.86 | 0.41 | 15.21 | 0.267 |
| 51 | 53892.35 | -4087.35 | 7289.4>> | 24398.0 | 2.91 | 161.95 | 3.53 | 10.54 | 0.256 |
| 51 | 53892.35 | -3146.98 | -5836.4<< | 13690.9 | 0.00 | 129.67 | 2.83 | 8.12 | 0.188 |

| BARRA 51 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 51 | 53841.13 | 37.36>> | 386.6 | 13570.1 | 0.00 | 8.59 | 0.19 | 0.10 | 0.003 |
| 51 | 53841.28 | -5341.71<< | 849.0 | 28514.2 | 9.83 | 18.86 | 0.41 | 13.78 | 0.237 |
| 51 | 53841.22 | -3533.25 | 7289.4>> | 24435.0 | 0.00 | 161.90 | 3.53 | 9.12 | 0.228 |
| 51 | 53841.22 | -2592.88 | -5836.4<< | 13727.8 | 0.00 | 129.63 | 2.83 | 6.69 | 0.162 |
| 52 | 53841.13 | -850.26>> | 408.2 | 12716.5 | 0.00 | 9.07 | 0.20 | 2.19 | 0.026 |
| 52 | 53841.28 | -7259.45<< | 1148.7 | 15282.4 | 20.38 | 25.51 | 0.56 | 18.73 | 0.347 |
| 52 | 53841.22 | -4681.18 | 7427.5>> | 15809.5 | 6.19 | 164.97 | 3.60 | 12.08 | 0.288 |
| 52 | 53841.22 | -3494.27 | -5896.8<< | 7336.0 | 0.00 | 130.97 | 2.86 | 9.01 | 0.205 |

| BARRA 52 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 52 | 53776.23 | -288.92>> | 408.5 | 12751.5 | 0.00 | 9.07 | 0.20 | 0.75 | 0.008 |
| 52 | 53776.38 | -6698.11<< | 1149.0 | 15317.4 | 17.31 | 25.51 | 0.56 | 17.28 | 0.315 |
| 52 | 53776.32 | -4119.84 | 7427.8>> | 15844.4 | 3.12 | 164.91 | 3.60 | 10.63 | 0.259 |
| 52 | 53776.32 | -2932.94 | -5896.5<< | 7371.0 | 0.00 | 130.91 | 2.86 | 7.57 | 0.179 |
| 53 | 53776.23 | -1176.10>> | 430.1 | 11213.8 | 0.00 | 9.55 | 0.21 | 3.03 | 0.037 |
| 53 | 53776.38 | -8614.94<< | 1448.6 | -754.5 | 27.86 | 32.16 | 0.70 | 22.22 | 0.431 |
| 53 | 53776.40 | -6336.08 | 8345.5>> | 12751.9 | 15.32 | 185.29 | 4.04 | 16.35 | 0.393 |
| 53 | 53776.28 | -4901.98 | -6575.1<< | 7029.7 | 7.43 | 145.98 | 3.18 | 12.65 | 0.287 |

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| BARRA 53 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 53 | 53699.63 | -623.04>> | 429.8 | 11235.1 | 0.00 | 9.54 | 0.21 | 1.61 | 0.018 |
| 53 | 53699.78 | -8061.88<< | 1448.4 | -733.2 | 24.85 | 32.14 | 0.70 | 20.80 | 0.397 |
| 53 | 53699.80 | -5783.02 | 8345.2>> | 12773.2 | 12.30 | 185.20 | 4.04 | 14.92 | 0.362 |
| 53 | 53699.68 | -4348.92 | -6575.4<< | 7050.9 | 4.40 | 145.92 | 3.19 | 11.22 | 0.258 |
| 54 | 53699.63 | -1510.67>> | 451.3 | 8994.2 | 0.00 | 10.02 | 0.22 | 3.90 | 0.050 |
| 54 | 53699.75 | -10115.90<< | 2302.7 | 3117.2 | 36.16 | 51.10 | 1.12 | 26.10 | 0.533 |
| 54 | 53699.84 | -7667.25 | 9417.1>> | -7613.5 | 22.67 | 208.98 | 4.56 | 19.78 | 0.487 |
| 54 | 53699.61 | -5986.67 | -7134.4<< | -10066.2 | 13.42 | 158.33 | 3.46 | 15.44 | 0.354 |

| BARRA 54 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 54 | 53611.14 | -962.65>> | 456.8 | 8989.7 | 0.00 | 10.13 | 0.22 | 2.48 | 0.030 |
| 54 | 53611.29 | -9567.88<< | 2305.3 | 3111.8 | 33.18 | 51.13 | 1.12 | 24.68 | 0.499 |
| 54 | 53611.32 | -7119.23 | 9414.6>> | -7622.3 | 19.69 | 208.82 | 4.56 | 18.37 | 0.455 |
| 54 | 53611.20 | -5438.65 | -7138.0<< | -10067.1 | 10.43 | 158.32 | 3.46 | 14.03 | 0.324 |
| 55 | 53611.14 | -1850.25>> | 478.3 | 6036.2 | 0.00 | 10.61 | 0.23 | 4.77 | 0.064 |
| 55 | 53611.29 | -11709.69<< | 2673.4 | -19230.5 | 44.97 | 59.30 | 1.30 | 30.21 | 0.640 |
| 55 | 53611.32 | -8757.21 | 10860.3>> | -24293.1 | 28.71 | 240.89 | 5.27 | 22.59 | 0.577 |
| 55 | 53611.20 | -6830.08 | -8194.1<< | -22949.6 | 18.09 | 181.75 | 3.97 | 17.62 | 0.418 |

| BARRA 55 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 55 | 63970.92 | 4656.54>> | 489.9 | 7437.7 | 3.54 | 11.51 | 0.22 | 12.01 | 0.204 |
| 55 | 64710.73 | -5175.13<< | 2802.0 | -17829.0 | 6.05 | 66.10 | 1.28 | 13.35 | 0.258 |
| 55 | 64489.27 | -2230.96 | 10993.9>> | -22891.6 | 0.00 | 259.06 | 5.02 | 5.76 | 0.238 |
| 55 | 64344.57 | -309.26 | -8101.2<< | -21548.1 | 0.00 | 190.75 | 3.70 | 0.80 | 0.114 |
| 56 | 64051.50 | 3585.37>> | 511.6 | 16116.7 | 0.00 | 11.69 | 0.29 | 8.98 | 0.022 |
| 56 | 64840.66 | -6902.01<< | 2980.2 | -30791.6 | 0.00 | 68.35 | 1.67 | 17.30 | 0.074 |
| 56 | 64603.80 | -3753.25 | 11643.0>> | -29315.6 | 0.00 | 266.72 | 6.54 | 9.40 | 0.134 |
| 56 | 64440.54 | -1585.02 | -8550.5<< | -23665.3 | 0.00 | 195.73 | 4.81 | 3.97 | 0.072 |

| BARRA 56 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 56 | 64553.84 | -5118.92>> | 494.0 | 16450.5 | 0.00 | 11.31 | 0.28 | 12.83 | 0.039 |
| 56 | 64553.98 | -15635.95<< | 2820.6 | -30458.9 | 47.49 | 64.60 | 1.59 | 39.18 | 0.251 |
| 56 | 64553.98 | -12478.30 | 11489.8>> | -28987.1 | 29.70 | 263.15 | 6.46 | 31.27 | 0.274 |
| 56 | 64553.96 | -10303.92 | -8689.7<< | -23327.2 | 17.45 | 199.02 | 4.88 | 25.82 | 0.189 |
| 57 | 64553.84 | -6190.09>> | 515.6 | 4575.4 | 0.00 | 11.81 | 0.29 | 15.51 | 0.053 |
| 57 | 64553.98 | -16981.22<< | 2876.7 | -64708.7 | 55.07 | 65.89 | 1.62 | 42.55 | 0.287 |
| 57 | 64553.98 | -13809.79 | 11627.9>> | -56591.0 | 37.20 | 266.32 | 6.54 | 34.60 | 0.307 |
| 57 | 64553.96 | -11388.87 | -8750.1<< | -46105.9 | 23.56 | 200.41 | 4.92 | 28.54 | 0.212 |

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| BARRA 57 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 57 | 64542.21 | 16354.56>> | -2908.7 | -64707.4 | 51.54 | 66.62 | 1.64 | 40.98 | 0.271 |
| 57 | 64542.07 | 5535.81<< | -527.6 | 4633.1 | 0.00 | 12.08 | 0.30 | 13.87 | 0.044 |
| 57 | 64542.19 | 10748.81 | 8795.3>> | -46050.0 | 19.96 | 201.43 | 4.94 | 26.93 | 0.200 |
| 57 | 64542.21 | 13168.81 | -11709.8<< | -56532.2 | 33.59 | 268.18 | 6.58 | 33.00 | 0.293 |
| 58 | 64542.21 | 15009.25>> | -2852.6 | -31774.0 | 43.96 | 65.33 | 1.60 | 37.61 | 0.236 |
| 58 | 64542.07 | 4464.61<< | -506.1 | 15133.7 | 0.00 | 11.59 | 0.28 | 11.19 | 0.031 |
| 58 | 64542.19 | 9663.83 | 8734.9>> | -24616.0 | 13.84 | 200.05 | 4.91 | 24.22 | 0.178 |
| 58 | 64542.21 | 11837.28 | -11571.7<< | -30274.8 | 26.09 | 265.01 | 6.50 | 29.66 | 0.262 |

| BARRA 58 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 58 | 64728.34 | 6143.22>> | -2982.2 | -32001.9 | 0.00 | 68.36 | 1.67 | 15.39 | 0.063 |
| 58 | 63937.10 | -4371.68<< | -513.5 | 14905.9 | 0.00 | 11.73 | 0.29 | 10.95 | 0.030 |
| 58 | 64327.28 | 812.86 | 8607.5>> | -24843.8 | 0.00 | 196.92 | 4.84 | 2.04 | 0.069 |
| 58 | 64490.37 | 2980.20 | -11683.3<< | -30502.6 | 0.00 | 267.50 | 6.57 | 7.47 | 0.127 |
| 59 | 64595.94 | 4383.74>> | -2793.4 | -20667.4 | 1.98 | 65.86 | 1.27 | 11.31 | 0.215 |
| 59 | 63856.50 | -5442.87<< | -491.9 | 4571.0 | 7.66 | 11.55 | 0.23 | 14.04 | 0.247 |
| 59 | 64230.05 | -479.20 | 8124.0>> | -24367.8 | 0.00 | 191.17 | 3.71 | 1.24 | 0.119 |
| 59 | 64374.59 | 1441.59 | -10989.4<< | -25721.7 | 0.00 | 258.80 | 5.02 | 3.72 | 0.204 |

| BARRA 59 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 59 | 53628.15 | 11505.09>> | -2677.7 | -20340.3 | 43.84 | 59.40 | 1.30 | 29.68 | 0.627 |
| 59 | 53628.01 | 1650.67<< | -484.0 | 4897.0 | 0.00 | 10.74 | 0.23 | 4.26 | 0.056 |
| 59 | 53628.06 | 6628.38 | 8216.9>> | -24045.9 | 16.98 | 182.27 | 3.98 | 17.10 | 0.407 |
| 59 | 53628.19 | 8554.62 | -10883.4<< | -25390.7 | 27.59 | 241.42 | 5.28 | 22.07 | 0.565 |
| 60 | 53628.15 | 9363.25>> | -2309.5 | 1572.9 | 32.04 | 51.23 | 1.12 | 24.16 | 0.486 |
| 60 | 53628.01 | 763.07<< | -462.4 | 7431.8 | 0.00 | 10.26 | 0.22 | 1.97 | 0.023 |
| 60 | 53628.06 | 5236.95 | 7160.9>> | -11586.4 | 9.31 | 158.85 | 3.47 | 13.51 | 0.313 |
| 60 | 53628.19 | 6916.62 | -9437.6<< | -9144.7 | 18.56 | 209.35 | 4.58 | 17.84 | 0.443 |

| BARRA 60 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 60 | 53712.31 | 9903.44>> | -2309.5 | 1544.3 | 34.98 | 51.26 | 1.12 | 25.55 | 0.520 |
| 60 | 53712.17 | 1303.27<< | -462.4 | 7403.3 | 0.00 | 10.26 | 0.22 | 3.36 | 0.042 |
| 60 | 53712.22 | 5777.14 | 7160.9>> | -11615.0 | 12.26 | 158.93 | 3.47 | 14.90 | 0.343 |
| 60 | 53712.35 | 7456.81 | -9437.6<< | -9173.3 | 21.51 | 209.45 | 4.57 | 19.24 | 0.475 |
| 61 | 53712.36 | 7847.66>> | -1448.2 | -2731.1 | 23.66 | 32.14 | 0.70 | 20.25 | 0.385 |
| 61 | 53712.17 | 415.64<< | -440.8 | 9208.3 | 0.00 | 9.78 | 0.21 | 1.07 | 0.012 |
| 61 | 53712.30 | 4141.38 | 6583.5>> | 5014.5 | 3.25 | 146.11 | 3.19 | 10.68 | 0.248 |
| 61 | 53712.30 | 5574.59 | -8356.7<< | 10723.9 | 11.15 | 185.46 | 4.05 | 14.38 | 0.351 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 61 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 61 | 53788.53 | 8402.91>> | -1444.4 | -2784.8 | 26.69 | 32.07 | 0.70 | 21.68 | 0.418 |
| 61 | 53788.36 | 970.90<< | -431.5 | 9154.2 | 0.00 | 9.58 | 0.21 | 2.50 | 0.030 |
| 61 | 53788.42 | 4696.64 | 6590.9>> | 4957.0 | 6.29 | 146.34 | 3.19 | 12.12 | 0.276 |
| 61 | 53788.53 | 6129.85 | -8346.6<< | 10673.6 | 14.18 | 185.32 | 4.04 | 15.81 | 0.381 |
| 62 | 53788.53 | 6485.12>> | -1144.7 | 12848.8 | 16.13 | 25.42 | 0.55 | 16.73 | 0.303 |
| 62 | 53788.36 | 83.27<< | -409.9 | 10261.5 | 0.00 | 9.10 | 0.20 | 0.21 | 0.004 |
| 62 | 53788.47 | 2739.81 | 5960.8>> | 4911.3 | 0.00 | 132.35 | 2.89 | 7.07 | 0.171 |
| 62 | 53788.46 | 3925.71 | -7503.3<< | 13378.7 | 2.05 | 166.60 | 3.63 | 10.13 | 0.251 |

| BARRA 62 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 62 | 53849.17 | 7035.01>> | -1144.7 | 12784.7 | 19.14 | 25.43 | 0.55 | 18.15 | 0.334 |
| 62 | 53849.00 | 633.17<< | -409.9 | 10197.3 | 0.00 | 9.10 | 0.20 | 1.63 | 0.019 |
| 62 | 53849.09 | 3289.70 | 5960.8>> | 4847.2 | 0.00 | 132.40 | 2.89 | 8.49 | 0.196 |
| 62 | 53849.10 | 4475.60 | -7503.3<< | 13314.6 | 5.06 | 166.66 | 3.63 | 11.55 | 0.279 |
| 63 | 53849.17 | 5118.16>> | -845.2 | 25540.7 | 8.59 | 18.77 | 0.41 | 13.20 | 0.225 |
| 63 | 53849.00 | -254.03<< | -388.3 | 10595.7 | 0.00 | 8.62 | 0.19 | 0.66 | 0.007 |
| 63 | 53849.09 | 2388.74 | 5900.4>> | 10807.5 | 0.00 | 131.06 | 2.86 | 6.16 | 0.154 |
| 63 | 53849.10 | 3328.20 | -7365.3<< | 21505.7 | 0.00 | 163.59 | 3.57 | 8.59 | 0.220 |

| BARRA 63 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 63 | 53898.49 | 5669.08>> | -845.3 | 25473.6 | 11.61 | 18.78 | 0.41 | 14.63 | 0.255 |
| 63 | 53898.32 | 296.90<< | -388.3 | 10528.6 | 0.00 | 8.63 | 0.19 | 0.77 | 0.009 |
| 63 | 53898.43 | 2939.66 | 5900.4>> | 10740.5 | 0.00 | 131.09 | 2.86 | 7.58 | 0.179 |
| 63 | 53898.42 | 3879.13 | -7365.3<< | 21438.5 | 1.77 | 163.64 | 3.57 | 10.01 | 0.247 |
| 64 | 53898.49 | 3751.30>> | -545.5 | 35365.6 | 1.06 | 12.12 | 0.26 | 9.68 | 0.152 |
| 64 | 53898.32 | -590.72<< | -366.7 | 10220.1 | 0.00 | 8.15 | 0.18 | 1.52 | 0.017 |
| 64 | 53898.43 | 1815.05 | 5387.0>> | 15829.2 | 0.00 | 119.69 | 2.61 | 4.68 | 0.122 |
| 64 | 53898.42 | 2507.97 | -6630.3<< | 28241.4 | 0.00 | 147.31 | 3.21 | 6.47 | 0.170 |

| BARRA 64 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 64 | 53936.20 | 4314.63>> | -516.2 | 35303.9 | 4.15 | 11.47 | 0.25 | 11.13 | 0.180 |
| 64 | 53936.07 | -27.39<< | -349.4 | 10158.3 | 0.00 | 7.76 | 0.17 | 0.07 | 0.002 |
| 64 | 53936.04 | 2378.39 | 5407.0>> | 15764.7 | 0.00 | 120.16 | 2.62 | 6.14 | 0.146 |
| 64 | 53936.25 | 3071.31 | -6604.4<< | 28182.6 | 0.00 | 146.77 | 3.20 | 7.92 | 0.196 |
| 65 | 53936.20 | 2396.84>> | -216.5 | 42351.6 | 0.00 | 4.81 | 0.10 | 6.18 | 0.086 |
| 65 | 53936.07 | -915.01<< | -327.8 | 9168.9 | 0.00 | 7.28 | 0.16 | 2.36 | 0.027 |
| 65 | 53936.13 | 564.35 | 5839.0>> | 31576.1 | 0.00 | 129.76 | 2.83 | 1.46 | 0.083 |
| 65 | 53936.20 | 1010.77 | -6431.0<< | 45189.8 | 0.00 | 142.92 | 3.11 | 2.61 | 0.106 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 65 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 65 | 53961.02 | 2962.57>> | -216.5 | 42301.9 | 0.00 | 4.81 | 0.10 | 7.64 | 0.111 |
| 65 | 53960.89 | -349.28<< | -327.8 | 9119.3 | 0.00 | 7.29 | 0.16 | 0.90 | 0.010 |
| 65 | 53960.95 | 1130.08 | 5839.0>> | 31526.5 | 0.00 | 129.78 | 2.83 | 2.92 | 0.102 |
| 65 | 53961.03 | 1576.50 | -6431.0<< | 45140.2 | 0.00 | 142.94 | 3.11 | 4.07 | 0.128 |
| 66 | 53960.93 | 1141.73>> | 126.1 | 6439.9 | 0.00 | 2.80 | 0.06 | 2.95 | 0.034 |
| 66 | 53960.89 | -1236.91<< | -306.2 | 7453.9 | 0.00 | 6.81 | 0.15 | 3.19 | 0.039 |
| 66 | 53960.96 | -157.61 | 5772.2>> | 24028.4 | 0.00 | 128.29 | 2.79 | 0.41 | 0.071 |
| 66 | 53960.98 | 42.30 | -5975.4<< | 38322.7 | 0.00 | 132.81 | 2.89 | 0.11 | 0.071 |

| BARRA 66 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 66 | 53971.53 | 1703.52>> | 126.1 | 6408.7 | 0.00 | 2.80 | 0.06 | 4.39 | 0.056 |
| 66 | 53971.49 | -675.12<< | -306.2 | 7422.7 | 0.00 | 6.81 | 0.15 | 1.74 | 0.019 |
| 66 | 53971.55 | 404.18 | 5772.2>> | 23997.2 | 0.00 | 128.30 | 2.79 | 1.04 | 0.077 |
| 66 | 53971.58 | 604.09 | -5975.4<< | 38291.6 | 0.00 | 132.82 | 2.89 | 1.56 | 0.086 |
| 67 | 53971.52 | 572.17>> | 193.6 | -1131.0 | 0.00 | 4.30 | 0.09 | 1.48 | 0.015 |
| 67 | 53971.50 | -1593.13<< | -296.0 | 14970.4 | 0.00 | 6.58 | 0.14 | 4.11 | 0.052 |
| 67 | 53971.55 | -497.23 | 5711.8>> | 23899.6 | 0.00 | 126.96 | 2.76 | 1.28 | 0.079 |
| 67 | 53971.58 | -543.85 | -5837.3<< | 38354.9 | 0.00 | 129.75 | 2.82 | 1.40 | 0.082 |

| BARRA 67 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 67 | 53971.57 | 1134.34>> | 208.2 | -1146.8 | 0.00 | 4.63 | 0.10 | 2.93 | 0.034 |
| 67 | 53971.58 | -1030.95<< | -273.7 | 14954.8 | 0.00 | 6.08 | 0.13 | 2.66 | 0.031 |
| 67 | 53971.53 | 48.92 | 5739.5>> | 30092.6 | 0.00 | 127.57 | 2.78 | 0.13 | 0.068 |
| 67 | 53971.73 | 34.35 | -5805.0<< | 32130.3 | 0.00 | 129.03 | 2.81 | 0.09 | 0.069 |
| 68 | 53971.57 | 246.71>> | 229.8 | 303.6 | 0.00 | 5.11 | 0.11 | 0.64 | 0.006 |
| 68 | 53971.58 | -2192.70<< | -217.6 | 11569.9 | 0.00 | 4.84 | 0.11 | 5.66 | 0.077 |
| 68 | 53971.57 | -1128.04 | 5856.4>> | 37176.3 | 0.00 | 130.17 | 2.83 | 2.91 | 0.102 |
| 68 | 53971.69 | -838.08 | -5844.3<< | 23069.8 | 0.00 | 129.90 | 2.83 | 2.16 | 0.092 |

| BARRA 68 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 68 | 53958.39 | 818.77>> | 229.8 | 306.3 | 0.00 | 5.11 | 0.11 | 2.11 | 0.023 |
| 68 | 53958.40 | -1620.64<< | -217.6 | 11572.7 | 0.00 | 4.84 | 0.11 | 4.18 | 0.053 |
| 68 | 53958.39 | -555.98 | 5856.4>> | 37179.1 | 0.00 | 130.16 | 2.83 | 1.43 | 0.083 |
| 68 | 53958.51 | -266.02 | -5844.3<< | 23072.6 | 0.00 | 129.89 | 2.83 | 0.69 | 0.074 |
| 69 | 53958.39 | -68.84>> | 251.3 | 1094.0 | 0.00 | 5.59 | 0.12 | 0.18 | 0.002 |
| 69 | 53958.48 | -3496.51<< | 89.7 | 46247.9 | 0.00 | 1.99 | 0.04 | 9.02 | 0.136 |
| 69 | 53958.43 | -2126.29 | 6246.6>> | 42858.7 | 0.00 | 138.84 | 3.02 | 5.49 | 0.148 |
| 69 | 53958.48 | -1589.82 | -5857.3<< | 29622.2 | 0.00 | 130.18 | 2.83 | 4.10 | 0.120 |

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| BARRA 69 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 69 | 53931.88 | 502.25>> | 251.4 | 1113.8 | 0.00 | 5.59 | 0.12 | 1.30 | 0.013 |
| 69 | 53931.98 | -2925.42<< | 89.9 | 46267.7 | 0.00 | 2.00 | 0.04 | 7.55 | 0.109 |
| 69 | 53931.93 | -1555.20 | 6246.9>> | 42878.4 | 0.00 | 138.82 | 3.02 | 4.01 | 0.124 |
| 69 | 53931.97 | -1018.73 | -5857.1<< | 29642.0 | 0.00 | 130.16 | 2.83 | 2.63 | 0.098 |
| 70 | 53931.88 | -384.97>> | 272.9 | 1237.2 | 0.00 | 6.06 | 0.13 | 0.99 | 0.010 |
| 70 | 53931.98 | -4842.32<< | 389.5 | 38115.2 | 7.05 | 8.66 | 0.19 | 12.49 | 0.206 |
| 70 | 53932.01 | -3591.97 | 6493.6>> | 24740.6 | 0.18 | 144.30 | 3.14 | 9.27 | 0.219 |
| 70 | 53931.84 | -2809.14 | -5526.7<< | 12888.5 | 0.00 | 122.81 | 2.67 | 7.25 | 0.168 |

| BARRA 70 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 70 | 53892.43 | 182.25>> | 285.8 | 1269.2 | 0.00 | 6.35 | 0.14 | 0.47 | 0.005 |
| 70 | 53892.54 | -4275.10<< | 419.7 | 38147.1 | 3.95 | 9.32 | 0.20 | 11.03 | 0.177 |
| 70 | 53892.45 | -3024.76 | 6517.5>> | 24769.7 | 0.00 | 144.80 | 3.15 | 7.80 | 0.192 |
| 70 | 53892.52 | -2241.92 | -5508.3<< | 12923.2 | 0.00 | 122.38 | 2.67 | 5.78 | 0.142 |
| 71 | 53892.43 | -705.38>> | 307.3 | 720.1 | 0.00 | 6.83 | 0.15 | 1.82 | 0.020 |
| 71 | 53892.54 | -6192.90<< | 719.4 | 27155.2 | 14.49 | 15.98 | 0.35 | 15.98 | 0.282 |
| 71 | 53892.45 | -4381.51 | 7213.5>> | 16894.6 | 4.53 | 160.26 | 3.49 | 11.30 | 0.270 |
| 71 | 53892.52 | -3352.12 | -5992.2<< | 6951.1 | 0.00 | 133.13 | 2.90 | 8.65 | 0.200 |

| BARRA 71 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 71 | 53841.10 | -151.28>> | 307.3 | 757.1 | 0.00 | 6.83 | 0.15 | 0.39 | 0.004 |
| 71 | 53841.21 | -5638.80<< | 719.4 | 27192.1 | 11.46 | 15.98 | 0.35 | 14.55 | 0.252 |
| 71 | 53841.13 | -3827.41 | 7213.5>> | 16931.6 | 1.50 | 160.22 | 3.49 | 9.87 | 0.242 |
| 71 | 53841.20 | -2798.03 | -5992.2<< | 6988.1 | 0.00 | 133.09 | 2.90 | 7.22 | 0.174 |
| 72 | 53841.10 | -1038.92>> | 328.9 | -492.6 | 0.00 | 7.31 | 0.16 | 2.68 | 0.032 |
| 72 | 53841.21 | -7556.61<< | 1019.1 | 13336.0 | 22.01 | 22.63 | 0.49 | 19.49 | 0.363 |
| 72 | 53841.13 | -4975.39 | 7351.6>> | 7688.1 | 7.81 | 163.28 | 3.56 | 12.84 | 0.303 |
| 72 | 53841.20 | -3699.45 | -6052.6<< | 165.3 | 0.79 | 134.43 | 2.93 | 9.54 | 0.218 |

| BARRA 72 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 72 | 53776.48 | -479.14>> | 336.6 | -457.9 | 0.00 | 7.47 | 0.16 | 1.24 | 0.013 |
| 72 | 53776.62 | -6996.83<< | 1033.4 | 13370.3 | 18.95 | 22.94 | 0.50 | 18.05 | 0.331 |
| 72 | 53776.39 | -4415.60 | 7363.3>> | 7719.3 | 4.75 | 163.48 | 3.57 | 11.39 | 0.274 |
| 72 | 53776.70 | -3139.67 | -6044.6<< | 203.0 | 0.00 | 134.20 | 2.93 | 8.10 | 0.190 |
| 73 | 53776.48 | -1366.78>> | 358.2 | -2396.0 | 0.00 | 7.95 | 0.17 | 3.53 | 0.044 |
| 73 | 53776.62 | -8914.66<< | 1333.1 | -3337.8 | 29.51 | 29.60 | 0.65 | 23.00 | 0.448 |
| 73 | 53776.57 | -6639.76 | 8313.9>> | 3885.6 | 16.99 | 184.58 | 4.03 | 17.13 | 0.409 |
| 73 | 53776.58 | -5116.50 | -6736.6<< | -690.4 | 8.61 | 149.56 | 3.26 | 13.20 | 0.301 |

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| BARRA 73 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^B +(Td/Tu1)^B |
|---|---|---|---|---|---|---|---|---|---|
| 73 | 53699.69 | -812.30>> | 358.2 | -2374.7 | 0.00 | 7.95 | 0.17 | 2.10 | 0.024 |
| 73 | 53699.83 | -8360.18<< | 1333.1 | -3316.5 | 26.49 | 29.58 | 0.65 | 21.57 | 0.414 |
| 73 | 53699.79 | -6085.28 | 8313.9>> | 3906.9 | 13.96 | 184.50 | 4.03 | 15.70 | 0.378 |
| 73 | 53699.79 | -4562.02 | -6736.6<< | -669.2 | 5.57 | 149.50 | 3.26 | 11.77 | 0.271 |
| 74 | 53699.69 | -1699.95>> | 379.8 | -5012.4 | 0.00 | 8.43 | 0.18 | 4.39 | 0.057 |
| 74 | 53699.79 | -10426.80<< | 2222.1 | -162.5 | 37.87 | 49.31 | 1.08 | 26.90 | 0.552 |
| 74 | 53699.81 | -7961.90 | 9364.6>> | -16960.1 | 24.29 | 207.82 | 4.54 | 20.54 | 0.504 |
| 74 | 53699.74 | -6192.10 | -7256.0<< | -18078.8 | 14.55 | 161.02 | 3.52 | 15.97 | 0.367 |

| BARRA 74 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^B +(Td/Tu1)^B |
|---|---|---|---|---|---|---|---|---|---|
| 74 | 53611.20 | -1151.80>> | 379.8 | -5016.7 | 0.00 | 8.42 | 0.18 | 2.97 | 0.036 |
| 74 | 53611.30 | -9878.65<< | 2222.1 | -166.8 | 34.89 | 49.29 | 1.08 | 25.48 | 0.517 |
| 74 | 53611.32 | -7413.75 | 9364.6>> | -16964.5 | 21.31 | 207.71 | 4.54 | 19.13 | 0.471 |
| 74 | 53611.25 | -5643.95 | -7256.0<< | -18083.1 | 11.56 | 160.94 | 3.52 | 14.56 | 0.337 |
| 75 | 53611.20 | -2039.42>> | 401.4 | -8367.7 | 0.00 | 8.90 | 0.19 | 5.26 | 0.072 |
| 75 | 53611.30 | -12020.55<< | 2590.2 | -23162.8 | 46.69 | 57.45 | 1.26 | 31.01 | 0.660 |
| 75 | 53611.32 | -9051.79 | 10810.5>> | -34254.6 | 30.33 | 239.78 | 5.24 | 23.35 | 0.594 |
| 75 | 53611.25 | -7035.43 | -8312.1<< | -31397.5 | 19.22 | 184.36 | 4.03 | 18.15 | 0.432 |

| BARRA 75 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^B +(Td/Tu1)^B |
|---|---|---|---|---|---|---|---|---|---|
| 75 | 63983.89 | 4472.63>> | 345.0 | -6966.4 | 2.58 | 8.11 | 0.16 | 11.54 | 0.193 |
| 75 | 64733.11 | -5480.34<< | 2610.4 | -21762.6 | 7.63 | 61.59 | 1.19 | 14.14 | 0.273 |
| 75 | 64510.26 | -2519.94 | 10794.5>> | -32858.3 | 0.00 | 254.39 | 4.93 | 6.50 | 0.247 |
| 75 | 64359.00 | -509.28 | -8269.2<< | -29992.0 | 0.00 | 194.72 | 3.78 | 1.31 | 0.123 |
| 76 | 64064.48 | 3401.92>> | 366.7 | 1322.1 | 0.00 | 8.38 | 0.21 | 8.52 | 0.020 |
| 76 | 64862.71 | -7201.98<< | 2787.0 | -35355.6 | 0.00 | 63.93 | 1.56 | 18.05 | 0.078 |
| 76 | 64624.64 | -4039.33 | 11437.3>> | -39884.4 | 0.00 | 262.04 | 6.43 | 10.12 | 0.133 |
| 76 | 64454.79 | -1782.24 | -8713.8<< | -32526.0 | 0.00 | 199.48 | 4.90 | 4.47 | 0.075 |

| BARRA 76 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^B +(Td/Tu1)^B |
|---|---|---|---|---|---|---|---|---|---|
| 76 | 64553.57 | -5307.70>> | 425.1 | 1656.5 | 0.00 | 9.74 | 0.24 | 13.30 | 0.041 |
| 76 | 64553.68 | -15941.62<< | 2763.7 | -35021.2 | 49.21 | 63.30 | 1.55 | 39.95 | 0.259 |
| 76 | 64553.66 | -12770.02 | 11456.4>> | -39550.0 | 31.34 | 262.39 | 6.44 | 32.00 | 0.280 |
| 76 | 64553.69 | -10506.54 | -8787.7<< | -32191.7 | 18.59 | 201.27 | 4.94 | 26.33 | 0.195 |
| 77 | 64553.57 | -6378.93>> | 446.6 | -10615.3 | 0.00 | 10.23 | 0.25 | 15.98 | 0.056 |
| 77 | 64553.68 | -17286.97<< | 2819.8 | -69914.1 | 56.79 | 64.58 | 1.58 | 43.32 | 0.295 |
| 77 | 64553.66 | -14101.59 | 11594.6>> | -67767.4 | 38.84 | 265.55 | 6.52 | 35.34 | 0.313 |
| 77 | 64553.69 | -11591.55 | -8848.2<< | -55396.5 | 24.70 | 202.65 | 4.97 | 29.05 | 0.217 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 77 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^B +(Td/Tu1)^B |
|---|---|---|---|---|---|---|---|---|---|
| 77 | 64541.86 | 16705.74>> | -2745.4 | -68707.3 | 53.52 | 62.87 | 1.54 | 41.86 | 0.279 |
| 77 | 64541.80 | 6181.52<< | -364.1 | -13500.7 | 0.00 | 8.34 | 0.20 | 15.49 | 0.053 |
| 77 | 64541.76 | 11036.07 | 8708.1>> | -55342.1 | 21.58 | 199.43 | 4.89 | 27.65 | 0.204 |
| 77 | 64541.92 | 13583.77 | -11359.0<< | -67707.4 | 35.93 | 260.14 | 6.39 | 34.04 | 0.297 |
| 78 | 64541.86 | 15360.36>> | -2689.3 | -35034.7 | 45.94 | 61.59 | 1.51 | 38.49 | 0.244 |
| 78 | 64541.80 | 5110.28<< | -342.5 | -1643.1 | 0.00 | 7.84 | 0.19 | 12.81 | 0.038 |
| 78 | 64541.76 | 9951.05 | 8647.7>> | -33303.5 | 15.46 | 198.05 | 4.86 | 24.94 | 0.182 |
| 78 | 64541.92 | 12252.18 | -11220.9<< | -40577.0 | 28.43 | 256.98 | 6.31 | 30.70 | 0.265 |

| BARRA 78 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^B +(Td/Tu1)^B |
|---|---|---|---|---|---|---|---|---|---|
| 78 | 64754.49 | 6493.54>> | -2722.1 | -35262.4 | 0.00 | 62.41 | 1.53 | 16.27 | 0.067 |
| 78 | 63985.45 | -3727.64<< | -319.7 | -1870.8 | 0.00 | 7.30 | 0.18 | 9.34 | 0.023 |
| 78 | 64327.15 | 817.92 | 8685.6>> | -24835.5 | 0.00 | 198.71 | 4.89 | 2.05 | 0.070 |
| 78 | 64500.39 | 3112.90 | -11283.1<< | -32120.4 | 0.00 | 258.35 | 6.34 | 7.80 | 0.122 |
| 79 | 64622.12 | 4733.97>> | -2532.0 | -23189.6 | 3.79 | 59.71 | 1.15 | 12.21 | 0.231 |
| 79 | 63904.88 | -4798.89<< | -298.1 | -10849.6 | 4.29 | 7.00 | 0.14 | 12.38 | 0.210 |
| 79 | 64229.96 | -474.22 | 8197.8>> | -24348.6 | 0.00 | 192.91 | 3.75 | 1.22 | 0.120 |
| 79 | 64384.65 | 1574.21 | -10583.6<< | -27059.7 | 0.00 | 249.25 | 4.83 | 4.06 | 0.202 |

| BARRA 79 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^B +(Td/Tu1)^B |
|---|---|---|---|---|---|---|---|---|---|
| 79 | 53627.98 | 11856.23>> | -2490.6 | -22863.9 | 45.77 | 55.25 | 1.21 | 30.59 | 0.648 |
| 79 | 53627.92 | 2296.41<< | -313.3 | -10523.9 | 0.00 | 6.95 | 0.15 | 5.92 | 0.082 |
| 79 | 53627.88 | 6915.67 | 8143.8>> | -32125.7 | 18.56 | 180.65 | 3.95 | 17.84 | 0.422 |
| 79 | 53628.04 | 8969.56 | -10499.5<< | -34826.0 | 29.87 | 232.90 | 5.09 | 23.14 | 0.583 |
| 80 | 53627.98 | 9714.32>> | -2122.4 | -212.7 | 33.97 | 47.08 | 1.03 | 25.06 | 0.506 |
| 80 | 53627.92 | 1408.77<< | -291.7 | -6633.1 | 0.00 | 6.47 | 0.14 | 3.63 | 0.045 |
| 80 | 53627.88 | 5524.17 | 7087.7>> | -19062.6 | 10.89 | 157.22 | 3.44 | 14.25 | 0.328 |
| 80 | 53628.04 | 7331.51 | -9053.6<< | -17708.3 | 20.85 | 200.83 | 4.39 | 18.91 | 0.461 |

| BARRA 80 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^B +(Td/Tu1)^B |
|---|---|---|---|---|---|---|---|---|---|
| 80 | 53711.82 | 10252.78>> | -2122.5 | -241.1 | 36.90 | 47.10 | 1.03 | 26.45 | 0.540 |
| 80 | 53711.76 | 1947.22<< | -291.8 | -6661.5 | 0.00 | 6.48 | 0.14 | 5.02 | 0.067 |
| 80 | 53711.72 | 6062.63 | 7087.6>> | -19091.1 | 13.83 | 157.30 | 3.43 | 15.64 | 0.358 |
| 80 | 53711.88 | 7869.96 | -9053.8<< | -17736.7 | 23.78 | 200.94 | 4.39 | 20.30 | 0.493 |
| 81 | 53711.84 | 8252.97>> | -1243.3 | -4387.1 | 25.89 | 27.59 | 0.60 | 21.29 | 0.407 |
| 81 | 53711.76 | 1059.98<< | -270.2 | -3505.1 | 0.00 | 6.00 | 0.13 | 2.73 | 0.032 |
| 81 | 53711.76 | 4429.32 | 6565.2>> | -1960.0 | 4.84 | 145.70 | 3.18 | 11.43 | 0.262 |
| 81 | 53711.85 | 5990.27 | -8001.3<< | 2928.7 | 13.43 | 177.58 | 3.88 | 15.45 | 0.368 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 81 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 81 | 53788.30 | 8809.98>> | -1240.5 | -4441.0 | 28.93 | 27.54 | 0.60 | 22.73 | 0.441 |
| 81 | 53788.23 | 1616.98<< | -267.0 | -3559.5 | 0.00 | 5.93 | 0.13 | 4.17 | 0.053 |
| 81 | 53788.14 | 4986.33 | 6569.2>> | -2017.6 | 7.89 | 145.86 | 3.18 | 12.86 | 0.291 |
| 81 | 53788.39 | 6547.27 | -7995.0<< | 2878.0 | 16.48 | 177.52 | 3.87 | 16.89 | 0.399 |
| 82 | 53788.30 | 6892.12>> | -940.8 | 12047.8 | 18.37 | 20.89 | 0.46 | 17.78 | 0.324 |
| 82 | 53788.23 | 729.33<< | -245.4 | -1095.6 | 0.00 | 5.45 | 0.12 | 1.88 | 0.020 |
| 82 | 53788.21 | 3110.03 | 5729.5>> | -1177.2 | 0.00 | 127.21 | 2.78 | 8.02 | 0.184 |
| 82 | 53788.30 | 4423.81 | -6855.0<< | 6739.8 | 4.79 | 152.20 | 3.32 | 11.41 | 0.266 |

| BARRA 82 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 82 | 53849.13 | 7443.18>> | -927.0 | 11984.2 | 21.39 | 20.59 | 0.45 | 19.20 | 0.356 |
| 82 | 53849.09 | 1280.38<< | -237.9 | -1159.6 | 0.00 | 5.28 | 0.12 | 3.30 | 0.040 |
| 82 | 53848.93 | 3661.09 | 5736.9>> | -1244.0 | 0.58 | 127.43 | 2.78 | 9.44 | 0.211 |
| 82 | 53849.26 | 4974.87 | -6843.7<< | 6679.1 | 7.81 | 152.01 | 3.31 | 12.83 | 0.295 |
| 83 | 53849.13 | 5525.31>> | -627.2 | 25602.5 | 10.83 | 13.93 | 0.30 | 14.25 | 0.245 |
| 83 | 53849.09 | 392.73<< | -216.3 | 597.4 | 0.00 | 4.80 | 0.10 | 1.01 | 0.010 |
| 83 | 53848.93 | 2759.65 | 5676.5>> | 5498.4 | 0.00 | 126.08 | 2.75 | 7.12 | 0.167 |
| 83 | 53849.26 | 3826.87 | -6705.6<< | 15921.8 | 1.49 | 148.94 | 3.25 | 9.87 | 0.234 |

| BARRA 83 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 83 | 53898.32 | 6075.01>> | -649.9 | 25535.5 | 13.84 | 14.44 | 0.31 | 15.67 | 0.275 |
| 83 | 53898.25 | 942.43<< | -227.1 | 530.5 | 0.00 | 5.05 | 0.11 | 2.43 | 0.028 |
| 83 | 53898.22 | 3309.35 | 5663.4>> | 5434.4 | 0.00 | 125.83 | 2.74 | 8.54 | 0.193 |
| 83 | 53898.32 | 4376.57 | -6723.7<< | 15851.9 | 4.50 | 149.39 | 3.25 | 11.29 | 0.262 |
| 84 | 53898.32 | 4157.18>> | -350.2 | 36280.2 | 3.30 | 7.78 | 0.17 | 10.72 | 0.171 |
| 84 | 53898.25 | 54.76<< | -205.5 | 1577.5 | 0.00 | 4.57 | 0.10 | 0.14 | 0.002 |
| 84 | 53898.22 | 2182.90 | 5146.8>> | 11297.3 | 0.00 | 114.35 | 2.49 | 5.63 | 0.134 |
| 84 | 53898.32 | 3003.59 | -5984.3<< | 23697.3 | 0.00 | 132.96 | 2.90 | 7.75 | 0.183 |

| BARRA 84 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 84 | 53935.96 | 4719.80>> | -290.3 | 36218.4 | 6.38 | 6.45 | 0.14 | 12.18 | 0.199 |
| 84 | 53935.93 | 617.39<< | -178.9 | 1515.6 | 0.00 | 3.98 | 0.09 | 1.59 | 0.016 |
| 84 | 53935.64 | 2793.73 | 5183.7>> | 17813.7 | 0.00 | 115.20 | 2.51 | 7.21 | 0.162 |
| 84 | 53936.22 | 3518.02 | -5937.6<< | 17057.4 | 0.00 | 131.95 | 2.87 | 9.08 | 0.207 |
| 85 | 53935.96 | 2802.81>> | 9.3 | 44114.1 | 0.00 | 0.21 | 0.00 | 7.23 | 0.103 |
| 85 | 53935.93 | -269.86<< | -157.3 | 1880.3 | 0.00 | 3.50 | 0.08 | 0.70 | 0.006 |
| 85 | 53935.80 | 966.98 | 5593.7>> | 34517.9 | 0.00 | 124.31 | 2.71 | 2.49 | 0.092 |
| 85 | 53936.13 | 1444.87 | -5758.0<< | 35023.6 | 0.00 | 127.96 | 2.79 | 3.73 | 0.113 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 85 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 85 | 53960.71 | 3369.12>> | -26.1 | 44064.3 | 0.00 | 0.58 | 0.01 | 8.69 | 0.130 |
| 85 | 53960.66 | 296.45<< | -172.3 | 1830.4 | 0.00 | 3.83 | 0.08 | 0.76 | 0.007 |
| 85 | 53960.66 | 1485.10 | 5565.2>> | 27786.2 | 0.00 | 123.69 | 2.69 | 3.83 | 0.111 |
| 85 | 53960.73 | 2059.38 | -5791.1<< | 41655.7 | 0.00 | 128.71 | 2.80 | 5.31 | 0.138 |
| 86 | 53960.64 | 1573.32>> | 279.1 | 9387.3 | 0.00 | 6.20 | 0.14 | 4.06 | 0.052 |
| 86 | 53960.69 | -812.45<< | 801.1 | 21489.9 | 0.00 | 17.80 | 0.39 | 2.10 | 0.028 |
| 86 | 53960.68 | 436.29 | 5592.9>> | 28671.2 | 0.00 | 124.31 | 2.71 | 1.13 | 0.075 |
| 86 | 53960.69 | 202.03 | -5477.2<< | 27424.1 | 0.00 | 121.74 | 2.65 | 0.52 | 0.067 |

| BARRA 86 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 86 | 53971.43 | 2135.11>> | 298.2 | 9356.1 | 0.00 | 6.63 | 0.14 | 5.51 | 0.075 |
| 86 | 53971.48 | -250.67<< | 825.9 | 21458.4 | 0.00 | 18.36 | 0.40 | 0.65 | 0.011 |
| 86 | 53971.36 | 1046.27 | 5622.2>> | 35423.3 | 0.00 | 124.97 | 2.72 | 2.70 | 0.096 |
| 86 | 53971.64 | 715.62 | -5450.6<< | 20609.8 | 0.00 | 121.15 | 2.64 | 1.85 | 0.082 |
| 87 | 53971.43 | 975.18>> | 354.3 | 10996.3 | 0.00 | 7.88 | 0.17 | 2.52 | 0.030 |
| 87 | 53971.48 | -1140.20<< | 847.5 | 21623.9 | 0.00 | 18.84 | 0.41 | 2.94 | 0.040 |
| 87 | 53971.40 | -101.74 | 5636.5>> | 36414.0 | 0.00 | 125.28 | 2.73 | 0.26 | 0.067 |
| 87 | 53971.60 | -185.84 | -5387.1<< | 21167.3 | 0.00 | 119.74 | 2.61 | 0.48 | 0.066 |

| BARRA 87 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 87 | 53971.36 | 1537.42>> | 354.3 | 10980.4 | 0.00 | 7.88 | 0.17 | 3.97 | 0.051 |
| 87 | 53971.42 | -577.97<< | 847.5 | 21608.0 | 0.00 | 18.84 | 0.41 | 1.49 | 0.020 |
| 87 | 53971.34 | 460.50 | 5636.5>> | 36398.2 | 0.00 | 125.28 | 2.73 | 1.19 | 0.077 |
| 87 | 53971.54 | 376.40 | -5387.1<< | 21151.5 | 0.00 | 119.74 | 2.61 | 0.97 | 0.071 |
| 88 | 53971.36 | 615.32>> | 329.3 | 4841.0 | 0.00 | 7.32 | 0.16 | 1.59 | 0.017 |
| 88 | 53971.42 | -1705.33<< | 950.1 | 27609.8 | 0.00 | 21.12 | 0.46 | 4.40 | 0.062 |
| 88 | 53971.34 | -687.51 | 5774.6>> | 36159.5 | 0.00 | 128.35 | 2.79 | 1.77 | 0.086 |
| 88 | 53971.54 | -525.05 | -5447.6<< | 20995.1 | 0.00 | 121.09 | 2.64 | 1.35 | 0.076 |

| BARRA 88 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 88 | 53958.16 | 1187.26>> | 346.5 | 4843.7 | 0.00 | 7.70 | 0.17 | 3.06 | 0.037 |
| 88 | 53958.22 | -1133.40<< | 978.1 | 27612.2 | 0.00 | 21.74 | 0.47 | 2.92 | 0.041 |
| 88 | 53958.04 | -115.57 | 5806.7>> | 36159.6 | 0.00 | 129.06 | 2.81 | 0.30 | 0.070 |
| 88 | 53958.47 | 46.88 | -5422.7<< | 21000.5 | 0.00 | 120.52 | 2.62 | 0.12 | 0.063 |
| 89 | 53958.16 | 299.58>> | 368.1 | 6405.0 | 0.00 | 8.18 | 0.18 | 0.77 | 0.008 |
| 89 | 53958.30 | -3004.92<< | 387.6 | 41050.0 | 0.00 | 8.62 | 0.19 | 7.75 | 0.115 |
| 89 | 53958.09 | -1691.86 | 6294.9>> | 42650.4 | 0.00 | 139.91 | 3.05 | 4.36 | 0.130 |
| 89 | 53958.45 | -1282.88 | -5488.0<< | 28093.7 | 0.00 | 121.97 | 2.66 | 3.31 | 0.102 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 89 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 89 | 53931.66 | 870.67>> | 368.3 | 6424.7 | 0.00 | 8.18 | 0.18 | 2.25 | 0.026 |
| 89 | 53931.80 | -2433.83<< | 388.1 | 41069.7 | 0.00 | 8.62 | 0.19 | 6.28 | 0.089 |
| 89 | 53931.59 | -1120.76 | 6295.4>> | 42670.1 | 0.00 | 139.90 | 3.05 | 2.89 | 0.108 |
| 89 | 53931.94 | -711.79 | -5487.6<< | 28113.5 | 0.00 | 121.95 | 2.66 | 1.84 | 0.082 |
| 90 | 53931.66 | -16.57>> | 389.9 | 7321.4 | 0.00 | 8.66 | 0.19 | 0.04 | 0.003 |
| 90 | 53931.80 | -4350.81<< | 687.7 | 33948.6 | 4.35 | 15.28 | 0.33 | 11.22 | 0.183 |
| 90 | 53931.59 | -3135.95 | 6448.0>> | 38202.4 | 0.00 | 143.29 | 3.12 | 8.09 | 0.196 |
| 90 | 53931.94 | -2480.54 | -5007.1<< | 24762.9 | 0.00 | 111.27 | 2.42 | 6.40 | 0.145 |

| BARRA 90 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 90 | 53892.23 | 550.64>> | 389.7 | 7353.4 | 0.00 | 8.66 | 0.19 | 1.42 | 0.016 |
| 90 | 53892.37 | -3783.59<< | 687.3 | 33980.6 | 1.24 | 15.27 | 0.33 | 9.76 | 0.155 |
| 90 | 53892.16 | -2568.73 | 6447.5>> | 38234.4 | 0.00 | 143.24 | 3.12 | 6.63 | 0.170 |
| 90 | 53892.51 | -1913.32 | -5007.4<< | 24794.8 | 0.00 | 111.25 | 2.42 | 4.94 | 0.121 |
| 91 | 53892.23 | -337.04>> | 411.2 | 7577.6 | 0.00 | 9.14 | 0.20 | 0.87 | 0.010 |
| 91 | 53892.37 | -5701.50<< | 987.0 | 24019.9 | 11.79 | 21.93 | 0.48 | 14.71 | 0.258 |
| 91 | 53892.22 | -4028.92 | 6880.6>> | 16822.7 | 2.59 | 152.87 | 3.33 | 10.39 | 0.247 |
| 91 | 53892.41 | -3126.92 | -5154.6<< | 5020.1 | 0.00 | 114.52 | 2.50 | 8.07 | 0.177 |

| BARRA 91 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 91 | 53906.11 | 224.62>> | 425.4 | 7564.3 | 0.00 | 9.45 | 0.21 | 0.58 | 0.007 |
| 91 | 53906.30 | -5139.84<< | 1009.0 | 24006.3 | 8.70 | 22.42 | 0.49 | 13.26 | 0.227 |
| 91 | 53906.03 | -3467.26 | 6899.2>> | 16806.2 | 0.00 | 153.29 | 3.34 | 8.94 | 0.219 |
| 91 | 53906.38 | -2565.27 | -5141.6<< | 5009.4 | 0.00 | 114.24 | 2.49 | 6.62 | 0.151 |
| 92 | 53906.11 | -663.06>> | 447.0 | 7103.9 | 0.00 | 9.93 | 0.22 | 1.71 | 0.020 |
| 92 | 53906.30 | -7057.74<< | 1308.8 | 11197.2 | 19.25 | 29.08 | 0.63 | 18.21 | 0.337 |
| 92 | 53906.03 | -4615.28 | 7037.3>> | 8318.5 | 5.81 | 156.36 | 3.41 | 11.91 | 0.279 |
| 92 | 53906.38 | -3466.72 | -5202.0<< | -1325.0 | 0.00 | 115.58 | 2.52 | 8.94 | 0.194 |

| BARRA 92 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 92 | 54010.18 | -75.87>> | 447.3 | 7023.5 | 0.00 | 9.94 | 0.22 | 0.20 | 0.004 |
| 92 | 54010.37 | -6470.55<< | 1309.1 | 11116.8 | 15.98 | 29.10 | 0.63 | 16.69 | 0.304 |
| 92 | 54010.10 | -4028.09 | 7037.6>> | 8238.1 | 2.56 | 156.46 | 3.40 | 10.39 | 0.249 |
| 92 | 54010.45 | -2879.53 | -5201.8<< | -1405.4 | 0.00 | 115.65 | 2.52 | 7.43 | 0.166 |
| 93 | 54010.18 | -963.14>> | 468.9 | 5932.8 | 0.00 | 10.42 | 0.23 | 2.48 | 0.030 |
| 93 | 54010.32 | -8470.29<< | 2035.2 | 14129.2 | 26.97 | 45.25 | 0.98 | 21.85 | 0.429 |
| 93 | 54010.30 | -6280.90 | 8020.4>> | 4831.4 | 14.94 | 178.31 | 3.88 | 16.20 | 0.385 |
| 93 | 54010.33 | -4885.13 | -5941.9<< | -2141.3 | 7.27 | 132.10 | 2.87 | 12.60 | 0.277 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 93 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 93 | 54110.31 | -374.08>> | 468.6 | 5884.7 | 0.00 | 10.42 | 0.23 | 0.97 | 0.011 |
| 93 | 54110.44 | -7881.23<< | 2034.9 | 14081.1 | 23.70 | 45.27 | 0.98 | 20.33 | 0.394 |
| 93 | 54110.41 | -5691.83 | 8020.2>> | 4783.4 | 11.67 | 178.41 | 3.88 | 14.68 | 0.352 |
| 93 | 54110.45 | -4296.06 | -5942.0<< | -2189.5 | 4.01 | 132.18 | 2.87 | 11.08 | 0.246 |
| 94 | 54110.31 | -1261.76>> | 490.2 | 4166.7 | 0.00 | 10.90 | 0.24 | 3.26 | 0.041 |
| 94 | 54110.44 | -10023.22<< | 2403.1 | -4721.3 | 35.47 | 53.46 | 1.16 | 25.86 | 0.529 |
| 94 | 54110.41 | -7329.95 | 9466.1>> | -8891.5 | 20.67 | 210.58 | 4.58 | 18.91 | 0.469 |
| 94 | 54110.45 | -5687.63 | -6998.2<< | -12673.9 | 11.65 | 155.68 | 3.38 | 14.67 | 0.336 |

| BARRA 94 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 94 | 54196.40 | -668.75>> | 493.2 | 4155.7 | 0.00 | 10.98 | 0.24 | 1.73 | 0.020 |
| 94 | 54196.56 | -9430.22<< | 2401.9 | -4733.1 | 32.17 | 53.46 | 1.16 | 24.33 | 0.492 |
| 94 | 54196.48 | -6736.94 | 9462.9>> | -8906.7 | 17.39 | 210.62 | 4.57 | 17.38 | 0.434 |
| 94 | 54196.62 | -5094.62 | -7003.1<< | -12681.3 | 8.37 | 155.87 | 3.38 | 13.14 | 0.304 |
| 95 | 54196.40 | -1556.44>> | 514.8 | 1818.9 | 0.00 | 11.46 | 0.25 | 4.02 | 0.053 |
| 95 | 54196.56 | -11572.24<< | 2770.1 | -26788.9 | 43.93 | 61.65 | 1.34 | 29.85 | 0.634 |
| 95 | 54196.48 | -8375.08 | 10908.8>> | -24776.6 | 26.38 | 242.80 | 5.27 | 21.61 | 0.555 |
| 95 | 54196.62 | -6486.20 | -8059.3<< | -24842.9 | 16.01 | 179.37 | 3.89 | 16.73 | 0.397 |

| BARRA 95 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 95 | 64807.45 | 5037.34>> | 487.2 | 3317.8 | 5.31 | 11.50 | 0.22 | 13.00 | 0.226 |
| 95 | 65558.93 | -4950.23<< | 2870.2 | -25289.9 | 4.68 | 68.01 | 1.30 | 12.77 | 0.248 |
| 95 | 65319.04 | -1762.08 | 10925.5>> | -23277.7 | 0.00 | 258.56 | 4.96 | 4.55 | 0.216 |
| 95 | 65177.46 | 121.50 | -7867.5<< | -23344.0 | 0.00 | 186.06 | 3.58 | 0.31 | 0.106 |
| 96 | 64888.06 | 3966.05>> | 508.8 | 12799.4 | 0.00 | 11.67 | 0.29 | 9.94 | 0.026 |
| 96 | 65688.18 | -6667.96<< | 3045.8 | -37768.4 | 0.00 | 70.14 | 1.70 | 16.71 | 0.072 |
| 96 | 65432.66 | -3270.49 | 11480.8>> | -28366.3 | 0.00 | 264.05 | 6.43 | 8.20 | 0.127 |
| 96 | 65272.23 | -1140.26 | -8205.6<< | -24201.4 | 0.00 | 188.58 | 4.60 | 2.86 | 0.066 |

| BARRA 96 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 96 | 66009.73 | -4859.66>> | 530.2 | 13629.5 | 0.00 | 12.23 | 0.30 | 12.18 | 0.036 |
| 96 | 66009.90 | -15523.75<< | 2913.5 | -36939.3 | 45.98 | 67.19 | 1.63 | 38.90 | 0.251 |
| 96 | 66009.80 | -12184.42 | 11409.0>> | -27891.8 | 27.29 | 263.11 | 6.37 | 30.53 | 0.268 |
| 96 | 66010.03 | -10048.24 | -8387.2<< | -23721.6 | 15.34 | 193.43 | 4.68 | 25.18 | 0.182 |
| 97 | 66009.73 | -5930.45>> | 551.8 | 2303.5 | 0.00 | 12.73 | 0.31 | 14.86 | 0.050 |
| 97 | 66009.90 | -16868.52<< | 2969.6 | -70940.2 | 53.50 | 68.48 | 1.66 | 42.27 | 0.286 |
| 97 | 66009.95 | -13447.69 | 11462.4>> | -54375.3 | 34.36 | 264.35 | 6.40 | 33.70 | 0.297 |
| 97 | 66009.82 | -11064.96 | -8333.2<< | -45457.5 | 21.03 | 192.18 | 4.65 | 27.73 | 0.201 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 97 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 97 | 66328.01 | 16243.29>> | -2087.1 | -57869.2 | 49.81 | 48.21 | 1.16 | 40.70 | 0.265 |
| 97 | 66327.81 | 5878.40<< | 0.5 | 2679.6 | 0.00 | 0.01 | 0.00 | 14.73 | 0.048 |
| 97 | 66327.88 | 10652.87 | 7842.6>> | -46103.5 | 18.57 | 181.14 | 4.37 | 26.69 | 0.187 |
| 97 | 66328.09 | 12860.00 | -9624.4<< | -54994.6 | 30.90 | 222.29 | 5.36 | 32.22 | 0.257 |
| 98 | 66328.05 | 13998.49>> | -1278.6 | -54326.6 | 37.27 | 29.53 | 0.71 | 35.08 | 0.205 |
| 98 | 66327.81 | 4807.09<< | 22.1 | 13901.0 | 0.00 | 0.51 | 0.01 | 12.05 | 0.035 |
| 98 | 66327.88 | 9077.67 | 6786.5>> | -25383.4 | 9.77 | 156.74 | 3.78 | 22.75 | 0.145 |
| 98 | 66328.09 | 11038.24 | -8178.5<< | -29897.8 | 20.73 | 188.90 | 4.56 | 27.66 | 0.199 |

| BARRA 98 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 98 | 66460.37 | 5278.47>> | -1440.8 | -54544.6 | 0.00 | 33.30 | 0.80 | 13.23 | 0.044 |
| 98 | 65770.68 | -3887.02<< | 51.5 | 13683.1 | 0.00 | 1.19 | 0.03 | 9.74 | 0.024 |
| 98 | 66091.06 | 371.52 | 6753.7>> | -25601.3 | 0.00 | 155.81 | 3.77 | 0.93 | 0.046 |
| 98 | 66238.36 | 2326.56 | -8360.9<< | -30115.8 | 0.00 | 193.03 | 4.66 | 5.83 | 0.075 |
| 99 | 66338.93 | 3663.78>> | -1296.6 | -44946.3 | 0.00 | 30.85 | 0.59 | 9.45 | 0.161 |
| 99 | 65690.09 | -4958.33<< | 73.2 | 4367.9 | 4.69 | 1.73 | 0.03 | 12.79 | 0.219 |
| 99 | 65964.12 | -1318.08 | 5724.0>> | -28015.6 | 0.00 | 135.92 | 2.59 | 3.40 | 0.112 |
| 99 | 66092.51 | 390.22 | -6967.6<< | -28668.9 | 0.00 | 165.56 | 3.15 | 1.01 | 0.099 |

| BARRA 99 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 99 | 55688.42 | 11041.16>> | -1167.0 | -44530.9 | 40.32 | 26.20 | 0.56 | 28.48 | 0.584 |
| 99 | 55688.23 | 2394.67<< | 44.1 | 4782.8 | 0.00 | 0.99 | 0.02 | 6.18 | 0.085 |
| 99 | 55688.38 | 5805.86 | 5850.6>> | -20709.9 | 11.83 | 131.35 | 2.80 | 14.98 | 0.327 |
| 99 | 55688.29 | 7997.70 | -6967.9<< | -35144.4 | 23.76 | 156.44 | 3.34 | 20.63 | 0.471 |
| 100 | 55688.42 | 9124.11>> | -867.4 | -23364.2 | 29.89 | 19.47 | 0.42 | 23.54 | 0.459 |
| 100 | 55688.23 | 1507.38<< | 65.6 | 8878.5 | 0.00 | 1.47 | 0.03 | 3.89 | 0.048 |
| 100 | 55688.46 | 4613.09 | 5472.8>> | -3017.8 | 5.34 | 122.87 | 2.62 | 11.90 | 0.257 |
| 100 | 55688.24 | 6558.45 | -6291.4<< | -13111.7 | 15.93 | 141.25 | 3.01 | 16.92 | 0.376 |

| BARRA 100 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 100 | 55922.16 | 9676.52>> | -867.2 | -23390.0 | 32.80 | 19.49 | 0.41 | 24.96 | 0.494 |
| 100 | 55921.96 | 2059.79<< | 65.6 | 8852.8 | 0.00 | 1.47 | 0.03 | 5.31 | 0.071 |
| 100 | 55922.20 | 5165.51 | 5472.9>> | -3043.5 | 8.28 | 123.04 | 2.62 | 13.33 | 0.287 |
| 100 | 55921.98 | 7110.87 | -6291.3<< | -13137.4 | 18.85 | 141.44 | 3.01 | 18.34 | 0.408 |
| 101 | 55922.16 | 7758.58>> | -567.4 | -5080.5 | 22.38 | 12.76 | 0.27 | 20.02 | 0.374 |
| 101 | 55921.96 | 1172.11<< | 87.2 | 12246.7 | 0.00 | 1.96 | 0.04 | 3.02 | 0.035 |
| 101 | 55922.20 | 3680.78 | 5195.6>> | 6147.8 | 0.21 | 116.80 | 2.49 | 9.50 | 0.206 |
| 101 | 55921.98 | 5379.55 | -5560.1<< | -119.2 | 9.44 | 125.00 | 2.66 | 13.88 | 0.299 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 101 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 101 | 56195.98 | 8322.95>> | -567.4 | -5169.2 | 25.34 | 12.78 | 0.27 | 21.47 | 0.408 |
| 101 | 56195.78 | 1736.48<< | 87.2 | 12157.9 | 0.00 | 1.96 | 0.04 | 4.48 | 0.057 |
| 101 | 56196.02 | 4245.15 | 5195.6>> | 6059.0 | 3.21 | 116.99 | 2.48 | 10.95 | 0.234 |
| 101 | 56195.80 | 5943.92 | -5560.1<< | -207.9 | 12.43 | 125.19 | 2.66 | 15.33 | 0.331 |
| 102 | 56195.98 | 6404.99>> | -267.7 | 10297.2 | 14.93 | 6.03 | 0.13 | 16.52 | 0.293 |
| 102 | 56195.78 | 848.77<< | 108.8 | 14872.6 | 0.00 | 2.45 | 0.05 | 2.19 | 0.024 |
| 102 | 56196.02 | 2965.59 | 4368.5>> | 13631.2 | 0.00 | 98.36 | 2.09 | 7.65 | 0.160 |
| 102 | 56195.80 | 4417.79 | -4411.7<< | 10673.3 | 4.15 | 99.34 | 2.11 | 11.40 | 0.232 |

| BARRA 102 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 102 | 56458.37 | 6983.26>> | -256.8 | 10150.8 | 17.98 | 5.79 | 0.12 | 18.02 | 0.327 |
| 102 | 56458.23 | 1427.03<< | 121.9 | 14726.0 | 0.00 | 2.75 | 0.06 | 3.68 | 0.045 |
| 102 | 56458.41 | 3543.86 | 4381.1>> | 13482.6 | 0.00 | 98.80 | 2.09 | 9.14 | 0.188 |
| 102 | 56458.24 | 4996.06 | -4400.6<< | 10528.9 | 7.22 | 99.24 | 2.10 | 12.89 | 0.263 |
| 103 | 56458.37 | 5066.19>> | 42.8 | 22798.3 | 7.60 | 0.97 | 0.02 | 13.07 | 0.218 |
| 103 | 56458.23 | 539.75<< | 143.5 | 16790.0 | 0.00 | 3.24 | 0.07 | 1.39 | 0.014 |
| 103 | 56458.41 | 3231.88 | 3581.6>> | 24283.0 | 0.00 | 80.77 | 1.71 | 8.34 | 0.162 |
| 103 | 56458.24 | 2503.70 | -3279.9<< | 14712.2 | 0.00 | 73.96 | 1.56 | 6.46 | 0.124 |

| BARRA 103 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 103 | 56707.90 | 5654.41>> | 42.6 | 22613.2 | 10.71 | 0.96 | 0.02 | 14.59 | 0.250 |
| 103 | 56707.74 | 1127.97<< | 143.3 | 16604.9 | 0.00 | 3.24 | 0.07 | 2.91 | 0.034 |
| 103 | 56707.93 | 3820.10 | 3581.3>> | 24097.9 | 0.79 | 80.88 | 1.71 | 9.86 | 0.191 |
| 103 | 56707.75 | 3091.92 | -3280.1<< | 14527.0 | 0.00 | 74.07 | 1.56 | 7.98 | 0.151 |
| 104 | 56707.90 | 3736.44>> | 342.3 | 32475.3 | 0.33 | 7.73 | 0.16 | 9.64 | 0.151 |
| 104 | 56707.74 | 240.25<< | 164.9 | 18041.9 | 0.00 | 3.72 | 0.08 | 0.62 | 0.006 |
| 104 | 56708.04 | 2197.61 | 3180.2>> | 43653.8 | 0.00 | 71.82 | 1.51 | 5.67 | 0.109 |
| 104 | 56707.68 | 1715.90 | -2500.3<< | 32808.8 | 0.00 | 56.46 | 1.19 | 4.43 | 0.080 |

| BARRA 104 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^ß +(Td/Tu1)^ß |
|---|---|---|---|---|---|---|---|---|---|
| 104 | 56879.03 | 4342.24>> | 367.5 | 32326.8 | 3.57 | 8.31 | 0.17 | 11.20 | 0.182 |
| 104 | 56878.92 | 846.06<< | 183.2 | 17893.5 | 0.00 | 4.14 | 0.09 | 2.18 | 0.024 |
| 104 | 56879.13 | 2803.41 | 3210.7>> | 43503.9 | 0.00 | 72.58 | 1.53 | 7.23 | 0.137 |
| 104 | 56878.89 | 2321.70 | -2474.9<< | 32661.6 | 0.00 | 55.95 | 1.18 | 5.99 | 0.106 |
| 105 | 56879.03 | 2424.27>> | 667.3 | 39432.6 | 0.00 | 15.08 | 0.32 | 6.25 | 0.091 |
| 105 | 56879.02 | -327.78<< | 1043.5 | 29202.0 | 0.00 | 23.59 | 0.50 | 0.85 | 0.015 |
| 105 | 56879.23 | 473.69 | 4273.1>> | 29576.4 | 0.00 | 96.59 | 2.03 | 1.22 | 0.058 |
| 105 | 56878.73 | 237.90 | -3066.5<< | 17979.5 | 0.00 | 69.32 | 1.46 | 0.61 | 0.036 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 105 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^B +(Td/Tu1)^B |
|---|---|---|---|---|---|---|---|---|---|
| 105 | 56780.91 | 3044.94>> | 667.7 | 39567.6 | 0.00 | 15.08 | 0.32 | 7.86 | 0.120 |
| 105 | 56780.90 | 292.90<< | 1043.8 | 29337.0 | 0.00 | 23.58 | 0.50 | 0.76 | 0.014 |
| 105 | 56781.11 | 1094.36 | 4273.4>> | 29711.4 | 0.00 | 96.55 | 2.03 | 2.82 | 0.079 |
| 105 | 56780.60 | 858.57 | -3066.3<< | 18114.6 | 0.00 | 69.27 | 1.46 | 2.21 | 0.055 |
| 106 | 56780.86 | 1603.55>> | 605.9 | 3871.3 | 0.00 | 13.69 | 0.29 | 4.14 | 0.056 |
| 106 | 56780.90 | -968.72<< | 1183.4 | 29775.7 | 0.00 | 26.74 | 0.56 | 2.50 | 0.037 |
| 106 | 56781.11 | -237.54 | 4905.9>> | 30489.8 | 0.00 | 110.83 | 2.34 | 0.61 | 0.061 |
| 106 | 56780.60 | -226.88 | -3503.1<< | 18656.7 | 0.00 | 79.14 | 1.67 | 0.59 | 0.041 |

| BARRA 106 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^B +(Td/Tu1)^B |
|---|---|---|---|---|---|---|---|---|---|
| 106 | 56671.16 | 1976.33>> | 605.8 | 3991.9 | 0.00 | 13.68 | 0.29 | 5.10 | 0.071 |
| 106 | 56671.20 | -595.94<< | 1183.1 | 29896.3 | 0.00 | 26.71 | 0.56 | 1.54 | 0.024 |
| 106 | 56671.41 | 135.24 | 4905.5>> | 30610.5 | 0.00 | 110.76 | 2.34 | 0.35 | 0.058 |
| 106 | 56670.91 | 145.90 | -3503.3<< | 18777.2 | 0.00 | 79.10 | 1.67 | 0.38 | 0.039 |
| 107 | 56671.16 | 861.24>> | 493.6 | -1733.0 | 0.00 | 11.14 | 0.24 | 2.22 | 0.027 |
| 107 | 56671.20 | -1530.43<< | 1373.0 | 36367.5 | 0.00 | 31.00 | 0.65 | 3.95 | 0.060 |
| 107 | 56671.41 | -1012.83 | 5043.6>> | 29688.5 | 0.00 | 113.88 | 2.40 | 2.61 | 0.087 |
| 107 | 56670.91 | -755.60 | -3563.8<< | 18136.6 | 0.00 | 80.46 | 1.70 | 1.95 | 0.058 |

| BARRA 107 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^B +(Td/Tu1)^B |
|---|---|---|---|---|---|---|---|---|---|
| 107 | 56558.79 | 990.97>> | 503.6 | -1640.9 | 0.00 | 11.36 | 0.24 | 2.56 | 0.032 |
| 107 | 56558.82 | -1400.69<< | 1401.1 | 36459.1 | 0.00 | 31.61 | 0.67 | 3.61 | 0.055 |
| 107 | 56558.95 | -883.10 | 5068.6>> | 29778.4 | 0.00 | 114.37 | 2.42 | 2.28 | 0.083 |
| 107 | 56558.63 | -625.87 | -3544.3<< | 18230.6 | 0.00 | 79.97 | 1.69 | 1.61 | 0.053 |
| 108 | 56558.79 | 103.25>> | 525.2 | -491.7 | 0.00 | 11.85 | 0.25 | 0.27 | 0.005 |
| 108 | 56558.81 | -3256.23<< | 1269.2 | 55130.6 | 0.00 | 28.64 | 0.60 | 8.40 | 0.136 |
| 108 | 56558.95 | -1999.28 | 5695.1>> | 33361.4 | 0.00 | 128.50 | 2.71 | 5.16 | 0.135 |
| 108 | 56558.63 | -1495.66 | -3945.0<< | 22611.2 | 0.00 | 89.01 | 1.88 | 3.86 | 0.090 |

| BARRA 108 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^B +(Td/Tu1)^B |
|---|---|---|---|---|---|---|---|---|---|
| 108 | 56443.53 | 236.54>> | 525.2 | -402.6 | 0.00 | 11.84 | 0.25 | 0.61 | 0.008 |
| 108 | 56443.55 | -3122.95<< | 1269.7 | 55219.7 | 0.00 | 28.63 | 0.61 | 8.06 | 0.129 |
| 108 | 56443.70 | -1865.99 | 5695.4>> | 33450.5 | 0.00 | 128.42 | 2.72 | 4.81 | 0.130 |
| 108 | 56443.38 | -1362.38 | -3944.8<< | 22700.4 | 0.00 | 88.95 | 1.88 | 3.51 | 0.085 |
| 109 | 56443.53 | -650.76>> | 546.7 | -837.8 | 0.00 | 12.33 | 0.26 | 1.68 | 0.020 |
| 109 | 56443.55 | -5040.04<< | 1569.3 | 46650.8 | 7.46 | 35.38 | 0.75 | 13.00 | 0.230 |
| 109 | 56443.70 | -3391.40 | 6843.3>> | 27931.5 | 0.00 | 154.31 | 3.26 | 8.75 | 0.216 |
| 109 | 56443.38 | -2641.35 | -4771.5<< | 18497.4 | 0.00 | 107.59 | 2.28 | 6.81 | 0.150 |

VIADUCTO DE RIERA DE LA RIERUSSA.

| BARRA 109 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^B +(Td/Tu1)^B |
|---|---|---|---|---|---|---|---|---|---|
| 109 | 56326.60 | -526.07>> | 546.8 | -754.3 | 0.00 | 12.32 | 0.26 | 1.36 | 0.016 |
| 109 | 56326.62 | -4915.35<< | 1568.9 | 46734.3 | 6.81 | 35.35 | 0.75 | 12.68 | 0.223 |
| 109 | 56326.77 | -3266.71 | 6843.1>> | 28015.0 | 0.00 | 154.20 | 3.27 | 8.43 | 0.210 |
| 109 | 56326.45 | -2516.66 | -4771.7<< | 18580.8 | 0.00 | 107.52 | 2.28 | 6.49 | 0.145 |
| 110 | 56326.60 | -1413.82>> | 568.4 | -2791.7 | 0.00 | 12.81 | 0.27 | 3.65 | 0.048 |
| 110 | 56326.63 | -6861.05<< | 1990.8 | 37964.4 | 17.37 | 44.86 | 0.95 | 17.70 | 0.336 |
| 110 | 56326.77 | -4792.88 | 7991.4>> | 19550.8 | 6.15 | 180.08 | 3.81 | 12.36 | 0.306 |
| 110 | 56326.45 | -3796.25 | -5598.7<< | 11950.9 | 0.75 | 126.16 | 2.67 | 9.79 | 0.218 |

| BARRA 110 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^B +(Td/Tu1)^B |
|---|---|---|---|---|---|---|---|---|---|
| 110 | 56204.68 | -1291.45>> | 576.9 | -2714.8 | 0.00 | 12.99 | 0.28 | 3.33 | 0.043 |
| 110 | 56204.69 | -6738.69<< | 2019.2 | 38040.6 | 16.74 | 45.47 | 0.96 | 17.38 | 0.329 |
| 110 | 56204.73 | -4670.52 | 8010.9>> | 19624.1 | 5.52 | 180.39 | 3.83 | 12.05 | 0.299 |
| 110 | 56204.63 | -3673.89 | -5583.0<< | 12030.8 | 0.11 | 125.72 | 2.67 | 9.48 | 0.211 |
| 111 | 56204.68 | -2178.75>> | 598.5 | -6357.8 | 0.00 | 13.48 | 0.29 | 5.62 | 0.080 |
| 111 | 56204.69 | -8879.81<< | 2387.2 | 21645.7 | 28.36 | 53.76 | 1.14 | 22.91 | 0.461 |
| 111 | 56204.72 | -6700.76 | 8750.3>> | 12245.4 | 16.54 | 197.04 | 4.18 | 17.29 | 0.424 |
| 111 | 56204.63 | -5457.04 | -6141.9<< | 7000.4 | 9.79 | 138.30 | 2.93 | 14.08 | 0.313 |

| BARRA 111 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^B +(Td/Tu1)^B |
|---|---|---|---|---|---|---|---|---|---|
| 111 | 56079.99 | -2054.39>> | 598.4 | -6294.8 | 0.00 | 13.47 | 0.29 | 5.30 | 0.074 |
| 111 | 56080.00 | -8755.44<< | 2386.9 | 21708.6 | 27.73 | 53.71 | 1.14 | 22.59 | 0.453 |
| 111 | 56080.03 | -6576.39 | 8750.0>> | 12308.4 | 15.90 | 196.89 | 4.18 | 16.97 | 0.416 |
| 111 | 56079.95 | -5332.68 | -6142.1<< | 7063.2 | 9.15 | 138.21 | 2.94 | 13.76 | 0.306 |
| 112 | 56079.99 | -2942.13>> | 620.0 | -11542.5 | 0.00 | 13.95 | 0.30 | 7.59 | 0.114 |
| 112 | 56080.00 | -10897.57<< | 2755.0 | 1068.7 | 39.37 | 61.99 | 1.32 | 28.11 | 0.593 |
| 112 | 56080.03 | -8214.62 | 10196.0>> | -3225.4 | 24.80 | 229.43 | 4.87 | 21.19 | 0.537 |
| 112 | 56079.95 | -6724.32 | -7198.3<< | -5599.4 | 16.70 | 161.98 | 3.44 | 17.35 | 0.400 |

| BARRA 112 | Fxd (kN) | Fzd (kN) | Mxd (m.kN) | Myd (m.kN) | Arm.cortante (cm2/m) | Arm.tor.long (cm2) | Arm.tor.tran (cm2/m) | Arm. ras. (cm2/m) | (Vrd/Vu1)^B +(Td/Tu1)^B |
|---|---|---|---|---|---|---|---|---|---|
| 112 | 55972.80 | 3034.71>> | 624.8 | -11508.9 | 0.00 | 14.05 | 0.30 | 7.83 | 0.119 |
| 112 | 56805.98 | -4876.98<< | 2759.2 | 1101.3 | 6.48 | 62.35 | 1.31 | 12.58 | 0.235 |
| 112 | 56524.97 | -2208.80 | 10167.9>> | -3196.3 | 0.00 | 229.38 | 4.85 | 5.70 | 0.216 |
| 112 | 56368.95 | -726.68 | -7164.0<< | -5562.0 | 0.00 | 161.47 | 3.42 | 1.87 | 0.109 |
| 113 | 56053.39 | 2269.46>> | 640.3 | -7507.9 | 0.00 | 14.06 | 0.38 | 5.69 | 0.011 |
| 113 | 56978.08 | -6511.04<< | 3014.5 | -7508.3 | 0.00 | 66.49 | 1.76 | 16.32 | 0.067 |
| 113 | 56660.59 | -3496.51 | 11168.1>> | -7509.6 | 0.00 | 245.94 | 6.53 | 8.76 | 0.120 |
| 113 | 56486.02 | -1838.27 | -7893.4<< | -7506.5 | 0.00 | 173.67 | 4.62 | 4.61 | 0.064 |

## 7.5. COMBINACIONES PARA CÁLCULO DE APOYOS Y ESTRIBOS

CASOS DE CARGA
==========

Fichero 1: Cargas según IPF
==========

CASo # 1 PESO PROPIO
CASo # 2 LEVANTAMIENTO DE APOYOS
CASo # 3 CARGA PERMANENTE CARACTERISTICA
CASo # 4 VALOR MAXIMO DEL BALASTO
CASo # 5 VALOR MINIMO DEL BALASTO
CASo # 6 DESBALASTADO 50 POR CIENTO
CASo # 7 SC PASEOS VANO 1 DERECHA
CASo # 8 SC PASEOS VANO 2 DERECHA
CASo # 9 SC PASEOS VANO 3 DERECHA
CASo # 10 SC PASEOS VANO 4 DERECHA
CASo # 11 SC PASEOS VANO 5 DERECHA
CASo # 12 SC PASEOS VANO 6 DERECHA
CASo # 13 SC PASEOS VANO 1 IZQUIERDA
CASo # 14 SC PASEOS VANO 2 IZQUIERDA
CASo # 15 SC PASEOS VANO 3 IZQUIERDA
CASo # 16 SC PASEOS VANO 4 IZQUIERDA
CASo # 17 SC PASEOS VANO 5 IZQUIERDA
CASo # 18 SC PASEOS VANO 6 IZQUIERDA
CASo # 19 TREN B POS. 1 DERECHA
CASo # 20 TREN B POS. 1 IZQUIERDA
CASo # 21 TREN B POS. 2 DERECHA
CASo # 22 TREN B POS. 2 IZQUIERDA
CASo # 23 TREN B POS. 3 DERECHA
CASo # 24 TREN B POS. 3 IZQUIERDA
CASo # 25 TREN B POS. 4 DERECHA
CASo # 26 TREN B POS. 4 IZQUIERDA
CASo # 27 TREN B POS. 5 DERECHA
CASo # 28 TREN B POS. 5 IZQUIERDA
CASo # 29 TREN B POS. 6 DERECHA
CASo # 30 TREN B POS. 6 IZQUIERDA
CASo # 31 TREN B POS. 7 DERECHA
CASo # 32 TREN B POS. 7 IZQUIERDA
CASo # 33 TREN B POS. 8 DERECHA
CASo # 34 TREN B POS. 8 IZQUIERDA
CASo # 35 TREN B POS. 9 DERECHA
CASo # 36 TREN B POS. 9 IZQUIERDA
CASo # 37 GRAD.(5.8 C)
CASo # 38  LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Superior.  Est B
CASo # 39  LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Superior 8.  Est B
CASo # 40  LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Superior 9.  Est B
CASo # 41  LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Inferior.  Est B
CASo # 42  LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Inferior 5.  Est B
CASo # 43  LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Inferior 6.  Est B
CASo # 44  LAV GELIDA. V-Riera de la Rierussa. Tendon 1 (Servicio).  Est C
CASo # 45  LAV GELIDA. V-Riera de la Rierussa. Tendon 2 (Servicio).  Est B
CASo # 46  LAV GELIDA. V-Riera de la Rierussa. Tendon 3 (Servicio).  Est C
CASo # 47  LAV GELIDA. V-Riera de la Rierussa. Tendon 4 (Servicio).  Est C
CASo # 48  LAV GELIDA. V-Riera de la Rierussa. Tendon 5 (Servicio).  Est C
CASo # 49  LAV GELIDA. V-Riera de la Rierussa. Tendon 6 (Servicio).  Est C
CASo # 50  LAV GELIDA. V-Riera de la Rierussa. Tendon 7 (Servicio).  Est C
CASo # 51  LAV GELIDA. V-Riera de la Rierussa. Tendon 8 (Servicio).  Est C
CASo # 52  LAV GELIDA. V-Riera de la Rierussa. Tendon 9 (Servicio).  Est C
CASo # 53  LAV GELIDA. V-Riera de la Rierussa. Tendon 10 (Servicio).  Est C
CASo # 54  LAV GELIDA. V-Riera de la Rierussa. Tendon 11 (Servicio).  Est C
CASo # 55  LAV GELIDA. V-Riera de la Rierussa. Tendon 12 (Servicio).  Est C
CASo # 56  LAV GELIDA. V-Riera de la Rierussa. Tendon 13 (Servicio).  Est C
CASo # 57  LAV GELIDA. V-Riera de la Rierussa. Tendon 14 (Servicio).  Est C

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Fichero 2: Cargas según EC
==========================

