

# 1. Informe de uniones de los nudos

Orden: Por número

## Nudo 61 [+100; +75; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
105: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,2 \text{ kN}$	$\Sigma V_{y,Rd} = 105,6 \text{ kN}$	0,2%	Sí
112: ALLR 48,3.3,2					
Travesaños / largueros					
111: ALLR 48,3.3,2	K 2000+ T01	$M_{z,Ed} = 0,045 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	4,5%	Sí
		$V_{y,Ed} = 0,2 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,6%	Sí
		$V_{z,Ed} = 0,3 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	2,5%	Sí
		$N_{Ed} = 0,1 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	0,5%	Sí
		$M_{x,Ed} = 0,017 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,052 \text{ kN}\cdot\text{m}$	---	---	---

## Nudo 62 [+257; +75; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
106: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,1 \text{ kN}$	$\Sigma V_{y,Rd} = 105,6 \text{ kN}$	0,1%	Sí
114: ALLR 48,3.3,2					
Travesaños / largueros					
113: ALLR 48,3.3,2	K 2000+ T01	$M_{z,Ed} = 0,069 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	6,8%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,2%	Sí
		$V_{z,Ed} = 0,5 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	4,8%	Sí
		$N_{Ed} = 1,2 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	3,9%	Sí
		$M_{x,Ed} = 0,028 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,113 \text{ kN}\cdot\text{m}$	---	---	---

## Nudo 63 [+514; +75; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
107: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,3 \text{ kN}$	$\Sigma V_{y,Rd} = 105,6 \text{ kN}$	0,3%	Sí
116: ALLR 48,3.3,2					
Travesaños / largueros					

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
115: ALLR 48,3.3,2	K 2000+ T01	$M_{z,Ed} = 0,104$ kN·m	$M_{z,Rd} = 1,010$ kN·m	10,3%	Sí
		$V_{y,Ed} = 0,3$ kN	$V_{y,Rd} = 26,4$ kN	1,2%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	0,6%	Sí
		$N_{Ed} = 1,0$ kN	$N_{Rd} = 31,0$ kN	3,3%	Sí
		$M_{x,Ed} = 0,007$ kN·m	---	---	---
		$M_{y,Ed} = 0,039$ kN·m	---	---	---

## Nudo 69 [+90; +75; +89] cm

Unión mediante grapa ortogonal  
Elemento de unión: G01 48x48

Barra	Esfuerzos	Resistencia	Comprobación	Cumple
Generales				
	$F_{p,Ed} = 0,8$ kN	$F_{p,Rd} = 30,0$ kN	2,7%	Sí
	$M_{B,Ed} = 0,028$ kN·m	$M_{B,Rd} = 0,800$ kN·m	3,5%	Sí
Barra 1				
11: ALLR 48,3.3,2	$N_{Ed} = 0,8$ kN	$N_{Rd} = 9,1$ kN	9,0%	Sí
	$M_{x,Ed} = 0,022$ kN·m	$M_{x,Rd} = 0,130$ kN·m	16,7%	Sí
124: ALLR 48,3.3,2	$V_{y,Ed} = 0,0$ kN	---	---	---
	$M_{y,Ed} = 0,187$ kN·m	---	---	---
Barra 2				
122: ALLR 48,3.3,2	$N_{Ed} = 0,0$ kN	$N_{Rd} = 9,1$ kN	0,0%	Sí
	$M_{x,Ed} = 0,187$ kN·m	$M_{x,Rd} = 0,130$ kN·m	143,8%	No
123: ALLR 48,3.3,2	$V_{y,Ed} = 0,8$ kN	---	---	---
	$M_{y,Ed} = 0,022$ kN·m	---	---	---

## Errores de comprobación

Resistencia a torsión insuficiente en la barra 2

## Nudo 120 [+100; +75; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
Montantes					
108: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,2$ kN	$\Sigma V_{v,Rd} = 105,6$ kN	0,1%	Sí
185: ALLR 48,3.3,2					
Travesaños / largueros					
161: ALLR 48,3.3,2	K 2000+ T01	$M_{z,Ed} = 0,045$ kN·m	$M_{z,Rd} = 1,010$ kN·m	4,5%	Sí
		$V_{y,Ed} = 0,2$ kN	$V_{y,Rd} = 26,4$ kN	0,6%	Sí
		$V_{z,Ed} = 0,3$ kN	$V_{z,Rd} = 10,0$ kN	2,9%	Sí
		$N_{Ed} = 0,1$ kN	$N_{Rd} = 31,0$ kN	0,5%	Sí
		$M_{x,Ed} = 0,048$ kN·m	---	---	---
		$M_{y,Ed} = 0,070$ kN·m	---	---	---

## Nudo 121 [+257; +75; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
109: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,0$ kN	$\Sigma V_{v,Rd} = 105,6$ kN	0,0%	Sí
186: ALLR 48,3.3,2					
Travesaños / largueros					
167: ALLR 48,3.3,2	K 2000+ T01	$M_{z,Ed} = 0,053$ kN·m	$M_{z,Rd} = 1,010$ kN·m	5,3%	Sí
		$V_{y,Ed} = 0,0$ kN	$V_{y,Rd} = 26,4$ kN	0,1%	Sí
		$V_{z,Ed} = 0,5$ kN	$V_{z,Rd} = 10,0$ kN	5,1%	Sí
		$N_{Ed} = 0,9$ kN	$N_{Rd} = 31,0$ kN	2,8%	Sí
		$M_{x,Ed} = 0,043$ kN·m	---	---	---
		$M_{y,Ed} = 0,125$ kN·m	---	---	---

## Nudo 122 [+514; +75; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
110: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,3$ kN	$\Sigma V_{v,Rd} = 105,6$ kN	0,3%	Sí
187: ALLR 48,3.3,2					
Travesaños / largueros					
176: ALLR 48,3.3,2	K 2000+ T01	$M_{z,Ed} = 0,103$ kN·m	$M_{z,Rd} = 1,010$ kN·m	10,2%	Sí
		$V_{y,Ed} = 0,3$ kN	$V_{y,Rd} = 26,4$ kN	1,2%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	1,2%	Sí
		$N_{Ed} = 1,1$ kN	$N_{Rd} = 31,0$ kN	3,4%	Sí
		$M_{x,Ed} = 0,054$ kN·m	---	---	---
		$M_{y,Ed} = 0,018$ kN·m	---	---	---

## Nudo 123 [+100; +104; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
112: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 3,3$ kN	$\Sigma V_{v,Rd} = 105,6$ kN	3,1%	Sí
190: ALLR 48,3.3,2					
Travesaños / largueros					
188: ALLR 48,3.3,2	K 2000+ T01	$M_{z,Ed} = 0,012$ kN·m	$M_{z,Rd} = 1,010$ kN·m	1,2%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,3%	Sí
		$V_{z,Ed} = 0,3$ kN	$V_{z,Rd} = 10,0$ kN	2,8%	Sí

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
		$N_{Ed} = 0,5 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	1,5%	Sí
		$M_{x,Ed} = 0,010 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,240 \text{ kN}\cdot\text{m}$	---	---	---
189: U_AL VP	K 2000+ T02	$M_{z,Ed} = 0,101 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	10,0%	Sí
		$V_{y,Ed} = 3,2 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	12,1%	Sí
		$V_{z,Ed} = 0,1 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	1,2%	Sí
		$N_{Ed} = 0,6 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	1,9%	Sí
		$M_{x,Ed} = 0,003 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,171 \text{ kN}\cdot\text{m}$	---	---	---

## Nudo 124 [+257; +104; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
Montantes					
114: ALLR 48,3.3.2	K 2000+ R01	$\Sigma V_{y,Ed} = 8,7 \text{ kN}$	$\Sigma V_{y,Rd} = 105,6 \text{ kN}$	8,2%	Sí
193: ALLR 48,3.3.2					
Travesaños / largueros					
188: ALLR 48,3.3.2	K 2000+ T01	$M_{z,Ed} = 0,015 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	1,5%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,3%	Sí
		$V_{z,Ed} = 0,3 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	2,8%	Sí
		$N_{Ed} = 0,5 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	1,5%	Sí
		$M_{x,Ed} = 0,010 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,200 \text{ kN}\cdot\text{m}$	---	---	---
191: ALLR 48,3.3.2	K 2000+ T01	$M_{z,Ed} = 0,029 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	2,9%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,4%	Sí
		$V_{z,Ed} = 0,1 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	1,0%	Sí
		$N_{Ed} = 0,1 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	0,2%	Sí
		$M_{x,Ed} = 0,025 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,121 \text{ kN}\cdot\text{m}$	---	---	---
192: U_AL VP	K 2000+ T02	$M_{z,Ed} = 0,151 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	15,0%	Sí
		$V_{y,Ed} = 8,2 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	30,9%	Sí
		$V_{z,Ed} = 0,2 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	1,8%	Sí
		$N_{Ed} = 1,5 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	4,8%	Sí
		$M_{x,Ed} = 0,003 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,275 \text{ kN}\cdot\text{m}$	---	---	---
Diagonales					
194: ALLR 48,3.2.3	K 2000+ D01	$N_{c,Ed} = 2,2 \text{ kN}$	$N_{c,Rd} = 14,7 \text{ kN}$	14,8%	Sí
		$N_{t,Ed} = 2,1 \text{ kN}$	$N_{t,Rd} = 17,9 \text{ kN}$	11,7%	Sí

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
		$V_{y,Ed} = 0,0$ kN	---	---	---
		$V_{z,Ed} = 0,0$ kN	---	---	---
		$M_{x,Ed} = 0,049$ kN·m	---	---	---
		$M_{y,Ed} = 0,055$ kN·m	---	---	---
		$M_{z,Ed} = 0,016$ kN·m	---	---	---

## Nudo 125 [+514; +104; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
Montantes					
116: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 5,2$ kN	$\Sigma V_{v,Rd} = 105,6$ kN	4,9%	Sí
196: ALLR 48,3.3,2					
Travesaños / largueros					
191: ALLR 48,3.3,2	K 2000+ T01	$M_{z,Ed} = 0,024$ kN·m	$M_{z,Rd} = 1,010$ kN·m	2,4%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,4%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	1,0%	Sí
		$N_{Ed} = 0,1$ kN	$N_{Rd} = 31,0$ kN	0,2%	Sí
		$M_{x,Ed} = 0,025$ kN·m	---	---	---
		$M_{y,Ed} = 0,143$ kN·m	---	---	---
195: U_AL VP	K 2000+ T02	$M_{z,Ed} = 0,178$ kN·m	$M_{z,Rd} = 1,010$ kN·m	17,6%	Sí
		$V_{y,Ed} = 5,1$ kN	$V_{y,Rd} = 26,4$ kN	19,4%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	0,8%	Sí
		$N_{Ed} = 0,8$ kN	$N_{Rd} = 31,0$ kN	2,6%	Sí
		$M_{x,Ed} = 0,004$ kN·m	---	---	---
		$M_{y,Ed} = 0,141$ kN·m	---	---	---

## Nudo 126 [+100; +104; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
Montantes					
185: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 3,5$ kN	$\Sigma V_{v,Rd} = 105,6$ kN	3,3%	Sí
198: ALLR 48,3.3,2					
Travesaños / largueros					
189: U_AL VP	K 2000+ T02	$M_{z,Ed} = 0,094$ kN·m	$M_{z,Rd} = 1,010$ kN·m	9,4%	Sí
		$V_{y,Ed} = 3,2$ kN	$V_{y,Rd} = 26,4$ kN	12,1%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	1,2%	Sí
		$N_{Ed} = 0,6$ kN	$N_{Rd} = 31,0$ kN	1,9%	Sí
		$M_{x,Ed} = 0,003$ kN·m	---	---	---

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
		kN·m			
		$M_{y,Ed} = 0,183$ kN·m	---	---	---
197: ALLR 48,3.3,2	K 2000+ T01	$M_{z,Ed} = 0,054$ kN·m	$M_{z,Rd} = 1,010$ kN·m	5,3%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,4%	Sí
		$V_{z,Ed} = 0,2$ kN	$V_{z,Rd} = 10,0$ kN	2,5%	Sí
		$N_{Ed} = 0,6$ kN	$N_{Rd} = 31,0$ kN	1,8%	Sí
		$M_{x,Ed} = 0,017$ kN·m	---	---	---
		$M_{y,Ed} = 0,212$ kN·m	---	---	---
Diagonales					
199: ALLR 48,3.2,3	K 2000+ D01	$N_{c,Ed} = 1,5$ kN	$N_{c,Rd} = 8,4$ kN	18,2%	Sí
		$N_{t,Ed} = 1,5$ kN	$N_{t,Rd} = 17,9$ kN	8,2%	Sí
		$V_{y,Ed} = 0,1$ kN	---	---	---
		$V_{z,Ed} = 0,0$ kN	---	---	---
		$M_{x,Ed} = 0,011$ kN·m	---	---	---
		$M_{y,Ed} = 0,021$ kN·m	---	---	---
		$M_{z,Ed} = 0,052$ kN·m	---	---	---

## Nudo 127 [+257; +104; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
Montantes					
186: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 7,7$ kN	$\Sigma V_{v,Rd} = 105,6$ kN	7,3%	Sí
201: ALLR 48,3.3,2					
Travesaños / largueros					
192: U_AL VP	K 2000+ T02	$M_{z,Ed} = 0,160$ kN·m	$M_{z,Rd} = 1,010$ kN·m	15,8%	Sí
		$V_{y,Ed} = 8,2$ kN	$V_{y,Rd} = 26,4$ kN	30,9%	Sí
		$V_{z,Ed} = 0,2$ kN	$V_{z,Rd} = 10,0$ kN	1,8%	Sí
		$N_{Ed} = 1,5$ kN	$N_{Rd} = 31,0$ kN	4,8%	Sí
		$M_{x,Ed} = 0,003$ kN·m	---	---	---
		$M_{y,Ed} = 0,280$ kN·m	---	---	---
197: ALLR 48,3.3,2	K 2000+ T01	$M_{z,Ed} = 0,050$ kN·m	$M_{z,Rd} = 1,010$ kN·m	4,9%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,4%	Sí
		$V_{z,Ed} = 0,2$ kN	$V_{z,Rd} = 10,0$ kN	2,5%	Sí
		$N_{Ed} = 0,6$ kN	$N_{Rd} = 31,0$ kN	1,8%	Sí
		$M_{x,Ed} = 0,017$ kN·m	---	---	---
		$M_{y,Ed} = 0,179$ kN·m	---	---	---
200: ALLR 48,3.3,2	K 2000+ T01	$M_{z,Ed} = 0,062$ kN·m	$M_{z,Rd} = 1,010$ kN·m	6,1%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,5%	Sí

