

RF-LAMINATE

Proyecto: TFM Modelo: TFM_FINAL_v02
TFM Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

1.1.1 DATOS GENERALES

Superficies para el cálculo	22,25,48,51,74,77,148-171,197-220,246-269
Cálculo según la norma	EN 1995-1-1:2004-11/UNE
Modelo de material:	Ortótropo
Estado límite último	
Combinaciones de resultados para el cálculo	CR1 ELU (STR/GEO) - Permanente / transitoria - Ec. 6.10 Persistente/transit.

1.1.2 DETALLES

Teoría de flexión de placas:	Mindlin
1 - Forjado CLT 220	
Superficies asignadas a la composición:	172-186,221-236,270-285,295,296
Capa de unión	<input checked="" type="checkbox"/>
Madera contralaminada sin cola en el lado estrecho	<input checked="" type="checkbox"/>
Fallo por cortante en la superficie de contacto encolada	<input type="checkbox"/>
Efecto de la rigidez a torsión D_{33}	$k_{33} = 0.65$
Efecto de la rigidez a cortante D_{44}	$k_{44} = 1.00$
Efecto de la rigidez a cortante D_{55}	$k_{55} = 1.00$
Efecto de la rigidez de la membrana D_{88}	$k_{88} = 0.70$
Plano de referencia relativo a:	Centro de la composición
Desplazamiento del plano de referencia:	0.0 mm
2 - Pared CLT 140	
Superficies asignadas a la composición:	1-9,26-34,46,52-61,78,81-83,89-106,188-196,237-245,286-294
Capa de unión	<input checked="" type="checkbox"/>
Madera contralaminada sin cola en el lado estrecho	<input checked="" type="checkbox"/>
Fallo por cortante en la superficie de contacto encolada	<input type="checkbox"/>
Efecto de la rigidez a torsión D_{33}	$k_{33} = 0.65$
Efecto de la rigidez a cortante D_{44}	$k_{44} = 1.00$
Efecto de la rigidez a cortante D_{55}	$k_{55} = 1.00$
Efecto de la rigidez de la membrana D_{88}	$k_{88} = 0.70$
Plano de referencia relativo a:	Centro de la composición
Desplazamiento del plano de referencia:	0.0 mm
3 - Viga CLT 140	
Superficies asignadas a la composición:	22,25,48,51,74,77,148-171,197-220,246-269
Capa de unión	<input checked="" type="checkbox"/>
Madera contralaminada sin cola en el lado estrecho	<input checked="" type="checkbox"/>
Fallo por cortante en la superficie de contacto encolada	<input type="checkbox"/>
Efecto de la rigidez a torsión D_{33}	$k_{33} = 0.65$
Efecto de la rigidez a cortante D_{44}	$k_{44} = 1.00$
Efecto de la rigidez a cortante D_{55}	$k_{55} = 1.00$
Efecto de la rigidez de la membrana D_{88}	$k_{88} = 0.70$
Plano de referencia relativo a:	Centro de la composición
Desplazamiento del plano de referencia:	0.0 mm

1.1.3 DATOS PARA LA NORMA

Madera laminada encolada				
Coefficiente parcial γ_M				
Persistente/transit.	1.25			
Accidental	1.00			
Factor de modificación k_{mod}				
	Clase de servicio 1	Clase de servicio 2	Clase de servicio 3	
Permanente	0.60	0.60	0.50	
Larga	0.70	0.70	0.55	
Media	0.80	0.80	0.65	
Corta	0.90	0.90	0.70	
Instantánea	1.10	1.10	0.90	
Límites de servicio (flechas)				

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1.1.3 DATOS PARA LA NORMA

Combinación de acciones:	Voladizos	
Característica 1 - Integridad	L / 500	L _c / 150
Característica 2 - Confort	L / 350	L _c / 175
Cuasipermanente - Apariencia	L / 300	L _c / 150

1.2.1 CARACTERÍSTICAS DEL MATERIAL - A

Comp. núm.	Capa núm.	Descripción del material	Categoría del factor	Espesor t [mm]	Coef. de Poisson [-]		Módulo de cortante [N/mm²]		
					V _{xy}	V _{yx}	G _{xz}	G _{yz}	G _{xy}
1	Forjado CLT 220								
	1	C24	A	30.0	0.200	0.007	690.0	50.0	690.0
	CLT 220 L7s-2, Panel del piso(picea), Stora Enso (ETA-14/0349)								
	2	C24	A	30.0	0.200	0.007	690.0	50.0	690.0
	CLT 220 L7s-2, Panel del piso(picea), Stora Enso (ETA-14/0349)								
	3	C24	A	30.0	0.200	0.007	690.0	50.0	690.0
	CLT 220 L7s-2, Panel del piso(picea), Stora Enso (ETA-14/0349)								
2	Pared CLT 140								
	1	C24	A	40.0	0.200	0.007	690.0	50.0	690.0
	CLT 140 C5s, Elemento de pared(picea), Stora Enso (ETA-14/0349)								
	2	C24	A	20.0	0.200	0.007	690.0	50.0	690.0
	CLT 140 C5s, Elemento de pared(picea), Stora Enso (ETA-14/0349)								
	3	C24	A	20.0	0.200	0.007	690.0	50.0	690.0
	CLT 140 C5s, Elemento de pared(picea), Stora Enso (ETA-14/0349)								
3	Viga CLT 140								
	1	C24	A	40.0	0.200	0.007	690.0	50.0	690.0
	CLT 140 L5s, Panel del piso(picea), Stora Enso (ETA-14/0349)								
	2	C24	A	20.0	0.200	0.007	690.0	50.0	690.0
	CLT 140 L5s, Panel del piso(picea), Stora Enso (ETA-14/0349)								
	3	C24	A	20.0	0.200	0.007	690.0	50.0	690.0
	CLT 140 L5s, Panel del piso(picea), Stora Enso (ETA-14/0349)								
Categoría de factor									
A - Madera laminada encolada									

1.2.2 CARACTERÍSTICAS DEL MATERIAL - B

Comp. núm.	Capa núm.	Descripción del material	Ángulo	Módulo de elasticidad [N/mm²]		Peso específico	Coef. de dilat. térm.
			β [°]	E _x	E _y	γ [kN/m³]	α _T [1/K]
1	Forjado CLT 220						
	1	C24	0.00	12000.0	0.0	5.00	5.0E-06
	CLT 220 L7s-2, Panel del piso(picea), Stora Enso (ETA-14/0349)						
	2	C24	0.00	12000.0	0.0	5.00	5.0E-06
	CLT 220 L7s-2, Panel del piso(picea), Stora Enso (ETA-14/0349)						
	3	C24	90.00	12000.0	0.0	5.00	5.0E-06
	CLT 220 L7s-2, Panel del piso(picea), Stora Enso (ETA-14/0349)						
	4	C24	0.00	12000.0	0.0	5.00	5.0E-06
	CLT 220 L7s-2, Panel del piso(picea), Stora Enso (ETA-14/0349)						
	5	C24	90.00	12000.0	0.0	5.00	5.0E-06
	CLT 220 L7s-2, Panel del piso(picea), Stora Enso (ETA-14/0349)						
	6	C24	0.00	12000.0	0.0	5.00	5.0E-06
	CLT 220 L7s-2, Panel del piso(picea), Stora Enso (ETA-14/0349)						

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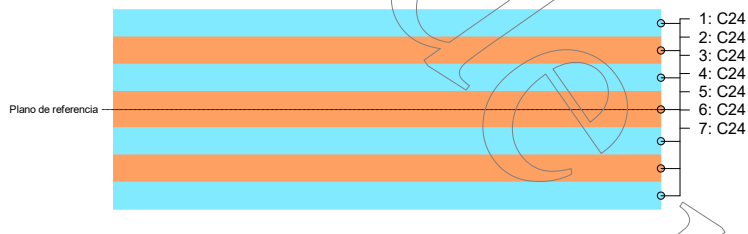
Fecha: 05/07/2020

1.2.2 CARACTERÍSTICAS DEL MATERIAL - B

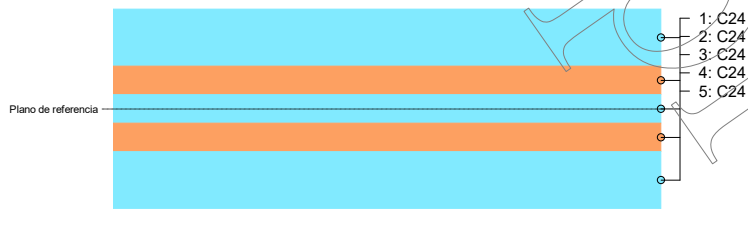
Comp. núm.	Capa núm.	Descripción del material	Ángulo β [°]	Módulo de elasticidad [N/mm ²]		Peso específico γ [kN/m ³]	Coef. de dilat. térm. α_T [1/K]
2	7	C24	0.00	12000.0	0.0	5.00	5.0E-06
	CLT 220 L7s-2, Panel del piso(picea), Stora Enso (ETA-14/0349)						
	1	C24	90.00	12000.0	0.0	5.00	5.0E-06
	CLT 140 C5s, Elemento de pared(picea), Stora Enso (ETA-14/0349)						
	2	C24	0.00	12000.0	0.0	5.00	5.0E-06
	CLT 140 C5s, Elemento de pared(picea), Stora Enso (ETA-14/0349)						
	3	C24	90.00	12000.0	0.0	5.00	5.0E-06
3	Pared CLT 140						
	1	C24	90.00	12000.0	0.0	5.00	5.0E-06
	CLT 140 C5s, Elemento de pared(picea), Stora Enso (ETA-14/0349)						
	2	C24	0.00	12000.0	0.0	5.00	5.0E-06
	CLT 140 C5s, Elemento de pared(picea), Stora Enso (ETA-14/0349)						
	3	C24	90.00	12000.0	0.0	5.00	5.0E-06
	CLT 140 C5s, Elemento de pared(picea), Stora Enso (ETA-14/0349)						
	4	C24	0.00	12000.0	0.0	5.00	5.0E-06
	CLT 140 C5s, Elemento de pared(picea), Stora Enso (ETA-14/0349)						
	5	C24	90.00	12000.0	0.0	5.00	5.0E-06
	CLT 140 C5s, Elemento de pared(picea), Stora Enso (ETA-14/0349)						
	Viga CLT 140						
	1	C24	0.00	12000.0	0.0	5.00	5.0E-06
	CLT 140 L5s, Panel del piso(picea), Stora Enso (ETA-14/0349)						
	2	C24	90.00	12000.0	0.0	5.00	5.0E-06
	CLT 140 L5s, Panel del piso(picea), Stora Enso (ETA-14/0349)						
	3	C24	0.00	12000.0	0.0	5.00	5.0E-06
	CLT 140 L5s, Panel del piso(picea), Stora Enso (ETA-14/0349)						
	4	C24	90.00	12000.0	0.0	5.00	5.0E-06
	CLT 140 L5s, Panel del piso(picea), Stora Enso (ETA-14/0349)						
	5	C24	0.00	12000.0	0.0	5.00	5.0E-06
	CLT 140 L5s, Panel del piso(picea), Stora Enso (ETA-14/0349)						

1.2.4 DIAGRAMAS DE CAPAS

1 | Forjado CLT 220



2 | Pared CLT 140



3 | Viga CLT 140



Proyecto: TFM
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1.3.1 RESISTENCIAS DEL MATERIAL - A

Comp. nm.	Capa nm.	Descripcin del material	Resistencia para flex. /tracc. / compr. [N/mm²]						
			f _{b,0,k}	f _{b,90,k}	f _{t,0,k}	f _{t,90,k}	f _{c,0,k}	f _{c,90,k}	
1	Forjado CLT 220								
	1	C24	24.0	0.0	24.0	0.4	24.0	2.5	
	CLT 220 L7s-2, Panel del piso(picea), Stora Enso (ETA-14/0349)								
	2	C24	24.0	0.0	24.0	0.4	24.0	2.5	
	CLT 220 L7s-2, Panel del piso(picea), Stora Enso (ETA-14/0349)								
	3	C24	24.0	0.0	24.0	0.4	24.0	2.5	
	CLT 220 L7s-2, Panel del piso(picea), Stora Enso (ETA-14/0349)								
	4	C24	24.0	0.0	24.0	0.4	24.0	2.5	
	CLT 220 L7s-2, Panel del piso(picea), Stora Enso (ETA-14/0349)								
	5	C24	24.0	0.0	24.0	0.4	24.0	2.5	
	CLT 220 L7s-2, Panel del piso(picea), Stora Enso (ETA-14/0349)								
	6	C24	24.0	0.0	24.0	0.4	24.0	2.5	
	CLT 220 L7s-2, Panel del piso(picea), Stora Enso (ETA-14/0349)								
	7	C24	24.0	0.0	24.0	0.4	24.0	2.5	
	CLT 220 L7s-2, Panel del piso(picea), Stora Enso (ETA-14/0349)								
	2	Pared CLT 140							
		1	C24	24.0	0.0	24.0	0.4	24.0	2.5
		CLT 140 C5s, Elemento de pared(picea), Stora Enso (ETA-14/0349)							
		2	C24	24.0	0.0	24.0	0.4	24.0	2.5
		CLT 140 C5s, Elemento de pared(picea), Stora Enso (ETA-14/0349)							
3		C24	24.0	0.0	24.0	0.4	24.0	2.5	
CLT 140 C5s, Elemento de pared(picea), Stora Enso (ETA-14/0349)									
	4	C24	24.0	0.0	24.0	0.4	24.0	2.5	
	CLT 140 C5s, Elemento de pared(picea), Stora Enso (ETA-14/0349)								
	5	C24	24.0	0.0	24.0	0.4	24.0	2.5	
	CLT 140 C5s, Elemento de pared(picea), Stora Enso (ETA-14/0349)								
	3	Viga CLT 140							
		1	C24	24.0	0.0	24.0	0.4	24.0	2.5
		CLT 140 L5s, Panel del piso(picea), Stora Enso (ETA-14/0349)							
2		C24	24.0	0.0	24.0	0.4	24.0	2.5	
CLT 140 L5s, Panel del piso(picea), Stora Enso (ETA-14/0349)									
3		C24	24.0	0.0	24.0	0.4	24.0	2.5	
CLT 140 L5s, Panel del piso(picea), Stora Enso (ETA-14/0349)									
	4	C24	24.0	0.0	24.0	0.4	24.0	2.5	
	CLT 140 L5s, Panel del piso(picea), Stora Enso (ETA-14/0349)								
	5	C24	24.0	0.0	24.0	0.4	24.0	2.5	
CLT 140 L5s, Panel del piso(picea), Stora Enso (ETA-14/0349)									

1.3.2 RESISTENCIAS DEL MATERIAL - B

RESISTENCIAS DEL MATERIAL						
Comp. núm.	Capa núm.	Descripción del material	Resistencias a cortante [N/mm²]			Torsión [N/mm²]
			$f_{xy,k}$	$f_{v,k}$	$f_{R,k}$	$f_{v,tor,k}$
1	Forjado CLT 220					
	1	C24 CLT 220 L7s-2, Panel del piso(picea), Stora Enso (ETA-14/0349)	4.0	4.0	1.0	-
	2	C24 CLT 220 L7s-2, Panel del piso(picea), Stora Enso (ETA-14/0349)	4.0	4.0	1.0	-
	3	C24 CLT 220 L7s-2, Panel del piso(picea), Stora Enso (ETA-14/0349)	4.0	4.0	1.0	-
	4	C24 CLT 220 L7s-2, Panel del piso(picea), Stora Enso (ETA-14/0349)	4.0	4.0	1.0	-
	5	C24 CLT 220 L7s-2, Panel del piso(picea), Stora Enso (ETA-14/0349)	4.0	4.0	1.0	-
	6	C24 CLT 220 L7s-2, Panel del piso(picea), Stora Enso (ETA-14/0349)	4.0	4.0	1.0	-
2	Pared CLT 140					
	1	C24 CLT 140 C5s, Elemento de pared(picea), Stora Enso (ETA-14/0349)	4.0	4.0	1.0	-
	2	C24 CLT 140 C5s, Elemento de pared(picea), Stora Enso (ETA-14/0349)	4.0	4.0	1.0	-
	3	C24 CLT 140 C5s, Elemento de pared(picea), Stora Enso (ETA-14/0349)	4.0	4.0	1.0	-

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1.3.2 RESISTENCIAS DEL MATERIAL - B

Comp. núm.	Capa núm.	Descripción del material	Resistencias a cortante [N/mm ²]			Torsión [N/mm ²]
			$f_{xy,k}$	$f_{v,k}$	$f_{R,k}$	
3	4	C24	4.0	4.0	1.0	-
	CLT 140 C5s, Elemento de pared(picea), Stora Enso (ETA-14/0349)					
	5	C24	4.0	4.0	1.0	-
	CLT 140 C5s, Elemento de pared(picea), Stora Enso (ETA-14/0349)					
	Viga CLT 140					
	1	C24	4.0	4.0	1.0	-
	CLT 140 L5s, Panel del piso(picea), Stora Enso (ETA-14/0349)					
	2	C24	4.0	4.0	1.0	-
	CLT 140 L5s, Panel del piso(picea), Stora Enso (ETA-14/0349)					
	3	C24	4.0	4.0	1.0	-
	CLT 140 L5s, Panel del piso(picea), Stora Enso (ETA-14/0349)					
	4	C24	4.0	4.0	1.0	-
	CLT 140 L5s, Panel del piso(picea), Stora Enso (ETA-14/0349)					
	5	C24	4.0	4.0	1.0	-
	CLT 140 L5s, Panel del piso(picea), Stora Enso (ETA-14/0349)					

1.4 CLASE DE DURACIÓN DE CARGA Y SERVICIO

Carga	Descripción	Tipo de carga	Clase de duración de carga CDC
CC1	Peso Propio	Permanente	Permanente
CC2	Cargas Muertas	Permanente/Sobrecarga de uso	Permanente
CC3	Sobrecarga de uso	Sobrecarga de uso - Categoría B: zonas de oficinas	Media
CR1	ELU (STR/GEO) - Permanente / transitoria - Ec. 6.10		Permanente
Clase de servicio CLSE			
Clase de servicio 1			

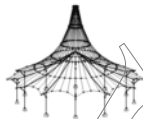
Idéntica para todas las superficies

2.1 RAZÓN MÁX. DE TENSIONES POR CARGA

Carga	Superf. núm.	Punto núm.	Coordenadas del punto [m]			Capa núm.	z [mm]	Lado	Tensiones [N/mm ²]			Razón [-]
			X	Y	Z				Símbolo	Existente	Límite	
CR1	ELU (STR/GEO) - Permanente / transitoria - Ec. 6.10											
	269	1705	59.400	13.500	9.000	4	80.0	Superior	$\sigma_{b,0}$	0.52	11.52	0.04
	25	1060	48.600	16.200	0.000	2	50.0	Intermedio	$\sigma_{b,c,0}$	-5.93	11.52	0.51
	25	1060	48.600	16.200	0.000	2	40.0	Superior	$\sigma_{b+tlc,0}$	-5.93		0.51
	269	1705	59.400	13.500	9.000	3	70.0	Intermedio	τ_{yz}	-0.09	0.50	0.19
	269	1705	59.400	13.500	9.000	2	60.0	Inferior	τ_{xz}	-0.09	1.92	0.05
	251	897	40.500	0.000	9.000	5	140.0	Inferior	τ_{xy}	-1.21	1.92	0.63
	Razón máxima 0.63											

2.2 RAZÓN MÁX. DE TENSIONES POR SUPERFICIE

Superf. núm.	Punto núm.	Coordenadas del punto [m]			Carga	Núm.	Capa z [mm]	Lado	Tensiones [N/mm ²]			Razón [-]
		X	Y	Z					Símbolo	Existente	Límite	
22	1027	24.300	13.500	1.000	CR1	2	40.0	Superior	$\sigma_{b,0}$	-0.22	11.52	0.02
	1026	24.300	13.500	0.000	CR1	2	50.0	Intermedio	$\sigma_{b,c,0}$	-2.32	11.52	0.20
	1026	24.300	13.500	0.000	CR1	2	40.0	Superior	$\sigma_{b+tlc,0}$	-2.32		0.20
	1027	24.300	13.500	1.000	CR1	3	70.0	Intermedio	τ_{yz}	0.04	0.50	0.08
	1027	24.300	13.500	1.000	CR1	2	60.0	Inferior	τ_{xz}	0.04	1.92	0.02
	25199	19.391	13.500	0.000	CR1	5	140.0	Inferior	τ_{xy}	0.38	1.92	0.20
25	1061	48.600	16.200	1.000	CR1	2	60.0	Inferior	$\sigma_{b,0}$	0.30	11.52	0.03
	1060	48.600	16.200	0.000	CR1	2	50.0	Intermedio	$\sigma_{b,c,0}$	-5.93	11.52	0.51
	1060	48.600	16.200	0.000	CR1	2	40.0	Superior	$\sigma_{b+tlc,0}$	-5.93		0.51
	1061	48.600	16.200	1.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.05	0.50	0.10
	1061	48.600	16.200	1.000	CR1	2	60.0	Inferior	τ_{xz}	0.05	1.92	0.03
	1061	48.600	16.200	1.000	CR1	1	0.0	Superior	τ_{xy}	-0.74	1.92	0.39
48	1326	24.300	13.500	5.000	CR1	2	60.0	Inferior	$\sigma_{b,0}$	0.21	11.52	0.02
	1324	18.900	13.500	4.000	CR1	2	50.0	Intermedio	$\sigma_{b,c,0}$	-1.76	11.52	0.15
	1324	18.900	13.500	4.000	CR1	2	40.0	Superior	$\sigma_{b+tlc,0}$	-1.76		0.15
	1326	24.300	13.500	5.000	CR1	3	70.0	Intermedio	τ_{yz}	0.04	0.50	0.07
	1326	24.300	13.500	5.000	CR1	2	60.0	Inferior	τ_{xz}	0.04	1.92	0.02
	25848	19.391	13.500	4.000	CR1	5	140.0	Inferior	τ_{xy}	0.38	1.92	0.20
51	1378	48.600	16.200	5.000	CR1	2	40.0	Superior	$\sigma_{b,0}$	-0.29	11.52	0.03
	1377	48.600	16.200	4.000	CR1	2	50.0	Intermedio	$\sigma_{b,c,0}$	-4.63	11.52	0.40
	1377	48.600	16.200	4.000	CR1	2	40.0	Superior	$\sigma_{b+tlc,0}$	-4.63		0.40
	1378	48.600	16.200	5.000	CR1	3	70.0	Intermedio	τ_{yz}	0.05	0.50	0.10
	1378	48.600	16.200	5.000	CR1	2	60.0	Inferior	τ_{xz}	0.05	1.92	0.03
	1378	48.600	16.200	5.000	CR1	1	0.0	Superior	τ_{xy}	-0.62	1.92	0.32

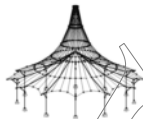


Proyecto: TFM
Modelo: TFM_FINAL_v02
TFM Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

2.2 RAZÓN MÁX. DE TENSIONES POR SUPERFICIE

Superf. núm.	Punto núm.	Coordenadas del punto [m]			Carga	Núm.	Capa		Lado	Tensiones [N/mm ²]			Razón [-]
		X	Y	Z			z [mm]			Símbolo	Existente	Límite	
74	1632	24.300	13.500	9.000	CR1	2	40.0		Superior	$\sigma_{b,0}$	-0.15	11.52	0.01
	1630	18.900	13.500	8.000	CR1	4	90.0		Intermedio	$\sigma_{b,c,0}$	-2.32	11.52	0.20
	1630	18.900	13.500	8.000	CR1	4	80.0		Superior	$\sigma_{b+tlc,0}$	-2.32		0.20
	1632	24.300	13.500	9.000	CR1	3	70.0		Intermedio	τ_{yz}	0.03	0.50	0.05
	1632	24.300	13.500	9.000	CR1	2	60.0		Inferior	τ_{xz}	0.03	1.92	0.01
	26483	19.391	13.500	8.000	CR1	5	140.0		Inferior	τ_{xy}	0.41	1.92	0.21
77	710	43.200	16.200	9.000	CR1	2	60.0		Inferior	$\sigma_{b,0}$	0.24	11.52	0.02
	1667	48.600	16.200	8.000	CR1	4	90.0		Intermedio	$\sigma_{b,c,0}$	-5.60	11.52	0.49
	1667	48.600	16.200	8.000	CR1	4	80.0		Superior	$\sigma_{b+tlc,0}$	-5.60		0.49
	710	43.200	16.200	9.000	CR1	3	70.0		Intermedio	τ_{yz}	0.04	0.50	0.08
	710	43.200	16.200	9.000	CR1	2	60.0		Inferior	τ_{xz}	0.04	1.92	0.02
	1668	48.600	16.200	9.000	CR1	1	0.0		Superior	τ_{xy}	-0.73	1.92	0.38
148	339	59.400	10.800	1.000	CR1	2	60.0		Inferior	$\sigma_{b,0}$	-0.34	11.52	0.03
	339	59.400	10.800	1.000	CR1	4	90.0		Intermedio	$\sigma_{b,c,0}$	-0.75	11.52	0.07
	339	59.400	10.800	1.000	CR1	4	80.0		Superior	$\sigma_{b+tlc,0}$	-0.41		0.09
	339	59.400	10.800	1.000	CR1	3	70.0		Intermedio	τ_{yz}	-0.06	0.50	0.12
	339	59.400	10.800	1.000	CR1	2	60.0		Inferior	τ_{xz}	-0.06	1.92	0.03
	339	59.400	10.800	1.000	CR1	5	140.0		Inferior	τ_{xy}	0.20	1.92	0.10
149	343	0.000	10.800	1.000	CR1	2	40.0		Superior	$\sigma_{b,0}$	-0.26	11.52	0.02
	1178	2.700	10.800	0.000	CR1	4	90.0		Intermedio	$\sigma_{b,c,0}$	-1.01	11.52	0.09
	1178	2.700	10.800	0.000	CR1	4	80.0		Superior	$\sigma_{b+tlc,0}$	-1.00		0.09
	343	0.000	10.800	1.000	CR1	3	70.0		Intermedio	τ_{yz}	0.05	0.50	0.09
	343	0.000	10.800	1.000	CR1	2	60.0		Inferior	τ_{xz}	0.05	1.92	0.02
	1179	2.700	10.800	1.000	CR1	5	140.0		Inferior	τ_{xy}	-0.16	1.92	0.09
150	1185	0.000	13.500	1.000	CR1	2	60.0		Inferior	$\sigma_{b,0}$	0.20	11.52	0.02
	1183	2.700	13.500	0.000	CR1	2	50.0		Intermedio	$\sigma_{b,c,0}$	-1.47	11.52	0.13
	1183	2.700	13.500	0.000	CR1	2	40.0		Superior	$\sigma_{b+tlc,0}$	-1.47		0.13
	1185	0.000	13.500	1.000	CR1	3	70.0		Intermedio	τ_{yz}	-0.04	0.50	0.07
	1185	0.000	13.500	1.000	CR1	2	60.0		Inferior	τ_{xz}	-0.04	1.92	0.02
	345	2.700	13.500	1.000	CR1	1	0.0		Superior	τ_{xy}	0.18	1.92	0.09
151	1149	18.900	0.000	1.000	CR1	2	60.0		Inferior	$\sigma_{b,0}$	-0.36	11.52	0.03
	1149	18.900	0.000	1.000	CR1	4	90.0		Intermedio	$\sigma_{b,c,0}$	-3.71	11.52	0.32
	1149	18.900	0.000	1.000	CR1	4	80.0		Superior	$\sigma_{b+tlc,0}$	-3.35		0.35
	1149	18.900	0.000	1.000	CR1	3	70.0		Intermedio	τ_{yz}	-0.03	0.50	0.06
	1149	18.900	0.000	1.000	CR1	2	60.0		Inferior	τ_{xz}	-0.03	1.92	0.01
	365	24.300	0.000	1.000	CR1	5	140.0		Inferior	τ_{xy}	-1.10	1.92	0.57
152	1142	27.000	0.000	1.000	CR1	4	100.0		Inferior	$\sigma_{b,0}$	-0.36	11.52	0.03
	1142	27.000	0.000	1.000	CR1	4	90.0		Intermedio	$\sigma_{b,c,0}$	-3.77	11.52	0.33
	1142	27.000	0.000	1.000	CR1	4	80.0		Superior	$\sigma_{b+tlc,0}$	-3.42		0.36
	1142	27.000	0.000	1.000	CR1	3	70.0		Intermedio	τ_{yz}	-0.03	0.50	0.06
	1142	27.000	0.000	1.000	CR1	2	60.0		Inferior	τ_{xz}	-0.03	1.92	0.01
	367	32.400	0.000	1.000	CR1	5	140.0		Inferior	τ_{xy}	-1.10	1.92	0.57
153	1135	35.100	0.000	1.000	CR1	2	40.0		Superior	$\sigma_{b,0}$	0.36	11.52	0.03
	1135	35.100	0.000	1.000	CR1	4	90.0		Intermedio	$\sigma_{b,c,0}$	-3.89	11.52	0.34
	1135	35.100	0.000	1.000	CR1	4	80.0		Superior	$\sigma_{b+tlc,0}$	-3.54		0.37
	1135	35.100	0.000	1.000	CR1	3	70.0		Intermedio	τ_{yz}	-0.03	0.50	0.06
	1135	35.100	0.000	1.000	CR1	2	60.0		Inferior	τ_{xz}	-0.03	1.92	0.01
	1135	35.100	0.000	1.000	CR1	5	140.0		Inferior	τ_{xy}	1.09	1.92	0.57
154	1128	43.200	0.000	1.000	CR1	2	60.0		Inferior	$\sigma_{b,0}$	-0.36	11.52	0.03
	1128	43.200	0.000	1.000	CR1	4	90.0		Intermedio	$\sigma_{b,c,0}$	-3.74	11.52	0.32
	1128	43.200	0.000	1.000	CR1	4	80.0		Superior	$\sigma_{b+tlc,0}$	-3.38		0.36
	1128	43.200	0.000	1.000	CR1	3	70.0		Intermedio	τ_{yz}	-0.03	0.50	0.06
	1128	43.200	0.000	1.000	CR1	2	60.0		Inferior	τ_{xz}	-0.03	1.92	0.01
	1128	43.200	0.000	1.000	CR1	5	140.0		Inferior	τ_{xy}	1.10	1.92	0.57
155	373	4.050	0.000	1.000	CR1	2	40.0		Superior	$\sigma_{b,0}$	0.33	11.52	0.03
	1170	0.000	0.000	1.000	CR1	4	90.0		Intermedio	$\sigma_{b,c,0}$	-1.31	11.52	0.11
	1170	0.000	0.000	1.000	CR1	4	80.0		Superior	$\sigma_{b+tlc,0}$	-1.05		0.14
	1169	4.050	0.000	0.000	CR1	3	70.0		Intermedio	τ_{yz}	-0.05	0.50	0.09
	1169	4.050	0.000	0.000	CR1	2	60.0		Inferior	τ_{xz}	-0.05	1.92	0.02
	8735	0.506	0.000	0.500	CR1	5	140.0		Inferior	τ_{xy}	0.29	1.92	0.15
156	1163	6.750	0.000	1.000	CR1	2	60.0		Inferior	$\sigma_{b,0}$	-0.34	11.52	0.03
	1163	6.750	0.000	1.000	CR1	4	90.0		Intermedio	$\sigma_{b,c,0}$	-1.11	11.52	0.10
	1163	6.750	0.000	1.000	CR1	4	80.0		Superior	$\sigma_{b+tlc,0}$	-0.78		0.13
	1163	6.750	0.000	1.000	CR1	3	70.0		Intermedio	τ_{yz}	-0.03	0.50	0.06
	1163	6.750	0.000	1.000	CR1	2	60.0		Inferior	τ_{xz}	-0.03	1.92	0.02
	1163	6.750	0.000	1.000	CR1	5	140.0		Inferior	τ_{xy}	0.32	1.92	0.17
157	1156	12.150	0.000	1.000	CR1	2	60.0		Inferior	$\sigma_{b,0}$	-0.35	11.52	0.03
	1156	12.150	0.000	1.000	CR1	4	90.0		Intermedio	$\sigma_{b,c,0}$	-2.65	11.52	0.23
	1156	12.150	0.000	1.000	CR1	4	80.0		Superior	$\sigma_{b+tlc,0}$	-2.30		0.26
	1156	12.150	0.000	1.000	CR1	3	70.0		Intermedio	τ_{yz}	-0.03	0.50	0.06
	1156	12.150	0.000	1.000	CR1	2	60.0		Inferior	τ_{xz}	-0.03	1.92	0.02
	363	16.200	0.000	1.000	CR1	5	140.0		Inferior	τ_{xy}	-0.79	1.92	0.41

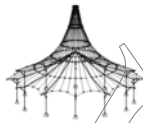


Proyecto: TFM
TFM
Modelo: TFM_FINAL_v02
Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

2.2 RAZÓN MÁX. DE TENSIONES POR SUPERFICIE

Superf. núm.	Punto núm.	Coordenadas del punto [m]			Carga	Núm.	Capa		Lado	Tensiones [N/mm²]			Razón [-]
		X	Y	Z			z [mm]			Símbolo	Existente	Límite	
158	377	55.350	0.000	1.000	CR1	4	80.0	Superior	$\sigma_{b,0}$	0.35	11.52	0.03	
	377	55.350	0.000	1.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-2.61	11.52	0.23	
	377	55.350	0.000	1.000	CR1	4	80.0	Superior	$\sigma_{b+tlc,0}$	-2.26		0.26	
	377	55.350	0.000	1.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.06	
	377	55.350	0.000	1.000	CR1	2	60.0	Inferior	τ_{xz}	-0.03	1.92	0.02	
	1121	51.300	0.000	1.000	CR1	5	140.0	Inferior	τ_{xy}	0.79	1.92	0.41	
159	1113	58.050	0.000	1.000	CR1	2	40.0	Superior	$\sigma_{b,0}$	0.33	11.52	0.03	
	1113	58.050	0.000	1.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-1.05	11.52	0.09	
	1113	58.050	0.000	1.000	CR1	4	80.0	Superior	$\sigma_{b+tlc,0}$	-0.72		0.12	
	1111	58.050	0.000	0.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.05	0.50	0.09	
	1111	58.050	0.000	0.000	CR1	2	60.0	Inferior	τ_{xz}	-0.05	1.92	0.02	
	8804	61.594	0.000	0.500	CR1	5	140.0	Inferior	τ_{xy}	-0.29	1.92	0.15	
160	331	0.000	18.900	1.000	CR1	2	60.0	Inferior	$\sigma_{b,0}$	0.21	11.52	0.02	
	331	0.000	18.900	1.000	CR1	2	50.0	Intermedio	$\sigma_{b,c,0}$	-0.83	11.52	0.07	
	1005	4.050	18.900	1.000	CR1	4	80.0	Superior	$\sigma_{b+tlc,0}$	-0.64		0.09	
	331	0.000	18.900	1.000	CR1	3	70.0	Intermedio	τ_{yz}	0.04	0.50	0.08	
	331	0.000	18.900	1.000	CR1	2	60.0	Inferior	τ_{xz}	0.04	1.92	0.02	
	8849	0.506	18.900	0.500	CR1	5	140.0	Inferior	τ_{xy}	0.25	1.92	0.13	
161	1014	10.800	18.900	1.000	CR1	4	80.0	Superior	$\sigma_{b,0}$	0.19	11.52	0.02	
	1013	10.800	18.900	0.000	CR1	2	50.0	Intermedio	$\sigma_{b,c,0}$	-3.44	11.52	0.30	
	1013	10.800	18.900	0.000	CR1	2	40.0	Superior	$\sigma_{b+tlc,0}$	-3.45		0.30	
	1014	10.800	18.900	1.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.02	0.50	0.04	
	1014	10.800	18.900	1.000	CR1	2	60.0	Inferior	τ_{xz}	-0.02	1.92	0.01	
	1014	10.800	18.900	1.000	CR1	5	140.0	Inferior	τ_{xy}	-0.61	1.92	0.32	
162	1018	14.850	18.900	0.000	CR1	2	40.0	Superior	$\sigma_{b,0}$	-0.20	11.52	0.02	
	1018	14.850	18.900	0.000	CR1	2	50.0	Intermedio	$\sigma_{b,c,0}$	-3.30	11.52	0.29	
	1018	14.850	18.900	0.000	CR1	2	40.0	Superior	$\sigma_{b+tlc,0}$	-3.30		0.29	
	1020	18.900	18.900	1.000	CR1	3	70.0	Intermedio	τ_{yz}	0.03	0.50	0.05	
	1020	18.900	18.900	1.000	CR1	2	60.0	Inferior	τ_{xz}	0.03	1.92	0.01	
	1018	14.850	18.900	0.000	CR1	5	140.0	Inferior	τ_{xy}	-0.44	1.92	0.23	
163	333	24.300	21.600	1.000	CR1	2	60.0	Inferior	$\sigma_{b,0}$	0.20	11.52	0.02	
	333	24.300	21.600	1.000	CR1	2	50.0	Intermedio	$\sigma_{b,c,0}$	-0.47	11.52	0.04	
	333	24.300	21.600	1.000	CR1	2	40.0	Superior	$\sigma_{b+tlc,0}$	-0.67		0.06	
	333	24.300	21.600	1.000	CR1	3	70.0	Intermedio	τ_{yz}	0.03	0.50	0.07	
	333	24.300	21.600	1.000	CR1	2	60.0	Inferior	τ_{xz}	0.03	1.92	0.02	
	8909	24.840	21.600	0.500	CR1	5	140.0	Inferior	τ_{xy}	0.22	1.92	0.11	
164	354	29.700	21.600	1.000	CR1	4	100.0	Inferior	$\sigma_{b,0}$	-0.19	11.52	0.02	
	354	29.700	21.600	1.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-0.68	11.52	0.06	
	354	29.700	21.600	1.000	CR1	4	80.0	Superior	$\sigma_{b+tlc,0}$	-0.50		0.08	
	354	29.700	21.600	1.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.02	0.50	0.03	
	354	29.700	21.600	1.000	CR1	2	60.0	Inferior	τ_{xz}	-0.02	1.92	0.01	
	354	29.700	21.600	1.000	CR1	5	140.0	Inferior	τ_{xy}	0.23	1.92	0.12	
165	1047	37.800	21.600	1.000	CR1	4	100.0	Inferior	$\sigma_{b,0}$	-0.19	11.52	0.02	
	1047	37.800	21.600	1.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-0.74	11.52	0.06	
	1047	37.800	21.600	1.000	CR1	4	80.0	Superior	$\sigma_{b+tlc,0}$	-0.56		0.08	
	1047	37.800	21.600	1.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.02	0.50	0.03	
	1047	37.800	21.600	1.000	CR1	2	60.0	Inferior	τ_{xz}	-0.02	1.92	0.01	
	1047	37.800	21.600	1.000	CR1	5	140.0	Inferior	τ_{xy}	-0.25	1.92	0.13	
166	1054	43.200	21.600	1.000	CR1	2	40.0	Superior	$\sigma_{b,0}$	-0.19	11.52	0.02	
	1054	43.200	21.600	1.000	CR1	2	50.0	Intermedio	$\sigma_{b,c,0}$	-0.47	11.52	0.04	
	1054	43.200	21.600	1.000	CR1	2	40.0	Superior	$\sigma_{b+tlc,0}$	-0.67		0.06	
	1054	43.200	21.600	1.000	CR1	3	70.0	Intermedio	τ_{yz}	0.03	0.50	0.06	
	1054	43.200	21.600	1.000	CR1	2	60.0	Inferior	τ_{xz}	0.03	1.92	0.02	
	8948	42.660	21.600	0.500	CR1	5	140.0	Inferior	τ_{xy}	-0.22	1.92	0.12	
167	335	48.600	24.300	1.000	CR1	2	60.0	Inferior	$\sigma_{b,0}$	0.27	11.52	0.02	
	8977	50.625	24.300	1.000	CR1	5	120.0	Intermedio	$\sigma_{b,c,0}$	0.77	11.52	0.07	
	335	48.600	24.300	1.000	CR1	2	40.0	Superior	$\sigma_{b+tlc,0}$	-0.94		0.08	
	335	48.600	24.300	1.000	CR1	3	70.0	Intermedio	τ_{yz}	0.05	0.50	0.10	
	335	48.600	24.300	1.000	CR1	2	60.0	Inferior	τ_{xz}	0.05	1.92	0.03	
	8984	49.106	24.300	0.500	CR1	5	140.0	Inferior	τ_{xy}	0.28	1.92	0.14	
168	1076	59.400	24.300	1.000	CR1	2	40.0	Superior	$\sigma_{b,0}$	0.19	11.52	0.02	
	1075	59.400	24.300	0.000	CR1	2	50.0	Intermedio	$\sigma_{b,c,0}$	-2.98	11.52	0.26	
	1075	59.400	24.300	0.000	CR1	2	40.0	Superior	$\sigma_{b+tlc,0}$	-2.98		0.26	
	1076	59.400	24.300	1.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.02	0.50	0.04	
	1076	59.400	24.300	1.000	CR1	2	60.0	Inferior	τ_{xz}	-0.02	1.92	0.01	
	1076	59.400	24.300	1.000	CR1	5	140.0	Inferior	τ_{xy}	-0.50	1.92	0.26	
169	350	63.450	24.300	1.000	CR1	4	100.0	Inferior	$\sigma_{b,0}$	-0.18	11.52	0.02	
	1080	63.450	24.300	0.000	CR1	2	50.0	Intermedio	$\sigma_{b,c,0}$	-2.82	11.52	0.25	
	1080	63.450	24.300	0.000	CR1	2	40.0	Superior	$\sigma_{b+tlc,0}$	-2.82		0.25	
	1082	67.500	24.300	1.000	CR1	3	70.0	Intermedio	τ_{yz}	0.03	0.50	0.05	
	1082	67.500	24.300	1.000	CR1	2	60.0	Inferior	τ_{xz}	0.03	1.92	0.01	
	350	63.450	24.300	1.000	CR1	5	140.0	Inferior	τ_{xy}	0.44	1.92	0.23	

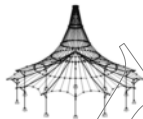


Proyecto: TFM
Modelo: TFM_FINAL_v02
TFM Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

2.2 RAZÓN MÁX. DE TENSIONES POR SUPERFICIE

Superf. núm.	Punto núm.	Coordenadas del punto [m]			Carga	Núm.	Capa		Tensiones [N/mm²]			Razón [-]
		X	Y	Z			z [mm]	Lado	Símbolo	Existente	Límite	
170	337	67.500	13.500	1.000	CR1	2	60.0	Inferior	$\sigma_{b,0}$	-0.12	11.52	0.01
	337	67.500	13.500	1.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-0.52	11.52	0.05
	337	67.500	13.500	1.000	CR1	4	80.0	Superior	$\sigma_{b+tc,0}$	-0.40		0.06
	337	67.500	13.500	1.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.02	0.50	0.04
	337	67.500	13.500	1.000	CR1	2	60.0	Inferior	τ_{xz}	-0.02	1.92	0.01
	25347	64.800	13.500	0.500	CR1	5	140.0	Inferior	τ_{xy}	0.12	1.92	0.06
171	1098	59.400	13.500	1.000	CR1	4	100.0	Inferior	$\sigma_{b,0}$	-0.51	11.52	0.04
	1096	59.400	13.500	0.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-4.49	11.52	0.39
	1096	59.400	13.500	0.000	CR1	4	80.0	Superior	$\sigma_{b+tc,0}$	-4.43		0.39
	1098	59.400	13.500	1.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.09	0.50	0.19
	1098	59.400	13.500	1.000	CR1	2	60.0	Inferior	τ_{xz}	-0.09	1.92	0.05
	1098	59.400	13.500	1.000	CR1	5	140.0	Inferior	τ_{xy}	0.58	1.92	0.30
197	565	59.400	10.800	5.000	CR1	4	100.0	Inferior	$\sigma_{b,0}$	-0.28	11.52	0.02
	1438	59.400	10.800	4.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-1.18	11.52	0.10
	1438	59.400	10.800	4.000	CR1	4	80.0	Superior	$\sigma_{b+tc,0}$	-1.15		0.11
	565	59.400	10.800	5.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.05	0.50	0.11
	565	59.400	10.800	5.000	CR1	2	60.0	Inferior	τ_{xz}	-0.05	1.92	0.03
	565	59.400	10.800	5.000	CR1	5	140.0	Inferior	τ_{xy}	0.24	1.92	0.12
198	569	0.000	10.800	5.000	CR1	4	100.0	Inferior	$\sigma_{b,0}$	0.22	11.52	0.02
	1279	2.700	10.800	4.000	CR1	2	50.0	Intermedio	$\sigma_{b,c,0}$	-1.01	11.52	0.09
	1279	2.700	10.800	4.000	CR1	2	40.0	Superior	$\sigma_{b+tc,0}$	-1.02		0.09
	569	0.000	10.800	5.000	CR1	3	70.0	Intermedio	τ_{yz}	0.04	0.50	0.08
	569	0.000	10.800	5.000	CR1	2	60.0	Inferior	τ_{xz}	0.04	1.92	0.02
	1280	2.700	10.800	5.000	CR1	5	140.0	Inferior	τ_{xy}	-0.16	1.92	0.09
199	1295	0.000	13.500	5.000	CR1	2	40.0	Superior	$\sigma_{b,0}$	-0.15	11.52	0.01
	1293	2.700	13.500	4.000	CR1	2	50.0	Intermedio	$\sigma_{b,c,0}$	-1.31	11.52	0.11
	1293	2.700	13.500	4.000	CR1	2	40.0	Superior	$\sigma_{b+tc,0}$	-1.31		0.11
	1295	0.000	13.500	5.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.05
	1295	0.000	13.500	5.000	CR1	2	60.0	Inferior	τ_{xz}	-0.03	1.92	0.01
	571	2.700	13.500	5.000	CR1	1	0.0	Superior	τ_{xy}	0.16	1.92	0.09
200	1501	18.900	0.000	5.000	CR1	2	60.0	Inferior	$\sigma_{b,0}$	-0.38	11.52	0.03
	1501	18.900	0.000	5.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-3.85	11.52	0.33
	1501	18.900	0.000	5.000	CR1	4	80.0	Superior	$\sigma_{b+tc,0}$	-3.46		0.37
	1501	18.900	0.000	5.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.06
	1501	18.900	0.000	5.000	CR1	2	60.0	Inferior	τ_{xz}	-0.03	1.92	0.02
	591	24.300	0.000	5.000	CR1	5	140.0	Inferior	τ_{xy}	-1.08	1.92	0.56
201	1492	27.000	0.000	5.000	CR1	4	100.0	Inferior	$\sigma_{b,0}$	-0.39	11.52	0.03
	1492	27.000	0.000	5.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-3.81	11.52	0.33
	1492	27.000	0.000	5.000	CR1	4	80.0	Superior	$\sigma_{b+tc,0}$	-3.42		0.36
	593	32.400	0.000	5.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.06
	593	32.400	0.000	5.000	CR1	2	60.0	Inferior	τ_{xz}	-0.03	1.92	0.02
	1492	27.000	0.000	5.000	CR1	5	140.0	Inferior	τ_{xy}	1.07	1.92	0.56
202	1483	35.100	0.000	5.000	CR1	4	80.0	Superior	$\sigma_{b,0}$	0.38	11.52	0.03
	1483	35.100	0.000	5.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-3.93	11.52	0.34
	1483	35.100	0.000	5.000	CR1	4	80.0	Superior	$\sigma_{b+tc,0}$	-3.55		0.37
	1483	35.100	0.000	5.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.06
	1483	35.100	0.000	5.000	CR1	2	60.0	Inferior	τ_{xz}	-0.03	1.92	0.02
	595	40.500	0.000	5.000	CR1	5	140.0	Inferior	τ_{xy}	-1.07	1.92	0.56
203	1474	43.200	0.000	5.000	CR1	4	80.0	Superior	$\sigma_{b,0}$	0.38	11.52	0.03
	1474	43.200	0.000	5.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-3.86	11.52	0.34
	1474	43.200	0.000	5.000	CR1	4	80.0	Superior	$\sigma_{b+tc,0}$	-3.48		0.37
	1474	43.200	0.000	5.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.06
	1474	43.200	0.000	5.000	CR1	2	60.0	Inferior	τ_{xz}	-0.03	1.92	0.02
	1474	43.200	0.000	5.000	CR1	5	140.0	Inferior	τ_{xy}	1.07	1.92	0.56
204	599	4.050	0.000	5.000	CR1	2	40.0	Superior	$\sigma_{b,0}$	0.35	11.52	0.03
	599	4.050	0.000	5.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-1.27	11.52	0.11
	599	4.050	0.000	5.000	CR1	4	80.0	Superior	$\sigma_{b+tc,0}$	-0.92		0.14
	1529	4.050	0.000	4.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.05	0.50	0.10
	1529	4.050	0.000	4.000	CR1	2	60.0	Inferior	τ_{xz}	-0.05	1.92	0.03
	599	4.050	0.000	5.000	CR1	5	140.0	Inferior	τ_{xy}	-0.32	1.92	0.17
205	1520	6.750	0.000	5.000	CR1	2	60.0	Inferior	$\sigma_{b,0}$	-0.35	11.52	0.03
	1520	6.750	0.000	5.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-1.28	11.52	0.11
	1520	6.750	0.000	5.000	CR1	4	80.0	Superior	$\sigma_{b+tc,0}$	-0.93		0.14
	601	9.450	0.000	5.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.06
	601	9.450	0.000	5.000	CR1	2	60.0	Inferior	τ_{xz}	-0.03	1.92	0.02
	1520	6.750	0.000	5.000	CR1	5	140.0	Inferior	τ_{xy}	0.37	1.92	0.19
206	1510	12.150	0.000	5.000	CR1	2	60.0	Inferior	$\sigma_{b,0}$	-0.37	11.52	0.03
	1510	12.150	0.000	5.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-2.75	11.52	0.24
	1510	12.150	0.000	5.000	CR1	4	80.0	Superior	$\sigma_{b+tc,0}$	-2.38		0.27
	1510	12.150	0.000	5.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.06
	1510	12.150	0.000	5.000	CR1	2	60.0	Inferior	τ_{xz}	-0.03	1.92	0.02
	589	16.200	0.000	5.000	CR1	5	140.0	Inferior	τ_{xy}	-0.80	1.92	0.41