CASo # 1 PESO PROPIO
CASo # 2 LEVANTAMIENTO DE APOYOS
CASo # 3 CARGA PERMANENTE CARACTERISTICA
CASo # 4 VALOR MAXIMO DEL BALASTO
CASo # 5 VALOR MINIMO DEL BALASTO
CASo # 6 DESBALASTADO 50 POR CIENTO
CASo # 7 SC PASEOS VANO 1 DERECHA
CASo # 8 SC PASEOS VANO 2 DERECHA
CASo # 9 SC PASEOS VANO 3 DERECHA
CASo # 10 SC PASEOS VANO 4 DERECHA
CASo # 11 SC PASEOS VANO 5 DERECHA
CASo # 12 SC PASEOS VANO 6 DERECHA
CASo # 13 SC PASEOS VANO 1 IZQUIERDA
CASo # 14 SC PASEOS VANO 2 IZQUIERDA
CASo # 15 SC PASEOS VANO 3 IZQUIERDA
CASo # 16 SC PASEOS VANO 4 IZQUIERDA
CASo # 17 SC PASEOS VANO 5 IZQUIERDA
CASo # 18 SC PASEOS VANO 6 IZQUIERDA
CASo # 19 TREN 71 SC UNIFORME POS. 1 DERECHA
CASo # 20 TREN 71 SC UNIFORME POS. 1 IZQUIERDA
CASo # 21 TREN 71 SC UNIFORME POS. 2 DERECHA
CASo # 22 TREN 71 SC UNIFORME POS. 2 IZQUIERDA
CASo # 23 TREN 71 SC UNIFORME POS. 3 DERECHA
CASo # 24 TREN 71 SC UNIFORME POS. 3 IZQUIERDA
CASo # 25 TREN 71 SC UNIFORME POS. 4 DERECHA
CASo # 26 TREN 71 SC UNIFORME POS. 4 IZQUIERDA
CASo # 27 TREN 71 SC UNIFORME POS. 5 DERECHA
CASo # 28 TREN 71 SC UNIFORME POS. 5 IZQUIERDA
CASo # 29 TREN 71 SC UNIFORME POS. 6 DERECHA
CASo # 30 TREN 71 SC UNIFORME POS. 6 IZQUIERDA
CASo # 31 TREN 71 SC UNIFORME POS. 7 DERECHA
CASo # 32 TREN 71 SC UNIFORME POS. 7 IZQUIERDA
CASo # 33 TREN 71 SC UNIFORME POS. 8 DERECHA
CASo # 34 TREN 71 SC UNIFORME POS. 8 IZQUIERDA
CASo # 35 TREN 71 SC UNIFORME POS. 9 DERECHA
CASo # 36 TREN 71 SC UNIFORME POS. 9 IZQUIERDA
CASo # 37 TREN 71 SC UNIFORME POS. 10 DERECHA
CASo # 38 TREN 71 SC UNIFORME POS. 10 IZQUIERDA
CASo # 39 TREN 71 SC UNIFORME POS. 11 DERECHA
CASo # 40 TREN 71 SC UNIFORME POS. 11 IZQUIERDA
CASo # 41 CARRO TREN 71 POSICION   1 DERECHA 300 km/h
CASo #  42 CARRO TREN 71 POSICION   1 IZQUIERDA 300 km/h
CASo #  43 CARRO TREN 71 POSICION   2 DERECHA 300 km/h
CASo #  44 CARRO TREN 71 POSICION   2 IZQUIERDA 300 km/h
CASo #  45 CARRO TREN 71 POSICION   3 DERECHA 300 km/h
CASo #  46 CARRO TREN 71 POSICION   3 IZQUIERDA 300 km/h
CASo #  47 CARRO TREN 71 POSICION   4 DERECHA 300 km/h
CASo #  48 CARRO TREN 71 POSICION   4 IZQUIERDA 300 km/h
CASo #  49 CARRO TREN 71 POSICION   5 DERECHA 300 km/h
CASo #  50 CARRO TREN 71 POSICION   5 IZQUIERDA 300 km/h
CASo #  51 CARRO TREN 71 POSICION   6 DERECHA 300 km/h
CASo #  52 CARRO TREN 71 POSICION   6 IZQUIERDA 300 km/h
CASo #  53 CARRO TREN 71 POSICION   7 DERECHA 300 km/h
CASo #  54 CARRO TREN 71 POSICION   7 IZQUIERDA 300 km/h
CASo #  55 CARRO TREN 71 POSICION   8 DERECHA 300 km/h
CASo #  56 CARRO TREN 71 POSICION   8 IZQUIERDA 300 km/h
CASo #  57 CARRO TREN 71 POSICION   9 DERECHA 300 km/h
CASo #  58 CARRO TREN 71 POSICION   9 IZQUIERDA 300 km/h
CASo #  59 CARRO TREN 71 POSICION  10 DERECHA 300 km/h
CASo #  60 CARRO TREN 71 POSICION  10 IZQUIERDA 300 km/h
CASo #  61 CARRO TREN 71 POSICION  11 DERECHA 300 km/h
CASo #  62 CARRO TREN 71 POSICION  11 IZQUIERDA 300 km/h
CASo #  63 CARRO TREN 71 POSICION  12 DERECHA 300 km/h
CASo #  64 CARRO TREN 71 POSICION  12 IZQUIERDA 300 km/h
CASo #  65 CARRO TREN 71 POSICION  13 DERECHA 300 km/h
CASo #  66 CARRO TREN 71 POSICION  13 IZQUIERDA 300 km/h
CASo #  67 CARRO TREN 71 POSICION  14 DERECHA 300 km/h
CASo #  68 CARRO TREN 71 POSICION  14 IZQUIERDA 300 km/h
CASo #  69 CARRO TREN 71 POSICION  15 DERECHA 300 km/h
CASo #  70 CARRO TREN 71 POSICION  15 IZQUIERDA 300 km/h
CASo #  71 CARRO TREN 71 POSICION  16 DERECHA 300 km/h
CASo #  72 CARRO TREN 71 POSICION  16 IZQUIERDA 300 km/h
CASo #  73 CARRO TREN 71 POSICION  17 DERECHA 300 km/h
CASo #  74 CARRO TREN 71 POSICION  17 IZQUIERDA 300 km/h
CASo #  75 CARRO TREN 71 POSICION  18 DERECHA 300 km/h
CASo #  76 CARRO TREN 71 POSICION  18 IZQUIERDA 300 km/h
CASo #  77 CARRO TREN 71 POSICION  19 DERECHA 300 km/h
CASo #  78 CARRO TREN 71 POSICION  19 IZQUIERDA 300 km/h
CASo #  79 CARRO TREN 71 POSICION  20 DERECHA 300 km/h
CASo #  80 CARRO TREN 71 POSICION  20 IZQUIERDA 300 km/h
CASo #  81 CARRO TREN 71 POSICION  21 DERECHA 300 km/h
CASo #  82 CARRO TREN 71 POSICION  21 IZQUIERDA 300 km/h
CASo #  83 CARRO TREN 71 POSICION  22 DERECHA 300 km/h
CASo #  84 CARRO TREN 71 POSICION  22 IZQUIERDA 300 km/h
CASo #  85 CARRO TREN 71 POSICION  23 DERECHA 300 km/h
CASo #  86 CARRO TREN 71 POSICION  23 IZQUIERDA 300 km/h
CASo #  87 CARRO TREN 71 POSICION  24 DERECHA 300 km/h
CASo #  88 CARRO TREN 71 POSICION  24 IZQUIERDA 300 km/h
CASo #  89 CARRO TREN 71 POSICION  25 DERECHA 300 km/h
CASo #  90 CARRO TREN 71 POSICION  25 IZQUIERDA 300 km/h
CASo #  91 CARRO TREN 71 POSICION  26 DERECHA 300 km/h
CASo #  92 CARRO TREN 71 POSICION  26 IZQUIERDA 300 km/h
CASo #  93 CARRO TREN 71 POSICION  27 DERECHA 300 km/h
CASo #  94 CARRO TREN 71 POSICION  27 IZQUIERDA 300 km/h
CASo #  95 CARRO TREN 71 POSICION  28 DERECHA 300 km/h
CASo #  96 CARRO TREN 71 POSICION  28 IZQUIERDA 300 km/h
CASo #  97 TREN SW0 POSICION   1 DERECHA  80 km/h
CASo #  98 TREN SW0 POSICION   1 IZQUIERDA  80 km/h
CASo #  99 TREN SW0 POSICION   2 DERECHA  80 km/h
CASo #  100 TREN SW0 POSICION   2 IZQUIERDA  80 km/h
CASo #  101 TREN SW0 POSICION   3 DERECHA  80 km/h
CASo #  102 TREN SW0 POSICION   3 IZQUIERDA  80 km/h
CASo #  103 TREN SW0 POSICION   4 DERECHA  80 km/h
CASo #  104 TREN SW0 POSICION   4 IZQUIERDA  80 km/h
CASo #  105 TREN SW0 POSICION   5 DERECHA  80 km/h
CASo #  106 TREN SW0 POSICION   5 IZQUIERDA  80 km/h
CASo #  107 TREN SW0 POSICION   6 DERECHA  80 km/h
CASo #  108 TREN SW0 POSICION   6 IZQUIERDA  80 km/h
CASo #  109 TREN SW0 POSICION   7 DERECHA  80 km/h
CASo #  110 TREN SW0 POSICION   7 IZQUIERDA  80 km/h
CASo #  111 TREN SW0 POSICION   8 DERECHA  80 km/h
CASo # 112  TREN SW0 POSICION   8 IZQUIERDA  80 km/h
CASo # 113  TREN SW0 POSICION   9 DERECHA  80 km/h
CASo # 114  TREN SW0 POSICION   9 IZQUIERDA  80 km/h
CASo # 115  TREN SW0 POSICION  10 DERECHA  80 km/h
CASo # 116  TREN SW0 POSICION  10 IZQUIERDA  80 km/h
CASo # 117 TREN SW0 POSICION  11 DERECHA  80 km/h
CASo # 118 TREN SW0 POSICION  11 IZQUIERDA  80 km/h
CASo # 119 TREN SW2 POSICION   1 DERECHA  80 km/h
CASo # 120 TREN SW2 POSICION   1 IZQUIERDA  80 km/h
CASo # 121  TREN SW2 POSICION   2 DERECHA  80 km/h
CASo # 122  TREN SW2 POSICION   2 IZQUIERDA  80 km/h
CASo # 123  TREN SW2 POSICION   3 DERECHA  80 km/h
CASo # 124  TREN SW2 POSICION   3 IZQUIERDA  80 km/h
CASo # 125  TREN SW2 POSICION   4 DERECHA  80 km/h
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CASo # 126  TREN SW2 POSICION   4 IZQUIERDA  80 km/h
CASo # 127  TREN SW2 POSICION   5 DERECHA  80 km/h
CASo # 128  TREN SW2 POSICION   5 IZQUIERDA  80 km/h
CASo # 129  TREN SW2 POSICION   6 DERECHA  80 km/h
CASo # 130  TREN SW2 POSICION   6 IZQUIERDA  80 km/h
CASo # 131  TREN SW2 POSICION   7 DERECHA  80 km/h
CASo # 132  TREN SW2 POSICION   7 IZQUIERDA  80 km/h
CASo # 133  TREN SW2 POSICION   8 DERECHA  80 km/h
CASo # 134  TREN SW2 POSICION   8 IZQUIERDA  80 km/h
CASo # 135  TREN SW2 POSICION   9 DERECHA  80 km/h
CASo # 136  TREN SW2 POSICION   9 IZQUIERDA  80 km/h
CASo # 137  TREN SW2 POSICION  10 DERECHA  80 km/h
CASo # 138  TREN SW2 POSICION  10 IZQUIERDA  80 km/h
CASo # 139  TREN SW2 POSICION  11 DERECHA  80 km/h
CASo # 140  TREN SW2 POSICION  11 IZQUIERDA  80 km/h
CASo # 141 GRAD.(5.8 C)
CASo # 142  LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Superior.  Est B
CASo # 143  LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Superior 8.  Est B
CASo # 144  LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Superior 9.  Est B
CASo # 145  LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Inferior.  Est B
CASo # 146  LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Inferior 5.  Est B
CASo # 147  LAV GELIDA. V-Riera de la Rierussa. Tendon Recto Inferior 6.  Est B
CASo # 148  LAV GELIDA. V-Riera de la Rierussa. Tendon 1 (Servicio).  Est C
CASo # 149  LAV GELIDA. V-Riera de la Rierussa. Tendon 2 (Servicio).  Est B
CASo # 150  LAV GELIDA. V-Riera de la Rierussa. Tendon 3 (Servicio).  Est C
CASo # 151  LAV GELIDA. V-Riera de la Rierussa. Tendon 4 (Servicio).  Est C
CASo # 152  LAV GELIDA. V-Riera de la Rierussa. Tendon 5 (Servicio).  Est C
CASo # 153  LAV GELIDA. V-Riera de la Rierussa. Tendon 6 (Servicio).  Est C
CASo # 154  LAV GELIDA. V-Riera de la Rierussa. Tendon 7 (Servicio).  Est C
CASo # 155  LAV GELIDA. V-Riera de la Rierussa. Tendon 8 (Servicio).  Est C
CASo # 156  LAV GELIDA. V-Riera de la Rierussa. Tendon 9 (Servicio).  Est C
CASo # 157  LAV GELIDA. V-Riera de la Rierussa. Tendon 10 (Servicio).  Est C
CASo # 158  LAV GELIDA. V-Riera de la Rierussa. Tendon 11 (Servicio).  Est C
CASo # 159  LAV GELIDA. V-Riera de la Rierussa. Tendon 12 (Servicio).  Est C
CASo # 160  LAV GELIDA. V-Riera de la Rierussa. Tendon 13 (Servicio).  Est C
CASo # 161  LAV GELIDA. V-Riera de la Rierussa. Tendon 14 (Servicio).  Est C
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TITULO
=======
LAV-Gelida. V.Rierussa. ELS Comb Rara.IPF(1.00*G+1.0*LEV+1.00*P+1.0*SC+0.6*GT)

FICHERO DE GEOMETRIA COMPLETA
==============================
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
================================
1

Fich   Num. Nudos    Num. barras     Num. hipotesis   NOMBRE FICHERO
=============================================================================
  1       120           119              57           ESFipfPI.TXT

Fich    Hipotesis       Caracter      Coeficiente
=================================================
  1         1               1             1.0
  1         2               1             1.0
  1         3               1             1.0
  1         4               3             1.0
  1         5               3             1.0
  1         6               3             1.0
  1         7               2             0.5
  1         8               2             0.5
  1         9               2             0.5
  1         10              2             0.5
  1         11              2             0.5
  1         12              2             0.5
  1         13              2             0.5
  1         14              2             0.5
  1         15              2             0.5
  1         16              2             0.5
  1         17              2             0.5
  1         18              2             0.5
  1         19              4             1.0
  1         20              5             1.0
  1         21              4             1.0
  1         22              5             1.0
  1         23              4             1.0
  1         24              5             1.0
  1         25              4             1.0
  1         26              5             1.0
  1         27              4             1.0
  1         28              5             1.0
  1         29              4             1.0
  1         30              5             1.0
  1         31              4             1.0
  1         32              5             1.0
  1         33              4             1.0
  1         34              5             1.0
  1         35              4             1.0
  1         36              5             1.0
  1         37              2             0.6
  1         38              1            20.433
  1         39              1             2.919
  1         40              1             2.919
  1         41              1            11.676
  1         42              1             2.919
  1         43              1             2.919
  1         44              Ç 1           6.464
  1         45              1             6.464
  1         46              1             6.464
```

| | | | |
|---|---|---|---|
| 1 | 47 | 1 | 6.464 |
| 1 | 48 | 1 | 6.464 |
| 1 | 49 | 1 | 6.464 |
| 1 | 50 | 1 | 6.464 |
| 1 | 51 | 1 | 6.464 |
| 1 | 52 | 1 | 6.464 |
| 1 | 53 | 1 | 6.464 |
| 1 | 54 | 1 | 6.464 |
| 1 | 55 | 1 | 6.464 |
| 1 | 56 | 1 | 6.464 |
| 1 | 57 | 1 | 6.464 |

LAV-Gelida. V.Rierussa. ELS Comb Rara.IPF(1.00*G+1.0*LEV+1.00*P+1.0*SC+0.6*GT)

| BARRA 201 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 201 | 9162.25>> | 165.10 | 0.00 | 0.0 | 0.0 | 4743.2 |
| 201 | 3905.35<< | -4.75 | 0.00 | 0.0 | 0.1 | 725.6 |
| 201 | 8684.05 | 275.25>> | -0.01 | 0.0 | 0.1 | 6988.0 |
| 201 | 4388.77 | -117.43<< | 0.00 | 0.0 | 0.0 | -1653.2 |
| 201 | 5493.56 | 1.50 | 0.00>> | 0.0 | 0.0 | 329.6 |
| 201 | 6477.44 | 197.36 | -0.01<< | 0.0 | 0.1 | 9182.3 |
| 201 | 5493.56 | 1.50 | 0.00 | 0.0>> | 0.0 | 329.6 |
| 201 | 5227.53 | 1.45 | 0.00 | 0.0<< | 0.0 | 324.1 |
| 201 | 6427.01 | 172.12 | -0.01 | 0.0 | 0.1>> | 8526.5 |
| 201 | 6849.83 | 57.98 | 0.00 | 0.0 | -0.0<< | -2694.0 |
| 201 | 7171.09 | 234.18 | -0.01 | 0.0 | 0.1 | 10064.9>> |
| 201 | 5956.18 | -75.78 | 0.00 | 0.0 | 0.0 | -4673.9<< |
| 1 | 9162.25>> | 165.10 | 0.00 | 0.0 | 0.0 | 3153.1 |
| 1 | 3905.35<< | -4.75 | 0.00 | 0.0 | 0.0 | 771.0 |
| 1 | 8684.05 | 275.25>> | -0.01 | 0.0 | 0.0 | 4336.9 |
| 1 | 4388.77 | -117.43<< | 0.00 | 0.0 | 0.0 | -522.7 |
| 1 | 5493.56 | 1.50 | 0.00>> | 0.0 | 0.0 | 314.7 |
| 1 | 6477.44 | 197.36 | -0.01<< | 0.0 | 0.0 | 7281.4 |
| 1 | 5493.56 | 1.50 | 0.00 | 0.0>> | 0.0 | 314.7 |
| 1 | 5227.53 | 1.45 | 0.00 | 0.0<< | 0.0 | 309.9 |
| 1 | 5493.56 | 1.50 | 0.00 | 0.0 | 0.0>> | 314.7 |
| 1 | 5227.53 | 1.45 | 0.00 | 0.0 | 0.0<< | 309.9 |
| 1 | 7165.10 | 139.06 | -0.01 | 0.0 | 0.0 | 8204.8>> |
| 1 | 5950.19 | 26.63 | 0.00 | 0.0 | 0.0 | -4359.6<< |

| BARRA 202 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 202 | 26858.20>> | 203.38 | 0.00 | 0.0 | 0.0 | 8424.1 |
| 202 | 11982.40<< | 62.71 | 0.00 | 0.0 | 0.0 | 1935.9 |
| 202 | 20325.94 | 438.83>> | 0.00 | 0.0 | 0.0 | 7433.9 |
| 202 | 21134.35 | -155.90<< | 0.00 | 0.0 | 0.0 | 8928.4 |
| 202 | 15422.25 | -5.32 | 0.00>> | 0.0 | 0.0 | 510.2 |
| 202 | 15250.26 | -5.17 | 0.00<< | 0.0 | 0.0 | 500.6 |
| 202 | 15422.25 | -5.32 | 0.00 | 0.0>> | 0.0 | 510.2 |
| 202 | 15250.26 | -5.17 | 0.00 | 0.0<< | 0.0 | 500.6 |
| 202 | 15422.25 | -5.32 | 0.00 | 0.0 | 0.0>> | 510.2 |
| 202 | 15250.26 | -5.17 | 0.00 | 0.0 | 0.0<< | 500.6 |
| 202 | 21161.43 | 5.03 | 0.00 | 0.0 | 0.0 | 12716.2>> |
| 202 | 17734.46 | 254.54 | 0.00 | 0.0 | 0.0 | -2534.2<< |
| 17 | 26858.20>> | 203.38 | 0.00 | 0.0 | 0.0 | 4637.7 |
| 17 | 11982.40<< | 62.71 | 0.00 | 0.0 | 0.0 | 770.5 |
| 17 | 20325.94 | 438.83>> | 0.00 | 0.0 | 0.0 | -738.7 |
| 17 | 21134.35 | -155.90<< | 0.00 | 0.0 | 0.0 | 11835.6 |
| 17 | 15422.25 | -5.32 | 0.00>> | 0.0 | 0.0 | 612.1 |
| 17 | 15250.26 | -5.17 | 0.00<< | 0.0 | 0.0 | 599.7 |
| 17 | 15422.25 | -5.32 | 0.00 | 0.0>> | 0.0 | 612.1 |
| 17 | 15250.26 | -5.17 | 0.00 | 0.0<< | 0.0 | 599.7 |
| 17 | 15422.25 | -5.32 | 0.00 | 0.0 | 0.0>> | 612.1 |
| 17 | 15250.26 | -5.17 | 0.00 | 0.0 | 0.0<< | 599.7 |
| 17 | 21161.43 | 2.17 | 0.00 | 0.0 | 0.0 | 12642.8>> |
| 17 | 17734.47 | 257.40 | 0.00 | 0.0 | 0.0 | -7290.9<< |

LAV-Gelida. V.Rierussa. ELS Comb Rara.IPF(1.00*G+1.0*LEV+1.00*P+1.0*SC+0.6*GT)

| BARRA 203 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 203 | 27431.93>> | 481.60 | 0.00 | 0.0 | 0.0 | 14428.6 |
| 203 | 13593.32<< | 6.91 | 0.00 | 0.0 | 0.0 | 528.8 |
| 203 | 26585.35 | 775.62>> | 0.00 | 0.0 | 0.0 | 19934.5 |
| 203 | 13833.44 | -19.67<< | 0.00 | 0.0 | 0.0 | 916.3 |
| 203 | 16373.21 | 12.87 | 0.00>> | 0.0 | 0.0 | 960.5 |
| 203 | 15958.09 | 12.60 | 0.00<< | 0.0 | 0.0 | 941.3 |
| 203 | 16373.21 | 12.87 | 0.00 | 0.0>> | 0.0 | 960.5 |
| 203 | 15958.09 | 12.60 | 0.00 | 0.0<< | 0.0 | 941.3 |
| 203 | 16373.21 | 12.87 | 0.00 | 0.0 | 0.0>> | 960.5 |
| 203 | 15958.09 | 12.60 | 0.00 | 0.0 | 0.0<< | 941.3 |
| 203 | 21776.85 | 559.83 | 0.00 | 0.0 | 0.0 | 24471.1>> |
| 203 | 18036.27 | 136.41 | 0.00 | 0.0 | 0.0 | -5128.8<< |
| 37 | 27431.93>> | 481.60 | 0.00 | 0.0 | 0.0 | 4735.1 |
| 37 | 13593.32<< | 6.91 | 0.00 | 0.0 | 0.0 | 390.9 |
| 37 | 26585.35 | 775.62>> | 0.00 | 0.0 | 0.0 | 4322.5 |
| 37 | 13833.44 | -19.67<< | 0.00 | 0.0 | 0.0 | 1313.3 |
| 37 | 16373.21 | 12.87 | 0.00>> | 0.0 | 0.0 | 702.5 |
| 37 | 15958.09 | 12.60 | 0.00<< | 0.0 | 0.0 | 688.7 |
| 37 | 16373.21 | 12.87 | 0.00 | 0.0>> | 0.0 | 702.5 |
| 37 | 15958.09 | 12.60 | 0.00 | 0.0<< | 0.0 | 688.7 |
| 37 | 16373.21 | 12.87 | 0.00 | 0.0 | 0.0>> | 702.5 |
| 37 | 15958.09 | 12.60 | 0.00 | 0.0 | 0.0<< | 688.7 |
| 37 | 21776.85 | 559.63 | 0.00 | 0.0 | 0.0 | 13206.8>> |
| 37 | 18036.27 | 136.61 | 0.00 | 0.0 | 0.0 | -7877.6<< |

LAV-Gelida. V.Rierussa. ELS Comb Rara.IPF(1.00*G+1.0*LEV+1.00*P+1.0*SC+0.6*GT)

| BARRA 205 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 205 | 27814.35>> | 489.48 | 0.00 | 0.0 | 0.0 | 15096.5 |
| 205 | 13972.20<< | 7.54 | 0.00 | 0.0 | 0.0 | 497.2 |
| 205 | 26970.25 | 774.03>> | 0.00 | 0.0 | 0.0 | 20780.8 |
| 205 | 14212.17 | -16.14<< | 0.00 | 0.0 | 0.0 | 900.4 |
| 205 | 16753.75 | 13.45 | 0.00>> | 0.0 | 0.0 | 932.2 |
| 205 | 16338.61 | 13.19 | 0.00<< | 0.0 | 0.0 | 912.8 |
| 205 | 16753.75 | 13.45 | 0.00 | 0.0>> | 0.0 | 932.2 |
| 205 | 16338.61 | 13.19 | 0.00 | 0.0<< | 0.0 | 912.8 |
| 205 | 16753.75 | 13.45 | 0.00 | 0.0 | 0.0>> | 932.2 |
| 205 | 16338.61 | 13.19 | 0.00 | 0.0 | 0.0<< | 912.8 |
| 205 | 22161.25 | 563.93 | 0.00 | 0.0 | 0.0 | 25059.9>> |
| 205 | 18417.79 | 141.82 | 0.00 | 0.0 | 0.0 | -4809.9<< |
| 77 | 27814.35>> | 489.48 | 0.00 | 0.0 | 0.0 | 4508.0 |
| 77 | 13972.20<< | 7.54 | 0.00 | 0.0 | 0.0 | 333.0 |
| 77 | 26970.25 | 774.03>> | 0.00 | 0.0 | 0.0 | 4037.5 |
| 77 | 14212.17 | -16.14<< | 0.00 | 0.0 | 0.0 | 1248.5 |
| 77 | 16753.75 | 13.45 | 0.00>> | 0.0 | 0.0 | 640.0 |
| 77 | 16338.61 | 13.19 | 0.00<< | 0.0 | 0.0 | 626.4 |
| 77 | 16753.75 | 13.45 | 0.00 | 0.0>> | 0.0 | 640.0 |
| 77 | 16338.61 | 13.19 | 0.00 | 0.0<< | 0.0 | 626.4 |
| 77 | 16753.75 | 13.45 | 0.00 | 0.0 | 0.0>> | 640.0 |
| 77 | 16338.61 | 13.19 | 0.00 | 0.0 | 0.0<< | 626.4 |
| 77 | 22161.25 | 563.44 | 0.00 | 0.0 | 0.0 | 12864.6>> |
| 77 | 18417.79 | 142.31 | 0.00 | 0.0 | 0.0 | -7882.0<< |

| BARRA 204 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 204 | 27130.33>> | -71.23 | 0.00 | 0.0 | 0.0 | 2516.2 |
| 204 | 13371.21<< | -9.84 | 0.00 | 0.0 | 0.0 | -1.5 |
| 204 | 18455.36 | 229.25>> | 0.00 | 0.0 | 0.0 | 2554.2 |
| 204 | 22046.18 | -310.32<< | 0.00 | 0.0 | 0.0 | -39.6 |
| 204 | 16053.83 | -17.14 | 0.00>> | 0.0 | 0.0 | 2.3 |
| 204 | 15711.91 | -16.80 | 0.00<< | 0.0 | 0.0 | 2.1 |
| 204 | 16053.83 | -17.14 | 0.00 | 0.0>> | 0.0 | 2.3 |
| 204 | 15711.91 | -16.80 | 0.00 | 0.0<< | 0.0 | 2.1 |
| 204 | 16053.83 | -17.14 | 0.00 | 0.0 | 0.0>> | 2.3 |
| 204 | 15711.91 | -16.80 | 0.00 | 0.0 | 0.0<< | 2.1 |
| 204 | 26210.71 | -28.13 | 0.00 | 0.0 | 0.0 | 4521.5>> |
| 204 | 13636.71 | -36.55 | 0.00 | 0.0 | 0.0 | -290.7<< |
| 57 | 27130.33>> | -71.23 | 0.00 | 0.0 | 0.0 | 5622.3 |
| 57 | 13371.21<< | -9.84 | 0.00 | 0.0 | 0.0 | 426.2 |
| 57 | 18455.36 | 229.25>> | 0.00 | 0.0 | 0.0 | -7449.5 |
| 57 | 22046.18 | -310.32<< | 0.00 | 0.0 | 0.0 | 13498.1 |
| 57 | 16053.83 | -17.14 | 0.00>> | 0.0 | 0.0 | 748.5 |
| 57 | 15711.91 | -16.80 | 0.00<< | 0.0 | 0.0 | 733.4 |
| 57 | 16053.83 | -17.14 | 0.00 | 0.0>> | 0.0 | 748.5 |
| 57 | 15711.91 | -16.80 | 0.00 | 0.0<< | 0.0 | 733.4 |
| 57 | 16053.83 | -17.14 | 0.00 | 0.0 | 0.0>> | 748.5 |
| 57 | 15711.91 | -16.80 | 0.00 | 0.0 | 0.0<< | 733.4 |
| 57 | 21391.95 | -291.35 | 0.00 | 0.0 | 0.0 | 14674.5>> |
| 57 | 17802.18 | 221.55 | 0.00 | 0.0 | 0.0 | -8016.6<< |

| BARRA 206 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 206 | 27194.77>> | 104.81 | 0.00 | 0.0 | 0.0 | 6975.8 |
| 206 | 12331.00<< | 54.82 | 0.00 | 0.0 | 0.0 | 1958.8 |
| 206 | 18050.91 | 403.13>> | 0.00 | 0.0 | 0.0 | 3018.8 |
| 206 | 21474.86 | -243.50<< | 0.00 | 0.0 | 0.0 | 5915.8 |
| 206 | 15763.71 | -9.56 | 0.00>> | 0.0 | 0.0 | 336.1 |
| 206 | 15591.82 | -9.33 | 0.00<< | 0.0 | 0.0 | 329.3 |
| 206 | 15763.71 | -9.56 | 0.00 | 0.0>> | 0.0 | 336.1 |
| 206 | 15591.82 | -9.33 | 0.00 | 0.0<< | 0.0 | 329.3 |
| 206 | 15763.71 | -9.56 | 0.00 | 0.0 | 0.0>> | 336.1 |
| 206 | 15591.82 | -9.33 | 0.00 | 0.0 | 0.0<< | 329.3 |
| 206 | 26425.68 | 168.97 | 0.00 | 0.0 | 0.0 | 9861.5>> |
| 206 | 15743.08 | 130.88 | 0.00 | 0.0 | 0.0 | -1309.6<< |
| 97 | 27194.77>> | 104.81 | 0.00 | 0.0 | 0.0 | 4498.4 |
| 97 | 12331.00<< | 54.82 | 0.00 | 0.0 | 0.0 | 662.3 |
| 97 | 18050.91 | 403.13>> | 0.00 | 0.0 | 0.0 | -6508.2 |
| 97 | 21474.86 | -243.50<< | 0.00 | 0.0 | 0.0 | 11668.9 |
| 97 | 15763.71 | -9.56 | 0.00>> | 0.0 | 0.0 | 561.0 |
| 97 | 15591.82 | -9.33 | 0.00<< | 0.0 | 0.0 | 548.8 |
| 97 | 15763.71 | -9.56 | 0.00 | 0.0>> | 0.0 | 561.0 |
| 97 | 15591.82 | -9.33 | 0.00 | 0.0<< | 0.0 | 548.8 |
| 97 | 15763.71 | -9.56 | 0.00 | 0.0 | 0.0>> | 561.0 |
| 97 | 15591.82 | -9.33 | 0.00 | 0.0 | 0.0<< | 548.8 |
| 97 | 21501.83 | -118.92 | 0.00 | 0.0 | 0.0 | 12420.0>> |
| 97 | 18078.97 | 272.23 | 0.00 | 0.0 | 0.0 | -7308.4<< |

LAV-Gelida. V.Rierussa. ELS Comb Rara.IPF(1.00*G+1.0*LEV+1.00*P+1.0*SC+0.6*GT)

| BARRA 207 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 207 | 9135.62>> | 220.61 | 0.00 | 0.0 | 0.0 | 6084.1 |
| 207 | 3525.67<< | 32.93 | 0.00 | 0.0 | 0.0 | 1315.2 |
| 207 | 8659.72 | 348.94>> | 0.00 | 0.0 | 0.0 | 8790.0 |
| 207 | 4006.79 | -102.54<< | 0.00 | 0.0 | 0.0 | -1595.7 |
| 207 | 5112.00 | 4.16 | 0.00>> | 0.0 | 0.0 | 427.0 |
| 207 | 4845.91 | 4.04 | 0.00<< | 0.0 | 0.0 | 420.5 |
| 207 | 5112.00 | 4.16 | 0.00 | 0.0>> | 0.0 | 427.0 |
| 207 | 4845.91 | 4.04 | 0.00 | 0.0<< | 0.0 | 420.5 |
| 207 | 5112.00 | 4.16 | 0.00 | 0.0 | 0.0>> | 427.0 |
| 207 | 4845.91 | 4.04 | 0.00 | 0.0 | 0.0<< | 420.5 |
| 207 | 6884.77 | 289.25 | 0.00 | 0.0 | 0.0 | 11997.5>> |
| 207 | 5829.95 | -42.25 | 0.00 | 0.0 | 0.0 | -4728.1<< |
| 113 | 9135.62>> | 220.61 | 0.00 | 0.0 | 0.0 | 3517.7 |
| 113 | 3525.67<< | 32.93 | 0.00 | 0.0 | 0.0 | 931.5 |
| 113 | 8659.72 | 348.94>> | 0.00 | 0.0 | 0.0 | 4731.2 |
| 113 | 4006.79 | -102.54<< | 0.00 | 0.0 | 0.0 | -403.9 |
| 113 | 5112.00 | 4.16 | 0.00>> | 0.0 | 0.0 | 377.9 |
| 113 | 4845.91 | 4.04 | 0.00<< | 0.0 | 0.0 | 372.7 |
| 113 | 5112.00 | 4.16 | 0.00 | 0.0>> | 0.0 | 377.9 |
| 113 | 4845.91 | 4.04 | 0.00 | 0.0<< | 0.0 | 372.7 |
| 113 | 5112.00 | 4.16 | 0.00 | 0.0 | 0.0>> | 377.9 |
| 113 | 4845.91 | 4.04 | 0.00 | 0.0 | 0.0<< | 372.7 |
| 113 | 6962.81 | 232.95 | 0.00 | 0.0 | 0.0 | 9008.2>> |
| 113 | 5745.96 | 21.23 | 0.00 | 0.0 | 0.0 | -4653.3<< |

TITULO
=======
LAV-Gelida. V.Rierussa. ELS Comb Rara.EC71-71(1.00*G+1.00*LEV+1.00*P+1.0*SC+0.6*GT)

FICHERO DE GEOMETRIA COMPLETA
==============================
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
================================
1

| Fich | Num. Nudos | Num. barras | Num. hipotesis | NOMBRE FICHERO |
|---|---|---|---|---|
| 1 | 120 | 119 | 161 | ESFec.TXT |

| Fich | Hipotesis | Caracter | Coeficiente |
|---|---|---|---|
| 1 | 1 | 1 | 1.0 |
| 1 | 2 | 1 | 1.0 |
| 1 | 3 | 1 | 1.0 |
| 1 | 4 | 3 | 1.0 |
| 1 | 5 | 3 | 1.0 |
| 1 | 6 | 3 | 1.0 |
| 1 | 7 | 2 | 0.5 |
| 1 | 8 | 2 | 0.5 |
| 1 | 9 | 2 | 0.5 |
| 1 | 10 | 2 | 0.5 |
| 1 | 11 | 2 | 0.5 |
| 1 | 12 | 2 | 0.5 |
| 1 | 13 | 2 | 0.5 |
| 1 | 14 | 2 | 0.5 |
| 1 | 15 | 2 | 0.5 |
| 1 | 16 | 2 | 0.5 |
| 1 | 17 | 2 | 0.5 |
| 1 | 18 | 2 | 0.5 |
| 1 | 19 | 4 | 1.0 |
| 1 | 20 | 5 | 1.0 |
| 1 | 21 | 4 | 1.0 |
| 1 | 22 | 5 | 1.0 |
| 1 | 23 | 4 | 1.0 |
| 1 | 24 | 5 | 1.0 |
| 1 | 25 | 4 | 1.0 |
| 1 | 26 | 5 | 1.0 |
| 1 | 27 | 4 | 1.0 |
| 1 | 28 | 5 | 1.0 |
| 1 | 29 | 4 | 1.0 |
| 1 | 30 | 5 | 1.0 |
| 1 | 31 | 4 | 1.0 |
| 1 | 32 | 5 | 1.0 |
| 1 | 33 | 4 | 1.0 |
| 1 | 34 | 5 | 1.0 |
| 1 | 35 | 4 | 1.0 |
| 1 | 36 | 5 | 1.0 |
| 1 | 37 | 4 | 1.0 |
| 1 | 38 | 5 | 1.0 |
| 1 | 39 | 4 | 1.0 |
| 1 | 40 | 5 | 1.0 |
| 1 | 41 | 6 | 1.0 |
| 1 | 42 | 7 | 1.0 |
| 1 | 43 | 6 | 1.0 |
| 1 | 44 | 7 | 1.0 |
| 1 | 45 | 6 | 1.0 |
| 1 | 46 | 7 | 1.0 |

| | | | |
|---|---|---|---|
| 1 | 47 | 6 | 1.0 |
| 1 | 48 | 7 | 1.0 |
| 1 | 49 | 6 | 1.0 |
| 1 | 50 | 7 | 1.0 |
| 1 | 51 | 6 | 1.0 |
| 1 | 52 | 7 | 1.0 |
| 1 | 53 | 6 | 1.0 |
| 1 | 54 | 7 | 1.0 |
| 1 | 55 | 6 | 1.0 |
| 1 | 56 | 7 | 1.0 |
| 1 | 57 | 6 | 1.0 |
| 1 | 58 | 7 | 1.0 |
| 1 | 59 | 6 | 1.0 |
| 1 | 60 | 7 | 1.0 |
| 1 | 61 | 6 | 1.0 |
| 1 | 62 | 7 | 1.0 |
| 1 | 63 | 6 | 1.0 |
| 1 | 64 | 7 | 1.0 |
| 1 | 65 | 6 | 1.0 |
| 1 | 66 | 7 | 1.0 |
| 1 | 67 | 6 | 1.0 |
| 1 | 68 | 7 | 1.0 |
| 1 | 69 | 6 | 1.0 |
| 1 | 70 | 7 | 1.0 |
| 1 | 71 | 6 | 1.0 |
| 1 | 72 | 7 | 1.0 |
| 1 | 73 | 6 | 1.0 |
| 1 | 74 | 7 | 1.0 |
| 1 | 75 | 6 | 1.0 |
| 1 | 76 | 7 | 1.0 |
| 1 | 77 | 6 | 1.0 |
| 1 | 78 | 7 | 1.0 |
| 1 | 79 | 6 | 1.0 |
| 1 | 80 | 7 | 1.0 |
| 1 | 81 | 6 | 1.0 |
| 1 | 82 | 7 | 1.0 |
| 1 | 83 | 6 | 1.0 |
| 1 | 84 | 7 | 1.0 |
| 1 | 85 | 6 | 1.0 |
| 1 | 86 | 7 | 1.0 |
| 1 | 87 | 6 | 1.0 |
| 1 | 88 | 7 | 1.0 |
| 1 | 89 | 6 | 1.0 |
| 1 | 90 | 7 | 1.0 |
| 1 | 91 | 6 | 1.0 |
| 1 | 92 | 7 | 1.0 |
| 1 | 93 | 6 | 1.0 |
| 1 | 94 | 7 | 1.0 |
| 1 | 95 | 6 | 1.0 |
| 1 | 96 | 7 | 1.0 |
| 1 | 97 | 8 | 0.0 |
| 1 | 98 | 9 | 0.0 |
| 1 | 99 | 8 | 0.0 |
| 1 | 100 | 9 | 0.0 |
| 1 | 101 | 8 | 0.0 |
| 1 | 102 | 9 | 0.0 |
| 1 | 103 | 8 | 0.0 |
| 1 | 104 | 9 | 0.0 |
| 1 | 105 | 8 | 0.0 |
| 1 | 106 | 9 | 0.0 |
| 1 | 107 | 8 | 0.0 |
| 1 | 108 | 9 | 0.0 |
| 1 | 109 | 8 | 0.0 |
| 1 | 110 | 9 | 0.0 |
| 1 | 111 | 8 | 0.0 |
| 1 | 112 | 9 | 0.0 |
| 1 | 113 | 8 | 0.0 |
| 1 | 114 | 9 | 0.0 |
| 1 | 115 | 8 | 0.0 |
| 1 | 116 | 9 | 0.0 |
| 1 | 117 | 8 | 0.0 |
| 1 | 118 | 9 | 0.0 |
| 1 | 119 | 10 | 0.0 |
| 1 | 120 | 10 | 0.0 |
| 1 | 121 | 10 | 0.0 |
| 1 | 122 | 10 | 0.0 |
| 1 | 123 | 10 | 0.0 |
| 1 | 124 | 10 | 0.0 |
| 1 | 125 | 10 | 0.0 |
| 1 | 126 | 10 | 0.0 |
| 1 | 127 | 10 | 0.0 |
| 1 | 128 | 10 | 0.0 |
| 1 | 129 | 10 | 0.0 |
| 1 | 130 | 10 | 0.0 |
| 1 | 131 | 10 | 0.0 |
| 1 | 132 | 10 | 0.0 |
| 1 | 133 | 10 | 0.0 |
| 1 | 134 | 10 | 0.0 |
| 1 | 135 | 10 | 0.0 |
| 1 | 136 | 10 | 0.0 |
| 1 | 137 | 10 | 0.0 |
| 1 | 138 | 10 | 0.0 |
| 1 | 139 | 10 | 0.0 |
| 1 | 140 | 10 | 0.0 |
| 1 | 141 | 2 | 0.6 |
| 1 | 142 | 1 | 20.433 |
| 1 | 143 | 1 | 2.919 |
| 1 | 144 | 1 | 2.919 |
| 1 | 145 | 1 | 11.676 |
| 1 | 146 | 1 | 2.919 |
| 1 | 147 | 1 | 2.919 |
| 1 | 148 | 1 | 6.464 |
| 1 | 149 | 1 | 6.464 |
| 1 | 150 | 1 | 6.464 |
| 1 | 151 | 1 | 6.464 |
| 1 | 152 | 1 | 6.464 |
| 1 | 153 | 1 | 6.464 |
| 1 | 154 | 1 | 6.464 |
| 1 | 155 | 1 | 6.464 |
| 1 | 156 | 1 | 6.464 |
| 1 | 157 | 1 | 6.464 |
| 1 | 158 | 1 | 6.464 |
| 1 | 159 | 1 | 6.464 |
| 1 | 160 | 1 | 6.464 |
| 1 | 161 | 1 | 6.464 |

LAV-Gelida. V.Rierussa. ELS Comb Rara.EC71-71(1.00*G+1.00*LEV+1.00*P+1.0*SC+0.6*GT)

| BARRA 201 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 201 | 9768.43>> | 169.41 | -0.01 | 0.0 | 0.1 | 4432.1 |
| 201 | 3814.45<< | 23.59 | 0.00 | 0.0 | 0.0 | 884.4 |
| 201 | 7833.45 | 258.29>> | -0.01 | 0.0 | 0.1 | 9287.0 |
| 201 | 4381.07 | -147.06<< | 0.00 | 0.0 | 0.0 | -1978.0 |
| 201 | 5458.98 | 21.29 | 0.02>> | 0.0 | -0.1 | 624.7 |
| 201 | 5783.30 | 34.88 | -0.02<< | 0.0 | 0.2 | -163.8 |
| 201 | 5493.56 | 1.50 | 0.00 | 0.0>> | 0.0 | 329.6 |
| 201 | 5227.53 | 1.45 | 0.00 | 0.0<< | 0.0 | 324.1 |
| 201 | 8336.39 | 99.64 | -0.02 | 0.0 | 0.2>> | 3037.4 |
| 201 | 5287.90 | -30.74 | 0.02 | 0.0 | -0.2<< | 400.2 |
| 201 | 7523.20 | 243.68 | 0.00 | 0.0 | 0.0 | 10599.4>> |
| 201 | 6326.93 | -112.73 | -0.01 | 0.0 | 0.1 | -5765.9<< |
| 1 | 9768.43>> | 169.41 | -0.01 | 0.0 | 0.0 | 2800.4 |
| 1 | 3814.45<< | 23.59 | 0.00 | 0.0 | 0.0 | 656.9 |
| 1 | 7833.45 | 258.29>> | -0.01 | 0.0 | 0.0 | 6799.2 |
| 1 | 4381.07 | -147.06<< | 0.00 | 0.0 | 0.0 | -562.0 |
| 1 | 5458.98 | 21.29 | 0.02>> | 0.0 | 0.0 | 419.2 |
| 1 | 5783.30 | 34.88 | -0.02<< | 0.0 | 0.0 | -500.0 |
| 1 | 5493.56 | 1.50 | 0.00 | 0.0>> | 0.0 | 314.7 |
| 1 | 5227.53 | 1.45 | 0.00 | 0.0<< | 0.0 | 309.9 |
| 1 | 5493.56 | 1.50 | 0.00 | 0.0 | 0.0>> | 314.7 |
| 1 | 5227.53 | 1.45 | 0.00 | 0.0 | 0.0<< | 309.9 |
| 1 | 7536.84 | 118.40 | 0.00 | 0.0 | 0.0 | 8714.5>> |
| 1 | 6321.83 | 9.87 | -0.01 | 0.0 | 0.0 | -5185.0<< |

LAV-Gelida. V.Rierussa. ELS Comb Rara.EC71-71(1.00*G+1.00*LEV+1.00*P+1.0*SC+0.6*GT)

| BARRA 203 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 203 | 28214.18>> | 308.41 | 0.00 | 0.0 | 0.0 | 10562.6 |
| 203 | 12757.17<< | 144.56 | 0.00 | 0.0 | 0.0 | 3392.0 |
| 203 | 26864.45 | 655.96>> | 0.00 | 0.0 | 0.0 | 16370.5 |
| 203 | 14137.32 | -106.38<< | 0.00 | 0.0 | 0.0 | -197.0 |
| 203 | 16373.21 | 12.87 | 0.00>> | 0.0 | 0.0 | 960.5 |
| 203 | 15958.09 | 12.60 | 0.00<< | 0.0 | 0.0 | 941.3 |
| 203 | 16373.21 | 12.87 | 0.00 | 0.0>> | 0.0 | 960.5 |
| 203 | 15958.09 | 12.60 | 0.00 | 0.0<< | 0.0 | 941.3 |
| 203 | 16373.21 | 12.87 | 0.00 | 0.0 | 0.0>> | 960.5 |
| 203 | 15958.09 | 12.60 | 0.00 | 0.0 | 0.0<< | 941.3 |
| 203 | 22121.75 | 439.68 | 0.00 | 0.0 | 0.0 | 22138.5>> |
| 203 | 18216.93 | 50.89 | 0.00 | 0.0 | 0.0 | -7180.0<< |
| 37 | 28214.18>> | 308.41 | 0.00 | 0.0 | 0.0 | 4355.4 |
| 37 | 12757.17<< | 144.56 | 0.00 | 0.0 | 0.0 | 483.1 |
| 37 | 26864.45 | 655.96>> | 0.00 | 0.0 | 0.0 | 3167.1 |
| 37 | 14137.32 | -106.38<< | 0.00 | 0.0 | 0.0 | 1945.5 |
| 37 | 16373.21 | 12.87 | 0.00>> | 0.0 | 0.0 | 702.5 |
| 37 | 15958.09 | 12.60 | 0.00<< | 0.0 | 0.0 | 688.7 |
| 37 | 16373.21 | 12.87 | 0.00 | 0.0>> | 0.0 | 702.5 |
| 37 | 15958.09 | 12.60 | 0.00 | 0.0<< | 0.0 | 688.7 |
| 37 | 16373.21 | 12.87 | 0.00 | 0.0 | 0.0>> | 702.5 |
| 37 | 15958.09 | 12.60 | 0.00 | 0.0 | 0.0<< | 688.7 |
| 37 | 22266.90 | 426.58 | 0.00 | 0.0 | 0.0 | 13481.9>> |
| 37 | 18526.21 | 69.91 | 0.00 | 0.0 | 0.0 | -8490.8<< |

| BARRA 202 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 202 | 26818.23>> | 127.06 | 0.00 | 0.0 | 0.0 | 6213.9 |
| 202 | 11859.11<< | 67.32 | 0.00 | 0.0 | 0.0 | 1876.5 |
| 202 | 17748.57 | 417.80>> | 0.00 | 0.0 | 0.0 | 1202.2 |
| 202 | 21136.01 | -221.04<< | 0.00 | 0.0 | 0.0 | 6904.3 |
| 202 | 15422.25 | -5.32 | 0.00>> | 0.0 | 0.0 | 510.2 |
| 202 | 15250.26 | -5.17 | 0.00<< | 0.0 | 0.0 | 500.6 |
| 202 | 15422.25 | -5.32 | 0.00 | 0.0>> | 0.0 | 510.2 |
| 202 | 15250.26 | -5.17 | 0.00 | 0.0<< | 0.0 | 500.6 |
| 202 | 15422.25 | -5.32 | 0.00 | 0.0 | 0.0>> | 510.2 |
| 202 | 15250.26 | -5.17 | 0.00 | 0.0 | 0.0<< | 500.6 |
| 202 | 21035.29 | -18.55 | 0.00 | 0.0 | 0.0 | 11548.7>> |
| 202 | 17456.11 | 167.73 | 0.00 | 0.0 | 0.0 | -3925.2<< |
| 17 | 26818.23>> | 127.06 | 0.00 | 0.0 | 0.0 | 3849.5 |
| 17 | 11859.11<< | 67.32 | 0.00 | 0.0 | 0.0 | 625.2 |
| 17 | 17748.57 | 417.80>> | 0.00 | 0.0 | 0.0 | -6578.5 |
| 17 | 21136.01 | -221.04<< | 0.00 | 0.0 | 0.0 | 11025.1 |
| 17 | 15422.25 | -5.32 | 0.00>> | 0.0 | 0.0 | 612.1 |
| 17 | 15250.26 | -5.17 | 0.00<< | 0.0 | 0.0 | 599.7 |
| 17 | 15422.25 | -5.32 | 0.00 | 0.0>> | 0.0 | 612.1 |
| 17 | 15250.26 | -5.17 | 0.00 | 0.0<< | 0.0 | 599.7 |
| 17 | 15422.25 | -5.32 | 0.00 | 0.0 | 0.0>> | 612.1 |
| 17 | 15250.26 | -5.17 | 0.00 | 0.0 | 0.0<< | 599.7 |
| 17 | 21199.65 | -46.56 | 0.00 | 0.0 | 0.0 | 12147.5>> |
| 17 | 17772.76 | 211.64 | 0.00 | 0.0 | 0.0 | -7461.8<< |

| BARRA 204 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 204 | 27801.26>> | -76.93 | 0.00 | 0.0 | 0.0 | 1564.0 |
| 204 | 12521.18<< | -3.90 | 0.00 | 0.0 | 0.0 | 576.0 |
| 204 | 18417.90 | 251.38>> | 0.00 | 0.0 | 0.0 | 3562.9 |
| 204 | 22009.32 | -331.38<< | 0.00 | 0.0 | 0.0 | -1391.5 |
| 204 | 16053.83 | -17.14 | 0.00>> | 0.0 | 0.0 | 2.3 |
| 204 | 15711.91 | -16.80 | 0.00<< | 0.0 | 0.0 | 2.1 |
| 204 | 16053.83 | -17.14 | 0.00 | 0.0>> | 0.0 | 2.3 |
| 204 | 15711.91 | -16.80 | 0.00 | 0.0<< | 0.0 | 2.1 |
| 204 | 16053.83 | -17.14 | 0.00 | 0.0 | 0.0>> | 2.3 |
| 204 | 15711.91 | -16.80 | 0.00 | 0.0 | 0.0<< | 2.1 |
| 204 | 26373.19 | -10.03 | 0.00 | 0.0 | 0.0 | 3996.0>> |
| 204 | 18482.55 | -318.56 | 0.00 | 0.0 | 0.0 | -1449.0<< |
| 57 | 27801.26>> | -76.93 | 0.00 | 0.0 | 0.0 | 4919.2 |
| 57 | 12521.18<< | -3.90 | 0.00 | 0.0 | 0.0 | 744.3 |
| 57 | 18417.90 | 251.38>> | 0.00 | 0.0 | 0.0 | -7406.1 |
| 57 | 22009.32 | -331.38<< | 0.00 | 0.0 | 0.0 | 13065.2 |
| 57 | 16053.83 | -17.14 | 0.00>> | 0.0 | 0.0 | 748.5 |
| 57 | 15711.91 | -16.80 | 0.00<< | 0.0 | 0.0 | 733.4 |
| 57 | 16053.83 | -17.14 | 0.00 | 0.0>> | 0.0 | 748.5 |
| 57 | 15711.91 | -16.80 | 0.00 | 0.0<< | 0.0 | 733.4 |
| 57 | 16053.83 | -17.14 | 0.00 | 0.0 | 0.0>> | 748.5 |
| 57 | 15711.91 | -16.80 | 0.00 | 0.0 | 0.0<< | 733.4 |
| 57 | 21819.19 | -311.87 | 0.00 | 0.0 | 0.0 | 14779.8>> |
| 57 | 18229.45 | 231.89 | 0.00 | 0.0 | 0.0 | -8785.9<< |

LAV-Gelida. V.Rierussa. ELS Comb Rara.EC71-71(1.00*G+1.00*LEV+1.00*P+1.0*SC+0.6*GT)

| BARRA 205 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 205 | 28594.90>> | 319.24 | 0.00 | 0.0 | 0.0 | 11116.0 |
| 205 | 13137.88<< | 131.65 | 0.00 | 0.0 | 0.0 | 3257.3 |
| 205 | 27249.14 | 645.15>> | 0.00 | 0.0 | 0.0 | 16892.1 |
| 205 | 14501.10 | -94.91<< | 0.00 | 0.0 | 0.0 | -140.8 |
| 205 | 16753.75 | 13.45 | 0.00>> | 0.0 | 0.0 | 932.2 |
| 205 | 16338.61 | 13.19 | 0.00<< | 0.0 | 0.0 | 912.8 |
| 205 | 16753.75 | 13.45 | 0.00 | 0.0>> | 0.0 | 932.2 |
| 205 | 16338.61 | 13.19 | 0.00 | 0.0<< | 0.0 | 912.8 |
| 205 | 16753.75 | 13.45 | 0.00 | 0.0 | 0.0>> | 932.2 |
| 205 | 16338.61 | 13.19 | 0.00 | 0.0 | 0.0<< | 912.8 |
| 205 | 22486.42 | 441.22 | 0.00 | 0.0 | 0.0 | 22538.8>> |
| 205 | 18586.67 | 50.07 | 0.00 | 0.0 | 0.0 | -7058.6<< |
| 77 | 28594.90>> | 319.24 | 0.00 | 0.0 | 0.0 | 4210.0 |
| 77 | 13137.88<< | 131.65 | 0.00 | 0.0 | 0.0 | 408.5 |
| 77 | 27249.14 | 645.15>> | 0.00 | 0.0 | 0.0 | 2936.5 |
| 77 | 14501.10 | -94.91<< | 0.00 | 0.0 | 0.0 | 1911.2 |
| 77 | 16753.75 | 13.45 | 0.00>> | 0.0 | 0.0 | 640.0 |
| 77 | 16338.61 | 13.19 | 0.00<< | 0.0 | 0.0 | 626.4 |
| 77 | 16753.75 | 13.45 | 0.00 | 0.0>> | 0.0 | 640.0 |
| 77 | 16338.61 | 13.19 | 0.00 | 0.0<< | 0.0 | 626.4 |
| 77 | 16753.75 | 13.45 | 0.00 | 0.0 | 0.0>> | 640.0 |
| 77 | 16338.61 | 13.19 | 0.00 | 0.0 | 0.0<< | 626.4 |
| 77 | 22652.10 | 428.86 | 0.00 | 0.0 | 0.0 | 13175.4>> |
| 77 | 18908.52 | 73.52 | 0.00 | 0.0 | 0.0 | -8470.5<< |

| BARRA 206 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 206 | 27140.24>> | 46.74 | 0.00 | 0.0 | 0.0 | 4887.8 |
| 206 | 12208.06<< | 52.65 | 0.00 | 0.0 | 0.0 | 1787.9 |
| 206 | 18107.20 | 398.96>> | 0.00 | 0.0 | 0.0 | 2979.4 |
| 206 | 21531.01 | -296.12<< | 0.00 | 0.0 | 0.0 | 3913.4 |
| 206 | 15763.71 | -9.56 | 0.00>> | 0.0 | 0.0 | 336.1 |
| 206 | 15591.82 | -9.33 | 0.00<< | 0.0 | 0.0 | 329.3 |
| 206 | 15763.71 | -9.56 | 0.00 | 0.0>> | 0.0 | 336.1 |
| 206 | 15591.82 | -9.33 | 0.00 | 0.0<< | 0.0 | 329.3 |
| 206 | 15763.71 | -9.56 | 0.00 | 0.0 | 0.0>> | 336.1 |
| 206 | 15591.82 | -9.33 | 0.00 | 0.0 | 0.0<< | 329.3 |
| 206 | 21801.56 | -90.91 | 0.00 | 0.0 | 0.0 | 8731.7>> |
| 206 | 15435.05 | 71.15 | 0.00 | 0.0 | 0.0 | -2375.1<< |
| 97 | 27140.24>> | 46.74 | 0.00 | 0.0 | 0.0 | 3782.5 |
| 97 | 12208.06<< | 52.65 | 0.00 | 0.0 | 0.0 | 542.9 |
| 97 | 18107.20 | 398.96>> | 0.00 | 0.0 | 0.0 | -6448.8 |
| 97 | 21531.01 | -296.12<< | 0.00 | 0.0 | 0.0 | 10910.1 |
| 97 | 15763.71 | -9.56 | 0.00>> | 0.0 | 0.0 | 561.0 |
| 97 | 15591.82 | -9.33 | 0.00<< | 0.0 | 0.0 | 548.8 |
| 97 | 15763.71 | -9.56 | 0.00 | 0.0>> | 0.0 | 561.0 |
| 97 | 15591.82 | -9.33 | 0.00 | 0.0<< | 0.0 | 548.8 |
| 97 | 15763.71 | -9.56 | 0.00 | 0.0 | 0.0>> | 561.0 |
| 97 | 15591.82 | -9.33 | 0.00 | 0.0 | 0.0<< | 548.8 |
| 97 | 21539.26 | -151.88 | 0.00 | 0.0 | 0.0 | 11948.5>> |
| 97 | 18116.48 | 237.94 | 0.00 | 0.0 | 0.0 | -7464.0<< |

LAV-Gelida. V.Rierussa. ELS Comb Rara.EC71-71(1.00*G+1.00*LEV+1.00*P+1.0*SC+0.6*GT)

| BARRA 207 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 207 | 8929.98>> | 181.90 | 0.00 | 0.0 | 0.0 | 5601.1 |
| 207 | 3435.15<< | 54.29 | 0.00 | 0.0 | 0.0 | 1411.0 |
| 207 | 7123.13 | 301.48>> | 0.00 | 0.0 | 0.0 | 9715.9 |
| 207 | 3998.02 | -134.65<< | 0.00 | 0.0 | 0.0 | -2008.7 |
| 207 | 5112.00 | 4.16 | 0.00>> | 0.0 | 0.0 | 427.0 |
| 207 | 4845.91 | 4.04 | 0.00<< | 0.0 | 0.0 | 420.5 |
| 207 | 5112.00 | 4.16 | 0.00 | 0.0>> | 0.0 | 427.0 |
| 207 | 4845.91 | 4.04 | 0.00 | 0.0<< | 0.0 | 420.5 |
| 207 | 5112.00 | 4.16 | 0.00 | 0.0 | 0.0>> | 427.0 |
| 207 | 4845.91 | 4.04 | 0.00 | 0.0 | 0.0<< | 420.5 |
| 207 | 7069.69 | 278.09 | 0.00 | 0.0 | 0.0 | 11445.3>> |
| 207 | 5851.76 | -71.27 | 0.00 | 0.0 | 0.0 | -5528.0<< |
| 113 | 8929.98>> | 181.90 | 0.00 | 0.0 | 0.0 | 3484.7 |
| 113 | 3435.15<< | 54.29 | 0.00 | 0.0 | 0.0 | 778.7 |
| 113 | 7123.13 | 301.48>> | 0.00 | 0.0 | 0.0 | 6208.9 |
| 113 | 3998.02 | -134.65<< | 0.00 | 0.0 | 0.0 | -443.4 |
| 113 | 5112.00 | 4.16 | 0.00>> | 0.0 | 0.0 | 377.9 |
| 113 | 4845.91 | 4.04 | 0.00<< | 0.0 | 0.0 | 372.7 |
| 113 | 5112.00 | 4.16 | 0.00 | 0.0>> | 0.0 | 377.9 |
| 113 | 4845.91 | 4.04 | 0.00 | 0.0<< | 0.0 | 372.7 |
| 113 | 5112.00 | 4.16 | 0.00 | 0.0 | 0.0>> | 377.9 |
| 113 | 4845.91 | 4.04 | 0.00 | 0.0 | 0.0<< | 372.7 |
| 113 | 7155.76 | 189.15 | 0.00 | 0.0 | 0.0 | 8658.9>> |
| 113 | 5938.79 | -10.20 | 0.00 | 0.0 | 0.0 | -4980.5<< |

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TITULO
=======
LAV-Gelida. V.Rierussa. ELS Comb Rara.ECSW-71(1.00*G+1.00*LEV+1.00*P+1.0*SC+0.6*GT)

FICHERO DE GEOMETRIA COMPLETA
=============================
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
================================
1
```

| Fich | Num. Nudos | Num. barras | Num. hipotesis | NOMBRE FICHERO |
|---|---|---|---|---|
| 1 | 120 | 119 | 161 | ESFec.TXT |

| Fich | Hipotesis | Caracter | Coeficiente |
|---|---|---|---|
| 1 | 1 | 1 | 1.0 |
| 1 | 2 | 1 | 1.0 |
| 1 | 3 | 1 | 1.0 |
| 1 | 4 | 3 | 1.0 |
| 1 | 5 | 3 | 1.0 |
| 1 | 6 | 3 | 1.0 |
| 1 | 7 | 2 | 0.5 |
| 1 | 8 | 2 | 0.5 |
| 1 | 9 | 2 | 0.5 |
| 1 | 10 | 2 | 0.5 |
| 1 | 11 | 2 | 0.5 |
| 1 | 12 | 2 | 0.5 |
| 1 | 13 | 2 | 0.5 |
| 1 | 14 | 2 | 0.5 |
| 1 | 15 | 2 | 0.5 |
| 1 | 16 | 2 | 0.5 |
| 1 | 17 | 2 | 0.5 |
| 1 | 18 | 2 | 0.5 |
| 1 | 19 | 4 | 0.0 |
| 1 | 20 | 5 | 1.0 |
| 1 | 21 | 4 | 0.0 |
| 1 | 22 | 5 | 1.0 |
| 1 | 23 | 4 | 0.0 |
| 1 | 24 | 5 | 1.0 |
| 1 | 25 | 4 | 0.0 |
| 1 | 26 | 5 | 1.0 |
| 1 | 27 | 4 | 0.0 |
| 1 | 28 | 5 | 1.0 |
| 1 | 29 | 4 | 0.0 |
| 1 | 30 | 5 | 1.0 |
| 1 | 31 | 4 | 0.0 |
| 1 | 32 | 5 | 1.0 |
| 1 | 33 | 4 | 0.0 |
| 1 | 34 | 5 | 1.0 |
| 1 | 35 | 4 | 0.0 |
| 1 | 36 | 5 | 1.0 |
| 1 | 37 | 4 | 0.0 |
| 1 | 38 | 5 | 1.0 |
| 1 | 39 | 4 | 0.0 |
| 1 | 40 | 5 | 1.0 |
| 1 | 41 | 6 | 0.0 |
| 1 | 42 | 7 | 1.0 |
| 1 | 43 | 6 | 0.0 |
| 1 | 44 | 7 | 1.0 |
| 1 | 45 | 6 | 0.0 |
| 1 | 46 | 7 | 1.0 |
| 1 | 47 | 6 | 0.0 |
| 1 | 48 | 7 | 1.0 |
| 1 | 49 | 6 | 0.0 |
| 1 | 50 | 7 | 1.0 |
| 1 | 51 | 6 | 0.0 |
| 1 | 52 | 7 | 1.0 |
| 1 | 53 | 6 | 0.0 |
| 1 | 54 | 7 | 1.0 |
| 1 | 55 | 6 | 0.0 |
| 1 | 56 | 7 | 1.0 |
| 1 | 57 | 6 | 0.0 |
| 1 | 58 | 7 | 1.0 |
| 1 | 59 | 6 | 0.0 |
| 1 | 60 | 7 | 1.0 |
| 1 | 61 | 6 | 0.0 |
| 1 | 62 | 7 | 1.0 |
| 1 | 63 | 6 | 0.0 |
| 1 | 64 | 7 | 1.0 |
| 1 | 65 | 6 | 0.0 |
| 1 | 66 | 7 | 1.0 |
| 1 | 67 | 6 | 0.0 |
| 1 | 68 | 7 | 1.0 |
| 1 | 69 | 6 | 0.0 |
| 1 | 70 | 7 | 1.0 |
| 1 | 71 | 6 | 0.0 |
| 1 | 72 | 7 | 1.0 |
| 1 | 73 | 6 | 0.0 |
| 1 | 74 | 7 | 1.0 |
| 1 | 75 | 6 | 0.0 |
| 1 | 76 | 7 | 1.0 |
| 1 | 77 | 6 | 0.0 |
| 1 | 78 | 7 | 1.0 |
| 1 | 79 | 6 | 0.0 |
| 1 | 80 | 7 | 1.0 |
| 1 | 81 | 6 | 0.0 |
| 1 | 82 | 7 | 1.0 |
| 1 | 83 | 6 | 0.0 |
| 1 | 84 | 7 | 1.0 |
| 1 | 85 | 6 | 0.0 |
| 1 | 86 | 7 | 1.0 |
| 1 | 87 | 6 | 0.0 |
| 1 | 88 | 7 | 1.0 |
| 1 | 89 | 6 | 0.0 |
| 1 | 90 | 7 | 1.0 |
| 1 | 91 | 6 | 0.0 |
| 1 | 92 | 7 | 1.0 |
| 1 | 93 | 6 | 0.0 |
| 1 | 94 | 7 | 1.0 |
| 1 | 95 | 6 | 0.0 |
| 1 | 96 | 7 | 1.0 |
| 1 | 97 | 8 | 1.0 |
| 1 | 98 | 9 | 0.0 |
| 1 | 99 | 8 | 1.0 |
| 1 | 100 | 9 | 0.0 |
| 1 | 101 | 8 | 1.0 |
| 1 | 102 | 9 | 0.0 |
| 1 | 103 | 8 | 1.0 |
| 1 | 104 | 9 | 0.0 |
| 1 | 105 | 8 | 1.0 |
| 1 | 106 | 9 | 0.0 |
| 1 | 107 | 8 | 1.0 |
| 1 | 108 | 9 | 0.0 |
| 1 | 109 | 8 | 1.0 |
| 1 | 110 | 9 | 0.0 |

| | | | |
|---|---|---|---|
| 1 | 111 | 8 | 1.0 |
| 1 | 112 | 9 | 0.0 |
| 1 | 113 | 8 | 1.0 |
| 1 | 114 | 9 | 0.0 |
| 1 | 115 | 8 | 1.0 |
| 1 | 116 | 9 | 0.0 |
| 1 | 117 | 8 | 1.0 |
| 1 | 118 | 9 | 0.0 |
| 1 | 119 | 8 | 1.0 |
| 1 | 120 | 10 | 0.0 |
| 1 | 121 | 8 | 1.0 |
| 1 | 122 | 10 | 0.0 |
| 1 | 123 | 8 | 1.0 |
| 1 | 124 | 10 | 0.0 |
| 1 | 125 | 8 | 1.0 |
| 1 | 126 | 10 | 0.0 |
| 1 | 127 | 8 | 1.0 |
| 1 | 128 | 10 | 0.0 |
| 1 | 129 | 8 | 1.0 |
| 1 | 130 | 10 | 0.0 |
| 1 | 131 | 8 | 1.0 |
| 1 | 132 | 10 | 0.0 |
| 1 | 133 | 8 | 1.0 |
| 1 | 134 | 10 | 0.0 |
| 1 | 135 | 8 | 1.0 |
| 1 | 136 | 10 | 0.0 |
| 1 | 137 | 8 | 1.0 |
| 1 | 138 | 10 | 0.0 |
| 1 | 139 | 8 | 1.0 |
| 1 | 140 | 10 | 0.0 |
| 1 | 141 | 2 | 0.6 |
| 1 | 142 | 1 | 20.433 |
| 1 | 143 | 1 | 2.919 |
| 1 | 144 | 1 | 2.919 |
| 1 | 145 | 1 | 11.676 |
| 1 | 146 | 1 | 2.919 |
| 1 | 147 | 1 | 2.919 |
| 1 | 148 | 1 | 6.464 |
| 1 | 149 | 1 | 6.464 |
| 1 | 150 | 1 | 6.464 |
| 1 | 151 | 1 | 6.464 |
| 1 | 152 | 1 | 6.464 |
| 1 | 153 | 1 | 6.464 |
| 1 | 154 | 1 | 6.464 |
| 1 | 155 | 1 | 6.464 |
| 1 | 156 | 1 | 6.464 |
| 1 | 157 | 1 | 6.464 |
| 1 | 158 | 1 | 6.464 |
| 1 | 159 | 1 | 6.464 |
| 1 | 160 | 1 | 6.464 |
| 1 | 161 | 1 | 6.464 |

LAV-Gelida. V.Rierussa. ELS Comb Rara.ECSW-71(1.00*G+1.00*LEV+1.00*P+1.0*SC+0.6*GT)

| BARRA 201 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 201 | 9856.08>> | 141.59 | -0.01 | 0.0 | 0.1 | 4306.8 |
| 201 | 3797.26<< | 18.84 | 0.00 | 0.0 | 0.0 | 738.5 |
| 201 | 7591.38 | 217.85>> | -0.01 | 0.0 | 0.1 | 8077.8 |
| 201 | 4368.91 | -134.31<< | 0.00 | 0.0 | 0.0 | -1750.6 |
| 201 | 5483.01 | 3.53 | 0.01>> | 0.0 | -0.1 | 330.9 |
| 201 | 5747.17 | 15.65 | -0.01<< | 0.0 | 0.1 | -528.3 |
| 201 | 5493.56 | 1.50 | 0.00 | 0.0>> | 0.0 | 329.6 |
| 201 | 5227.53 | 1.45 | 0.00 | 0.0<< | 0.0 | 324.1 |
| 201 | 7123.79 | -6.22 | -0.01 | 0.0 | 0.1>> | -4361.7 |
| 201 | 5232.20 | 5.93 | 0.01 | 0.0 | -0.1<< | 370.4 |
| 201 | 7905.30 | 161.79 | 0.00 | 0.0 | 0.0 | 9052.9>> |
| 201 | 6311.23 | -83.50 | -0.01 | 0.0 | 0.1 | -5603.1<< |
| 1 | 9856.08>> | 141.59 | -0.01 | 0.0 | 0.0 | 2943.0 |
| 1 | 3797.26<< | 18.84 | 0.00 | 0.0 | 0.0 | 556.7 |
| 1 | 7591.38 | 217.85>> | -0.01 | 0.0 | 0.0 | 5979.6 |
| 1 | 4368.91 | -134.31<< | 0.00 | 0.0 | 0.0 | -457.5 |
| 1 | 5483.01 | 3.53 | 0.01>> | 0.0 | 0.0 | 296.4 |
| 1 | 5747.17 | 15.65 | -0.01<< | 0.0 | 0.0 | -679.3 |
| 1 | 5493.56 | 1.50 | 0.00 | 0.0>> | 0.0 | 314.7 |
| 1 | 5227.53 | 1.45 | 0.00 | 0.0<< | 0.0 | 309.9 |
| 1 | 5493.56 | 1.50 | 0.00 | 0.0 | 0.0>> | 314.7 |
| 1 | 5227.53 | 1.45 | 0.00 | 0.0 | 0.0<< | 309.9 |
| 1 | 7854.55 | 125.33 | 0.00 | 0.0 | 0.0 | 7682.1>> |
| 1 | 6320.78 | 5.49 | -0.01 | 0.0 | 0.0 | -5182.7<< |

| BARRA 202 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 202 | 27148.38>> | 7.31 | 0.00 | 0.0 | 0.0 | 4089.8 |
| 202 | 11837.22<< | 52.00 | 0.00 | 0.0 | 0.0 | 1531.8 |
| 202 | 17759.29 | 453.23>> | 0.00 | 0.0 | 0.0 | 2203.1 |
| 202 | 21472.96 | -335.76<< | 0.00 | 0.0 | 0.0 | 4799.1 |
| 202 | 15422.25 | -5.32 | 0.00>> | 0.0 | 0.0 | 510.2 |
| 202 | 15250.26 | -5.17 | 0.00<< | 0.0 | 0.0 | 500.6 |
| 202 | 15422.25 | -5.32 | 0.00 | 0.0>> | 0.0 | 510.2 |
| 202 | 15250.26 | -5.17 | 0.00 | 0.0<< | 0.0 | 500.6 |
| 202 | 15422.25 | -5.32 | 0.00 | 0.0 | 0.0>> | 510.2 |
| 202 | 15250.26 | -5.17 | 0.00 | 0.0 | 0.0<< | 500.6 |
| 202 | 20585.13 | -94.64 | 0.00 | 0.0 | 0.0 | 8358.5>> |
| 202 | 17462.02 | 165.50 | 0.00 | 0.0 | 0.0 | -3928.7<< |
| 17 | 27148.38>> | 7.31 | 0.00 | 0.0 | 0.0 | 3956.2 |
| 17 | 11837.22<< | 52.00 | 0.00 | 0.0 | 0.0 | 565.9 |
| 17 | 17759.29 | 453.23>> | 0.00 | 0.0 | 0.0 | -6237.6 |
| 17 | 21472.96 | -335.76<< | 0.00 | 0.0 | 0.0 | 11057.1 |
| 17 | 15422.25 | -5.32 | 0.00>> | 0.0 | 0.0 | 612.1 |
| 17 | 15250.26 | -5.17 | 0.00<< | 0.0 | 0.0 | 599.7 |
| 17 | 15422.25 | -5.32 | 0.00 | 0.0>> | 0.0 | 612.1 |
| 17 | 15250.26 | -5.17 | 0.00 | 0.0<< | 0.0 | 599.7 |
| 17 | 15422.25 | -5.32 | 0.00 | 0.0 | 0.0>> | 612.1 |
| 17 | 15250.26 | -5.17 | 0.00 | 0.0 | 0.0<< | 599.7 |
| 17 | 21833.70 | -252.80 | 0.00 | 0.0 | 0.0 | 11407.9>> |
| 17 | 17772.76 | 211.64 | 0.00 | 0.0 | 0.0 | -7461.8<< |

LAV-Gelida. V.Rierussa. ELS Comb Rara.ECSW-71(1.00*G+1.00*LEV+1.00*P+1.0*SC+0.6*GT)

| BARRA 203 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 203 | 28438.23>> | 124.40 | 0.00 | 0.0 | 0.0 | 6763.7 |
| 203 | 12736.38<< | 106.21 | 0.00 | 0.0 | 0.0 | 2627.7 |
| 203 | 22505.05 | 462.03>> | 0.00 | 0.0 | 0.0 | 2506.0 |
| 203 | 17775.24 | -214.70<< | 0.00 | 0.0 | 0.0 | 5153.5 |
| 203 | 16373.21 | 12.87 | 0.00>> | 0.0 | 0.0 | 960.5 |
| 203 | 15958.09 | 12.60 | 0.00<< | 0.0 | 0.0 | 941.3 |
| 203 | 16373.21 | 12.87 | 0.00 | 0.0>> | 0.0 | 960.5 |
| 203 | 15958.09 | 12.60 | 0.00 | 0.0<< | 0.0 | 941.3 |
| 203 | 16373.21 | 12.87 | 0.00 | 0.0 | 0.0>> | 960.5 |
| 203 | 15958.09 | 12.60 | 0.00 | 0.0 | 0.0<< | 941.3 |
| 203 | 22998.51 | -45.94 | 0.00 | 0.0 | 0.0 | 11805.0>> |
| 203 | 18197.64 | 49.83 | 0.00 | 0.0 | 0.0 | -7182.7<< |
| 37 | 28438.23>> | 124.40 | 0.00 | 0.0 | 0.0 | 4260.6 |
| 37 | 12736.38<< | 106.21 | 0.00 | 0.0 | 0.0 | 490.9 |
| 37 | 22505.05 | 462.03>> | 0.00 | 0.0 | 0.0 | -6793.7 |
| 37 | 17775.24 | -214.70<< | 0.00 | 0.0 | 0.0 | 9476.5 |
| 37 | 16373.21 | 12.87 | 0.00>> | 0.0 | 0.0 | 702.5 |
| 37 | 15958.09 | 12.60 | 0.00<< | 0.0 | 0.0 | 688.7 |
| 37 | 16373.21 | 12.87 | 0.00 | 0.0>> | 0.0 | 702.5 |
| 37 | 15958.09 | 12.60 | 0.00 | 0.0<< | 0.0 | 688.7 |
| 37 | 16373.21 | 12.87 | 0.00 | 0.0 | 0.0>> | 702.5 |
| 37 | 15958.09 | 12.60 | 0.00 | 0.0 | 0.0<< | 688.7 |
| 37 | 22998.51 | -46.14 | 0.00 | 0.0 | 0.0 | 12734.8>> |
| 37 | 18526.21 | 69.91 | 0.00 | 0.0 | 0.0 | -8490.8<< |

LAV-Gelida. V.Rierussa. ELS Comb Rara.ECSW-71(1.00*G+1.00*LEV+1.00*P+1.0*SC+0.6*GT)

| BARRA 205 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 205 | 28818.00>> | 136.54 | 0.00 | 0.0 | 0.0 | 7023.9 |
| 205 | 13117.21<< | 96.71 | 0.00 | 0.0 | 0.0 | 2511.5 |
| 205 | 22885.96 | 430.50>> | 0.00 | 0.0 | 0.0 | 2464.6 |
| 205 | 18154.12 | -186.57<< | 0.00 | 0.0 | 0.0 | 5309.1 |
| 205 | 16753.75 | 13.45 | 0.00>> | 0.0 | 0.0 | 932.2 |
| 205 | 16338.61 | 13.19 | 0.00<< | 0.0 | 0.0 | 912.8 |
| 205 | 16753.75 | 13.45 | 0.00 | 0.0>> | 0.0 | 932.2 |
| 205 | 16338.61 | 13.19 | 0.00 | 0.0<< | 0.0 | 912.8 |
| 205 | 16753.75 | 13.45 | 0.00 | 0.0 | 0.0>> | 932.2 |
| 205 | 16338.61 | 13.19 | 0.00 | 0.0 | 0.0<< | 912.8 |
| 205 | 23359.86 | -25.64 | 0.00 | 0.0 | 0.0 | 11964.9>> |
| 205 | 18584.96 | 50.27 | 0.00 | 0.0 | 0.0 | -7051.9<< |
| 77 | 28818.00>> | 136.54 | 0.00 | 0.0 | 0.0 | 4069.6 |
| 77 | 13117.21<< | 96.71 | 0.00 | 0.0 | 0.0 | 418.4 |
| 77 | 22885.96 | 430.50>> | 0.00 | 0.0 | 0.0 | -6848.0 |
| 77 | 18154.12 | -186.57<< | 0.00 | 0.0 | 0.0 | 9343.6 |
| 77 | 16753.75 | 13.45 | 0.00>> | 0.0 | 0.0 | 640.0 |
| 77 | 16338.61 | 13.19 | 0.00<< | 0.0 | 0.0 | 626.4 |
| 77 | 16753.75 | 13.45 | 0.00 | 0.0>> | 0.0 | 640.0 |
| 77 | 16338.61 | 13.19 | 0.00 | 0.0<< | 0.0 | 626.4 |
| 77 | 16753.75 | 13.45 | 0.00 | 0.0 | 0.0>> | 640.0 |
| 77 | 16338.61 | 13.19 | 0.00 | 0.0 | 0.0<< | 626.4 |
| 77 | 23378.77 | -27.29 | 0.00 | 0.0 | 0.0 | 12534.1>> |
| 77 | 18908.52 | 73.52 | 0.00 | 0.0 | 0.0 | -8470.5<< |

| BARRA 204 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 204 | 28028.35>> | -97.42 | 0.00 | 0.0 | 0.0 | 257.4 |
| 204 | 12500.95<< | -5.53 | 0.00 | 0.0 | 0.0 | 443.6 |
| 204 | 18345.26 | 248.81>> | 0.00 | 0.0 | 0.0 | 3393.4 |
| 204 | 22236.41 | -351.87<< | 0.00 | 0.0 | 0.0 | -2698.0 |
| 204 | 16053.83 | -17.14 | 0.00>> | 0.0 | 0.0 | 2.3 |
| 204 | 15711.91 | -16.80 | 0.00<< | 0.0 | 0.0 | 2.1 |
| 204 | 16053.83 | -17.14 | 0.00 | 0.0>> | 0.0 | 2.3 |
| 204 | 15711.91 | -16.80 | 0.00 | 0.0<< | 0.0 | 2.1 |
| 204 | 16053.83 | -17.14 | 0.00 | 0.0 | 0.0>> | 2.3 |
| 204 | 15711.91 | -16.80 | 0.00 | 0.0 | 0.0<< | 2.1 |
| 204 | 22095.03 | 234.96 | 0.00 | 0.0 | 0.0 | 3851.2>> |
| 204 | 18709.64 | -339.05 | 0.00 | 0.0 | 0.0 | -2755.5<< |
| 57 | 28028.35>> | -97.42 | 0.00 | 0.0 | 0.0 | 4506.6 |
| 57 | 12500.95<< | -5.53 | 0.00 | 0.0 | 0.0 | 683.0 |
| 57 | 18345.26 | 248.81>> | 0.00 | 0.0 | 0.0 | -7463.8 |
| 57 | 22236.41 | -351.87<< | 0.00 | 0.0 | 0.0 | 12652.6 |
| 57 | 16053.83 | -17.14 | 0.00>> | 0.0 | 0.0 | 748.5 |
| 57 | 15711.91 | -16.80 | 0.00<< | 0.0 | 0.0 | 733.4 |
| 57 | 16053.83 | -17.14 | 0.00 | 0.0>> | 0.0 | 748.5 |
| 57 | 15711.91 | -16.80 | 0.00 | 0.0<< | 0.0 | 733.4 |
| 57 | 16053.83 | -17.14 | 0.00 | 0.0 | 0.0>> | 748.5 |
| 57 | 15711.91 | -16.80 | 0.00 | 0.0 | 0.0<< | 733.4 |
| 57 | 22608.66 | -344.95 | 0.00 | 0.0 | 0.0 | 13117.9>> |
| 57 | 18229.45 | 231.89 | 0.00 | 0.0 | 0.0 | -8785.9<< |

| BARRA 206 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 206 | 27472.64>> | -37.90 | 0.00 | 0.0 | 0.0 | 2928.5 |
| 206 | 12186.33<< | 38.59 | 0.00 | 0.0 | 0.0 | 1404.3 |
| 206 | 18102.01 | 419.13>> | 0.00 | 0.0 | 0.0 | 3593.1 |
| 206 | 21863.41 | -380.76<< | 0.00 | 0.0 | 0.0 | 1954.2 |
| 206 | 15763.71 | -9.56 | 0.00>> | 0.0 | 0.0 | 336.1 |
| 206 | 15591.82 | -9.33 | 0.00<< | 0.0 | 0.0 | 329.3 |
| 206 | 15763.71 | -9.56 | 0.00 | 0.0>> | 0.0 | 336.1 |
| 206 | 15591.82 | -9.33 | 0.00 | 0.0<< | 0.0 | 329.3 |
| 206 | 15763.71 | -9.56 | 0.00 | 0.0 | 0.0>> | 336.1 |
| 206 | 15591.82 | -9.33 | 0.00 | 0.0 | 0.0<< | 329.3 |
| 206 | 18739.89 | 58.09 | 0.00 | 0.0 | 0.0 | 6007.7>> |
| 206 | 15440.70 | 70.25 | 0.00 | 0.0 | 0.0 | -2360.6<< |
| 97 | 27472.64>> | -37.90 | 0.00 | 0.0 | 0.0 | 3823.3 |
| 97 | 12186.33<< | 38.59 | 0.00 | 0.0 | 0.0 | 491.3 |
| 97 | 18102.01 | 419.13>> | 0.00 | 0.0 | 0.0 | -6311.9 |
| 97 | 21863.41 | -380.76<< | 0.00 | 0.0 | 0.0 | 10950.8 |
| 97 | 15763.71 | -9.56 | 0.00>> | 0.0 | 0.0 | 561.0 |
| 97 | 15591.82 | -9.33 | 0.00<< | 0.0 | 0.0 | 548.8 |
| 97 | 15763.71 | -9.56 | 0.00 | 0.0>> | 0.0 | 561.0 |
| 97 | 15591.82 | -9.33 | 0.00 | 0.0<< | 0.0 | 548.8 |
| 97 | 15763.71 | -9.56 | 0.00 | 0.0 | 0.0>> | 561.0 |
| 97 | 15591.82 | -9.33 | 0.00 | 0.0 | 0.0<< | 548.8 |
| 97 | 22167.33 | -318.09 | 0.00 | 0.0 | 0.0 | 11306.3>> |
| 97 | 18116.48 | 237.94 | 0.00 | 0.0 | 0.0 | -7464.0<< |

LAV-Gelida. V.Rierussa. ELS Comb Rara.ECSW-71(1.00*G+1.00*LEV+1.00*P+1.0*SC+0.6*GT)

| BARRA 207 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 207 | 9241.14>> | 138.20 | 0.00 | 0.0 | 0.0 | 4192.0 |
| 207 | 3418.04<< | 40.44 | 0.00 | 0.0 | 0.0 | 1129.1 |
| 207 | 7205.04 | 244.82>> | 0.00 | 0.0 | 0.0 | 9117.1 |
| 207 | 3979.87 | -113.74<< | 0.00 | 0.0 | 0.0 | -1923.6 |
| 207 | 5112.00 | 4.16 | 0.00>> | 0.0 | 0.0 | 427.0 |
| 207 | 4845.91 | 4.04 | 0.00<< | 0.0 | 0.0 | 420.5 |
| 207 | 5112.00 | 4.16 | 0.00 | 0.0>> | 0.0 | 427.0 |
| 207 | 4845.91 | 4.04 | 0.00 | 0.0<< | 0.0 | 420.5 |
| 207 | 5112.00 | 4.16 | 0.00 | 0.0 | 0.0>> | 427.0 |
| 207 | 4845.91 | 4.04 | 0.00 | 0.0 | 0.0<< | 420.5 |
| 207 | 6609.34 | 225.90 | 0.00 | 0.0 | 0.0 | 9820.9>> |
| 207 | 5855.82 | -70.54 | 0.00 | 0.0 | 0.0 | -5488.3<< |
| 113 | 9241.14>> | 138.20 | 0.00 | 0.0 | 0.0 | 2584.0 |
| 113 | 3418.04<< | 40.44 | 0.00 | 0.0 | 0.0 | 657.9 |
| 113 | 7205.04 | 244.82>> | 0.00 | 0.0 | 0.0 | 6269.1 |
| 113 | 3979.87 | -113.74<< | 0.00 | 0.0 | 0.0 | -601.4 |
| 113 | 5112.00 | 4.16 | 0.00>> | 0.0 | 0.0 | 377.9 |
| 113 | 4845.91 | 4.04 | 0.00<< | 0.0 | 0.0 | 372.7 |
| 113 | 5112.00 | 4.16 | 0.00 | 0.0>> | 0.0 | 377.9 |
| 113 | 4845.91 | 4.04 | 0.00 | 0.0<< | 0.0 | 372.7 |
| 113 | 5112.00 | 4.16 | 0.00 | 0.0 | 0.0>> | 377.9 |
| 113 | 4845.91 | 4.04 | 0.00 | 0.0 | 0.0<< | 372.7 |
| 113 | 7466.92 | 145.45 | 0.00 | 0.0 | 0.0 | 7758.2>> |
| 113 | 5938.71 | -6.71 | 0.00 | 0.0 | 0.0 | -4979.9<< |

TITULO
=======
LAV-Gelida. V.Rierussa. ELS Comb Rara.ECSW-SW(1.00*G+1.00*LEV+1.00*P+1.0*SC+0.6*GT)