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	1,3%	Sí
		$N_{Ed} = 1,3$ kN	$N_{Rd} = 31,0$ kN	4,2%	Sí
		$M_{x,Ed} = 0,009$ kN·m	---	---	---
		$M_{y,Ed} = 0,138$ kN·m	---	---	---
Diagonales					
		$N_{c,Ed} = 0,6$ kN	$N_{c,Rd} = 14,7$ kN	4,0%	Sí
		$N_{t,Ed} = 1,1$ kN	$N_{t,Rd} = 17,9$ kN	6,1%	Sí
		$V_{y,Ed} = 0,0$ kN	---	---	---
		$V_{z,Ed} = 0,1$ kN	---	---	---
		$M_{x,Ed} = 0,025$ kN·m	---	---	---
		$M_{y,Ed} = 0,015$ kN·m	---	---	---
		$M_{z,Ed} = 0,023$ kN·m	---	---	---
202: ALLR 48,3.2,3	K 2000+ D01				

## Nudo 128 [+514; +104; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
Montantes					
187: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 6,2$ kN	$\Sigma V_{v,Rd} = 105,6$ kN	5,9%	Sí
203: ALLR 48,3.3,2					
Travesaños / largueros					
		$M_{z,Ed} = 0,165$ kN·m	$M_{z,Rd} = 1,010$ kN·m	16,4%	Sí
		$V_{y,Ed} = 5,1$ kN	$V_{y,Rd} = 26,4$ kN	19,4%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	0,8%	Sí
		$N_{Ed} = 0,8$ kN	$N_{Rd} = 31,0$ kN	2,6%	Sí
		$M_{x,Ed} = 0,004$ kN·m	---	---	---
		$M_{y,Ed} = 0,105$ kN·m	---	---	---
		$M_{z,Ed} = 0,064$ kN·m	$M_{z,Rd} = 1,010$ kN·m	6,4%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,5%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	1,3%	Sí
		$N_{Ed} = 1,3$ kN	$N_{Rd} = 31,0$ kN	4,2%	Sí
		$M_{x,Ed} = 0,009$ kN·m	---	---	---
		$M_{y,Ed} = 0,188$ kN·m	---	---	---
		$M_{z,Ed} = 0,064$ kN·m	$M_{z,Rd} = 1,010$ kN·m	6,4%	Sí
200: ALLR 48,3.3,2	K 2000+ T01				
Diagonales					
		$N_{c,Ed} = 2,0$ kN	$N_{c,Rd} = 8,4$ kN	23,7%	Sí
		$N_{t,Ed} = 2,0$ kN	$N_{t,Rd} = 17,9$ kN	10,9%	Sí
		$V_{y,Ed} = 0,1$ kN	---	---	---
		$V_{z,Ed} = 0,0$ kN	---	---	---
		$M_{x,Ed} = 0,010$ kN·m	---	---	---
		$M_{y,Ed} = 0,020$ kN·m	---	---	---
204: ALLR 48,3.2,3	K 2000+ D01				

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
		kN·m			
		$M_{z,Ed} = 0,048$ kN·m	---	---	---
205: ALLR 48,3.2,3	K 2000+ D01	$N_{c,Ed} = 1,5$ kN	$N_{c,Rd} = 10,2$ kN	14,8%	Sí
		$N_{t,Ed} = 1,1$ kN	$N_{t,Rd} = 17,9$ kN	6,0%	Sí
		$V_{y,Ed} = 0,1$ kN	---	---	---
		$V_{z,Ed} = 0,1$ kN	---	---	---
		$M_{x,Ed} = 0,055$ kN·m	---	---	---
		$M_{y,Ed} = 0,063$ kN·m	---	---	---
		$M_{z,Ed} = 0,037$ kN·m	---	---	---

## Nudo 129 [+100; +154; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
190: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,2$ kN	$\Sigma V_{v,Rd} = 105,6$ kN	0,2%	Sí
208: ALLR 48,3.3,2					
Travesaños / largueros					
206: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,013$ kN·m	$M_{z,Rd} = 1,010$ kN·m	1,2%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,2%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	0,9%	Sí
		$N_{Ed} = 0,0$ kN	$N_{Rd} = 31,0$ kN	0,1%	Sí
		$M_{x,Ed} = 0,043$ kN·m	---	---	---
		$M_{y,Ed} = 0,133$ kN·m	---	---	---
207: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,084$ kN·m	$M_{z,Rd} = 1,010$ kN·m	8,3%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,5%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	0,8%	Sí
		$N_{Ed} = 0,4$ kN	$N_{Rd} = 31,0$ kN	1,3%	Sí
		$M_{x,Ed} = 0,022$ kN·m	---	---	---
		$M_{y,Ed} = 0,108$ kN·m	---	---	---

## Nudo 130 [+257; +154; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
193: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,1$ kN	$\Sigma V_{v,Rd} = 105,6$ kN	0,1%	Sí
210: ALLR 48,3.3,2					
Travesaños / largueros					
206: ALLR	K 2000+ T01	$M_{z,Ed} = 0,012$	$M_{z,Rd} = 1,010$	1,2%	Sí



Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
48,3.3,2_HSR		kN·m	kN·m		
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,2%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	0,9%	Sí
		$N_{Ed} = 0,0$ kN	$N_{Rd} = 31,0$ kN	0,1%	Sí
		$M_{x,Ed} = 0,043$ kN·m	---	---	---
		$M_{y,Ed} = 0,015$ kN·m	---	---	---
209: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,020$ kN·m	$M_{z,Rd} = 1,010$ kN·m	2,0%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,3%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	0,7%	Sí
		$N_{Ed} = 0,2$ kN	$N_{Rd} = 31,0$ kN	0,6%	Sí
		$M_{x,Ed} = 0,031$ kN·m	---	---	---
		$M_{y,Ed} = 0,071$ kN·m	---	---	---

### Nudo 131 [+514; +154; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
196: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,2$ kN	$\Sigma V_{y,Rd} = 105,6$ kN	0,2%	Sí
212: ALLR 48,3.3,2					
Travesaños / largueros					
209: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,022$ kN·m	$M_{z,Rd} = 1,010$ kN·m	2,2%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,3%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	0,7%	Sí
		$N_{Ed} = 0,2$ kN	$N_{Rd} = 31,0$ kN	0,6%	Sí
		$M_{x,Ed} = 0,031$ kN·m	---	---	---
		$M_{y,Ed} = 0,112$ kN·m	---	---	---
211: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,095$ kN·m	$M_{z,Rd} = 1,010$ kN·m	9,4%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,5%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	0,6%	Sí
		$N_{Ed} = 0,1$ kN	$N_{Rd} = 31,0$ kN	0,4%	Sí
		$M_{x,Ed} = 0,012$ kN·m	---	---	---
		$M_{y,Ed} = 0,111$ kN·m	---	---	---

### Nudo 132 [+100; +154; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
198: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,2$ kN	$\Sigma V_{y,Rd} = 105,6$ kN	0,2%	Sí

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
214: ALLR 48,3.3,2					
Travesaños / largueros					
207: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,083$ kN·m	$M_{z,Rd} = 1,010$ kN·m	8,2%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,5%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	0,8%	Sí
		$N_{Ed} = 0,4$ kN	$N_{Rd} = 31,0$ kN	1,3%	Sí
		$M_{x,Ed} = 0,022$ kN·m	---	---	---
		$M_{y,Ed} = 0,148$ kN·m	---	---	---
213: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,088$ kN·m	$M_{z,Rd} = 1,010$ kN·m	8,7%	Sí
		$V_{y,Ed} = 0,2$ kN	$V_{y,Rd} = 26,4$ kN	0,6%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	1,2%	Sí
		$N_{Ed} = 1,1$ kN	$N_{Rd} = 31,0$ kN	3,7%	Sí
		$M_{x,Ed} = 0,068$ kN·m	---	---	---
		$M_{y,Ed} = 0,135$ kN·m	---	---	---

### Nudo 133 [+257; +154; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
Montantes					
201: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,2$ kN	$\Sigma V_{v,Rd} = 105,6$ kN	0,2%	Sí
216: ALLR 48,3.3,2					
Travesaños / largueros					
213: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,087$ kN·m	$M_{z,Rd} = 1,010$ kN·m	8,6%	Sí
		$V_{y,Ed} = 0,2$ kN	$V_{y,Rd} = 26,4$ kN	0,6%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	1,2%	Sí
		$N_{Ed} = 1,1$ kN	$N_{Rd} = 31,0$ kN	3,7%	Sí
		$M_{x,Ed} = 0,068$ kN·m	---	---	---
		$M_{y,Ed} = 0,060$ kN·m	---	---	---
215: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,083$ kN·m	$M_{z,Rd} = 1,010$ kN·m	8,2%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,5%	Sí
		$V_{z,Ed} = 0,0$ kN	$V_{z,Rd} = 10,0$ kN	0,4%	Sí
		$N_{Ed} = 2,3$ kN	$N_{Rd} = 31,0$ kN	7,5%	Sí
		$M_{x,Ed} = 0,036$ kN·m	---	---	---
		$M_{y,Ed} = 0,002$ kN·m	---	---	---

### Nudo 134 [+514; +154; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
Montantes					
203: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,2 \text{ kN}$	$\Sigma V_{y,Rd} = 105,6 \text{ kN}$	0,2%	Sí
217: ALLR 48,3.3,2					
Travesaños / largueros					
211: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,092 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	9,1%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,5%	Sí
		$V_{z,Ed} = 0,1 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	0,6%	Sí
		$N_{Ed} = 0,1 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	0,4%	Sí
		$M_{x,Ed} = 0,012 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,073 \text{ kN}\cdot\text{m}$	---	---	---
215: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,065 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	6,4%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,5%	Sí
		$V_{z,Ed} = 0,0 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	0,4%	Sí
		$N_{Ed} = 2,3 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	7,5%	Sí
		$M_{x,Ed} = 0,036 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,108 \text{ kN}\cdot\text{m}$	---	---	---

## Nudo 135 [+100; +204; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
Montantes					
208: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,2 \text{ kN}$	$\Sigma V_{y,Rd} = 105,6 \text{ kN}$	0,1%	Sí
220: ALLR 48,3.3,2					
Travesaños / largueros					
218: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,009 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	0,9%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,2%	Sí
		$V_{z,Ed} = 0,0 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	0,1%	Sí
		$N_{Ed} = 0,1 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	0,4%	Sí
		$M_{x,Ed} = 0,050 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,072 \text{ kN}\cdot\text{m}$	---	---	---
219: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,044 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	4,4%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,4%	Sí
		$V_{z,Ed} = 0,1 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	0,9%	Sí
		$N_{Ed} = 0,7 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	2,2%	Sí
		$M_{x,Ed} = 0,005 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,100 \text{ kN}\cdot\text{m}$	---	---	---

## Nudo 136 [+257; +204; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
210: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,1 \text{ kN}$	$\Sigma V_{v,Rd} = 105,6 \text{ kN}$	0,1%	Sí
222: ALLR 48,3.3,2					
Travesaños / largueros					
218: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,011 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	1,1%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,2%	Sí
		$V_{z,Ed} = 0,0 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	0,1%	Sí
		$N_{Ed} = 0,1 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	0,4%	Sí
		$M_{x,Ed} = 0,050 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,087 \text{ kN}\cdot\text{m}$	---	---	---
221: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,019 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	1,9%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,3%	Sí
		$V_{z,Ed} = 0,1 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	0,9%	Sí
		$N_{Ed} = 0,2 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	0,5%	Sí
		$M_{x,Ed} = 0,035 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,110 \text{ kN}\cdot\text{m}$	---	---	---

## Nudo 137 [+514; +204; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
212: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,2 \text{ kN}$	$\Sigma V_{v,Rd} = 105,6 \text{ kN}$	0,2%	Sí
224: ALLR 48,3.3,2					
Travesaños / largueros					
221: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,021 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	2,0%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,3%	Sí
		$V_{z,Ed} = 0,1 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	0,9%	Sí
		$N_{Ed} = 0,2 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	0,5%	Sí
		$M_{x,Ed} = 0,035 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,132 \text{ kN}\cdot\text{m}$	---	---	---
223: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,052 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	5,1%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,4%	Sí
		$V_{z,Ed} = 0,1 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	0,6%	Sí
		$N_{Ed} = 0,0 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	0,1%	Sí
		$M_{x,Ed} = 0,049 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,123 \text{ kN}\cdot\text{m}$	---	---	---

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
		kN·m			

### Nudo 138 [+100; +204; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
214: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,2$ kN	$\Sigma V_{y,Rd} = 105,6$ kN	0,2%	Sí
226: ALLR 48,3.3,2					
Travesaños / largueros					
219: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,061$ kN·m	$M_{z,Rd} = 1,010$ kN·m	6,0%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,4%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	0,9%	Sí
		$N_{Ed} = 0,7$ kN	$N_{Rd} = 31,0$ kN	2,2%	Sí
		$M_{x,Ed} = 0,005$ kN·m	---	---	---
		$M_{y,Ed} = 0,191$ kN·m	---	---	---
225: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,024$ kN·m	$M_{z,Rd} = 1,010$ kN·m	2,3%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,3%	Sí
		$V_{z,Ed} = 0,2$ kN	$V_{z,Rd} = 10,0$ kN	1,8%	Sí
		$N_{Ed} = 2,0$ kN	$N_{Rd} = 31,0$ kN	6,4%	Sí
		$M_{x,Ed} = 0,075$ kN·m	---	---	---
		$M_{y,Ed} = 0,173$ kN·m	---	---	---