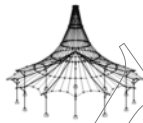


Proyecto: TFM
TFM
Modelo: TFM_FINAL_v02
Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

2.2 RAZÓN MÁX. DE TENSIONES POR SUPERFICIE

Superf. núm.	Punto núm.	Coordenadas del punto [m]			Carga	Núm.	Capa		Lado	Tensiones [N/mm²]			Razón [-]
		X	Y	Z			z [mm]			Símbolo	Existente	Límite	
207	603	55.350	0.000	5.000	CR1	4	80.0	Superior	$\sigma_{b,0}$	0.37	11.52	0.03	
	603	55.350	0.000	5.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-2.68	11.52	0.23	
	603	55.350	0.000	5.000	CR1	4	80.0	Superior	$\sigma_{b+tc,0}$	-2.31		0.26	
	603	55.350	0.000	5.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.06	
	603	55.350	0.000	5.000	CR1	2	60.0	Inferior	τ_{xz}	-0.03	1.92	0.02	
	1465	51.300	0.000	5.000	CR1	5	140.0	Inferior	τ_{xy}	0.80	1.92	0.42	
208	1454	58.050	0.000	5.000	CR1	4	100.0	Inferior	$\sigma_{b,0}$	-0.35	11.52	0.03	
	1454	58.050	0.000	5.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-1.26	11.52	0.11	
	1454	58.050	0.000	5.000	CR1	4	80.0	Superior	$\sigma_{b+tc,0}$	-0.91		0.14	
	1452	58.050	0.000	4.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.05	0.50	0.10	
	1452	58.050	0.000	4.000	CR1	2	60.0	Inferior	τ_{xz}	-0.05	1.92	0.03	
	1454	58.050	0.000	5.000	CR1	5	140.0	Inferior	τ_{xy}	0.34	1.92	0.18	
209	1298	4.050	18.900	5.000	CR1	4	100.0	Inferior	$\sigma_{b,0}$	-0.18	11.52	0.02	
	1298	4.050	18.900	5.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-0.98	11.52	0.09	
	1298	4.050	18.900	5.000	CR1	4	80.0	Superior	$\sigma_{b+tc,0}$	-0.80		0.10	
	557	0.000	18.900	5.000	CR1	3	70.0	Intermedio	τ_{yz}	0.03	0.50	0.06	
	557	0.000	18.900	5.000	CR1	2	60.0	Inferior	τ_{xz}	0.03	1.92	0.01	
	1298	4.050	18.900	5.000	CR1	5	140.0	Inferior	τ_{xy}	-0.28	1.92	0.14	
210	1308	10.800	18.900	5.000	CR1	4	80.0	Superior	$\sigma_{b,0}$	0.20	11.52	0.02	
	1307	10.800	18.900	4.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-2.29	11.52	0.20	
	1307	10.800	18.900	4.000	CR1	4	80.0	Superior	$\sigma_{b+tc,0}$	-2.28		0.20	
	1308	10.800	18.900	5.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.02	0.50	0.04	
	1308	10.800	18.900	5.000	CR1	2	60.0	Inferior	τ_{xz}	-0.02	1.92	0.01	
	1308	10.800	18.900	5.000	CR1	5	140.0	Inferior	τ_{xy}	-0.54	1.92	0.28	
211	577	14.850	18.900	5.000	CR1	4	80.0	Superior	$\sigma_{b,0}$	0.18	11.52	0.02	
	1314	14.850	18.900	4.000	CR1	2	50.0	Intermedio	$\sigma_{b,c,0}$	-2.46	11.52	0.21	
	1314	14.850	18.900	4.000	CR1	2	40.0	Superior	$\sigma_{b+tc,0}$	-2.46		0.21	
	1314	14.850	18.900	4.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.05	
	1314	14.850	18.900	4.000	CR1	2	60.0	Inferior	τ_{xz}	-0.03	1.92	0.01	
	577	14.850	18.900	5.000	CR1	5	140.0	Inferior	τ_{xy}	0.37	1.92	0.19	
212	559	24.300	21.600	5.000	CR1	2	40.0	Superior	$\sigma_{b,0}$	-0.18	11.52	0.02	
	25888	27.000	21.600	4.500	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-0.50	11.52	0.04	
	1338	27.000	21.600	5.000	CR1	4	80.0	Superior	$\sigma_{b+tc,0}$	-0.28		0.05	
	1337	27.000	21.600	4.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.06	
	1337	27.000	21.600	4.000	CR1	2	60.0	Inferior	τ_{xz}	-0.03	1.92	0.02	
	12981	24.840	21.600	4.500	CR1	5	140.0	Inferior	τ_{xy}	0.21	1.92	0.11	
213	580	29.700	21.600	5.000	CR1	4	80.0	Superior	$\sigma_{b,0}$	0.19	11.52	0.02	
	580	29.700	21.600	5.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-0.82	11.52	0.07	
	580	29.700	21.600	5.000	CR1	4	80.0	Superior	$\sigma_{b+tc,0}$	-0.63		0.09	
	580	29.700	21.600	5.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.02	0.50	0.03	
	580	29.700	21.600	5.000	CR1	2	60.0	Inferior	τ_{xz}	-0.02	1.92	0.01	
	580	29.700	21.600	5.000	CR1	5	140.0	Inferior	τ_{xy}	0.27	1.92	0.14	
214	582	35.100	21.600	5.000	CR1	2	40.0	Superior	$\sigma_{b,0}$	0.19	11.52	0.02	
	1358	37.800	21.600	5.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-0.87	11.52	0.08	
	1358	37.800	21.600	5.000	CR1	4	80.0	Superior	$\sigma_{b+tc,0}$	-0.68		0.09	
	582	35.100	21.600	5.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.02	0.50	0.03	
	582	35.100	21.600	5.000	CR1	2	60.0	Inferior	τ_{xz}	-0.02	1.92	0.01	
	1358	37.800	21.600	5.000	CR1	5	140.0	Inferior	τ_{xy}	-0.28	1.92	0.14	
215	584	40.500	21.600	5.000	CR1	2	60.0	Inferior	$\sigma_{b,0}$	-0.17	11.52	0.02	
	13028	40.500	21.600	4.500	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-0.54	11.52	0.05	
	13028	40.500	21.600	4.500	CR1	4	80.0	Superior	$\sigma_{b+tc,0}$	-0.43		0.06	
	1366	40.500	21.600	4.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.06	
	1366	40.500	21.600	4.000	CR1	2	60.0	Inferior	τ_{xz}	-0.03	1.92	0.02	
	13016	42.660	21.600	4.500	CR1	5	140.0	Inferior	τ_{xy}	-0.21	1.92	0.11	
216	561	48.600	24.300	5.000	CR1	2	60.0	Inferior	$\sigma_{b,0}$	0.25	11.52	0.02	
	1390	52.650	24.300	5.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-0.78	11.52	0.07	
	1390	52.650	24.300	5.000	CR1	4	80.0	Superior	$\sigma_{b+tc,0}$	-0.60		0.08	
	561	48.600	24.300	5.000	CR1	3	70.0	Intermedio	τ_{yz}	0.05	0.50	0.09	
	561	48.600	24.300	5.000	CR1	2	60.0	Inferior	τ_{xz}	0.05	1.92	0.02	
	13050	49.106	24.300	4.500	CR1	5	140.0	Inferior	τ_{xy}	0.27	1.92	0.14	
217	1400	59.400	24.300	5.000	CR1	4	80.0	Superior	$\sigma_{b,0}$	0.20	11.52	0.02	
	1399	59.400	24.300	4.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-2.18	11.52	0.19	
	1399	59.400	24.300	4.000	CR1	4	80.0	Superior	$\sigma_{b+tc,0}$	-2.18		0.19	
	1400	59.400	24.300	5.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.02	0.50	0.04	
	1400	59.400	24.300	5.000	CR1	2	60.0	Inferior	τ_{xz}	-0.02	1.92	0.01	
	1400	59.400	24.300	5.000	CR1	5	140.0	Inferior	τ_{xy}	-0.48	1.92	0.25	
218	576	63.450	24.300	5.000	CR1	4	80.0	Superior	$\sigma_{b,0}$	0.18	11.52	0.02	
	1406	63.450	24.300	4.000	CR1	2	50.0	Intermedio	$\sigma_{b,c,0}$	-1.89	11.52	0.16	
	1406	63.450	24.300	4.000	CR1	2	40.0	Superior	$\sigma_{b+tc,0}$	-1.90		0.16	
	1406	63.450	24.300	4.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.05	
	1406	63.450	24.300	4.000	CR1	2	60.0	Inferior	τ_{xz}	-0.03	1.92	0.01	
	576	63.450	24.300	5.000	CR1	5	140.0	Inferior	τ_{xy}	0.38	1.92	0.20	

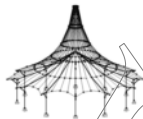


Proyecto: TFM
TFM
Modelo: TFM_FINAL_v02
Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

2.2 RAZÓN MÁX. DE TENSIONES POR SUPERFICIE

Superf. núm.	Punto núm.	Coordenadas del punto [m]			Carga	Núm.	Capa		Lado	Tensiones [N/mm²]			Razón [-]
		X	Y	Z			z [mm]			Símbolo	Existente	Límite	
219	563	67.500	13.500	5.000	CR1	4	100.0	Inferior	$\sigma_{b,0}$	-0.09	11.52	0.01	
	1420	64.800	13.500	4.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-0.51	11.52	0.04	
	563	67.500	13.500	5.000	CR1	4	80.0	Superior	$\sigma_{b+tlc,0}$	-0.40		0.05	
	563	67.500	13.500	5.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.02	0.50	0.03	
	563	67.500	13.500	5.000	CR1	2	60.0	Inferior	τ_{xz}	-0.02	1.92	0.01	
	26069	64.800	13.500	4.500	CR1	5	140.0	Inferior	τ_{xy}	0.14	1.92	0.07	
220	1432	59.400	13.500	5.000	CR1	4	80.0	Superior	$\sigma_{b,0}$	0.50	11.52	0.04	
	1430	59.400	13.500	4.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-3.58	11.52	0.31	
	1430	59.400	13.500	4.000	CR1	4	80.0	Superior	$\sigma_{b+tlc,0}$	-3.53		0.31	
	1432	59.400	13.500	5.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.09	0.50	0.18	
	1432	59.400	13.500	5.000	CR1	2	60.0	Inferior	τ_{xz}	-0.09	1.92	0.05	
	1432	59.400	13.500	5.000	CR1	5	140.0	Inferior	τ_{xy}	0.51	1.92	0.27	
246	1710	62.100	10.800	9.000	CR1	4	80.0	Superior	$\sigma_{b,0}$	-0.25	11.52	0.02	
	1711	59.400	10.800	8.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-1.96	11.52	0.17	
	1711	59.400	10.800	8.000	CR1	4	80.0	Superior	$\sigma_{b+tlc,0}$	-1.93		0.17	
	867	59.400	10.800	9.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.05	0.50	0.09	
	867	59.400	10.800	9.000	CR1	2	60.0	Inferior	τ_{xz}	-0.05	1.92	0.02	
	867	59.400	10.800	9.000	CR1	5	140.0	Inferior	τ_{xy}	0.31	1.92	0.16	
247	871	0.000	10.800	9.000	CR1	2	60.0	Inferior	$\sigma_{b,0}$	0.28	11.52	0.02	
	1598	2.700	10.800	8.000	CR1	2	50.0	Intermedio	$\sigma_{b,c,0}$	-1.42	11.52	0.12	
	1598	2.700	10.800	8.000	CR1	2	40.0	Superior	$\sigma_{b+tlc,0}$	-1.42		0.12	
	871	0.000	10.800	9.000	CR1	3	70.0	Intermedio	τ_{yz}	0.05	0.50	0.10	
	871	0.000	10.800	9.000	CR1	2	60.0	Inferior	τ_{xz}	0.05	1.92	0.03	
	1599	2.700	10.800	9.000	CR1	5	140.0	Inferior	τ_{xy}	-0.21	1.92	0.11	
248	1605	0.000	13.500	9.000	CR1	2	40.0	Superior	$\sigma_{b,0}$	-0.15	11.52	0.01	
	1603	2.700	13.500	8.000	CR1	2	50.0	Intermedio	$\sigma_{b,c,0}$	-1.68	11.52	0.15	
	1603	2.700	13.500	8.000	CR1	2	40.0	Superior	$\sigma_{b+tlc,0}$	-1.68		0.15	
	1605	0.000	13.500	9.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.05	
	1605	0.000	13.500	9.000	CR1	2	60.0	Inferior	τ_{xz}	-0.03	1.92	0.01	
	873	2.700	13.500	9.000	CR1	1	0.0	Superior	τ_{xy}	0.21	1.92	0.11	
249	1569	18.900	0.000	9.000	CR1	4	100.0	Inferior	$\sigma_{b,0}$	-0.41	11.52	0.04	
	1569	18.900	0.000	9.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-4.06	11.52	0.35	
	1569	18.900	0.000	9.000	CR1	4	80.0	Superior	$\sigma_{b+tlc,0}$	-3.65		0.39	
	1569	18.900	0.000	9.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.06	
	1569	18.900	0.000	9.000	CR1	2	60.0	Inferior	τ_{xz}	-0.03	1.92	0.02	
	893	24.300	0.000	9.000	CR1	5	140.0	Inferior	τ_{xy}	-1.21	1.92	0.63	
250	1562	27.000	0.000	9.000	CR1	2	40.0	Superior	$\sigma_{b,0}$	0.42	11.52	0.04	
	1562	27.000	0.000	9.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-4.03	11.52	0.35	
	1562	27.000	0.000	9.000	CR1	4	80.0	Superior	$\sigma_{b+tlc,0}$	-3.62		0.39	
	895	32.400	0.000	9.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.06	
	895	32.400	0.000	9.000	CR1	2	60.0	Inferior	τ_{xz}	-0.03	1.92	0.02	
	1562	27.000	0.000	9.000	CR1	5	140.0	Inferior	τ_{xy}	1.20	1.92	0.63	
251	1555	35.100	0.000	9.000	CR1	2	60.0	Inferior	$\sigma_{b,0}$	-0.41	11.52	0.04	
	1555	35.100	0.000	9.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-4.18	11.52	0.36	
	1555	35.100	0.000	9.000	CR1	4	80.0	Superior	$\sigma_{b+tlc,0}$	-3.77		0.40	
	1555	35.100	0.000	9.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.06	
	1555	35.100	0.000	9.000	CR1	2	60.0	Inferior	τ_{xz}	-0.03	1.92	0.02	
	897	40.500	0.000	9.000	CR1	5	140.0	Inferior	τ_{xy}	-1.21	1.92	0.63	
252	1548	43.200	0.000	9.000	CR1	4	80.0	Superior	$\sigma_{b,0}$	0.42	11.52	0.04	
	1548	43.200	0.000	9.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-4.08	11.52	0.35	
	1548	43.200	0.000	9.000	CR1	4	80.0	Superior	$\sigma_{b+tlc,0}$	-3.67		0.39	
	1548	43.200	0.000	9.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.06	
	1548	43.200	0.000	9.000	CR1	2	60.0	Inferior	τ_{xz}	-0.03	1.92	0.02	
	1548	43.200	0.000	9.000	CR1	5	140.0	Inferior	τ_{xy}	1.19	1.92	0.62	
253	901	4.050	0.000	9.000	CR1	2	40.0	Superior	$\sigma_{b,0}$	0.36	11.52	0.03	
	901	4.050	0.000	9.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-1.48	11.52	0.13	
	901	4.050	0.000	9.000	CR1	4	80.0	Superior	$\sigma_{b+tlc,0}$	-1.12		0.16	
	1589	4.050	0.000	8.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.05	0.50	0.10	
	1589	4.050	0.000	8.000	CR1	2	60.0	Inferior	τ_{xz}	-0.05	1.92	0.03	
	901	4.050	0.000	9.000	CR1	5	140.0	Inferior	τ_{xy}	-0.40	1.92	0.21	
254	903	9.450	0.000	9.000	CR1	4	80.0	Superior	$\sigma_{b,0}$	0.37	11.52	0.03	
	903	9.450	0.000	9.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-1.46	11.52	0.13	
	903	9.450	0.000	9.000	CR1	4	80.0	Superior	$\sigma_{b+tlc,0}$	-1.09		0.16	
	903	9.450	0.000	9.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.06	
	903	9.450	0.000	9.000	CR1	2	60.0	Inferior	τ_{xz}	-0.03	1.92	0.02	
	903	9.450	0.000	9.000	CR1	5	140.0	Inferior	τ_{xy}	-0.45	1.92	0.23	
255	891	16.200	0.000	9.000	CR1	4	80.0	Superior	$\sigma_{b,0}$	0.39	11.52	0.03	
	1576	12.150	0.000	9.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-2.93	11.52	0.25	
	1576	12.150	0.000	9.000	CR1	4	80.0	Superior	$\sigma_{b+tlc,0}$	-2.54		0.29	
	1576	12.150	0.000	9.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.07	
	1576	12.150	0.000	9.000	CR1	2	60.0	Inferior	τ_{xz}	-0.03	1.92	0.02	
	891	16.200	0.000	9.000	CR1	5	140.0	Inferior	τ_{xy}	-0.92	1.92	0.48	



Proyecto: TFM Modelo: TFM_FINAL_v02
TFM Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

2.2 RAZÓN MÁX. DE TENSIONES POR SUPERFICIE

Superf. núm.	Punto núm.	Coordenadas del punto [m]			Carga	Núm.	Capa		Tensiones [N/mm²]			Razón [-]
		X	Y	Z			z [mm]	Lado	Símbolo	Existente	Límite	
256	905	55.350	0.000	9.000	CR1	2	60.0	Inferior	$\sigma_{b,0}$	-0.39	11.52	0.03
	905	55.350	0.000	9.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-2.90	11.52	0.25
	905	55.350	0.000	9.000	CR1	4	80.0	Superior	$\sigma_{b+tc,0}$	-2.50		0.29
	905	55.350	0.000	9.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.07
	905	55.350	0.000	9.000	CR1	2	60.0	Inferior	τ_{xz}	-0.03	1.92	0.02
	1541	51.300	0.000	9.000	CR1	5	140.0	Inferior	τ_{xy}	0.93	1.92	0.48
257	1533	58.050	0.000	9.000	CR1	2	40.0	Superior	$\sigma_{b,0}$	0.37	11.52	0.03
	1533	58.050	0.000	9.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-1.57	11.52	0.14
	1533	58.050	0.000	9.000	CR1	4	80.0	Superior	$\sigma_{b+tc,0}$	-1.20		0.17
	1531	58.050	0.000	8.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.05	0.50	0.10
	1531	58.050	0.000	8.000	CR1	2	60.0	Inferior	τ_{xz}	-0.05	1.92	0.03
	1533	58.050	0.000	9.000	CR1	5	140.0	Inferior	τ_{xy}	0.44	1.92	0.23
258	1612	4.050	18.900	9.000	CR1	2	60.0	Inferior	$\sigma_{b,0}$	-0.19	11.52	0.02
	1612	4.050	18.900	9.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-1.21	11.52	0.10
	1612	4.050	18.900	9.000	CR1	4	80.0	Superior	$\sigma_{b+tc,0}$	-1.02		0.12
	859	0.000	18.900	9.000	CR1	3	70.0	Intermedio	τ_{yz}	0.03	0.50	0.06
	859	0.000	18.900	9.000	CR1	2	60.0	Inferior	τ_{xz}	0.03	1.92	0.01
	1612	4.050	18.900	9.000	CR1	5	140.0	Inferior	τ_{xy}	-0.36	1.92	0.19
259	1619	10.800	18.900	9.000	CR1	4	100.0	Inferior	$\sigma_{b,0}$	-0.21	11.52	0.02
	1618	10.800	18.900	8.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-2.87	11.52	0.25
	1618	10.800	18.900	8.000	CR1	4	80.0	Superior	$\sigma_{b+tc,0}$	-2.87		0.25
	1619	10.800	18.900	9.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.02	0.50	0.04
	1619	10.800	18.900	9.000	CR1	2	60.0	Inferior	τ_{xz}	-0.02	1.92	0.01
	1619	10.800	18.900	9.000	CR1	5	140.0	Inferior	τ_{xy}	-0.62	1.92	0.32
260	879	14.850	18.900	9.000	CR1	4	100.0	Inferior	$\sigma_{b,0}$	-0.19	11.52	0.02
	1623	14.850	18.900	8.000	CR1	2	50.0	Intermedio	$\sigma_{b,c,0}$	-2.97	11.52	0.26
	1623	14.850	18.900	8.000	CR1	2	40.0	Superior	$\sigma_{b+tc,0}$	-2.97		0.26
	1625	18.900	18.900	9.000	CR1	3	70.0	Intermedio	τ_{yz}	0.03	0.50	0.06
	1625	18.900	18.900	9.000	CR1	2	60.0	Inferior	τ_{xz}	0.03	1.92	0.02
	879	14.850	18.900	9.000	CR1	5	140.0	Inferior	τ_{xy}	0.49	1.92	0.26
261	861	24.300	21.600	9.000	CR1	2	60.0	Inferior	$\sigma_{b,0}$	0.24	11.52	0.02
	1639	27.000	21.600	8.000	CR1	2	50.0	Intermedio	$\sigma_{b,c,0}$	-0.87	11.52	0.08
	26511	27.000	21.600	8.500	CR1	4	80.0	Superior	$\sigma_{b+tc,0}$	-0.69		0.08
	861	24.300	21.600	9.000	CR1	3	70.0	Intermedio	τ_{yz}	0.04	0.50	0.08
	861	24.300	21.600	9.000	CR1	2	60.0	Inferior	τ_{xz}	0.04	1.92	0.02
	18061	24.840	21.600	8.500	CR1	5	140.0	Inferior	τ_{xy}	0.20	1.92	0.11
262	1647	32.400	21.600	9.000	CR1	4	100.0	Inferior	$\sigma_{b,0}$	-0.20	11.52	0.02
	882	29.700	21.600	9.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-0.96	11.52	0.08
	882	29.700	21.600	9.000	CR1	4	80.0	Superior	$\sigma_{b+tc,0}$	-0.77		0.10
	1647	32.400	21.600	9.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.02	0.50	0.04
	1647	32.400	21.600	9.000	CR1	2	60.0	Inferior	τ_{xz}	-0.02	1.92	0.01
	1647	32.400	21.600	9.000	CR1	5	140.0	Inferior	τ_{xy}	-0.33	1.92	0.17
263	884	35.100	21.600	9.000	CR1	2	40.0	Superior	$\sigma_{b,0}$	0.20	11.52	0.02
	884	35.100	21.600	9.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-0.97	11.52	0.08
	884	35.100	21.600	9.000	CR1	4	80.0	Superior	$\sigma_{b+tc,0}$	-0.77		0.10
	884	35.100	21.600	9.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.02	0.50	0.04
	884	35.100	21.600	9.000	CR1	2	60.0	Inferior	τ_{xz}	-0.02	1.92	0.01
	884	35.100	21.600	9.000	CR1	5	140.0	Inferior	τ_{xy}	0.33	1.92	0.17
264	1661	43.200	21.600	9.000	CR1	4	80.0	Superior	$\sigma_{b,0}$	-0.24	11.52	0.02
	1659	40.500	21.600	8.000	CR1	2	50.0	Intermedio	$\sigma_{b,c,0}$	-0.90	11.52	0.08
	18108	40.500	21.600	8.500	CR1	4	80.0	Superior	$\sigma_{b+tc,0}$	-0.74		0.09
	1661	43.200	21.600	9.000	CR1	3	70.0	Intermedio	τ_{yz}	0.04	0.50	0.08
	1661	43.200	21.600	9.000	CR1	2	60.0	Inferior	τ_{xz}	0.04	1.92	0.02
	886	40.500	21.600	9.000	CR1	5	140.0	Inferior	τ_{xy}	0.21	1.92	0.11
265	863	48.600	24.300	9.000	CR1	2	40.0	Superior	$\sigma_{b,0}$	-0.33	11.52	0.03
	26582	52.650	24.300	8.500	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-1.23	11.52	0.11
	26582	52.650	24.300	8.500	CR1	4	80.0	Superior	$\sigma_{b+tc,0}$	-1.09		0.12
	863	48.600	24.300	9.000	CR1	3	70.0	Intermedio	τ_{yz}	0.06	0.50	0.13
	863	48.600	24.300	9.000	CR1	2	60.0	Inferior	τ_{xz}	0.06	1.92	0.03
	1676	52.650	24.300	9.000	CR1	5	140.0	Inferior	τ_{xy}	-0.36	1.92	0.19
266	1683	59.400	24.300	9.000	CR1	4	80.0	Superior	$\sigma_{b,0}$	0.21	11.52	0.02
	1682	59.400	24.300	8.000	CR1	4	90.0	Intermedio	$\sigma_{b,c,0}$	-2.73	11.52	0.24
	1682	59.400	24.300	8.000	CR1	4	80.0	Superior	$\sigma_{b+tc,0}$	-2.73		0.24
	1683	59.400	24.300	9.000	CR1	3	70.0	Intermedio	τ_{yz}	-0.02	0.50	0.04
	1683	59.400	24.300	9.000	CR1	2	60.0	Inferior	τ_{xz}	-0.02	1.92	0.01
	1683	59.400	24.300	9.000	CR1	5	140.0	Inferior	τ_{xy}	-0.59	1.92	0.31
267	878	63.450	24.300	9.000	CR1	2	60.0	Inferior	$\sigma_{b,0}$	-0.19	11.52	0.02
	1687	63.450	24.300	8.000	CR1	2	50.0	Intermedio	$\sigma_{b,c,0}$	-2.37	11.52	0.21
	1687	63.450	24.300	8.000	CR1	2	40.0	Superior	$\sigma_{b+tc,0}$	-2.37		0.21
	1689	67.500	24.300	9.000	CR1	3	70.0	Intermedio	τ_{yz}	0.03	0.50	0.06
	1689	67.500	24.300	9.000	CR1	2	60.0	Inferior	τ_{xz}	0.03	1.92	0.02
	878	63.450	24.300	9.000	CR1	5	140.0	Inferior	τ_{xy}	0.45	1.92	0.23

Proyecto: TFM Modelo: TFM_FINAL_v02
TFM Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

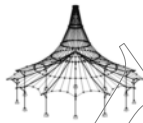
2.2 RAZÓN MÁX. DE TENSIONES POR SUPERFICIE

Superf. núm.	Punto núm.	Coordenadas del punto [m]			Carga	Núm.	Capa		Lado	Tensiones [N/mm ²]			Razón [-]
		X	Y	Z			z [mm]			Símbolo	Existente	Límite	
268	865	67.500	13.500	9.000	CR1	4	100.0		Inferior	$\sigma_{b,0}$	-0.14	11.52	0.01
	1696	64.800	13.500	8.000	CR1	4	90.0		Intermedio	$\sigma_{b,c,0}$	-0.89	11.52	0.08
	1696	64.800	13.500	8.000	CR1	4	80.0		Superior	$\sigma_{b+tlc,0}$	-0.88		0.08
	865	67.500	13.500	9.000	CR1	3	70.0		Intermedio	τ_{yz}	-0.03	0.50	0.05
	865	67.500	13.500	9.000	CR1	2	60.0		Inferior	τ_{xz}	-0.03	1.92	0.01
	1698	64.800	13.500	9.000	CR1	5	140.0		Inferior	τ_{xy}	0.15	1.92	0.08
269	1705	59.400	13.500	9.000	CR1	4	80.0		Superior	$\sigma_{b,0}$	0.52	11.52	0.04
	1703	59.400	13.500	8.000	CR1	4	90.0		Intermedio	$\sigma_{b,c,0}$	-4.36	11.52	0.38
	1703	59.400	13.500	8.000	CR1	4	80.0		Superior	$\sigma_{b+tlc,0}$	-4.31		0.38
	1705	59.400	13.500	9.000	CR1	3	70.0		Intermedio	τ_{yz}	-0.09	0.50	0.19
	1705	59.400	13.500	9.000	CR1	2	60.0		Inferior	τ_{xz}	-0.09	1.92	0.05
	1705	59.400	13.500	9.000	CR1	5	140.0		Inferior	τ_{xy}	0.60	1.92	0.31

Razón máxima 0.63

2.3 RAZÓN MÁX. DE TENSIONES POR COMPOSICIÓN

Comp. núm.	Superfici núm.	Capa núm.	Punto núm	Coordenadas del punto [			Carga	Capa		Lado	Tensiones [N/mm ²]			Razón [-]
				X	Y	Z		z [mm]			Símbolo	Existente	Límite		
3	22	1	25200	19.882	13.500	0.000	CR1	0.0	Superior	$\sigma_{b,0}$		-0.01	11.52	0.00	
			2304	21.355	13.500	1.000	CR1	20.0	Intermedio	$\sigma_{b,c,0}$		1.22	11.52	0.11	
			2304	21.355	13.500	1.000	CR1	0.0	Superior	$\sigma_{b+tlc,0}$		1.22		0.11	
			25209	24.300	13.500	0.500	CR1	20.0	Intermedio	τ_{yz}		0.00	0.50	0.00	
			25199	19.391	13.500	0.000	CR1	40.0	Inferior	τ_{xz}		-0.01	1.92	0.01	
		2	1027	24.300	13.500	1.000	CR1	0.0	Superior	τ_{xy}		-0.36	1.92	0.19	
			1027	24.300	13.500	1.000	CR1	40.0	Superior	$\sigma_{b,0}$		-0.22	11.52	0.02	
			1026	24.300	13.500	0.000	CR1	50.0	Intermedio	$\sigma_{b,c,0}$		-2.32	11.52	0.20	
			1026	24.300	13.500	0.000	CR1	40.0	Superior	$\sigma_{b+tlc,0}$		-2.32		0.20	
			25199	19.391	13.500	0.000	CR1	50.0	Intermedio	τ_{yz}		0.01	0.50	0.03	
	23	2	1027	24.300	13.500	1.000	CR1	60.0	Inferior	τ_{xz}		0.04	1.92	0.02	
			1027	24.300	13.500	1.000	CR1	40.0	Superior	τ_{xy}		0.36	1.92	0.19	
			25200	19.882	13.500	0.000	CR1	60.0	Superior	$\sigma_{b,0}$		-0.01	11.52	0.00	
			2304	21.355	13.500	1.000	CR1	70.0	Intermedio	$\sigma_{b,c,0}$		1.23	11.52	0.11	
			2304	21.355	13.500	1.000	CR1	60.0	Superior	$\sigma_{b+tlc,0}$		1.23		0.11	
		3	1027	24.300	13.500	1.000	CR1	70.0	Intermedio	τ_{yz}		0.04	0.50	0.08	
			25199	19.391	13.500	0.000	CR1	70.0	Intermedio	τ_{xz}		-0.01	1.92	0.01	
			1027	24.300	13.500	1.000	CR1	60.0	Superior	τ_{xy}		-0.36	1.92	0.19	
			1027	24.300	13.500	1.000	CR1	80.0	Superior	$\sigma_{b,0}$		-0.22	11.52	0.02	
			1026	24.300	13.500	0.000	CR1	90.0	Intermedio	$\sigma_{b,c,0}$		-2.31	11.52	0.20	
	24	4	1026	24.300	13.500	0.000	CR1	80.0	Superior	$\sigma_{b+tlc,0}$		-2.31		0.20	
			25199	19.391	13.500	0.000	CR1	90.0	Intermedio	τ_{yz}		0.01	0.50	0.03	
			1027	24.300	13.500	1.000	CR1	80.0	Superior	τ_{xz}		0.04	1.92	0.02	
			1027	24.300	13.500	1.000	CR1	80.0	Superior	τ_{xy}		0.36	1.92	0.19	
			25200	19.882	13.500	0.000	CR1	140.0	Inferior	$\sigma_{b,0}$		0.01	11.52	0.00	
		5	2304	21.355	13.500	1.000	CR1	120.0	Intermedio	$\sigma_{b,c,0}$		1.23	11.52	0.11	
			2301	21.845	13.500	1.000	CR1	100.0	Superior	$\sigma_{b+tlc,0}$		1.23		0.11	
			25209	24.300	13.500	0.500	CR1	120.0	Intermedio	τ_{yz}		0.00	0.50	0.00	
			25199	19.391	13.500	0.000	CR1	100.0	Superior	τ_{xz}		-0.01	1.92	0.01	
			25199	19.391	13.500	0.000	CR1	140.0	Inferior	τ_{xy}		0.38	1.92	0.20	
	25	1	25273	47.618	16.200	0.000	CR1	0.0	Superior	$\sigma_{b,0}$		-0.01	11.52	0.00	
			2493	46.145	16.200	1.000	CR1	20.0	Intermedio	$\sigma_{b,c,0}$		1.31	11.52	0.11	
			2493	46.145	16.200	1.000	CR1	0.0	Superior	$\sigma_{b+tlc,0}$		1.31		0.11	
			25275	48.600	16.200	0.500	CR1	20.0	Intermedio	τ_{yz}		0.00	0.50	0.00	
			25274	48.109	16.200	0.000	CR1	40.0	Inferior	τ_{xz}		0.01	1.92	0.01	
		2	1061	48.600	16.200	1.000	CR1	0.0	Superior	τ_{xy}		-0.74	1.92	0.39	
			1061	48.600	16.200	1.000	CR1	60.0	Inferior	$\sigma_{b,0}$		0.30	11.52	0.03	
			1060	48.600	16.200	0.000	CR1	50.0	Intermedio	$\sigma_{b,c,0}$		-5.93	11.52	0.51	
			1060	48.600	16.200	0.000	CR1	40.0	Superior	$\sigma_{b+tlc,0}$		-5.93		0.51	
			25274	48.109	16.200	0.000	CR1	50.0	Intermedio	τ_{yz}		-0.01	0.50	0.03	
		3	1061	48.600	16.200	1.000	CR1	60.0	Inferior	τ_{xz}		0.05	1.92	0.03	
			1061	48.600	16.200	1.000	CR1	40.0	Superior	τ_{xy}		0.74	1.92	0.38	
			25273	47.618	16.200	0.000	CR1	60.0	Superior	$\sigma_{b,0}$		-0.01	11.52	0.00	
			2493	46.145	16.200	1.000	CR1	70.0	Intermedio	$\sigma_{b,c,0}$		1.31	11.52	0.11	
			2493	46.145	16.200	1.000	CR1	60.0	Superior	$\sigma_{b+tlc,0}$		1.31		0.11	
		26	4	1061	48.600	16.200	1.000	CR1	70.0	Intermedio	τ_{yz}		0.05	0.50	0.10
				25274	48.109	16.200	0.000	CR1	70.0	Intermedio	τ_{xz}		0.02	1.92	0.01
				1061	48.600	16.200	1.000	CR1	60.0	Superior	τ_{xy}		-0.73	1.92	0.38
				1061	48.600	16.200	1.000	CR1	80.0	Superior	$\sigma_{b,0}$		-0.30	11.52	0.03
				1060	48.600	16.200	0.000	CR1	90.0	Intermedio	$\sigma_{b,c,0}$		-5.91	11.52	0.51
	5		1060	48.600	16.200	0.000	CR1	80.0	Superior	$\sigma_{b+tlc,0}$		-5.92		0.51	
			25274	48.109	16.200	0.000	CR1	90.0	Intermedio	τ_{yz}		-0.01	0.50	0.03	
			1061	48.600	16.200	1.000	CR1	80.0	Superior	τ_{xz}		0.05	1.92	0.03	
			1061	48.600	16.200	1.000	CR1	80.0	Superior	τ_{xy}		0.73	1.92	0.38	
			25273	47.618	16.200	0.000	CR1	100.0	Superior	$\sigma_{b,0}$		-0.01	11.52	0.00	
	6	2493	46.145	16.200	1.000	CR1	120.0	Intermedio	$\sigma_{b,c,0}$		1.31	11.52	0.11		
		2493	46.145	16.200	1.000	CR1	100.0	Superior	$\sigma_{b+tlc,0}$		1.31		0.11		
		25275	48.600	16.200	0.500	CR1	120.0	Intermedio	τ_{yz}		0.00	0.50	0.00		
		25274	48.109	16.200	0.000	CR1	100.0	Superior	τ_{xz}		0.01	1.92	0.01		



Proyecto: TFM
TFM

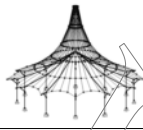
Modelo: TFM_FINAL_v02

Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

2.3 RAZÓN MÁX. DE TENSIONES POR COMPOSICIÓN

Comp. núm.	Superf. núm.	Capa núm.	Punto núm.	Coordenadas del punto [			Carga	Capa		Tensiones [N/mm ²]			Razón [-]
				X	Y	Z		z [mm]	Lado	Símbolo	Existente	Límite	
48	1	1	1061	48.600	16.200	1.000	CR1	100.0	Superior	τ_{xy}	-0.73	1.92	0.38
			25849	19.882	13.500	4.000	CR1	0.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			4612	21.355	13.500	5.000	CR1	20.0	Intermedio	$\sigma_{b,0}$	1.20	11.52	0.10
			4612	21.355	13.500	5.000	CR1	0.0	Superior	$\sigma_{b+tlc,0}$	1.20		0.10
			25858	24.300	13.500	4.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			25848	19.391	13.500	4.000	CR1	40.0	Inferior	τ_{xz}	-0.01	1.92	0.01
		2	25848	19.391	13.500	4.000	CR1	40.0	Inferior	τ_{xy}	0.32	1.92	0.17
			1326	24.300	13.500	5.000	CR1	60.0	Inferior	$\sigma_{b,0}$	0.21	11.52	0.02
			1324	18.900	13.500	4.000	CR1	50.0	Intermedio	$\sigma_{b,0}$	-1.76	11.52	0.15
			1324	18.900	13.500	4.000	CR1	40.0	Superior	$\sigma_{b+tlc,0}$	-1.76		0.15
			25848	19.391	13.500	4.000	CR1	50.0	Intermedio	τ_{yz}	0.01	0.50	0.02
			1326	24.300	13.500	5.000	CR1	60.0	Inferior	τ_{xz}	0.04	1.92	0.02
	3	3	25848	19.391	13.500	4.000	CR1	60.0	Inferior	τ_{xy}	-0.33	1.92	0.17
			25849	19.882	13.500	4.000	CR1	60.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			4612	21.355	13.500	5.000	CR1	70.0	Intermedio	$\sigma_{b,0}$	1.21	11.52	0.10
			4612	21.355	13.500	5.000	CR1	60.0	Superior	$\sigma_{b+tlc,0}$	1.21		0.10
			1326	24.300	13.500	5.000	CR1	70.0	Intermedio	τ_{yz}	0.04	0.50	0.07
			25848	19.391	13.500	4.000	CR1	70.0	Intermedio	τ_{xz}	-0.01	1.92	0.01
		4	25848	19.391	13.500	4.000	CR1	80.0	Inferior	τ_{xy}	0.34	1.92	0.18
			1326	24.300	13.500	5.000	CR1	80.0	Superior	$\sigma_{b,0}$	-0.21	11.52	0.02
			1324	18.900	13.500	4.000	CR1	90.0	Intermedio	$\sigma_{b,0}$	-1.76	11.52	0.15
			1324	18.900	13.500	4.000	CR1	80.0	Superior	$\sigma_{b+tlc,0}$	-1.76		0.15
			25848	19.391	13.500	4.000	CR1	90.0	Intermedio	τ_{yz}	0.01	0.50	0.02
			1326	24.300	13.500	5.000	CR1	80.0	Superior	τ_{xz}	0.04	1.92	0.02
51	1	5	25848	19.391	13.500	4.000	CR1	100.0	Inferior	τ_{xy}	-0.36	1.92	0.19
			25849	19.882	13.500	4.000	CR1	100.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			4612	21.355	13.500	5.000	CR1	120.0	Intermedio	$\sigma_{b,0}$	1.21	11.52	0.10
			4612	21.355	13.500	5.000	CR1	100.0	Superior	$\sigma_{b+tlc,0}$	1.21		0.10
			25858	24.300	13.500	4.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			25848	19.391	13.500	4.000	CR1	100.0	Superior	τ_{xz}	-0.01	1.92	0.01
		2	25848	19.391	13.500	4.000	CR1	140.0	Inferior	τ_{xy}	0.38	1.92	0.20
			25956	47.618	16.200	4.000	CR1	40.0	Inferior	$\sigma_{b,0}$	0.01	11.52	0.00
			4783	46.145	16.200	5.000	CR1	20.0	Intermedio	$\sigma_{b,0}$	1.27	11.52	0.11
			4783	46.145	16.200	5.000	CR1	0.0	Superior	$\sigma_{b+tlc,0}$	1.27		0.11
			25958	48.600	16.200	4.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			25957	48.109	16.200	4.000	CR1	40.0	Inferior	τ_{xz}	0.01	1.92	0.00
	2	3	1378	48.600	16.200	5.000	CR1	0.0	Superior	τ_{xy}	-0.62	1.92	0.32
			1378	48.600	16.200	5.000	CR1	40.0	Superior	$\sigma_{b,0}$	-0.29	11.52	0.03
			1377	48.600	16.200	4.000	CR1	50.0	Intermedio	$\sigma_{b,0}$	-4.63	11.52	0.40
			1377	48.600	16.200	4.000	CR1	40.0	Superior	$\sigma_{b+tlc,0}$	-4.63		0.40
			25957	48.109	16.200	4.000	CR1	50.0	Intermedio	τ_{yz}	-0.01	0.50	0.02
			1378	48.600	16.200	5.000	CR1	60.0	Inferior	τ_{xz}	0.05	1.92	0.03
		3	1378	48.600	16.200	5.000	CR1	40.0	Superior	τ_{xy}	0.62	1.92	0.32
			25956	47.618	16.200	4.000	CR1	60.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			4783	46.145	16.200	5.000	CR1	70.0	Intermedio	$\sigma_{b,0}$	1.27	11.52	0.11
			4783	46.145	16.200	5.000	CR1	60.0	Superior	$\sigma_{b+tlc,0}$	1.27		0.11
			1378	48.600	16.200	5.000	CR1	70.0	Intermedio	τ_{yz}	0.05	0.50	0.10
			25957	48.109	16.200	4.000	CR1	70.0	Intermedio	τ_{xz}	0.01	1.92	0.01
74	1	4	1378	48.600	16.200	5.000	CR1	60.0	Superior	τ_{xy}	-0.61	1.92	0.32
			1378	48.600	16.200	5.000	CR1	80.0	Superior	$\sigma_{b,0}$	-0.29	11.52	0.03
			1377	48.600	16.200	4.000	CR1	90.0	Intermedio	$\sigma_{b,0}$	-4.62	11.52	0.40
			1377	48.600	16.200	4.000	CR1	80.0	Superior	$\sigma_{b+tlc,0}$	-4.62		0.40
			25957	48.109	16.200	4.000	CR1	90.0	Intermedio	τ_{yz}	-0.01	0.50	0.02
			1378	48.600	16.200	5.000	CR1	80.0	Superior	τ_{xz}	0.05	1.92	0.03
		5	1378	48.600	16.200	5.000	CR1	80.0	Superior	τ_{xy}	0.61	1.92	0.32
			25956	47.618	16.200	4.000	CR1	140.0	Inferior	$\sigma_{b,0}$	0.01	11.52	0.00
			4783	46.145	16.200	5.000	CR1	120.0	Intermedio	$\sigma_{b,0}$	1.27	11.52	0.11
			4783	46.145	16.200	5.000	CR1	100.0	Superior	$\sigma_{b+tlc,0}$	1.27		0.11
			25958	48.600	16.200	4.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			25957	48.109	16.200	4.000	CR1	100.0	Superior	τ_{xz}	0.01	1.92	0.00
74	2	1	1378	48.600	16.200	5.000	CR1	100.0	Superior	τ_{xy}	-0.60	1.92	0.31
			26484	19.882	13.500	8.000	CR1	0.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			6896	21.355	13.500	9.000	CR1	20.0	Intermedio	$\sigma_{b,0}$	1.20	11.52	0.10
			6896	21.355	13.500	9.000	CR1	0.0	Superior	$\sigma_{b+tlc,0}$	1.20		0.10
			26493	24.300	13.500	8.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			26483	19.391	13.500	8.000	CR1	40.0	Inferior	τ_{xz}	-0.01	1.92	0.00
		2	708	18.900	13.500	9.000	CR1	40.0	Inferior	τ_{xy}	0.37	1.92	0.19
			1632	24.300	13.500	9.000	CR1	40.0	Superior	$\sigma_{b,0}$	-0.15	11.52	0.01
			1630	18.900	13.500	8.000	CR1	50.0	Intermedio	$\sigma_{b,0}$	-2.31	11.52	0.20
			1630	18.900	13.500	8.000	CR1	40.0	Superior	$\sigma_{b+tlc,0}$	-2.31		0.20
			26483	19.391	13.500	8.000	CR1	50.0	Intermedio	τ_{yz}	0.01	0.50	0.02
			1632	24.300	13.500	9.000	CR1	60.0	Inferior	τ_{xz}	0.03	1.92	0.01
	3	3	708	18.900	13.500	9.000	CR1	60.0	Inferior	τ_{xy}	-0.37	1.92	0.19
			26484	19.882	13.500	8.000	CR1	60.0	Superior	$\sigma_{b,0}$	0.00	11.52	0.00
			6896	21.355	13.500	9.000	CR1	70.0	Intermedio	$\sigma_{b,0}$	1.20	11.52	0.10
			6896	21.355	13.500	9.000	CR1	60.0	Superior	$\sigma_{b+tlc,0}$	1.20		0.10
			1632	24.300	13.500	9.000	CR1	70.0	Intermedio	τ_{yz}	0.03	0.50	0.05
			26483	19.391	13.500	8.000	CR1	70.0	Intermedio	τ_{xz}	-0.01	1.92	0.00
	4	4	708	18.900	13.500	9.000	CR1	80.0	Inferior	τ_{xy}	0.37	1.92	0.19
			1632	24.300	13.500	9.000	CR1	80.0	Superior	$\sigma_{b,0}$	-0.15	11.52	0.01
			1630	18.900	13.500	8.000	CR1	90.0	Intermedio	$\sigma_{b,0}$	-2.32	11.52	0.20
		4	1630	18.900	13.500	8.000	CR1	80.0	Superior	$\sigma_{b+tlc,0}$	-2.32		0.20
			26483	19.391	13.500	8.000	CR1	90.0	Intermedio	τ_{yz}	0.01	0.50	0.02

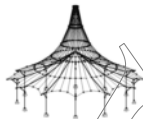


Proyecto: TFM
TFM
Modelo: TFM_FINAL_v02
Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