FICHERO DE GEOMETRIA COMPLETA
==============================
gelempu.GEO

NUMERO DE FICHEROS DE RESULTADOS
================================
1

| Fich | Num. Nudos | Num. barras | Num. hipotesis | NOMBRE FICHERO |
|---|---|---|---|---|
| 1 | 120 | 119 | 161 | ESFec.TXT |

| Fich | Hipotesis | Caracter | Coeficiente |
|---|---|---|---|
| 1 | 1 | 1 | 1.0 |
| 1 | 2 | 1 | 1.0 |
| 1 | 3 | 1 | 1.0 |
| 1 | 4 | 3 | 1.0 |
| 1 | 5 | 3 | 1.0 |
| 1 | 6 | 3 | 1.0 |
| 1 | 7 | 2 | 0.5 |
| 1 | 8 | 2 | 0.5 |
| 1 | 9 | 2 | 0.5 |
| 1 | 10 | 2 | 0.5 |
| 1 | 11 | 2 | 0.5 |
| 1 | 12 | 2 | 0.5 |
| 1 | 13 | 2 | 0.5 |
| 1 | 14 | 2 | 0.5 |
| 1 | 15 | 2 | 0.5 |
| 1 | 16 | 2 | 0.5 |
| 1 | 17 | 2 | 0.5 |
| 1 | 18 | 2 | 0.5 |
| 1 | 19 | 4 | 0.0 |
| 1 | 20 | 5 | 0.0 |
| 1 | 21 | 4 | 0.0 |
| 1 | 22 | 5 | 0.0 |
| 1 | 23 | 4 | 0.0 |
| 1 | 24 | 5 | 0.0 |
| 1 | 25 | 4 | 0.0 |
| 1 | 26 | 5 | 0.0 |
| 1 | 27 | 4 | 0.0 |
| 1 | 28 | 5 | 0.0 |
| 1 | 29 | 4 | 0.0 |
| 1 | 30 | 5 | 0.0 |
| 1 | 31 | 4 | 0.0 |
| 1 | 32 | 5 | 0.0 |
| 1 | 33 | 4 | 0.0 |
| 1 | 34 | 5 | 0.0 |
| 1 | 35 | 4 | 0.0 |
| 1 | 36 | 5 | 0.0 |
| 1 | 37 | 4 | 0.0 |
| 1 | 38 | 5 | 0.0 |
| 1 | 39 | 4 | 0.0 |
| 1 | 40 | 5 | 0.0 |
| 1 | 41 | 6 | 0.0 |
| 1 | 42 | 7 | 0.0 |
| 1 | 43 | 6 | 0.0 |
| 1 | 44 | 7 | 0.0 |
| 1 | 45 | 6 | 0.0 |
| 1 | 46 | 7 | 0.0 |

| | | | |
|---|---|---|---|
| 1 | 47 | 6 | 0.0 |
| 1 | 48 | 7 | 0.0 |
| 1 | 49 | 6 | 0.0 |
| 1 | 50 | 7 | 0.0 |
| 1 | 51 | 6 | 0.0 |
| 1 | 52 | 7 | 0.0 |
| 1 | 53 | 6 | 0.0 |
| 1 | 54 | 7 | 0.0 |
| 1 | 55 | 6 | 0.0 |
| 1 | 56 | 7 | 0.0 |
| 1 | 57 | 6 | 0.0 |
| 1 | 58 | 7 | 0.0 |
| 1 | 59 | 6 | 0.0 |
| 1 | 60 | 7 | 0.0 |
| 1 | 61 | 6 | 0.0 |
| 1 | 62 | 7 | 0.0 |
| 1 | 63 | 6 | 0.0 |
| 1 | 64 | 7 | 0.0 |
| 1 | 65 | 6 | 0.0 |
| 1 | 66 | 7 | 0.0 |
| 1 | 67 | 6 | 0.0 |
| 1 | 68 | 7 | 0.0 |
| 1 | 69 | 6 | 0.0 |
| 1 | 70 | 7 | 0.0 |
| 1 | 71 | 6 | 0.0 |
| 1 | 72 | 7 | 0.0 |
| 1 | 73 | 6 | 0.0 |
| 1 | 74 | 7 | 0.0 |
| 1 | 75 | 6 | 0.0 |
| 1 | 76 | 7 | 0.0 |
| 1 | 77 | 6 | 0.0 |
| 1 | 78 | 7 | 0.0 |
| 1 | 79 | 6 | 0.0 |
| 1 | 80 | 7 | 0.0 |
| 1 | 81 | 6 | 0.0 |
| 1 | 82 | 7 | 0.0 |
| 1 | 83 | 6 | 0.0 |
| 1 | 84 | 7 | 0.0 |
| 1 | 85 | 6 | 0.0 |
| 1 | 86 | 7 | 0.0 |
| 1 | 87 | 6 | 0.0 |
| 1 | 88 | 7 | 0.0 |
| 1 | 89 | 6 | 0.0 |
| 1 | 90 | 7 | 0.0 |
| 1 | 91 | 6 | 0.0 |
| 1 | 92 | 7 | 0.0 |
| 1 | 93 | 6 | 0.0 |
| 1 | 94 | 7 | 0.0 |
| 1 | 95 | 6 | 0.0 |
| 1 | 96 | 7 | 0.0 |
| 1 | 97 | 8 | 1.0 |
| 1 | 98 | 9 | 1.0 |
| 1 | 99 | 8 | 1.0 |
| 1 | 100 | 9 | 1.0 |
| 1 | 101 | 8 | 1.0 |
| 1 | 102 | 9 | 1.0 |
| 1 | 103 | 8 | 1.0 |
| 1 | 104 | 9 | 1.0 |
| 1 | 105 | 8 | 1.0 |
| 1 | 106 | 9 | 1.0 |
| 1 | 107 | 8 | 1.0 |
| 1 | 108 | 9 | 1.0 |
| 1 | 109 | 8 | 1.0 |
| 1 | 110 | 9 | 1.0 |
| 1 | 111 | 8 | 1.0 |
| 1 | 112 | 9 | 1.0 |
| 1 | 113 | 8 | 1.0 |
| 1 | 114 | 9 | 1.0 |
| 1 | 115 | 8 | 1.0 |
| 1 | 116 | 9 | 1.0 |
| 1 | 117 | 8 | 1.0 |
| 1 | 118 | 9 | 1.0 |
| 1 | 119 | 8 | 1.0 |
| 1 | 120 | 9 | 1.0 |
| 1 | 121 | 8 | 1.0 |
| 1 | 122 | 9 | 1.0 |
| 1 | 123 | 8 | 1.0 |
| 1 | 124 | 9 | 1.0 |
| 1 | 125 | 8 | 1.0 |
| 1 | 126 | 9 | 1.0 |
| 1 | 127 | 8 | 1.0 |
| 1 | 128 | 9 | 1.0 |
| 1 | 129 | 8 | 1.0 |
| 1 | 130 | 9 | 1.0 |
| 1 | 131 | 8 | 1.0 |
| 1 | 132 | 9 | 1.0 |
| 1 | 133 | 8 | 1.0 |
| 1 | 134 | 9 | 1.0 |
| 1 | 135 | 8 | 1.0 |
| 1 | 136 | 9 | 1.0 |
| 1 | 137 | 8 | 1.0 |
| 1 | 138 | 9 | 1.0 |
| 1 | 139 | 8 | 1.0 |
| 1 | 140 | 9 | 1.0 |
| 1 | 141 | 2 | 0.6 |
| 1 | 142 | 1 | 20.433 |
| 1 | 143 | 1 | 2.919 |
| 1 | 144 | 1 | 2.919 |
| 1 | 145 | 1 | 11.676 |
| 1 | 146 | 1 | 2.919 |
| 1 | 147 | 1 | 2.919 |
| 1 | 148 | 1 | 6.464 |
| 1 | 149 | 1 | 6.464 |
| 1 | 150 | 1 | 6.464 |
| 1 | 151 | 1 | 6.464 |
| 1 | 152 | 1 | 6.464 |
| 1 | 153 | 1 | 6.464 |
| 1 | 154 | 1 | 6.464 |
| 1 | 155 | 1 | 6.464 |
| 1 | 156 | 1 | 6.464 |
| 1 | 157 | 1 | 6.464 |
| 1 | 158 | 1 | 6.464 |
| 1 | 159 | 1 | 6.464 |
| 1 | 160 | 1 | 6.464 |
| 1 | 161 | 1 | 6.464 |

LAV-Gelida. V.Rierussa. ELS Comb Rara.ECSW-SW(1.00*G+1.00*LEV+1.00*P+1.0*SC+0.6*GT)

| BARRA 201 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 201 | 9943.88>> | 52.14 | 0.00 | 0.0 | 0.0 | 2559.2 |
| 201 | 3780.11<< | 14.12 | 0.00 | 0.0 | 0.0 | 516.5 |
| 201 | 7078.06 | 227.16>> | 0.00 | 0.0 | 0.0 | 8986.7 |
| 201 | 5863.11 | -188.85<< | 0.00 | 0.0 | 0.0 | -6383.1 |
| 201 | 5493.56 | 1.50 | 0.00>> | 0.0 | 0.0 | 329.6 |
| 201 | 5227.53 | 1.45 | 0.00<< | 0.0 | 0.0 | 324.1 |
| 201 | 5493.56 | 1.50 | 0.00 | 0.0>> | 0.0 | 329.6 |
| 201 | 5227.53 | 1.45 | 0.00 | 0.0<< | 0.0 | 324.1 |
| 201 | 7505.47 | -61.69 | 0.00 | 0.0 | 0.0>> | -5333.9 |
| 201 | 5227.53 | 1.45 | 0.00 | 0.0 | 0.0<< | 324.1 |
| 201 | 7908.40 | 172.24 | 0.00 | 0.0 | 0.0 | 9150.3>> |
| 201 | 6692.91 | -138.97 | 0.00 | 0.0 | 0.0 | -6575.4<< |
| 1 | 9943.88>> | 52.14 | 0.00 | 0.0 | 0.0 | 2056.7 |
| 1 | 3780.11<< | 14.12 | 0.00 | 0.0 | 0.0 | 380.1 |
| 1 | 7078.06 | 227.16>> | 0.00 | 0.0 | 0.0 | 6798.8 |
| 1 | 5863.11 | -188.85<< | 0.00 | 0.0 | 0.0 | -4564.8 |
| 1 | 5493.56 | 1.50 | 0.00>> | 0.0 | 0.0 | 314.7 |
| 1 | 5227.53 | 1.45 | 0.00<< | 0.0 | 0.0 | 309.9 |
| 1 | 5493.56 | 1.50 | 0.00 | 0.0>> | 0.0 | 314.7 |
| 1 | 5227.53 | 1.45 | 0.00 | 0.0<< | 0.0 | 309.9 |
| 1 | 5493.56 | 1.50 | 0.00 | 0.0 | 0.0>> | 314.7 |
| 1 | 5227.53 | 1.45 | 0.00 | 0.0 | 0.0<< | 309.9 |
| 1 | 7853.50 | 130.24 | 0.00 | 0.0 | 0.0 | 7685.0>> |
| 1 | 6638.05 | -81.71 | 0.00 | 0.0 | 0.0 | -5491.8<< |

LAV-Gelida. V.Rierussa. ELS Comb Rara.ECSW-SW(1.00*G+1.00*LEV+1.00*P+1.0*SC+0.6*GT)

| BARRA 203 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 203 | 28662.01>> | 46.13 | 0.00 | 0.0 | 0.0 | 4351.0 |
| 203 | 12715.63<< | 55.61 | 0.00 | 0.0 | 0.0 | 1589.0 |
| 203 | 21520.36 | 386.79>> | 0.00 | 0.0 | 0.0 | 2026.7 |
| 203 | 17781.82 | -283.25<< | 0.00 | 0.0 | 0.0 | 3466.1 |
| 203 | 16373.21 | 12.87 | 0.00>> | 0.0 | 0.0 | 960.5 |
| 203 | 15958.09 | 12.60 | 0.00<< | 0.0 | 0.0 | 941.3 |
| 203 | 16373.21 | 12.87 | 0.00 | 0.0>> | 0.0 | 960.5 |
| 203 | 15958.09 | 12.60 | 0.00 | 0.0<< | 0.0 | 941.3 |
| 203 | 16373.21 | 12.87 | 0.00 | 0.0 | 0.0>> | 960.5 |
| 203 | 15958.09 | 12.60 | 0.00 | 0.0 | 0.0<< | 941.3 |
| 203 | 22998.51 | -45.94 | 0.00 | 0.0 | 0.0 | 11805.0>> |
| 203 | 19232.80 | 97.56 | 0.00 | 0.0 | 0.0 | -6930.8<< |
| 37 | 28662.01>> | 46.13 | 0.00 | 0.0 | 0.0 | 3423.6 |
| 37 | 12715.63<< | 55.61 | 0.00 | 0.0 | 0.0 | 470.6 |
| 37 | 21520.36 | 386.79>> | 0.00 | 0.0 | 0.0 | -5758.1 |
| 37 | 17781.82 | -283.25<< | 0.00 | 0.0 | 0.0 | 9169.1 |
| 37 | 16373.21 | 12.87 | 0.00>> | 0.0 | 0.0 | 702.5 |
| 37 | 15958.09 | 12.60 | 0.00<< | 0.0 | 0.0 | 688.7 |
| 37 | 16373.21 | 12.87 | 0.00 | 0.0>> | 0.0 | 702.5 |
| 37 | 15958.09 | 12.60 | 0.00 | 0.0<< | 0.0 | 688.7 |
| 37 | 16373.21 | 12.87 | 0.00 | 0.0 | 0.0>> | 702.5 |
| 37 | 15958.09 | 12.60 | 0.00 | 0.0 | 0.0<< | 688.7 |
| 37 | 22998.51 | -46.14 | 0.00 | 0.0 | 0.0 | 12734.8>> |
| 37 | 19256.82 | 99.17 | 0.00 | 0.0 | 0.0 | -8920.3<< |

| BARRA 202 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 202 | 27478.20>> | -27.55 | 0.00 | 0.0 | 0.0 | 2531.5 |
| 202 | 11815.35<< | 29.71 | 0.00 | 0.0 | 0.0 | 1018.5 |
| 202 | 18095.92 | 416.20>> | 0.00 | 0.0 | 0.0 | 652.8 |
| 202 | 21524.32 | -395.03<< | 0.00 | 0.0 | 0.0 | 3366.4 |
| 202 | 15422.25 | -5.32 | 0.00>> | 0.0 | 0.0 | 510.2 |
| 202 | 15250.26 | -5.17 | 0.00<< | 0.0 | 0.0 | 500.6 |
| 202 | 15422.25 | -5.32 | 0.00 | 0.0>> | 0.0 | 510.2 |
| 202 | 15250.26 | -5.17 | 0.00 | 0.0<< | 0.0 | 500.6 |
| 202 | 15422.25 | -5.32 | 0.00 | 0.0 | 0.0>> | 510.2 |
| 202 | 15250.26 | -5.17 | 0.00 | 0.0 | 0.0<< | 500.6 |
| 202 | 20591.05 | -87.59 | 0.00 | 0.0 | 0.0 | 8435.5>> |
| 202 | 17164.03 | 86.40 | 0.00 | 0.0 | 0.0 | -5299.1<< |
| 17 | 27478.20>> | -27.55 | 0.00 | 0.0 | 0.0 | 3047.5 |
| 17 | 11815.35<< | 29.71 | 0.00 | 0.0 | 0.0 | 467.7 |
| 17 | 18095.92 | 416.20>> | 0.00 | 0.0 | 0.0 | -7098.0 |
| 17 | 21524.32 | -395.03<< | 0.00 | 0.0 | 0.0 | 10728.6 |
| 17 | 15422.25 | -5.32 | 0.00>> | 0.0 | 0.0 | 612.1 |
| 17 | 15250.26 | -5.17 | 0.00<< | 0.0 | 0.0 | 599.7 |
| 17 | 15422.25 | -5.32 | 0.00 | 0.0>> | 0.0 | 612.1 |
| 17 | 15250.26 | -5.17 | 0.00 | 0.0<< | 0.0 | 599.7 |
| 17 | 15422.25 | -5.32 | 0.00 | 0.0 | 0.0>> | 612.1 |
| 17 | 15250.26 | -5.17 | 0.00 | 0.0 | 0.0<< | 599.7 |
| 17 | 21833.70 | -252.80 | 0.00 | 0.0 | 0.0 | 11407.9>> |
| 17 | 18405.99 | 222.99 | 0.00 | 0.0 | 0.0 | -8013.0<< |

| BARRA 204 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 204 | 28255.14>> | -84.96 | 0.00 | 0.0 | 0.0 | -113.2 |
| 204 | 12480.76<< | -7.40 | 0.00 | 0.0 | 0.0 | 254.3 |
| 204 | 18572.05 | 261.27>> | 0.00 | 0.0 | 0.0 | 3022.8 |
| 204 | 22163.86 | -353.63<< | 0.00 | 0.0 | 0.0 | -2881.6 |
| 204 | 16053.83 | -17.14 | 0.00>> | 0.0 | 0.0 | 2.3 |
| 204 | 15711.91 | -16.80 | 0.00<< | 0.0 | 0.0 | 2.1 |
| 204 | 16053.83 | -17.14 | 0.00 | 0.0>> | 0.0 | 2.3 |
| 204 | 15711.91 | -16.80 | 0.00 | 0.0<< | 0.0 | 2.1 |
| 204 | 16053.83 | -17.14 | 0.00 | 0.0 | 0.0>> | 2.3 |
| 204 | 15711.91 | -16.80 | 0.00 | 0.0 | 0.0<< | 2.1 |
| 204 | 22321.82 | 247.42 | 0.00 | 0.0 | 0.0 | 3480.5>> |
| 204 | 18734.18 | -339.34 | 0.00 | 0.0 | 0.0 | -3186.9<< |
| 57 | 28255.14>> | -84.96 | 0.00 | 0.0 | 0.0 | 3592.2 |
| 57 | 12480.76<< | -7.40 | 0.00 | 0.0 | 0.0 | 575.3 |
| 57 | 18572.05 | 261.27>> | 0.00 | 0.0 | 0.0 | -8378.2 |
| 57 | 22163.86 | -353.63<< | 0.00 | 0.0 | 0.0 | 12545.7 |
| 57 | 16053.83 | -17.14 | 0.00>> | 0.0 | 0.0 | 748.5 |
| 57 | 15711.91 | -16.80 | 0.00<< | 0.0 | 0.0 | 733.4 |
| 57 | 16053.83 | -17.14 | 0.00 | 0.0>> | 0.0 | 748.5 |
| 57 | 15711.91 | -16.80 | 0.00 | 0.0<< | 0.0 | 733.4 |
| 57 | 16053.83 | -17.14 | 0.00 | 0.0 | 0.0>> | 748.5 |
| 57 | 15711.91 | -16.80 | 0.00 | 0.0 | 0.0<< | 733.4 |
| 57 | 22608.66 | -344.95 | 0.00 | 0.0 | 0.0 | 13117.9>> |
| 57 | 19017.69 | 250.15 | 0.00 | 0.0 | 0.0 | -9099.5<< |

LAV-Gelida. V.Rierussa. ELS Comb Rara.ECSW-SW(1.00*G+1.00*LEV+1.00*P+1.0*SC+0.6*GT)

| BARRA 205 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 205 | 29040.82>> | 51.76 | 0.00 | 0.0 | 0.0 | 4441.2 |
| 205 | 13096.57<< | 51.49 | 0.00 | 0.0 | 0.0 | 1520.5 |
| 205 | 21899.00 | 352.09>> | 0.00 | 0.0 | 0.0 | 1817.2 |
| 205 | 18157.66 | -251.19<< | 0.00 | 0.0 | 0.0 | 3618.3 |
| 205 | 16753.75 | 13.45 | 0.00>> | 0.0 | 0.0 | 932.2 |
| 205 | 16338.61 | 13.19 | 0.00<< | 0.0 | 0.0 | 912.8 |
| 205 | 16753.75 | 13.45 | 0.00 | 0.0>> | 0.0 | 932.2 |
| 205 | 16338.61 | 13.19 | 0.00 | 0.0<< | 0.0 | 912.8 |
| 205 | 16753.75 | 13.45 | 0.00 | 0.0 | 0.0>> | 932.2 |
| 205 | 16338.61 | 13.19 | 0.00 | 0.0 | 0.0<< | 912.8 |
| 205 | 23358.15 | -24.20 | 0.00 | 0.0 | 0.0 | 11987.1>> |
| 205 | 19613.60 | 82.29 | 0.00 | 0.0 | 0.0 | -7066.8<< |
| 77 | 29040.82>> | 51.76 | 0.00 | 0.0 | 0.0 | 3320.7 |
| 77 | 13096.57<< | 51.49 | 0.00 | 0.0 | 0.0 | 405.6 |
| 77 | 21899.00 | 352.09>> | 0.00 | 0.0 | 0.0 | -5799.5 |
| 77 | 18157.66 | -251.19<< | 0.00 | 0.0 | 0.0 | 9050.7 |
| 77 | 16753.75 | 13.45 | 0.00>> | 0.0 | 0.0 | 640.0 |
| 77 | 16338.61 | 13.19 | 0.00<< | 0.0 | 0.0 | 626.4 |
| 77 | 16753.75 | 13.45 | 0.00 | 0.0>> | 0.0 | 640.0 |
| 77 | 16338.61 | 13.19 | 0.00 | 0.0<< | 0.0 | 626.4 |
| 77 | 16753.75 | 13.45 | 0.00 | 0.0 | 0.0>> | 640.0 |
| 77 | 16338.61 | 13.19 | 0.00 | 0.0 | 0.0<< | 626.4 |
| 77 | 23378.77 | -27.29 | 0.00 | 0.0 | 0.0 | 12534.1>> |
| 77 | 19634.25 | 86.59 | 0.00 | 0.0 | 0.0 | -8880.4<< |

LAV-Gelida. V.Rierussa. ELS Comb Rara.ECSW-SW(1.00*G+1.00*LEV+1.00*P+1.0*SC+0.6*GT)

| BARRA 207 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 207 | 9551.84>> | 60.48 | 0.00 | 0.0 | 0.0 | 2830.1 |
| 207 | 3400.97<< | 25.22 | 0.00 | 0.0 | 0.0 | 754.8 |
| 207 | 6685.93 | 241.99>> | 0.00 | 0.0 | 0.0 | 9854.7 |
| 207 | 5469.08 | -177.95<< | 0.00 | 0.0 | 0.0 | -6779.4 |
| 207 | 5112.00 | 4.16 | 0.00>> | 0.0 | 0.0 | 427.0 |
| 207 | 4845.91 | 4.04 | 0.00<< | 0.0 | 0.0 | 420.5 |
| 207 | 5112.00 | 4.16 | 0.00 | 0.0>> | 0.0 | 427.0 |
| 207 | 4845.91 | 4.04 | 0.00 | 0.0<< | 0.0 | 420.5 |
| 207 | 5112.00 | 4.16 | 0.00 | 0.0 | 0.0>> | 427.0 |
| 207 | 4845.91 | 4.04 | 0.00 | 0.0 | 0.0<< | 420.5 |
| 207 | 6612.56 | 237.57 | 0.00 | 0.0 | 0.0 | 9920.4>> |
| 207 | 5395.69 | -170.27 | 0.00 | 0.0 | 0.0 | -6857.4<< |
| 113 | 9551.84>> | 60.48 | 0.00 | 0.0 | 0.0 | 2126.1 |
| 113 | 3400.97<< | 25.22 | 0.00 | 0.0 | 0.0 | 460.7 |
| 113 | 6685.93 | 241.99>> | 0.00 | 0.0 | 0.0 | 7039.6 |
| 113 | 5469.08 | -177.95<< | 0.00 | 0.0 | 0.0 | -4710.4 |
| 113 | 5112.00 | 4.16 | 0.00>> | 0.0 | 0.0 | 377.9 |
| 113 | 4845.91 | 4.04 | 0.00<< | 0.0 | 0.0 | 372.7 |
| 113 | 5112.00 | 4.16 | 0.00 | 0.0>> | 0.0 | 377.9 |
| 113 | 4845.91 | 4.04 | 0.00 | 0.0<< | 0.0 | 372.7 |
| 113 | 5112.00 | 4.16 | 0.00 | 0.0 | 0.0>> | 377.9 |
| 113 | 4845.91 | 4.04 | 0.00 | 0.0 | 0.0<< | 372.7 |
| 113 | 7466.83 | 144.88 | 0.00 | 0.0 | 0.0 | 7760.7>> |
| 113 | 6249.41 | -84.43 | 0.00 | 0.0 | 0.0 | -5437.9<< |

| BARRA 206 | Fx (kN) | Fy (kN) | Fz (kN) | Mx (m.kN) | My (m.kN) | Mz (m.kN) |
|---|---|---|---|---|---|---|
| 206 | 27804.71>> | -55.12 | 0.00 | 0.0 | 0.0 | 1681.2 |
| 206 | 12164.63<< | 20.13 | 0.00 | 0.0 | 0.0 | 882.9 |
| 206 | 18434.08 | 401.91>> | 0.00 | 0.0 | 0.0 | 2345.8 |
| 206 | 21858.34 | -422.59<< | 0.00 | 0.0 | 0.0 | 662.6 |
| 206 | 15763.71 | -9.56 | 0.00>> | 0.0 | 0.0 | 336.1 |
| 206 | 15591.82 | -9.33 | 0.00<< | 0.0 | 0.0 | 329.3 |
| 206 | 15763.71 | -9.56 | 0.00 | 0.0>> | 0.0 | 336.1 |
| 206 | 15591.82 | -9.33 | 0.00 | 0.0<< | 0.0 | 329.3 |
| 206 | 15763.71 | -9.56 | 0.00 | 0.0 | 0.0>> | 336.1 |
| 206 | 15591.82 | -9.33 | 0.00 | 0.0 | 0.0<< | 329.3 |
| 206 | 18160.62 | 31.50 | 0.00 | 0.0 | 0.0 | 5946.8>> |
| 206 | 14738.69 | -21.37 | 0.00 | 0.0 | 0.0 | -3776.5<< |
| 97 | 27804.71>> | -55.12 | 0.00 | 0.0 | 0.0 | 2983.1 |
| 97 | 12164.63<< | 20.13 | 0.00 | 0.0 | 0.0 | 406.1 |
| 97 | 18434.08 | 401.91>> | 0.00 | 0.0 | 0.0 | -7152.1 |
| 97 | 21858.34 | -422.59<< | 0.00 | 0.0 | 0.0 | 10647.5 |
| 97 | 15763.71 | -9.56 | 0.00>> | 0.0 | 0.0 | 561.0 |
| 97 | 15591.82 | -9.33 | 0.00<< | 0.0 | 0.0 | 548.8 |
| 97 | 15763.71 | -9.56 | 0.00 | 0.0>> | 0.0 | 561.0 |
| 97 | 15591.82 | -9.33 | 0.00 | 0.0<< | 0.0 | 548.8 |
| 97 | 15763.71 | -9.56 | 0.00 | 0.0 | 0.0>> | 561.0 |
| 97 | 15591.82 | -9.33 | 0.00 | 0.0 | 0.0<< | 548.8 |
| 97 | 22167.33 | -318.09 | 0.00 | 0.0 | 0.0 | 11306.3>> |
| 97 | 18743.74 | 258.31 | 0.00 | 0.0 | 0.0 | -8024.3<< |

## 7.6. INTERACCIÓN VÍA – TABLERO

## TENSIONES EN EL CARRIL

La interacción entre la vía y la estructura supone un incremento de las tensiones en la vía, bien para transmitir los esfuerzos al tablero, bien para coartar sus movimientos, ya que los movimientos relativos entre carril y tablero o plataforma están restringidos por las sujeciones que unen carril y traviesa y la trabazón que asegura el balasto entre la traviesa y la infraestructura (tablero de puente o plataforma).

Es necesario analizar la interacción entre el carril y la estructura con dos objetivos principales:

- Determinar las sobretensiones en el carril y la eventual necesidad de disponer uno o varios aparatos de dilatación.
- Determinar los desplazamientos absolutos del tablero y relativos entre carril y tablero o plataforma, debiendo limitarse estos últimos con el fin de asegurar la estabilidad de la parrilla de la vía.

Las acciones que incrementan las tensiones son el arranque y frenado, las deformaciones reológicas y el incremento de temperatura.

En el caso de la temperatura, se han considerado cuatro situaciones según la época en la que se coloquen las vías. De esta forma, si se colocan en verano se considerará el máximo decremento de temperatura; si es en invierno, el máximo incremento; en otoño, la mitad del máximo incremento y en primavera la mitad del máximo decremento de temperatura.

En ausencia de aparato de dilatación, la variación de temperatura en el carril no produce movimientos relativos entre el carril y el tablero o la plataforma, siendo únicamente necesario considerar la variación de la temperatura del tablero. En ausencia de aparatos de dilatación, las tensiones obtenidas en el carril por variación de temperatura del tablero tienen carácter de sobretensiones, que vienen a incrementar las tensiones que puedan existir por la variación de temperatura del carril.

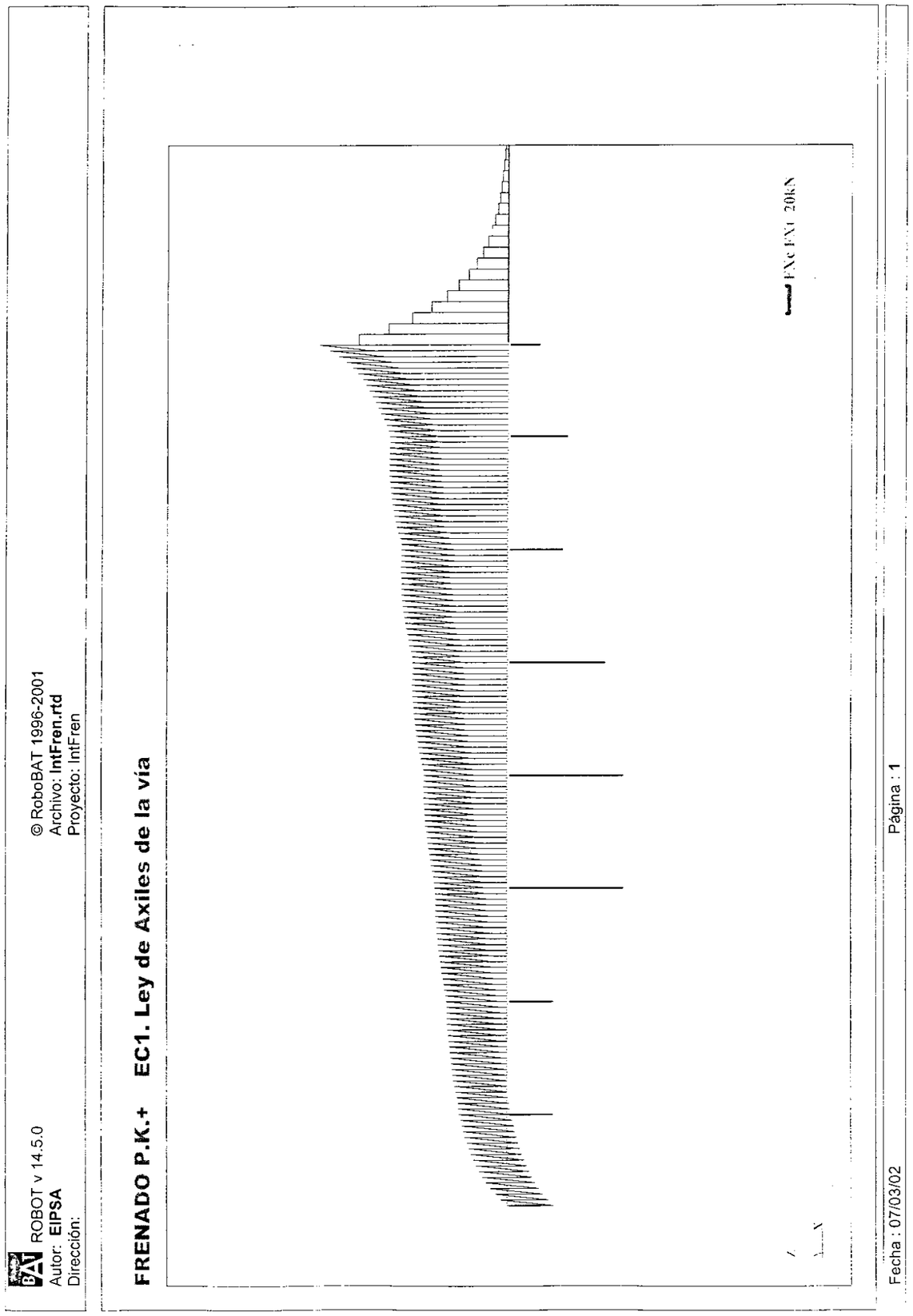
En el caso de análisis de interacción con aparato de dilatación, las tensiones en el carril obtenidas incluyen tanto las tensiones debidas a la variación de temperatura del tablero como las correspondientes a la variación de temperatura del carril.

Al alcanzarse el máximo valor de la resistencia al desplazamiento relativo vía-estructura prácticamente en la totalidad del viaducto tanto con el máximo decremento de temperatura como con las deformaciones reológicas, no es posible combinar linealmente ambos efectos, y es necesario combinarlos previamente. De todos modos, al haberse alcanzado el máximo valor de resistencia, cabe esperar que aumenten poco los esfuerzos.

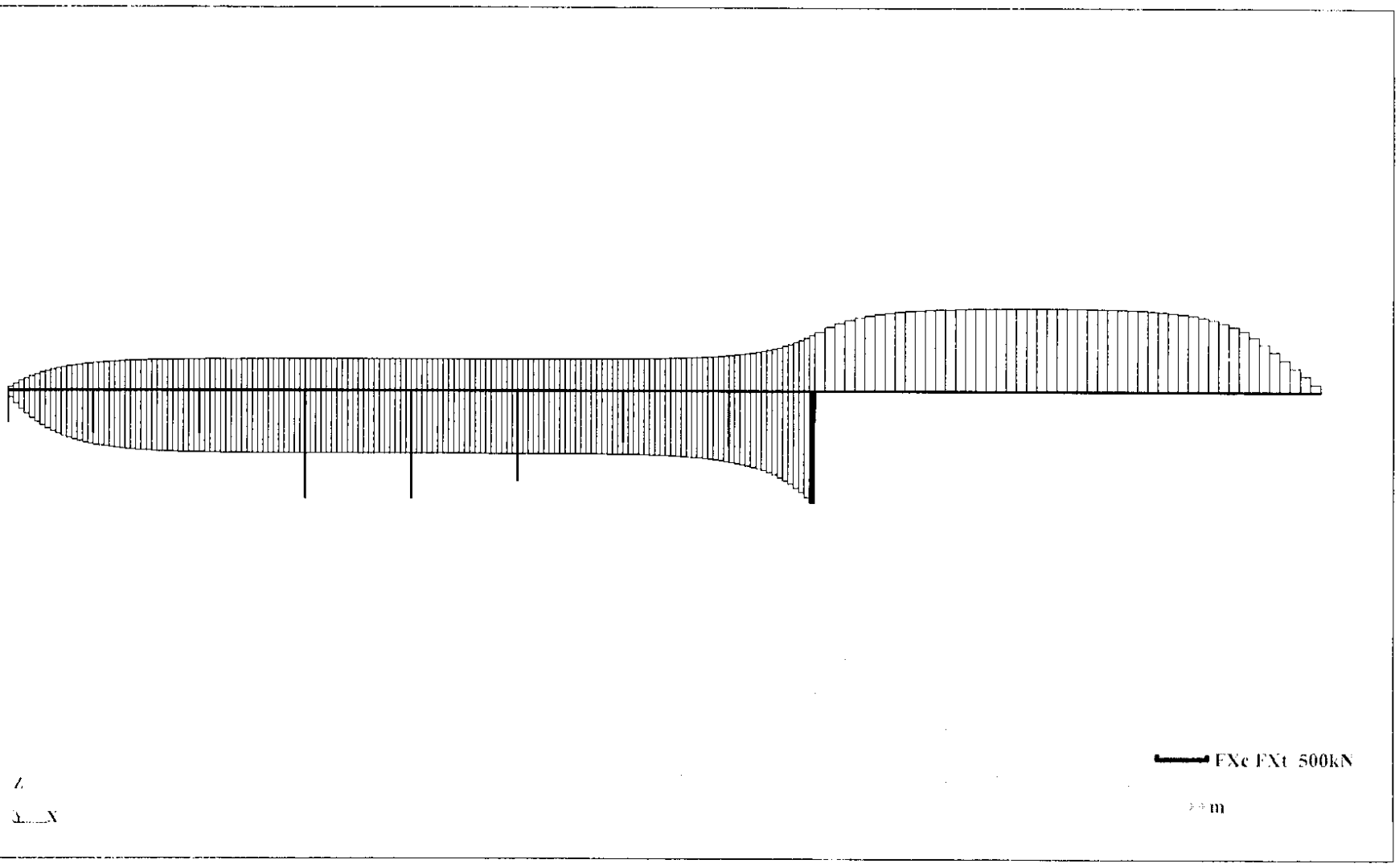
El frenado, sin embargo, sí puede combinarse con las deformaciones impuestas, puesto que la resistencia al desplazamiento de la vía cargada aumenta 3 veces.

Los valores de los axiles producidos por estas acciones en la vía se incluyen en las siguientes páginas, así como esquemas de las leyes.

Combinando las acciones longitudinales, se tienen los siguientes resultados, donde se ha tomado el área de los carriles UIC-60:



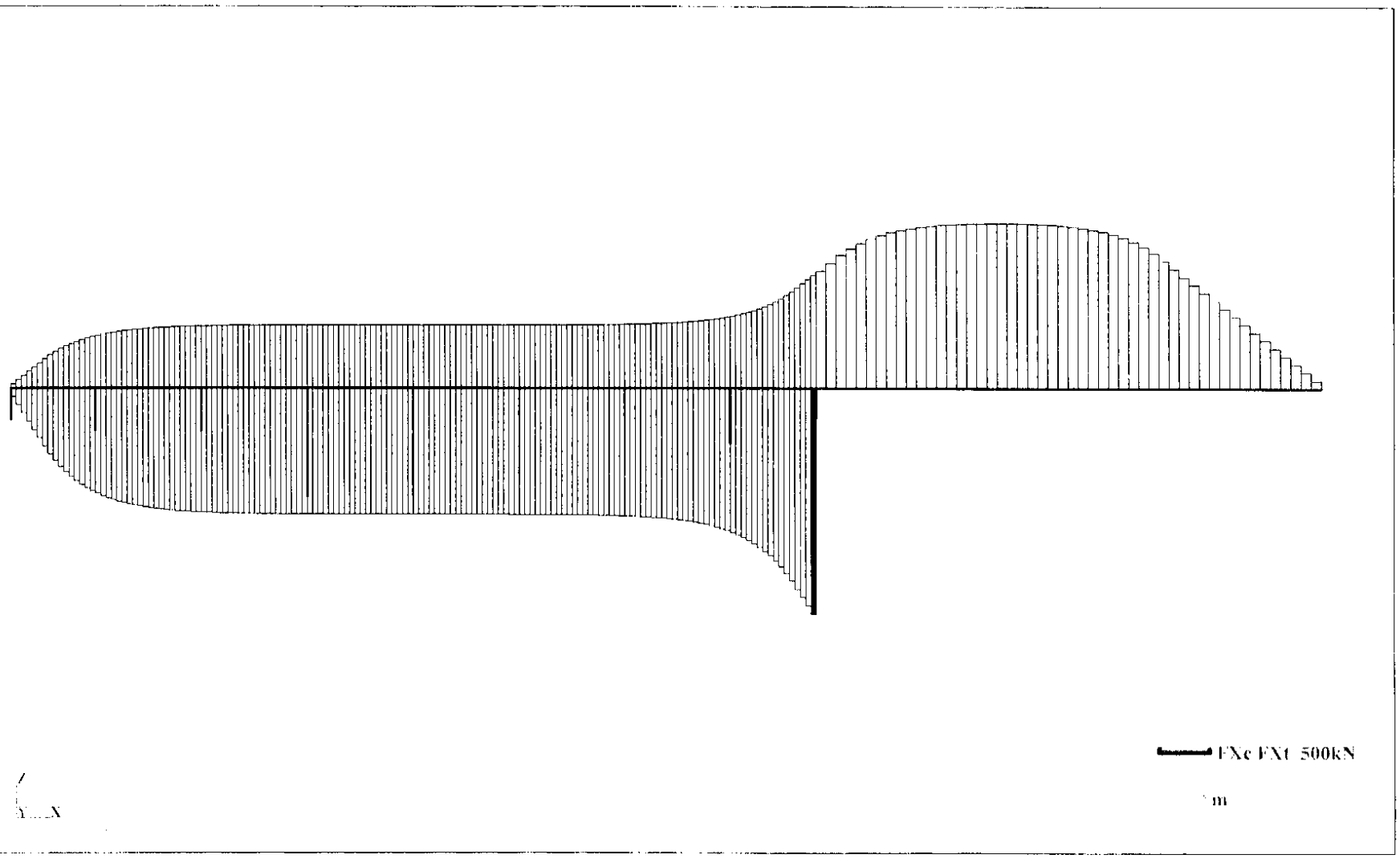
## PRIMAVERA.MÍNIMO DECREMENTO DE TEMPERATURA



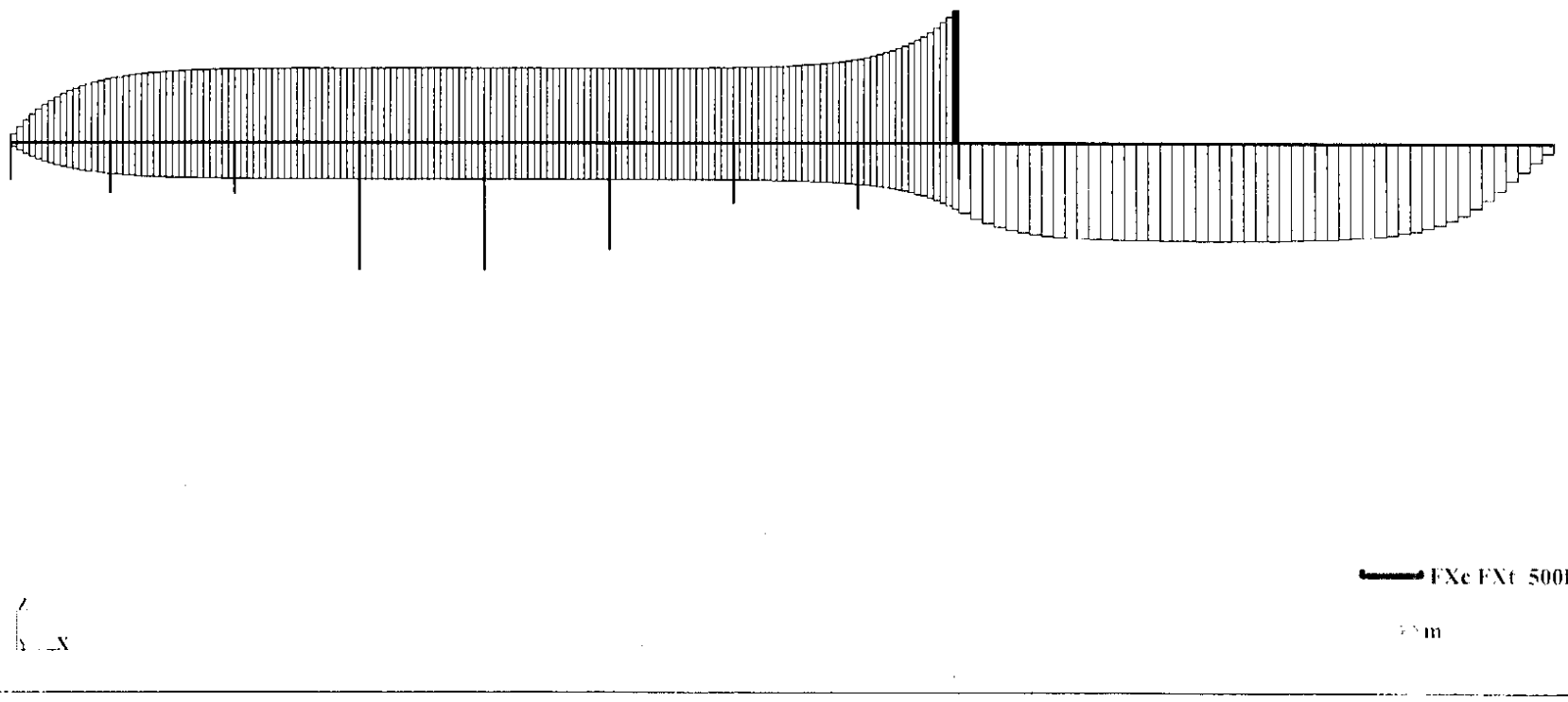





## VERANO.MÁXIMO DECREMENTO DE TEMPERATURA



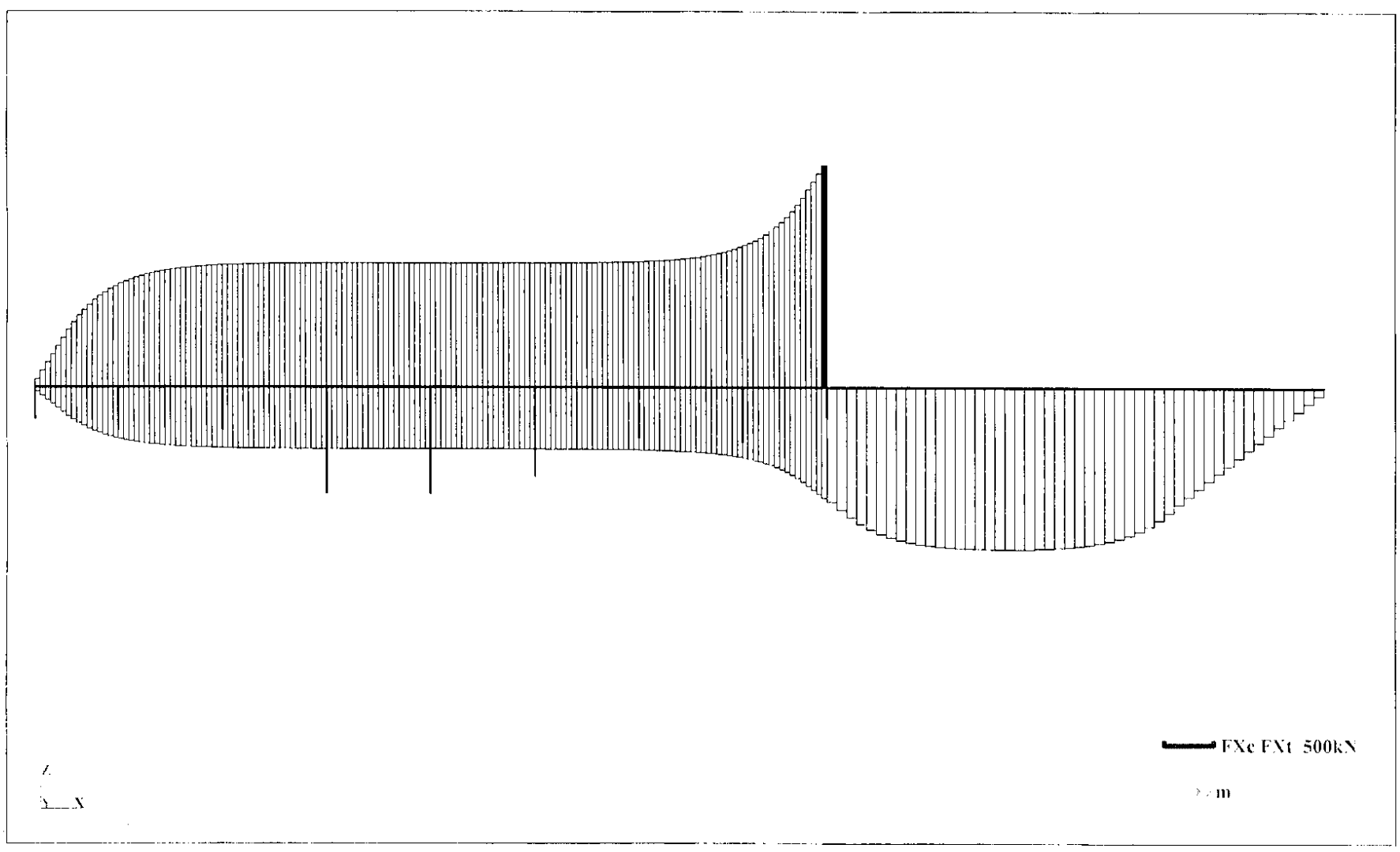
## OTOÑO.MÍNIMO INCREMENTO DE TEMPERATURA



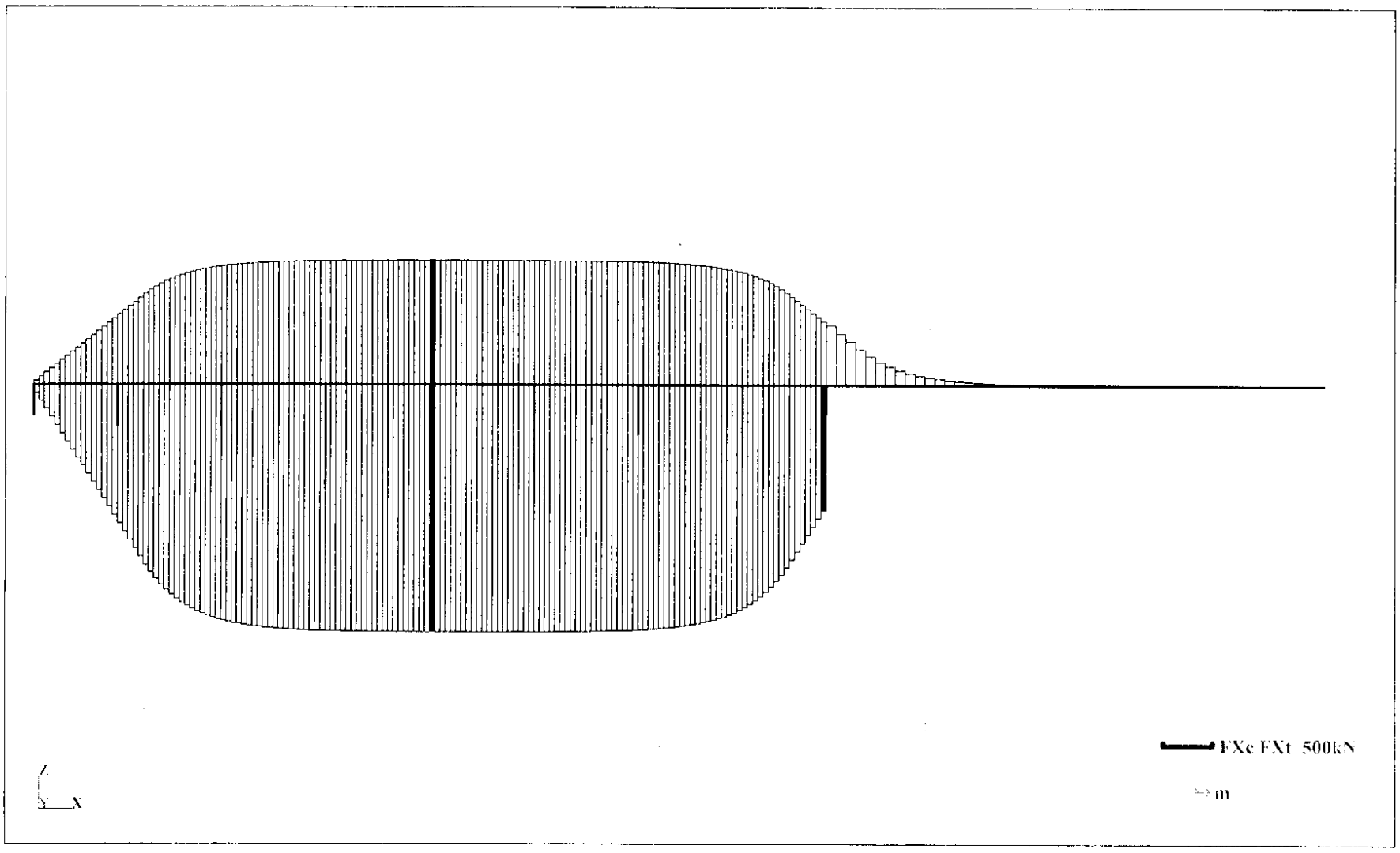





## INVIERNO.MÁXIMO INCREMENTO DE TEMPERATURA



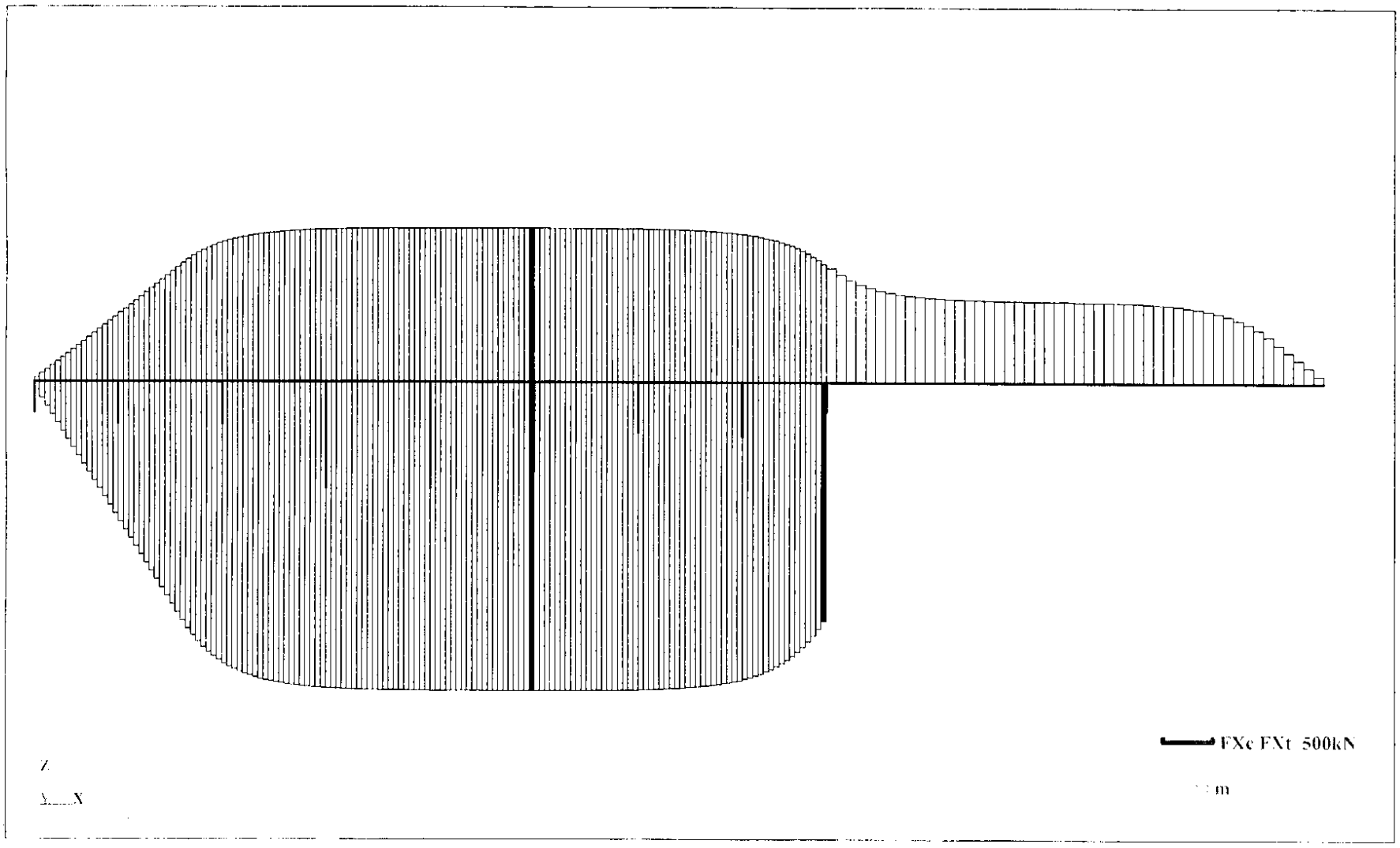
## (ACCIONES REOLÓGICAS



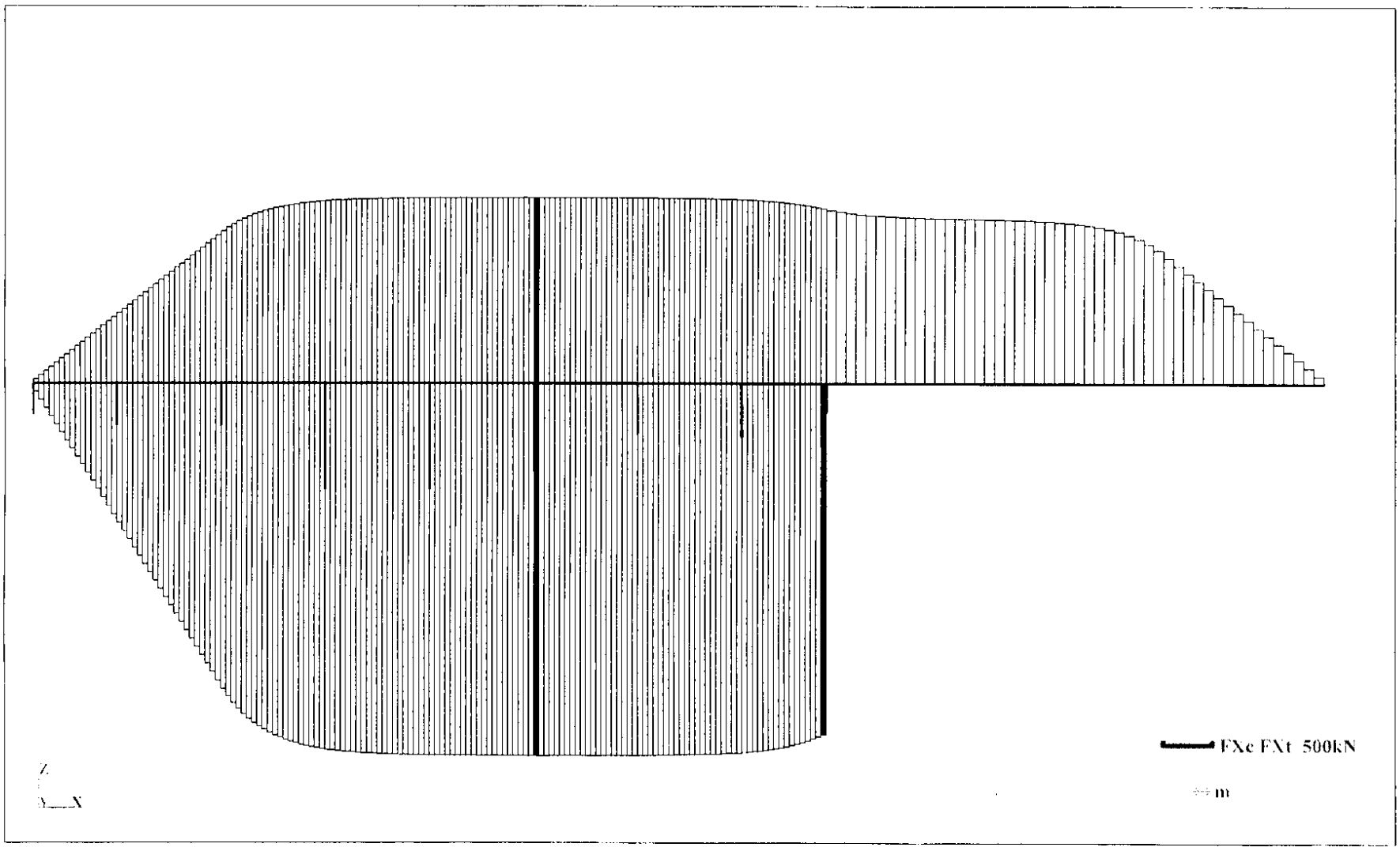





## MÍNIMO DECREMENTO DE TEMPERATURA + REOLOGÍA



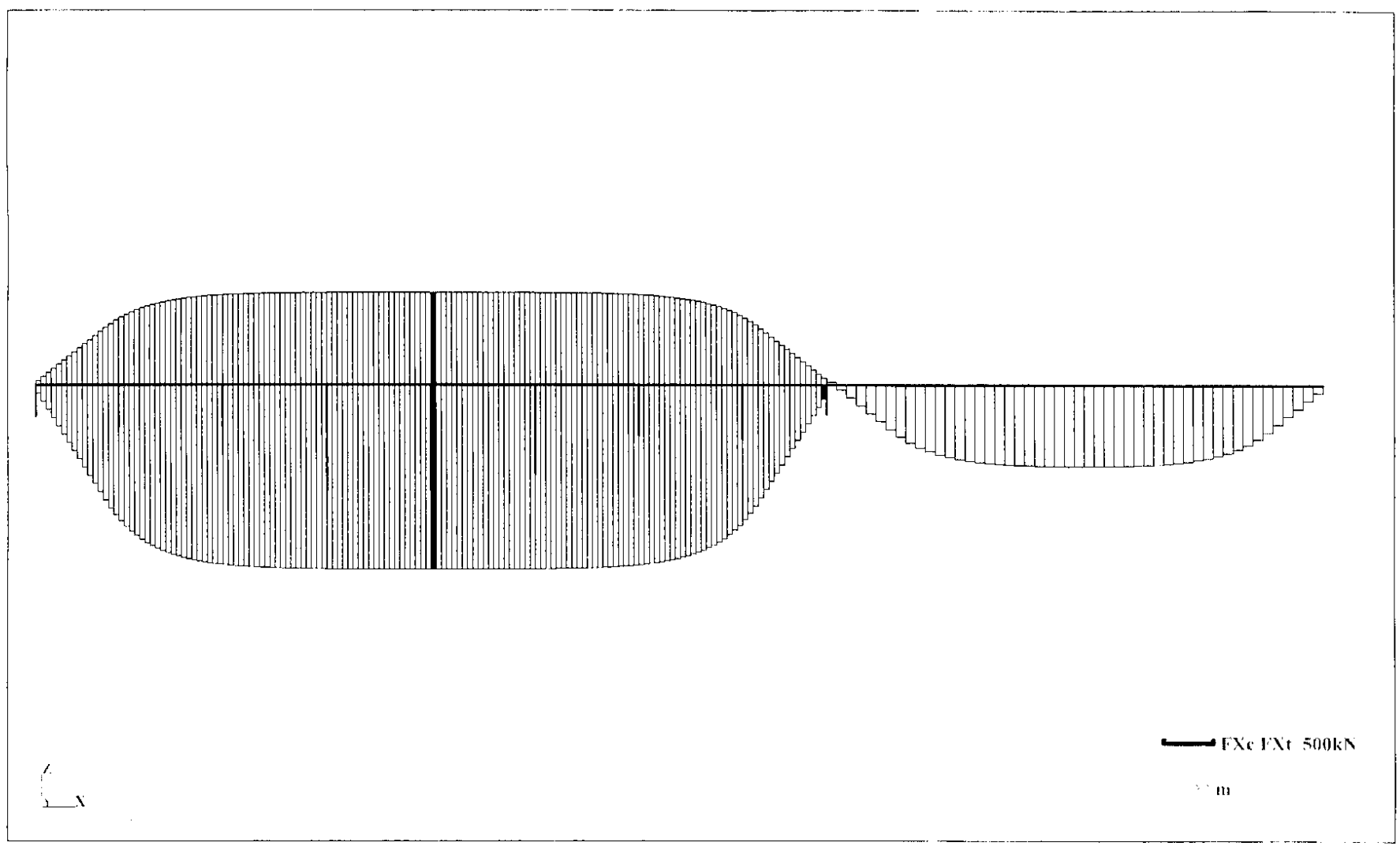
## (MÁXIMO DECREMENTO DE TEMPERATURA + REOLOGÍA

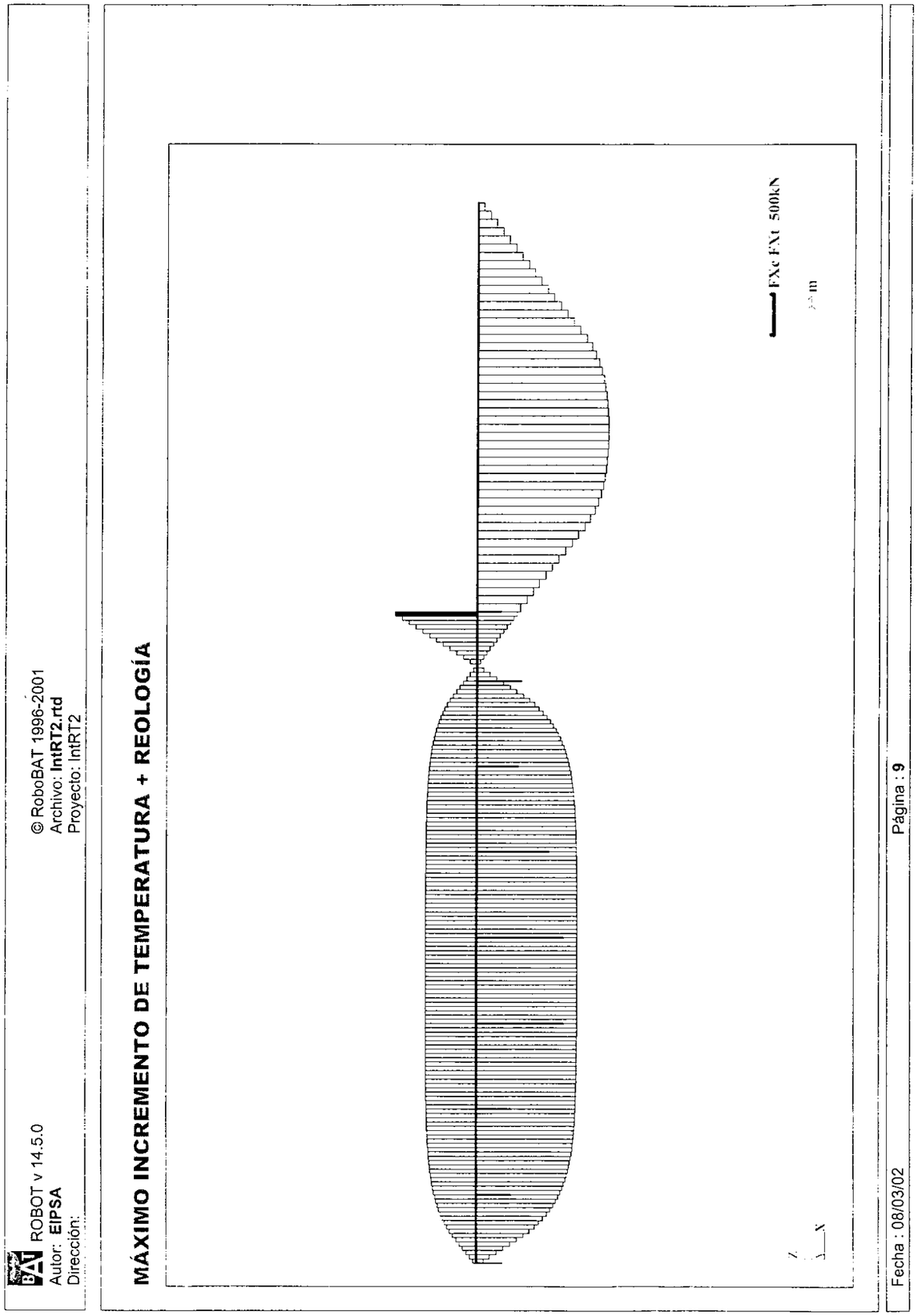







## MÍNIMO INCREMENTO DE TEMPERATURA + REOLOGÍA








## Esfuerzos FRENADO P.K.+ EC

**- Caso: 1 (FRENADO P.K.+ EC)**

| Barra/Nudo/Caso | FX (kN) |
|---|---|
| 501/ 501/ 1 | -35.00 |
| 501/ 502/ 1 | 4.84 |
| 509/ 509/ 1 | -12.81 |
| 509/ 510/ 1 | 27.03 |
| 517/ 517/ 1 | -3.07 |
| 517/ 518/ 1 | 36.31 |
| 527/ 527/ 1 | 3.42 |
| 527/ 528/ 1 | 42.79 |
| 537/ 537/ 1 | 6.62 |
| 537/ 538/ 1 | 45.99 |
| 547/ 547/ 1 | 12.61 |
| 547/ 548/ 1 | 51.99 |
| 557/ 557/ 1 | 15.09 |
| 557/ 558/ 1 | 54.47 |
| 567/ 567/ 1 | 21.53 |
| 567/ 568/ 1 | 60.91 |
| 577/ 577/ 1 | 23.52 |
| 577/ 578/ 1 | 62.89 |
| 587/ 587/ 1 | 30.44 |
| 587/ 588/ 1 | 69.82 |
| 597/ 597/ 1 | 31.94 |
| 597/ 598/ 1 | 71.32 |
| 607/ 607/ 1 | 39.35 |
| 607/ 608/ 1 | 78.73 |
| 617/ 617/ 1 | 40.38 |
| 617/ 618/ 1 | 79.75 |
| 627/ 627/ 1 | 48.36 |
| 627/ 628/ 1 | 87.74 |
| 637/ 637/ 1 | 49.58 |
| 637/ 638/ 1 | 89.42 |
| 645/ 645/ 1 | 66.31 |
| 645/ 646/ 1 | 106.15 |
| 652/ 652/ 1 | 101.29 |
| 652/ 653/ 1 | 141.14 |

## Esfuerzos FRENADO P.K.- EC

**- Caso: 2 (FRENADO P.K.- EC)**

| Barra/Nudo/Caso | FX (kN) |
|---|---|
| 501/ 501/ 2 | 35.00 |
| 501/ 502/ 2 | -4.84 |
| 509/ 509/ 2 | 12.81 |
| 509/ 510/ 2 | -27.03 |
| 517/ 517/ 2 | 3.07 |
| 517/ 518/ 2 | -36.31 |
| 527/ 527/ 2 | -3.42 |
| 527/ 528/ 2 | -42.79 |
| 537/ 537/ 2 | -6.62 |
| 537/ 538/ 2 | -45.99 |
| 547/ 547/ 2 | -12.61 |
| 547/ 548/ 2 | -51.99 |
| 557/ 557/ 2 | -15.09 |
| 557/ 558/ 2 | -54.47 |
| 567/ 567/ 2 | -21.53 |
| 567/ 568/ 2 | -60.91 |
| 577/ 577/ 2 | -23.52 |
| 577/ 578/ 2 | -62.89 |
| 587/ 587/ 2 | -30.44 |
| 587/ 588/ 2 | -69.82 |
| 597/ 597/ 2 | -31.94 |
| 597/ 598/ 2 | -71.32 |
| 607/ 607/ 2 | -39.35 |
| 607/ 608/ 2 | -78.73 |
| 617/ 617/ 2 | -40.38 |
| 617/ 618/ 2 | -79.75 |
| 627/ 627/ 2 | -48.36 |
| 627/ 628/ 2 | -87.74 |
| 637/ 637/ 2 | -49.58 |
| 637/ 638/ 2 | -89.42 |
| 645/ 645/ 2 | -66.31 |
| 645/ 646/ 2 | -106.15 |
| 652/ 652/ 2 | -101.29 |
| 652/ 653/ 2 | -141.14 |





## Esfuerzos PRIMAVERA.MÍNIMO DECREMENTO DE TEMPERATURA

**- Caso: 1 (PRIMAVERA.MÍNIMO DECRE**

| Barra/Nudo/Caso | FX (kN) |
|---|---|
| 501/ 501/ 1 | 35.39 |
| 501/ 502/ 1 | 35.39 |
| 509/ 509/ 1 | 207.53 |
| 509/ 510/ 1 | 207.53 |
| 517/ 517/ 1 | 274.17 |
| 517/ 518/ 1 | 274.17 |
| 527/ 527/ 1 | 303.22 |
| 527/ 528/ 1 | 303.22 |
| 537/ 537/ 1 | 312.35 |
| 537/ 538/ 1 | 312.35 |
| 547/ 547/ 1 | 314.95 |
| 547/ 548/ 1 | 314.95 |
| 557/ 557/ 1 | 315.96 |
| 557/ 558/ 1 | 315.96 |
| 567/ 567/ 1 | 316.06 |
| 567/ 568/ 1 | 316.06 |
| 577/ 577/ 1 | 316.33 |
| 577/ 578/ 1 | 316.33 |
| 587/ 587/ 1 | 316.27 |
| 587/ 588/ 1 | 316.27 |
| 597/ 597/ 1 | 316.70 |
| 597/ 598/ 1 | 316.70 |
| 607/ 607/ 1 | 317.38 |
| 607/ 608/ 1 | 317.38 |
| 617/ 617/ 1 | 320.28 |
| 617/ 618/ 1 | 320.28 |
| 627/ 627/ 1 | 329.02 |
| 627/ 628/ 1 | 329.02 |
| 637/ 637/ 1 | 358.19 |
| 637/ 638/ 1 | 358.19 |
| 645/ 645/ 1 | 424.08 |
| 645/ 646/ 1 | 424.08 |
| 652/ 652/ 1 | 563.96 |
| 652/ 653/ 1 | 563.96 |

## Esfuerzos VERANO.MÁXIMO DECREMENTO DE TEMPERATURA

**- Caso: 2 (VERANO.MÁXIMO DECREME**

| Barra/Nudo/Caso | FX (kN) |
|---|---|
| 501/ 501/ 2 | 42.00 |
| 501/ 502/ 2 | 42.00 |
| 509/ 509/ 2 | 365.00 |
| 509/ 510/ 2 | 365.00 |
| 517/ 517/ 2 | 528.90 |
| 517/ 518/ 2 | 528.90 |
| 527/ 527/ 2 | 600.47 |
| 527/ 528/ 2 | 600.47 |
| 537/ 537/ 2 | 622.87 |
| 537/ 538/ 2 | 622.87 |
| 547/ 547/ 2 | 629.33 |
| 547/ 548/ 2 | 629.33 |
| 557/ 557/ 2 | 631.75 |
| 557/ 558/ 2 | 631.75 |
| 567/ 567/ 2 | 632.07 |
| 567/ 568/ 2 | 632.07 |
| 577/ 577/ 2 | 632.65 |
| 577/ 578/ 2 | 632.65 |
| 587/ 587/ 2 | 632.56 |
| 587/ 588/ 2 | 632.56 |
| 597/ 597/ 2 | 633.47 |
| 597/ 598/ 2 | 633.47 |
| 607/ 607/ 2 | 634.98 |
| 607/ 608/ 2 | 634.98 |
| 617/ 617/ 2 | 641.29 |
| 617/ 618/ 2 | 641.29 |
| 627/ 627/ 2 | 660.42 |
| 627/ 628/ 2 | 660.42 |
| 637/ 637/ 2 | 724.12 |
| 637/ 638/ 2 | 724.12 |
| 645/ 645/ 2 | 868.14 |
| 645/ 646/ 2 | 868.14 |
| 652/ 652/ 2 | 1136.30 |
| 652/ 653/ 2 | 1136.30 |



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Proyecto: IntRT2

## Esfuerzos OTOÑO.MÍNIMO INCREMENTO DE TEMPERATURA

**- Caso: 3 (OTOÑO.MÍNIMO INCREMEN**

| Barra/Nudo/Caso | FX (kN) |
|---|---|
| 501/ 501/ 3 | -35.39 |
| 501/ 502/ 3 | -35.39 |
| 509/ 509/ 3 | -207.53 |
| 509/ 510/ 3 | -207.53 |
| 517/ 517/ 3 | -274.17 |
| 517/ 518/ 3 | -274.17 |
| 527/ 527/ 3 | -303.22 |
| 527/ 528/ 3 | -303.22 |
| 537/ 537/ 3 | -312.35 |
| 537/ 538/ 3 | -312.35 |
| 547/ 547/ 3 | -314.95 |
| 547/ 548/ 3 | -314.95 |
| 557/ 557/ 3 | -315.96 |
| 557/ 558/ 3 | -315.96 |
| 567/ 567/ 3 | -316.06 |
| 567/ 568/ 3 | -316.06 |
| 577/ 577/ 3 | -316.33 |
| 577/ 578/ 3 | -316.33 |
| 587/ 587/ 3 | -316.27 |
| 587/ 588/ 3 | -316.27 |
| 597/ 597/ 3 | -316.70 |
| 597/ 598/ 3 | -316.70 |
| 607/ 607/ 3 | -317.38 |
| 607/ 608/ 3 | -317.38 |
| 617/ 617/ 3 | -320.28 |
| 617/ 618/ 3 | -320.28 |
| 627/ 627/ 3 | -329.02 |
| 627/ 628/ 3 | -329.02 |
| 637/ 637/ 3 | -358.19 |
| 637/ 638/ 3 | -358.19 |
| 645/ 645/ 3 | -424.08 |
| 645/ 646/ 3 | -424.08 |
| 652/ 652/ 3 | -563.96 |
| 652/ 653/ 3 | -563.96 |

## Esfuerzos INVIERNO.MÁXIMO INCREMENTO DE TEMPERATURA

**- Caso: 4 (INVIERNO.MÁXIMO INCREM**

| Barra/Nudo/Caso | FX (kN) |
|---|---|
| 501/ 501/ 4 | -42.00 |
| 501/ 502/ 4 | -42.00 |
| 509/ 509/ 4 | -365.00 |
| 509/ 510/ 4 | -365.00 |
| 517/ 517/ 4 | -528.90 |
| 517/ 518/ 4 | -528.90 |
| 527/ 527/ 4 | -600.47 |
| 527/ 528/ 4 | -600.47 |
| 537/ 537/ 4 | -622.87 |
| 537/ 538/ 4 | -622.87 |
| 547/ 547/ 4 | -629.33 |
| 547/ 548/ 4 | -629.33 |
| 557/ 557/ 4 | -631.75 |
| 557/ 558/ 4 | -631.75 |
| 567/ 567/ 4 | -632.07 |
| 567/ 568/ 4 | -632.07 |
| 577/ 577/ 4 | -632.65 |
| 577/ 578/ 4 | -632.65 |
| 587/ 587/ 4 | -632.56 |
| 587/ 588/ 4 | -632.56 |
| 597/ 597/ 4 | -633.47 |
| 597/ 598/ 4 | -633.47 |
| 607/ 607/ 4 | -634.98 |
| 607/ 608/ 4 | -634.98 |
| 617/ 617/ 4 | -641.29 |
| 617/ 618/ 4 | -641.29 |
| 627/ 627/ 4 | -660.42 |
| 627/ 628/ 4 | -660.42 |
| 637/ 637/ 4 | -724.12 |
| 637/ 638/ 4 | -724.12 |
| 645/ 645/ 4 | -868.14 |
| 645/ 646/ 4 | -868.14 |
| 652/ 652/ 4 | -1136.30 |
| 652/ 653/ 4 | -1136.30 |



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## Esfuerzos ACCIONES REOLÓGICAS

**- Caso: 5 (ACCIONES REOLÓGICAS)**

| Barra/Nudo/Caso | FX (kN) |
|---|---|
| 501/ 501/ 5 | 42.00 |
| 501/ 502/ 5 | 42.00 |
| 509/ 509/ 5 | 378.00 |
| 509/ 510/ 5 | 378.00 |
| 517/ 517/ 5 | 713.92 |
| 517/ 518/ 5 | 713.92 |
| 527/ 527/ 5 | 1075.32 |
| 527/ 528/ 5 | 1075.32 |
| 537/ 537/ 5 | 1204.94 |
| 537/ 538/ 5 | 1204.94 |
| 547/ 547/ 5 | 1243.93 |
| 547/ 548/ 5 | 1243.93 |
| 557/ 557/ 5 | 1256.75 |
| 557/ 558/ 5 | 1256.75 |
| 567/ 567/ 5 | 1259.82 |
| 567/ 568/ 5 | 1259.82 |
| 577/ 577/ 5 | 1261.55 |
| 577/ 578/ 5 | 1261.55 |
| 587/ 587/ 5 | 1261.01 |
| 587/ 588/ 5 | 1261.01 |
| 597/ 597/ 5 | 1261.00 |
| 597/ 598/ 5 | 1261.00 |
| 607/ 607/ 5 | 1257.85 |
| 607/ 608/ 5 | 1257.85 |
| 617/ 617/ 5 | 1250.31 |
| 617/ 618/ 5 | 1250.31 |
| 627/ 627/ 5 | 1222.95 |
| 627/ 628/ 5 | 1222.95 |
| 637/ 637/ 5 | 1136.60 |
| 637/ 638/ 5 | 1136.60 |
| 645/ 645/ 5 | 937.77 |
| 645/ 646/ 5 | 937.77 |
| 652/ 652/ 5 | 645.58 |
| 652/ 653/ 5 | 645.58 |

## Esfuerzos MÍNIMO DECREMENTO DE TEMPERATURA + REOLOGÍA

**- Caso: 6 (MÍNIMO DECREMENTO DE T**

| Barra/Nudo/Caso | FX (kN) |
|---|---|
| 501/ 501/ 6 | 42.00 |
| 501/ 502/ 6 | 42.00 |
| 509/ 509/ 6 | 378.00 |
| 509/ 510/ 6 | 378.00 |
| 517/ 517/ 6 | 714.00 |
| 517/ 518/ 6 | 714.00 |
| 527/ 527/ 6 | 1134.07 |
| 527/ 528/ 6 | 1134.07 |
| 537/ 537/ 6 | 1438.72 |
| 537/ 538/ 6 | 1438.72 |
| 547/ 547/ 6 | 1534.75 |
| 547/ 548/ 6 | 1534.75 |
| 557/ 557/ 6 | 1565.30 |
| 557/ 558/ 6 | 1565.30 |
| 567/ 567/ 6 | 1573.61 |
| 567/ 568/ 6 | 1573.61 |
| 577/ 577/ 6 | 1577.20 |
| 577/ 578/ 6 | 1577.20 |
| 587/ 587/ 6 | 1577.13 |
| 587/ 588/ 6 | 1577.13 |
| 597/ 597/ 6 | 1577.83 |
| 597/ 598/ 6 | 1577.83 |
| 607/ 607/ 6 | 1575.88 |
| 607/ 608/ 6 | 1575.88 |
| 617/ 617/ 6 | 1572.74 |
| 617/ 618/ 6 | 1572.74 |
| 627/ 627/ 6 | 1558.99 |
| 627/ 628/ 6 | 1558.99 |
| 637/ 637/ 6 | 1517.67 |
| 637/ 638/ 6 | 1517.67 |
| 645/ 645/ 6 | 1420.87 |
| 645/ 646/ 6 | 1420.87 |
| 652/ 652/ 6 | 1217.95 |
| 652/ 653/ 6 | 1217.95 |



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## Esfuerzos MÁXIMO DECREMENTO DE TEMPERATURA + REOLOGÍA

**- Caso: 7 (MÁXIMO DECREMENTO DE T**

| Barra/Nudo/Caso | FX (kN) |
|---|---|
| 501/ 501/ 7 | 42.00 |
| 501/ 502/ 7 | 42.00 |
| 509/ 509/ 7 | 378.00 |
| 509/ 510/ 7 | 378.00 |
| 517/ 517/ 7 | 714.00 |
| 517/ 518/ 7 | 714.00 |
| 527/ 527/ 7 | 1134.00 |
| 527/ 528/ 7 | 1134.00 |
| 537/ 537/ 7 | 1555.21 |
| 537/ 538/ 7 | 1555.21 |
| 547/ 547/ 7 | 1789.55 |
| 547/ 548/ 7 | 1789.55 |
| 557/ 557/ 7 | 1862.77 |
| 557/ 558/ 7 | 1862.77 |
| 567/ 567/ 7 | 1884.00 |
| 567/ 568/ 7 | 1884.00 |
| 577/ 577/ 7 | 1891.78 |
| 577/ 578/ 7 | 1891.78 |
| 587/ 587/ 7 | 1892.86 |
| 587/ 588/ 7 | 1892.86 |
| 597/ 597/ 7 | 1894.37 |
| 597/ 598/ 7 | 1894.37 |
| 607/ 607/ 7 | 1893.21 |
| 607/ 608/ 7 | 1893.21 |
| 617/ 617/ 7 | 1893.03 |
| 617/ 618/ 7 | 1893.03 |
| 627/ 627/ 7 | 1888.09 |
| 627/ 628/ 7 | 1888.09 |
| 637/ 637/ 7 | 1876.11 |
| 637/ 638/ 7 | 1876.11 |
| 645/ 645/ 7 | 1845.60 |
| 645/ 646/ 7 | 1845.60 |
| 652/ 652/ 7 | 1783.39 |
| 652/ 653/ 7 | 1783.39 |

## Esfuerzos MÍNIMO INCREMENTO DE TEMPERATURA + REOLOGÍA

**- Caso: 8 (MÍNIMO INCREMENTO DE TI**

| Barra/Nudo/Caso | FX (kN) |
|---|---|
| 501/ 501/ 8 | 42.00 |
| 501/ 502/ 8 | 42.00 |
| 509/ 509/ 8 | 378.00 |
| 509/ 510/ 8 | 378.00 |
| 517/ 517/ 8 | 695.02 |
| 517/ 518/ 8 | 695.02 |
| 527/ 527/ 8 | 868.32 |
| 527/ 528/ 8 | 868.32 |
| 537/ 537/ 8 | 922.16 |
| 537/ 538/ 8 | 922.16 |
| 547/ 547/ 8 | 938.07 |
| 547/ 548/ 8 | 938.07 |
| 557/ 557/ 8 | 943.58 |
| 557/ 558/ 8 | 943.58 |
| 567/ 567/ 8 | 944.59 |
| 567/ 568/ 8 | 944.59 |
| 577/ 577/ 8 | 945.40 |
| 577/ 578/ 8 | 945.40 |
| 587/ 587/ 8 | 944.57 |
| 587/ 588/ 8 | 944.57 |
| 597/ 597/ 8 | 943.50 |
| 597/ 598/ 8 | 943.50 |
| 607/ 607/ 8 | 937.81 |
| 607/ 608/ 8 | 937.81 |
| 617/ 617/ 8 | 921.34 |
| 617/ 618/ 8 | 921.34 |
| 627/ 627/ 8 | 865.66 |
| 627/ 628/ 8 | 865.66 |
| 637/ 637/ 8 | 686.36 |
| 637/ 638/ 8 | 686.36 |
| 645/ 645/ 8 | 365.45 |
| 645/ 646/ 8 | 365.45 |
| 652/ 652/ 8 | 71.45 |
| 652/ 653/ 8 | 71.45 |





## Esfuerzos MÁXIMO INCREMENTO DE TEMPERATURA + REOLOGÍA

**- Caso: 9 (MÁXIMO INCREMENTO DE T**

| Barra/Nudo/Caso | FX (kN) |
|---|---|
| 501/ 501/ 9 | 42.00 |
| 501/ 502/ 9 | 42.00 |
| 509/ 509/ 9 | 364.41 |
| 509/ 510/ 9 | 364.41 |
| 517/ 517/ 9 | 526.74 |
| 517/ 518/ 9 | 526.74 |
| 527/ 527/ 9 | 597.62 |
| 527/ 528/ 9 | 597.62 |
| 537/ 537/ 9 | 619.80 |
| 537/ 538/ 9 | 619.80 |
| 547/ 547/ 9 | 626.18 |
| 547/ 548/ 9 | 626.18 |
| 557/ 557/ 9 | 628.54 |
| 557/ 558/ 9 | 628.54 |
| 567/ 567/ 9 | 628.75 |
| 567/ 568/ 9 | 628.75 |
| 577/ 577/ 9 | 628.96 |
| 577/ 578/ 9 | 628.96 |
| 587/ 587/ 9 | 627.67 |
| 587/ 588/ 9 | 627.67 |
| 597/ 597/ 9 | 624.68 |
| 597/ 598/ 9 | 624.68 |
| 607/ 607/ 9 | 613.51 |
| 607/ 608/ 9 | 613.51 |
| 617/ 617/ 9 | 578.50 |
| 617/ 618/ 9 | 578.50 |
| 627/ 627/ 9 | 463.22 |
| 627/ 628/ 9 | 463.22 |
| 637/ 637/ 9 | 125.36 |
| 637/ 638/ 9 | 125.36 |
| 645/ 645/ 9 | -209.51 |
| 645/ 646/ 9 | -209.51 |
| 652/ 652/ 9 | -503.51 |
| 652/ 653/ 9 | -503.51 |

**TENSIONES EN EL CARRIL PRODUCIDAS POR ACCIONES LONGITUDINALES**
Unidades en MPa

| | **Estribo 2** | | | | **Nudo 577** | | | |
|---|---|---|---|---|---|---|---|---|
| **Acciones reológicas** | + 41.92 | | | | + 81.92 | | | |
| **Frenado** | ± 9.17 | | | | ± 1.53 | | | |
| **Temperatura** | Primavera | Verano | Otoño | Invierno | Primavera | Verano | Otoño | Invierno |
| | + 36.62 | +73.79 | - 36.62 | - 73.79 | + 20.54 | + 41.08 | - 20.54 | - 41.08 |
| **Temperatura + Reología** | Primavera | Verano | Otoño | Invierno | Primavera | Verano | Otoño | Invierno |
| | + 79.09 | + 115.80 | + 4.64 | - 32.69 | + 102.42 | + 122.84 | + 61.39 | + 40.84 |
| **Máxima Tracción** | - 9.17 | - 9.17 | - 45.79 | - 82.96 | - 1.53 | - 1.53 | - 22.07 | - 42.61 |
| **Máxima Compresión** | + 88.26 | + 124.97 | + 51.09 | + 51.09 | + 103.95 | + 124.37 | + 83.45 | + 83.45 |

Los valores negativos indican tensiones de tracción mientras que los positivos indican compresión.

## DEFORMACIONES VÍA – ESTRUCTURA

El máximo desplazamiento relativo entre carril y tablero o terreno bajo la aplicación de las acciones de frenado y arranque no deberá ser mayor de 4 mm, valor muy superior al obtenido.

En la siguiente tabla se incluyen los máximos desplazamientos entre vía y estructura:

| **Desplazamiento relativo vía – estructura** | δ (mm) |
|---|---|
| Frenado | 1.1 |

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## CÁLCULO DE LA CARRERA DE APARATO DE DILATACIÓN

Cuando es necesaria la disposición de un aparato de dilatación es preciso comprobar la carrera del mismo, que deberá ser inferior a la máxima permitida por el aparato de mecanismo.

Cuando el aparato de dilatación se disponga próximo a un estribo del puente, del lado de la plataforma, será necesario tener en cuenta los desplazamientos del extremo del carril por variación de temperatura del mismo (recorrido de respiración).