### Nudo 139 [+257; +204; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
216: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,2$ kN	$\Sigma V_{y,Rd} = 105,6$ kN	0,2%	Sí
228: ALLR 48,3.3,2					
Travesaños / largueros					
225: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,025$ kN·m	$M_{z,Rd} = 1,010$ kN·m	2,5%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,3%	Sí
		$V_{z,Ed} = 0,2$ kN	$V_{z,Rd} = 10,0$ kN	1,8%	Sí
		$N_{Ed} = 2,0$ kN	$N_{Rd} = 31,0$ kN	6,4%	Sí
		$M_{x,Ed} = 0,075$ kN·m	---	---	---
		$M_{y,Ed} = 0,114$ kN·m	---	---	---
227: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,058$ kN·m	$M_{z,Rd} = 1,010$ kN·m	5,7%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,5%	Sí
		$V_{z,Ed} = 0,0$ kN	$V_{z,Rd} = 10,0$ kN	0,2%	Sí

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
		$N_{Ed} = 4,1 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	13,3%	Sí
		$M_{x,Ed} = 0,050 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,106 \text{ kN}\cdot\text{m}$	---	---	---

## Nudo 140 [+514; +204; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
Montantes					
217: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,2 \text{ kN}$	$\Sigma V_{v,Rd} = 105,6 \text{ kN}$	0,2%	Sí
229: ALLR 48,3.3,2					
Travesaños / largueros					
223: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,053 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	5,3%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,4%	Sí
		$V_{z,Ed} = 0,1 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	0,6%	Sí
		$N_{Ed} = 0,0 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	0,1%	Sí
		$M_{x,Ed} = 0,049 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,054 \text{ kN}\cdot\text{m}$	---	---	---
227: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,141 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	14,0%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,5%	Sí
		$V_{z,Ed} = 0,0 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	0,2%	Sí
		$N_{Ed} = 4,1 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	13,3%	Sí
		$M_{x,Ed} = 0,050 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,048 \text{ kN}\cdot\text{m}$	---	---	---

## Nudo 143 [+100; +254; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
Montantes					
220: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,1 \text{ kN}$	$\Sigma V_{v,Rd} = 105,6 \text{ kN}$	0,1%	Sí
231: ALLR 48,3.3,2					
Travesaños / largueros					
230: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,010 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	1,0%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,2%	Sí
		$V_{z,Ed} = 0,1 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	1,0%	Sí
		$N_{Ed} = 0,2 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	0,6%	Sí
		$M_{x,Ed} = 0,042 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,006 \text{ kN}\cdot\text{m}$	---	---	---

## Nudo 144 [+257; +254; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
222: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,1 \text{ kN}$	$\Sigma V_{v,Rd} = 105,6 \text{ kN}$	0,1%	Sí
233: ALLR 48,3.3,2					
Travesaños / largueros					
230: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,012 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	1,2%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,2%	Sí
		$V_{z,Ed} = 0,1 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	1,0%	Sí
		$N_{Ed} = 0,2 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	0,6%	Sí
		$M_{x,Ed} = 0,042 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,148 \text{ kN}\cdot\text{m}$	---	---	---
232: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,021 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	2,1%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,3%	Sí
		$V_{z,Ed} = 0,1 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	1,3%	Sí
		$N_{Ed} = 0,4 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	1,2%	Sí
		$M_{x,Ed} = 0,028 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,176 \text{ kN}\cdot\text{m}$	---	---	---

## Nudo 145 [+514; +254; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
224: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,2 \text{ kN}$	$\Sigma V_{v,Rd} = 105,6 \text{ kN}$	0,2%	Sí
235: ALLR 48,3.3,2					
Travesaños / largueros					
232: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,023 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	2,2%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,3%	Sí
		$V_{z,Ed} = 0,1 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	1,3%	Sí
		$N_{Ed} = 0,4 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	1,2%	Sí
		$M_{x,Ed} = 0,028 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,171 \text{ kN}\cdot\text{m}$	---	---	---
234: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,077 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	7,6%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,5%	Sí
		$V_{z,Ed} = 0,1 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	0,6%	Sí
		$N_{Ed} = 0,5 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	1,5%	Sí
		$M_{x,Ed} = 0,082 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,133 \text{ kN}\cdot\text{m}$	---	---	---

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
		kN·m			

### Nudo 146 [+100; +254; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
226: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,2$ kN	$\Sigma V_{y,Rd} = 105,6$ kN	0,1%	Sí
237: ALLR 48,3.3,2					
Travesaños / largueros					
236: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,090$ kN·m	$M_{z,Rd} = 1,010$ kN·m	9,0%	Sí
		$V_{y,Ed} = 0,2$ kN	$V_{y,Rd} = 26,4$ kN	0,6%	Sí
		$V_{z,Ed} = 0,2$ kN	$V_{z,Rd} = 10,0$ kN	1,6%	Sí
		$N_{Ed} = 0,0$ kN	$N_{Rd} = 31,0$ kN	0,0%	Sí
		$M_{x,Ed} = 0,032$ kN·m	---	---	---
		$M_{y,Ed} = 0,134$ kN·m	---	---	---

### Nudo 147 [+257; +254; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
228: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,2$ kN	$\Sigma V_{y,Rd} = 105,6$ kN	0,2%	Sí
238: ALLR 48,3.3,2					
Travesaños / largueros					
236: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,093$ kN·m	$M_{z,Rd} = 1,010$ kN·m	9,2%	Sí
		$V_{y,Ed} = 0,2$ kN	$V_{y,Rd} = 26,4$ kN	0,6%	Sí
		$V_{z,Ed} = 0,2$ kN	$V_{z,Rd} = 10,0$ kN	1,6%	Sí
		$N_{Ed} = 0,0$ kN	$N_{Rd} = 31,0$ kN	0,0%	Sí
		$M_{x,Ed} = 0,032$ kN·m	---	---	---
		$M_{y,Ed} = 0,117$ kN·m	---	---	---

### Nudo 148 [+514; +254; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
229: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,1$ kN	$\Sigma V_{y,Rd} = 105,6$ kN	0,1%	Sí
239: ALLR 48,3.3,2					
Travesaños / largueros					
234: ALLR	K 2000+ T01	$M_{z,Ed} = 0,077$	$M_{z,Rd} = 1,010$	7,6%	Sí



Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
48,3.3,2_HSR		kN·m	kN·m		
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,5%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	0,6%	Sí
		$N_{Ed} = 0,5$ kN	$N_{Rd} = 31,0$ kN	1,5%	Sí
		$M_{x,Ed} = 0,082$ kN·m	---	---	---
		$M_{y,Ed} = 0,038$ kN·m	---	---	---

## Nudo 151 [+100; +304; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
231: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 2,7$ kN	$\Sigma V_{y,Rd} = 105,6$ kN	2,6%	Sí
241: ALLR 48,3.3,2					
Travesaños / largueros					
240: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,024$ kN·m	$M_{z,Rd} = 1,010$ kN·m	2,4%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,3%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	1,1%	Sí
		$N_{Ed} = 1,3$ kN	$N_{Rd} = 31,0$ kN	4,2%	Sí
		$M_{x,Ed} = 0,027$ kN·m	---	---	---
		$M_{y,Ed} = 0,033$ kN·m	---	---	---
Diagonales					
194: ALLR 48,3.2,3	K 2000+ D01	$N_{c,Ed} = 2,1$ kN	$N_{c,Rd} = 14,7$ kN	14,2%	Sí
		$N_{t,Ed} = 2,2$ kN	$N_{t,Rd} = 17,9$ kN	12,2%	Sí
		$V_{y,Ed} = 0,0$ kN	---	---	---
		$V_{z,Ed} = 0,0$ kN	---	---	---
		$M_{x,Ed} = 0,049$ kN·m	---	---	---
		$M_{y,Ed} = 0,028$ kN·m	---	---	---
		$M_{z,Ed} = 0,021$ kN·m	---	---	---
199: ALLR 48,3.2,3	K 2000+ D01	$N_{c,Ed} = 1,4$ kN	$N_{c,Rd} = 8,4$ kN	17,0%	Sí
		$N_{t,Ed} = 1,6$ kN	$N_{t,Rd} = 17,9$ kN	8,7%	Sí
		$V_{y,Ed} = 0,1$ kN	---	---	---
		$V_{z,Ed} = 0,0$ kN	---	---	---
		$M_{x,Ed} = 0,011$ kN·m	---	---	---
		$M_{y,Ed} = 0,003$ kN·m	---	---	---
		$M_{z,Ed} = 0,157$ kN·m	---	---	---

## Nudo 152 [+257; +304; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
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Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
<b>Montantes</b>					
233: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 7,0 \text{ kN}$	$\Sigma V_{v,Rd} = 105,6 \text{ kN}$	6,7%	Sí
243: ALLR 48,3.3,2					
<b>Travesaños / largueros</b>					
240: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,026 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	2,6%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,3%	Sí
		$V_{z,Ed} = 0,1 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	1,1%	Sí
		$N_{Ed} = 1,3 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	4,2%	Sí
		$M_{x,Ed} = 0,027 \text{ kN}\cdot\text{m}$	---	---	---
242: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,037 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	3,7%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,4%	Sí
		$V_{z,Ed} = 0,2 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	1,8%	Sí
		$N_{Ed} = 5,0 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	16,3%	Sí
		$M_{x,Ed} = 0,019 \text{ kN}\cdot\text{m}$	---	---	---
244: ALLR 48,3.2,3	K 2000+ D01	$N_{c,Ed} = 8,8 \text{ kN}$	$N_{c,Rd} = 14,7 \text{ kN}$	59,6%	Sí
		$N_{t,Ed} = 8,6 \text{ kN}$	$N_{t,Rd} = 17,9 \text{ kN}$	48,2%	Sí
		$V_{y,Ed} = 0,0 \text{ kN}$	---	---	---
		$V_{z,Ed} = 0,0 \text{ kN}$	---	---	---
		$M_{x,Ed} = 0,036 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,172 \text{ kN}\cdot\text{m}$	---	---	---
$M_{z,Ed} = 0,013 \text{ kN}\cdot\text{m}$	---	---	---		

## Nudo 153 [+514; +304; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
<b>Montantes</b>					
235: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 1,2 \text{ kN}$	$\Sigma V_{v,Rd} = 105,6 \text{ kN}$	1,1%	Sí
246: ALLR 48,3.3,2					
<b>Travesaños / largueros</b>					
242: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,042 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	4,2%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,4%	Sí
		$V_{z,Ed} = 0,2 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	1,8%	Sí
		$N_{Ed} = 5,0 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	16,3%	Sí
		$M_{x,Ed} = 0,019 \text{ kN}\cdot\text{m}$	---	---	---
$M_{y,Ed} = 0,220 \text{ kN}\cdot\text{m}$	---	---	---		

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
245: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,217$ kN·m	$M_{z,Rd} = 1,010$ kN·m	21,5%	Sí
		$V_{y,Ed} = 0,2$ kN	$V_{y,Rd} = 26,4$ kN	0,8%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	0,6%	Sí
		$N_{Ed} = 3,2$ kN	$N_{Rd} = 31,0$ kN	10,4%	Sí
		$M_{x,Ed} = 0,017$ kN·m	---	---	---
		$M_{y,Ed} = 0,134$ kN·m	---	---	---
<b>Diagonales</b>					
204: ALLR 48,3.2,3	K 2000+ D01	$N_{c,Ed} = 1,9$ kN	$N_{c,Rd} = 8,4$ kN	22,5%	Sí
		$N_{t,Ed} = 2,0$ kN	$N_{t,Rd} = 17,9$ kN	11,4%	Sí
		$V_{y,Ed} = 0,1$ kN	---	---	---
		$V_{z,Ed} = 0,0$ kN	---	---	---
		$M_{x,Ed} = 0,010$ kN·m	---	---	---
		$M_{y,Ed} = 0,041$ kN·m	---	---	---
		$M_{z,Ed} = 0,217$ kN·m	---	---	---

## Nudo 154 [+100; +304; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
<b>Montantes</b>					
237: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 3,4$ kN	$\Sigma V_{v,Rd} = 105,6$ kN	3,2%	Sí
248: ALLR 48,3.3,2					
<b>Travesaños / largueros</b>					
247: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,082$ kN·m	$M_{z,Rd} = 1,010$ kN·m	8,1%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,5%	Sí
		$V_{z,Ed} = 0,3$ kN	$V_{z,Rd} = 10,0$ kN	2,8%	Sí
		$N_{Ed} = 1,0$ kN	$N_{Rd} = 31,0$ kN	3,1%	Sí
		$M_{x,Ed} = 0,093$ kN·m	---	---	---
		$M_{y,Ed} = 0,216$ kN·m	---	---	---
<b>Diagonales</b>					
202: ALLR 48,3.2,3	K 2000+ D01	$N_{c,Ed} = 0,5$ kN	$N_{c,Rd} = 14,7$ kN	3,3%	Sí
		$N_{t,Ed} = 1,2$ kN	$N_{t,Rd} = 17,9$ kN	6,6%	Sí
		$V_{y,Ed} = 0,0$ kN	---	---	---
		$V_{z,Ed} = 0,1$ kN	---	---	---
		$M_{x,Ed} = 0,025$ kN·m	---	---	---
		$M_{y,Ed} = 0,177$ kN·m	---	---	---
		$M_{z,Ed} = 0,051$ kN·m	---	---	---
249: ALLR 48,3.2,3	K 2000+ D01	$N_{c,Ed} = 4,5$ kN	$N_{c,Rd} = 8,4$ kN	53,8%	Sí
		$N_{t,Ed} = 4,4$ kN	$N_{t,Rd} = 17,9$ kN	24,5%	Sí
		$V_{y,Ed} = 0,1$ kN	---	---	---

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
		$V_{z,Ed} = 0,0$ kN	---	---	---
		$M_{x,Ed} = 0,020$ kN·m	---	---	---
		$M_{y,Ed} = 0,064$ kN·m	---	---	---
		$M_{z,Ed} = 0,108$ kN·m	---	---	---

