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DISEÑO ESTRUCTURAL

PROYECTO

AULA AMBIENTAL PARA CULTURA DEL ARBOL
Diseño Tipo I – Zona de Riesgo Símico Intermedio

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DISEÑO ESTRUCTURAL
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1. INTRODUCCIÓN

El presente informe busca realizar el diseño estructural de un Aula Ambiental para varios municipios del departamento de Cundinamarca y Boyacá, una estructura principal compuesta bajo elementos metálicos, placas de tanques en concreto sobre nivel de piso y una placa de concreto para una edificación en concreto prefabricado. Se realizará el análisis de la estructura basado en la información que entregan los diseños arquitectónicos, los cuales darán las pautas de implantación definitiva de las estructuras. Los diseños estarán basados bajo la normativa sismorresistente colombiana (NSR-10).

2. LOCALIZACIÓN

El proyecto se ubicará en varios municipios de los departamentos de Cundinamarca y Boyacá, los cuales se ilustran a continuación:

#	MUNICIPIO
1	Municipio Zipaquirá Aula Ambiental Tipo 1
2	Municipio Carmen de Carupa Aula Ambiental Tipo 2
3	Municipio Ubaté Aula Ambiental Tipo 1
4	Municipio Nemocón Aula Ambiental Tipo 1
5	Municipio Buenavista Aula Ambiental Tipo 2
6	Municipio Yacopí Aula Ambiental Tipo 2
7	Municipio Pacho Aula Ambiental Tipo 1
8	Municipio Machetá Aula Ambiental Tipo 2
9	Municipio Chocontá Aula Ambiental Tipo 1
10	Municipio La Calera Aula Ambiental Tipo 1
11	Municipio Tabio Aula Ambiental Tipo 1
12	Municipio Factativa Aula Ambiental Tipo 1
13	Municipio San Francisco Aula Ambiental Tipo 2
14	Municipio Vergara Aula Ambiental Tipo 2
15	Municipio Villeta Aula Ambiental Tipo 1
16	Municipio Quebradanegra Aula Ambiental Tipo 2
17	Municipio Guaduas Aula Ambiental Tipo 1
18	Municipio Viani Aula Ambiental Tipo 1
19	Municipio La Mesa Aula Ambiental Tipo 1
20	Municipio Tocaima Aula Ambiental Tipo 1
21	Municipio Girardot Aula Ambiental Tipo 1
22	Municipio Cabrera Aula Ambiental Tipo 1

No	MUNICIPIO	DIRECCION REGIONAL
1	ARBELAEZ	DRSU
2	ZIPACON	DRSO
3	BOJACA	DRSO
4	CUCUNUBA	DRU
5	SABOYA	DRCH
6	CALDAS	DRCH
7	SAN MIGUEL DE SEMA	DRCH
8	FUSAGASUGA	DRSU
9	NOCAIMA	DRGU
10	PUERTO SALGAR	DRBM
11	SAN JUAN DE RIO SECO	DRMC
12	UTICA	DRGU
13	TOPAIPI	DRRN
14	SOPO	DRSC
15	PASCA	DRSU
16	SUPATA	DRGU
17	TOCANCIPA	DRSC
18	COGUA	DRSC
19	TENA	DRTE
20	VENECIA	DRSU
21	SILVANIA	DRSU
22	EL COLEGIO	DRTE
23	AGUA DE DIOS	DRAM
24	NIMAIMA	DRGU
25	LA VEGA	DRGU
26	VILLA GOMEZ	DRRN

Ilustración 1 Municipios del proyecto

3. IMPLANTACIÓN ESTRUCTURAL

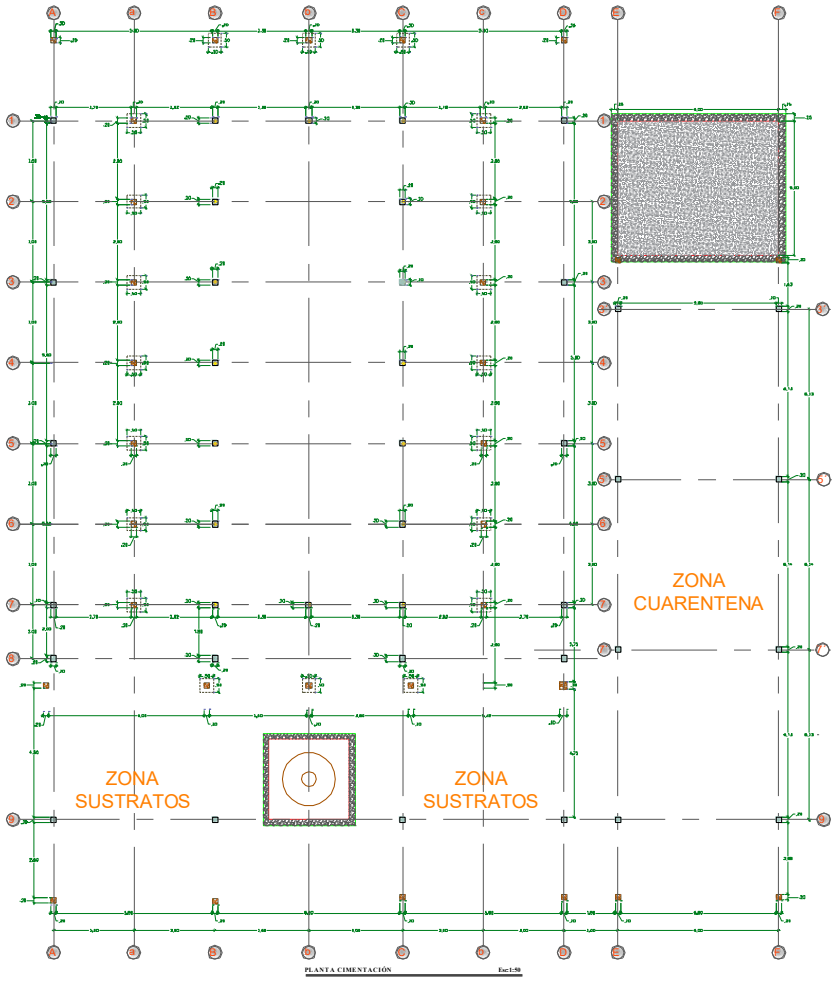


Ilustración 2 Planta Estructural Nivel 1

4. NORMAS Y ESPECIFICACIONES

El presente diseño estará basado en la Norma Sismorresistente Colombiana de 2010, por medio de la metodología de resistencia ultima ***"Load and Resistance Factor Design***" (LRFD). El análisis y diseño de la estructura se efectúa por medio del software de diseño Midas Gen, en donde se realizarán los siguientes análisis descritos en la norma:

- Análisis por Fuerza Horizontal Equivalente.
- Fuerzas internas y deflexiones.
- Verificación de diseño de elementos de concreto.
- Diseño de cimentación.

5. PARÁMETROS SÍSMICOS DE LA ESTRUCTURA

Debido a que en zona de riesgo sísmico Alto se encuentran ubicados varios de los municipios objeto del diseño, se tomará para el presente análisis el mayormente crítico para los factores Aa y Av:

Zona de Riesgo Sísmico	INTERMEDIO
Coeficiente de Aceleración (Aa)	0,20
Coeficiente de velocidad (Av)	0,20
Tipo de suelo	E
Coeficiente de importancia (I) (Grupo de uso II)	1,10
Altura total edificio (m)	5,40
Fa (Coef. De sitio para Zona de periodos cortos)	1,70
Fv (Coef. De sitio para Zona de periodos intermedios)	3,1

6. MATERIALES

6.1 Columnas y Losas

ELEMENTO	SECCIÓN	RESISTENCIA
CIMENTACIÓN		
DADOS DE CIMENTACIÓN	Ver planos	21 MPa
PLACA TANQUE	3,0m x 3,0m x 0,10m	21 MPa
PLACA CUARTO ALMACENAMIENTO	5,0m x 6,0m x 0,12m	21 MPa
ESTRUCTURA Y CUBIERTA		
COLUMNAS Y ARCOS INVERNADERO	TUBO 2" (Ø60.2 x3.0mm) - TUBO 2" (Ø60.2 x2.0mm)	ASTM A 500 GRADO C
COLUMNAS EXTERNAS	TUBO 2" (Ø60,2 x2.0mm)	ASTM A 500 GRADO C
GUAYAS O TENSORES	1/4" (6,35mm)	ASTM A 416 GRADO175(250)
GUAYAS O TENSORES	1/8" (3,20mm)	ASTM A 416 GRADO175(250)
GUAYAS O TENSORES	(5,0mm)	ASTM A 416 GRADO175(250)

6.2 Refuerzo

- ✓ Refuerzo: Ø 1/4" — f'y = 240 MPa
- ✓ Refuerzo: Ø 3/8" — f'y = 420 MPa
- ✓ Refuerzo: Ø 1/2" — f'y = 420 MPa
- ✓ Malla electrosoldada — f'y = 485 MPa

7. COMBINACIONES DE CARGAS

7.1 Patrones de Cargas

No	Name	Type
1	Peso Propio	Dead Load (D)
2	Carga Muerta Sobre Impuesta	Dead Load (D)
3	EX (Sismo Reducido)	Earthquake (E)
4	EY (Sismo Reducido)	Earthquake (E)
5	Sismo X	User Defined Load (USER)
6	Sismo Y	User Defined Load (USER)
7	Carga de Viento	Wind Load on Structure (W)
8	Carga Fluidos	Fluid Pressure (FP)

7.2 Combinaciones de Cargas

No	Name	Active	Type	Description
1	sLCB1	Strength/Stress	Add	1.4(D+FP)
2	sLCB2	Strength/Stress	Add	1.2D + 1.0Carga de Viento
3	sLCB3	Strength/Stress	Add	1.2D - 1.0Carga de Viento
4	sLCB4	Strength/Stress	Add	1.2D + 1.0(1.0EX (Sismo Reducido)+0.3EY (Sismo Reducido))
5	sLCB5	Strength/Stress	Add	1.2D + 1.0(1.0EX (Sismo Reducido)-0.3EY (Sismo Reducido))
6	sLCB6	Strength/Stress	Add	1.2D + 1.0(1.0EY (Sismo Reducido)+0.3EX (Sismo Reducido))
7	sLCB7	Strength/Stress	Add	1.2D + 1.0(1.0EY (Sismo Reducido)-0.3EX (Sismo Reducido))
8	sLCB8	Strength/Stress	Add	1.2D - 1.0(1.0EX (Sismo Reducido)+0.3EY (Sismo Reducido))
9	sLCB9	Strength/Stress	Add	1.2D - 1.0(1.0EX (Sismo Reducido)-0.3EY (Sismo Reducido))
10	sLCB10	Strength/Stress	Add	1.2D - 1.0(1.0EY (Sismo Reducido)+0.3EX (Sismo Reducido))
11	sLCB11	Strength/Stress	Add	1.2D - 1.0(1.0EY (Sismo Reducido)-0.3EX (Sismo Reducido))
12	sLCB12	Strength/Stress	Add	0.9D + 1.0Carga de Viento
13	sLCB13	Strength/Stress	Add	0.9D - 1.0Carga de Viento
14	sLCB14	Strength/Stress	Add	0.9D + 1.0(1.0EX (Sismo Reducido)+0.3EY (Sismo Reducido))
15	sLCB15	Strength/Stress	Add	0.9D + 1.0(1.0EX (Sismo Reducido)-0.3EY (Sismo Reducido))
16	sLCB16	Strength/Stress	Add	0.9D + 1.0(1.0EY (Sismo Reducido)+0.3EX (Sismo Reducido))
17	sLCB17	Strength/Stress	Add	0.9D + 1.0(1.0EY (Sismo Reducido)-0.3EX (Sismo Reducido))
18	sLCB18	Strength/Stress	Add	0.9D - 1.0(1.0EX (Sismo Reducido)+0.3EY (Sismo Reducido))
19	sLCB19	Strength/Stress	Add	0.9D - 1.0(1.0EX (Sismo Reducido)-0.3EY (Sismo Reducido))
20	sLCB20	Strength/Stress	Add	0.9D - 1.0(1.0EY (Sismo Reducido)+0.3EX (Sismo Reducido))
21	sLCB21	Strength/Stress	Add	0.9D - 1.0(1.0EY (Sismo Reducido)-0.3EX (Sismo Reducido))
22	sLCB22	Serviceability	Add	SERV :(D+FP)
23	sLCB23	Serviceability	Add	SERV :(D+FP) + 0.6Carga de Viento

24	sLCB24	Serviceability	Add	SERV :(D+FP) - 0.6Carga de Viento
25	sLCB25	Serviceability	Add	SERV :(D+FP) + 0.7(1.0EX (Sismo Reducido)+0.3EY (Sismo Reducido))
26	sLCB26	Serviceability	Add	SERV :(D+FP) + 0.7(1.0EX (Sismo Reducido)-0.3EY (Sismo Reducido))
27	sLCB27	Serviceability	Add	SERV :(D+FP) + 0.7(1.0EY (Sismo Reducido)+0.3EX (Sismo Reducido))
28	sLCB28	Serviceability	Add	SERV :(D+FP) + 0.7(1.0EY (Sismo Reducido)-0.3EX (Sismo Reducido))
29	sLCB29	Serviceability	Add	SERV :(D+FP) - 0.7(1.0EX (Sismo Reducido)+0.3EY (Sismo Reducido))
30	sLCB30	Serviceability	Add	SERV :(D+FP) - 0.7(1.0EX (Sismo Reducido)-0.3EY (Sismo Reducido))
31	sLCB31	Serviceability	Add	SERV :(D+FP) - 0.7(1.0EY (Sismo Reducido)+0.3EX (Sismo Reducido))
32	sLCB32	Serviceability	Add	SERV :(D+FP) - 0.7(1.0EY (Sismo Reducido)-0.3EX (Sismo Reducido))
33	sLCB33	Serviceability	Add	SERV :(D+FP) + 0.75(0.6)Carga de Viento
34	sLCB34	Serviceability	Add	SERV :(D+FP) - 0.75(0.6)Carga de Viento
35	sLCB35	Serviceability	Add	SERV :(D+FP) + 0.75(0.7)(1.0EX (Sismo Reducido)+0.3EY (Sismo Reducido))
36	sLCB36	Serviceability	Add	SERV :(D+FP) + 0.75(0.7)(1.0EX (Sismo Reducido)-0.3EY (Sismo Reducido))
37	sLCB37	Serviceability	Add	SERV :(D+FP) + 0.75(0.7)(1.0EY (Sismo Reducido)+0.3EX (Sismo Reducido))
38	sLCB38	Serviceability	Add	SERV :(D+FP) + 0.75(0.7)(1.0EY (Sismo Reducido)-0.3EX (Sismo Reducido))
39	sLCB39	Serviceability	Add	SERV :(D+FP) - 0.75(0.7)(1.0EX (Sismo Reducido)+0.3EY (Sismo Reducido))
40	sLCB40	Serviceability	Add	SERV :(D+FP) - 0.75(0.7)(1.0EX (Sismo Reducido)-0.3EY (Sismo Reducido))
41	sLCB41	Serviceability	Add	SERV :(D+FP) - 0.75(0.7)(1.0EY (Sismo Reducido)+0.3EX (Sismo Reducido))
42	sLCB42	Serviceability	Add	SERV :(D+FP) - 0.75(0.7)(1.0EY (Sismo Reducido)-0.3EX (Sismo Reducido))
43	sLCB43	Serviceability	Add	SERV :0.6D + 0.6Carga de Viento
44	sLCB44	Serviceability	Add	SERV :0.6D - 0.6Carga de Viento
45	sLCB45	Serviceability	Add	SERV :0.6(D+FP) + 0.7(1.0EX (Sismo Reducido)+0.3EY (Sismo Reducido))
46	sLCB46	Serviceability	Add	SERV :0.6(D+FP) + 0.7(1.0EX (Sismo Reducido)-0.3EY (Sismo Reducido))
47	sLCB47	Serviceability	Add	SERV :0.6(D+FP) + 0.7(1.0EY (Sismo Reducido)+0.3EX (Sismo Reducido))
48	sLCB48	Serviceability	Add	SERV :0.6(D+FP) + 0.7(1.0EY (Sismo Reducido)-0.3EX (Sismo Reducido))
49	sLCB49	Serviceability	Add	SERV :0.6(D+FP) - 0.7(1.0EX (Sismo Reducido)+0.3EY (Sismo Reducido))
50	sLCB50	Serviceability	Add	SERV :0.6(D+FP) - 0.7(1.0EX (Sismo Reducido)-0.3EY (Sismo Reducido))
51	sLCB51	Serviceability	Add	SERV :0.6(D+FP) - 0.7(1.0EY (Sismo Reducido)+0.3EX (Sismo Reducido))
52	sLCB52	Serviceability	Add	SERV :0.6(D+FP) - 0.7(1.0EY (Sismo Reducido)-0.3EX (Sismo Reducido))
53	ENV MAY	Strength/Stress	Envelope	
54	ENV SERV	Serviceability	Envelope	

8. ANÁLISIS Y DISEÑO

8.1 Avalúo de Cargas de Cubierta – Carga Muerta

Como carga muerta considerada dentro de la cubierta se incluye la carga del plástico en polietileno Calibre 6 con peso aproximado de 0.00141 kN/m2.

8.2 Avalúo de Cargas de Cubierta – Carga de Fluidos

Como carga de fluidos se considerada en los laterales de la cubierta del canal en plástico en polietileno Calibre 6 con peso aproximado de 0.75 kN/ml.

8.3 Avalúo de Cargas de Cubierta – Carga de Granizo

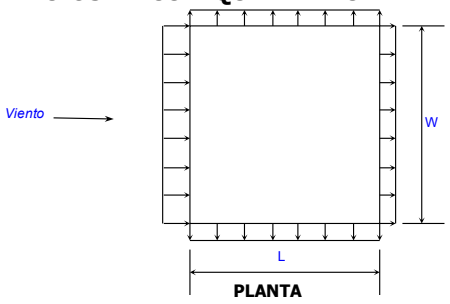
Para el presente proyecto no se considerará la carga de granizo, con la hipótesis de que esta condición no será muy probable que ocurra como carga importante, dado que la materialidad del plástico y la pendiente de la cubierta no permitían su acumulación.

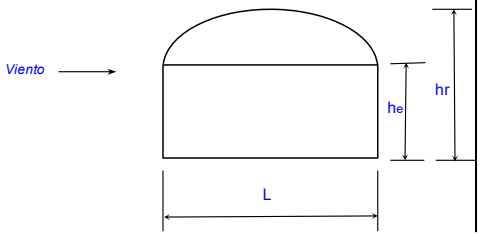
8.4 Avalúo de Cargas de Viento en Cubierta

PROCEDIMIENTO ANALÍTICO PARA SPRFV EN EDIFICIOS DE CUALQUIER ALTURA

DATOS

Región	3	
Grupo Uso del Edificio	I	
Rugosidad del Terreno	C	
Categoria de Exposición	C	
Tipo de Cubierta	En Arco	
Altura Cubierta, hr =	5,40	m
Altura Cornisa, he =	3,00	m
Ancho del Edificio, W =	18,00	m
Largo del Edificio, L =	7	m
Edificio sobre Colina o Escarpe	NO	
Tipo de estructura	SPRFV	
Clasificación según cerramiento	cerrado	
Región propensa a Huracanes	SI	
% de Amortiguamiento Crítico, β =	5%	
Sistema Estructural	Porticos arriostrados de acero estructural con diagonales excéntricas	





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PARÁMETROS RESULTANTES

ELEVACIÓN

General

Velocidad Básica del Viento, V =	100	km/h
Factor de Importancia, I =	0,77	
Ancho de la Zona, a =	0,7	m
2a =	1,4	m
Factor direccionalidad del viento, Kd =	0,85	
Factor Topográfico, Kzt =	1,00	
Ángulo inclinación Cubierta, θ =	18,92	grados
Altura media de la cubierta, h =	5,40	m
Coeficiente de Exposición, Kh =	0,88	

Presión por Velocidad

q_h =	272	N/m^2
q_h =	0,27	kN/m^2

Periodo Fundamental y Frecuencia Natural de la Estructura

Ct =	0,073	
αt =	0,750	
Periodo, T =	0,259	s
Frecuencia Natural, f =	3,87	Hz
Clasificación según frecuencia	Edificio Rígido	

FACTOR DE EFECTO RÁFAGA

Intensidad de Turbulencia, Iz =	0,23	
Factor pico respuesta entorno, g_Q =	3,40	
Factor pico respuesta viento, g_v =	3,40	
Longitud integral esc. turb, L_Z =	129,91	m
Factor de respuesta del entorno, Q =	0,91	
Factor pico respuesta viento, g_R =	4,50	
Rn =	0,015	
Rh =	0,152	
Rb =	0,049	
Rl =	0,038	
Factor de respuesta de resonancia, R =	0,035	
Factor de Efecto Ráfaga, G =	0,8500	

COEFICIENTES DE PRESIÓN Y PRESIONES NETAS DE DISEÑO

Coeficientes de Presión Interna

GCpi (+) =	0,18
GCpi (-) =	-0,18

Coeficientes de Presión Externa y Presiones Netas para Muros y Cubiertas de una Pendiente o a dos Aguas.

Dirección del Viento: **Normal a la Cumbrera**

Cp Muro a Barlovento =	0,8	Se debe utilizar qz para estimar la presión neta
Cp Muro a Sotavento =	-0,5	
Cp Muros Laterales =	-0,7	

	CONDICIÓN 1	CONDICIÓN 2	
Cp Cubierta a Barlovento =	-0,6		(zona #1 para 0 a h/2)
Cp Cubierta a Barlovento =	-0,1		(zona #2 para h/2 a h)
Cp Cubierta a Sotavento =	-0,6		(zona #3 para h a 2*h)
			(zona #4 para > 2*h)

Desea ingresar valores de z: **NO**

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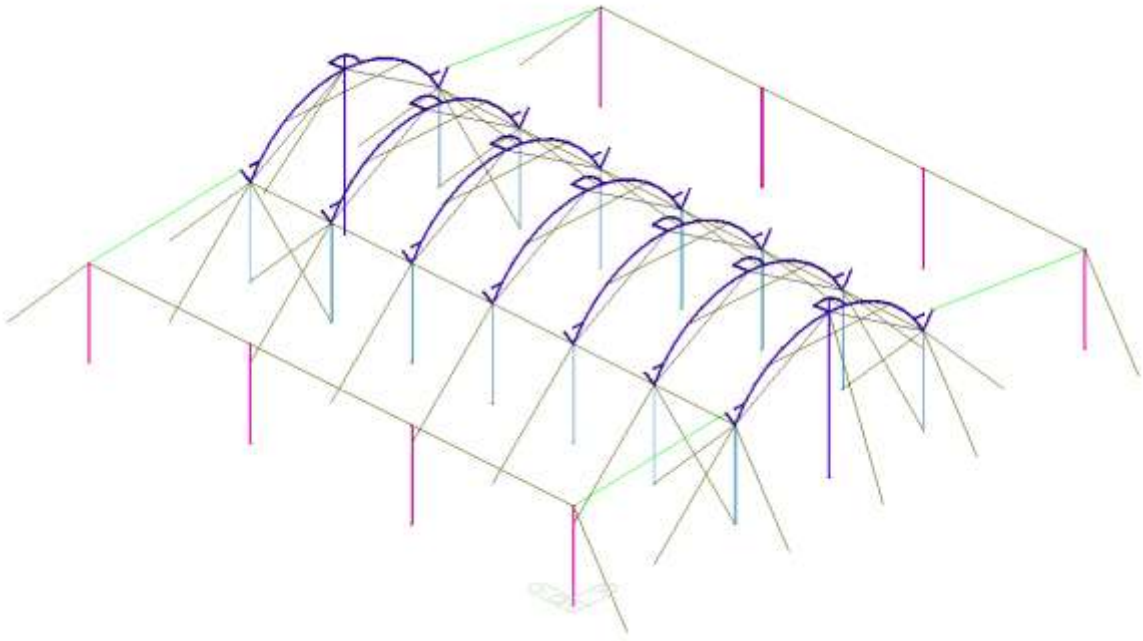
Carga de Viento Normal a la Cumbrera Para el SPRVF en Edificios de Cualquier Altura							
	Superficie	z (m)	Kz	qz (kN/m^2)	Cp	p = Presión Neta (kN/m^2)	
						GCp - (+)GCp	GCp - (-)GCpi
	MURO A BARLOVENTO	0	0,85	0,26	0,80	0,13	0,23
		5,00	0,87	0,27	0,80	0,13	0,23
		5,40	0,88	0,27	0,80	0,14	0,23
		z = he	3,00	0,85	0,26	0,80	0,13	0,23
		z = h	5,40	0,88	0,27	0,80	0,14	0,23
		z = hr	5,40	0,88	0,27	0,80	0,14	0,23
	MURO A SOTAVENTO	h	---	---	-0,5	-0,16	0,01
	MUROS LATERALES	h	---	---	-0,7	-0,21	0,00
Cond. 1	CUBIERTA (ZONA# 1)	---	---	---	-0,63	-0,19	-0,10
Cond. 2		---	---	---			
Cond. 1	CUBIERTA (ZONA# 2)	---	---	---	-0,12	-0,08	0,02
Cond. 2		---	---	---			
Cond. 1	CUBIERTA (ZONA# 3)	---	---	---	-0,59	-0,19	-0,09
Cond. 2		---	---	---			
Cond. 1	CUBIERTA (ZONA# 4	---	---	---			
Cond. 2		---	---	---			

NOTAS 1 Signos(+) y (-) significan presión y succión sobre las superficies respectivamente.

2. Para cubiertas con una sola pendiente, su superficie total será de barlovento o de sotavento.

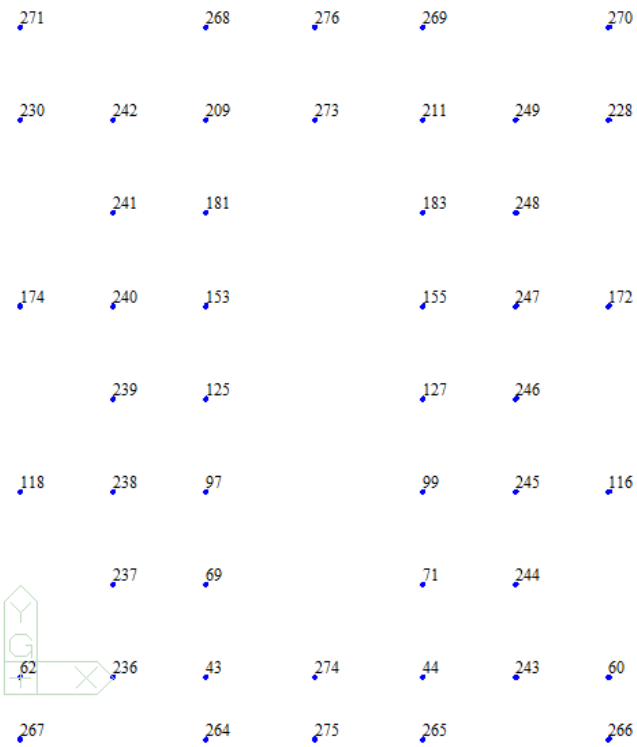
Como por evaluación por procedimiento analístico las cargas de vientos son inferiores a 0.40 kN/m2, se trabajará con este valor mínimo.