Esta longitud de respiración será igual a:

$\delta_{resp} = \pm (\Delta T_c\, \alpha)^2\, E_c\, A_c\, (1/k) = \pm 67.38$ mm

donde:

- $\Delta T_c = \pm 50$ °C : variación de temperatura en el carril
- $\alpha$: coeficiente de dilatación térmica del acero
- E: módulo de elasticidad del acero
- A: área del carril UIC60 = 7700 $mm^2$
- K=12 kN/m: resistencia al desplazamiento de la vía

Los desplazamientos máximos y mínimos del lado del puente serán:

| DESPLAZAMIENTOS EN ESTRIBO 1 (mm) | | |
|---|---|---|
| CARGA | Máximo | Mínimo |
| Frenado | 4.58 | -4.,58 |
| Temperatura | 103.88 | -103.88 |
| Reología | 125.198 | - |
| Longitud de Respiración | 68.00 | -68.00 |
| **TOTAL** | **301.66** | **-176.46** |

| Nudo/Caso | UX (mm) |
|---|---|
| 1/ 1 | 4.58 |
| 153/ 1 | 0.23 |
| 301/ 1 | 4.58 |
| 453/ 1 | 0.23 |
| 501/ 1 | 5.13 |
| 653/ 1 | 0.69 |
| 701/ 1 | 4.58 |
| 853/ 1 | 0.23 |
| 901/ 1 | 5.68 |
| 1053/ 1 | 0.30 |

| Nudo/Caso | UX (mm) |
|---|---|
| 1/ 2 | -4.58 |
| 153/ 2 | -0.23 |
| 301/ 2 | -4.58 |
| 453/ 2 | -0.23 |
| 501/ 2 | -5.13 |
| 653/ 2 | -0.69 |
| 701/ 2 | -4.58 |
| 853/ 2 | -0.23 |
| 901/ 2 | -5.68 |
| 1053/ 2 | -0.30 |





| Nudo/Caso | UX (mm) |
|---|---|
| 1/ 1 | -51.945 |
| 153/ 1 | -0.039 |
| 301/ 1 | -51.945 |
| 453/ 1 | -0.039 |
| 501/ 1 | -53.630 |
| 653/ 1 | -1.526 |
| 701/ 1 | -51.945 |
| 853/ 1 | -0.039 |
| 901/ 1 | -53.630 |
| 1053/ 1 | -1.526 |

| Nudo/Caso | UX (mm) |
|---|---|
| 1/ 2 | -103.880 |
| 153/ 2 | -0.078 |
| 301/ 2 | -103.880 |
| 453/ 2 | -0.078 |
| 501/ 2 | -107.871 |
| 653/ 2 | -3.284 |
| 701/ 2 | -103.880 |
| 853/ 2 | -0.078 |
| 901/ 2 | -107.871 |
| 1053/ 2 | -3.284 |





| Nudo/Caso | UX (mm) |
|---|---|
| 1/ 3 | 51.945 |
| 153/ 3 | 0.039 |
| 301/ 3 | 51.945 |
| 453/ 3 | 0.039 |
| 501/ 3 | 53.630 |
| 653/ 3 | 1.526 |
| 701/ 3 | 51.945 |
| 853/ 3 | 0.039 |
| 901/ 3 | 53.630 |
| 1053/ 3 | 1.526 |

| Nudo/Caso | UX (mm) |
|---|---|
| 1/ 4 | 103.880 |
| 153/ 4 | 0.078 |
| 301/ 4 | 103.880 |
| 453/ 4 | 0.078 |
| 501/ 4 | 107.871 |
| 653/ 4 | 3.284 |
| 701/ 4 | 103.880 |
| 853/ 4 | 0.078 |
| 901/ 4 | 107.871 |
| 1053/ 4 | 3.284 |





| Nudo/Caso | UX (mm) |
|---|---|
| 1/ 5 | 125.198 |
| 153/ 5 | -0.040 |
| 301/ 5 | 125.198 |
| 453/ 5 | -0.040 |
| 501/ 5 | 111.927 |
| 653/ 5 | 4.208 |
| 701/ 5 | 125.198 |
| 853/ 5 | -0.040 |
| 901/ 5 | 111.927 |
| 1053/ 5 | 4.208 |

| Nudo/Caso | UX (mm) |
|---|---|
| 1/ 6 | 73.360 |
| 153/ 6 | -0.078 |
| 301/ 6 | 73.360 |
| 453/ 6 | -0.078 |
| 501/ 6 | 53.046 |
| 653/ 6 | 2.083 |
| 701/ 6 | 73.360 |
| 853/ 6 | -0.078 |
| 901/ 6 | 53.046 |
| 1053/ 6 | 2.083 |





| Nudo/Caso | UX (mm) |
|---|---|
| 1/ 7 | 21.569 |
| 153/ 7 | -0.117 |
| 301/ 7 | 21.569 |
| 453/ 7 | -0.117 |
| 501/ 7 | -7.361 |
| 653/ 7 | 0.548 |
| 701/ 7 | 21.569 |
| 853/ 7 | -0.117 |
| 901/ 7 | -7.361 |
| 1053/ 7 | 0.548 |

| Nudo/Caso | UX (mm) |
|---|---|
| 1/ 8 | 177.095 |
| 153/ 8 | -0.002 |
| 301/ 8 | 177.095 |
| 453/ 8 | -0.002 |
| 501/ 8 | 169.264 |
| 653/ 8 | 7.399 |
| 701/ 8 | 177.095 |
| 853/ 8 | -0.002 |
| 901/ 8 | 169.264 |
| 1053/ 8 | 7.399 |





| Nudo/Caso | UX (mm) |
|---|---|
| 1/ 9 | 229.051 |
| 153/ 9 | 0.036 |
| 301/ 9 | 229.051 |
| 453/ 9 | 0.036 |
| 501/ 9 | 225.091 |
| 653/ 9 | 11.679 |
| 701/ 9 | 229.051 |
| 853/ 9 | 0.036 |
| 901/ 9 | 225.091 |
| 1053/ 9 | 11.679 |

## 7.7. ANÁLISIS DINÁMICO

## 7.7. Análisis Dinámico

### 7.7.1. Introducción

El presente Apartado constituye el "Estudio de los Efectos Dinámicos producidos por el paso de trenes de Alta Velocidad sobre el Viaducto de Riera de Rierussa", situado en el P.K. 101+000 y perteneciente a la Línea de Alta Velocidad entre Madrid Barcelona, Tramo Gelida-Sant Llorenc D´Hortons.

Los puentes ferroviarios se encuentran sometidos a las cargas que transmiten las composiciones de vehículos. Generalmente estas cargas se encuentran distribuidas a distancias regulares a lo largo de la longitud del tren, lo que se traduce en cargas periódicas. De esta forma, al efecto dinámico inherente al paso de cargas por un puente a velocidad constante hay que añadir los efectos resonantes producidos por las cargas rítmicas.

Los cálculos se realizarán basándose en el tráfico real que atraviesa la estructura, por lo que se introducirán los trenes 3 y 4 del anexo F del EC1, barriendo las velocidades comprendidas entre 40 y 120 m/s con intervalos de 10 m/s.

El objetivo del estudio se centra en la determinación de los coeficientes de impacto y de las aceleraciones máximas.

## 7.7.2.Modelo de Cálculo

### 7.7.2. Modelo de cálculo

El modelo de cálculo empleado es el mismo que el considerado en el dimensionamiento de la estructura, un pórtico espacial curvo en planta de 6 vanos (33+4x42+33 metros). Cada elemento viga posee 6 grados de libertad por nudo ( 3 giros y 3 desplazamientos).

Las características mecánicas también se conservaron respecto al modelo de cálculo original, así como el número de barras y la ubicación de las mismas.

El modelo no tiene en cuenta las interacciones vehículo – estructura, siendo una hipótesis conservadora.

Se prestará atención a las directrices expuestas en el Eurocódigo 1, Parte 3.

Asimismo, sí se han tenido en cuenta los apoyos reales de la estructura y toda la subestructura del puente. El coeficiente de amortiguamiento previsto ha sido del 5%. No se ha considerado masa variable, si no que se ha supuesto que la masa del tren está uniformemente repartida a lo largo del puente. Esta hipótesis es realista, debido a que los momentos de máxima vibración de un punto se producen cuando el tren está encima.

## 7.7.3.Análisis Modal

### 7.7.3. Análisis Modal.

Con el fin de determinar las frecuencias naturales más importantes de la estructura se ha realizado un análisis modal.

El análisis modal determina los modos propios de la estructura y sus derivados (períodos, frecuencias, ...), además de los vectores propios y coeficientes de participación de masas para el caso en cuestión.

El problema consiste en resolver el siguiente sistema de ecuaciones:

$$(K - \omega_i^2 M)U_i = 0$$

donde:

- **K**: matriz de rigidez de la estructura.
- **M**: matriz de masas de la estructura.
- $\omega_i$: modo propio del modo i.
- $\mathbf{U_i}$: vector propio.

El número de modos propios considerado es un dato a introducir, así como el número máximo de iteraciones y el criterio de convergencia.

De todos las posibilidades que el ROBOT ofrece, se consideran las siguientes:

| | |
|---|---|
| Número de modos: | 100 |
| Tolerancia: | 0.0001 |
| Número máximo de iteraciones: | 40 |
| Matriz de masas: | Concentrada con Rotaciones |
| Método: | Iteración en el subespacio |
| Verificación de Stum | Inactiva |
| Amortiguación | 5% |
| Aceleración | 9.80665 |

Se han considerado 50 modos propios debido a que se buscaba un coeficiente de participación de masas superior al 90% en las tres direcciones.

Los resultados obtenidos se muestran a continuación. Se han calculado los modos propios para el tren 3 y para el tren 4, pues aunque los modos de una estructura no dependen de las cargas, sí dependen de la masa considerada, siendo diferente para los dos trenes.

El coeficiente dinámico calculado en el EC es sólo aplicable para velocidades inferiores a 220 km/h y cuando se esté dentro del huso de frecuencias expuesto en la Norma.

En este caso no se cumplen ninguna de las dos opciones (como se observa a continuación), por lo que se deberá desarrollar una metodología diferente.



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Autor: **eipsa-J.A. Llombart-Eipsa**
Archivo: **Rierumo.rtd**
Dirección:
Proyecto: Rierumo

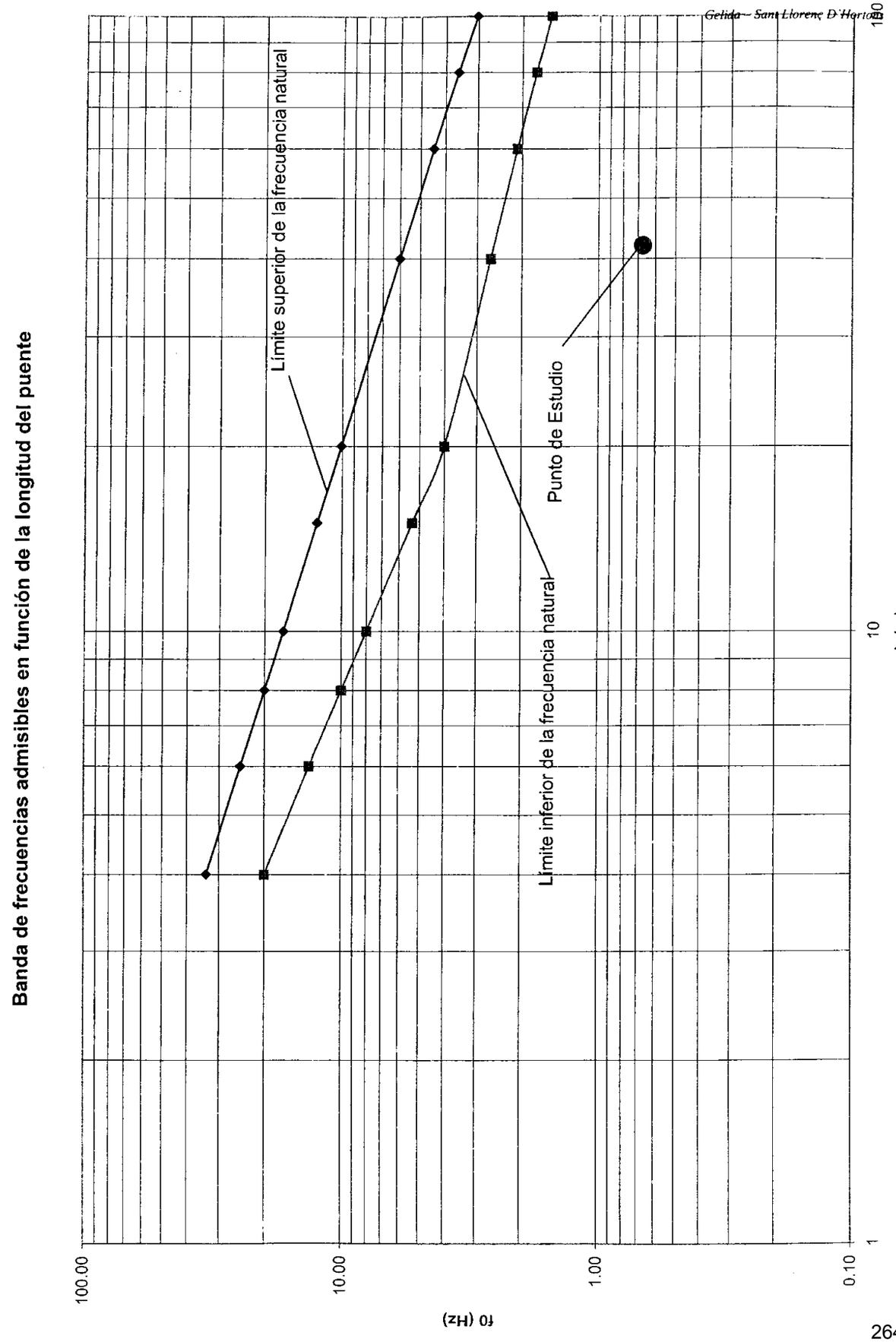
## Modos Propios

**- Caso: 151 (MODAL) Modos activos: 1..100, CQC**

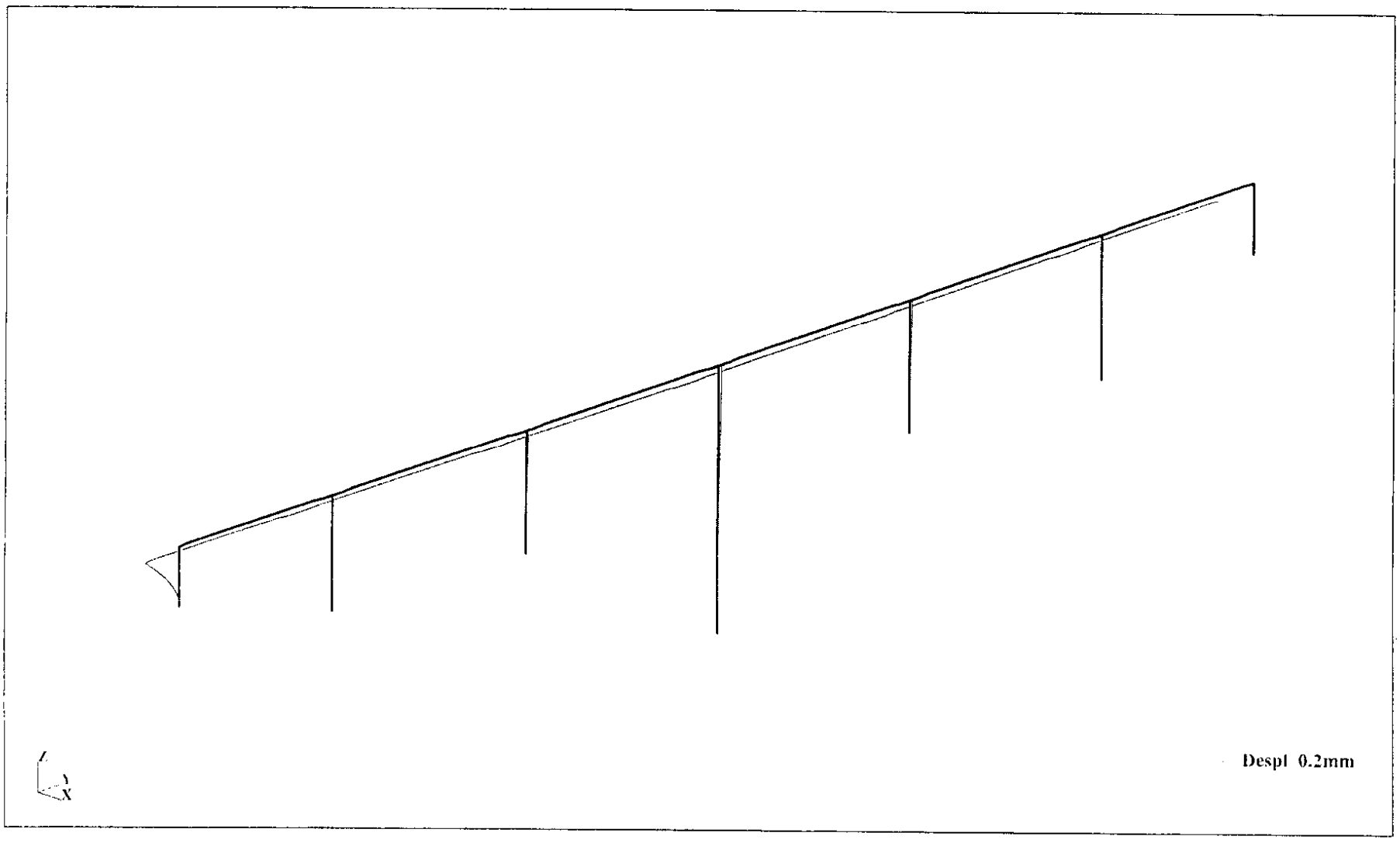
| Caso/Modo | Valor propio | Frecuencia (Hz) | Período (sec) | Pulsación (1/sec) | . UX (%) | . UY (%) | . UZ (%) |
|---|---|---|---|---|---|---|---|
| 151/ 1 | 17.59 | 0.67 | 1.50 | 4.19 | 4.34 | 83.78 | 0.00 |
| 151/ 2 | 17.75 | 0.67 | 1.49 | 4.21 | 4.45 | 86.92 | 0.00 |
| 151/ 3 | 74.45 | 1.37 | 0.73 | 8.63 | 61.25 | 90.29 | 0.00 |
| 151/ 4 | 164.48 | 2.04 | 0.49 | 12.82 | 61.57 | 90.32 | 0.00 |
| 151/ 5 | 206.20 | 2.29 | 0.44 | 14.36 | 61.63 | 92.02 | 0.00 |
| 151/ 6 | 276.85 | 2.65 | 0.38 | 16.64 | 85.13 | 92.92 | 0.00 |
| 151/ 7 | 293.66 | 2.73 | 0.37 | 17.14 | 85.18 | 94.47 | 0.00 |
| 151/ 8 | 318.60 | 2.84 | 0.35 | 17.85 | 85.19 | 94.47 | 0.00 |
| 151/ 9 | 391.40 | 3.15 | 0.32 | 19.78 | 85.24 | 95.93 | 0.00 |
| 151/ 10 | 434.98 | 3.32 | 0.30 | 20.86 | 85.32 | 97.94 | 0.00 |
| 151/ 11 | 441.04 | 3.34 | 0.30 | 21.00 | 85.32 | 97.94 | 0.01 |
| 151/ 12 | 533.42 | 3.68 | 0.27 | 23.10 | 85.36 | 99.29 | 0.01 |
| 151/ 13 | 654.65 | 4.07 | 0.25 | 25.59 | 85.45 | 99.29 | 0.01 |
| 151/ 14 | 668.42 | 4.11 | 0.24 | 25.85 | 85.46 | 99.29 | 0.01 |
| 151/ 15 | 899.09 | 4.77 | 0.21 | 29.98 | 85.46 | 99.29 | 10.12 |
| 151/ 16 | 1165.07 | 5.43 | 0.18 | 34.13 | 85.47 | 99.33 | 10.86 |
| 151/ 17 | 1271.79 | 5.68 | 0.18 | 35.66 | 87.98 | 99.42 | 10.91 |
| 151/ 18 | 1296.76 | 5.73 | 0.17 | 36.01 | 88.15 | 99.42 | 19.87 |
| 151/ 19 | 1351.53 | 5.85 | 0.17 | 36.76 | 88.16 | 99.43 | 73.50 |
| 151/ 20 | 2025.66 | 7.16 | 0.14 | 45.01 | 88.16 | 99.43 | 73.50 |
| 151/ 21 | 2631.61 | 8.16 | 0.12 | 51.30 | 88.16 | 99.43 | 73.50 |
| 151/ 22 | 2706.86 | 8.28 | 0.12 | 52.03 | 88.16 | 99.43 | 73.50 |
| 151/ 23 | 2937.90 | 8.63 | 0.12 | 54.20 | 88.16 | 99.43 | 73.50 |
| 151/ 24 | 3666.24 | 9.64 | 0.10 | 60.55 | 88.17 | 99.43 | 73.59 |
| 151/ 25 | 3699.94 | 9.68 | 0.10 | 60.83 | 88.60 | 99.44 | 73.59 |
| 151/ 26 | 4398.21 | 10.56 | 0.09 | 66.32 | 89.99 | 99.48 | 73.59 |
| 151/ 27 | 4570.86 | 10.76 | 0.09 | 67.61 | 90.13 | 99.49 | 73.59 |
| 151/ 28 | 4654.25 | 10.86 | 0.09 | 68.22 | 90.19 | 99.49 | 73.59 |
| 151/ 29 | 4731.30 | 10.95 | 0.09 | 68.78 | 90.19 | 99.49 | 73.61 |
| 151/ 30 | 4998.10 | 11.25 | 0.09 | 70.70 | 90.19 | 99.53 | 73.61 |
| 151/ 31 | 5142.74 | 11.41 | 0.09 | 71.71 | 91.60 | 99.58 | 73.61 |
| 151/ 32 | 5308.94 | 11.60 | 0.09 | 72.86 | 91.63 | 99.58 | 73.65 |
| 151/ 33 | 5627.01 | 11.94 | 0.08 | 75.01 | 91.68 | 99.58 | 73.66 |
| 151/ 34 | 5701.17 | 12.02 | 0.08 | 75.51 | 91.69 | 99.58 | 73.66 |
| 151/ 35 | 7714.17 | 13.98 | 0.07 | 87.83 | 91.70 | 99.58 | 73.66 |
| 151/ 36 | 8332.02 | 14.53 | 0.07 | 91.28 | 91.71 | 99.58 | 73.88 |
| 151/ 37 | 8397.10 | 14.58 | 0.07 | 91.64 | 91.78 | 99.59 | 73.94 |
| 151/ 38 | 9333.98 | 15.38 | 0.07 | 96.61 | 91.78 | 99.59 | 73.94 |
| 151/ 39 | 9705.56 | 15.68 | 0.06 | 98.52 | 91.78 | 99.59 | 77.58 |
| 151/ 40 | 10160.08 | 16.04 | 0.06 | 100.80 | 91.78 | 99.59 | 82.40 |
| 151/ 41 | 10287.78 | 16.14 | 0.06 | 101.43 | 91.78 | 99.59 | 85.10 |
| 151/ 42 | 10810.83 | 16.55 | 0.06 | 103.98 | 91.79 | 99.59 | 85.98 |
| 151/ 43 | 11154.18 | 16.81 | 0.06 | 105.61 | 91.79 | 99.59 | 85.98 |
| 151/ 44 | 11661.99 | 17.19 | 0.06 | 107.99 | 93.41 | 99.65 | 85.98 |
| 151/ 45 | 12883.64 | 18.07 | 0.06 | 113.51 | 93.41 | 99.65 | 85.98 |
| 151/ 46 | 13459.79 | 18.46 | 0.05 | 116.02 | 93.46 | 99.65 | 85.98 |
| 151/ 47 | 14596.31 | 19.23 | 0.05 | 120.82 | 93.46 | 99.65 | 86.13 |
| 151/ 48 | 15054.53 | 19.53 | 0.05 | 122.70 | 93.46 | 99.65 | 86.13 |
| 151/ 49 | 16086.77 | 20.19 | 0.05 | 126.83 | 93.46 | 99.65 | 92.15 |

| Caso/Modo | Valor propio | Frecuencia (Hz) | Período (sec) | Pulsación (1/sec) | . UX (%) | . UY (%) | . UZ (%) |
|---|---|---|---|---|---|---|---|
| 151/ 50 | 17387.60 | 20.99 | 0.05 | 131.86 | 93.55 | 99.65 | 92.15 |
| 151/ 51 | 18092.84 | 21.41 | 0.05 | 134.51 | 93.60 | 99.65 | 92.15 |
| 151/ 52 | 18972.49 | 21.92 | 0.05 | 137.74 | 93.60 | 99.65 | 92.26 |
| 151/ 53 | 19415.94 | 22.18 | 0.05 | 139.34 | 93.60 | 99.65 | 92.27 |
| 151/ 54 | 20303.10 | 22.68 | 0.04 | 142.49 | 93.60 | 99.65 | 92.28 |
| 151/ 55 | 22504.43 | 23.88 | 0.04 | 150.01 | 93.92 | 99.67 | 92.28 |
| 151/ 56 | 23138.90 | 24.21 | 0.04 | 152.11 | 95.37 | 99.72 | 92.28 |
| 151/ 57 | 26019.72 | 25.67 | 0.04 | 161.31 | 95.37 | 99.72 | 92.47 |
| 151/ 58 | 28618.36 | 26.92 | 0.04 | 169.17 | 95.37 | 99.72 | 92.48 |
| 151/ 59 | 29371.94 | 27.28 | 0.04 | 171.38 | 95.39 | 99.72 | 92.48 |
| 151/ 60 | 30183.36 | 27.65 | 0.04 | 173.73 | 95.52 | 99.73 | 92.49 |
| 151/ 61 | 31345.27 | 28.18 | 0.04 | 177.05 | 95.53 | 99.73 | 92.49 |
| 151/ 62 | 32649.46 | 28.76 | 0.03 | 180.69 | 95.70 | 99.73 | 92.50 |
| 151/ 63 | 35160.57 | 29.84 | 0.03 | 187.51 | 96.05 | 99.75 | 92.62 |
| 151/ 64 | 36134.16 | 30.25 | 0.03 | 190.09 | 96.10 | 99.75 | 93.80 |
| 151/ 65 | 38028.89 | 31.04 | 0.03 | 195.01 | 96.16 | 99.75 | 93.81 |
| 151/ 66 | 41194.72 | 32.30 | 0.03 | 202.96 | 96.62 | 99.77 | 93.82 |
| 151/ 67 | 42139.81 | 32.67 | 0.03 | 205.28 | 96.88 | 99.78 | 93.84 |
| 151/ 68 | 44416.27 | 33.54 | 0.03 | 210.75 | 97.39 | 99.80 | 93.84 |
| 151/ 69 | 44974.65 | 33.75 | 0.03 | 212.07 | 97.53 | 99.81 | 93.84 |
| 151/ 70 | 49286.79 | 35.33 | 0.03 | 222.01 | 97.59 | 99.81 | 93.84 |
| 151/ 71 | 51968.66 | 36.28 | 0.03 | 227.97 | 97.59 | 99.81 | 95.01 |
| 151/ 72 | 52226.05 | 36.37 | 0.03 | 228.53 | 97.76 | 99.81 | 95.02 |
| 151/ 73 | 54699.78 | 37.22 | 0.03 | 233.88 | 97.78 | 99.82 | 95.02 |
| 151/ 74 | 55354.33 | 37.45 | 0.03 | 235.28 | 97.78 | 99.83 | 95.02 |
| 151/ 75 | 55570.96 | 37.52 | 0.03 | 235.73 | 97.80 | 99.83 | 95.02 |
| 151/ 76 | 63083.11 | 39.97 | 0.03 | 251.16 | 98.44 | 99.86 | 95.02 |
| 151/ 77 | 63867.97 | 40.22 | 0.02 | 252.72 | 98.44 | 99.86 | 95.04 |
| 151/ 78 | 66702.43 | 41.10 | 0.02 | 258.27 | 98.47 | 99.86 | 95.04 |
| 151/ 79 | 69829.40 | 42.06 | 0.02 | 264.25 | 98.69 | 99.87 | 95.04 |
| 151/ 80 | 72167.08 | 42.76 | 0.02 | 268.64 | 98.69 | 99.87 | 95.13 |
| 151/ 81 | 72599.48 | 42.88 | 0.02 | 269.44 | 98.79 | 99.87 | 95.13 |
| 151/ 82 | 76032.18 | 43.89 | 0.02 | 275.74 | 98.79 | 99.87 | 95.14 |
| 151/ 83 | 77765.74 | 44.38 | 0.02 | 278.87 | 98.80 | 99.89 | 95.14 |
| 151/ 84 | 79848.32 | 44.97 | 0.02 | 282.57 | 98.91 | 99.90 | 95.14 |
| 151/ 85 | 83405.45 | 45.96 | 0.02 | 288.80 | 99.09 | 99.90 | 95.14 |
| 151/ 86 | 86207.62 | 46.73 | 0.02 | 293.61 | 99.09 | 99.90 | 95.23 |
| 151/ 87 | 87787.21 | 47.16 | 0.02 | 296.29 | 99.12 | 99.90 | 95.23 |
| 151/ 88 | 91261.76 | 48.08 | 0.02 | 302.10 | 99.12 | 99.90 | 95.26 |
| 151/ 89 | 91515.39 | 48.15 | 0.02 | 302.52 | 99.12 | 99.90 | 95.26 |
| 151/ 90 | 94758.94 | 48.99 | 0.02 | 307.83 | 99.13 | 99.92 | 95.27 |
| 151/ 91 | 98172.10 | 49.87 | 0.02 | 313.32 | 99.13 | 99.92 | 96.01 |
| 151/ 92 | 101215.00 | 50.63 | 0.02 | 318.14 | 99.34 | 99.93 | 96.01 |
| 151/ 93 | 102370.36 | 50.92 | 0.02 | 319.95 | 99.34 | 99.95 | 96.01 |
| 151/ 94 | 108932.32 | 52.53 | 0.02 | 330.05 | 99.34 | 99.95 | 96.03 |
| 151/ 95 | 111593.54 | 53.17 | 0.02 | 334.06 | 99.34 | 99.95 | 96.10 |
| 151/ 96 | 112680.16 | 53.42 | 0.02 | 335.68 | 99.34 | 99.95 | 96.30 |
| 151/ 97 | 113695.65 | 53.67 | 0.02 | 337.19 | 99.35 | 99.95 | 96.34 |
| 151/ 98 | 122779.56 | 55.77 | 0.02 | 350.40 | 99.35 | 99.95 | 97.00 |
| 151/ 99 | 126026.01 | 56.50 | 0.02 | 355.00 | 99.35 | 99.95 | 97.83 |
| 151/ 100 | 127812.96 | 56.90 | 0.02 | 357.51 | 99.39 | 99.95 | 97.93 |
| 151/ CQC | No existe | No existe | No existe | No existe | No existe | No existe | No existe |





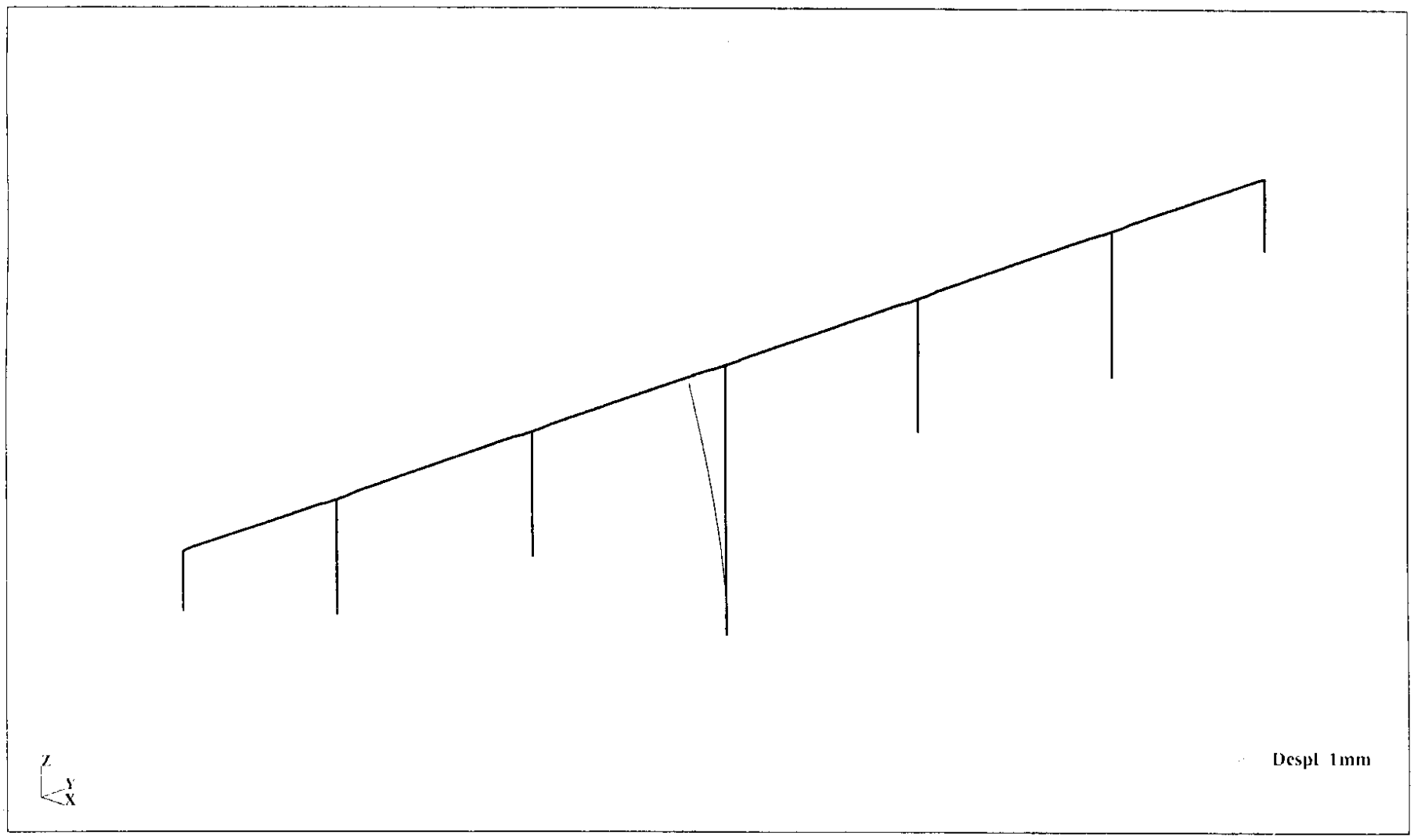
## Modo 1



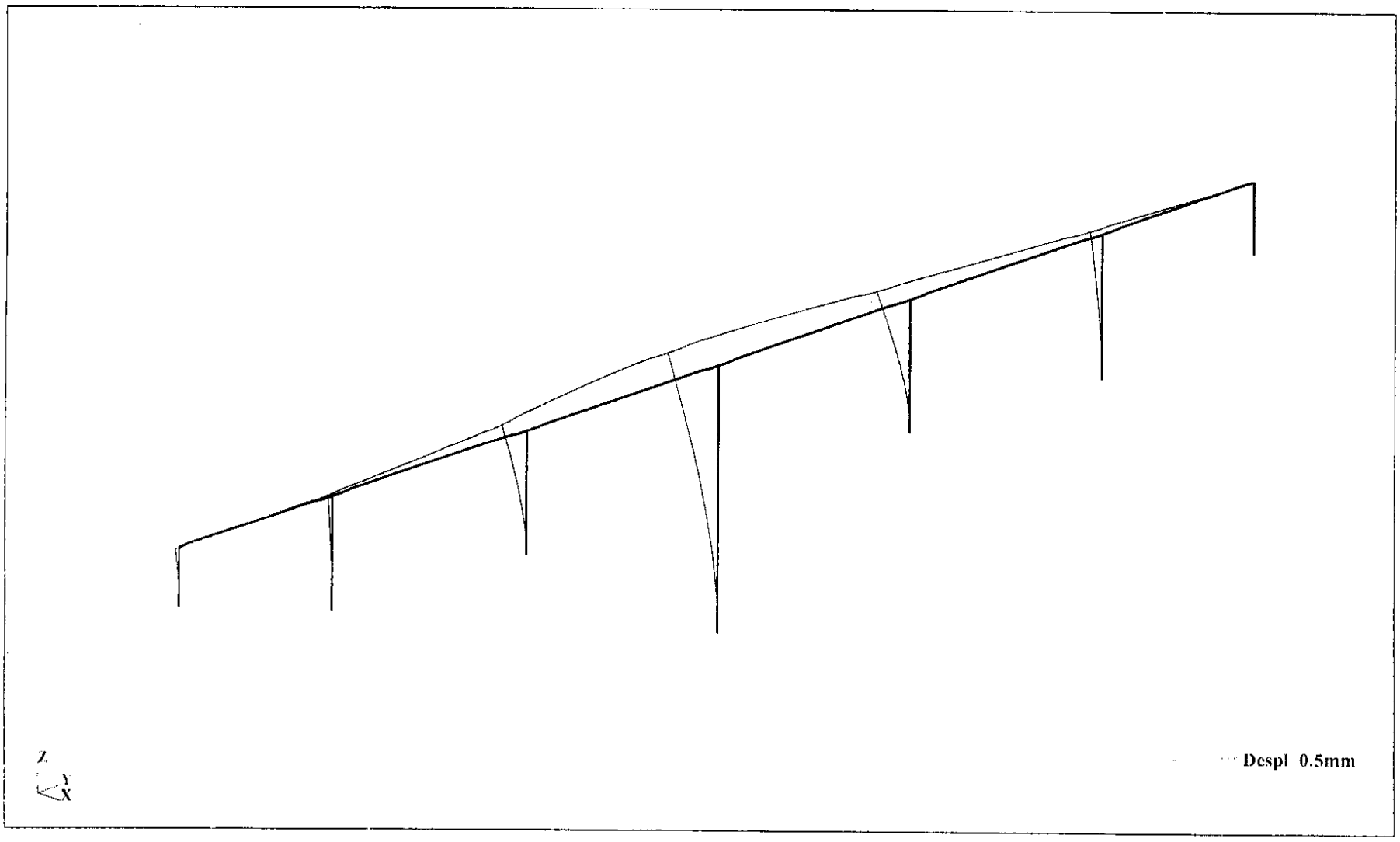





## Modo 2



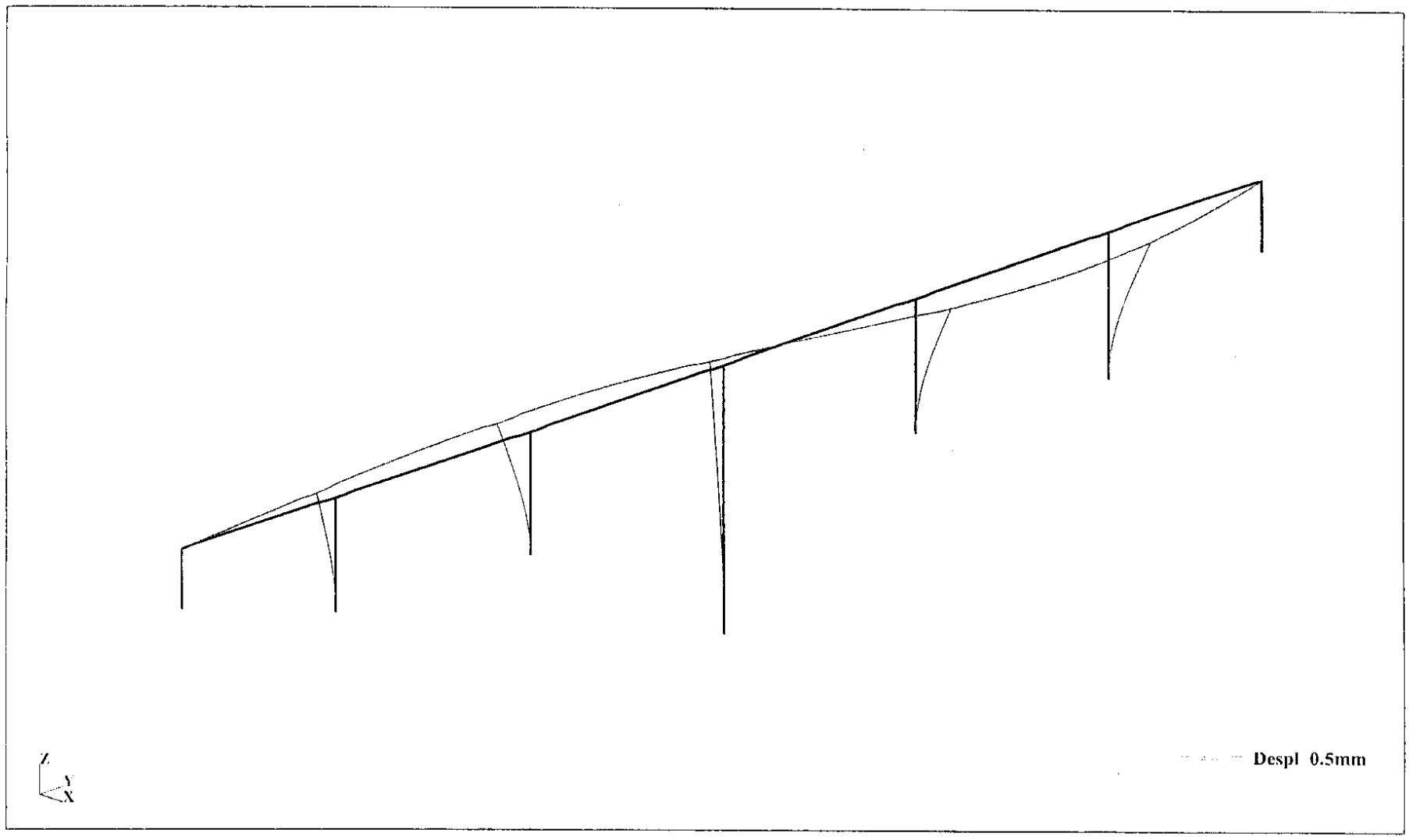
## Modo 3



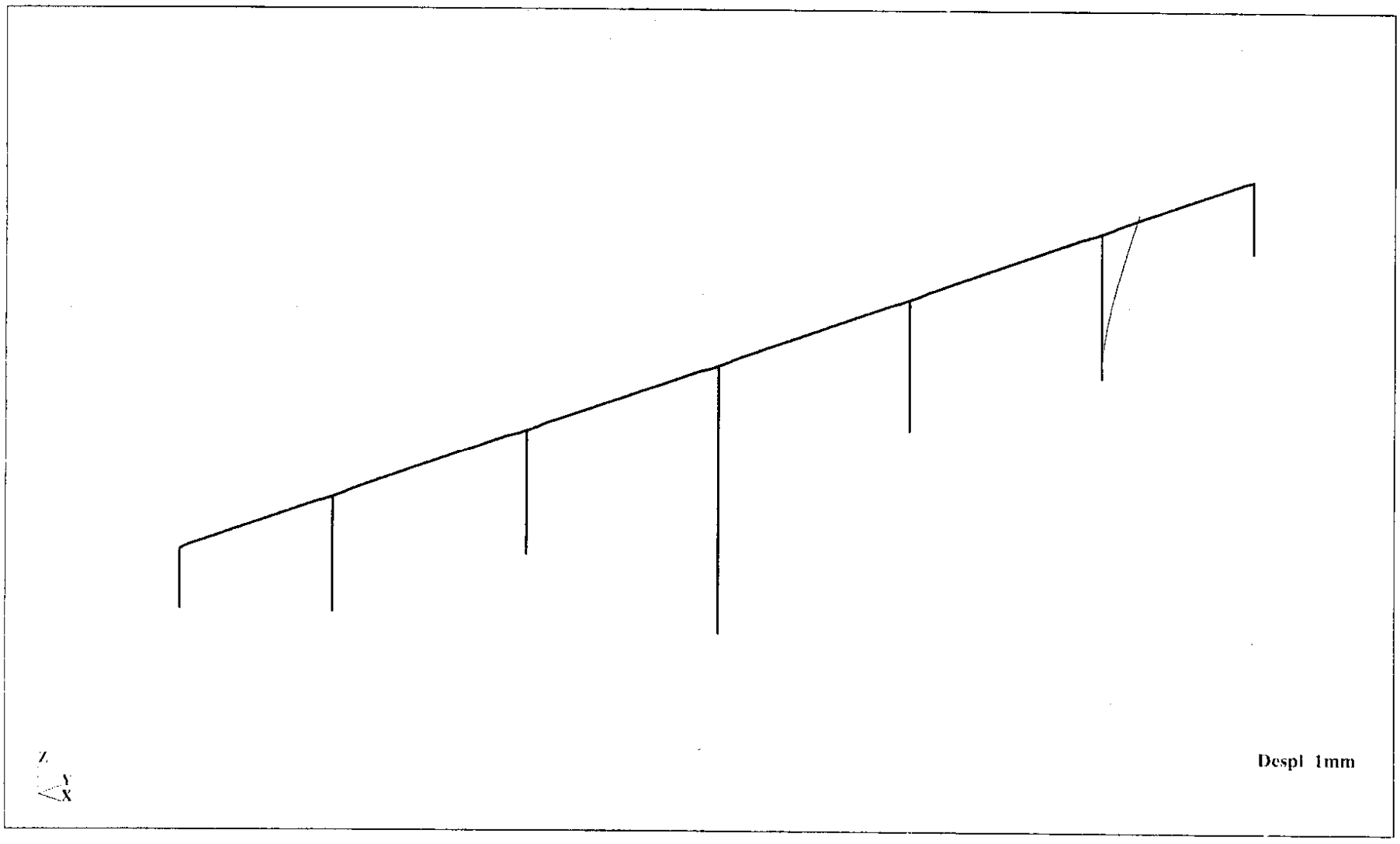





## Modo 4



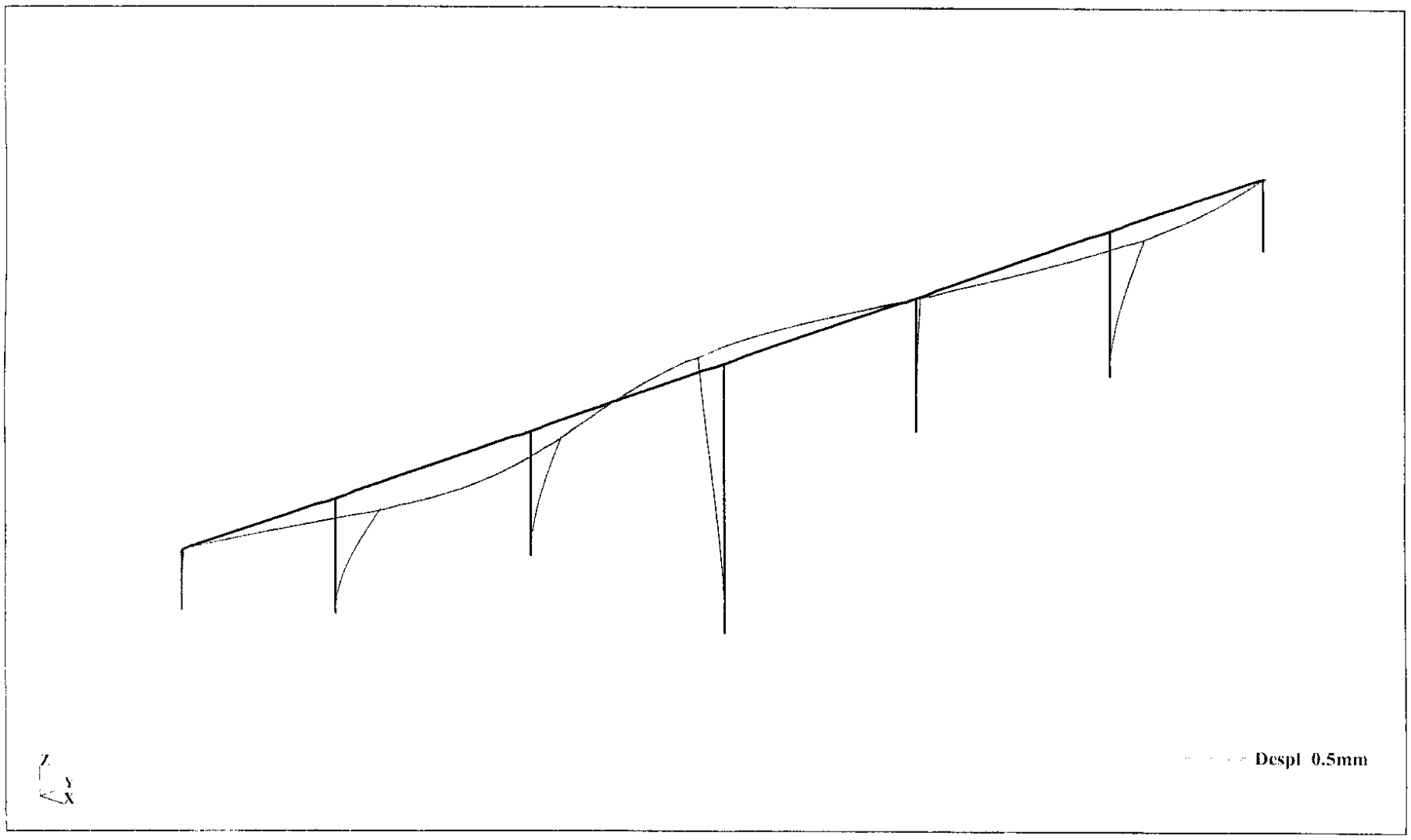
## Modo 5








## Modo 6



## 7.7.4.Modelos de Carga

### 7.7.4. Modelos de carga.

Se presentan en este apartado los modelos de trenes que serán empleados en el estudio, caracterizados por la colocación de las cargas por eje de cada vehículo.

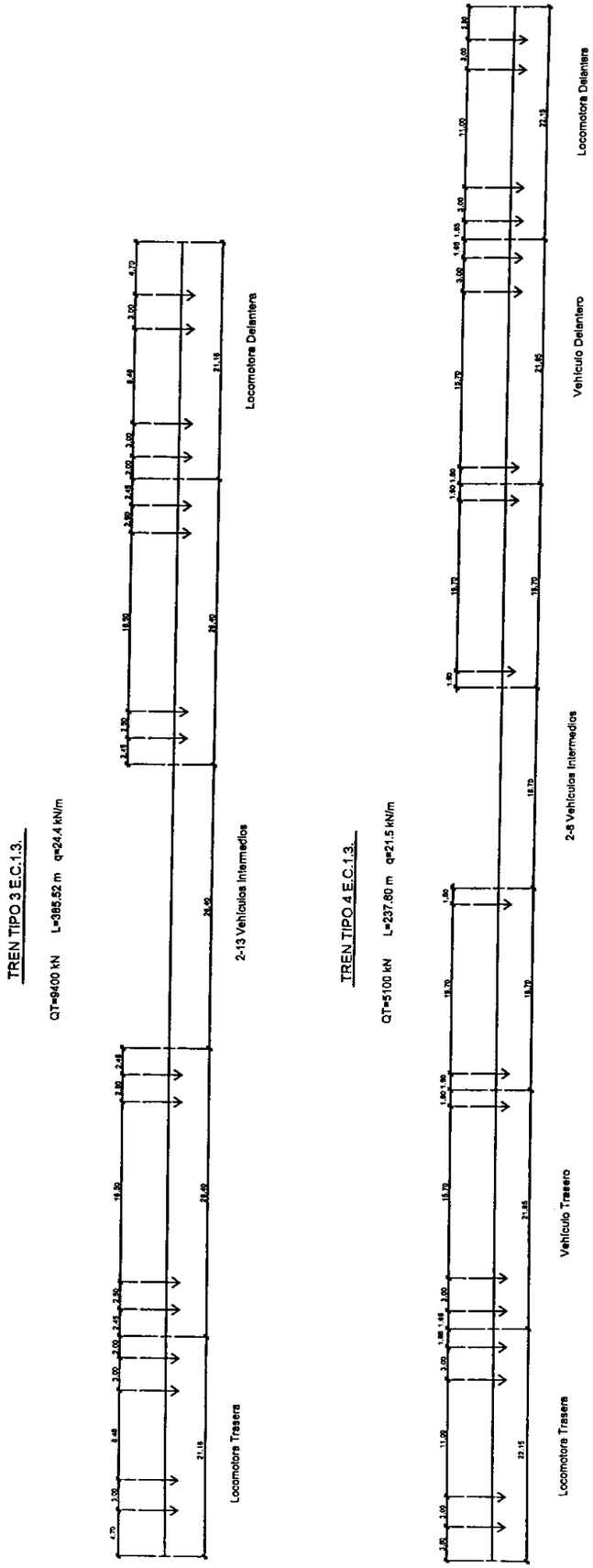
- Tren 3 del EC. Compuesto por:

  - 1 locomotora delantera formada por 4 cargas de 200 kN: 1x(4x200 kN).
  - Un número variable de vehículos intermedios formados por 4 cargas de 150 kN (el número de vehículos será menor que 13): nx(4*150 kN). En este caso se han dispuesto **8** vehículos.
  - 1 locomotora trasera formada por 4 cargas de 200 kN: 1x(4x200 kN).

- Tren 4 del EC. Compuesto por:

  - 1 locomotora delantera formada por 4 cargas de 170 kN: 1x(4x170 kN).
  - 1 vehículo delantero formado por 3 cargas de 170 kN: 1x(3x170 kN).
  - Un número variable de vehículos intermedios formados por 2 cargas de 170 kN (el número de vehículos será menor que 8): nx(2*170 kN). En este caso se han dispuesto **8** vehículos.
  - 1 vehículo trasero formado por 3 cargas de 170 kN: 1x(3x170 kN).
  - 1 locomotora trasera formada por 4 cargas de 170 kN: 1x(4x170 kN).

La descripción de los trenes se muestra en la página siguiente.




## 7.7.5.Método de cálculo

### 7.7.5. Método de cálculo.

Tanto el Eurocódigo como la IAPF-98 proponen una serie de métodos para la evaluación dinámica de puentes de ferrocarril.

En el caso del puente de estudio, al no cumplirse las condiciones descritas en apartados anteriores se empleará uno de estos métodos, concretamente el de "Integración directa en el tiempo sin interacción vehículo – estructura", pues se cumplen las premisas necesarias:

- Método general válido para todo rango de velocidades.
- Sin limitación de frecuencias y masas mínimas.
- Aplicable a puentes isostáticos e hiperestáticos.
- Incluye posibles fenómenos resonantes.
- No tiene en cuenta fenómenos de interacción vehículo – estructura.

Al ser un viaducto de varios vanos perteneciente a una línea de alta velocidad es indicada la integración directa en el tiempo, que puede ser realizada teniendo en cuenta la interacción vehículo – estructura o sin ella. Este segundo método es más conservador, y es el que se seguirá.

Con este método generalmente sólo se representa el aspecto dinámico de un puente con vía ideal, por el que pasa un tren de cargas, sin tener en cuenta las irregularidades que esta pueda tener, dado que su influencia es despreciable.

Se deberá cumplir lo siguiente:

$$\phi\, \delta_{est,tipo} \geq \delta_{din,real}$$

donde:

- $\phi$: coeficiente de impacto calculado con la Norma IPF-75 o el EC1.
- $\delta_{din,real}$: flecha obtenida mediante cálculo dinámico y con los trenes 3 y 4.
- $\delta_{est,tipo}$ : flecha obtenida mediante cálculo estático a los trenes de las instrucciones IPF-75 y EC1.

La respuesta dinámica de la estructura se calculará mediante integración directa con un método paso a paso.

El Time- History Análisis permite obtener la reacción de la estructura en unos instantes de tiempo determinados para unas iteraciones determinadas.

El Time- History Análisis consiste en encontrar una solución a la siguiente ecuación dependiente del tiempo:

$$M \cdot a(t) + C \cdot v(t) + K \cdot d(t) = F(t)$$

donde las condiciones de contorno son conocidas y son:

- $d(0)=d_0$
- $v(0)=v_0$

y dónde:

- **M**: matriz de masas.
- **K**: matriz de rigidez.
- **C=$\alpha$*M+$\beta$*K** : matriz de amortiguamiento.
- $\alpha$, $\beta$: coeficientes definidos por el usuario.
- **d**: vector de desplazamientos.
- **v**: vector de velocidades.
- **a**: vector de aceleraciones
- **F**: vector de cargas

Los vectores d, v y a son las incógnitas del problema en cada instante de tiempo. Se empleará el Método de Descomposición para resolver el problema.

La función de carga móvil se debe definir a partir de sucesivas posiciones de los vehículos y combinarlos con las correspondientes funciones temporales.

Los parámetros considerados se muestran en las páginas siguientes.

FICHERO DE ESCRITURA DE DATOS E HIPOTESIS

- NUMERO DE BARRAS DEL MODELO: 112
- NUMERO DE INTERVALOS DE TIEMPO: 150
- TREN NUMERO: 3
- EXCENTRICIDAD DEL TREN: 2.350
- TREN FORMADO POR:
  - LOCOMOTORA DELANTERA (4x200 kN)
  - 8 VEHICULOS INTERMEDIOS 8x(4x150 kN)
  - LOCOMOTORA TRASERA (4x200 kN)
- EN CADA INTERVALO DE TIEMPO EL TREN AVANZA: 3.229 metros
- MASA ADICIONAL: 359.900
- DIRECTRIZ VARIABLE

- PARAMETROS CONSIDERADOS PARA ANALISIS MODAL:

  - NUMERO DE MODOS PROPIOS: 50
  - TOLERANCIA: 0.0001
  - NUMERO MAXIMO DE ITERACIONES: 40
  - METODO: ITERACION EN EL SUBESPACIO
  - MATRIZ DE MASAS: CONCENTRADAS CON ROTACIONES
  - AMORTIGUACION: 5%
  - VERIFICACION DE STUM: INACTIVA
  - ACELERACION: 9.80665

- PARAMETROS CONSIDERADOS PARA TIME- HISTORY:

  - METODO: DECOMPOSICION MODAL
  - MATRIZ DE MASAS: CONCENTRADAS ROTATIVAS
  - ACELERACION: 9.80665
  - TIEMPO FINAL DE CALCULO: 4.063
  - DURACION DE CADA INTERVALO: 0.027
  - NUMERO DE DIVISONES POR INTERVALO:
    - VELOCIDAD DINAMICA: 5
  - AMORTIGUACION: 5%
  - VELOCIDAD INICIAL DINAMICA: 40.000 m/s
  - VELOCIDAD FINAL DINAMICA: 120.000 m/s
  - INTERVALO DE VELOCIDADES 10.000 m/s

FICHERO DE ESCRITURA DE DATOS E HIPOTESIS

- NUMERO DE BARRAS DEL MODELO: 112
- NUMERO DE INTERVALOS DE TIEMPO: 150
- TREN NUMERO: 4
- EXCENTRICIDAD DEL TREN: 2.350
- TREN FORMADO POR:
  - LOCOMOTORA DELANTERA (4x170 kN)
  - VEHICULO DELANTERO (3x170 kN)
  - 8 VEHICULOS INTERMEDIOS 8x(2x170 kN)
  - VEHICULO TRASERO (3x170 kN)
  - LOCOMOTORA TRASERA (4x170 kN)
- EN CADA INTERVALO DE TIEMPO EL TREN AVANZA: 3.123 metros
- MASA ADICIONAL: 357.000
- DIRECTRIZ VARIABLE

- PARAMETROS CONSIDERADOS PARA ANALISIS MODAL:

  - NUMERO DE MODOS PROPIOS: 50
  - TOLERANCIA: 0.0001
  - NUMERO MAXIMO DE ITERACIONES: 40
  - METODO: ITERACION EN EL SUBESPACIO
  - MATRIZ DE MASAS: CONCENTRADAS CON ROTACIONES
  - AMORTIGUACION: 5%
  - VERIFICACION DE STUM: INACTIVA
  - ACELERACION: 9.80665

- PARAMETROS CONSIDERADOS PARA TIME- HISTORY:

  - METODO: DECOMPOSICION MODAL
  - MATRIZ DE MASAS: CONCENTRADAS ROTATIVAS
  - ACELERACION: 9.80665
  - TIEMPO FINAL DE CALCULO: 3.930
  - DURACION DE CADA INTERVALO: 0.026
  - NUMERO DE DIVISONES POR INTERVALO:
    - VELOCIDAD DINAMICA: 5
  - AMORTIGUACION: 5%
  - VELOCIDAD INICIAL DINAMICA: 40.000 m/s
  - VELOCIDAD FINAL DINAMICA: 120.000 m/s
  - INTERVALO DE VELOCIDADES 10.000 m/s

## 7.7.6.Resultados

### 7.7.6. Resultados.

Los resultados de los cálculos realizados se han agrupado en los siguientes subapartados:

- Desplazamientos carga estática.
- Resultados carga dinámica.
- Coeficientes de impacto.
- Desplazamientos trenes IPF y EC.
- Historias temporales.

Se han realizado estudios con los trenes 3 y 4 del Eurocódigo para el rango de velocidades entre 40 y 120 m/s cada 10 m/s. La ubicación de los trenes abarca desde el momento en que entra la locomotora en la estructura hasta el momento en que el último vehículo la abandona, dividiendo este espacio en 150 intervalos. El tiempo en que se pasa de un intervalo a otro viene marcado por la velocidad, y varía de un caso a otro. Los trenes se han introducido con su excentricidad real, teniendo así en cuenta el momento torsor. Para la determinación de las masas adicionales se ha considerado la carga de balasto característica.

7.6.6.1. Resultados Carga Estática.

Se ha obtenido la envolvente de desplazamientos de los trenes 3 y 4 del EC introducidos como carga estática.

Los resultados obtenidos se muestran en la página siguiente.

**7.7.6.1. Resultados Carga Estática**

Desplazamientos Carga Estática Tren 3

**- Casos: 1A150**

| Filtrar | Nudo | Caso |
|---|---|---|
| Lista completa | 1A120 201A207 | 1A152 |
| Selección | 9 27A87CA20 1 | 1A150 |
| | | |
| Número total | 127 | 152 |
| Número seleccion | 6 | 150 |

**- Casos: 1A150**

| Nudo/Caso | | UZ (mm) |
|---|---|---|
| 9/ | 89 | 0.5120>> |
| 9/ | 10 | -1.2318<< |
| 27/ | 102 | 0.6034>> |
| 27/ | 22 | -1.5979<< |
| 47/ | 23 | 0.6114>> |
| 47/ | 103 | -1.6470<< |
| 67/ | 128 | 0.6118>> |
| 67/ | 48 | -1.6504<< |
| 87/ | 49 | 0.6019>> |
| 87/ | 129 | -1.6185<< |
| 105/ | 62 | 0.5009>> |
| 105/ | 141 | -1.2450<< |





Desplazamientos Carga Estática Tren 4

**- Casos: 1A150**

| Filtrar | Nudo | Caso |
|---|---|---|
| Lista completa | 1A120 201A207 | 1A152 |
| Selección | 9 27A87CA20 1 | 1A150 |
| | | |
| Número total | 127 | 152 |
| Número seleccion | 6 | 150 |

**- Casos: 1A150**

| Nudo/Caso | | UZ (mm) |
|---|---|---|
| 9/ | 87 | 0.4595>> |
| 9/ | 11 | -1.0675<< |
| 27/ | 101 | 0.5384>> |
| 27/ | 23 | -1.4323<< |
| 47/ | 24 | 0.5345>> |
| 47/ | 101 | -1.5160<< |
| 67/ | 127 | 0.5348>> |
| 67/ | 50 | -1.5190<< |
| 87/ | 50 | 0.5373>> |
| 87/ | 128 | -1.4510<< |
| 105/ | 64 | 0.4497>> |
| 105/ | 140 | -1.0798<< |

7.7.6.2. Resultados Cargas Dinámicas.

Los resultados obtenidos en el análisis dinámico se muestran en las páginas siguientes, concluyéndose lo siguiente:

- En el rango de velocidades estudiadas se aprecian ciertas no linealidades, pero sin que ello produzca un coeficiente de amplificación que equivalga a cargas estáticas mayores que las calculadas.
- Al aumentar la velocidad de los trenes la aceleración de respuesta aumenta considerablemente.
- El valor de aceleración máximo alcanza un valor de 0.339 $m/s^2$, muy por debajo del valor de 0.35g (3.43 $m/s^2$) que establece como límite la norma IAPF-98.

En las páginas siguientes se muestran los resultados del cálculo dinámico, en donde se calculan los desplazamientos, la velocidad y la aceleración de los centros de vano de la estructura para las distintas velocidades de cada tren.

7.7.6.2. Resultados Cargas Dinámicas

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## Resultados del análisis temporal - Casos: 154 155 : Envolvente: 1

**- Caso: 152 (ANALISIS TEMPORAL. VELOCIDAD= 40.000 m/**

| Nudo/Caso | VZ (mm/sec) | UZ (mm) | AZ (mm/sec2) |
|---|---|---|---|
| 9/ ANALI | **3,02>>** | -0,82 | 4,98 |
| 9/ ANALI | **-2,56<<** | -0,87 | 4,90 |
| 9/ ANALI | -0,17 | **0,53>>** | -9,28 |
| 9/ ANALI | 0,20 | **-1,26<<** | 16,45 |
| 9/ ANALI | -0,49 | -0,91 | **27,86>>** |
| 9/ ANALI | -1,35 | -0,40 | **-23,34<<** |
| 27/ ANALI | **3,71>>** | -0,80 | 5,26 |
| 27/ ANALI | **-3,80<<** | -0,72 | 5,22 |
| 27/ ANALI | 0,05 | **0,62>>** | -3,52 |
| 27/ ANALI | 0,11 | **-1,63<<** | 15,21 |
| 27/ ANALI | 1,48 | -1,46 | **16,36>>** |
| 27/ ANALI | 0,43 | -0,48 | **-17,41<<** |
| 47/ ANALI | **4,12>>** | -0,61 | -2,87 |
| 47/ ANALI | **-3,73<<** | -0,68 | 4,56 |
| 47/ ANALI | -0,10 | **0,64>>** | -5,63 |
| 47/ ANALI | 0,37 | **-1,66<<** | 7,64 |
| 47/ ANALI | -0,61 | -0,74 | **23,18>>** |
| 47/ ANALI | 0,45 | -0,64 | **-16,07<<** |
| 67/ ANALI | **3,82>>** | -0,26 | 0,52 |
| 67/ ANALI | **-4,04<<** | -0,75 | 1,84 |
| 67/ ANALI | -0,16 | **0,64>>** | -13,64 |
| 67/ ANALI | 0,14 | **-1,67<<** | 10,73 |
| 67/ ANALI | -2,29 | -1,53 | **23,77>>** |
| 67/ ANALI | -0,16 | 0,64 | **-13,64<<** |
| 87/ ANALI | **3,35>>** | -0,88 | 6,57 |
| 87/ ANALI | **-3,97<<** | -0,62 | -4,92 |
| 87/ ANALI | -0,09 | **0,61>>** | -1,53 |
| 87/ ANALI | -0,53 | **-1,63<<** | 16,51 |
| 87/ ANALI | 1,65 | -1,56 | **23,48>>** |
| 87/ ANALI | 0,05 | -0,53 | **-19,38<<** |
| 105/ ANALI | **2,54>>** | -0,59 | -12,03 |
| 105/ ANALI | **-3,12<<** | -0,92 | 5,99 |
| 105/ ANALI | 0,00 | **0,52>>** | -5,40 |
| 105/ ANALI | 0,71 | **-1,26<<** | 22,37 |
| 105/ ANALI | 0,71 | -1,26 | **22,37>>** |
| 105/ ANALI | -1,23 | -0,38 | **-23,08<<** |



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## Resultados del análisis temporal - Casos: 154 155 : Envolvente: 1

**- Caso: 152 (ANALISIS TEMPORAL. VELOCIDAD= 50.000 m/**

| Nudo/Caso | VZ (mm/sec) | UZ (mm) | AZ (mm/sec2) |
|---|---|---|---|
| 9/ ANALI | **4,25>>** | -0,81 | 10,05 |
| 9/ ANALI | **-3,38<<** | -0,87 | 9,73 |
| 9/ ANALI | 0,15 | **0,53>>** | -6,26 |
| 9/ ANALI | -0,03 | **-1,28<<** | 40,83 |
| 9/ ANALI | -0,03 | -1,28 | **40,83>>** |
| 9/ ANALI | -0,87 | -0,34 | **-35,01<<** |
| 27/ ANALI | **4,98>>** | -0,42 | 0,27 |
| 27/ ANALI | **-4,72<<** | -0,71 | -6,74 |
| 27/ ANALI | 0,24 | **0,64>>** | -15,37 |
| 27/ ANALI | 0,06 | **-1,64<<** | 15,25 |
| 27/ ANALI | 0,80 | -0,48 | **34,84>>** |
| 27/ ANALI | -0,79 | 0,59 | **-36,01<<** |
| 47/ ANALI | **4,78>>** | -0,53 | 9,65 |
| 47/ ANALI | **-4,66<<** | -0,99 | 3,43 |
| 47/ ANALI | -0,07 | **0,65>>** | -8,85 |
| 47/ ANALI | 0,98 | **-1,69<<** | 18,40 |
| 47/ ANALI | -0,22 | -0,78 | **43,33>>** |
| 47/ ANALI | -0,17 | -0,63 | **-30,69<<** |
| 67/ ANALI | **4,72>>** | -0,74 | 5,58 |
| 67/ ANALI | **-4,65<<** | -0,78 | -3,84 |
| 67/ ANALI | 0,15 | **0,65>>** | -13,55 |
| 67/ ANALI | 0,51 | **-1,69<<** | 22,93 |
| 67/ ANALI | 2,67 | -1,53 | **25,13>>** |
| 67/ ANALI | 0,54 | -0,31 | **-24,12<<** |
| 87/ ANALI | **4,35>>** | -0,50 | -8,73 |
| 87/ ANALI | **-4,77<<** | -0,37 | -3,21 |
| 87/ ANALI | -0,27 | **0,63>>** | -7,15 |
| 87/ ANALI | 0,10 | **-1,67<<** | 34,70 |
| 87/ ANALI | 0,10 | -1,67 | **34,70>>** |
| 87/ ANALI | -0,26 | -0,57 | **-35,53<<** |
| 105/ ANALI | **3,50>>** | -1,08 | 10,50 |
| 105/ ANALI | **-4,17<<** | -1,03 | 11,99 |
| 105/ ANALI | -0,36 | **0,52>>** | -9,57 |
| 105/ ANALI | -0,16 | **-1,27<<** | -3,25 |
| 105/ ANALI | 2,88 | -0,26 | **39,98>>** |
| 105/ ANALI | -0,96 | -0,12 | **-37,39<<** |

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## Resultados del análisis temporal - Casos: 154 155 : Envolvente: 1

**- Caso: 152 (ANALISIS TEMPORAL. VELOCIDAD= 60.000 m/**

| Nudo/Caso | VZ (mm/sec) | UZ (mm) | AZ (mm/sec2) |
|---|---|---|---|
| 9/ ANALI | **4,46>>** | -0,40 | 5,29 |
| 9/ ANALI | **-4,41<<** | -0,85 | -5,85 |
| 9/ ANALI | -0,68 | **0,54>>** | -23,80 |
| 9/ ANALI | -1,26 | **-1,29<<** | 42,37 |
| 9/ ANALI | 2,47 | -1,26 | **60,49>>** |
| 9/ ANALI | 2,20 | 0,41 | **-49,14<<** |
| 27/ ANALI | **5,73>>** | -0,49 | -19,10 |
| 27/ ANALI | **-5,13<<** | 0,07 | 11,14 |
| 27/ ANALI | -0,07 | **0,67>>** | -43,07 |
| 27/ ANALI | -0,48 | **-1,68<<** | 33,12 |
| 27/ ANALI | 1,99 | -1,55 | **60,66>>** |
| 27/ ANALI | -0,77 | -0,31 | **-67,91<<** |
| 47/ ANALI | **5,77>>** | -0,94 | 13,00 |
| 47/ ANALI | **-5,55<<** | -0,65 | 7,86 |
| 47/ ANALI | 0,20 | **0,70>>** | -29,30 |
| 47/ ANALI | 0,36 | **-1,71<<** | 13,21 |
| 47/ ANALI | -0,53 | -0,78 | **52,29>>** |
| 47/ ANALI | -0,33 | -0,64 | **-40,14<<** |
| 67/ ANALI | **5,87>>** | -0,84 | -5,85 |
| 67/ ANALI | **-5,84<<** | -1,04 | 0,00 |
| 67/ ANALI | -0,16 | **0,69>>** | -22,15 |
| 67/ ANALI | 0,24 | **-1,72<<** | 24,89 |
| 67/ ANALI | 0,54 | -1,69 | **48,49>>** |
| 67/ ANALI | 0,37 | -0,62 | **-37,93<<** |
| 87/ ANALI | **5,08>>** | -1,14 | -1,17 |
| 87/ ANALI | **-5,87<<** | -0,61 | 0,37 |
| 87/ ANALI | -0,20 | **0,65>>** | -22,55 |
| 87/ ANALI | -1,03 | **-1,70<<** | 46,02 |
| 87/ ANALI | -3,18 | -1,58 | **50,95>>** |
| 87/ ANALI | -1,77 | -0,62 | **-47,00<<** |
| 105/ ANALI | **3,99>>** | -0,98 | 5,35 |
| 105/ ANALI | **-4,30<<** | -0,93 | -11,27 |
| 105/ ANALI | -0,21 | **0,54>>** | -19,75 |
| 105/ ANALI | -1,12 | **-1,30<<** | 60,07 |
| 105/ ANALI | -1,12 | -1,30 | **60,07>>** |
| 105/ ANALI | 0,56 | -0,30 | **-61,45<<** |

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M

2M

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## Resultados del análisis temporal - Casos: 154 155 : Envolvente: 1

**- Caso: 152 (ANALISIS TEMPORAL. VELOCIDAD= 70.000 m/**

| Nudo/Caso | VZ (mm/sec) | UZ (mm) | AZ (mm/sec2) |
|---|---|---|---|
| 9/ ANALI | **6,36>>** | -0,88 | 6,44 |
| 9/ ANALI | **-5,19<<** | -0,33 | 2,59 |
| 9/ ANALI | -0,86 | **0,58>>** | -48,39 |
| 9/ ANALI | 1,23 | **-1,27<<** | 63,62 |
| 9/ ANALI | -1,15 | -0,93 | **82,18>>** |
| 9/ ANALI | -3,67 | -0,12 | **-62,35<<** |
| 27/ ANALI | **8,10>>** | -0,38 | -32,34 |
| 27/ ANALI | **-7,23<<** | -0,16 | 7,16 |
| 27/ ANALI | -0,57 | **0,63>>** | -45,71 |
| 27/ ANALI | 0,52 | **-1,72<<** | 54,43 |
| 27/ ANALI | -0,05 | -0,71 | **65,44>>** |
| 27/ ANALI | -4,18 | -0,80 | **-58,02<<** |
| 47/ ANALI | **8,67>>** | -0,84 | 3,67 |
| 47/ ANALI | **-6,39<<** | -0,36 | 6,04 |
| 47/ ANALI | -0,51 | **0,73>>** | -47,88 |
| 47/ ANALI | -0,75 | **-1,75<<** | 40,74 |
| 47/ ANALI | 0,52 | -0,78 | **74,01>>** |
| 47/ ANALI | -1,93 | 0,62 | **-57,75<<** |
| 67/ ANALI | **8,12>>** | -1,08 | -0,76 |
| 67/ ANALI | **-6,01<<** | -1,19 | -0,24 |
| 67/ ANALI | 0,45 | **0,77>>** | -55,44 |
| 67/ ANALI | -1,07 | **-1,80<<** | 73,40 |
| 67/ ANALI | 0,44 | -1,80 | **88,79>>** |
| 67/ ANALI | 0,08 | -0,51 | **-62,46<<** |
| 87/ ANALI | **6,72>>** | -1,05 | 6,82 |
| 87/ ANALI | **-6,65<<** | -1,39 | 31,34 |
| 87/ ANALI | 0,35 | **0,71>>** | -41,32 |
| 87/ ANALI | -1,51 | **-1,80<<** | 63,23 |
| 87/ ANALI | -0,64 | -1,67 | **88,13>>** |
| 87/ ANALI | 3,53 | 0,58 | **-55,04<<** |
| 105/ ANALI | **5,13>>** | -0,96 | -1,07 |
| 105/ ANALI | **-5,80<<** | -0,95 | -10,03 |
| 105/ ANALI | -0,15 | **0,56>>** | -18,52 |
| 105/ ANALI | -1,41 | **-1,36<<** | 90,24 |
| 105/ ANALI | -1,41 | -1,36 | **90,24>>** |
| 105/ ANALI | -0,13 | -0,30 | **-69,44<<** |

Fecha : 14/03/02 Página : 1

**- Caso: 152 (ANALISIS TEMPORAL. VELOCIDAD= 80.000 m/s)**

| Filtrar | Nudo | Caso |
|---|---|---|
| Lista completa | 1A120 201A207 | 1A152 |
| Selección | 9 27A87CA20 1 | 152 |
| | | |
| Número total | 127 | 152 |
| Número seleccionado | 6 | 1 |

**- Casos: 154 155**

| Nudo/Caso | VZ (mm/sec) | UZ (mm) | AZ (mm/sec2) |
|---|---|---|---|
| 9/ ANALI | **7,00>>** | -0,86 | 36,53 |
| 9/ ANALI | **-6,00<<** | -0,32 | -14,24 |
| 9/ ANALI | 0,93 | **0,57>>** | -38,42 |
| 9/ ANALI | -0,09 | **-1,32<<** | 67,98 |
| 9/ ANALI | -0,08 | -0,96 | **102,61>>** |
| 9/ ANALI | 3,57 | -0,35 | **-90,53<<** |
| 27/ ANALI | **8,80>>** | -0,16 | 10,74 |
| 27/ ANALI | **-8,44<<** | -0,22 | -10,44 |
| 27/ ANALI | 0,02 | **0,66>>** | -75,81 |
| 27/ ANALI | 0,87 | **-1,69<<** | 68,57 |
| 27/ ANALI | -1,82 | -0,68 | **89,18>>** |
| 27/ ANALI | -1,79 | -0,29 | **-80,70<<** |
| 47/ ANALI | **10,89>>** | -0,56 | 6,67 |
| 47/ ANALI | **-8,76<<** | -0,23 | 19,30 |
| 47/ ANALI | -0,30 | **0,75>>** | -67,24 |
| 47/ ANALI | -0,85 | **-1,70<<** | 51,88 |
| 47/ ANALI | 4,17 | -1,57 | **67,27>>** |
| 47/ ANALI | -3,47 | 0,67 | **-86,74<<** |
| 67/ ANALI | **10,73>>** | -0,74 | -1,09 |
| 67/ ANALI | **-9,59<<** | -0,33 | -2,97 |
| 67/ ANALI | 0,26 | **0,70>>** | -38,68 |
| 67/ ANALI | -1,28 | **-1,74<<** | 79,77 |
| 67/ ANALI | 2,78 | -1,71 | **99,85>>** |
| 67/ ANALI | -3,09 | 0,57 | **-86,85<<** |
| 87/ ANALI | **8,56>>** | -0,99 | -5,03 |
| 87/ ANALI | **-8,92<<** | 0,06 | -36,69 |
| 87/ ANALI | -0,99 | **0,74>>** | -70,65 |
| 87/ ANALI | 2,12 | **-1,79<<** | 103,50 |
| 87/ ANALI | 2,12 | -1,79 | **103,50>>** |
| 87/ ANALI | -4,39 | 0,63 | **-83,82<<** |
| 105/ ANALI | **6,25>>** | -1,08 | 22,01 |
| 105/ ANALI | **-6,01<<** | -0,84 | 2,11 |
| 105/ ANALI | -0,72 | **0,58>>** | -45,72 |
| 105/ ANALI | -0,19 | **-1,37<<** | 103,98 |
| 105/ ANALI | -0,19 | -1,37 | **103,98>>** |
| 105/ ANALI | -0,60 | -0,26 | **-93,58<<** |





**- Caso: 152 (ANALISIS TEMPORAL. VELOCIDAD= 90.000 m/s)**

| Filtrar | Nudo | Caso |
|---|---|---|
| Lista completa | 1A120 201A207 | 1A152 |
| Selección | 9 27A87CA20 1 | 152 |
| | | |
| Número total | 127 | 152 |
| Número seleccionado | 6 | 1 |

**- Casos: 154 155**

| Nudo/Caso | VZ (mm/sec) | UZ (mm) | AZ (mm/sec2) |
|---|---|---|---|
| 9/ ANALI | **7,8836>>** | -0,6868 | 41,5399 |
| 9/ ANALI | **-6,5974<<** | -0,2786 | -47,5866 |
| 9/ ANALI | -0,4931 | **0,5638>>** | -69,4866 |
| 9/ ANALI | -1,6432 | **-1,3553<<** | 120,3329 |
| 9/ ANALI | 4,5287 | -0,9204 | **138,3206>>** |
| 9/ ANALI | 0,6069 | 0,0268 | **-100,3383<<** |
| 27/ ANALI | **9,6467>>** | -0,8526 | 12,9450 |
| 27/ ANALI | **-10,4308<<** | -0,1364 | 12,7285 |
| 27/ ANALI | 1,7994 | **0,7956>>** | -95,4535 |
| 27/ ANALI | -0,7118 | **-1,6817<<** | 109,2015 |
| 27/ ANALI | -0,7118 | -1,6817 | **109,2015>>** |
| 27/ ANALI | -1,7657 | 0,6635 | **-121,0629<<** |
| 47/ ANALI | **9,9891>>** | -0,3790 | -7,6591 |
| 47/ ANALI | **-12,0750<<** | -0,4054 | 19,3834 |
| 47/ ANALI | -0,8028 | **0,7047>>** | -77,1070 |
| 47/ ANALI | 0,4279 | **-1,7188<<** | 43,9241 |
| 47/ ANALI | -7,6163 | -1,1404 | **76,7196>>** |
| 47/ ANALI | -4,3185 | 0,6160 | **-108,1699<<** |
| 67/ ANALI | **11,4255>>** | -0,5752 | -13,4269 |
| 67/ ANALI | **-11,3258<<** | -0,7473 | 2,0399 |
| 67/ ANALI | -0,5649 | **0,7075>>** | -51,7754 |
| 67/ ANALI | -0,9387 | **-1,7909<<** | 90,6708 |
| 67/ ANALI | 5,3397 | -1,6089 | **114,3097>>** |
| 67/ ANALI | 7,5823 | 0,1405 | **-83,0734<<** |
| 87/ ANALI | **11,6252>>** | -1,2581 | 33,4735 |
| 87/ ANALI | **-11,9321<<** | -0,6065 | -10,9095 |
| 87/ ANALI | -1,2519 | **0,7403>>** | -101,6838 |
| 87/ ANALI | -2,0410 | **-1,8905<<** | 152,7769 |
| 87/ ANALI | 3,6896 | -1,8646 | **174,1325>>** |
| 87/ ANALI | -1,2519 | 0,7403 | **-101,6838<<** |
| 105/ ANALI | **8,1105>>** | -0,8093 | -23,5435 |
| 105/ ANALI | **-7,4977<<** | -0,2528 | -14,2067 |
| 105/ ANALI | -0,3133 | **0,5459>>** | -20,0313 |
| 105/ ANALI | -0,2134 | **-1,4125<<** | 135,3361 |
| 105/ ANALI | -0,2134 | -1,4125 | **135,3361>>** |
| 105/ ANALI | 2,4202 | -0,4528 | **-115,3032<<** |

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Proyecto : rieru3100

**- Caso: 152 (ANALISIS TEMPORAL. VELOCIDAD= 100.000 m/s)**

| Filtrar | Nudo | Caso |
|---|---|---|
| Lista completa | 1A120 201A207 | 1A152 |
| Selección | 9 27A87CA20 1 | 152 |
| | | |
| Número total | 127 | 152 |
| Número seleccionado | 6 | 1 |

**- Casos: 154 155**

| Nudo/Caso | VZ (mm/sec) | UZ (mm) | AZ (mm/sec2) |
|---|---|---|---|
| 9/ ANALI | **9,7383>>** | -0,8753 | -2,4273 |
| 9/ ANALI | **-7,1571<<** | -0,5074 | 52,4833 |
| 9/ ANALI | 1,3857 | **0,6480>>** | -123,3410 |
| 9/ ANALI | -2,4579 | **-1,3772<<** | 143,7113 |
| 9/ ANALI | 3,1367 | -1,3681 | **173,9968>>** |
| 9/ ANALI | 1,1831 | 0,0485 | **-134,8762<<** |
| 27/ ANALI | **10,3347>>** | -0,3658 | 0,1251 |
| 27/ ANALI | **-13,5887<<** | -0,1685 | -14,6577 |
| 27/ ANALI | 0,0420 | **0,7972>>** | -54,0727 |
| 27/ ANALI | -0,4836 | **-1,6509<<** | 49,8735 |
| 27/ ANALI | -2,7562 | -0,7413 | **98,7852>>** |
| 27/ ANALI | -6,3790 | 0,5487 | **-158,1158<<** |
| 47/ ANALI | **10,9884>>** | -0,0674 | -22,5183 |
| 47/ ANALI | **-14,1865<<** | -0,5138 | -2,3479 |
| 47/ ANALI | -0,5650 | **0,7437>>** | -92,7364 |
| 47/ ANALI | -0,8100 | **-1,8596<<** | 117,4734 |
| 47/ ANALI | -5,1891 | -1,5833 | **131,8139>>** |
| 47/ ANALI | -4,9226 | 0,5397 | **-134,1445<<** |
| 67/ ANALI | **15,4437>>** | -0,5611 | 5,9008 |
| 67/ ANALI | **-11,4736<<** | -0,6483 | -3,6582 |
| 67/ ANALI | -0,1493 | **0,7062>>** | -46,3670 |
| 67/ ANALI | -0,0022 | **-1,8611<<** | 105,6277 |
| 67/ ANALI | 9,2874 | -1,4336 | **160,4320>>** |
| 67/ ANALI | 9,4947 | 0,3212 | **-150,3009<<** |
| 87/ ANALI | **12,4430>>** | -0,8196 | 2,7197 |
| 87/ ANALI | **-11,1447<<** | -0,8746 | -26,8599 |
| 87/ ANALI | -1,3217 | **0,8618>>** | -101,0231 |
| 87/ ANALI | 1,2757 | **-1,8302<<** | 156,1591 |
| 87/ ANALI | 1,2757 | -1,8302 | **156,1591>>** |
| 87/ ANALI | 2,1282 | 0,8495 | **-101,4820<<** |
| 105/ ANALI | **8,3112>>** | -0,9030 | -15,9596 |
| 105/ ANALI | **-8,0852<<** | -0,8127 | -14,0536 |
| 105/ ANALI | 0,9230 | **0,6601>>** | -75,2706 |
| 105/ ANALI | -1,0279 | **-1,4043<<** | 139,1015 |
| 105/ ANALI | 2,8332 | -1,0508 | **141,5276>>** |
| 105/ ANALI | 4,4626 | -0,4038 | **-136,8555<<** |



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**- Caso: 152 (ANALISIS TEMPORAL. VELOCIDAD= 110.000 m/s)**

| Filtrar | Nudo | Caso |
|---|---|---|
| Lista completa | 1A120 201A207 | 1A152 |
| Selección | 9 27A87CA20 1 | 152 |
| | | |
| Número total | 127 | 152 |
| Número seleccionado | 6 | 1 |

**- Casos: 154 155**

| Nudo/Caso | VZ (mm/sec) | UZ (mm) | AZ (mm/sec2) |
|---|---|---|---|
| 9/ ANALI | **11,7189>>** | -0,9495 | 54,6198 |
| 9/ ANALI | **-8,2059<<** | -0,4758 | 28,0120 |
| 9/ ANALI | -1,1645 | **0,6893>>** | -112,5274 |
| 9/ ANALI | 1,8579 | **-1,4038<<** | 208,0746 |
| 9/ ANALI | 1,8579 | -1,4038 | **208,0746>>** |
| 9/ ANALI | 6,5290 | -0,3318 | **-166,7228<<** |
| 27/ ANALI | **13,3859>>** | -0,9506 | 18,6992 |
| 27/ ANALI | **-16,4128<<** | -0,5415 | 44,3443 |
| 27/ ANALI | -0,4230 | **0,8447>>** | -82,8798 |
| 27/ ANALI | -1,6101 | **-1,7785<<** | 115,4385 |
| 27/ ANALI | -8,6422 | -1,3315 | **166,6861>>** |
| 27/ ANALI | -11,1239 | 0,3583 | **-186,4048<<** |
| 47/ ANALI | **11,6103>>** | -0,0659 | -12,0080 |
| 47/ ANALI | **-15,5754<<** | -0,8939 | 48,6064 |
| 47/ ANALI | 0,0770 | **0,8225>>** | -138,9103 |
| 47/ ANALI | 1,1925 | **-1,9267<<** | 143,9122 |
| 47/ ANALI | -8,1664 | -1,6462 | **181,6819>>** |
| 47/ ANALI | -8,0644 | 0,3124 | **-156,4682<<** |
| 67/ ANALI | **16,2258>>** | -0,2006 | -32,8161 |
| 67/ ANALI | **-14,2330<<** | -1,0330 | 15,2659 |
| 67/ ANALI | -0,5824 | **0,8084>>** | -98,9717 |
| 67/ ANALI | 2,1290 | **-1,9405<<** | 152,2077 |
| 67/ ANALI | -3,0006 | -1,9296 | **186,7588>>** |
| 67/ ANALI | 8,5122 | 0,5872 | **-179,5805<<** |
| 87/ ANALI | **15,3241>>** | -1,1956 | 51,5521 |
| 87/ ANALI | **-11,1144<<** | -0,0473 | 16,6479 |
| 87/ ANALI | -0,8425 | **0,8914>>** | -139,5421 |
| 87/ ANALI | -0,7750 | **-1,9662<<** | 192,1149 |
| 87/ ANALI | 6,0106 | -1,8913 | **230,6979>>** |
| 87/ ANALI | -5,2308 | 0,8001 | **-140,6696<<** |
| 105/ ANALI | **12,0648>>** | -0,9822 | 31,9569 |
| 105/ ANALI | **-9,6697<<** | -1,0077 | -5,9451 |
| 105/ ANALI | 1,4109 | **0,7236>>** | -116,4481 |
| 105/ ANALI | 2,6758 | **-1,4859<<** | 218,6827 |
| 105/ ANALI | 2,6758 | -1,4859 | **218,6827>>** |
| 105/ ANALI | 1,5275 | -0,1086 | **-238,5531<<** |

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Autor : **eipsa-J.A. Llombart-Eipsa**
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**- Caso: 152 (ANALISIS TEMPORAL. VELOCIDAD= 120.000 m/s)**

| Filtrar | Nudo | Caso |
|---|---|---|
| Lista completa | 1A120 201A207 | 1A152 |
| Selección | 9 27A87CA20 1 | 152 |
| | | |
| Número total | 127 | 152 |
| Número seleccionado | 6 | 1 |