## Nudo 155 [+257; +304; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
Montantes					
238: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 2,5$ kN	$\Sigma V_{y,Rd} = 105,6$ kN	2,4%	Sí
250: ALLR 48,3.3,2					
Travesaños / largueros					
247: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,085$ kN·m	$M_{z,Rd} = 1,010$ kN·m	8,4%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,6%	Sí
		$V_{z,Ed} = 0,3$ kN	$V_{z,Rd} = 10,0$ kN	2,8%	Sí
		$N_{Ed} = 1,0$ kN	$N_{Rd} = 31,0$ kN	3,1%	Sí
		$M_{x,Ed} = 0,093$ kN·m	---	---	---
		$M_{y,Ed} = 0,224$ kN·m	---	---	---
Diagonales					
205: ALLR 48,3.2,3	K 2000+ D01	$N_{c,Ed} = 1,4$ kN	$N_{c,Rd} = 10,2$ kN	13,8%	Sí
		$N_{t,Ed} = 1,2$ kN	$N_{t,Rd} = 17,9$ kN	6,6%	Sí
		$V_{y,Ed} = 0,1$ kN	---	---	---
		$V_{z,Ed} = 0,1$ kN	---	---	---
		$M_{x,Ed} = 0,055$ kN·m	---	---	---
		$M_{y,Ed} = 0,260$ kN·m	---	---	---
		$M_{z,Ed} = 0,055$ kN·m	---	---	---
251: ALLR 48,3.2,3	K 2000+ D01	$N_{c,Ed} = 3,8$ kN	$N_{c,Rd} = 14,7$ kN	26,1%	Sí
		$N_{t,Ed} = 3,7$ kN	$N_{t,Rd} = 17,9$ kN	20,7%	Sí
		$V_{y,Ed} = 0,0$ kN	---	---	---
		$V_{z,Ed} = 0,1$ kN	---	---	---
		$M_{x,Ed} = 0,036$ kN·m	---	---	---
		$M_{y,Ed} = 0,093$ kN·m	---	---	---
		$M_{z,Ed} = 0,044$ kN·m	---	---	---

## Nudo 156 [+514; +304; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
Montantes					

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
239: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,2 \text{ kN}$	$\Sigma V_{y,Rd} = 105,6 \text{ kN}$	0,2%	Sí
252: ALLR 48,3.3,2					
Travesaños / largueros					
245: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,234 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	23,1%	Sí
		$V_{y,Ed} = 0,2 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,9%	Sí
		$V_{z,Ed} = 0,1 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	0,6%	Sí
		$N_{Ed} = 3,2 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	10,4%	Sí
		$M_{x,Ed} = 0,017 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,071 \text{ kN}\cdot\text{m}$	---	---	---

## Nudo 157 [+100; +354; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
241: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,1 \text{ kN}$	$\Sigma V_{y,Rd} = 105,6 \text{ kN}$	0,1%	Sí
254: ALLR 48,3.3,2					
Travesaños / largueros					
253: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,061 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	6,1%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,4%	Sí
		$V_{z,Ed} = 0,0 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	0,1%	Sí
		$N_{Ed} = 1,0 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	3,1%	Sí
		$M_{x,Ed} = 0,009 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,011 \text{ kN}\cdot\text{m}$	---	---	---

## Nudo 158 [+257; +354; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
243: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 1,7 \text{ kN}$	$\Sigma V_{y,Rd} = 105,6 \text{ kN}$	1,6%	Sí
255: ALLR 48,3.3,2					
Travesaños / largueros					
253: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,062 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	6,1%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,5%	Sí
		$V_{z,Ed} = 0,0 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	0,1%	Sí
		$N_{Ed} = 1,0 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	3,1%	Sí
		$M_{x,Ed} = 0,009 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,031 \text{ kN}\cdot\text{m}$	---	---	---

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Diagonales					
302: ALLR 48,3.2,3	K 2000+ D01	$N_{c,Ed} = 2,5$ kN	$N_{c,Rd} = 10,2$ kN	24,9%	Sí
		$N_{t,Ed} = 2,4$ kN	$N_{t,Rd} = 17,9$ kN	13,6%	Sí
		$V_{y,Ed} = 0,1$ kN	---	---	---
		$V_{z,Ed} = 0,0$ kN	---	---	---
		$M_{x,Ed} = 0,027$ kN·m	---	---	---
		$M_{y,Ed} = 0,033$ kN·m	---	---	---
		$M_{z,Ed} = 0,055$ kN·m	---	---	---

## Nudo 160 [+100; +354; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
248: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,1$ kN	$\Sigma V_{v,Rd} = 105,6$ kN	0,1%	Sí
258: ALLR 48,3.3,2					
Travesaños / largueros					
257: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,053$ kN·m	$M_{z,Rd} = 1,010$ kN·m	5,2%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,4%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	0,7%	Sí
		$N_{Ed} = 0,1$ kN	$N_{Rd} = 31,0$ kN	0,2%	Sí
		$M_{x,Ed} = 0,203$ kN·m	---	---	---
		$M_{y,Ed} = 0,055$ kN·m	---	---	---

## Nudo 161 [+257; +354; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
250: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,1$ kN	$\Sigma V_{v,Rd} = 105,6$ kN	0,1%	Sí
259: ALLR 48,3.3,2					
Travesaños / largueros					
257: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,053$ kN·m	$M_{z,Rd} = 1,010$ kN·m	5,2%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,4%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	0,7%	Sí
		$N_{Ed} = 0,1$ kN	$N_{Rd} = 31,0$ kN	0,2%	Sí
		$M_{x,Ed} = 0,203$ kN·m	---	---	---
		$M_{y,Ed} = 0,049$ kN·m	---	---	---

## Nudo 165 [+100; +404; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
254: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 9,5$ kN	$\Sigma V_{v,Rd} = 105,6$ kN	9,0%	Sí
263: ALLR 48,3.3,2					
Travesaños / largueros					
261: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,047$ kN·m	$M_{z,Rd} = 1,010$ kN·m	4,6%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,4%	Sí
		$V_{z,Ed} = 0,0$ kN	$V_{z,Rd} = 10,0$ kN	0,3%	Sí
		$N_{Ed} = 0,0$ kN	$N_{Rd} = 31,0$ kN	0,0%	Sí
		$M_{x,Ed} = 0,047$ kN·m	---	---	---
		$M_{y,Ed} = 0,021$ kN·m	---	---	---
262: U_AL VP	K 2000+ T02	$M_{z,Ed} = 0,024$ kN·m	$M_{z,Rd} = 1,010$ kN·m	2,4%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,5%	Sí
		$V_{z,Ed} = 0,0$ kN	$V_{z,Rd} = 10,0$ kN	0,1%	Sí
		$N_{Ed} = 0,0$ kN	$N_{Rd} = 31,0$ kN	0,0%	Sí
		$M_{x,Ed} = 0,001$ kN·m	---	---	---
		$M_{y,Ed} = 0,001$ kN·m	---	---	---

## Nudo 166 [+257; +404; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
255: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{v,Ed} = 12,8$ kN	$\Sigma V_{v,Rd} = 105,6$ kN	12,1%	Sí
265: ALLR 48,3.3,2					
Travesaños / largueros					
261: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,046$ kN·m	$M_{z,Rd} = 1,010$ kN·m	4,6%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,4%	Sí
		$V_{z,Ed} = 0,0$ kN	$V_{z,Rd} = 10,0$ kN	0,3%	Sí
		$N_{Ed} = 0,0$ kN	$N_{Rd} = 31,0$ kN	0,0%	Sí
		$M_{x,Ed} = 0,047$ kN·m	---	---	---
		$M_{y,Ed} = 0,021$ kN·m	---	---	---
264: U_AL VP	K 2000+ T02	$M_{z,Ed} = 0,091$ kN·m	$M_{z,Rd} = 1,010$ kN·m	9,0%	Sí
		$V_{y,Ed} = 0,3$ kN	$V_{y,Rd} = 26,4$ kN	1,1%	Sí
		$V_{z,Ed} = 0,0$ kN	$V_{z,Rd} = 10,0$ kN	0,2%	Sí
		$N_{Ed} = 0,0$ kN	$N_{Rd} = 31,0$ kN	0,0%	Sí
		$M_{x,Ed} = 0,002$ kN·m	---	---	---
		$M_{y,Ed} = 0,018$ kN·m	---	---	---

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
		kN·m			

## Nudo 168 [+100; +404; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
258: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 8,1 \text{ kN}$	$\Sigma V_{y,Rd} = 105,6 \text{ kN}$	7,6%	Sí
268: ALLR 48,3.3,2					
Travesaños / largueros					
262: U_AL VP	K 2000+ T02	$M_{z,Ed} = 0,015 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	1,5%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,5%	Sí
		$V_{z,Ed} = 0,0 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	0,1%	Sí
		$N_{Ed} = 0,0 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	0,0%	Sí
		$M_{x,Ed} = 0,001 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,016 \text{ kN}\cdot\text{m}$	---	---	---
267: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,027 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	2,7%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,3%	Sí
		$V_{z,Ed} = 0,1 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	0,9%	Sí
		$N_{Ed} = 0,0 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	0,0%	Sí
		$M_{x,Ed} = 0,161 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,060 \text{ kN}\cdot\text{m}$	---	---	---

## Nudo 169 [+257; +404; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
259: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 8,9 \text{ kN}$	$\Sigma V_{y,Rd} = 105,6 \text{ kN}$	8,4%	Sí
270: ALLR 48,3.3,2					
Travesaños / largueros					
264: U_AL VP	K 2000+ T02	$M_{z,Ed} = 0,366 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	36,3%	Sí
		$V_{y,Ed} = 0,3 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	1,1%	Sí
		$V_{z,Ed} = 0,0 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	0,2%	Sí
		$N_{Ed} = 0,0 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	0,0%	Sí
		$M_{x,Ed} = 0,002 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,054 \text{ kN}\cdot\text{m}$	---	---	---
267: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,026 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	2,6%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,3%	Sí
		$V_{z,Ed} = 0,1 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	0,9%	Sí



Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
		$N_{Ed} = 0,0$ kN	$N_{Rd} = 31,0$ kN	0,0%	Sí
		$M_{x,Ed} = 0,161$ kN·m	---	---	---
		$M_{y,Ed} = 0,081$ kN·m	---	---	---
269: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,061$ kN·m	$M_{z,Rd} = 1,010$ kN·m	6,0%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,5%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	0,8%	Sí
		$N_{Ed} = 5,2$ kN	$N_{Rd} = 31,0$ kN	16,7%	Sí
		$M_{x,Ed} = 0,060$ kN·m	---	---	---
		$M_{y,Ed} = 0,115$ kN·m	---	---	---

### Nudo 170 [+514; +404; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
260: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,1$ kN	$\Sigma V_{y,Rd} = 105,6$ kN	0,1%	Sí
271: ALLR 48,3.3,2					
Travesaños / largueros					
269: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,142$ kN·m	$M_{z,Rd} = 1,010$ kN·m	14,1%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,5%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	0,8%	Sí
		$N_{Ed} = 5,2$ kN	$N_{Rd} = 31,0$ kN	16,7%	Sí
		$M_{x,Ed} = 0,060$ kN·m	---	---	---
		$M_{y,Ed} = 0,092$ kN·m	---	---	---

### Nudo 173 [+100; +454; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
263: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,3$ kN	$\Sigma V_{y,Rd} = 105,6$ kN	0,2%	Sí
274: ALLR 48,3.3,2					
Travesaños / largueros					
272: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,057$ kN·m	$M_{z,Rd} = 1,010$ kN·m	5,6%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,4%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	0,7%	Sí
		$N_{Ed} = 1,4$ kN	$N_{Rd} = 31,0$ kN	4,6%	Sí
		$M_{x,Ed} = 0,094$ kN·m	---	---	---
		$M_{y,Ed} = 0,070$ kN·m	---	---	---

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
273: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,192$ kN·m	$M_{z,Rd} = 1,010$ kN·m	19,0%	Sí
		$V_{y,Ed} = 0,2$ kN	$V_{y,Rd} = 26,4$ kN	0,8%	Sí
		$V_{z,Ed} = 0,0$ kN	$V_{z,Rd} = 10,0$ kN	0,5%	Sí
		$N_{Ed} = 0,5$ kN	$N_{Rd} = 31,0$ kN	1,5%	Sí
		$M_{x,Ed} = 0,008$ kN·m	---	---	---
		$M_{y,Ed} = 0,069$ kN·m	---	---	---

## Nudo 174 [+257; +454; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
265: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,2$ kN	$\Sigma V_{v,Rd} = 105,6$ kN	0,1%	Sí
276: ALLR 48,3.3,2					
Travesaños / largueros					
272: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,056$ kN·m	$M_{z,Rd} = 1,010$ kN·m	5,5%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,4%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	0,7%	Sí
		$N_{Ed} = 1,4$ kN	$N_{Rd} = 31,0$ kN	4,6%	Sí
		$M_{x,Ed} = 0,094$ kN·m	---	---	---
		$M_{y,Ed} = 0,045$ kN·m	---	---	---
275: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,059$ kN·m	$M_{z,Rd} = 1,010$ kN·m	5,8%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,4%	Sí
		$V_{z,Ed} = 0,0$ kN	$V_{z,Rd} = 10,0$ kN	0,4%	Sí
		$N_{Ed} = 2,8$ kN	$N_{Rd} = 31,0$ kN	8,9%	Sí
		$M_{x,Ed} = 0,101$ kN·m	---	---	---
		$M_{y,Ed} = 0,070$ kN·m	---	---	---

## Nudo 175 [+514; +454; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
266: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 7,2$ kN	$\Sigma V_{v,Rd} = 105,6$ kN	6,8%	Sí
278: ALLR 48,3.3,2					
Travesaños / largueros					
275: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,059$ kN·m	$M_{z,Rd} = 1,010$ kN·m	5,8%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,4%	Sí
		$V_{z,Ed} = 0,0$ kN	$V_{z,Rd} = 10,0$ kN	0,4%	Sí
		$N_{Ed} = 2,8$ kN	$N_{Rd} = 31,0$ kN	8,9%	Sí