9. ELABORACIÓN DE MODELO ESTRUCTURAL EN SOFTWARE

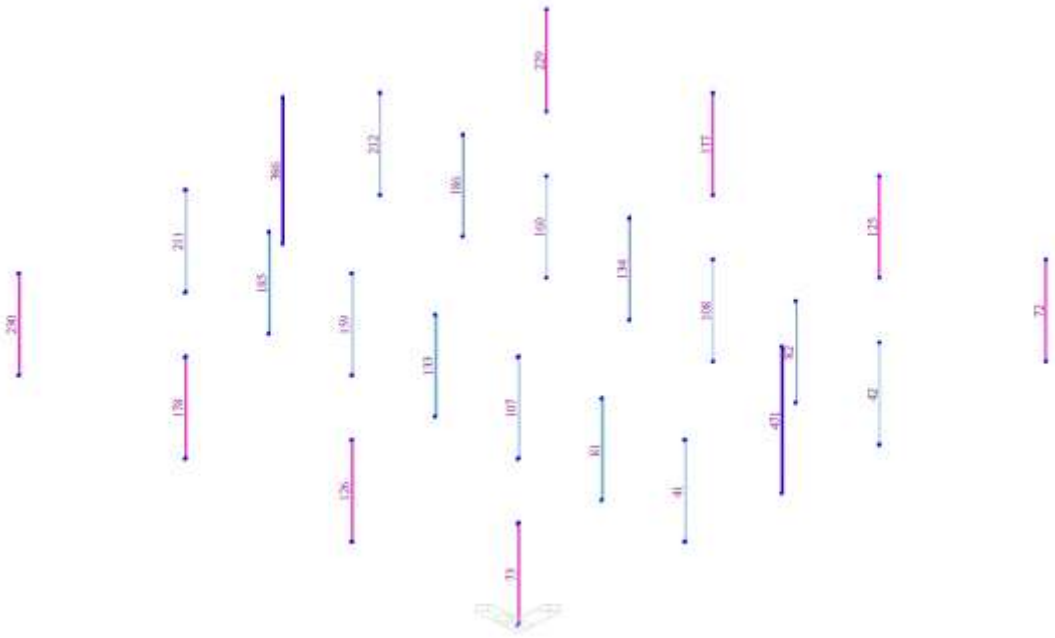


10. NUMERACIÓN DE ELEMENTOS Y NODOS

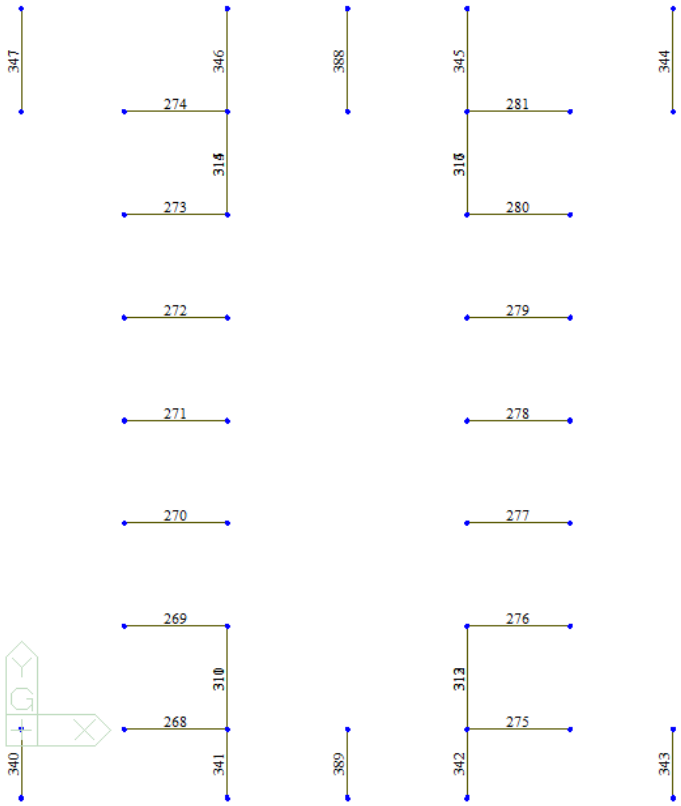
10.1 Apoyos de Cimentación



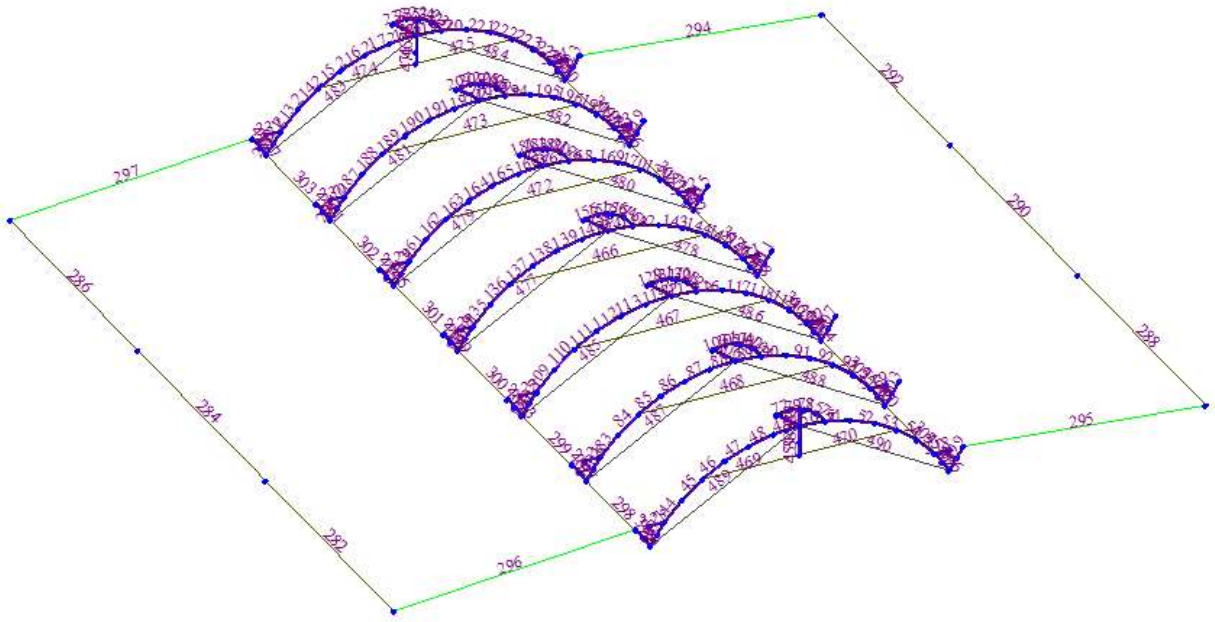
10.2 Numeración de Columnas



10.3 Numeración de Elementos Diagonales

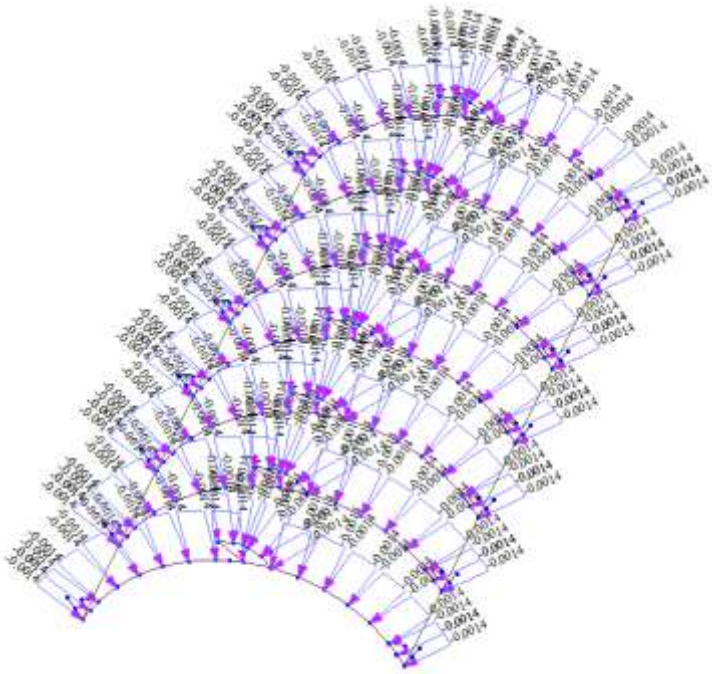


10.4 Numeración de Elementos Nivel Cubierta

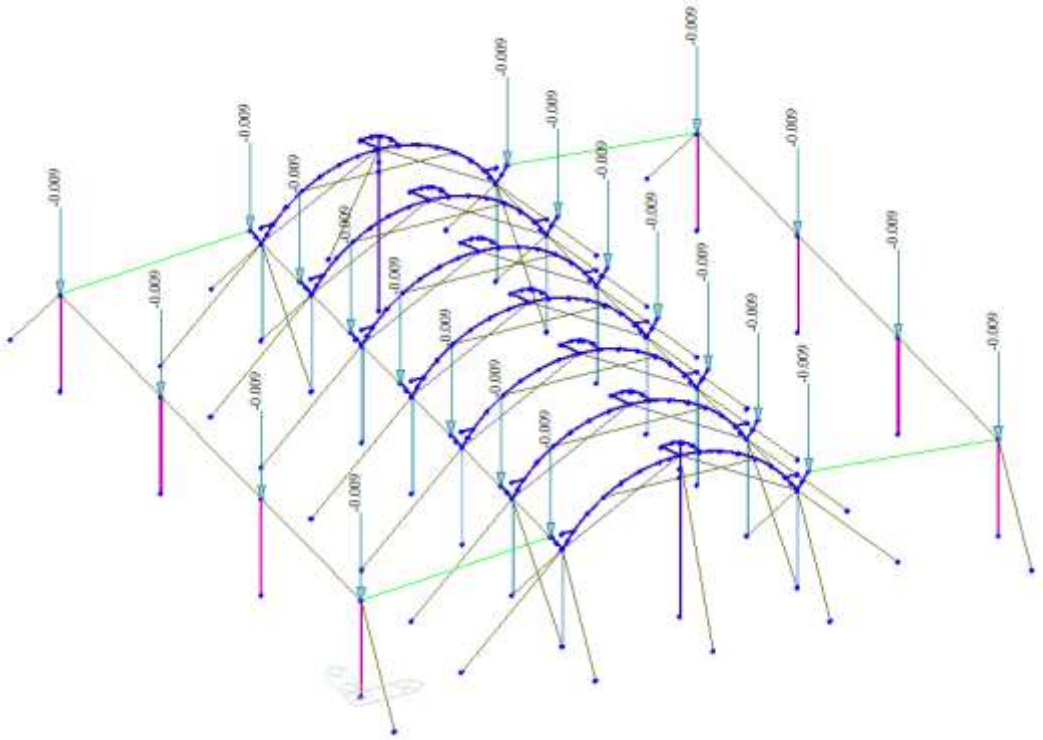


11. ASIGNACIÓN DE CARGAS EN MODELO

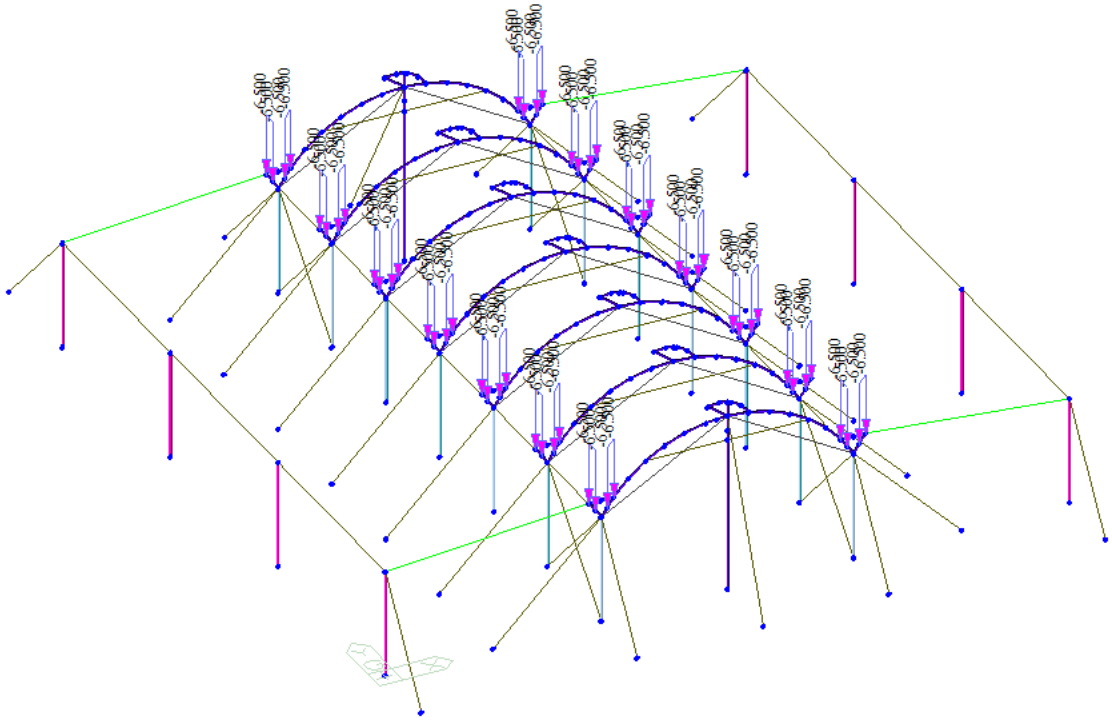
11.1 Cargas Muertas Cubierta (kN/ml)



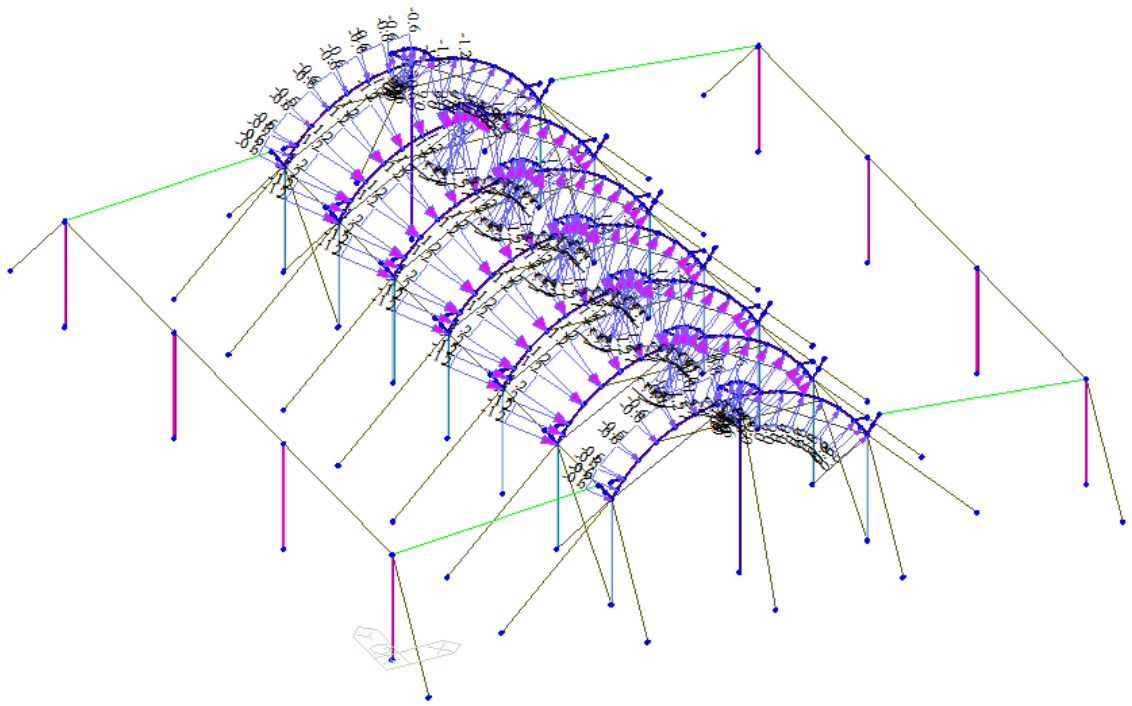
11.2 Cargas Muertas Cubierta (kN)



11.3 Cargas de Fluidos Cubierta (kN/ml)



11.4 Cargas de viento Cubierta (kN/ml)



12. ANÁLISIS SÍSMICO

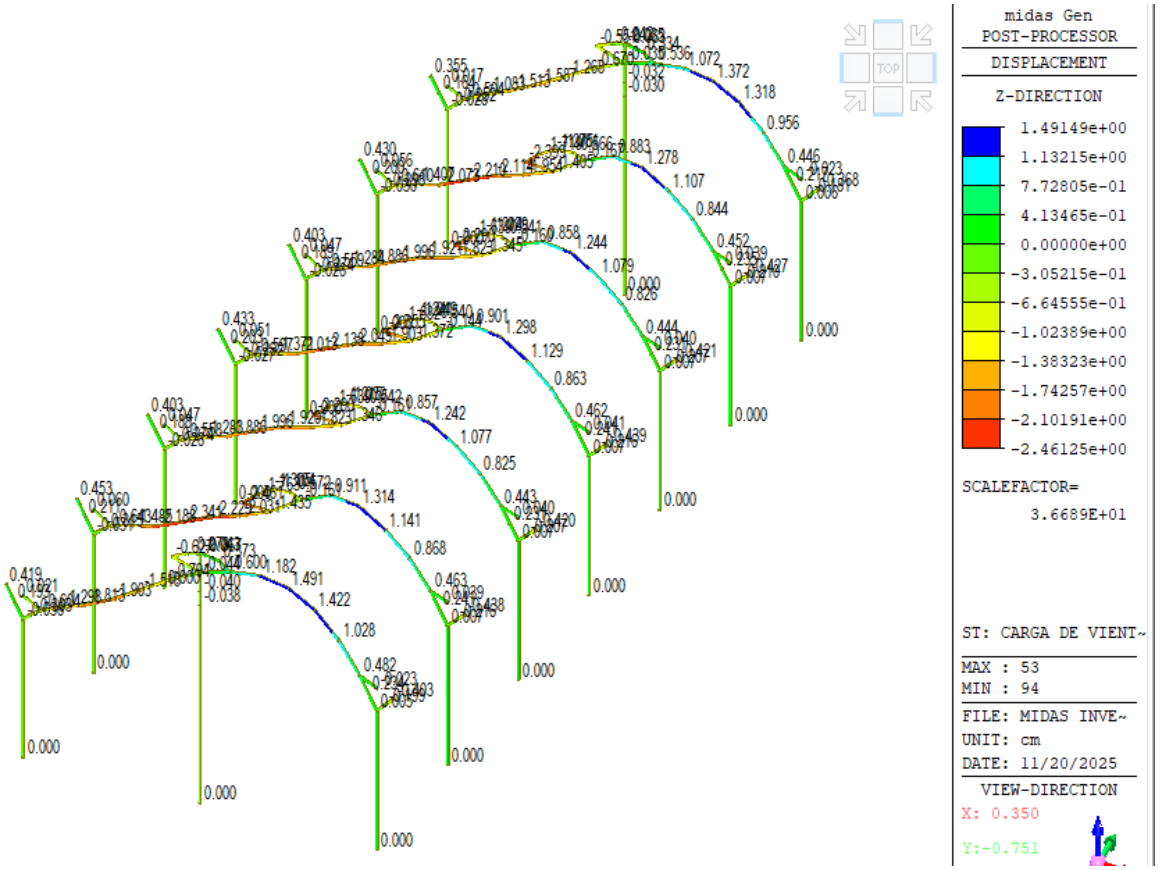
Se realiza la verificación del cumplimiento normativo de la estructura, en este punto se toma la aceleración máxima para un coeficiente de importancia igual a 1.

12.1 Chequeo Derivas Eje X y Y

	Load Case	Story	Story Height (cm)	P-Delta Incremental Factor (ad)	Allowable Story Drift Ratio	Maximum Drift of All Vertical Elements					Drift at the Center of Mass				
						Node	Story Drift (cm)	Modified Drift (cm)	Story Drift Ratio	Remark	Story Drift (cm)	Modified Drift (cm)	Drift Factor (Maximum/Current)	Story Drift Ratio	Remark
	RMC,Not Used, Cd=1, Ie=1, Scale Factor=1, Allowable Ratio=0.015														
	Sismo X	12F	3,41	1	0,015	0	0	0	0	OK	0,0075	0,0075	0	0,0022	OK
	Sismo X	11F	16,95	1	0,015	0	0	0	0	OK	0,0149	0,0149	0	0,0009	OK
	Sismo X	10F	20,64	1	0,015	0	0	0	0	OK	0,0618	0,0618	0	0,003	OK
	Sismo X	8F	13,28	1	0,015	0	0	0	0	OK	0,0072	0,0072	0	0,0005	OK
	Sismo X	7F	21,82	1	0,015	0	0	0	0	OK	0,0088	0,0088	0	0,0004	OK
	Sismo X	6F	29,87	1	0,015	0	0	0	0	OK	0,0025	0,0025	0	0,0001	OK
	Sismo X	5F	37,27	1	0,015	0	0	0	0	OK	0,0138	0,0138	0	0,0004	OK
	Sismo X	4F	43,84	1	0,015	0	0	0	0	OK	0,0375	0,0375	0	0,0009	OK
	Sismo X	3F	24,73	1	0,015	0	0	0	0	OK	0,0424	0,0424	0	0,0017	OK
	Sismo X	2F	24,73	1	0,015	0	0	0	0	OK	0,1046	0,1046	0	0,0042	OK
	Sismo X	1F	300	1	0,015	62	1,3684	1,3684	0,0046	OK	0,3014	0,3014	4,5399	0,001	OK
	Sismo Y	12F	3,41	1	0,015	0	0	0	0	OK	0,0032	0,0032	0	0,0009	OK
	Sismo Y	11F	16,95	1	0,015	0	0	0	0	OK	0,0139	0,0139	0	0,0008	OK
	Sismo Y	10F	20,64	1	0,015	0	0	0	0	OK	0,1386	0,1386	0	0,0067	OK
	Sismo Y	8F	13,28	1	0,015	0	0	0	0	OK	0,0252	0,0252	0	0,0019	OK
	Sismo Y	7F	21,82	1	0,015	0	0	0	0	OK	0,0159	0,0159	0	0,0007	OK
	Sismo Y	6F	29,87	1	0,015	0	0	0	0	OK	0,0079	0,0079	0	0,0003	OK
	Sismo Y	5F	37,27	1	0,015	0	0	0	0	OK	0,0368	0,0368	0	0,001	OK
	Sismo Y	4F	43,84	1	0,015	0	0	0	0	OK	0,0615	0,0615	0	0,0014	OK
	Sismo Y	3F	24,73	1	0,015	0	0	0	0	OK	0,0373	0,0373	0	0,0015	OK
	Sismo Y	2F	24,73	1	0,015	0	0	0	0	OK	0,038	0,038	0	0,0015	OK
	Sismo Y	1F	300	1	0,015	181	0,321	0,321	0,0011	OK	0,1929	0,1929	1,6643	0,0006	OK

12.2 Chequeo Deflexiones en Cubierta

Para este caso se verifica la deflexión para la carga más crítica en la cubierta, lo cual es la carga de viento.



En cubierta se presenta una deflexión máxima de 2.5 cm, lo cual se considera aceptable para el proyecto. En todo caso la cubierta no está diseñada para cargas vivas, por lo tanto, se dejarán las respectivas notas dentro de los planos.

13. COEFICIENTE DE CAPACIDAD DE DISIPACIÓN DE ENERGÍA

El coeficiente de disipación de utilizado según el sistema estructural propuesta y la capacidad de energía mínima requerida para el caso de la zona de riesgo sísmico en este caso es la siguiente basados en la tabla A.3-3:

SISTEMA DE PÓRTICOS RESISTENTES A MOMENTOS – NAVE INDUSTRIAL

- ✓ Pórticos resistentes a momentos con capacidad especial de disipación de energía (DES)

- ✓ Sistema resistencia sísmica (fuerzas horizontales)
- ✓ Sistema resistencia para cargas verticales

R_0	Ω_0
1.5	1.0

COEFICIENTE DE CAPACIDAD DE DISIPACIÓN DE ENERGÍA REDUCIDOS

Coef. Inicial	ϕ_p	ϕ_a	Aus. Redundancia	Soldadura en Obra	Coef. Diseño
(x) 1.5	1	1	1	0.9	1.35
(y) 1.5	1	1	1	0.9	1.35

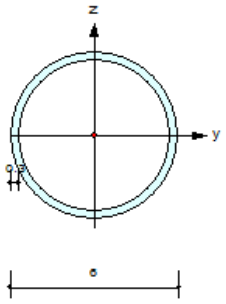
14. DISEÑO DE ELEMENTOS

14.1 Diseño de elementos tubulares 2.0" x 3.0mm

Se aporta el reporte de diseño del elemento más solicitado.

1. Design Information

Design Code	AISC(14th)-LRFD10
Unit System	kN, cm
Member No	41
Material	A500-50 (No:2)
	(Fy = 34.4738, Es = 19994.8)
Section Name	Tub 2" x 3mm (No:6)
	(Built-up Section).
Member Length	: 300.000



2. Member Forces

Axial Force	Fxx = -8.9291 (LCB: 2, POS:I)
Bending Moments	My = 51.9422, Mz = 1.82443
End Moments	Myi = 51.8847, Myj = -17.124 (for Lb)
	Myi = 51.8847, Myj = -17.124 (for Ly)
	Mzi = 1.81189, Mzj = 9.25333 (for Lz)
Shear Forces	Fyy = 0.02690 (LCB: 3, POS:I)
	Fzz = 0.23003 (LCB: 2, POS:I)

Outer Dia.	6.00000	Wall Thick	0.30000
Area	5.37212	Asz	2.68606
Qyb	8.14500	Qzb	8.14500
Iyy	21.8780	Izz	21.8780
Ybar	3.00000	Zbar	3.00000
Syy	7.29266	Szz	7.29266
ry	2.01804	rz	2.01804

3. Design Parameters

Unbraced Lengths	Ly = 300.000, Lz = 300.000, Lb = 300.000
Effective Length Factors	Ky = 1.00, Kz = 1.00
Moment Factor / Bending Coefficient	
	Cmy = 0.85, Cmz = 0.85, Cb = 1.00

4. Checking Results

Slenderness Ratio

KL/r = 148.7 < 200.0 (Memb:41, LCB: 2)..... O.K

Axial Strength

Pr/Pc = 8.9291/37.8637 = 0.236 < 1.000 ..... O.K

Bending Strength

Mry/Mcy = 51.942/302.694 = 0.172 < 1.000 ..... O.K

Mrz/Mcz = 1.824/302.694 = 0.006 < 1.000 ..... O.K

Combined Strength (Compression+Bending)

Pr/Pc = 0.24 > 0.20

Rmax = Pr/Pc + 8/9*SQRT[(Mry/Mcy)^2 + (Mrz/Mcz)^2] = 0.388 < 1.000 ..... O.K

Shear Strength

Vry/Vcy = 0.001 < 1.000 ..... O.K

Vrz/Vcz = 0.005 < 1.000 ..... O.K

Torsion Strength

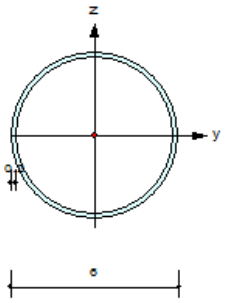
Tr/Tc = 0.633/285.019 = 0.002 < 1.000 ..... O.K

14.2 Diseño de elementos tubulares 2" x 2mm

Se aporta el reporte de diseño del elemento más solicitado.

1. Design Information

Design Code	AISC(14th)-LRFD10
Unit System	kN, cm
Member No	471
Material	A500-50 (No:2)
	(Fy = 34.4738, Es = 19994.8)
Section Name	Tub 2" x 2mm - 2 (No:4)
	(Built-up Section).
Member Length	: 430.570



2. Member Forces

Axial Force	Fxx = -6.9570 (LCB: 2, POS:J)
Bending Moments	My = 25.6363, Mz = 5.64896
End Moments	Myi = -26.236, Myj = 25.6878 (for Lb)
	Myi = -26.236, Myj = 25.6878 (for Ly)
	Mzi = 0.57722, Mzj = 5.50821 (for Lz)
Shear Forces	Fyy = -0.0115 (LCB: 2, POS:I)
	Fzz = 0.12185 (LCB: 3, POS:I)

Outer Dia.	6.00000	Wall Thick	0.20000
Area	3.64425	Asz	1.82212
Qyb	8.42000	Qzb	8.42000
Iyy	15.3423	Izz	15.3423
Ybar	3.00000	Zbar	3.00000
Syy	5.11409	Szz	5.11409
ry	2.05183	rz	2.05183

3. Design Parameters

Unbraced Lengths	Ly = 430.570, Lz = 430.570, Lb = 430.570
Effective Length Factors	Ky = 1.00, Kz = 1.00
Moment Factor / Bending Coefficient	
	Cmy = 0.85, Cmz = 0.85, Cb = 1.00

4. Checking Results

Axial Strength

Pr/Pc = 6.9570/12.8903 = 0.540 < 1.000 ..... O.K

Bending Strength

Mry/Mcy = 25.636/208.828 = 0.123 < 1.000 ..... O.K

Mrz/Mcz = 5.649/208.828 = 0.027 < 1.000 ..... O.K

Combined Strength (Compression+Bending)

Pr/Pc = 0.54 > 0.20

Rmax = Pr/Pc + 8/9*SQRT[(Mry/Mcy)^2 + (Mrz/Mcz)^2] = 0.651 < 1.000 ..... O.K

Shear Strength

Vry/Vcy = 0.000 < 1.000 ..... O.K

Vrz/Vcz = 0.004 < 1.000 ..... O.K

Torsion Strength

Tr/Tc = 0.778/196.738 = 0.004 < 1.000 ..... O.K

14.3 Diseño de elementos tipo guaya

MEMB	SECT	SEL	Section	Section	LCB	L (m)	Pu (kN)	ϕPn (kN)	ESTADO
COM	SHR	SEL	Material	Fy	LCB				
268	2	0	Tensor 1/4"	Tensor 1/4"	3	424,264	-8.38	34.8	OK
1,213,339	0.000		A500-50	344,738	3	424,264			
269	2	0	Tensor 1/4"	Tensor 1/4"	3	424,264	-7.09	34.8	OK
1,027,019	0.000		A500-50	344,738	3	424,264			
270	2	0	Tensor 1/4"	Tensor 1/4"	3	424,264	-6.90	34.8	OK
998,441	0.000		A500-50	344,738	3	424,264			
271	2	0	Tensor 1/4"	Tensor 1/4"	3	424,264	-7.10	34.8	OK
1,027,993	0.000		A500-50	344,738	3	424,264			
272	2	0	Tensor 1/4"	Tensor 1/4"	3	424,264	-6.94	34.8	OK
1,004,425	0.000		A500-50	344,738	3	424,264			
273	2	0	Tensor 1/4"	Tensor 1/4"	3	424,264	-7.59	34.8	OK
1,098,875	0.000		A500-50	344,738	3	424,264			
274	2	0	Tensor 1/4"	Tensor 1/4"	3	424,264	-7.91	34.8	OK
1,146,024	0.000		A500-50	344,738	3	424,264			
275	2	0	Tensor 1/4"	Tensor 1/4"	20	424,264	-0.1135	34.8	OK
16,439	0.000		A500-50	344,738	20	424,264			
276	2	0	Tensor 1/4"	Tensor 1/4"	6	424,264	0.00075	34.8	OK
0.000	0.000		A500-50	344,738	6	424,264			
277	2	0	Tensor 1/4"	Tensor 1/4"	20	424,264	-0.0180	34.8	OK
2,610	0.000		A500-50	344,738	20	424,264			
278	2	0	Tensor 1/4"	Tensor 1/4"	20	424,264	-0.0458	34.8	OK
6,632	0.000		A500-50	344,738	20	424,264			
279	2	0	Tensor 1/4"	Tensor 1/4"	20	424,264	-0.0189	34.8	OK
2,735	0.000		A500-50	344,738	20	424,264			
280	2	0	Tensor 1/4"	Tensor 1/4"	3	424,264	0.00000	34.8	OK
0.000	0.000		A500-50	344,738	3	424,264			
281	2	0	Tensor 1/4"	Tensor 1/4"	20	424,264	-0.0493	34.8	OK

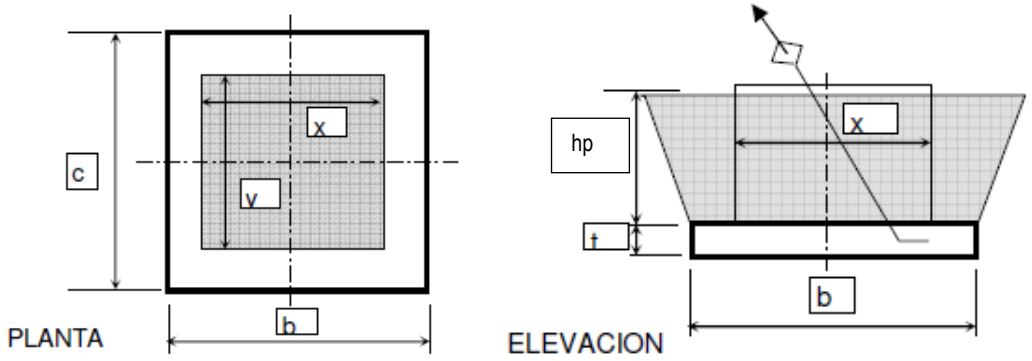
7,138	0.000		A500-50	344,738	20	424,264			
282	2	0	Tensor 1/4"	Tensor 1/4"	20	300,000	-0.1590	34.8	OK
11,513	0.000		A500-50	344,738	20	300,000			
283	2	0	Tensor 1/4"	Tensor 1/4"	20	300,000	-0.1335	34.8	OK
9,663	0.000		A500-50	344,738	20	300,000			
284	2	0	Tensor 1/4"	Tensor 1/4"	20	300,000	-0.1082	34.8	OK
7,835	0.000		A500-50	344,738	20	300,000			
285	2	0	Tensor 1/4"	Tensor 1/4"	20	300,000	-0.0825	34.8	OK
5,972	0.000		A500-50	344,738	20	300,000			
286	2	0	Tensor 1/4"	Tensor 1/4"	20	300,000	-0.0576	34.8	OK
4,167	0.000		A500-50	344,738	20	300,000			
287	2	0	Tensor 1/4"	Tensor 1/4"	20	300,000	-0.0326	34.8	OK
2,361	0.000		A500-50	344,738	20	300,000			
288	2	0	Tensor 1/4"	Tensor 1/4"	20	300,000	-0.1974	34.8	OK
14,295	0.000		A500-50	344,738	20	300,000			
289	2	0	Tensor 1/4"	Tensor 1/4"	20	300,000	-0.1642	34.8	OK
11,890	0.000		A500-50	344,738	20	300,000			
290	2	0	Tensor 1/4"	Tensor 1/4"	20	300,000	-0.1312	34.8	OK
9,496	0.000		A500-50	344,738	20	300,000			
291	2	0	Tensor 1/4"	Tensor 1/4"	20	300,000	-0.0990	34.8	OK
7,167	0.000		A500-50	344,738	20	300,000			
292	2	0	Tensor 1/4"	Tensor 1/4"	20	300,000	-0.0663	34.8	OK
4,800	0.000		A500-50	344,738	20	300,000			
293	2	0	Tensor 1/4"	Tensor 1/4"	20	300,000	-0.0338	34.8	OK
2,449	0.000		A500-50	344,738	20	300,000			
294	5	0	Tensor 1/8"	Tensor 1/8"	9	568,479	-0.0225	8.8	OK
100,482	0.000		A500-50	344,738	9	568,479			
295	5	0	Tensor 1/8"	Tensor 1/8"	18	568,479	-0.0248	8.8	OK
110,457	0.000		A500-50	344,738	18	568,479			
296	5	0	Tensor 1/8"	Tensor 1/8"	3	568,479	-0.0599	8.8	OK
267,267	0.000		A500-50	344,738	3	568,479			
297	5	0	Tensor 1/8"	Tensor 1/8"	3	568,479	-0.0562	8.8	OK
250,641	0.000		A500-50	344,738	3	568,479			
298	2	0	Tensor 1/4"	Tensor 1/4"	20	300,000	-0.2918	34.8	OK
21,497	0.000		A416-250(Normal)	146,514	20	300,000			
299	2	0	Tensor 1/4"	Tensor 1/4"	20	300,000	-0.8293	34.8	OK
61,094	0.000		A416-250(Normal)	146,514	20	300,000			
300	2	0	Tensor 1/4"	Tensor 1/4"	20	300,000	-0.5684	34.8	OK
41,876	0.000		A416-250(Normal)	146,514	20	300,000			
301	2	0	Tensor 1/4"	Tensor 1/4"	20	300,000	-0.3329	34.8	OK
24,524	0.000		A416-250(Normal)	146,514	20	300,000			
302	2	0	Tensor 1/4"	Tensor 1/4"	20	300,000	-0.1087	34.8	OK
8,009	0.000		A416-250(Normal)	146,514	20	300,000			
303	2	0	Tensor 1/4"	Tensor 1/4"	3	300,000	0.00000	34.8	OK
0.000	0.000		A416-250(Normal)	146,514	3	300,000			
304	2	0	Tensor 1/4"	Tensor 1/4"	20	300,000	-0.3101	34.8	OK
22,843	0.000		A416-250(Normal)	146,514	20	300,000			