**- Casos: 154 155**

| Nudo/Caso | VZ (mm/sec) | UZ (mm) | AZ (mm/sec2) |
|---|---|---|---|
| 9/ ANALI | **13,75>>** | -0,76 | -3,36 |
| 9/ ANALI | **-9,00<<** | -0,42 | -8,48 |
| 9/ ANALI | 0,25 | **0,65>>** | -57,84 |
| 9/ ANALI | -0,52 | **-1,42<<** | 196,00 |
| 9/ ANALI | 5,69 | -1,35 | **237,99>>** |
| 9/ ANALI | 5,31 | -0,20 | **-208,73<<** |
| 27/ ANALI | **16,18>>** | -0,58 | 15,16 |
| 27/ ANALI | **-18,96<<** | -0,79 | 75,96 |
| 27/ ANALI | -0,64 | **0,76>>** | -97,73 |
| 27/ ANALI | 0,93 | **-1,79<<** | 96,16 |
| 27/ ANALI | -8,90 | -1,59 | **232,23>>** |
| 27/ ANALI | -9,23 | 0,52 | **-209,56<<** |
| 47/ ANALI | **15,89>>** | -1,01 | -51,14 |
| 47/ ANALI | **-17,03<<** | -1,03 | 36,66 |
| 47/ ANALI | 0,61 | **0,96>>** | -208,57 |
| 47/ ANALI | -1,87 | **-2,12<<** | 270,70 |
| 47/ ANALI | 5,67 | -2,07 | **276,06>>** |
| 47/ ANALI | 0,61 | 0,96 | **-208,57<<** |
| 67/ ANALI | **17,08>>** | -0,31 | -1,06 |
| 67/ ANALI | **-14,79<<** | -1,39 | 15,62 |
| 67/ ANALI | 1,09 | **0,85>>** | -166,96 |
| 67/ ANALI | -0,87 | **-2,19<<** | 287,79 |
| 67/ ANALI | -0,87 | -2,19 | **287,79>>** |
| 67/ ANALI | 6,28 | 0,76 | **-208,95<<** |
| 87/ ANALI | **17,51>>** | -0,65 | -55,73 |
| 87/ ANALI | **-15,34<<** | -0,38 | 36,86 |
| 87/ ANALI | 0,61 | **0,86>>** | -101,27 |
| 87/ ANALI | 0,03 | **-1,91<<** | 232,77 |
| 87/ ANALI | 6,91 | -1,82 | **262,48>>** |
| 87/ ANALI | -0,94 | -0,25 | **-215,50<<** |
| 105/ ANALI | **12,01>>** | -0,88 | 5,04 |
| 105/ ANALI | **-13,94<<** | -0,06 | -11,62 |
| 105/ ANALI | -1,52 | **0,67>>** | -182,85 |
| 105/ ANALI | 0,06 | **-1,49<<** | 222,46 |
| 105/ ANALI | 1,57 | -0,74 | **250,92>>** |
| 105/ ANALI | -1,27 | -0,10 | **-264,34<<** |



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Autor : **eipsa-J.A. Llombart-Eipsa**
Dirección :

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Proyecto : RIERU440

**- Caso: 152 (ANALISIS TEMPORAL. VELOCIDAD= 40.000 m/s)**

| Filtrar | Nudo | Caso |
|---|---|---|
| Lista completa | 1A120 201A207 | 1A152 |
| Selección | 9 27A87CA20 1 | 152 |
| | | |
| Número total | 127 | 152 |
| Número seleccionado | 6 | 1 |

**- Casos: 154 155**

| Nudo/Caso | VZ (mm/sec) | UZ (mm) | AZ (mm/sec2) |
|---|---|---|---|
| 9/ ANALI | **2,2433>>** | -0,1088 | -4,9471 |
| 9/ ANALI | **-2,3257<<** | -0,2066 | 0,1607 |
| 9/ ANALI | 0,0863 | **0,4620>>** | -1,8387 |
| 9/ ANALI | 0,2579 | **-1,0823<<** | 6,5117 |
| 9/ ANALI | -0,0526 | -0,7846 | **23,1729>>** |
| 9/ ANALI | -0,1071 | -0,2796 | **-14,7052<<** |
| 27/ ANALI | **3,2766>>** | -0,2275 | -0,6311 |
| 27/ ANALI | **-3,4381<<** | -0,6844 | 4,5731 |
| 27/ ANALI | 0,0195 | **0,5568>>** | -3,6971 |
| 27/ ANALI | 0,2635 | **-1,4252<<** | 12,0835 |
| 27/ ANALI | 0,5086 | -1,4012 | **16,8121>>** |
| 27/ ANALI | -0,3526 | -0,2267 | **-18,8993<<** |
| 47/ ANALI | **3,2921>>** | -0,4090 | -3,8596 |
| 47/ ANALI | **-3,2315<<** | -0,8338 | 2,3107 |
| 47/ ANALI | 0,1339 | **0,5394>>** | 0,2735 |
| 47/ ANALI | -0,5326 | **-1,5400<<** | 17,1425 |
| 47/ ANALI | -0,5326 | -1,5400 | **17,1425>>** |
| 47/ ANALI | -1,9412 | -0,4613 | **-15,8503<<** |
| 67/ ANALI | **3,1249>>** | -0,4279 | -3,1394 |
| 67/ ANALI | **-3,2783<<** | -0,3262 | -0,6399 |
| 67/ ANALI | -0,2172 | **0,5490>>** | -5,5390 |
| 67/ ANALI | 0,3388 | **-1,5452<<** | 15,4331 |
| 67/ ANALI | 0,4859 | -0,5621 | **18,9066>>** |
| 67/ ANALI | -0,1945 | -0,4983 | **-13,9268<<** |
| 87/ ANALI | **3,6748>>** | -0,7983 | 2,7750 |
| 87/ ANALI | **-3,2520<<** | -0,6358 | 3,7512 |
| 87/ ANALI | 0,2216 | **0,5578>>** | -4,6042 |
| 87/ ANALI | -0,0740 | **-1,4459<<** | -0,5331 |
| 87/ ANALI | -0,1594 | -0,5180 | **15,5569>>** |
| 87/ ANALI | 0,5516 | 0,4645 | **-20,2262<<** |
| 105/ ANALI | **2,0437>>** | -0,8458 | 0,3588 |
| 105/ ANALI | **-2,2693<<** | -0,4141 | 1,3257 |
| 105/ ANALI | -0,1157 | **0,4597>>** | -8,7193 |
| 105/ ANALI | -0,4870 | **-1,0941<<** | 16,6517 |
| 105/ ANALI | 0,4350 | -0,7252 | **21,1088>>** |
| 105/ ANALI | 0,8125 | 0,0133 | **-26,4263<<** |

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Autor : **eipsa-J.A. Llombart-Eipsa**
Dirección :

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Proyecto : RIERU450

**- Caso: 152 (ANALISIS TEMPORAL. VELOCIDAD= 50.000 m/s)**

| Filtrar | Nudo | Caso |
|---|---|---|
| Lista completa | 1A120 201A207 | 1A152 |
| Selección | 9 27A87CA20 1 | 152 |
| | | |
| Número total | 127 | 152 |
| Número seleccionado | 6 | 1 |

**- Casos: 154 155**

| Nudo/Caso | VZ (mm/sec) | UZ (mm) | AZ (mm/sec2) |
|---|---|---|---|
| 9/ ANALI | **2,9441>>** | -0,3250 | 0,6362 |
| 9/ ANALI | **-3,1177<<** | -0,1857 | -10,4674 |
| 9/ ANALI | -0,0322 | **0,4965>>** | -17,4182 |
| 9/ ANALI | 0,2229 | **-1,1129<<** | 25,6906 |
| 9/ ANALI | 0,9002 | -0,7696 | **30,1855>>** |
| 9/ ANALI | -1,4233 | -0,0363 | **-25,7836<<** |
| 27/ ANALI | **4,2477>>** | -0,5519 | 1,5803 |
| 27/ ANALI | **-4,5096<<** | -0,6333 | -10,2798 |
| 27/ ANALI | -0,0384 | **0,5750>>** | -12,1807 |
| 27/ ANALI | -0,2364 | **-1,4639<<** | 36,9048 |
| 27/ ANALI | -0,2364 | -1,4639 | **36,9048>>** |
| 27/ ANALI | 3,4224 | -0,6645 | **-34,9862<<** |
| 47/ ANALI | **3,9675>>** | -0,0291 | -7,2239 |
| 47/ ANALI | **-4,1692<<** | -0,0901 | -7,0496 |
| 47/ ANALI | -0,1694 | **0,5384>>** | -5,3563 |
| 47/ ANALI | -0,4378 | **-1,5686<<** | 18,6511 |
| 47/ ANALI | 1,2363 | -1,5446 | **32,2645>>** |
| 47/ ANALI | 2,9737 | -0,4724 | **-21,3934<<** |
| 67/ ANALI | **4,6315>>** | -1,0296 | 7,6531 |
| 67/ ANALI | **-4,5441<<** | -0,5456 | -1,7131 |
| 67/ ANALI | 0,2777 | **0,5698>>** | -15,7257 |
| 67/ ANALI | -0,5265 | **-1,5706<<** | 19,1847 |
| 67/ ANALI | 1,0075 | -1,5546 | **29,3648>>** |
| 67/ ANALI | 1,8422 | 0,5091 | **-29,9453<<** |
| 87/ ANALI | **5,1780>>** | -0,6376 | -7,3232 |
| 87/ ANALI | **-4,3646<<** | -0,5732 | -0,8022 |
| 87/ ANALI | -0,3087 | **0,5812>>** | -14,5967 |
| 87/ ANALI | 0,5095 | **-1,4572<<** | 9,4339 |
| 87/ ANALI | -0,8462 | -1,4485 | **32,1670>>** |
| 87/ ANALI | 0,2018 | 0,5275 | **-40,1085<<** |
| 105/ ANALI | **2,9359>>** | -0,9208 | 8,4084 |
| 105/ ANALI | **-3,0599<<** | -0,9232 | 2,2584 |
| 105/ ANALI | -0,0969 | **0,4625>>** | -7,3240 |
| 105/ ANALI | 0,0773 | **-1,1261<<** | 24,7498 |
| 105/ ANALI | 1,4385 | -0,6937 | **36,0249>>** |
| 105/ ANALI | -0,8282 | -0,0218 | **-38,2895<<** |



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**- Caso: 152 (ANALISIS TEMPORAL. VELOCIDAD= 60.000 m/s)**

| Filtrar | Nudo | Caso |
|---|---|---|
| Lista completa | 1A120 201A207 | 1A152 |
| Selección | 9 27A87CA20 1 | 152 |
| | | |
| Número total | 127 | 152 |
| Número seleccionado | 6 | 1 |

**- Casos: 154 155**

| Nudo/Caso | VZ (mm/sec) | UZ (mm) | AZ (mm/sec2) |
|---|---|---|---|
| 9/ ANALI | **3,6849>>** | -0,3053 | 12,0069 |
| 9/ ANALI | **-3,6500<<** | -0,1565 | -32,1429 |
| 9/ ANALI | 0,0651 | **0,4814>>** | -18,4565 |
| 9/ ANALI | -0,2388 | **-1,1397<<** | 54,2399 |
| 9/ ANALI | -0,2388 | -1,1397 | **54,2399>>** |
| 9/ ANALI | 0,5033 | 0,0317 | **-43,3089<<** |
| 27/ ANALI | **4,9389>>** | -0,9686 | -9,8022 |
| 27/ ANALI | **-5,7039<<** | -1,1116 | 19,3867 |
| 27/ ANALI | -0,3445 | **0,5613>>** | -6,7097 |
| 27/ ANALI | -1,1680 | **-1,4990<<** | 54,1273 |
| 27/ ANALI | -1,1680 | -1,4990 | **54,1273>>** |
| 27/ ANALI | -0,4066 | -0,2131 | **-58,1015<<** |
| 47/ ANALI | **5,9083>>** | -0,7307 | -5,5499 |
| 47/ ANALI | **-5,9911<<** | -0,2155 | -4,9153 |
| 47/ ANALI | -0,0372 | **0,6234>>** | -28,7904 |
| 47/ ANALI | -0,5981 | **-1,5583<<** | 36,7004 |
| 47/ ANALI | -0,5981 | -1,5583 | **36,7004>>** |
| 47/ ANALI | 1,0138 | 0,5662 | **-36,1962<<** |
| 67/ ANALI | **5,7063>>** | -0,5572 | -9,5467 |
| 67/ ANALI | **-5,9719<<** | -0,8979 | -3,8424 |
| 67/ ANALI | 0,1681 | **0,6188>>** | -36,3587 |
| 67/ ANALI | 0,4480 | **-1,5360<<** | 13,6879 |
| 67/ ANALI | -3,1686 | -1,4255 | **48,6663>>** |
| 67/ ANALI | -1,5078 | 0,5379 | **-42,9511<<** |
| 87/ ANALI | **6,1904>>** | -0,4438 | -20,7166 |
| 87/ ANALI | **-5,5171<<** | 0,0164 | -4,1040 |
| 87/ ANALI | 0,1089 | **0,5765>>** | -29,8844 |
| 87/ ANALI | -0,0300 | **-1,5122<<** | 31,5388 |
| 87/ ANALI | -1,7405 | -1,4946 | **56,4444>>** |
| 87/ ANALI | -0,1713 | 0,5549 | **-54,9525<<** |
| 105/ ANALI | **3,7813>>** | -0,8214 | 3,9112 |
| 105/ ANALI | **-4,1205<<** | -0,2612 | -2,2041 |
| 105/ ANALI | -0,2253 | **0,4983>>** | -21,7251 |
| 105/ ANALI | -1,2510 | **-1,1490<<** | 53,0112 |
| 105/ ANALI | 2,1576 | -0,6805 | **56,1192>>** |
| 105/ ANALI | 1,9571 | 0,0391 | **-48,9646<<** |

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**- Caso: 152 (ANALISIS TEMPORAL. VELOCIDAD= 70.000 m/s)**

| Filtrar | Nudo | Caso |
|---|---|---|
| Lista completa | 1A120 201A207 | 1A152 |
| Selección | 9 27A87CA20 1 | 152 |
| | | |
| Número total | 127 | 152 |
| Número seleccionado | 6 | 1 |

**- Casos: 154 155**

| Nudo/Caso | VZ (mm/sec) | UZ (mm) | AZ (mm/sec2) |
|---|---|---|---|
| 9/ ANALI | **4,8840>>** | -0,0061 | -4,7691 |
| 9/ ANALI | **-4,4963<<** | -0,3413 | 25,8975 |
| 9/ ANALI | 0,5175 | **0,4819>>** | -33,3086 |
| 9/ ANALI | -1,0038 | **-1,1397<<** | 52,1948 |
| 9/ ANALI | 2,1784 | -1,1155 | **66,1415>>** |
| 9/ ANALI | -3,9664 | -0,1371 | **-53,6956<<** |
| 27/ ANALI | **7,6789>>** | -0,8318 | 26,2696 |
| 27/ ANALI | **-6,1637<<** | -1,1195 | 11,4380 |
| 27/ ANALI | 0,8044 | **0,7054>>** | -65,8706 |
| 27/ ANALI | 0,8146 | **-1,5650<<** | 59,3509 |
| 27/ ANALI | -1,8880 | -1,3329 | **69,5772>>** |
| 27/ ANALI | 0,8044 | 0,7054 | **-65,8706<<** |
| 47/ ANALI | **6,3498>>** | -0,5406 | 2,3031 |
| 47/ ANALI | **-7,5130<<** | -0,5920 | 23,4449 |
| 47/ ANALI | 0,8274 | **0,6755>>** | -60,4929 |
| 47/ ANALI | -1,1796 | **-1,6156<<** | 58,0567 |
| 47/ ANALI | 1,6445 | -1,5742 | **67,8091>>** |
| 47/ ANALI | 0,8274 | 0,6755 | **-60,4929<<** |
| 67/ ANALI | **7,6110>>** | -0,5859 | 19,4858 |
| 67/ ANALI | **-5,8445<<** | -0,7692 | -8,0104 |
| 67/ ANALI | -0,7747 | **0,6514>>** | -52,9431 |
| 67/ ANALI | 0,4497 | **-1,5898<<** | 26,0456 |
| 67/ ANALI | -1,5112 | -1,5725 | **70,2984>>** |
| 67/ ANALI | 5,1708 | 0,0419 | **-60,0162<<** |
| 87/ ANALI | **6,5661>>** | -0,4141 | -10,0622 |
| 87/ ANALI | **-6,8357<<** | -0,6000 | 20,2844 |
| 87/ ANALI | 0,6424 | **0,6479>>** | -47,1722 |
| 87/ ANALI | -1,0731 | **-1,5361<<** | 62,0704 |
| 87/ ANALI | -2,3367 | -0,6215 | **91,7106>>** |
| 87/ ANALI | -1,5760 | -0,3234 | **-75,3152<<** |
| 105/ ANALI | **4,4388>>** | -0,4370 | -16,3139 |
| 105/ ANALI | **-4,3065<<** | -0,2784 | 2,4853 |
| 105/ ANALI | 0,4367 | **0,4946>>** | -21,5108 |
| 105/ ANALI | -0,4772 | **-1,1541<<** | 68,7938 |
| 105/ ANALI | 0,7588 | -0,4817 | **72,4377>>** |
| 105/ ANALI | -1,2026 | -0,2298 | **-64,3972<<** |



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**- Caso: 152 (ANALISIS TEMPORAL. VELOCIDAD= 80.000 m/s)**

| Filtrar | Nudo | Caso |
|---|---|---|
| Lista completa | 1A120 201A207 | 1A152 |
| Selección | 9 27A87CA20 1 | 152 |
| | | |
| Número total | 127 | 152 |
| Número seleccionado | 6 | 1 |

**- Casos: 154 155**

| Nudo/Caso | VZ (mm/sec) | UZ (mm) | AZ (mm/sec2) |
|---|---|---|---|
| 9/ ANALI | **5,6526>>** | -0,8302 | 27,7917 |
| 9/ ANALI | **-5,4809<<** | -0,3059 | 2,9165 |
| 9/ ANALI | -0,5203 | **0,5007>>** | -40,7268 |
| 9/ ANALI | -0,7740 | **-1,1355<<** | 55,5391 |
| 9/ ANALI | -1,8601 | -0,8099 | **81,6295>>** |
| 9/ ANALI | 0,4088 | 0,0462 | **-77,8757<<** |
| 27/ ANALI | **7,4128>>** | -0,2889 | -2,1554 |
| 27/ ANALI | **-7,0274<<** | -0,1905 | 15,9847 |
| 27/ ANALI | -0,0278 | **0,6201>>** | -43,4045 |
| 27/ ANALI | -0,1020 | **-1,5965<<** | 100,8564 |
| 27/ ANALI | -0,1020 | -1,5965 | **100,8564>>** |
| 27/ ANALI | 0,0973 | 0,5542 | **-81,3103<<** |
| 47/ ANALI | **7,6528>>** | -0,5198 | 7,0260 |
| 47/ ANALI | **-8,6841<<** | -0,7389 | 1,7154 |
| 47/ ANALI | 1,1668 | **0,6955>>** | -78,3065 |
| 47/ ANALI | -0,1103 | **-1,6453<<** | 64,4991 |
| 47/ ANALI | -4,8360 | -1,3058 | **77,8791>>** |
| 47/ ANALI | -2,0901 | 0,6779 | **-82,7406<<** |
| 67/ ANALI | **8,1581>>** | -0,3495 | 12,3495 |
| 67/ ANALI | **-7,7804<<** | -0,2075 | 24,8759 |
| 67/ ANALI | -0,7804 | **0,6415>>** | -56,1711 |
| 67/ ANALI | -0,6718 | **-1,6885<<** | 101,3898 |
| 67/ ANALI | -0,6718 | -1,6885 | **101,3898>>** |
| 67/ ANALI | -5,0042 | 0,3494 | **-84,5482<<** |
| 87/ ANALI | **8,5378>>** | -0,5402 | 40,8791 |
| 87/ ANALI | **-7,9679<<** | -0,9442 | 13,3897 |
| 87/ ANALI | -0,5238 | **0,6666>>** | -68,1342 |
| 87/ ANALI | 1,1265 | **-1,6066<<** | 82,0028 |
| 87/ ANALI | -2,0072 | -0,6020 | **85,0161>>** |
| 87/ ANALI | 5,8173 | 0,0872 | **-87,3446<<** |
| 105/ ANALI | **5,6727>>** | -0,8982 | 28,6889 |
| 105/ ANALI | **-5,5418<<** | -0,1055 | 16,1791 |
| 105/ ANALI | -0,2577 | **0,4922>>** | -32,2176 |
| 105/ ANALI | 0,3606 | **-1,1643<<** | 82,7498 |
| 105/ ANALI | 0,3606 | -1,1643 | **82,7498>>** |
| 105/ ANALI | -2,1490 | -0,0349 | **-82,2628<<** |

**- Caso: 152 (ANALISIS TEMPORAL. VELOCIDAD= 90.000 m/s)**

| Filtrar | Nudo | Caso |
|---|---|---|
| Lista completa | 1A120 201A207 | 1A152 |
| Selección | 9 27A87CA20 1 | 152 |
| | | |
| Número total | 127 | 152 |
| Número seleccionado | 6 | 1 |

**- Casos: 154 155**

| Nudo/Caso | VZ (mm/sec) | UZ (mm) | AZ (mm/sec2) |
|---|---|---|---|
| 9/ ANALI | **6,4040>>** | -0,3384 | -35,1970 |
| 9/ ANALI | **-6,1059<<** | -0,2836 | -17,6531 |
| 9/ ANALI | 1,0478 | **0,5538>>** | -87,6381 |
| 9/ ANALI | -0,7513 | **-1,1804<<** | 115,4353 |
| 9/ ANALI | -0,7513 | -1,1804 | **115,4353>>** |
| 9/ ANALI | -4,0040 | -0,0985 | **-94,5415<<** |
| 27/ ANALI | **8,3070>>** | -0,3444 | 6,6072 |
| 27/ ANALI | **-8,7546<<** | 0,0899 | -17,6937 |
| 27/ ANALI | 0,2217 | **0,6314>>** | -39,5194 |
| 27/ ANALI | -0,4742 | **-1,6308<<** | 120,0315 |
| 27/ ANALI | -0,4742 | -1,6308 | **120,0315>>** |
| 27/ ANALI | -2,5989 | 0,5367 | **-131,9613<<** |
| 47/ ANALI | **7,6669>>** | -0,2772 | 11,5039 |
| 47/ ANALI | **-9,4750<<** | -0,8129 | -12,5071 |
| 47/ ANALI | -1,1793 | **0,6847>>** | -98,4834 |
| 47/ ANALI | -0,6050 | **-1,6611<<** | 61,9983 |
| 47/ ANALI | -5,5343 | -1,3874 | **102,2230>>** |
| 47/ ANALI | -1,1793 | 0,6847 | **-98,4834<<** |
| 67/ ANALI | **8,6192>>** | -0,0287 | -14,7488 |
| 67/ ANALI | **-9,7549<<** | -0,5147 | 5,9181 |
| 67/ ANALI | 1,5774 | **0,6500>>** | -94,7272 |
| 67/ ANALI | -1,3931 | **-1,6829<<** | 80,6429 |
| 67/ ANALI | 1,2179 | -1,6531 | **114,7174>>** |
| 67/ ANALI | 1,5774 | 0,6500 | **-94,7272<<** |
| 87/ ANALI | **9,3040>>** | -0,1514 | -31,3459 |
| 87/ ANALI | **-7,3996<<** | -0,8280 | -4,3352 |
| 87/ ANALI | -0,3648 | **0,6415>>** | -31,7928 |
| 87/ ANALI | 1,4182 | **-1,6398<<** | 111,6150 |
| 87/ ANALI | 1,4182 | -1,6398 | **111,6150>>** |
| 87/ ANALI | 6,9927 | 0,1404 | **-97,2124<<** |
| 105/ ANALI | **6,8374>>** | -0,8160 | -1,5628 |
| 105/ ANALI | **-6,5805<<** | -0,1740 | -22,9578 |
| 105/ ANALI | 0,8921 | **0,5527>>** | -68,1659 |
| 105/ ANALI | 1,9820 | **-1,1764<<** | 119,5453 |
| 105/ ANALI | 1,9820 | -1,1764 | **119,5453>>** |
| 105/ ANALI | -0,9476 | -0,1995 | **-116,3732<<** |





**- Caso: 152 (ANALISIS TEMPORAL. VELOCIDAD= 100.000 m/s)**

| Filtrar | Nudo | Caso |
|---|---|---|
| Lista completa | 1A120 201A207 | 1A152 |
| Selección | 9 27A87CA20 1 | 152 |
| | | |
| Número total | 127 | 152 |
| Número seleccionado | 6 | 1 |

**- Casos: 154 155**

| Nudo/Caso | VZ (mm/sec) | UZ (mm) | AZ (mm/sec2) |
|---|---|---|---|
| 9/ ANALI | **7,3147>>** | -0,8703 | -7,3474 |
| 9/ ANALI | **-6,4404<<** | -0,2427 | -49,0137 |
| 9/ ANALI | -0,1699 | **0,5797>>** | -89,2051 |
| 9/ ANALI | 1,8328 | **-1,2151<<** | 170,7860 |
| 9/ ANALI | 1,8328 | -1,2151 | **170,7860>>** |
| 9/ ANALI | 1,0595 | -0,2051 | **-123,2093<<** |
| 27/ ANALI | **8,7673>>** | -0,9701 | 6,9522 |
| 27/ ANALI | **-11,5894<<** | -0,0639 | -11,2179 |
| 27/ ANALI | -0,5593 | **0,6776>>** | -50,3071 |
| 27/ ANALI | 2,0796 | **-1,6766<<** | 158,4526 |
| 27/ ANALI | 2,0796 | -1,6766 | **158,4526>>** |
| 27/ ANALI | -4,5421 | 0,4900 | **-171,1586<<** |
| 47/ ANALI | **11,2219>>** | -1,0492 | 38,3215 |
| 47/ ANALI | **-10,2592<<** | -0,9196 | -30,0791 |
| 47/ ANALI | 1,3332 | **0,6706>>** | -108,2598 |
| 47/ ANALI | 1,3999 | **-1,6681<<** | 90,2453 |
| 47/ ANALI | -2,3886 | -1,6576 | **149,4483>>** |
| 47/ ANALI | -1,8705 | 0,6626 | **-117,7653<<** |
| 67/ ANALI | **10,3921>>** | -1,1097 | 23,5717 |
| 67/ ANALI | **-9,4495<<** | -0,9669 | 46,4541 |
| 67/ ANALI | -0,7813 | **0,6833>>** | -37,5257 |
| 67/ ANALI | 0,0366 | **-1,6996<<** | 77,4476 |
| 67/ ANALI | 3,8608 | -1,5967 | **152,6814>>** |
| 67/ ANALI | -6,3635 | -0,4172 | **-125,2669<<** |
| 87/ ANALI | **10,5042>>** | -0,2534 | 42,4456 |
| 87/ ANALI | **-9,1434<<** | -0,5618 | -7,4840 |
| 87/ ANALI | 0,0102 | **0,6735>>** | -45,6598 |
| 87/ ANALI | -0,5981 | **-1,7221<<** | 176,3536 |
| 87/ ANALI | -0,5981 | -1,7221 | **176,3536>>** |
| 87/ ANALI | 6,4733 | 0,3383 | **-149,4224<<** |
| 105/ ANALI | **7,9062>>** | -0,8687 | -16,0462 |
| 105/ ANALI | **-7,9655<<** | -0,1748 | -67,3200 |
| 105/ ANALI | 0,5467 | **0,5674>>** | -71,9401 |
| 105/ ANALI | 1,7414 | **-1,2364<<** | 176,6170 |
| 105/ ANALI | -0,4132 | -0,5410 | **177,5655>>** |
| 105/ ANALI | -1,8496 | -0,1229 | **-191,4394<<** |

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Autor : **eipsa-J.A. Llombart-Eipsa**
Dirección :

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Proyecto : RIERU4110

**- Caso: 152 (ANALISIS TEMPORAL. VELOCIDAD= 110.000 m/s)**

| Filtrar | Nudo | Caso |
|---|---|---|
| Lista completa | 1A120 201A207 | 1A152 |
| Selección | 9 27A87CA20 1 | 152 |
| | | |
| Número total | 127 | 152 |
| Número seleccionado | 6 | 1 |

**- Casos: 154 155**

| Nudo/Caso | VZ (mm/sec) | UZ (mm) | AZ (mm/sec2) |
|---|---|---|---|
| 9/ ANALI | **11,9890>>** | -0,4312 | 43,5420 |
| 9/ ANALI | **-10,9377<<** | -0,3811 | -89,4298 |
| 9/ ANALI | 2,2364 | **0,6971>>** | -216,5607 |
| 9/ ANALI | 2,1429 | **-1,2399<<** | 222,6474 |
| 9/ ANALI | 2,4957 | -0,5332 | **277,9897>>** |
| 9/ ANALI | -4,8898 | -0,1368 | **-294,7543<<** |
| 27/ ANALI | **12,9748>>** | -0,8520 | 21,4726 |
| 27/ ANALI | **-13,8600<<** | -0,1166 | -48,0662 |
| 27/ ANALI | -0,2355 | **0,7618>>** | -126,0153 |
| 27/ ANALI | -2,0665 | **-1,7327<<** | 192,4282 |
| 27/ ANALI | 4,0003 | -1,7955 | **209,2623>>** |
| 27/ ANALI | -0,6222 | -0,0293 | **-206,3109<<** |
| 47/ ANALI | **11,9307>>** | -0,4651 | -22,0532 |
| 47/ ANALI | **-10,5621<<** | -0,1089 | 20,8706 |
| 47/ ANALI | -0,1881 | **0,6800>>** | -43,1158 |
| 47/ ANALI | -0,3755 | **-1,7670<<** | 177,8058 |
| 47/ ANALI | -0,3755 | -1,7670 | **177,8058>>** |
| 47/ ANALI | -7,1891 | 0,4521 | **-131,1548<<** |
| 67/ ANALI | **12,3665>>** | -0,7214 | -11,0298 |
| 67/ ANALI | **-10,9685<<** | -0,6699 | -11,2908 |
| 67/ ANALI | 0,7046 | **0,7169>>** | -98,0560 |
| 67/ ANALI | -0,7991 | **-1,7427<<** | 95,5352 |
| 67/ ANALI | -3,4513 | -1,6228 | **130,2431>>** |
| 67/ ANALI | 1,2052 | -0,0195 | **-109,1661<<** |
| 87/ ANALI | **12,3854>>** | -1,0516 | -45,1701 |
| 87/ ANALI | **-11,4803<<** | -0,8886 | 53,8587 |
| 87/ ANALI | 0,1045 | **0,7037>>** | -56,7599 |
| 87/ ANALI | -0,9120 | **-1,7186<<** | 183,8340 |
| 87/ ANALI | 5,5476 | -1,6553 | **236,2677>>** |
| 87/ ANALI | 1,7034 | 0,6635 | **-217,5910<<** |
| 105/ ANALI | **13,1749>>** | -0,6202 | -120,0617 |
| 105/ ANALI | **-13,1624<<** | -0,5468 | 95,0023 |
| 105/ ANALI | -0,5710 | **0,5489>>** | -54,4097 |
| 105/ ANALI | 4,3303 | **-1,2655<<** | 332,2176 |
| 105/ ANALI | 4,3303 | -1,2655 | **332,2176>>** |
| 105/ ANALI | -2,9558 | 0,0525 | **-338,9437<<** |



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Proyecto : RIERU4120

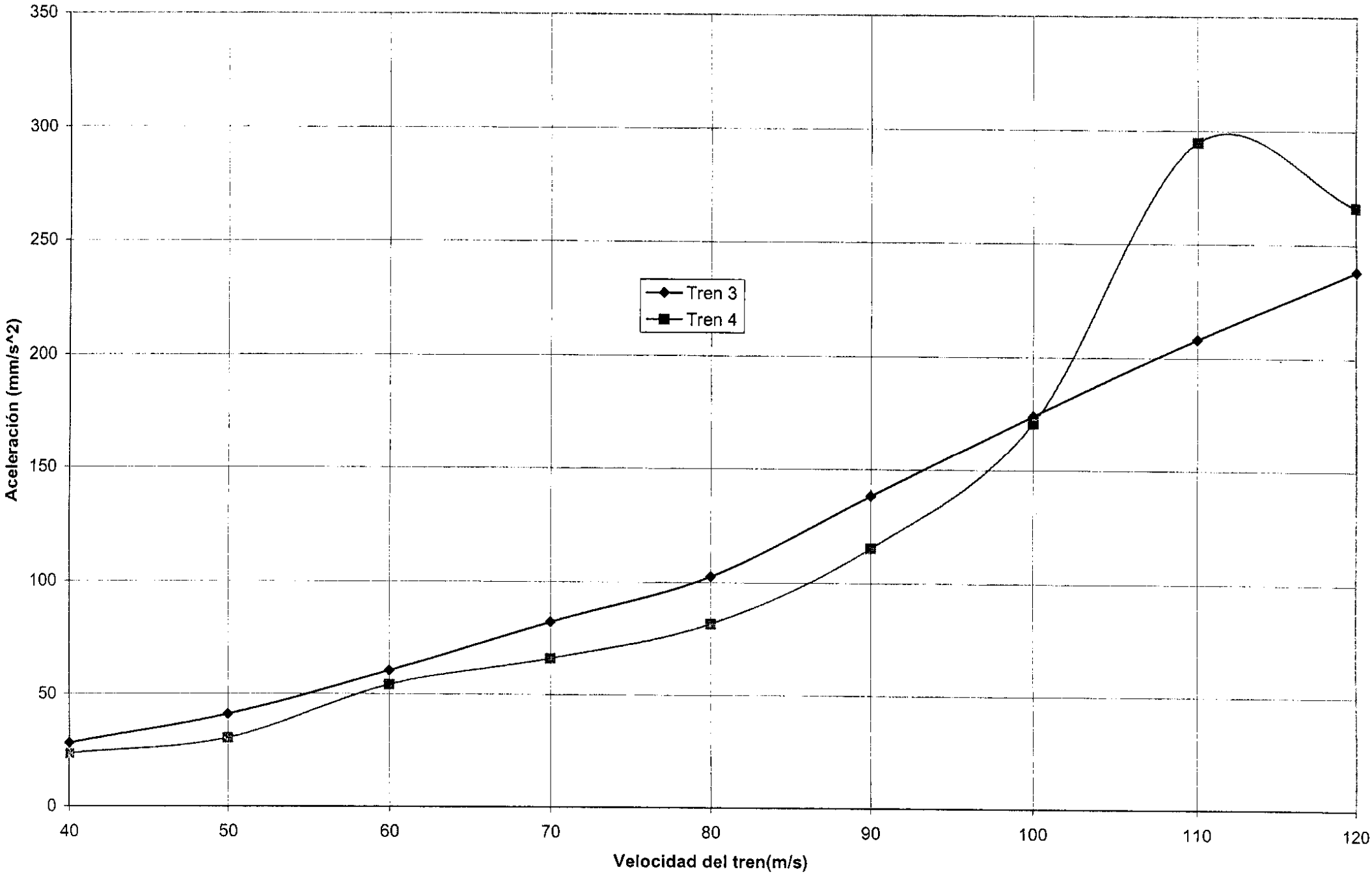
**- Caso: 152 (ANALISIS TEMPORAL. VELOCIDAD= 120.000 m/s)**

| Filtrar | Nudo | Caso |
|---|---|---|
| Lista completa | 1A120 201A207 | 1A152 |
| Selección | 9 27A87CA20 1 | 152 |
| | | |
| Número total | 127 | 152 |
| Número seleccionado | 6 | 1 |

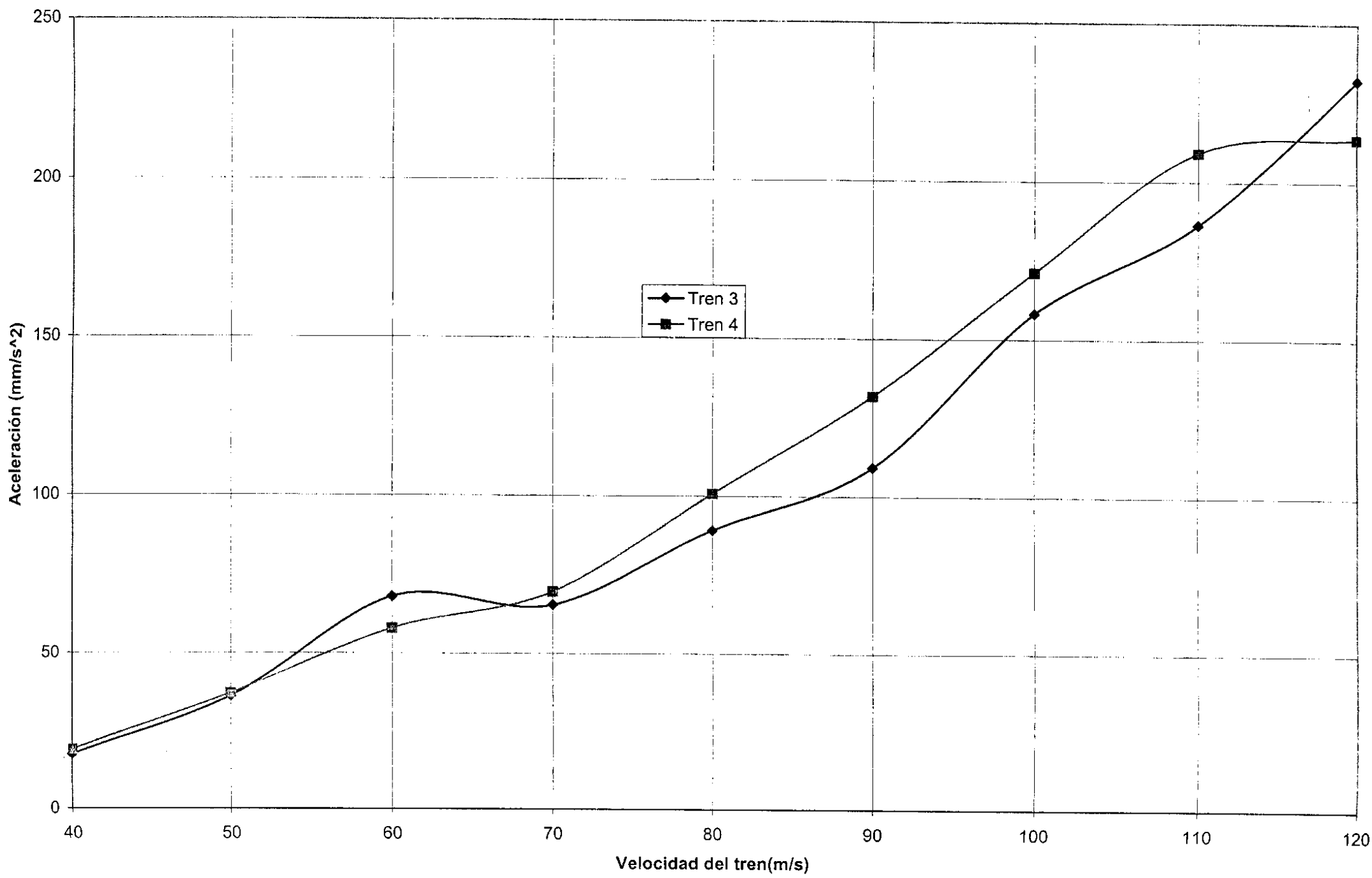
**- Casos: 154 155**

| Nudo/Caso | VZ (mm/sec) | UZ (mm) | AZ (mm/sec2) |
|---|---|---|---|
| 9/ ANALI | **11,2730>>** | -0,2477 | 67,6029 |
| 9/ ANALI | **-10,4465<<** | -0,6042 | 5,3082 |
| 9/ ANALI | -1,1261 | **0,6130>>** | -134,3944 |
| 9/ ANALI | -1,5116 | **-1,2546<<** | 224,8359 |
| 9/ ANALI | -0,3982 | -0,9514 | **266,4738>>** |
| 9/ ANALI | -1,2642 | -0,2413 | **-243,9677<<** |
| 27/ ANALI | **14,1051>>** | -0,2733 | -34,5216 |
| 27/ ANALI | **-15,8712<<** | -0,2460 | -57,1319 |
| 27/ ANALI | -0,1317 | **0,7400>>** | -73,7254 |
| 27/ ANALI | -0,8488 | **-1,7594<<** | 167,4640 |
| 27/ ANALI | 4,3859 | -1,7165 | **213,8916>>** |
| 27/ ANALI | -7,2239 | 0,3912 | **-210,6982<<** |
| 47/ ANALI | **11,7372>>** | -0,6009 | 22,7438 |
| 47/ ANALI | **-12,5090<<** | -0,1649 | -26,2513 |
| 47/ ANALI | 0,6874 | **0,8048>>** | -104,6445 |
| 47/ ANALI | -1,0611 | **-1,8029<<** | 165,3644 |
| 47/ ANALI | -1,1982 | -1,7834 | **168,8502>>** |
| 47/ ANALI | -2,3434 | 0,1038 | **-128,4517<<** |
| 67/ ANALI | **14,4569>>** | -0,6780 | 21,7964 |
| 67/ ANALI | **-11,7589<<** | -0,6439 | -3,8009 |
| 67/ ANALI | 0,5355 | **0,7749>>** | -90,6183 |
| 67/ ANALI | 1,7619 | **-1,8715<<** | 164,1852 |
| 67/ ANALI | -2,6111 | -1,8606 | **168,4000>>** |
| 67/ ANALI | -4,3207 | 0,5904 | **-107,6461<<** |
| 87/ ANALI | **13,0549>>** | -0,8067 | -9,6430 |
| 87/ ANALI | **-11,6215<<** | -0,4445 | 0,6928 |
| 87/ ANALI | 0,9092 | **0,7692>>** | -64,0584 |
| 87/ ANALI | -0,1602 | **-1,6761<<** | 41,5577 |
| 87/ ANALI | 8,7055 | -1,4125 | **153,4718>>** |
| 87/ ANALI | -0,5397 | 0,1356 | **-155,2874<<** |
| 105/ ANALI | **11,1716>>** | -0,5395 | -64,8400 |
| 105/ ANALI | **-10,4336<<** | -0,6972 | 82,0823 |
| 105/ ANALI | 0,3396 | **0,5767>>** | -67,4029 |
| 105/ ANALI | 1,2993 | **-1,1567<<** | 162,6599 |
| 105/ ANALI | -1,1780 | -0,4677 | **209,4474>>** |
| 105/ ANALI | 2,1143 | -0,1775 | **-203,6160<<** |

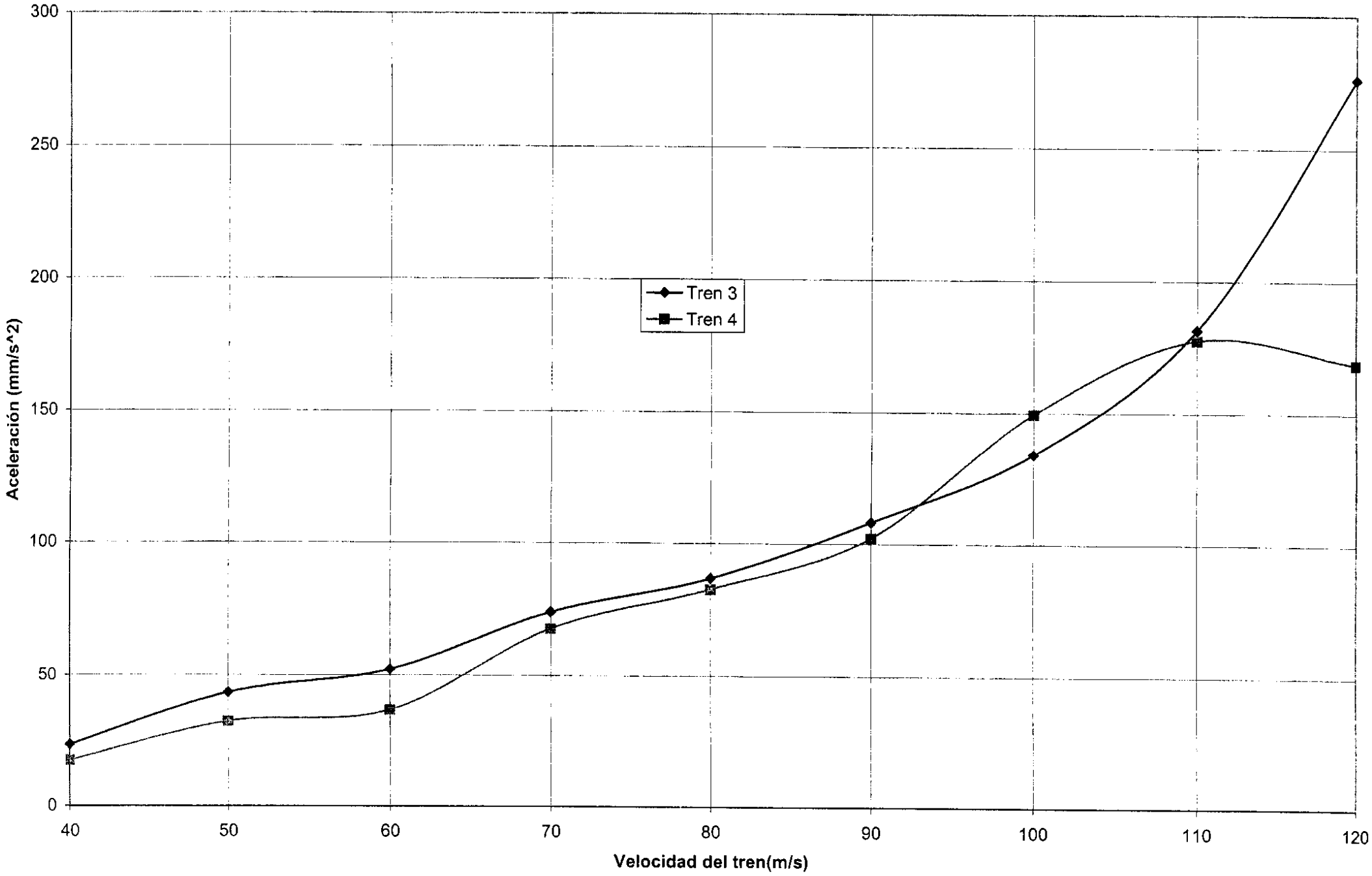
## EVOLUCIÓN DE LA ACELERACIÓN. NUDO 9



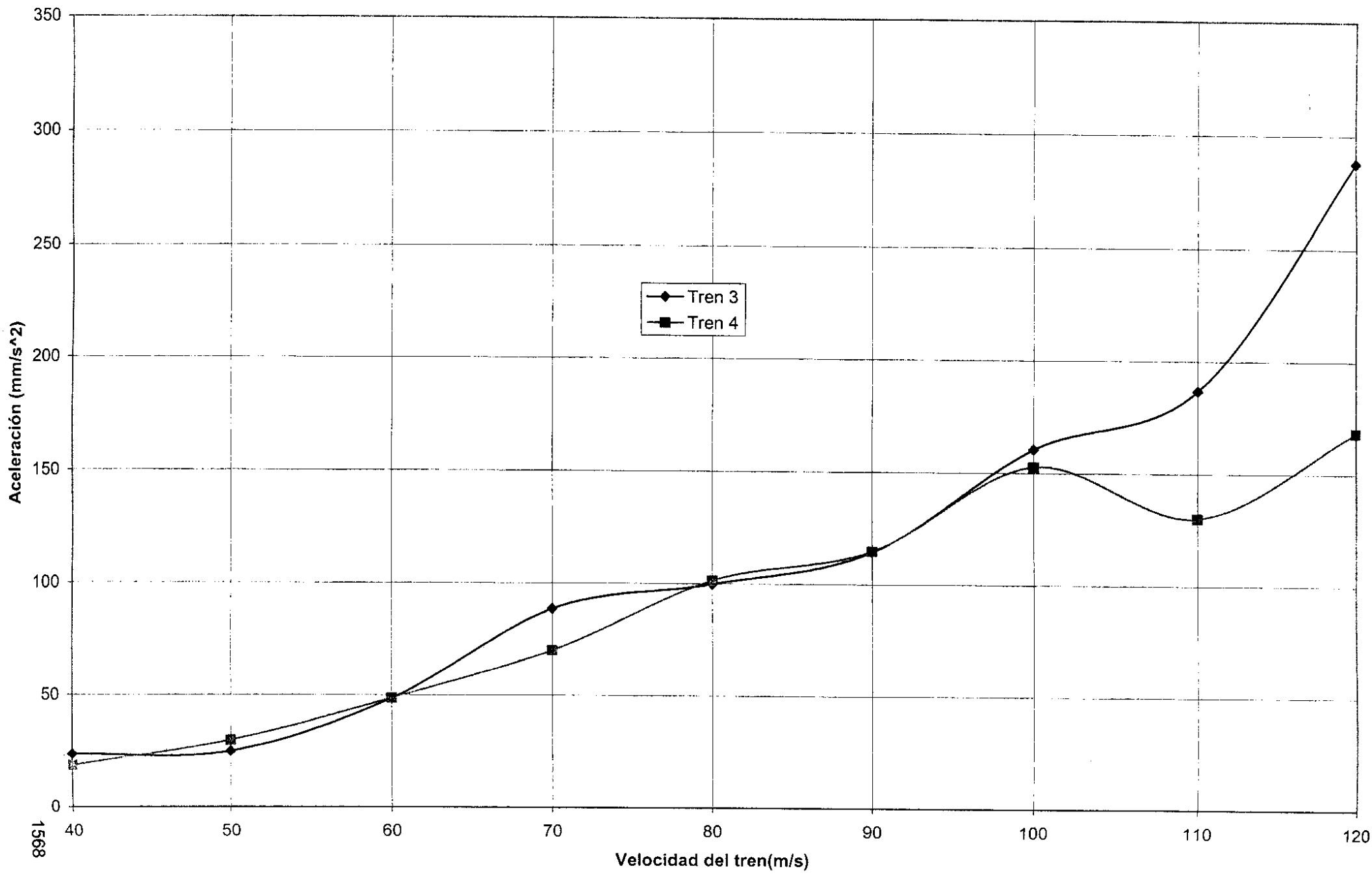

## EVOLUCIÓN DE LA ACELERACIÓN. NUDO 27



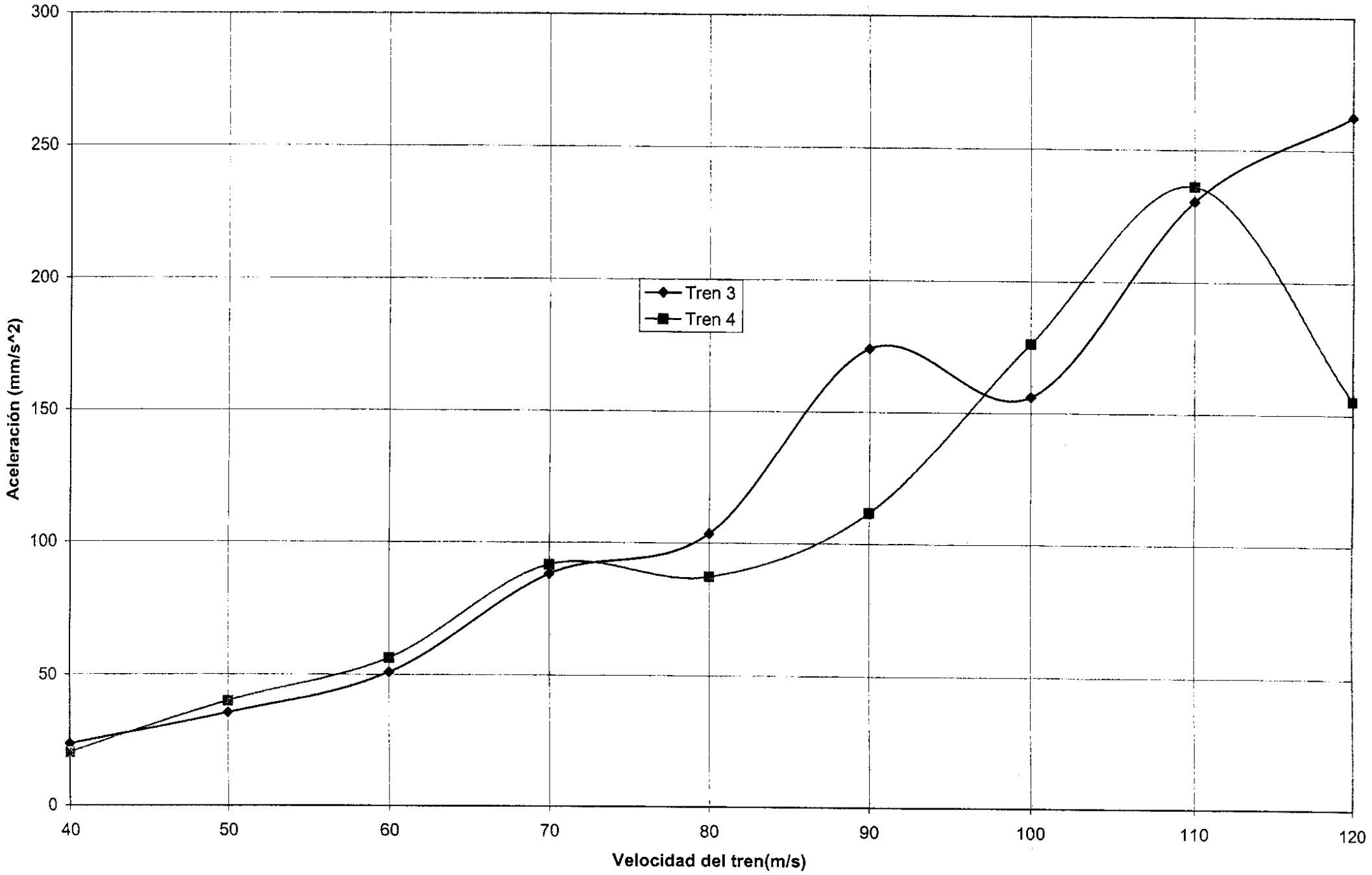
## EVOLUCIÓN DE LA ACELERACIÓN. NUDO 47



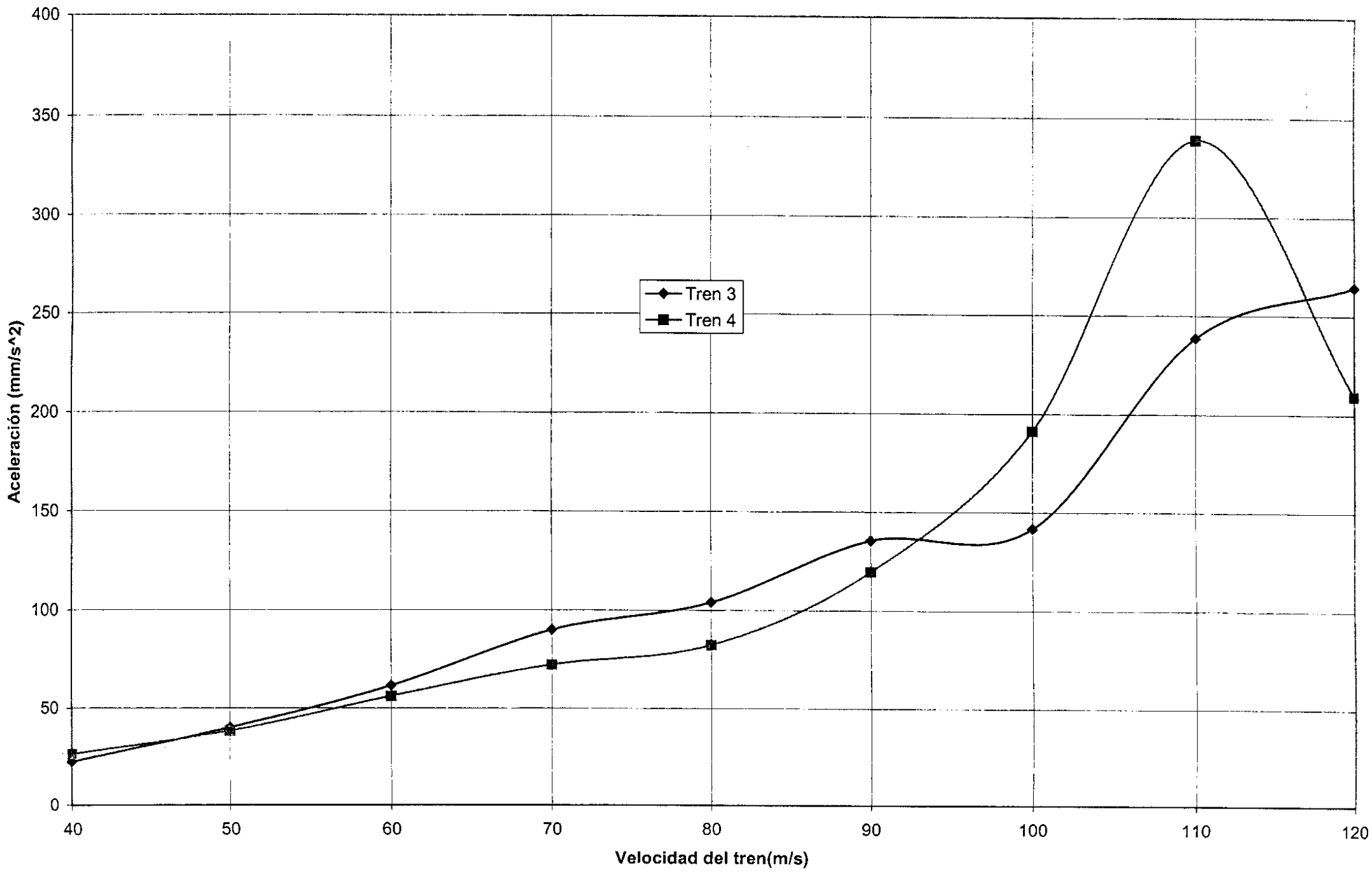

## EVOLUCIÓN DE LA ACELERACIÓN. NUDO 67



## EVOLUCIÓN DE LA ACELERACIÓN. NUDO 87




## EVOLUCIÓN DE LA ACELERACIÓN. NUDO 105



### 7.7.6.3. Coeficientes de Amplificación Dinámicos

7.6.6.3. Coeficientes de Amplificación Dinámicos.

Con los resultados obtenidos se pueden calcular los CAD de los centros de vano del puente dividiendo la máxima flecha en cada punto obtenida en el cálculo dinámico por su correspondiente en el cálculo estático.

Los resultados obtenidos se muestran en la tabla siguiente.

| COEFICIENTES AMPLIFICACIÓN DINÁMICOS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Desplazamientos Carga Estática (mm) | | Desplazamientos Análisis Dinámico (mm) | | CAD | | |
| | | Máximo | Mínimo | Máximo | Mínimo | Máximo | Mínimo | Máximo |
| NUDO 9 | Tren 3 | 0.51 | -1.23 | 0.69 | -1.42 | 1.35 | 1.15 | **1.35** |
| | Tren 4 | 0.46 | -1.07 | 0.70 | -1.25 | 1.52 | 1.17 | **1.52** |
| NUDO 27 | Tren 3 | 0.60 | -1.60 | 0.85 | -1.79 | 1.42 | 1.12 | **1.42** |
| | Tren 4 | 0.54 | -1.43 | 0.76 | -1.76 | 1.41 | 1.23 | **1.41** |
| NUDO 47 | Tren 3 | 0.61 | -1.65 | 0.96 | -2.12 | 1.57 | 1.28 | **1.57** |
| | Tren 4 | 0.53 | -1.52 | 0.80 | -1.80 | 1.51 | 1.18 | **1.51** |
| NUDO 67 | Tren 3 | 0.61 | -1.65 | 0.85 | -2.19 | 1.39 | 1.33 | **1.39** |
| | Tren 4 | 0.53 | -1.52 | 0.77 | -1.87 | 1.45 | 1.23 | **1.45** |
| NUDO 87 | Tren 3 | 0.60 | -1.62 | 0.89 | -1.96 | 1.48 | 1.21 | **1.48** |
| | Tren 4 | 0.54 | -1.45 | 0.77 | -1.72 | 1.43 | 1.19 | **1.43** |
| NUDO 105 | Tren 3 | 0.50 | -1.25 | 0.72 | -1.49 | 1.44 | 1.19 | **1.44** |
| | Tren 4 | 0.45 | -1.08 | 0.58 | -1.27 | 1.29 | 1.18 | **1.29** |

7.6.6.4. Desplazamientos trenes IPF-75 y EC1.

En la página siguiente se muestra la envolvente de desplazamientos del tren B de la IPF y de los trenes 71, SW0 y SW2 del Eurocódigo.

Observando los resultados se comprueba que las flechas de estos trenes son mayores que las obtenidas en el Análisis Dinámico.

**7.7.6.4. Desplazamientos trenes IPF – 75 y EC1**

**- Casos: 19A36**

| Filtrar | Nudo | Caso |
|---|---|---|
| Lista completa | 1A120 201A207 | 1A57 |
| Selección | 9 27A87CA20 1 | 19A36 |
| | | |
| Número total | 127 | 57 |
| Número seleccion | 6 | 18 |

**- Casos: 19A36**

| Nudo/Caso | UZ (mm) |
|---|---|
| 9/ 22 | 2,16>> |
| 9/ 20 | -4,84<< |
| 27/ 20 | 3,74>> |
| 27/ 21 | -6,88<< |
| 47/ 22 | 3,87>> |
| 47/ 19 | -7,52<< |
| 67/ 19 | 3,89>> |
| 67/ 21 | -7,51<< |
| 87/ 21 | 3,72>> |
| 87/ 19 | -6,95<< |
| 105/ 19 | 2,12>> |
| 105/ 21 | -4,98<< |





**- Casos: 19A140**

| Filtrar | Nudo | Caso |
|---|---|---|
| Lista completa | 1A120 201A207 | 1A165 |
| Selección | 9 27A87CA20 1 | 19A140 |
| | | |
| Número total | 127 | 165 |
| Número seleccion | 6 | 122 |

**- Casos: 19A140**

| Nudo/Caso | UZ (mm) |
|---|---|
| 9/ 101 | 2,18>> |
| 9/ 119 | -4,39<< |
| 27/ 105 | 2,52>> |
| 27/ 101 | -6,75<< |
| 47/ 101 | 2,51>> |
| 47/ 105 | -7,08<< |
| 67/ 113 | 2,50>> |
| 67/ 109 | -7,09<< |
| 87/ 109 | 2,51>> |
| 87/ 113 | -6,81<< |
| 105/ 113 | 2,14>> |
| 105/ 139 | -4,41<< |

7.6.6.5. Conclusiones.

Tras el estudio realizado sobre el Viaducto de la Riera de Rierussa, se puede concluir lo siguiente:

- Los coeficientes de amplificación obtenidos tienen un valor máximo de 1.57, siendo un valor muy inferior al que produciría esfuerzos y deformaciones iguales que los obtenidos con los trenes tipo introducidos (trenes de la IPF y EC), por lo que este análisis no refleja ningún aspecto crítico en la vida del puente.
- Las aceleraciones máximas se mantienen por debajo de los límites establecidos en la IAPF-98.
- No se aprecian efectos resonantes importantes para las velocidades analizadas.
- Los resultados en función de los distintos trenes son similares.

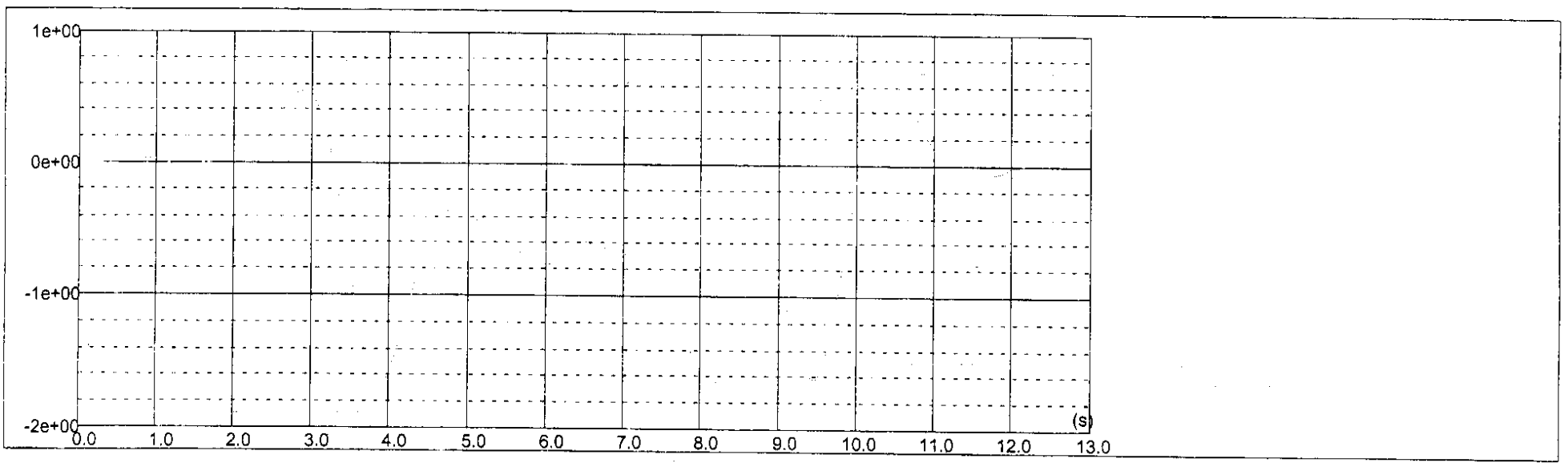
**7.7.6.5. Conclusiones**

### 7.7.7. **Resultados en el tiempo.**

La información que se genera al realizar un análisis dinámico es muy extensa, y su exposición conduciría a una desproporcionada cantidad de hojas de interpretación complicada. Por ello, en este apartado se mostrará únicamente la evolución en el tiempo de los desplazamientos de los centros de vano representativos (la mitad, por la simetría del puente) para cada velocidad y para cada tren.

No se mostrará por tanto la evolución de las velocidades y de las aceleraciones.

**7.7.7. Resultados en el tiempo**




| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 67 | Desplazamiento UZ (mm) | 0.64 | 130/151 10.45(s) | -1.67 | 49/151 3.89(s) |



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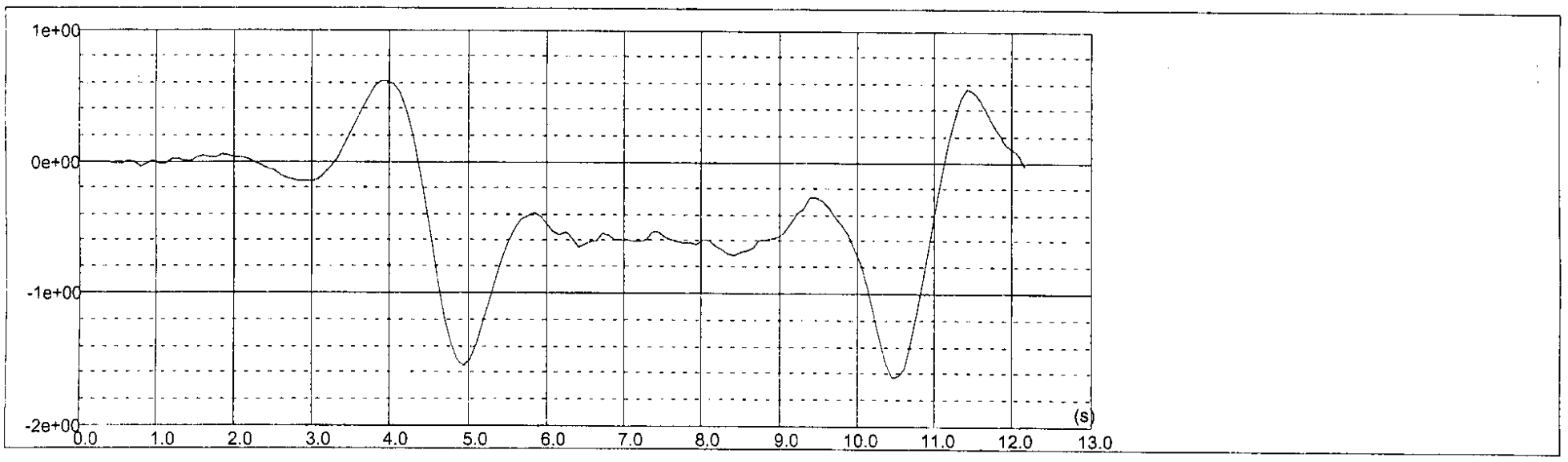
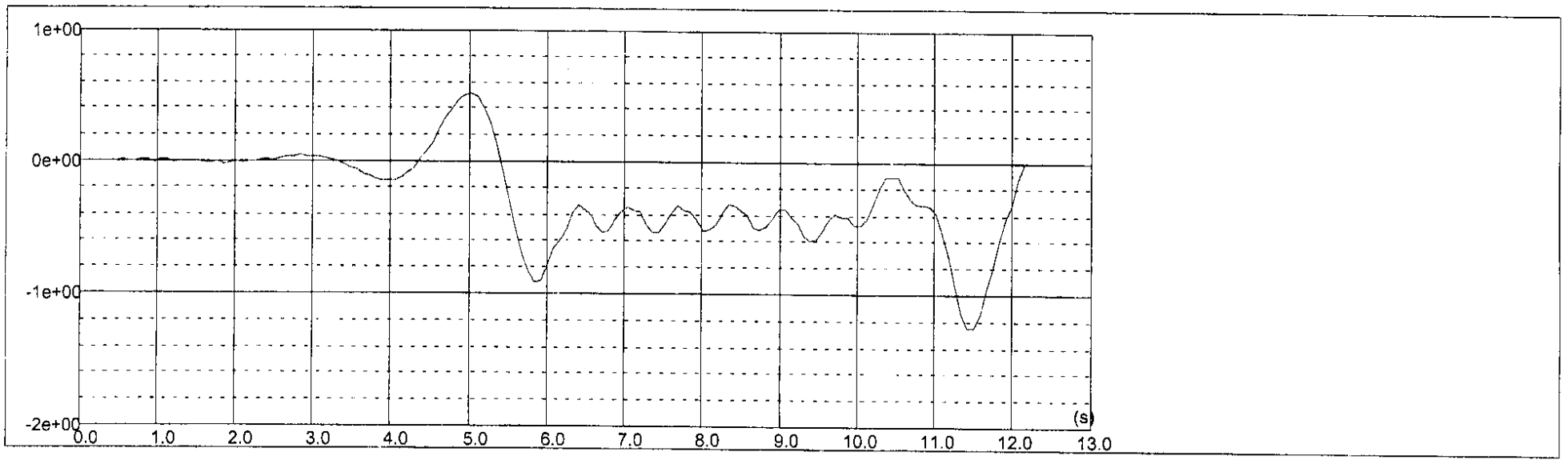


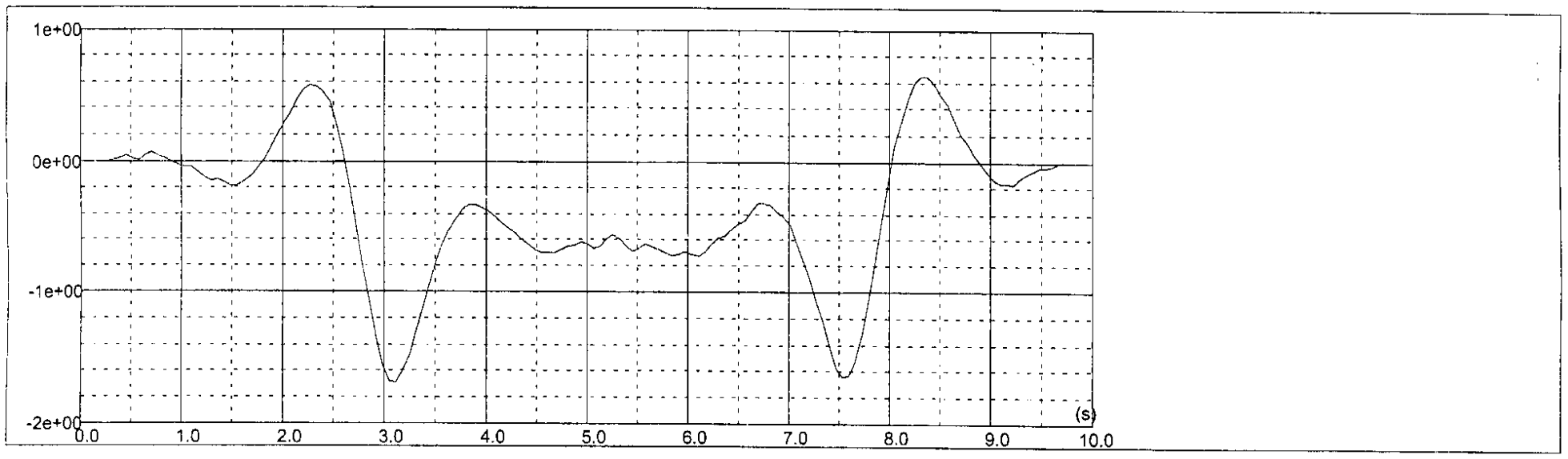

| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 87 | Desplazamiento UZ (mm) | 0.61 | 50/151 3.97(s) | -1.63 | 130/151 10.45(s) |



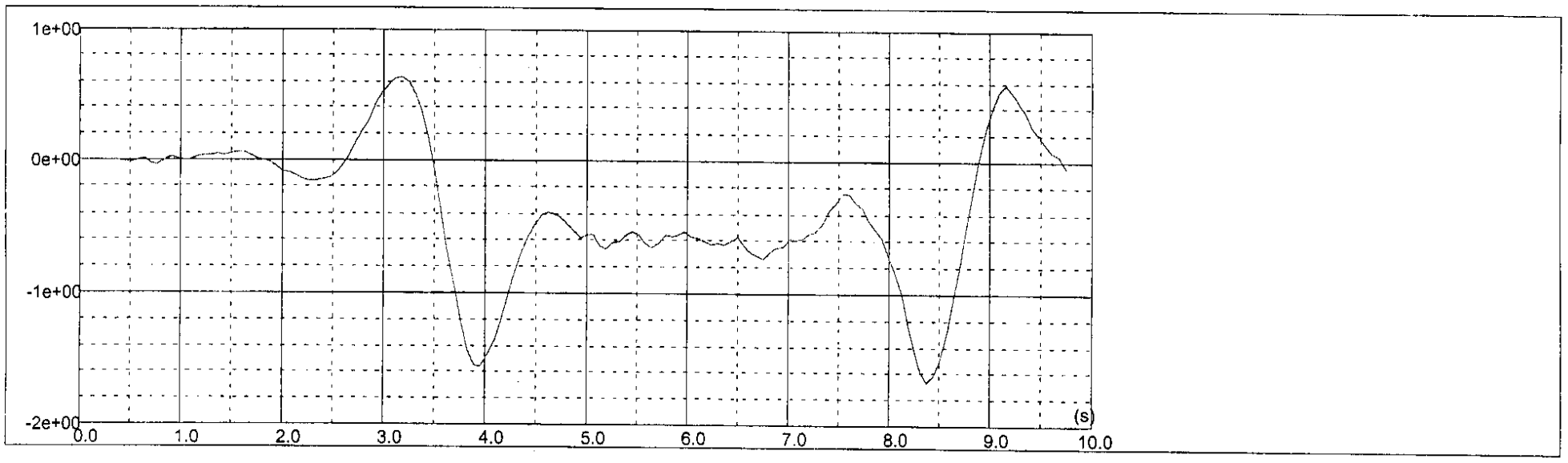

| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 105 | Desplazamiento UZ (mm) | 0.52 | 63/151 5.02(s) | -1.26 | 143/151 11.50(s) |








| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 67 | Desplazamiento UZ (mm) | 0.65 | 129/151 8.32(s) | -1.69 | 49/151 3.12(s) |




| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 87 | Desplazamiento UZ (mm) | 0.63 | 50/151 3.19(s) | -1.67 | 130/151 8.38(s) |



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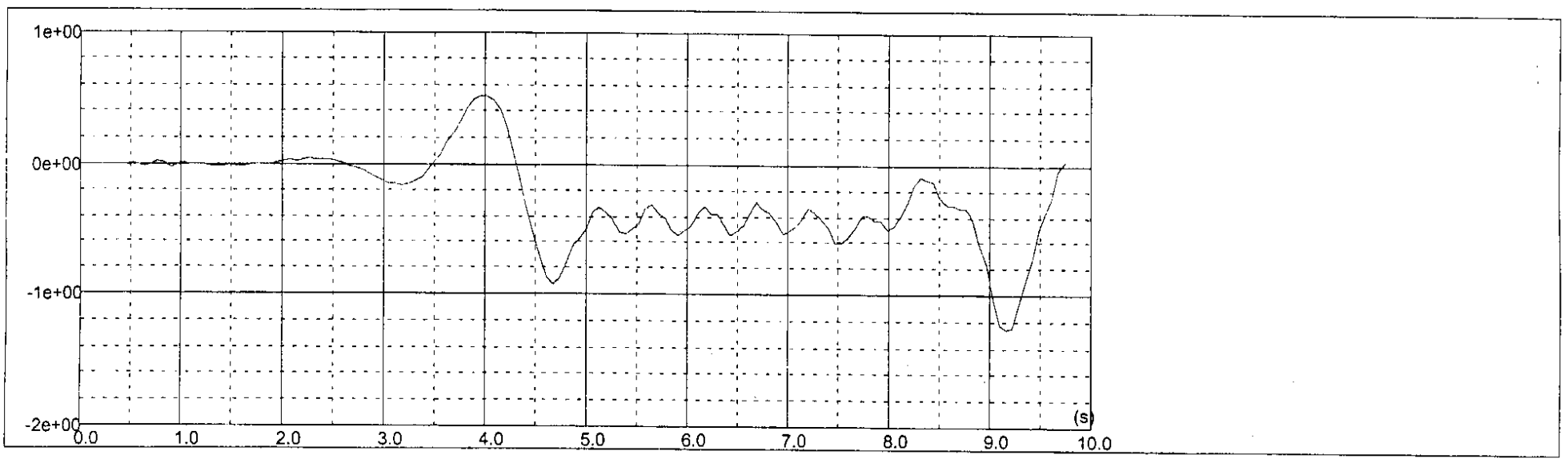
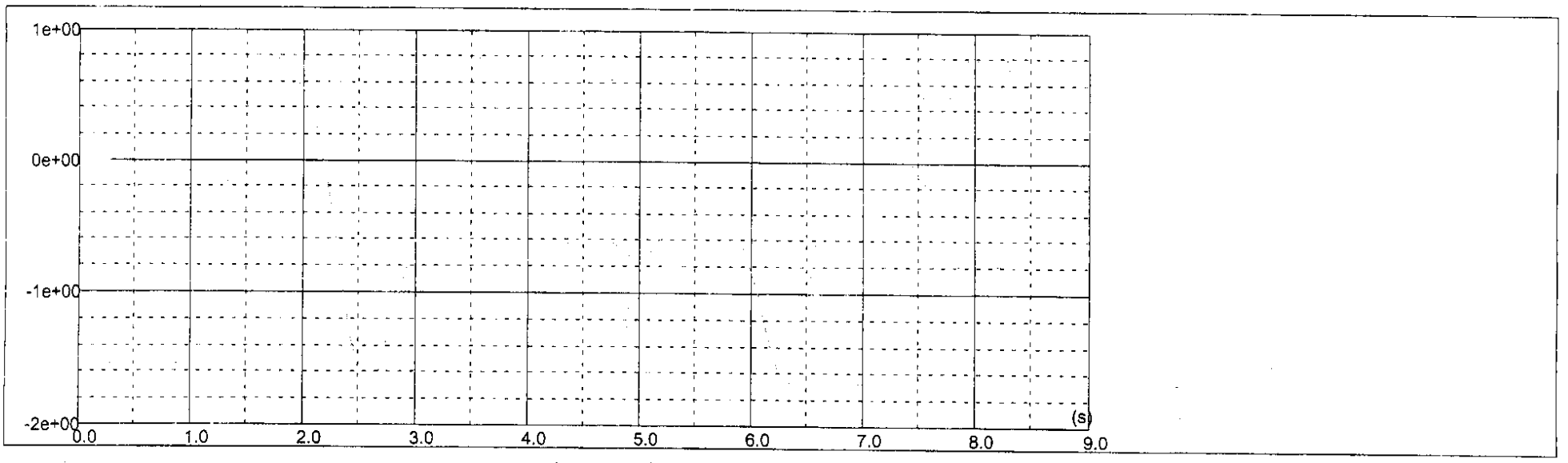



| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 105 | Desplazamiento UZ (mm) | 0.52 | 63/151 4.03(s) | -1.27 | 142/151 9.17(s) |




| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 67 | Desplazamiento UZ (mm) | 0.69 | 130/151 6.97(s) | -1.72 | 49/151 2.59(s) |



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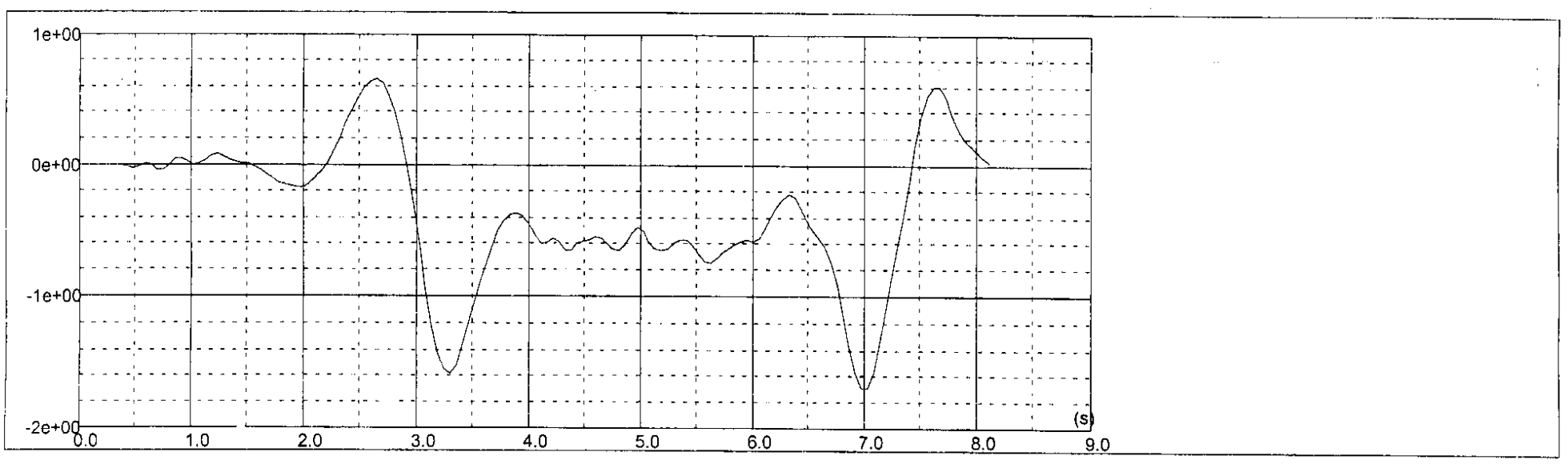
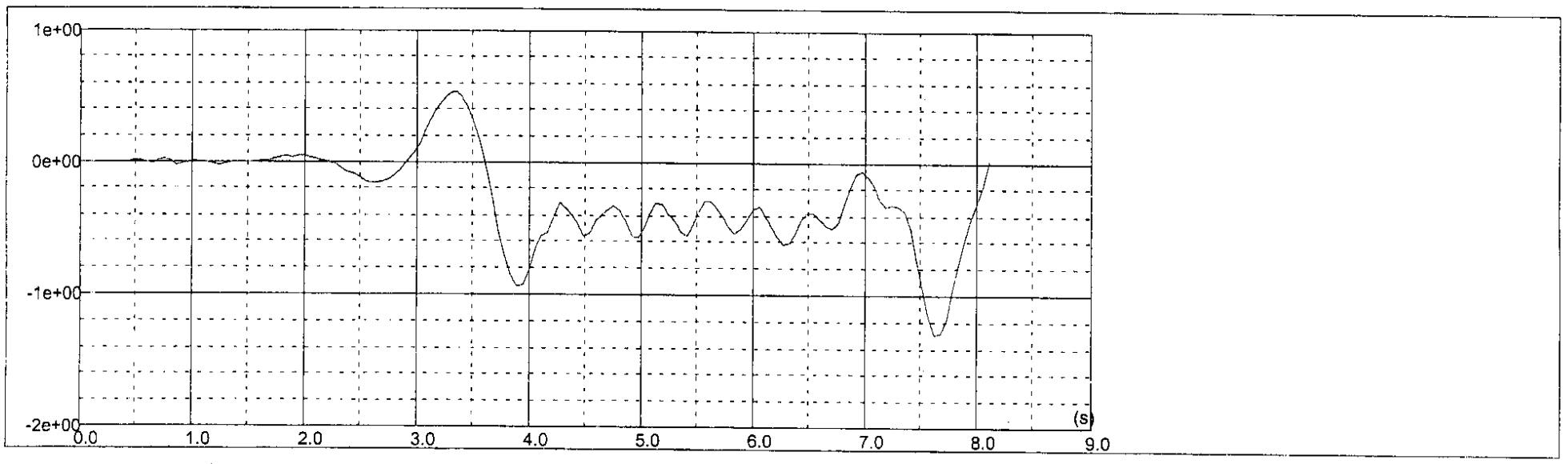
Proyecto: Rieru360



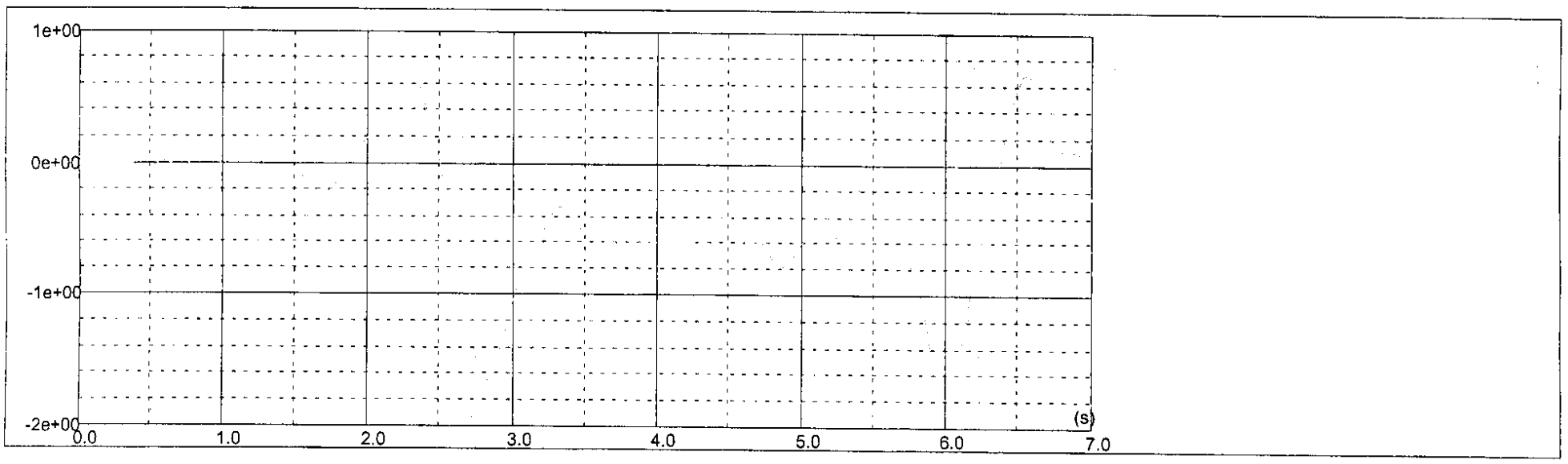

| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 87 | Desplazamiento UZ (mm) | 0.65 | 50/151 2.65(s) | -1.70 | 130/151 6.97(s) |



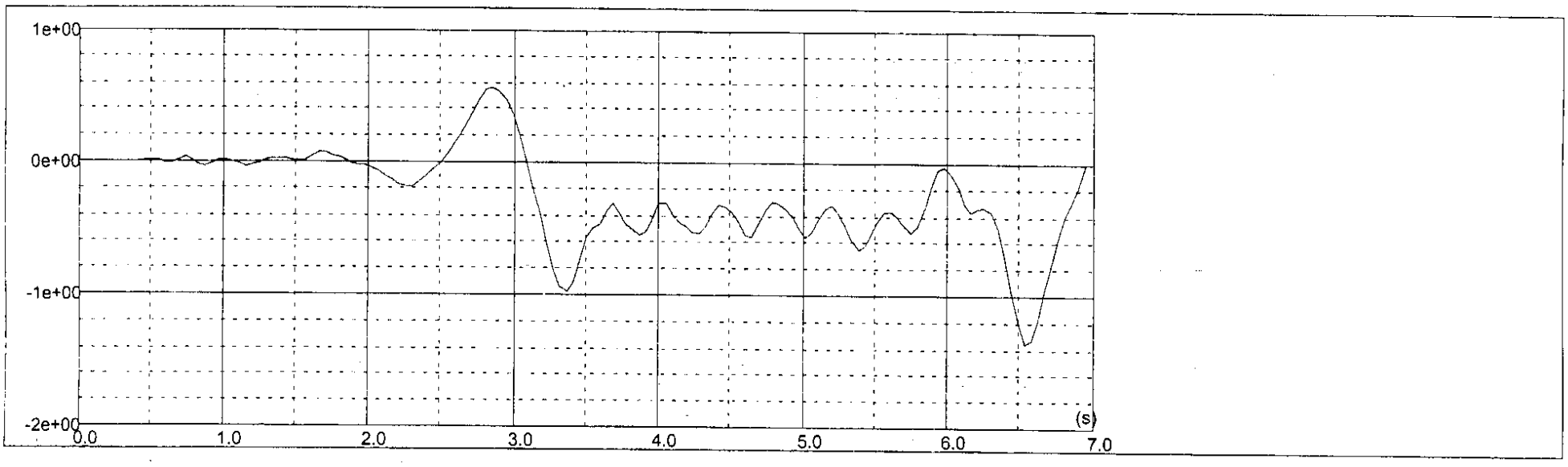

| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 105 | Desplazamiento UZ (mm) | 0.54 | 63/151 3.35(s) | -1.30 | 142/151 7.61(s) |