2.3 RAZÓN MÁX. DE TENSIONES POR COMPOSICIÓN

Comp. núm.	Superfici núm.	Capa núm.	Punto núm.	Coordenadas del punto [			Carga	Capa		Tensiones [N/mm ²]			Razón [-]
				X	Y	Z		z [mm]	Lado	Símbolo	Existente	Límite	
		5	1632	24.300	13.500	9.000	CR1	80.0	Superior	τ_{xz}	0.03	1.92	0.01
			26483	19.391	13.500	8.000	CR1	100.0	Inferior	τ_{xy}	-0.38	1.92	0.20
			26484	19.882	13.500	8.000	CR1	140.0	Inferior	$\sigma_{b,0}$	0.01	11.52	0.00
			6896	21.355	13.500	9.000	CR1	120.0	Intermedio	$\sigma_{bc,0}$	1.21	11.52	0.10
			6893	21.845	13.500	9.000	CR1	100.0	Superior	$\sigma_{b+bc,0}$	1.20		0.10
			26493	24.300	13.500	8.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			26483	19.391	13.500	8.000	CR1	100.0	Superior	τ_{xz}	-0.01	1.92	0.00
			26483	19.391	13.500	8.000	CR1	140.0	Inferior	τ_{xy}	0.41	1.92	0.21
			26559	47.618	16.200	8.000	CR1	0.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			7067	46.145	16.200	9.000	CR1	20.0	Intermedio	$\sigma_{bc,0}$	1.28	11.52	0.11
	1	1	7067	46.145	16.200	9.000	CR1	0.0	Superior	$\sigma_{b+bc,0}$	1.27		0.11
			26561	48.600	16.200	8.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			26551	43.691	16.200	8.000	CR1	40.0	Inferior	τ_{xz}	-0.01	1.92	0.00
			1668	48.600	16.200	9.000	CR1	0.0	Superior	τ_{xy}	-0.73	1.92	0.38
			710	43.200	16.200	9.000	CR1	60.0	Inferior	$\sigma_{b,0}$	0.24	11.52	0.02
			1667	48.600	16.200	8.000	CR1	50.0	Intermedio	$\sigma_{bc,0}$	-5.60	11.52	0.49
			1667	48.600	16.200	8.000	CR1	40.0	Superior	$\sigma_{b+bc,0}$	-5.60		0.49
			26551	43.691	16.200	8.000	CR1	50.0	Intermedio	τ_{yz}	0.01	0.50	0.02
			710	43.200	16.200	9.000	CR1	60.0	Inferior	τ_{xz}	0.04	1.92	0.02
			1668	48.600	16.200	9.000	CR1	40.0	Superior	τ_{xy}	0.73	1.92	0.38
	2	2	26559	47.618	16.200	8.000	CR1	80.0	Inferior	$\sigma_{b,0}$	0.00	11.52	0.00
			7067	46.145	16.200	9.000	CR1	70.0	Intermedio	$\sigma_{bc,0}$	1.28	11.52	0.11
			7067	46.145	16.200	9.000	CR1	60.0	Superior	$\sigma_{b+bc,0}$	1.28		0.11
			710	43.200	16.200	9.000	CR1	70.0	Intermedio	τ_{yz}	0.04	0.50	0.08
			26551	43.691	16.200	8.000	CR1	70.0	Intermedio	τ_{xz}	-0.01	1.92	0.00
			1668	48.600	16.200	9.000	CR1	60.0	Superior	τ_{xy}	-0.73	1.92	0.38
			710	43.200	16.200	9.000	CR1	80.0	Superior	$\sigma_{b,0}$	-0.24	11.52	0.02
			1667	48.600	16.200	8.000	CR1	90.0	Intermedio	$\sigma_{bc,0}$	-5.60	11.52	0.49
			1667	48.600	16.200	8.000	CR1	80.0	Superior	$\sigma_{b+bc,0}$	-5.60		0.49
			26551	43.691	16.200	8.000	CR1	90.0	Intermedio	τ_{yz}	0.01	0.50	0.02
	3	3	710	43.200	16.200	9.000	CR1	80.0	Superior	τ_{xz}	0.04	1.92	0.02
			1668	48.600	16.200	9.000	CR1	80.0	Superior	τ_{xy}	0.72	1.92	0.38
			26559	47.618	16.200	8.000	CR1	140.0	Inferior	$\sigma_{b,0}$	0.01	11.52	0.00
			7067	46.145	16.200	9.000	CR1	120.0	Intermedio	$\sigma_{bc,0}$	1.28	11.52	0.11
			7067	46.145	16.200	9.000	CR1	100.0	Superior	$\sigma_{b+bc,0}$	1.28		0.11
			26561	48.600	16.200	8.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			26551	43.691	16.200	8.000	CR1	100.0	Superior	τ_{xz}	-0.01	1.92	0.00
			1668	48.600	16.200	9.000	CR1	100.0	Superior	τ_{xy}	-0.72	1.92	0.38
			8569	59.940	10.800	1.000	CR1	40.0	Inferior	$\sigma_{b,0}$	0.01	11.52	0.00
			8566	60.480	10.800	1.000	CR1	20.0	Intermedio	$\sigma_{bc,0}$	0.31	11.52	0.03
	148	1	8566	60.480	10.800	1.000	CR1	0.0	Superior	$\sigma_{b+bc,0}$	0.31		0.03
			25367	62.100	10.800	0.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			339	59.400	10.800	1.000	CR1	40.0	Inferior	τ_{xz}	0.00	1.92	0.00
			8143	59.400	10.800	0.500	CR1	40.0	Inferior	τ_{xy}	0.13	1.92	0.07
			339	59.400	10.800	1.000	CR1	60.0	Inferior	$\sigma_{b,0}$	-0.34	11.52	0.03
			339	59.400	10.800	1.000	CR1	50.0	Intermedio	$\sigma_{bc,0}$	0.62	11.52	0.05
			339	59.400	10.800	1.000	CR1	40.0	Superior	$\sigma_{b+bc,0}$	0.96		0.08
			339	59.400	10.800	1.000	CR1	50.0	Intermedio	τ_{yz}	0.00	0.50	0.01
			339	59.400	10.800	1.000	CR1	60.0	Inferior	τ_{xz}	-0.06	1.92	0.03
			8143	59.400	10.800	0.500	CR1	60.0	Inferior	τ_{xy}	-0.14	1.92	0.07
	3	3	8569	59.940	10.800	1.000	CR1	60.0	Superior	$\sigma_{b,0}$	0.00	11.52	0.00
			8566	60.480	10.800	1.000	CR1	70.0	Intermedio	$\sigma_{bc,0}$	0.32	11.52	0.03
			8566	60.480	10.800	1.000	CR1	60.0	Superior	$\sigma_{b+bc,0}$	0.31		0.03
			339	59.400	10.800	1.000	CR1	70.0	Intermedio	τ_{yz}	-0.06	0.50	0.12
			339	59.400	10.800	1.000	CR1	70.0	Intermedio	τ_{xz}	0.01	1.92	0.00
			8143	59.400	10.800	0.500	CR1	80.0	Inferior	τ_{xy}	0.15	1.92	0.08
			339	59.400	10.800	1.000	CR1	80.0	Superior	$\sigma_{b,0}$	0.34	11.52	0.03
			339	59.400	10.800	1.000	CR1	90.0	Intermedio	$\sigma_{bc,0}$	-0.75	11.52	0.07
			339	59.400	10.800	1.000	CR1	80.0	Superior	$\sigma_{b+bc,0}$	-0.41		0.09
			339	59.400	10.800	1.000	CR1	90.0	Intermedio	τ_{yz}	0.00	0.50	0.01
	4	4	339	59.400	10.800	1.000	CR1	80.0	Superior	τ_{xz}	-0.06	1.92	0.03
			8143	59.400	10.800	0.500	CR1	100.0	Inferior	τ_{xy}	-0.15	1.92	0.08
			8569	59.940	10.800	1.000	CR1	100.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			8566	60.480	10.800	1.000	CR1	120.0	Intermedio	$\sigma_{bc,0}$	0.32	11.52	0.03
			8566	60.480	10.800	1.000	CR1	100.0	Superior	$\sigma_{b+bc,0}$	0.32		0.03
			25367	62.100	10.800	0.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			339	59.400	10.800	1.000	CR1	100.0	Superior	τ_{xz}	0.00	1.92	0.00
			339	59.400	10.800	1.000	CR1	140.0	Inferior	τ_{xy}	0.20	1.92	0.10
			8581	0.540	10.800	1.000	CR1	40.0	Inferior	$\sigma_{b,0}$	-0.01	11.52	0.00
			8575	1.620	10.800	1.000	CR1	20.0	Intermedio	$\sigma_{bc,0}$	0.30	11.52	0.03
	149	1	8575	1.620	10.800	1.000	CR1	0.0	Superior	$\sigma_{b+bc,0}$	0.30		0.03
			25519	2.700	10.800	0.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			343	0.000	10.800	1.000	CR1	40.0	Inferior	τ_{xz}	0.00	1.92	0.00
			25519	2.700	10.800	0.500	CR1	40.0	Inferior	τ_{xy}	-0.15	1.92	0.08
			343	0.000	10.800	1.000	CR1	40.0	Superior	$\sigma_{b,0}$	-0.26	11.52	0.02
			1178	2.700	10.800	0.000	CR1	50.0	Intermedio	$\sigma_{bc,0}$	-1.00	11.52	0.09
			1178	2.700	10.800	0.000	CR1	40.0	Superior	$\sigma_{b+bc,0}$	-1.00		0.09
			343	0.000	10.800	1.000	CR1	50.0	Intermedio	τ_{yz}	0.00	0.50	0.01
			343	0.000	10.800	1.000	CR1	60.0	Inferior	τ_{xz}	0.05	1.92	0.02
			25519	2.700	10.800	0.500	CR1	60.0	Inferior	τ_{xy}	0.15	1.92	0.08
	3	3	8581	0.540	10.800	1.000	CR1	60.0	Superior	$\sigma_{b,0}$	0.00	11.52	0.00
			8575	1.620	10.800	1.000	CR1	70.0	Intermedio	$\sigma_{bc,0}$	0.30	11.52	0.03
			8575	1.620	10.800	1.000	CR1	60.0	Superior	$\sigma_{b+bc,0}$	0.30		0.03



Proyecto: TFM
TFM

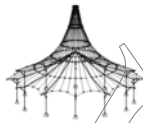
Modelo: TFM_FINAL_v02

Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

2.3 RAZÓN MÁX. DE TENSIONES POR COMPOSICIÓN

Comp. núm.	Superf. núm.	Capa núm.	Punto núm.	Coordenadas del punto [			Carga	Capa		Tensiones [N/mm ²]			Razón [-]
				X	Y	Z		z [mm]	Lado	Símbolo	Existente	Límite	
150	1	4	343	0.000	10.800	1.000	CR1	70.0	Intermedio	T _{yz}	0.05	0.50	0.09
			343	0.000	10.800	1.000	CR1	70.0	Intermedio	T _{xz}	0.00	1.92	0.00
			1179	2.700	10.800	1.000	CR1	80.0	Inferior	T _{xy}	-0.16	1.92	0.08
			343	0.000	10.800	1.000	CR1	80.0	Superior	σ _{b,0}	-0.26	11.52	0.02
			1178	2.700	10.800	0.000	CR1	90.0	Intermedio	σ _{bc,0}	-1.01	11.52	0.09
			1178	2.700	10.800	0.000	CR1	80.0	Superior	σ _{b+bc,0}	-1.00		0.09
			343	0.000	10.800	1.000	CR1	90.0	Intermedio	T _{yz}	0.00	0.50	0.01
			343	0.000	10.800	1.000	CR1	80.0	Superior	T _{xz}	0.05	1.92	0.02
			1179	2.700	10.800	1.000	CR1	100.0	Inferior	T _{xy}	0.16	1.92	0.08
			8581	0.540	10.800	1.000	CR1	100.0	Superior	σ _{b,0}	0.01	11.52	0.00
			8575	1.620	10.800	1.000	CR1	120.0	Intermedio	σ _{bc,0}	0.30	11.52	0.03
			8575	1.620	10.800	1.000	CR1	100.0	Superior	σ _{b+bc,0}	0.30		0.03
			25519	2.700	10.800	0.500	CR1	120.0	Intermedio	T _{yz}	0.00	0.50	0.00
			343	0.000	10.800	1.000	CR1	100.0	Superior	T _{xz}	0.00	1.92	0.00
			1179	2.700	10.800	1.000	CR1	140.0	Inferior	T _{xy}	-0.16	1.92	0.09
			8584	0.540	13.500	1.000	CR1	0.0	Superior	σ _{b,0}	0.01	11.52	0.00
			8590	1.620	13.500	1.000	CR1	20.0	Intermedio	σ _{bc,0}	0.27	11.52	0.02
			8590	1.620	13.500	1.000	CR1	0.0	Superior	σ _{b+bc,0}	0.27		0.02
			25529	0.000	13.500	0.500	CR1	20.0	Intermedio	T _{yz}	0.00	0.50	0.00
			1183	2.700	13.500	0.000	CR1	40.0	Inferior	T _{xz}	0.01	1.92	0.00
			345	2.700	13.500	1.000	CR1	0.0	Superior	T _{xy}	0.18	1.92	0.09
			1185	0.000	13.500	1.000	CR1	60.0	Inferior	σ _{b,0}	0.20	11.52	0.02
			1183	2.700	13.500	0.000	CR1	50.0	Intermedio	σ _{bc,0}	-1.47	11.52	0.13
			1183	2.700	13.500	0.000	CR1	40.0	Superior	σ _{b+bc,0}	-1.47		0.13
			1183	2.700	13.500	0.000	CR1	60.0	Inferior	T _{yz}	-0.01	0.50	0.01
			1185	0.000	13.500	1.000	CR1	60.0	Inferior	T _{xz}	-0.04	1.92	0.02
			345	2.700	13.500	1.000	CR1	40.0	Superior	T _{xy}	-0.18	1.92	0.09
			8584	0.540	13.500	1.000	CR1	60.0	Superior	σ _{b,0}	0.00	11.52	0.00
			8590	1.620	13.500	1.000	CR1	70.0	Intermedio	σ _{bc,0}	0.27	11.52	0.02
			8590	1.620	13.500	1.000	CR1	60.0	Superior	σ _{b+bc,0}	0.27		0.02
			1185	0.000	13.500	1.000	CR1	70.0	Intermedio	T _{yz}	-0.04	0.50	0.07
			1183	2.700	13.500	0.000	CR1	70.0	Intermedio	T _{xz}	0.01	1.92	0.00
			345	2.700	13.500	1.000	CR1	60.0	Superior	T _{xy}	0.18	1.92	0.09
			1185	0.000	13.500	1.000	CR1	80.0	Superior	σ _{b,0}	-0.20	11.52	0.02
			1183	2.700	13.500	0.000	CR1	90.0	Intermedio	σ _{bc,0}	-1.46	11.52	0.13
			1183	2.700	13.500	0.000	CR1	80.0	Superior	σ _{b+bc,0}	-1.46		0.13
			1183	2.700	13.500	0.000	CR1	80.0	Superior	T _{yz}	-0.01	0.50	0.01
			1185	0.000	13.500	1.000	CR1	80.0	Superior	T _{xz}	-0.04	1.92	0.02
			345	2.700	13.500	1.000	CR1	80.0	Superior	T _{xy}	-0.18	1.92	0.09
			8584	0.540	13.500	1.000	CR1	140.0	Inferior	σ _{b,0}	-0.01	11.52	0.00
			8590	1.620	13.500	1.000	CR1	120.0	Intermedio	σ _{bc,0}	0.27	11.52	0.02
			8590	1.620	13.500	1.000	CR1	100.0	Superior	σ _{b+bc,0}	0.27		0.02
			25529	0.000	13.500	0.500	CR1	120.0	Intermedio	T _{yz}	0.00	0.50	0.00
			1183	2.700	13.500	0.000	CR1	100.0	Superior	T _{xz}	0.01	1.92	0.00
			345	2.700	13.500	1.000	CR1	100.0	Superior	T _{xy}	0.18	1.92	0.09
	151	1	25456	23.760	0.000	0.000	CR1	0.0	Superior	σ _{b,0}	-0.03	11.52	0.00
			8619	21.845	0.000	1.000	CR1	20.0	Intermedio	σ _{bc,0}	2.37	11.52	0.21
			8619	21.845	0.000	1.000	CR1	0.0	Superior	σ _{b+bc,0}	2.36		0.21
			25462	18.900	0.000	0.500	CR1	20.0	Intermedio	T _{yz}	0.00	0.50	0.00
			7602	24.300	0.000	0.500	CR1	40.0	Inferior	T _{xz}	-0.02	1.92	0.01
			365	24.300	0.000	1.000	CR1	40.0	Inferior	T _{xy}	-0.85	1.92	0.44
			1149	18.900	0.000	1.000	CR1	60.0	Inferior	σ _{b,0}	-0.36	11.52	0.03
			1149	18.900	0.000	1.000	CR1	50.0	Intermedio	σ _{bc,0}	-2.26	11.52	0.20
			1149	18.900	0.000	1.000	CR1	40.0	Superior	σ _{b+bc,0}	-1.90		0.23
			7602	24.300	0.000	0.500	CR1	50.0	Intermedio	T _{yz}	0.02	0.50	0.03
			1149	18.900	0.000	1.000	CR1	60.0	Inferior	T _{xz}	-0.03	1.92	0.01
			365	24.300	0.000	1.000	CR1	60.0	Inferior	T _{xy}	0.90	1.92	0.47
			25456	23.760	0.000	0.000	CR1	60.0	Superior	σ _{b,0}	-0.01	11.52	0.00
			8619	21.845	0.000	1.000	CR1	70.0	Intermedio	σ _{bc,0}	2.39	11.52	0.21
			8619	21.845	0.000	1.000	CR1	60.0	Superior	σ _{b+bc,0}	2.39		0.21
			1149			18.900	0.000	1.000	CR1	70.0	Intermedio	T _{yz}	-0.03	0.50	0.06
			7602			24.300	0.000	0.500	CR1	70.0	Intermedio	T _{xz}	-0.02	1.92	0.01
			365			24.300	0.000	1.000	CR1	80.0	Inferior	T _{xy}	-0.95	1.92	0.50
			1149			18.900	0.000	1.000	CR1	100.0	Inferior	σ _{b,0}	-0.36	11.52	0.03
			1149			18.900	0.000	1.000	CR1	90.0	Intermedio	σ _{bc,0}	-3.71	11.52	0.32
			1149			18.900	0.000	1.000	CR1	80.0	Superior	σ _{b+bc,0}	-3.35		0.35
			7602			24.300	0.000	0.500	CR1	90.0	Intermedio	T _{yz}	0.02	0.50	0.03
			1149			18.900	0.000	1.000	CR1	80.0	Superior	T _{xz}	-0.03	1.92	0.01
			365			24.300	0.000	1.000	CR1	100.0	Inferior	T _{xy}	1.00	1.92	0.52
			25456			23.760	0.000	0.000	CR1	100.0	Superior	σ _{b,0}	-0.03	11.52	0.00
			8619			21.845	0.000	1.000	CR1	120.0	Intermedio	σ _{bc,0}	2.41	11.52	0.21
			8619			21.845	0.000	1.000	CR1	100.0	Superior	σ _{b+bc,0}	2.40		0.21
			25462			18.900	0.000	0.500	CR1	120.0	Intermedio	T _{yz}	0.00	0.50	0.00
			7602			24.300	0.000	0.500	CR1	100.0	Superior	T _{xz}	-0.02	1.92	0.01
			365			24.300	0.000	1.000	CR1	140.0	Inferior	T _{xy}	-1.10	1.92	0.57
	152	1	25442	27.450	0.000	0.000	CR1	0.0	Superior	σ _{b,0}	-0.02	11.52	0.00
			8648	29.455	0.000	1.000	CR1	20.0	Intermedio	σ _{bc,0}	2.24	11.52	0.19
			8648	29.455	0.000	1.000	CR1	0.0	Superior	σ _{b+bc,0}	2.23		0.20
			25447	27.000	0.000	0.500	CR1	20.0	Intermedio	T _{yz}	0.00	0.50	0.00
			25442	27.450	0.000	0.000	CR1	40.0	Inferior	T _{xz}	0.02	1.92	0.01
			367	32.400	0.000	1.000	CR1	40.0	Inferior	T _{xy}	-0.86	1.92	0.45
			1142	27.000	0.000	1.000	CR1	40.0	Superior	σ _{b,0}	0.36	11.52	0.03
			1142	27.000	0.000	1.000	CR1	50.0	Intermedio	σ _{bc,0}	-2.34	11.52	0.20



Proyecto: TFM
TFM

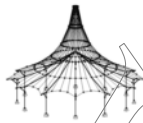
Modelo: TFM_FINAL_v02

Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

2.3 RAZÓN MÁX. DE TENSIONES POR COMPOSICIÓN

Comp. núm.	Superf. núm.	Capa núm.	Punto núm.	Coordenadas del punto [			Carga	Capa		Tensiones [N/mm ²]			Razón [-]
				X	Y	Z		z [mm]	Lado	Símbolo	Existente	Límite	
153		3	1142	27.000	0.000	1.000	CR1	40.0	Superior	$\sigma_{b+hc,0}$	-1.98		0.23
			25442	27.450	0.000	0.000	CR1	50.0	Intermedio	τ_{yz}	-0.02	0.50	0.03
			1142	27.000	0.000	1.000	CR1	60.0	Inferior	τ_{xz}	-0.03	1.92	0.01
			367	32.400	0.000	1.000	CR1	60.0	Inferior	τ_{xy}	0.91	1.92	0.47
			25442	27.450	0.000	0.000	CR1	80.0	Inferior	$\sigma_{b,0}$	0.01	11.52	0.00
			8648	29.455	0.000	1.000	CR1	70.0	Intermedio	$\sigma_{bc,0}$	2.27	11.52	0.20
			8648	29.455	0.000	1.000	CR1	60.0	Superior	$\sigma_{b+hc,0}$	2.26		0.20
			1142	27.000	0.000	1.000	CR1	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.06
			25442	27.450	0.000	0.000	CR1	70.0	Intermedio	τ_{xz}	0.02	1.92	0.01
			367	32.400	0.000	1.000	CR1	80.0	Inferior	τ_{xy}	-0.96	1.92	0.50
		4	1142	27.000	0.000	1.000	CR1	100.0	Inferior	$\sigma_{b,0}$	-0.36	11.52	0.03
			1142	27.000	0.000	1.000	CR1	90.0	Intermedio	$\sigma_{bc,0}$	-3.77	11.52	0.33
			1142	27.000	0.000	1.000	CR1	80.0	Superior	$\sigma_{b+hc,0}$	-3.42		0.36
			25442	27.450	0.000	0.000	CR1	90.0	Intermedio	τ_{yz}	-0.02	0.50	0.03
		5	1142	27.000	0.000	1.000	CR1	80.0	Superior	τ_{xz}	-0.03	1.92	0.01
			367	32.400	0.000	1.000	CR1	100.0	Inferior	τ_{xy}	1.00	1.92	0.52
			25442	27.450	0.000	0.000	CR1	100.0	Superior	$\sigma_{b,0}$	-0.02	11.52	0.00
			8648	29.455	0.000	1.000	CR1	120.0	Intermedio	$\sigma_{bc,0}$	2.29	11.52	0.20
		1	8648	29.455	0.000	1.000	CR1	100.0	Superior	$\sigma_{b+hc,0}$	2.28		0.20
			25442	27.000	0.000	0.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			25442	27.450	0.000	0.000	CR1	100.0	Superior	τ_{xz}	0.02	1.92	0.01
			367	32.400	0.000	1.000	CR1	140.0	Inferior	τ_{xy}	-1.10	1.92	0.57
		1	25428	39.960	0.000	0.000	CR1	0.0	Superior	$\sigma_{b,0}$	-0.02	11.52	0.00
			8679	38.045	0.000	1.000	CR1	20.0	Intermedio	$\sigma_{bc,0}$	2.27	11.52	0.20
			8679	38.045	0.000	1.000	CR1	0.0	Superior	$\sigma_{b+hc,0}$	2.26		0.20
			25434	35.100	0.000	0.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
		2	7719	40.500	0.000	0.500	CR1	40.0	Inferior	τ_{xz}	-0.02	1.92	0.01
			1135	35.100	0.000	1.000	CR1	40.0	Inferior	τ_{xy}	0.85	1.92	0.44
			1135	35.100	0.000	1.000	CR1	40.0	Superior	$\sigma_{b,0}$	0.36	11.52	0.03
			1135	35.100	0.000	1.000	CR1	50.0	Intermedio	$\sigma_{bc,0}$	-2.47	11.52	0.21
		3	1135	35.100	0.000	1.000	CR1	40.0	Superior	$\sigma_{b+hc,0}$	-2.12		0.25
			7719	40.500	0.000	0.500	CR1	50.0	Intermedio	τ_{yz}	0.02	0.50	0.03
			1135	35.100	0.000	1.000	CR1	60.0	Inferior	τ_{xz}	-0.03	1.92	0.01
			1135	35.100	0.000	1.000	CR1	60.0	Inferior	τ_{xy}	-0.90	1.92	0.47
		4	25428	39.960	0.000	0.000	CR1	60.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			8679	38.045	0.000	1.000	CR1	70.0	Intermedio	$\sigma_{bc,0}$	2.29	11.52	0.20
			8679	38.045	0.000	1.000	CR1	60.0	Superior	$\sigma_{b+hc,0}$	2.28		0.20
			1135	35.100	0.000	1.000	CR1	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.06
		5	7719	40.500	0.000	0.500	CR1	70.0	Intermedio	τ_{xz}	-0.02	1.92	0.01
			1135	35.100	0.000	1.000	CR1	80.0	Inferior	τ_{xy}	0.95	1.92	0.49
			1135	35.100	0.000	1.000	CR1	80.0	Superior	$\sigma_{b,0}$	0.36	11.52	0.03
			1135	35.100	0.000	1.000	CR1	90.0	Intermedio	$\sigma_{bc,0}$	-3.89	11.52	0.34
		1	1135	35.100	0.000	1.000	CR1	80.0	Superior	$\sigma_{b+hc,0}$	-3.54		0.37
			7719	40.500	0.000	0.500	CR1	90.0	Intermedio	τ_{yz}	0.02	0.50	0.03
			1135	35.100	0.000	1.000	CR1	80.0	Superior	τ_{xz}	-0.03	1.92	0.01
			1135	35.100	0.000	1.000	CR1	100.0	Inferior	τ_{xy}	-1.00	1.92	0.52
		1	25428	39.960	0.000	0.000	CR1	100.0	Superior	$\sigma_{b,0}$	-0.02	11.52	0.00
			8679	38.045	0.000	1.000	CR1	120.0	Intermedio	$\sigma_{bc,0}$	2.31	11.52	0.20
			8679	38.045	0.000	1.000	CR1	100.0	Superior	$\sigma_{b+hc,0}$	2.30		0.20
			25434	35.100	0.000	0.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
		2	7719	40.500	0.000	0.500	CR1	100.0	Superior	τ_{xz}	-0.02	1.92	0.01
			1135	35.100	0.000	1.000	CR1	140.0	Inferior	τ_{xy}	1.09	1.92	0.57
			25413	48.060	0.000	0.000	CR1	0.0	Superior	$\sigma_{b,0}$	-0.03	11.52	0.00
			8709	46.145	0.000	1.000	CR1	20.0	Intermedio	$\sigma_{bc,0}$	2.40	11.52	0.21
		3	8709	46.145	0.000	1.000	CR1	0.0	Superior	$\sigma_{b+hc,0}$	2.39		0.21
			25419	43.200	0.000	0.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			7773	48.600	0.000	0.500	CR1	40.0	Inferior	τ_{xz}	-0.02	1.92	0.01
		4	1128	43.200	0.000	1.000	CR1	40.0	Inferior	τ_{xy}	0.85	1.92	0.44
			1128	43.200	0.000	1.000	CR1	60.0	Inferior	$\sigma_{b,0}$	-0.36	11.52	0.03
			1128	43.200	0.000	1.000	CR1	50.0	Intermedio	$\sigma_{bc,0}$	-2.29	11.52	0.20
			1128			43.200	0.000	1.000	CR1	40.0	Superior	$\sigma_{b+hc,0}$	-1.93		0.23
		5		7773	48.600	0.000	0.500	CR1	50.0	Intermedio	τ_{yz}	0.02	0.50	0.03
			1128	43.200	0.000	1.000	CR1	60.0	Inferior	τ_{xz}	-0.03	1.92	0.01
			1128	43.200	0.000	1.000	CR1	60.0	Inferior	τ_{xy}	-0.90	1.92	0.47
			25413	48.060	0.000	0.000	CR1	60.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
		1		8709	46.145	0.000	1.000	CR1	70.0	Intermedio	$\sigma_{bc,0}$	2.42	11.52	0.21
			8709	46.145	0.000	1.000	CR1	60.0	Superior	$\sigma_{b+hc,0}$	2.42		0.21
			1128	43.200	0.000	1.000	CR1	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.06
			7773	48.600	0.000	0.500	CR1	70.0	Intermedio	τ_{xz}	-0.02	1.92	0.01
		2		1128	43.200	0.000	1.000	CR1	80.0	Inferior	τ_{xy}	0.95	1.92	0.49
			1128	43.200	0.000	1.000	CR1	80.0	Superior	$\sigma_{b,0}$	0.36	11.52	0.03
			1128	43.200	0.000	1.000	CR1	90.0	Intermedio	$\sigma_{bc,0}$	-3.74	11.52	0.32
			1128	43.200	0.000	1.000	CR1	80.0	Superior	$\sigma_{b+hc,0}$	-3.38		0.36
		3		7773	48.600	0.000	0.500	CR1	90.0	Intermedio	τ_{yz}	0.02	0.50	0.03
			1128	43.200	0.000	1.000	CR1	80.0	Superior	τ_{xz}	-0.03	1.92	0.01
			1128	43.200	0.000	1.000	CR1	100.0	Inferior	τ_{xy}	-1.00	1.92	0.52
			25413	48.060	0.000	0.000	CR1	100.0	Superior	$\sigma_{b,0}$	-0.03	11.52	0.00
		4		8709	46.145	0.000	1.000	CR1	120.0	Intermedio	$\sigma_{bc,0}$	2.44	11.52	0.21
			8709	46.145	0.000	1.000	CR1	100.0	Superior	$\sigma_{b+hc,0}$	2.43		0.21
			25419	43.200	0.000	0.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			7773	48.600	0.000	0.500	CR1	100.0	Superior	τ_{xz}	-0.02	1.92	0.01
		5		1128	43.200	0.000	1.000	CR1	140.0	Inferior	τ_{xy}	1.10	1.92	0.57
			1128	43.200	0.000	1.000	CR1	40.0	Inferior	$\sigma_{b,0}$	0.02	11.52	0.00
155	1	1	1170	0.000	0.000	1.000	CR1	40.0	Inferior	$\sigma_{b,0}$	0.02	11.52	0.00



Proyecto: TFM
TFM

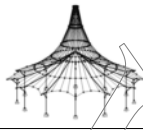
Modelo: TFM_FINAL_v02

Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

2.3 RAZÓN MÁX. DE TENSIONES POR COMPOSICIÓN

2.3. RESULTADOS DE LOS CÁLCULOS DE LAS TENSIONES																
Comp. núm.	Superf. núm.	Capa núm.	Punto núm.	Coordenadas del punto [			Carga	Capa		Tensiones [N/mm²]			Razón [-]			
				X	Y	Z		z [mm]	Lado	Símbolo	Existente	Límite				
156		2	8728	2.025	0.000	1.000	CR1	20.0	Intermedio	$\sigma_{xc,0}$	0.65	11.52	0.06			
			8728	2.025	0.000	1.000	CR1	0.0	Superior	$\sigma_{b+tc,0}$	0.65		0.06			
			25497	0.000	0.000	0.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00			
			8715	4.050	0.000	0.500	CR1	40.0	Inferior	τ_{xz}	-0.01	1.92	0.01			
			8715	4.050	0.000	0.500	CR1	0.0	Superior	τ_{xy}	-0.21	1.92	0.11			
			373	4.050	0.000	1.000	CR1	40.0	Superior	$\sigma_{b,0}$	0.33	11.52	0.03			
			1170	0.000	0.000	1.000	CR1	50.0	Intermedio	$\sigma_{xc,0}$	-0.29	11.52	0.03			
			373	4.050	0.000	1.000	CR1	40.0	Superior	$\sigma_{b+tc,0}$	0.57		0.05			
			8715	4.050	0.000	0.500	CR1	60.0	Inferior	τ_{yz}	0.01	0.50	0.03			
			1169	4.050	0.000	0.000	CR1	60.0	Inferior	τ_{xz}	-0.05	1.92	0.02			
			157		3	8715	4.050	0.000	0.500	CR1	40.0	Superior	τ_{xy}	0.21	1.92	0.11
						1170	0.000	0.000	1.000	CR1	60.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
						8728	2.025	0.000	1.000	CR1	70.0	Intermedio	$\sigma_{xc,0}$	0.66	11.52	0.06
						8728	2.025	0.000	1.000	CR1	60.0	Superior	$\sigma_{b+tc,0}$	0.66		0.06
						1169	4.050	0.000	0.000	CR1	70.0	Intermedio	τ_{yz}	-0.05	0.50	0.09
						8715	4.050	0.000	0.500	CR1	70.0	Intermedio	τ_{xz}	-0.01	1.92	0.01
						8715	4.050	0.000	0.500	CR1	60.0	Superior	τ_{xy}	-0.21	1.92	0.11
						373	4.050	0.000	1.000	CR1	80.0	Superior	$\sigma_{b,0}$	0.33	11.52	0.03
						1170	0.000	0.000	1.000	CR1	90.0	Intermedio	$\sigma_{xc,0}$	-1.31	11.52	0.11
						1170	0.000	0.000	1.000	CR1	80.0	Superior	$\sigma_{b+tc,0}$	-1.05		0.14
						8715	4.050	0.000	0.500	CR1	80.0	Superior	τ_{yz}	0.01	0.50	0.03
						1169	4.050	0.000	0.000	CR1	80.0	Superior	τ_{xz}	-0.05	1.92	0.02
						8735	0.506	0.000	0.500	CR1	100.0	Inferior	τ_{xy}	-0.22	1.92	0.12
						1170	0.000	0.000	1.000	CR1	100.0	Superior	$\sigma_{b,0}$	-0.02	11.52	0.00
						8728	2.025	0.000	1.000	CR1	120.0	Intermedio	$\sigma_{xc,0}$	0.67	11.52	0.06
						8728	2.025	0.000	1.000	CR1	100.0	Superior	$\sigma_{b+tc,0}$	0.66		0.06
						25497	0.000	0.000	0.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
						8715	4.050	0.000	0.500	CR1	100.0	Superior	τ_{xz}	-0.01	1.92	0.01
						8735	0.506	0.000	0.500	CR1	140.0	Inferior	τ_{xy}	0.29	1.92	0.15
						375	9.450	0.000	1.000	CR1	0.0	Superior	$\sigma_{b,0}$	-0.02	11.52	0.00
						1163	6.750	0.000	1.000	CR1	20.0	Intermedio	$\sigma_{xc,0}$	-0.24	11.52	0.02
						1163	6.750	0.000	1.000	CR1	0.0	Superior	$\sigma_{b+tc,0}$	-0.24		0.02
						25484	6.750	0.000	0.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
						25484	6.750	0.000	0.500	CR1	40.0	Inferior	τ_{xz}	0.02	1.92	0.01
						25484	6.750	0.000	0.500	CR1	40.0	Inferior	τ_{xy}	0.11	1.92	0.06
						1163	6.750	0.000	1.000	CR1	60.0	Inferior	$\sigma_{b,0}$	-0.34	11.52	0.03
						375	9.450	0.000	1.000	CR1	50.0	Intermedio	$\sigma_{xc,0}$	0.28	11.52	0.02
						375	9.450	0.000	1.000	CR1	40.0	Superior	$\sigma_{b+tc,0}$	0.61		0.05
						25484	6.750	0.000	0.500	CR1	50.0	Intermedio	τ_{yz}	-0.02	0.50	0.03
						1163	6.750	0.000	1.000	CR1	60.0	Inferior	τ_{xz}	-0.03	1.92	0.02
						1163	6.750	0.000	1.000	CR1	60.0	Inferior	τ_{xy}	-0.13	1.92	0.07
						375	9.450	0.000	1.000	CR1	60.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
						1163	6.750	0.000	1.000	CR1	70.0	Intermedio	$\sigma_{xc,0}$	-0.24	11.52	0.02
						1163	6.750	0.000	1.000	CR1	60.0	Superior	$\sigma_{b+tc,0}$	-0.24		0.02
						1163	6.750	0.000	1.000	CR1	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.06
						25484	6.750	0.000	0.500	CR1	70.0	Intermedio	τ_{xz}	0.02	1.92	0.01
						1163	6.750	0.000	1.000	CR1	80.0	Inferior	τ_{xy}	0.18	1.92	0.09
						1163	6.750	0.000	1.000	CR1	80.0	Superior	$\sigma_{b,0}$	0.34	11.52	0.03
						1163	6.750	0.000	1.000	CR1	90.0	Intermedio	$\sigma_{xc,0}$	-1.11	11.52	0.10
						1163	6.750	0.000	1.000	CR1	80.0	Superior	$\sigma_{b+tc,0}$	-0.78		0.13
						25484	6.750	0.000	0.500	CR1	90.0	Intermedio	τ_{yz}	-0.02	0.50	0.03
						1163	6.750	0.000	1.000	CR1	80.0	Superior	τ_{xz}	-0.03	1.92	0.02
						1163	6.750	0.000	1.000	CR1	100.0	Inferior	τ_{xy}	-0.22	1.92	0.12
						375	9.450	0.000	1.000	CR1	100.0	Superior	$\sigma_{b,0}$	-0.02	11.52	0.00
						1163	6.750	0.000	1.000	CR1	120.0	Intermedio	$\sigma_{xc,0}$	-0.25	11.52	0.02
						1163	6.750	0.000	1.000	CR1	100.0	Superior	$\sigma_{b+tc,0}$	-0.25		0.02
						25484	6.750	0.000	0.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
						25484	6.750	0.000	0.500	CR1	100.0	Superior	τ_{xz}	0.02	1.92	0.01
						1163	6.750	0.000	1.000	CR1	140.0	Inferior	τ_{xy}	0.32	1.92	0.17
						363	16.200	0.000	1.000	CR1	40.0	Inferior	$\sigma_{b,0}$	0.02	11.52	0.00
						8776	14.175	0.000				1.000	CR1	20.0	Intermedio	$\sigma_{xc,0}$	1.39	11.52	0.12
						8776	14.175	0.000				1.000	CR1	0.0	Superior	$\sigma_{b+tc,0}$	1.38		0.12
						25474	12.150	0.000				0.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
						7548	16.200	0.000				0.500	CR1	40.0	Inferior	τ_{xz}	-0.02	1.92	0.01
						363	16.200	0.000				1.000	CR1	40.0	Inferior	τ_{xy}	-0.54	1.92	0.28
						1156	12.150	0.000				1.000	CR1	60.0	Inferior	$\sigma_{b,0}$	-0.35	11.52	0.03
						1156	12.150	0.000				1.000	CR1	50.0	Intermedio	$\sigma_{xc,0}$	-1.26	11.52	0.11
						1156	12.150	0.000				1.000	CR1	40.0	Superior	$\sigma_{b+tc,0}$	-0.91		0.14
						7548	16.200	0.000				0.500	CR1	50.0	Intermedio	τ_{yz}	0.02	0.50	0.03
						1156	12.150	0.000				1.000	CR1	60.0	Inferior	τ_{xz}	-0.03	1.92	0.02
						363	16.200	0.000	1.000	CR1	60.0	Inferior	τ_{xy}	0.59	1.92	0.31
						363	16.200	0.000	1.000	CR1	60.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
						8776	14.175	0.000	1.000	CR1	70.0	Intermedio	$\sigma_{xc,0}$	1.41	11.52	0.12
						8776	14.175	0.000	1.000	CR1	60.0	Superior	$\sigma_{b+tc,0}$	1.41		0.12
						1156	12.150	0.000	1.000	CR1	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.06
						7548	16.200	0.000	0.500	CR1	70.0	Intermedio	τ_{xz}	-0.02	1.92	0.01
						363	16.200	0.000	1.000	CR1	80.0	Inferior	τ_{xy}	-0.64	1.92	0.33
						1156	12.150	0.000	1.000	CR1	80.0	Superior	$\sigma_{b,0}$	0.35	11.52	0.03
						1156	12.150	0.000	1.000	CR1	90.0	Intermedio	$\sigma_{xc,0}$	-2.65	11.52	0.23
						1156	12.150	0.000	1.000	CR1	80.0	Superior	$\sigma_{b+tc,0}$	-2.30		0.26
						7548	16.200	0.000	0.500	CR1	90.0	Intermedio	τ_{yz}	0.02	0.50	0.03
						1156	12.150	0.000	1.000	CR1	80.0	Superior	τ_{xz}	-0.03	1.92	0.02
						363	16.200	0.000	1.000	CR1	100.0	Inferior	τ_{xy}	0.69	1.92	0.36



Proyecto: TFM
TFM

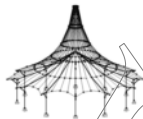
Modelo: TFM_FINAL_v02

Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

2.3 RAZÓN MÁX. DE TENSIONES POR COMPOSICIÓN

Comp. núm.	Superfici núm.	Capa núm.	Punto núm.	Coordenadas del punto [			Carga	z [mm]	Lado	Tensiones [N/mm ²]			Razón [-]
				X	Y	Z				Símbolo	Existente	Límite	
158	1	5	363	16.200	0.000	1.000	CR1	100.0	Superior	$\sigma_{b,0}$	-0.02	11.52	0.00
			8776	14.175	0.000	1.000	CR1	120.0	Intermedio	$\sigma_{b,c,0}$	1.44	11.52	0.12
			8776	14.175	0.000	1.000	CR1	100.0	Superior	$\sigma_{b+tlc,0}$	1.43		0.13
			25474	12.150	0.000	0.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			7548	16.200	0.000	0.500	CR1	100.0	Superior	τ_{xz}	-0.02	1.92	0.01
			363	16.200	0.000	1.000	CR1	140.0	Inferior	τ_{xy}	-0.79	1.92	0.41
			1121	51.300	0.000	1.000	CR1	0.0	Superior	$\sigma_{b,0}$	-0.02	11.52	0.00
			8799	53.325	0.000	1.000	CR1	20.0	Intermedio	$\sigma_{b,c,0}$	1.41	11.52	0.12
			8799	53.325	0.000	1.000	CR1	0.0	Superior	$\sigma_{b+tlc,0}$	1.40		0.12
			25404	51.300	0.000	0.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			25404	51.300	0.000	0.500	CR1	40.0	Inferior	τ_{xz}	0.02	1.92	0.01
			1121	51.300	0.000	1.000	CR1	40.0	Inferior	τ_{xy}	0.55	1.92	0.29
			377	55.350	0.000	1.000	CR1	40.0	Superior	$\sigma_{b,0}$	0.35	11.52	0.03
			377	55.350	0.000	1.000	CR1	50.0	Intermedio	$\sigma_{b,c,0}$	-1.20	11.52	0.10
			377	55.350	0.000	1.000	CR1	40.0	Superior	$\sigma_{b+tlc,0}$	-0.85		0.13
			25404	51.300	0.000	0.500	CR1	50.0	Intermedio	τ_{yz}	-0.02	0.50	0.03
			377	55.350	0.000	1.000	CR1	60.0	Inferior	τ_{xz}	-0.03	1.92	0.02
			1121	51.300	0.000	1.000	CR1	60.0	Inferior	τ_{xy}	-0.60	1.92	0.31
			1121	51.300	0.000	1.000	CR1	80.0	Inferior	$\sigma_{b,0}$	0.01	11.52	0.00
			8799	53.325	0.000	1.000	CR1	70.0	Intermedio	$\sigma_{b,c,0}$	1.44	11.52	0.12
			8799	53.325	0.000	1.000	CR1	60.0	Superior	$\sigma_{b+tlc,0}$	1.43		0.13
			377	55.350	0.000	1.000	CR1	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.06
			25404	51.300	0.000	0.500	CR1	70.0	Intermedio	τ_{xz}	0.02	1.92	0.01
			1121	51.300	0.000	1.000	CR1	80.0	Inferior	τ_{xy}	0.65	1.92	0.34
			377	55.350	0.000	1.000	CR1	80.0	Superior	$\sigma_{b,0}$	0.35	11.52	0.03
			377	55.350	0.000	1.000	CR1	90.0	Intermedio	$\sigma_{b,c,0}$	-2.61	11.52	0.23
			377	55.350	0.000	1.000	CR1	80.0	Superior	$\sigma_{b+tlc,0}$	-2.26		0.26
			25404	51.300	0.000	0.500	CR1	90.0	Intermedio	τ_{yz}	-0.02	0.50	0.03
			377	55.350	0.000	1.000	CR1	80.0	Superior	τ_{xz}	-0.03	1.92	0.02
			1121	51.300	0.000	1.000	CR1	100.0	Inferior	τ_{xy}	-0.70	1.92	0.36
			1121	51.300	0.000	1.000	CR1	100.0	Superior	$\sigma_{b,0}$	-0.02	11.52	0.00
			8799	53.325	0.000	1.000	CR1	120.0	Intermedio	$\sigma_{b,c,0}$	1.46	11.52	0.13
			8799	53.325	0.000	1.000	CR1	100.0	Superior	$\sigma_{b+tlc,0}$	1.45		0.13
			25404	51.300	0.000	0.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			25404	51.300	0.000	0.500	CR1	100.0	Superior	τ_{xz}	0.02	1.92	0.01
			1121	51.300	0.000	1.000	CR1	140.0	Inferior	τ_{xy}	0.79	1.92	0.41
			341	62.100	0.000	1.000	CR1	0.0	Superior	$\sigma_{b,0}$	-0.02	11.52	0.00
			8815	60.075	0.000	1.000	CR1	20.0	Intermedio	$\sigma_{b,c,0}$	0.66	11.52	0.06
			8815	60.075	0.000	1.000	CR1	0.0	Superior	$\sigma_{b+tlc,0}$	0.66		0.06
			25392	58.050	0.000	0.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			25392	58.050	0.000	0.500	CR1	40.0	Inferior	τ_{xz}	0.01	1.92	0.01
			25392	58.050	0.000	0.500	CR1	0.0	Superior	τ_{xy}	0.20	1.92	0.10
			1113	58.050	0.000	1.000	CR1	40.0	Superior	$\sigma_{b,0}$	0.33	11.52	0.03
			1113	58.050	0.000	1.000	CR1	50.0	Intermedio	$\sigma_{b,c,0}$	0.26	11.52	0.02
			1113	58.050	0.000	1.000	CR1	40.0	Superior	$\sigma_{b+tlc,0}$	0.59		0.05
			25392	58.050	0.000	0.500	CR1	50.0	Intermedio	τ_{yz}	-0.01	0.50	0.03
			1111	58.050	0.000	0.000	CR1	60.0	Inferior	τ_{xz}	-0.05	1.92	0.02
			25392	58.050	0.000	0.500	CR1	40.0	Superior	τ_{xy}	-0.20	1.92	0.10
			341	62.100	0.000	1.000	CR1	80.0	Inferior	$\sigma_{b,0}$	0.01	11.52	0.00
			8815	60.075	0.000	1.000	CR1	70.0	Intermedio	$\sigma_{b,c,0}$	0.66	11.52	0.06
			8815	60.075	0.000	1.000	CR1	60.0	Superior	$\sigma_{b+tlc,0}$	0.66		0.06
			1111	58.050	0.000	0.000	CR1	70.0	Intermedio	τ_{yz}	-0.05	0.50	0.09
			25392	58.050	0.000	0.500	CR1	70.0	Intermedio	τ_{xz}	0.01	1.92	0.01
			25392	58.050	0.000	0.500	CR1	60.0	Superior	τ_{xy}	0.20	1.92	0.10
			1113	58.050	0.000	1.000	CR1	100.0	Inferior	$\sigma_{b,0}$	-0.33	11.52	0.03
			1113	58.050	0.000	1.000	CR1	90.0	Intermedio	$\sigma_{b,c,0}$	-1.05	11.52	0.09
			1113	58.050	0.000	1.000	CR1	80.0	Superior	$\sigma_{b+tlc,0}$	-0.72		0.12
			25392	58.050	0.000	0.500	CR1	90.0	Intermedio	τ_{yz}	-0.01	0.50	0.03
			1111	58.050	0.000	0.000	CR1	80.0	Superior	τ_{xz}	-0.05	1.92	0.02
			8804	61.594	0.000	0.500	CR1	100.0	Inferior	τ_{xy}	0.22	1.92	0.11
			341	62.100	0.000	1.000	CR1	140.0	Inferior	$\sigma_{b,0}$	0.02	11.52	0.00
			8815	60.075	0.000	1.000	CR1	120.0	Intermedio	$\sigma_{b,c,0}$	0.67	11.52	0.06
			8815	60.075	0.000	1.000	CR1	100.0	Superior	$\sigma_{b+tlc,0}$	0.67		0.06
			25392	58.050	0.000	0.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			25392	58.050	0.000	0.500	CR1	100.0	Superior	τ_{xz}	0.01	1.92	0.01
			8804	61.594	0.000	0.500	CR1	140.0	Inferior	τ_{xy}	-0.29	1.92	0.15
			1003	0.000	18.900	0.000	CR1	0.0	Superior	$\sigma_{b,0}$	0.01	11.52	0.00
			8842	2.025	18.900	1.000	CR1	20.0	Intermedio	$\sigma_{b,c,0}$	0.63	11.52	0.05
			8842	2.025	18.900	1.000	CR1	0.0	Superior	$\sigma_{b+tlc,0}$	0.63		0.05
			25158	4.050	18.900	0.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			1004	4.050	18.900	0.000	CR1	40.0	Inferior	τ_{xz}	0.01	1.92	0.01
			25158	4.050	18.900	0.500	CR1	40.0	Inferior	τ_{xy}	-0.20	1.92	0.10
			331	0.000	18.900	1.000	CR1	60.0	Inferior	$\sigma_{b,0}$	0.21	11.52	0.02
			331	0.000	18.900	1.000	CR1	50.0	Intermedio	$\sigma_{b,c,0}$	-0.83	11.52	0.07
			331	0.000	18.900	1.000	CR1	40.0	Superior	$\sigma_{b+tlc,0}$	-0.85		0.07
			1004	4.050	18.900	0.000	CR1	50.0	Intermedio	τ_{yz}	-0.01	0.50	0.02
			331	0.000	18.900	1.000	CR1	60.0	Inferior	τ_{xz}	0.04	1.92	0.02
			25158	4.050	18.900	0.500	CR1	60.0	Inferior	τ_{xy}	0.20	1.92	0.10
			1003	0.000	18.900	0.000	CR1	60.0	Superior	$\sigma_{b,0}$	0.01	11.52	0.00
			8842	2.025	18.900	1.000	CR1	70.0	Intermedio	$\sigma_{b,c,0}$	0.64	11.52	0.06
			8842	2.025	18.900	1.000	CR1	60.0	Superior	$\sigma_{b+tlc,0}$	0.63		0.06
			331	0.000	18.900	1.000	CR1	70.0	Intermedio	τ_{yz}	0.04	0.50	0.08
			1004	4.050	18.900	0.000	CR1	70.0	Intermedio	τ_{xz}	0.01	1.92	0.01