305	2	0	Tensor 1/4"	Tensor 1/4"	20	300,000	-0.9161	34.8	OK
67,483	0.000		A416-250(Normal)	146,514	20	300,000			
306	2	0	Tensor 1/4"	Tensor 1/4"	20	300,000	-0.6442	34.8	OK
47,458	0.000		A416-250(Normal)	146,514	20	300,000			
307	2	0	Tensor 1/4"	Tensor 1/4"	20	300,000	-0.3617	34.8	OK
26,645	0.000		A416-250(Normal)	146,514	20	300,000			
308	2	0	Tensor 1/4"	Tensor 1/4"	13	300,000	-0.1943	34.8	OK
14,311	0.000		A416-250(Normal)	146,514	13	300,000			
309	2	0	Tensor 1/4"	Tensor 1/4"	3	300,000	0.00000	34.8	OK
0.000	0.000		A416-250(Normal)	146,514	3	300,000			
310	2	0	Tensor 1/4"	Tensor 1/4"	20	424,264	-1.26	34.8	OK
185,154	0.000		A416-250(Normal)	146,514	20	424,264			
311	2	0	Tensor 1/4"	Tensor 1/4"	3	424,264	0.00000	34.8	OK
0.000	0.000		A416-250(Normal)	146,514	3	424,264			
312	2	0	Tensor 1/4"	Tensor 1/4"	20	424,264	-1.33	34.8	OK
195,906	0.000		A416-250(Normal)	146,514	20	424,264			
313	2	0	Tensor 1/4"	Tensor 1/4"	3	424,264	0.00000	34.8	OK
0.000	0.000		A416-250(Normal)	146,514	3	424,264			
314	2	0	Tensor 1/4"	Tensor 1/4"	9	424,264	-0.1081	34.8	OK
15,920	0.000		A416-250(Normal)	146,514	9	424,264			
315	2	0	Tensor 1/4"	Tensor 1/4"	20	424,264	-0.2081	34.8	OK
30,660	0.000		A416-250(Normal)	146,514	20	424,264			
316	2	0	Tensor 1/4"	Tensor 1/4"	3	424,264	0.00000	34.8	OK
0.000	0.000		A416-250(Normal)	146,514	3	424,264			
317	2	0	Tensor 1/4"	Tensor 1/4"	20	424,264	-0.2161	34.8	OK
31,842	0.000		A416-250(Normal)	146,514	20	424,264			
340	2	0	Tensor 1/4"	Tensor 1/4"	20	360,555	-0.3362	34.8	OK
35,770	0.000		A416-250(Normal)	146,514	20	360,555			
341	2	0	Tensor 1/4"	Tensor 1/4"	13	360,555	-5.38	34.8	OK
572,097	0.000		A416-250(Normal)	146,514	13	360,555			
342	2	0	Tensor 1/4"	Tensor 1/4"	20	360,555	-1.06	34.8	OK
113,214	0.000		A416-250(Normal)	146,514	20	360,555			
343	2	0	Tensor 1/4"	Tensor 1/4"	20	360,555	-0.4181	34.8	OK
44,491	0.000		A416-250(Normal)	146,514	20	360,555			
344	2	0	Tensor 1/4"	Tensor 1/4"	3	424,264	0.00000	34.8	OK
0.000	0.000		A416-250(Normal)	146,514	3	424,264			
345	2	0	Tensor 1/4"	Tensor 1/4"	13	424,264	-0.1340	34.8	OK
19,747	0.000		A416-250(Normal)	146,514	13	424,264			
346	2	0	Tensor 1/4"	Tensor 1/4"	13	424,264	-4.23	34.8	OK
623,800	0.000		A416-250(Normal)	146,514	13	424,264			
347	2	0	Tensor 1/4"	Tensor 1/4"	9	424,264	-0.0270	34.8	OK
3,981	0.000		A416-250(Normal)	146,514	9	424,264			
388	2	0	Tensor 1/4"	Tensor 1/4"	13	583,095	-6.42	34.8	OK
1,787,374	0.000		A416-250(Normal)	146,514	13	583,095			
389	2	0	Tensor 1/4"	Tensor 1/4"	13	538,516	-6.95	34.8	OK
1,649,664	0.000		A416-250(Normal)	146,514	13	538,516			
430	2	0	Tensor 1/4"	Tensor 1/4"	20	502,494	-0.2371	34.8	OK

48,993	0.000		A416-250(Normal)	146,514	20	502,494			
431	3	0	Tensor 5mm	Tensor 5mm	13	502,494	-0.0354	21.6	OK
18,684	0.000		A500-50	344,738	13	502,494			
432	3	0	Tensor 5mm	Tensor 5mm	18	502,494	-0.0085	21.6	OK
4,479	0.000		A500-50	344,738	18	502,494			
433	3	0	Tensor 5mm	Tensor 5mm	20	502,494	-0.2321	21.6	OK
122,659	0.000		A500-50	344,738	20	502,494			
434	3	0	Tensor 5mm	Tensor 5mm	1	502,494	0.04935	21.6	OK
0.004	0.000		A500-50	344,738	1	502,494			
435	3	0	Tensor 5mm	Tensor 5mm	20	502,494	-0.2352	21.6	OK
124,287	0.000		A500-50	344,738	20	502,494			
436	3	0	Tensor 5mm	Tensor 5mm	1	502,494	0.05259	21.6	OK
0.004	0.000		A500-50	344,738	1	502,494			
437	3	0	Tensor 5mm	Tensor 5mm	20	502,494	-0.2576	21.6	OK
136,093	0.000		A500-50	344,738	20	502,494			
438	3	0	Tensor 5mm	Tensor 5mm	20	502,494	-0.0081	21.6	OK
4,296	0.000		A500-50	344,738	20	502,494			
439	3	0	Tensor 5mm	Tensor 5mm	20	502,494	-0.2295	21.6	OK
121,264	0.000		A500-50	344,738	20	502,494			
440	3	0	Tensor 5mm	Tensor 5mm	1	502,494	0.04792	21.6	OK
0.004	0.000		A500-50	344,738	1	502,494			
441	3	0	Tensor 5mm	Tensor 5mm	13	502,494	-0.3597	21.6	OK
190,075	0.000		A500-50	344,738	13	502,494			
442	3	0	Tensor 5mm	Tensor 5mm	13	502,494	-4.49	21.6	OK
2,372,680	0.000		A500-50	344,738	13	502,494			
443	3	0	Tensor 5mm	Tensor 5mm	13	502,494	-4.95	21.6	OK
2,614,370	0.000		A500-50	344,738	13	502,494			
444	3	0	Tensor 5mm	Tensor 5mm	13	502,494	-4.98	21.6	OK
2,633,250	0.000		A500-50	344,738	13	502,494			
445	3	0	Tensor 5mm	Tensor 5mm	3	502,494	-5.28	21.6	OK
2,790,588	0.000		A500-50	344,738	3	502,494			
446	3	0	Tensor 5mm	Tensor 5mm	13	502,494	-5.27	21.6	OK
2,783,063	0.000		A500-50	344,738	13	502,494			
447	3	0	Tensor 5mm	Tensor 5mm	13	502,494	-5.29	21.6	OK
2,795,850	0.000		A500-50	344,738	13	502,494			
448	3	0	Tensor 5mm	Tensor 5mm	13	502,494	-5.29	21.6	OK
2,793,770	0.000		A500-50	344,738	13	502,494			
449	3	0	Tensor 5mm	Tensor 5mm	13	502,494	-5.27	21.6	OK
2,784,433	0.000		A500-50	344,738	13	502,494			
450	3	0	Tensor 5mm	Tensor 5mm	3	502,494	-5.27	21.6	OK
2,783,561	0.000		A500-50	344,738	3	502,494			
451	3	0	Tensor 5mm	Tensor 5mm	13	502,494	-5.02	21.6	OK
2,650,836	0.000		A500-50	344,738	13	502,494			
452	3	0	Tensor 5mm	Tensor 5mm	13	502,494	-4.98	21.6	OK
2,631,389	0.000		A500-50	344,738	13	502,494			
453	3	0	Tensor 5mm	Tensor 5mm	13	502,494	-5.32	21.6	OK
2,810,250	0.000		A500-50	344,738	13	502,494			

15. DISEÑO DE CONTRAPESOS PARA TENSORES

Para el diseño del elemento se tiene que la carga mayormente critica dentro de estos elementos es de 5.59 kN en el eje "X" y de 5.58 kN para el eje "Y". Calcularemos un factor de seguridad vertical, que garantice que, en combinación con la fuerza horizontal, pueda cumplir el factor de seguridad al arrancamiento de la fuerza resultante actuante.



Las dimensiones del elemento son las siguientes:

Coeficiente	Valor	Un
b	0.50	m
c	0.50	m
x	0.20	m
y	0.20	m
hp	0.60	m
t	0.30	m

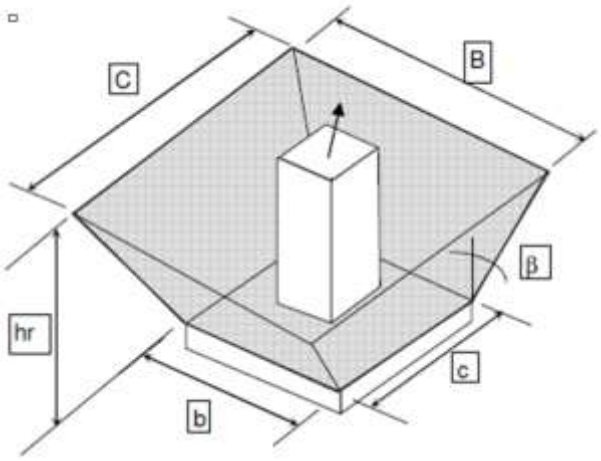
El peso de la estructura de concreto está dado por lo siguiente:

W_{ZAPATA}: 0.50m x 0.50m x 0.30m x 24 kN/m3: 1.8 kN

$W_{PEDESTAL}$: 0.20m x 0.20m x 0.6m x 24 kN/m3: 0.576 kN

$W_{CIMENTACIÓN}$: 2.376 kN

El factor de seguridad al arrancamiento estará dado por la sumatoria del peso de la estructura de concreto sumando el tronco de pirámide que se genera con el suelo de relleno:



Coeficiente	Valor	Un
hr	0.50	m
β	20	°
B= b+2hr*tanβ	0.86	m
C= c+2hr*tanβ	0.86	m
Vt= hr/3[BC+bc+ (BCbc)$^{1/2}$]	0.24	m3
γ_{suelo}	18	kN/m3

Ahora, el peso del suelo por encima del elemento es el siguiente:

$$W_{SUELO} = Vt \times \gamma_{suelo} = 0.24\ m3 * 18\ kN/m3 = 4.29\ kN$$

Descontando el peso del área ocupada por el pedestal, tenemos que:

$$W = W_{SUELO} - W_{PEDESTAL\ SUELO} = 4.29\ kN - 0.576\ kN = 3.71\ kN$$

Con esto, el factor de seguridad ante el arrancamiento es:

$$F.S.= (W + W_{CIMENTACIÓN}) / RFZT$$

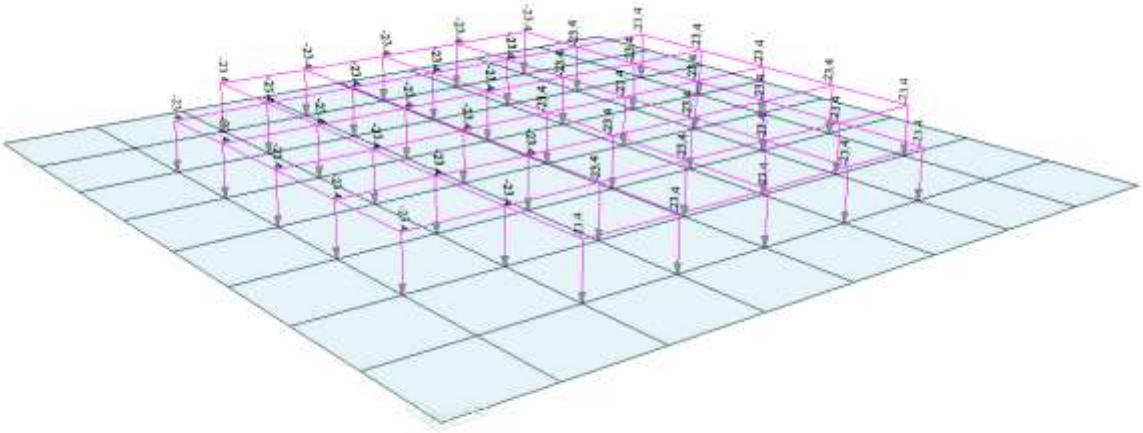
$$F.S.= (3.71\ kN + 2.376\ kN) / 5.58$$

$$F.S.= 1.1$$

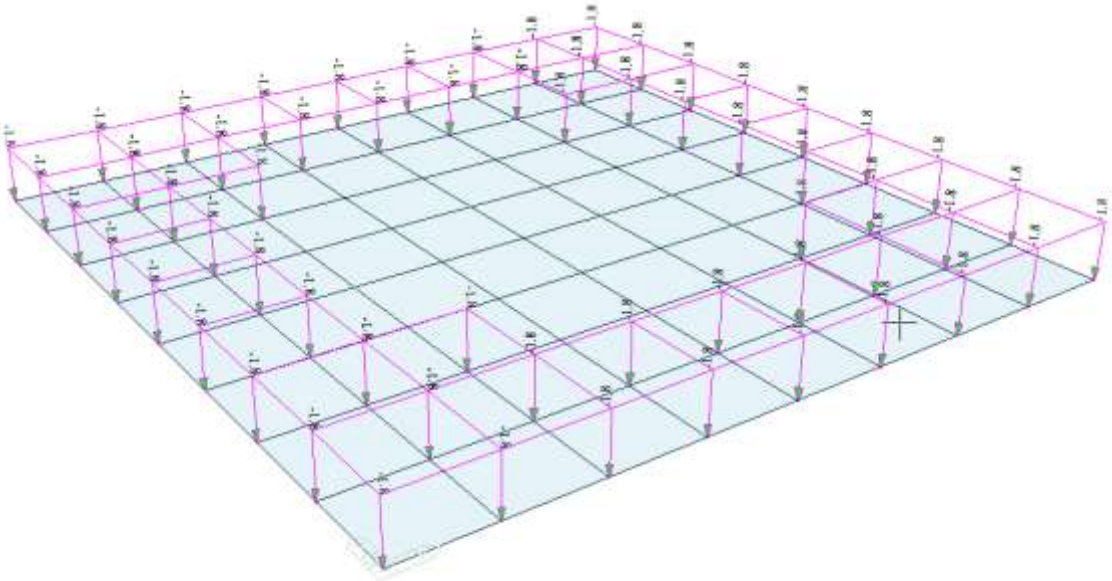
16. DISEÑO DE PLACA DE CIMENTACIÓN PARA TANQUE 5000 Litros

Las cargas actuantes consideradas dentro del diseño de la placa son las siguientes:

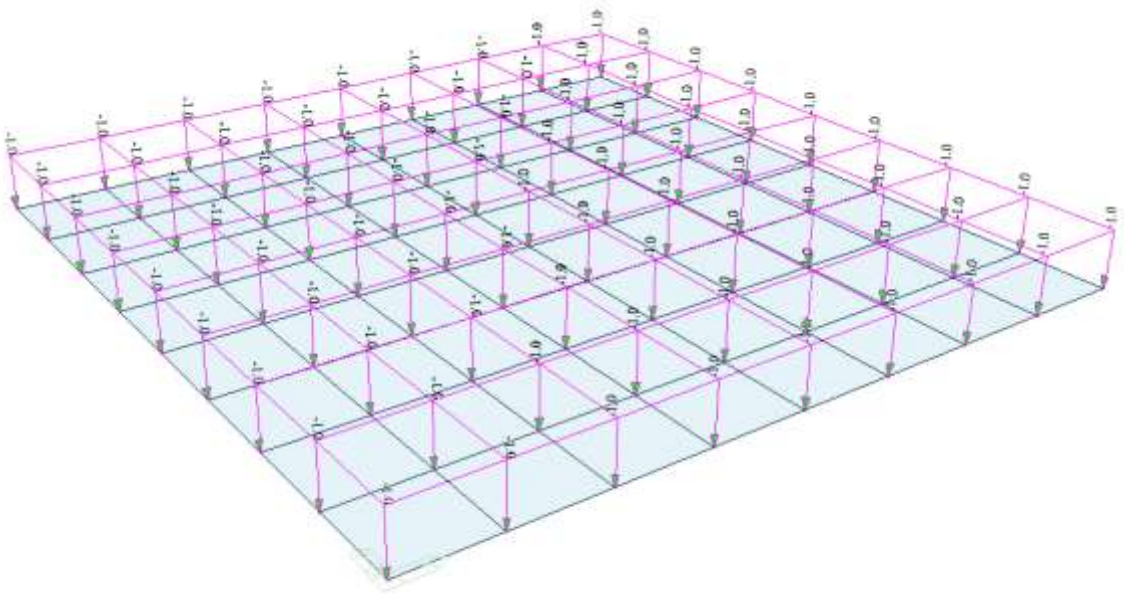
- CARGA MUERTA: Peso propio de placa E=0.10m
- CARGA FLUIDOS: Carga de tanque 5000 lts – 23.4 kN/m2



- CARGA VIVA= 1.8 kN/m2

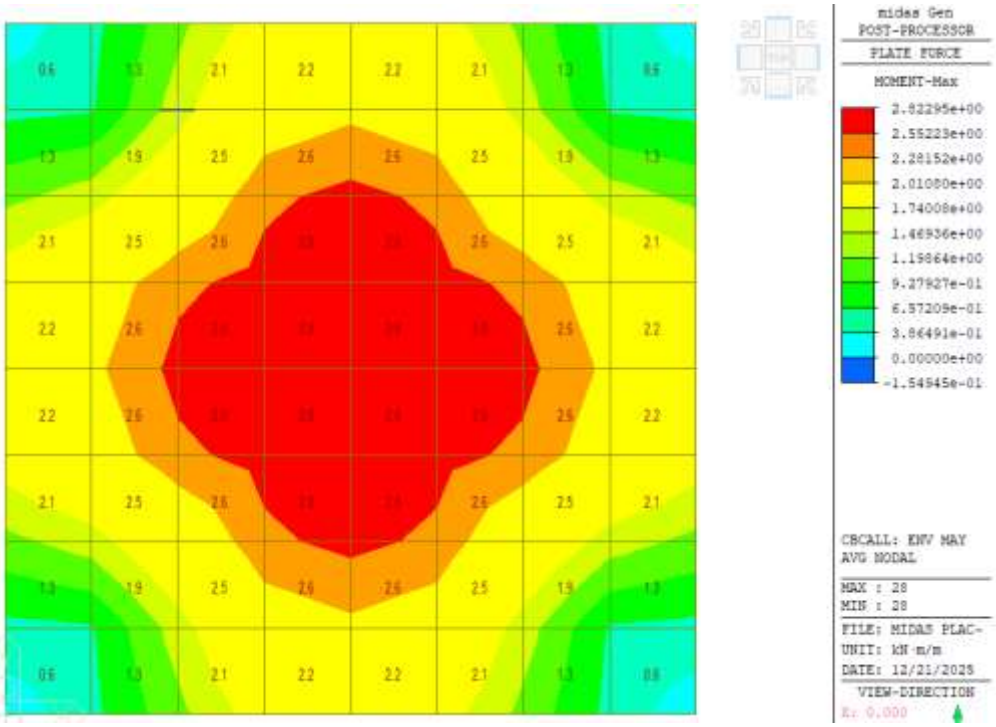


- CARGA GRANIZO= 1.0 kN/m2

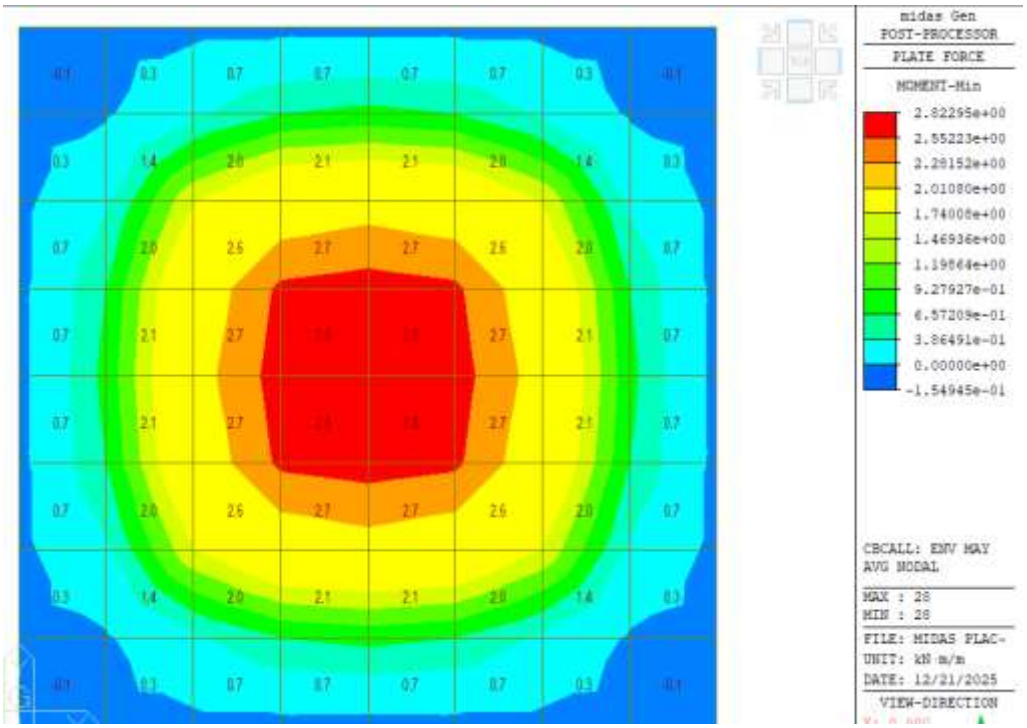


Con el fin de realizar el modelo con condiciones del terreno se utilizaron resortes equivalentes a arcillas blandas, una condición conservadora ante la cantidad de posibles suelos que se puedan encontrar dentro de los municipios. El valor utilizado como reacción de la subrasante en esta ocasión es de 15.000 kN/m3

- DISEÑO DE ACERO DE REFUERZO



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DATOS DE ENTRADA		
Cortante (Vu)	0	KN
Momento (Mu)	2.8	KN*m
Torsión (Tu)	0	KN*m
f´c	21	Mpa
fy	420	Mpa
b	1.00	m
h	0.10	m
Recubrimiento	0.05	m
Peralte (d)	0.05	m

DISEÑO A FLEXIÓN			
ρmin	0.0020		
β1	0.85		
ρmax	0.01355		
ρ	0.00308	OK	
ρ diseño	0.0031		
As	154	mm2	Acero Req a Flexión
As	154	mm2	Acero Req a Flexión + Torsión

Diámetro Barra (mm)	Área Barra(mm2)	#	Área Suministrada (mm2)
6	28.3	6.5	183.95

S	0.153	m	CUMPLE

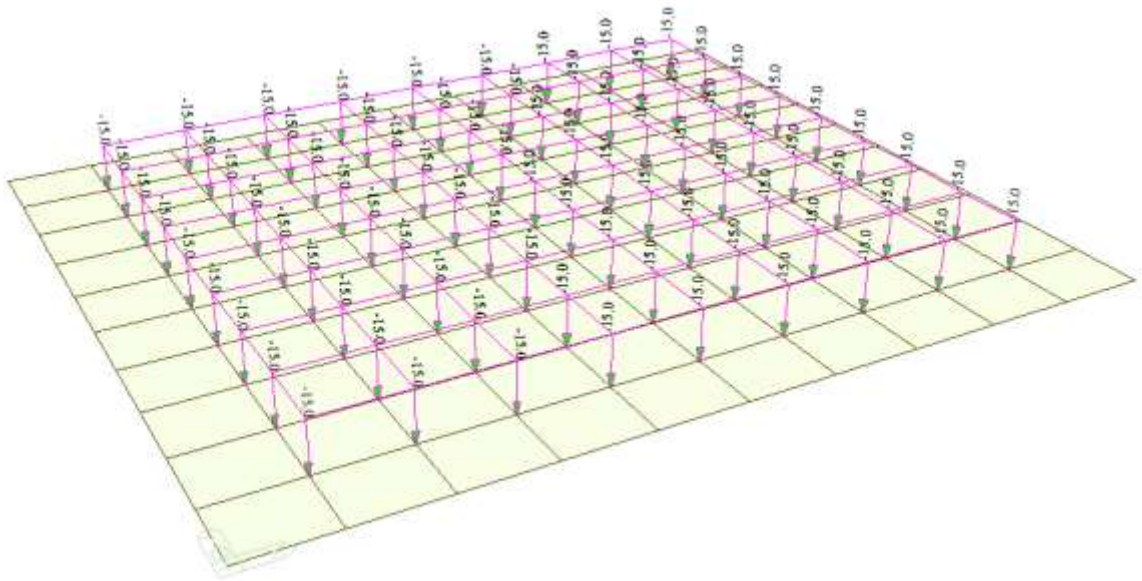
Para la losa de 10 cm, incluir malla electrosoldada de 6 mm cada 0.15m en cada dirección.

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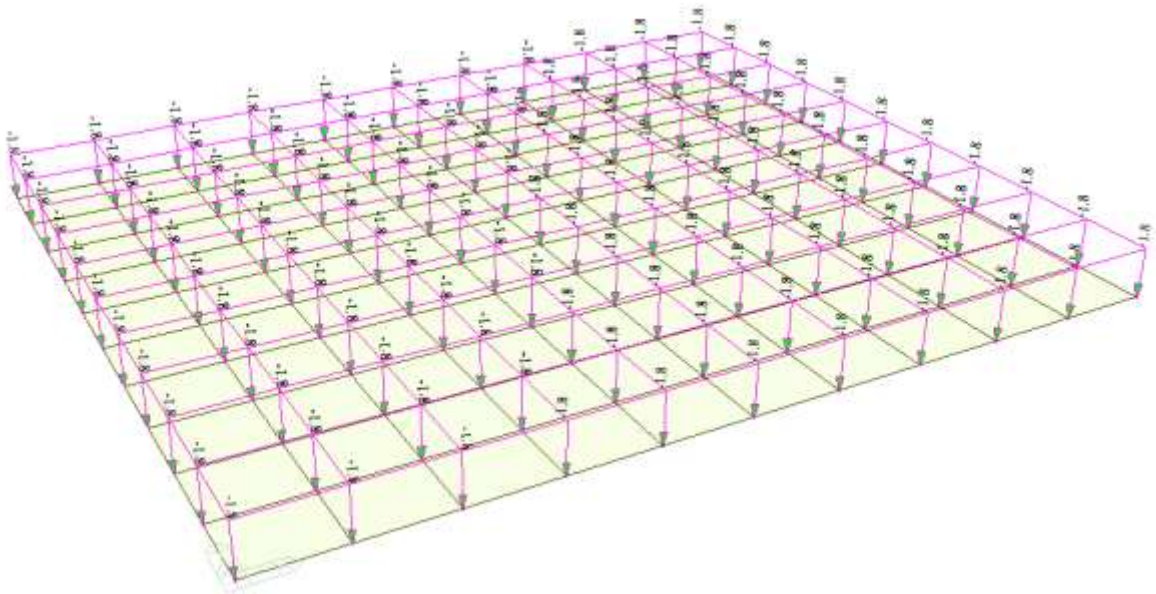
17. DISEÑO DE PLACA DE CIMENTACIÓN PARA CUARTO DE ALMACENAMIENTO

Las cargas actuantes consideradas dentro del diseño de la placa son las siguientes:

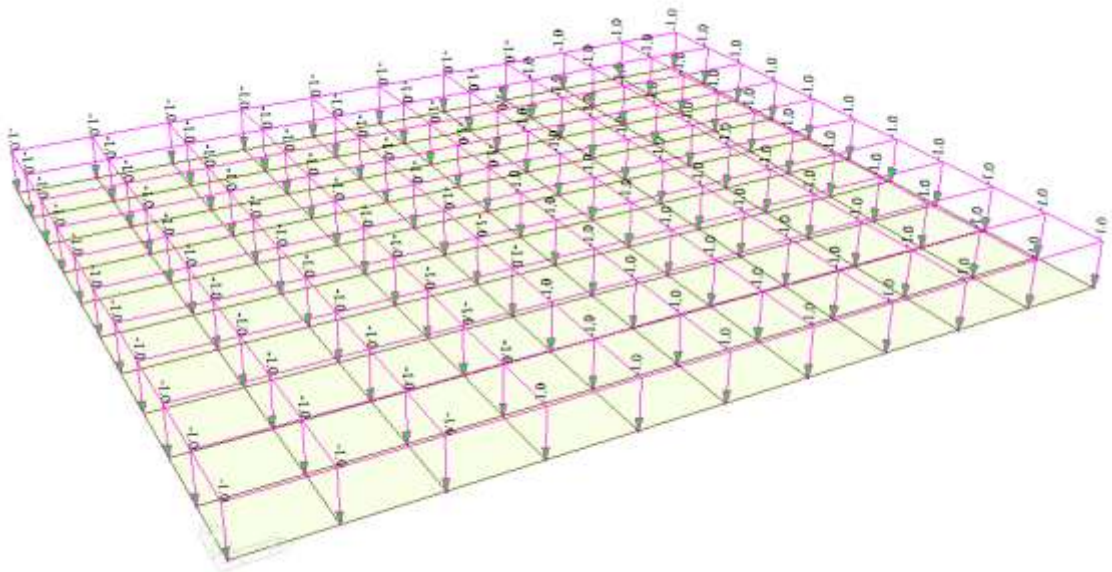
- CARGA MUERTA: Peso propio de placa E=0.12m, más una carga de 15 kN/m2 que considera el peso de la estructura prefabricada y almacenamiento.



- CARGA VIVA= 1.8 kN/m2

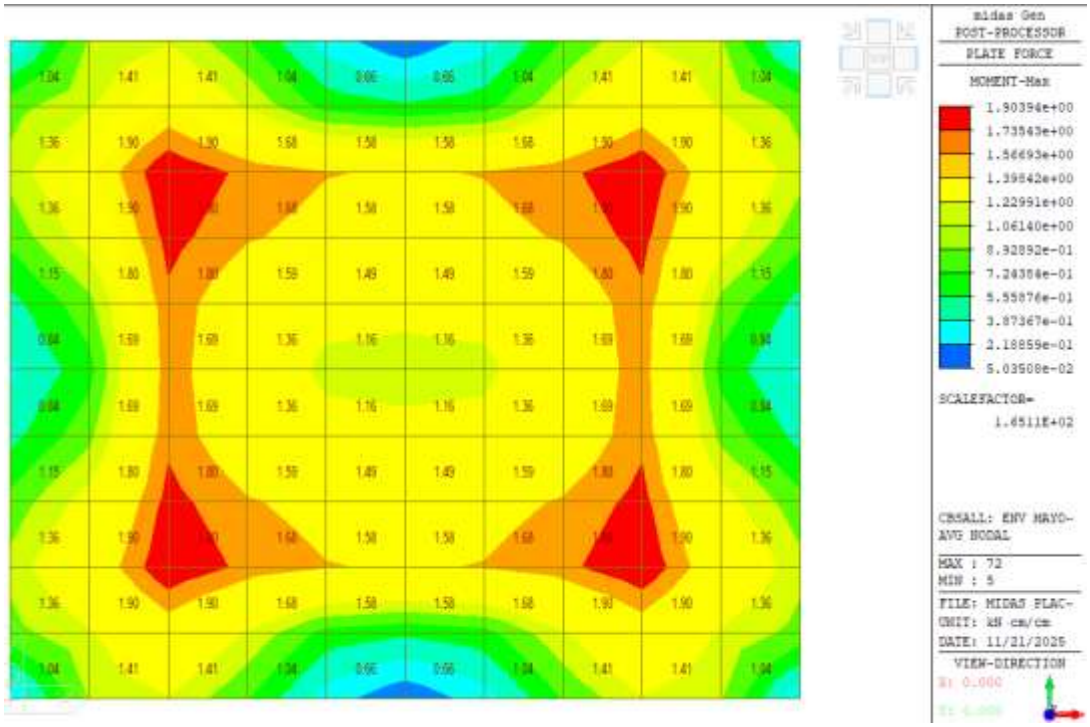


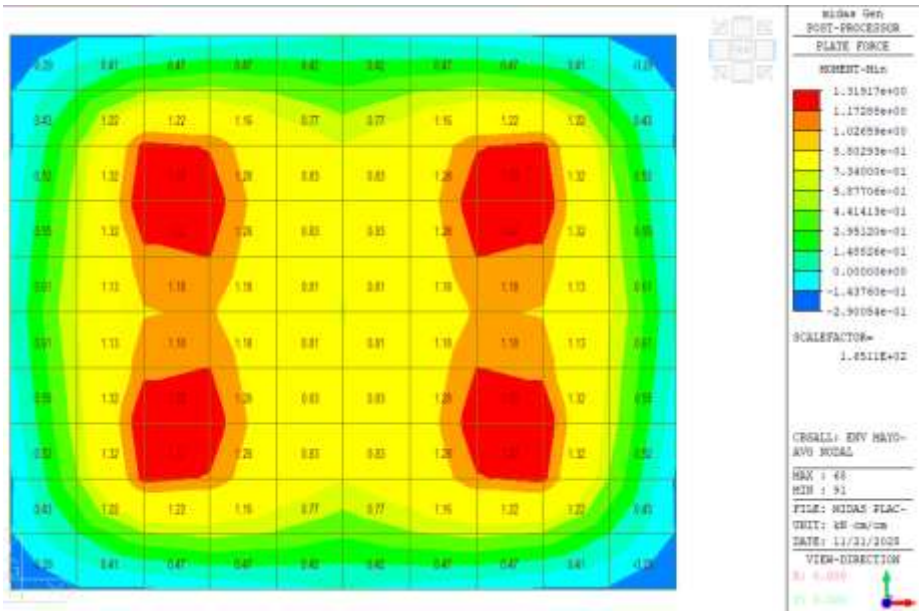
- CARGA GRANIZO= 1.0 kN/m2



Con el fin de realizar el modelo con condiciones del terreno se utilizaron resortes equivalentes a arcillas blandas, una condición conservadora ante la cantidad de posibles suelos que se puedan encontrar dentro de los municipios. El valor utilizado como reacción de la subrasante en esta ocasión es de 15.000 kN/m3

- DISEÑO DE ACERO DE REFUERZO





DATOS DE ENTRADA		
Cortante (Vu)	0	KN
Momento (Mu)	1.91	KN*m
Torsión (Tu)	0	KN*m
f´c	21	Mpa
fy	420	Mpa
b	1.00	m
h	0.12	m
Recubrimiento	0.06	m
Peralte (d)	0.06	m

DISEÑO A FLEXIÓN			
ρmin	0.0020		
β1	0.85		
ρmax	0.01355		
ρ	0.00143	OK	
ρ diseño	0.0020		
As	120	mm2	Acero Req a Flexión
As	120	mm2	Acero Req a Flexión + Torsión

Diámetro Barra (mm)	Área Barra(mm2)	#	Área Suministrada (mm2)
6	28.3	6	169.8

S	0.160	m	CUMPLE

Para la losa de 10 cm, incluir malla electrosoldada de 6 mm cada 0.15m en cada dirección.