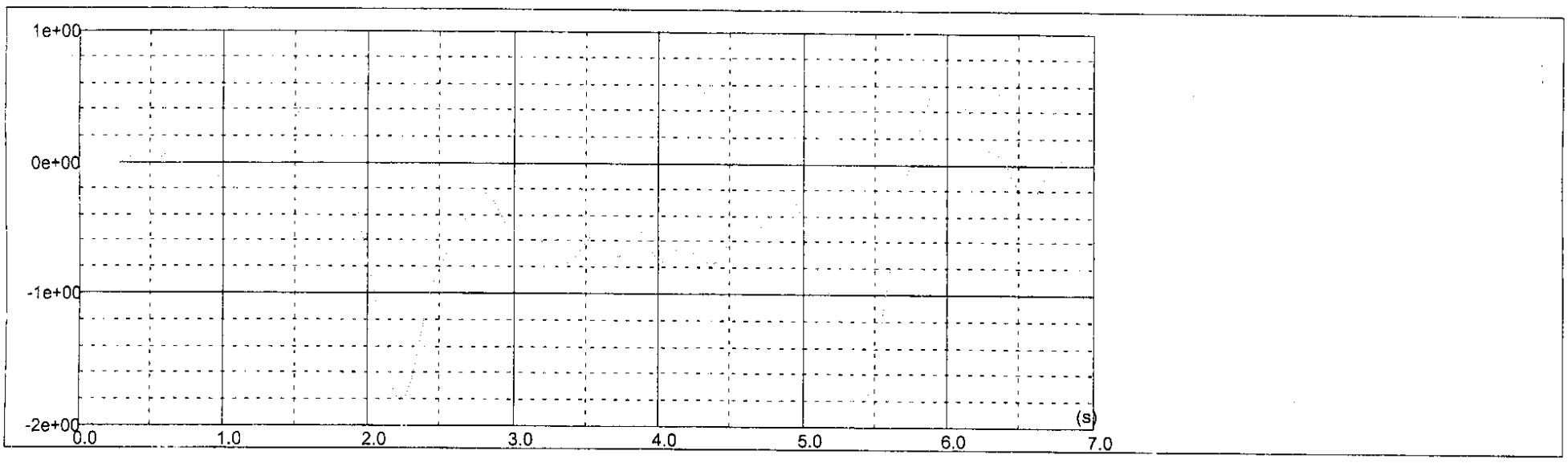



| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 87 | Desplazamiento UZ (mm) | 0.71 | 50/152 2.25(s) | -1.80 | 131/152 5.98(s) |

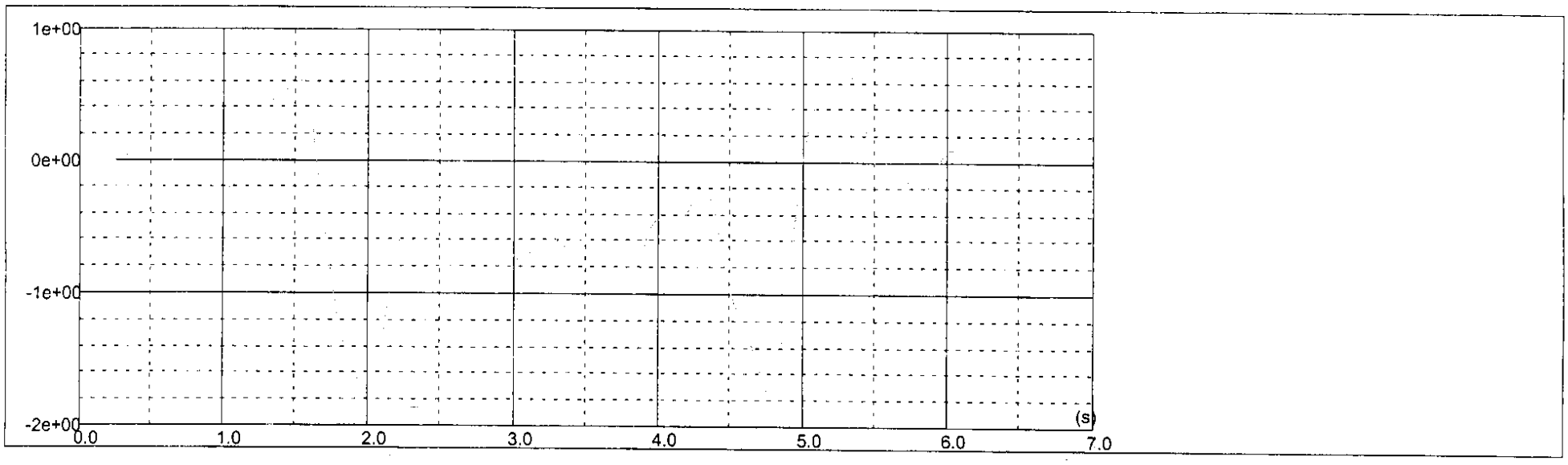



| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 105 | Desplazamiento UZ (mm) | 0.56 | 63/152 2.85(s) | -1.36 | 143/152 6.53(s) |






| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 67 | Desplazamiento UZ (mm) | 0.77 | 131/152 5.98(s) | -1.80 | 49/152 2.21(s) |




| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 67 | Desplazamiento UZ (mm) | 0.70 | 130/149 5.29(s) | -1.74 | 117/149 4.76(s) |



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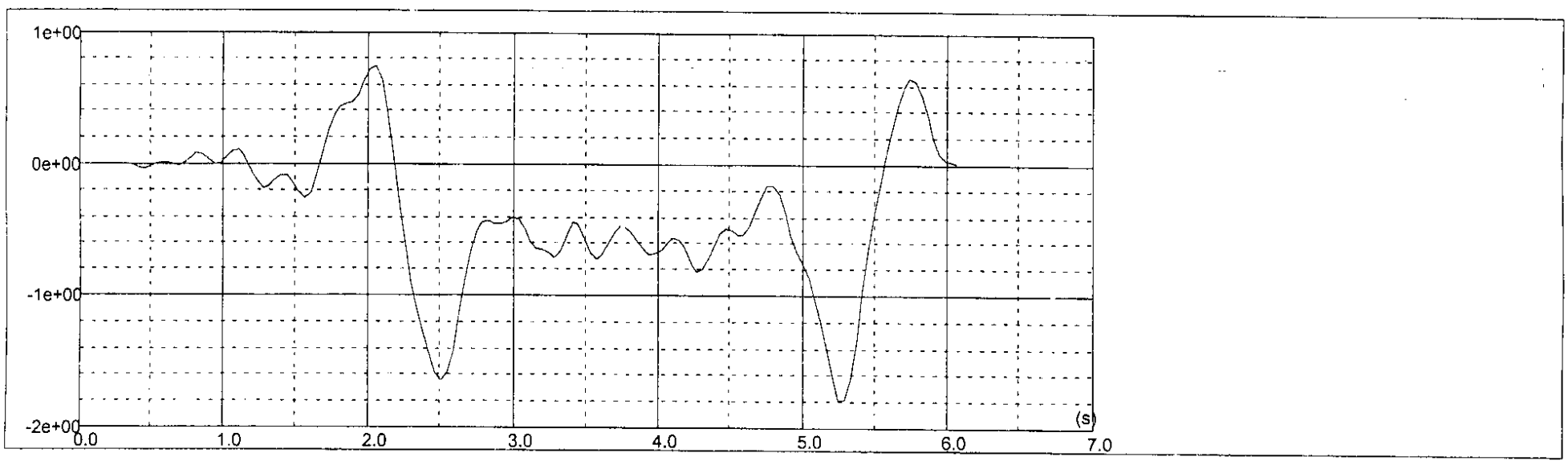
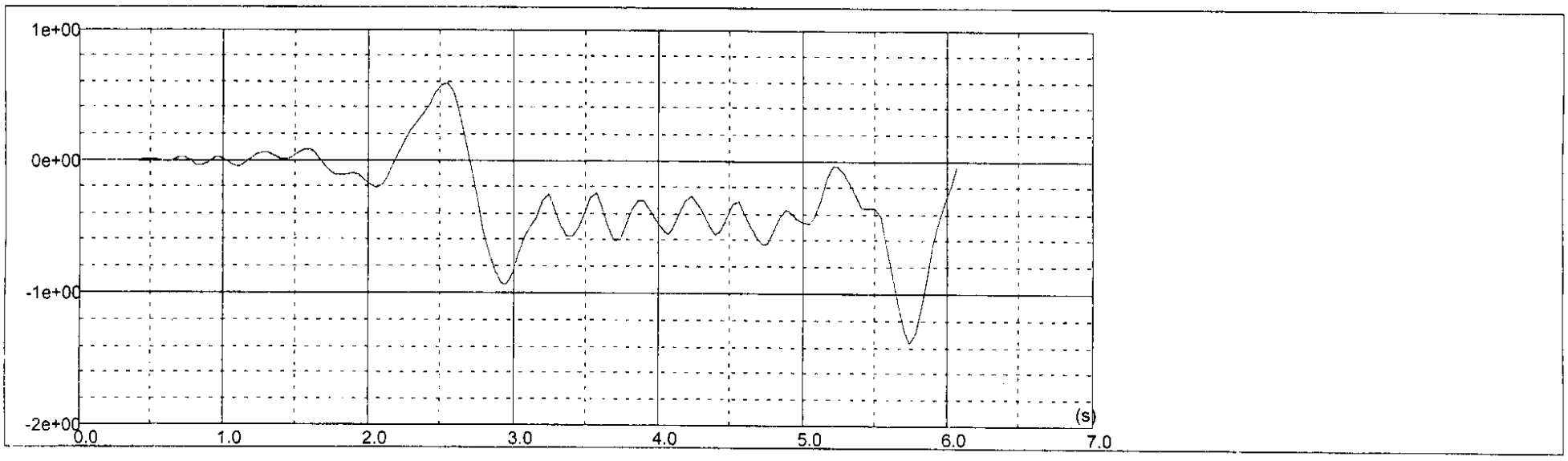
Proyecto: rieru380



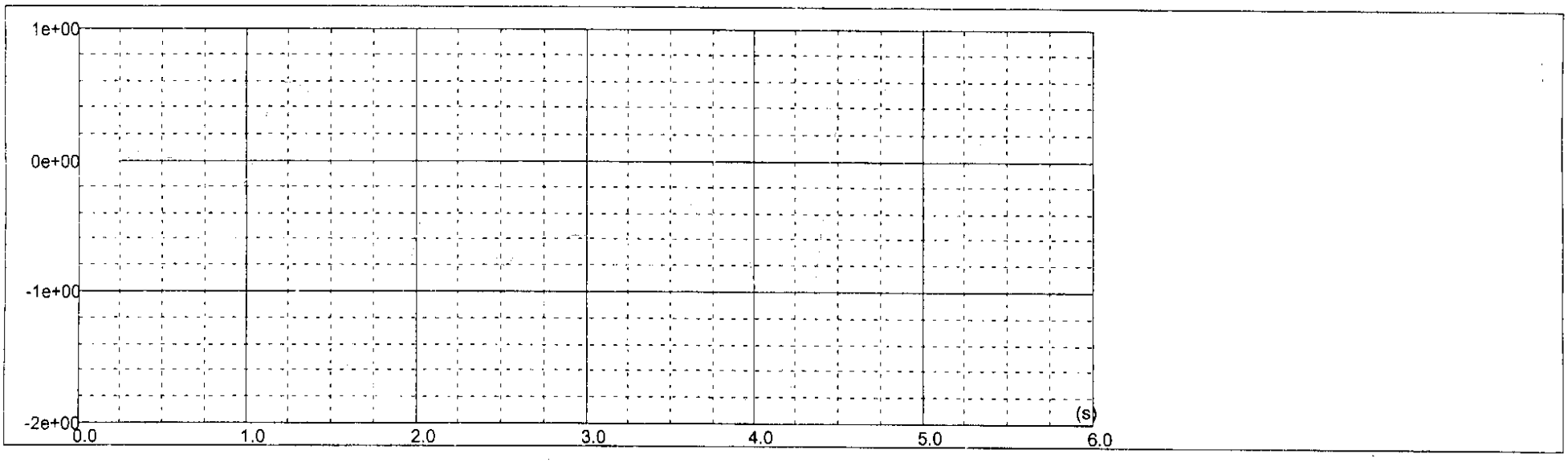

| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 87 | Desplazamiento UZ (mm) | 0.74 | 51/149 2.05(s) | -1.79 | 130/149 5.29(s) |



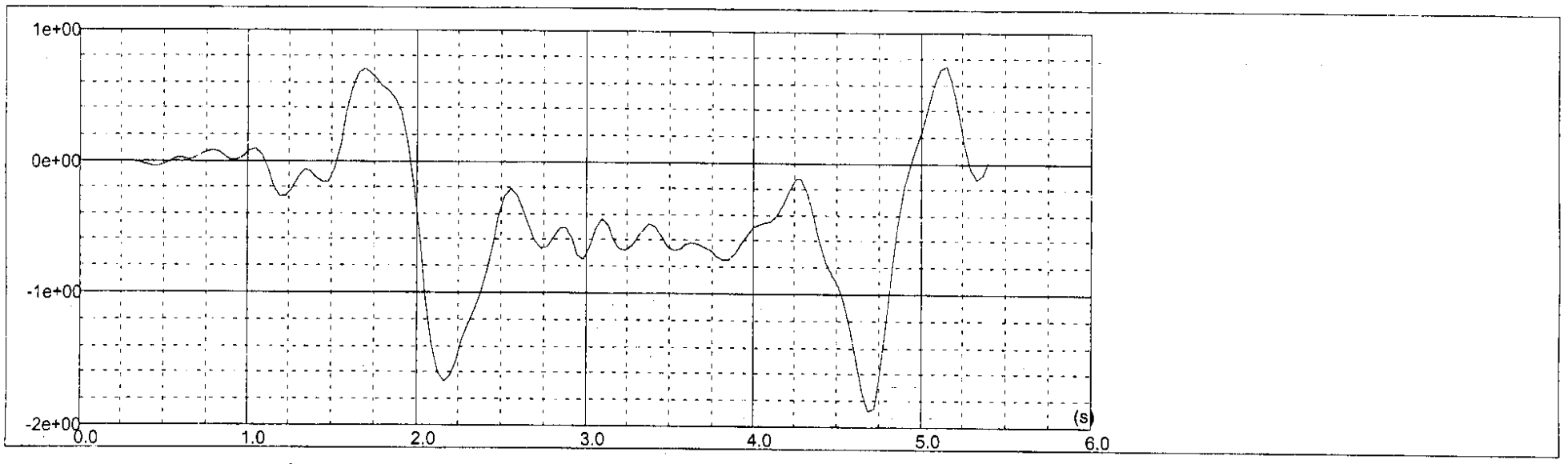

| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 105 | Desplazamiento UZ (mm) | 0.58 | 63/149 2.54(s) | -1.37 | 141/149 5.74(s) |








| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 67 | Desplazamiento UZ (mm) | 0.7075 | 132/151 4.72(s) | -1.7909 | 48/151 1.69(s) |




| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 87 | Desplazamiento UZ (mm) | 0.7403 | 144/151 5.15(s) | -1.8905 | 131/151 4.68(s) |



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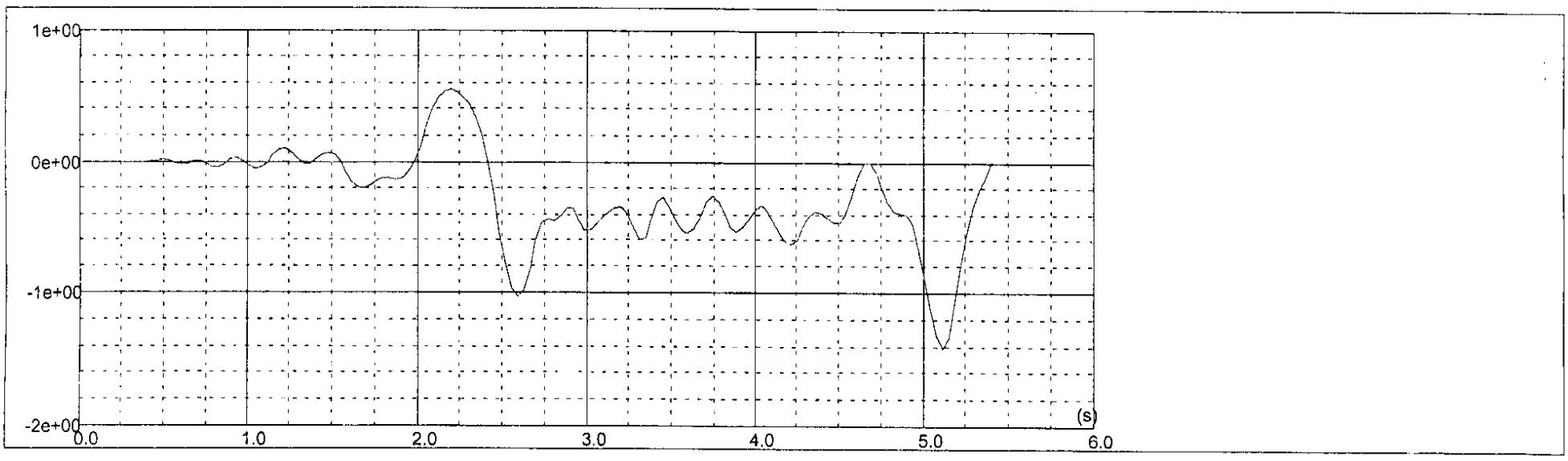
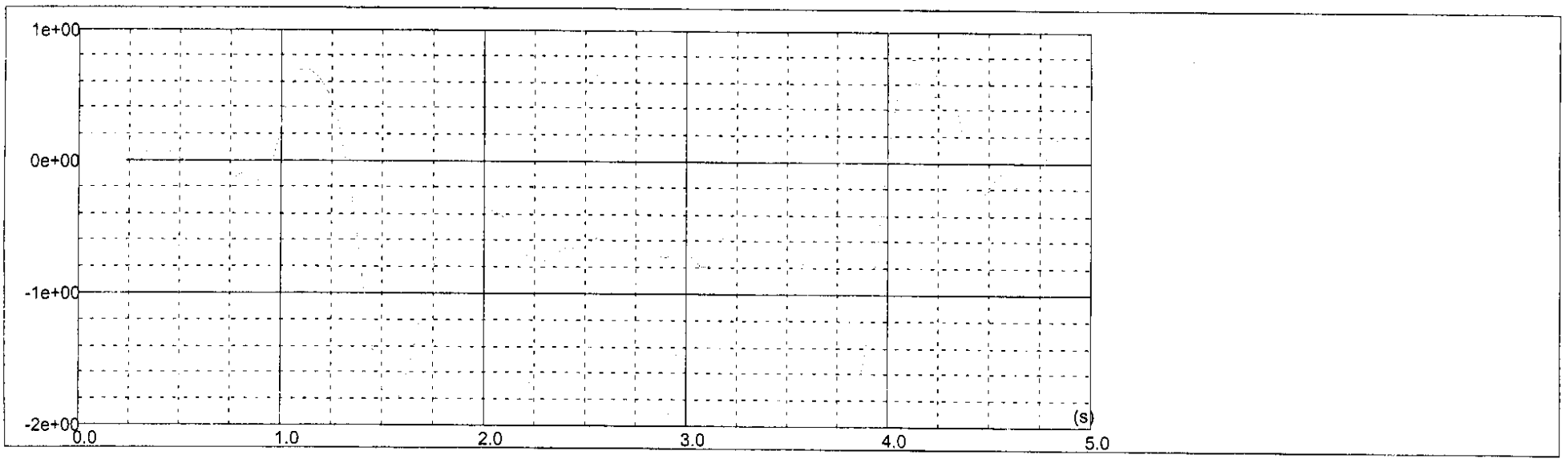



| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 105 | Desplazamiento UZ (mm) | 0.5459 | 62/151 2.20(s) | -1.4125 | 143/151 5.11(s) |




| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 67 | Desplazamiento UZ (mm) | 0.7062 | 35/148 1.12(s) | -1.8611 | 48/148 1.55(s) |



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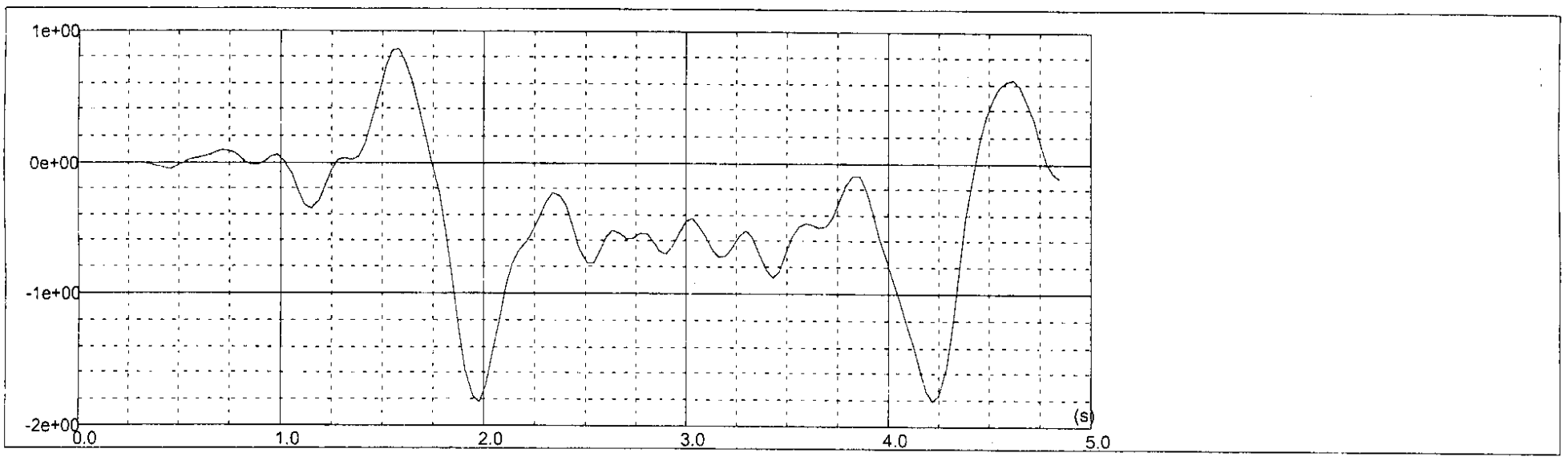
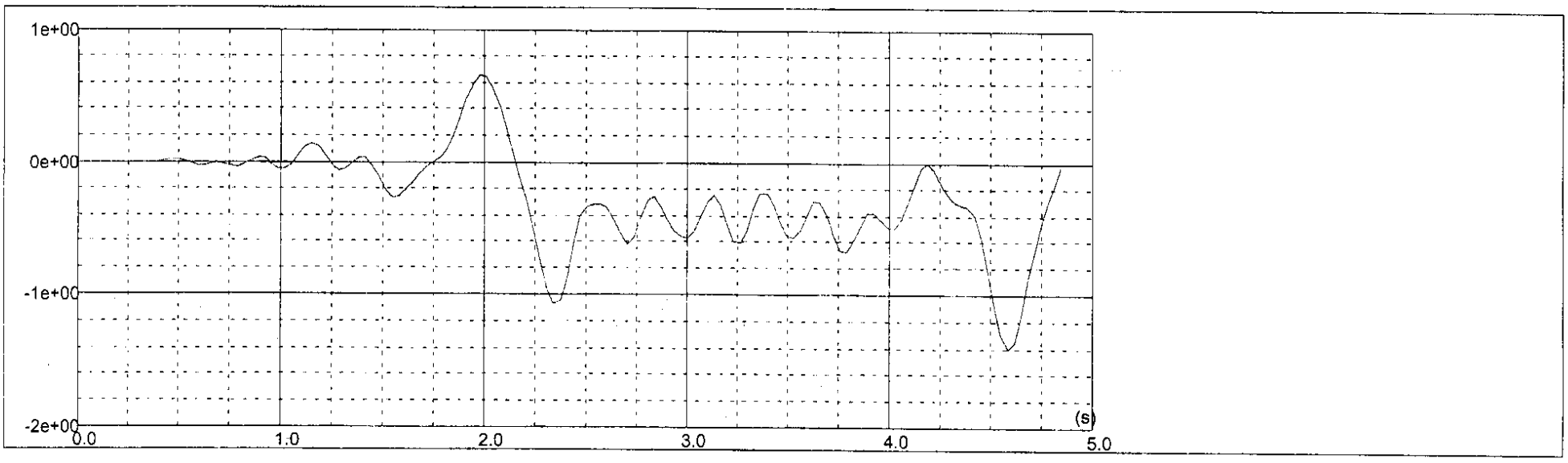


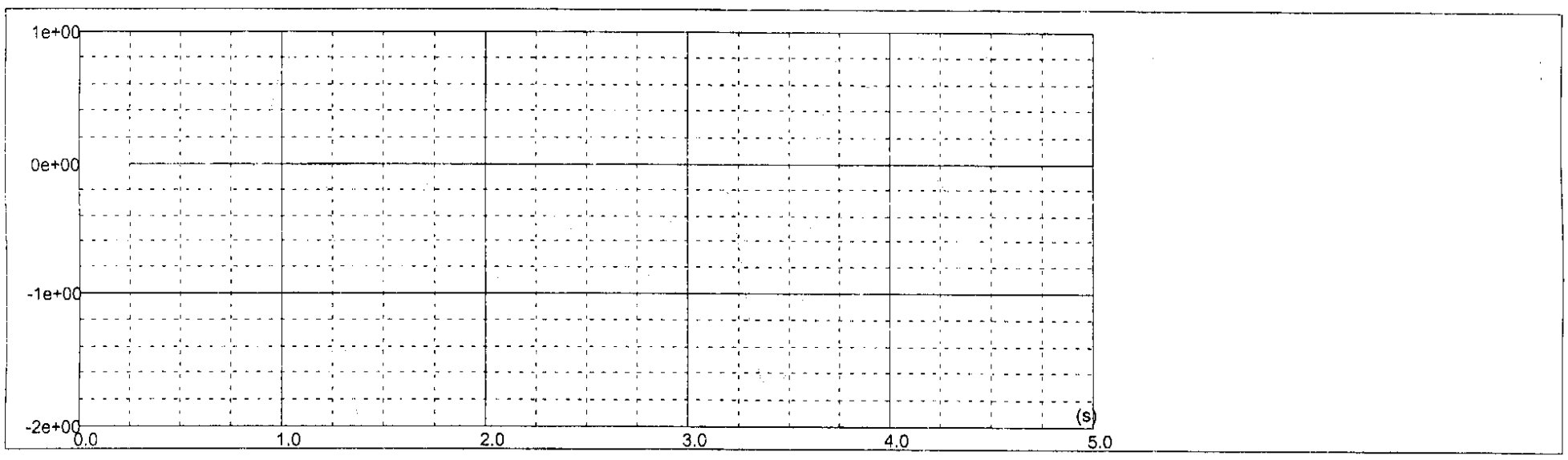

| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 87 | Desplazamiento UZ (mm) | 0.8618 | 49/148 1.58(s) | -1.8302 | 61/148 1.98(s) |



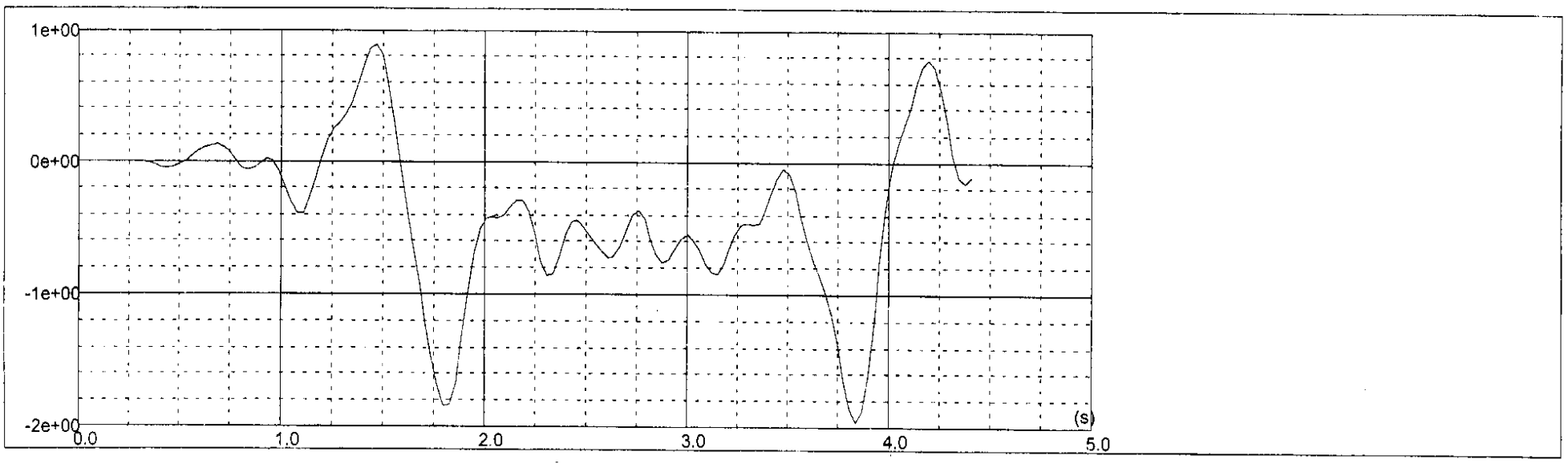

| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 105 | Desplazamiento UZ (mm) | 0.6601 | 61/148 1.98(s) | -1.4043 | 140/148 4.59(s) |








| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 67 | Desplazamiento UZ (mm) | 0.8084 | 36/148 1.05(s) | -1.9405 | 48/148 1.41(s) |




| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 87 | Desplazamiento UZ (mm) | 0.8914 | 50/148 1.47(s) | -1.9662 | 129/148 3.84(s) |



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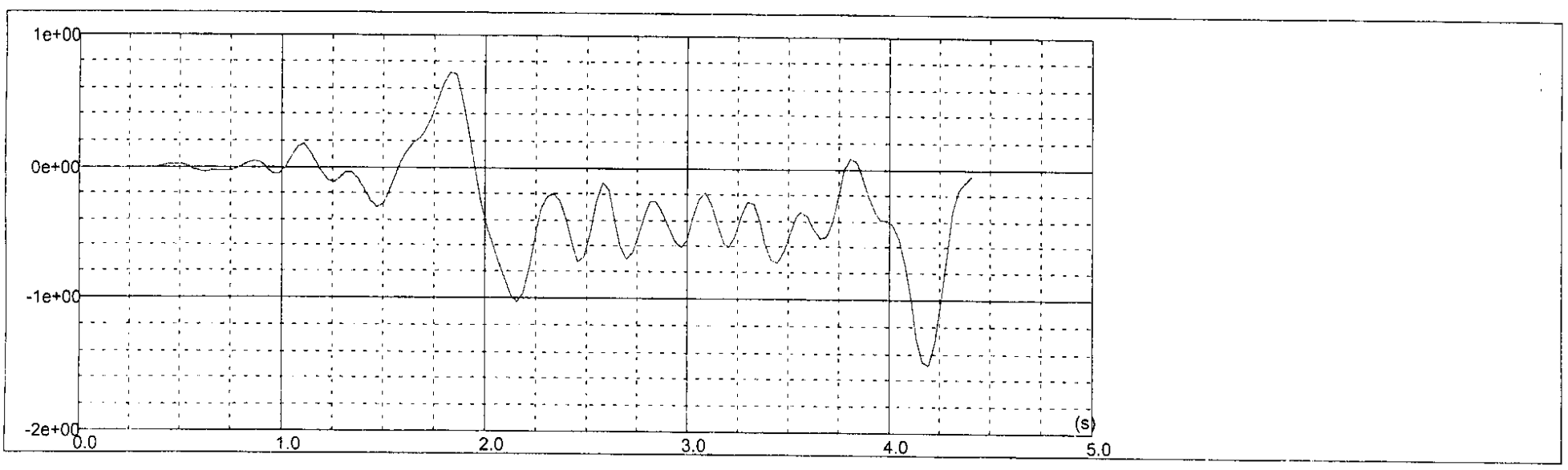
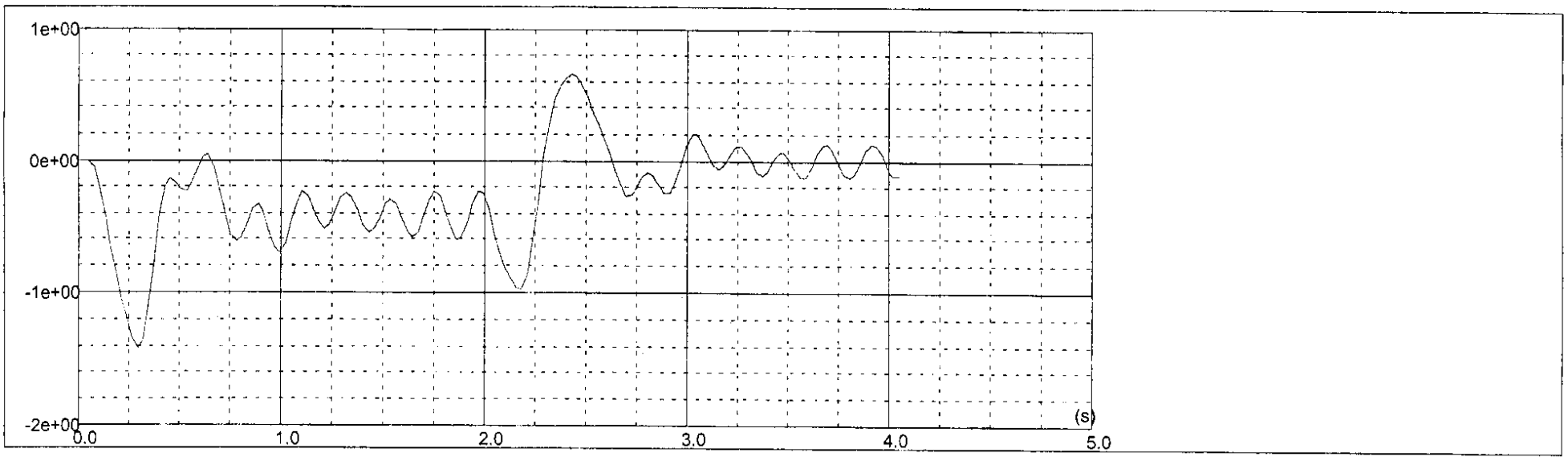



| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 105 | Desplazamiento UZ (mm) | 0.7236 | 62/148 1.83(s) | -1.4859 | 141/148 4.20(s) |




| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 9 | Desplazamiento UZ (mm) | 0.65 | 91/151 2.43(s) | -1.42 | 12/151 0.30(s) |



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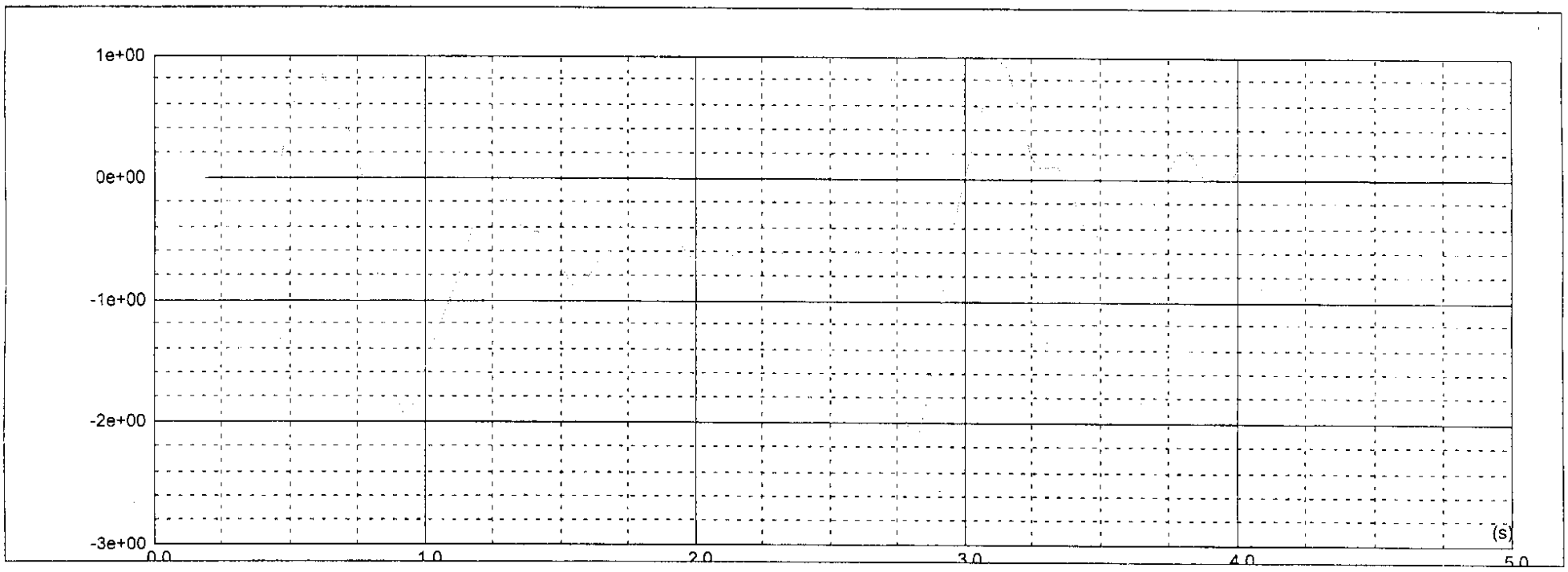
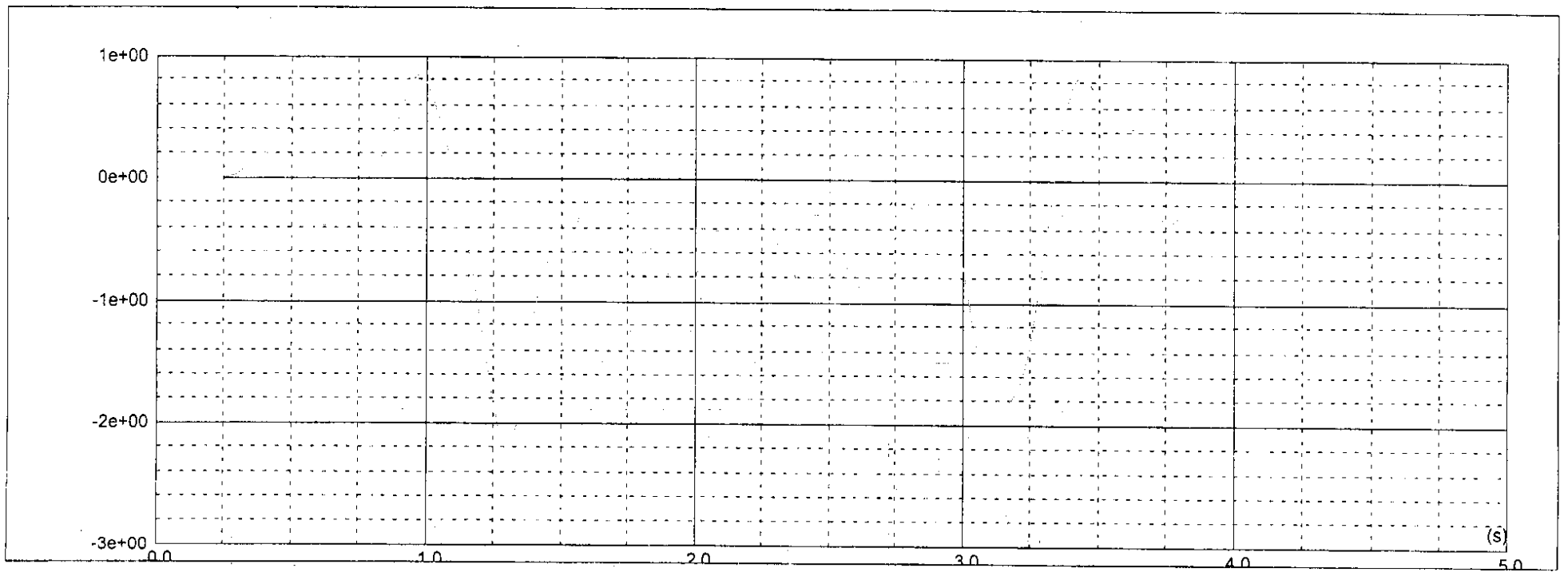
## Desplazamiento nudo 47




| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 47 | Desplazamiento UZ (mm) | 0.96 | 117/151 3.13(s) | -2.12 | 105/151 2.81(s) |

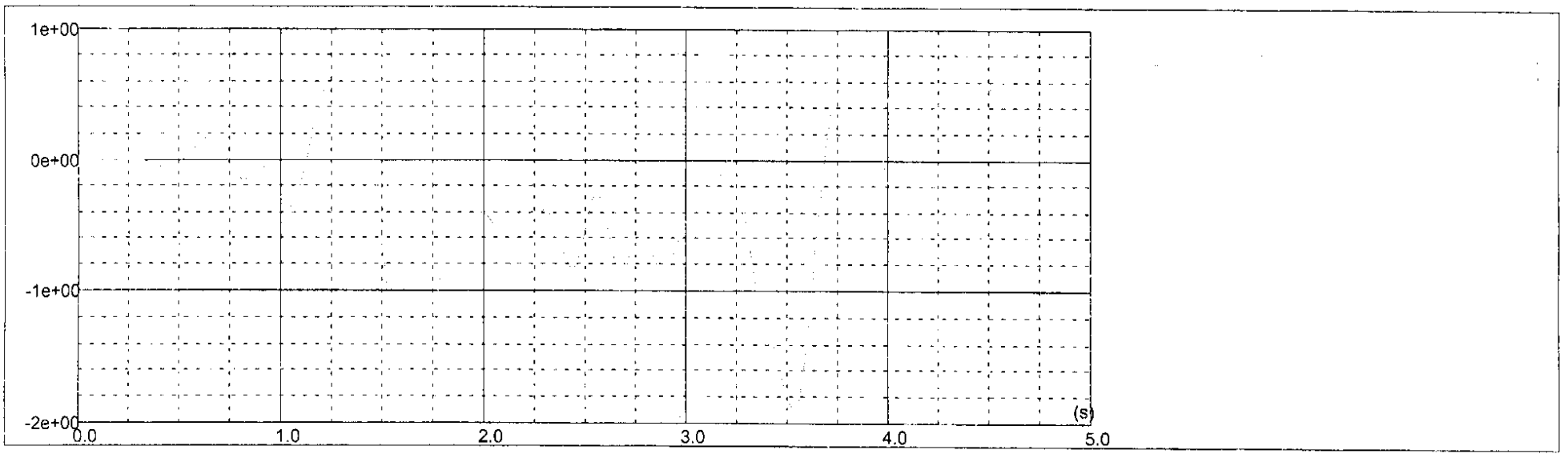
## Desplazamiento nudo 67



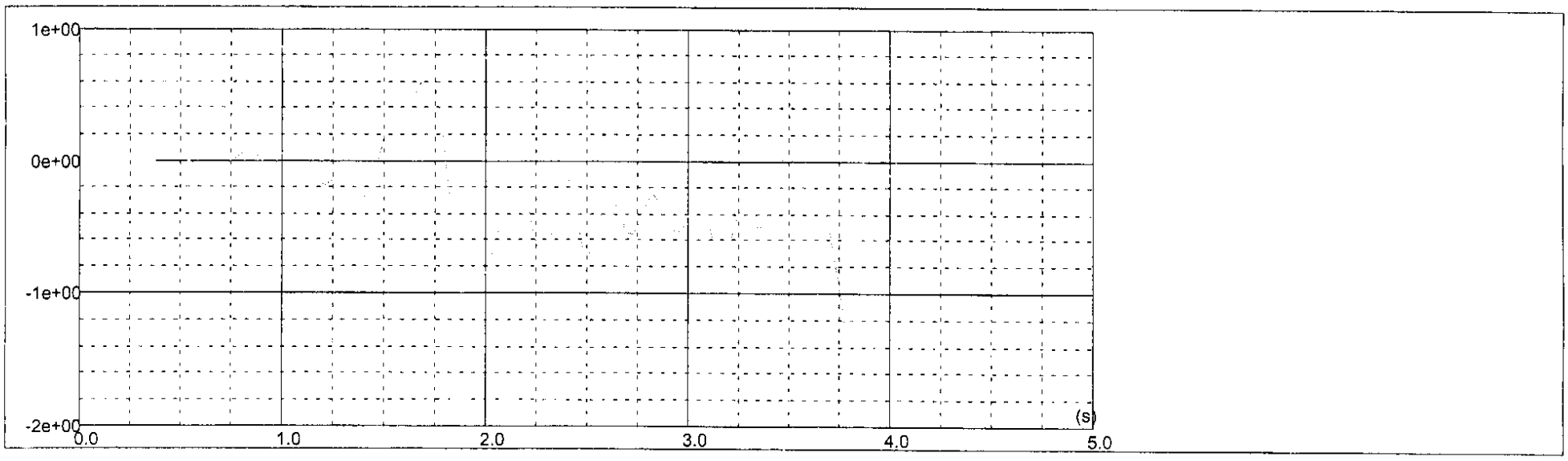

| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 67 | Desplazamiento UZ (mm) | 0.85 | 128/151 3.43(s) | -2.19 | 49/151 1.30(s) |







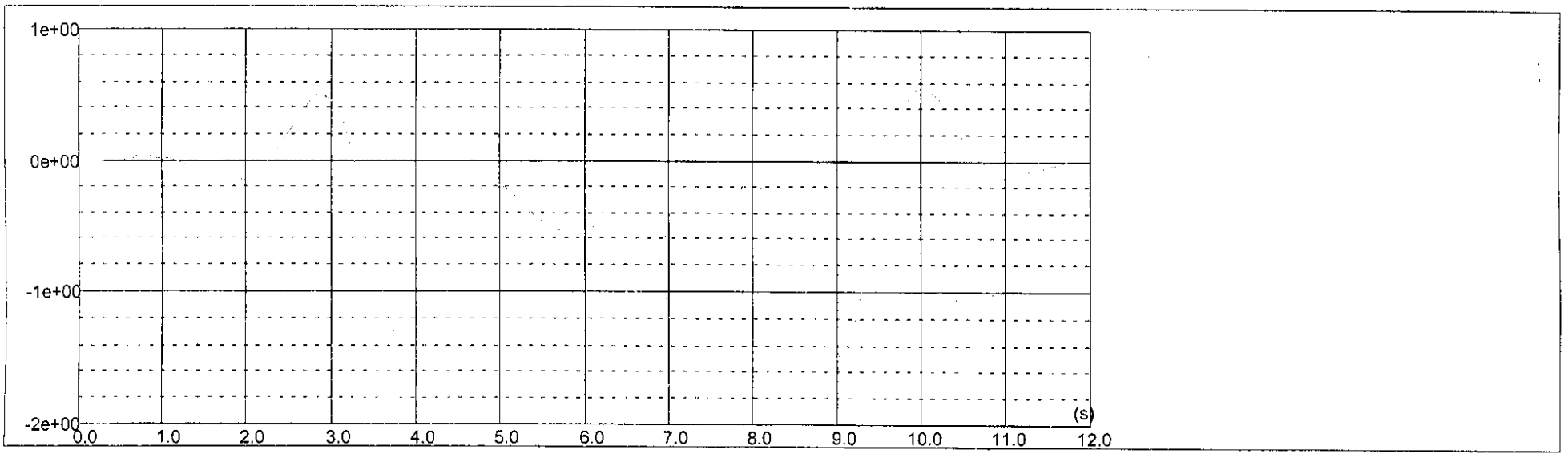

| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 87 | Desplazamiento UZ (mm) | 0.86 | 51/151 1.35(s) | -1.91 | 132/151 3.54(s) |



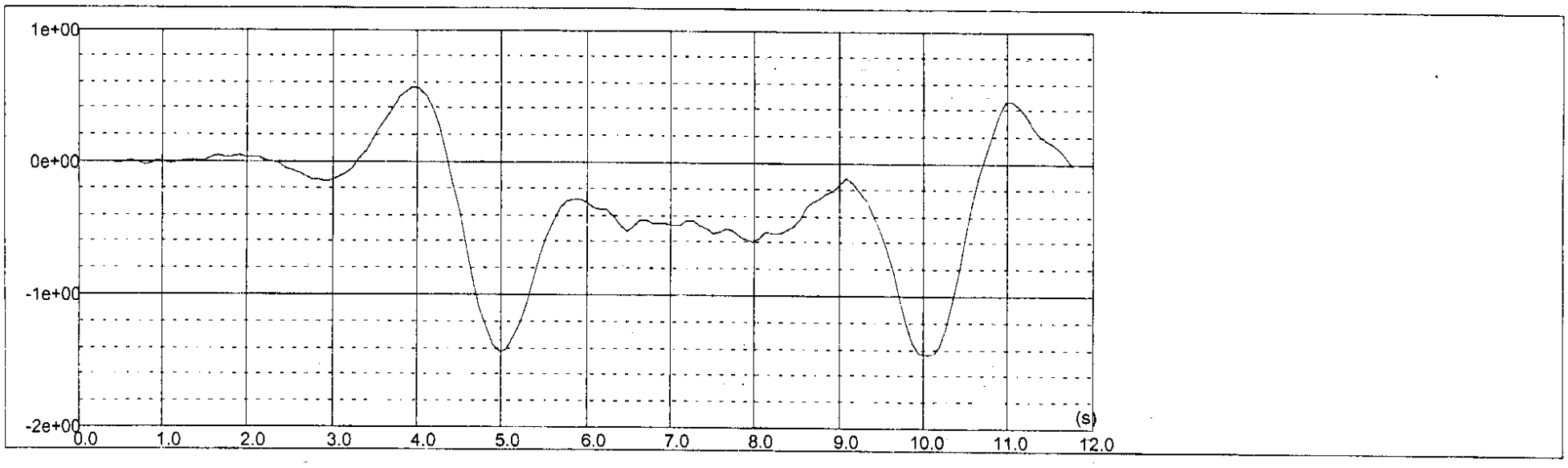

| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 105 | Desplazamiento UZ (mm) | 0.67 | 65/151 1.73(s) | -1.49 | 143/151 3.83(s) |








| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 67 | Desplazamiento UZ (mm) | 0.5490 | 128/150 10.03(s) | -1.5452 | 51/150 3.95(s) |




| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 87 | Desplazamiento UZ (mm) | 0.5578 | 51/150 3.95(s) | -1.4459 | 128/150 10.03(s) |



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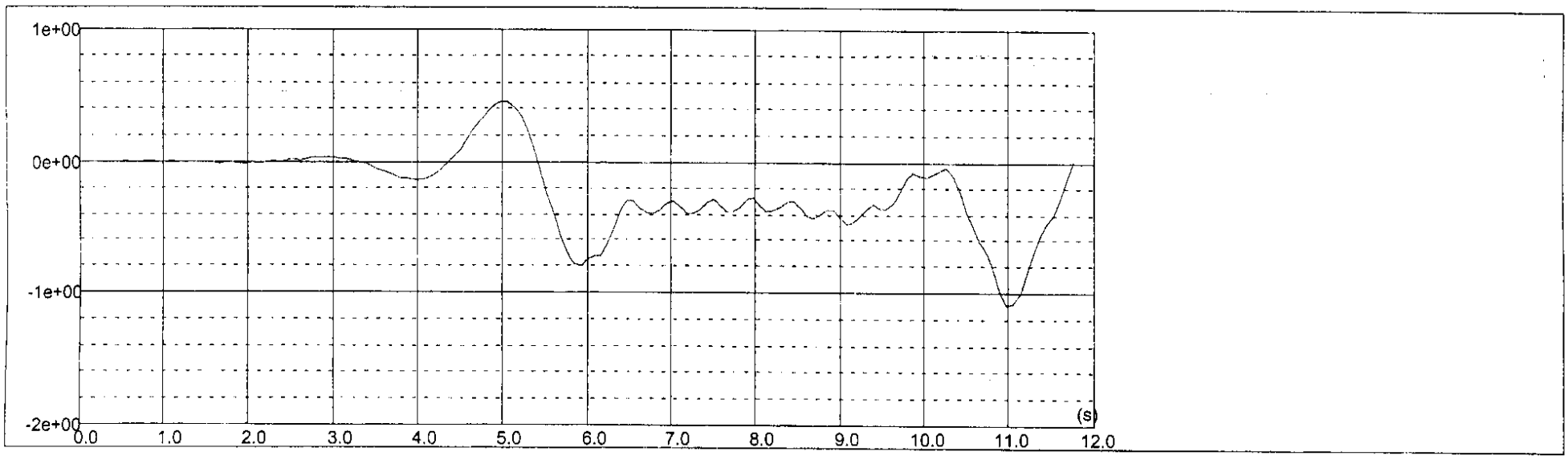
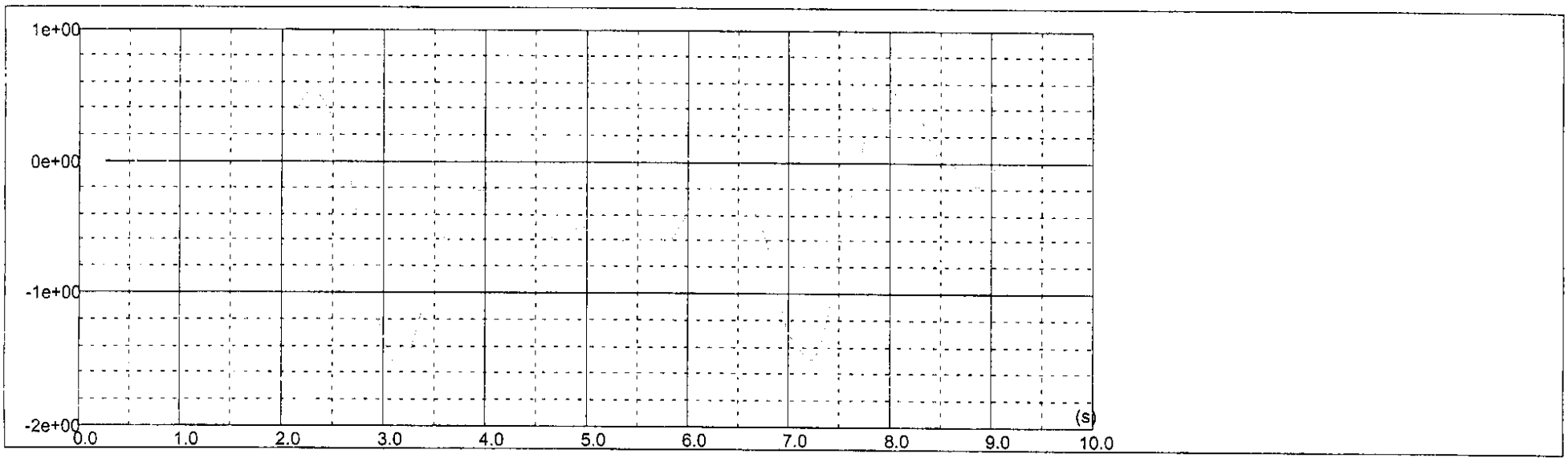



| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 105 | Desplazamiento UZ (mm) | 0.4597 | 65/150 5.06(s) | -1.0941 | 140/150 10.98(s) |




| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 67 | Desplazamiento UZ (mm) | 0.5698 | 127/150 7.94(s) | -1.5706 | 51/150 3.15(s) |



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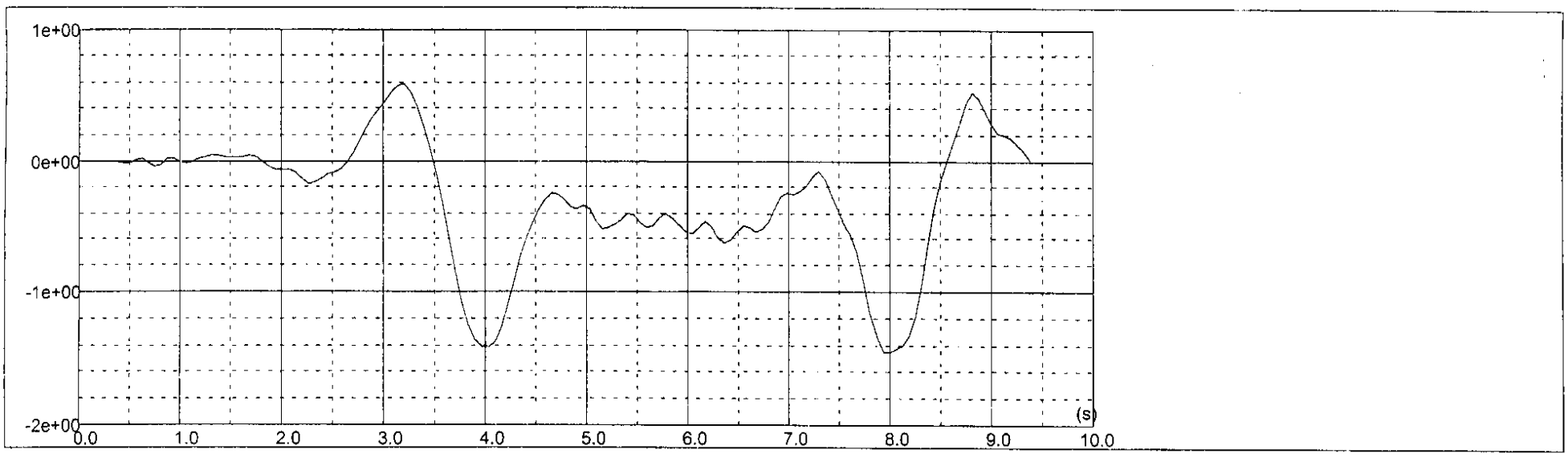
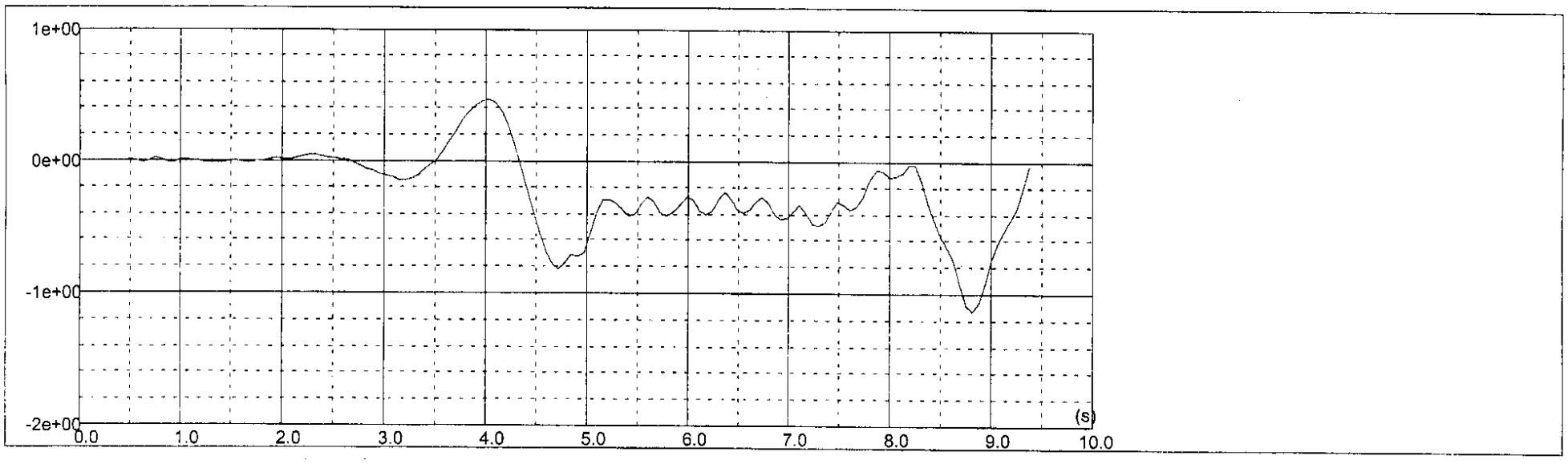


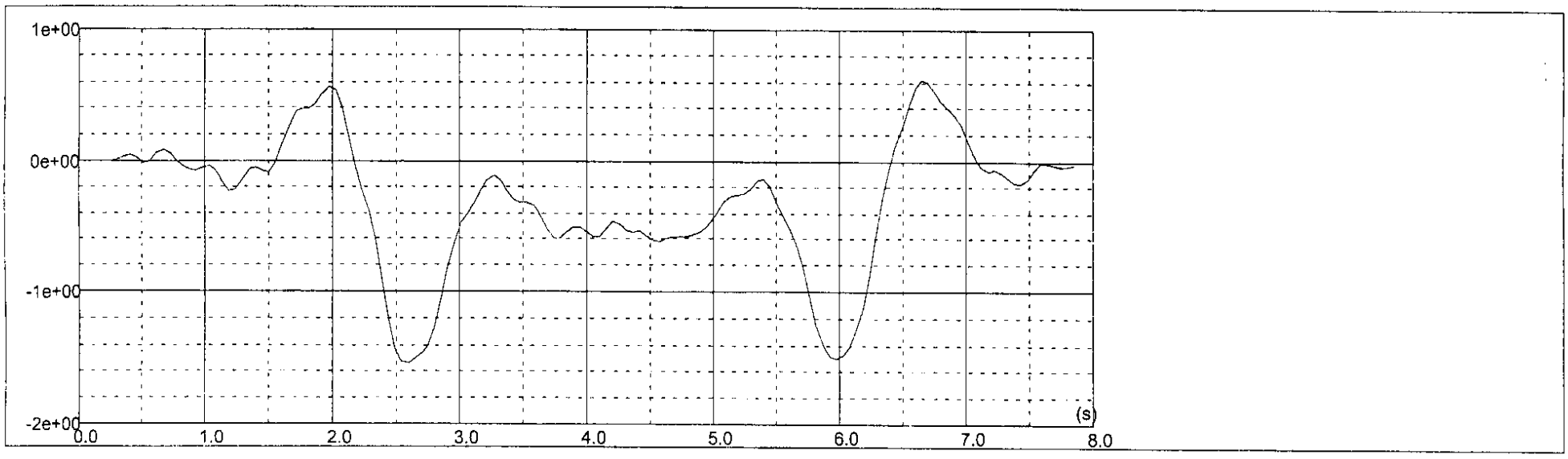

| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 87 | Desplazamiento UZ (mm) | 0.5812 | 52/150 3.21(s) | -1.4572 | 128/150 8.00(s) |



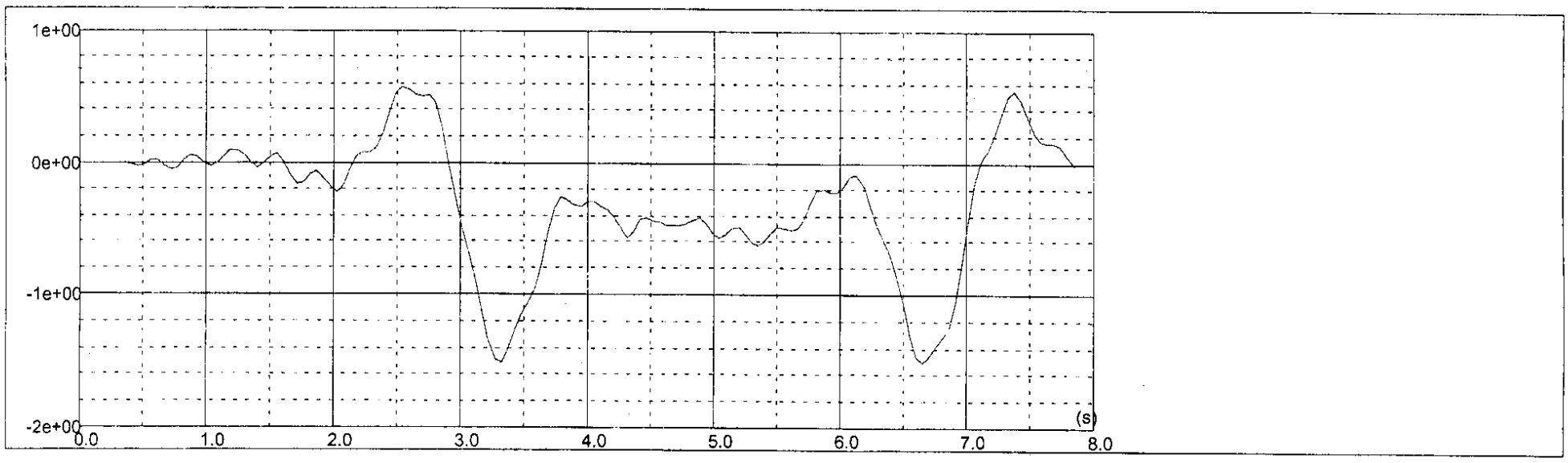

| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 105 | Desplazamiento UZ (mm) | 0.4625 | 65/150 4.03(s) | -1.1261 | 141/150 8.82(s) |








| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 67 | Desplazamiento UZ (mm) | 0.6188 | 129/152 6.66(s) | -1.5360 | 51/152 2.60(s) |




| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 87 | Desplazamiento UZ (mm) | 0.5765 | 50/152 2.55(s) | -1.5122 | 129/152 6.66(s) |



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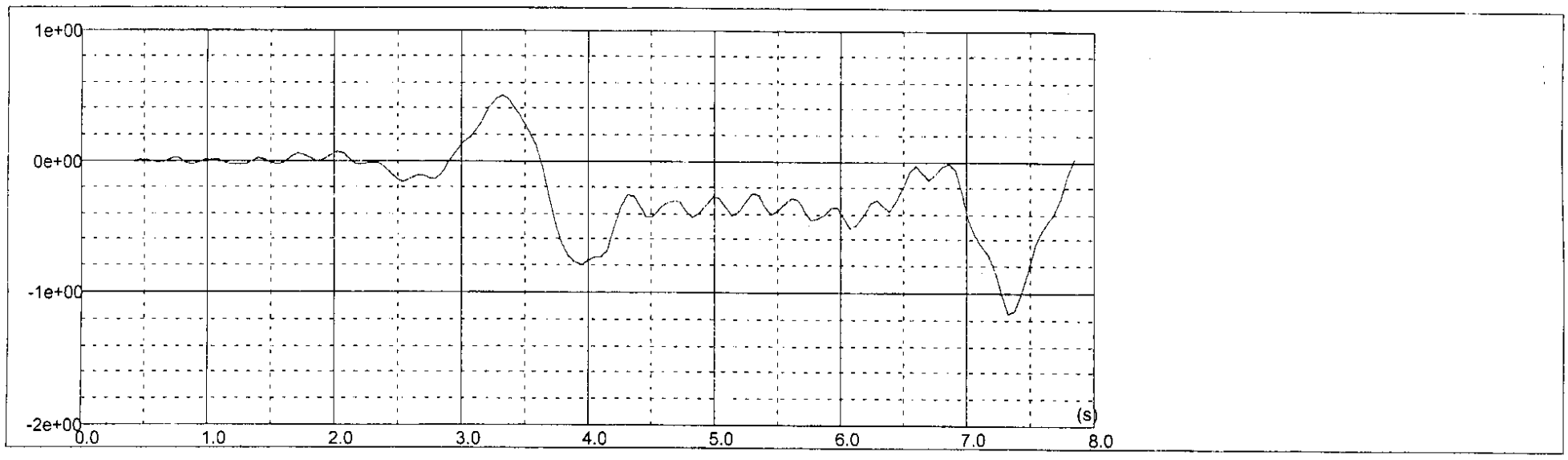
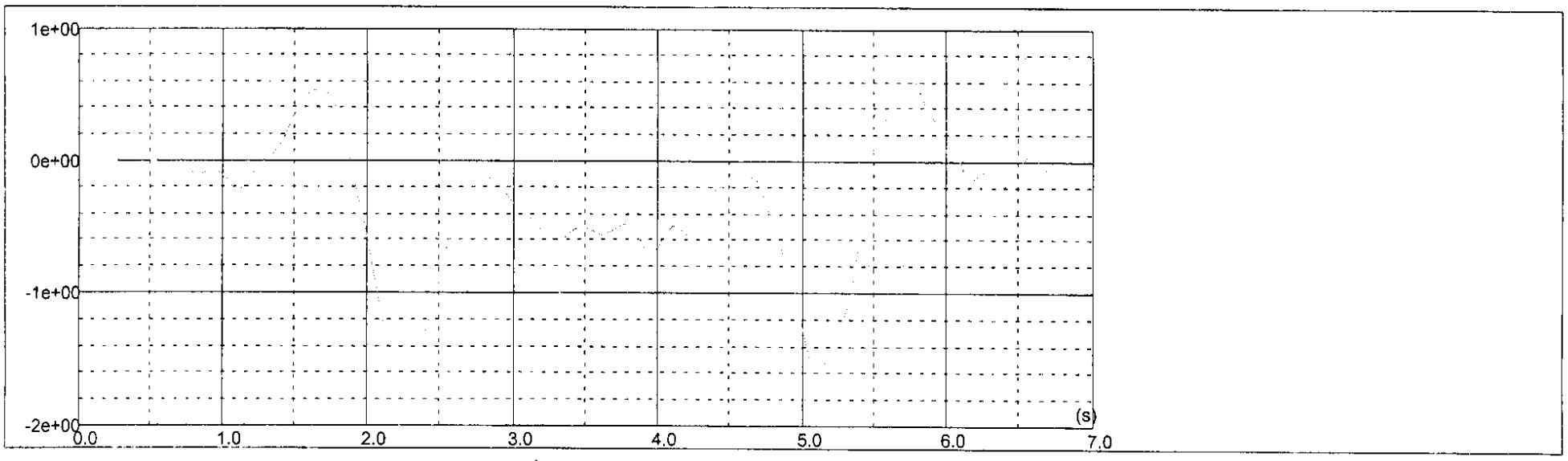



| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 105 | Desplazamiento UZ (mm) | 0.4983 | 65/152 3.33(s) | -1.1490 | 142/152 7.33(s) |




| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 67 | Desplazamiento UZ (mm) | 0.6514 | 129/150 5.76(s) | -1.5898 | 51/150 2.25(s) |



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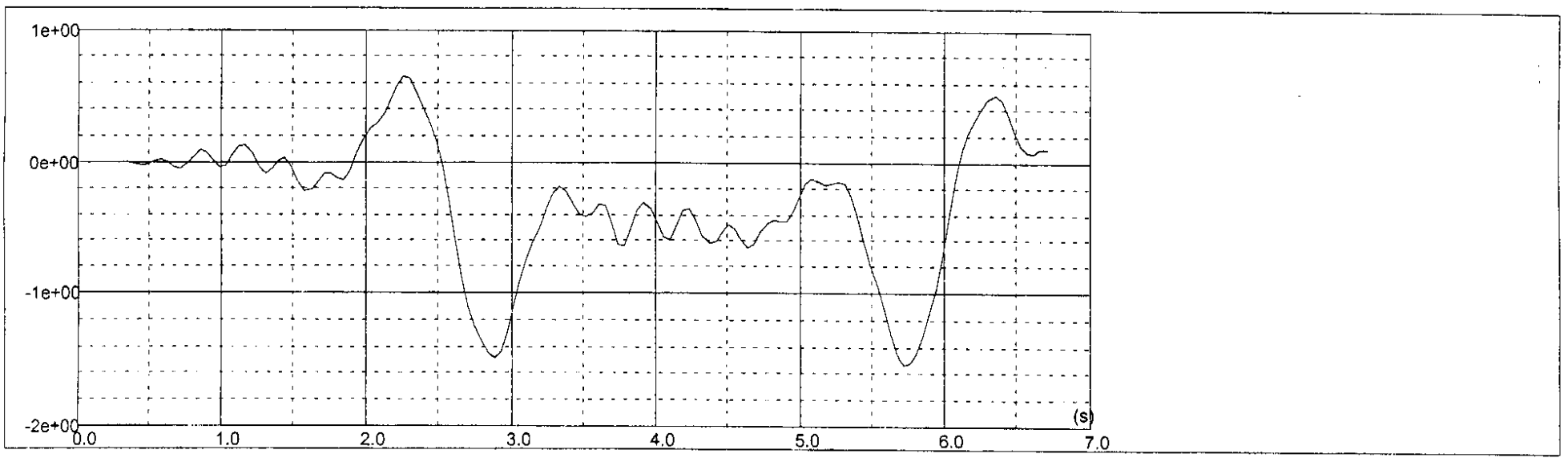
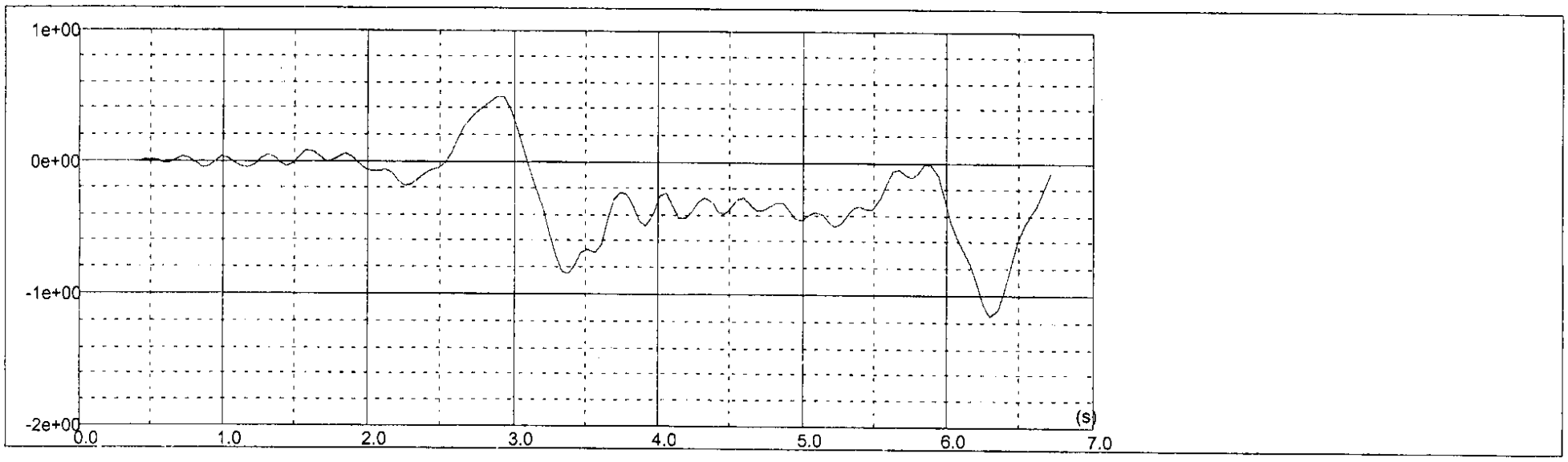


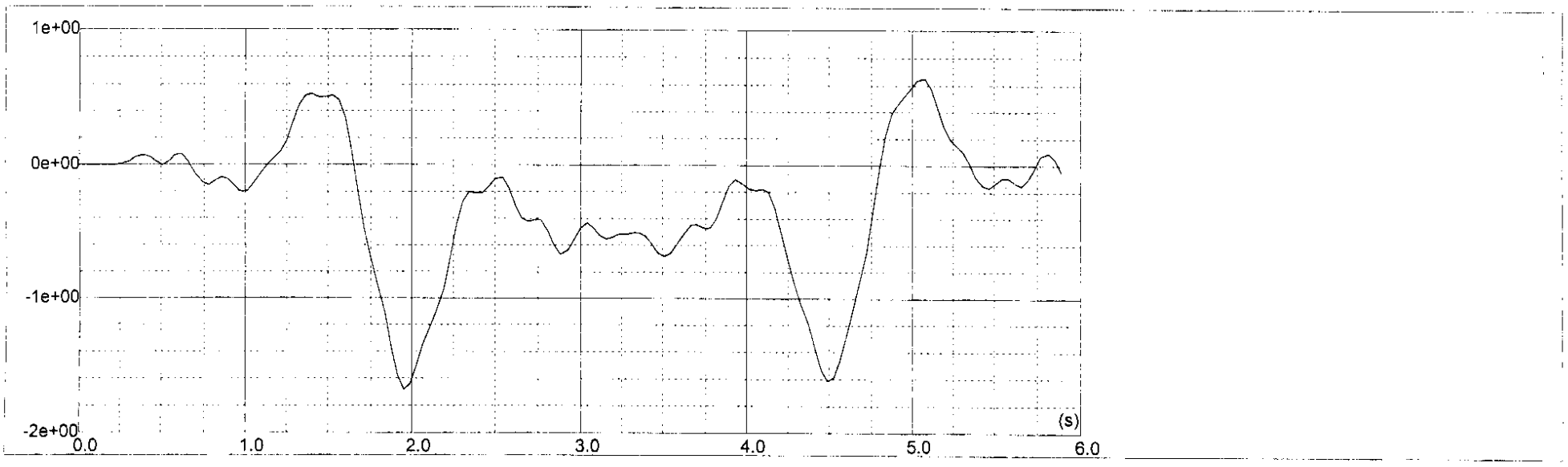

| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 87 | Desplazamiento UZ (mm) | 0.6479 | 51/150 2.25(s) | -1.5361 | 128/150 5.71(s) |



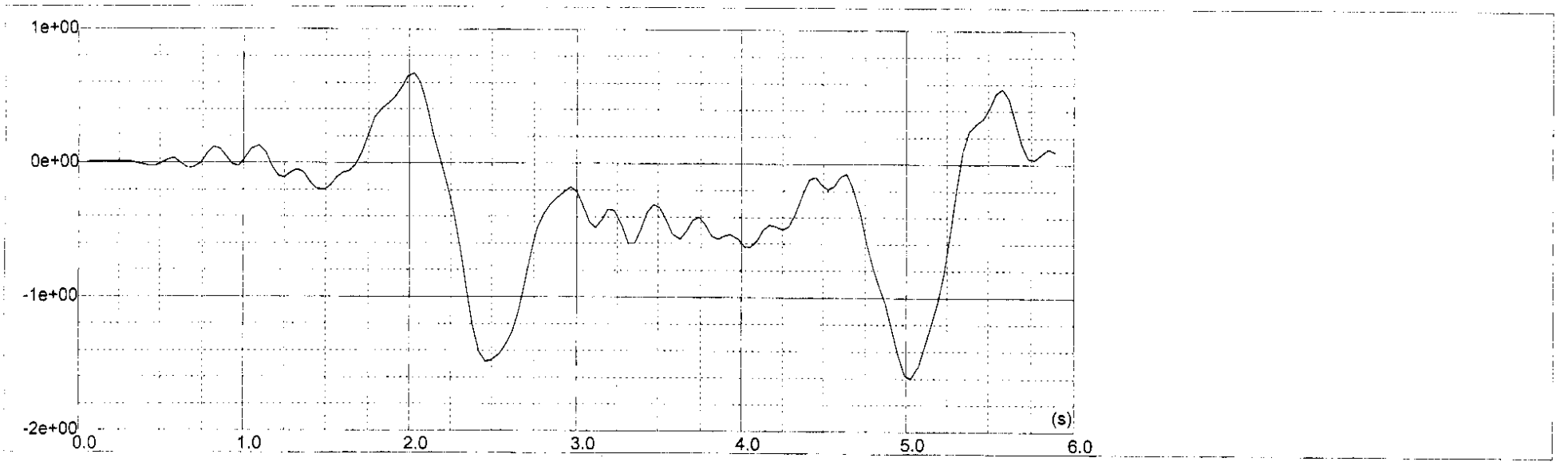

| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 105 | Desplazamiento UZ (mm) | 0.4946 | 65/150 2.88(s) | -1.1541 | 141/150 6.30(s) |








| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 67 | Desplazamiento UZ (mm) | 0.6415 | 131/152 5.07(s) | -1.6885 | 51/152 1.95(s) |




| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 87 | Desplazamiento UZ (mm) | 0,6666 | 53/152 2,03(s) | -1,6066 | 130/152 5,03(s) |



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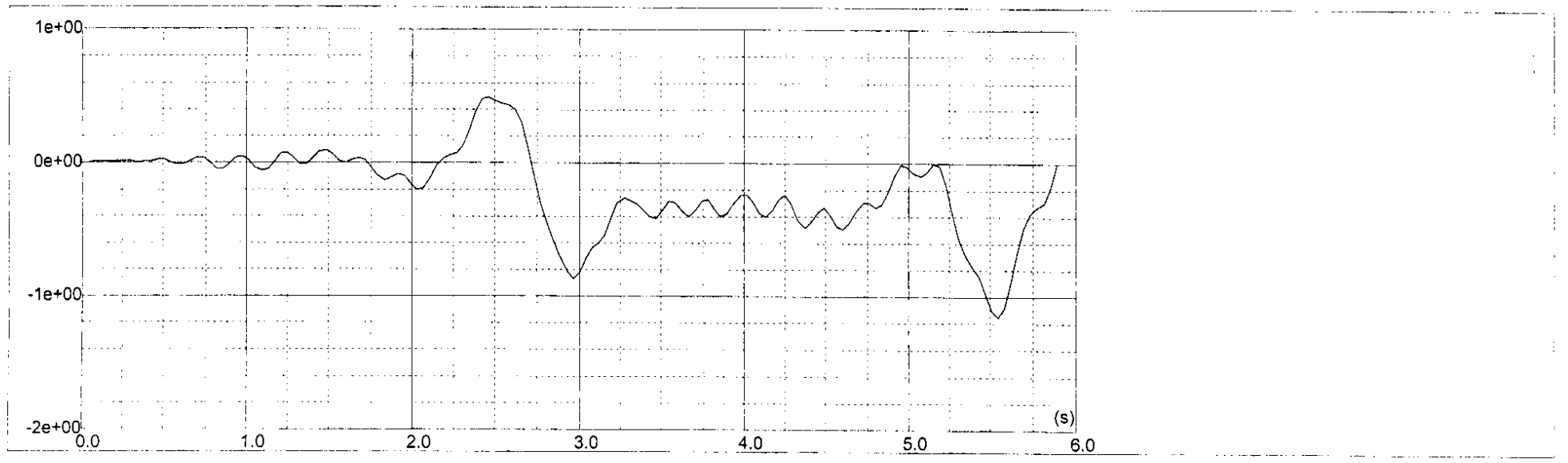
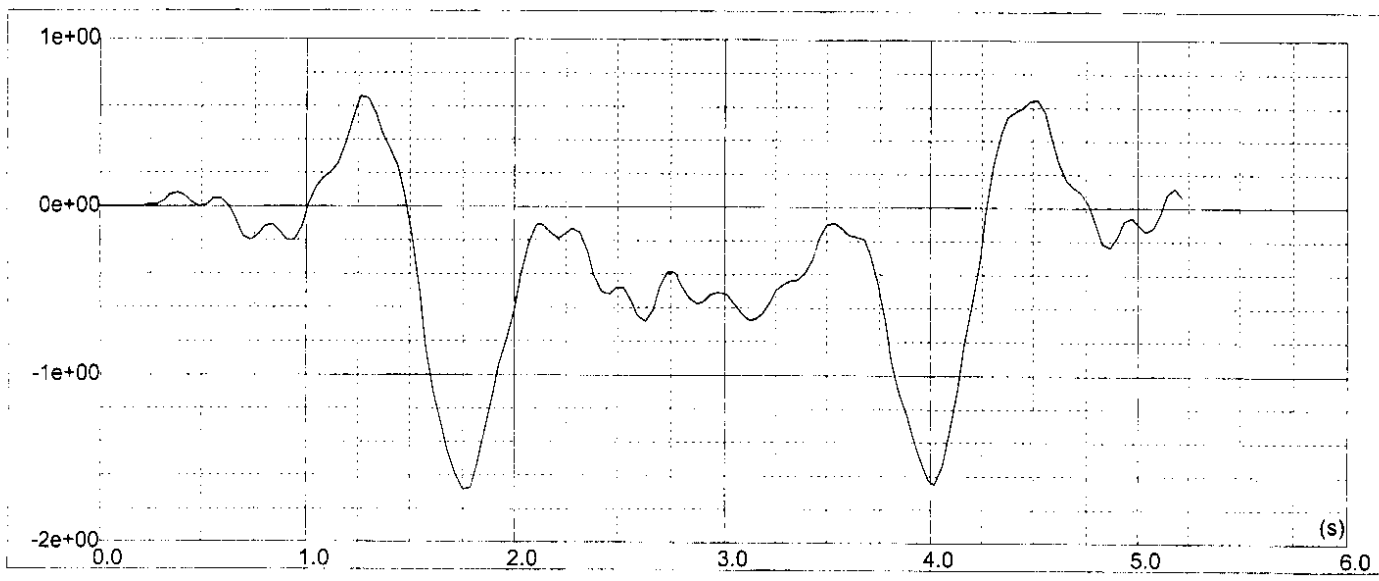



| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 105 | Desplazamiento UZ (mm) | 0,4922 | 64/152 2,46(s) | -1,1643 | 143/152 5,54(s) |




| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 67 | Desplazamiento UZ (mm) | 0,6500 | 37/150 1,26(s) | -1,6829 | 51/150 1,75(s) |



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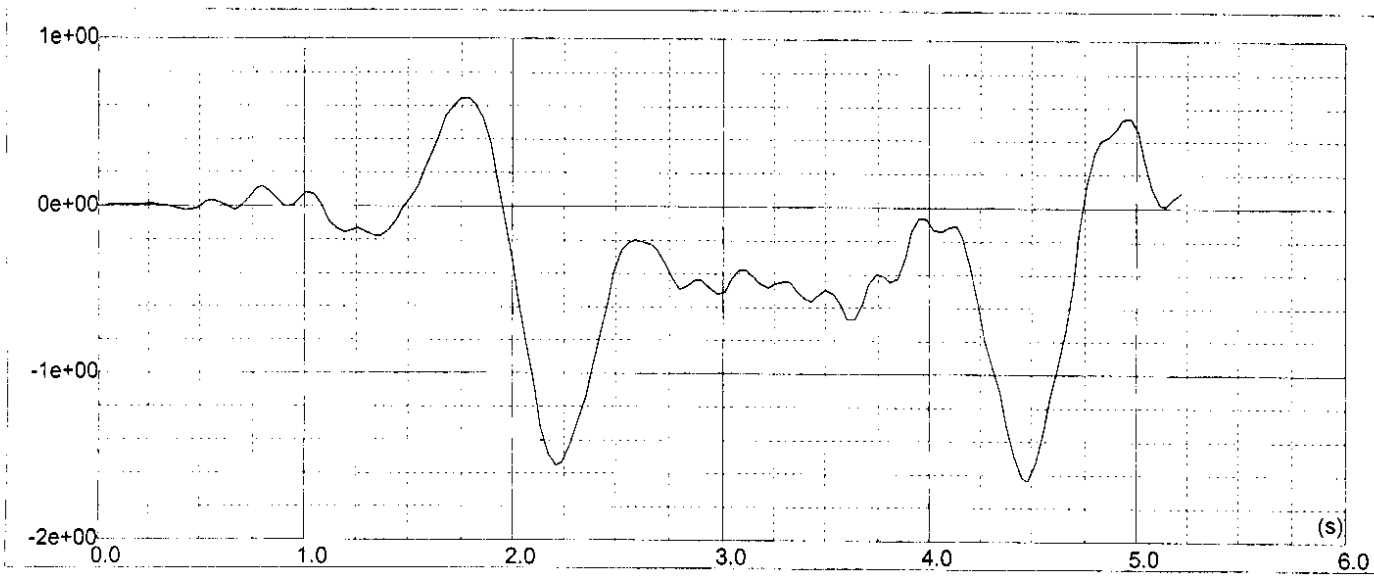
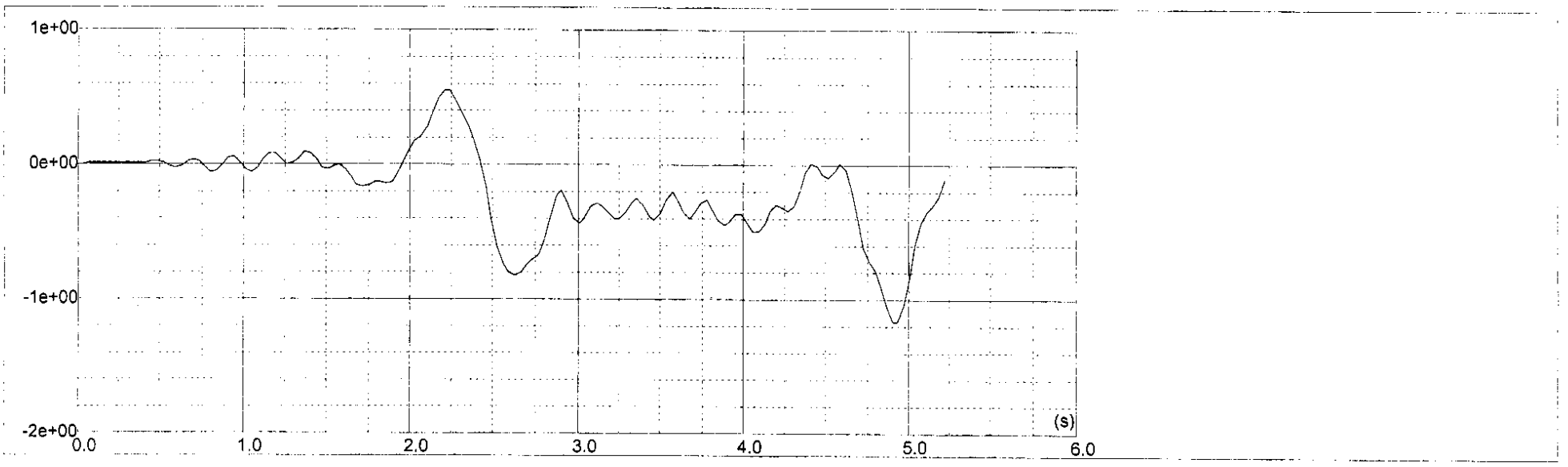