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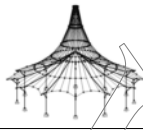
Modelo: TFM_FINAL_v02

Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

2.3 RAZÓN MÁX. DE TENSIONES POR COMPOSICIÓN

Comp. núm.	Superf. núm.	Capa núm.	Punto núm.	Coordenadas del punto [			Carga	Capa		Tensiones [N/mm ²]			Razón [-]
				X	Y	Z		z [mm]	Lado	Símbolo	Existente	Límite	
161	4		25158	4.050	18.900	0.500	CR1	80.0	Inferior	τ_{xy}	-0.20	1.92	0.10
			331	0.000	18.900	1.000	CR1	80.0	Superior	$\sigma_{b,0}$	-0.21	11.52	0.02
			1005	4.050	18.900	1.000	CR1	90.0	Intermedio	$\sigma_{b,0}$	-0.81	11.52	0.07
			1005	4.050	18.900	1.000	CR1	80.0	Superior	$\sigma_{b+tlc,0}$	-0.64		0.09
			1004	4.050	18.900	0.000	CR1	90.0	Intermedio	τ_{yz}	-0.01	0.50	0.02
			331	0.000	18.900	1.000	CR1	80.0	Superior	τ_{xz}	0.04	1.92	0.02
			25158	4.050	18.900	0.500	CR1	100.0	Inferior	τ_{xy}	0.20	1.92	0.11
			1003	0.000	18.900	0.000	CR1	140.0	Inferior	$\sigma_{b,0}$	-0.01	11.52	0.00
			8842	2.025	18.900	1.000	CR1	120.0	Intermedio	$\sigma_{b,0}$	0.64	11.52	0.06
			8842	2.025	18.900	1.000	CR1	100.0	Superior	$\sigma_{b+tlc,0}$	0.64		0.06
			25158	4.050	18.900	0.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			1004	4.050	18.900	0.000	CR1	100.0	Superior	τ_{xz}	0.01	1.92	0.01
	1		8849	0.506	18.900	0.500	CR1	140.0	Inferior	τ_{xy}	0.25	1.92	0.13
			25171	9.788	18.900	0.000	CR1	0.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			1013	10.800	18.900	0.000	CR1	20.0	Intermedio	$\sigma_{b,0}$	-1.05	11.52	0.09
			1013	10.800	18.900	0.000	CR1	0.0	Superior	$\sigma_{b+tlc,0}$	-1.05		0.09
			25173	10.800	18.900	0.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			1013	10.800	18.900	0.000	CR1	40.0	Inferior	τ_{xz}	0.01	1.92	0.01
			1014	10.800	18.900	1.000	CR1	40.0	Inferior	τ_{xy}	-0.45	1.92	0.23
			1014	10.800	18.900	1.000	CR1	40.0	Superior	$\sigma_{b,0}$	0.19	11.52	0.02
			1013	10.800	18.900	0.000	CR1	50.0	Intermedio	$\sigma_{b,0}$	-3.44	11.52	0.30
			1013	10.800	18.900	0.000	CR1	40.0	Superior	$\sigma_{b+tlc,0}$	-3.45		0.30
			1013	10.800	18.900	0.000	CR1	50.0	Intermedio	τ_{yz}	-0.01	0.50	0.03
			1014	10.800	18.900	1.000	CR1	60.0	Inferior	τ_{xz}	-0.02	1.92	0.01
	3		1014	10.800	18.900	1.000	CR1	60.0	Inferior	τ_{xy}	0.48	1.92	0.25
			25171	9.788	18.900	0.000	CR1	80.0	Inferior	$\sigma_{b,0}$	0.01	11.52	0.00
			1013	10.800	18.900	0.000	CR1	70.0	Intermedio	$\sigma_{b,0}$	-1.05	11.52	0.09
			1013	10.800	18.900	0.000	CR1	60.0	Superior	$\sigma_{b+tlc,0}$	-1.05		0.09
			1014	10.800	18.900	1.000	CR1	70.0	Intermedio	τ_{yz}	-0.02	0.50	0.04
			1013	10.800	18.900	0.000	CR1	70.0	Intermedio	τ_{xz}	0.01	1.92	0.01
			1014	10.800	18.900	1.000	CR1	80.0	Inferior	τ_{xy}	-0.52	1.92	0.27
			1014	10.800	18.900	1.000	CR1	80.0	Superior	$\sigma_{b,0}$	0.19	11.52	0.02
	4		1013	10.800	18.900	0.000	CR1	90.0	Intermedio	$\sigma_{b,0}$	-3.44	11.52	0.30
			1013	10.800	18.900	0.000	CR1	80.0	Superior	$\sigma_{b+tlc,0}$	-3.44		0.30
			1013	10.800	18.900	0.000	CR1	90.0	Intermedio	τ_{yz}	-0.01	0.50	0.03
			1014	10.800	18.900	1.000	CR1	80.0	Superior	τ_{xz}	-0.02	1.92	0.01
			1014	10.800	18.900	1.000	CR1	100.0	Inferior	τ_{xy}	0.55	1.92	0.29
	5		25171	9.788	18.900	0.000	CR1	140.0	Inferior	$\sigma_{b,0}$	0.01	11.52	0.00
			1013	10.800	18.900	0.000	CR1	120.0	Intermedio	$\sigma_{b,0}$	-1.05	11.52	0.09
			1013	10.800	18.900	0.000	CR1	100.0	Superior	$\sigma_{b+tlc,0}$	-1.05		0.09
			25173	10.800	18.900	0.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			1013	10.800	18.900	0.000	CR1	100.0	Superior	τ_{xz}	0.01	1.92	0.01
			1014	10.800	18.900	1.000	CR1	140.0	Inferior	τ_{xy}	-0.61	1.92	0.32
	162		1019	18.900	18.900	0.000	CR1	0.0	Superior	$\sigma_{b,0}$	0.02	11.52	0.00
			8890	16.369	18.900	1.000	CR1	20.0	Intermedio	$\sigma_{b,0}$	0.85	11.52	0.07
			8890	16.369	18.900	1.000	CR1	0.0	Superior	$\sigma_{b+tlc,0}$	0.84		0.07
			25189	18.900	18.900	0.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			1018	14.850	18.900	0.000	CR1	40.0	Inferior	τ_{xz}	-0.01	1.92	0.01
			1018	14.850	18.900	0.000	CR1	40.0	Inferior	τ_{xy}	-0.37	1.92	0.19
			1018	14.850	18.900	0.000	CR1	40.0	Superior	$\sigma_{b,0}$	-0.20	11.52	0.02
			1018	14.850	18.900	0.000	CR1	50.0	Intermedio	$\sigma_{b,0}$	-3.30	11.52	0.29
			1018	14.850	18.900	0.000	CR1	40.0	Superior	$\sigma_{b+tlc,0}$	-3.30		0.29
			1018	14.850	18.900	0.000	CR1	50.0	Intermedio	τ_{yz}	0.01	0.50	0.03
			1020	18.900	18.900	1.000	CR1	60.0	Inferior	τ_{xz}	0.03	1.92	0.01
			1018	14.850	18.900	0.000	CR1	60.0	Inferior	τ_{xy}	0.38	1.92	0.20
	3		1019	18.900	18.900	0.000	CR1	60.0	Superior	$\sigma_{b,0}$	0.01	11.52	0.00
			1018	14.850	18.900	0.000	CR1	70.0	Intermedio	$\sigma_{b,0}$	-0.87	11.52	0.08
			1018	14.850	18.900	0.000	CR1	60.0	Superior	$\sigma_{b+tlc,0}$	-0.86		0.08
			1020	18.900	18.900	1.000	CR1	70.0	Intermedio	τ_{yz}	0.03	0.50	0.05
			1018	14.850	18.900	0.000	CR1	70.0	Intermedio	τ_{xz}	-0.02	1.92	0.01
			1018	14.850	18.900	0.000	CR1	80.0	Inferior	τ_{xy}	-0.40	1.92	0.21
	4		1018	14.850	18.900	0.000	CR1	80.0	Superior	$\sigma_{b,0}$	-0.20	11.52	0.02
			1018	14.850	18.900	0.000	CR1	90.0	Intermedio	$\sigma_{b,0}$	-3.28	11.52	0.29
			1018	14.850	18.900	0.000	CR1	80.0	Superior	$\sigma_{b+tlc,0}$	-3.29		0.29
			1018	14.850	18.900	0.000	CR1	90.0	Intermedio	τ_{yz}	0.01	0.50	0.03
			1020	18.900	18.900	1.000	CR1	80.0	Superior	τ_{xz}	0.03	1.92	0.01
			1018	14.850	18.900	0.000	CR1	100.0	Inferior	τ_{xy}	0.41	1.92	0.21
	5		1019	18.900	18.900	0.000	CR1	140.0	Inferior	$\sigma_{b,0}$	-0.02	11.52	0.00
			1018	14.850	18.900	0.000	CR1	120.0	Intermedio	$\sigma_{b,0}$	-0.90	11.52	0.08
			1018	14.850	18.900	0.000	CR1	100.0	Superior	$\sigma_{b+tlc,0}$	-0.89		0.08
			25189	18.900	18.900	0.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			1018	14.850	18.900	0.000	CR1	100.0	Superior	τ_{xz}	-0.01	1.92	0.01
			1018	14.850	18.900	0.000	CR1	140.0	Inferior	τ_{xy}	-0.44	1.92	0.23
	163		1033	24.300	21.600	0.000	CR1	0.0	Superior	$\sigma_{b,0}$	0.02	11.52	0.00
			8905	25.920	21.600	1.000	CR1	20.0	Intermedio	$\sigma_{b,0}$	0.35	11.52	0.03
			8905	25.920	21.600	1.000	CR1	0.0	Superior	$\sigma_{b+tlc,0}$	0.35		0.03
			25227	27.000	21.600	0.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			333	24.300	21.600	1.000	CR1	40.0	Inferior	τ_{xz}	-0.01	1.92	0.01
			8899	26.460	21.600	0.500	CR1	0.0	Superior	τ_{xy}	-0.12	1.92	0.06
			333	24.300	21.600	1.000	CR1	60.0	Inferior	$\sigma_{b,0}$	0.20	11.52	0.02
			333	24.300	21.600	1.000	CR1	50.0	Intermedio	$\sigma_{b,0}$	-0.47	11.52	0.04
			333	24.300	21.600	1.000	CR1	40.0	Superior	$\sigma_{b+tlc,0}$	-0.67		0.06
			333	24.300	21.600	1.000	CR1	50.0	Intermedio	τ_{yz}	0.01	0.50	0.02



Proyecto: TFM
TFM

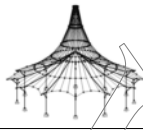
Modelo: TFM_FINAL_v02

Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

2.3 RAZÓN MÁX. DE TENSIONES POR COMPOSICIÓN

Comp. núm.	Superfici núm.	Capa núm.	Punto núm.	Coordenadas del punto [			Carga	Capa		Tensiones [N/mm ²]			Razón [-]
				X	Y	Z		z [mm]	Lado	Símbolo	Existente	Límite	
164	1	3	333	24.300	21.600	1.000	CR1	60.0	Inferior	τ_{xz}	0.03	1.92	0.02
			25227	27.000	21.600	0.500	CR1	40.0	Superior	τ_{xy}	0.11	1.92	0.06
			1033	24.300	21.600	0.000	CR1	60.0	Superior	$\sigma_{b,0}$	0.01	11.52	0.00
			8905	25.920	21.600	1.000	CR1	70.0	Intermedio	$\sigma_{bc,0}$	0.36	11.52	0.03
			8905	25.920	21.600	1.000	CR1	60.0	Superior	$\sigma_{b+bc,0}$	0.36		0.03
			333	24.300	21.600	1.000	CR1	70.0	Intermedio	τ_{yz}	0.03	0.50	0.07
			333	24.300	21.600	1.000	CR1	70.0	Intermedio	τ_{xz}	-0.01	1.92	0.01
			8909	24.840	21.600	0.500	CR1	80.0	Inferior	τ_{xy}	0.12	1.92	0.06
			333	24.300	21.600	1.000	CR1	100.0	Inferior	$\sigma_{b,0}$	0.20	11.52	0.02
			1035	27.000	21.600	1.000	CR1	90.0	Intermedio	$\sigma_{bc,0}$	-0.39	11.52	0.03
			1035	27.000	21.600	1.000	CR1	80.0	Superior	$\sigma_{b+bc,0}$	-0.22		0.05
			333	24.300	21.600	1.000	CR1	90.0	Intermedio	τ_{yz}	0.01	0.50	0.02
			333	24.300	21.600	1.000	CR1	80.0	Superior	τ_{xz}	0.03	1.92	0.02
			8909	24.840	21.600	0.500	CR1	100.0	Superior	τ_{xy}	-0.15	1.92	0.08
			1033	24.300	21.600	0.000	CR1	140.0	Inferior	$\sigma_{b,0}$	-0.02	11.52	0.00
			8905	25.920	21.600	1.000	CR1	120.0	Intermedio	$\sigma_{bc,0}$	0.36	11.52	0.03
			8905	25.920	21.600	1.000	CR1	100.0	Superior	$\sigma_{b+bc,0}$	0.36		0.03
			25227	27.000	21.600	0.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			333	24.300	21.600	1.000	CR1	100.0	Superior	τ_{xz}	-0.01	1.92	0.01
			8909	24.840	21.600	0.500	CR1	140.0	Inferior	τ_{xy}	0.22	1.92	0.11
			354	29.700	21.600	1.000	CR1	0.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			8920	31.320	21.600	1.000	CR1	20.0	Intermedio	$\sigma_{bc,0}$	0.27	11.52	0.02
			8920	31.320	21.600	1.000	CR1	0.0	Superior	$\sigma_{b+bc,0}$	0.26		0.02
			25235	32.400	21.600	0.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			8927	29.700	21.600	0.500	CR1	40.0	Inferior	τ_{xz}	0.01	1.92	0.01
			8927	29.700	21.600	0.500	CR1	40.0	Inferior	τ_{xy}	0.13	1.92	0.07
			354	29.700	21.600	1.000	CR1	40.0	Superior	$\sigma_{b,0}$	0.19	11.52	0.02
			25234	31.860	21.600	0.000	CR1	50.0	Intermedio	$\sigma_{bc,0}$	-0.22	11.52	0.02
			354	29.700	21.600	1.000	CR1	40.0	Superior	$\sigma_{b+bc,0}$	0.24		0.02
			8927	29.700	21.600	0.500	CR1	50.0	Intermedio	τ_{yz}	-0.01	0.50	0.02
			354	29.700	21.600	1.000	CR1	60.0	Inferior	τ_{xz}	-0.02	1.92	0.01
			8927	29.700	21.600	0.500	CR1	60.0	Inferior	τ_{xy}	-0.13	1.92	0.07
			354	29.700	21.600	1.000	CR1	60.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			8920	31.320	21.600	1.000	CR1	70.0	Intermedio	$\sigma_{bc,0}$	0.28	11.52	0.02
			8920	31.320	21.600	1.000	CR1	60.0	Superior	$\sigma_{b+bc,0}$	0.28		0.02
			354	29.700	21.600	1.000	CR1	70.0	Intermedio	τ_{yz}	-0.02	0.50	0.03
			8927	29.700	21.600	0.500	CR1	70.0	Intermedio	τ_{xz}	0.01	1.92	0.01
			354	29.700	21.600	1.000	CR1	80.0	Inferior	τ_{xy}	0.14	1.92	0.07
			354	29.700	21.600	1.000	CR1	100.0	Inferior	$\sigma_{b,0}$	-0.19	11.52	0.02
			354	29.700	21.600	1.000	CR1	90.0	Intermedio	$\sigma_{bc,0}$	-0.68	11.52	0.06
			354	29.700	21.600	1.000	CR1	80.0	Superior	$\sigma_{b+bc,0}$	-0.50		0.08
			8927	29.700	21.600	0.500	CR1	90.0	Intermedio	τ_{yz}	-0.01	0.50	0.02
			354	29.700	21.600	1.000	CR1	80.0	Superior	τ_{xz}	-0.02	1.92	0.01
			354	29.700	21.600	1.000	CR1	100.0	Inferior	τ_{xy}	-0.17	1.92	0.09
			354	29.700	21.600	1.000	CR1	100.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			8920	31.320	21.600	1.000	CR1	120.0	Intermedio	$\sigma_{bc,0}$	0.30	11.52	0.03
			8920	31.320	21.600	1.000	CR1	100.0	Superior	$\sigma_{b+bc,0}$	0.29		0.03
			25235	32.400	21.600	0.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			8927	29.700	21.600	0.500	CR1	100.0	Superior	τ_{xz}	0.01	1.92	0.01
			354	29.700	21.600	1.000	CR1	140.0	Inferior	τ_{xy}	0.23	1.92	0.12
			1047	37.800	21.600	1.000	CR1	0.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			8941	36.180	21.600	1.000	CR1	20.0	Intermedio	$\sigma_{bc,0}$	0.28	11.52	0.02
			8941	36.180	21.600	1.000	CR1	0.0	Superior	$\sigma_{b+bc,0}$	0.28		0.03
			25245	37.800	21.600	0.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			25245	37.800	21.600	0.500	CR1	40.0	Inferior	τ_{xz}	-0.01	1.92	0.01
			25245	37.800	21.600	0.500	CR1	40.0	Inferior	τ_{xy}	-0.13	1.92	0.07
			1047	37.800	21.600	1.000	CR1	40.0	Superior	$\sigma_{b,0}$	0.19	11.52	0.02
			25241	35.640	21.600	0.000	CR1	50.0	Intermedio	$\sigma_{bc,0}$	-0.21	11.52	0.02
			356	35.100	21.600	1.000	CR1	40.0	Superior	$\sigma_{b+bc,0}$	0.32		0.03
			25245	37.800	21.600	0.500	CR1	60.0	Inferior	τ_{yz}	0.01	0.50	0.02
			1047	37.800	21.600	1.000	CR1	60.0	Inferior	τ_{xz}	-0.02	1.92	0.01
			25245	37.800	21.600	0.500	CR1	60.0	Inferior	τ_{xy}	0.13	1.92	0.07
			1047	37.800	21.600	1.000	CR1	80.0	Inferior	$\sigma_{b,0}$	0.01	11.52	0.00
			8941	36.180	21.600	1.000	CR1	70.0	Intermedio	$\sigma_{bc,0}$	0.30	11.52	0.03
			8941	36.180	21.600	1.000	CR1	60.0	Superior	$\sigma_{b+bc,0}$	0.29		0.03
			1047	37.800	21.600	1.000	CR1	70.0	Intermedio	τ_{yz}	-0.02	0.50	0.03
			25245	37.800	21.600	0.500	CR1	70.0	Intermedio	τ_{xz}	-0.01	1.92	0.01
			1047	37.800	21.600	1.000	CR1	80.0	Inferior	τ_{xy}	-0.16	1.92	0.08
			1047	37.800	21.600	1.000	CR1	100.0	Inferior	$\sigma_{b,0}$	-0.19	11.52	0.02
			1047	37.800	21.600	1.000	CR1	90.0	Intermedio	$\sigma_{bc,0}$	-0.74	11.52	0.06
			1047	37.800	21.600	1.000	CR1	80.0	Superior	$\sigma_{b+bc,0}$	-0.56		0.08
			25245	37.800	21.600	0.500	CR1	80.0	Superior	τ_{yz}	0.01	0.50	0.02
			1047	37.800	21.600	1.000	CR1	80.0	Superior	τ_{xz}	-0.02	1.92	0.01
			1047	37.800	21.600	1.000	CR1	100.0	Inferior	τ_{xy}	0.19	1.92	0.10
			1047	37.800	21.600	1.000	CR1	100.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			8941	36.180	21.600	1.000	CR1	120.0	Intermedio	$\sigma_{bc,0}$	0.31	11.52	0.03
			8941	36.180	21.600	1.000	CR1	100.0	Superior	$\sigma_{b+bc,0}$	0.31		0.03
			25245	37.800	21.600	0.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			25245	37.800	21.600	0.500	CR1	100.0	Superior	τ_{xz}	-0.01	1.92	0.01
			1047	37.800	21.600	1.000	CR1	140.0	Inferior	τ_{xy}	-0.25	1.92	0.13
166	1		1053	43.200	21.600	0.000	CR1	40.0	Inferior	$\sigma_{b,0}$	-0.02	11.52	0.00
			8956	41.580	21.600	1.000	CR1	20.0	Intermedio	$\sigma_{bc,0}$	0.37	11.52	0.03
			8956	41.580	21.600	1.000	CR1	0.0	Superior	$\sigma_{b+bc,0}$	0.37		0.03



Proyecto: TFM
TFM

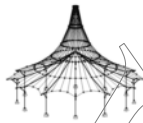
Modelo: TFM_FINAL_v02

Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

2.3 RAZÓN MÁX. DE TENSIONES POR COMPOSICIÓN

Comp. núm.	Superf. núm.	Capa núm.	Punto núm.	Coordenadas del punto [			Carga	Capa		Tensiones [N/mm ²]			Razón [-]
				X	Y	Z		z [mm]	Lado	Símbolo	Existente	Límite	
			25255	43.200	21.600	0.500	CR1	20.0	Intermedio	T _{y'z'}	0.00	0.50	0.00
			1054	43.200	21.600	1.000	CR1	40.0	Inferior	T _{x'z'}	0.01	1.92	0.01
			8957	41.040	21.600	0.500	CR1	0.0	Superior	T _{x'y'}	0.12	1.92	0.06
		2	1054	43.200	21.600	1.000	CR1	40.0	Superior	σ _{b,0}	-0.19	11.52	0.02
			1054	43.200	21.600	1.000	CR1	50.0	Intermedio	σ _{bc,0}	-0.47	11.52	0.04
			1054	43.200	21.600	1.000	CR1	40.0	Superior	σ _{b+bc,0}	-0.67		0.06
			1054	43.200	21.600	1.000	CR1	50.0	Intermedio	T _{y'z'}	-0.01	0.50	0.02
			1054	43.200	21.600	1.000	CR1	60.0	Inferior	T _{x'z'}	0.03	1.92	0.02
			8960	40.500	21.600	0.500	CR1	40.0	Superior	T _{x'y'}	-0.11	1.92	0.06
		3	1053	43.200	21.600	0.000	CR1	60.0	Superior	σ _{b,0}	0.01	11.52	0.00
			8956	41.580	21.600	1.000	CR1	70.0	Intermedio	σ _{bc,0}	0.38	11.52	0.03
			8956	41.580	21.600	1.000	CR1	60.0	Superior	σ _{b+bc,0}	0.38		0.03
			1054	43.200	21.600	1.000	CR1	70.0	Intermedio	T _{y'z'}	0.03	0.50	0.06
			1054	43.200	21.600	1.000	CR1	70.0	Intermedio	T _{x'z'}	0.01	1.92	0.01
			8948	42.660	21.600	0.500	CR1	80.0	Inferior	T _{x'y'}	-0.13	1.92	0.07
		4	1054	43.200	21.600	1.000	CR1	80.0	Superior	σ _{b,0}	-0.19	11.52	0.02
			358	40.500	21.600	1.000	CR1	90.0	Intermedio	σ _{bc,0}	-0.37	11.52	0.03
			358	40.500	21.600	1.000	CR1	80.0	Superior	σ _{b+bc,0}	-0.20		0.05
			1054	43.200	21.600	1.000	CR1	90.0	Intermedio	T _{y'z'}	-0.01	0.50	0.02
			1054	43.200	21.600	1.000	CR1	80.0	Superior	T _{x'z'}	0.03	1.92	0.02
			8948	42.660	21.600	0.500	CR1	100.0	Inferior	T _{x'y'}	0.16	1.92	0.08
		5	1053	43.200	21.600	0.000	CR1	100.0	Superior	σ _{b,0}	0.02	11.52	0.00
			8956	41.580	21.600	1.000	CR1	120.0	Intermedio	σ _{bc,0}	0.38	11.52	0.03
			8956	41.580	21.600	1.000	CR1	100.0	Superior	σ _{b+bc,0}	0.38		0.03
			25255	43.200	21.600	0.500	CR1	120.0	Intermedio	T _{y'z'}	0.00	0.50	0.00
			1054	43.200	21.600	1.000	CR1	100.0	Superior	T _{x'z'}	0.01	1.92	0.01
			8948	42.660	21.600	0.500	CR1	140.0	Inferior	T _{x'y'}	-0.22	1.92	0.12
		167	1067	48.600	24.300	0.000	CR1	40.0	Inferior	σ _{b,0}	-0.02	11.52	0.00
			8977	50.625	24.300	1.000	CR1	20.0	Intermedio	σ _{bc,0}	0.76	11.52	0.07
			8977	50.625	24.300	1.000	CR1	0.0	Superior	σ _{b+bc,0}	0.75		0.07
			25296	52.650	24.300	0.500	CR1	20.0	Intermedio	T _{y'z'}	0.00	0.50	0.00
			1068	52.650	24.300	0.000	CR1	40.0	Inferior	T _{x'z'}	0.01	1.92	0.01
			25296	52.650	24.300	0.500	CR1	40.0	Inferior	T _{x'y'}	-0.22	1.92	0.11
		2	335	48.600	24.300	1.000	CR1	60.0	Inferior	σ _{b,0}	0.27	11.52	0.02
			335	48.600	24.300	1.000	CR1	50.0	Intermedio	σ _{bc,0}	-0.67	11.52	0.06
			335	48.600	24.300	1.000	CR1	40.0	Superior	σ _{b+bc,0}	-0.94		0.08
			1068	52.650	24.300	0.000	CR1	50.0	Intermedio	T _{y'z'}	-0.01	0.50	0.02
			335	48.600	24.300	1.000	CR1	60.0	Inferior	T _{x'z'}	0.05	1.92	0.03
			25296	52.650	24.300	0.500	CR1	60.0	Inferior	T _{x'y'}	0.22	1.92	0.11
		3	1067	48.600	24.300	0.000	CR1	80.0	Inferior	σ _{b,0}	-0.01	11.52	0.00
			8977	50.625	24.300	1.000	CR1	70.0	Intermedio	σ _{bc,0}	0.76	11.52	0.07
			8977	50.625	24.300	1.000	CR1	60.0	Superior	σ _{b+bc,0}	0.76		0.07
			335	48.600	24.300	1.000	CR1	70.0	Intermedio	T _{y'z'}	0.05	0.50	0.10
			1068	52.650	24.300	0.000	CR1	70.0	Intermedio	T _{x'z'}	0.01	1.92	0.01
			25296	52.650	24.300	0.500	CR1	80.0	Inferior	T _{x'y'}	-0.22	1.92	0.11
		4	335	48.600	24.300	1.000	CR1	100.0	Inferior	σ _{b,0}	0.27	11.52	0.02
			1069	52.650	24.300	1.000	CR1	90.0	Intermedio	σ _{bc,0}	-0.51	11.52	0.04
			1069	52.650	24.300	1.000	CR1	80.0	Superior	σ _{b+bc,0}	-0.33		0.06
			1068	52.650	24.300	0.000	CR1	90.0	Intermedio	T _{y'z'}	-0.01	0.50	0.02
			335	48.600	24.300	1.000	CR1	80.0	Superior	T _{x'z'}	0.05	1.92	0.03
			8984	49.106	24.300	0.500	CR1	100.0	Inferior	T _{x'y'}	-0.23	1.92	0.12
		5	1067	48.600	24.300	0.000	CR1	100.0	Superior	σ _{b,0}	0.02	11.52	0.00
			8977	50.625	24.300	1.000	CR1	120.0	Intermedio	σ _{bc,0}	0.77	11.52	0.07
			8977	50.625	24.300	1.000	CR1	100.0	Superior	σ _{b+bc,0}	0.77		0.07
			25296	52.650	24.300	0.500	CR1	120.0	Intermedio	T _{y'z'}	0.00	0.50	0.00
			1068	52.650	24.300	0.000	CR1	100.0	Superior	T _{x'z'}	0.01	1.92	0.01
			8984	49.106	24.300	0.500	CR1	140.0	Inferior	T _{x'y'}	0.28	1.92	0.14
		168	25307	58.388	24.300	0.000	CR1	0.0	Superior	σ _{b,0}	-0.01	11.52	0.00
			1075	59.400	24.300	0.000	CR1	20.0	Intermedio	σ _{bc,0}	-0.86	11.52	0.08
			1075	59.400	24.300	0.000	CR1	0.0	Superior	σ _{b+bc,0}	-0.86		0.08
			25309	59.400	24.300	0.500	CR1	20.0	Intermedio	T _{y'z'}	0.00	0.50	0.00
			1075	59.400	24.300	0.000	CR1	40.0	Inferior	T _{x'z'}	0.01	1.92	0.01
			1076	59.400	24.300	1.000	CR1	40.0	Inferior	T _{x'y'}	-0.34	1.92	0.18
		2	1076	59.400	24.300	1.000	CR1	40.0	Superior	σ _{b,0}	0.19	11.52	0.02
			1075	59.400	24.300	0.000	CR1	50.0	Intermedio	σ _{bc,0}	-2.98	11.52	0.26
			1075	59.400	24.300	0.000	CR1	40.0	Superior	σ _{b+bc,0}	-2.98		0.26
			1075	59.400	24.300	0.000	CR1	50.0	Intermedio	T _{y'z'}	-0.01	0.50	0.02
			1076	59.400	24.300	1.000	CR1	60.0	Inferior	T _{x'z'}	-0.02	1.92	0.01
			1076	59.400	24.300	1.000	CR1	60.0	Inferior	T _{x'y'}	0.38	1.92	0.20
		3	25307	58.388	24.300	0.000	CR1	80.0	Inferior	σ _{b,0}	0.01	11.52	0.00
			1075	59.400	24.300	0.000	CR1	70.0	Intermedio	σ _{bc,0}	-0.87	11.52	0.08
			1075	59.400	24.300	0.000	CR1	60.0	Superior	σ _{b+bc,0}	-0.87		0.08
			1076	59.400	24.300	1.000	CR1	70.0	Intermedio	T _{y'z'}	-0.02	0.50	0.04
			1075	59.400	24.300	0.000	CR1	70.0	Intermedio	T _{x'z'}	0.01	1.92	0.01
			1076	59.400	24.300	1.000	CR1	80.0	Inferior	T _{x'y'}	-0.41	1.92	0.21
		4	1076	59.400	24.300	1.000	CR1	80.0	Superior	σ _{b,0}	0.19	11.52	0.02
			1075	59.400	24.300	0.000	CR1	90.0	Intermedio	σ _{bc,0}	-2.98	11.52	0.26
			1075	59.400	24.300	0.000	CR1	80.0	Superior	σ _{b+bc,0}	-2.98		0.26
			1075	59.400	24.300	0.000	CR1	90.0	Intermedio	T _{y'z'}	-0.01	0.50	0.02
			1076	59.400	24.300	1.000	CR1	80.0	Superior	T _{x'z'}	-0.02	1.92	0.01
			1076	59.400	24.300	1.000	CR1	100.0	Inferior	T _{x'y'}	0.44	1.92	0.23
		5	25307	58.388	24.300	0.000	CR1	140.0	Inferior	σ _{b,0}	0.01	11.52	0.00
			1075	59.400	24.300	0.000	CR1	120.0	Intermedio	σ _{bc,0}	-0.88	11.52	0.08



Proyecto: TFM

Modelo: TFM_FINAL_v02

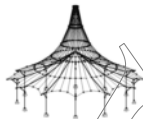
Fecha: 05/07/2020

TFM

Estructura Consellería - Primera Prueba

2.3 RAZÓN MÁX. DE TENSIONES POR COMPOSICIÓN

2.1. TENSIONES MAX. DEFINIDAS POR COM. CUBICION														
Comp. núm.	Superfici núm.	Capa núm.	Punto núm.	Coordenadas del punto [			Carga	Capa		Tensiones [N/mm ²]			Razón
				X	Y	Z		z [mm]	Lado	Símbolo	Existente	Límite	[-]	
169	1		1075	59.400	24.300	0.000	CR1	100.0	Superior	$\sigma_{b+tc,0}$	-0.88		0.08	
			25309	59.400	24.300	0.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00	
			1075	59.400	24.300	0.000	CR1	100.0	Superior	τ_{xz}	0.01	1.92	0.01	
			1076	59.400	24.300	1.000	CR1	140.0	Inferior	τ_{xy}	-0.50	1.92	0.26	
			1081	67.500	24.300	0.000	CR1	0.0	Superior	$\sigma_{b,0}$	0.01	11.52	0.00	
			1080	63.450	24.300	0.000	CR1	20.0	Intermedio	$\sigma_{tc,0}$	-0.78	11.52	0.07	
			1080	63.450	24.300	0.000	CR1	0.0	Superior	$\sigma_{b+tc,0}$	-0.77		0.07	
			25325	67.500	24.300	0.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00	
			1080	63.450	24.300	0.000	CR1	40.0	Inferior	τ_{xz}	-0.01	1.92	0.01	
			350	63.450	24.300	1.000	CR1	40.0	Inferior	τ_{xy}	0.35	1.92	0.18	
	2		350	63.450	24.300	1.000	CR1	40.0	Superior	$\sigma_{b,0}$	0.18	11.52	0.02	
			1080	63.450	24.300	0.000	CR1	50.0	Intermedio	$\sigma_{tc,0}$	-2.82	11.52	0.25	
			1080	63.450	24.300	0.000	CR1	40.0	Superior	$\sigma_{b+tc,0}$	-2.82		0.25	
			1080	63.450	24.300	0.000	CR1	50.0	Intermedio	τ_{yz}	0.01	0.50	0.03	
			1082	67.500	24.300	1.000	CR1	60.0	Inferior	τ_{xz}	0.03	1.92	0.01	
			350	63.450	24.300	1.000	CR1	60.0	Inferior	τ_{xy}	-0.36	1.92	0.19	
			1081	67.500	24.300	0.000	CR1	80.0	Inferior	$\sigma_{b,0}$	-0.01	11.52	0.00	
			1080	63.450	24.300	0.000	CR1	70.0	Intermedio	$\sigma_{tc,0}$	-0.81	11.52	0.07	
			1080	63.450	24.300	0.000	CR1	60.0	Superior	$\sigma_{b+tc,0}$	-0.80		0.07	
			1082	67.500	24.300	1.000	CR1	70.0	Intermedio	τ_{yz}	0.03	0.50	0.05	
	3		1080	63.450	24.300	0.000	CR1	70.0	Intermedio	τ_{xz}	-0.01	1.92	0.01	
			350	63.450	24.300	1.000	CR1	80.0	Inferior	τ_{xy}	0.38	1.92	0.20	
			350	63.450	24.300	1.000	CR1	100.0	Inferior	$\sigma_{b,0}$	-0.18	11.52	0.02	
			1080	63.450	24.300	0.000	CR1	90.0	Intermedio	$\sigma_{tc,0}$	-2.81	11.52	0.24	
			1080	63.450	24.300	0.000	CR1	80.0	Superior	$\sigma_{b+tc,0}$	-2.82		0.24	
			1080	63.450	24.300	0.000	CR1	90.0	Intermedio	τ_{yz}	0.01	0.50	0.03	
			1082	67.500	24.300	1.000	CR1	80.0	Superior	τ_{xz}	0.03	1.92	0.01	
			350	63.450	24.300	1.000	CR1	100.0	Inferior	τ_{xy}	-0.40	1.92	0.21	
			1081	67.500	24.300	0.000	CR1	100.0	Superior	$\sigma_{b,0}$	0.01	11.52	0.00	
			1080	63.450	24.300	0.000	CR1	120.0	Intermedio	$\sigma_{tc,0}$	-0.84	11.52	0.07	
	4		1080	63.450	24.300	0.000	CR1	100.0	Superior	$\sigma_{b+tc,0}$	-0.83		0.07	
			25325	67.500	24.300	0.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00	
			1080	63.450	24.300	0.000	CR1	100.0	Superior	τ_{xz}	-0.01	1.92	0.01	
			350	63.450	24.300	1.000	CR1	140.0	Inferior	τ_{xy}	0.44	1.92	0.23	
			1090	67.500	13.500	0.000	CR1	0.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00	
			9040	65.880	13.500	1.000	CR1	20.0	Intermedio	$\sigma_{tc,0}$	0.27	11.52	0.02	
			9040	65.880	13.500	1.000	CR1	0.0	Superior	$\sigma_{b+tc,0}$	0.27		0.02	
			25347	64.800	13.500	0.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00	
			1089	64.800	13.500	0.000	CR1	40.0	Inferior	τ_{xz}	0.00	1.92	0.00	
			25347	64.800	13.500	0.500	CR1	40.0	Inferior	τ_{xy}	0.12	1.92	0.06	
170	2		337	67.500	13.500	1.000	CR1	60.0	Inferior	$\sigma_{b,0}$	-0.12	11.52	0.01	
			25343	65.340	13.500	0.000	CR1	50.0	Intermedio	$\sigma_{tc,0}$	-0.17	11.52	0.01	
			25343	65.340	13.500	0.000	CR1	40.0	Superior	$\sigma_{b+tc,0}$	-0.17		0.01	
			1089	64.800	13.500	0.000	CR1	50.0	Intermedio	τ_{yz}	0.00	0.50	0.00	
			337	67.500	13.500	1.000	CR1	60.0	Inferior	τ_{xz}	-0.02	1.92	0.01	
			25347	64.800	13.500	0.500	CR1	60.0	Inferior	τ_{xy}	-0.12	1.92	0.06	
			1090	67.500	13.500	0.000	CR1	80.0	Inferior	$\sigma_{b,0}$	0.00	11.52	0.00	
			9040	65.880	13.500	1.000	CR1	70.0	Intermedio	$\sigma_{tc,0}$	0.27	11.52	0.02	
			9040	65.880	13.500	1.000	CR1	60.0	Superior	$\sigma_{b+tc,0}$	0.27		0.02	
			337	67.500	13.500	1.000	CR1	70.0	Intermedio	τ_{yz}	-0.02	0.50	0.04	
			1089	64.800	13.500	0.000	CR1	70.0	Intermedio	τ_{xz}	0.00	1.92	0.00	
			25347	64.800	13.500	0.500	CR1	80.0	Inferior	τ_{xy}	0.12	1.92	0.06	
	3		337	67.500	13.500	1.000	CR1	80.0	Superior	$\sigma_{b,0}$	0.12	11.52	0.01	
			337	67.500	13.500	1.000	CR1	90.0	Intermedio	$\sigma_{tc,0}$	-0.52	11.52	0.05	
			337	67.500	13.500	1.000	CR1	80.0	Superior	$\sigma_{b+tc,0}$	-0.40		0.06	
			1089	64.800	13.500	0.000	CR1	90.0	Intermedio	τ_{yz}	0.00	0.50	0.00	
			337	67.500	13.500	1.000	CR1	80.0	Superior	τ_{xz}	-0.02	1.92	0.01	
			25347	64.800	13.500	0.500	CR1	100.0	Inferior	τ_{xy}	-0.12	1.92	0.06	
			1090	67.500	13.500	0.000	CR1	140.0	Inferior	$\sigma_{b,0}$	0.01	11.52	0.00	
			9040	65.880	13.500	1.000	CR1	120.0	Intermedio	$\sigma_{tc,0}$	0.27	11.52	0.02	
			9040	65.880	13.500	1.000	CR1	100.0	Superior	$\sigma_{b+tc,0}$	0.27		0.02	
			25347	64.800	13.500	0.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00	
	4		1089	64.800	13.500	0.000	CR1	100.0	Superior	τ_{xz}	0.00	1.92	0.00	
			25347	64.800	13.500	0.500	CR1	140.0	Inferior	τ_{xy}	0.12	1.92	0.06	
			9061	59.940	13.500	1.000	CR1	0.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00	
			1096	59.400	13.500	0.000	CR1	20.0	Intermedio	$\sigma_{tc,0}$	-1.02	11.52	0.09	
			1096	59.400	13.500	0.000	CR1	0.0	Superior	$\sigma_{b+tc,0}$	-1.01		0.09	
			25357	59.400	13.500	0.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00	
			1098	59.400	13.500	1.000	CR1	40.0	Inferior	τ_{xz}	0.01	1.92	0.00	
			1096	59.400	13.500	0.000	CR1	0.0	Superior	τ_{xy}	-0.50	1.92	0.26	
			1098	59.400	13.500	1.000	CR1	40.0	Superior	$\sigma_{b,0}$	0.51	11.52	0.04	
			1096	59.400	13.500	0.000	CR1	50.0	Intermedio	$\sigma_{tc,0}$	-4.24	11.52	0.37	
			1096	59.400	13.500	0.000	CR1	40.0	Superior	$\sigma_{b+tc,0}$	-4.18		0.37	
5		1098	59.400	13.500	1.000	CR1	50.0	Intermedio	τ_{yz}	-0.01	0.50	0.02		
		1098	59.400	13.500	1.000	CR1	60.0	Inferior	τ_{xz}	-0.09	1.92	0.05		
		1096	59.400	13.500	0.000	CR1	40.0	Superior	τ_{xy}	0.50	1.92	0.26		
		9061	59.940	13.500	1.000	CR1	80.0	Inferior	$\sigma_{b,0}$	0.01	11.52	0.00		
		1096	59.400	13.500	0.000	CR1	70.0	Intermedio	$\sigma_{tc,0}$	-1.04	11.52	0.09		
		1096	59.400	13.500	0.000	CR1	60.0	Superior	$\sigma_{b+tc,0}$	-1.03		0.09		
		1098	59.400	13.500	1.000	CR1	70.0	Intermedio	τ_{yz}	-0.09	0.50	0.19		
		1098	59.400	13.500	1.000	CR1	70.0	Intermedio	τ_{xz}	0.01	1.92	0.01		
		1096	59.400	13.500	0.000	CR1	60.0	Superior	τ_{xy}	-0.50	1.92	0.26		
		1098	59.400	13.500	1.000	CR1	100.0	Inferior	$\sigma_{b,0}$	-0.51	11.52	0.04		