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
		$M_{x,Ed} = 0,101$ kN·m	---	---	---
		$M_{y,Ed} = 0,024$ kN·m	---	---	---
277: U_AL VP	K 2000+ T02	$M_{z,Ed} = 0,315$ kN·m	$M_{z,Rd} = 1,010$ kN·m	31,2%	Sí
		$V_{y,Ed} = 0,3$ kN	$V_{y,Rd} = 26,4$ kN	1,3%	Sí
		$V_{z,Ed} = 0,0$ kN	$V_{z,Rd} = 10,0$ kN	0,4%	Sí
		$N_{Ed} = 0,0$ kN	$N_{Rd} = 31,0$ kN	0,0%	Sí
		$M_{x,Ed} = 0,003$ kN·m	---	---	---
		$M_{y,Ed} = 0,056$ kN·m	---	---	---

## Nudo 176 [+100; +454; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
268: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,3$ kN	$\Sigma V_{v,Rd} = 105,6$ kN	0,3%	Sí
280: ALLR 48,3.3,2					
Travesaños / largueros					
273: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,198$ kN·m	$M_{z,Rd} = 1,010$ kN·m	19,6%	Sí
		$V_{y,Ed} = 0,2$ kN	$V_{y,Rd} = 26,4$ kN	0,8%	Sí
		$V_{z,Ed} = 0,0$ kN	$V_{z,Rd} = 10,0$ kN	0,5%	Sí
		$N_{Ed} = 0,5$ kN	$N_{Rd} = 31,0$ kN	1,5%	Sí
		$M_{x,Ed} = 0,008$ kN·m	---	---	---
		$M_{y,Ed} = 0,082$ kN·m	---	---	---
279: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,054$ kN·m	$M_{z,Rd} = 1,010$ kN·m	5,4%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,4%	Sí
		$V_{z,Ed} = 0,2$ kN	$V_{z,Rd} = 10,0$ kN	2,0%	Sí
		$N_{Ed} = 1,6$ kN	$N_{Rd} = 31,0$ kN	5,3%	Sí
		$M_{x,Ed} = 0,103$ kN·m	---	---	---
		$M_{y,Ed} = 0,159$ kN·m	---	---	---

## Nudo 177 [+257; +454; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
270: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,1$ kN	$\Sigma V_{v,Rd} = 105,6$ kN	0,1%	Sí
282: ALLR 48,3.3,2					
Travesaños / largueros					
279: ALLR	K 2000+ T01	$M_{z,Ed} = 0,053$	$M_{z,Rd} = 1,010$	5,2%	Sí

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
48,3.3,2_HSR		kN·m	kN·m		
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,4%	Sí
		$V_{z,Ed} = 0,2$ kN	$V_{z,Rd} = 10,0$ kN	2,0%	Sí
		$N_{Ed} = 1,6$ kN	$N_{Rd} = 31,0$ kN	5,3%	Sí
		$M_{x,Ed} = 0,103$ kN·m	---	---	---
		$M_{y,Ed} = 0,150$ kN·m	---	---	---
281: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,063$ kN·m	$M_{z,Rd} = 1,010$ kN·m	6,2%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,5%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	0,7%	Sí
		$N_{Ed} = 3,4$ kN	$N_{Rd} = 31,0$ kN	10,9%	Sí
		$M_{x,Ed} = 0,095$ kN·m	---	---	---
		$M_{y,Ed} = 0,124$ kN·m	---	---	---

### Nudo 178 [+514; +454; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
271: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 7,4$ kN	$\Sigma V_{y,Rd} = 105,6$ kN	7,0%	Sí
283: ALLR 48,3.3,2					
Travesaños / largueros					
277: U_AL VP	K 2000+ T02	$M_{z,Ed} = 0,312$ kN·m	$M_{z,Rd} = 1,010$ kN·m	30,9%	Sí
		$V_{y,Ed} = 0,3$ kN	$V_{y,Rd} = 26,4$ kN	1,3%	Sí
		$V_{z,Ed} = 0,0$ kN	$V_{z,Rd} = 10,0$ kN	0,4%	Sí
		$N_{Ed} = 0,0$ kN	$N_{Rd} = 31,0$ kN	0,0%	Sí
		$M_{x,Ed} = 0,003$ kN·m	---	---	---
		$M_{y,Ed} = 0,076$ kN·m	---	---	---
281: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,083$ kN·m	$M_{z,Rd} = 1,010$ kN·m	8,2%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,5%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	0,7%	Sí
		$N_{Ed} = 3,4$ kN	$N_{Rd} = 31,0$ kN	10,9%	Sí
		$M_{x,Ed} = 0,095$ kN·m	---	---	---
		$M_{y,Ed} = 0,059$ kN·m	---	---	---

### Nudo 179 [+100; +504; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
274: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 7,0$ kN	$\Sigma V_{y,Rd} = 105,6$ kN	6,7%	Sí

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
286: ALLR 48,3.3,2					
Travesaños / largueros					
284: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,045$ kN·m	$M_{z,Rd} = 1,010$ kN·m	4,5%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,4%	Sí
		$V_{z,Ed} = 0,2$ kN	$V_{z,Rd} = 10,0$ kN	1,6%	Sí
		$N_{Ed} = 3,4$ kN	$N_{Rd} = 31,0$ kN	11,0%	Sí
		$M_{x,Ed} = 0,053$ kN·m	---	---	---
		$M_{y,Ed} = 0,163$ kN·m	---	---	---
285: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,155$ kN·m	$M_{z,Rd} = 1,010$ kN·m	15,4%	Sí
		$V_{y,Ed} = 0,2$ kN	$V_{y,Rd} = 26,4$ kN	0,7%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	0,8%	Sí
		$N_{Ed} = 1,5$ kN	$N_{Rd} = 31,0$ kN	5,0%	Sí
		$M_{x,Ed} = 0,012$ kN·m	---	---	---
		$M_{y,Ed} = 0,116$ kN·m	---	---	---
Diagonales					
244: ALLR 48,3.2,3	K 2000+ D01	$N_{c,Ed} = 8,7$ kN	$N_{c,Rd} = 14,7$ kN	58,9%	Sí
		$N_{t,Ed} = 8,7$ kN	$N_{t,Rd} = 17,9$ kN	48,8%	Sí
		$V_{y,Ed} = 0,0$ kN	---	---	---
		$V_{z,Ed} = 0,0$ kN	---	---	---
		$M_{x,Ed} = 0,036$ kN·m	---	---	---
		$M_{y,Ed} = 0,086$ kN·m	---	---	---
		$M_{z,Ed} = 0,034$ kN·m	---	---	---
249: ALLR 48,3.2,3	K 2000+ D01	$N_{c,Ed} = 4,4$ kN	$N_{c,Rd} = 8,4$ kN	52,6%	Sí
		$N_{t,Ed} = 4,5$ kN	$N_{t,Rd} = 17,9$ kN	25,0%	Sí
		$V_{y,Ed} = 0,1$ kN	---	---	---
		$V_{z,Ed} = 0,0$ kN	---	---	---
		$M_{x,Ed} = 0,020$ kN·m	---	---	---
		$M_{y,Ed} = 0,006$ kN·m	---	---	---
		$M_{z,Ed} = 0,132$ kN·m	---	---	---

## Nudo 180 [+257; +504; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
Montantes					
276: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,1$ kN	$\Sigma V_{y,Rd} = 105,6$ kN	0,1%	Sí
288: ALLR 48,3.3,2					
Travesaños / largueros					
284: ALLR	K 2000+ T01	$M_{z,Ed} = 0,046$ kN·m	$M_{z,Rd} = 1,010$ kN·m	4,6%	Sí

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
48,3.3,2_HSR		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,4%	Sí
		$V_{z,Ed} = 0,2$ kN	$V_{z,Rd} = 10,0$ kN	1,6%	Sí
		$N_{Ed} = 3,4$ kN	$N_{Rd} = 31,0$ kN	11,0%	Sí
		$M_{x,Ed} = 0,053$ kN·m	---	---	---
		$M_{y,Ed} = 0,088$ kN·m	---	---	---
287: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,052$ kN·m	$M_{z,Rd} = 1,010$ kN·m	5,2%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,4%	Sí
		$V_{z,Ed} = 0,0$ kN	$V_{z,Rd} = 10,0$ kN	0,1%	Sí
		$N_{Ed} = 1,5$ kN	$N_{Rd} = 31,0$ kN	4,9%	Sí
		$M_{x,Ed} = 0,065$ kN·m	---	---	---
		$M_{y,Ed} = 0,048$ kN·m	---	---	---

### Nudo 181 [+514; +504; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
Montantes					
278: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,2$ kN	$\Sigma V_{y,Rd} = 105,6$ kN	0,2%	Sí
290: ALLR 48,3.3,2					
Travesaños / largueros					
287: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,055$ kN·m	$M_{z,Rd} = 1,010$ kN·m	5,4%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,4%	Sí
		$V_{z,Ed} = 0,0$ kN	$V_{z,Rd} = 10,0$ kN	0,1%	Sí
		$N_{Ed} = 1,5$ kN	$N_{Rd} = 31,0$ kN	4,9%	Sí
		$M_{x,Ed} = 0,065$ kN·m	---	---	---
		$M_{y,Ed} = 0,030$ kN·m	---	---	---
289: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,114$ kN·m	$M_{z,Rd} = 1,010$ kN·m	11,3%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,6%	Sí
		$V_{z,Ed} = 0,0$ kN	$V_{z,Rd} = 10,0$ kN	0,1%	Sí
		$N_{Ed} = 0,3$ kN	$N_{Rd} = 31,0$ kN	0,9%	Sí
		$M_{x,Ed} = 0,009$ kN·m	---	---	---
		$M_{y,Ed} = 0,017$ kN·m	---	---	---

### Nudo 182 [+100; +504; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
Montantes					
280: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 3,1$ kN	$\Sigma V_{y,Rd} = 105,6$ kN	2,9%	Sí
292: ALLR					

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
48,3.3,2					
Travesaños / largueros					
285: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,162$ kN·m	$M_{z,Rd} = 1,010$ kN·m	16,1%	Sí
		$V_{y,Ed} = 0,2$ kN	$V_{y,Rd} = 26,4$ kN	0,7%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	0,8%	Sí
		$N_{Ed} = 1,5$ kN	$N_{Rd} = 31,0$ kN	5,0%	Sí
		$M_{x,Ed} = 0,012$ kN·m	---	---	---
		$M_{y,Ed} = 0,120$ kN·m	---	---	---
291: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,083$ kN·m	$M_{z,Rd} = 1,010$ kN·m	8,2%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,6%	Sí
		$V_{z,Ed} = 0,2$ kN	$V_{z,Rd} = 10,0$ kN	2,5%	Sí
		$N_{Ed} = 1,2$ kN	$N_{Rd} = 31,0$ kN	3,8%	Sí
		$M_{x,Ed} = 0,027$ kN·m	---	---	---
		$M_{y,Ed} = 0,237$ kN·m	---	---	---
Diagonales					
251: ALLR 48,3.2,3	K 2000+ D01	$N_{c,Ed} = 3,7$ kN	$N_{c,Rd} = 14,7$ kN	25,4%	Sí
		$N_{t,Ed} = 3,8$ kN	$N_{t,Rd} = 17,9$ kN	21,3%	Sí
		$V_{y,Ed} = 0,0$ kN	---	---	---
		$V_{z,Ed} = 0,1$ kN	---	---	---
		$M_{x,Ed} = 0,036$ kN·m	---	---	---
		$M_{y,Ed} = 0,258$ kN·m	---	---	---
		$M_{z,Ed} = 0,046$ kN·m	---	---	---

## Nudo 183 [+257; +504; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
282: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,2$ kN	$\Sigma V_{y,Rd} = 105,6$ kN	0,2%	Sí
294: ALLR 48,3.3,2					
Travesaños / largueros					
291: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,086$ kN·m	$M_{z,Rd} = 1,010$ kN·m	8,5%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,6%	Sí
		$V_{z,Ed} = 0,2$ kN	$V_{z,Rd} = 10,0$ kN	2,5%	Sí
		$N_{Ed} = 1,2$ kN	$N_{Rd} = 31,0$ kN	3,8%	Sí
		$M_{x,Ed} = 0,027$ kN·m	---	---	---
		$M_{y,Ed} = 0,155$ kN·m	---	---	---
293: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,085$ kN·m	$M_{z,Rd} = 1,010$ kN·m	8,4%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,5%	Sí
		$V_{z,Ed} = 0,0$ kN	$V_{z,Rd} = 10,0$ kN	0,4%	Sí

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
		$N_{Ed} = 0,4 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	1,3%	Sí
		$M_{x,Ed} = 0,079 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,098 \text{ kN}\cdot\text{m}$	---	---	---

## Nudo 184 [+514; +504; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
Montantes					
283: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,2 \text{ kN}$	$\Sigma V_{y,Rd} = 105,6 \text{ kN}$	0,2%	Sí
295: ALLR 48,3.3,2					
Travesaños / largueros					
289: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,115 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	11,4%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,6%	Sí
		$V_{z,Ed} = 0,0 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	0,1%	Sí
		$N_{Ed} = 0,3 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	0,9%	Sí
		$M_{x,Ed} = 0,009 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,006 \text{ kN}\cdot\text{m}$	---	---	---
293: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,084 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	8,4%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,5%	Sí
		$V_{z,Ed} = 0,0 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	0,4%	Sí
		$N_{Ed} = 0,4 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	1,3%	Sí
		$M_{x,Ed} = 0,079 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,007 \text{ kN}\cdot\text{m}$	---	---	---

## Nudo 185 [+100; +554; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
Montantes					
286: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,2 \text{ kN}$	$\Sigma V_{y,Rd} = 105,6 \text{ kN}$	0,2%	Sí
Travesaños / largueros					
296: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,018 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	1,8%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,2%	Sí
		$V_{z,Ed} = 0,1 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	1,5%	Sí
		$N_{Ed} = 0,7 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	2,2%	Sí
		$M_{x,Ed} = 0,017 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,167 \text{ kN}\cdot\text{m}$	---	---	---
297: ALLR	K 2000+ T01	$M_{z,Ed} = 0,107 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	10,6%	Sí



Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
48,3.3,2_HSR		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,6%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	1,0%	Sí
		$N_{Ed} = 0,1$ kN	$N_{Rd} = 31,0$ kN	0,4%	Sí
		$M_{x,Ed} = 0,018$ kN·m	---	---	---
		$M_{y,Ed} = 0,148$ kN·m	---	---	---

## Nudo 186 [+257; +554; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
Montantes					
288: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,1$ kN	$\Sigma V_{y,Rd} = 105,6$ kN	0,1%	Sí
Travesaños / largueros					
296: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,017$ kN·m	$M_{z,Rd} = 1,010$ kN·m	1,7%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,2%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	1,5%	Sí
		$N_{Ed} = 0,7$ kN	$N_{Rd} = 31,0$ kN	2,2%	Sí
		$M_{x,Ed} = 0,017$ kN·m	---	---	---
298: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,028$ kN·m	$M_{z,Rd} = 1,010$ kN·m	2,8%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,3%	Sí
		$V_{z,Ed} = 0,0$ kN	$V_{z,Rd} = 10,0$ kN	0,3%	Sí
		$N_{Ed} = 1,3$ kN	$N_{Rd} = 31,0$ kN	4,3%	Sí
		$M_{x,Ed} = 0,050$ kN·m	---	---	---
		$M_{y,Ed} = 0,017$ kN·m	---	---	---

## Nudo 187 [+514; +554; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
Montantes					
290: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 1,8$ kN	$\Sigma V_{y,Rd} = 105,6$ kN	1,7%	Sí
Travesaños / largueros					
298: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,024$ kN·m	$M_{z,Rd} = 1,010$ kN·m	2,4%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,3%	Sí
		$V_{z,Ed} = 0,0$ kN	$V_{z,Rd} = 10,0$ kN	0,3%	Sí
		$N_{Ed} = 1,3$ kN	$N_{Rd} = 31,0$ kN	4,3%	Sí
		$M_{x,Ed} = 0,050$ kN·m	---	---	---
		$M_{y,Ed} = 0,081$ kN·m	---	---	---
299: ALLR	K 2000+ T01	$M_{z,Ed} = 0,079$ kN·m	$M_{z,Rd} = 1,010$ kN·m	7,8%	Sí

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
48,3.3,2_HSR		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,5%	Sí
		$V_{z,Ed} = 0,0$ kN	$V_{z,Rd} = 10,0$ kN	0,3%	Sí
		$N_{Ed} = 0,1$ kN	$N_{Rd} = 31,0$ kN	0,4%	Sí
		$M_{x,Ed} = 0,019$ kN·m	---	---	---
		$M_{y,Ed} = 0,046$ kN·m	---	---	---
<b>Diagonales</b>					
302: ALLR 48,3.2,3	K 2000+ D01	$N_{c,Ed} = 2,4$ kN	$N_{c,Rd} = 10,2$ kN	23,9%	Sí
		$N_{t,Ed} = 2,5$ kN	$N_{t,Rd} = 17,9$ kN	14,2%	Sí
		$V_{y,Ed} = 0,1$ kN	---	---	---
		$V_{z,Ed} = 0,0$ kN	---	---	---
		$M_{x,Ed} = 0,027$ kN·m	---	---	---
		$M_{y,Ed} = 0,008$ kN·m	---	---	---
		$M_{z,Ed} = 0,035$ kN·m	---	---	---

### Nudo 188 [+100; +554; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
<b>Montantes</b>					
292: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,2$ kN	$\Sigma V_{y,Rd} = 105,6$ kN	0,2%	Sí
<b>Travesaños / largueros</b>					
297: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,116$ kN·m	$M_{z,Rd} = 1,010$ kN·m	11,5%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,6%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	1,0%	Sí
		$N_{Ed} = 0,1$ kN	$N_{Rd} = 31,0$ kN	0,4%	Sí
		$M_{x,Ed} = 0,018$ kN·m	---	---	---
		$M_{y,Ed} = 0,156$ kN·m	---	---	---
300: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,051$ kN·m	$M_{z,Rd} = 1,010$ kN·m	5,1%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,4%	Sí
		$V_{z,Ed} = 0,2$ kN	$V_{z,Rd} = 10,0$ kN	1,7%	Sí
		$N_{Ed} = 0,1$ kN	$N_{Rd} = 31,0$ kN	0,2%	Sí
		$M_{x,Ed} = 0,002$ kN·m	---	---	---
		$M_{y,Ed} = 0,183$ kN·m	---	---	---

### Nudo 189 [+257; +554; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
<b>Montantes</b>					
294: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,2$ kN	$\Sigma V_{y,Rd} = 105,6$ kN	0,1%	Sí
<b>Travesaños / largueros</b>					

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
300: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,052$ kN·m	$M_{z,Rd} = 1,010$ kN·m	5,2%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,4%	Sí
		$V_{z,Ed} = 0,2$ kN	$V_{z,Rd} = 10,0$ kN	1,7%	Sí
		$N_{Ed} = 0,1$ kN	$N_{Rd} = 31,0$ kN	0,2%	Sí
		$M_{x,Ed} = 0,002$ kN·m	---	---	---
		$M_{y,Ed} = 0,087$ kN·m	---	---	---
301: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,056$ kN·m	$M_{z,Rd} = 1,010$ kN·m	5,6%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,4%	Sí
		$V_{z,Ed} = 0,0$ kN	$V_{z,Rd} = 10,0$ kN	0,1%	Sí
		$N_{Ed} = 0,1$ kN	$N_{Rd} = 31,0$ kN	0,3%	Sí
		$M_{x,Ed} = 0,061$ kN·m	---	---	---
		$M_{y,Ed} = 0,046$ kN·m	---	---	---

## Nudo 190 [+514; +554; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
Montantes					
295: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,2$ kN	$\Sigma V_{v,Rd} = 105,6$ kN	0,2%	Sí
Travesaños / largueros					
299: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,078$ kN·m	$M_{z,Rd} = 1,010$ kN·m	7,7%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,5%	Sí
		$V_{z,Ed} = 0,0$ kN	$V_{z,Rd} = 10,0$ kN	0,3%	Sí
		$N_{Ed} = 0,1$ kN	$N_{Rd} = 31,0$ kN	0,4%	Sí
		$M_{x,Ed} = 0,019$ kN·m	---	---	---
		$M_{y,Ed} = 0,040$ kN·m	---	---	---
301: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,059$ kN·m	$M_{z,Rd} = 1,010$ kN·m	5,8%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,4%	Sí
		$V_{z,Ed} = 0,0$ kN	$V_{z,Rd} = 10,0$ kN	0,1%	Sí
		$N_{Ed} = 0,1$ kN	$N_{Rd} = 31,0$ kN	0,3%	Sí
		$M_{x,Ed} = 0,061$ kN·m	---	---	---
		$M_{y,Ed} = 0,066$ kN·m	---	---	---

## 2. Resumen de uniones

### 2.1. Pésima comprobación global

#### Nudo 69 [+90; +75; +89], cm

Unión mediante grapa ortogonal

Elemento de unión: G01 48x48

Barra	Esfuerzos	Resistencia	Comprobación	Cumple
Generales				
	$F_{p,Ed} = 0,8 \text{ kN}$	$F_{p,Rd} = 30,0 \text{ kN}$	2,7%	Sí
	$M_{B,Ed} = 0,028 \text{ kN}\cdot\text{m}$	$M_{B,Rd} = 0,800 \text{ kN}\cdot\text{m}$	3,5%	Sí
Barra 1				
11: ALLR 48,3.3,2	$N_{Ed} = 0,8 \text{ kN}$	$N_{Rd} = 9,1 \text{ kN}$	9,0%	Sí
	$M_{x,Ed} = 0,022 \text{ kN}\cdot\text{m}$	$M_{x,Rd} = 0,130 \text{ kN}\cdot\text{m}$	16,7%	Sí
124: ALLR 48,3.3,2	$V_{y,Ed} = 0,0 \text{ kN}$	---	---	---
	$M_{y,Ed} = 0,187 \text{ kN}\cdot\text{m}$	---	---	---
Barra 2				
122: ALLR 48,3.3,2	$N_{Ed} = 0,0 \text{ kN}$	$N_{Rd} = 9,1 \text{ kN}$	0,0%	Sí
	$M_{x,Ed} = 0,187 \text{ kN}\cdot\text{m}$	$M_{x,Rd} = 0,130 \text{ kN}\cdot\text{m}$	143,8%	No
123: ALLR 48,3.3,2	$V_{y,Ed} = 0,8 \text{ kN}$	---	---	---
	$M_{y,Ed} = 0,022 \text{ kN}\cdot\text{m}$	---	---	---

### 2.2. Pésima comprobación de cortante vertical global en la roseta

#### Nudo 166 [+257; +404; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
Montantes					
255: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{v,Ed} = 12,8 \text{ kN}$	$\Sigma V_{v,Rd} = 105,6 \text{ kN}$	12,1%	Sí
265: ALLR 48,3.3,2					
Travesaños / largueros					
261: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,046 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	4,6%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,4%	Sí
		$V_{z,Ed} = 0,0 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	0,3%	Sí
		$N_{Ed} = 0,0 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	0,0%	Sí
		$M_{x,Ed} = 0,047 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,021 \text{ kN}\cdot\text{m}$	---	---	---
264: U_AL VP	K 2000+ T02	$M_{z,Ed} = 0,091 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	9,0%	Sí
		$V_{y,Ed} = 0,3 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	1,1%	Sí
		$V_{z,Ed} = 0,0 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	0,2%	Sí
		$N_{Ed} = 0,0 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	0,0%	Sí
		$M_{x,Ed} = 0,002 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,018 \text{ kN}\cdot\text{m}$	---	---	---

## 2.3. Pésima comprobación a flexión Mz en un travesaño o larguero

### Nudo 169 [+257; +404; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
259: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 8,9 \text{ kN}$	$\Sigma V_{v,Rd} = 105,6 \text{ kN}$	8,4%	Sí
270: ALLR 48,3.3,2					
Travesaños / largueros					
264: U_AL VP	K 2000+ T02	$M_{z,Ed} = 0,366 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	36,3%	Sí
		$V_{y,Ed} = 0,3 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	1,1%	Sí
		$V_{z,Ed} = 0,0 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	0,2%	Sí
		$N_{Ed} = 0,0 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	0,0%	Sí
		$M_{x,Ed} = 0,002 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,054 \text{ kN}\cdot\text{m}$	---	---	---
267: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,026 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	2,6%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,3%	Sí
		$V_{z,Ed} = 0,1 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	0,9%	Sí
		$N_{Ed} = 0,0 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	0,0%	Sí
		$M_{x,Ed} = 0,161 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,081 \text{ kN}\cdot\text{m}$	---	---	---
269: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,061 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	6,0%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,5%	Sí
		$V_{z,Ed} = 0,1 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	0,8%	Sí
		$N_{Ed} = 5,2 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	16,7%	Sí
		$M_{x,Ed} = 0,060 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,115 \text{ kN}\cdot\text{m}$	---	---	---

## 2.4. Pésima comprobación a cortante Vy en un travesaño o larguero

### Nudo 124 [+257; +104; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
114: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 8,7 \text{ kN}$	$\Sigma V_{v,Rd} = 105,6 \text{ kN}$	8,2%	Sí
193: ALLR 48,3.3,2					
Travesaños / largueros					
188: ALLR 48,3.3,2	K 2000+ T01	$M_{z,Ed} = 0,015 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	1,5%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,3%	Sí
		$V_{z,Ed} = 0,3 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	2,8%	Sí

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
		$N_{Ed} = 0,5 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	1,5%	Sí
		$M_{x,Ed} = 0,010 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,200 \text{ kN}\cdot\text{m}$	---	---	---
191: ALLR 48,3.3,2	K 2000+ T01	$M_{z,Ed} = 0,029 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	2,9%	Sí
		$V_{y,Ed} = 0,1 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,4%	Sí
		$V_{z,Ed} = 0,1 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	1,0%	Sí
		$N_{Ed} = 0,1 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	0,2%	Sí
		$M_{x,Ed} = 0,025 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,121 \text{ kN}\cdot\text{m}$	---	---	---
192: U_AL VP	K 2000+ T02	$M_{z,Ed} = 0,151 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	15,0%	Sí
		$V_{y,Ed} = 8,2 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	30,9%	Sí
		$V_{z,Ed} = 0,2 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	1,8%	Sí
		$N_{Ed} = 1,5 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	4,8%	Sí
		$M_{x,Ed} = 0,003 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,275 \text{ kN}\cdot\text{m}$	---	---	---
Diagonales					
194: ALLR 48,3.2,3	K 2000+ D01	$N_{c,Ed} = 2,2 \text{ kN}$	$N_{c,Rd} = 14,7 \text{ kN}$	14,8%	Sí
		$N_{t,Ed} = 2,1 \text{ kN}$	$N_{t,Rd} = 17,9 \text{ kN}$	11,7%	Sí
		$V_{y,Ed} = 0,0 \text{ kN}$	---	---	---
		$V_{z,Ed} = 0,0 \text{ kN}$	---	---	---
		$M_{x,Ed} = 0,049 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,055 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{z,Ed} = 0,016 \text{ kN}\cdot\text{m}$	---	---	---