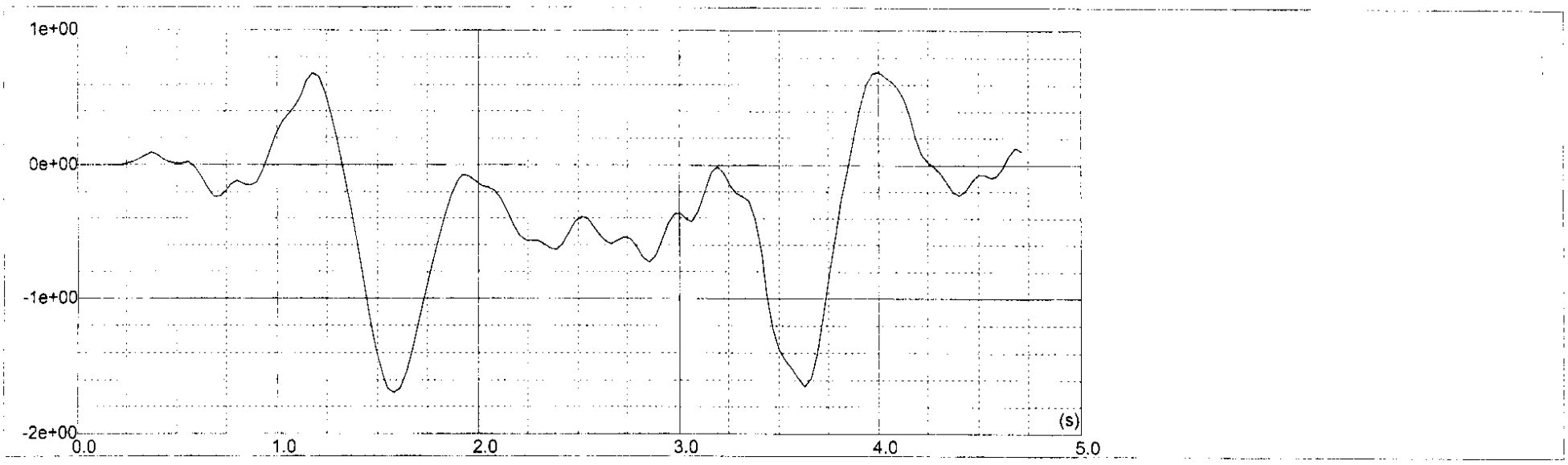

| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 87 | Desplazamiento UZ (mm) | 0,6415 | 52/150 1,79(s) | -1,6398 | 129/150 4,48(s) |



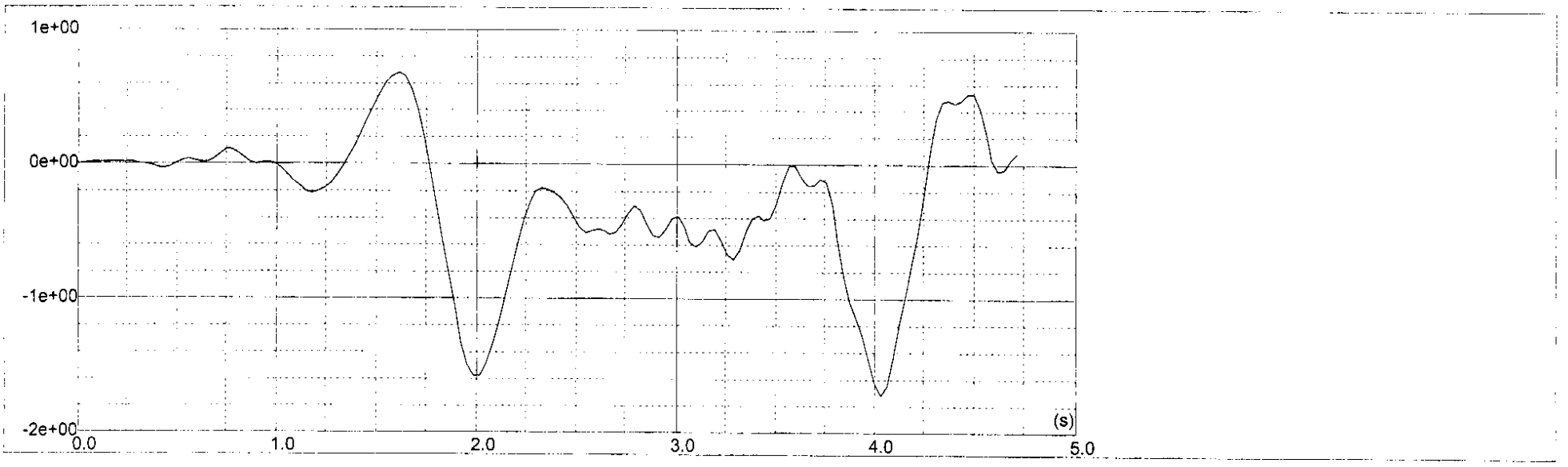

| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 105 | Desplazamiento UZ (mm) | 0,5527 | 64/150 2,21(s) | -1,1764 | 142/150 4,94(s) |







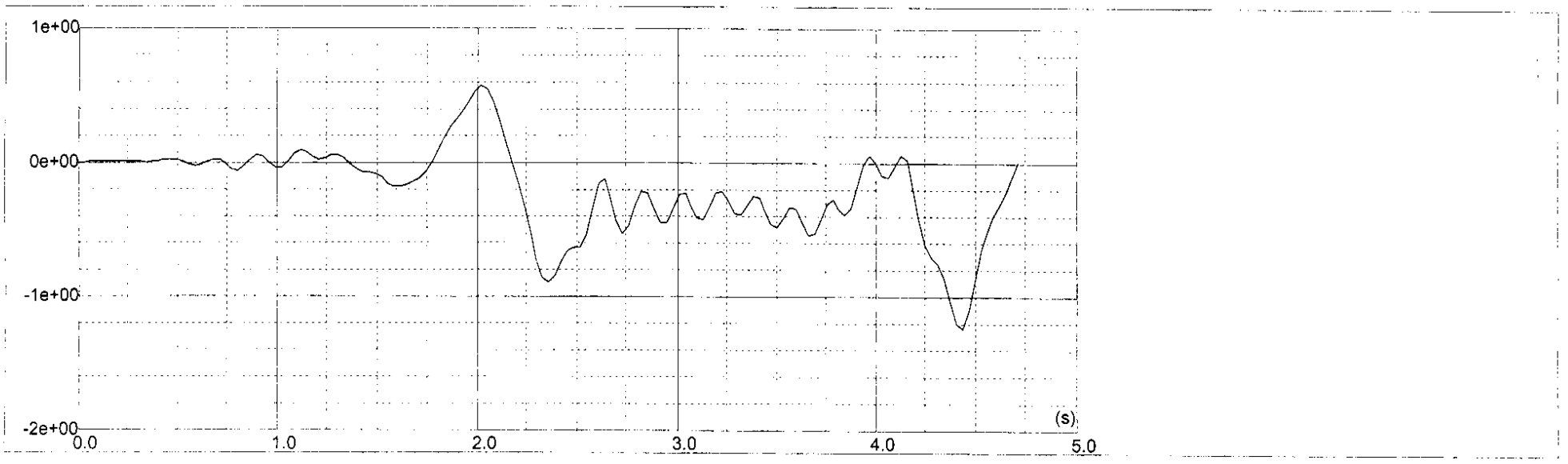

| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 67 | Desplazamiento UZ (mm) | 0,6833 | 130/153 4,00(s) | -1,6996 | 52/153 1,58(s) |



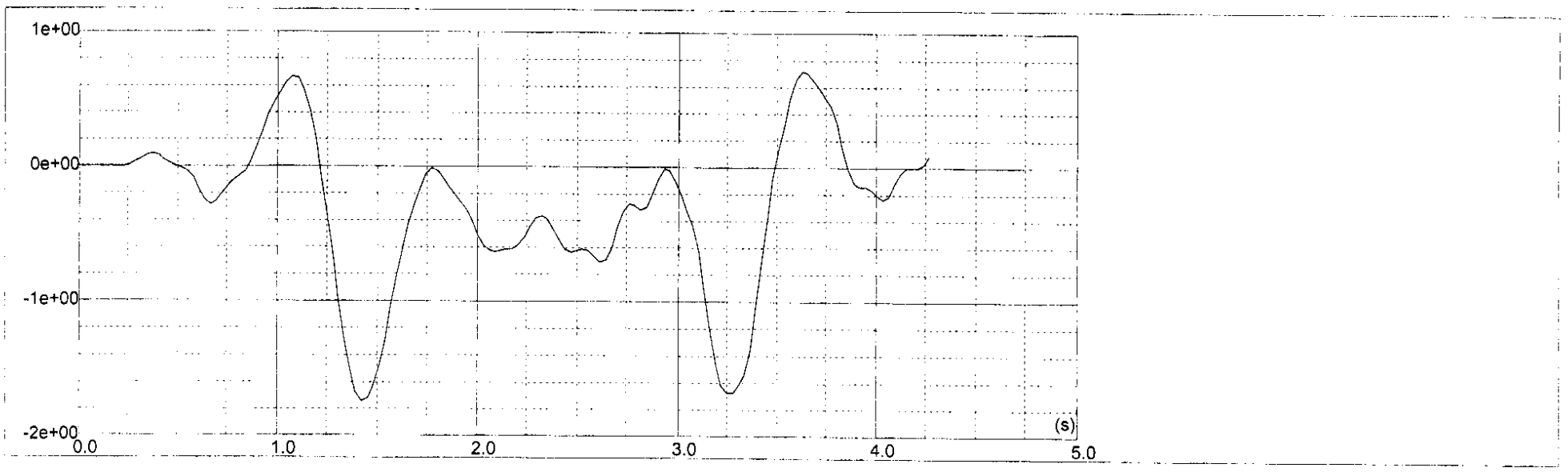

| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 87 | Desplazamiento UZ (mm) | 0,6735 | 53/153 1,61(s) | -1,7221 | 131/153 4,03(s) |








| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 105 | Desplazamiento UZ (mm) | 0,5674 | 66/153 2,02(s) | -1,2364 | 144/153 4,43(s) |




| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 67 | Desplazamiento UZ (mm) | 0,7169 | 126/148 3,63(s) | -1,7427 | 50/148 1,42(s) |



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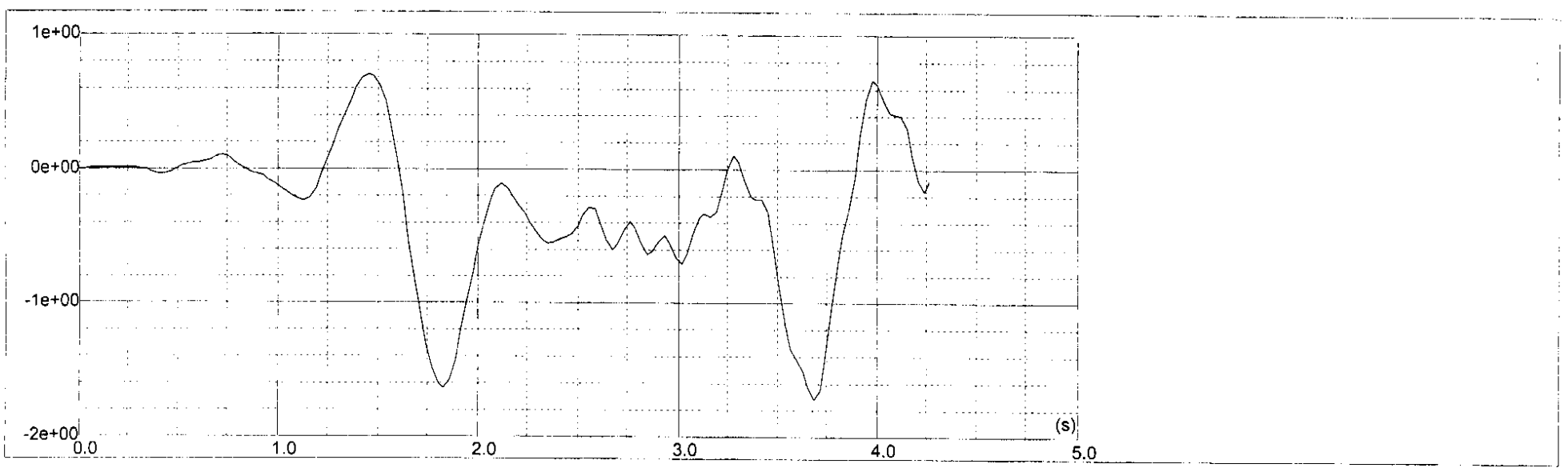
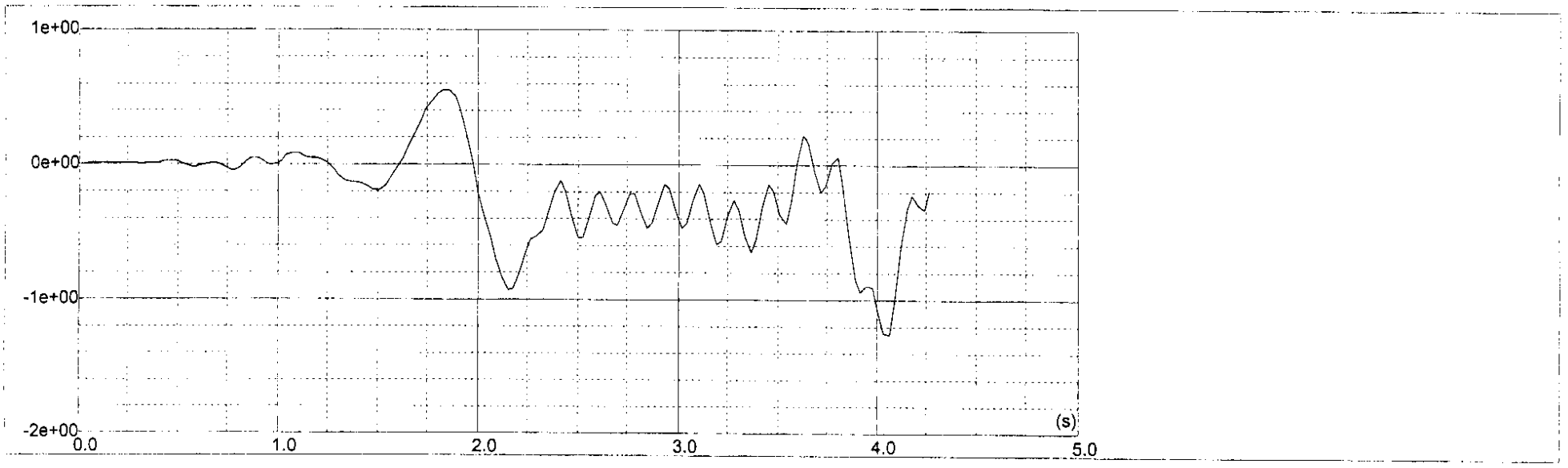


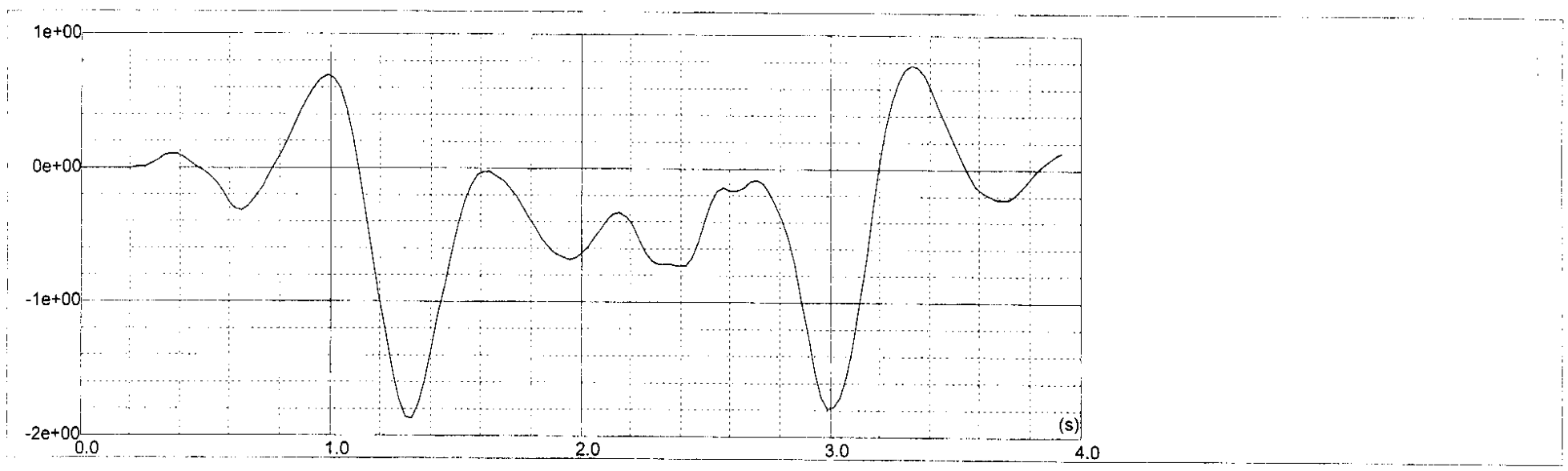

| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 87 | Desplazamiento UZ (mm) | 0,7037 | 51/148 1,45(s) | -1,7186 | 128/148 3,68(s) |



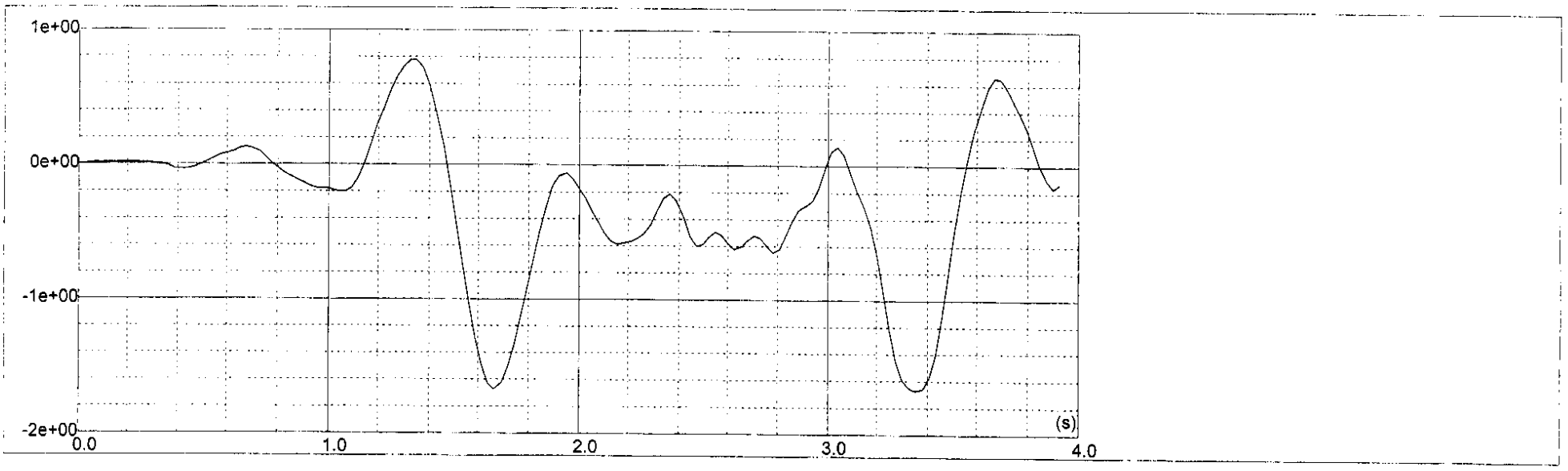

| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 105 | Desplazamiento UZ (mm) | 0,5489 | 65/148 1,86(s) | -1,2655 | 141/148 4,06(s) |








| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 67 | Desplazamiento UZ (mm) | 0,7749 | 129/152 3,33(s) | -1,8715 | 52/152 1,33(s) |




| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 87 | Desplazamiento UZ (mm) | 0,7692 | 52/152 1,33(s) | -1,6761 | 130/152 3,35(s) |



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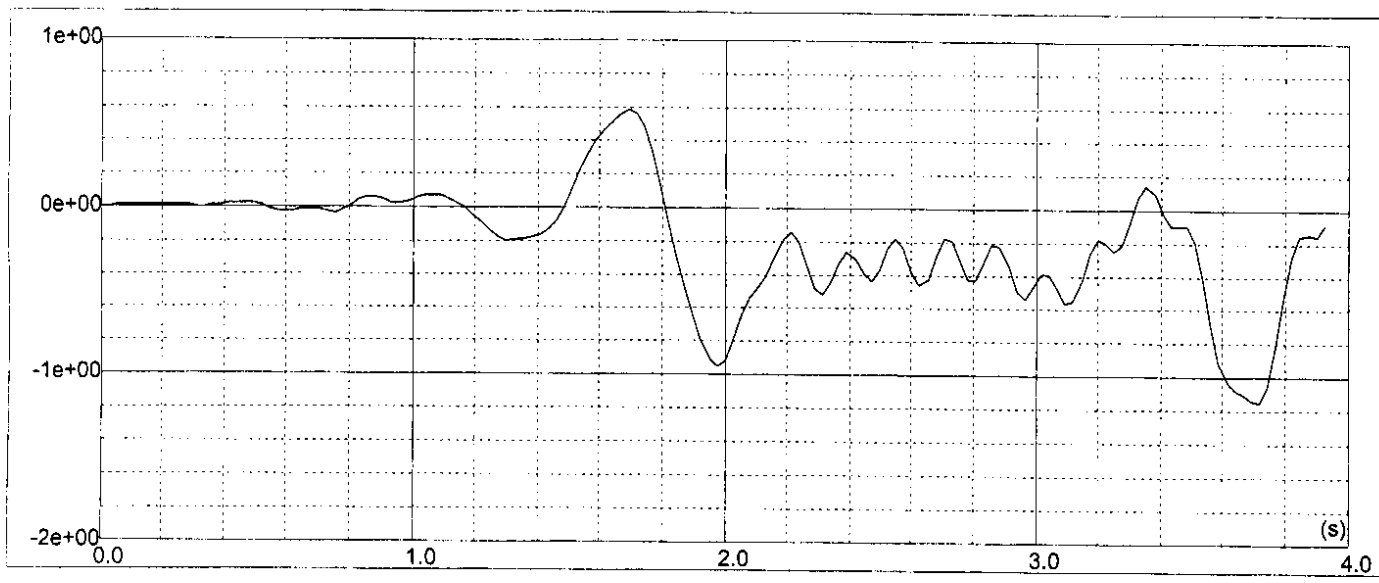



| | Caso | Elemento/ Nudo | Valor - Unidad | Max | Posición max | Min | Posición min |
|---|---|---|---|---|---|---|---|
| | 152 | 105 | Desplazamiento UZ (mm) | 0,5767 | 66/152 1,69(s) | -1,1567 | 144/152 3,72(s) |

## 7.8. PRUEBA DE CARGA

GENERALIDADES

Una vez finalizada la estructura objeto del presente proyecto se procederá a realizar la Prueba de Carga, de acuerdo con el art. 6 de la vigente "Instrucción relativa a las acciones a considerar en el proyecto de puentes de carretera".

Los criterios para la ejecución de las Pruebas de Carga están basados en las "Recomendaciones para el Proyecto y Ejecución de Pruebas de Carga en Puentes de Carreteras" (M.O.P.U. 1974) y en la publicación Nº 23 del M.O.P.U "Pruebas de carga en puentes de carretera", de marzo de 1988.

En el presente apartado se incluyen las indicaciones necesarias para la ejecución de la prueba de carga, posición de vehículos y estimación de las correspondientes flechas.

Los esfuerzos producidos durante la prueba de carga podrán ser presumiblemente mayores que los que cabría esperar de las cargas normales de tráfico, dada la escasa probabilidad de que concurran en el futuro las circunstancias impuestas expresamente para la prueba de carga.

Ningún elemento de la estructura podrá ser sometido durante la prueba de carga a esfuerzos mayores que los deducidos del cálculo con el tren de la citada Instrucción Oficial de Puentes del Ministerio de Obras Públicas.

Se registrarán las flechas en los puntos más característicos, cotejándose posteriormente con las previstas en el cálculo.

MÓDULO DE ELASTICIDAD DEL HORMIGÓN

Para el cálculo de la flecha máxima se considera un módulo instantáneo de deformación longitudinal del hormigón igual a 30891 N/mm$^2$, que corresponde a una resistencia característica de 40 N/mm$^2$.

En este caso se considera el módulo de deformación instantáneo del hormigón a 28 días. En el caso de que la prueba de carga se realice cuando el hormigón tenga una edad distinta, se procederá a multiplicar la flecha obtenida por la relación de módulos.

Se comprobará la recuperación de flechas después de retirada la carga, considerándose admisible un 80%. En caso de que fuera inferior, se repetirá la prueba hasta alcanzar la recuperación citada en relación con la nueva medida efectuada. En caso de que siguiese siendo inferior, se pondrá el hecho en conocimiento del Director de Obra, para que adopte las medidas oportunas.

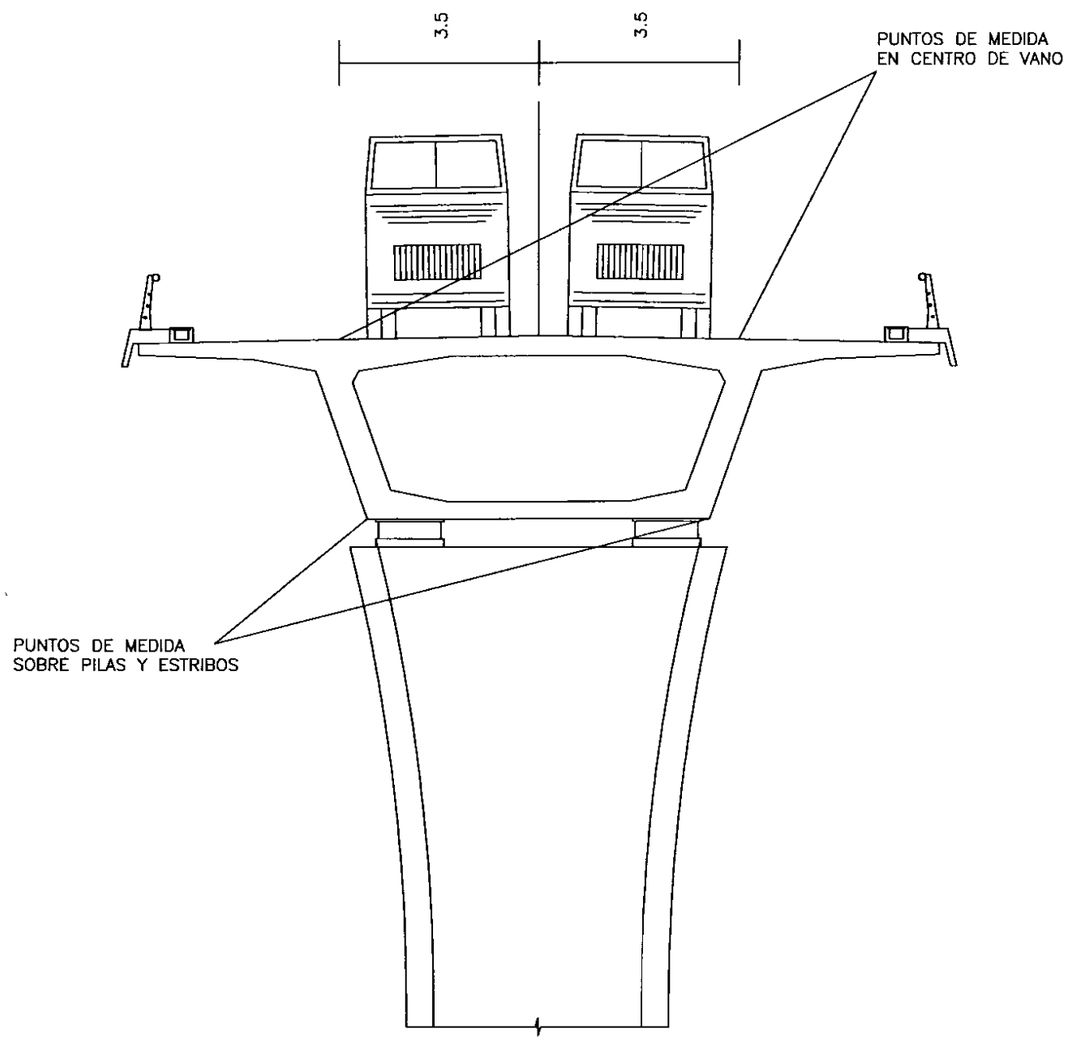
PUNTOS DE MEDIDA

Se medirán las flechas en el centro de cada uno de los vanos del tablero, antes y después de la entrada de los vehículos, para cada una de las fases de carga y se registrará la flecha remanente, si la hubiere, después de la retirada de los vehículos.

Dada la escasa magnitud de las flechas previsibles, para efectuar la medición se deberá utilizar una instrumentación adecuada, no solamente en los puntos de medida, sino también en la zona de apoyos, para valorar el descenso relativo.

En los puntos que corresponden a centros de vanos se medirán los descensos verticales del tablero producidos por las cargas. En los puntos correspondientes a apoyos se medirá el descenso de los mismos, a fin de descontarlo del descenso medido en el centro de los vanos, con el objeto de determinar las flechas.

El valor real del descenso en relación con el calculado podrá diferir, debido a la imprecisión en la determinación del módulo de elasticidad considerado en el cálculo.




puntos de medida

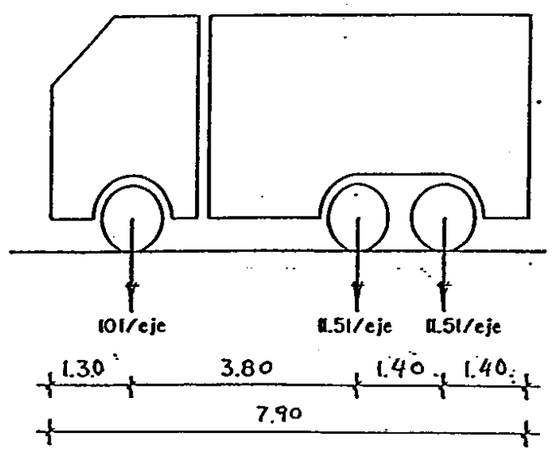
VEHÍCULOS A EMPLEAR

Se utilizarán simultáneamente un máximo de 16 camiones de 330 kN (3 ejes), cargados de forma que no se superen los pesos máximos legales. Las cargas de cada camión por eje serán de 100 kN en el primer eje y de 115 kN en los ejes segundo y tercero. (Véase croquis adjunto).

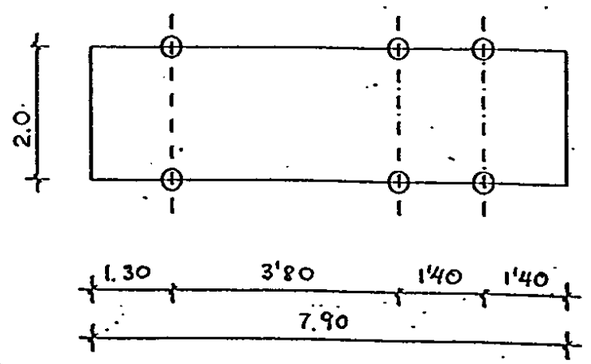
Se registrará la pesada de cada camión en báscula y se identificará de acuerdo con las cargas reales resultantes, a fin de poder realizar ulteriores comprobaciones de cálculo.

# CAMION TIPO

## ALZADO




## PLANTA

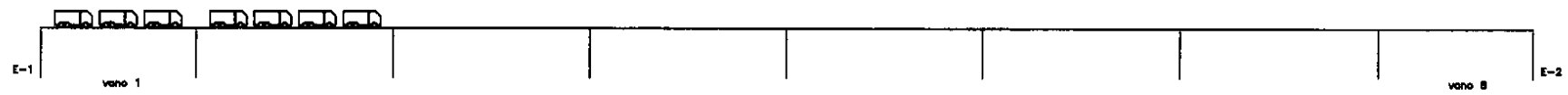



FASES DE CARGA

| | |
|---|---|
| FASE 1) | 6 camiones en el vano 1 y 8 camiones en el vano 2 |
| FASE 2) | 6 camiones en el vano 1 y 8 camiones en el vano 3 |
| FASE 3) | 8 camiones en el vano 2 y 8 camiones en el vano 3 |
| FASE 4) | 8 camiones en el vano 2 y 8 camiones en el vano 4 |
| FASE 5) | 8 camiones en el vano 3 y 8 camiones en el vano 4 |
| FASE 6) | 8 camiones en el vano 3 y 8 camiones en el vano 5 |
| FASE 7) | 8 camiones en el vano 4 y 8 camiones en el vano 5 |
| FASE 8) | 8 camiones en el vano 4 y 8 camiones en el vano 6 |
| FASE 9) | 8 camiones en el vano 5 y 8 camiones en el vano 6 |
| FASE 10) | 8 camiones en el vano 5 y 8 camiones en el vano 7 |
| FASE 11) | 8 camiones en el vano 6 y 8 camiones en el vano 7 |
| FASE 12) | 8 camiones en el vano 6 y 8 camiones en el vano 8 |
| FASE 13) | 8 camiones en el vano 7 y 8 camiones en el vano 8 |

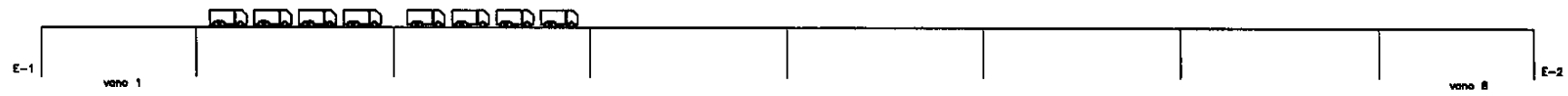
Ver ubicación en las siguientes páginas

FASE 1



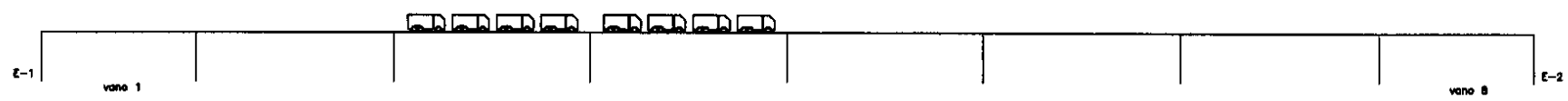

FASE 2

FASE 3

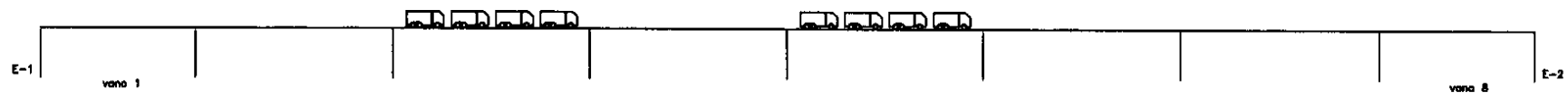



FASE 4

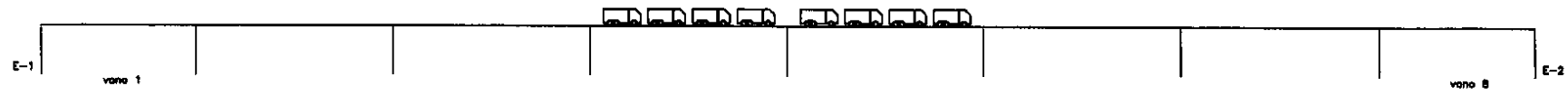
FASE 5




FASE 6

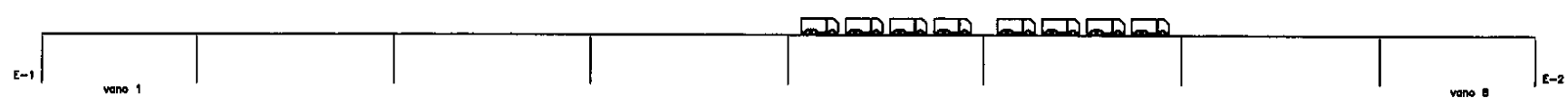



FASE 7

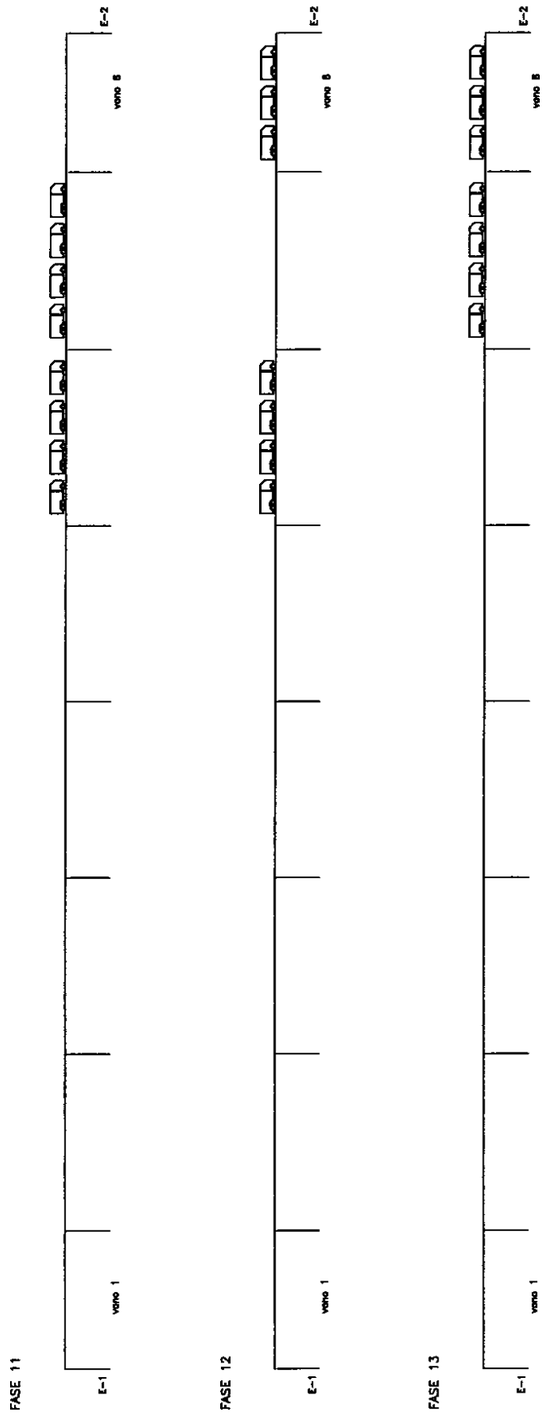


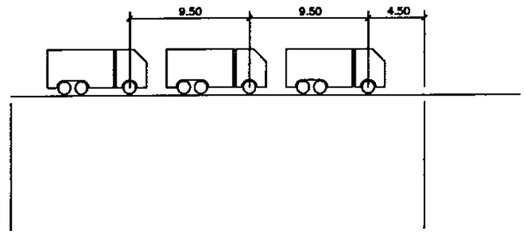

FASE 8

FASE 9

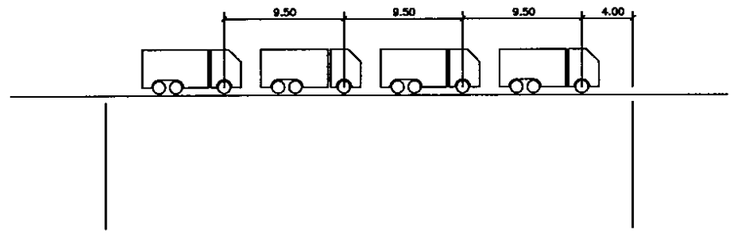



FASE 10

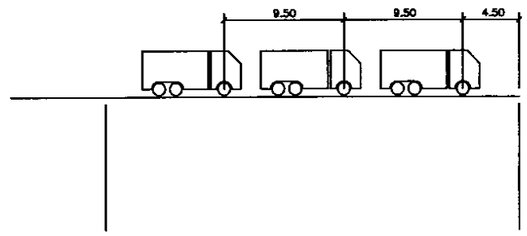


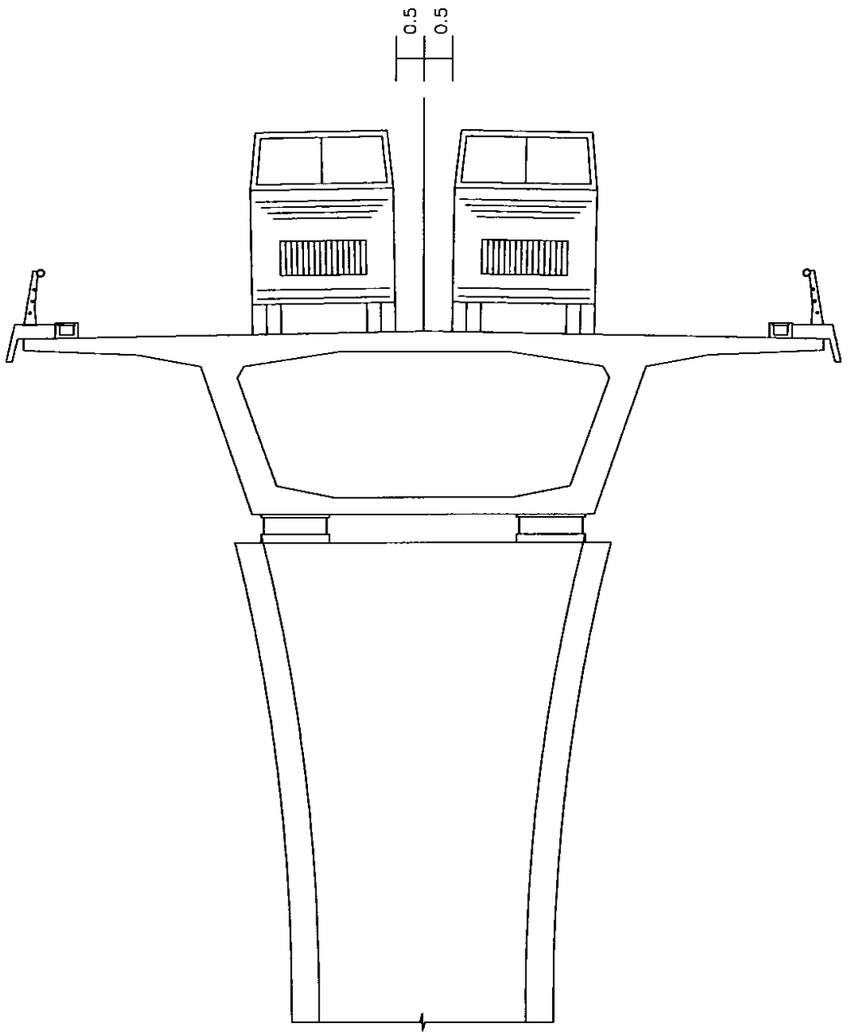

ubicación de camiones en vano de 33.00 metros




ubicación de camiones en vano de 42.00 metros




ubicación de camiones en vano de 33.00 metros




posicion de los camiones

CÁLCULO DE LA PRUEBA:

Usando el modelo general de cálculo, se introducen las cargas de los camiones realmente dispuestos para la prueba y se combinan según las fases indicadas.

MEDIDAS PREVISTAS EN LA PRUEBA

En la hoja siguiente se relacionan las flechas estimadas en el centro de cada vano en cada fase de carga.

| | | desplazamientos (mm) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Fase | Vanos cargados | Vano 1 | Vano 2 | Vano 3 | Vano 4 | Vano 5 | Vano 6 | Vano 7 | Vano 8 |
| 1 | 1 y 2 | -0.9 | -2.9 | 1.1 | | | | | |
| 2 | 1 y 3 | -2.5 | 2.3 | -4.2 | 1.3 | | | | |
| 3 | 2 y 3 | 0.9 | -2.4 | -2.6 | 0.9 | | | | |
| 4 | 2 y 4 | 1.2 | -4.2 | 2.6 | -4.3 | 1.5 | | | |
| 5 | 3 y 4 | | 1.0 | -2.7 | -2.7 | 1.0 | | | |
| 6 | 3 y 5 | | 1.5 | -4.3 | 2.6 | -4.3 | 1.5 | | |
| 7 | 4 y 5 | | | 1.0 | -2.7 | -2.7 | 1.0 | | |
| 8 | 4 y 6 | | | 1.5 | -4.3 | 2.6 | -4.3 | 1.5 | |
| 9 | 5 y 6 | | | | 1.0 | -2.7 | -2.7 | 1.0 | |
| 10 | 5 y 7 | | | | 1.5 | -4.3 | 2.6 | -4.2 | 1.2 |
| 11 | 6 y 7 | | | | | 0.9 | -2.6 | -2.4 | 0.9 |
| 12 | 6 y 8 | | | | | 1.3 | -4.2 | 2.3 | -2.5 |
| 13 | 7 y 8 | | | | | | 1.1 | -2.9 | -0.9 |

NOTA: valores negativos equivalen a descensos del tablero

CALCULOS DE LA PRUEBA DE CARGA

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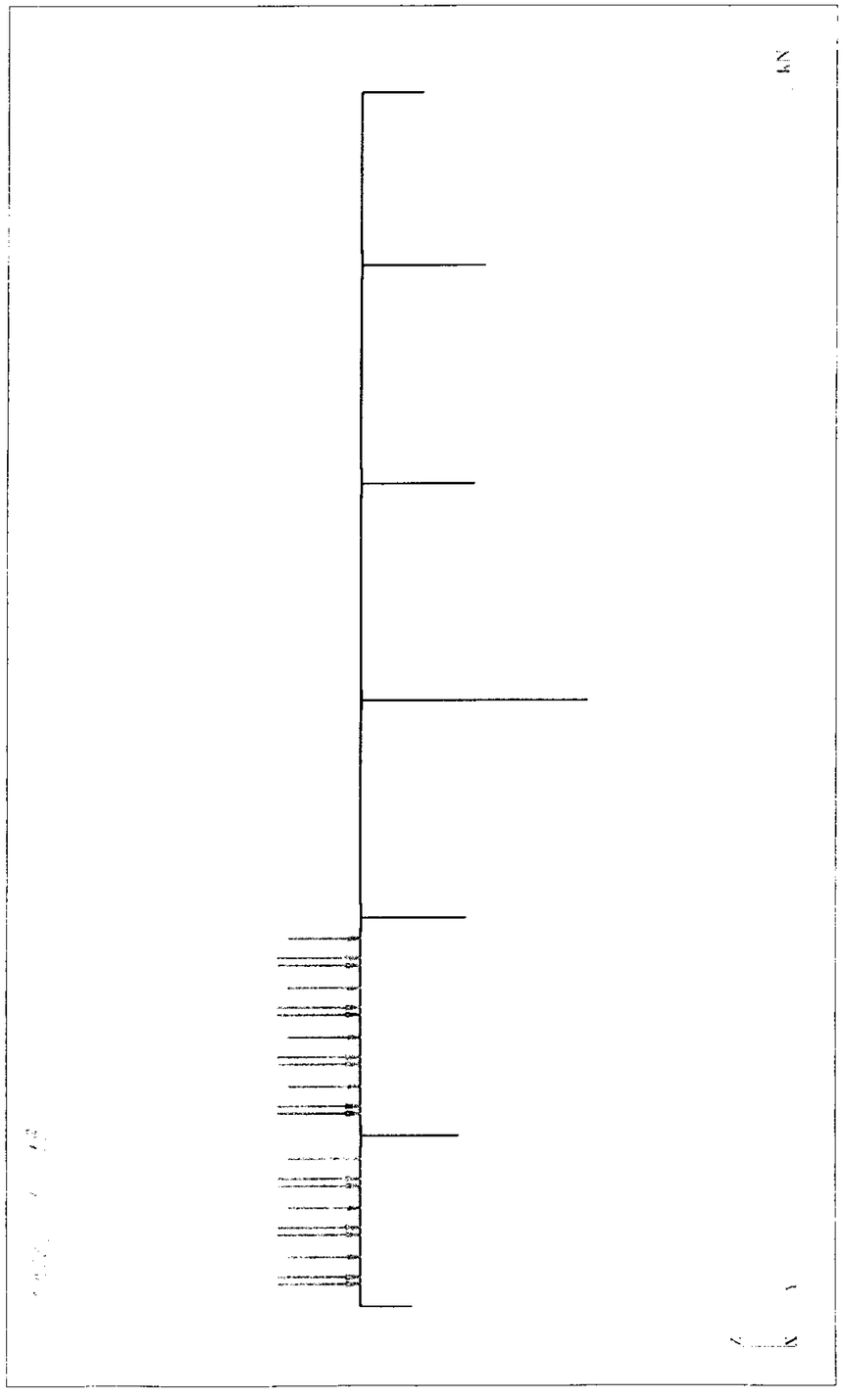
(CASO 1)



**Modelo**

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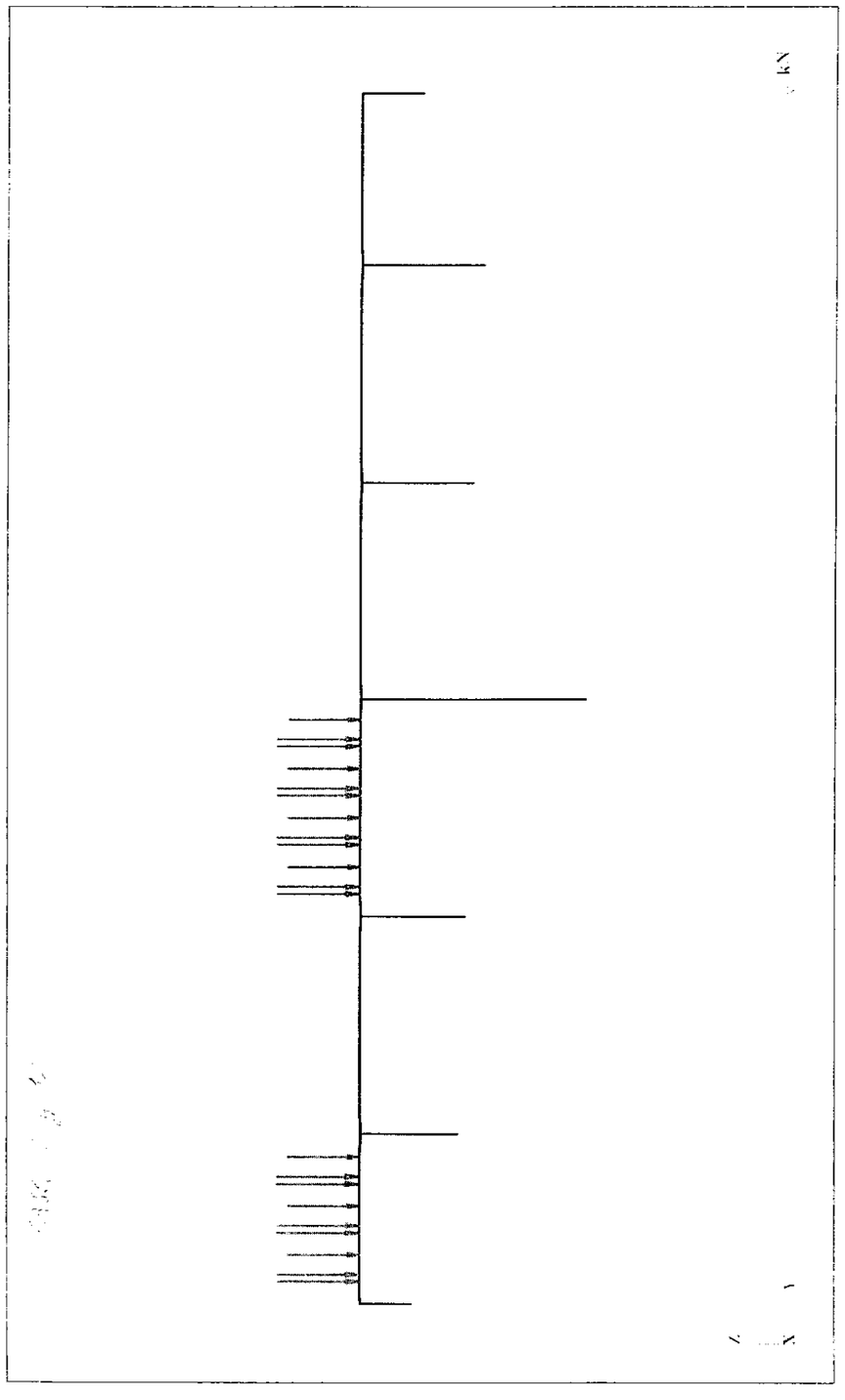
Archivo:
Proyecto: Frame3d

**(CASO 2)**



Fecha : 04/03/02 Página : **1**

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Dirección:

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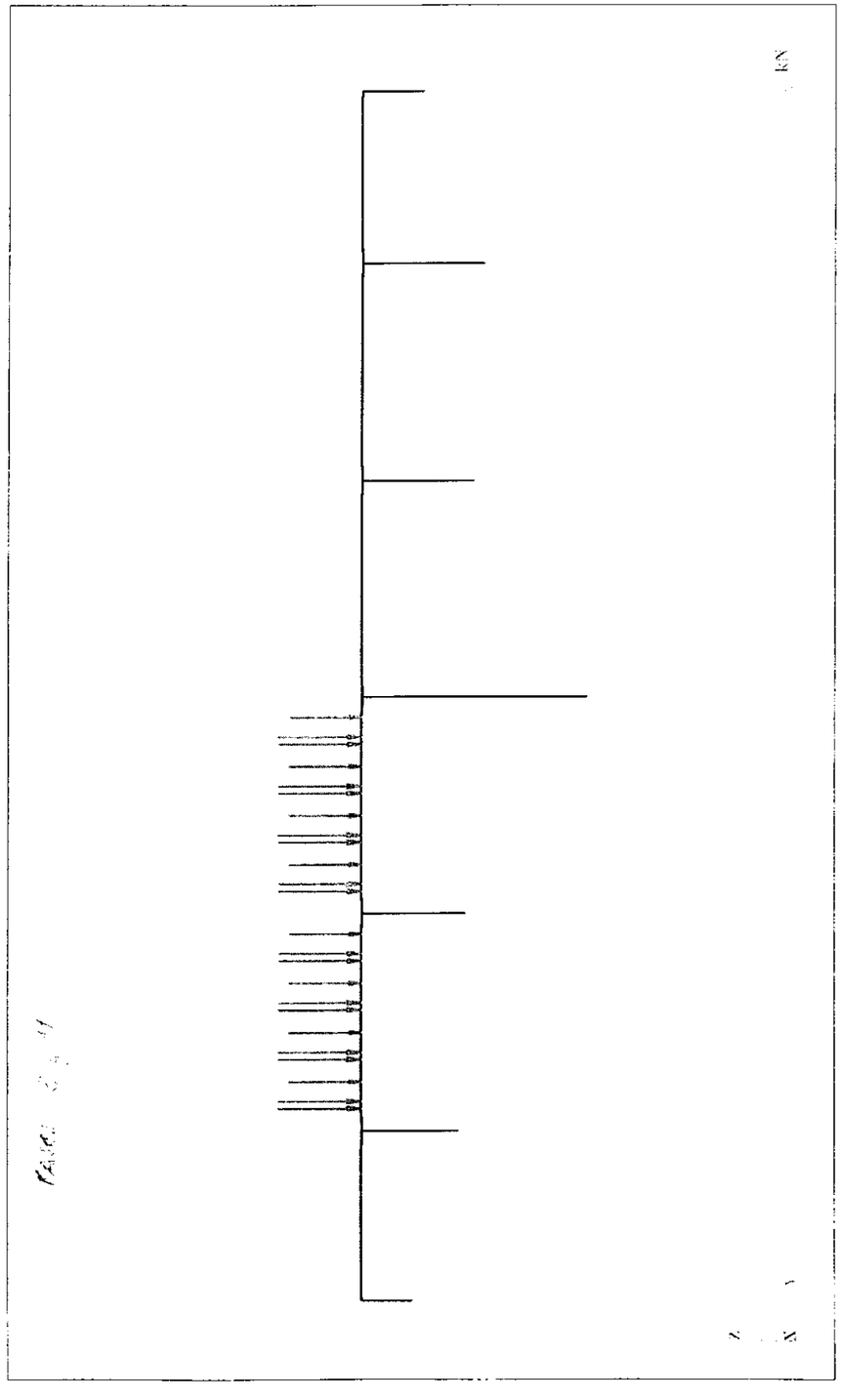
Proyecto: Frame3d

**(CASO 3)**



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Dirección:

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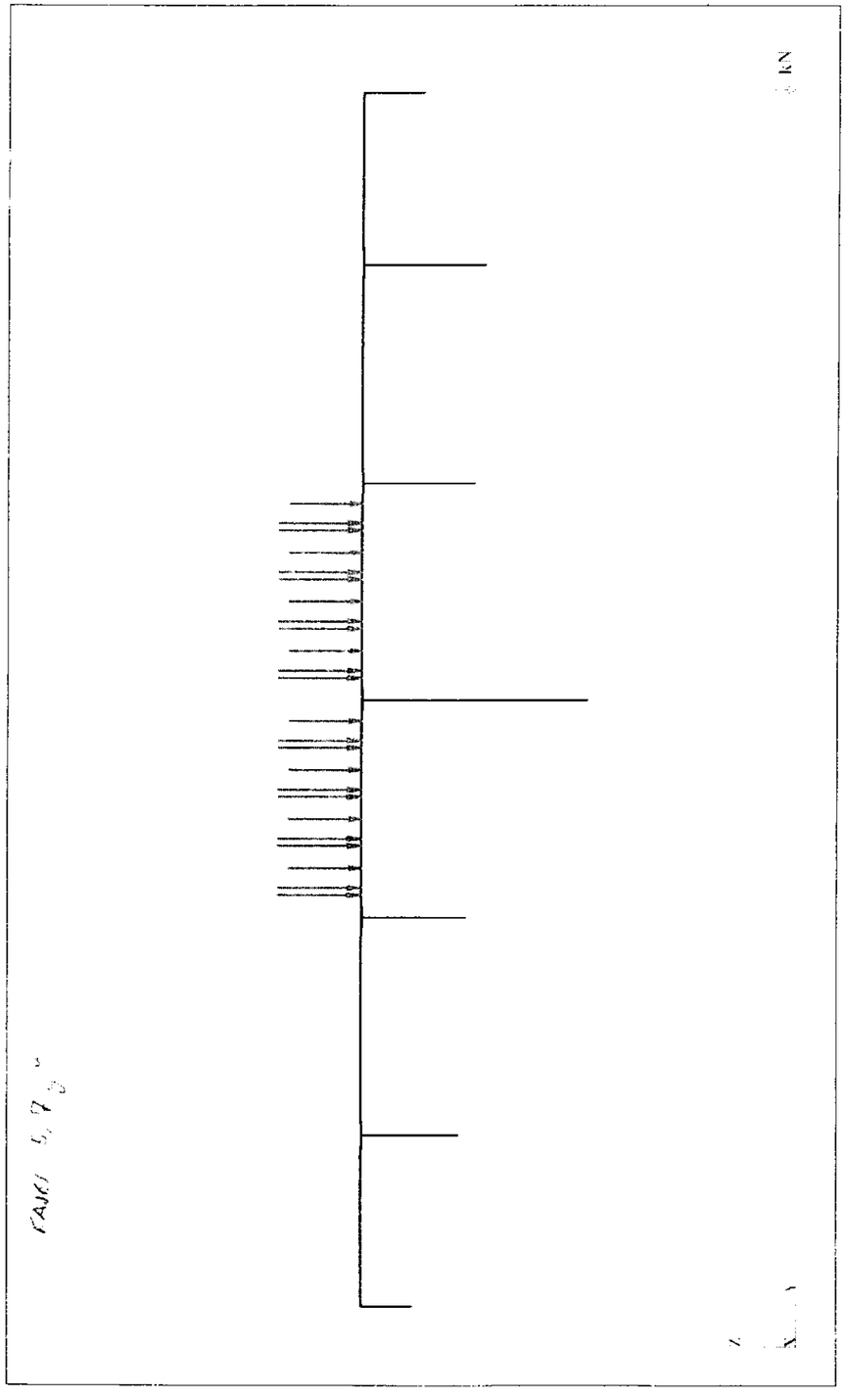
Archivo:
Proyecto: Frame3d

**(CASO 4)**



Fecha : 04/03/02 Página : 1

ROBOT v 14.5.0
Autor: **EIPSA-J.A.Llombart**
Dirección:

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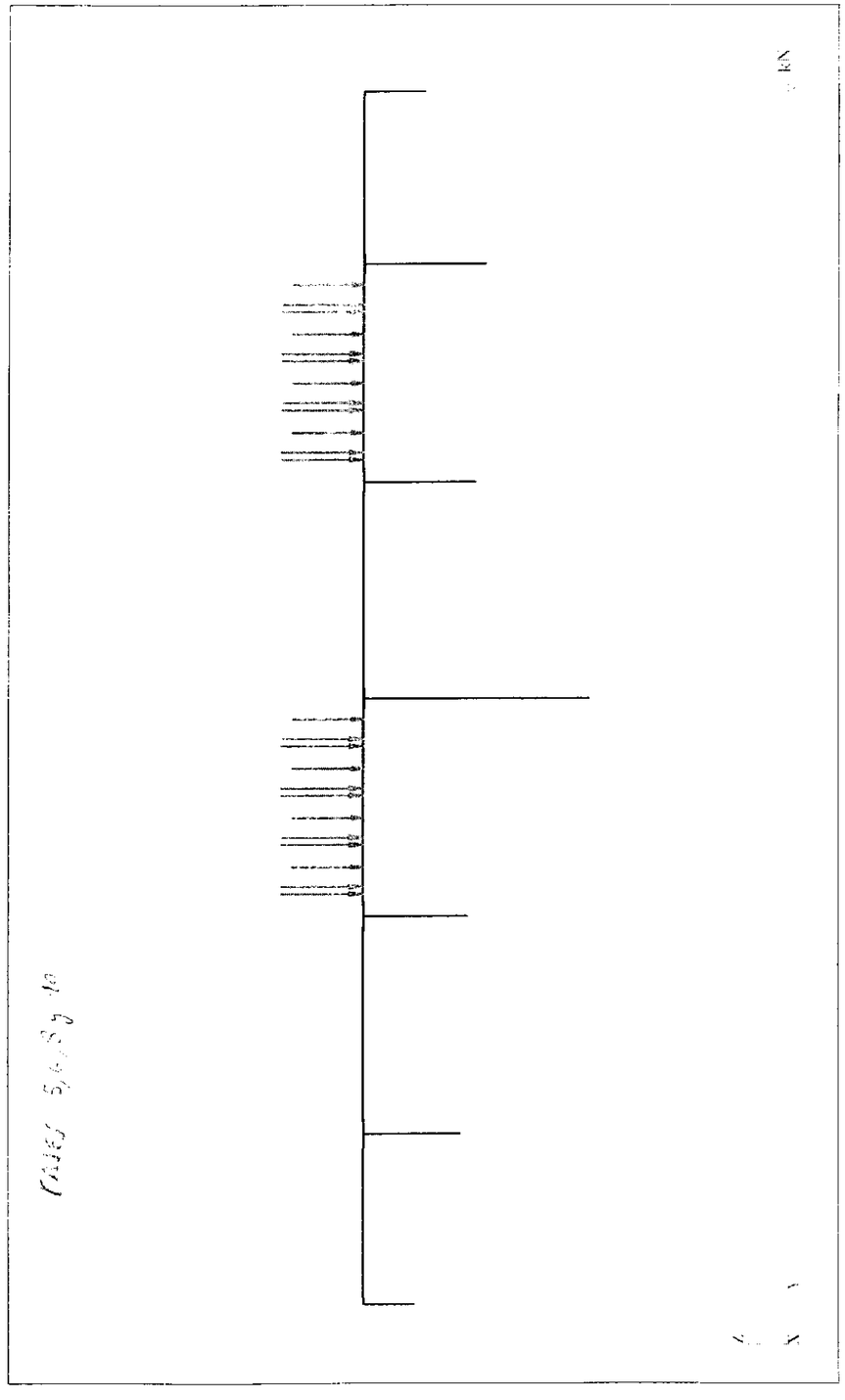
Archivo:
Proyecto: Frame3d

**(CASO 5)**



Fecha : 04/03/02 Página : 1

## Características

| Nombre de la sección | Lista de barras | SX (cm^2) | SY (cm^2) | SZ (cm^2) | IX (cm^4) | IY (cm^4) | IZ (cm^4) | E (MPa) | RO (kN/m^3) |
|---|---|---|---|---|---|---|---|---|---|
| NS 1 | 2A14 19A34 39A54 59 | 88170.000 | 0.0 | 0.0 | 1962300000.000 | 1176300000.000 | 8737000000.000 | 30891.00 | 25.00 |
| NS 2 | 1 15A18 35A38 55A58 | 114070.000 | 0.0 | 0.0 | 2193600000.000 | 1403300000.000 | 9923800000.000 | 30891.00 | 25.00 |
| RE 1 | 201 207 | 168000.000 | 140000.000 | 140000.000 | 762838456.927 | 201600000.000 | 27440000000.000 | 30891.00 | 25.00 |
| RE 2 | 202A206 | 69300.000 | 57750.000 | 57750.000 | 1896775878.809 | 669997500.000 | 2800777500.000 | 30891.00 | 25.00 |



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Dirección: Proyecto: Frame3d

## Cargas - Casos: 1A5

| Caso | Tipo de carga | Lista | Valores de carga | Nombre del caso |
|---|---|---|---|---|
| 1 | fuerza sobre barra | 3 | FZ=-230.00(kN) X=0.70(m) | camiones en vano 1 |
| 1 | fuerza sobre barra | 3 | FZ=-230.00(kN) X=2.10(m) | camiones en vano 1 |
| 1 | fuerza sobre barra | 5 | FZ=-200.00(kN) X=1.70(m) | camiones en vano 1 |
| 1 | fuerza sobre barra | 7 | FZ=-230.00(kN) X=1.80(m) | camiones en vano 1 |
| 1 | fuerza sobre barra | 8 | FZ=-230.00(kN) X=1.10(m) | camiones en vano 1 |
| 1 | fuerza sobre barra | 10 | FZ=-200.00(kN) X=0.70(m) | camiones en vano 1 |
| 1 | fuerza sobre barra | 12 | FZ=-230.00(kN) X=0.80(m) | camiones en vano 1 |
| 1 | fuerza sobre barra | 13 | FZ=-230.00(kN) X=0.10(m) | camiones en vano 1 |
| 1 | fuerza sobre barra | 14 | FZ=-200.00(kN) X=1.80(m) | camiones en vano 1 |
| 2 | fuerza sobre barra | 35 | FZ=-200.00(kN) X=0.20(m) | camiones en vano 2 |
| 2 | fuerza sobre barra | 33 | FZ=-230.00(kN) X=0.60(m) | camiones en vano 2 |
| 2 | fuerza sobre barra | 32 | FZ=-230.00(kN) X=1.30(m) | camiones en vano 2 |
| 2 | fuerza sobre barra | 30 | FZ=-200.00(kN) X=1.20(m) | camiones en vano 2 |
| 2 | fuerza sobre barra | 28 | FZ=-230.00(kN) X=1.60(m) | camiones en vano 2 |
| 2 | fuerza sobre barra | 28 | FZ=-230.00(kN) X=0.20(m) | camiones en vano 2 |
| 2 | fuerza sobre barra | 26 | FZ=-200.00(kN) X=0.10(m) | camiones en vano 2 |
| 2 | fuerza sobre barra | 24 | FZ=-230.00(kN) X=0.50(m) | camiones en vano 2 |
| 2 | fuerza sobre barra | 23 | FZ=-230.00(kN) X=1.20(m) | camiones en vano 2 |
| 2 | fuerza sobre barra | 21 | FZ=-200.00(kN) X=1.10(m) | camiones en vano 2 |
| 2 | fuerza sobre barra | 19 | FZ=-230.00(kN) X=1.50(m) | camiones en vano 2 |
| 2 | fuerza sobre barra | 19 | FZ=-230.00(kN) X=0.10(m) | camiones en vano 2 |
| 3 | fuerza sobre barra | 55 | FZ=-200.00(kN) X=0.20(m) | camiones en vano 3 |
| 3 | fuerza sobre barra | 53 | FZ=-230.00(kN) X=0.60(m) | camiones en vano 3 |
| 3 | fuerza sobre barra | 52 | FZ=-230.00(kN) X=1.30(m) | camiones en vano 3 |
| 3 | fuerza sobre barra | 50 | FZ=-200.00(kN) X=1.20(m) | camiones en vano 3 |
| 3 | fuerza sobre barra | 48 | FZ=-230.00(kN) X=1.60(m) | camiones en vano 3 |
| 3 | fuerza sobre barra | 48 | FZ=-230.00(kN) X=0.20(m) | camiones en vano 3 |
| 3 | fuerza sobre barra | 46 | FZ=-200.00(kN) X=0.10(m) | camiones en vano 3 |
| 3 | fuerza sobre barra | 44 | FZ=-230.00(kN) X=0.50(m) | camiones en vano 3 |
| 3 | fuerza sobre barra | 43 | FZ=-230.00(kN) X=1.20(m) | camiones en vano 3 |

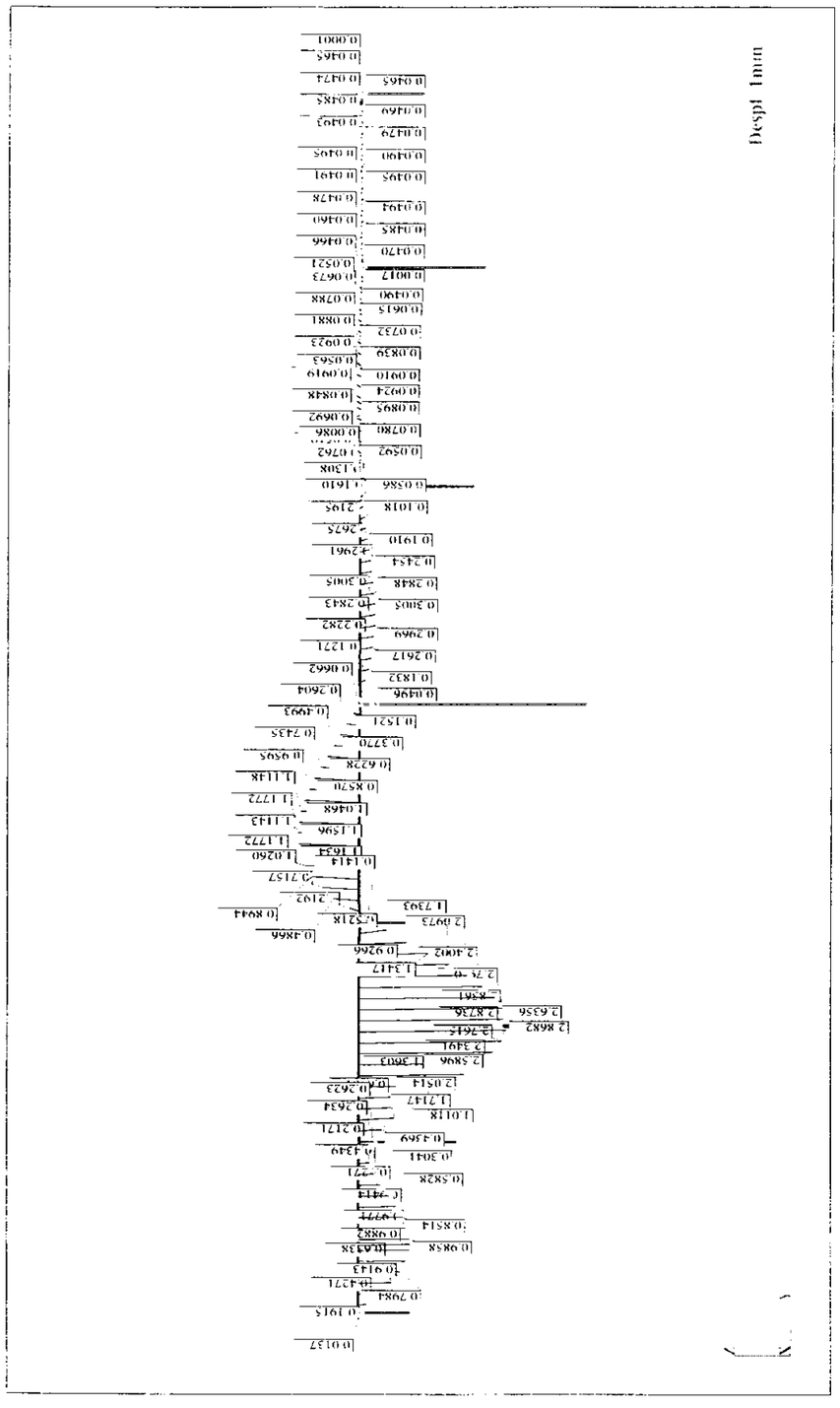
| | Caso | Tipo de carga | Lista | Valores de carga | Nombre del caso |
|---|---|---|---|---|---|
| | 3 | fuerza sobre barra | 41 | FZ=-200.00(kN) X=1.10(m) | camiones en vano 3 |
| | 3 | fuerza sobre barra | 39 | FZ=-230.00(kN) X=1.50(m) | camiones en vano 3 |
| | 3 | fuerza sobre barra | 39 | FZ=-230.00(kN) X=0.10(m) | camiones en vano 3 |
| | 4 | fuerza sobre barra | 75 | FZ=-200.00(kN) X=0.20(m) | camiones en vano 4 |
| | 4 | fuerza sobre barra | 73 | FZ=-230.00(kN) X=0.60(m) | camiones en vano 4 |
| | 4 | fuerza sobre barra | 72 | FZ=-230.00(kN) X=1.30(m) | camiones en vano 4 |
| | 4 | fuerza sobre barra | 70 | FZ=-200.00(kN) X=1.20(m) | camiones en vano 4 |
| | 4 | fuerza sobre barra | 68 | FZ=-230.00(kN) X=1.60(m) | camiones en vano 4 |
| | 4 | fuerza sobre barra | 68 | FZ=-230.00(kN) X=0.20(m) | camiones en vano 4 |
| | 4 | fuerza sobre barra | 66 | FZ=-200.00(kN) X=0.10(m) | camiones en vano 4 |
| | 4 | fuerza sobre barra | 64 | FZ=-230.00(kN) X=0.50(m) | camiones en vano 4 |
| | 4 | fuerza sobre barra | 63 | FZ=-230.00(kN) X=1.20(m) | camiones en vano 4 |
| | 4 | fuerza sobre barra | 61 | FZ=-200.00(kN) X=1.10(m) | camiones en vano 4 |
| | 4 | fuerza sobre barra | 59 | FZ=-230.00(kN) X=1.50(m) | camiones en vano 4 |
| | 4 | fuerza sobre barra | 59 | FZ=-230.00(kN) X=0.10(m) | camiones en vano 4 |
| | 5 | fuerza sobre barra | 95 | FZ=-200.00(kN) X=0.20(m) | camiones en vano 5 |
| | 5 | fuerza sobre barra | 93 | FZ=-230.00(kN) X=0.60(m) | camiones en vano 5 |
| | 5 | fuerza sobre barra | 92 | FZ=-230.00(kN) X=1.30(m) | camiones en vano 5 |
| | 5 | fuerza sobre barra | 90 | FZ=-200.00(kN) X=1.20(m) | camiones en vano 5 |
| | 5 | fuerza sobre barra | 88 | FZ=-230.00(kN) X=1.60(m) | camiones en vano 5 |
| | 5 | fuerza sobre barra | 88 | FZ=-230.00(kN) X=0.20(m) | camiones en vano 5 |
| | 5 | fuerza sobre barra | 86 | FZ=-200.00(kN) X=0.10(m) | camiones en vano 5 |
| | 5 | fuerza sobre barra | 84 | FZ=-230.00(kN) X=0.50(m) | camiones en vano 5 |
| | 5 | fuerza sobre barra | 83 | FZ=-230.00(kN) X=1.20(m) | camiones en vano 5 |
| | 5 | fuerza sobre barra | 81 | FZ=-200.00(kN) X=1.10(m) | camiones en vano 5 |
| | 5 | fuerza sobre barra | 79 | FZ=-230.00(kN) X=1.50(m) | camiones en vano 5 |
| | 5 | fuerza sobre barra | 79 | FZ=-230.00(kN) X=0.10(m) | camiones en vano 5 |





## Desplazamientos

## Def. exacta casos: 6 (CASO 1)








## Desplazamientos - (CASO 1)

**- Caso: 6 (CASO 1)**

| Nudo/Caso | | UZ (mm) |
|---|---|---|
| 1/ | 6 (C) | -0.0137 |
| 2/ | 6 (C) | -0.1906 |
| 3/ | 6 (C) | -0.4267 |
| 4/ | 6 (C) | -0.6335 |
| 5/ | 6 (C) | -0.7982 |
| 6/ | 6 (C) | -0.9141 |
| 7/ | 6 (C) | -0.9769 |
| 8/ | 6 (C) | -0.9856 |
| 9/ | 6 (C) | -0.9412 |
| 10/ | 6 (C) | -0.8512 |
| 11/ | 6 (C) | -0.7269 |
| 12/ | 6 (C) | -0.5825 |
| 13/ | 6 (C) | -0.4345 |
| 14/ | 6 (C) | -0.3034 |
| 15/ | 6 (C) | -0.2161 |
| 16/ | 6 (C) | -0.1950 |
| 17/ | 6 (C) | -0.2625 |
| 18/ | 6 (C) | -0.4363 |
| 19/ | 6 (C) | -0.6948 |
| 20/ | 6 (C) | -1.0109 |
| 21/ | 6 (C) | -1.3596 |
| 22/ | 6 (C) | -1.7141 |
| 23/ | 6 (C) | -2.0509 |
| 24/ | 6 (C) | -2.3486 |
| 25/ | 6 (C) | -2.5891 |
| 26/ | 6 (C) | -2.7610 |
| 27/ | 6 (C) | -2.8556 |
| 28/ | 6 (C) | -2.8676 |
| 29/ | 6 (C) | -2.7934 |
| 30/ | 6 (C) | -2.6350 |
| 31/ | 6 (C) | -2.3994 |
| 32/ | 6 (C) | -2.0963 |
| 33/ | 6 (C) | -1.7381 |
| 34/ | 6 (C) | -1.3400 |
| 35/ | 6 (C) | -0.9241 |
| 36/ | 6 (C) | -0.5137 |
| 37/ | 6 (C) | -0.1331 |
| 38/ | 6 (C) | 0.1989 |
| 39/ | 6 (C) | 0.4808 |
| 40/ | 6 (C) | 0.7118 |
| 41/ | 6 (C) | 0.8913 |
| 42/ | 6 (C) | 1.0233 |
| 43/ | 6 (C) | 1.1119 |
| 44/ | 6 (C) | 1.1612 |
| 45/ | 6 (C) | 1.1750 |
| 46/ | 6 (C) | 1.1575 |
| 47/ | 6 (C) | 1.1127 |
| 48/ | 6 (C) | 1.0446 |
| 49/ | 6 (C) | 0.9572 |

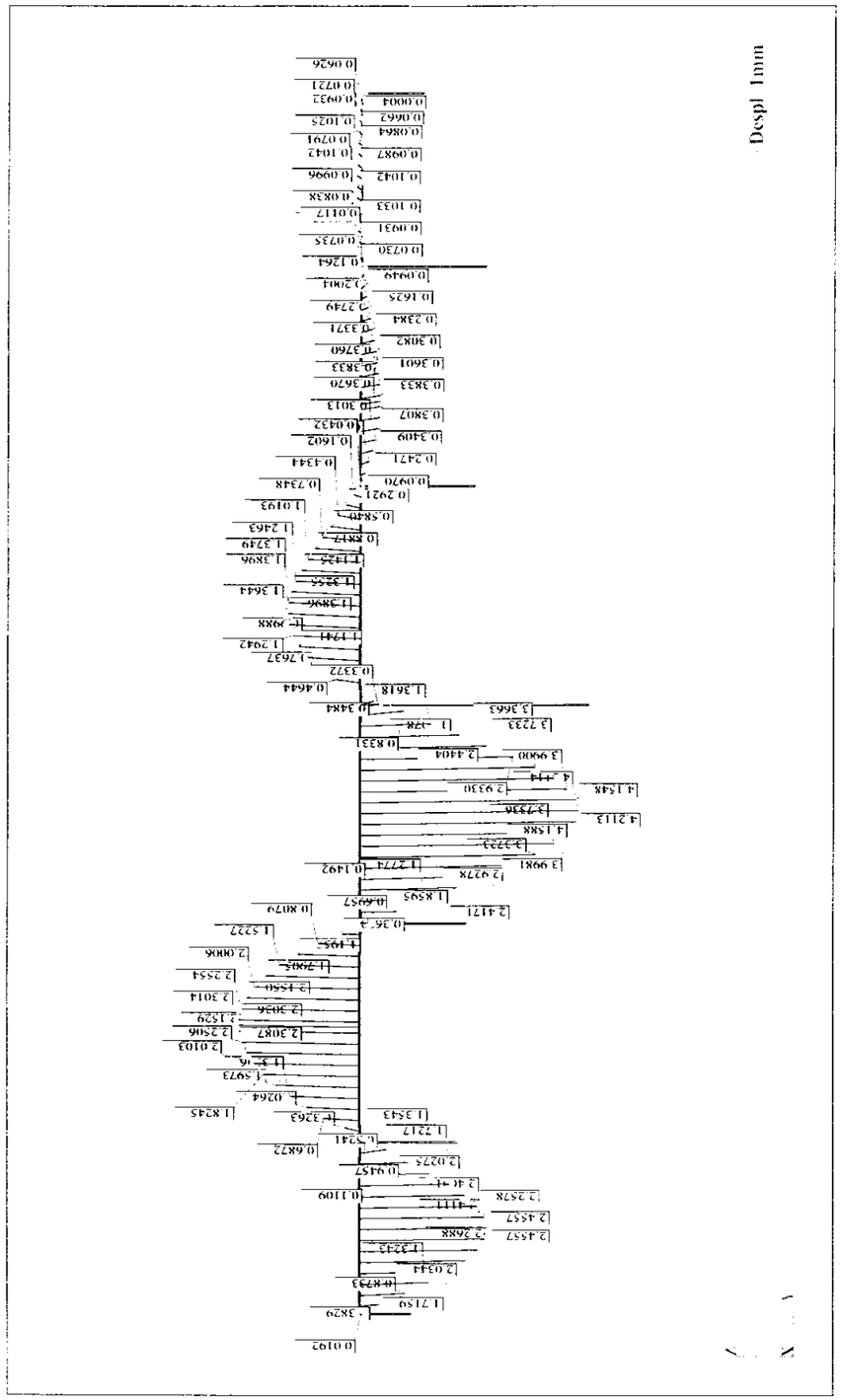
| Nudo/Caso | UZ (mm) |
|---|---|
| 50/ 6 (C) | 0.8546 |
| 51/ 6 (C) | 0.7407 |
| 52/ 6 (C) | 0.6197 |
| 53/ 6 (C) | 0.4956 |
| 54/ 6 (C) | 0.3722 |
| 55/ 6 (C) | 0.2538 |
| 56/ 6 (C) | 0.1434 |
| 57/ 6 (C) | 0.0439 |
| 58/ 6 (C) | -0.0423 |
| 59/ 6 (C) | -0.1155 |
| 60/ 6 (C) | -0.1756 |
| 61/ 6 (C) | -0.2222 |
| 62/ 6 (C) | -0.2566 |
| 63/ 6 (C) | -0.2797 |
| 64/ 6 (C) | -0.2926 |
| 65/ 6 (C) | -0.2964 |
| 66/ 6 (C) | -0.2920 |
| 67/ 6 (C) | -0.2805 |
| 68/ 6 (C) | -0.2630 |
| 69/ 6 (C) | -0.2405 |
| 70/ 6 (C) | -0.2141 |
| 71/ 6 (C) | -0.1848 |
| 72/ 6 (C) | -0.1536 |
| 73/ 6 (C) | -0.1217 |
| 74/ 6 (C) | -0.0899 |
| 75/ 6 (C) | -0.0595 |
| 76/ 6 (C) | -0.0312 |
| 77/ 6 (C) | -0.0057 |
| 78/ 6 (C) | 0.0163 |
| 79/ 6 (C) | 0.0350 |
| 80/ 6 (C) | 0.0502 |
| 81/ 6 (C) | 0.0619 |
| 82/ 6 (C) | 0.0704 |
| 83/ 6 (C) | 0.0759 |
| 84/ 6 (C) | 0.0789 |
| 85/ 6 (C) | 0.0794 |
| 86/ 6 (C) | 0.0779 |
| 87/ 6 (C) | 0.0745 |
| 88/ 6 (C) | 0.0696 |
| 89/ 6 (C) | 0.0634 |
| 90/ 6 (C) | 0.0563 |
| 91/ 6 (C) | 0.0484 |
| 92/ 6 (C) | 0.0401 |
| 93/ 6 (C) | 0.0317 |
| 94/ 6 (C) | 0.0234 |
| 95/ 6 (C) | 0.0155 |
| 96/ 6 (C) | 0.0082 |
| 97/ 6 (C) | 0.0017 |
| 98/ 6 (C) | -0.0039 |
| 99/ 6 (C) | -0.0085 |
| 100/ 6 (C) | -0.0121 |
| 101/ 6 (C) | -0.0148 |





| Nudo/Caso | UZ (mm) |
|---|---|
| 102/ 6 (C) | -0.0165 |
| 103/ 6 (C) | -0.0175 |
| 104/ 6 (C) | -0.0177 |
| 105/ 6 (C) | -0.0173 |
| 106/ 6 (C) | -0.0163 |
| 107/ 6 (C) | -0.0147 |
| 108/ 6 (C) | -0.0128 |
| 109/ 6 (C) | -0.0105 |
| 110/ 6 (C) | -0.0079 |
| 111/ 6 (C) | -0.0051 |
| 112/ 6 (C) | -0.0022 |
| 113/ 6 (C) | -0.0001 |

## Def. exacta casos: 7 (CASO 2)



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## Desplazamientos - (CASO 2)