Proyecto: TFM
TFM

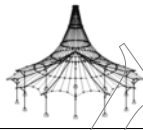
Modelo: TFM_FINAL_v02

Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

2.3 RAZÓN MÁX. DE TENSIONES POR COMPOSICIÓN

Comp. núm.	Superf. núm.	Capa núm.	Punto núm.	Coordenadas del punto [			Carga	Capa		Tensiones [N/mm ²]			Razón [-]
				X	Y	Z		z [mm]	Lado	Símbolo	Existente	Límite	
197	1	5	1096	59.400	13.500	0.000	CR1	90.0	Intermedio	$\sigma_{\text{lc},0}$	-4.49	11.52	0.39
			1096	59.400	13.500	0.000	CR1	80.0	Superior	$\sigma_{\text{b}+\text{lc},0}$	-4.43		0.39
			1098	59.400	13.500	1.000	CR1	90.0	Intermedio	$\tau_{\text{y}z}$	-0.01	0.50	0.02
			1098	59.400	13.500	1.000	CR1	80.0	Superior	$\tau_{\text{x}z}$	-0.09	1.92	0.05
			1098	59.400	13.500	1.000	CR1	100.0	Inferior	$\tau_{\text{x}y}$	-0.51	1.92	0.27
			9061	59.940	13.500	1.000	CR1	100.0	Superior	$\sigma_{\text{b},0}$	-0.01	11.52	0.00
			1096	59.400	13.500	0.000	CR1	120.0	Intermedio	$\sigma_{\text{lc},0}$	-1.06	11.52	0.09
			1096	59.400	13.500	0.000	CR1	100.0	Superior	$\sigma_{\text{b}+\text{lc},0}$	-1.05		0.09
			25357	59.400	13.500	0.500	CR1	120.0	Intermedio	$\tau_{\text{y}z}$	0.00	0.50	0.00
			1098	59.400	13.500	1.000	CR1	100.0	Superior	$\tau_{\text{x}z}$	0.01	1.92	0.00
			1098	59.400	13.500	1.000	CR1	140.0	Inferior	$\tau_{\text{x}y}$	0.58	1.92	0.30
			12650	59.940	10.800	5.000	CR1	0.0	Superior	$\sigma_{\text{b},0}$	-0.01	11.52	0.00
			12647	60.480	10.800	5.000	CR1	20.0	Intermedio	$\sigma_{\text{lc},0}$	0.34	11.52	0.03
			12647	60.480	10.800	5.000	CR1	0.0	Superior	$\sigma_{\text{b}+\text{lc},0}$	0.34		0.03
			26097	62.100	10.800	4.500	CR1	20.0	Intermedio	$\tau_{\text{y}z}$	0.00	0.50	0.00
			1438	59.400	10.800	4.000	CR1	40.0	Inferior	$\tau_{\text{x}z}$	-0.01	1.92	0.00
			3152	59.400	10.800	4.500	CR1	40.0	Inferior	$\tau_{\text{x}y}$	0.15	1.92	0.08
			565	59.400	10.800	5.000	CR1	40.0	Superior	$\sigma_{\text{b},0}$	0.28	11.52	0.02
			1438	59.400	10.800	4.000	CR1	50.0	Intermedio	$\sigma_{\text{lc},0}$	-1.06	11.52	0.09
			1438	59.400	10.800	4.000	CR1	40.0	Superior	$\sigma_{\text{b}+\text{lc},0}$	-1.03		0.09
			1438	59.400	10.800	4.000	CR1	50.0	Intermedio	$\tau_{\text{y}z}$	0.01	0.50	0.01
			565	59.400	10.800	5.000	CR1	60.0	Inferior	$\tau_{\text{x}z}$	-0.05	1.92	0.03
			565	59.400	10.800	5.000	CR1	60.0	Inferior	$\tau_{\text{x}y}$	-0.16	1.92	0.08
			12650	59.940	10.800	5.000	CR1	60.0	Superior	$\sigma_{\text{b},0}$	0.00	11.52	0.00
			12647	60.480	10.800	5.000	CR1	70.0	Intermedio	$\sigma_{\text{lc},0}$	0.35	11.52	0.03
			12647	60.480	10.800	5.000	CR1	60.0	Superior	$\sigma_{\text{b}+\text{lc},0}$	0.35		0.03
			565	59.400	10.800	5.000	CR1	70.0	Intermedio	$\tau_{\text{y}z}$	-0.05	0.50	0.11
			1438	59.400	10.800	4.000	CR1	70.0	Intermedio	$\tau_{\text{x}z}$	-0.01	1.92	0.00
			565	59.400	10.800	5.000	CR1	80.0	Inferior	$\tau_{\text{x}y}$	0.18	1.92	0.09
			565	59.400	10.800	5.000	CR1	100.0	Inferior	$\sigma_{\text{b},0}$	-0.28	11.52	0.02
			1438	59.400	10.800	4.000	CR1	90.0	Intermedio	$\sigma_{\text{lc},0}$	-1.18	11.52	0.10
			1438	59.400	10.800	4.000	CR1	80.0	Superior	$\sigma_{\text{b}+\text{lc},0}$	-1.15		0.11
			1438	59.400	10.800	4.000	CR1	90.0	Intermedio	$\tau_{\text{y}z}$	0.01	0.50	0.01
			565	59.400	10.800	5.000	CR1	80.0	Superior	$\tau_{\text{x}z}$	-0.05	1.92	0.03
			565	59.400	10.800	5.000	CR1	100.0	Inferior	$\tau_{\text{x}y}$	-0.20	1.92	0.10
			12650	59.940	10.800	5.000	CR1	100.0	Superior	$\sigma_{\text{b},0}$	-0.01	11.52	0.00
			12647	60.480	10.800	5.000	CR1	120.0	Intermedio	$\sigma_{\text{lc},0}$	0.35	11.52	0.03
			12647	60.480	10.800	5.000	CR1	100.0	Superior	$\sigma_{\text{b}+\text{lc},0}$	0.35		0.03
			26097	62.100	10.800	4.500	CR1	120.0	Intermedio	$\tau_{\text{y}z}$	0.00	0.50	0.00
			1438	59.400	10.800	4.000	CR1	100.0	Superior	$\tau_{\text{x}z}$	-0.01	1.92	0.00
			565	59.400	10.800	5.000	CR1	140.0	Inferior	$\tau_{\text{x}y}$	0.24	1.92	0.12
198	1	5	12662	0.540	10.800	5.000	CR1	40.0	Inferior	$\sigma_{\text{b},0}$	-0.01	11.52	0.00
			12656	1.620	10.800	5.000	CR1	20.0	Intermedio	$\sigma_{\text{lc},0}$	0.31	11.52	0.03
			12656	1.620	10.800	5.000	CR1	0.0	Superior	$\sigma_{\text{b}+\text{lc},0}$	0.31		0.03
			25751	2.700	10.800	4.500	CR1	20.0	Intermedio	$\tau_{\text{y}z}$	0.00	0.50	0.00
			25750	2.160	10.800	4.000	CR1	40.0	Inferior	$\tau_{\text{x}z}$	0.00	1.92	0.00
			1280	2.700	10.800	5.000	CR1	40.0	Inferior	$\tau_{\text{x}y}$	-0.16	1.92	0.08
			569	0.000	10.800	5.000	CR1	40.0	Superior	$\sigma_{\text{b},0}$	-0.22	11.52	0.02
			1279	2.700	10.800	4.000	CR1	50.0	Intermedio	$\sigma_{\text{lc},0}$	-1.01	11.52	0.09
			1279	2.700	10.800	4.000	CR1	40.0	Superior	$\sigma_{\text{b}+\text{lc},0}$	-1.02		0.09
			25750	2.160	10.800	4.000	CR1	50.0	Intermedio	$\tau_{\text{y}z}$	0.00	0.50	0.01
			569	0.000	10.800	5.000	CR1	60.0	Inferior	$\tau_{\text{x}z}$	0.04	1.92	0.02
			1280	2.700	10.800	5.000	CR1	60.0	Inferior	$\tau_{\text{x}y}$	0.16	1.92	0.08
			12662	0.540	10.800	5.000	CR1	80.0	Inferior	$\sigma_{\text{b},0}$	0.00	11.52	0.00
			12656	1.620	10.800	5.000	CR1	70.0	Intermedio	$\sigma_{\text{lc},0}$	0.31	11.52	0.03
			12656	1.620	10.800	5.000	CR1	60.0	Superior	$\sigma_{\text{b}+\text{lc},0}$	0.31		0.03
			569	0.000	10.800	5.000	CR1	70.0	Intermedio	$\tau_{\text{y}z}$	0.04	0.50	0.08
			25750	2.160	10.800	4.000	CR1	70.0	Intermedio	$\tau_{\text{x}z}$	0.00	1.92	0.00
			1280	2.700	10.800	5.000	CR1	80.0	Inferior	$\tau_{\text{x}y}$	-0.16	1.92	0.08
			569	0.000	10.800	5.000	CR1	100.0	Inferior	$\sigma_{\text{b},0}$	0.22	11.52	0.02
			1279	2.700	10.800	4.000	CR1	90.0	Intermedio	$\sigma_{\text{lc},0}$	-1.01	11.52	0.09
			1279	2.700	10.800	4.000	CR1	80.0	Superior	$\sigma_{\text{b}+\text{lc},0}$	-1.01		0.09
			25750	2.160	10.800	4.000	CR1	90.0	Intermedio	$\tau_{\text{y}z}$	0.00	0.50	0.01
			569	0.000	10.800	5.000	CR1	80.0	Superior	$\tau_{\text{x}z}$	0.04	1.92	0.02
			1280	2.700	10.800	5.000	CR1	100.0	Inferior	$\tau_{\text{x}y}$	0.16	1.92	0.08
			12662	0.540	10.800	5.000	CR1	100.0	Superior	$\sigma_{\text{b},0}$	0.01	11.52	0.00
			12656	1.620	10.800	5.000	CR1	120.0	Intermedio	$\sigma_{\text{lc},0}$	0.31	11.52	0.03
			12656	1.620	10.800	5.000	CR1	100.0	Superior	$\sigma_{\text{b}+\text{lc},0}$	0.31		0.03
			25751	2.700	10.800	4.500	CR1	120.0	Intermedio	$\tau_{\text{y}z}$	0.00	0.50	0.00
			25750	2.160	10.800	4.000	CR1	100.0	Superior	$\tau_{\text{x}z}$	0.00	1.92	0.00
			1280	2.700	10.800	5.000	CR1	140.0	Inferior	$\tau_{\text{x}y}$	-0.16	1.92	0.09
199	1	5	25781	0.540	13.500	4.000	CR1	0.0	Superior	$\sigma_{\text{b},0}$	0.00	11.52	0.00
			1294	0.000	13.500	4.000	CR1	20.0	Intermedio	$\sigma_{\text{lc},0}$	-0.27	11.52	0.02
			1294	0.000	13.500	4.000	CR1	0.0	Superior	$\sigma_{\text{b}+\text{lc},0}$	-0.27		0.02
			25782	0.000	13.500	4.500	CR1	20.0	Intermedio	$\tau_{\text{y}z}$	0.00	0.50	0.00
			1294	0.000	13.500	4.000	CR1	40.0	Inferior	$\tau_{\text{x}z}$	0.01	1.92	0.00
			571	2.700	13.500	5.000	CR1	0.0	Superior	$\tau_{\text{x}y}$	0.16	1.92	0.09
			1295	0.000	13.500	5.000	CR1	40.0	Superior	$\sigma_{\text{b},0}$	-0.15	11.52	0.01
			1293	2.700	13.500	4.000	CR1	50.0	Intermedio	$\sigma_{\text{lc},0}$	-1.31	11.52	0.11
			1293	2.700	13.500	4.000	CR1	40.0	Superior	$\sigma_{\text{b}+\text{lc},0}$	-1.31		0.11
			1294	0.000	13.500	4.000	CR1	50.0	Intermedio	$\tau_{\text{y}z}$	-0.01	0.50	0.01
			1295	0.000	13.500	5.000	CR1	60.0	Inferior	$\tau_{\text{x}z}$	-0.03	1.92	0.01
			571	2.700	13.500	5.000	CR1	40.0	Superior	$\tau_{\text{x}y}$	-0.16	1.92	0.09



Proyecto: TFM
TFM

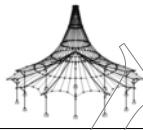
Modelo: TFM_FINAL_v02

Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

2.3 RAZÓN MÁX. DE TENSIONES POR COMPOSICIÓN

Comp. núm.	Superfici núm.	Capa núm.	Punto núm.	Coordenadas del punto [			Carga	Capa		Tensiones [N/mm ²]			Razón [-]
				X	Y	Z		z [mm]	Lado	Símbolo	Existente	Límite	
200	3		25781	0.540	13.500	4.000	CR1	80.0	Inferior	$\sigma_{b,0}$	0.00	11.52	0.00
			1294	0.000	13.500	4.000	CR1	70.0	Intermedio	$\sigma_{b,c,0}$	-0.28	11.52	0.02
			1294	0.000	13.500	4.000	CR1	60.0	Superior	$\sigma_{b+tc,0}$	-0.28		0.02
			1295	0.000	13.500	5.000	CR1	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.05
			1294	0.000	13.500	4.000	CR1	70.0	Intermedio	τ_{xz}	0.01	1.92	0.00
			571	2.700	13.500	5.000	CR1	60.0	Superior	τ_{xy}	0.16	1.92	0.08
		4	1295	0.000	13.500	5.000	CR1	80.0	Superior	$\sigma_{b,0}$	-0.15	11.52	0.01
			1293	2.700	13.500	4.000	CR1	90.0	Intermedio	$\sigma_{b,c,0}$	-1.30	11.52	0.11
			1293	2.700	13.500	4.000	CR1	80.0	Superior	$\sigma_{b+tc,0}$	-1.30		0.11
			1294	0.000	13.500	4.000	CR1	90.0	Intermedio	τ_{yz}	-0.01	0.50	0.01
			1295	0.000	13.500	5.000	CR1	80.0	Superior	τ_{xz}	-0.03	1.92	0.01
	5		571	2.700	13.500	5.000	CR1	80.0	Superior	τ_{xy}	-0.16	1.92	0.08
			25781	0.540	13.500	4.000	CR1	100.0	Superior	$\sigma_{b,0}$	0.00	11.52	0.00
			1294	0.000	13.500	4.000	CR1	120.0	Intermedio	$\sigma_{b,c,0}$	-0.28	11.52	0.02
			1294	0.000	13.500	4.000	CR1	100.0	Superior	$\sigma_{b+tc,0}$	-0.28		0.02
			25782	0.000	13.500	4.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
		1	1294	0.000	13.500	4.000	CR1	100.0	Superior	τ_{xz}	0.01	1.92	0.00
			571	2.700	13.500	5.000	CR1	100.0	Superior	τ_{xy}	0.16	1.92	0.08
			26226	23.760	0.000	4.000	CR1	40.0	Inferior	$\sigma_{b,0}$	0.03	11.52	0.00
			12700	21.845	0.000	5.000	CR1	20.0	Intermedio	$\sigma_{b,c,0}$	2.29	11.52	0.20
			12700	21.845	0.000	5.000	CR1	0.0	Superior	$\sigma_{b+tc,0}$	2.29		0.20
201	2	1	26232	18.900	0.000	4.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			7873	24.300	0.000	4.500	CR1	40.0	Inferior	τ_{xz}	-0.02	1.92	0.01
			591	24.300	0.000	5.000	CR1	40.0	Inferior	τ_{xy}	-0.83	1.92	0.43
			1501	18.900	0.000	5.000	CR1	60.0	Inferior	$\sigma_{b,0}$	-0.38	11.52	0.03
			1501	18.900	0.000	5.000	CR1	50.0	Intermedio	$\sigma_{b,c,0}$	-2.31	11.52	0.20
			1501	18.900	0.000	5.000	CR1	40.0	Superior	$\sigma_{b+tc,0}$	-1.93		0.23
			7873	24.300	0.000	4.500	CR1	50.0	Intermedio	τ_{yz}	0.02	0.50	0.03
			1501	18.900	0.000	5.000	CR1	60.0	Inferior	τ_{xz}	-0.03	1.92	0.02
			591	24.300	0.000	5.000	CR1	60.0	Inferior	τ_{xy}	0.88	1.92	0.46
		3	26226	23.760	0.000	4.000	CR1	80.0	Inferior	$\sigma_{b,0}$	0.01	11.52	0.00
			12700	21.845	0.000	5.000	CR1	70.0	Intermedio	$\sigma_{b,c,0}$	2.32	11.52	0.20
			12700	21.845	0.000	5.000	CR1	60.0	Superior	$\sigma_{b+tc,0}$	2.31		0.20
			1501	18.900	0.000	5.000	CR1	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.06
			7873	24.300	0.000	4.500	CR1	70.0	Intermedio	τ_{xz}	-0.02	1.92	0.01
			591	24.300	0.000	5.000	CR1	80.0	Inferior	τ_{xy}	-0.93	1.92	0.48
		4	1501	18.900	0.000	5.000	CR1	80.0	Superior	$\sigma_{b,0}$	0.38	11.52	0.03
			1501	18.900	0.000	5.000	CR1	90.0	Intermedio	$\sigma_{b,c,0}$	-3.85	11.52	0.33
			1501	18.900	0.000	5.000	CR1	80.0	Superior	$\sigma_{b+tc,0}$	-3.46		0.37
			7873	24.300	0.000	4.500	CR1	90.0	Intermedio	τ_{yz}	0.02	0.50	0.03
			1501	18.900	0.000	5.000	CR1	80.0	Superior	τ_{xz}	-0.03	1.92	0.02
			591	24.300	0.000	5.000	CR1	100.0	Inferior	τ_{xy}	0.98	1.92	0.51
	5		26226	23.760	0.000	4.000	CR1	100.0	Superior	$\sigma_{b,0}$	-0.03	11.52	0.00
			12700	21.845	0.000	5.000	CR1	120.0	Intermedio	$\sigma_{b,c,0}$	2.34	11.52	0.20
			12700	21.845	0.000	5.000	CR1	100.0	Superior	$\sigma_{b+tc,0}$	2.33		0.20
			26232	18.900	0.000	4.500	CR1	120.0	Superior	τ_{yz}	0.00	0.50	0.00
			7873	24.300	0.000	4.500	CR1	100.0	Superior	τ_{xz}	-0.02	1.92	0.01
			591	24.300	0.000	5.000	CR1	140.0	Inferior	τ_{xy}	-1.08	1.92	0.56
		1	26207	31.860	0.000	4.000	CR1	40.0	Inferior	$\sigma_{b,0}$	0.03	11.52	0.00
			12729	29.455	0.000	5.000	CR1	20.0	Intermedio	$\sigma_{b,c,0}$	2.19	11.52	0.19
			12729	29.455	0.000	5.000	CR1	0.0	Superior	$\sigma_{b+tc,0}$	2.18		0.19
			26213	27.000	0.000	4.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			26209	27.900	0.000	4.000	CR1	40.0	Inferior	τ_{xz}	0.02	1.92	0.01
			1492	27.000	0.000	5.000	CR1	40.0	Inferior	τ_{xy}	0.82	1.92	0.43
		2	1492	27.000	0.000	5.000	CR1	40.0	Superior	$\sigma_{b,0}$	0.39	11.52	0.03
			593	32.400	0.000	5.000	CR1	50.0	Intermedio	$\sigma_{b,c,0}$	-2.32	11.52	0.20
			593	32.400	0.000	5.000	CR1	40.0	Superior	$\sigma_{b+tc,0}$	-1.96		0.23
			26209	27.900	0.000	4.000	CR1	50.0	Intermedio	τ_{yz}	-0.02	0.50	0.03
			593	32.400	0.000	5.000	CR1	60.0	Inferior	τ_{xz}	-0.03	1.92	0.02
			1492	27.000	0.000	5.000	CR1	60.0	Inferior	τ_{xy}	-0.87	1.92	0.45
	3		26207	31.860	0.000	4.000	CR1	80.0	Inferior	$\sigma_{b,0}$	0.01	11.52	0.00
			12729	29.455	0.000	5.000	CR1	70.0	Intermedio	$\sigma_{b,c,0}$	2.22	11.52	0.19
			12729	29.455	0.000	5.000	CR1	60.0	Superior	$\sigma_{b+tc,0}$	2.21		0.19
			593	32.400	0.000	5.000	CR1	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.06
			26209	27.900	0.000	4.000	CR1	70.0	Intermedio	τ_{xz}	0.02	1.92	0.01
		4	1492	27.000	0.000	5.000	CR1	80.0	Inferior	τ_{xy}	0.92	1.92	0.48
			1492	27.000	0.000	5.000	CR1	100.0	Inferior	$\sigma_{b,0}$	-0.39	11.52	0.03
			1492	27.000	0.000	5.000	CR1	90.0	Intermedio	$\sigma_{b,c,0}$	-3.81	11.52	0.33
			1492	27.000	0.000	5.000	CR1	80.0	Superior	$\sigma_{b+tc,0}$	-3.42		0.36
			26209	27.900	0.000	4.000	CR1	90.0	Intermedio	τ_{yz}	-0.02	0.50	0.03
202	1		593	32.400	0.000	5.000	CR1	80.0	Superior	τ_{xz}	-0.03	1.92	0.02
			1492	27.000	0.000	5.000	CR1	100.0	Inferior	τ_{xy}	-0.97	1.92	0.51
			26207	31.860	0.000	4.000	CR1	100.0	Superior	$\sigma_{b,0}$	-0.03	11.52	0.00
			12729	29.455	0.000	5.000	CR1	120.0	Intermedio	$\sigma_{b,c,0}$	2.25	11.52	0.19
			12729	29.455	0.000	5.000	CR1	100.0	Superior	$\sigma_{b+tc,0}$	2.24		0.20
			26213	27.000	0.000	4.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			26209	27.900	0.000	4.000	CR1	100.0	Superior	τ_{xz}	0.02	1.92	0.01
			1492	27.000	0.000	5.000	CR1	140.0	Inferior	τ_{xy}	1.07	1.92	0.56
202	1		26186	39.960	0.000	4.000	CR1	0.0	Superior	$\sigma_{b,0}$	-0.03	11.52	0.00
			12760	38.045	0.000	5.000	CR1	20.0	Intermedio	$\sigma_{b,c,0}$	2.21	11.52	0.19
			12760	38.045	0.000	5.000	CR1	0.0	Superior	$\sigma_{b+tc,0}$	2.20		0.19
			26192	35.100	0.000	4.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
202	1		7977	40.500	0.000	4.500	CR1	40.0	Inferior	τ_{xz}	-0.02	1.92	0.01



Proyecto: TFM
TFM

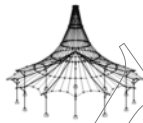
Modelo: TFM_FINAL_v02

Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

2.3 RAZÓN MÁX. DE TENSIONES POR COMPOSICIÓN

Comp. núm.	Superf. núm.	Capa núm.	Punto núm.	Coordenadas del punto [			Carga	Capa		Tensiones [N/mm ²]			Razón [-]
				X	Y	Z		z [mm]	Lado	Símbolo	Existente	Límite	
203		2	595	40.500	0.000	5.000	CR1	40.0	Inferior	τ_{xy}	-0.82	1.92	0.43
			1483	35.100	0.000	5.000	CR1	40.0	Superior	$\sigma_{b,0}$	0.38	11.52	0.03
			1483	35.100	0.000	5.000	CR1	50.0	Intermedio	$\sigma_{b+tlc,0}$	-2.41	11.52	0.21
			1483	35.100	0.000	5.000	CR1	40.0	Superior	$\sigma_{b+tlc,0}$	-2.04		0.24
			7977	40.500	0.000	4.500	CR1	50.0	Intermedio	τ_{yz}	0.02	0.50	0.03
			1483	35.100	0.000	5.000	CR1	60.0	Inferior	τ_{xz}	-0.03	1.92	0.02
			595	40.500	0.000	5.000	CR1	60.0	Inferior	τ_{xy}	0.87	1.92	0.45
			26186	39.960	0.000	4.000	CR1	60.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			12760	38.045	0.000	5.000	CR1	70.0	Intermedio	$\sigma_{b,0}$	2.23	11.52	0.19
			12760	38.045	0.000	5.000	CR1	60.0	Superior	$\sigma_{b+tlc,0}$	2.23		0.19
			1483	35.100	0.000	5.000	CR1	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.06
			7977	40.500	0.000	4.500	CR1	70.0	Intermedio	τ_{xz}	-0.02	1.92	0.01
			595	40.500	0.000	5.000	CR1	80.0	Inferior	τ_{xy}	-0.92	1.92	0.48
			1483	35.100	0.000	5.000	CR1	80.0	Superior	$\sigma_{b,0}$	0.38	11.52	0.03
			1483	35.100	0.000	5.000	CR1	90.0	Intermedio	$\sigma_{b,0}$	-3.93	11.52	0.34
			1483	35.100	0.000	5.000	CR1	80.0	Superior	$\sigma_{b+tlc,0}$	-3.55		0.37
			7977	40.500	0.000	4.500	CR1	90.0	Intermedio	τ_{yz}	0.02	0.50	0.03
			1483	35.100	0.000	5.000	CR1	80.0	Superior	τ_{xz}	-0.03	1.92	0.02
			595	40.500	0.000	5.000	CR1	100.0	Inferior	τ_{xy}	0.97	1.92	0.51
			26186	39.960	0.000	4.000	CR1	140.0	Inferior	$\sigma_{b,0}$	0.03	11.52	0.00
			12760	38.045	0.000	5.000	CR1	120.0	Intermedio	$\sigma_{b,0}$	2.26	11.52	0.20
			12760	38.045	0.000	5.000	CR1	100.0	Superior	$\sigma_{b+tlc,0}$	2.25		0.20
			26192	35.100	0.000	4.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			7977	40.500	0.000	4.500	CR1	100.0	Superior	τ_{xz}	-0.02	1.92	0.01
			595	40.500	0.000	5.000	CR1	140.0	Inferior	τ_{xy}	-1.07	1.92	0.56
	1		26167	48.060	0.000	4.000	CR1	0.0	Superior	$\sigma_{b,0}$	-0.03	11.52	0.00
			12790	46.145	0.000	5.000	CR1	20.0	Intermedio	$\sigma_{b,0}$	2.30	11.52	0.20
			12790	46.145	0.000	5.000	CR1	0.0	Superior	$\sigma_{b+tlc,0}$	2.29		0.20
			26173	43.200	0.000	4.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			8025	48.600	0.000	4.500	CR1	40.0	Inferior	τ_{xz}	-0.02	1.92	0.01
			1474	43.200	0.000	5.000	CR1	40.0	Inferior	τ_{xy}	0.82	1.92	0.43
		2	1474	43.200	0.000	5.000	CR1	40.0	Superior	$\sigma_{b,0}$	0.38	11.52	0.03
			1474	43.200	0.000	5.000	CR1	50.0	Intermedio	$\sigma_{b,0}$	-2.32	11.52	0.20
			1474	43.200	0.000	5.000	CR1	40.0	Superior	$\sigma_{b+tlc,0}$	-1.94		0.24
			8025	48.600	0.000	4.500	CR1	50.0	Intermedio	τ_{yz}	0.02	0.50	0.03
			1474	43.200	0.000	5.000	CR1	60.0	Inferior	τ_{xz}	-0.03	1.92	0.02
			1474	43.200	0.000	5.000	CR1	60.0	Inferior	τ_{xy}	-0.87	1.92	0.46
		3	26167	48.060	0.000	4.000	CR1	60.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			12790	46.145	0.000	5.000	CR1	70.0	Intermedio	$\sigma_{b,0}$	2.32	11.52	0.20
			12790	46.145	0.000	5.000	CR1	60.0	Superior	$\sigma_{b+tlc,0}$	2.32		0.20
			1474	43.200	0.000	5.000	CR1	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.06
			8025	48.600	0.000	4.500	CR1	70.0	Intermedio	τ_{xz}	-0.02	1.92	0.01
			1474	43.200	0.000	5.000	CR1	80.0	Inferior	τ_{xy}	0.92	1.92	0.48
		4	1474	43.200	0.000	5.000	CR1	80.0	Superior	$\sigma_{b,0}$	0.38	11.52	0.03
			1474	43.200	0.000	5.000	CR1	90.0	Intermedio	$\sigma_{b,0}$	-3.86	11.52	0.34
			1474	43.200	0.000	5.000	CR1	80.0	Superior	$\sigma_{b+tlc,0}$	-3.48		0.37
			8025	48.600	0.000	4.500	CR1	90.0	Intermedio	τ_{yz}	0.02	0.50	0.03
			1474	43.200	0.000	5.000	CR1	80.0	Superior	τ_{xz}	-0.03	1.92	0.02
			1474	43.200	0.000	5.000	CR1	100.0	Inferior	τ_{xy}	-0.97	1.92	0.51
		5	26167	48.060	0.000	4.000	CR1	100.0	Superior	$\sigma_{b,0}$	-0.03	11.52	0.00
			12790	46.145	0.000	5.000	CR1	120.0	Intermedio	$\sigma_{b,0}$	2.34	11.52	0.20
			12790	46.145	0.000	5.000	CR1	100.0	Superior	$\sigma_{b+tlc,0}$	2.33		0.20
			26173	43.200	0.000	4.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			8025	48.600	0.000	4.500	CR1	100.0	Superior	τ_{xz}	-0.02	1.92	0.01
			1474	43.200	0.000	5.000	CR1	140.0	Inferior	τ_{xy}	1.07	1.92	0.56
204		1	1529	4.050	0.000	4.000	CR1	0.0	Superior	$\sigma_{b,0}$	-0.03	11.52	0.00
			12808	2.025	0.000	5.000	CR1	20.0	Intermedio	$\sigma_{b,0}$	0.63	11.52	0.05
			12808	2.025	0.000	5.000	CR1	0.0	Superior	$\sigma_{b+tlc,0}$	0.63		0.06
			26279	0.000	0.000	4.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			12795	4.050	0.000	4.500	CR1	40.0	Inferior	τ_{xz}	-0.01	1.92	0.01
			12795	4.050	0.000	4.500	CR1	0.0	Superior	τ_{xy}	-0.21	1.92	0.11
		2	599	4.050	0.000	5.000	CR1	40.0	Superior	$\sigma_{b,0}$	0.35	11.52	0.03
			1530	0.000	0.000	5.000	CR1	50.0	Intermedio	$\sigma_{b,0}$	-0.40	11.52	0.03
			1530	0.000	0.000	5.000	CR1	40.0	Superior	$\sigma_{b+tlc,0}$	-0.20		0.05
			12795	4.050	0.000	4.500	CR1	60.0	Inferior	τ_{yz}	0.01	0.50	0.03
			1529	4.050	0.000	4.000	CR1	60.0	Inferior	τ_{xz}	-0.05	1.92	0.03
			12795	4.050	0.000	4.500	CR1	40.0	Superior	τ_{xy}	0.21	1.92	0.11
		3	1529	4.050	0.000	4.000	CR1	60.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			12808	2.025	0.000	5.000	CR1	70.0	Intermedio	$\sigma_{b,0}$	0.64	11.52	0.06
			12808	2.025	0.000	5.000	CR1	60.0	Superior	$\sigma_{b+tlc,0}$	0.64		0.06
			1529	4.050	0.000	4.000	CR1	70.0	Intermedio	τ_{yz}	-0.05	0.50	0.10
			12795	4.050	0.000	4.500	CR1	70.0	Intermedio	τ_{xz}	-0.01	1.92	0.01
			12795	4.050	0.000	4.500	CR1	60.0	Superior	τ_{xy}	-0.21	1.92	0.11
		4	599	4.050	0.000	5.000	CR1	80.0	Superior	$\sigma_{b,0}$	0.35	11.52	0.03
			599	4.050	0.000	5.000	CR1	90.0	Intermedio	$\sigma_{b,0}$	-1.27	11.52	0.11
			599	4.050	0.000	5.000	CR1	80.0	Superior	$\sigma_{b+tlc,0}$	-0.92		0.14
			12795	4.050	0.000	4.500	CR1	80.0	Superior	τ_{yz}	0.01	0.50	0.03
			1529	4.050	0.000	4.000	CR1	80.0	Superior	τ_{xz}	-0.05	1.92	0.03
			599	4.050	0.000	5.000	CR1	100.0	Inferior	τ_{xy}	0.25	1.92	0.13
		5	1529	4.050	0.000	4.000	CR1	100.0	Superior	$\sigma_{b,0}$	-0.03	11.52	0.00
			12808	2.025	0.000	5.000	CR1	120.0	Intermedio	$\sigma_{b,0}$	0.64	11.52	0.06
			12808	2.025	0.000	5.000	CR1	100.0	Superior	$\sigma_{b+tlc,0}$	0.64		0.06
			26279	0.000	0.000	4.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00



Proyecto: TFM
TFM

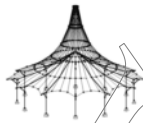
Modelo: TFM_FINAL_v02

Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

2.3 RAZÓN MÁX. DE TENSIONES POR COMPOSICIÓN

Comp. núm.	Superf. núm.	Capa núm.	Punto núm.	Coordenadas del punto [			Carga	Capa		Tensiones [N/mm ²]			Razón [-]
				X	Y	Z		z [mm]	Lado	Símbolo	Existente	Límite	
205	1		12795	4.050	0.000	4.500	CR1	100.0	Superior	τ_{xz}	-0.01	1.92	0.01
			599	4.050	0.000	5.000	CR1	140.0	Inferior	τ_{xy}	-0.32	1.92	0.17
			1520	6.750	0.000	5.000	CR1	0.0	Superior	$\sigma_{b,0}$	-0.02	11.52	0.00
			1519	9.450	0.000	4.000	CR1	20.0	Intermedio	$\sigma_{bc,0}$	-0.29	11.52	0.02
			1519	9.450	0.000	4.000	CR1	0.0	Superior	$\sigma_{b+bc,0}$	-0.29		0.02
		2	26262	6.750	0.000	4.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			26262	6.750	0.000	4.500	CR1	40.0	Inferior	τ_{xz}	0.02	1.92	0.01
			12818	9.450	0.000	4.500	CR1	40.0	Inferior	τ_{xy}	-0.13	1.92	0.07
			1520	6.750	0.000	5.000	CR1	60.0	Inferior	$\sigma_{b,0}$	-0.35	11.52	0.03
			1519	9.450	0.000	4.000	CR1	50.0	Intermedio	$\sigma_{bc,0}$	-0.62	11.52	0.05
	3		1519	9.450	0.000	4.000	CR1	40.0	Superior	$\sigma_{b+bc,0}$	-0.61		0.05
			26262	6.750	0.000	4.500	CR1	50.0	Intermedio	τ_{yz}	-0.02	0.50	0.03
			601	9.450	0.000	5.000	CR1	60.0	Inferior	τ_{xz}	-0.03	1.92	0.02
			1520	6.750	0.000	5.000	CR1	60.0	Inferior	τ_{xy}	-0.17	1.92	0.09
			1520	6.750	0.000	5.000	CR1	60.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
		4	1519	9.450	0.000	4.000	CR1	70.0	Intermedio	$\sigma_{bc,0}$	-0.29	11.52	0.03
			1519	9.450	0.000	4.000	CR1	60.0	Superior	$\sigma_{b+bc,0}$	-0.29		0.03
			601	9.450	0.000	5.000	CR1	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.06
			26262	6.750	0.000	4.500	CR1	70.0	Intermedio	τ_{xz}	0.02	1.92	0.01
			1520	6.750	0.000	5.000	CR1	80.0	Inferior	τ_{xy}	0.22	1.92	0.11
	5		1520	6.750	0.000	5.000	CR1	80.0	Superior	$\sigma_{b,0}$	0.35	11.52	0.03
			1520	6.750	0.000	5.000	CR1	90.0	Intermedio	$\sigma_{bc,0}$	-1.28	11.52	0.11
			1520	6.750	0.000	5.000	CR1	80.0	Superior	$\sigma_{b+bc,0}$	-0.93		0.14
			26262	6.750	0.000	4.500	CR1	90.0	Intermedio	τ_{yz}	-0.02	0.50	0.03
			601	9.450	0.000	5.000	CR1	80.0	Superior	τ_{xz}	-0.03	1.92	0.02
		6	1520	6.750	0.000	5.000	CR1	100.0	Inferior	τ_{xy}	-0.27	1.92	0.14
			1520	6.750	0.000	5.000	CR1	140.0	Inferior	$\sigma_{b,0}$	0.02	11.52	0.00
			1519	9.450	0.000	4.000	CR1	120.0	Intermedio	$\sigma_{bc,0}$	-0.29	11.52	0.03
			1519	9.450	0.000	4.000	CR1	100.0	Superior	$\sigma_{b+bc,0}$	-0.29		0.03
			26262	6.750	0.000	4.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
206	1		26262	6.750	0.000	4.500	CR1	100.0	Superior	τ_{xz}	0.02	1.92	0.01
			1520	6.750	0.000	5.000	CR1	140.0	Inferior	τ_{xy}	0.37	1.92	0.19
			589	16.200	0.000	5.000	CR1	40.0	Inferior	$\sigma_{b,0}$	0.02	11.52	0.00
		2	12853	14.175	0.000	5.000	CR1	20.0	Intermedio	$\sigma_{bc,0}$	1.33	11.52	0.12
			12853	14.175	0.000	5.000	CR1	0.0	Superior	$\sigma_{b+bc,0}$	1.32		0.12
			26248	12.150	0.000	4.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			26248	12.150	0.000	4.500	CR1	40.0	Inferior	τ_{xz}	0.02	1.92	0.01
			589	16.200	0.000	5.000	CR1	40.0	Inferior	τ_{xy}	-0.55	1.92	0.29
	2		1510	12.150	0.000	5.000	CR1	60.0	Inferior	$\sigma_{b,0}$	-0.37	11.52	0.03
			1510	12.150	0.000	5.000	CR1	50.0	Intermedio	$\sigma_{bc,0}$	-1.28	11.52	0.11
			1510	12.150	0.000	5.000	CR1	40.0	Superior	$\sigma_{b+bc,0}$	-0.92		0.14
			26248	12.150	0.000	4.500	CR1	50.0	Intermedio	τ_{yz}	-0.02	0.50	0.03
			1510	12.150	0.000	5.000	CR1	60.0	Inferior	τ_{xz}	-0.03	1.92	0.02
		3	589	16.200	0.000	5.000	CR1	60.0	Inferior	τ_{xy}	0.60	1.92	0.31
			589	16.200	0.000	5.000	CR1	60.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			12853	14.175	0.000	5.000	CR1	70.0	Intermedio	$\sigma_{bc,0}$	1.35	11.52	0.12
			12853	14.175	0.000	5.000	CR1	60.0	Superior	$\sigma_{b+bc,0}$	1.35		0.12
			1510	12.150	0.000	5.000	CR1	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.06
	3		26248	12.150	0.000	4.500	CR1	70.0	Intermedio	τ_{xz}	0.02	1.92	0.01
			589	16.200	0.000	5.000	CR1	80.0	Inferior	τ_{xy}	-0.65	1.92	0.34
			1510	12.150	0.000	5.000	CR1	80.0	Superior	$\sigma_{b,0}$	0.37	11.52	0.03
			1510	12.150	0.000	5.000	CR1	90.0	Intermedio	$\sigma_{bc,0}$	-2.75	11.52	0.24
			1510	12.150	0.000	5.000	CR1	80.0	Superior	$\sigma_{b+bc,0}$	-2.38		0.27
		4	26248	12.150	0.000	4.500	CR1	90.0	Intermedio	τ_{yz}	-0.02	0.50	0.03
			1510	12.150	0.000	5.000	CR1	80.0	Superior	τ_{xz}	-0.03	1.92	0.02
			589	16.200	0.000	5.000	CR1	100.0	Inferior	τ_{xy}	0.70	1.92	0.36
			589	16.200	0.000	5.000	CR1	140.0	Inferior	$\sigma_{b,0}$	0.02	11.52	0.00
			12853	14.175	0.000	5.000	CR1	120.0	Intermedio	$\sigma_{bc,0}$	1.38	11.52	0.12
207	1		12853	14.175	0.000	5.000	CR1	100.0	Superior	$\sigma_{b+bc,0}$	1.37		0.12
			26248	12.150	0.000	4.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			26248	12.150	0.000	4.500	CR1	100.0	Superior	τ_{xz}	0.02	1.92	0.01
			589	16.200	0.000	5.000	CR1	140.0	Inferior	τ_{xy}	-0.80	1.92	0.41
		2	26150	51.840	0.000	4.000	CR1	0.0	Superior	$\sigma_{b,0}$	-0.02	11.52	0.00
			12875	53.325	0.000	5.000	CR1	20.0	Intermedio	$\sigma_{bc,0}$	1.35	11.52	0.12
			12875	53.325	0.000	5.000	CR1	0.0	Superior	$\sigma_{b+bc,0}$	1.34		0.12
			26154	51.300	0.000	4.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			12871	55.350	0.000	4.500	CR1	40.0	Inferior	τ_{xz}	-0.02	1.92	0.01
			1465	51.300	0.000	5.000	CR1	40.0	Inferior	τ_{xy}	0.56	1.92	0.29
	2		603	55.350	0.000	5.000	CR1	40.0	Superior	$\sigma_{b,0}$	0.37	11.52	0.03
			603	55.350	0.000	5.000	CR1	50.0	Intermedio	$\sigma_{bc,0}$	-1.20	11.52	0.10
			603	55.350	0.000	5.000	CR1	40.0	Superior	$\sigma_{b+bc,0}$	-0.83		0.14
			12871	55.350	0.000	4.500	CR1	50.0	Intermedio	τ_{yz}	0.02	0.50	0.03
			603	55.350	0.000	5.000	CR1	60.0	Inferior	τ_{xz}	-0.03	1.92	0.02
		3	1465	51.300	0.000	5.000	CR1	60.0	Inferior	τ_{xy}	-0.61	1.92	0.32
			26150	51.840	0.000	4.000	CR1	60.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			12875	53.325	0.000	5.000	CR1	70.0	Intermedio	$\sigma_{bc,0}$	1.37	11.52	0.12
			12875	53.325	0.000	5.000	CR1	60.0	Superior	$\sigma_{b+bc,0}$	1.37		0.12
			603	55.350	0.000	5.000	CR1	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.06
			12871	55.350	0.000	4.500	CR1	70.0	Intermedio	τ_{xz}	-0.02	1.92	0.01
208	4		1465	51.300	0.000	5.000	CR1	80.0	Inferior	τ_{xy}	0.66	1.92	0.34
			603	55.350	0.000	5.000	CR1	80.0	Superior	$\sigma_{b,0}$	0.37	11.52	0.03
			603	55.350	0.000	5.000	CR1	90.0	Intermedio	$\sigma_{bc,0}$	-2.68	11.52	0.23
			603	55.350	0.000	5.000	CR1	80.0	Superior	$\sigma_{b+bc,0}$	-2.31		0.26



Proyecto: TFM
TFM

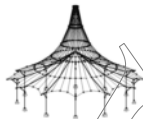
Modelo: TFM_FINAL_v02

Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

2.3 RAZÓN MÁX. DE TENSIONES POR COMPOSICIÓN

EVALUACIÓN POR CAPA DE LOS REFORZOS POR CEMENTACIÓN														
Comp. núm.	Superf. núm.	Capa núm.	Punto núm.	Coordenadas del punto [			Carga	Capa		Tensiones [N/mm ²]			Razón
				X	Y	Z		z [mm]	Lado	Símbolo	Existente	Límite	[-]	
208		5	12871	55.350	0.000	4.500	CR1	90.0	Intermedio	Ty'z'	0.02	0.50	0.03	
			603	55.350	0.000	5.000	CR1	80.0	Superior	Tx'z'	-0.03	1.92	0.02	
			1465	51.300	0.000	5.000	CR1	100.0	Inferior	Tx'y'	-0.70	1.92	0.37	
			26150	51.840	0.000	4.000	CR1	100.0	Superior	σ _{b,0}	-0.02	11.52	0.00	
			12875	53.325	0.000	5.000	CR1	120.0	Intermedio	σ _{bc,0}	1.40	11.52	0.12	
			12875	53.325	0.000	5.000	CR1	100.0	Superior	σ _{b+bc,0}	1.39		0.12	
			26154	51.300	0.000	4.500	CR1	120.0	Intermedio	Ty'z'	0.00	0.50	0.00	
			12871	55.350	0.000	4.500	CR1	100.0	Superior	Tx'z'	-0.02	1.92	0.01	
			1465	51.300	0.000	5.000	CR1	140.0	Inferior	Tx'y'	0.80	1.92	0.42	
			1452	58.050	0.000	4.000	CR1	0.0	Superior	σ _{b,0}	-0.03	11.52	0.00	
			12891	60.075	0.000	5.000	CR1	20.0	Intermedio	σ _{bc,0}	0.65	11.52	0.06	
			12891	60.075	0.000	5.000	CR1	0.0	Superior	σ _{b+bc,0}	0.65		0.06	
			26138	58.050	0.000	4.500	CR1	20.0	Intermedio	Ty'z'	0.00	0.50	0.00	
			26138	58.050	0.000	4.500	CR1	40.0	Inferior	Tx'z'	0.01	1.92	0.01	
			26131	58.556	0.000	4.000	CR1	0.0	Superior	Tx'y'	0.22	1.92	0.11	
			1454	58.050	0.000	5.000	CR1	40.0	Superior	σ _{b,0}	0.35	11.52	0.03	
			1452	58.050	0.000	4.000	CR1	50.0	Intermedio	σ _{bc,0}	-0.56	11.52	0.05	
			1452	58.050	0.000	4.000	CR1	40.0	Superior	σ _{b+bc,0}	-0.56		0.05	
			26138	58.050	0.000	4.500	CR1	50.0	Intermedio	Ty'z'	-0.01	0.50	0.03	
			1452	58.050	0.000	4.000	CR1	60.0	Inferior	Tx'z'	-0.05	1.92	0.03	
			26138	58.050	0.000	4.500	CR1	40.0	Superior	Tx'y'	-0.22	1.92	0.11	
			1452	58.050	0.000	4.000	CR1	60.0	Superior	σ _{b,0}	-0.01	11.52	0.00	
			12891	60.075	0.000	5.000	CR1	70.0	Intermedio	σ _{bc,0}	0.66	11.52	0.06	
			12891	60.075	0.000	5.000	CR1	60.0	Superior	σ _{b+bc,0}	0.66		0.06	
			1452	58.050	0.000	4.000	CR1	70.0	Intermedio	Ty'z'	-0.05	0.50	0.10	
			26138	58.050	0.000	4.500	CR1	70.0	Intermedio	Tx'z'	0.01	1.92	0.01	
			1454	58.050	0.000	5.000	CR1	80.0	Inferior	Tx'y'	0.22	1.92	0.12	
			1454	58.050	0.000	5.000	CR1	100.0	Inferior	σ _{b,0}	-0.35	11.52	0.03	
			1454	58.050	0.000	5.000	CR1	90.0	Intermedio	σ _{bc,0}	-1.26	11.52	0.11	
			1454	58.050	0.000	5.000	CR1	80.0	Superior	σ _{b+bc,0}	-0.91		0.14	
			26138	58.050	0.000	4.500	CR1	90.0	Intermedio	Ty'z'	-0.01	0.50	0.03	
			1452	58.050	0.000	4.000	CR1	80.0	Superior	Tx'z'	-0.05	1.92	0.03	
			1454	58.050	0.000	5.000	CR1	100.0	Inferior	Tx'y'	-0.26	1.92	0.14	
			1452	58.050	0.000	4.000	CR1	100.0	Superior	σ _{b,0}	-0.03	11.52	0.00	
			12891	60.075	0.000	5.000	CR1	120.0	Intermedio	σ _{bc,0}	0.66	11.52	0.06	
			12891	60.075	0.000	5.000	CR1	100.0	Superior	σ _{b+bc,0}	0.66		0.06	
			26138	58.050	0.000	4.500	CR1	120.0	Intermedio	Ty'z'	0.00	0.50	0.00	
			26138	58.050	0.000	4.500	CR1	100.0	Superior	Tx'z'	0.01	1.92	0.01	
			1454	58.050	0.000	5.000	CR1	140.0	Inferior	Tx'y'	0.34	1.92	0.18	
			209		1	1296	0.000	18.900	4.000	CR1	0.0	Superior	σ _{b,0}	0.02	11.52	0.00
12916	2.025	18.900				5.000	CR1	20.0	Intermedio	σ _{bc,0}	0.62	11.52	0.05	
12916	2.025	18.900				5.000	CR1	0.0	Superior	σ _{b+bc,0}	0.62		0.05	
25790	4.050	18.900				4.500	CR1	20.0	Intermedio	Ty'z'	0.00	0.50	0.00	
1297	4.050	18.900				4.000	CR1	40.0	Inferior	Tx'z'	0.01	1.92	0.01	
25790	4.050	18.900				4.500	CR1	40.0	Inferior	Tx'y'	-0.21	1.92	0.11	
1298	4.050	18.900				5.000	CR1	60.0	Inferior	σ _{b,0}	-0.18	11.52	0.02	
557	0.000	18.900				5.000	CR1	50.0	Intermedio	σ _{bc,0}	-0.82	11.52	0.07	
557	0.000	18.900				5.000	CR1	40.0	Superior	σ _{b+bc,0}	-0.83		0.07	
1297	4.050	18.900				4.000	CR1	50.0	Intermedio	Ty'z'	-0.01	0.50	0.02	
557	0.000	18.900				5.000	CR1	60.0	Inferior	Tx'z'	0.03	1.92	0.01	
25790	4.050	18.900				4.500	CR1	60.0	Inferior	Tx'y'	0.21	1.92	0.11	
1296	0.000	18.900				4.000	CR1	80.0	Inferior	σ _{b,0}	-0.01	11.52	0.00	
12916	2.025	18.900				5.000	CR1	70.0	Intermedio	σ _{bc,0}	0.63	11.52	0.05	
12916	2.025	18.900				5.000	CR1	60.0	Superior	σ _{b+bc,0}	0.63		0.05	
557	0.000	18.900				5.000	CR1	70.0	Intermedio	Ty'z'	0.03	0.50	0.06	
1297	4.050	18.900				4.000	CR1	70.0	Intermedio	Tx'z'	0.01	1.92	0.01	
1298	4.050	18.900				5.000	CR1	80.0	Inferior	Tx'y'	-0.22	1.92	0.11	
1298	4.050	18.900				5.000	CR1	100.0	Inferior	σ _{b,0}	-0.18	11.52	0.02	
1298	4.050	18.900				5.000	CR1	90.0	Intermedio	σ _{bc,0}	-0.98	11.52	0.09	
1298	4.050	18.900				5.000	CR1	80.0	Superior	σ _{b+bc,0}	-0.80		0.10	
1297	4.050	18.900				4.000	CR1	90.0	Intermedio	Ty'z'	-0.01	0.50	0.02	
557	0.000	18.900				5.000	CR1	80.0	Superior	Tx'z'	0.03	1.92	0.01	
1298	4.050	18.900				5.000	CR1	100.0	Inferior	Tx'y'	0.24	1.92	0.12	
1296	0.000	18.900				4.000	CR1	140.0	Inferior	σ _{b,0}	-0.02	11.52	0.00	
12916	2.025	18.900				5.000	CR1	120.0	Intermedio	σ _{bc,0}	0.64	11.52	0.06	
12916	2.025	18.900				5.000	CR1	100.0	Superior	σ _{b+bc,0}	0.64		0.06	
25790	4.050	18.900				4.500	CR1	120.0	Intermedio	Ty'z'	0.00	0.50	0.00	
1297	4.050	18.900				4.000	CR1	100.0	Superior	Tx'z'	0.01	1.92	0.01	
1298	4.050	18.900				5.000	CR1	140.0	Inferior	Tx'y'	-0.28	1.92	0.14	
1	1308	10.800				18.900	5.000	CR1	0.0	Superior	σ _{b,0}	-0.01	11.52	0.00
	1307	10.800				18.900	4.000	CR1	20.0	Intermedio	σ _{bc,0}	-0.63	11.52	0.06
	1307	10.800				18.900	4.000	CR1	0.0	Superior	σ _{b+bc,0}	-0.63		0.06
	25807	10.800				18.900	4.500	CR1	20.0	Intermedio	Ty'z'	0.00	0.50	0.00
	25807	10.800				18.900	4.500	CR1	40.0	Inferior	Tx'z'	-0.01	1.92	0.01
	1308	10.800				18.900	5.000	CR1	40.0	Inferior	Tx'y'	-0.38	1.92	0.20
	1308	10.800				18.900	5.000	CR1	40.0	Superior	σ _{b,0}	0.20	11.52	0.02
	1307	10.800				18.900	4.000	CR1	50.0	Intermedio	σ _{bc,0}	-2.27	11.52	0.20
	1307	10.800				18.900	4.000	CR1	40.0	Superior	σ _{b+bc,0}	-2.27		0.20
	25807	10.800				18.900	4.500	CR1	60.0	Inferior	Ty'z'	0.01	0.50	0.02
	1308	10.800	18.900	5.000	CR1	60.0	Inferior	Tx'z'	-0.02	1.92	0.01			
	1308	10.800	18.900	5.000	CR1	60.0	Inferior	Tx'y'	0.41	1.92	0.22			
3	1308	10.800	18.900	5.000	CR1	80.0	Inferior	σ _{b,0}	0.01	11.52	0.00			
	1307	10.800	18.900	4.000	CR1	70.0	Intermedio	σ _{bc,0}	-0.64	11.52	0.06			