18. REPORTE DISEÑO DE ELEMENTOS TUBULARES

Ver anexo.

19. REPORTE MIDAS

Ver anexo.

AMAURY ANDRÉS URUETA MORA
Ingeniero Civil
Especialista en Análisis y Diseño de Estructuras
Matr. Prof. # 22202-212829 COR

ANEXOS

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REPORTE DISEÑO ELEMENTOS TUBULARES

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MEMB	SECT	SEL	Section	Section	LCB	Len	Ly	Cb	Ky	B1y	B2y	Pr	Mry	Mrz	Vry	Vrz	Tr	CHK
COM	SHR	SEL	Material	Fy	LCB	Lb	Lz	Cb	Kz	B1z	B2z	Pc	Mcy	Mcz	Vcy	Vcz	Tc	CHK
41	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	300	300	1	1	1	1	-10.384	133.394	9.18378	-0.0006	0.60595	3.22159	OK
0.434	0.012		A500-50	34.4738	2	300	300	1	1	1	1	59.6114	385.684	385.684	51.5385	51.5385	363.347	OK
42	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	3	300	300	1	1	1	1	-2.9971	-65.207	-11.837	-0.0582	-0.2137	6.55295	OK
0.197	0.004		A500-50	34.4738	3	300	300	1	1	1	1	59.6114	385.684	385.684	51.5385	51.5385	363.347	OK
44	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	-0.0685	92.216	2.72746	0.05151	-1.9233	3.48898	OK
0.239	0.037		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
45	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	0.12551	140.501	-0.9194	0.05151	-1.1759	3.85374	OK
0.365	0.023		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
46	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	0.19506	147.045	-3.0295	0.05151	-0.405	3.67554	OK
0.382	0.008		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
47	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	0.14946	142.298	-5.0731	0.05151	1.12362	2.9583	OK
0.37	0.022		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
48	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	-0.0072	97.2948	-8.5218	0.05151	1.88854	1.71777	OK
0.253	0.037		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
49	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	-0.2772	-128.87	-14.851	0.05151	2.62194	0.31019	OK
0.337	0.051		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
50	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	2.77705	-22.226	-7.4855	-0.0598	0.56022	1.82537	OK
0.069	0.012		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
51	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	3	60.2028	60.2028	1	1	1.001	1	-2.3802	71.9028	5.90948	0.05206	-1.1208	4.35716	OK
0.194	0.022		A500-50	34.4738	3	60.2028	60.2028	1	1	1.001	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
52	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	3	60.2028	60.2028	1	1	1.001	1	-2.3109	92.308	2.15767	0.05206	-0.715	5.46269	OK
0.246	0.014		A500-50	34.4738	3	60.2028	60.2028	1	1	1.001	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
53	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	3	60.2028	60.2028	1	1	1.001	1	-2.2987	95.8357	-0.1092	0.05206	0.44548	5.86627	OK
0.255	0.009		A500-50	34.4738	3	60.2028	60.2028	1	1	1.001	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
54	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	3	60.2028	60.2028	1	1	1.001	1	-2.3468	88.0716	-2.3737	0.05206	0.84741	5.55904	OK
0.236	0.016		A500-50	34.4738	3	60.2028	60.2028	1	1	1.001	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
55	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	3	60.2028	60.2028	1	1	1.001	1	-2.4652	59.5592	-6.1184	0.05206	1.23304	4.54774	OK
0.163	0.024		A500-50	34.4738	3	60.2028	60.2028	1	1	1.001	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
56	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	3	30.1014	30.1014	1	1	1	1	-2.67	-23.475	-11.262	0.05206	1.2326	2.85458	OK
0.075	0.031		A500-50	34.4738	3	30.1014	30.1014	1	1	1	1	169.975	385.684	385.684	51.5385	51.5385	363.347	OK
69	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	30.1014	30.1014	1	1	1	1	-0.4143	-137.47	9.38177	0.05151	-2.6399	2.58927	OK
0.358	0.051		A500-50	34.4738	2	30.1014	30.1014	1	1	1	1	169.975	385.684	385.684	51.5385	51.5385	363.347	OK
70	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	29.9181	29.9181	1	1	1	1	-2.2923	-69.87	0	0	-1.5608	0	OK
0.188	0.03		A500-50	34.4738	1	29.9181	29.9181	1	1	1	1	169.997	385.684	385.684	0	51.5385	0	OK
71	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	29.9181	29.9181	1	1	1	1	-2.2923	-69.87	0	0	-1.5608	0	OK
0.188	0.03		A500-50	34.4738	1	29.9181	29.9181	1	1	1	1	169.997	385.684	385.684	0	51.5385	0	OK
72	1	0	Tub 2" x 2mm	Tub 2" x 2mm	4	300	300	1	1	1	1	-0.2516	3.32451	0.17496	-0.0006	-0.0111	0	OK
0.021	0		A500-50	34.4738	4	300	300	1	1	1	1	26.5526	208.828	208.828	33.9204	33.9204	0	OK
73	1	0	Tub 2" x 2mm	Tub 2" x 2mm	3	300	300	1	1	1	1	-0.1287	-17.907	0	0	0.05969	0	OK
0.088	0.002		A500-50	34.4738	3	300	300	1	1	1	1	26.5526	208.828	208.828	0	33.9204	0	OK
74	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	33.0543	33.0543	1	1	1	1	-0.2399	-11.162	2.9262	-0.0056	-0.2164	3.91173	OK
0.031	0.006		A500-50	34.4738	2	33.0543	33.0543	1	1	1	1	169.603	385.684	385.684	51.5385	51.5385	363.347	OK
75	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	3	33.0543	33.0543	1	1	1	1	0.51059	9.56913	-3.101	0.00793	0.67003	2.747	OK
0.028	0.013		A500-50	34.4738	3	33.0543	33.0543	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
77	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	33.0543	33.0543	1	1	1	1	-0.1119	1.95795	-0.2283	0.05089	-0.244	0.64295	OK
0.005	0.005		A500-50	34.4738	2	33.0543	33.0543	1	1	1	1	169.603	385.684	385.684	51.5385	51.5385	363.347	OK
78	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	3	10.711	10.711	1	1	1	1	0.36663	-14.686	-3.8414	0.00793	0.89906	1.77134	OK
0.04	0.017		A500-50	34.4738	3	10.711	10.711	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
79	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	3	22.4384	22.4384	1	1	1	1	0.17666	-8.7351	1.87244	-0.04	0.52638	1.00957	OK
0.024	0.01		A500-50	34.4738	3	22.4384	22.4384	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
80	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	68.6003	68.6003	1	1	1	1	0.22725	4.08758	-2.8856	-0.0509	0.10221	0.31461	OK
0.014	0.002		A500-50	34.4738	2	68.6003	68.6003	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
81	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	300	300	1	1	1	1	-6.8699	98.2418	3.96629	0.01242	0.45128	1.57383	OK
0.313	0.009		A500-50	34.4738	2	300	300	1	1	1	1	59.6114	385.684	385.684	51.5385	51.5385	363.347	OK
82	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	300	300	1	1	1	1	1.10831	132.677	-1.8327	0.02124	-0.5861	1.99768	OK
0.347	0.011		A500-50	34.4738	2	300	300	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
83	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1.003	1	-5.6057	-65.223	2.74029	0.02066	-1.0276	1.38806	OK
0.186	0.02		A500-50	34.4738	2	60.2028	60.2028	1	1	1.003	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
84	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1.003	1	-5.4801	-25.766	1.27345	0.02066	-1.105	1.59352	OK
0.084	0.021		A500-50	34.4738	2	60.2028	60.2028	1	1	1.003	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
85	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1.003	1	-5.3329	65.5575	-1.4526	0.02066	-1.1605	1.58018	OK
0.186	0.023		A500-50	34.4738	2	60.2028	60.2028	1	1	1.003	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
86	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1.003	1	-5.2025	114.803	-2.9153	0.02066	-1.1939	1.34835	OK
0.314	0.023		A500-50	34.4738	2	60.2028	60.2028	1	1	1.003	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
87	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1.003	1	-5.0733	164.72	-4.3276	0.02066	-1.2057	0.90311	OK
0.443	0.023		A500-50	34.4738	2	60.2028	60.2028	1	1	1.003	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
88	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1.003	1	-4.9485	214.091	-5.6585	0.02066	-1.197	0.60559	OK
0.57	0.023		A500-50	34.4738	2	60.2028	60.2028	1	1	1.003	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK

89	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	4.77756	139.999	-4.5776	-0.0384	2.52337	0.96967	OK
0.377	0.049		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
90	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	1.01647	98.1935	-4.1785	-0.0219	2.21425	1.21486	OK
0.258	0.043		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
91	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	3	60.2028	60.2028	1	1	1.001	1	-1.2396	94.0566	0.27085	0.00691	-1.5542	1.62446	OK
0.248	0.032		A500-50	34.4738	3	60.2028	60.2028	1	1	1.001	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
92	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	0.5964	-136.3	0.23696	-0.0219	1.06481	1.80382	OK
0.355	0.021		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
93	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	0.52083	-145.01	1.48837	-0.0219	0.45423	1.74899	OK
0.378	0.009		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
94	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	0.5463	-142.66	2.05603	-0.0219	-0.8643	1.48754	OK
0.372	0.018		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
95	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	30.1014	30.1014	1	1	1	1	0.63109	-111.39	3.55152	-0.0219	-1.1191	1.53492	OK
0.291	0.03		A500-50	34.4738	2	30.1014	30.1014	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
96	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	30.1014	30.1014	1	1	1.001	1	-5.7361	-99.127	4.15703	0.02066	-0.9392	1.39784	OK
0.274	0.03		A500-50	34.4738	2	30.1014	30.1014	1	1	1.001	1	169.975	385.684	385.684	51.5385	51.5385	363.347	OK
97	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	29.9181	29.9181	1	1	1	1	-2.2904	-69.791	0	0	-1.5595	0	OK
0.188	0.03		A500-50	34.4738	1	29.9181	29.9181	1	1	1	1	169.997	385.684	385.684	0	51.5385	0	OK
98	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	29.9181	29.9181	1	1	1	1	-2.2904	-69.791	0	0	-1.5595	0	OK
0.188	0.03		A500-50	34.4738	1	29.9181	29.9181	1	1	1	1	169.997	385.684	385.684	0	51.5385	0	OK
99	1	0	Tub 2" x 2mm	Tub 2" x 2mm	4	300	300	1	1	1	1	-0.1207	10.0622	0.2108	-0.0007	-0.0335	0	OK
0.05	0.001		A500-50	34.4738	4	300	300	1	1	1	1	26.5526	208.828	208.828	33.9204	33.9204	0	OK
100	1	0	Tub 2" x 2mm	Tub 2" x 2mm	4	300	300	1	1	1	1	-0.1207	10.0617	0.08223	-0.0003	-0.0335	0	OK
0.05	0.001		A500-50	34.4738	4	300	300	1	1	1	1	26.5526	208.828	208.828	33.9204	33.9204	0	OK
101	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	33.0543	33.0543	1	1	1	1	-2.0844	109.184	1.62821	0.0165	2.78234	1.94327	OK
0.289	0.054		A500-50	34.4738	2	33.0543	33.0543	1	1	1	1	169.603	385.684	385.684	51.5385	51.5385	363.347	OK
102	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	33.0543	33.0543	1	1	1	1	-2.7271	23.5789	1.42905	0.0165	1.61288	1.10106	OK
0.069	0.031		A500-50	34.4738	2	33.0543	33.0543	1	1	1	1	169.603	385.684	385.684	51.5385	51.5385	363.347	OK
103	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	33.0543	33.0543	1	1	1	1	-2.7863	-27.131	0.70281	0.0165	-1.3972	0.32118	OK
0.079	0.028		A500-50	34.4738	2	33.0543	33.0543	1	1	1	1	169.603	385.684	385.684	51.5385	51.5385	363.347	OK
104	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	10.711	10.711	1	1	1	1	-2.9163	-29.463	0.86806	0.0165	0.62499	0.73437	OK
0.085	0.012		A500-50	34.4738	2	10.711	10.711	1	1	1	1	171.564	385.684	385.684	51.5385	51.5385	363.347	OK
105	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	22.4384	22.4384	1	1	1	1	-2.9591	-29.464	-0.961	0.0165	0.23273	0.49801	OK
0.085	0.006		A500-50	34.4738	2	22.4384	22.4384	1	1	1	1	170.781	385.684	385.684	51.5385	51.5385	363.347	OK
106	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	68.6003	68.6003	1	1	1	1	2.97116	-74.057	-1.028	-0.0165	-0.9072	0.75608	OK
0.201	0.018		A500-50	34.4738	2	68.6003	68.6003	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
107	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	300	300	1	1	1	1	-6.2971	98.7951	-0.6414	-0.0116	0.46777	0.58721	OK
0.309	0.009		A500-50	34.4738	2	300	300	1	1	1	1	59.6114	385.684	385.684	51.5385	51.5385	363.347	OK
108	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	300	300	1	1	1	1	1.10236	148.763	0.86495	-0.003	-0.7024	0.3837	OK
0.389	0.014		A500-50	34.4738	2	300	300	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
109	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1.003	1	-5.9481	-72.131	-0.5668	-0.0023	-0.9724	0.73635	OK
0.205	0.019		A500-50	34.4738	2	60.2028	60.2028	1	1	1.003	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
110	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1.003	1	-5.8269	-35.99	-0.4	-0.0023	-1.101	0.46057	OK
0.111	0.021		A500-50	34.4738	2	60.2028	60.2028	1	1	1.003	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
111	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1.003	1	-5.6766	57.9513	-0.0878	-0.0023	-1.2078	0.49947	OK
0.167	0.023		A500-50	34.4738	2	60.2028	60.2028	1	1	1.003	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
112	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1.003	1	-5.5354	113.073	0.08906	-0.0023	-1.2914	0.52735	OK
0.31	0.025		A500-50	34.4738	2	60.2028	60.2028	1	1	1.003	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
113	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1.003	1	-5.3882	171.762	0.2662	-0.0023	-1.3514	0.4253	OK
0.462	0.026		A500-50	34.4738	2	60.2028	60.2028	1	1	1.003	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
114	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1.003	1	-5.2384	232.606	0.43902	-0.0023	-1.3876	0.44346	OK
0.619	0.027		A500-50	34.4738	2	60.2028	60.2028	1	1	1.003	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
115	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	5.21789	148.512	0.37423	0.00337	2.56548	0.92775	OK
0.4	0.05		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
116	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	1.1596	114.809	0.41733	0.00113	2.2673	0.31387	OK
0.301	0.044		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
117	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	3	60.2028	60.2028	1	1	1.001	1	-1.2237	90.446	-0.4962	-0.0041	-1.5821	0.41058	OK
0.238	0.034		A500-50	34.4738	3	60.2028	60.2028	1	1	1.001	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
118	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	0.71777	-132.89	0.22536	0.00113	1.15738	0.23816	OK
0.347	0.022		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
119	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	0.62719	-146.53	0.171	0.00113	0.56372	0.49566	OK
0.382	0.011		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
120	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	0.63531	-145.84	0.14644	0.00113	-0.7403	0.86117	OK
0.38	0.018		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
121	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	30.1014	30.1014	1	1	1	1	0.7008	-122.03	0.06852	0.00113	-0.9833	1.1318	OK
0.318	0.031		A500-50	34.4738	2	30.1014	30.1014	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
122	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	30.1014	30.1014	1	1	1.001	1	-6.0666	-99.688	-0.7234	-0.0023	-0.8339	0.99336	OK
0.276	0.031		A500-50	34.4738	2	30.1014	30.1014	1	1	1.001	1	169.975	385.684	385.684	51.5385	51.5385	363.347	OK
123	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	29.9181	29.9181	1	1	1	1	-2.2904	-69.791	0	0	-1.5595	0	OK
0.188	0.03		A500-50	34.4738	1	29.9181	29.9181	1	1	1	1	169.997	385.684	385.684	0	51.5385	0	OK

124	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	29.9181	29.9181	1	1	1	1	-2.2904	-69.791	0	0	-1.5595	0	OK
0.188	0.03		A500-50	34.4738	1	29.9181	29.9181	1	1	1	1	169.997	385.684	385.684	0	51.5385	0	OK
125	1	0	Tub 2" x 2mm	Tub 2" x 2mm	4	300	300	1	1	1	1	-0.1207	9.69988	0.24056	-0.0008	-0.0323	0	OK
0.049	0.001		A500-50	34.4738	4	300	300	1	1	1	1	26.5526	208.828	208.828	33.9204	33.9204	0	OK
126	1	0	Tub 2" x 2mm	Tub 2" x 2mm	4	300	300	1	1	1	1	-0.1207	9.69957	0.10397	-0.0003	-0.0323	0	OK
0.049	0.001		A500-50	34.4738	4	300	300	1	1	1	1	26.5526	208.828	208.828	33.9204	33.9204	0	OK
127	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	33.0543	33.0543	1	1	1	1	-2.2819	119.824	-0.2236	-0.0022	2.99626	1.74139	OK
0.317	0.058		A500-50	34.4738	2	33.0543	33.0543	1	1	1	1	169.603	385.684	385.684	51.5385	51.5385	363.347	OK
128	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	33.0543	33.0543	1	1	1	1	-2.9824	27.1469	-0.1733	-0.0022	1.7528	0.97236	OK
0.079	0.034		A500-50	34.4738	2	33.0543	33.0543	1	1	1	1	169.603	385.684	385.684	51.5385	51.5385	363.347	OK
129	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	33.0543	33.0543	1	1	1	1	-3.0742	-29.886	-0.037	-0.0022	-1.4398	0.12298	OK
0.087	0.028		A500-50	34.4738	2	33.0543	33.0543	1	1	1	1	169.603	385.684	385.684	51.5385	51.5385	363.347	OK
130	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	10.711	10.711	1	1	1	1	-3.1956	-31.403	-0.0827	-0.0022	0.7074	0.6461	OK
0.091	0.014		A500-50	34.4738	2	10.711	10.711	1	1	1	1	171.564	385.684	385.684	51.5385	51.5385	363.347	OK
131	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	22.4384	22.4384	1	1	1	1	-3.2475	-31.566	0.07307	-0.0022	0.19644	0.42055	OK
0.091	0.006		A500-50	34.4738	2	22.4384	22.4384	1	1	1	1	170.781	385.684	385.684	51.5385	51.5385	363.347	OK
132	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	68.6003	68.6003	1	1	1	1	3.21085	-84.045	0.12594	0.00225	-1.0725	0.74024	OK
0.227	0.021		A500-50	34.4738	2	68.6003	68.6003	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
133	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	300	300	1	1	1	1	-6.3586	98.2006	-0.2391	-0.0037	0.46467	0.34151	OK
0.308	0.009		A500-50	34.4738	2	300	300	1	1	1	1	59.6114	385.684	385.684	51.5385	51.5385	363.347	OK
134	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	300	300	1	1	1	1	1.09404	149.491	1.47888	-0.0063	-0.7075	0.3729	OK
0.391	0.014		A500-50	34.4738	2	300	300	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
135	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1.003	1	-5.9772	-72.251	-0.139	-0.0015	-0.9648	0.64933	OK
0.205	0.019		A500-50	34.4738	2	60.2028	60.2028	1	1	1.003	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
136	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1.003	1	-5.8569	-36.567	-0.0358	-0.0015	-1.0978	0.29466	OK
0.113	0.021		A500-50	34.4738	2	60.2028	60.2028	1	1	1.003	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
137	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1.003	1	-5.7066	57.2549	0.1556	-0.0015	-1.209	0.28716	OK
0.166	0.023		A500-50	34.4738	2	60.2028	60.2028	1	1	1.003	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
138	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1.003	1	-5.565	112.718	0.2561	-0.0015	-1.2971	0.5022	OK
0.309	0.025		A500-50	34.4738	2	60.2028	60.2028	1	1	1.003	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
139	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1.003	1	-5.4166	172.007	0.35195	-0.0015	-1.3613	0.41197	OK
0.462	0.026		A500-50	34.4738	2	60.2028	60.2028	1	1	1.003	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
140	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1.003	1	-5.265	233.698	0.44103	-0.0015	-1.4016	0.43527	OK
0.622	0.027		A500-50	34.4738	2	60.2028	60.2028	1	1	1.003	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
141	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	5.23857	149.033	0.35303	0.00291	2.56921	0.9691	OK
0.402	0.05		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
142	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	1.16312	115.701	0.3063	0.00183	2.27113	0.45736	OK
0.303	0.044		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
143	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	3	60.2028	60.2028	1	1	1.001	1	-1.218	90.5949	0.01639	-0.0008	-1.5808	0.44525	OK
0.239	0.034		A500-50	34.4738	3	60.2028	60.2028	1	1	1.001	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
144	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	0.72001	-132.77	-0.0698	0.00183	1.16207	0.16875	OK
0.346	0.023		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
145	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	0.62871	-146.64	-0.1764	0.00183	0.5687	0.35836	OK
0.382	0.011		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
146	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	0.63608	-146.02	-0.2248	0.00183	-0.7352	0.75685	OK
0.38	0.018		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
147	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	30.1014	30.1014	1	1	1	1	0.7008	-122.52	-0.3495	0.00183	-0.9781	1.06987	OK
0.32	0.031		A500-50	34.4738	2	30.1014	30.1014	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
148	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	30.1014	30.1014	1	1	1.001	1	-6.0942	-99.094	-0.2397	-0.0015	-0.8221	0.93906	OK
0.275	0.031		A500-50	34.4738	2	30.1014	30.1014	1	1	1.001	1	169.975	385.684	385.684	51.5385	51.5385	363.347	OK
149	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	29.9181	29.9181	1	1	1	1	-2.2904	-69.791	0	0	-1.5595	0	OK
0.188	0.03		A500-50	34.4738	1	29.9181	29.9181	1	1	1	1	169.997	385.684	385.684	0	51.5385	0	OK
150	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	29.9181	29.9181	1	1	1	1	-2.2904	-69.791	0	0	-1.5595	0	OK
0.188	0.03		A500-50	34.4738	1	29.9181	29.9181	1	1	1	1	169.997	385.684	385.684	0	51.5385	0	OK
151	1	0	Tub 2" x 2mm	Tub 2" x 2mm	4	300	300	1	1	1	1	-0.1207	9.31804	0.26425	-0.0009	-0.0311	0	OK
0.047	0.001		A500-50	34.4738	4	300	300	1	1	1	1	26.5526	208.828	208.828	33.9204	33.9204	0	OK
152	1	0	Tub 2" x 2mm	Tub 2" x 2mm	9	300	300	1	1	1	1	-0.1207	-9.3179	0.21752	-0.0007	0.03106	0	OK
0.047	0.001		A500-50	34.4738	9	300	300	1	1	1	1	26.5526	208.828	208.828	33.9204	33.9204	0	OK
153	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	33.0543	33.0543	1	1	1	1	-2.2933	120.42	-0.1065	-0.0011	3.00838	1.74936	OK
0.319	0.058		A500-50	34.4738	2	33.0543	33.0543	1	1	1	1	169.603	385.684	385.684	51.5385	51.5385	363.347	OK
154	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	33.0543	33.0543	1	1	1	1	-2.9971	27.3422	-0.0983	-0.0011	1.76065	0.97225	OK
0.08	0.034		A500-50	34.4738	2	33.0543	33.0543	1	1	1	1	169.603	385.684	385.684	51.5385	51.5385	363.347	OK
155	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	33.0543	33.0543	1	1	1	1	-3.0907	-30.042	-0.0585	-0.0011	-1.4424	0.13629	OK
0.087	0.028		A500-50	34.4738	2	33.0543	33.0543	1	1	1	1	169.603	385.684	385.684	51.5385	51.5385	363.347	OK
156	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	10.711	10.711	1	1	1	1	-3.2116	-31.517	-0.0645	-0.0011	0.71196	0.65377	OK
0.091	0.014		A500-50	34.4738	2	10.711	10.711	1	1	1	1	171.564	385.684	385.684	51.5385	51.5385	363.347	OK
157	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	22.4384	22.4384	1	1	1	1	-3.264	-31.69	0.06654	-0.0011	0.19453	0.43277	OK
0.092	0.006		A500-50	34.4738	2	22.4384	22.4384	1	1	1	1	170.781	385.684	385.684	51.5385	51.5385	363.347	OK
158	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	68.6003	68.6003	1	1	1	1	3.22465	-84.613	0.07046	0.00108	-1.0818	0.75611	OK
0.229	0.021		A500-50	34.4738	2	68.6003	68.6003	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK

159	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	300	300	1	1	1	1	-6.3086	98.7379	-0.6033	-0.0023	0.46727	0.45828	OK
0.309	0.009		A500-50	34.4738	2	300	300	1	1	1	1	59.6114	385.684	385.684	51.5385	51.5385	363.347	OK
160	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	300	300	1	1	1	1	1.1042	148.593	2.33674	-0.012	-0.7012	0.62436	OK
0.389	0.014		A500-50	34.4738	2	300	300	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
161	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1.003	1	-5.9454	-72.038	-0.3131	-0.004	-0.9726	0.78305	OK
0.205	0.019		A500-50	34.4738	2	60.2028	60.2028	1	1	1.003	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
162	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1.003	1	-5.8242	-35.884	-0.0314	-0.004	-1.1008	0.43596	OK
0.111	0.021		A500-50	34.4738	2	60.2028	60.2028	1	1	1.003	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
163	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1.003	1	-5.6739	58.0063	0.491	-0.004	-1.2072	0.40984	OK
0.168	0.023		A500-50	34.4738	2	60.2028	60.2028	1	1	1.003	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
164	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1.003	1	-5.5329	113.068	0.76257	-0.004	-1.2904	0.61552	OK
0.31	0.025		A500-50	34.4738	2	60.2028	60.2028	1	1	1.003	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
165	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1.003	1	-5.3858	171.673	1.02003	-0.004	-1.35	0.48897	OK
0.461	0.026		A500-50	34.4738	2	60.2028	60.2028	1	1	1.003	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
166	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1.003	1	-5.2362	232.414	1.25772	-0.004	-1.3859	0.46099	OK
0.619	0.027		A500-50	34.4738	2	60.2028	60.2028	1	1	1.003	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
167	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	5.21325	148.423	1.00206	0.0082	2.56505	0.99401	OK
0.4	0.05		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
168	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	1.15805	114.636	0.8514	0.00534	2.26675	0.42725	OK
0.301	0.044		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
169	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	3	60.2028	60.2028	1	1	1.001	1	-1.2245	90.5558	0.20657	-0.0005	-1.5823	0.54104	OK
0.239	0.034		A500-50	34.4738	3	60.2028	60.2028	1	1	1.001	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
170	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	0.71645	-132.92	-0.2564	0.00534	1.1564	0.51244	OK
0.347	0.022		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
171	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	0.62603	-146.52	-0.5704	0.00534	0.56256	0.5131	OK
0.382	0.011		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
172	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	0.63433	-145.8	-0.7129	0.00534	-0.7416	0.86277	OK
0.38	0.018		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
173	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	30.1014	30.1014	1	1	1	1	0.70003	-121.92	-1.0773	0.00534	-0.9848	1.13558	OK
0.318	0.031		A500-50	34.4738	2	30.1014	30.1014	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
174	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	30.1014	30.1014	1	1	1.001	1	-6.0639	-99.631	-0.5894	-0.004	-0.8345	1.02373	OK
0.276	0.031		A500-50	34.4738	2	30.1014	30.1014	1	1	1.001	1	169.975	385.684	385.684	51.5385	51.5385	363.347	OK
175	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	29.9181	29.9181	1	1	1	1	-2.2904	-69.791	0	0	-1.5595	0	OK
0.188	0.03		A500-50	34.4738	1	29.9181	29.9181	1	1	1	1	169.997	385.684	385.684	0	51.5385	0	OK
176	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	29.9181	29.9181	1	1	1	1	-2.2904	-69.791	0	0	-1.5595	0	OK
0.188	0.03		A500-50	34.4738	1	29.9181	29.9181	1	1	1	1	169.997	385.684	385.684	0	51.5385	0	OK
177	1	0	Tub 2" x 2mm	Tub 2" x 2mm	9	300	300	1	1	1	1	-0.1207	-9.1198	0.15952	-0.0005	0.0304	0	OK
0.046	0.001		A500-50	34.4738	9	300	300	1	1	1	1	26.5526	208.828	208.828	33.9204	33.9204	0	OK
178	1	0	Tub 2" x 2mm	Tub 2" x 2mm	9	300	300	1	1	1	1	-0.1207	-9.12	0.22388	-0.0007	0.0304	0	OK
0.046	0.001		A500-50	34.4738	9	300	300	1	1	1	1	26.5526	208.828	208.828	33.9204	33.9204	0	OK
179	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	33.0543	33.0543	1	1	1	1	-2.2799	119.713	-0.2808	-0.0029	2.99404	1.83332	OK
0.317	0.058		A500-50	34.4738	2	33.0543	33.0543	1	1	1	1	169.603	385.684	385.684	51.5385	51.5385	363.347	OK
180	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	33.0543	33.0543	1	1	1	1	-2.9797	27.1097	-0.2656	-0.0029	1.75134	1.04367	OK
0.079	0.034		A500-50	34.4738	2	33.0543	33.0543	1	1	1	1	169.603	385.684	385.684	51.5385	51.5385	363.347	OK
181	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	33.0543	33.0543	1	1	1	1	-3.0713	-29.858	-0.171	-0.0029	-1.4394	0.14913	OK
0.086	0.028		A500-50	34.4738	2	33.0543	33.0543	1	1	1	1	169.603	385.684	385.684	51.5385	51.5385	363.347	OK
182	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	10.711	10.711	1	1	1	1	-3.1927	-31.383	-0.1802	-0.0029	0.70655	0.69965	OK
0.091	0.014		A500-50	34.4738	2	10.711	10.711	1	1	1	1	171.564	385.684	385.684	51.5385	51.5385	363.347	OK
183	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	22.4384	22.4384	1	1	1	1	-3.2445	-31.544	0.18838	-0.0029	0.19682	0.46147	OK
0.091	0.006		A500-50	34.4738	2	22.4384	22.4384	1	1	1	1	170.781	385.684	385.684	51.5385	51.5385	363.347	OK
184	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	68.6003	68.6003	1	1	1	1	3.20837	-83.941	0.19003	0.00286	-1.0708	0.76703	OK
0.227	0.021		A500-50	34.4738	2	68.6003	68.6003	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
185	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	300	300	1	1	1	1	-6.3866	84.3418	-4.3255	-0.0219	0.37703	1.71136	OK
0.273	0.007		A500-50	34.4738	2	300	300	1	1	1	1	59.6114	385.684	385.684	51.5385	51.5385	363.347	OK
186	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	300	300	1	1	1	1	1.42013	111.342	4.63241	-0.0321	-0.4538	2.19978	OK
0.293	0.009		A500-50	34.4738	2	300	300	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
187	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1.003	1	-5.7561	-58.781	-2.9822	-0.0226	-0.9248	1.55849	OK
0.17	0.018		A500-50	34.4738	2	60.2028	60.2028	1	1	1.003	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
188	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1.003	1	-5.6441	-25.513	-1.3783	-0.0226	-1.0256	1.73938	OK
0.083	0.02		A500-50	34.4738	2	60.2028	60.2028	1	1	1.003	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
189	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1.003	1	-5.5068	57.7562	1.60218	-0.0226	-1.1062	1.72272	OK
0.167	0.021		A500-50	34.4738	2	60.2028	60.2028	1	1	1.003	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
190	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1.003	1	-5.3826	105.315	3.20088	-0.0226	-1.1659	1.46726	OK
0.29	0.023		A500-50	34.4738	2	60.2028	60.2028	1	1	1.003	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
191	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1.003	1	-5.2555	155.165	4.74415	-0.0226	-1.2046	0.97862	OK
0.418	0.023		A500-50	34.4738	2	60.2028	60.2028	1	1	1.003	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
192	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1.003	1	-5.1289	206.091	6.19809	-0.0226	-1.2228	0.64985	OK
0.55	0.024		A500-50	34.4738	2	60.2028	60.2028	1	1	1.003	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
193	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	4.53074	136.297	5.01239	0.042	2.50432	1.06726	OK
0.367	0.049		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK

194	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	0.89814	91.0575	4.57115	0.02398	2.18206	1.34065	OK
0.239	0.042		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
195	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	3	60.2028	60.2028	1	1	1.001	1	-1.146	95.7457	-0.1269	-0.0055	-1.5096	1.7881	OK
0.252	0.031		A500-50	34.4738	3	60.2028	60.2028	1	1	1.001	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
196	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	0.49264	-134.6	-0.273	0.02398	0.99943	1.98291	OK
0.35	0.019		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
197	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	0.43265	-140.62	-1.2849	0.02398	0.37424	1.92079	OK
0.366	0.008		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
198	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	0.46619	-136.14	-2.2687	0.02398	-0.9572	1.60312	OK
0.354	0.02		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
199	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	30.1014	30.1014	1	1	1	1	0.56558	-99.282	-3.9087	0.02398	-1.2228	1.58511	OK
0.259	0.029		A500-50	34.4738	2	30.1014	30.1014	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
200	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	30.1014	30.1014	1	1	1.001	1	-5.8696	-85.227	-4.5309	-0.0226	-0.8153	1.54558	OK
0.239	0.029		A500-50	34.4738	2	30.1014	30.1014	1	1	1.001	1	169.975	385.684	385.684	51.5385	51.5385	363.347	OK
201	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	29.9181	29.9181	1	1	1	1	-2.2904	-69.791	0	0	-1.5595	0	OK
0.188	0.03		A500-50	34.4738	1	29.9181	29.9181	1	1	1	1	169.997	385.684	385.684	0	51.5385	0	OK
202	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	29.9181	29.9181	1	1	1	1	-2.2904	-69.791	0	0	-1.5595	0	OK
0.188	0.03		A500-50	34.4738	1	29.9181	29.9181	1	1	1	1	169.997	385.684	385.684	0	51.5385	0	OK
203	1	0	Tub 2" x 2mm	Tub 2" x 2mm	9	300	300	1	1	1	1	-0.1207	-8.9317	0.16635	-0.0006	0.02977	0	OK
0.045	0.001		A500-50	34.4738	9	300	300	1	1	1	1	26.5526	208.828	208.828	33.9204	33.9204	0	OK
204	1	0	Tub 2" x 2mm	Tub 2" x 2mm	9	300	300	1	1	1	1	-0.1207	-8.9319	0.22508	-0.0008	0.02977	0	OK
0.045	0.001		A500-50	34.4738	9	300	300	1	1	1	1	26.5526	208.828	208.828	33.9204	33.9204	0	OK
205	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	33.0543	33.0543	1	1	1	1	-1.9996	104.603	-1.7779	-0.018	2.69036	2.01023	OK
0.277	0.052		A500-50	34.4738	2	33.0543	33.0543	1	1	1	1	169.603	385.684	385.684	51.5385	51.5385	363.347	OK
206	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	33.0543	33.0543	1	1	1	1	-2.6087	-22.98	-0.966	-0.018	1.5527	1.15601	OK
0.067	0.03		A500-50	34.4738	2	33.0543	33.0543	1	1	1	1	169.603	385.684	385.684	51.5385	51.5385	363.347	OK
207	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	33.0543	33.0543	1	1	1	1	-2.6625	-25.951	-0.7707	-0.018	-1.379	0.35305	OK
0.075	0.027		A500-50	34.4738	2	33.0543	33.0543	1	1	1	1	169.603	385.684	385.684	51.5385	51.5385	363.347	OK
208	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	10.711	10.711	1	1	1	1	-2.7964	-28.634	-0.9499	-0.018	0.58951	0.78102	OK
0.082	0.011		A500-50	34.4738	2	10.711	10.711	1	1	1	1	171.564	385.684	385.684	51.5385	51.5385	363.347	OK
209	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	22.4384	22.4384	1	1	1	1	-2.835	-28.634	1.05193	-0.018	0.24838	0.54693	OK
0.083	0.006		A500-50	34.4738	2	22.4384	22.4384	1	1	1	1	170.781	385.684	385.684	51.5385	51.5385	363.347	OK
210	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	68.6003	68.6003	1	1	1	1	2.86818	-69.759	1.12335	0.01802	-0.8362	0.79553	OK
0.189	0.016		A500-50	34.4738	2	68.6003	68.6003	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
211	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	300	300	1	1	1	1	-8.7355	124.553	-6.4503	0.00103	0.56545	2.24935	OK
0.397	0.011		A500-50	34.4738	2	300	300	1	1	1	1	59.6114	385.684	385.684	51.5385	51.5385	363.347	OK
212	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	3	300	300	1	1	1	1	-3.0819	-65.596	8.55926	0.04244	-0.2258	4.66479	OK
0.197	0.004		A500-50	34.4738	3	300	300	1	1	1	1	59.6114	385.684	385.684	51.5385	51.5385	363.347	OK
213	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	-0.4266	85.5167	-1.8898	-0.0363	-1.8185	2.45902	OK
0.223	0.035		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
214	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	-0.2441	130.747	0.68116	-0.0363	-1.1251	2.71129	OK
0.34	0.022		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
215	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	-0.178	137.425	2.16773	-0.0363	-0.4094	2.58085	OK
0.357	0.008		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
216	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	-0.2188	132.811	3.6067	-0.0363	1.06409	2.07058	OK
0.345	0.021		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
217	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	-0.3626	91.3916	6.03587	-0.0363	1.77524	1.19167	OK
0.239	0.034		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
218	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	-0.612	-118.04	10.4953	-0.0363	2.45736	0.18139	OK
0.309	0.048		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
219	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	60.2028	60.2028	1	1	1	1	2.8877	-20.677	5.30413	0.04221	0.54362	1.30251	OK
0.064	0.012		A500-50	34.4738	2	60.2028	60.2028	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
220	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	3	60.2028	60.2028	1	1	1.001	1	-2.3912	68.5711	-4.278	-0.0377	-1.1266	3.10572	OK
0.185	0.022		A500-50	34.4738	3	60.2028	60.2028	1	1	1.001	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
221	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	3	60.2028	60.2028	1	1	1.001	1	-2.3209	89.4208	-1.5639	-0.0377	-0.7224	3.88638	OK
0.239	0.014		A500-50	34.4738	3	60.2028	60.2028	1	1	1.001	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
222	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	3	60.2028	60.2028	1	1	1.001	1	-2.3075	93.2129	0.07569	-0.0377	0.4367	4.16895	OK
0.249	0.008		A500-50	34.4738	3	60.2028	60.2028	1	1	1.001	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
223	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	3	60.2028	60.2028	1	1	1.001	1	-2.3543	85.7133	1.71365	-0.0377	0.83742	3.94725	OK
0.229	0.016		A500-50	34.4738	3	60.2028	60.2028	1	1	1.001	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
224	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	3	60.2028	60.2028	1	1	1.001	1	-2.4711	57.8024	4.42277	-0.0377	1.22206	3.22612	OK
0.158	0.024		A500-50	34.4738	3	60.2028	60.2028	1	1	1.001	1	164.63	385.684	385.684	51.5385	51.5385	363.347	OK
225	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	3	30.1014	30.1014	1	1	1	1	-2.6741	-24.218	8.14431	-0.0377	1.22087	2.02142	OK
0.074	0.031		A500-50	34.4738	3	30.1014	30.1014	1	1	1	1	169.975	385.684	385.684	51.5385	51.5385	363.347	OK
226	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	30.1014	30.1014	1	1	1	1	-0.7529	-128.43	-6.5818	-0.0363	-2.4834	1.8296	OK
0.336	0.048		A500-50	34.4738	2	30.1014	30.1014	1	1	1	1	169.975	385.684	385.684	51.5385	51.5385	363.347	OK
227	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	29.9181	29.9181	1	1	1	1	-2.2923	-69.87	0	0	-1.5608	0	OK
0.188	0.03		A500-50	34.4738	1	29.9181	29.9181	1	1	1	1	169.997	385.684	385.684	0	51.5385	0	OK
228	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	29.9181	29.9181	1	1	1	1	-2.2923	-69.87	0	0	-1.5608	0	OK
0.188	0.03		A500-50	34.4738	1	29.9181	29.9181	1	1	1	1	169.997	385.684	385.684	0	51.5385	0	OK

229	1	0	Tub 2" x 2mm	Tub 2" x 2mm	9	300	300	1	1	1	1	-0.1265	-2.5565	0.16992	-0.0006	0.00852	0	OK
0.015	0		A500-50	34.4738	9	300	300	1	1	1	1	26.5526	208.828	208.828	33.9204	33.9204	0	OK
230	1	0	Tub 2" x 2mm	Tub 2" x 2mm	3	300	300	1	1	1	1	-0.1294	-16.794	0	0	0.05598	0	OK
0.083	0.002		A500-50	34.4738	3	300	300	1	1	1	1	26.5526	208.828	208.828	0	33.9204	0	OK
231	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	33.0543	33.0543	1	1	1	1	-0.3243	-9.8746	-2.0608	0.00418	0.22397	2.77136	OK
0.027	0.007		A500-50	34.4738	2	33.0543	33.0543	1	1	1	1	169.603	385.684	385.684	51.5385	51.5385	363.347	OK
232	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	3	33.0543	33.0543	1	1	1	1	0.60638	9.20275	2.24564	-0.0057	0.64492	1.94896	OK
0.026	0.013		A500-50	34.4738	3	33.0543	33.0543	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
233	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	3	33.0543	33.0543	1	1	1	1	0.26138	1.53109	0.36075	0.02891	0.21612	0.45666	OK
0.005	0.005		A500-50	34.4738	3	33.0543	33.0543	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
234	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	3	10.711	10.711	1	1	1	1	0.46557	-14.178	2.77881	-0.0057	0.89489	1.25791	OK
0.039	0.017		A500-50	34.4738	3	10.711	10.711	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
235	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	3	22.4384	22.4384	1	1	1	1	0.1977	-9.0395	-1.3546	0.02891	0.54205	0.71659	OK
0.024	0.011		A500-50	34.4738	3	22.4384	22.4384	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
236	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	4	68.6003	68.6003	1	1	1	1	-0.076	3.87128	0.36064	0.0066	0.08912	0.2245	OK
0.01	0.002		A500-50	34.4738	4	68.6003	68.6003	1	1	1	1	162.55	385.684	385.684	51.5385	51.5385	363.347	OK
318	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	35	35	1	1	1	1	0	-0.366	0	0	-0.0209	0	OK
0.001	0		A500-50	34.4738	1	35	35	1	1	1	1	171.795	385.684	385.684	0	51.5385	0	OK
319	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	35	35	1	1	1	1	0	-0.366	0	0	-0.0209	0	OK
0.001	0		A500-50	34.4738	1	35	35	1	1	1	1	171.795	385.684	385.684	0	51.5385	0	OK
320	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	35	35	1	1	1	1	0	-0.366	0	0	-0.0209	0	OK
0.001	0		A500-50	34.4738	1	35	35	1	1	1	1	171.795	385.684	385.684	0	51.5385	0	OK
321	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	35	35	1	1	1	1	0	-0.366	0	0	-0.0209	0	OK
0.001	0		A500-50	34.4738	1	35	35	1	1	1	1	171.795	385.684	385.684	0	51.5385	0	OK
322	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	35	35	1	1	1	1	0	-0.366	0	0	-0.0209	0	OK
0.001	0		A500-50	34.4738	1	35	35	1	1	1	1	171.795	385.684	385.684	0	51.5385	0	OK
323	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	35	35	1	1	1	1	0	-0.366	0	0	-0.0209	0	OK
0.001	0		A500-50	34.4738	1	35	35	1	1	1	1	171.795	385.684	385.684	0	51.5385	0	OK
324	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	35	35	1	1	1	1	0	-0.366	0	0	-0.0209	0	OK
0.001	0		A500-50	34.4738	1	35	35	1	1	1	1	171.795	385.684	385.684	0	51.5385	0	OK
325	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	35	35	1	1	1	1	0	-0.366	0	0	-0.0209	0	OK
0.001	0		A500-50	34.4738	1	35	35	1	1	1	1	171.795	385.684	385.684	0	51.5385	0	OK
326	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	35	35	1	1	1	1	0	-0.366	0	0	-0.0209	0	OK
0.001	0		A500-50	34.4738	1	35	35	1	1	1	1	171.795	385.684	385.684	0	51.5385	0	OK
327	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	35	35	1	1	1	1	0	-0.366	0	0	-0.0209	0	OK
0.001	0		A500-50	34.4738	1	35	35	1	1	1	1	171.795	385.684	385.684	0	51.5385	0	OK
328	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	35	35	1	1	1	1	0	-0.366	0	0	-0.0209	0	OK
0.001	0		A500-50	34.4738	1	35	35	1	1	1	1	171.795	385.684	385.684	0	51.5385	0	OK
329	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	35	35	1	1	1	1	0	-0.366	0	0	-0.0209	0	OK
0.001	0		A500-50	34.4738	1	35	35	1	1	1	1	171.795	385.684	385.684	0	51.5385	0	OK
330	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	35	35	1	1	1	1	0	-0.366	0	0	-0.0209	0	OK
0.001	0		A500-50	34.4738	1	35	35	1	1	1	1	171.795	385.684	385.684	0	51.5385	0	OK
331	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	35	35	1	1	1	1	0	-0.366	0	0	-0.0209	0	OK
0.001	0		A500-50	34.4738	1	35	35	1	1	1	1	171.795	385.684	385.684	0	51.5385	0	OK
382	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	500	500	1	1	1.386	1	-10.519	-126.66	-0.2297	-0.0337	-0.4308	1.53328	OK*
0.782	0.008		A500-50	34.4738	2	500	500	1	1	1.386	1	21.4601	385.684	385.684	51.5385	51.5385	363.347	OK*
383	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	41	41	1	1	1	1	1.13677	8.52847	1.84037	0.05648	0.39435	2.64846	OK
0.026	0.008		A500-50	34.4738	2	41	41	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
386	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	500	500	1	1	1.317	1	-9.6454	-119.84	-0.1656	0.02382	0.40712	1.10824	OK*
0.726	0.008		A500-50	34.4738	2	500	500	1	1	1.317	1	21.4601	385.684	385.684	51.5385	51.5385	363.347	OK*
387	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	41	41	1	1	1	1	1.19812	-6.8122	0.33577	-0.0402	0.3212	1.87849	OK
0.021	0.006		A500-50	34.4738	2	41	41	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
396	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	3	30.1014	30.1014	1	1	1	1	-2.6826	-66.155	-12.829	0.05206	1.60311	2.85458	OK
0.183	0.031		A500-50	34.4738	3	30.1014	30.1014	1	1	1	1	169.975	385.684	385.684	51.5385	51.5385	363.347	OK
397	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	30.1014	30.1014	1	1	1	1	-0.4016	-63.58	7.83109	0.05151	-2.2694	2.58927	OK
0.167	0.044		A500-50	34.4738	2	30.1014	30.1014	1	1	1	1	169.975	385.684	385.684	51.5385	51.5385	363.347	OK
398	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	29.9181	29.9181	1	1	1	1	-2.2776	-23.324	0	0	-1.5507	0	OK
0.067	0.03		A500-50	34.4738	1	29.9181	29.9181	1	1	1	1	169.997	385.684	385.684	0	51.5385	0	OK
399	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	29.9181	29.9181	1	1	1	1	-2.2776	-23.324	0	0	-1.5507	0	OK
0.067	0.03		A500-50	34.4738	1	29.9181	29.9181	1	1	1	1	169.997	385.684	385.684	0	51.5385	0	OK
400	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	30.1014	30.1014	1	1	1	1	0.61842	-83.003	4.20981	-0.0219	-1.471	1.53492	OK
0.217	0.03		A500-50	34.4738	2	30.1014	30.1014	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
401	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	30.1014	30.1014	1	1	1.001	1	-5.7234	-76.434	3.53502	0.02066	-0.5686	1.39784	OK
0.215	0.029		A500-50	34.4738	2	30.1014	30.1014	1	1	1.001	1	169.975	385.684	385.684	51.5385	51.5385	363.347	OK
402	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	29.9181	29.9181	1	1	1	1	-2.2756	-23.284	0	0	-1.5494	0	OK
0.067	0.03		A500-50	34.4738	1	29.9181	29.9181	1	1	1	1	169.997	385.684	385.684	0	51.5385	0	OK
403	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	29.9181	29.9181	1	1	1	1	-2.2756	-23.284	0	0	-1.5494	0	OK
0.067	0.03		A500-50	34.4738	1	29.9181	29.9181	1	1	1	1	169.997	385.684	385.684	0	51.5385	0	OK
404	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	30.1014	30.1014	1	1	1	1	0.68813	-97.732	0.03459	0.00113	-1.3352	1.1318	OK
0.255	0.031		A500-50	34.4738	2	30.1014	30.1014	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK

405	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	30.1014	30.1014	1	1	1.001	1	-6.0539	-80.161	-0.6546	-0.0023	-0.4634	0.99336	OK
0.226	0.031		A500-50	34.4738	2	30.1014	30.1014	1	1	1.001	1	169.975	385.684	385.684	51.5385	51.5385	363.347	OK
406	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	29.9181	29.9181	1	1	1	1	-2.2756	-23.284	0	0	-1.5494	0	OK
0.067	0.03		A500-50	34.4738	1	29.9181	29.9181	1	1	1	1	169.997	385.684	385.684	0	51.5385	0	OK
407	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	29.9181	29.9181	1	1	1	1	-2.2756	-23.284	0	0	-1.5494	0	OK
0.067	0.03		A500-50	34.4738	1	29.9181	29.9181	1	1	1	1	169.997	385.684	385.684	0	51.5385	0	OK
408	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	30.1014	30.1014	1	1	1	1	0.68814	-98.377	-0.4044	0.00183	-1.33	1.06987	OK
0.257	0.032		A500-50	34.4738	2	30.1014	30.1014	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
409	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	30.1014	30.1014	1	1	1.001	1	-6.0816	-79.923	-0.1956	-0.0015	-0.4516	0.93906	OK
0.225	0.031		A500-50	34.4738	2	30.1014	30.1014	1	1	1.001	1	169.975	385.684	385.684	51.5385	51.5385	363.347	OK
410	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	29.9181	29.9181	1	1	1	1	-2.2756	-23.284	0	0	-1.5494	0	OK
0.067	0.03		A500-50	34.4738	1	29.9181	29.9181	1	1	1	1	169.997	385.684	385.684	0	51.5385	0	OK
411	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	29.9181	29.9181	1	1	1	1	-2.2756	-23.284	0	0	-1.5494	0	OK
0.067	0.03		A500-50	34.4738	1	29.9181	29.9181	1	1	1	1	169.997	385.684	385.684	0	51.5385	0	OK
412	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	30.1014	30.1014	1	1	1	1	0.68736	-97.572	-1.238	0.00534	-1.3367	1.13558	OK
0.255	0.031		A500-50	34.4738	2	30.1014	30.1014	1	1	1	1	171.795	385.684	385.684	51.5385	51.5385	363.347	OK
413	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	30.1014	30.1014	1	1	1.001	1	-6.0512	-80.086	-0.4682	-0.004	-0.464	1.02373	OK
0.225	0.031		A500-50	34.4738	2	30.1014	30.1014	1	1	1.001	1	169.975	385.684	385.684	51.5385	51.5385	363.347	OK
414	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	29.9181	29.9181	1	1	1	1	-2.2756	-23.284	0	0	-1.5494	0	OK
0.067	0.03		A500-50	34.4738	1	29.9181	29.9181	1	1	1	1	169.997	385.684	385.684	0	51.5385	0	OK
415	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	29.9181	29.9181	1	1	1	1	-2.2756	-23.284	0	0	-1.5494	0	OK
0.067	0.03		A500-50	34.4738	1	29.9181	29.9181	1	1	1	1	169.997	385.684	385.684	0	51.5385	0	OK
416	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	30.1014	30.1014	1	1	1	1	-2.7638	-69.889	-3.0469	0.01446	1.52039	1.58511	OK
0.19	0.031		A500-50	34.4738	1	30.1014	30.1014	1	1	1	1	169.975	385.684	385.684	51.5385	51.5385	363.347	OK
417	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	30.1014	30.1014	1	1	1.001	1	-5.857	-66.263	-3.8507	-0.0226	-0.4447	1.54558	OK
0.189	0.029		A500-50	34.4738	2	30.1014	30.1014	1	1	1.001	1	169.975	385.684	385.684	51.5385	51.5385	363.347	OK
418	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	29.9181	29.9181	1	1	1	1	-2.2756	-23.284	0	0	-1.5494	0	OK
0.067	0.03		A500-50	34.4738	1	29.9181	29.9181	1	1	1	1	169.997	385.684	385.684	0	51.5385	0	OK
419	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	29.9181	29.9181	1	1	1	1	-2.2756	-23.284	0	0	-1.5494	0	OK
0.067	0.03		A500-50	34.4738	1	29.9181	29.9181	1	1	1	1	169.997	385.684	385.684	0	51.5385	0	OK
420	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	3	30.1014	30.1014	1	1	1	1	-2.6868	-66.545	9.27814	-0.0377	1.59138	2.02142	OK
0.182	0.031		A500-50	34.4738	3	30.1014	30.1014	1	1	1	1	169.975	385.684	385.684	51.5385	51.5385	363.347	OK
421	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	2	30.1014	30.1014	1	1	1	1	-0.7402	-59.258	-5.4884	-0.0363	-2.1129	1.8296	OK
0.156	0.041		A500-50	34.4738	2	30.1014	30.1014	1	1	1	1	169.975	385.684	385.684	51.5385	51.5385	363.347	OK
422	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	29.9181	29.9181	1	1	1	1	-2.2776	-23.324	0	0	-1.5507	0	OK
0.067	0.03		A500-50	34.4738	1	29.9181	29.9181	1	1	1	1	169.997	385.684	385.684	0	51.5385	0	OK
423	4	0	Tub 2.5" x 2.5mm	Tub 2.5" x 2.5mm	1	29.9181	29.9181	1	1	1	1	-2.2776	-23.324	0	0	-1.5507	0	OK
0.067	0.03		A500-50	34.4738	1	29.9181	29.9181	1	1	1	1	169.997	385.684	385.684	0	51.5385	0	OK

AMAURY ANDRES URUETA MORA
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PROJECT TITLE : INVERNADERO 2 PUL TIPO 1

MIDAS	Company		Client	
	Author	AMAURY URUETA	File Name	Midas Invernadero Tipo 1.mdl

*** PROJECT INFORMATION

Project Name : INVERNADERO 2 PUL TIPO 1
Date : 2025/12/21

*** CONTROL DATA

Panel Zone Effect : Do not Calculate
Unit System : KN, CM
Definition of Frame
- X Direction of Frame : Braced I Non-sway
- Y Direction of Frame : Braced I Non-sway
- Design Type : 3-D

Design Code
- Steel : AISC(14th)-LRFD10
- Concrete : NSR-10
- SRC : SSRC79

*** LOAD CASE DATA

NO	NAME	TYPE	SELF WEIGHT FACTOR X	Y	Z	DESCRIPTION
1	Peso Propio	D	0.000	0.000	-1.000	
2	Carga Muerta Sobre ~	D	0.000	0.000	0.000	
4	EX (Sismo Reducido)	E	0.000	0.000	0.000	
5	EY (Sismo Reducido)	E	0.000	0.000	0.000	
6	Sismo X	USER	0.000	0.000	0.000	
7	Sismo Y	USER	0.000	0.000	0.000	
8	Carga de Viento	W	0.000	0.000	0.000	
11	Carga Fluidos	FP	0.000	0.000	0.000	

*** MATERIAL PROPERTY DATA

NO	NAME	TYPE	MODULUS OF ELASTICITY	SHEAR MODULUS	THERMAL COEFF.	POISSON RATIO	WEIGHT DENSITY
1	A416-250(Normal)	STEEL	1.965e+04	7558	6.5e-06	0.3	7.709e-05
2	A500-50	STEEL	1.999e+04	7690	6.5e-06	0.3	7.709e-05

NO	NAME	TYPE	STRENGTH OF DESIGN MATERIAL STEEL	CONCRETE	MAIN REBAR	SUB REBAR
1	A416-250(Normal)	STEEL	146.5	-	-	-
2	A500-50	STEEL	34.47	-	-	-

*** STORY DATA

NAME	LEVEL	HEIGHT	FLOOR DIAPHRAGM

Roof	544.620	0.000	Do not consider
14F	541.000	3.620	Do not consider
13F	537.590	3.410	Do not consider
12F	520.641	16.948	Do not consider
11F	500.000	20.641	Do not consider
10F	497.770	2.230	Do not consider
9F	495.539	2.230	Do not consider
8F	482.255	13.284	Do not consider
7F	460.439	21.816	Do not consider
6F	430.570	29.869	Do not consider
5F	393.304	37.266	Do not consider
4F	349.460	43.844	Do not consider
3F	324.730	24.730	Do not consider
2F	300.000	24.730	Do not consider
1F	0.000	300.000	Do not consider

*** NODE DATA

NO	X	Y	Z	TEMPERATURE
3	600	0	300	0
4	1300	0	300	0
24	950	0	500	0
43	600	0	0	0
44	1300	0	0	0
45	634.3	0	349.5	0
46	675.6	0	393.3	0
47	722.9	0	430.6	0
48	775.1	0	460.4	0
49	831.2	0	482.3	0
50	890	0	495.5	0
51	1010	0	495.5	0
52	1069	0	482.3	0
53	1125	0	460.4	0
54	1177	0	430.6	0
55	1224	0	393.3	0
56	1266	0	349.5	0
57	566.3	0	349.5	0
58	1334	0	349.5	0
59	1900	0	300	0
60	1900	0	0	0
61	0	0	300	0
62	0	0	0	0
63	950	0	541	0
64	895	0	541	0
65	988.5	0	520.6	0
66	960.2	0	537.6	0
67	927.9	0	544.6	0
68	600	300	300	0
69	600	300	0	0
70	1300	300	300	0
71	1300	300	0	0
72	634.3	300	349.5	0
73	675.6	300	393.3	0
74	722.9	300	430.6	0
75	775.1	300	460.4	0
76	831.2	300	482.3	0
77	890	300	495.5	0
78	950	300	500	0
79	1010	300	495.5	0
80	1069	300	482.3	0
81	1125	300	460.4	0

PROJECT TITLE : INVERNADERO 2 PUL TIPO 1

MIDAS	Company		Client	
	Author	AMAURY URUETA	File Name	Midas Invernadero Tipo 1.mdl

82	1177	300	430.6	0
83	1224	300	393.3	0
84	1266	300	349.5	0
85	566.3	300	349.5	0
86	1334	300	349.5	0
91	988.5	300	520.6	0
92	960.2	300	537.6	0
93	927.9	300	544.6	0
94	895	300	541	0
95	950	300	541	0
96	600	600	300	0
97	600	600	0	0
98	1300	600	300	0
99	1300	600	0	0
100	634.3	600	349.5	0
101	675.6	600	393.3	0
102	722.9	600	430.6	0
103	775.1	600	460.4	0
104	831.2	600	482.3	0
105	890	600	495.5	0
106	950	600	500	0
107	1010	600	495.5	0
108	1069	600	482.3	0
109	1125	600	460.4	0
110	1177	600	430.6	0
111	1224	600	393.3	0
112	1266	600	349.5	0
113	566.3	600	349.5	0
114	1334	600	349.5	0
115	1900	600	300	0
116	1900	600	0	0
117	0	600	300	0
118	0	600	0	0
119	988.5	600	520.6	0
120	960.2	600	537.6	0
121	927.9	600	544.6	0
122	895	600	541	0
123	950	600	541	0
124	600	900	300	0
125	600	900	0	0
126	1300	900	300	0
127	1300	900	0	0
128	634.3	900	349.5	0
129	675.6	900	393.3	0
130	722.9	900	430.6	0
131	775.1	900	460.4	0
132	831.2	900	482.3	0
133	890	900	495.5	0
134	950	900	500	0
135	1010	900	495.5	0
136	1069	900	482.3	0
137	1125	900	460.4	0
138	1177	900	430.6	0
139	1224	900	393.3	0
140	1266	900	349.5	0
141	566.3	900	349.5	0
142	1334	900	349.5	0
147	988.5	900	520.6	0
148	960.2	900	537.6	0
149	927.9	900	544.6	0
150	895	900	541	0
151	950	900	541	0
152	600	1200	300	0
153	600	1200	0	0

PROJECT TITLE : INVERNADERO 2 PUL TIPO 1

MIDAS	Company		Client	
	Author	AMAURY URUETA	File Name	Midas Invernadero Tipo 1.mdl

154	1300	1200	300	0
155	1300	1200	0	0
156	634.3	1200	349.5	0
157	675.6	1200	393.3	0
158	722.9	1200	430.6	0
159	775.1	1200	460.4	0
160	831.2	1200	482.3	0
161	890	1200	495.5	0
162	950	1200	500	0
163	1010	1200	495.5	0
164	1069	1200	482.3	0
165	1125	1200	460.4	0
166	1177	1200	430.6	0
167	1224	1200	393.3	0
168	1266	1200	349.5	0
169	566.3	1200	349.5	0
170	1334	1200	349.5	0
171	1900	1200	300	0
172	1900	1200	0	0
173	0	1200	300	0
174	0	1200	0	0
175	988.5	1200	520.6	0
176	960.2	1200	537.6	0
177	927.9	1200	544.6	0
178	895	1200	541	0
179	950	1200	541	0
180	600	1500	300	0
181	600	1500	0	0
182	1300	1500	300	0
183	1300	1500	0	0
184	634.3	1500	349.5	0
185	675.6	1500	393.3	0
186	722.9	1500	430.6	0
187	775.1	1500	460.4	0
188	831.2	1500	482.3	0
189	890	1500	495.5	0
190	950	1500	500	0
191	1010	1500	495.5	0
192	1069	1500	482.3	0
193	1125	1500	460.4	0
194	1177	1500	430.6	0
195	1224	1500	393.3	0
196	1266	1500	349.5	0
197	566.3	1500	349.5	0
198	1334	1500	349.5	0
203	988.5	1500	520.6	0
204	960.2	1500	537.6	0
205	927.9	1500	544.6	0
206	895	1500	541	0
207	950	1500	541	0
208	600	1800	300	0
209	600	1800	0	0
210	1300	1800	300	0
211	1300	1800	0	0
212	634.3	1800	349.5	0
213	675.6	1800	393.3	0
214	722.9	1800	430.6	0
215	775.1	1800	460.4	0
216	831.2	1800	482.3	0
217	890	1800	495.5	0
218	950	1800	500	0
219	1010	1800	495.5	0
220	1069	1800	482.3	0
221	1125	1800	460.4	0