**- Caso: 7 (CASO 2)**

| Nudo/Caso | | UZ (mm) |
|---|---|---|
| 1/ | 7 (C) | -0.0190 |
| 2/ | 7 (C) | -0.3809 |
| 3/ | 7 (C) | -0.8723 |
| 4/ | 7 (C) | -1.3236 |
| 5/ | 7 (C) | -1.7152 |
| 6/ | 7 (C) | -2.0337 |
| 7/ | 7 (C) | -2.2680 |
| 8/ | 7 (C) | -2.4103 |
| 9/ | 7 (C) | -2.4547 |
| 10/ | 7 (C) | -2.4020 |
| 11/ | 7 (C) | -2.2566 |
| 12/ | 7 (C) | -2.0259 |
| 13/ | 7 (C) | -1.7198 |
| 14/ | 7 (C) | -1.3517 |
| 15/ | 7 (C) | -0.9419 |
| 16/ | 7 (C) | -0.5135 |
| 17/ | 7 (C) | -0.0904 |
| 18/ | 7 (C) | 0.3096 |
| 19/ | 7 (C) | 0.6823 |
| 20/ | 7 (C) | 1.0235 |
| 21/ | 7 (C) | 1.3286 |
| 22/ | 7 (C) | 1.5958 |
| 23/ | 7 (C) | 1.8233 |
| 24/ | 7 (C) | 2.0094 |
| 25/ | 7 (C) | 2.1522 |
| 26/ | 7 (C) | 2.2500 |
| 27/ | 7 (C) | 2.3009 |
| 28/ | 7 (C) | 2.3032 |
| 29/ | 7 (C) | 2.2550 |
| 30/ | 7 (C) | 2.1546 |
| 31/ | 7 (C) | 2.0002 |
| 32/ | 7 (C) | 1.7899 |
| 33/ | 7 (C) | 1.5220 |
| 34/ | 7 (C) | 1.1946 |
| 35/ | 7 (C) | 0.8060 |
| 36/ | 7 (C) | 0.3595 |
| 37/ | 7 (C) | -0.1412 |
| 38/ | 7 (C) | -0.6937 |
| 39/ | 7 (C) | -1.2755 |
| 40/ | 7 (C) | -1.8581 |
| 41/ | 7 (C) | -2.4160 |
| 42/ | 7 (C) | -2.9269 |
| 43/ | 7 (C) | -3.3715 |
| 44/ | 7 (C) | -3.7329 |
| 45/ | 7 (C) | -3.9975 |
| 46/ | 7 (C) | -4.1582 |
| 47/ | 7 (C) | -4.2108 |
| 48/ | 7 (C) | -4.1542 |
| 49/ | 7 (C) | -3.9894 |

| Nudo/Caso | UZ (mm) |
|---|---|
| 50/ 7 (C) | -3.7227 |
| 51/ 7 (C) | -3.3657 |
| 52/ 7 (C) | -2.9323 |
| 53/ 7 (C) | -2.4397 |
| 54/ 7 (C) | -1.9069 |
| 55/ 7 (C) | -1.3606 |
| 56/ 7 (C) | -0.8279 |
| 57/ 7 (C) | -0.3358 |
| 58/ 7 (C) | 0.0936 |
| 59/ 7 (C) | 0.4595 |
| 60/ 7 (C) | 0.7608 |
| 61/ 7 (C) | 0.9966 |
| 62/ 7 (C) | 1.1722 |
| 63/ 7 (C) | 1.2925 |
| 64/ 7 (C) | 1.3628 |
| 65/ 7 (C) | 1.3880 |
| 66/ 7 (C) | 1.3733 |
| 67/ 7 (C) | 1.3238 |
| 68/ 7 (C) | 1.2445 |
| 69/ 7 (C) | 1.1405 |
| 70/ 7 (C) | 1.0171 |
| 71/ 7 (C) | 0.8791 |
| 72/ 7 (C) | 0.7317 |
| 73/ 7 (C) | 0.5800 |
| 74/ 7 (C) | 0.4291 |
| 75/ 7 (C) | 0.2841 |
| 76/ 7 (C) | 0.1491 |
| 77/ 7 (C) | 0.0275 |
| 78/ 7 (C) | -0.0775 |
| 79/ 7 (C) | -0.1664 |
| 80/ 7 (C) | -0.2387 |
| 81/ 7 (C) | -0.2945 |
| 82/ 7 (C) | -0.3351 |
| 83/ 7 (C) | -0.3617 |
| 84/ 7 (C) | -0.3756 |
| 85/ 7 (C) | -0.3783 |
| 86/ 7 (C) | -0.3709 |
| 87/ 7 (C) | -0.3549 |
| 88/ 7 (C) | -0.3316 |
| 89/ 7 (C) | -0.3022 |
| 90/ 7 (C) | -0.2682 |
| 91/ 7 (C) | -0.2307 |
| 92/ 7 (C) | -0.1912 |
| 93/ 7 (C) | -0.1510 |
| 94/ 7 (C) | -0.1114 |
| 95/ 7 (C) | -0.0737 |
| 96/ 7 (C) | -0.0389 |
| 97/ 7 (C) | -0.0079 |
| 98/ 7 (C) | 0.0184 |
| 99/ 7 (C) | 0.0403 |
| 100/ 7 (C) | 0.0576 |
| 101/ 7 (C) | 0.0702 |



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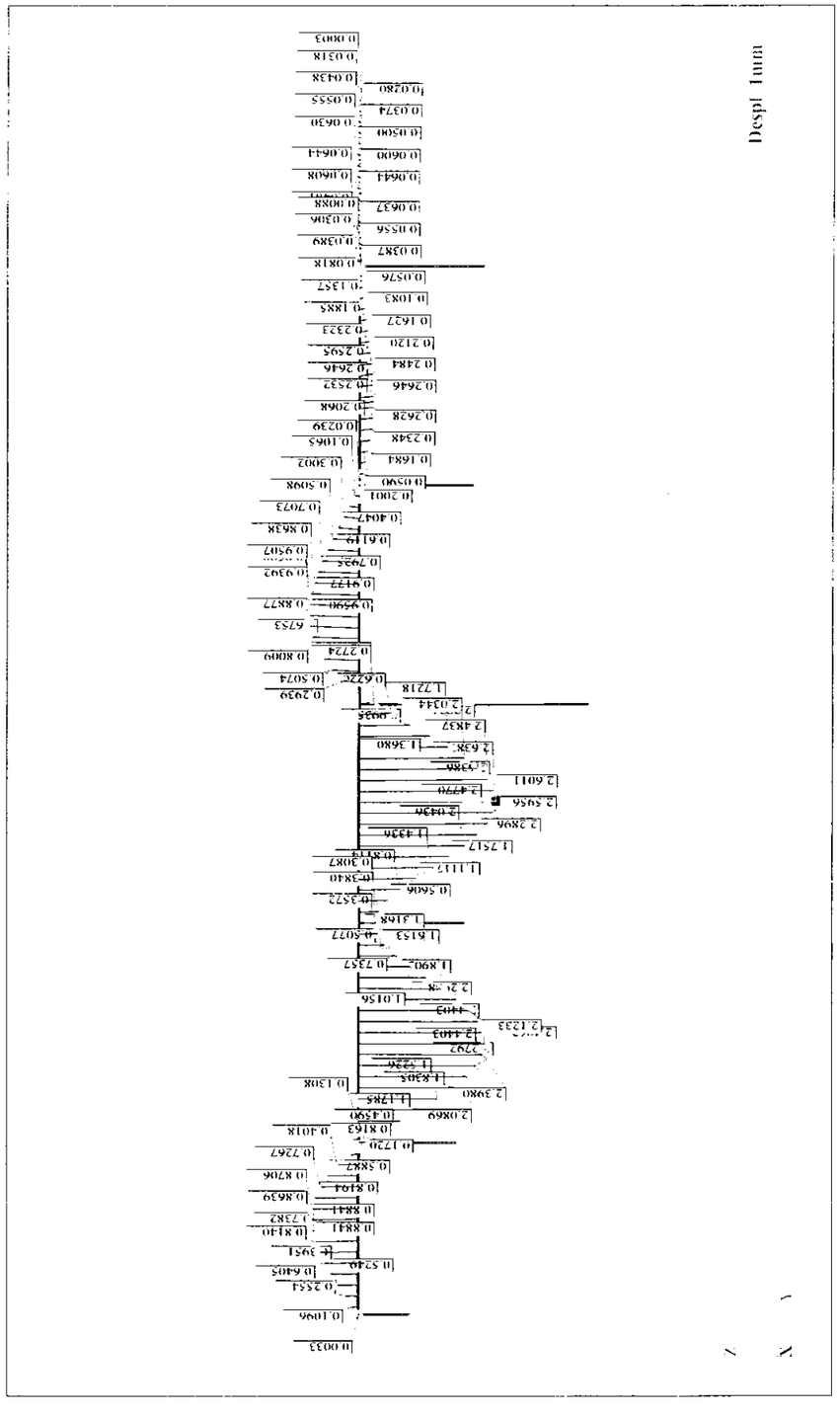
| Nudo/Caso | UZ (mm) |
|---|---|
| 102/ 7 (C) | 0.0787 |
| 103/ 7 (C) | 0.0832 |
| 104/ 7 (C) | 0.0843 |
| 105/ 7 (C) | 0.0822 |
| 106/ 7 (C) | 0.0773 |
| 107/ 7 (C) | 0.0700 |
| 108/ 7 (C) | 0.0607 |
| 109/ 7 (C) | 0.0497 |
| 110/ 7 (C) | 0.0374 |
| 111/ 7 (C) | 0.0242 |
| 112/ 7 (C) | 0.0104 |
| 113/ 7 (C) | 0.0003 |

## Def. exacta casos: 8 (CASO 3)








## Desplazamientos - (CASO 3)

- Caso: 8 (CASO 3)

| Nudo/Caso | | UZ (mm) |
|---|---|---|
| 1/ | 8 (C) | 0.0031 |
| 2/ | 8 (C) | 0.1090 |
| 3/ | 8 (C) | 0.2550 |
| 4/ | 8 (C) | 0.3948 |
| 5/ | 8 (C) | 0.5245 |
| 6/ | 8 (C) | 0.6402 |
| 7/ | 8 (C) | 0.7378 |
| 8/ | 8 (C) | 0.8135 |
| 9/ | 8 (C) | 0.8634 |
| 10/ | 8 (C) | 0.8834 |
| 11/ | 8 (C) | 0.8697 |
| 12/ | 8 (C) | 0.8184 |
| 13/ | 8 (C) | 0.7254 |
| 14/ | 8 (C) | 0.5870 |
| 15/ | 8 (C) | 0.3990 |
| 16/ | 8 (C) | 0.1621 |
| 17/ | 8 (C) | -0.1230 |
| 18/ | 8 (C) | -0.4552 |
| 19/ | 8 (C) | -0.8148 |
| 20/ | 8 (C) | -1.1775 |
| 21/ | 8 (C) | -1.5219 |
| 22/ | 8 (C) | -1.8299 |
| 23/ | 8 (C) | -2.0864 |
| 24/ | 8 (C) | -2.2788 |
| 25/ | 8 (C) | -2.3976 |
| 26/ | 8 (C) | -2.4400 |
| 27/ | 8 (C) | -2.4059 |
| 28/ | 8 (C) | -2.2985 |
| 29/ | 8 (C) | -2.1230 |
| 30/ | 8 (C) | -1.8900 |
| 31/ | 8 (C) | -1.6150 |
| 32/ | 8 (C) | -1.3165 |
| 33/ | 8 (C) | -1.0153 |
| 34/ | 8 (C) | -0.7354 |
| 35/ | 8 (C) | -0.5073 |
| 36/ | 8 (C) | -0.3567 |
| 37/ | 8 (C) | -0.3086 |
| 38/ | 8 (C) | -0.3838 |
| 39/ | 8 (C) | -0.5602 |
| 40/ | 8 (C) | -0.8112 |
| 41/ | 8 (C) | -1.1115 |
| 42/ | 8 (C) | -1.4334 |
| 43/ | 8 (C) | -1.7516 |
| 44/ | 8 (C) | -2.0435 |
| 45/ | 8 (C) | -2.2895 |
| 46/ | 8 (C) | -2.4769 |
| 47/ | 8 (C) | -2.5955 |
| 48/ | 8 (C) | -2.6385 |
| 49/ | 8 (C) | -2.6010 |

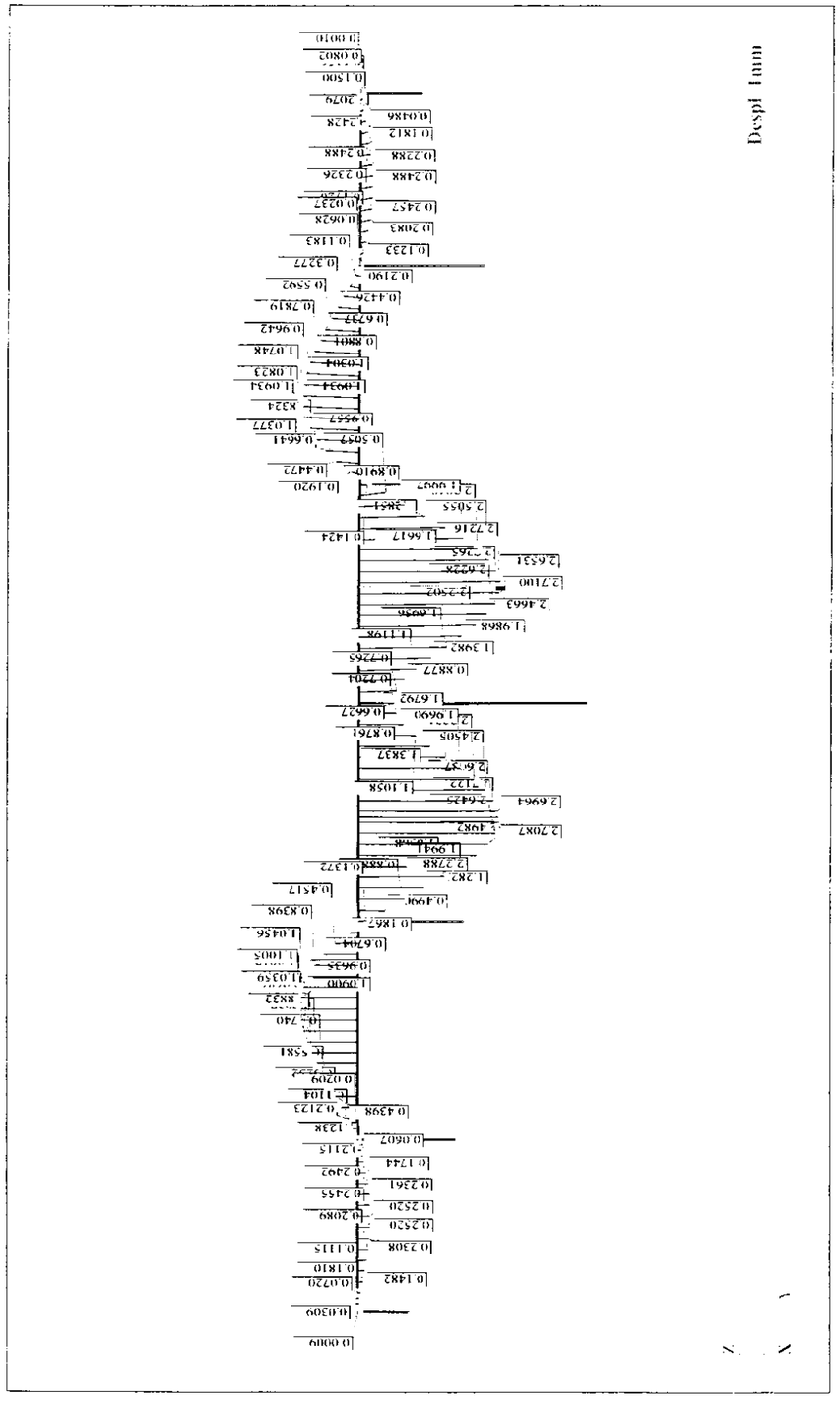
| Nudo/Caso | UZ (mm) |
|---|---|
| 50/ 8 (C) | -2.4836 |
| 51/ 8 (C) | -2.2919 |
| 52/ 8 (C) | -2.0342 |
| 53/ 8 (C) | -1.7216 |
| 54/ 8 (C) | -1.3677 |
| 55/ 8 (C) | -0.9931 |
| 56/ 8 (C) | -0.6203 |
| 57/ 8 (C) | -0.2723 |
| 58/ 8 (C) | 0.0322 |
| 59/ 8 (C) | 0.2920 |
| 60/ 8 (C) | 0.5063 |
| 61/ 8 (C) | 0.6745 |
| 62/ 8 (C) | 0.8003 |
| 63/ 8 (C) | 0.8871 |
| 64/ 8 (C) | 0.9387 |
| 65/ 8 (C) | 0.9585 |
| 66/ 8 (C) | 0.9502 |
| 67/ 8 (C) | 0.9173 |
| 68/ 8 (C) | 0.8633 |
| 69/ 8 (C) | 0.7920 |
| 70/ 8 (C) | 0.7068 |
| 71/ 8 (C) | 0.6113 |
| 72/ 8 (C) | 0.5090 |
| 73/ 8 (C) | 0.4037 |
| 74/ 8 (C) | 0.2988 |
| 75/ 8 (C) | 0.1979 |
| 76/ 8 (C) | 0.1039 |
| 77/ 8 (C) | 0.0193 |
| 78/ 8 (C) | -0.0538 |
| 79/ 8 (C) | -0.1156 |
| 80/ 8 (C) | -0.1660 |
| 81/ 8 (C) | -0.2048 |
| 82/ 8 (C) | -0.2330 |
| 83/ 8 (C) | -0.2515 |
| 84/ 8 (C) | -0.2613 |
| 85/ 8 (C) | -0.2631 |
| 86/ 8 (C) | -0.2580 |
| 87/ 8 (C) | -0.2469 |
| 88/ 8 (C) | -0.2306 |
| 89/ 8 (C) | -0.2102 |
| 90/ 8 (C) | -0.1865 |
| 91/ 8 (C) | -0.1605 |
| 92/ 8 (C) | -0.1330 |
| 93/ 8 (C) | -0.1050 |
| 94/ 8 (C) | -0.0775 |
| 95/ 8 (C) | -0.0512 |
| 96/ 8 (C) | -0.0270 |
| 97/ 8 (C) | -0.0055 |
| 98/ 8 (C) | 0.0128 |
| 99/ 8 (C) | 0.0280 |
| 100/ 8 (C) | 0.0400 |
| 101/ 8 (C) | 0.0488 |





| Nudo/Caso | UZ (mm) |
|---|---|
| 102/ 8 (C) | 0.0547 |
| 103/ 8 (C) | 0.0578 |
| 104/ 8 (C) | 0.0586 |
| 105/ 8 (C) | 0.0571 |
| 106/ 8 (C) | 0.0537 |
| 107/ 8 (C) | 0.0486 |
| 108/ 8 (C) | 0.0422 |
| 109/ 8 (C) | 0.0345 |
| 110/ 8 (C) | 0.0260 |
| 111/ 8 (C) | 0.0168 |
| 112/ 8 (C) | 0.0072 |
| 113/ 8 (C) | 0.0002 |

## Def. exacta casos: 9 (CASO 4)



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## Desplazamientos - (CASO 4)

**- Caso: 9 (CASO 4)**

| Nudo/Caso | | UZ (mm) |
|---|---|---|
| 1/ | 9 (C) | -0.0009 |
| 2/ | 9 (C) | -0.0307 |
| 3/ | 9 (C) | -0.0719 |
| 4/ | 9 (C) | -0.1114 |
| 5/ | 9 (C) | -0.1481 |
| 6/ | 9 (C) | -0.1809 |
| 7/ | 9 (C) | -0.2087 |
| 8/ | 9 (C) | -0.2305 |
| 9/ | 9 (C) | -0.2452 |
| 10/ | 9 (C) | -0.2517 |
| 11/ | 9 (C) | -0.2489 |
| 12/ | 9 (C) | -0.2357 |
| 13/ | 9 (C) | -0.2111 |
| 14/ | 9 (C) | -0.1740 |
| 15/ | 9 (C) | -0.1232 |
| 16/ | 9 (C) | -0.0590 |
| 17/ | 9 (C) | 0.0185 |
| 18/ | 9 (C) | 0.1097 |
| 19/ | 9 (C) | 0.2121 |
| 20/ | 9 (C) | 0.3232 |
| 21/ | 9 (C) | 0.4398 |
| 22/ | 9 (C) | 0.5581 |
| 23/ | 9 (C) | 0.6740 |
| 24/ | 9 (C) | 0.7837 |
| 25/ | 9 (C) | 0.8832 |
| 26/ | 9 (C) | 0.9685 |
| 27/ | 9 (C) | 1.0358 |
| 28/ | 9 (C) | 1.0811 |
| 29/ | 9 (C) | 1.1004 |
| 30/ | 9 (C) | 1.0898 |
| 31/ | 9 (C) | 1.0454 |
| 32/ | 9 (C) | 0.9633 |
| 33/ | 9 (C) | 0.8394 |
| 34/ | 9 (C) | 0.6699 |
| 35/ | 9 (C) | 0.4508 |
| 36/ | 9 (C) | 0.1825 |
| 37/ | 9 (C) | -0.1338 |
| 38/ | 9 (C) | -0.4974 |
| 39/ | 9 (C) | -0.8883 |
| 40/ | 9 (C) | -1.2819 |
| 41/ | 9 (C) | -1.6564 |
| 42/ | 9 (C) | -1.9938 |
| 43/ | 9 (C) | -2.2786 |
| 44/ | 9 (C) | -2.4981 |
| 45/ | 9 (C) | -2.6424 |
| 46/ | 9 (C) | -2.7086 |
| 47/ | 9 (C) | -2.6963 |
| 48/ | 9 (C) | -2.6086 |
| 49/ | 9 (C) | -2.4504 |

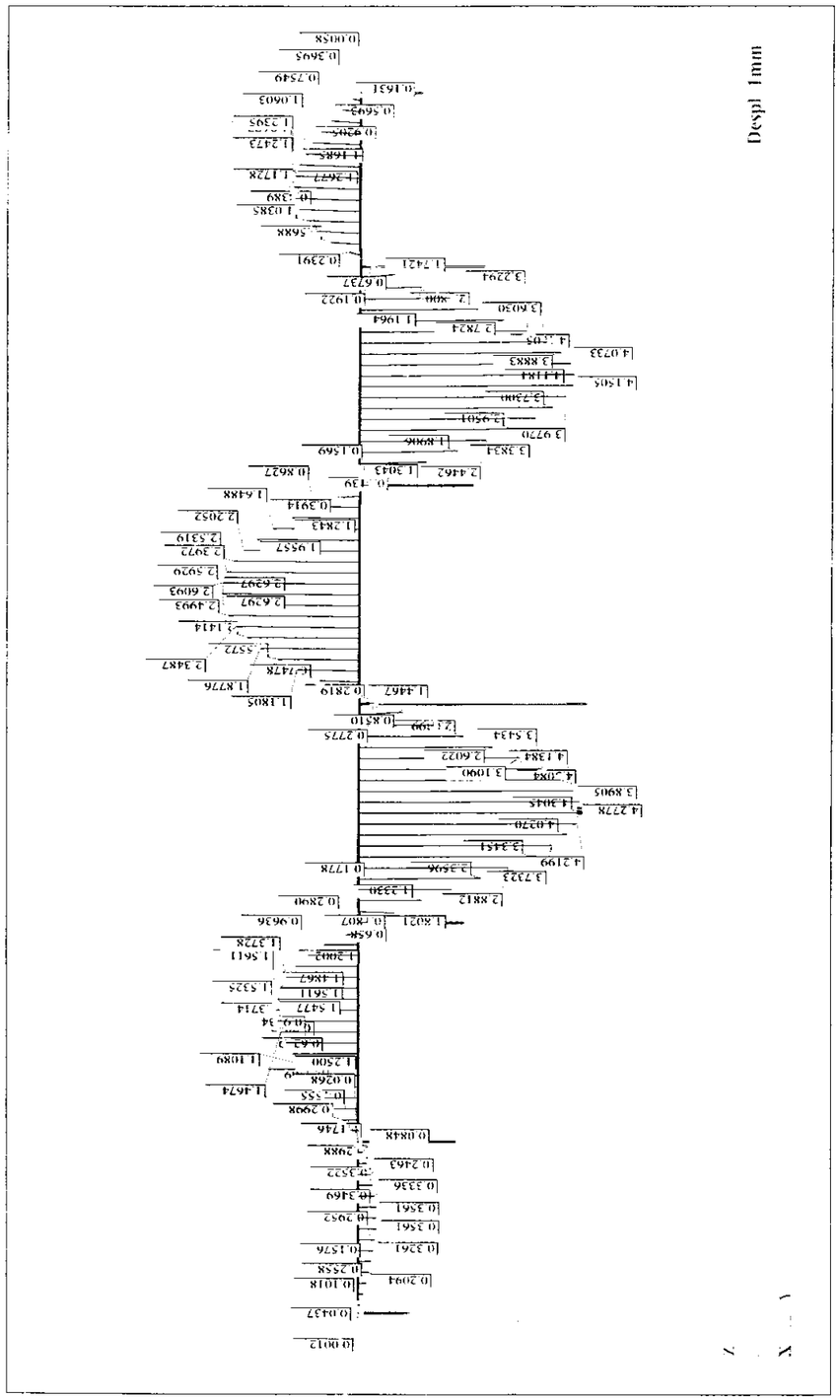
| Nudo/Caso | UZ (mm) |
|---|---|
| 50/ 9 (C) | -2.2320 |
| 51/ 9 (C) | -1.9689 |
| 52/ 9 (C) | -1.6792 |
| 53/ 9 (C) | -1.3837 |
| 54/ 9 (C) | -1.1058 |
| 55/ 9 (C) | -0.8760 |
| 56/ 9 (C) | -0.7202 |
| 57/ 9 (C) | -0.6633 |
| 58/ 9 (C) | -0.7262 |
| 59/ 9 (C) | -0.8871 |
| 60/ 9 (C) | -1.1193 |
| 61/ 9 (C) | -1.3978 |
| 62/ 9 (C) | -1.6952 |
| 63/ 9 (C) | -1.9865 |
| 64/ 9 (C) | -2.2498 |
| 65/ 9 (C) | -2.4659 |
| 66/ 9 (C) | -2.6224 |
| 67/ 9 (C) | -2.7097 |
| 68/ 9 (C) | -2.7212 |
| 69/ 9 (C) | -2.6526 |
| 70/ 9 (C) | -2.5050 |
| 71/ 9 (C) | -2.2842 |
| 72/ 9 (C) | -1.9991 |
| 73/ 9 (C) | -1.6609 |
| 74/ 9 (C) | -1.2841 |
| 75/ 9 (C) | -0.8895 |
| 76/ 9 (C) | -0.5000 |
| 77/ 9 (C) | -0.1383 |
| 78/ 9 (C) | 0.1766 |
| 79/ 9 (C) | 0.4435 |
| 80/ 9 (C) | 0.6617 |
| 81/ 9 (C) | 0.8305 |
| 82/ 9 (C) | 0.9542 |
| 83/ 9 (C) | 1.0364 |
| 84/ 9 (C) | 1.0811 |
| 85/ 9 (C) | 1.0923 |
| 86/ 9 (C) | 1.0737 |
| 87/ 9 (C) | 1.0294 |
| 88/ 9 (C) | 0.9632 |
| 89/ 9 (C) | 0.8790 |
| 90/ 9 (C) | 0.7807 |
| 91/ 9 (C) | 0.6723 |
| 92/ 9 (C) | 0.5576 |
| 93/ 9 (C) | 0.4406 |
| 94/ 9 (C) | 0.3252 |
| 95/ 9 (C) | 0.2151 |
| 96/ 9 (C) | 0.1136 |
| 97/ 9 (C) | 0.0233 |
| 98/ 9 (C) | -0.0536 |
| 99/ 9 (C) | -0.1174 |
| 100/ 9 (C) | -0.1678 |
| 101/ 9 (C) | -0.2048 |





| Nudo/Caso | UZ (mm) |
|---|---|
| 102/ 9 (C) | -0.2295 |
| 103/ 9 (C) | -0.2428 |
| 104/ 9 (C) | -0.2459 |
| 105/ 9 (C) | -0.2399 |
| 106/ 9 (C) | -0.2257 |
| 107/ 9 (C) | -0.2045 |
| 108/ 9 (C) | -0.1773 |
| 109/ 9 (C) | -0.1452 |
| 110/ 9 (C) | -0.1093 |
| 111/ 9 (C) | -0.0707 |
| 112/ 9 (C) | -0.0303 |
| 113/ 9 (C) | -0.0010 |

## Def. exacta casos: 10 (CASO 5)



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## Desplazamientos - (CASO 5)

**- Caso: 10 (CASO 5)**

| Nudo/Caso | | UZ (mm) |
|---|---|---|
| 1/ | 10 (C) | -0.0012 |
| 2/ | 10 (C) | -0.0434 |
| 3/ | 10 (C) | -0.1016 |
| 4/ | 10 (C) | -0.1574 |
| 5/ | 10 (C) | -0.2093 |
| 6/ | 10 (C) | -0.2557 |
| 7/ | 10 (C) | -0.2951 |
| 8/ | 10 (C) | -0.3259 |
| 9/ | 10 (C) | -0.3467 |
| 10/ | 10 (C) | -0.3559 |
| 11/ | 10 (C) | -0.3519 |
| 12/ | 10 (C) | -0.3333 |
| 13/ | 10 (C) | -0.2985 |
| 14/ | 10 (C) | -0.2460 |
| 15/ | 10 (C) | -0.1743 |
| 16/ | 10 (C) | -0.0834 |
| 17/ | 10 (C) | 0.0261 |
| 18/ | 10 (C) | 0.1550 |
| 19/ | 10 (C) | 0.2998 |
| 20/ | 10 (C) | 0.4569 |
| 21/ | 10 (C) | 0.6219 |
| 22/ | 10 (C) | 0.7892 |
| 23/ | 10 (C) | 0.9533 |
| 24/ | 10 (C) | 1.1087 |
| 25/ | 10 (C) | 1.2498 |
| 26/ | 10 (C) | 1.3711 |
| 27/ | 10 (C) | 1.4670 |
| 28/ | 10 (C) | 1.5320 |
| 29/ | 10 (C) | 1.5605 |
| 30/ | 10 (C) | 1.5470 |
| 31/ | 10 (C) | 1.4859 |
| 32/ | 10 (C) | 1.3717 |
| 33/ | 10 (C) | 1.1988 |
| 34/ | 10 (C) | 0.9617 |
| 35/ | 10 (C) | 0.6549 |
| 36/ | 10 (C) | 0.2788 |
| 37/ | 10 (C) | -0.1649 |
| 38/ | 10 (C) | -0.6760 |
| 39/ | 10 (C) | -1.2309 |
| 40/ | 10 (C) | -1.8006 |
| 41/ | 10 (C) | -2.3585 |
| 42/ | 10 (C) | -2.8803 |
| 43/ | 10 (C) | -3.3443 |
| 44/ | 10 (C) | -3.7316 |
| 45/ | 10 (C) | -4.0264 |
| 46/ | 10 (C) | -4.2194 |
| 47/ | 10 (C) | -4.3041 |
| 48/ | 10 (C) | -4.2774 |
| 49/ | 10 (C) | -4.1379 |

| Nudo/Caso | UZ (mm) |
|---|---|
| 50/ 10 (C) | -3.8900 |
| 51/ 10 (C) | -3.5429 |
| 52/ 10 (C) | -3.1085 |
| 53/ 10 (C) | -2.6016 |
| 54/ 10 (C) | -2.0392 |
| 55/ 10 (C) | -1.4457 |
| 56/ 10 (C) | -0.8478 |
| 57/ 10 (C) | -0.2720 |
| 58/ 10 (C) | 0.2604 |
| 59/ 10 (C) | 0.7456 |
| 60/ 10 (C) | 1.1790 |
| 61/ 10 (C) | 1.5560 |
| 62/ 10 (C) | 1.8766 |
| 63/ 10 (C) | 2.1404 |
| 64/ 10 (C) | 2.3478 |
| 65/ 10 (C) | 2.4983 |
| 66/ 10 (C) | 2.5920 |
| 67/ 10 (C) | 2.6287 |
| 68/ 10 (C) | 2.6083 |
| 69/ 10 (C) | 2.5307 |
| 70/ 10 (C) | 2.3960 |
| 71/ 10 (C) | 2.2038 |
| 72/ 10 (C) | 1.9541 |
| 73/ 10 (C) | 1.6469 |
| 74/ 10 (C) | 1.2820 |
| 75/ 10 (C) | 0.8593 |
| 76/ 10 (C) | 0.3836 |
| 77/ 10 (C) | -0.1409 |
| 78/ 10 (C) | -0.7104 |
| 79/ 10 (C) | -1.3026 |
| 80/ 10 (C) | -1.8896 |
| 81/ 10 (C) | -2.4455 |
| 82/ 10 (C) | -2.9496 |
| 83/ 10 (C) | -3.3830 |
| 84/ 10 (C) | -3.7298 |
| 85/ 10 (C) | -3.9769 |
| 86/ 10 (C) | -4.1183 |
| 87/ 10 (C) | -4.1504 |
| 88/ 10 (C) | -4.0732 |
| 89/ 10 (C) | -3.8882 |
| 90/ 10 (C) | -3.6029 |
| 91/ 10 (C) | -3.2292 |
| 92/ 10 (C) | -2.7821 |
| 93/ 10 (C) | -2.2796 |
| 94/ 10 (C) | -1.7415 |
| 95/ 10 (C) | -1.1953 |
| 96/ 10 (C) | -0.6685 |
| 97/ 10 (C) | -0.1883 |
| 98/ 10 (C) | 0.2230 |
| 99/ 10 (C) | 0.5650 |
| 100/ 10 (C) | 0.8363 |
| 101/ 10 (C) | 1.0365 |





| Nudo/Caso | UZ (mm) |
|---|---|
| 102/ 10 (C) | 1.1711 |
| 103/ 10 (C) | 1.2458 |
| 104/ 10 (C) | 1.2663 |
| 105/ 10 (C) | 1.2382 |
| 106/ 10 (C) | 1.1672 |
| 107/ 10 (C) | 1.0589 |
| 108/ 10 (C) | 0.9191 |
| 109/ 10 (C) | 0.7534 |
| 110/ 10 (C) | 0.5674 |
| 111/ 10 (C) | 0.3669 |
| 112/ 10 (C) | 0.1573 |
| 113/ 10 (C) | 0.0054 |

**Esfuerzos bajo la solicitación de los camiones**

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## Esfuerzos: Envolvente

- Casos: 6A10

| Barra/Nudo/Caso | | | FZ (kN) | MY (kNm) |
|---|---|---|---|---|
| 1/ | 1/ | 7 (C) | **944.00>>** | -91.64 |
| 1/ | 1/ | 8 (C) | **-153.30<<** | 44.59 |
| 1/ | 2/ | 7 (C) | 944.00 | **1332.20>>** |
| 1/ | 2/ | 8 (C) | -153.30 | **-186.64<<** |
| 2/ | 2/ | 7 (C) | **949.59>>** | 1332.45 |
| 2/ | 2/ | 8 (C) | **-154.29<<** | -186.76 |
| 2/ | 3/ | 7 (C) | 949.59 | **3326.58>>** |
| 2/ | 3/ | 8 (C) | -154.29 | **-510.77<<** |
| 3/ | 3/ | 7 (C) | **949.59>>** | 3326.33 |
| 3/ | 3/ | 8 (C) | **-154.29<<** | -510.64 |
| 3/ | 4/ | 7 (C) | 489.59 | **4998.46>>** |
| 3/ | 4/ | 8 (C) | -154.29 | **-834.65<<** |
| 4/ | 4/ | 7 (C) | **489.59>>** | 4998.96 |
| 4/ | 4/ | 8 (C) | **-154.29<<** | -834.89 |
| 4/ | 5/ | 7 (C) | 489.59 | **6027.09>>** |
| 4/ | 5/ | 8 (C) | -154.29 | **-1158.90<<** |
| 5/ | 5/ | 7 (C) | **489.59>>** | 6026.84 |
| 5/ | 5/ | 8 (C) | **-154.29<<** | -1158.77 |
| 5/ | 6/ | 7 (C) | 289.59 | **6974.97>>** |
| 5/ | 6/ | 8 (C) | -154.29 | **-1482.78<<** |
| 6/ | 6/ | 7 (C) | **289.59>>** | 6975.22 |
| 5/ | 6/ | 8 (C) | -154.29 | **-1482.78<<** |
| 6/ | 6/ | 7 (C) | **289.59>>** | 6975.22 |
| 6/ | 6/ | 8 (C) | **-154.29<<** | -1482.90 |
| 6/ | 7/ | 7 (C) | 289.59 | **7583.35>>** |
| 6/ | 7/ | 8 (C) | -154.29 | **-1806.90<<** |
| 7/ | 7/ | 7 (C) | **289.59>>** | 7583.35 |
| 7/ | 8/ | 6 (C) | **-207.28<<** | 4436.10 |
| 7/ | 8/ | 7 (C) | 59.59 | **8122.48>>** |
| 7/ | 8/ | 8 (C) | -154.29 | **-2130.91<<** |
| 8/ | 8/ | 10 (C) | **60.03>>** | 829.45 |
| 8/ | 9/ | 6 (C) | **-437.28<<** | 3770.85 |
| 8/ | 8/ | 7 (C) | 59.59 | **8122.73>>** |
| 8/ | 9/ | 8 (C) | -154.29 | **-2455.03<<** |
| 9/ | 9/ | 10 (C) | **60.03>>** | 955.52 |
| 9/ | 9/ | 6 (C) | **-437.28<<** | 3770.85 |
| 9/ | 9/ | 7 (C) | -170.41 | **8017.86>>** |
| 9/ | 10/ | 8 (C) | -154.29 | **-2779.04<<** |
| 10/ | 10/ | 10 (C) | **60.03>>** | 1081.63 |
| 10/ | 11/ | 6 (C) | **-637.28<<** | 1654.32 |
| 10/ | 10/ | 7 (C) | -170.41 | **7660.23>>** |
| 10/ | 11/ | 8 (C) | -154.29 | **-3103.16<<** |
| 11/ | 11/ | 10 (C) | **60.03>>** | 1207.65 |
| 11/ | 11/ | 6 (C) | **-637.28<<** | 1654.29 |
| 11/ | 11/ | 7 (C) | -370.41 | **7022.12>>** |
| 11/ | 12/ | 8 (C) | -154.29 | **-3427.05<<** |
| 12/ | 12/ | 10 (C) | **60.03>>** | 1333.80 |
| 12/ | 13/ | 6 (C) | **-867.28<<** | -1321.21 |
| 12/ | 12/ | 7 (C) | -370.41 | **6244.74>>** |
| 12/ | 13/ | 8 (C) | -154.29 | **-3751.29<<** |
| 13/ | 13/ | 10 (C) | **60.03>>** | 1459.83 |

Fecha : 04/03/02

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| Barra/Nudo/Caso | | | FZ (kN) | MY (kNm) |
|---|---|---|---|---|
| 13/ | 14/ | 6 (C) | **-1097.28<<** | -3602.53 |
| 13/ | 13/ | 7 (C) | -600.41 | **5167.62>>** |
| 13/ | 14/ | 8 (C) | -154.29 | **-4075.18<<** |
| 14/ | 14/ | 10 (C) | **60.03>>** | 1585.94 |
| 14/ | 15/ | 6 (C) | **-1297.28<<** | -5966.79 |
| 14/ | 14/ | 7 (C) | -830.41 | **3446.99>>** |
| 14/ | 15/ | 6 (C) | -1297.28 | **-5966.79<<** |
| 15/ | 15/ | 10 (C) | **59.98>>** | 1712.00 |
| 15/ | 15/ | 6 (C) | **-1293.68<<** | -5966.79 |
| 15/ | 16/ | 10 (C) | 59.98 | **1838.32>>** |
| 15/ | 16/ | 6 (C) | -1293.68 | **-8691.19<<** |
| 16/ | 16/ | 10 (C) | **60.03>>** | 1838.36 |
| 16/ | 16/ | 6 (C) | **-1297.28<<** | -8691.15 |
| 16/ | 17/ | 10 (C) | 60.03 | **1964.43>>** |
| 16/ | 17/ | 6 (C) | -1297.28 | **-11415.45<<** |
| 17/ | 17/ | 6 (C) | **1490.22>>** | -11436.98 |
| 17/ | 17/ | 10 (C) | **-217.64<<** | 2022.51 |
| 17/ | 17/ | 10 (C) | -217.64 | **2022.51>>** |
| 17/ | 17/ | 6 (C) | 1490.22 | **-11436.98<<** |
| 18/ | 18/ | 6 (C) | **1485.91>>** | -8307.40 |
| 18/ | 18/ | 10 (C) | **-216.83<<** | 1565.35 |
| 18/ | 18/ | 10 (C) | -216.83 | **1565.35>>** |
| 18/ | 18/ | 6 (C) | 1485.91 | **-8307.40<<** |
| 19/ | 19/ | 6 (C) | **1490.22>>** | -5178.25 |
| 19/ | 19/ | 10 (C) | **-217.64<<** | 1108.84 |
| 19/ | 20/ | 8 (C) | 692.18 | **1547.15>>** |
| 19/ | 19/ | 6 (C) | 1490.22 | **-5178.25<<** |
| 20/ | 20/ | 6 (C) | **1030.22>>** | -2646.56 |
| 20/ | 20/ | 10 (C) | **-217.64<<** | 651.56 |
| 20/ | 21/ | 8 (C) | 692.18 | **3000.86>>** |
| 20/ | 21/ | 7 (C) | -70.43 | **-3120.50<<** |
| 21/ | 21/ | 6 (C) | **1030.22>>** | -483.18 |
| 21/ | 21/ | 10 (C) | **-217.64<<** | 194.63 |
| 21/ | 22/ | 8 (C) | 492.18 | **4254.39>>** |
| 21/ | 22/ | 7 (C) | -70.43 | **-3268.23<<** |
| 22/ | 22/ | 6 (C) | **830.22>>** | 1480.40 |
| 22/ | 22/ | 10 (C) | **-217.64<<** | -262.53 |
| 22/ | 23/ | 8 (C) | 492.18 | **5288.04>>** |
| 22/ | 23/ | 7 (C) | -70.43 | **-3416.30<<** |
| 23/ | 23/ | 6 (C) | **830.22>>** | 3223.89 |
| 23/ | 23/ | 10 (C) | **-217.64<<** | -719.58 |
| 23/ | 24/ | 8 (C) | 262.18 | **6114.62>>** |
| 23/ | 24/ | 7 (C) | -70.43 | **-3564.20<<** |
| 24/ | 24/ | 6 (C) | **600.22>>** | 4760.47 |
| 24/ | 24/ | 10 (C) | **-217.64<<** | -1176.74 |
| 24/ | 25/ | 8 (C) | 32.18 | **6297.26>>** |
| 24/ | 25/ | 7 (C) | -70.43 | **-3712.28<<** |
| 25/ | 25/ | 6 (C) | **370.22>>** | 5652.95 |
| 25/ | 25/ | 10 (C) | **-217.64<<** | -1633.79 |
| 25/ | 26/ | 6 (C) | 370.22 | **6430.43>>** |
| 25/ | 26/ | 7 (C) | -70.43 | **-3860.18<<** |
| 26/ | 26/ | 6 (C) | **370.22>>** | 6430.53 |





| Barra/Nudo/Caso | | | FZ (kN) | MY (kNm) |
|---|---|---|---|---|
| 26/ | 26/ | 10 (C) | **-217.64<<** | -2090.95 |
| 26/ | 27/ | 6 (C) | 170.22 | **6808.00>>** |
| 26/ | 27/ | 7 (C) | -70.43 | **-4008.25<<** |
| 27/ | 27/ | 6 (C) | **170.22>>** | 6807.90 |
| 27/ | 27/ | 10 (C) | **-217.64<<** | -2547.89 |
| 27/ | 28/ | 6 (C) | 170.22 | **7165.37>>** |
| 27/ | 28/ | 7 (C) | -70.43 | **-4155.98<<** |
| 28/ | 28/ | 6 (C) | **170.22>>** | 7165.57 |
| 28/ | 29/ | 8 (C) | **-627.82<<** | 4775.67 |
| 28/ | 28/ | 6 (C) | 170.22 | **7165.57>>** |
| 28/ | 29/ | 7 (C) | -70.43 | **-4304.23<<** |
| 29/ | 29/ | 7 (C) | **-70.43>>** | -4304.05 |
| 29/ | 29/ | 8 (C) | **-627.82<<** | 4775.61 |
| 29/ | 29/ | 6 (C) | -289.78 | **6970.94>>** |
| 29/ | 30/ | 7 (C) | -70.43 | **-4451.95<<** |
| 30/ | 30/ | 7 (C) | **-70.43>>** | -4452.13 |
| 30/ | 31/ | 8 (C) | **-827.82<<** | 1958.79 |
| 30/ | 30/ | 6 (C) | -289.78 | **6362.50>>** |
| 30/ | 31/ | 7 (C) | -70.43 | **-4600.03<<** |
| 31/ | 31/ | 7 (C) | **-70.43>>** | -4600.03 |
| 31/ | 31/ | 8 (C) | **-827.82<<** | 1958.79 |
| 31/ | 31/ | 6 (C) | -489.78 | **5573.96>>** |
| 31/ | 32/ | 10 (C) | -217.64 | **-4833.37<<** |
| 32/ | 32/ | 7 (C) | **-70.43>>** | -4748.10 |
| 32/ | 33/ | 8 (C) | **-1057.82<<** | -1702.05 |
| 32/ | 32/ | 6 (C) | -489.78 | **4545.51>>** |
| 32/ | 33/ | 10 (C) | -217.64 | **-5290.53<<** |
| 33/ | 33/ | 7 (C) | **-70.43>>** | -4896.00 |
| 33/ | 34/ | 8 (C) | **-1287.82<<** | -4268.52 |
| 33/ | 33/ | 6 (C) | -719.78 | **3332.96>>** |
| 33/ | 34/ | 10 (C) | -217.64 | **-5747.59<<** |
| 34/ | 34/ | 7 (C) | **-70.43>>** | -5043.90 |
| 34/ | 34/ | 8 (C) | **-1287.82<<** | -4268.52 |
| 34/ | 34/ | 6 (C) | -949.78 | **1476.39>>** |
| 34/ | 35/ | 8 (C) | -1287.82 | **-6972.98<<** |
| 35/ | 35/ | 7 (C) | **-70.59>>** | -5191.98 |
| 35/ | 36/ | 8 (C) | **-1483.54<<** | -10057.34 |
| 35/ | 35/ | 6 (C) | -946.99 | **-518.07>>** |
| 35/ | 36/ | 8 (C) | -1483.54 | **-10057.34<<** |
| 36/ | 36/ | 7 (C) | **-70.43>>** | -5340.64 |
| 36/ | 36/ | 8 (C) | **-1487.82<<** | -10057.34 |
| 36/ | 36/ | 6 (C) | -1149.78 | **-2892.53>>** |
| 36/ | 37/ | 8 (C) | -1487.82 | **-13180.33<<** |
| 37/ | 37/ | 8 (C) | **1545.47>>** | -13182.89 |
| 37/ | 37/ | 6 (C) | **157.99<<** | -5237.30 |
| 37/ | 38/ | 9 (C) | 1160.78 | **-2677.91>>** |
| 37/ | 37/ | 8 (C) | 1545.47 | **-13182.89<<** |
| 38/ | 38/ | 8 (C) | **1541.07>>** | -9937.34 |
| 38/ | 38/ | 6 (C) | **157.63<<** | -4905.53 |
| 38/ | 39/ | 7 (C) | 1313.33 | **-92.68>>** |
| 38/ | 38/ | 8 (C) | 1541.07 | **-9937.34<<** |
| 39/ | 39/ | 8 (C) | **1545.47>>** | -6691.88 |

| Barra/Nudo/Caso | FZ (kN) | MY (kNm) |
|---|---|---|
| 39/ 39/ 6 (C) | **157.99<<** | -4573.56 |
| 39/ 40/ 7 (C) | 857.26 | **2075.60>>** |
| 39/ 39/ 8 (C) | 1545.47 | **-6691.88<<** |
| 40/ 40/ 8 (C) | **1085.47>>** | -4044.28 |
| 40/ 40/ 6 (C) | **157.99<<** | -4241.87 |
| 40/ 41/ 7 (C) | 857.26 | **3876.09>>** |
| 40/ 40/ 6 (C) | 157.99 | **-4241.87<<** |
| 41/ 41/ 8 (C) | **1085.47>>** | -1764.75 |
| 41/ 41/ 6 (C) | **157.99<<** | -3910.10 |
| 41/ 42/ 7 (C) | 657.26 | **5476.36>>** |
| 41/ 41/ 6 (C) | 157.99 | **-3910.10<<** |
| 42/ 42/ 8 (C) | **885.47>>** | 314.78 |
| 42/ 42/ 6 (C) | **157.99<<** | -3578.32 |
| 42/ 43/ 7 (C) | 657.26 | **6856.64>>** |
| 42/ 42/ 6 (C) | 157.99 | **-3578.32<<** |
| 43/ 43/ 8 (C) | **885.47>>** | 2174.37 |
| 43/ 43/ 6 (C) | **157.99<<** | -3246.63 |
| 43/ 44/ 7 (C) | 427.26 | **8030.10>>** |
| 43/ 43/ 6 (C) | 157.99 | **-3246.63<<** |
| 44/ 44/ 8 (C) | **655.47>>** | 3826.89 |
| 44/ 45/ 9 (C) | **40.78<<** | 6439.68 |
| 44/ 45/ 7 (C) | 197.26 | **8559.35>>** |
| 44/ 44/ 6 (C) | 157.99 | **-2914.85<<** |
| 45/ 45/ 8 (C) | **425.47>>** | 4835.46 |
| 45/ 45/ 9 (C) | **40.78<<** | 6439.75 |
| 45/ 46/ 10 (C) | 282.80 | **8981.96>>** |
| 45/ 45/ 6 (C) | 157.99 | **-2583.16<<** |
| 46/ 46/ 8 (C) | **425.47>>** | 5728.96 |
| 46/ 47/ 9 (C) | **-159.22<<** | 6211.00 |
| 46/ 47/ 10 (C) | 82.80 | **9175.85>>** |
| 46/ 46/ 6 (C) | 157.99 | **-2251.38<<** |
| 47/ 47/ 8 (C) | **225.47>>** | 6222.46 |
| 47/ 47/ 9 (C) | **-159.22<<** | 6211.00 |
| 47/ 48/ 10 (C) | 82.80 | **9349.74>>** |
| 47/ 47/ 6 (C) | 157.99 | **-1919.60<<** |
| 48/ 48/ 8 (C) | **225.47>>** | 6695.95 |
| 48/ 49/ 9 (C) | **-619.22<<** | 4990.21 |
| 48/ 48/ 10 (C) | 82.80 | **9349.74>>** |
| 48/ 48/ 6 (C) | 157.99 | **-1587.82<<** |
| 49/ 49/ 6 (C) | **157.99>>** | -1256.12 |
| 49/ 49/ 9 (C) | **-619.22<<** | 4990.27 |
| 49/ 49/ 10 (C) | -377.20 | **8971.79>>** |
| 49/ 49/ 6 (C) | 157.99 | **-1256.12<<** |
| 50/ 50/ 6 (C) | **157.99>>** | -924.43 |
| 50/ 51/ 9 (C) | **-819.22<<** | 2209.48 |
| 50/ 50/ 10 (C) | -377.20 | **8179.84>>** |
| 50/ 50/ 6 (C) | 157.99 | **-924.43<<** |
| 51/ 51/ 6 (C) | **157.99>>** | -592.65 |
| 51/ 51/ 9 (C) | **-819.22<<** | 2209.48 |
| 51/ 51/ 10 (C) | -577.20 | **7207.67>>** |
| 51/ 51/ 6 (C) | 157.99 | **-592.65<<** |
| 52/ 52/ 6 (C) | **157.99>>** | -260.87 |





| Barra/Nudo/Caso | FZ (kN) | MY (kNm) |
|---|---|---|
| 52/ 53/ 9 (C) | **-1049.22<<** | -1414.37 |
| 52/ 52/ 10 (C) | -577.20 | **5995.50>>** |
| 52/ 53/ 9 (C) | -1049.22 | **-1414.37<<** |
| 53/ 53/ 6 (C) | **157.99>>** | 70.76 |
| 53/ 54/ 9 (C) | **-1279.22<<** | -3962.85 |
| 53/ 53/ 10 (C) | -807.20 | **4600.12>>** |
| 53/ 54/ 9 (C) | -1279.22 | **-3962.85<<** |
| 54/ 54/ 6 (C) | **157.99>>** | 402.46 |
| 54/ 54/ 9 (C) | **-1279.22<<** | -3962.79 |
| 54/ 54/ 10 (C) | -1037.20 | **2560.11>>** |
| 54/ 55/ 9 (C) | -1279.22 | **-6649.28<<** |
| 55/ 55/ 6 (C) | **157.45>>** | 734.24 |
| 55/ 56/ 9 (C) | **-1474.99<<** | -9715.76 |
| 55/ 56/ 6 (C) | 157.45 | **1065.84>>** |
| 55/ 56/ 9 (C) | -1474.99 | **-9715.76<<** |
| 56/ 56/ 6 (C) | **157.99>>** | 1065.76 |
| 56/ 56/ 9 (C) | **-1479.22<<** | -9715.69 |
| 56/ 57/ 6 (C) | 157.99 | **1397.54>>** |
| 56/ 57/ 9 (C) | -1479.22 | **-12822.22<<** |
| 57/ 57/ 9 (C) | **1528.63>>** | -12822.48 |
| 57/ 57/ 6 (C) | **-41.02<<** | 1358.37 |
| 57/ 57/ 6 (C) | -41.02 | **1358.37>>** |
| 57/ 57/ 9 (C) | 1528.63 | **-12822.48<<** |
| 58/ 58/ 9 (C) | **1524.25>>** | -9612.21 |
| 58/ 58/ 6 (C) | **-40.93<<** | 1272.22 |
| 58/ 58/ 6 (C) | -40.93 | **1272.22>>** |
| 58/ 58/ 9 (C) | 1524.25 | **-9612.21<<** |
| 59/ 59/ 9 (C) | **1528.63>>** | -6402.01 |
| 59/ 59/ 6 (C) | **-41.02<<** | 1186.05 |
| 59/ 59/ 6 (C) | -41.02 | **1186.05>>** |
| 59/ 59/ 9 (C) | 1528.63 | **-6402.01<<** |
| 60/ 60/ 9 (C) | **1068.63>>** | -3789.77 |
| 60/ 60/ 6 (C) | **-41.02<<** | 1099.91 |
| 60/ 60/ 6 (C) | -41.02 | **1099.91>>** |
| 60/ 60/ 7 (C) | 199.74 | **-5387.42<<** |
| 61/ 61/ 9 (C) | **1068.63>>** | -1545.46 |
| 61/ 61/ 6 (C) | **-41.02<<** | 1013.78 |
| 61/ 61/ 6 (C) | -41.02 | **1013.78>>** |
| 61/ 61/ 7 (C) | 199.74 | **-4968.05<<** |
| 62/ 62/ 9 (C) | **868.63>>** | 498.76 |
| 62/ 62/ 6 (C) | **-41.02<<** | 927.63 |
| 62/ 63/ 9 (C) | 868.63 | **2322.12>>** |
| 62/ 63/ 10 (C) | -3.80 | **-4670.00<<** |
| 63/ 63/ 9 (C) | **868.63>>** | 2322.12 |
| 63/ 63/ 6 (C) | **-41.02<<** | 841.53 |
| 63/ 64/ 9 (C) | 638.63 | **3939.31>>** |
| 63/ 64/ 10 (C) | -3.80 | **-4677.98<<** |
| 64/ 64/ 9 (C) | **638.63>>** | 3939.38 |
| 64/ 64/ 6 (C) | **-41.02<<** | 755.40 |
| 64/ 65/ 9 (C) | 408.63 | **4912.55>>** |
| 64/ 65/ 10 (C) | -3.80 | **-4686.17<<** |
| 65/ 65/ 9 (C) | **408.63>>** | 4912.55 |

| Barra/Nudo/Caso | | | FZ (kN) | MY (kNm) |
|---|---|---|---|---|
| 65/ | 65/ | 6 (C) | **-41.02<<** | 669.26 |
| 65/ | 66/ | 9 (C) | 408.63 | **5770.72>>** |
| 65/ | 66/ | 10 (C) | -3.80 | **-4694.15<<** |
| 66/ | 66/ | 9 (C) | **408.63>>** | 5770.72 |
| 66/ | 66/ | 6 (C) | **-41.02<<** | 583.11 |
| 66/ | 67/ | 9 (C) | 208.63 | **6228.86>>** |
| 66/ | 67/ | 10 (C) | -3.80 | **-4702.14<<** |
| 67/ | 67/ | 9 (C) | **208.63>>** | 6228.93 |
| 67/ | 67/ | 6 (C) | **-41.02<<** | 496.98 |
| 67/ | 68/ | 9 (C) | 208.63 | **6667.08>>** |
| 67/ | 68/ | 10 (C) | -3.80 | **-4710.33<<** |
| 68/ | 68/ | 9 (C) | **208.63>>** | 6667.08 |
| 68/ | 69/ | 9 (C) | **-251.37<<** | 6553.15 |
| 68/ | 68/ | 9 (C) | 208.63 | **6667.08>>** |
| 68/ | 69/ | 10 (C) | -3.80 | **-4718.31<<** |
| 69/ | 69/ | 7 (C) | **199.74>>** | -1612.61 |
| 69/ | 69/ | 9 (C) | **-251.37<<** | 6553.15 |
| 69/ | 69/ | 9 (C) | -251.37 | **6553.15>>** |
| 69/ | 70/ | 10 (C) | -3.80 | **-4726.29<<** |
| 70/ | 70/ | 7 (C) | **199.74>>** | -1193.44 |
| 70/ | 71/ | 9 (C) | **-451.37<<** | 5317.59 |
| 70/ | 70/ | 9 (C) | -251.37 | **6025.55>>** |
| 70/ | 71/ | 10 (C) | -3.80 | **-4734.48<<** |
| 71/ | 71/ | 7 (C) | **199.74>>** | -773.95 |
| 71/ | 71/ | 9 (C) | **-451.37<<** | 5317.59 |
| 71/ | 71/ | 9 (C) | -451.37 | **5317.59>>** |
| 71/ | 72/ | 10 (C) | -3.80 | **-4742.47<<** |
| 72/ | 72/ | 7 (C) | **199.74>>** | -354.57 |
| 72/ | 73/ | 9 (C) | **-681.37<<** | 3237.70 |
| 72/ | 72/ | 9 (C) | -451.37 | **4369.70>>** |
| 72/ | 73/ | 10 (C) | -3.80 | **-4750.66<<** |
| 73/ | 73/ | 7 (C) | **199.74>>** | 64.92 |
| 73/ | 74/ | 9 (C) | **-911.37<<** | 1461.65 |
| 73/ | 73/ | 9 (C) | -681.37 | **3237.70>>** |
| 73/ | 74/ | 10 (C) | -3.80 | **-4758.64<<** |
| 74/ | 74/ | 7 (C) | **199.74>>** | 484.41 |
| 74/ | 74/ | 9 (C) | **-911.37<<** | 1461.65 |
| 74/ | 74/ | 9 (C) | -911.37 | **1461.65>>** |
| 74/ | 75/ | 10 (C) | -3.80 | **-4766.62<<** |
| 75/ | 75/ | 7 (C) | **199.09>>** | 903.79 |
| 75/ | 76/ | 9 (C) | **-1108.17<<** | -2745.28 |
| 75/ | 76/ | 7 (C) | 199.09 | **1322.89>>** |
| 75/ | 76/ | 10 (C) | -4.02 | **-4775.29<<** |
| 76/ | 76/ | 7 (C) | **199.74>>** | 1322.89 |
| 76/ | 76/ | 9 (C) | **-1111.37<<** | -2745.28 |
| 76/ | 77/ | 7 (C) | 199.74 | **1742.38>>** |
| 76/ | 77/ | 9 (C) | -1111.37 | **-5079.37<<** |
| 77/ | 77/ | 10 (C) | **1285.36>>** | -4932.06 |
| 77/ | 77/ | 7 (C) | **-51.87<<** | 1694.21 |
| 77/ | 77/ | 7 (C) | -51.87 | **1694.21>>** |
| 77/ | 77/ | 9 (C) | 153.27 | **-5021.47<<** |
| 78/ | 78/ | 10 (C) | **1281.40>>** | -2232.55 |





| Barra/Nudo/Caso | | | FZ (kN) | MY (kNm) |
|---|---|---|---|---|
| 78/ | 78/ | 7 (C) | **-51.78<<** | 1585.28 |
| 78/ | 78/ | 7 (C) | -51.78 | **1585.28>>** |
| 78/ | 78/ | 9 (C) | 152.96 | **-4699.59<<** |
| 79/ | 79/ | 10 (C) | **1285.36>>** | 466.25 |
| 79/ | 79/ | 7 (C) | **-51.87<<** | 1476.23 |
| 79/ | 80/ | 10 (C) | 825.36 | **2567.67>>** |
| 79/ | 79/ | 9 (C) | 153.27 | **-4377.43<<** |
| 80/ | 80/ | 10 (C) | **825.36>>** | 2567.67 |
| 80/ | 80/ | 7 (C) | **-51.87<<** | 1367.29 |
| 80/ | 81/ | 10 (C) | 825.36 | **4300.26>>** |
| 80/ | 80/ | 9 (C) | 153.27 | **-4055.55<<** |
| 81/ | 81/ | 10 (C) | **825.36>>** | 4300.45 |
| 81/ | 81/ | 7 (C) | **-51.87<<** | 1258.44 |
| 81/ | 82/ | 10 (C) | 625.36 | **5833.83>>** |
| 81/ | 81/ | 9 (C) | 153.27 | **-3733.90<<** |
| 82/ | 82/ | 10 (C) | **625.36>>** | 5834.02 |
| 82/ | 82/ | 7 (C) | **-51.87<<** | 1149.52 |
| 82/ | 83/ | 10 (C) | 625.36 | **7147.41>>** |
| 82/ | 82/ | 9 (C) | 153.27 | **-3412.09<<** |
| 83/ | 83/ | 10 (C) | **625.36>>** | 7147.22 |
| 83/ | 83/ | 7 (C) | **-51.87<<** | 1040.57 |
| 83/ | 84/ | 10 (C) | 395.36 | **8253.55>>** |
| 83/ | 83/ | 9 (C) | 153.27 | **-3090.12<<** |
| 84/ | 84/ | 10 (C) | **395.36>>** | 8253.93 |
| 84/ | 84/ | 7 (C) | **-51.87<<** | 931.68 |
| 84/ | 85/ | 10 (C) | 165.36 | **8716.06>>** |
| 84/ | 84/ | 9 (C) | 153.27 | **-2768.40<<** |
| 85/ | 85/ | 10 (C) | **165.36>>** | 8715.86 |
| 85/ | 85/ | 7 (C) | **-51.87<<** | 822.77 |
| 85/ | 86/ | 10 (C) | 165.36 | **9063.15>>** |
| 85/ | 85/ | 9 (C) | 153.27 | **-2446.57<<** |
| 86/ | 86/ | 10 (C) | **165.36>>** | 9063.34 |
| 86/ | 86/ | 7 (C) | **-51.87<<** | 713.86 |
| 86/ | 86/ | 10 (C) | 165.36 | **9063.34>>** |
| 86/ | 86/ | 9 (C) | 153.27 | **-2124.76<<** |
| 87/ | 87/ | 9 (C) | **153.27>>** | -1802.87 |
| 87/ | 87/ | 7 (C) | **-51.87<<** | 604.93 |
| 87/ | 87/ | 10 (C) | -34.64 | **9010.57>>** |
| 87/ | 87/ | 9 (C) | 153.27 | **-1802.87<<** |
| 88/ | 88/ | 9 (C) | **153.27>>** | -1481.06 |
| 88/ | 89/ | 10 (C) | **-494.64<<** | 8313.12 |
| 88/ | 88/ | 10 (C) | -34.64 | **8938.00>>** |
| 88/ | 88/ | 9 (C) | 153.27 | **-1481.06<<** |
| 89/ | 89/ | 9 (C) | **153.27>>** | -1159.16 |
| 89/ | 89/ | 10 (C) | **-494.64<<** | 8313.12 |
| 89/ | 89/ | 10 (C) | -494.64 | **8313.12>>** |
| 89/ | 89/ | 9 (C) | 153.27 | **-1159.16<<** |
| 90/ | 90/ | 9 (C) | **153.27>>** | -837.42 |
| 90/ | 91/ | 10 (C) | **-694.64<<** | 6055.80 |
| 90/ | 90/ | 10 (C) | -494.64 | **7274.73>>** |
| 90/ | 90/ | 9 (C) | 153.27 | **-837.42<<** |
| 91/ | 91/ | 9 (C) | **153.27>>** | -515.60 |

| Barra/Nudo/Caso | FZ (kN) | MY (kNm) |
|---|---|---|
| 91/ 91/ 10 (C) | **-694.64<<** | 6055.98 |
| 91/ 91/ 10 (C) | -694.64 | **6055.98>>** |
| 91/ 91/ 9 (C) | 153.27 | **-515.60<<** |
| 92/ 92/ 9 (C) | **153.27>>** | -193.70 |
| 92/ 93/ 10 (C) | **-924.64<<** | 2954.96 |
| 92/ 92/ 10 (C) | -694.64 | **4597.04>>** |
| 92/ 92/ 9 (C) | 153.27 | **-193.70<<** |
| 93/ 93/ 9 (C) | **153.27>>** | 128.04 |
| 93/ 94/ 10 (C) | **-1154.64<<** | 667.88 |
| 93/ 93/ 10 (C) | -924.64 | **2954.96>>** |
| 93/ 94/ 7 (C) | -51.87 | **-157.48<<** |
| 94/ 94/ 9 (C) | **153.27>>** | 449.86 |
| 94/ 94/ 10 (C) | **-1154.64<<** | 668.07 |
| 94/ 95/ 9 (C) | 153.27 | **771.76>>** |
| 94/ 95/ 10 (C) | -1154.64 | **-1757.02<<** |
| 95/ 95/ 9 (C) | **152.71>>** | 771.76 |
| 95/ 96/ 10 (C) | **-1350.50<<** | -4561.60 |
| 95/ 96/ 9 (C) | 152.71 | **1093.40>>** |
| 95/ 96/ 10 (C) | -1350.50 | **-4561.60<<** |
| 96/ 96/ 9 (C) | **153.27>>** | 1093.32 |
| 96/ 96/ 10 (C) | **-1354.64<<** | -4561.41 |
| 96/ 97/ 9 (C) | 153.27 | **1415.07>>** |
| 96/ 97/ 10 (C) | -1354.64 | **-7405.23<<** |
| 97/ 97/ 10 (C) | **222.27>>** | -7269.65 |
| 97/ 97/ 9 (C) | **-41.93<<** | 1372.20 |
| 97/ 97/ 9 (C) | -41.93 | **1372.20>>** |
| 97/ 97/ 10 (C) | 222.27 | **-7269.65<<** |
| 98/ 98/ 10 (C) | **221.88>>** | -6802.81 |
| 98/ 98/ 9 (C) | **-41.88<<** | 1284.13 |
| 98/ 98/ 9 (C) | -41.88 | **1284.13>>** |
| 98/ 98/ 10 (C) | 221.88 | **-6802.81<<** |
| 99/ 99/ 10 (C) | **222.27>>** | -6335.66 |
| 99/ 99/ 9 (C) | **-41.93<<** | 1195.94 |
| 99/ 99/ 9 (C) | -41.93 | **1195.94>>** |
| 99/ 99/ 10 (C) | 222.27 | **-6335.66<<** |
| 100/ 100/ 10 (C) | **222.27>>** | -5869.03 |
| 100/ 100/ 9 (C) | **-41.93<<** | 1107.92 |
| 100/ 100/ 9 (C) | -41.93 | **1107.92>>** |
| 100/ 100/ 10 (C) | 222.27 | **-5869.03<<** |
| 101/ 101/ 10 (C) | **222.27>>** | -5402.18 |
| 101/ 101/ 9 (C) | **-41.93<<** | 1019.85 |
| 101/ 101/ 9 (C) | -41.93 | **1019.85>>** |
| 101/ 101/ 10 (C) | 222.27 | **-5402.18<<** |
| 102/ 102/ 10 (C) | **222.27>>** | -4935.51 |
| 102/ 102/ 9 (C) | **-41.93<<** | 931.81 |
| 102/ 102/ 9 (C) | -41.93 | **931.81>>** |
| 102/ 102/ 10 (C) | 222.27 | **-4935.51<<** |
| 103/ 103/ 10 (C) | **222.27>>** | -4468.88 |
| 103/ 103/ 9 (C) | **-41.93<<** | 843.78 |
| 103/ 103/ 9 (C) | -41.93 | **843.78>>** |
| 103/ 103/ 10 (C) | 222.27 | **-4468.88<<** |
| 104/ 104/ 10 (C) | **222.27>>** | -4002.20 |





| Barra/Nudo/Caso | FZ (kN) | MY (kNm) |
|---|---|---|
| 104/ 104/ 9 (C) | **-41.93<<** | 755.74 |
| 104/ 104/ 9 (C) | -41.93 | **755.74>>** |
| 104/ 104/ 10 (C) | 222.27 | **-4002.20<<** |
| 105/ 105/ 10 (C) | **222.27>>** | -3535.35 |
| 105/ 105/ 9 (C) | **-41.93<<** | 667.67 |
| 105/ 105/ 9 (C) | -41.93 | **667.67>>** |
| 105/ 105/ 10 (C) | 222.27 | **-3535.35<<** |
| 106/ 106/ 10 (C) | **222.27>>** | -3068.71 |
| 106/ 106/ 9 (C) | **-41.93<<** | 579.64 |
| 106/ 106/ 9 (C) | -41.93 | **579.64>>** |
| 106/ 106/ 10 (C) | 222.27 | **-3068.71<<** |
| 107/ 107/ 10 (C) | **222.27>>** | -2602.03 |
| 107/ 107/ 9 (C) | **-41.93<<** | 491.60 |
| 107/ 107/ 9 (C) | -41.93 | **491.60>>** |
| 107/ 107/ 10 (C) | 222.27 | **-2602.03<<** |
| 108/ 108/ 10 (C) | **222.27>>** | -2135.17 |
| 108/ 108/ 9 (C) | **-41.93<<** | 403.53 |
| 108/ 108/ 9 (C) | -41.93 | **403.53>>** |
| 108/ 108/ 10 (C) | 222.27 | **-2135.17<<** |
| 109/ 109/ 10 (C) | **222.27>>** | -1668.53 |
| 109/ 109/ 9 (C) | **-41.93<<** | 315.49 |
| 109/ 109/ 9 (C) | -41.93 | **315.49>>** |
| 109/ 109/ 10 (C) | 222.27 | **-1668.53<<** |
| 110/ 110/ 10 (C) | **222.27>>** | -1201.84 |
| 110/ 110/ 9 (C) | **-41.93<<** | 227.45 |
| 110/ 110/ 9 (C) | -41.93 | **227.45>>** |
| 110/ 110/ 10 (C) | 222.27 | **-1201.84<<** |
| 111/ 111/ 10 (C) | **222.27>>** | -735.19 |
| 111/ 111/ 9 (C) | **-41.93<<** | 139.42 |
| 111/ 111/ 9 (C) | -41.93 | **139.42>>** |
| 111/ 111/ 10 (C) | 222.27 | **-735.19<<** |
| 112/ 112/ 10 (C) | **220.74>>** | -268.50 |
| 112/ 112/ 9 (C) | **-41.60<<** | 51.38 |
| 112/ 113/ 10 (C) | 220.74 | **64.51>>** |
| 112/ 112/ 10 (C) | 220.74 | **-268.50<<** |

## 7.9. PROGRAMAS DE CÁLCULO UTILIZADOS

## Programa de fuerzas equivalentes de pretensado

El siguiente programa tiene por objeto determinar las cargas equivalentes de pretensado que un tendón produce en una estructura espacial.

Se discretiza cada tendón en una poligonal de n segmentos cuyos n+1 vértices se relacionan con n+1 nudos diferentes de la estructura. Se considera que los vértices del tendón se hallan siempre en la vertical del centro de gravedad de su sección asociada de la estructura.

El programa considera las pérdidas de pretensado por rozamiento y las pérdidas por penetración de cuñas según las fórmulas:

$$Proz(x) = P_0 \, e^{-(\mu \Sigma \alpha + k x)}$$

donde

Proz(x) = Fuerza de pretensado a la distancia x del anclaje
$P_0$ = Fuerza de pretensado en anclaje
$\Sigma \alpha$ = Suma de la desviación angular total a la distancia x del anclaje

$$\Delta Pcu = a \, E_p \, A_p / L$$

donde

Pcu(x) = Fuerza de pretensado a la distancia x del anclaje una vez deducidas las pérdidas por rozamiento y por penetración de cuñas
a = penetración de cuñas
$E_p$ = módulo de elasticidad de la armadura activa
$A_p$ = sección de la armadura activa
L = longitud afectada por la penetración de cuñas.

Las pérdidas por acortamiento elástico y las pérdidas diferidas se consideran como un coeficiente global afectando a la fuerza de pretensado del tendón.

Al estar el tendón discretizado como una poligonal, las variaciones angulares se acumulan en los vértices. Así en cada vértice aparecen dos fuerzas P1 y P2, correspondientes a la fuerza de pretensado antes y después del vértice.

Las vectores ( Fx, Fy, Fz, Mx, My ) son las fuerzas equivalentes de pretensado aplicadas a los nudos asociados de la estructura; comprobándose en todos los casos que dichas fuerzas constituyen un sistema autoequilibrado para la totalidad del tendón.

El programa considera la posibilidad de tesar por un extremo, por el otro o tesar por uno y retesar por el otro.

## Diagrama de interacción N - M en secciones de hormigón armado y pretensado . ("esfulta")

El siguiente programa tiene por objeto determinar el diagrama de interacción axil - flector de secciones de hormigón armado y pretensado sometidas a solicitaciones normales siguiendo los dominios de deformación de la EHE.

La sección transversal se discretiza en "n" trapecios de hormigón. Como diagrama tensión – deformación se adopta en el cálculo el diagrama parábola – rectángulo.

El acero pasivo se introduce en capas, definiéndose sus áreas y sus profundidades respectivas a partir de la fibra superior. Como diagrama tensión – deformación se usa el diagrama bilineal de la norma.

El acero activo se introduce en varias capas, análogamente al pasivo. El programa calcula internamente las deformaciones de neutralización del acero activo

El programa calcula los diferentes planos de rotura variando la fibra neutra y apoyándose en el pivote correspondiente de los diferentes planos de dominios de deformación de la norma.

## Diagrama Momento - Curvatura en seciones de hormigón armado y pretensado . ("momcur")

El siguiente programa tiene por objeto determinar el diagrama momento curvatura de secciones de hormigón armado y pretensado sometidas a un axil dado.

La sección transversal se discretiza en n trapecios de hormigón. Como diagrama tensión – deformación se adopta en el cálculo el diagrama definido en el capítulo 21.3.3 de la EHE.

El acero pasivo se introduce en capas, definiéndose sus áreas y sus profundidades respectivas a partir de la fibra superior. Como diagrama tensión – deformación se usa el diagrama bilineal de la norma.

El acero activo se introduce en varias capas, análogamente al pasivo. El programa calcula internamente las deformaciones de neutralización del acero activo

El programa calcula el diagrama momento - curvatura imponiendo distintas curvaturas crecientes en la sección hasta alcanzar las deformaciones últimas permitidas y calculando para cada curvatura el momento flector resultante, verificándose siempre que el axil resultante es igual al axil exterior dado.

## Verificación de fustes ("pila")

Se lleva a cabo mediante el análisis, en teoría de segundo orden, de los esfuerzos y deformaciones de la pila del puente sometida a flexocompresión esviada. Tanto las dimensiones de la sección como las armaduras y los esfuerzos de primer orden pueden ser variables a lo largo de la altura de la pila. El análisis es no lineal, tanto en geometría como en cuanto a comportamiento del material.

El proceso está preparado para analizar el caso más simple de pila en ménsula, equivalente a una pieza biarticulada de longitud doble.

La base del método es un algoritmo para el análisis de una pila alta de hormigón armado de sección y armaduras variables, sometida a una solicitación normal general (flexocompresión esviada) también variable a lo largo de la altura de la pila.

El cálculo se realiza aplicando el Método General, también llamado de las diferencias finitas, en el que se efectúan recorridos sucesivos de las distintas secciones de la pieza. En cada sección, en función de las flechas estimadas o conocidas del recorrido anterior, se obtienen los momentos de segundo orden, que se suman a los de primero para obtener los momentos totales. A partir de estos momentos y del axil se efectúa un cálculo de sección, obteniendo las deformaciones de sus fibras y por consiguientes las curvaturas. Estas curvaturas, integradas a lo largo de la pieza, permiten obtener una nueva ley de flechas y el proceso se repite hasta que se alcanza la convergencia.

Se verifican 10 secciones a lo largo de toda la pila, con comprobación de agotamiento, inestabilidad de la pila y análisis del equilibrio o convergencia.

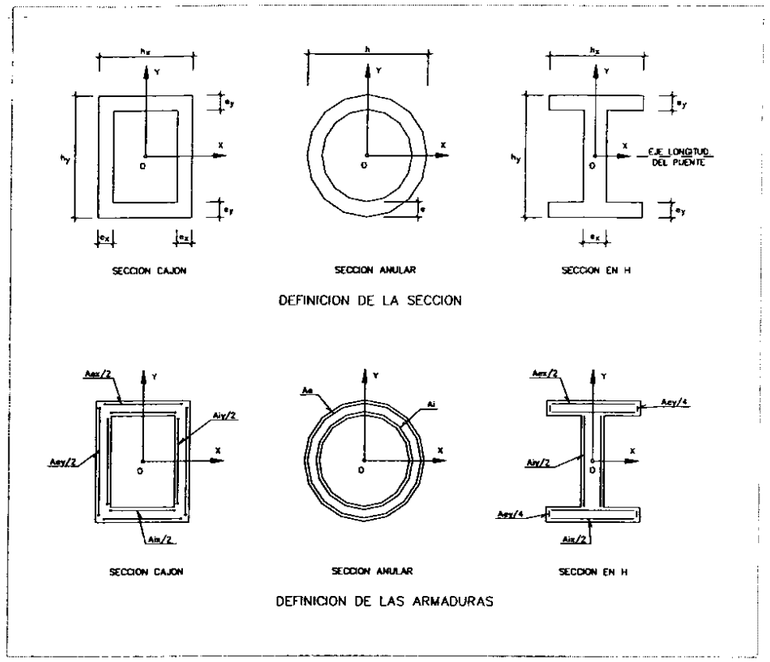
El proceso proporciona un listado de salida con los siguientes datos:

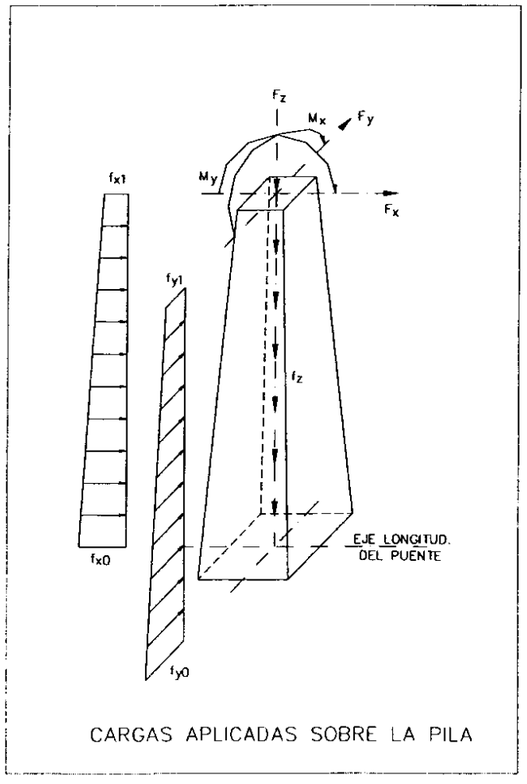
- flecha. x = flecha en la sección considerada, en dirección longitudinal.
- flecha. y = flecha en la sección considerada, en dirección transversal.
- Mom. x = momento actuante total usado como dato para el ajuste de la sección, girando alrededor del eje longitudinal del puente.
- Mom. y = idem girando alrededor de un eje transversal al puente.
- Axil = esfuerzo axil actuante en la sección, incluyendo peso propio.
- curv. x = curvatura corregida en la sección (después del cálculo semidirecto), girando alrededor del eje longitudinal del puente.
- curv. y = idem girando alrededor de un eje transversal al puente.

Se dan los valores de la última iteración, que indica la situación final de la pila para la hipótesis considerada.

El programa esta preparado para analizar pilas de sección circular, rectangular (ambas huecas o macizas) o en "H", permitiendo la variación de sus dimensiones a lo largo de la altura. De igual forma, puede variarse la armadura desde la base hasta la cabeza de la pila.

En los siguientes esquemas se muestra la forma de definir las secciones y su armadura y el sentido de los esfuerzos que actúan sobre el fuste.

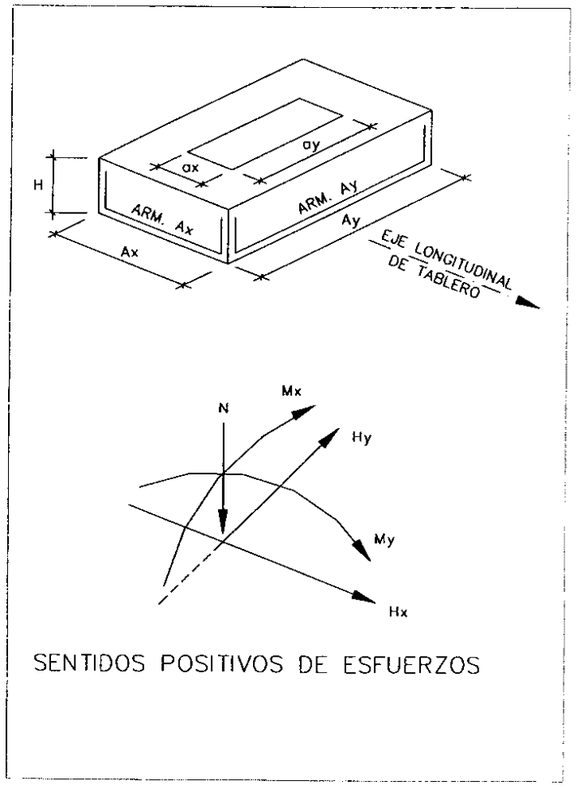


## Zapatas de pilas
## ("zapata")

El programa tiene por objeto la determinación de tensiones sobre el terreno en zapatas que soportan fustes sometidos a carga vertical y flexión en las dos direcciones perpendiculares, teniendo en cuenta el peso propio de la zapata y el relleno de tierras existente sobre ella. Las armaduras en ambas direcciones son calculadas de acuerdo con los criterios de la instrucción EHE, verificándose la seguridad frente al cortante y punzonamiento.

Las cargas introducidas son las obtenidas como resultado del programa "pila".
En el siguiente esquema se muestra el convenio de signos utilizado así como la dirección de las armaduras resultantes del cálculo.




SENTIDOS POSITIVOS DE ESFUERZOS

## Calculo de estribos
## ("estribo")

El programa tiene por objeto el diseño y verificación de Estribos de puente. En el caso más general (Estribos abiertos), las tierras, además de poder derramarse por la parte anterior del estribo, se introducen entre los tabiques verticales que soportan el cargadero.
El programa permite la verificación de estribos cerrados, como un caso particular de estribos abiertos con un solo tabique de sustentación de un cargadero virtual.

Para el caso de estribos abiertos, el número mínimo de tabiques verticales es de 2 y el máximo de 5. Los tabiques pueden tener sección variable a lo largo de su altura.

Para el caso particular de tratarse de un estribo cerrado, existirá un solo tabique vertical.

El derrame anterior de tierras se define por las cotas $Z_B$ y $Z_C$, sobre la cara superior de la zapata.

Se consideran las siguientes cargas:

- Peso propio del estribo, en su totalidad, de acuerdo con la definición geométrica realizada
- Peso propio de tierras.
- Empuje activo de tierras
- Carga vertical uniforme sobre el relleno de tierras situadas en el trasdós del estribo (q).
- Carga vertical puntual sobre el cargadero (V), debida a los esfuerzos inducidos por el tablero. Esta carga es la suma de las reacciones verticales sobre cada uno de los apoyos.
- Carga horizontal inducida por el tablero (H). Se considera, como en el caso anterior, la carga total actuante.

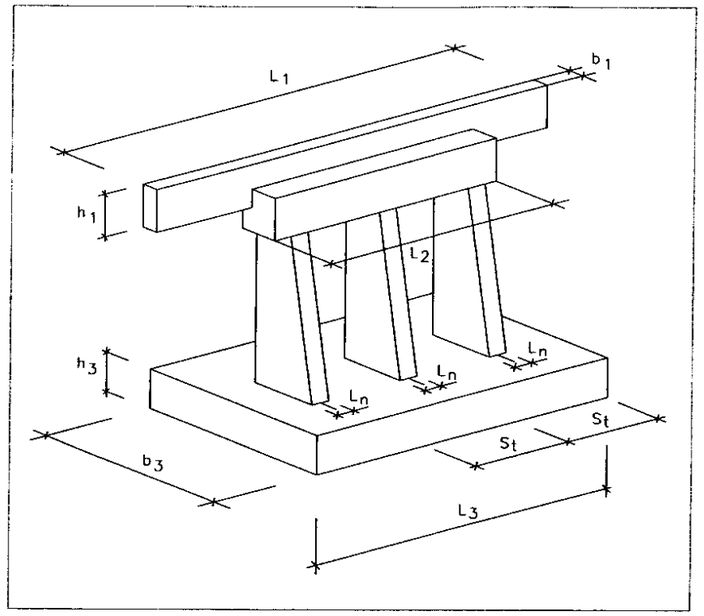
Para el cálculo del empuje activo se aplica la teoría de Coulomb. La aplicación de dicha teoría a los tabiques verticales del estribo lleva a considerar el "efecto arco", mediante el cual resulta modificada la superficie eficaz de aplicación de presiones del terreno sobre dichos elementos. Debido al "efecto arco", la superficie eficaz que se opone al empuje de tierras en un estribo abierto es la correspondiente a la que tiene una altura igual a la real del elemento, mientras que el ancho a considerar es tres veces el real.

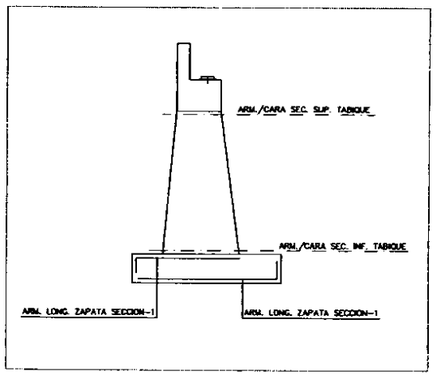
La salida de resultados consta de dos partes:

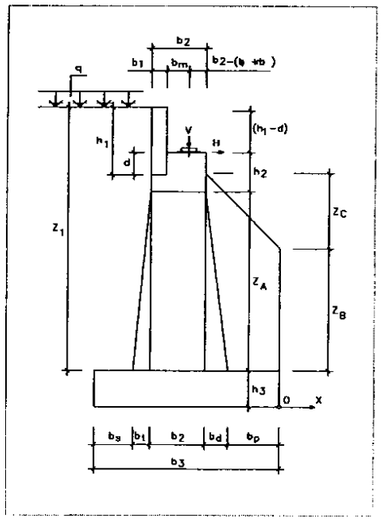
- Dimensionamiento global del estribo.- Se obtienen valores del empuje de tierras, coeficientes de seguridad al vuelco y al deslizamiento, tensiones sobre el terreno bajo zapata.

- Dimensionamiento estructural del estribo.- Esfuerzos resultantes en distintos elementos del estribo (Se imprimen los resultados de los valores de los esfuerzos característicos, es decir, sin mayorar). Verificación como piezas de hormigón armado. Cálculo de armaduras necesarias y mínimas, de acuerdo con los criterios de cuantía mínima de la EH-91, en las secciones más representativas.

En el esquema de la pagina siguiente se indican los parámetros que hay que introducir en el archivo de entrada, así como la colocación de las armaduras indicadas en el archivo de salida.




## Programa de armado a cortante y torsión de tableros pretensados

El programa ROBCORT está preparado para calcular las armaduras a cortante y torsión de un tablero de hormigón pretensado calculado con el programa ROBOT. El cálculo se efectúa según los artículos 44 y 45 de la EHE. Para su ejecución se requieren los siguientes ficheros:

**.PON Coeficientes de ponderación de cada una de la hipótesis
**.COR Características de torsión y cortante de la sección

Generando los dos archivos de resultados siguientes:

**.PNC Ponderación y comprobación de esfuerzos de cortante y torsión
**.ARM Resumen de armaduras en los nudos del tablero

Las comprobaciones que efectúa el programa son las siguientes:

1) $(V_{rd}/V_{u1})^{\beta} + (T_d/T_{u1})^{\beta} \leq 1$

2) $V_{rd} \leq V_{u2}$

3) $T_d \leq T_{u2}$

4) $T_d \leq T_{u3}$

Donde: $\beta = 2*(1-h_e/b)$
$V_{rd}$ = Cortante reducido de cálculo
$V_{u1}$ = Cortante de agotamiento por compresión
$T_d$ = Momento torsor de cálculo
$T_{u1}$ = Torsor de agotamiento por compresión
$T_{u2}$ = Torsor de agotamiento por tracción longitudinal
$T_{u3}$ = Torsor de agotamiento por tracción transversal

Partiendo de las comprobaciones anteriores, el programa calcula la cuantía de armadura necesaria de cortante, torsión longitudinal, torsión transversal y rasante.

El programa facilita un listado resumido con las armaduras.