## 2.5. Pésima comprobación a cortante Vz en un travesaño o larguero

### Nudo 121 [+257; +75; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
Montantes					
109: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 0,0 \text{ kN}$	$\Sigma V_{y,Rd} = 105,6 \text{ kN}$	0,0%	Sí
186: ALLR 48,3.3,2					
Travesaños / largueros					
167: ALLR 48,3.3,2	K 2000+ T01	$M_{z,Ed} = 0,053 \text{ kN}\cdot\text{m}$	$M_{z,Rd} = 1,010 \text{ kN}\cdot\text{m}$	5,3%	Sí
		$V_{y,Ed} = 0,0 \text{ kN}$	$V_{y,Rd} = 26,4 \text{ kN}$	0,1%	Sí
		$V_{z,Ed} = 0,5 \text{ kN}$	$V_{z,Rd} = 10,0 \text{ kN}$	5,1%	Sí
		$N_{Ed} = 0,9 \text{ kN}$	$N_{Rd} = 31,0 \text{ kN}$	2,8%	Sí
		$M_{x,Ed} = 0,043 \text{ kN}\cdot\text{m}$	---	---	---
		$M_{y,Ed} = 0,125 \text{ kN}\cdot\text{m}$	---	---	---

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
		kN·m			

## 2.6. Pésima comprobación a axil en un travesaño o larguero

### Nudo 169 [+257; +404; +330] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
259: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 8,9$ kN	$\Sigma V_{y,Rd} = 105,6$ kN	8,4%	Sí
270: ALLR 48,3.3,2					
Travesaños / largueros					
264: U_AL VP	K 2000+ T02	$M_{z,Ed} = 0,366$ kN·m	$M_{z,Rd} = 1,010$ kN·m	36,3%	Sí
		$V_{y,Ed} = 0,3$ kN	$V_{y,Rd} = 26,4$ kN	1,1%	Sí
		$V_{z,Ed} = 0,0$ kN	$V_{z,Rd} = 10,0$ kN	0,2%	Sí
		$N_{Ed} = 0,0$ kN	$N_{Rd} = 31,0$ kN	0,0%	Sí
		$M_{x,Ed} = 0,002$ kN·m	---	---	---
		$M_{y,Ed} = 0,054$ kN·m	---	---	---
267: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,026$ kN·m	$M_{z,Rd} = 1,010$ kN·m	2,6%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,3%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	0,9%	Sí
		$N_{Ed} = 0,0$ kN	$N_{Rd} = 31,0$ kN	0,0%	Sí
		$M_{x,Ed} = 0,161$ kN·m	---	---	---
		$M_{y,Ed} = 0,081$ kN·m	---	---	---
269: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,061$ kN·m	$M_{z,Rd} = 1,010$ kN·m	6,0%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,5%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	0,8%	Sí
		$N_{Ed} = 5,2$ kN	$N_{Rd} = 31,0$ kN	16,7%	Sí
		$M_{x,Ed} = 0,060$ kN·m	---	---	---
		$M_{y,Ed} = 0,115$ kN·m	---	---	---

## 2.7. Pésima comprobación a compresión en una diagonal

### Nudo 152 [+257; +304; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
Montantes					
233: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 7,0$ kN	$\Sigma V_{y,Rd} = 105,6$ kN	6,7%	Sí
243: ALLR 48,3.3,2					
Travesaños / largueros					
240: ALLR	K 2000+ T01	$M_{z,Ed} = 0,026$ kN·m	$M_{z,Rd} = 1,010$ kN·m	2,6%	Sí

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
48,3.3,2_HSR		kN·m	kN·m		
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,3%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	1,1%	Sí
		$N_{Ed} = 1,3$ kN	$N_{Rd} = 31,0$ kN	4,2%	Sí
		$M_{x,Ed} = 0,027$ kN·m	---	---	---
242: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,037$ kN·m	$M_{z,Rd} = 1,010$ kN·m	3,7%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,4%	Sí
		$V_{z,Ed} = 0,2$ kN	$V_{z,Rd} = 10,0$ kN	1,8%	Sí
		$N_{Ed} = 5,0$ kN	$N_{Rd} = 31,0$ kN	16,3%	Sí
		$M_{x,Ed} = 0,019$ kN·m	---	---	---
		$M_{y,Ed} = 0,248$ kN·m	---	---	---
<b>Diagonales</b>					
244: ALLR 48,3.2,3	K 2000+ D01	$N_{c,Ed} = 8,8$ kN	$N_{c,Rd} = 14,7$ kN	59,6%	Sí
		$N_{t,Ed} = 8,6$ kN	$N_{t,Rd} = 17,9$ kN	48,2%	Sí
		$V_{y,Ed} = 0,0$ kN	---	---	---
		$V_{z,Ed} = 0,0$ kN	---	---	---
		$M_{x,Ed} = 0,036$ kN·m	---	---	---
		$M_{y,Ed} = 0,172$ kN·m	---	---	---
		$M_{z,Ed} = 0,013$ kN·m	---	---	---

## 2.8. Pésima comprobación a tracción en una diagonal

### Nudo 179 [+100; +504; +23] cm

Unión mediante roseta

Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cum ple
<b>Montantes</b>					
274: ALLR 48,3.3,2	K 2000+ R01	$\Sigma V_{y,Ed} = 7,0$ kN	$\Sigma V_{y,Rd} = 105,6$ kN	6,7%	Sí
286: ALLR 48,3.3,2					
<b>Travesaños / largueros</b>					
284: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,045$ kN·m	$M_{z,Rd} = 1,010$ kN·m	4,5%	Sí
		$V_{y,Ed} = 0,1$ kN	$V_{y,Rd} = 26,4$ kN	0,4%	Sí
		$V_{z,Ed} = 0,2$ kN	$V_{z,Rd} = 10,0$ kN	1,6%	Sí
		$N_{Ed} = 3,4$ kN	$N_{Rd} = 31,0$ kN	11,0%	Sí
		$M_{x,Ed} = 0,053$ kN·m	---	---	---
		$M_{y,Ed} = 0,163$ kN·m	---	---	---
285: ALLR 48,3.3,2_HSR	K 2000+ T01	$M_{z,Ed} = 0,155$ kN·m	$M_{z,Rd} = 1,010$ kN·m	15,4%	Sí
		$V_{y,Ed} = 0,2$ kN	$V_{y,Rd} = 26,4$ kN	0,7%	Sí
		$V_{z,Ed} = 0,1$ kN	$V_{z,Rd} = 10,0$ kN	0,8%	Sí
		$N_{Ed} = 1,5$ kN	$N_{Rd} = 31,0$ kN	5,0%	Sí



Barra	Elemento de unión	Esfuerzos	Resistencia	Comprobación	Cumple
		$M_{x,Ed} = 0,012$ kN·m	---	---	---
		$M_{y,Ed} = 0,116$ kN·m	---	---	---
Diagonales					
244: ALLR 48,3.2,3	K 2000+ D01	$N_{c,Ed} = 8,7$ kN	$N_{c,Rd} = 14,7$ kN	58,9%	Sí
		$N_{t,Ed} = 8,7$ kN	$N_{t,Rd} = 17,9$ kN	48,8%	Sí
		$V_{y,Ed} = 0,0$ kN	---	---	---
		$V_{z,Ed} = 0,0$ kN	---	---	---
		$M_{x,Ed} = 0,036$ kN·m	---	---	---
		$M_{y,Ed} = 0,086$ kN·m	---	---	---
		$M_{z,Ed} = 0,034$ kN·m	---	---	---
249: ALLR 48,3.2,3	K 2000+ D01	$N_{c,Ed} = 4,4$ kN	$N_{c,Rd} = 8,4$ kN	52,6%	Sí
		$N_{t,Ed} = 4,5$ kN	$N_{t,Rd} = 17,9$ kN	25,0%	Sí
		$V_{y,Ed} = 0,1$ kN	---	---	---
		$V_{z,Ed} = 0,0$ kN	---	---	---
		$M_{x,Ed} = 0,020$ kN·m	---	---	---
		$M_{y,Ed} = 0,006$ kN·m	---	---	---
		$M_{z,Ed} = 0,132$ kN·m	---	---	---

## 2.9. Pésima comprobación a deslizamiento en la barra 1 de una grapa

### Nudo 69 [+90; +75; +89] cm

Unión mediante grapa ortogonal  
Elemento de unión: G01 48x48

Barra	Esfuerzos	Resistencia	Comprobación	Cumple
Generales				
	$F_{p,Ed} = 0,8$ kN	$F_{p,Rd} = 30,0$ kN	2,7%	Sí
	$M_{B,Ed} = 0,028$ kN·m	$M_{B,Rd} = 0,800$ kN·m	3,5%	Sí
Barra 1				
11: ALLR 48,3.3,2	$N_{Ed} = 0,8$ kN	$N_{Rd} = 9,1$ kN	9,0%	Sí
	$M_{x,Ed} = 0,022$ kN·m	$M_{x,Rd} = 0,130$ kN·m	16,7%	Sí
124: ALLR 48,3.3,2	$V_{y,Ed} = 0,0$ kN	---	---	---
	$M_{y,Ed} = 0,187$ kN·m	---	---	---
Barra 2				
122: ALLR 48,3.3,2	$N_{Ed} = 0,0$ kN	$N_{Rd} = 9,1$ kN	0,0%	Sí
	$M_{x,Ed} = 0,187$ kN·m	$M_{x,Rd} = 0,130$ kN·m	143,8%	No
123: ALLR 48,3.3,2	$V_{y,Ed} = 0,8$ kN	---	---	---
	$M_{y,Ed} = 0,022$ kN·m	---	---	---

## 2.10. Pésima comprobación a deslizamiento en la barra 2 de una grapa

### Nudo 69 [+90; +75; +89] cm

Unión mediante grapa ortogonal  
Elemento de unión: G01 48x48

Barra	Esfuerzos	Resistencia	Comprobación	Cumple
-------	-----------	-------------	--------------	--------

Barra	Esfuerzos	Resistencia	Comprobación	Cumpl e
Generales				
	$F_{p,Ed} = 0,8 \text{ kN}$	$F_{p,Rd} = 30,0 \text{ kN}$	2,7%	Sí
	$M_{B,Ed} = 0,028 \text{ kN}\cdot\text{m}$	$M_{B,Rd} = 0,800 \text{ kN}\cdot\text{m}$	3,5%	Sí
Barra 1				
11: ALLR 48,3.3,2	$N_{Ed} = 0,8 \text{ kN}$	$N_{Rd} = 9,1 \text{ kN}$	9,0%	Sí
	$M_{x,Ed} = 0,022 \text{ kN}\cdot\text{m}$	$M_{x,Rd} = 0,130 \text{ kN}\cdot\text{m}$	16,7%	Sí
124: ALLR 48,3.3,2	$V_{y,Ed} = 0,0 \text{ kN}$	---	---	---
	$M_{y,Ed} = 0,187 \text{ kN}\cdot\text{m}$	---	---	---
Barra 2				
122: ALLR 48,3.3,2	$N_{Ed} = 0,0 \text{ kN}$	$N_{Rd} = 9,1 \text{ kN}$	0,0%	Sí
	$M_{x,Ed} = 0,187 \text{ kN}\cdot\text{m}$	$M_{x,Rd} = 0,130 \text{ kN}\cdot\text{m}$	143,8%	No
123: ALLR 48,3.3,2	$V_{y,Ed} = 0,8 \text{ kN}$	---	---	---
	$M_{y,Ed} = 0,022 \text{ kN}\cdot\text{m}$	---	---	---

## 2.11. Pésima comprobación a torsión en la barra 1 de una grapa

### Nudo 69 [+90; +75; +89] cm

Unión mediante grapa ortogonal  
Elemento de unión: G01 48x48

Barra	Esfuerzos	Resistencia	Comprobación	Cumpl e
Generales				
	$F_{p,Ed} = 0,8 \text{ kN}$	$F_{p,Rd} = 30,0 \text{ kN}$	2,7%	Sí
	$M_{B,Ed} = 0,028 \text{ kN}\cdot\text{m}$	$M_{B,Rd} = 0,800 \text{ kN}\cdot\text{m}$	3,5%	Sí
Barra 1				
11: ALLR 48,3.3,2	$N_{Ed} = 0,8 \text{ kN}$	$N_{Rd} = 9,1 \text{ kN}$	9,0%	Sí
	$M_{x,Ed} = 0,022 \text{ kN}\cdot\text{m}$	$M_{x,Rd} = 0,130 \text{ kN}\cdot\text{m}$	16,7%	Sí
124: ALLR 48,3.3,2	$V_{y,Ed} = 0,0 \text{ kN}$	---	---	---
	$M_{y,Ed} = 0,187 \text{ kN}\cdot\text{m}$	---	---	---
Barra 2				
122: ALLR 48,3.3,2	$N_{Ed} = 0,0 \text{ kN}$	$N_{Rd} = 9,1 \text{ kN}$	0,0%	Sí
	$M_{x,Ed} = 0,187 \text{ kN}\cdot\text{m}$	$M_{x,Rd} = 0,130 \text{ kN}\cdot\text{m}$	143,8%	No
123: ALLR 48,3.3,2	$V_{y,Ed} = 0,8 \text{ kN}$	---	---	---
	$M_{y,Ed} = 0,022 \text{ kN}\cdot\text{m}$	---	---	---

## 2.12. Pésima comprobación a torsión en la barra 2 de una grapa

### Nudo 69 [+90; +75; +89] cm

Unión mediante grapa ortogonal  
Elemento de unión: G01 48x48

Barra	Esfuerzos	Resistencia	Comprobación	Cumpl e
Generales				
	$F_{p,Ed} = 0,8 \text{ kN}$	$F_{p,Rd} = 30,0 \text{ kN}$	2,7%	Sí
	$M_{B,Ed} = 0,028 \text{ kN}\cdot\text{m}$	$M_{B,Rd} = 0,800 \text{ kN}\cdot\text{m}$	3,5%	Sí
Barra 1				
11: ALLR 48,3.3,2	$N_{Ed} = 0,8 \text{ kN}$	$N_{Rd} = 9,1 \text{ kN}$	9,0%	Sí
	$M_{x,Ed} = 0,022 \text{ kN}\cdot\text{m}$	$M_{x,Rd} = 0,130 \text{ kN}\cdot\text{m}$	16,7%	Sí
124: ALLR 48,3.3,2	$V_{y,Ed} = 0,0 \text{ kN}$	---	---	---
	$M_{y,Ed} = 0,187 \text{ kN}\cdot\text{m}$	---	---	---
Barra 2				