PROJECT TITLE : INVERNADERO 2 PUL TIPO 1

MIDAS	Company		Client	
	Author	AMAURY URUETA	File Name	Midas Invernadero Tipo 1.mdl

222	1177	1800	430.6	0
223	1224	1800	393.3	0
224	1266	1800	349.5	0
225	566.3	1800	349.5	0
226	1334	1800	349.5	0
227	1900	1800	300	0
228	1900	1800	0	0
229	0	1800	300	0
230	0	1800	0	0
231	988.5	1800	520.6	0
232	960.2	1800	537.6	0
233	927.9	1800	544.6	0
234	895	1800	541	0
235	950	1800	541	0
236	300	0	0	0
237	300	300	0	0
238	300	600	0	0
239	300	900	0	0
240	300	1200	0	0
241	300	1500	0	0
242	300	1800	0	0
243	1600	0	0	0
244	1600	300	0	0
245	1600	600	0	0
246	1600	900	0	0
247	1600	1200	0	0
248	1600	1500	0	0
249	1600	1800	0	0
250	1301	0	349.5	0
251	1301	300	349.5	0
252	1301	600	349.5	0
253	1301	900	349.5	0
254	1301	1200	349.5	0
255	1301	1500	349.5	0
256	1301	1800	349.5	0
257	599.3	0	349.5	0
258	599.3	300	349.5	0
259	599.3	600	349.5	0
260	599.3	900	349.5	0
261	599.3	1200	349.5	0
262	599.3	1500	349.5	0
263	599.3	1800	349.5	0
264	600	-200	0	0
265	1300	-200	0	0
266	1900	-200	0	0
267	0	-200	0	0
268	600	2100	0	0
269	1300	2100	0	0
270	1900	2100	0	0
271	0	2100	0	0
273	950	1800	0	0
274	950	0	0	0
275	950	-200	0	0
276	950	2100	0	0
277	1283	0	324.7	0
278	617.2	0	324.7	0
279	583.2	0	324.7	0
280	1317	0	324.7	0
281	1283	300	324.7	0
282	617.2	300	324.7	0
283	583.2	300	324.7	0
284	1317	300	324.7	0
285	1283	600	324.7	0
286	617.2	600	324.7	0

287	583.2	600	324.7	0
288	1317	600	324.7	0
289	1283	900	324.7	0
290	617.2	900	324.7	0
291	583.2	900	324.7	0
292	1317	900	324.7	0
293	1283	1200	324.7	0
294	617.2	1200	324.7	0
295	583.2	1200	324.7	0
296	1317	1200	324.7	0
297	1283	1500	324.7	0
298	617.2	1500	324.7	0
299	583.2	1500	324.7	0
300	1317	1500	324.7	0
301	1283	1800	324.7	0
302	617.2	1800	324.7	0
303	583.2	1800	324.7	0
304	1317	1800	324.7	0
305	920	0	497.8	0
306	950	0	460.4	0
307	950	1800	460.4	0
308	950	0	430.6	0
309	950	1800	430.6	0

*** SUPPORT / SPECIFIED DISPLACEMENT / POINT SPRING SUPPORT

** SUPPORT / SPECIFIED DISPLACEMENT

NODE	SUPPORT DDDRRR	SPECIFIED DISPLACEMENT Dx	Dy	Dz	Rx	Ry	Rz
43	111111	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
44	111111	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	111111	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
62	111111	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
69	111111	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
71	111111	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
97	111111	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
99	111111	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
116	111111	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
118	111111	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
125	111111	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
127	111111	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
153	111111	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
155	111111	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
172	111111	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
174	111111	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
181	111111	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
183	111111	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
209	111111	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
211	111111	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
228	111111	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
230	111111	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
236	111000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
237	111000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
238	111000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
239	111000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
240	111000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
241	111000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
242	111000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
243	111000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
244	111000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
245	111000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

246	111000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
247	111000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
248	111000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
249	111000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
264	111000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
265	111000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
266	111000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
267	111000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
268	111000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
269	111000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
270	111000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
271	111000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
273	111111	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
274	111111	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
275	111000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
276	111000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

*** SECTION PROPERTY DATA

NO	NAME	SHAPE	H	B	tw	tf1	r1
1	Tub 2" x 2mm	P	6	0.2	0	0	0
2	Tensor 1/4"	SR	0.635	0	0	0	0
3	Tensor 5mm	SR	0.5	0	0	0	0
4	Tub 2" x 2mm - 2	P	6	0.2	0	0	0
5	Tensor 1/8"	SR	0.312	0	0	0	0
6	Tub 2" x 3mm	P	6	0.3	0	0	0

NO	NAME	STIFFNESS SCALE FACTOR							
		A	Asy	Asz	Ix	Iy	Iz	W	Boundary Group
1	Tub 2" x 2mm								
2	Tensor 1/4"								
3	Tensor 5mm								
4	Tub 2" x 2mm - 2								
5	Tensor 1/8"								
6	Tub 2" x 3mm								

NO	NAME	AREA	MOMENT OF INERTIA			SHAPE FACTOR	
		[SRC:EQIV.]	Ix	Iy	Iz	k-Y	k-Z
1	Tub 2" x 2mm	3.644	30.68	15.34	15.34	0.5	0.5
2	Tensor 1/4"	0.3167	0.01596	0.007981	0.007981	0.9	0.9
3	Tensor 5mm	0.1963	0.006136	0.003068	0.003068	0.9	0.9
4	Tub 2" x 2mm - 2	3.644	30.68	15.34	15.34	0.5	0.5
5	Tensor 1/8"	0.07645	0.0009303	0.0004651	0.0004651	0.9	0.9
6	Tub 2" x 3mm	5.372	43.76	21.88	21.88	0.5	0.5

NO	NAME	SECTION MODULUS Sy	SECTION MODULUS Sz

		I or CONC.	J or STEEL	I or CONC.	J or STEEL
1	Tub 2" x 2mm	5.114	5.114	5.114	5.114
2	Tensor 1/4"	0.02514	0.02514	0.02514	0.02514
3	Tensor 5mm	0.01227	0.01227	0.01227	0.01227
4	Tub 2" x 2mm - 2	5.114	5.114	5.114	5.114
5	Tensor 1/8"	0.002982	0.002982	0.002982	0.002982
6	Tub 2" x 3mm	7.293	7.293	7.293	7.293

*** BEAM MEMBER DATA

NO	NODAL CONNECTIVITY I	J	BEAM END RELEASE I	J	MATERIAL	SECTION	LENGTH
41	3	43	-	-	A500-50	Tub 2" x 3mm	300
42	4	44	-	-	A500-50	Tub 2" x 3mm	300
44	45	46	-	-	A500-50	Tub 2" x 2mm -~	60.2
45	46	47	-	-	A500-50	Tub 2" x 2mm -~	60.2
46	47	48	-	-	A500-50	Tub 2" x 2mm -~	60.2
47	48	49	-	-	A500-50	Tub 2" x 2mm -~	60.2
48	49	50	-	-	A500-50	Tub 2" x 2mm -~	60.2
49	50	24	-	-	A500-50	Tub 2" x 2mm -~	60.2
50	24	51	-	-	A500-50	Tub 2" x 2mm -~	60.2
51	51	52	-	-	A500-50	Tub 2" x 2mm -~	60.2
52	52	53	-	-	A500-50	Tub 2" x 2mm -~	60.2
53	53	54	-	-	A500-50	Tub 2" x 2mm -~	60.2
54	54	55	-	-	A500-50	Tub 2" x 2mm -~	60.2
55	55	56	-	-	A500-50	Tub 2" x 2mm -~	60.2
56	56	277	-	-	A500-50	Tub 2" x 2mm -~	30.1
69	3	278	-	-	A500-50	Tub 2" x 2mm -~	30.1
70	3	279	-	-	A500-50	Tub 2" x 2mm -~	29.92
71	4	280	-	-	A500-50	Tub 2" x 2mm -~	29.92
72	59	60	-	-	A500-50	Tub 2" x 2mm	300
73	61	62	-	-	A500-50	Tub 2" x 2mm	300
74	51	65	-	-	A500-50	Tub 2" x 2mm -~	33.05
75	65	66	-	-	A500-50	Tub 2" x 2mm -~	33.05
77	67	64	-	-	A500-50	Tub 2" x 2mm -~	33.05
78	66	63	-	-	A500-50	Tub 2" x 2mm -~	10.71
79	67	63	-	-	A500-50	Tub 2" x 2mm -~	22.44
80	24	64	-	-	A500-50	Tub 2" x 2mm -~	68.6
81	68	69	-	-	A500-50	Tub 2" x 3mm	300
82	70	71	-	-	A500-50	Tub 2" x 3mm	300
83	72	73	-	-	A500-50	Tub 2" x 2mm -~	60.2
84	73	74	-	-	A500-50	Tub 2" x 2mm -~	60.2
85	74	75	-	-	A500-50	Tub 2" x 2mm -~	60.2
86	75	76	-	-	A500-50	Tub 2" x 2mm -~	60.2
87	76	77	-	-	A500-50	Tub 2" x 2mm -~	60.2
88	77	78	-	-	A500-50	Tub 2" x 2mm -~	60.2
89	78	79	-	-	A500-50	Tub 2" x 2mm -~	60.2
90	79	80	-	-	A500-50	Tub 2" x 2mm -~	60.2
91	80	81	-	-	A500-50	Tub 2" x 2mm -~	60.2
92	81	82	-	-	A500-50	Tub 2" x 2mm -~	60.2
93	82	83	-	-	A500-50	Tub 2" x 2mm -~	60.2
94	83	84	-	-	A500-50	Tub 2" x 2mm -~	60.2
95	84	281	-	-	A500-50	Tub 2" x 2mm -~	30.1
96	68	282	-	-	A500-50	Tub 2" x 2mm -~	30.1
97	68	283	-	-	A500-50	Tub 2" x 2mm -~	29.92
98	70	284	-	-	A500-50	Tub 2" x 2mm -~	29.92
101	79	91	-	-	A500-50	Tub 2" x 2mm -~	33.05
102	91	92	-	-	A500-50	Tub 2" x 2mm -~	33.05
103	93	94	-	-	A500-50	Tub 2" x 2mm -~	33.05
104	92	95	-	-	A500-50	Tub 2" x 2mm -~	10.71
105	93	95	-	-	A500-50	Tub 2" x 2mm -~	22.44

106	78	94	-	-	A500-50 Tub 2" x 2mm -~	68.6
107	96	97	-	-	A500-50 Tub 2" x 3mm	300
108	98	99	-	-	A500-50 Tub 2" x 3mm	300
109	100	101	-	-	A500-50 Tub 2" x 2mm -~	60.2
110	101	102	-	-	A500-50 Tub 2" x 2mm -~	60.2
111	102	103	-	-	A500-50 Tub 2" x 2mm -~	60.2
112	103	104	-	-	A500-50 Tub 2" x 2mm -~	60.2
113	104	105	-	-	A500-50 Tub 2" x 2mm -~	60.2
114	105	106	-	-	A500-50 Tub 2" x 2mm -~	60.2
115	106	107	-	-	A500-50 Tub 2" x 2mm -~	60.2
116	107	108	-	-	A500-50 Tub 2" x 2mm -~	60.2
117	108	109	-	-	A500-50 Tub 2" x 2mm -~	60.2
118	109	110	-	-	A500-50 Tub 2" x 2mm -~	60.2
119	110	111	-	-	A500-50 Tub 2" x 2mm -~	60.2
120	111	112	-	-	A500-50 Tub 2" x 2mm -~	60.2
121	112	285	-	-	A500-50 Tub 2" x 2mm -~	30.1
122	96	286	-	-	A500-50 Tub 2" x 2mm -~	30.1
123	96	287	-	-	A500-50 Tub 2" x 2mm -~	29.92
124	98	288	-	-	A500-50 Tub 2" x 2mm -~	29.92
125	115	116	-	-	A500-50 Tub 2" x 2mm	300
126	117	118	-	-	A500-50 Tub 2" x 2mm	300
127	107	119	-	-	A500-50 Tub 2" x 2mm -~	33.05
128	119	120	-	-	A500-50 Tub 2" x 2mm -~	33.05
129	121	122	-	-	A500-50 Tub 2" x 2mm -~	33.05
130	120	123	-	-	A500-50 Tub 2" x 2mm -~	10.71
131	121	123	-	-	A500-50 Tub 2" x 2mm -~	22.44
132	106	122	-	-	A500-50 Tub 2" x 2mm -~	68.6
133	124	125	-	-	A500-50 Tub 2" x 3mm	300
134	126	127	-	-	A500-50 Tub 2" x 3mm	300
135	128	129	-	-	A500-50 Tub 2" x 2mm -~	60.2
136	129	130	-	-	A500-50 Tub 2" x 2mm -~	60.2
137	130	131	-	-	A500-50 Tub 2" x 2mm -~	60.2
138	131	132	-	-	A500-50 Tub 2" x 2mm -~	60.2
139	132	133	-	-	A500-50 Tub 2" x 2mm -~	60.2
140	133	134	-	-	A500-50 Tub 2" x 2mm -~	60.2
141	134	135	-	-	A500-50 Tub 2" x 2mm -~	60.2
142	135	136	-	-	A500-50 Tub 2" x 2mm -~	60.2
143	136	137	-	-	A500-50 Tub 2" x 2mm -~	60.2
144	137	138	-	-	A500-50 Tub 2" x 2mm -~	60.2
145	138	139	-	-	A500-50 Tub 2" x 2mm -~	60.2
146	139	140	-	-	A500-50 Tub 2" x 2mm -~	60.2
147	140	289	-	-	A500-50 Tub 2" x 2mm -~	30.1
148	124	290	-	-	A500-50 Tub 2" x 2mm -~	30.1
149	124	291	-	-	A500-50 Tub 2" x 2mm -~	29.92
150	126	292	-	-	A500-50 Tub 2" x 2mm -~	29.92
153	135	147	-	-	A500-50 Tub 2" x 2mm -~	33.05
154	147	148	-	-	A500-50 Tub 2" x 2mm -~	33.05
155	149	150	-	-	A500-50 Tub 2" x 2mm -~	33.05
156	148	151	-	-	A500-50 Tub 2" x 2mm -~	10.71
157	149	151	-	-	A500-50 Tub 2" x 2mm -~	22.44
158	134	150	-	-	A500-50 Tub 2" x 2mm -~	68.6
159	152	153	-	-	A500-50 Tub 2" x 3mm	300
160	154	155	-	-	A500-50 Tub 2" x 3mm	300
161	156	157	-	-	A500-50 Tub 2" x 2mm -~	60.2
162	157	158	-	-	A500-50 Tub 2" x 2mm -~	60.2
163	158	159	-	-	A500-50 Tub 2" x 2mm -~	60.2
164	159	160	-	-	A500-50 Tub 2" x 2mm -~	60.2
165	160	161	-	-	A500-50 Tub 2" x 2mm -~	60.2
166	161	162	-	-	A500-50 Tub 2" x 2mm -~	60.2
167	162	163	-	-	A500-50 Tub 2" x 2mm -~	60.2
168	163	164	-	-	A500-50 Tub 2" x 2mm -~	60.2
169	164	165	-	-	A500-50 Tub 2" x 2mm -~	60.2
170	165	166	-	-	A500-50 Tub 2" x 2mm -~	60.2
171	166	167	-	-	A500-50 Tub 2" x 2mm -~	60.2

172	167	168	-	-	A500-50 Tub 2" x 2mm -~	60.2
173	168	293	-	-	A500-50 Tub 2" x 2mm -~	30.1
174	152	294	-	-	A500-50 Tub 2" x 2mm -~	30.1
175	152	295	-	-	A500-50 Tub 2" x 2mm -~	29.92
176	154	296	-	-	A500-50 Tub 2" x 2mm -~	29.92
177	171	172	-	-	A500-50 Tub 2" x 2mm	300
178	173	174	-	-	A500-50 Tub 2" x 2mm	300
179	163	175	-	-	A500-50 Tub 2" x 2mm -~	33.05
180	175	176	-	-	A500-50 Tub 2" x 2mm -~	33.05
181	177	178	-	-	A500-50 Tub 2" x 2mm -~	33.05
182	176	179	-	-	A500-50 Tub 2" x 2mm -~	10.71
183	177	179	-	-	A500-50 Tub 2" x 2mm -~	22.44
184	162	178	-	-	A500-50 Tub 2" x 2mm -~	68.6
185	180	181	-	-	A500-50 Tub 2" x 3mm	300
186	182	183	-	-	A500-50 Tub 2" x 3mm	300
187	184	185	-	-	A500-50 Tub 2" x 2mm -~	60.2
188	185	186	-	-	A500-50 Tub 2" x 2mm -~	60.2
189	186	187	-	-	A500-50 Tub 2" x 2mm -~	60.2
190	187	188	-	-	A500-50 Tub 2" x 2mm -~	60.2
191	188	189	-	-	A500-50 Tub 2" x 2mm -~	60.2
192	189	190	-	-	A500-50 Tub 2" x 2mm -~	60.2
193	190	191	-	-	A500-50 Tub 2" x 2mm -~	60.2
194	191	192	-	-	A500-50 Tub 2" x 2mm -~	60.2
195	192	193	-	-	A500-50 Tub 2" x 2mm -~	60.2
196	193	194	-	-	A500-50 Tub 2" x 2mm -~	60.2
197	194	195	-	-	A500-50 Tub 2" x 2mm -~	60.2
198	195	196	-	-	A500-50 Tub 2" x 2mm -~	60.2
199	196	297	-	-	A500-50 Tub 2" x 2mm -~	30.1
200	180	298	-	-	A500-50 Tub 2" x 2mm -~	30.1
201	180	299	-	-	A500-50 Tub 2" x 2mm -~	29.92
202	182	300	-	-	A500-50 Tub 2" x 2mm -~	29.92
205	191	203	-	-	A500-50 Tub 2" x 2mm -~	33.05
206	203	204	-	-	A500-50 Tub 2" x 2mm -~	33.05
207	205	206	-	-	A500-50 Tub 2" x 2mm -~	33.05
208	204	207	-	-	A500-50 Tub 2" x 2mm -~	10.71
209	205	207	-	-	A500-50 Tub 2" x 2mm -~	22.44
210	190	206	-	-	A500-50 Tub 2" x 2mm -~	68.6
211	208	209	-	-	A500-50 Tub 2" x 3mm	300
212	210	211	-	-	A500-50 Tub 2" x 3mm	300
213	212	213	-	-	A500-50 Tub 2" x 2mm -~	60.2
214	213	214	-	-	A500-50 Tub 2" x 2mm -~	60.2
215	214	215	-	-	A500-50 Tub 2" x 2mm -~	60.2
216	215	216	-	-	A500-50 Tub 2" x 2mm -~	60.2
217	216	217	-	-	A500-50 Tub 2" x 2mm -~	60.2
218	217	218	-	-	A500-50 Tub 2" x 2mm -~	60.2
219	218	219	-	-	A500-50 Tub 2" x 2mm -~	60.2
220	219	220	-	-	A500-50 Tub 2" x 2mm -~	60.2
221	220	221	-	-	A500-50 Tub 2" x 2mm -~	60.2
222	221	222	-	-	A500-50 Tub 2" x 2mm -~	60.2
223	222	223	-	-	A500-50 Tub 2" x 2mm -~	60.2
224	223	224	-	-	A500-50 Tub 2" x 2mm -~	60.2
225	224	301	-	-	A500-50 Tub 2" x 2mm -~	30.1
226	208	302	-	-	A500-50 Tub 2" x 2mm -~	30.1
227	208	303	-	-	A500-50 Tub 2" x 2mm -~	29.92
228	210	304	-	-	A500-50 Tub 2" x 2mm -~	29.92
229	227	228	-	-	A500-50 Tub 2" x 2mm	300
230	229	230	-	-	A500-50 Tub 2" x 2mm	300
231	219	231	-	-	A500-50 Tub 2" x 2mm -~	33.05
232	231	232	-	-	A500-50 Tub 2" x 2mm -~	33.05
233	233	234	-	-	A500-50 Tub 2" x 2mm -~	33.05
234	232	235	-	-	A500-50 Tub 2" x 2mm -~	10.71
235	233	235	-	-	A500-50 Tub 2" x 2mm -~	22.44
236	218	234	-	-	A500-50 Tub 2" x 2mm -~	68.6
318	56	250	-	-	A500-50 Tub 2" x 2mm -~	35

319	84	251	-	-	A500-50 Tub 2" x 2mm -~	35
320	112	252	-	-	A500-50 Tub 2" x 2mm -~	35
321	140	253	-	-	A500-50 Tub 2" x 2mm -~	35
322	168	254	-	-	A500-50 Tub 2" x 2mm -~	35
323	196	255	-	-	A500-50 Tub 2" x 2mm -~	35
324	224	256	-	-	A500-50 Tub 2" x 2mm -~	35
325	45	257	-	-	A500-50 Tub 2" x 2mm -~	35
326	72	258	-	-	A500-50 Tub 2" x 2mm -~	35
327	100	259	-	-	A500-50 Tub 2" x 2mm -~	35
328	128	260	-	-	A500-50 Tub 2" x 2mm -~	35
329	156	261	-	-	A500-50 Tub 2" x 2mm -~	35
330	184	262	-	-	A500-50 Tub 2" x 2mm -~	35
331	212	263	-	-	A500-50 Tub 2" x 2mm -~	35
382	24	306	-	-	A500-50 Tub 2" x 2mm -~	39.56
383	24	63	-	-	A500-50 Tub 2" x 2mm -~	41
386	273	309	-	-	A500-50 Tub 2" x 2mm -~	430.6
387	218	235	-	-	A500-50 Tub 2" x 2mm -~	41
396	277	4	-	-	A500-50 Tub 2" x 2mm -~	30.1
397	278	45	-	-	A500-50 Tub 2" x 2mm -~	30.1
398	279	57	-	-	A500-50 Tub 2" x 2mm -~	29.92
399	280	58	-	-	A500-50 Tub 2" x 2mm -~	29.92
400	281	70	-	-	A500-50 Tub 2" x 2mm -~	30.1
401	282	72	-	-	A500-50 Tub 2" x 2mm -~	30.1
402	283	85	-	-	A500-50 Tub 2" x 2mm -~	29.92
403	284	86	-	-	A500-50 Tub 2" x 2mm -~	29.92
404	285	98	-	-	A500-50 Tub 2" x 2mm -~	30.1
405	286	100	-	-	A500-50 Tub 2" x 2mm -~	30.1
406	287	113	-	-	A500-50 Tub 2" x 2mm -~	29.92
407	288	114	-	-	A500-50 Tub 2" x 2mm -~	29.92
408	289	126	-	-	A500-50 Tub 2" x 2mm -~	30.1
409	290	128	-	-	A500-50 Tub 2" x 2mm -~	30.1
410	291	141	-	-	A500-50 Tub 2" x 2mm -~	29.92
411	292	142	-	-	A500-50 Tub 2" x 2mm -~	29.92
412	293	154	-	-	A500-50 Tub 2" x 2mm -~	30.1
413	294	156	-	-	A500-50 Tub 2" x 2mm -~	30.1
414	295	169	-	-	A500-50 Tub 2" x 2mm -~	29.92
415	296	170	-	-	A500-50 Tub 2" x 2mm -~	29.92
416	297	182	-	-	A500-50 Tub 2" x 2mm -~	30.1
417	298	184	-	-	A500-50 Tub 2" x 2mm -~	30.1
418	299	197	-	-	A500-50 Tub 2" x 2mm -~	29.92
419	300	198	-	-	A500-50 Tub 2" x 2mm -~	29.92
420	301	210	-	-	A500-50 Tub 2" x 2mm -~	30.1
421	302	212	-	-	A500-50 Tub 2" x 2mm -~	30.1
422	303	225	-	-	A500-50 Tub 2" x 2mm -~	29.92
423	304	226	-	-	A500-50 Tub 2" x 2mm -~	29.92
459	306	308	-	-	A500-50 Tub 2" x 2mm -~	29.87
464	307	218	-	-	A500-50 Tub 2" x 2mm -~	39.56
471	308	274	-	-	A500-50 Tub 2" x 2mm -~	430.6
476	309	307	-	-	A500-50 Tub 2" x 2mm -~	29.87

*** TRUSS MEMBER DATA

NO	NODAL CONNECTIVITY I	J	MATERIAL	SECTION	TENSION / COMPRESSION	SECTION AREA I	J	LENGTH
268	236	3	A416-250(~	Tensor 1/~	T	0.3167	-	424.3
269	237	68	A416-250(~	Tensor 1/~	T	0.3167	-	424.3
270	238	96	A416-250(~	Tensor 1/~	T	0.3167	-	424.3
271	239	124	A416-250(~	Tensor 1/~	T	0.3167	-	424.3
272	240	152	A416-250(~	Tensor 1/~	T	0.3167	-	424.3
273	241	180	A416-250(~	Tensor 1/~	T	0.3167	-	424.3
274	242	208	A416-250(~	Tensor 1/~	T	0.3167	-	424.3
275	243	4	A416-250(~	Tensor 1/~	T	0.3167	-	424.3

276	244	70	A416-250(~ Tensor 1/~	T	0.3167	-	424.3
277	245	98	A416-250(~ Tensor 1/~	T	0.3167	-	424.3
278	246	126	A416-250(~ Tensor 1/~	T	0.3167	-	424.3
279	247	154	A416-250(~ Tensor 1/~	T	0.3167	-	424.3
280	248	182	A416-250(~ Tensor 1/~	T	0.3167	-	424.3
281	249	210	A416-250(~ Tensor 1/~	T	0.3167	-	424.3
282	61	117	A416-250(~ Tensor 1/~	T	0.3167	-	600
284	117	173	A416-250(~ Tensor 1/~	T	0.3167	-	600
286	173	229	A416-250(~ Tensor 1/~	T	0.3167	-	600
288	59	115	A416-250(~ Tensor 1/~	T	0.3167	-	600
290	115	171	A416-250(~ Tensor 1/~	T	0.3167	-	600
292	171	227	A416-250(~ Tensor 1/~	T	0.3167	-	600
294	226	227	A416-250(~ Tensor 1/~	T	0.07645	-	568.5
295	58	59	A416-250(~ Tensor 1/~	T	0.07645	-	568.5
296	61	57	A416-250(~ Tensor 1/~	T	0.07645	-	568.5
297	229	225	A416-250(~ Tensor 1/~	T	0.07645	-	568.5
298	3	68	A416-250(~ Tensor 1/~	T	0.3167	-	300
299	68	96	A416-250(~ Tensor 1/~	T	0.3167	-	300
300	96	124	A416-250(~ Tensor 1/~	T	0.3167	-	300
301	124	152	A416-250(~ Tensor 1/~	T	0.3167	-	300
302	152	180	A416-250(~ Tensor 1/~	T	0.3167	-	300
303	180	208	A416-250(~ Tensor 1/~	T	0.3167	-	300
304	4	70	A416-250(~ Tensor 1/~	T	0.3167	-	300
305	70	98	A416-250(~ Tensor 1/~	T	0.3167	-	300
306	98	126	A416-250(~ Tensor 1/~	T	0.3167	-	300
307	126	154	A416-250(~ Tensor 1/~	T	0.3167	-	300
308	154	182	A416-250(~ Tensor 1/~	T	0.3167	-	300
309	182	210	A416-250(~ Tensor 1/~	T	0.3167	-	300
310	43	68	A416-250(~ Tensor 1/~	T	0.3167	-	424.3
311	69	3	A416-250(~ Tensor 1/~	T	0.3167	-	424.3
312	44	70	A416-250(~ Tensor 1/~	T	0.3167	-	424.3
313	71	4	A416-250(~ Tensor 1/~	T	0.3167	-	424.3
314	209	180	A416-250(~ Tensor 1/~	T	0.3167	-	424.3
315	181	208	A416-250(~ Tensor 1/~	T	0.3167	-	424.3
316	211	182	A416-250(~ Tensor 1/~	T	0.3167	-	424.3
317	183	210	A416-250(~ Tensor 1/~	T	0.3167	-	424.3
340	267	61	A416-250(~ Tensor 1/~	T	0.3167	-	360.6
341	264	3	A416-250(~ Tensor 1/~	T	0.3167	-	360.6
342	265	4	A416-250(~ Tensor 1/~	T	0.3167	-	360.6
343	266	59	A416-250(~ Tensor 1/~	T	0.3167	-	360.6
344	270	227	A416-250(~ Tensor 1/~	T	0.3167	-	424.3
345	269	210	A416-250(~ Tensor 1/~	T	0.3167	-	424.3
346	268	208	A416-250(~ Tensor 1/~	T	0.3167	-	424.3
347	271	229	A416-250(~ Tensor 1/~	T	0.3167	-	424.3
388	276	218	A416-250(~ Tensor 1/~	N	0.3167	-	583.1
389	275	24	A416-250(~ Tensor 1/~	N	0.3167	-	538.5
466	130	138	A416-250(~ Tensor 1/~	T	0.3167	-	454.3
467	102	110	A416-250(~ Tensor 1/~	T	0.3167	-	454.3
468	74	82	A416-250(~ Tensor 1/~	T	0.3167	-	454.3
469	47	308	A416-250(~ Tensor 1/~	T	0.3167	-	227.1
470	308	54	A416-250(~ Tensor 1/~	T	0.3167	-	227.1
472	158	166	A416-250(~ Tensor 1/~	T	0.3167	-	454.3
473	186	194	A416-250(~ Tensor 1/~	T	0.3167	-	454.3
474	214	309	A416-250(~ Tensor 1/~	T	0.3167	-	227.1
475	309	222	A416-250(~ Tensor 1/~	T	0.3167	-	227.1
477	124	134	A416-250(~ Tensor 5mm	T	0.1963	-	403.1
478	126	134	A416-250(~ Tensor 5mm	T	0.1963	-	403.1
479	152	162	A416-250(~ Tensor 5mm	T	0.1963	-	403.1
480	154	162	A416-250(~ Tensor 5mm	T	0.1963	-	403.1
481	180	190	A416-250(~ Tensor 5mm	T	0.1963	-	403.1
482	182	190	A416-250(~ Tensor 5mm	T	0.1963	-	403.1
483	208	218	A416-250(~ Tensor 5mm	T	0.1963	-	403.1
484	210	218	A416-250(~ Tensor 5mm	T	0.1963	-	403.1
485	96	106	A416-250(~ Tensor 5mm	T	0.1963	-	403.1

486	98	106	A416-250(~ Tensor 5mm	T	0.1963	-	403.1
487	68	78	A416-250(~ Tensor 5mm	T	0.1963	-	403.1
488	70	78	A416-250(~ Tensor 5mm	T	0.1963	-	403.1
489	3	24	A416-250(~ Tensor 5mm	T	0.1963	-	403.1
490	4	24	A416-250(~ Tensor 5mm	T	0.1963	-	403.1

*** TOTAL WEIGHT / VOLUME / SURFACE AREA SUMMARY

SECTION NO	SECION NAME	SURFACE AREA	VOLUME	WEIGHT	FRAME NUMBER	TRUSS NUMBER
1	Tub 2" x 2mm	8.746e+04	8746	0.6743	8	0
2	Tensor 1/4"	4.783e+04	7593	0.5853	0	59
3	Tensor 5mm	8865	1108	0.08543	0	14
4	Tub 2" x 2mm -~	3.541e+05	3.541e+04	2.73	204	0
5	Tensor 1/8"	2229	173.8	0.0134	0	4
6	Tub 2" x 3mm	1.504e+05	2.256e+04	1.739	14	0

*** LOAD DATA

; Self Weight, Nodal Load, Specified Displacement, Beam Load, Floor Load, Finishing Material Load,

System Temperature, Nodal Temperature, Element Temperature, Beam Section Temperature,
Wind Load, Static Seismic Load, Time History Analysis Data

[LOAD CASE : Peso Propio]

** SELF WEIGHT DATA

; X=0, Y=0, Z=-1

[LOAD CASE : Carga Muerta Sobre Impuesta]