Proyecto: TFM

Modelo: TFM_FINAL_v02

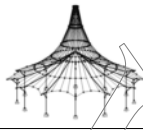
Fecha: 05/07/2020

TFM

Estructura Consellería - Primera Prueba

2.3 RAZÓN MÁX. DE TENSIONES POR COMPOSICIÓN

Comp. núm.	Superf. núm.	Capa núm.	Punto núm.	Coordenadas del punto [			Carga	Capa		Tensiones [N/mm ²]			Razón [-]
				X	Y	Z		z [mm]	Lado	Símbolo	Existente	Límite	
211	1	4	1307	10.800	18.900	4.000	CR1	60.0	Superior	$\sigma_{b+tc,0}$	-0.64		0.06
			1308	10.800	18.900	5.000	CR1	70.0	Intermedio	τ_{yz}	-0.02	0.50	0.04
			25807	10.800	18.900	4.500	CR1	70.0	Intermedio	τ_{xz}	-0.01	1.92	0.01
			1308	10.800	18.900	5.000	CR1	80.0	Inferior	τ_{xy}	-0.45	1.92	0.23
			1308	10.800	18.900	5.000	CR1	80.0	Superior	$\sigma_{b,0}$	0.20	11.52	0.02
			1307	10.800	18.900	4.000	CR1	90.0	Intermedio	$\sigma_{tc,0}$	-2.29	11.52	0.20
			1307	10.800	18.900	4.000	CR1	80.0	Superior	$\sigma_{b+tc,0}$	-2.28		0.20
			25807	10.800	18.900	4.500	CR1	80.0	Superior	τ_{yz}	0.01	0.50	0.02
			1308	10.800	18.900	5.000	CR1	80.0	Superior	τ_{xz}	-0.02	1.92	0.01
			1308	10.800	18.900	5.000	CR1	100.0	Inferior	τ_{xy}	0.48	1.92	0.25
		5	1308	10.800	18.900	5.000	CR1	100.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			1307	10.800	18.900	4.000	CR1	120.0	Intermedio	$\sigma_{tc,0}$	-0.64	11.52	0.06
			1307	10.800	18.900	4.000	CR1	100.0	Superior	$\sigma_{b+tc,0}$	-0.64		0.06
			25807	10.800	18.900	4.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			25807	10.800	18.900	4.500	CR1	100.0	Superior	τ_{xz}	-0.01	1.92	0.01
			1308	10.800	18.900	5.000	CR1	140.0	Inferior	τ_{xy}	-0.54	1.92	0.28
		1	1315	18.900	18.900	4.000	CR1	0.0	Superior	$\sigma_{b,0}$	0.01	11.52	0.00
			12963	16.369	18.900	5.000	CR1	20.0	Intermedio	$\sigma_{tc,0}$	0.70	11.52	0.06
			12963	16.369	18.900	5.000	CR1	0.0	Superior	$\sigma_{b+tc,0}$	0.69		0.06
			25830	18.900	18.900	4.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
		2	1314	14.850	18.900	4.000	CR1	40.0	Inferior	τ_{xz}	-0.01	1.92	0.01
			577	14.850	18.900	5.000	CR1	40.0	Inferior	τ_{xy}	0.28	1.92	0.15
			577	14.850	18.900	5.000	CR1	40.0	Superior	$\sigma_{b,0}$	0.18	11.52	0.02
			1314	14.850	18.900	4.000	CR1	50.0	Intermedio	$\sigma_{tc,0}$	-2.46	11.52	0.21
			1314	14.850	18.900	4.000	CR1	40.0	Superior	$\sigma_{b+tc,0}$	-2.46		0.21
			1314	14.850	18.900	4.000	CR1	50.0	Intermedio	τ_{yz}	0.01	0.50	0.02
			1314	14.850	18.900	4.000	CR1	60.0	Inferior	τ_{xz}	-0.03	1.92	0.01
			577	14.850	18.900	5.000	CR1	60.0	Inferior	τ_{xy}	-0.30	1.92	0.16
		3	1315	18.900	18.900	4.000	CR1	60.0	Superior	$\sigma_{b,0}$	0.01	11.52	0.00
			12963	16.369	18.900	5.000	CR1	70.0	Intermedio	$\sigma_{tc,0}$	0.71	11.52	0.06
			12963	16.369	18.900	5.000	CR1	60.0	Superior	$\sigma_{b+tc,0}$	0.70		0.06
			1314	14.850	18.900	4.000	CR1	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.05
			1314	14.850	18.900	4.000	CR1	70.0	Intermedio	τ_{xz}	-0.01	1.92	0.01
			577	14.850	18.900	5.000	CR1	80.0	Inferior	τ_{xy}	0.32	1.92	0.17
		4	577	14.850	18.900	5.000	CR1	80.0	Superior	$\sigma_{b,0}$	0.18	11.52	0.02
			1314	14.850	18.900	4.000	CR1	90.0	Intermedio	$\sigma_{tc,0}$	-2.45	11.52	0.21
			1314	14.850	18.900	4.000	CR1	80.0	Superior	$\sigma_{b+tc,0}$	-2.45		0.21
			1314	14.850	18.900	4.000	CR1	90.0	Intermedio	τ_{yz}	0.01	0.50	0.02
			1314	14.850	18.900	4.000	CR1	80.0	Superior	τ_{xz}	-0.03	1.92	0.01
			577	14.850	18.900	5.000	CR1	100.0	Inferior	τ_{xy}	-0.34	1.92	0.18
		5	1315	18.900	18.900	4.000	CR1	100.0	Superior	$\sigma_{b,0}$	0.01	11.52	0.00
			12963	16.369	18.900	5.000	CR1	120.0	Intermedio	$\sigma_{tc,0}$	0.71	11.52	0.06
			12963	16.369	18.900	5.000	CR1	100.0	Superior	$\sigma_{b+tc,0}$	0.71		0.06
			25830	18.900	18.900	4.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
		1	1314	14.850	18.900	4.000	CR1	100.0	Superior	τ_{xz}	-0.01	1.92	0.01
			577	14.850	18.900	5.000	CR1	140.0	Inferior	τ_{xy}	0.37	1.92	0.19
			1336	24.300	21.600	4.000	CR1	40.0	Inferior	$\sigma_{b,0}$	-0.02	11.52	0.00
			12977	25.920	21.600	5.000	CR1	20.0	Intermedio	$\sigma_{tc,0}$	0.34	11.52	0.03
			12977	25.920	21.600	5.000	CR1	0.0	Superior	$\sigma_{b+tc,0}$	0.34		0.03
			25888	27.000	21.600	4.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			559	24.300	21.600	5.000	CR1	40.0	Inferior	τ_{xz}	-0.01	1.92	0.01
		2	25888	27.000	21.600	4.500	CR1	0.0	Superior	τ_{xy}	-0.13	1.92	0.07
			559	24.300	21.600	5.000	CR1	40.0	Superior	$\sigma_{b,0}$	-0.18	11.52	0.02
			1337	27.000	21.600	4.000	CR1	50.0	Intermedio	$\sigma_{tc,0}$	-0.49	11.52	0.04
			559	24.300	21.600	5.000	CR1	40.0	Superior	$\sigma_{b+tc,0}$	-0.60		0.05
			559	24.300	21.600	5.000	CR1	50.0	Intermedio	τ_{yz}	0.01	0.50	0.02
			1337	27.000	21.600	4.000	CR1	60.0	Inferior	τ_{xz}	-0.03	1.92	0.02
			25888	27.000	21.600	4.500	CR1	40.0	Superior	τ_{xy}	0.13	1.92	0.07
		3	1336	24.300	21.600	4.000	CR1	80.0	Inferior	$\sigma_{b,0}$	-0.01	11.52	0.00
			12977	25.920	21.600	5.000	CR1	70.0	Intermedio	$\sigma_{tc,0}$	0.34	11.52	0.03
			12977	25.920		21.600	5.000	CR1	60.0	Superior	$\sigma_{b+tc,0}$	0.34		0.03
			1337	27.000		21.600	4.000	CR1	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.06
			559	24.300		21.600	5.000	CR1	70.0	Intermedio	τ_{xz}	-0.01	1.92	0.01
			25888	27.000		21.600	4.500	CR1	60.0	Superior	τ_{xy}	-0.13	1.92	0.07
		4	559	24.300	21.600	5.000	CR1	80.0	Superior	$\sigma_{b,0}$	-0.18	11.52	0.02
			25888	27.000	21.600	4.500	CR1	90.0	Intermedio	$\sigma_{tc,0}$	-0.50	11.52	0.04
			1338	27.000	21.600	5.000	CR1	80.0	Superior	$\sigma_{b+tc,0}$	-0.28		0.05
			559	24.300	21.600	5.000	CR1	90.0	Intermedio	τ_{yz}	0.01	0.50	0.02
			1337	27.000	21.600	4.000	CR1	80.0	Superior	τ_{xz}	-0.03	1.92	0.02
		5	12981	24.840	21.600	4.500	CR1	100.0	Inferior	τ_{xy}	-0.15	1.92	0.08
			1336	24.300	21.600	4.000	CR1	100.0	Superior	$\sigma_{b,0}$	0.02	11.52	0.00
			12977	25.920	21.600	5.000	CR1	120.0	Intermedio	$\sigma_{tc,0}$	0.35	11.52	0.03
			12977	25.920	21.600	5.000	CR1	100.0	Superior	$\sigma_{b+tc,0}$	0.35		0.03
			25888	27.000	21.600	4.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			559	24.300	21.600	5.000	CR1	100.0	Superior	τ_{xz}	-0.01	1.92	0.01
		1	12981	24.840	21.600	4.500	CR1	140.0	Inferior	τ_{xy}	0.21	1.92	0.11
			25900	31.320	21.600	4.000	CR1	0.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			12991	31.320	21.600	5.000	CR1	20.0	Intermedio	$\sigma_{tc,0}$	0.23	11.52	0.02
			12991	31.320	21.600	5.000	CR1	0.0	Superior	$\sigma_{b+tc,0}$	0.23		0.02
			25902	32.400	21.600	4.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			12998	29.700	21.600	4.500	CR1	40.0	Inferior	τ_{xz}	-0.01	1.92	0.01
			12998	29.700	21.600	4.500	CR1	40.0	Inferior	τ_{xy}	0.14	1.92	0.07
		2	580	29.700	21.600	5.000	CR1	40.0	Superior	$\sigma_{b,0}$	0.19	11.52	0.02

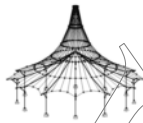


Proyecto: TFM Modelo: TFM_FINAL_v02
TFM Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

2.3 RAZÓN MÁX. DE TENSIONES POR COMPOSICIÓN

Comp. núm.	Superfici núm.	Capa núm.	Punto núm.	Coordenadas del punto [			Carga	Capa		Tensiones [N/mm²]			Razón [-]
				X	Y	Z		z [mm]	Lado	Símbolo	Existente	Límite	
214		3	1347	32.400	21.600	4.000	CR1	50.0	Intermedio	$\sigma_{b,c,0}$	-0.37	11.52	0.03
			1347	32.400	21.600	4.000	CR1	40.0	Superior	$\sigma_{b+tc,0}$	-0.37		0.03
			25902	32.400	21.600	4.500	CR1	60.0	Inferior	τ_{yz}	0.01	0.50	0.02
			580	29.700	21.600	5.000	CR1	60.0	Inferior	τ_{xz}	-0.02	1.92	0.01
			580	29.700	21.600	5.000	CR1	60.0	Inferior	τ_{xy}	-0.15	1.92	0.08
			25900	31.320	21.600	4.000	CR1	60.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			12991	31.320	21.600	5.000	CR1	70.0	Intermedio	$\sigma_{b,c,0}$	0.25	11.52	0.02
			12991	31.320	21.600	5.000	CR1	60.0	Superior	$\sigma_{b+tc,0}$	0.24		0.02
			580	29.700	21.600	5.000	CR1	70.0	Intermedio	τ_{yz}	-0.02	0.50	0.03
			25902	32.400	21.600	4.500	CR1	70.0	Intermedio	τ_{xz}	-0.01	1.92	0.01
		4	580	29.700	21.600	5.000	CR1	80.0	Inferior	τ_{xy}	0.18	1.92	0.09
			580	29.700	21.600	5.000	CR1	80.0	Superior	$\sigma_{b,0}$	0.19	11.52	0.02
			580	29.700	21.600	5.000	CR1	90.0	Intermedio	$\sigma_{b,c,0}$	-0.82	11.52	0.07
			580	29.700	21.600	5.000	CR1	80.0	Superior	$\sigma_{b+tc,0}$	-0.63		0.09
			25902	32.400	21.600	4.500	CR1	80.0	Superior	τ_{yz}	0.01	0.50	0.02
			580	29.700	21.600	5.000	CR1	80.0	Superior	τ_{xz}	-0.02	1.92	0.01
			580	29.700	21.600	5.000	CR1	100.0	Inferior	τ_{xy}	-0.21	1.92	0.11
			25900	31.320	21.600	4.000	CR1	100.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			12991	31.320	21.600	5.000	CR1	120.0	Intermedio	$\sigma_{b,c,0}$	0.26	11.52	0.02
			12991	31.320	21.600	5.000	CR1	100.0	Superior	$\sigma_{b+tc,0}$	0.26		0.02
		5	25902	32.400	21.600	4.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			25902	32.400	21.600	4.500	CR1	100.0	Superior	τ_{xz}	-0.01	1.92	0.01
			580	29.700	21.600	5.000	CR1	140.0	Inferior	τ_{xy}	0.27	1.92	0.14
			25913	36.180	21.600	4.000	CR1	0.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			13010	36.180	21.600	5.000	CR1	20.0	Intermedio	$\sigma_{b,c,0}$	0.23	11.52	0.02
			13010	36.180	21.600	5.000	CR1	0.0	Superior	$\sigma_{b+tc,0}$	0.23		0.02
			25916	37.800	21.600	4.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			13014	35.100	21.600	4.500	CR1	40.0	Inferior	τ_{xz}	0.01	1.92	0.01
			25916	37.800	21.600	4.500	CR1	40.0	Inferior	τ_{xy}	-0.14	1.92	0.07
			582	35.100	21.600	5.000	CR1	40.0	Superior	$\sigma_{b,0}$	0.19	11.52	0.02
		2	1356	35.100	21.600	4.000	CR1	50.0	Intermedio	$\sigma_{b,c,0}$	-0.43	11.52	0.04
			1356	35.100	21.600	4.000	CR1	40.0	Superior	$\sigma_{b+tc,0}$	-0.43		0.04
			13014	35.100	21.600	4.500	CR1	50.0	Intermedio	τ_{yz}	-0.01	0.50	0.02
			582	35.100	21.600	5.000	CR1	60.0	Inferior	τ_{xz}	-0.02	1.92	0.01
			1358	37.800	21.600	5.000	CR1	60.0	Inferior	τ_{xy}	0.16	1.92	0.08
			25913	36.180	21.600	4.000	CR1	80.0	Inferior	$\sigma_{b,0}$	0.01	11.52	0.00
			13010	36.180	21.600	5.000	CR1	70.0	Intermedio	$\sigma_{b,c,0}$	0.25	11.52	0.02
			13010	36.180	21.600	5.000	CR1	60.0	Superior	$\sigma_{b+tc,0}$	0.24		0.02
			582	35.100	21.600	5.000	CR1	70.0	Intermedio	τ_{yz}	-0.02	0.50	0.03
			13014	35.100	21.600	4.500	CR1	70.0	Intermedio	τ_{xz}	0.01	1.92	0.01
		3	1358	37.800	21.600	5.000	CR1	80.0	Inferior	τ_{xy}	-0.19	1.92	0.10
			582	35.100	21.600	5.000	CR1	80.0	Superior	$\sigma_{b,0}$	0.19	11.52	0.02
			1358	37.800	21.600	5.000	CR1	90.0	Intermedio	$\sigma_{b,c,0}$	-0.87	11.52	0.08
			1358	37.800	21.600	5.000	CR1	80.0	Superior	$\sigma_{b+tc,0}$	-0.68		0.09
			13014	35.100	21.600	4.500	CR1	90.0	Intermedio	τ_{yz}	-0.01	0.50	0.02
			582	35.100	21.600	5.000	CR1	80.0	Superior	τ_{xz}	-0.02	1.92	0.01
			1358	37.800	21.600	5.000	CR1	100.0	Inferior	τ_{xy}	0.22	1.92	0.11
			25913	36.180	21.600	4.000	CR1	100.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			13010	36.180	21.600	5.000	CR1	120.0	Intermedio	$\sigma_{b,c,0}$	0.26	11.52	0.02
			13010	36.180	21.600	5.000	CR1	100.0	Superior	$\sigma_{b+tc,0}$	0.25		0.02
		4	25916	37.800	21.600	4.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			13014	35.100	21.600	4.500	CR1	100.0	Superior	τ_{xz}	0.01	1.92	0.01
1358	37.800		21.600	5.000	CR1	140.0	Inferior	τ_{xy}	-0.28	1.92	0.14		
1367	43.200		21.600	4.000	CR1	0.0	Superior	$\sigma_{b,0}$	0.02	11.52	0.00		
13024	41.580		21.600	5.000	CR1	20.0	Intermedio	$\sigma_{b,c,0}$	0.33	11.52	0.03		
13024	41.580		21.600	5.000	CR1	0.0	Superior	$\sigma_{b+tc,0}$	0.33		0.03		
25930	43.200		21.600	4.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00		
1368	43.200		21.600	5.000	CR1	40.0	Inferior	τ_{xz}	0.01	1.92	0.01		
13028	40.500		21.600	4.500	CR1	0.0	Superior	τ_{xy}	0.13	1.92	0.07		
584	40.500		21.600	5.000	CR1	60.0	Inferior	$\sigma_{b,0}$	-0.17	11.52	0.02		
2	1366	40.500	21.600	4.000	CR1	50.0	Intermedio	$\sigma_{b,c,0}$	-0.53	11.52	0.05		
	1368	43.200	21.600	5.000	CR1	40.0	Superior	$\sigma_{b+tc,0}$	-0.58		0.05		
	1368	43.200	21.600	5.000	CR1	50.0	Intermedio	τ_{yz}	-0.01	0.50	0.02		
	1366	40.500	21.600	4.000	CR1	60.0	Inferior	τ_{xz}	-0.03	1.92	0.02		
	13028	40.500	21.600	4.500	CR1	40.0	Superior	τ_{xy}	-0.13	1.92	0.07		
	1367	43.200	21.600	4.000	CR1	80.0	Inferior	$\sigma_{b,0}$	-0.01	11.52	0.00		
	13024	41.580	21.600	5.000	CR1	70.0	Intermedio	$\sigma_{b,c,0}$	0.33	11.52	0.03		
	13024	41.580	21.600	5.000	CR1	60.0	Superior	$\sigma_{b+tc,0}$	0.33		0.03		
	1366	40.500	21.600	4.000	CR1	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.06		
	1368	43.200	21.600	5.000	CR1	70.0	Intermedio	τ_{xz}	0.01	1.92	0.01		
3	13028	40.500	21.600	4.500	CR1	60.0	Superior	τ_{xy}	0.13	1.92	0.07		
	584	40.500	21.600	5.000	CR1	100.0	Inferior	$\sigma_{b,0}$	-0.17	11.52	0.02		
	13028	40.500	21.600	4.500	CR1	90.0	Intermedio	$\sigma_{b,c,0}$	-0.54	11.52	0.05		
	13028	40.500	21.600	4.500	CR1	80.0	Superior	$\sigma_{b+tc,0}$	-0.43		0.06		
	1368	43.200	21.600	5.000	CR1	90.0	Intermedio	τ_{yz}	-0.01	0.50	0.02		
	1366	40.500	21.600	4.000	CR1	80.0	Superior	τ_{xz}	-0.03	1.92	0.02		
	13016	42.660	21.600	4.500	CR1	100.0	Inferior	τ_{xy}	0.14	1.92	0.07		
	1367	43.200	21.600	4.000	CR1	140.0	Inferior	$\sigma_{b,0}$	-0.02	11.52	0.00		
	13024	41.580	21.600	5.000	CR1	120.0	Intermedio	$\sigma_{b,c,0}$	0.34	11.52	0.03		
	13024	41.580	21.600	5.000	CR1	100.0	Superior	$\sigma_{b+tc,0}$	0.34		0.03		
5	25930	43.200	21.600	4.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00		
	1368	43.200	21.600	5.000	CR1	100.0	Superior	τ_{xz}	0.01	1.92	0.01		
	13016	42.660	21.600	4.500	CR1	140.0	Inferior	τ_{xy}	-0.21	1.92	0.11		



Proyecto: TFM
TFM

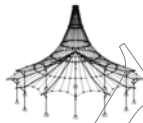
Modelo: TFM_FINAL_v02

Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

2.3 RAZÓN MÁX. DE TENSIONES POR COMPOSICIÓN

Comp. núm.	Superf. núm.	Capa núm.	Punto núm.	Coordenadas del punto [			Carga	Capa		Tensiones [N/mm ²]			Razón [-]
				X	Y	Z		z [mm]	Lado	Símbolo	Existente	Límite	
216	1	1	1388	48.600	24.300	4.000	CR1	0.0	Superior	$\sigma_{b,0}$	0.01	11.52	0.00
			13043	50.625	24.300	5.000	CR1	20.0	Intermedio	$\sigma_{b,c,0}$	0.71	11.52	0.06
			13043	50.625	24.300	5.000	CR1	0.0	Superior	$\sigma_{b+tc,0}$	0.71		0.06
			25991	52.650	24.300	4.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			1389	52.650	24.300	4.000	CR1	40.0	Inferior	τ_{xz}	0.01	1.92	0.01
		2	25991	52.650	24.300	4.500	CR1	40.0	Inferior	τ_{xy}	-0.23	1.92	0.12
			561	48.600	24.300	5.000	CR1	60.0	Inferior	$\sigma_{b,0}$	0.25	11.52	0.02
			561	48.600	24.300	5.000	CR1	50.0	Intermedio	$\sigma_{b,c,0}$	-0.63	11.52	0.05
			561	48.600	24.300	5.000	CR1	40.0	Superior	$\sigma_{b+tc,0}$	-0.88		0.08
			1389	52.650	24.300	4.000	CR1	50.0	Intermedio	τ_{yz}	-0.01	0.50	0.02
			561	48.600	24.300	5.000	CR1	60.0	Inferior	τ_{xz}	0.05	1.92	0.02
			25991	52.650	24.300	4.500	CR1	60.0	Inferior	τ_{xy}	0.23	1.92	0.12
		3	1388	48.600	24.300	4.000	CR1	60.0	Superior	$\sigma_{b,0}$	0.01	11.52	0.00
			13043	50.625	24.300	5.000	CR1	70.0	Intermedio	$\sigma_{b,c,0}$	0.72	11.52	0.06
			13043	50.625	24.300	5.000	CR1	60.0	Superior	$\sigma_{b+tc,0}$	0.71		0.06
			561	48.600	24.300	5.000	CR1	70.0	Intermedio	τ_{yz}	0.05	0.50	0.09
			1389	52.650	24.300	4.000	CR1	70.0	Intermedio	τ_{xz}	0.01	1.92	0.01
		4	25991	52.650	24.300	4.500	CR1	80.0	Inferior	τ_{xy}	-0.23	1.92	0.12
			561	48.600	24.300	5.000	CR1	100.0	Inferior	$\sigma_{b,0}$	0.25	11.52	0.02
			1390	52.650	24.300	5.000	CR1	90.0	Intermedio	$\sigma_{b,c,0}$	-0.78	11.52	0.07
			1390	52.650	24.300	5.000	CR1	80.0	Superior	$\sigma_{b+tc,0}$	-0.60		0.08
			1389	52.650	24.300	4.000	CR1	90.0	Intermedio	τ_{yz}	-0.01	0.50	0.02
		5	561	48.600	24.300	5.000	CR1	80.0	Superior	τ_{xz}	0.05	1.92	0.02
			25991	52.650	24.300	4.500	CR1	100.0	Inferior	τ_{xy}	0.23	1.92	0.12
			1388	48.600	24.300	4.000	CR1	100.0	Superior	$\sigma_{b,0}$	0.01	11.52	0.00
			13043	50.625	24.300	5.000	CR1	120.0	Intermedio	$\sigma_{b,c,0}$	0.72	11.52	0.06
			13043	50.625	24.300	5.000	CR1	100.0	Superior	$\sigma_{b+tc,0}$	0.72		0.06
217	1	1	25991	52.650	24.300	4.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			1389	52.650	24.300	4.000	CR1	100.0	Superior	τ_{xz}	0.01	1.92	0.01
			13050	49.106	24.300	4.500	CR1	140.0	Inferior	τ_{xy}	0.27	1.92	0.14
		2	1400	59.400	24.300	5.000	CR1	0.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			1399	59.400	24.300	4.000	CR1	20.0	Intermedio	$\sigma_{b,c,0}$	-0.59	11.52	0.05
			1399	59.400	24.300	4.000	CR1	0.0	Superior	$\sigma_{b+tc,0}$	-0.59		0.05
			26008	59.400	24.300	4.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			13074	55.350	24.300	4.500	CR1	40.0	Inferior	τ_{xz}	0.01	1.92	0.01
			1400	59.400	24.300	5.000	CR1	40.0	Inferior	τ_{xy}	-0.32	1.92	0.17
		3	1400	59.400	24.300	5.000	CR1	40.0	Superior	$\sigma_{b,0}$	0.20	11.52	0.02
			1399	59.400	24.300	4.000	CR1	50.0	Intermedio	$\sigma_{b,c,0}$	-2.17	11.52	0.19
			1399	59.400	24.300	4.000	CR1	40.0	Superior	$\sigma_{b+tc,0}$	-2.16		0.19
			13074	55.350	24.300	4.500	CR1	50.0	Intermedio	τ_{yz}	-0.01	0.50	0.02
			1400	59.400	24.300	5.000	CR1	60.0	Inferior	τ_{xz}	-0.02	1.92	0.01
		4	1400	59.400	24.300	5.000	CR1	60.0	Inferior	τ_{xy}	0.35	1.92	0.18
			1400	59.400	24.300	5.000	CR1	60.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			1399	59.400	24.300	4.000	CR1	70.0	Intermedio	$\sigma_{b,c,0}$	-0.60	11.52	0.05
			1399	59.400	24.300	4.000	CR1	60.0	Superior	$\sigma_{b+tc,0}$	-0.60		0.05
			1400	59.400	24.300	5.000	CR1	70.0	Intermedio	τ_{yz}	-0.02	0.50	0.04
		5	13074	55.350	24.300	4.500	CR1	70.0	Intermedio	τ_{xz}	0.01	1.92	0.01
			1400	59.400	24.300	5.000	CR1	80.0	Inferior	τ_{xy}	-0.38	1.92	0.20
			1400	59.400	24.300	5.000	CR1	80.0	Superior	$\sigma_{b,0}$	0.20	11.52	0.02
			1399	59.400	24.300	4.000	CR1	90.0	Intermedio	$\sigma_{b,c,0}$	-2.18	11.52	0.19
			1399	59.400	24.300	4.000	CR1	80.0	Superior	$\sigma_{b+tc,0}$	-2.18		0.19
218	1	1	13074	55.350	24.300	4.500	CR1	90.0	Intermedio	τ_{yz}	-0.01	0.50	0.02
			1400	59.400	24.300	5.000	CR1	80.0	Superior	τ_{xz}	-0.02	1.92	0.01
			1400	59.400	24.300	5.000	CR1	100.0	Inferior	τ_{xy}	0.42	1.92	0.22
		2	1400	59.400	24.300	5.000	CR1	100.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			1399	59.400	24.300	4.000	CR1	120.0	Intermedio	$\sigma_{b,c,0}$	-0.60	11.52	0.05
			1399	59.400	24.300	4.000	CR1	100.0	Superior	$\sigma_{b+tc,0}$	-0.60		0.05
			26008	59.400	24.300	4.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			13074	55.350	24.300	4.500	CR1	100.0	Superior	τ_{xz}	0.01	1.92	0.01
		3	1400	59.400	24.300	5.000	CR1	140.0	Inferior	τ_{xy}	-0.48	1.92	0.25
			1407	67.500	24.300	4.000	CR1	0.0	Superior	$\sigma_{b,0}$	0.02	11.52	0.00
			13087	65.475	24.300	5.000	CR1	20.0	Intermedio	$\sigma_{b,c,0}$	0.61	11.52	0.05
			13087	65.475	24.300	5.000	CR1	0.0	Superior	$\sigma_{b+tc,0}$	0.61		0.05
			26031	67.500	24.300	4.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
		4	1406	63.450	24.300	4.000	CR1	40.0	Inferior	τ_{xz}	-0.01	1.92	0.01
			576	63.450	24.300	5.000	CR1	40.0	Inferior	τ_{xy}	0.29	1.92	0.15
			576	63.450	24.300	5.000	CR1	60.0	Inferior	$\sigma_{b,0}$	-0.18	11.52	0.02
			1406	63.450	24.300	4.000	CR1	50.0	Intermedio	$\sigma_{b,c,0}$	-1.89	11.52	0.16
			1406	63.450	24.300	4.000	CR1	40.0	Superior	$\sigma_{b+tc,0}$	-1.90		0.16
		5	1406	63.450	24.300	4.000	CR1	50.0	Intermedio	τ_{yz}	0.01	0.50	0.02
			1406	63.450	24.300	4.000	CR1	60.0	Inferior	τ_{xz}	-0.03	1.92	0.01
			576	63.450	24.300	5.000	CR1	60.0	Inferior	τ_{xy}	-0.31	1.92	0.16
			1407	67.500	24.300	4.000	CR1	60.0	Superior	$\sigma_{b,0}$	0.01	11.52	0.00
			13087	65.475	24.300	5.000	CR1	70.0	Intermedio	$\sigma_{b,c,0}$	0.62	11.52	0.05
		6	13087	65.475	24.300	5.000	CR1	60.0	Superior	$\sigma_{b+tc,0}$	0.62		0.05
			1406	63.450	24.300	4.000	CR1	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.05
			1406	63.450	24.300	4.000	CR1	70.0	Intermedio	τ_{xz}	-0.01	1.92	0.01
			576	63.450	24.300	5.000	CR1	80.0	Inferior	τ_{xy}	0.33	1.92	0.17
			576	63.450	24.300	5.000	CR1	80.0	Superior	$\sigma_{b,0}$	0.18	11.52	0.02
		7	1406	63.450	24.300	4.000	CR1	90.0	Intermedio	$\sigma_{b,c,0}$	-1.89	11.52	0.16
			1406	63.450	24.300	4.000	CR1	80.0	Superior	$\sigma_{b+tc,0}$	-1.89		0.16
			1406	63.450	24.300	4.000	CR1	90.0	Intermedio	τ_{yz}	0.01	0.50	0.02
			1406	63.450	24.300	4.000	CR1	80.0	Superior	τ_{xz}	-0.03	1.92	0.01



Proyecto: TFM
TFM

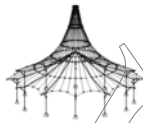
Modelo: TFM_FINAL_v02

Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

2.3 RAZÓN MÁX. DE TENSIONES POR COMPOSICIÓN

EVALUACIÓN DEL RENDIMIENTO POR COMPRESIÓN														
Comp. núm.	Superficie núm.	Capa núm.	Punto núm.	Coordenadas del punto [			Carga	Capa		Tensiones [N/mm ²]			Razón
				X	Y	Z		z [mm]	Lado	Símbolo	Existente	Límite	[-]	
219	5		576	63.450	24.300	5.000	CR1	100.0	Inferior	T _{xy} '	-0.35	1.92	0.18	
			1407	67.500	24.300	4.000	CR1	140.0	Inferior	σ _{0,0}	-0.02	11.52	0.00	
			13087	65.475	24.300	5.000	CR1	120.0	Intermedio	σ _{0,0}	0.62	11.52	0.05	
			13087	65.475	24.300	5.000	CR1	100.0	Superior	σ _{0+0,0}	0.62		0.05	
			26031	67.500	24.300	4.500	CR1	120.0	Intermedio	T _{yz} '	0.00	0.50	0.00	
			1406	63.450	24.300	4.000	CR1	100.0	Superior	T _{xz} '	-0.01	1.92	0.01	
		1	576	63.450	24.300	5.000	CR1	140.0	Inferior	T _{xy} '	0.38	1.92	0.20	
			26066	65.880	13.500	4.000	CR1	0.0	Superior	σ _{0,0}	0.01	11.52	0.00	
			13105	65.880	13.500	5.000	CR1	20.0	Intermedio	σ _{0,0}	0.31	11.52	0.03	
			13105	65.880	13.500	5.000	CR1	0.0	Superior	σ _{0+0,0}	0.31		0.03	
			26069	64.800	13.500	4.500	CR1	20.0	Intermedio	T _{yz} '	0.00	0.50	0.00	
			1420	64.800	13.500	4.000	CR1	40.0	Inferior	T _{xz} '	0.00	1.92	0.00	
	2	26069	64.800	13.500	4.500	CR1	40.0	Inferior	T _{xy} '	0.13	1.92	0.07		
		563	67.500	13.500	5.000	CR1	60.0	Inferior	σ _{0,0}	-0.09	11.52	0.01		
		1420	64.800	13.500	4.000	CR1	50.0	Intermedio	σ _{0,0}	-0.48	11.52	0.04		
		1420	64.800	13.500	4.000	CR1	40.0	Superior	σ _{0+0,0}	-0.48		0.04		
		1420	64.800	13.500	4.000	CR1	50.0	Intermedio	T _{yz} '	0.00	0.50	0.01		
		563	67.500	13.500	5.000	CR1	60.0	Inferior	T _{xz} '	-0.02	1.92	0.01		
		3	26069	64.800	13.500	4.500	CR1	60.0	Inferior	T _{xy} '	-0.13	1.92	0.07	
			26066	65.880	13.500	4.000	CR1	60.0	Superior	σ _{0,0}	0.00	11.52	0.00	
			13105	65.880	13.500	5.000	CR1	70.0	Intermedio	σ _{0,0}	0.31	11.52	0.03	
			13105	65.880	13.500	5.000	CR1	60.0	Superior	σ _{0+0,0}	0.31		0.03	
			563	67.500	13.500	5.000	CR1	70.0	Intermedio	T _{yz} '	-0.02	0.50	0.03	
			1420	64.800	13.500	4.000	CR1	70.0	Intermedio	T _{xz} '	0.00	1.92	0.00	
	4		26069	64.800	13.500	4.500	CR1	80.0	Inferior	T _{xy} '	0.13	1.92	0.07	
			563	67.500	13.500	5.000	CR1	100.0	Inferior	σ _{0,0}	-0.09	11.52	0.01	
			1420	64.800	13.500	4.000	CR1	90.0	Intermedio	σ _{0,0}	-0.51	11.52	0.04	
			563	67.500	13.500	5.000	CR1	80.0	Superior	σ _{0+0,0}	-0.40		0.05	
			1420	64.800	13.500	4.000	CR1	90.0	Intermedio	T _{yz} '	0.00	0.50	0.01	
			563	67.500	13.500	5.000	CR1	80.0	Superior	T _{xz} '	-0.02	1.92	0.01	
		5	26069	64.800	13.500	4.500	CR1	100.0	Inferior	T _{xy} '	-0.14	1.92	0.07	
			26066	65.880	13.500	4.000	CR1	140.0	Inferior	σ _{0,0}	-0.01	11.52	0.00	
			13105	65.880	13.500	5.000	CR1	120.0	Intermedio	σ _{0,0}	0.31	11.52	0.03	
			13105	65.880	13.500	5.000	CR1	100.0	Superior	σ _{0+0,0}	0.31		0.03	
			26069	64.800	13.500	4.500	CR1	120.0	Intermedio	T _{yz} '	0.00	0.50	0.00	
			1420	64.800	13.500	4.000	CR1	100.0	Superior	T _{xz} '	0.00	1.92	0.00	
	220		1	26069	64.800	13.500	4.500	CR1	140.0	Inferior	T _{xy} '	0.14	1.92	0.07
				13124	59.940	13.500	5.000	CR1	0.0	Superior	σ _{0,0}	-0.01	11.52	0.00
				1430	59.400	13.500	4.000	CR1	20.0	Intermedio	σ _{0,0}	-0.78	11.52	0.07
				1430	59.400	13.500	4.000	CR1	0.0	Superior	σ _{0+0,0}	-0.77		0.07
				26083	59.400	13.500	4.500	CR1	20.0	Intermedio	T _{yz} '	0.00	0.50	0.00
				1432	59.400	13.500	5.000	CR1	40.0	Inferior	T _{xz} '	0.01	1.92	0.00
		2	1430	59.400	13.500	4.000	CR1	0.0	Superior	T _{xy} '	-0.38	1.92	0.20	
			1432	59.400	13.500	5.000	CR1	40.0	Superior	σ _{0,0}	0.50	11.52	0.04	
			1430	59.400	13.500	4.000	CR1	50.0	Intermedio	σ _{0,0}	-3.39	11.52	0.29	
			1430	59.400	13.500	4.000	CR1	40.0	Superior	σ _{0+0,0}	-3.34		0.30	
			1432	59.400	13.500	5.000	CR1	50.0	Intermedio	T _{yz} '	-0.01	0.50	0.02	
			1432	59.400	13.500	5.000	CR1	60.0	Inferior	T _{xz} '	-0.09	1.92	0.05	
3	1432	59.400	13.500	5.000	CR1	60.0	Inferior	T _{xy} '	-0.38	1.92	0.20			
	13124	59.940	13.500	5.000	CR1	60.0	Superior	σ _{0,0}	-0.01	11.52	0.00			
	1430	59.400	13.500	4.000	CR1	70.0	Intermedio	σ _{0,0}	-0.80	11.52	0.07			
	1430	59.400	13.500	4.000	CR1	60.0	Superior	σ _{0+0,0}	-0.79		0.07			
	1432	59.400	13.500	5.000	CR1	70.0	Intermedio	T _{yz} '	-0.09	0.50	0.18			
	1432	59.400	13.500	5.000	CR1	70.0	Intermedio	T _{xz} '	0.01	1.92	0.00			
246	4	1432	59.400	13.500	5.000	CR1	80.0	Inferior	T _{xy} '	0.41	1.92	0.21		
		1432	59.400	13.500	5.000	CR1	80.0	Superior	σ _{0,0}	0.50	11.52	0.04		
		1430	59.400	13.500	4.000	CR1	90.0	Intermedio	σ _{0,0}	-3.58	11.52	0.31		
		1430	59.400	13.500	4.000	CR1	80.0	Superior	σ _{0+0,0}	-3.53		0.31		
		1432	59.400	13.500	5.000	CR1	90.0	Intermedio	T _{yz} '	-0.01	0.50	0.02		
		1432	59.400	13.500	5.000	CR1	80.0	Superior	T _{xz} '	-0.09	1.92	0.05		
	5	1432	59.400	13.500	5.000	CR1	100.0	Inferior	T _{xy} '	-0.44	1.92	0.23		
		13124	59.940	13.500	5.000	CR1	140.0	Inferior	σ _{0,0}	0.01	11.52	0.00		
		1430	59.400	13.500	4.000	CR1	120.0	Intermedio	σ _{0,0}	-0.82	11.52	0.07		
		1430	59.400	13.500	4.000	CR1	100.0	Superior	σ _{0+0,0}	-0.81		0.07		
		26083	59.400	13.500	4.500	CR1	120.0	Intermedio	T _{yz} '	0.00	0.50	0.00		
		1432	59.400	13.500	5.000	CR1	100.0	Superior	T _{xz} '	0.01	1.92	0.00		



Proyecto: TFM
TFM

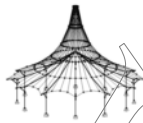
Modelo: TFM_FINAL_v02

Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

2.3 RAZÓN MÁX. DE TENSIONES POR COMPOSICIÓN

Comp. núm.	Superf. núm.	Capa núm.	Punto núm.	Coordenadas del punto [			Carga	Capa		Tensiones [N/mm ²]			Razón [-]
				X	Y	Z		z [mm]	Lado	Símbolo	Existente	Límite	
247	1	4	1711	59.400	10.800	8.000	CR1	70.0	Intermedio	τ_{xz}	-0.01	1.92	0.00
			867	59.400	10.800	9.000	CR1	80.0	Inferior	τ_{xy}	0.26	1.92	0.14
			1710	62.100	10.800	9.000	CR1	80.0	Superior	$\sigma_{b,0}$	-0.25	11.52	0.02
			1711	59.400	10.800	8.000	CR1	90.0	Intermedio	$\sigma_{bc,0}$	-1.96	11.52	0.17
			1711	59.400	10.800	8.000	CR1	80.0	Superior	$\sigma_{b+bc,0}$	-1.93		0.17
			1711	59.400	10.800	8.000	CR1	90.0	Intermedio	τ_{yz}	0.01	0.50	0.02
			867	59.400	10.800	9.000	CR1	80.0	Superior	τ_{xz}	-0.05	1.92	0.02
			867	59.400	10.800	9.000	CR1	100.0	Inferior	τ_{xy}	-0.28	1.92	0.15
			17730	59.940	10.800	9.000	CR1	100.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			1711	59.400	10.800	8.000	CR1	120.0	Intermedio	$\sigma_{bc,0}$	-0.40	11.52	0.03
			1711	59.400	10.800	8.000	CR1	100.0	Superior	$\sigma_{b+bc,0}$	-0.40		0.03
			26653	61.560	10.800	8.000	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			1711	59.400	10.800	8.000	CR1	100.0	Superior	τ_{xz}	-0.01	1.92	0.00
			867	59.400	10.800	9.000	CR1	140.0	Inferior	τ_{xy}	0.31	1.92	0.16
			17742	0.540	10.800	9.000	CR1	0.0	Superior	$\sigma_{b,0}$	0.01	11.52	0.00
			1597	0.000	10.800	8.000	CR1	20.0	Intermedio	$\sigma_{bc,0}$	-0.37	11.52	0.03
			1597	0.000	10.800	8.000	CR1	0.0	Superior	$\sigma_{b+bc,0}$	-0.36		0.03
			26417	2.700	10.800	8.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			1598	2.700	10.800	8.000	CR1	40.0	Inferior	τ_{xz}	0.01	1.92	0.00
			1599	2.700	10.800	9.000	CR1	40.0	Inferior	τ_{xy}	-0.21	1.92	0.11
			871	0.000	10.800	9.000	CR1	60.0	Inferior	$\sigma_{b,0}$	0.28	11.52	0.02
			1598	2.700	10.800	8.000	CR1	50.0	Intermedio	$\sigma_{bc,0}$	-1.42	11.52	0.12
			1598	2.700	10.800	8.000	CR1	40.0	Superior	$\sigma_{b+bc,0}$	-1.42		0.12
			1598	2.700	10.800	8.000	CR1	50.0	Intermedio	τ_{yz}	-0.01	0.50	0.01
			871	0.000	10.800	9.000	CR1	60.0	Inferior	τ_{xz}	0.05	1.92	0.03
			1599	2.700	10.800	9.000	CR1	60.0	Inferior	τ_{xy}	0.21	1.92	0.11
			17742	0.540	10.800	9.000	CR1	60.0	Superior	$\sigma_{b,0}$	0.00	11.52	0.00
			1597	0.000	10.800	8.000	CR1	70.0	Intermedio	$\sigma_{bc,0}$	-0.37	11.52	0.03
			1597	0.000	10.800	8.000	CR1	60.0	Superior	$\sigma_{b+bc,0}$	-0.37		0.03
			871	0.000	10.800	9.000	CR1	70.0	Intermedio	τ_{yz}	0.05	0.50	0.10
			1598	2.700	10.800	8.000	CR1	70.0	Intermedio	τ_{xz}	0.01	1.92	0.00
			1599	2.700	10.800	9.000	CR1	80.0	Inferior	τ_{xy}	-0.21	1.92	0.11
			871	0.000	10.800	9.000	CR1	100.0	Inferior	$\sigma_{b,0}$	0.28	11.52	0.02
			1598	2.700	10.800	8.000	CR1	90.0	Intermedio	$\sigma_{bc,0}$	-1.42	11.52	0.12
			1598	2.700	10.800	8.000	CR1	80.0	Superior	$\sigma_{b+bc,0}$	-1.42		0.12
			1598	2.700	10.800	8.000	CR1	90.0	Intermedio	τ_{yz}	-0.01	0.50	0.01
			871	0.000	10.800	9.000	CR1	80.0	Superior	τ_{xz}	0.05	1.92	0.03
			1599	2.700	10.800	9.000	CR1	100.0	Inferior	τ_{xy}	0.21	1.92	0.11
			17742	0.540	10.800	9.000	CR1	140.0	Inferior	$\sigma_{b,0}$	-0.01	11.52	0.00
			1597	0.000	10.800	8.000	CR1	120.0	Intermedio	$\sigma_{bc,0}$	-0.37	11.52	0.03
			1597	0.000	10.800	8.000	CR1	100.0	Superior	$\sigma_{b+bc,0}$	-0.37		0.03
			26417	2.700	10.800	8.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			1598	2.700	10.800	8.000	CR1	100.0	Superior	τ_{xz}	0.01	1.92	0.00
			1599	2.700	10.800	9.000	CR1	140.0	Inferior	τ_{xy}	-0.21	1.92	0.11
248	1	1	26424	1.620	13.500	8.000	CR1	0.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			1603	2.700	13.500	8.000	CR1	20.0	Intermedio	$\sigma_{bc,0}$	-0.37	11.52	0.03
			1603	2.700	13.500	8.000	CR1	0.0	Superior	$\sigma_{b+bc,0}$	-0.37		0.03
			26427	0.000	13.500	8.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			1603	2.700	13.500	8.000	CR1	40.0	Inferior	τ_{xz}	0.01	1.92	0.00
			873	2.700	13.500	9.000	CR1	0.0	Superior	τ_{xy}	0.21	1.92	0.11
			1605	0.000	13.500	9.000	CR1	40.0	Superior	$\sigma_{b,0}$	-0.15	11.52	0.01
			1603	2.700	13.500	8.000	CR1	50.0	Intermedio	$\sigma_{bc,0}$	-1.68	11.52	0.15
			1603	2.700	13.500	8.000	CR1	40.0	Superior	$\sigma_{b+bc,0}$	-1.68		0.15
			1603	2.700	13.500	8.000	CR1	60.0	Inferior	τ_{yz}	-0.01	0.50	0.01
			1605	0.000	13.500	9.000	CR1	60.0	Inferior	τ_{xz}	-0.03	1.92	0.01
			873	2.700	13.500	9.000	CR1	40.0	Superior	τ_{xy}	-0.21	1.92	0.11
			26424	1.620	13.500	8.000	CR1	60.0	Superior	$\sigma_{b,0}$	0.00	11.52	0.00
			1603	2.700	13.500	8.000	CR1	70.0	Intermedio	$\sigma_{bc,0}$	-0.37	11.52	0.03
			1603	2.700	13.500	8.000	CR1	60.0	Superior	$\sigma_{b+bc,0}$	-0.37		0.03
			1605	0.000	13.500	9.000	CR1	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.05
			1603	2.700	13.500	8.000	CR1	70.0	Intermedio	τ_{xz}	0.01	1.92	0.00
			873	2.700	13.500	9.000	CR1	60.0	Superior	τ_{xy}	0.21	1.92	0.11
			1605	0.000	13.500	9.000	CR1	80.0	Superior	$\sigma_{b,0}$	-0.15	11.52	0.01
			1603	2.700	13.500	8.000	CR1	90.0	Intermedio	$\sigma_{bc,0}$	-1.68	11.52	0.15
			1603	2.700	13.500	8.000	CR1	80.0	Superior	$\sigma_{b+bc,0}$	-1.68		0.15
			1603	2.700	13.500	8.000	CR1	80.0	Superior	τ_{yz}	-0.01	0.50	0.01
			1605	0.000	13.500	9.000	CR1	80.0	Superior	τ_{xz}	-0.03	1.92	0.01
			873	2.700	13.500	9.000	CR1	80.0	Superior	τ_{xy}	-0.21	1.92	0.11
			26424	1.620	13.500	8.000	CR1	100.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			1603	2.700	13.500	8.000	CR1	120.0	Intermedio	$\sigma_{bc,0}$	-0.37	11.52	0.03
			1603	2.700	13.500	8.000	CR1	100.0	Superior	$\sigma_{b+bc,0}$	-0.37		0.03
			26427	0.000	13.500	8.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			1603	2.700	13.500	8.000	CR1	100.0	Superior	τ_{xz}	0.01	1.92	0.00
			873	2.700	13.500	9.000	CR1	100.0	Superior	τ_{xy}	0.21	1.92	0.11
249	1	1	26354	23.760	0.000	8.000	CR1	0.0	Superior	$\sigma_{b,0}$	-0.03	11.52	0.00
			17780	21.845	0.000	9.000	CR1	20.0	Intermedio	$\sigma_{bc,0}$	2.26	11.52	0.20
			17780	21.845	0.000	9.000	CR1	0.0	Superior	$\sigma_{b+bc,0}$	2.26		0.20
			26360	18.900	0.000	8.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
		2	8193	24.300	0.000	8.500	CR1	40.0	Inferior	τ_{xz}	-0.02	1.92	0.01
			893	24.300	0.000	9.000	CR1	40.0	Inferior	τ_{xy}	-0.94	1.92	0.49
			1569	18.900	0.000	9.000	CR1	40.0	Superior	$\sigma_{b,0}$	0.41	11.52	0.04
			1569	18.900	0.000	9.000	CR1	50.0	Intermedio	$\sigma_{bc,0}$	-2.41	11.52	0.21
			1569	18.900	0.000	9.000	CR1	40.0	Superior	$\sigma_{b+bc,0}$	-1.99		0.24