Barra	Esfuerzos	Resistencia	Comprobación	Cumpl e
122: ALLR 48,3.3,2	$N_{Ed} = 0,0 \text{ kN}$	$N_{Rd} = 9,1 \text{ kN}$	0,0%	Sí
	$M_{x,Ed} = 0,187 \text{ kN}\cdot\text{m}$	$M_{x,Rd} = 0,130 \text{ kN}\cdot\text{m}$	143,8%	No
123: ALLR 48,3.3,2	$V_{y,Ed} = 0,8 \text{ kN}$	---	---	---
	$M_{y,Ed} = 0,022 \text{ kN}\cdot\text{m}$	---	---	---

## 2.13. Pésima comprobación a la fuerza de separación de una grapa

### Nudo 69 [+90; +75; +89] cm

Unión mediante grapa ortogonal

Elemento de unión: G01 48x48

Barra	Esfuerzos	Resistencia	Comprobación	Cumpl e
Generales				
	$F_{p,Ed} = 0,8 \text{ kN}$	$F_{p,Rd} = 30,0 \text{ kN}$	2,7%	Sí
	$M_{B,Ed} = 0,028 \text{ kN}\cdot\text{m}$	$M_{B,Rd} = 0,800 \text{ kN}\cdot\text{m}$	3,5%	Sí
Barra 1				
11: ALLR 48,3.3,2	$N_{Ed} = 0,8 \text{ kN}$	$N_{Rd} = 9,1 \text{ kN}$	9,0%	Sí
	$M_{x,Ed} = 0,022 \text{ kN}\cdot\text{m}$	$M_{x,Rd} = 0,130 \text{ kN}\cdot\text{m}$	16,7%	Sí
124: ALLR 48,3.3,2	$V_{y,Ed} = 0,0 \text{ kN}$	---	---	---
	$M_{y,Ed} = 0,187 \text{ kN}\cdot\text{m}$	---	---	---
Barra 2				
122: ALLR 48,3.3,2	$N_{Ed} = 0,0 \text{ kN}$	$N_{Rd} = 9,1 \text{ kN}$	0,0%	Sí
	$M_{x,Ed} = 0,187 \text{ kN}\cdot\text{m}$	$M_{x,Rd} = 0,130 \text{ kN}\cdot\text{m}$	143,8%	No
123: ALLR 48,3.3,2	$V_{y,Ed} = 0,8 \text{ kN}$	---	---	---
	$M_{y,Ed} = 0,022 \text{ kN}\cdot\text{m}$	---	---	---

## 2.14. Pésima comprobación al momento cruciforme de una grapa

### Nudo 69 [+90; +75; +89] cm

Unión mediante grapa ortogonal

Elemento de unión: G01 48x48

Barra	Esfuerzos	Resistencia	Comprobación	Cumpl e
Generales				
	$F_{p,Ed} = 0,8 \text{ kN}$	$F_{p,Rd} = 30,0 \text{ kN}$	2,7%	Sí
	$M_{B,Ed} = 0,028 \text{ kN}\cdot\text{m}$	$M_{B,Rd} = 0,800 \text{ kN}\cdot\text{m}$	3,5%	Sí
Barra 1				
11: ALLR 48,3.3,2	$N_{Ed} = 0,8 \text{ kN}$	$N_{Rd} = 9,1 \text{ kN}$	9,0%	Sí
	$M_{x,Ed} = 0,022 \text{ kN}\cdot\text{m}$	$M_{x,Rd} = 0,130 \text{ kN}\cdot\text{m}$	16,7%	Sí
124: ALLR 48,3.3,2	$V_{y,Ed} = 0,0 \text{ kN}$	---	---	---
	$M_{y,Ed} = 0,187 \text{ kN}\cdot\text{m}$	---	---	---
Barra 2				
122: ALLR 48,3.3,2	$N_{Ed} = 0,0 \text{ kN}$	$N_{Rd} = 9,1 \text{ kN}$	0,0%	Sí
	$M_{x,Ed} = 0,187 \text{ kN}\cdot\text{m}$	$M_{x,Rd} = 0,130 \text{ kN}\cdot\text{m}$	143,8%	No
123: ALLR 48,3.3,2	$V_{y,Ed} = 0,8 \text{ kN}$	---	---	---
	$M_{y,Ed} = 0,022 \text{ kN}\cdot\text{m}$	---	---	---

### 3. Informe de reacciones

Orden: Por número

Reacciones. Ejes generales, Hormigón, E.L.U., sin mayorar

#### Nudo 141 [+90; +223; +89] cm

Pilar	Tipo	HIP	Id	$M_{x,Ed}$ (kN·m)	$M_{y,Ed}$ (kN·m)	$M_{z,Ed}$ (kN·m)	$F_{x,Ed}$ (kN)	$F_{y,Ed}$ (kN)	$F_{z,Ed}$ (kN)
---	xyzx yz	+	A	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	-	A	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	+	B	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	-	B	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	+	C	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	-	C	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	+	D	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	-	D	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0

#### Nudo 142 [+90; +223; +264] cm

Pilar	Tipo	HIP	Id	$M_{x,Ed}$ (kN·m)	$M_{y,Ed}$ (kN·m)	$M_{z,Ed}$ (kN·m)	$F_{x,Ed}$ (kN)	$F_{y,Ed}$ (kN)	$F_{z,Ed}$ (kN)
---	xyzx yz	+	A	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	-	A	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	+	B	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	-	B	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	+	C	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	-	C	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	+	D	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	-	D	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0

#### Nudo 149 [+559; +277; +89] cm

Pilar	Tipo	HIP	Id	$M_{x,Ed}$ (kN·m)	$M_{y,Ed}$ (kN·m)	$M_{z,Ed}$ (kN·m)	$F_{x,Ed}$ (kN)	$F_{y,Ed}$ (kN)	$F_{z,Ed}$ (kN)
---	xyzx yz	+	A	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	-	A	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	+	B	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx	-	B	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0

Pilar	Tipo	HIP	Id	$M_{x,Ed}$ (kN·m)	$M_{y,Ed}$ (kN·m)	$M_{z,Ed}$ (kN·m)	$F_{x,Ed}$ (kN)	$F_{y,Ed}$ (kN)	$F_{z,Ed}$ (kN)
	yz								
---	xyzx yz	+	C	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	-	C	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	+	D	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	-	D	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0

### Nudo 150 [+559; +277; +264] cm

Pilar	Tipo	HIP	Id	$M_{x,Ed}$ (kN·m)	$M_{y,Ed}$ (kN·m)	$M_{z,Ed}$ (kN·m)	$F_{x,Ed}$ (kN)	$F_{y,Ed}$ (kN)	$F_{z,Ed}$ (kN)
---	xyzx yz	+	A	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	-	A	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	+	B	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	-	B	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	+	C	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	-	C	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	+	D	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	-	D	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0

### Nudo 163 [+71; +385; +89] cm

Pilar	Tipo	HIP	Id	$M_{x,Ed}$ (kN·m)	$M_{y,Ed}$ (kN·m)	$M_{z,Ed}$ (kN·m)	$F_{x,Ed}$ (kN)	$F_{y,Ed}$ (kN)	$F_{z,Ed}$ (kN)
---	xyzx yz	+	A	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	-	A	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	+	B	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	-	B	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	+	C	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	-	C	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	+	D	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	-	D	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0

### Nudo 164 [+71; +385; +264] cm

Pilar	Tipo	HIP	Id	$M_{x,Ed}$ (kN·m)	$M_{y,Ed}$ (kN·m)	$M_{z,Ed}$ (kN·m)	$F_{x,Ed}$ (kN)	$F_{y,Ed}$ (kN)	$F_{z,Ed}$ (kN)
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Pilar	Tipo	HIP	Id	$M_{x,Ed}$ (kN·m)	$M_{y,Ed}$ (kN·m)	$M_{z,Ed}$ (kN·m)	$F_{x,Ed}$ (kN)	$F_{y,Ed}$ (kN)	$F_{z,Ed}$ (kN)
---	xyzx yz	+	A	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	-	A	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	+	B	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	-	B	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	+	C	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	-	C	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	+	D	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	-	D	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0

### Nudo 165 [+100; +404; +23] cm

Pilar	Tipo	HIP	Id	$M_{x,Ed}$ (kN·m)	$M_{y,Ed}$ (kN·m)	$M_{z,Ed}$ (kN·m)	$F_{x,Ed}$ (kN)	$F_{y,Ed}$ (kN)	$F_{z,Ed}$ (kN)
263	xyz_ —	+	A	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
263	xyz_ —	-	A	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
263	xyz_ —	+	B	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
263	xyz_ —	-	B	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
263	xyz_ —	+	C	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
263	xyz_ —	-	C	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
263	xyz_ —	+	D	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
263	xyz_ —	-	D	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0

### Nudo 166 [+257; +404; +23] cm

Pilar	Tipo	HIP	Id	$M_{x,Ed}$ (kN·m)	$M_{y,Ed}$ (kN·m)	$M_{z,Ed}$ (kN·m)	$F_{x,Ed}$ (kN)	$F_{y,Ed}$ (kN)	$F_{z,Ed}$ (kN)
265	xyz_ —	+	A	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
265	xyz_ —	-	A	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
265	xyz_ —	+	B	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
265	xyz_ —	-	B	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
265	xyz_ —	+	C	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
265	xyz_ —	-	C	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
265	xyz_ —	+	D	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0

Pilar	Tipo	HIP	Id	$M_{x,Ed}$ (kN·m)	$M_{y,Ed}$ (kN·m)	$M_{z,Ed}$ (kN·m)	$F_{x,Ed}$ (kN)	$F_{y,Ed}$ (kN)	$F_{z,Ed}$ (kN)
265	xyz_ —	-	D	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0

### Nudo 168 [+100; +404; +330] cm

Pilar	Tipo	HIP	Id	$M_{x,Ed}$ (kN·m)	$M_{y,Ed}$ (kN·m)	$M_{z,Ed}$ (kN·m)	$F_{x,Ed}$ (kN)	$F_{y,Ed}$ (kN)	$F_{z,Ed}$ (kN)
268	xyz_ —	+	A	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
268	xyz_ —	-	A	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
268	xyz_ —	+	B	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
268	xyz_ —	-	B	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
268	xyz_ —	+	C	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
268	xyz_ —	-	C	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
268	xyz_ —	+	D	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
268	xyz_ —	-	D	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0

### Nudo 169 [+257; +404; +330] cm

Pilar	Tipo	HIP	Id	$M_{x,Ed}$ (kN·m)	$M_{y,Ed}$ (kN·m)	$M_{z,Ed}$ (kN·m)	$F_{x,Ed}$ (kN)	$F_{y,Ed}$ (kN)	$F_{z,Ed}$ (kN)
270	xyz_ —	+	A	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
270	xyz_ —	-	A	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
270	xyz_ —	+	B	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
270	xyz_ —	-	B	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
270	xyz_ —	+	C	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
270	xyz_ —	-	C	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
270	xyz_ —	+	D	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
270	xyz_ —	-	D	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0

### Nudo 171 [+540; +439; +89] cm

Pilar	Tipo	HIP	Id	$M_{x,Ed}$ (kN·m)	$M_{y,Ed}$ (kN·m)	$M_{z,Ed}$ (kN·m)	$F_{x,Ed}$ (kN)	$F_{y,Ed}$ (kN)	$F_{z,Ed}$ (kN)
---	xyzx yz	+	A	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	-	A	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	+	B	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	-	B	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0

Pilar	Tipo	HIP	Id	M <sub>x,Ed</sub> (kN·m)	M <sub>y,Ed</sub> (kN·m)	M <sub>z,Ed</sub> (kN·m)	F <sub>x,Ed</sub> (kN)	F <sub>y,Ed</sub> (kN)	F <sub>z,Ed</sub> (kN)
---	xyzx yz	+	C	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	-	C	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	+	D	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	-	D	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0

### Nudo 172 [+540; +439; +264] cm

Pilar	Tipo	HIP	Id	M <sub>x,Ed</sub> (kN·m)	M <sub>y,Ed</sub> (kN·m)	M <sub>z,Ed</sub> (kN·m)	F <sub>x,Ed</sub> (kN)	F <sub>y,Ed</sub> (kN)	F <sub>z,Ed</sub> (kN)
---	xyzx yz	+	A	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	-	A	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	+	B	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	-	B	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	+	C	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	-	C	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	+	D	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
---	xyzx yz	-	D	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0

### Nudo 175 [+514; +454; +23] cm

Pilar	Tipo	HIP	Id	M <sub>x,Ed</sub> (kN·m)	M <sub>y,Ed</sub> (kN·m)	M <sub>z,Ed</sub> (kN·m)	F <sub>x,Ed</sub> (kN)	F <sub>y,Ed</sub> (kN)	F <sub>z,Ed</sub> (kN)
278	xyz_ —	+	A	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
278	xyz_ —	-	A	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
278	xyz_ —	+	B	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
278	xyz_ —	-	B	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
278	xyz_ —	+	C	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
278	xyz_ —	-	C	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
278	xyz_ —	+	D	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
278	xyz_ —	-	D	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0

### Nudo 178 [+514; +454; +330] cm

Pilar	Tipo	HIP	Id	M <sub>x,Ed</sub> (kN·m)	M <sub>y,Ed</sub> (kN·m)	M <sub>z,Ed</sub> (kN·m)	F <sub>x,Ed</sub> (kN)	F <sub>y,Ed</sub> (kN)	F <sub>z,Ed</sub> (kN)
283	xyz_ —	+	A	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0



Pilar	Tipo	HIP	Id	$M_{x,Ed}$ (kN·m)	$M_{y,Ed}$ (kN·m)	$M_{z,Ed}$ (kN·m)	$F_{x,Ed}$ (kN)	$F_{y,Ed}$ (kN)	$F_{z,Ed}$ (kN)
283	xyz_ —	-	A	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
283	xyz_ —	+	B	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
283	xyz_ —	-	B	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
283	xyz_ —	+	C	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
283	xyz_ —	-	C	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
283	xyz_ —	+	D	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0
283	xyz_ —	-	D	+0,000	+0,000	+0,000	+0,0	+0,0	+0,0