** NODAL LOAD DATA

NODE	FX	FY	FZ	MX	MY	MZ
57	0	0	-0.009	0	0	0
58	0	0	-0.009	0	0	0
59	0	0	-0.009	0	0	0
61	0	0	-0.009	0	0	0
85	0	0	-0.009	0	0	0
86	0	0	-0.009	0	0	0
113	0	0	-0.009	0	0	0
114	0	0	-0.009	0	0	0
115	0	0	-0.009	0	0	0
117	0	0	-0.009	0	0	0
141	0	0	-0.009	0	0	0
142	0	0	-0.009	0	0	0
169	0	0	-0.009	0	0	0
170	0	0	-0.009	0	0	0
171	0	0	-0.009	0	0	0
173	0	0	-0.009	0	0	0
197	0	0	-0.009	0	0	0
198	0	0	-0.009	0	0	0
225	0	0	-0.009	0	0	0
226	0	0	-0.009	0	0	0
227	0	0	-0.009	0	0	0
229	0	0	-0.009	0	0	0

PROJECT TITLE : INVERNADERO 2 PUL TIPO 1

MIDAS	Company		Client	
	Author	AMAURY URUETA	File Name	Midas Invernadero Tipo 1.mdl

** BEAM LOAD DATA

MEMBER	TYPE	DIR.	PROJ.	D1	P1	D2	P2	D3	P3	D4	P4
44	Uniform Load	LZ	NO	0	-1.4e-05	1	-1.4e-05	0	0	0	0
45	Uniform Load	LZ	NO	0	-1.4e-05	1	-1.4e-05	0	0	0	0
46	Uniform Load	LZ	NO	0	-1.4e-05	1	-1.4e-05	0	0	0	0
47	Uniform Load	LZ	NO	0	-1.4e-05	1	-1.4e-05	0	0	0	0
48	Uniform Load	LZ	NO	0	-1.4e-05	1	-1.4e-05	0	0	0	0
49	Uniform Load	LZ	NO	0	-1.4e-05	1	-1.4e-05	0	0	0	0
51	Uniform Load	LZ	NO	0	-1.4e-05	1	-1.4e-05	0	0	0	0
52	Uniform Load	LZ	NO	0	-1.4e-05	1	-1.4e-05	0	0	0	0
53	Uniform Load	LZ	NO	0	-1.4e-05	1	-1.4e-05	0	0	0	0
54	Uniform Load	LZ	NO	0	-1.4e-05	1	-1.4e-05	0	0	0	0
55	Uniform Load	LZ	NO	0	-1.4e-05	1	-1.4e-05	0	0	0	0
56	Uniform Load	LZ	NO	0	-1.4e-05	1	-1.4e-05	0	0	0	0
69	Uniform Load	LZ	NO	0	-1.4e-05	1	-1.4e-05	0	0	0	0
74	Uniform Load	LZ	NO	0	-1.4e-05	1	-1.4e-05	0	0	0	0
75	Uniform Load	LZ	NO	0	-1.4e-05	1	-1.4e-05	0	0	0	0
77	Uniform Load	LZ	NO	0	-1.4e-05	1	-1.4e-05	0	0	0	0
78	Uniform Load	LZ	NO	0	-1.4e-05	1	-1.4e-05	0	0	0	0
79	Uniform Load	LZ	NO	0	-1.4e-05	1	-1.4e-05	0	0	0	0
83	Uniform Load	LZ	NO	0	-1.4e-05	1	-1.4e-05	0	0	0	0
84	Uniform Load	LZ	NO	0	-1.4e-05	1	-1.4e-05	0	0	0	0
85	Uniform Load	LZ	NO	0	-1.4e-05	1	-1.4e-05	0	0	0	0
86	Uniform Load	LZ	NO	0	-1.4e-05	1	-1.4e-05	0	0	0	0
87	Uniform Load	LZ	NO	0	-1.4e-05	1	-1.4e-05	0	0	0	0
88	Uniform Load	LZ	NO	0	-1.4e-05	1	-1.4e-05	0	0	0	0
90	Uniform Load	LZ	NO	0	-1.4e-05	1	-1.4e-05	0	0	0	0
91	Uniform Load	LZ	NO	0	-1.4e-05	1	-1.4e-05	0	0	0	0
92	Uniform Load	LZ	NO	0	-1.4e-05	1	-1.4e-05	0	0	0	0
93	Uniform Load	LZ	NO	0	-1.4e-05	1	-1.4e-05	0	0	0	0
94	Uniform Load	LZ	NO	0	-1.4e-05	1	-1.4e-05	0	0	0	0

PROJECT TITLE : INVERNADERO 2 PUL TIPO 1

MIDAS	Company		Client	
	Author	AMAURY URUETA	File Name	Midas Invernadero Tipo 1.mdl

```
0
    95          Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0        0
0
    96          Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0        0
0
   101          Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0        0
0
   102          Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0        0
0
   103          Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0        0
0
   104          Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0        0
0
   105          Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0        0
0
   109          Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0        0
0
   110          Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0        0
0
   111          Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0        0
0
   112          Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0        0
0
   113          Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0        0
0
   114          Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0        0
0
   116          Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0        0
0
   117          Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0        0
0
   118          Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0        0
0
   119          Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0        0
0
   120          Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0        0
0
   121          Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0        0
0
   122          Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0        0
0
   127          Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0        0
0
   128          Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0        0
0
   129          Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0        0
0
   130          Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0        0
0
   131          Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0        0
0
   135          Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0        0
0
   136          Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0        0
0
   137          Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0        0
0
   138          Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0        0
0
   139          Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0        0
0
   140          Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0        0
0
   142          Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0        0
```

```
0
   143         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0      0
0
   144         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0      0
0
   145         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0      0
0
   146         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0      0
0
   147         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0      0
0
   148         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0      0
0
   153         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0      0
0
   154         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0      0
0
   155         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0      0
0
   156         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0      0
0
   157         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0      0
0
   161         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0      0
0
   162         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0      0
0
   163         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0      0
0
   164         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0      0
0
   165         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0      0
0
   166         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0      0
0
   168         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0      0
0
   169         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0      0
0
   170         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0      0
0
   171         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0      0
0
   172         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0      0
0
   173         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0      0
0
   174         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0      0
0
   179         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0      0
0
   180         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0      0
0
   181         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0      0
0
   182         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0      0
0
   183         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0      0
0
   187         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0      0
0
   188         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0      0
0
   189         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0      0
```

PROJECT TITLE : INVERNADERO 2 PUL TIPO 1

	Company		Client	
MIDAS	Author	AMAURY URUETA	File Name	Midas Invernadero Tipo 1.mdl

```
0
   190         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0     0
0
   191         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0     0
0
   192         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0     0
0
   194         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0     0
0
   195         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0     0
0
   196         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0     0
0
   197         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0     0
0
   198         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0     0
0
   199         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0     0
0
   200         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0     0
0
   205         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0     0
0
   206         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0     0
0
   207         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0     0
0
   208         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0     0
0
   209         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0     0
0
   213         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0     0
0
   214         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0     0
0
   215         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0     0
0
   216         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0     0
0
   217         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0     0
0
   218         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0     0
0
   220         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0     0
0
   221         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0     0
0
   222         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0     0
0
   223         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0     0
0
   224         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0     0
0
   225         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0     0
0
   226         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0     0
0
   231         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0     0
0
   232         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0     0
0
   233         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0     0
0
   234         Uniform Load     LZ    NO     0 -1.4e-05     1 -1.4e-05     0        0     0
```

```
     0
        235         Uniform Load     LZ    NO      0 -1.4e-05     1 -1.4e-05     0         0      0
     0
        396         Uniform Load     LZ    NO      0 -1.4e-05     1 -1.4e-05     0         0      0
     0
        397         Uniform Load     LZ    NO      0 -1.4e-05     1 -1.4e-05     0         0      0
     0
        400         Uniform Load     LZ    NO      0 -1.4e-05     1 -1.4e-05     0         0      0
     0
        401         Uniform Load     LZ    NO      0 -1.4e-05     1 -1.4e-05     0         0      0
     0
        404         Uniform Load     LZ    NO      0 -1.4e-05     1 -1.4e-05     0         0      0
     0
        405         Uniform Load     LZ    NO      0 -1.4e-05     1 -1.4e-05     0         0      0
     0
        408         Uniform Load     LZ    NO      0 -1.4e-05     1 -1.4e-05     0         0      0
     0
        409         Uniform Load     LZ    NO      0 -1.4e-05     1 -1.4e-05     0         0      0
     0
        412         Uniform Load     LZ    NO      0 -1.4e-05     1 -1.4e-05     0         0      0
     0
        413         Uniform Load     LZ    NO      0 -1.4e-05     1 -1.4e-05     0         0      0
     0
        416         Uniform Load     LZ    NO      0 -1.4e-05     1 -1.4e-05     0         0      0
     0
        417         Uniform Load     LZ    NO      0 -1.4e-05     1 -1.4e-05     0         0      0
     0
        420         Uniform Load     LZ    NO      0 -1.4e-05     1 -1.4e-05     0         0      0
     0
        421         Uniform Load     LZ    NO      0 -1.4e-05     1 -1.4e-05     0         0      0
     0

 [ LOAD CASE : EX (Sismo Reducido) ]

 ** STATIC SEISMIC LOAD DATA : CODE , NSR-10

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* MASS GENERATION DATA FOR LATERAL ANALYSIS OF BUILDING         [UNIT: kN, cm]
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STORY NAME	TRANSLATIONAL MASS (X-DIR)	TRANSLATIONAL MASS (Y-DIR)	ROTATIONAL MASS	CENTER OF MASS (X-COORD)	CENTER OF MASS (Y-COORD)
Roof	0.0	0.0	0.0	0.0	0.0
14F	0.0	0.0	0.0	0.0	0.0
13F	0.0	0.0	0.0	0.0	0.0
12F	0.0	0.0	0.0	0.0	0.0
11F	0.0	0.0	0.0	0.0	0.0
10F	0.0	0.0	0.0	0.0	0.0
9F	0.0	0.0	0.0	0.0	0.0
8F	0.0	0.0	0.0	0.0	0.0
7F	0.0	0.0	0.0	0.0	0.0
6F	0.0	0.0	0.0	0.0	0.0
5F	0.0	0.0	0.0	0.0	0.0
4F	0.0	0.0	0.0	0.0	0.0
3F	0.0	0.0	0.0	0.0	0.0
2F	0.0	0.0	0.0	0.0	0.0
1F	0.0	0.0	0.0	0.0	0.0
TOTAL :	0.0	0.0			

* ADDITIONAL MASSES FOR THE CALCULATION OF EQUIVALENT SEISMIC FORCE

Note. The following masses are between two adjacent stories or on the nodes released from floor rigid diaphragm by *Diaphragm Disconnect command. The masses are proportionally distributed to upper/lower stories according to their vertical locations. For dynamic analysis, however, floor masses and masses on vertical elements remain at their original locations.

STORY NAME	TRANSLATIONAL MASS (X-DIR)	(Y-DIR)
Roof	0.00005839	0.00005839
14F	0.00015018	0.00015018
13F	0.00004581	0.00004581
12F	0.00006878	0.00006878
11F	0.00027312	0.00027312
10F	0.0	0.0
9F	0.00028456	0.00028456
8F	0.00025295	0.00025295
7F	0.00027219	0.00027219
6F	0.00046251	0.00046251
5F	0.00025032	0.00025032
4F	0.00052265	0.00052265
3F	0.00024417	0.00024417
2F	0.00181113	0.00181113
1F	0.00152329	0.00152329
TOTAL :	0.00622005	0.00622005

* EQUIVALENT SEISMIC LOAD IN ACCORDANCE WITH NSR-10 [UNIT: kN, cm]

Site Class	: E
Effective Peak Acceleration(Aa)	: 0.20000
Effective Peak Velocity (Av)	: 0.20000
Site Coefficient at Short Periods (Fa)	: 1.70000
Site Coefficient at 1 s Period (Fv)	: 3.20000
Importance Factor (I)	: 1.10
Period Coefficient for Upper Limit (Cu)	: 1.2000
Fundamental Period Associated with X-dir. (Tx)	: 0.2794
Fundamental Period Associated with Y-dir. (Ty)	: 0.2794
Basic Ductility Factor for X-dir. (Rx0)	: 1.50000
Basic Ductility Factor for Y-dir. (Ry0)	: 1.50000
Reduction Factor of Irregularity for X-dir. (Phix)	: 0.90000
Reduction Factor of Irregularity for Y-dir. (Phiy)	: 0.90000
Ductility Factor for X-dir. (Rx)	: 1.35000
Ductility Factor for X-dir. (Rx)	: 1.35000
Total Effective Weight For X-dir. Seismic Loads (Wx)	: 4.605640
Total Effective Weight For Y-dir. Seismic Loads (Wy)	: 4.605640
Scale Factor For X-directional Seismic Loads	: 1.00
Scale Factor For Y-directional Seismic Loads	: 0.00
Accidental Eccentricity For X-direction (Ex)	: Positive
Accidental Eccentricity For Y-direction (Ey)	: Positive
Torsional Amplification for Accidental Eccentricity	: Consider
Torsional Amplification for Inherent Eccentricity	: Do not Consider
Total Base Shear Of Model For X-direction	: 3.189832
Total Base Shear Of Model For Y-direction	: 0.000000

```
  Summation Of Wi*Hi^k Of Model For X-direction          : 1766.291507
  Summation Of Wi*Hi^k Of Model For Y-direction          : 0.000000
-------------------------------------------------------------------------------


============================
 ECCENTRICITY RELATED DATA
============================

                X - D I R E C T I O N A L   L O A D          Y - D I R E C T I O N A L   L O A D

     STORY   ACCIDENTAL INHERENT   ACCIDENTAL INHERENT      ACCIDENTAL INHERENT   ACCIDENTAL INHERE
NT
     NAME    ECCENT.    ECCENT.    AMP.FACTOR AMP.FACTOR    ECCENT.    ECCENT.    AMP.FACTOR AMP.FA
CTOR
----------   ---------- ---------- ---------- ----------    ---------- ---------- ---------- ------
----
      Roof        -90.0        0.0        1.0        0.0          0.0        0.0        1.0
 0.0
       14F        -90.0        0.0        1.0        0.0         2.75        0.0        1.0
 0.0
       13F        -90.0        0.0        1.0        0.0          0.0        0.0        1.0
 0.0
       12F        -90.0        0.0        1.0        0.0          0.0        0.0        1.0
 0.0
       11F        -90.0        0.0        1.0        0.0          0.0        0.0        1.0
 0.0
       10F          0.0        0.0        1.0        0.0          0.0        0.0        1.0
 0.0
        9F        -90.0        0.0        1.0        0.0    6.0037318        0.0        1.0
 0.0
        8F        -90.0        0.0        1.0        0.0    11.875617        0.0        1.0
 0.0
        7F        -90.0        0.0        1.0        0.0    17.486705        0.0        1.0
 0.0
        6F        -90.0        0.0        1.0        0.0    22.713773        0.0        1.0
 0.0
        5F        -90.0        0.0        1.0        0.0    27.442029        0.0        1.0
 0.0
        4F        -90.0        0.0        1.0        0.0    38.367639        0.0        1.0
 0.0
        3F        -90.0        0.0        1.0        0.0    36.683819        0.0        1.0
 0.0
        2F        -90.0        0.0        1.0        0.0         95.0        0.0        1.0
 0.0
       G.L          0.0        0.0        0.0        0.0          0.0        0.0        0.0
 0.0
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The accidental amplification factors are automatically set to 1.0 when torsional amplification effe
ct
to accidental eccentricity is not considered.
The inherent amplification factors are automatically set to 0 when torsional amplification effect
to inherent eccentricity is not considered.
The inherent amplification factors are all set to 'the input value - 1.0'.(This is to exclude the t
rue
inherent torsion)
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PROJECT TITLE : INVERNADERO 2 PUL TIPO 1

MIDAS	Company		Client	
	Author	AMAURY URUETA	File Name	Midas Invernadero Tipo 1.mdl

** Story Force , Seismic Force x Scale Factor + Added Force

S E I S M I C L O A D G E N E R A T I O N D A T A X - D I R E C T I O N

STORY NAME	STORY WEIGHT	STORY LEVEL	SEISMIC FORCE	ADDED FORCE	STORY FORCE	STORY SHEAR	OVERTURN. MOMENT	ACCIDENT. TORSION	INHERENT TORSION	TOTAL TORSION
Roof	0.05726	544.62	0.056319	0.0	0.056319	0.0	0.0	5.068666	0.0	5.068666
14F	0.147262	541.0	0.143877	0.0	0.143877	0.056319	0.203855	12.94897	0.0	12.94897
13F	0.044922	537.59	0.043613	0.0	0.043613	0.200196	0.886618	3.925154	0.0	3.925154
12F	0.067448	520.641	0.063418	0.0	0.063418	0.243809	5.018742	5.707623	0.0	5.707623
11F	0.267826	500.0	0.24184	0.0	0.24184	0.307227	11.36031	21.76559	0.0	21.76559
10F	0.0	497.77	0.0	0.0	0.0	0.549067	12.58494	0.0	0.0	0.0
9F	0.279038	495.539	0.249716	0.0	0.249716	0.549067	13.80957	22.47447	0.0	22.47447
8F	0.24804	482.255	0.216024	0.0	0.216024	0.798783	24.42089	19.4422	0.0	19.4422
7F	0.266913	460.439	0.221946	0.0	0.221946	1.014807	46.56014	19.97514	0.0	19.97514
6F	0.453533	430.57	0.352661	0.0	0.352661	1.236754	83.50068	31.73949	0.0	31.73949
5F	0.245463	393.304	0.174349	0.0	0.174349	1.589415	142.7314	15.69142	0.0	15.69142
4F	0.512512	349.46	0.323449	0.0	0.323449	1.763764	220.0622	29.11045	0.0	29.11045
3F	0.239429	324.73	0.140412	0.0	0.140412	2.087213	271.6787	12.63708	0.0	12.63708
2F	1.775995	300.0	0.962207	0.0	0.962207	2.227625	326.7676	86.59863	0.0	86.59863
G.L.	--	0.0	--	--	--	3.189832	1283.717	---	---	--

S E I S M I C L O A D G E N E R A T I O N D A T A Y - D I R E C T I O N

STORY NAME	STORY WEIGHT	STORY LEVEL	SEISMIC FORCE	ADDED FORCE	STORY FORCE	STORY SHEAR	OVERTURN. MOMENT	ACCIDENT. TORSION	INHERENT TORSION	TOTAL TORSION
Roof	0.05726	544.62	0.056319	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14F	0.147262	541.0	0.143877	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13F	0.044922	537.59	0.043613	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12F	0.067448	520.641	0.063418	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11F	0.267826	500.0	0.24184	0.0	0.0	0.0	0.0	0.0	0.0	0.0

```
      10F      0.0  497.77      0.0      0.0      0.0      0.0      0.0      0.0      0.0
 0.0
       9F 0.279038 495.539 0.249716      0.0      0.0      0.0      0.0      0.0      0.0
 0.0
       8F  0.24804 482.255 0.216024      0.0      0.0      0.0      0.0      0.0      0.0
 0.0
       7F 0.266913 460.439 0.221946      0.0      0.0      0.0      0.0      0.0      0.0
 0.0
       6F 0.453533  430.57 0.352661      0.0      0.0      0.0      0.0      0.0      0.0
 0.0
       5F 0.245463 393.304 0.174349      0.0      0.0      0.0      0.0      0.0      0.0
 0.0
       4F 0.512512  349.46 0.323449      0.0      0.0      0.0      0.0      0.0      0.0
 0.0
       3F 0.239429  324.73 0.140412      0.0      0.0      0.0      0.0      0.0      0.0
 0.0
       2F 1.775995   300.0 0.962207      0.0      0.0      0.0      0.0      0.0      0.0
 0.0
     G.L.    --        0.0    --       --       --          0.0      0.0    ---      ---       --
-
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================================================
 COMMENTS ABOUT TORSION
================================================

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If torsional amplification effects are considered :
-------------------------------------------------------------------------------------------------
----
Accidental Torsion , Story Force * Accidental Eccentricity * Amp. Factor for Accidental Eccentricit
y
Inherent Torsion   , Story Force * Inherent Eccentricity * Amp. Factor for Inherent Eccentricity

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----
If torsional amplification effects are not considered :
-------------------------------------------------------------------------------------------------
----
Accidental Torsion , Story Force * Accidental Eccentricity
Inherent Torsion   , 0

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----
The inherent torsion above is the additional torsion due to torsional amplification effect.
The true inherent torsion is considered automatically in analysis stage when the seismic force is
applied to the structure.
-------------------------------------------------------------------------------------------------
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 [ LOAD CASE : EY (Sismo Reducido) ]


 ** STATIC SEISMIC LOAD DATA : CODE , NSR-10

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* MASS GENERATION DATA FOR LATERAL ANALYSIS OF BUILDING         [UNIT: kN, cm]
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STORY NAME	TRANSLATIONAL MASS (X-DIR)	(Y-DIR)	ROTATIONAL MASS	CENTER OF MASS (X-COORD)	(Y-COORD)
Roof	0.0	0.0	0.0	0.0	0.0
14F	0.0	0.0	0.0	0.0	0.0
13F	0.0	0.0	0.0	0.0	0.0
12F	0.0	0.0	0.0	0.0	0.0
11F	0.0	0.0	0.0	0.0	0.0
10F	0.0	0.0	0.0	0.0	0.0
9F	0.0	0.0	0.0	0.0	0.0
8F	0.0	0.0	0.0	0.0	0.0
7F	0.0	0.0	0.0	0.0	0.0
6F	0.0	0.0	0.0	0.0	0.0
5F	0.0	0.0	0.0	0.0	0.0
4F	0.0	0.0	0.0	0.0	0.0
3F	0.0	0.0	0.0	0.0	0.0
2F	0.0	0.0	0.0	0.0	0.0
1F	0.0	0.0	0.0	0.0	0.0
TOTAL :	0.0	0.0			

* ADDITIONAL MASSES FOR THE CALCULATION OF EQUIVALENT SEISMIC FORCE

Note. The following masses are between two adjacent stories or on the nodes released from floor rigid diaphragm by *Diaphragm Disconnect command. The masses are proportionally distributed to upper/lower stories according to their vertical locations. For dynamic analysis, however, floor masses and masses on vertical elements remain at their original locations.

STORY NAME	TRANSLATIONAL MASS (X-DIR)	(Y-DIR)
Roof	0.00005839	0.00005839
14F	0.00015018	0.00015018
13F	0.00004581	0.00004581
12F	0.00006878	0.00006878
11F	0.00027312	0.00027312
10F	0.0	0.0
9F	0.00028456	0.00028456
8F	0.00025295	0.00025295
7F	0.00027219	0.00027219
6F	0.00046251	0.00046251
5F	0.00025032	0.00025032
4F	0.00052265	0.00052265
3F	0.00024417	0.00024417
2F	0.00181113	0.00181113
1F	0.00152329	0.00152329
TOTAL :	0.00622005	0.00622005

* EQUIVALENT SEISMIC LOAD IN ACCORDANCE WITH NSR-10 [UNIT: kN, cm]

Site Class	: E
Effective Peak Acceleration(Aa)	: 0.20000
Effective Peak Velocity (Av)	: 0.20000
Site Coefficient at Short Periods (Fa)	: 1.70000
Site Coefficient at 1 s Period (Fv)	: 3.20000
Importance Factor (I)	: 1.10
Period Coefficient for Upper Limit (Cu)	: 1.2000
Fundamental Period Associated with X-dir. (Tx)	: 0.2794

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  Fundamental Period Associated with Y-dir. (Ty)        : 0.2794
  Basic Ductility Factor for X-dir. (Rx0)               : 1.50000
  Basic Ductility Factor for Y-dir. (Ry0)               : 1.50000
  Reduction Factor of Irregularity for X-dir. (Phix)    : 0.90000
  Reduction Factor of Irregularity for Y-dir. (Phiy)    : 0.90000
  Ductility Factor for X-dir. (Rx)                      : 1.35000
  Ductility Factor for X-dir. (Rx)                      : 1.35000
  Total Effective Weight For X-dir. Seismic Loads (Wx)    : 4.605640
  Total Effective Weight For Y-dir. Seismic Loads (Wy)    : 4.605640

  Scale Factor For X-directional Seismic Loads            : 0.00
  Scale Factor For Y-directional Seismic Loads            : 1.00

  Accidental Eccentricity For X-direction (Ex)            : Positive
  Accidental Eccentricity For Y-direction (Ey)            : Positive

  Torsional Amplification for Accidental Eccentricity     : Consider
  Torsional Amplification for Inherent Eccentricity       : Do not Consider

  Total Base Shear Of Model For X-direction               : 0.000000
  Total Base Shear Of Model For Y-direction               : 3.189832
  Summation Of Wi*Hi^k Of Model For X-direction           : 0.000000
  Summation Of Wi*Hi^k Of Model For Y-direction           : 1766.291507
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 ECCENTRICITY RELATED DATA
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	X-DIRECTIONAL LOAD				Y-DIRECTIONAL LOAD			
STORY NAME	ACCIDENTAL ECCENT.	INHERENT ECCENT.	ACCIDENTAL AMP.FACTOR	INHERENT AMP.FACTOR	ACCIDENTAL ECCENT.	INHERENT ECCENT.	ACCIDENTAL AMP.FACTOR	INHERENT AMP.FACTOR
Roof	-90.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
14F	-90.0	0.0	1.0	0.0	2.75	0.0	1.0	0.0
13F	-90.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
12F	-90.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
11F	-90.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
10F	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
9F	-90.0	0.0	1.0	0.0	6.0037318	0.0	1.0	0.0
8F	-90.0	0.0	1.0	0.0	11.875617	0.0	1.0	0.0
7F	-90.0	0.0	1.0	0.0	17.486705	0.0	1.0	0.0
6F	-90.0	0.0	1.0	0.0	22.713773	0.0	1.0	0.0
5F	-90.0	0.0	1.0	0.0	27.442029	0.0	1.0	0.0
4F	-90.0	0.0	1.0	0.0	38.367639	0.0	1.0	0.0
3F	-90.0	0.0	1.0	0.0	36.683819	0.0	1.0	0.0

```
 0.0
       2F        -90.0        0.0        1.0        0.0         95.0        0.0        1.0
 0.0
      G.L          0.0        0.0        0.0        0.0          0.0        0.0        0.0
 0.0
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The accidental amplification factors are automatically set to 1.0 when torsional amplification effe
ct
to accidental eccentricity is not considered.
The inherent amplification factors are automatically set to 0 when torsional amplification effect
to inherent eccentricity is not considered.
The inherent amplification factors are all set to 'the input value - 1.0'.(This is to exclude the t
rue
inherent torsion)
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  ** Story Force , Seismic Force x Scale Factor + Added Force


          S E I S M I C   L O A D   G E N E R A T I O N   D A T A   X - D I R E C T I O N

     STORY   STORY   STORY  SEISMIC   ADDED    STORY    STORY   OVERTURN. ACCIDENT. INHERENT   TOTA
L
     NAME    WEIGHT  LEVEL  FORCE     FORCE    FORCE    SHEAR   MOMENT    TORSION   TORSION    TORS
ION
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----
      Roof  0.05726  544.62 0.056319      0.0      0.0      0.0       0.0       0.0       0.0
 0.0
       14F 0.147262   541.0 0.143877      0.0      0.0      0.0       0.0       0.0       0.0
 0.0
       13F 0.044922  537.59 0.043613      0.0      0.0      0.0       0.0       0.0       0.0
 0.0
       12F 0.067448 520.641 0.063418      0.0      0.0      0.0       0.0       0.0       0.0
 0.0
       11F 0.267826   500.0  0.24184      0.0      0.0      0.0       0.0       0.0       0.0
 0.0
       10F      0.0  497.77      0.0      0.0      0.0      0.0       0.0       0.0       0.0
 0.0
        9F 0.279038 495.539 0.249716      0.0      0.0      0.0       0.0       0.0       0.0
 0.0
        8F  0.24804 482.255 0.216024      0.0      0.0      0.0       0.0       0.0       0.0
 0.0
        7F 0.266913 460.439 0.221946      0.0      0.0      0.0       0.0       0.0       0.0
 0.0
        6F 0.453533  430.57 0.352661      0.0      0.0      0.0       0.0       0.0       0.0
 0.0
        5F 0.245463 393.304 0.174349      0.0      0.0      0.0       0.0       0.0       0.0
 0.0
        4F 0.512512  349.46 0.323449      0.0      0.0      0.0       0.0       0.0       0.0
 0.0
        3F 0.239429  324.73 0.140412      0.0      0.0      0.0       0.0       0.0       0.0
 0.0
        2F 1.775995   300.0 0.962207      0.0      0.0      0.0       0.0       0.0       0.0
 0.0
      G.L.    --        0.0    --       --       --         0.0       0.0    ---       ---       --
-
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S E I S M I C L O A D G E N E R A T I O N D A T A Y - D I R E C T I O N

STORY NAME	STORY WEIGHT	STORY LEVEL	SEISMIC FORCE	ADDED FORCE	STORY FORCE	STORY SHEAR	OVERTURN. MOMENT	ACCIDENT. TORSION	INHERENT TORSION	TOTAL TORSION
Roof	0.05726	544.62	0.056319	0.0	0.056319	0.0	0.0	0.0	0.0	0.0
14F	0.147262	541.0	0.143877	0.0	0.143877	0.056319	0.203855	0.395663	0.0	0.395663
13F	0.044922	537.59	0.043613	0.0	0.043613	0.200196	0.886618	0.0	0.0	0.0
12F	0.067448	520.641	0.063418	0.0	0.063418	0.243809	5.018742	0.0	0.0	0.0
11F	0.267826	500.0	0.24184	0.0	0.24184	0.307227	11.36031	0.0	0.0	0.0
10F	0.0	497.77	0.0	0.0	0.0	0.549067	12.58494	0.0	0.0	0.0
9F	0.279038	495.539	0.249716	0.0	0.249716	0.549067	13.80957	1.49923	0.0	1.49923
8F	0.24804	482.255	0.216024	0.0	0.216024	0.798783	24.42089	2.565424	0.0	2.565424
7F	0.266913	460.439	0.221946	0.0	0.221946	1.014807	46.56014	3.881105	0.0	3.881105
6F	0.453533	430.57	0.352661	0.0	0.352661	1.236754	83.50068	8.010262	0.0	8.010262
5F	0.245463	393.304	0.174349	0.0	0.174349	1.589415	142.7314	4.784494	0.0	4.784494
4F	0.512512	349.46	0.323449	0.0	0.323449	1.763764	220.0622	12.40999	0.0	12.40999
3F	0.239429	324.73	0.140412	0.0	0.140412	2.087213	271.6787	5.150849	0.0	5.150849
2F	1.775995	300.0	0.962207	0.0	0.962207	2.227625	326.7676	91.40967	0.0	91.40967
G.L.	--	0.0	--	--	--	3.189832	1283.717	---	---	--

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COMMENTS ABOUT TORSION
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If torsional amplification effects are considered :

Accidental Torsion , Story Force * Accidental Eccentricity * Amp. Factor for Accidental Eccentricity
Inherent Torsion , Story Force * Inherent Eccentricity * Amp. Factor for Inherent Eccentricity

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If torsional amplification effects are not considered :

Accidental Torsion , Story Force * Accidental Eccentricity
Inherent Torsion , 0

The inherent torsion above is the additional torsion due to torsional amplification effect.
The true inherent torsion is considered automatically in analysis stage when the seismic force is applied to the structure.

[LOAD CASE : Sismo X]

** STATIC SEISMIC LOAD DATA : CODE , NSR-10

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* MASS GENERATION DATA FOR LATERAL ANALYSIS OF BUILDING [UNIT: kN, cm]

STORY NAME	TRANSLATIONAL MASS (X-DIR)	TRANSLATIONAL MASS (Y-DIR)	ROTATIONAL MASS	CENTER OF MASS (X-COORD)	CENTER OF MASS (Y-COORD)
Roof	0.0	0.0	0.0	0.0	0.0
14F	0.0	0.0	0.0	0.0	0.0
13F	0.0	0.0	0.0	0.0	0.0
12F	0.0	0.0	0.0	0.0	0.0
11F	0.0	0.0	0.0	0.0	0.0
10F	0.0	0.0	0.0	0.0	0.0
9F	0.0	0.0	0.0	0.0	0.0
8F	0.0	0.0	0.0	0.0	0.0
7F	0.0	0.0	0.0	0.0	0.0
6F	0.0	0.0	0.0	0.0	0.0
5F	0.0	0.0	0.0	0.0	0.0
4F	0.0	0.0	0.0	0.0	0.0
3F	0.0	0.0	0.0	0.0	0.0
2F	0.0	0.0	0.0	0.0	0.0
1F	0.0	0.0	0.0	0.0	0.0
TOTAL :	0.0	0.0			

* ADDITIONAL MASSES FOR THE CALCULATION OF EQUIVALENT SEISMIC FORCE

Note. The following masses are between two adjacent stories or on the nodes released from floor rigid diaphragm by *Diaphragm Disconnect command. The masses are proportionally distributed to upper/lower stories according to their vertical locations. For dynamic analysis, however, floor masses and masses on vertical elements remain at their original locations.