Proyecto: TFM
TFM

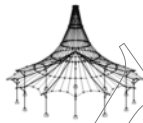
Modelo: TFM_FINAL_v02

Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

2.3 RAZÓN MÁX. DE TENSIONES POR COMPOSICIÓN

Comp. núm.	Superf. núm.	Capa núm.	Punto núm.	Coordenadas del punto [			Carga	Capa		Tensiones [N/mm ²]			Razón [-]
				X	Y	Z		z [mm]	Lado	Símbolo	Existente	Límite	
250			8193	24.300	0.000	8.500	CR1	50.0	Intermedio	T _{y'z'}	0.02	0.50	0.03
			1569	18.900	0.000	9.000	CR1	60.0	Inferior	T _{x'z'}	-0.03	1.92	0.02
			893	24.300	0.000	9.000	CR1	60.0	Inferior	T _{x'y'}	1.00	1.92	0.52
			26354	23.760	0.000	8.000	CR1	80.0	Inferior	σ _{b,0}	0.02	11.52	0.00
			17780	21.845	0.000	9.000	CR1	70.0	Intermedio	σ _{bc,0}	2.28	11.52	0.20
			17780	21.845	0.000	9.000	CR1	60.0	Superior	σ _{b+bc,0}	2.28		0.20
			1569	18.900	0.000	9.000	CR1	70.0	Intermedio	T _{y'z'}	-0.03	0.50	0.06
			8193	24.300	0.000	8.500	CR1	70.0	Intermedio	T _{x'z'}	-0.02	1.92	0.01
			893	24.300	0.000	9.000	CR1	80.0	Inferior	T _{x'y'}	-1.05	1.92	0.55
			1569	18.900	0.000	9.000	CR1	100.0	Inferior	σ _{b,0}	-0.41	11.52	0.04
			1569	18.900	0.000	9.000	CR1	90.0	Intermedio	σ _{bc,0}	-4.06	11.52	0.35
			1569	18.900	0.000	9.000	CR1	80.0	Superior	σ _{b+bc,0}	-3.65		0.39
			8193	24.300	0.000	8.500	CR1	90.0	Intermedio	T _{y'z'}	0.02	0.50	0.03
			1569	18.900	0.000	9.000	CR1	80.0	Superior	T _{x'z'}	-0.03	1.92	0.02
			893	24.300	0.000	9.000	CR1	100.0	Inferior	T _{x'y'}	1.10	1.92	0.57
			26354	23.760	0.000	8.000	CR1	100.0	Superior	σ _{b,0}	-0.03	11.52	0.00
			17780	21.845	0.000	9.000	CR1	120.0	Intermedio	σ _{bc,0}	2.30	11.52	0.20
			17780	21.845	0.000	9.000	CR1	100.0	Superior	σ _{b+bc,0}	2.30		0.20
			26360	18.900	0.000	8.500	CR1	120.0	Intermedio	T _{y'z'}	0.00	0.50	0.00
			8193	24.300	0.000	8.500	CR1	100.0	Superior	T _{x'z'}	-0.02	1.92	0.01
			893	24.300	0.000	9.000	CR1	140.0	Inferior	T _{x'y'}	-1.21	1.92	0.63
			26340	27.450	0.000	8.000	CR1	0.0	Superior	σ _{b,0}	-0.03	11.52	0.00
			17810	29.945	0.000	9.000	CR1	20.0	Intermedio	σ _{bc,0}	2.16	11.52	0.19
			17810	29.945	0.000	9.000	CR1	0.0	Superior	σ _{b+bc,0}	2.15		0.19
			26345	27.000	0.000	8.500	CR1	20.0	Intermedio	T _{y'z'}	0.00	0.50	0.00
			26340	27.450	0.000	8.000	CR1	40.0	Inferior	T _{x'z'}	0.02	1.92	0.01
			1562	27.000	0.000	9.000	CR1	40.0	Inferior	T _{x'y'}	0.94	1.92	0.49
			1562	27.000	0.000	9.000	CR1	40.0	Superior	σ _{b,0}	0.42	11.52	0.04
			895	32.400	0.000	9.000	CR1	50.0	Intermedio	σ _{bc,0}	-2.45	11.52	0.21
			895	32.400	0.000	9.000	CR1	40.0	Superior	σ _{b+bc,0}	-2.06		0.25
			26340	27.450	0.000	8.000	CR1	50.0	Intermedio	T _{y'z'}	-0.02	0.50	0.04
			895	32.400	0.000	9.000	CR1	60.0	Inferior	T _{x'z'}	-0.03	1.92	0.02
			1562	27.000	0.000	9.000	CR1	60.0	Inferior	T _{x'y'}	-0.99	1.92	0.52
			26340	27.450	0.000	8.000	CR1	60.0	Superior	σ _{b,0}	-0.01	11.52	0.00
			17810	29.945	0.000	9.000	CR1	70.0	Intermedio	σ _{bc,0}	2.19	11.52	0.19
			17810	29.945	0.000	9.000	CR1	60.0	Superior	σ _{b+bc,0}	2.18		0.19
			895	32.400	0.000	9.000	CR1	70.0	Intermedio	T _{y'z'}	-0.03	0.50	0.06
			26340	27.450	0.000	8.000	CR1	70.0	Intermedio	T _{x'z'}	0.02	1.92	0.01
			1562	27.000	0.000	9.000	CR1	80.0	Inferior	T _{x'y'}	1.04	1.92	0.54
			1562	27.000	0.000	9.000	CR1	80.0	Superior	σ _{b,0}	0.42	11.52	0.04
			1562	27.000	0.000	9.000	CR1	90.0	Intermedio	σ _{bc,0}	-4.03	11.52	0.35
			1562	27.000	0.000	9.000	CR1	80.0	Superior	σ _{b+bc,0}	-3.62		0.39
			26340	27.450	0.000	8.000	CR1	90.0	Intermedio	T _{y'z'}	-0.02	0.50	0.04
			895	32.400	0.000	9.000	CR1	80.0	Superior	T _{x'z'}	-0.03	1.92	0.02
			1562	27.000	0.000	9.000	CR1	100.0	Inferior	T _{x'y'}	-1.10	1.92	0.57
			26340	27.450	0.000	8.000	CR1	140.0	Inferior	σ _{b,0}	0.03	11.52	0.00
			17810	29.945	0.000	9.000	CR1	120.0	Intermedio	σ _{bc,0}	2.21	11.52	0.19
			17809	29.455	0.000	9.000	CR1	100.0	Superior	σ _{b+bc,0}	2.20		0.19
			26345	27.000	0.000	8.500	CR1	120.0	Intermedio	T _{y'z'}	0.00	0.50	0.00
			26340	27.450	0.000	8.000	CR1	100.0	Superior	T _{x'z'}	0.02	1.92	0.01
			1562	27.000	0.000	9.000	CR1	140.0	Inferior	T _{x'y'}	1.20	1.92	0.63
			26323	39.960	0.000	8.000	CR1	0.0	Superior	σ _{b,0}	-0.03	11.52	0.00
			17840	38.045	0.000	9.000	CR1	20.0	Intermedio	σ _{bc,0}	2.17	11.52	0.19
			17840	38.045	0.000	9.000	CR1	0.0	Superior	σ _{b+bc,0}	2.16		0.19
			26329	35.100	0.000	8.500	CR1	20.0	Intermedio	T _{y'z'}	0.00	0.50	0.00
			8297	40.500	0.000	8.500	CR1	40.0	Inferior	T _{x'z'}	-0.02	1.92	0.01
			897	40.500	0.000	9.000	CR1	40.0	Inferior	T _{x'y'}	-0.94	1.92	0.49
			1555	35.100	0.000	9.000	CR1	60.0	Inferior	σ _{b,0}	-0.41	11.52	0.04
			1555	35.100	0.000	9.000	CR1	50.0	Intermedio	σ _{bc,0}	-2.54	11.52	0.22
			1555	35.100	0.000	9.000	CR1	40.0	Superior	σ _{b+bc,0}	-2.13		0.26
			8297	40.500		0.000	8.500	CR1	60.0	Inferior	T _{y'z'}	0.02	0.50	0.03
			1555	35.100		0.000	9.000	CR1	60.0	Inferior	T _{x'z'}	-0.03	1.92	0.02
			897	40.500		0.000	9.000	CR1	60.0	Inferior	T _{x'y'}	1.00	1.92	0.52
			26323	39.960		0.000	8.000	CR1	80.0	Inferior	σ _{b,0}	0.02	11.52	0.00
			17840	38.045		0.000	9.000	CR1	70.0	Intermedio	σ _{bc,0}	2.20	11.52	0.19
			17840	38.045		0.000	9.000	CR1	60.0	Superior	σ _{b+bc,0}	2.19		0.19
			1555	35.100		0.000	9.000	CR1	70.0	Intermedio	T _{y'z'}	-0.03	0.50	0.06
			8297	40.500	0.000	8.500	CR1	70.0	Intermedio	T _{x'z'}	-0.02	1.92	0.01
			897	40.500	0.000	9.000	CR1	80.0	Inferior	T _{x'y'}	-1.05	1.92	0.55
			1555	35.100	0.000	9.000	CR1	100.0	Inferior	σ _{b,0}	-0.41	11.52	0.04
			1555	35.100	0.000	9.000	CR1	90.0	Intermedio	σ _{bc,0}	-4.18	11.52	0.36
			1555	35.100	0.000	9.000	CR1	80.0	Superior	σ _{b+bc,0}	-3.77		0.40
			8297	40.500	0.000	8.500	CR1	80.0	Superior	T _{y'z'}	0.02	0.50	0.03
			1555	35.100	0.000	9.000	CR1	80.0	Superior	T _{x'z'}	-0.03	1.92	0.02
			897	40.500	0.000	9.000	CR1	100.0	Inferior	T _{x'y'}	1.11	1.92	0.58
			26323	39.960	0.000	8.000	CR1	100.0	Superior	σ _{b,0}	-0.03	11.52	0.00
			17840	38.045	0.000	9.000	CR1	120.0	Intermedio	σ _{bc,0}	2.22	11.52	0.19
			17840	38.045	0.000	9.000	CR1	100.0	Superior	σ _{b+bc,0}	2.21		0.19
			26329	35.100	0.000	8.500	CR1	120.0	Intermedio	T _{y'z'}	0.00	0.50	0.00
			8297	40.500	0.000	8.500	CR1	100.0	Superior	T _{x'z'}	-0.02	1.92	0.01
			897	40.500	0.000	9.000	CR1	140.0	Inferior	T _{x'y'}	-1.21	1.92	0.63
			26308	48.060	0.000	8.000	CR1	0.0	Superior	σ _{b,0}	-0.03	11.52	0.00
			17870	46.145	0.000	9.000	CR1	20.0	Intermedio	σ _{bc,0}	2.27	11.52	0.20



Proyecto: TFM
TFM

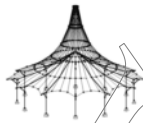
Modelo: TFM_FINAL_v02

Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

2.3 RAZÓN MÁX. DE TENSIONES POR COMPOSICIÓN

Comp. núm.	Superf. núm.	Capa núm.	Punto núm.	Coordenadas del punto [			Carga	Capa		Tensiones [N/mm ²]			Razón [-]		
				X	Y	Z		z [mm]	Lado	Símbolo	Existente	Límite			
253	2	2	17870	46.145	0.000	9.000	CR1	0.0	Superior	$\sigma_{b+hc,0}$	2.26		0.20		
			26314	43.200	0.000	8.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00		
			8345	48.600	0.000	8.500	CR1	40.0	Inferior	τ_{xz}	-0.02	1.92	0.01		
			1548	43.200	0.000	9.000	CR1	40.0	Inferior	τ_{xy}	0.93	1.92	0.49		
			1548	43.200	0.000	9.000	CR1	40.0	Superior	$\sigma_{b,0}$	0.42	11.52	0.04		
			1548	43.200	0.000	9.000	CR1	50.0	Intermedio	$\sigma_{hc,0}$	-2.42	11.52	0.21		
			1548	43.200	0.000	9.000	CR1	40.0	Superior	$\sigma_{b+hc,0}$	-2.00		0.25		
			8345	48.600	0.000	8.500	CR1	50.0	Intermedio	τ_{yz}	0.02	0.50	0.03		
			1548	43.200	0.000	9.000	CR1	60.0	Inferior	τ_{xz}	-0.03	1.92	0.02		
			1548	43.200	0.000	9.000	CR1	60.0	Inferior	τ_{xy}	-0.98	1.92	0.51		
			3		26308	48.060	0.000	8.000	CR1	60.0	Superior	$\sigma_{b,0}$	-0.02	11.52	0.00
					17870	46.145	0.000	9.000	CR1	70.0	Intermedio	$\sigma_{hc,0}$	2.29	11.52	0.20
					17870	46.145	0.000	9.000	CR1	60.0	Superior	$\sigma_{b+hc,0}$	2.28		0.20
					1548	43.200	0.000	9.000	CR1	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.06
					8345	48.600	0.000	8.500	CR1	70.0	Intermedio	τ_{xz}	-0.02	1.92	0.01
					1548	43.200	0.000	9.000	CR1	80.0	Inferior	τ_{xy}	1.04	1.92	0.54
					1548	43.200	0.000	9.000	CR1	80.0	Superior	$\sigma_{b,0}$	0.42	11.52	0.04
					1548	43.200	0.000	9.000	CR1	90.0	Intermedio	$\sigma_{hc,0}$	-4.08	11.52	0.35
					1548	43.200	0.000	9.000	CR1	80.0	Superior	$\sigma_{b+hc,0}$	-3.67		0.39
					8345	48.600	0.000	8.500	CR1	90.0	Intermedio	τ_{yz}	0.02	0.50	0.03
			5		1548	43.200	0.000	9.000	CR1	80.0	Superior	τ_{xz}	-0.03	1.92	0.02
					1548	43.200	0.000	9.000	CR1	100.0	Inferior	τ_{xy}	-1.09	1.92	0.57
					26308	48.060	0.000	8.000	CR1	140.0	Inferior	$\sigma_{b,0}$	0.03	11.52	0.00
					17870	46.145	0.000	9.000	CR1	120.0	Intermedio	$\sigma_{hc,0}$	2.31	11.52	0.20
					17870	46.145	0.000	9.000	CR1	100.0	Superior	$\sigma_{b+hc,0}$	2.30		0.20
					26314	43.200	0.000	8.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
					8345	48.600	0.000	8.500	CR1	100.0	Superior	τ_{xz}	-0.02	1.92	0.01
					1548	43.200	0.000	9.000	CR1	140.0	Inferior	τ_{xy}	1.19	1.92	0.62
					1589	4.050	0.000	8.000	CR1	0.0	Superior	$\sigma_{b,0}$	-0.03	11.52	0.00
					17888	2.025	0.000	9.000	CR1	20.0	Intermedio	$\sigma_{hc,0}$	0.62	11.52	0.05
			1		17888	2.025	0.000	9.000	CR1	0.0	Superior	$\sigma_{b+hc,0}$	0.61		0.05
					26395	0.000	0.000	8.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
					17894	1.013	0.000	9.000	CR1	40.0	Inferior	τ_{xz}	-0.01	1.92	0.01
					17875	4.050	0.000	8.500	CR1	0.0	Superior	τ_{xy}	-0.22	1.92	0.12
	2	901	4.050	0.000	9.000	CR1	40.0	Superior	$\sigma_{b,0}$	0.36	11.52	0.03			
		1589	4.050	0.000	8.000	CR1	50.0	Intermedio	$\sigma_{hc,0}$	-0.83	11.52	0.07			
		1589	4.050	0.000	8.000	CR1	40.0	Superior	$\sigma_{b+hc,0}$	-0.82		0.07			
		17894	1.013	0.000	9.000	CR1	50.0	Intermedio	τ_{yz}	0.01	0.50	0.03			
		1589	4.050	0.000	8.000	CR1	60.0	Inferior	τ_{xz}	-0.05	1.92	0.03			
		901	4.050	0.000	9.000	CR1	60.0	Inferior	τ_{xy}	0.24	1.92	0.13			
		3		1589	4.050	0.000	8.000	CR1	80.0	Inferior	$\sigma_{b,0}$	0.01	11.52	0.00	
				17888	2.025	0.000	9.000	CR1	70.0	Intermedio	$\sigma_{hc,0}$	0.62	11.52	0.05	
				17888	2.025	0.000	9.000	CR1	60.0	Superior	$\sigma_{b+hc,0}$	0.62		0.05	
				1589	4.050	0.000	8.000	CR1	70.0	Intermedio	τ_{yz}	-0.05	0.50	0.10	
				17894	1.013	0.000	9.000	CR1	70.0	Intermedio	τ_{xz}	-0.01	1.92	0.01	
				901	4.050	0.000	9.000	CR1	80.0	Inferior	τ_{xy}	-0.28	1.92	0.15	
				901	4.050	0.000	9.000	CR1	80.0	Superior	$\sigma_{b,0}$	0.36	11.52	0.03	
				901	4.050	0.000	9.000	CR1	90.0	Intermedio	$\sigma_{hc,0}$	-1.48	11.52	0.13	
				901	4.050	0.000	9.000	CR1	80.0	Superior	$\sigma_{b+hc,0}$	-1.12		0.16	
				17894	1.013	0.000	9.000	CR1	90.0	Intermedio	τ_{yz}	0.01	0.50	0.03	
		5		1589	4.050	0.000	8.000	CR1	80.0	Superior	τ_{xz}	-0.05	1.92	0.03	
				901	4.050	0.000	9.000	CR1	100.0	Inferior	τ_{xy}	0.32	1.92	0.17	
				1589	4.050	0.000	8.000	CR1	100.0	Superior	$\sigma_{b,0}$	-0.03	11.52	0.00	
				17888	2.025	0.000	9.000	CR1	120.0	Intermedio	$\sigma_{hc,0}$	0.63	11.52	0.05	
				17888	2.025	0.000	9.000	CR1	100.0	Superior	$\sigma_{b+hc,0}$	0.63		0.05	
				26395	0.000	0.000	8.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00	
		1	17894	1.013	0.000	9.000	CR1	100.0	Superior	τ_{xz}	-0.01	1.92	0.01		
			901	4.050	0.000	9.000	CR1	140.0	Inferior	τ_{xy}	-0.40	1.92	0.21		
			1583	6.750	0.000	9.000	CR1	0.0	Superior	$\sigma_{b,0}$	-0.02	11.52	0.00		
	1582		9.450	0.000	8.000	CR1	20.0	Intermedio	$\sigma_{hc,0}$	-0.46	11.52	0.04			
	1582		9.450		0.000	8.000	CR1	0.0	Superior	$\sigma_{b+hc,0}$	-0.46		0.04		
	26382		6.750		0.000	8.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00		
	26382		6.750		0.000	8.500	CR1	40.0	Inferior	τ_{xz}	0.02	1.92	0.01		
	903		9.450		0.000	9.000	CR1	40.0	Inferior	τ_{xy}	-0.20	1.92	0.11		
	903		9.450		0.000	9.000	CR1	40.0	Superior	$\sigma_{b,0}$	0.37	11.52	0.03		
	1582		9.450		0.000	8.000	CR1	50.0	Intermedio	$\sigma_{hc,0}$	-1.19	11.52	0.10		
	1582		9.450		0.000	8.000	CR1	40.0	Superior	$\sigma_{b+hc,0}$	-1.19		0.10		
	26382		6.750		0.000	8.500	CR1	50.0	Intermedio	τ_{yz}	-0.02	0.50	0.03		
	903		9.450		0.000	9.000	CR1	60.0	Inferior	τ_{xz}	-0.03	1.92	0.02		
	903		9.450		0.000	9.000	CR1	60.0	Inferior	τ_{xy}	0.25	1.92	0.13		
	1583		6.750		0.000	9.000	CR1	80.0	Inferior	$\sigma_{b,0}$	0.01	11.52	0.00		
	3	1582	9.450	0.000	8.000	CR1	70.0	Intermedio	$\sigma_{hc,0}$	-0.46	11.52	0.04			
		1582	9.450	0.000	8.000	CR1	60.0	Superior	$\sigma_{b+hc,0}$	-0.46		0.04			
		903	9.450	0.000	9.000	CR1	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.06			
		26382	6.750	0.000	8.500	CR1	70.0	Intermedio	τ_{xz}	0.02	1.92	0.01			
		903	9.450	0.000	9.000	CR1	80.0	Inferior	τ_{xy}	-0.30	1.92	0.16			
		903	9.450	0.000	9.000	CR1	80.0	Superior	$\sigma_{b,0}$	0.37	11.52	0.03			
		903	9.450	0.000	9.000	CR1	90.0	Intermedio	$\sigma_{hc,0}$	-1.46	11.52	0.13			
		903	9.450	0.000	9.000	CR1	80.0	Superior	$\sigma_{b+hc,0}$	-1.09		0.16			
		26382	6.750	0.000	8.500	CR1	90.0	Intermedio	τ_{yz}	-0.02	0.50	0.03			
		903	9.450	0.000	9.000	CR1	80.0	Superior	τ_{xz}	-0.03	1.92	0.02			
		903	9.450	0.000	9.000	CR1	100.0	Inferior	τ_{xy}	0.35	1.92	0.18			
		5	1583	6.750	0.000	9.000	CR1	100.0	Superior	$\sigma_{b,0}$	-0.02	11.52	0.00		



Proyecto: TFM
TFM

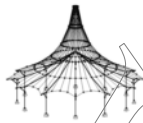
Modelo: TFM_FINAL_v02

Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

2.3 RAZÓN MÁX. DE TENSIONES POR COMPOSICIÓN

Comp. núm.	Superf. núm.	Capa núm.	Punto núm.	Coordenadas del punto [			Carga	Capa		Tensiones [N/mm ²]			Razón [-]
				X	Y	Z		z [mm]	Lado	Símbolo	Existente	Límite	
255	1	1	1582	9.450	0.000	8.000	CR1	120.0	Intermedio	$\sigma_{xc,0}$	-0.46	11.52	0.04
			1582	9.450	0.000	8.000	CR1	100.0	Superior	$\sigma_{b+tc,0}$	-0.46		0.04
			26382	6.750	0.000	8.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			26382	6.750	0.000	8.500	CR1	100.0	Superior	τ_{xz}	0.02	1.92	0.01
			903	9.450	0.000	9.000	CR1	140.0	Inferior	τ_{xy}	-0.45	1.92	0.23
			891	16.200	0.000	9.000	CR1	0.0	Superior	$\sigma_{b,0}$	-0.02	11.52	0.00
			17933	14.175	0.000	9.000	CR1	20.0	Intermedio	$\sigma_{xc,0}$	1.30	11.52	0.11
			17933	14.175	0.000	9.000	CR1	0.0	Superior	$\sigma_{b+tc,0}$	1.29		0.11
			26372	12.150	0.000	8.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			26372	12.150	0.000	8.500	CR1	40.0	Inferior	τ_{xz}	0.02	1.92	0.01
			891	16.200	0.000	9.000	CR1	40.0	Inferior	τ_{xy}	-0.67	1.92	0.35
			891	16.200	0.000	9.000	CR1	40.0	Superior	$\sigma_{b,0}$	0.39	11.52	0.03
			1576	12.150	0.000	9.000	CR1	50.0	Intermedio	$\sigma_{xc,0}$	-1.37	11.52	0.12
			1576	12.150	0.000	9.000	CR1	40.0	Superior	$\sigma_{b+tc,0}$	-0.98		0.15
			26372	12.150	0.000	8.500	CR1	50.0	Intermedio	τ_{yz}	-0.02	0.50	0.03
			1576	12.150	0.000	9.000	CR1	60.0	Inferior	τ_{xz}	-0.03	1.92	0.02
			891	16.200	0.000	9.000	CR1	60.0	Inferior	τ_{xy}	0.72	1.92	0.37
			891	16.200	0.000	9.000	CR1	60.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			17933	14.175	0.000	9.000	CR1	70.0	Intermedio	$\sigma_{xc,0}$	1.33	11.52	0.12
			17933	14.175	0.000	9.000	CR1	60.0	Superior	$\sigma_{b+tc,0}$	1.32		0.12
			1576	12.150	0.000	9.000	CR1	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.07
			26372	12.150	0.000	8.500	CR1	70.0	Intermedio	τ_{xz}	0.02	1.92	0.01
			891	16.200	0.000	9.000	CR1	80.0	Inferior	τ_{xy}	-0.77	1.92	0.40
			891	16.200	0.000	9.000	CR1	80.0	Superior	$\sigma_{b,0}$	0.39	11.52	0.03
			1576	12.150	0.000	9.000	CR1	90.0	Intermedio	$\sigma_{xc,0}$	-2.93	11.52	0.25
			1576	12.150	0.000	9.000	CR1	80.0	Superior	$\sigma_{b+tc,0}$	-2.54		0.29
			26372	12.150	0.000	8.500	CR1	90.0	Intermedio	τ_{yz}	-0.02	0.50	0.03
			1576	12.150	0.000	9.000	CR1	80.0	Superior	τ_{xz}	-0.03	1.92	0.02
			891	16.200	0.000	9.000	CR1	100.0	Inferior	τ_{xy}	0.82	1.92	0.43
			891	16.200	0.000	9.000	CR1	100.0	Superior	$\sigma_{b,0}$	-0.02	11.52	0.00
			17933	14.175	0.000	9.000	CR1	120.0	Intermedio	$\sigma_{xc,0}$	1.35	11.52	0.12
			17933	14.175	0.000	9.000	CR1	100.0	Superior	$\sigma_{b+tc,0}$	1.34		0.12
			26372	12.150	0.000	8.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			26372	12.150	0.000	8.500	CR1	100.0	Superior	τ_{xz}	0.02	1.92	0.01
			891	16.200	0.000	9.000	CR1	140.0	Inferior	τ_{xy}	-0.92	1.92	0.48
256	1	1	1541	51.300	0.000	9.000	CR1	0.0	Superior	$\sigma_{b,0}$	-0.02	11.52	0.00
			17955	53.325	0.000	9.000	CR1	20.0	Intermedio	$\sigma_{xc,0}$	1.32	11.52	0.11
			17955	53.325	0.000	9.000	CR1	0.0	Superior	$\sigma_{b+tc,0}$	1.31		0.12
			26299	51.300	0.000	8.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			17951	55.350	0.000	8.500	CR1	40.0	Inferior	τ_{xz}	-0.02	1.92	0.01
			1541	51.300	0.000	9.000	CR1	40.0	Inferior	τ_{xy}	0.67	1.92	0.35
		2	905	55.350	0.000	9.000	CR1	60.0	Inferior	$\sigma_{b,0}$	-0.39	11.52	0.03
			905	55.350	0.000	9.000	CR1	50.0	Intermedio	$\sigma_{xc,0}$	-1.32	11.52	0.11
			905	55.350	0.000	9.000	CR1	40.0	Superior	$\sigma_{b+tc,0}$	-0.92		0.15
			17951	55.350	0.000	8.500	CR1	50.0	Intermedio	τ_{yz}	0.02	0.50	0.03
		3	905	55.350	0.000	9.000	CR1	60.0	Inferior	τ_{xz}	-0.03	1.92	0.02
			1541	51.300	0.000	9.000	CR1	60.0	Inferior	τ_{xy}	-0.72	1.92	0.38
			1541	51.300	0.000	9.000	CR1	60.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			17955	53.325	0.000	9.000	CR1	70.0	Intermedio	$\sigma_{xc,0}$	1.34	11.52	0.12
		4	17955	53.325	0.000	9.000	CR1	60.0	Superior	$\sigma_{b+tc,0}$	1.34		0.12
			905	55.350	0.000	9.000	CR1	70.0	Intermedio	τ_{yz}	-0.03	0.50	0.07
			17951	55.350	0.000	8.500	CR1	70.0	Intermedio	τ_{xz}	-0.02	1.92	0.01
			1541	51.300	0.000	9.000	CR1	80.0	Inferior	τ_{xy}	0.77	1.92	0.40
		5	905	55.350	0.000	9.000	CR1	80.0	Superior	$\sigma_{b,0}$	0.39	11.52	0.03
			905	55.350	0.000	9.000	CR1	90.0	Intermedio	$\sigma_{xc,0}$	-2.90	11.52	0.25
			905	55.350	0.000	9.000	CR1	80.0	Superior	$\sigma_{b+tc,0}$	-2.50		0.29
			17951	55.350	0.000	8.500	CR1	90.0	Intermedio	τ_{yz}	0.02	0.50	0.03
		6	905	55.350	0.000	9.000	CR1	80.0	Superior	τ_{xz}	-0.03	1.92	0.02
			1541	51.300	0.000	9.000	CR1	100.0	Inferior	τ_{xy}	-0.82	1.92	0.43
			1541	51.300	0.000	9.000	CR1	100.0	Superior	$\sigma_{b,0}$	-0.02	11.52	0.00
			17955	53.325	0.000	9.000	CR1	120.0	Intermedio	$\sigma_{xc,0}$	1.37	11.52	0.12
		7	17955	53.325	0.000	9.000	CR1	100.0	Superior	$\sigma_{b+tc,0}$	1.36		0.12
			26299	51.300	0.000	8.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			17951	55.350	0.000	8.500	CR1	100.0	Superior	τ_{xz}	-0.02	1.92	0.01
			1541	51.300	0.000	9.000	CR1	140.0	Inferior	τ_{xy}	0.93	1.92	0.48
257	1	1	1531	58.050	0.000	8.000	CR1	40.0	Inferior	$\sigma_{b,0}$	0.03	11.52	0.00
			17971	60.075	0.000	9.000	CR1	20.0	Intermedio	$\sigma_{xc,0}$	0.61	11.52	0.05
			17971	60.075	0.000	9.000	CR1	0.0	Superior	$\sigma_{b+tc,0}$	0.61		0.05
			26287	58.050	0.000	8.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			17965	61.088	0.000	9.000	CR1	40.0	Inferior	τ_{xz}	0.01	1.92	0.01
			26280	58.556	0.000	8.000	CR1	0.0	Superior	τ_{xy}	0.25	1.92	0.13
		2	1533	58.050	0.000	9.000	CR1	40.0	Superior	$\sigma_{b,0}$	0.37	11.52	0.03
			1531	58.050	0.000	8.000	CR1	50.0	Intermedio	$\sigma_{xc,0}$	-1.14	11.52	0.10
			1531	58.050	0.000	8.000	CR1	40.0	Superior	$\sigma_{b+tc,0}$	-1.12		0.10
			17965	61.088	0.000	9.000	CR1	50.0	Intermedio	τ_{yz}	-0.01	0.50	0.03
		3	1531	58.050	0.000	8.000	CR1	60.0	Inferior	τ_{xz}	-0.05	1.92	0.03
			1533	58.050	0.000	9.000	CR1	60.0	Inferior	τ_{xy}	-0.28	1.92	0.15
			1531	58.050	0.000	8.000	CR1	60.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			17971	60.075	0.000	9.000	CR1	70.0	Intermedio	$\sigma_{xc,0}$	0.62	11.52	0.05
		4	17971	60.075	0.000	9.000	CR1	60.0	Superior	$\sigma_{b+tc,0}$	0.62		0.05
			1531	58.050	0.000	8.000	CR1	70.0	Intermedio	τ_{yz}	-0.05	0.50	0.10
			17965	61.088	0.000	9.000	CR1	70.0	Intermedio	τ_{xz}	0.01	1.92	0.01
			1533	58.050	0.000	9.000	CR1	80.0	Inferior	τ_{xy}	0.32	1.92	0.17



Proyecto: TFM
TFM

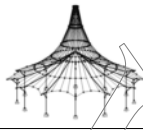
Modelo: TFM_FINAL_v02

Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

2.3 RAZÓN MÁX. DE TENSIONES POR COMPOSICIÓN

Comp. núm.	Superf. núm.	Capa núm.	Punto núm.	Coordenadas del punto [			Carga	Capa		Tensiones [N/mm ²]			Razón [-]
				X	Y	Z		z [mm]	Lado	Símbolo	Existente	Límite	
258	1	4	1533	58.050	0.000	9.000	CR1	100.0	Inferior	$\sigma_{b,0}$	-0.37	11.52	0.03
			1533	58.050	0.000	9.000	CR1	90.0	Intermedio	$\sigma_{b,c,0}$	-1.57	11.52	0.14
			1533	58.050	0.000	9.000	CR1	80.0	Superior	$\sigma_{b+tc,0}$	-1.20		0.17
			17965	61.088	0.000	9.000	CR1	90.0	Intermedio	τ_{yz}	-0.01	0.50	0.03
		5	1531	58.050	0.000	8.000	CR1	80.0	Superior	τ_{xz}	-0.05	1.92	0.03
			1533	58.050	0.000	9.000	CR1	100.0	Inferior	τ_{xy}	-0.36	1.92	0.19
			1531	58.050	0.000	8.000	CR1	100.0	Superior	$\sigma_{b,0}$	-0.03	11.52	0.00
			17971	60.075	0.000	9.000	CR1	120.0	Intermedio	$\sigma_{b,c,0}$	0.62	11.52	0.05
			17971	60.075	0.000	9.000	CR1	100.0	Superior	$\sigma_{b+tc,0}$	0.62		0.05
			26287	58.050	0.000	8.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			17965	61.088	0.000	9.000	CR1	100.0	Superior	τ_{xz}	0.01	1.92	0.01
			1533	58.050	0.000	9.000	CR1	140.0	Inferior	τ_{xy}	0.44	1.92	0.23
			1610	0.000	18.900	8.000	CR1	0.0	Superior	$\sigma_{b,0}$	0.02	11.52	0.00
			17996	2.025	18.900	9.000	CR1	20.0	Intermedio	$\sigma_{b,c,0}$	0.60	11.52	0.05
			17996	2.025	18.900	9.000	CR1	0.0	Superior	$\sigma_{b+tc,0}$	0.60		0.05
			26444	4.050	18.900	8.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
		2	1611	4.050	18.900	8.000	CR1	40.0	Inferior	τ_{xz}	0.01	1.92	0.01
			1612	4.050	18.900	9.000	CR1	40.0	Inferior	τ_{xy}	-0.26	1.92	0.14
			1612	4.050	18.900	9.000	CR1	60.0	Inferior	$\sigma_{b,0}$	-0.19	11.52	0.02
			1611	4.050	18.900	8.000	CR1	50.0	Intermedio	$\sigma_{b,c,0}$	-0.93	11.52	0.08
			1611	4.050	18.900	8.000	CR1	40.0	Superior	$\sigma_{b+tc,0}$	-0.93		0.08
			1611	4.050	18.900	8.000	CR1	50.0	Intermedio	τ_{yz}	-0.01	0.50	0.03
			859	0.000	18.900	9.000	CR1	60.0	Inferior	τ_{xz}	0.03	1.92	0.01
			1612	4.050	18.900	9.000	CR1	60.0	Inferior	τ_{xy}	0.28	1.92	0.15
		3	1610	0.000	18.900	8.000	CR1	80.0	Inferior	$\sigma_{b,0}$	-0.01	11.52	0.00
			17996	2.025	18.900	9.000	CR1	70.0	Intermedio	$\sigma_{b,c,0}$	0.61	11.52	0.05
			17996	2.025	18.900	9.000	CR1	60.0	Superior	$\sigma_{b+tc,0}$	0.61		0.05
			859	0.000	18.900	9.000	CR1	70.0	Intermedio	τ_{yz}	0.03	0.50	0.06
		4	1611	4.050	18.900	8.000	CR1	70.0	Intermedio	τ_{xz}	0.01	1.92	0.01
			1612	4.050	18.900	9.000	CR1	80.0	Inferior	τ_{xy}	-0.30	1.92	0.16
			1612	4.050	18.900	9.000	CR1	80.0	Superior	$\sigma_{b,0}$	0.19	11.52	0.02
			1612	4.050	18.900	9.000	CR1	90.0	Intermedio	$\sigma_{b,c,0}$	-1.21	11.52	0.10
			1612	4.050	18.900	9.000	CR1	80.0	Superior	$\sigma_{b+tc,0}$	-1.02		0.12
			1611	4.050	18.900	8.000	CR1	90.0	Intermedio	τ_{yz}	-0.01	0.50	0.03
			859	0.000	18.900	9.000	CR1	80.0	Superior	τ_{xz}	0.03	1.92	0.01
			1612	4.050	18.900	9.000	CR1	100.0	Inferior	τ_{xy}	0.32	1.92	0.17
			1610	0.000	18.900	8.000	CR1	140.0	Inferior	$\sigma_{b,0}$	-0.02	11.52	0.00
			17996	2.025	18.900	9.000	CR1	120.0	Intermedio	$\sigma_{b,c,0}$	0.62	11.52	0.05
			17996	2.025	18.900	9.000	CR1	100.0	Superior	$\sigma_{b+tc,0}$	0.61		0.05
			26444	4.050	18.900	8.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
		5	1611	4.050	18.900	8.000	CR1	100.0	Superior	τ_{xz}	0.01	1.92	0.01
			1612	4.050	18.900	9.000	CR1	140.0	Inferior	τ_{xy}	-0.36	1.92	0.19
		259	26455	9.788	18.900	8.000	CR1	0.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			1618	10.800	18.900	8.000	CR1	20.0	Intermedio	$\sigma_{b,c,0}$	-0.78	11.52	0.07
			1618	10.800	18.900	8.000	CR1	0.0	Superior	$\sigma_{b+tc,0}$	-0.78		0.07
			26457	10.800	18.900	8.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
		2	18027	6.750	18.900	8.500	CR1	40.0	Inferior	τ_{xz}	0.01	1.92	0.01
			1619	10.800	18.900	9.000	CR1	40.0	Inferior	τ_{xy}	-0.45	1.92	0.23
			1619	10.800	18.900	9.000	CR1	60.0	Inferior	$\sigma_{b,0}$	-0.21	11.52	0.02
			1618	10.800	18.900	8.000	CR1	50.0	Intermedio	$\sigma_{b,c,0}$	-2.85	11.52	0.25
			1618	10.800	18.900	8.000	CR1	40.0	Superior	$\sigma_{b+tc,0}$	-2.85		0.25
			18027	6.750	18.900	8.500	CR1	50.0	Intermedio	τ_{yz}	-0.01	0.50	0.02
			1619	10.800	18.900	9.000	CR1	60.0	Inferior	τ_{xz}	-0.02	1.92	0.01
			1619	10.800	18.900	9.000	CR1	60.0	Inferior	τ_{xy}	0.48	1.92	0.25
		3	26455	9.788	18.900	8.000	CR1	60.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			1618	10.800	18.900	8.000	CR1	70.0	Intermedio	$\sigma_{b,c,0}$	-0.78	11.52	0.07
			1618	10.800	18.900	8.000	CR1	60.0	Superior	$\sigma_{b+tc,0}$	-0.78		0.07
			1619	10.800	18.900	9.000	CR1	70.0	Intermedio	τ_{yz}	-0.02	0.50	0.04
		4	18027	6.750	18.900	8.500	CR1	70.0	Intermedio	τ_{xz}	0.01	1.92	0.01
			1619	10.800	18.900	9.000	CR1	80.0	Inferior	τ_{xy}	-0.51	1.92	0.27
			1619	10.800		18.900	9.000	CR1	100.0	Inferior	$\sigma_{b,0}$	-0.21	11.52	0.02
			1618	10.800		18.900	8.000	CR1	90.0	Intermedio	$\sigma_{b,c,0}$	-2.87	11.52	0.25
			1618	10.800		18.900	8.000	CR1	80.0	Superior	$\sigma_{b+tc,0}$	-2.87		0.25
			18027	6.750		18.900	8.500	CR1	90.0	Intermedio	τ_{yz}	-0.01	0.50	0.02
			1619	10.800		18.900	9.000	CR1	80.0	Superior	τ_{xz}	-0.02	1.92	0.01
			1619	10.800		18.900	9.000	CR1	100.0	Inferior	τ_{xy}	0.55	1.92	0.29
			26455	9.788		18.900	8.000	CR1	100.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			1618	10.800		18.900	8.000	CR1	120.0	Intermedio	$\sigma_{b,c,0}$	-0.79	11.52	0.07
			1618	10.800		18.900	8.000	CR1	100.0	Superior	$\sigma_{b+tc,0}$	-0.79		0.07
			26457	10.800		18.900	8.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
		260	18027	6.750	18.900	8.500	CR1	100.0	Superior	τ_{xz}	0.01	1.92	0.01
			1619	10.800	18.900	9.000	CR1	140.0	Inferior	τ_{xy}	-0.62	1.92	0.32
			1624	18.900	18.900	8.000	CR1	0.0	Superior	$\sigma_{b,0}$	0.01	11.52	0.00
			1623	14.850	18.900	8.000	CR1	20.0	Intermedio	$\sigma_{b,c,0}$	-0.71	11.52	0.06
			1623	14.850	18.900	8.000	CR1	0.0	Superior	$\sigma_{b+tc,0}$	-0.70		0.06
			26473	18.900	18.900	8.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			1623	14.850	18.900	8.000	CR1	40.0	Inferior	τ_{xz}	-0.01	1.92	0.01
			879	14.850	18.900	9.000	CR1	40.0	Inferior	τ_{xy}	0.39	1.92	0.20
			879	14.850	18.900	9.000	CR1	60.0	Inferior	$\sigma_{b,0}$	-0.19	11.52	0.02
			1623	14.850	18.900	8.000	CR1	50.0	Intermedio	$\sigma_{b,c,0}$	-2.97	11.52	0.26
			1623	14.850	18.900	8.000	CR1	40.0	Superior	$\sigma_{b+tc,0}$	-2.97		0.26
			1623	14.850	18.900	8.000	CR1	50.0	Intermedio	τ_{yz}	0.01	0.50	0.02
			1625	18.900	18.900	9.000	CR1	60.0	Inferior	τ_{xz}	0.03	1.92	0.02



Proyecto: TFM
TFM

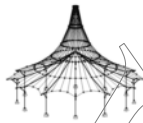
Modelo: TFM_FINAL_v02

Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

2.3 RAZÓN MÁX. DE TENSIONES POR COMPOSICIÓN

Comp. núm.	Superf. núm.	Capa núm.	Punto núm.	Coordenadas del punto [			Carga	Capa		Tensiones [N/mm ²]			Razón [-]
				X	Y	Z		z [mm]	Lado	Símbolo	Existente	Límite	
261		3	879	14.850	18.900	9.000	CR1	60.0	Inferior	τ_{xy}	-0.41	1.92	0.21
			1624	18.900	18.900	8.000	CR1	60.0	Superior	$\sigma_{b,0}$	0.01	11.52	0.00
			1623	14.850	18.900	8.000	CR1	70.0	Intermedio	$\sigma_{b,0}$	-0.73	11.52	0.06
			1623	14.850	18.900	8.000	CR1	60.0	Superior	$\sigma_{b+tlc,0}$	-0.73		0.06
			1625	18.900	18.900	9.000	CR1	70.0	Intermedio	τ_{yz}	0.03	0.50	0.06
			1623	14.850	18.900	8.000	CR1	70.0	Intermedio	τ_{xz}	-0.01	1.92	0.01
		4	879	14.850	18.900	9.000	CR1	80.0	Inferior	τ_{xy}	0.43	1.92	0.22
			879	14.850	18.900	9.000	CR1	100.0	Inferior	$\sigma_{b,0}$	-0.19	11.52	0.02
			1623	14.850	18.900	8.000	CR1	90.0	Intermedio	$\sigma_{b,0}$	-2.96	11.52	0.26
			1623	14.850	18.900	8.000	CR1	80.0	Superior	$\sigma_{b+tlc,0}$	-2.96		0.26
			1623	14.850	18.900	8.000	CR1	90.0	Intermedio	τ_{yz}	0.01	0.50	0.02
			1625	18.900	18.900	9.000	CR1	80.0	Superior	τ_{xz}	0.03	1.92	0.02
		5	879	14.850	18.900	9.000	CR1	100.0	Inferior	τ_{xy}	-0.45	1.92	0.24
			1624	18.900	18.900	8.000	CR1	140.0	Inferior	$\sigma_{b,0}$	-0.01	11.52	0.00
			1623	14.850	18.900	8.000	CR1	120.0	Intermedio	$\sigma_{b,0}$	-0.75	11.52	0.07
			1623	14.850	18.900	8.000	CR1	100.0	Superior	$\sigma_{b+tlc,0}$	-0.74		0.07
			26473	18.900	18.900	8.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			1623	14.850	18.900	8.000	CR1	100.0	Superior	τ_{xz}	-0.01	1.92	0.01
	261	1	879	14.850	18.900	9.000	CR1	140.0	Inferior	τ_{xy}	0.49	1.92	0.26
			1638	24.300	21.600	8.000	CR1	0.0	Superior	$\sigma_{b,0}$	0.02	11.52	0.00
			18057	25.920	21.600	9.000	CR1	20.0	Intermedio	$\sigma_{b,0}$	0.29	11.52	0.03
			18057	25.920	21.600	9.000	CR1	0.0	Superior	$\sigma_{b+tlc,0}$	0.29		0.03
			26511	27.000	21.600	8.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			861	24.300	21.600	9.000	CR1	40.0	Inferior	τ_{xz}	-0.01	1.92	0.01
		2	26511	27.000	21.600	8.500	CR1	0.0	Superior	τ_{xy}	-0.14	1.92	0.07
			861	24.300	21.600	9.000	CR1	60.0	Inferior	$\sigma_{b,0}$	0.24	11.52	0.02
			1639	27.000	21.600	8.000	CR1	50.0	Intermedio	$\sigma_{b,0}$	-0.87	11.52	0.08
			1639	27.000	21.600	8.000	CR1	40.0	Superior	$\sigma_{b+tlc,0}$	-0.87		0.08
			861	24.300	21.600	9.000	CR1	50.0	Intermedio	τ_{yz}	0.01	0.50	0.02
			861	24.300	21.600	9.000	CR1	60.0	Inferior	τ_{xz}	0.04	1.92	0.02
		3	1640	27.000	21.600	9.000	CR1	60.0	Inferior	τ_{xy}	0.15	1.92	0.08
			1638	24.300	21.600	8.000	CR1	80.0	Inferior	$\sigma_{b,0}$	-0.01	11.52	0.00
			18057	25.920	21.600	9.000	CR1	70.0	Intermedio	$\sigma_{b,0}$	0.30	11.52	0.03
			18057	25.920	21.600	9.000	CR1	60.0	Superior	$\sigma_{b+tlc,0}$	0.29		0.03
			861	24.300	21.600	9.000	CR1	70.0	Intermedio	τ_{yz}	0.04	0.50	0.08
			861	24.300	21.600	9.000	CR1	70.0	Intermedio	τ_{xz}	-0.01	1.92	0.01
		4	1640	27.000	21.600	9.000	CR1	80.0	Inferior	τ_{xy}	-0.16	1.92	0.08
			861	24.300	21.600	9.000	CR1	100.0	Inferior	$\sigma_{b,0}$	0.24	11.52	0.02
			1639	27.000	21.600	8.000	CR1	90.0	Intermedio	$\sigma_{b,0}$	-0.86	11.52	0.07
			26511	27.000	21.600	8.500	CR1	80.0	Superior	$\sigma_{b+tlc,0}$	-0.69		0.08
			861	24.300	21.600	9.000	CR1	90.0	Intermedio	τ_{yz}	0.01	0.50	0.02
			861	24.300	21.600	9.000	CR1	80.0	Superior	τ_{xz}	0.04	1.92	0.02
		5	1640	27.000	21.600	9.000	CR1	100.0	Inferior	τ_{xy}	0.17	1.92	0.09
			1638	24.300	21.600	8.000	CR1	100.0	Superior	$\sigma_{b,0}$	0.02	11.52	0.00
			18057	25.920	21.600	9.000	CR1	120.0	Intermedio	$\sigma_{b,0}$	0.30	11.52	0.03
			18057	25.920	21.600	9.000	CR1	100.0	Superior	$\sigma_{b+tlc,0}$	0.30		0.03
			26511	27.000	21.600	8.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			861	24.300	21.600	9.000	CR1	100.0	Superior	τ_{xz}	-0.01	1.92	0.01
262		1	18061	24.840	21.600	8.500	CR1	140.0	Inferior	τ_{xy}	0.20	1.92	0.11
			26519	31.320	21.600	8.000	CR1	0.0	Superior	$\sigma_{b,0}$	-0.02	11.52	0.00
			1646	32.400	21.600	8.000	CR1	20.0	Intermedio	$\sigma_{b,0}$	-0.32	11.52	0.03
			1646	32.400	21.600	8.000	CR1	0.0	Superior	$\sigma_{b+tlc,0}$	-0.32		0.03
			26521	32.400	21.600	8.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			26521	32.400	21.600	8.500	CR1	40.0	Inferior	τ_{xz}	-0.01	1.92	0.01
		2	1647	32.400	21.600	9.000	CR1	40.0	Inferior	τ_{xy}	-0.17	1.92	0.09
			1647	32.400	21.600	9.000	CR1	40.0	Superior	$\sigma_{b,0}$	0.20	11.52	0.02
			1646	32.400	21.600	8.000	CR1	50.0	Intermedio	$\sigma_{b,0}$	-0.85	11.52	0.07
			1646	32.400	21.600	8.000	CR1	40.0	Superior	$\sigma_{b+tlc,0}$	-0.85		0.07
			26521	32.400	21.600	8.500	CR1	60.0	Inferior	τ_{yz}	0.01	0.50	0.02
			1647	32.400	21.600	9.000	CR1	60.0	Inferior	τ_{xz}	-0.02	1.92	0.01
		3	1647	32.400	21.600	9.000	CR1	60.0	Inferior	τ_{xy}	0.20	1.92	0.10
			26519	31.320	21.600	8.000	CR1	60.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			1646	32.400	21.600	8.000	CR1	70.0	Intermedio	$\sigma_{b,0}$	-0.32	11.52	0.03
			1646	32.400	21.600	8.000	CR1	60.0	Superior	$\sigma_{b+tlc,0}$	-0.32		0.03
			1647	32.400	21.600	9.000	CR1	70.0	Intermedio	τ_{yz}	-0.02	0.50	0.04
			26521	32.400	21.600	8.500	CR1	70.0	Intermedio	τ_{xz}	-0.01	1.92	0.01
		4	1647	32.400	21.600	9.000	CR1	80.0	Inferior	τ_{xy}	-0.23	1.92	0.12
			1647	32.400	21.600	9.000	CR1	100.0	Inferior	$\sigma_{b,0}$	-0.20	11.52	0.02
			882	29.700	21.600	9.000	CR1	90.0	Intermedio	$\sigma_{b,0}$	-0.96	11.52	0.08
			882	29.700	21.600	9.000	CR1	80.0	Superior	$\sigma_{b+tlc,0}$	-0.77		0.10
			26521	32.400	21.600	8.500	CR1	80.0	Superior	τ_{yz}	0.01	0.50	0.02
			1647	32.400	21.600	9.000	CR1	80.0	Superior	τ_{xz}	-0.02	1.92	0.01
		5	1647	32.400	21.600	9.000	CR1	100.0	Inferior	τ_{xy}	0.26	1.92	0.14
			26519	31.320	21.600	8.000	CR1	140.0	Inferior	$\sigma_{b,0}$	0.02	11.52	0.00
			1646	32.400	21.600	8.000	CR1	120.0	Intermedio	$\sigma_{b,0}$	-0.32	11.52	0.03
			1646	32.400	21.600	8.000	CR1	100.0	Superior	$\sigma_{b+tlc,0}$	-0.32		0.03
			26521	32.400	21.600	8.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			26521	32.400	21.600	8.500	CR1	100.0	Superior	τ_{xz}	-0.01	1.92	0.01
263		1	1647	32.400	21.600	9.000	CR1	140.0	Inferior	τ_{xy}	-0.33	1.92	0.17
			26528	36.180	21.600	8.000	CR1	40.0	Inferior	$\sigma_{b,0}$	0.02	11.52	0.00
			1652	35.100	21.600	8.000	CR1	20.0	Intermedio	$\sigma_{b,0}$	-0.33	11.52	0.03
			1652	35.100	21.600	8.000	CR1	0.0	Superior	$\sigma_{b+tlc,0}$	-0.33		0.03
			26531	37.800	21.600	8.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00



Proyecto: TFM
TFM

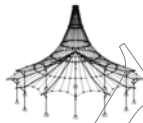
Modelo: TFM_FINAL_v02

Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

2.3 RAZÓN MÁX. DE TENSIONES POR COMPOSICIÓN

Comp. núm.	Superf. núm.	Capa núm.	Punto núm.	Coordenadas del punto [			Carga	Capa		Tensiones [N/mm ²]			Razón [-]
				X	Y	Z		z [mm]	Lado	Símbolo	Existente	Límite	
264		2	18094	35.100	21.600	8.500	CR1	40.0	Inferior	τ_{xz}	0.01	1.92	0.01
			884	35.100	21.600	9.000	CR1	40.0	Inferior	τ_{xy}	0.17	1.92	0.09
			884	35.100	21.600	9.000	CR1	40.0	Superior	$\sigma_{b,0}$	0.20	11.52	0.02
			1652	35.100	21.600	8.000	CR1	50.0	Intermedio	$\sigma_{bc,0}$	-0.88	11.52	0.08
			1652	35.100	21.600	8.000	CR1	40.0	Superior	$\sigma_{b+bc,0}$	-0.88		0.08
			18094	35.100	21.600	8.500	CR1	50.0	Intermedio	τ_{yz}	-0.01	0.50	0.02
			884	35.100	21.600	9.000	CR1	60.0	Inferior	τ_{xz}	-0.02	1.92	0.01
			884	35.100	21.600	9.000	CR1	60.0	Inferior	τ_{xy}	-0.20	1.92	0.11
			26528	36.180	21.600	8.000	CR1	60.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			1652	35.100	21.600	8.000	CR1	70.0	Intermedio	$\sigma_{bc,0}$	-0.33	11.52	0.03
			1652	35.100	21.600	8.000	CR1	60.0	Superior	$\sigma_{b+bc,0}$	-0.33		0.03
			884	35.100	21.600	9.000	CR1	70.0	Intermedio	τ_{yz}	-0.02	0.50	0.04
			18094	35.100	21.600	8.500	CR1	70.0	Intermedio	τ_{xz}	0.01	1.92	0.01
			884	35.100	21.600	9.000	CR1	80.0	Inferior	τ_{xy}	0.23	1.92	0.12
			884	35.100	21.600	9.000	CR1	100.0	Inferior	$\sigma_{b,0}$	-0.20	11.52	0.02
			884	35.100	21.600	9.000	CR1	90.0	Intermedio	$\sigma_{bc,0}$	-0.97	11.52	0.08
			884	35.100	21.600	9.000	CR1	80.0	Superior	$\sigma_{b+bc,0}$	-0.77		0.10
			18094	35.100	21.600	8.500	CR1	90.0	Intermedio	τ_{yz}	-0.01	0.50	0.02
			884	35.100	21.600	9.000	CR1	80.0	Superior	τ_{xz}	-0.02	1.92	0.01
			884	35.100	21.600	9.000	CR1	100.0	Inferior	τ_{xy}	-0.27	1.92	0.14
			26528	36.180	21.600	8.000	CR1	100.0	Superior	$\sigma_{b,0}$	-0.02	11.52	0.00
			1652	35.100	21.600	8.000	CR1	120.0	Intermedio	$\sigma_{bc,0}$	-0.33	11.52	0.03
			1652	35.100	21.600	8.000	CR1	100.0	Superior	$\sigma_{b+bc,0}$	-0.33		0.03
			26531	37.800	21.600	8.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			18094	35.100	21.600	8.500	CR1	100.0	Superior	τ_{xz}	0.01	1.92	0.01
			884	35.100	21.600	9.000	CR1	140.0	Inferior	τ_{xy}	0.33	1.92	0.17
		1	1660	43.200	21.600	8.000	CR1	0.0	Superior	$\sigma_{b,0}$	0.02	11.52	0.00
			1659	40.500	21.600	8.000	CR1	20.0	Intermedio	$\sigma_{bc,0}$	-0.28	11.52	0.02
			1659	40.500	21.600	8.000	CR1	0.0	Superior	$\sigma_{b+bc,0}$	-0.28		0.02
			26541	43.200	21.600	8.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			1661	43.200	21.600	9.000	CR1	40.0	Inferior	τ_{xz}	0.01	1.92	0.01
			886	40.500	21.600	9.000	CR1	40.0	Inferior	τ_{xy}	0.15	1.92	0.08
			1661	43.200	21.600	9.000	CR1	40.0	Superior	$\sigma_{b,0}$	-0.24	11.52	0.02
			1659	40.500	21.600	8.000	CR1	50.0	Intermedio	$\sigma_{bc,0}$	-0.90	11.52	0.08
			1659	40.500	21.600	8.000	CR1	40.0	Superior	$\sigma_{b+bc,0}$	-0.90		0.08
			1661	43.200	21.600	9.000	CR1	60.0	Inferior	τ_{yz}	-0.01	0.50	0.02
			1661	43.200	21.600	9.000	CR1	60.0	Inferior	τ_{xz}	0.04	1.92	0.02
			886	40.500	21.600	9.000	CR1	60.0	Inferior	τ_{xy}	-0.16	1.92	0.08
			1660	43.200	21.600	8.000	CR1	60.0	Superior	$\sigma_{b,0}$	0.01	11.52	0.00
			1659	40.500	21.600	8.000	CR1	70.0	Intermedio	$\sigma_{bc,0}$	-0.29	11.52	0.03
			1659	40.500	21.600	8.000	CR1	60.0	Superior	$\sigma_{b+bc,0}$	-0.29		0.03
			1661	43.200	21.600	9.000	CR1	70.0	Intermedio	τ_{yz}	0.04	0.50	0.08
			1661	43.200	21.600	9.000	CR1	70.0	Intermedio	τ_{xz}	0.01	1.92	0.01
			886	40.500	21.600	9.000	CR1	80.0	Inferior	τ_{xy}	0.18	1.92	0.09
			1661	43.200	21.600	9.000	CR1	80.0	Superior	$\sigma_{b,0}$	-0.24	11.52	0.02
			1659	40.500	21.600	8.000	CR1	90.0	Intermedio	$\sigma_{bc,0}$	-0.89	11.52	0.08
			18108	40.500	21.600	8.500	CR1	80.0	Superior	$\sigma_{b+bc,0}$	-0.74		0.09
			1661	43.200	21.600	9.000	CR1	80.0	Superior	τ_{yz}	-0.01	0.50	0.02
			1661	43.200	21.600	9.000	CR1	80.0	Superior	τ_{xz}	0.04	1.92	0.02
			886	40.500	21.600	9.000	CR1	100.0	Inferior	τ_{xy}	-0.19	1.92	0.10
			1660	43.200	21.600	8.000	CR1	140.0	Inferior	$\sigma_{b,0}$	-0.02	11.52	0.00
			1659	40.500	21.600	8.000	CR1	120.0	Intermedio	$\sigma_{bc,0}$	-0.30	11.52	0.03
			1660	43.200	21.600	8.000	CR1	100.0	Superior	$\sigma_{b+bc,0}$	-0.27		0.03
			26541	43.200	21.600	8.500	CR1	120.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			1661	43.200	21.600	9.000	CR1	100.0	Superior	τ_{xz}	0.01	1.92	0.01
			886	40.500	21.600	9.000	CR1	140.0	Inferior	τ_{xy}	0.21	1.92	0.11
		1	1674	48.600	24.300	8.000	CR1	0.0	Superior	$\sigma_{b,0}$	0.01	11.52	0.00
			18123	50.625	24.300	9.000	CR1	20.0	Intermedio	$\sigma_{bc,0}$	0.62	11.52	0.05
			18123	50.625	24.300	9.000	CR1	0.0	Superior	$\sigma_{b+bc,0}$	0.62		0.05
			26582	52.650	24.300	8.500	CR1	20.0	Intermedio	τ_{yz}	0.00	0.50	0.00
			1675	52.650		24.300	8.000	CR1	40.0	Inferior	τ_{xz}	0.01	1.92	0.01
			1676	52.650		24.300	9.000	CR1	40.0	Inferior	τ_{xy}	-0.27	1.92	0.14
			863	48.600		24.300	9.000	CR1	40.0	Superior	$\sigma_{b,0}$	-0.33	11.52	0.03
			1675	52.650		24.300	8.000	CR1	50.0	Intermedio	$\sigma_{bc,0}$	-1.11	11.52	0.10
			1675	52.650		24.300	8.000	CR1	40.0	Superior	$\sigma_{b+bc,0}$	-1.11		0.10
			1675	52.650		24.300	8.000	CR1	50.0	Intermedio	τ_{yz}	-0.01	0.50	0.03
			863	48.600		24.300	9.000	CR1	60.0	Inferior	τ_{xz}	0.06	1.92	0.03
			1676	52.650		24.300	9.000	CR1	60.0	Inferior	τ_{xy}	0.29	1.92	0.15
			1674	48.600		24.300	8.000	CR1	80.0	Inferior	$\sigma_{b,0}$	-0.01	11.52	0.00
			18123	50.625		24.300	9.000	CR1	70.0	Intermedio	$\sigma_{bc,0}$	0.63	11.52	0.05
			18123	50.625		24.300	9.000	CR1	60.0	Superior	$\sigma_{b+bc,0}$	0.63		0.05
			863	48.600		24.300	9.000	CR1	70.0	Intermedio	τ_{yz}	0.06	0.50	0.13
			1675	52.650		24.300	8.000	CR1	70.0	Intermedio	τ_{xz}	0.01	1.92	0.01
			1676	52.650		24.300	9.000	CR1	80.0	Inferior	τ_{xy}	-0.31	1.92	0.16
			863	48.600		24.300	9.000	CR1	80.0	Superior	$\sigma_{b,0}$	-0.33	11.52	0.03
			26582	52.650		24.300	8.500	CR1	90.0	Intermedio	$\sigma_{bc,0}$	-1.23	11.52	0.11
			26582	52.650		24.300	8.500	CR1	80.0	Superior	$\sigma_{b+bc,0}$	-1.09		0.12
			1675	52.650		24.300	8.000	CR1	90.0	Intermedio	τ_{yz}	-0.01	0.50	0.03
			863	48.600		24.300	9.000	CR1	80.0	Superior	τ_{xz}	0.06	1.92	0.03
			1676	52.650		24.300	9.000	CR1	100.0	Inferior	τ_{xy}	0.33	1.92	0.17
		5	1674	48.600	24.300	8.000	CR1	100.0	Superior	$\sigma_{b,0}$	0.01	11.52	0.00
			18123	50.625	24.300	9.000	CR1	120.0	Intermedio	$\sigma_{bc,0}$	0.64	11.52	0.06
			18123	50.625	24.300	9.000	CR1	100.0	Superior	$\sigma_{b+bc,0}$	0.63		0.06



Proyecto: TFM
TFM

Modelo: TFM_FINAL_v02

Estructura Conselleria - Primera Prueba

Fecha: 05/07/2020

2.3 RAZÓN MÁX. DE TENSIONES POR COMPOSICIÓN

Comp. núm.	Superf. núm.	Capa núm.	Punto núm.	Coordenadas del punto [			Carga	Capa		Tensiones [N/mm ²]			Razón [-]
				X	Y	Z		z [mm]	Lado	Símbolo	Existente	Límite	
266	1	1	26582	52.650	24.300	8.500	CR1	120.0	Intermedio	Ty'z'	0.00	0.50	0.00
			1675	52.650	24.300	8.000	CR1	100.0	Superior	Tx'z'	0.01	1.92	0.01
			1676	52.650	24.300	9.000	CR1	140.0	Inferior	Tx'y'	-0.36	1.92	0.19
			26589	56.362	24.300	8.000	CR1	0.0	Superior	σ _{b,0}	-0.01	11.52	0.00
			1682	59.400	24.300	8.000	CR1	20.0	Intermedio	σ _{lc,0}	-0.75	11.52	0.07
			1682	59.400	24.300	8.000	CR1	0.0	Superior	σ _{b+tlc,0}	-0.75		0.07
			26595	59.400	24.300	8.500	CR1	20.0	Intermedio	Ty'z'	0.00	0.50	0.00
			18154	55.350	24.300	8.500	CR1	40.0	Inferior	Tx'z'	0.01	1.92	0.01
			1683	59.400	24.300	9.000	CR1	40.0	Inferior	Tx'y'	-0.42	1.92	0.22
			1683	59.400	24.300	9.000	CR1	40.0	Superior	σ _{b,0}	0.21	11.52	0.02
	2		1682	59.400	24.300	8.000	CR1	50.0	Intermedio	σ _{lc,0}	-2.71	11.52	0.24
			1682	59.400	24.300	8.000	CR1	40.0	Superior	σ _{b+tlc,0}	-2.71		0.24
			18154	55.350	24.300	8.500	CR1	50.0	Intermedio	Ty'z'	-0.01	0.50	0.02
			1683	59.400	24.300	9.000	CR1	60.0	Inferior	Tx'z'	-0.02	1.92	0.01
			1683	59.400	24.300	9.000	CR1	60.0	Inferior	Tx'y'	0.45	1.92	0.24
			26589	56.362	24.300	8.000	CR1	60.0	Superior	σ _{b,0}	-0.01	11.52	0.00
			1682	59.400	24.300	8.000	CR1	70.0	Intermedio	σ _{lc,0}	-0.75	11.52	0.07
			1682	59.400	24.300	8.000	CR1	60.0	Superior	σ _{b+tlc,0}	-0.75		0.07
			1683	59.400	24.300	9.000	CR1	70.0	Intermedio	Ty'z'	-0.02	0.50	0.04
			18154	55.350	24.300	8.500	CR1	70.0	Intermedio	Tx'z'	0.01	1.92	0.01
	3		1683	59.400	24.300	9.000	CR1	80.0	Inferior	Tx'y'	-0.49	1.92	0.25
			1683	59.400	24.300	9.000	CR1	80.0	Superior	σ _{b,0}	0.21	11.52	0.02
			1682	59.400	24.300	8.000	CR1	90.0	Intermedio	σ _{lc,0}	-2.73	11.52	0.24
			1682	59.400	24.300	8.000	CR1	80.0	Superior	σ _{b+tlc,0}	-2.73		0.24
			18154	55.350	24.300	8.500	CR1	90.0	Intermedio	Ty'z'	-0.01	0.50	0.02
			1683	59.400	24.300	9.000	CR1	80.0	Superior	Tx'z'	-0.02	1.92	0.01
			1683	59.400	24.300	9.000	CR1	100.0	Inferior	Tx'y'	0.52	1.92	0.27
			26589	56.362	24.300	8.000	CR1	100.0	Superior	σ _{b,0}	-0.01	11.52	0.00
			1682	59.400	24.300	8.000	CR1	120.0	Intermedio	σ _{lc,0}	-0.75	11.52	0.07
			1682	59.400	24.300	8.000	CR1	100.0	Superior	σ _{b+tlc,0}	-0.75		0.07
	5		26595	59.400	24.300	8.500	CR1	120.0	Intermedio	Ty'z'	0.00	0.50	0.00
			18154	55.350	24.300	8.500	CR1	100.0	Superior	Tx'z'	0.01	1.92	0.01
			1683	59.400	24.300	9.000	CR1	140.0	Inferior	Tx'y'	-0.59	1.92	0.31
267	1		1688	67.500	24.300	8.000	CR1	0.0	Superior	σ _{b,0}	0.02	11.52	0.00
			18167	65.475	24.300	9.000	CR1	20.0	Intermedio	σ _{lc,0}	0.62	11.52	0.05
			18167	65.475	24.300	9.000	CR1	0.0	Superior	σ _{b+tlc,0}	0.62		0.05
			26611	67.500	24.300	8.500	CR1	20.0	Intermedio	Ty'z'	0.00	0.50	0.00
			1687	63.450	24.300	8.000	CR1	40.0	Inferior	Tx'z'	-0.01	1.92	0.01
			878	63.450	24.300	9.000	CR1	40.0	Inferior	Tx'y'	0.35	1.92	0.18
			878	63.450	24.300	9.000	CR1	60.0	Inferior	σ _{b,0}	-0.19	11.52	0.02
			1687	63.450	24.300	8.000	CR1	50.0	Intermedio	σ _{lc,0}	-2.37	11.52	0.21
			1687	63.450	24.300	8.000	CR1	40.0	Superior	σ _{b+tlc,0}	-2.37		0.21
			1687	63.450	24.300	8.000	CR1	50.0	Intermedio	Ty'z'	0.01	0.50	0.02
	2		1689	67.500	24.300	9.000	CR1	60.0	Inferior	Tx'z'	0.03	1.92	0.02
			878	63.450	24.300	9.000	CR1	60.0	Inferior	Tx'y'	-0.37	1.92	0.19
			1688	67.500	24.300	8.000	CR1	60.0	Superior	σ _{b,0}	0.01	11.52	0.00
			18167	65.475	24.300	9.000	CR1	70.0	Intermedio	σ _{lc,0}	0.63	11.52	0.05
			18167	65.475	24.300	9.000	CR1	60.0	Superior	σ _{b+tlc,0}	0.63		0.05
			1689	67.500	24.300	9.000	CR1	70.0	Intermedio	Ty'z'	0.03	0.50	0.06
			1687	63.450	24.300	8.000	CR1	70.0	Intermedio	Tx'z'	-0.01	1.92	0.01
			878	63.450	24.300	9.000	CR1	80.0	Inferior	Tx'y'	0.39	1.92	0.20
			878	63.450	24.300	9.000	CR1	80.0	Superior	σ _{b,0}	0.19	11.52	0.02
			1687	63.450	24.300	8.000	CR1	90.0	Intermedio	σ _{lc,0}	-2.36	11.52	0.21
	3		1687	63.450	24.300	8.000	CR1	80.0	Superior	σ _{b+tlc,0}	-2.36		0.21
			1687	63.450	24.300	8.000	CR1	90.0	Intermedio	Ty'z'	0.01	0.50	0.02
			1689	67.500	24.300	9.000	CR1	80.0	Superior	Tx'z'	0.03	1.92	0.02
			878	63.450	24.300	9.000	CR1	100.0	Inferior	Tx'y'	-0.41	1.92	0.21
			1688	67.500	24.300	8.000	CR1	100.0	Superior	σ _{b,0}	0.02	11.52	0.00
			18167	65.475	24.300	9.000	CR1	120.0	Intermedio	σ _{lc,0}	0.63	11.52	0.06
			18167	65.475	24.300	9.000	CR1	100.0	Superior	σ _{b+tlc,0}	0.63		0.06
			26611	67.500	24.300	8.500	CR1	120.0	Intermedio	Ty'z'	0.00	0.50	0.00
			1687	63.450	24.300	8.000	CR1	100.0	Superior	Tx'z'	-0.01	1.92	0.01
			878	63.450	24.300	9.000	CR1	140.0	Inferior	Tx'y'	0.45	1.92	0.23
	5		26630	65.880	13.500	8.000	CR1	40.0	Inferior	σ _{b,0}	-0.01	11.52	0.00
268	1		18185	65.880	13.500	9.000	CR1	20.0	Intermedio	σ _{lc,0}	0.31	11.52	0.03
			18185	65.880	13.500	9.000	CR1	0.0	Superior	σ _{b+tlc,0}	0.31		0.03
			26633	64.800	13.500	8.500	CR1	20.0	Intermedio	Ty'z'	0.00	0.50	0.00
			1696	64.800	13.500	8.000	CR1	40.0	Inferior	Tx'z'	0.00	1.92	0.00
			1698	64.800	13.500	9.000	CR1	40.0	Inferior	Tx'y'	0.15	1.92	0.08
			865	67.500	13.500	9.000	CR1	40.0	Superior	σ _{b,0}	0.14	11.52	0.01
			1696	64.800	13.500	8.000	CR1	50.0	Intermedio	σ _{lc,0}	-0.86	11.52	0.08
			1696	64.800	13.500	8.000	CR1	40.0	Superior	σ _{b+tlc,0}	-0.86		0.08
			1696	64.800	13.500	8.000	CR1	50.0	Intermedio	Ty'z'	0.00	0.50	0.01
			865	67.500	13.500	9.000	CR1	60.0	Inferior	Tx'z'	-0.03	1.92	0.01
			1698	64.800	13.500	9.000	CR1	60.0	Inferior	Tx'y'	-0.15	1.92	0.08
	2		26630	65.880	13.500	8.000	CR1	80.0	Inferior	σ _{b,0}	0.00	11.52	0.00
			18185	65.880	13.500	9.000	CR1	70.0	Intermedio	σ _{lc,0}	0.32	11.52	0.03
			18185	65.880	13.500	9.000	CR1	60.0	Superior	σ _{b+tlc,0}	0.32		0.03
			865	67.500	13.500	9.000	CR1	70.0	Intermedio	Ty'z'	-0.03	0.50	0.05
			1696	64.800	13.500	8.000	CR1	70.0	Intermedio	Tx'z'	0.00	1.92	0.00
			1698	64.800	13.500	9.000	CR1	80.0	Inferior	Tx'y'	0.15	1.92	0.08
			865	67.500	13.500	9.000	CR1	100.0	Inferior	σ _{b,0}	-0.14	11.52	0.01
			1696	64.800	13.500	8.000	CR1	90.0	Intermedio	σ _{lc,0}	-0.89	11.52	0.08
	4		1696	64.800	13.500	8.000	CR1	90.0	Intermedio	σ _{lc,0}	-0.89	11.52	0.08

Proyecto: TFM Modelo: TFM_FINAL_v02
TFM Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

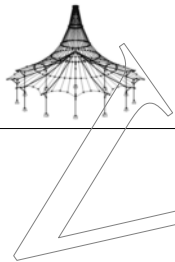
2.3 RAZÓN MÁX. DE TENSIONES POR COMPOSICIÓN

Comp. núm.	Superf. núm.	Capa núm.	Punto núm.	Coordenadas del punto [			Carga	Capa		Tensiones [N/mm ²]			Razón [-]
				X	Y	Z		z [mm]	Lado	Símbolo	Existente	Límite	
			1696	64.800	13.500	8.000	CR1	80.0	Superior	$\sigma_{b+Hc,0}$	-0.88		0.08
			1696	64.800	13.500	8.000	CR1	90.0	Intermedio	$\tau_{y'z'}$	0.00	0.50	0.01
			865	67.500	13.500	9.000	CR1	80.0	Superior	$\tau_{x'z'}$	-0.03	1.92	0.01
			1698	64.800	13.500	9.000	CR1	100.0	Inferior	$\tau_{x'y'}$	-0.15	1.92	0.08
		5	26630	65.880	13.500	8.000	CR1	100.0	Superior	$\sigma_{b,0}$	0.01	11.52	0.00
			18185	65.880	13.500	9.000	CR1	120.0	Intermedio	$\sigma_{b,c,0}$	0.32	11.52	0.03
			18185	65.880	13.500	9.000	CR1	100.0	Superior	$\sigma_{b+Hc,0}$	0.32		0.03
			26633	64.800	13.500	8.500	CR1	120.0	Intermedio	$\tau_{y'z'}$	0.00	0.50	0.00
			1696	64.800	13.500	8.000	CR1	100.0	Superior	$\tau_{x'z'}$	0.00	1.92	0.00
			1698	64.800	13.500	9.000	CR1	140.0	Inferior	$\tau_{x'y'}$	0.15	1.92	0.08
	269	1	18204	59.940	13.500	9.000	CR1	0.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			1703	59.400	13.500	8.000	CR1	20.0	Intermedio	$\sigma_{b,c,0}$	-0.96	11.52	0.08
			1703	59.400	13.500	8.000	CR1	0.0	Superior	$\sigma_{b+Hc,0}$	-0.95		0.08
			26643	59.400	13.500	8.500	CR1	20.0	Intermedio	$\tau_{y'z'}$	0.00	0.50	0.00
			1705	59.400	13.500	9.000	CR1	40.0	Inferior	$\tau_{x'z'}$	0.01	1.92	0.00
			1703	59.400	13.500	8.000	CR1	0.0	Superior	$\tau_{x'y'}$	-0.46	1.92	0.24
		2	1705	59.400	13.500	9.000	CR1	40.0	Superior	$\sigma_{b,0}$	0.52	11.52	0.04
			1703	59.400	13.500	8.000	CR1	50.0	Intermedio	$\sigma_{b,c,0}$	-4.16	11.52	0.36
			1703	59.400	13.500	8.000	CR1	40.0	Superior	$\sigma_{b+Hc,0}$	-4.12		0.37
			1705	59.400	13.500	9.000	CR1	40.0	Superior	$\tau_{y'z'}$	-0.01	0.50	0.02
			1705	59.400	13.500	9.000	CR1	60.0	Inferior	$\tau_{x'z'}$	-0.09	1.92	0.05
			1705	59.400	13.500	9.000	CR1	60.0	Inferior	$\tau_{x'y'}$	-0.47	1.92	0.24
		3	18204	59.940	13.500	9.000	CR1	60.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			1703	59.400	13.500	8.000	CR1	70.0	Intermedio	$\sigma_{b,c,0}$	-0.98	11.52	0.08
			1703	59.400	13.500	8.000	CR1	60.0	Superior	$\sigma_{b+Hc,0}$	-0.97		0.09
			1705	59.400	13.500	9.000	CR1	70.0	Intermedio	$\tau_{y'z'}$	-0.09	0.50	0.19
			1705	59.400	13.500	9.000	CR1	70.0	Intermedio	$\tau_{x'z'}$	0.01	1.92	0.00
			1705	59.400	13.500	9.000	CR1	80.0	Inferior	$\tau_{x'y'}$	0.50	1.92	0.26
		4	1705	59.400	13.500	9.000	CR1	80.0	Superior	$\sigma_{b,0}$	0.52	11.52	0.04
			1703	59.400	13.500	8.000	CR1	90.0	Intermedio	$\sigma_{b,c,0}$	-4.36	11.52	0.38
			1703	59.400	13.500	8.000	CR1	80.0	Superior	$\sigma_{b+Hc,0}$	-4.31		0.38
			1705	59.400	13.500	9.000	CR1	100.0	Inferior	$\tau_{y'z'}$	-0.01	0.50	0.02
			1705	59.400	13.500	9.000	CR1	80.0	Superior	$\tau_{x'z'}$	-0.09	1.92	0.05
			1705	59.400	13.500	9.000	CR1	100.0	Inferior	$\tau_{x'y'}$	-0.54	1.92	0.28
		5	18204	59.940	13.500	9.000	CR1	100.0	Superior	$\sigma_{b,0}$	-0.01	11.52	0.00
			1703	59.400	13.500	8.000	CR1	120.0	Intermedio	$\sigma_{b,c,0}$	-1.00	11.52	0.09
			1703	59.400	13.500	8.000	CR1	100.0	Superior	$\sigma_{b+Hc,0}$	-0.99		0.09
			26643	59.400	13.500	8.500	CR1	120.0	Intermedio	$\tau_{y'z'}$	0.00	0.50	0.00
			1705	59.400	13.500	9.000	CR1	100.0	Superior	$\tau_{x'z'}$	0.01	1.92	0.00
			1705	59.400	13.500	9.000	CR1	140.0	Inferior	$\tau_{x'y'}$	0.60	1.92	0.31

Razón máxima 0.63

4.1 LISTA DE PIEZAS

Superf. núm.	Descripción del material		Espesor t [mm]	Núm. de capas	Área [m ²]	Revestim. [m ²]	Volumen [m ³]	Peso [t]
22	C24		40.0	2	5.400	10.800	0.432	0.216
	C24		20.0	3	5.400	0.000	0.324	0.162
Σ			140.0	5	5.400	10.800	0.756	0.378
25	C24		40.0	2	5.400	10.800	0.432	0.216
	C24		20.0	3	5.400	0.000	0.324	0.162
Σ			140.0	5	5.400	10.800	0.756	0.378
48	C24		40.0	2	5.400	10.800	0.432	0.216
	C24		20.0	3	5.400	0.000	0.324	0.162
Σ			140.0	5	5.400	10.800	0.756	0.378
51	C24		40.0	2	5.400	10.800	0.432	0.216
	C24		20.0	3	5.400	0.000	0.324	0.162
Σ			140.0	5	5.400	10.800	0.756	0.378
74	C24		40.0	2	5.400	10.800	0.432	0.216
	C24		20.0	3	5.400	0.000	0.324	0.162
Σ			140.0	5	5.400	10.800	0.756	0.378
77	C24		40.0	2	5.400	10.800	0.432	0.216
	C24		20.0	3	5.400	0.000	0.324	0.162
Σ			140.0	5	5.400	10.800	0.756	0.378
148	C24		40.0	2	2.700	5.400	0.216	0.108
	C24		20.0	3	2.700	0.000	0.162	0.081
Σ			140.0	5	2.700	5.400	0.378	0.189
149	C24		40.0	2	2.700	5.400	0.216	0.108
	C24		20.0	3	2.700	0.000	0.162	0.081
Σ			140.0	5	2.700	5.400	0.378	0.189
150	C24		40.0	2	2.700	5.400	0.216	0.108
	C24		20.0	3	2.700	0.000	0.162	0.081
Σ			140.0	5	2.700	5.400	0.378	0.189
151	C24		40.0	2	5.400	10.800	0.432	0.216
	C24		20.0	3	5.400	0.000	0.324	0.162



Proyecto: TFM
TFM

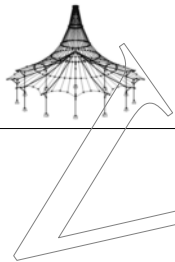
Modelo: TFM_FINAL_v02

Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

4.1 LISTA DE PIEZAS

Superf. núm.	Descripción del material	Espesor t [mm]	Núm. de capas	Área [m²]	Revestim. [m²]	Volumen [m³]	Peso [t]
Σ		140.0	5	5.400	10.800	0.756	0.378
152	C24	40.0	2	5.400	10.800	0.432	0.216
Σ	C24	20.0	3	5.400	0.000	0.324	0.162
Σ		140.0	5	5.400	10.800	0.756	0.378
153	C24	40.0	2	5.400	10.800	0.432	0.216
Σ	C24	20.0	3	5.400	0.000	0.324	0.162
Σ		140.0	5	5.400	10.800	0.756	0.378
154	C24	40.0	2	5.400	10.800	0.432	0.216
Σ	C24	20.0	3	5.400	0.000	0.324	0.162
Σ		140.0	5	5.400	10.800	0.756	0.378
155	C24	40.0	2	4.050	8.100	0.324	0.162
Σ	C24	20.0	3	4.050	0.000	0.243	0.122
Σ		140.0	5	4.050	8.100	0.567	0.283
156	C24	40.0	2	2.700	5.400	0.216	0.108
Σ	C24	20.0	3	2.700	0.000	0.162	0.081
Σ		140.0	5	2.700	5.400	0.378	0.189
157	C24	40.0	2	4.050	8.100	0.324	0.162
Σ	C24	20.0	3	4.050	0.000	0.243	0.122
Σ		140.0	5	4.050	8.100	0.567	0.283
158	C24	40.0	2	4.050	8.100	0.324	0.162
Σ	C24	20.0	3	4.050	0.000	0.243	0.122
Σ		140.0	5	4.050	8.100	0.567	0.283
159	C24	40.0	2	4.050	8.100	0.324	0.162
Σ	C24	20.0	3	4.050	0.000	0.243	0.122
Σ		140.0	5	4.050	8.100	0.567	0.283
160	C24	40.0	2	4.050	8.100	0.324	0.162
Σ	C24	20.0	3	4.050	0.000	0.243	0.122
Σ		140.0	5	4.050	8.100	0.567	0.283
161	C24	40.0	2	4.050	8.100	0.324	0.162
Σ	C24	20.0	3	4.050	0.000	0.243	0.122
Σ		140.0	5	4.050	8.100	0.567	0.283
162	C24	40.0	2	4.050	8.100	0.324	0.162
Σ	C24	20.0	3	4.050	0.000	0.243	0.122
Σ		140.0	5	4.050	8.100	0.567	0.283
163	C24	40.0	2	2.700	5.400	0.216	0.108
Σ	C24	20.0	3	2.700	0.000	0.162	0.081
Σ		140.0	5	2.700	5.400	0.378	0.189
164	C24	40.0	2	2.700	5.400	0.216	0.108
Σ	C24	20.0	3	2.700	0.000	0.162	0.081
Σ		140.0	5	2.700	5.400	0.378	0.189
165	C24	40.0	2	2.700	5.400	0.216	0.108
Σ	C24	20.0	3	2.700	0.000	0.162	0.081
Σ		140.0	5	2.700	5.400	0.378	0.189
166	C24	40.0	2	2.700	5.400	0.216	0.108
Σ	C24	20.0	3	2.700	0.000	0.162	0.081
Σ		140.0	5	2.700	5.400	0.378	0.189
167	C24	40.0	2	4.050	8.100	0.324	0.162
Σ	C24	20.0	3	4.050	0.000	0.243	0.122
Σ		140.0	5	4.050	8.100	0.567	0.283
168	C24	40.0	2	4.050	8.100	0.324	0.162
Σ	C24	20.0	3	4.050	0.000	0.243	0.122
Σ		140.0	5	4.050	8.100	0.567	0.283
169	C24	40.0	2	4.050	8.100	0.324	0.162
Σ	C24	20.0	3	4.050	0.000	0.243	0.122
Σ		140.0	5	4.050	8.100	0.567	0.283
170	C24	40.0	2	2.700	5.400	0.216	0.108
Σ	C24	20.0	3	2.700	0.000	0.162	0.081
Σ		140.0	5	2.700	5.400	0.378	0.189
171	C24	40.0	2	2.700	5.400	0.216	0.108
Σ	C24	20.0	3	2.700	0.000	0.162	0.081
Σ		140.0	5	2.700	5.400	0.378	0.189
197	C24	40.0	2	2.700	5.400	0.216	0.108
Σ	C24	20.0	3	2.700	0.000	0.162	0.081
Σ		140.0	5	2.700	5.400	0.378	0.189
198	C24	40.0	2	2.700	5.400	0.216	0.108
Σ	C24	20.0	3	2.700	0.000	0.162	0.081
Σ		140.0	5	2.700	5.400	0.378	0.189
199	C24	40.0	2	2.700	5.400	0.216	0.108
Σ	C24	20.0	3	2.700	0.000	0.162	0.081

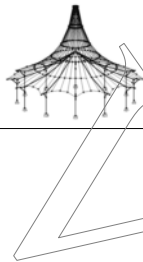


Proyecto: TFM Modelo: TFM_FINAL_v02
TFM Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

4.1 LISTA DE PIEZAS

Superf. núm.	Descripción del material	Espesor t [mm]	Núm. de capas	Área [m²]	Revestim. [m²]	Volumen [m³]	Peso [t]
Σ		140.0	5	2.700	5.400	0.378	0.189
200	C24	40.0	2	5.400	10.800	0.432	0.216
Σ	C24	20.0	3	5.400	0.000	0.324	0.162
Σ		140.0	5	5.400	10.800	0.756	0.378
201	C24	40.0	2	5.400	10.800	0.432	0.216
Σ	C24	20.0	3	5.400	0.000	0.324	0.162
Σ		140.0	5	5.400	10.800	0.756	0.378
202	C24	40.0	2	5.400	10.800	0.432	0.216
Σ	C24	20.0	3	5.400	0.000	0.324	0.162
Σ		140.0	5	5.400	10.800	0.756	0.378
203	C24	40.0	2	5.400	10.800	0.432	0.216
Σ	C24	20.0	3	5.400	0.000	0.324	0.162
Σ		140.0	5	5.400	10.800	0.756	0.378
204	C24	40.0	2	4.050	8.100	0.324	0.162
Σ	C24	20.0	3	4.050	0.000	0.243	0.122
Σ		140.0	5	4.050	8.100	0.567	0.283
205	C24	40.0	2	2.700	5.400	0.216	0.108
Σ	C24	20.0	3	2.700	0.000	0.162	0.081
Σ		140.0	5	2.700	5.400	0.378	0.189
206	C24	40.0	2	4.050	8.100	0.324	0.162
Σ	C24	20.0	3	4.050	0.000	0.243	0.122
Σ		140.0	5	4.050	8.100	0.567	0.283
207	C24	40.0	2	4.050	8.100	0.324	0.162
Σ	C24	20.0	3	4.050	0.000	0.243	0.122
Σ		140.0	5	4.050	8.100	0.567	0.283
208	C24	40.0	2	4.050	8.100	0.324	0.162
Σ	C24	20.0	3	4.050	0.000	0.243	0.122
Σ		140.0	5	4.050	8.100	0.567	0.283
209	C24	40.0	2	4.050	8.100	0.324	0.162
Σ	C24	20.0	3	4.050	0.000	0.243	0.122
Σ		140.0	5	4.050	8.100	0.567	0.283
210	C24	40.0	2	4.050	8.100	0.324	0.162
Σ	C24	20.0	3	4.050	0.000	0.243	0.122
Σ		140.0	5	4.050	8.100	0.567	0.283
211	C24	40.0	2	4.050	8.100	0.324	0.162
Σ	C24	20.0	3	4.050	0.000	0.243	0.122
Σ		140.0	5	4.050	8.100	0.567	0.283
212	C24	40.0	2	2.700	5.400	0.216	0.108
Σ	C24	20.0	3	2.700	0.000	0.162	0.081
Σ		140.0	5	2.700	5.400	0.378	0.189
213	C24	40.0	2	2.700	5.400	0.216	0.108
Σ	C24	20.0	3	2.700	0.000	0.162	0.081
Σ		140.0	5	2.700	5.400	0.378	0.189
214	C24	40.0	2	2.700	5.400	0.216	0.108
Σ	C24	20.0	3	2.700	0.000	0.162	0.081
Σ		140.0	5	2.700	5.400	0.378	0.189
215	C24	40.0	2	2.700	5.400	0.216	0.108
Σ	C24	20.0	3	2.700	0.000	0.162	0.081
Σ		140.0	5	2.700	5.400	0.378	0.189
216	C24	40.0	2	4.050	8.100	0.324	0.162
Σ	C24	20.0	3	4.050	0.000	0.243	0.122
Σ		140.0	5	4.050	8.100	0.567	0.283
217	C24	40.0	2	4.050	8.100	0.324	0.162
Σ	C24	20.0	3	4.050	0.000	0.243	0.122
Σ		140.0	5	4.050	8.100	0.567	0.283
218	C24	40.0	2	4.050	8.100	0.324	0.162
Σ	C24	20.0	3	4.050	0.000	0.243	0.122
Σ		140.0	5	4.050	8.100	0.567	0.283
219	C24	40.0	2	2.700	5.400	0.216	0.108
Σ	C24	20.0	3	2.700	0.000	0.162	0.081
Σ		140.0	5	2.700	5.400	0.378	0.189
220	C24	40.0	2	2.700	5.400	0.216	0.108
Σ	C24	20.0	3	2.700	0.000	0.162	0.081
Σ		140.0	5	2.700	5.400	0.378	0.189
246	C24	40.0	2	2.700	5.400	0.216	0.108
Σ	C24	20.0	3	2.700	0.000	0.162	0.081
Σ		140.0	5	2.700	5.400	0.378	0.189
247	C24	40.0	2	2.700	5.400	0.216	0.108
Σ	C24	20.0	3	2.700	0.000	0.162	0.081



Proyecto: TFM Modelo: TFM_FINAL_v02
TFM Estructura Consellería - Primera Prueba

Fecha: 05/07/2020

4.1 LISTA DE PIEZAS

Superf. núm.	Descripción del material	Espesor t [mm]	Núm. de capas	Área [m²]	Revestim. [m²]	Volumen [m³]	Peso [t]
Σ		140.0	5	2.700	5.400	0.378	0.189
248	C24	40.0	2	2.700	5.400	0.216	0.108
	C24	20.0	3	2.700	0.000	0.162	0.081
Σ		140.0	5	2.700	5.400	0.378	0.189
249	C24	40.0	2	5.400	10.800	0.432	0.216
	C24	20.0	3	5.400	0.000	0.324	0.162
Σ		140.0	5	5.400	10.800	0.756	0.378
250	C24	40.0	2	5.400	10.800	0.432	0.216
	C24	20.0	3	5.400	0.000	0.324	0.162
Σ		140.0	5	5.400	10.800	0.756	0.378
251	C24	40.0	2	5.400	10.800	0.432	0.216
	C24	20.0	3	5.400	0.000	0.324	0.162
Σ		140.0	5	5.400	10.800	0.756	0.378
252	C24	40.0	2	5.400	10.800	0.432	0.216
	C24	20.0	3	5.400	0.000	0.324	0.162
Σ		140.0	5	5.400	10.800	0.756	0.378
253	C24	40.0	2	4.050	8.100	0.324	0.162
	C24	20.0	3	4.050	0.000	0.243	0.122
Σ		140.0	5	4.050	8.100	0.567	0.283
254	C24	40.0	2	2.700	5.400	0.216	0.108
	C24	20.0	3	2.700	0.000	0.162	0.081
Σ		140.0	5	2.700	5.400	0.378	0.189
255	C24	40.0	2	4.050	8.100	0.324	0.162
	C24	20.0	3	4.050	0.000	0.243	0.122
Σ		140.0	5	4.050	8.100	0.567	0.283
256	C24	40.0	2	4.050	8.100	0.324	0.162
	C24	20.0	3	4.050	0.000	0.243	0.122
Σ		140.0	5	4.050	8.100	0.567	0.283
257	C24	40.0	2	4.050	8.100	0.324	0.162
	C24	20.0	3	4.050	0.000	0.243	0.122
Σ		140.0	5	4.050	8.100	0.567	0.283
258	C24	40.0	2	4.050	8.100	0.324	0.162
	C24	20.0	3	4.050	0.000	0.243	0.122
Σ		140.0	5	4.050	8.100	0.567	0.283
259	C24	40.0	2	4.050	8.100	0.324	0.162
	C24	20.0	3	4.050	0.000	0.243	0.122
Σ		140.0	5	4.050	8.100	0.567	0.283
260	C24	40.0	2	4.050	8.100	0.324	0.162
	C24	20.0	3	4.050	0.000	0.243	0.122
Σ		140.0	5	4.050	8.100	0.567	0.283
261	C24	40.0	2	2.700	5.400	0.216	0.108
	C24	20.0	3	2.700	0.000	0.162	0.081
Σ		140.0	5	2.700	5.400	0.378	0.189
262	C24	40.0	2	2.700	5.400	0.216	0.108
	C24	20.0	3	2.700	0.000	0.162	0.081
Σ		140.0	5	2.700	5.400	0.378	0.189
263	C24	40.0	2	2.700	5.400	0.216	0.108
	C24	20.0	3	2.700	0.000	0.162	0.081
Σ		140.0	5	2.700	5.400	0.378	0.189
264	C24	40.0	2	2.700	5.400	0.216	0.108
	C24	20.0	3	2.700	0.000	0.162	0.081
Σ		140.0	5	2.700	5.400	0.378	0.189
265	C24	40.0	2	4.050	8.100	0.324	0.162
	C24	20.0	3	4.050	0.000	0.243	0.122
Σ		140.0	5	4.050	8.100	0.567	0.283
266	C24	40.0	2	4.050	8.100	0.324	0.162
	C24	20.0	3	4.050	0.000	0.243	0.122
Σ		140.0	5	4.050	8.100	0.567	0.283
267	C24	40.0	2	4.050	8.100	0.324	0.162
	C24	20.0	3	4.050	0.000	0.243	0.122
Σ		140.0	5	4.050	8.100	0.567	0.283
268	C24	40.0	2	2.700	5.400	0.216	0.108
	C24	20.0	3	2.700	0.000	0.162	0.081
Σ		140.0	5	2.700	5.400	0.378	0.189
269	C24	40.0	2	2.700	5.400	0.216	0.108
	C24	20.0	3	2.700	0.000	0.162	0.081
Σ		140.0	5	2.700	5.400	0.378	0.189
Σ Total				299.700	599.400	41.958	20.979