STORY NAME	TRANSLATIONAL MASS (X-DIR)	TRANSLATIONAL MASS (Y-DIR)
Roof	0.00005839	0.00005839
14F	0.00015018	0.00015018
13F	0.00004581	0.00004581
12F	0.00006878	0.00006878
11F	0.00027312	0.00027312
10F	0.0	0.0
9F	0.00028456	0.00028456
8F	0.00025295	0.00025295

7F	0.00027219	0.00027219
6F	0.00046251	0.00046251
5F	0.00025032	0.00025032
4F	0.00052265	0.00052265
3F	0.00024417	0.00024417
2F	0.00181113	0.00181113
1F	0.00152329	0.00152329
TOTAL :	0.00622005	0.00622005

* EQUIVALENT SEISMIC LOAD IN ACCORDANCE WITH NSR-10 [UNIT: kN, cm]

Site Class	: E
Effective Peak Acceleration(Aa)	: 0.20000
Effective Peak Velocity (Av)	: 0.20000
Site Coefficient at Short Periods (Fa)	: 1.70000
Site Coefficient at 1 s Period (Fv)	: 3.20000
Importance Factor (I)	: 1.00
Period Coefficient for Upper Limit (Cu)	: 1.2000
Fundamental Period Associated with X-dir. (Tx)	: 0.2794
Fundamental Period Associated with Y-dir. (Ty)	: 0.2794
Basic Ductility Factor for X-dir. (Rx0)	: 1.00000
Basic Ductility Factor for Y-dir. (Ry0)	: 1.00000
Reduction Factor of Irregularity for X-dir. (Phix)	: 1.00000
Reduction Factor of Irregularity for Y-dir. (Phiy)	: 1.00000
Ductility Factor for X-dir. (Rx)	: 1.00000
Ductility Factor for X-dir. (Rx)	: 1.00000
Total Effective Weight For X-dir. Seismic Loads (Wx)	: 4.605640
Total Effective Weight For Y-dir. Seismic Loads (Wy)	: 4.605640
Scale Factor For X-directional Seismic Loads	: 1.00
Scale Factor For Y-directional Seismic Loads	: 0.00
Accidental Eccentricity For X-direction (Ex)	: Positive
Accidental Eccentricity For Y-direction (Ey)	: Positive
Torsional Amplification for Accidental Eccentricity	: Consider
Torsional Amplification for Inherent Eccentricity	: Do not Consider
Total Base Shear Of Model For X-direction	: 3.914794
Total Base Shear Of Model For Y-direction	: 0.000000
Summation Of Wi*Hi^k Of Model For X-direction	: 1766.291507
Summation Of Wi*Hi^k Of Model For Y-direction	: 0.000000

ECCENTRICITY RELATED DATA

	X-DIRECTIONAL LOAD				Y-DIRECTIONAL LOAD			
STORY NAME	ACCIDENTAL ECCENT.	INHERENT ECCENT.	ACCIDENTAL AMP.FACTOR	INHERENT AMP.FACTOR	ACCIDENTAL ECCENT.	INHERENT ECCENT.	ACCIDENTAL AMP.FACTOR	INHERENT AMP.FACTOR
Roof	-90.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
14F	-90.0	0.0	1.0	0.0	2.75	0.0	1.0	0.0

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       13F        -90.0         0.0         1.0         0.0           0.0         0.0         1.0
 0.0
       12F        -90.0         0.0         1.0         0.0           0.0         0.0         1.0
 0.0
       11F        -90.0         0.0         1.0         0.0           0.0         0.0         1.0
 0.0
       10F          0.0         0.0         1.0         0.0           0.0         0.0         1.0
 0.0
        9F        -90.0         0.0         1.0         0.0     6.0037318         0.0         1.0
 0.0
        8F        -90.0         0.0         1.0         0.0     11.875617         0.0         1.0
 0.0
        7F        -90.0         0.0         1.0         0.0     17.486705         0.0         1.0
 0.0
        6F        -90.0         0.0         1.0         0.0     22.713773         0.0         1.0
 0.0
        5F        -90.0         0.0         1.0         0.0     27.442029         0.0         1.0
 0.0
        4F        -90.0         0.0         1.0         0.0     38.367639         0.0         1.0
 0.0
        3F        -90.0         0.0         1.0         0.0     36.683819         0.0         1.0
 0.0
        2F        -90.0         0.0         1.0         0.0           95.0        0.0         1.0
 0.0
       G.L          0.0         0.0         0.0         0.0           0.0         0.0         0.0
 0.0
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The accidental amplification factors are automatically set to 1.0 when torsional amplification effe
ct
to accidental eccentricity is not considered.
The inherent amplification factors are automatically set to 0 when torsional amplification effect
to inherent eccentricity is not considered.
The inherent amplification factors are all set to 'the input value - 1.0'.(This is to exclude the t
rue
inherent torsion)
-------------------------------------------------------------------------------------------------
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  ** Story Force , Seismic Force x Scale Factor + Added Force


          S E I S M I C   L O A D   G E N E R A T I O N   D A T A   X - D I R E C T I O N

     STORY    STORY    STORY  SEISMIC    ADDED    STORY    STORY   OVERTURN. ACCIDENT. INHERENT   TOTA
L
     NAME    WEIGHT   LEVEL  FORCE      FORCE    FORCE    SHEAR   MOMENT    TORSION   TORSION    TORS
ION
---------- -------- ------- -------- -------- -------- -------- --------- --------- --------- -----
----
      Roof  0.05726  544.62 0.069118      0.0 0.069118      0.0       0.0  6.220636       0.0  6.22
0636
       14F 0.147262   541.0 0.176577      0.0 0.176577 0.069118  0.250186  15.89192       0.0  15.8
9192
       13F 0.044922  537.59 0.053525      0.0 0.053525 0.245695  1.088122  4.817235       0.0  4.81
7235
       12F 0.067448 520.641 0.077831      0.0 0.077831  0.29922  6.159365  7.004809       0.0  7.00
4809
       11F 0.267826   500.0 0.296803      0.0 0.296803 0.377051   13.9422  26.71231       0.0  26.7
1231
```

10F	0.0	497.77	0.0	0.0	0.0	0.673855	15.44515	0.0	0.0	0.0
9F	0.279038	495.539	0.30647	0.0	0.30647	0.673855	16.94811	27.5823	0.0	27.5823
8F	0.24804	482.255	0.265121	0.0	0.265121	0.980325	29.97109	23.86088	0.0	23.86088
7F	0.266913	460.439	0.272388	0.0	0.272388	1.245446	57.14199	24.51495	0.0	24.51495
6F	0.453533	430.57	0.432811	0.0	0.432811	1.517834	102.4781	38.95301	0.0	38.95301
5F	0.245463	393.304	0.213974	0.0	0.213974	1.950645	175.1704	19.25765	0.0	19.25765
4F	0.512512	349.46	0.396961	0.0	0.396961	2.164619	270.0763	35.72646	0.0	35.72646
3F	0.239429	324.73	0.172324	0.0	0.172324	2.56158	333.4239	15.50914	0.0	15.50914
2F	1.775995	300.0	1.18089	0.0	1.18089	2.733904	401.033	106.2801	0.0	106.2801
G.L.	--	0.0	--	--	--	3.914794	1575.471	---	---	--

S E I S M I C L O A D G E N E R A T I O N D A T A Y - D I R E C T I O N

STORY NAME	STORY WEIGHT	STORY LEVEL	SEISMIC FORCE	ADDED FORCE	STORY FORCE	STORY SHEAR	OVERTURN. MOMENT	ACCIDENT. TORSION	INHERENT TORSION	TOTAL TORSION
Roof	0.05726	544.62	0.069118	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14F	0.147262	541.0	0.176577	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13F	0.044922	537.59	0.053525	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12F	0.067448	520.641	0.077831	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11F	0.267826	500.0	0.296803	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10F	0.0	497.77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9F	0.279038	495.539	0.30647	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8F	0.24804	482.255	0.265121	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7F	0.266913	460.439	0.272388	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6F	0.453533	430.57	0.432811	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5F	0.245463	393.304	0.213974	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4F	0.512512	349.46	0.396961	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3F	0.239429	324.73	0.172324	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2F	1.775995	300.0	1.18089	0.0	0.0	0.0	0.0	0.0	0.0	0.0
G.L.	--	0.0	--	--	--	0.0	0.0	---	---	--

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COMMENTS ABOUT TORSION
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If torsional amplification effects are considered :

Accidental Torsion , Story Force * Accidental Eccentricity * Amp. Factor for Accidental Eccentricity
Inherent Torsion , Story Force * Inherent Eccentricity * Amp. Factor for Inherent Eccentricity

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If torsional amplification effects are not considered :

Accidental Torsion , Story Force * Accidental Eccentricity
Inherent Torsion , 0

The inherent torsion above is the additional torsion due to torsional amplification effect.
The true inherent torsion is considered automatically in analysis stage when the seismic force is applied to the structure.

[LOAD CASE : Sismo Y]

** STATIC SEISMIC LOAD DATA : CODE , NSR-10

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* MASS GENERATION DATA FOR LATERAL ANALYSIS OF BUILDING [UNIT: kN, cm]

STORY NAME	TRANSLATIONAL MASS (X-DIR)	(Y-DIR)	ROTATIONAL MASS	CENTER OF MASS (X-COORD)	(Y-COORD)
Roof	0.0	0.0	0.0	0.0	0.0
14F	0.0	0.0	0.0	0.0	0.0
13F	0.0	0.0	0.0	0.0	0.0
12F	0.0	0.0	0.0	0.0	0.0
11F	0.0	0.0	0.0	0.0	0.0
10F	0.0	0.0	0.0	0.0	0.0
9F	0.0	0.0	0.0	0.0	0.0
8F	0.0	0.0	0.0	0.0	0.0
7F	0.0	0.0	0.0	0.0	0.0
6F	0.0	0.0	0.0	0.0	0.0
5F	0.0	0.0	0.0	0.0	0.0
4F	0.0	0.0	0.0	0.0	0.0
3F	0.0	0.0	0.0	0.0	0.0
2F	0.0	0.0	0.0	0.0	0.0
1F	0.0	0.0	0.0	0.0	0.0
TOTAL :	0.0	0.0			

* ADDITIONAL MASSES FOR THE CALCULATION OF EQUIVALENT SEISMIC FORCE

Note. The following masses are between two adjacent stories or on the nodes released from floor rigid diaphragm by *Diaphragm Disconnect command. The masses are proportionally distributed to upper/lower stories according to their vertical locations. For dynamic analysis, however, floor masses and masses on vertical elements remain at their original locations.

STORY NAME	TRANSLATIONAL MASS (X-DIR)	(Y-DIR)
Roof	0.00005839	0.00005839
14F	0.00015018	0.00015018
13F	0.00004581	0.00004581
12F	0.00006878	0.00006878
11F	0.00027312	0.00027312
10F	0.0	0.0
9F	0.00028456	0.00028456
8F	0.00025295	0.00025295
7F	0.00027219	0.00027219
6F	0.00046251	0.00046251
5F	0.00025032	0.00025032
4F	0.00052265	0.00052265
3F	0.00024417	0.00024417
2F	0.00181113	0.00181113
1F	0.00152329	0.00152329
TOTAL :	0.00622005	0.00622005

* EQUIVALENT SEISMIC LOAD IN ACCORDANCE WITH NSR-10 [UNIT: kN, cm]

Site Class	: E
Effective Peak Acceleration(Aa)	: 0.20000
Effective Peak Velocity (Av)	: 0.20000
Site Coefficient at Short Periods (Fa)	: 1.70000
Site Coefficient at 1 s Period (Fv)	: 3.20000
Importance Factor (I)	: 1.00
Period Coefficient for Upper Limit (Cu)	: 1.2000
Fundamental Period Associated with X-dir. (Tx)	: 0.2794
Fundamental Period Associated with Y-dir. (Ty)	: 0.2794
Basic Ductility Factor for X-dir. (Rx0)	: 1.00000
Basic Ductility Factor for Y-dir. (Ry0)	: 1.00000
Reduction Factor of Irregularity for X-dir. (Phix)	: 1.00000
Reduction Factor of Irregularity for Y-dir. (Phiy)	: 1.00000
Ductility Factor for X-dir. (Rx)	: 1.00000
Ductility Factor for X-dir. (Rx)	: 1.00000
Total Effective Weight For X-dir. Seismic Loads (Wx)	: 4.605640
Total Effective Weight For Y-dir. Seismic Loads (Wy)	: 4.605640
Scale Factor For X-directional Seismic Loads	: 0.00
Scale Factor For Y-directional Seismic Loads	: 1.00
Accidental Eccentricity For X-direction (Ex)	: Positive
Accidental Eccentricity For Y-direction (Ey)	: Positive
Torsional Amplification for Accidental Eccentricity	: Do not Consider
Torsional Amplification for Inherent Eccentricity	: Do not Consider
Total Base Shear Of Model For X-direction	: 0.000000
Total Base Shear Of Model For Y-direction	: 3.914794
Summation Of Wi*Hi^k Of Model For X-direction	: 0.000000

Summation Of Wi*Hi^k Of Model For Y-direction : 1766.291507

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ECCENTRICITY RELATED DATA
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STORY NAME	X-DIRECTIONAL LOAD ACCIDENTAL ECCENT.	X-DIRECTIONAL LOAD INHERENT ECCENT.	X-DIRECTIONAL LOAD ACCIDENTAL AMP.FACTOR	X-DIRECTIONAL LOAD INHERENT AMP.FACTOR	Y-DIRECTIONAL LOAD ACCIDENTAL ECCENT.	Y-DIRECTIONAL LOAD INHERENT ECCENT.	Y-DIRECTIONAL LOAD ACCIDENTAL AMP.FACTOR	Y-DIRECTIONAL LOAD INHERENT AMP.FACTOR
Roof	-90.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
14F	-90.0	0.0	1.0	0.0	2.75	0.0	1.0	0.0
13F	-90.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
12F	-90.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
11F	-90.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
10F	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
9F	-90.0	0.0	1.0	0.0	6.0037318	0.0	1.0	0.0
8F	-90.0	0.0	1.0	0.0	11.875617	0.0	1.0	0.0
7F	-90.0	0.0	1.0	0.0	17.486705	0.0	1.0	0.0
6F	-90.0	0.0	1.0	0.0	22.713773	0.0	1.0	0.0
5F	-90.0	0.0	1.0	0.0	27.442029	0.0	1.0	0.0
4F	-90.0	0.0	1.0	0.0	38.367639	0.0	1.0	0.0
3F	-90.0	0.0	1.0	0.0	36.683819	0.0	1.0	0.0
2F	-90.0	0.0	1.0	0.0	95.0	0.0	1.0	0.0
G.L	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

The accidental amplification factors are automatically set to 1.0 when torsional amplification effect
to accidental eccentricity is not considered.
The inherent amplification factors are automatically set to 0 when torsional amplification effect
to inherent eccentricity is not considered.
The inherent amplification factors are all set to 'the input value - 1.0'.(This is to exclude the true
inherent torsion)

** Story Force , Seismic Force x Scale Factor + Added Force

S E I S M I C L O A D G E N E R A T I O N D A T A X - D I R E C T I O N

STORY NAME	STORY WEIGHT	STORY LEVEL	SEISMIC FORCE	ADDED FORCE	STORY FORCE	STORY SHEAR	OVERTURN. MOMENT	ACCIDENT. TORSION	INHERENT TORSION	TOTAL TORSION
Roof	0.05726	544.62	0.069118	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14F	0.147262	541.0	0.176577	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13F	0.044922	537.59	0.053525	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12F	0.067448	520.641	0.077831	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11F	0.267826	500.0	0.296803	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10F	0.0	497.77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9F	0.279038	495.539	0.30647	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8F	0.24804	482.255	0.265121	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7F	0.266913	460.439	0.272388	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6F	0.453533	430.57	0.432811	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5F	0.245463	393.304	0.213974	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4F	0.512512	349.46	0.396961	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3F	0.239429	324.73	0.172324	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2F	1.775995	300.0	1.18089	0.0	0.0	0.0	0.0	0.0	0.0	0.0
G.L.	--	0.0	--	--	--	0.0	0.0	---	---	--

S E I S M I C L O A D G E N E R A T I O N D A T A Y - D I R E C T I O N

STORY NAME	STORY WEIGHT	STORY LEVEL	SEISMIC FORCE	ADDED FORCE	STORY FORCE	STORY SHEAR	OVERTURN. MOMENT	ACCIDENT. TORSION	INHERENT TORSION	TOTAL TORSION
Roof	0.05726	544.62	0.069118	0.0	0.069118	0.0	0.0	0.0	0.0	0.0
14F	0.147262	541.0	0.176577	0.0	0.176577	0.069118	0.250186	0.485587	0.0	0.485587
13F	0.044922	537.59	0.053525	0.0	0.053525	0.245695	1.088122	0.0	0.0	0.0
12F	0.067448	520.641	0.077831	0.0	0.077831	0.29922	6.159365	0.0	0.0	0.0
11F	0.267826	500.0	0.296803	0.0	0.296803	0.377051	13.9422	0.0	0.0	0.0
10F	0.0	497.77	0.0	0.0	0.0	0.673855	15.44515	0.0	0.0	0.0

```
 0.0
        9F 0.279038 495.539  0.30647      0.0  0.30647 0.673855  16.94811  1.839964       0.0  1.83
9964
        8F  0.24804 482.255 0.265121      0.0 0.265121 0.980325  29.97109  3.148475       0.0  3.14
8475
        7F 0.266913 460.439 0.272388      0.0 0.272388 1.245446  57.14199  4.763174       0.0  4.76
3174
        6F 0.453533  430.57 0.432811      0.0 0.432811 1.517834  102.4781  9.830776       0.0  9.83
0776
        5F 0.245463 393.304 0.213974      0.0 0.213974 1.950645  175.1704  5.871879       0.0  5.87
1879
        4F 0.512512  349.46 0.396961      0.0 0.396961 2.164619  270.0763  15.23044       0.0  15.2
3044
        3F 0.239429  324.73 0.172324      0.0 0.172324  2.56158  333.4239  6.321496       0.0  6.32
1496
        2F 1.775995   300.0  1.18089      0.0  1.18089 2.733904   401.033  112.1846       0.0  112.
1846
      G.L.    --        0.0    --       --       --    3.914794  1575.471    ---       ---       --
-
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================================================
 COMMENTS ABOUT TORSION
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If torsional amplification effects are considered :
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----
Accidental Torsion , Story Force * Accidental Eccentricity * Amp. Factor for Accidental Eccentricit
y
Inherent Torsion   , Story Force * Inherent Eccentricity * Amp. Factor for Inherent Eccentricity

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----
If torsional amplification effects are not considered :
------------------------------------------------------------------------------------------------------
----
Accidental Torsion , Story Force * Accidental Eccentricity
Inherent Torsion   , 0

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The inherent torsion above is the additional torsion due to torsional amplification effect.
The true inherent torsion is considered automatically in analysis stage when the seismic force is
applied to the structure.
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 [ LOAD CASE : Carga de Viento ]

 ** BEAM LOAD DATA

     MEMBER                 TYPE    DIR. PROJ.     D1        P1     D2        P2     D3        P3     D4
    P4
   -------- -------------------- ------ ----- ----- -------- ----- -------- ----- -------- ----- --
------
         44         Uniform Load     LZ    NO      0   -0.006     1   -0.006     0        0      0
     0
```

PROJECT TITLE : INVERNADERO 2 PUL TIPO 1

	Company		Client	
MIDAS	Author	AMAURY URUETA	File Name	Midas Invernadero Tipo 1.mdl

45	Uniform Load	LZ	NO	0	-0.006	1	-0.006	0	0	0	0
46	Uniform Load	LZ	NO	0	-0.006	1	-0.006	0	0	0	0
47	Uniform Load	LZ	NO	0	-0.006	1	-0.006	0	0	0	0
48	Uniform Load	LZ	NO	0	-0.006	1	-0.006	0	0	0	0
49	Uniform Load	LZ	NO	0	-0.006	1	-0.006	0	0	0	0
51	Uniform Load	LZ	NO	0	0.006	1	0.006	0	0	0	0
52	Uniform Load	LZ	NO	0	0.006	1	0.006	0	0	0	0
53	Uniform Load	LZ	NO	0	0.006	1	0.006	0	0	0	0
54	Uniform Load	LZ	NO	0	0.006	1	0.006	0	0	0	0
55	Uniform Load	LZ	NO	0	0.006	1	0.006	0	0	0	0
56	Uniform Load	LZ	NO	0	0.006	1	0.006	0	0	0	0
69	Uniform Load	LZ	NO	0	-0.006	1	-0.006	0	0	0	0
74	Uniform Load	LZ	NO	0	0.006	1	0.006	0	0	0	0
75	Uniform Load	LZ	NO	0	0.006	1	0.006	0	0	0	0
77	Uniform Load	LZ	NO	0	0.006	1	0.006	0	0	0	0
78	Uniform Load	LZ	NO	0	0.006	1	0.006	0	0	0	0
79	Uniform Load	LZ	NO	0	0.006	1	0.006	0	0	0	0
83	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
84	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
85	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
86	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
87	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
88	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
90	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
91	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
92	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
93	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
94	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
95	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
96	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
101	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
102	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0

PROJECT TITLE : INVERNADERO 2 PUL TIPO 1

	Company		Client	
MIDAS	Author	AMAURY URUETA	File Name	Midas Invernadero Tipo 1.mdl

103	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
104	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
105	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
109	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
110	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
111	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
112	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
113	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
114	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
116	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
117	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
118	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
119	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
120	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
121	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
122	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
127	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
128	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
129	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
130	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
131	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
135	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
136	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
137	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
138	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
139	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
140	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
142	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
143	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
144	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
145	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
146	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0

PROJECT TITLE : INVERNADERO 2 PUL TIPO 1

	Company		Client	
MIDAS	Author	AMAURY URUETA	File Name	Midas Invernadero Tipo 1.mdl

147	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
148	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
153	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
154	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
155	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
156	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
157	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
161	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
162	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
163	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
164	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
165	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
166	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
168	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
169	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
170	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
171	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
172	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
173	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
174	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
179	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
180	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
181	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
182	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
183	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
187	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
188	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
189	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
190	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
191	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
192	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
194	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0

PROJECT TITLE : INVERNADERO 2 PUL TIPO 1

	Company		Client	
MIDAS	Author	AMAURY URUETA	File Name	Midas Invernadero Tipo 1.mdl

195	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
196	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
197	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
198	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
199	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
200	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
205	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
206	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
207	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
208	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
209	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
213	Uniform Load	LZ	NO	0	-0.006	1	-0.006	0	0	0	0
214	Uniform Load	LZ	NO	0	-0.006	1	-0.006	0	0	0	0
215	Uniform Load	LZ	NO	0	-0.006	1	-0.006	0	0	0	0
216	Uniform Load	LZ	NO	0	-0.006	1	-0.006	0	0	0	0
217	Uniform Load	LZ	NO	0	-0.006	1	-0.006	0	0	0	0
218	Uniform Load	LZ	NO	0	-0.006	1	-0.006	0	0	0	0
220	Uniform Load	LZ	NO	0	0.006	1	0.006	0	0	0	0
221	Uniform Load	LZ	NO	0	0.006	1	0.006	0	0	0	0
222	Uniform Load	LZ	NO	0	0.006	1	0.006	0	0	0	0
223	Uniform Load	LZ	NO	0	0.006	1	0.006	0	0	0	0
224	Uniform Load	LZ	NO	0	0.006	1	0.006	0	0	0	0
225	Uniform Load	LZ	NO	0	0.006	1	0.006	0	0	0	0
226	Uniform Load	LZ	NO	0	-0.006	1	-0.006	0	0	0	0
231	Uniform Load	LZ	NO	0	0.006	1	0.006	0	0	0	0
232	Uniform Load	LZ	NO	0	0.006	1	0.006	0	0	0	0
233	Uniform Load	LZ	NO	0	0.006	1	0.006	0	0	0	0
234	Uniform Load	LZ	NO	0	0.006	1	0.006	0	0	0	0
235	Uniform Load	LZ	NO	0	0.006	1	0.006	0	0	0	0
396	Uniform Load	LZ	NO	0	0.006	1	0.006	0	0	0	0
397	Uniform Load	LZ	NO	0	-0.006	1	-0.006	0	0	0	0
400	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0

	401	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
	404	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
	405	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
	408	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
	409	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
	412	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
	413	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
	416	Uniform Load	LZ	NO	0	0.012	1	0.012	0	0	0	0
	417	Uniform Load	LZ	NO	0	-0.012	1	-0.012	0	0	0	0
	420	Uniform Load	LZ	NO	0	0.006	1	0.006	0	0	0	0
	421	Uniform Load	LZ	NO	0	-0.006	1	-0.006	0	0	0	0

[LOAD CASE : Carga Fluidos]

** BEAM LOAD DATA

MEMBER	TYPE	DIR.	PROJ.	D1	P1	D2	P2	D3	P3	D4	P4
56	Uniform Load	GZ	NO	0	-0.065	1	-0.065	0	0	0	0
95	Uniform Load	GZ	NO	0	-0.065	1	-0.065	0	0	0	0
121	Uniform Load	GZ	NO	0	-0.065	1	-0.065	0	0	0	0
147	Uniform Load	GZ	NO	0	-0.065	1	-0.065	0	0	0	0
173	Uniform Load	GZ	NO	0	-0.065	1	-0.065	0	0	0	0
199	Uniform Load	GZ	NO	0	-0.065	1	-0.065	0	0	0	0
225	Uniform Load	GZ	NO	0	-0.065	1	-0.065	0	0	0	0
397	Uniform Load	GZ	NO	0	-0.065	1	-0.065	0	0	0	0
398	Uniform Load	GZ	NO	0	-0.065	1	-0.065	0	0	0	0
399	Uniform Load	GZ	NO	0	-0.065	1	-0.065	0	0	0	0
401	Uniform Load	GZ	NO	0	-0.065	1	-0.065	0	0	0	0
402	Uniform Load	GZ	NO	0	-0.065	1	-0.065	0	0	0	0
403	Uniform Load	GZ	NO	0	-0.065	1	-0.065	0	0	0	0
405	Uniform Load	GZ	NO	0	-0.065	1	-0.065	0	0	0	0
406	Uniform Load	GZ	NO	0	-0.065	1	-0.065	0	0	0	0
407	Uniform Load	GZ	NO	0	-0.065	1	-0.065	0	0	0	0

```
     0
        409         Uniform Load     GZ    NO      0    -0.065     1    -0.065     0         0      0
     0
        410         Uniform Load     GZ    NO      0    -0.065     1    -0.065     0         0      0
     0
        411         Uniform Load     GZ    NO      0    -0.065     1    -0.065     0         0      0
     0
        413         Uniform Load     GZ    NO      0    -0.065     1    -0.065     0         0      0
     0
        414         Uniform Load     GZ    NO      0    -0.065     1    -0.065     0         0      0
     0
        415         Uniform Load     GZ    NO      0    -0.065     1    -0.065     0         0      0
     0
        417         Uniform Load     GZ    NO      0    -0.065     1    -0.065     0         0      0
     0
        418         Uniform Load     GZ    NO      0    -0.065     1    -0.065     0         0      0
     0
        419         Uniform Load     GZ    NO      0    -0.065     1    -0.065     0         0      0
     0
        421         Uniform Load     GZ    NO      0    -0.065     1    -0.065     0         0      0
     0
        422         Uniform Load     GZ    NO      0    -0.065     1    -0.065     0         0      0
     0
        423         Uniform Load     GZ    NO      0    -0.065     1    -0.065     0         0      0
     0


*** RESPONSE SPECTRUM FUNCTION DATA

         NAME         FUNCTION  SCALE  GRAVITY DATA
                         TYPE
   ---------- --------------- ------ -------- ------------------------------------------------
   NSR-10 (U~ Normalized Acc.      1    980.6 0:0.1 0.1:0.174627 0.2:0.249254 0.3:0.25 0.4:0.25


*** LOAD COMBINATION DATA

 ** STEEL DESIGN
         NO       NAME       TYPE     ACTIVE  DESCRIPTION
   -------- ---------- ---------- ----------  -------------------------------------------
          1      sLCB1        Add     ACTIVE  1.4(D+FP)
          2      sLCB2        Add     ACTIVE  1.2D + 1.0Carga de Viento
          3      sLCB3        Add     ACTIVE  1.2D - 1.0Carga de Viento
          4      sLCB4        Add     ACTIVE  1.2D + 1.0(1.0EX (Sismo Reducido)+0.3EY (
                                              Sismo Reducido))
          5      sLCB5        Add     ACTIVE  1.2D + 1.0(1.0EX (Sismo Reducido)-0.3EY (
                                              Sismo Reducido))
          6      sLCB6        Add     ACTIVE  1.2D + 1.0(1.0EY (Sismo Reducido)+0.3EX (
                                              Sismo Reducido))
          7      sLCB7        Add     ACTIVE  1.2D + 1.0(1.0EY (Sismo Reducido)-0.3EX (
                                              Sismo Reducido))
          8      sLCB8        Add     ACTIVE  1.2D - 1.0(1.0EX (Sismo Reducido)+0.3EY (
                                              Sismo Reducido))
          9      sLCB9        Add     ACTIVE  1.2D - 1.0(1.0EX (Sismo Reducido)-0.3EY (
                                              Sismo Reducido))
         10     sLCB10        Add     ACTIVE  1.2D - 1.0(1.0EY (Sismo Reducido)+0.3EX (
                                              Sismo Reducido))
         11     sLCB11        Add     ACTIVE  1.2D - 1.0(1.0EY (Sismo Reducido)-0.3EX (
                                              Sismo Reducido))
         12     sLCB12        Add     ACTIVE  0.9D + 1.0Carga de Viento
         13     sLCB13        Add     ACTIVE  0.9D - 1.0Carga de Viento
         14     sLCB14        Add     ACTIVE  0.9D + 1.0(1.0EX (Sismo Reducido)+0.3EY (
                                              Sismo Reducido))
         15     sLCB15        Add     ACTIVE  0.9D + 1.0(1.0EX (Sismo Reducido)-0.3EY (
```

				Sismo Reducido))
16	sLCB16	Add	ACTIVE	0.9D + 1.0(1.0EY (Sismo Reducido)+0.3EX (Sismo Reducido))
17	sLCB17	Add	ACTIVE	0.9D + 1.0(1.0EY (Sismo Reducido)-0.3EX (Sismo Reducido))
18	sLCB18	Add	ACTIVE	0.9D - 1.0(1.0EX (Sismo Reducido)+0.3EY (Sismo Reducido))
19	sLCB19	Add	ACTIVE	0.9D - 1.0(1.0EX (Sismo Reducido)-0.3EY (Sismo Reducido))
20	sLCB20	Add	ACTIVE	0.9D - 1.0(1.0EY (Sismo Reducido)+0.3EX (Sismo Reducido))
21	sLCB21	Add	ACTIVE	0.9D - 1.0(1.0EY (Sismo Reducido)-0.3EX (Sismo Reducido))
22	sLCB22	Add	SERVICE	SERV :(D+FP)
23	sLCB23	Add	SERVICE	SERV :(D+FP) + 0.6Carga de Viento
24	sLCB24	Add	SERVICE	SERV :(D+FP) - 0.6Carga de Viento
25	sLCB25	Add	SERVICE	SERV :(D+FP) + 0.7(1.0EX (Sismo Reducido)+ 0.3EY (Sismo Reducido))
26	sLCB26	Add	SERVICE	SERV :(D+FP) + 0.7(1.0EX (Sismo Reducido)- 0.3EY (Sismo Reducido))
27	sLCB27	Add	SERVICE	SERV :(D+FP) + 0.7(1.0EY (Sismo Reducido)+ 0.3EX (Sismo Reducido))
28	sLCB28	Add	SERVICE	SERV :(D+FP) + 0.7(1.0EY (Sismo Reducido)- 0.3EX (Sismo Reducido))
29	sLCB29	Add	SERVICE	SERV :(D+FP) - 0.7(1.0EX (Sismo Reducido)+ 0.3EY (Sismo Reducido))
30	sLCB30	Add	SERVICE	SERV :(D+FP) - 0.7(1.0EX (Sismo Reducido)- 0.3EY (Sismo Reducido))
31	sLCB31	Add	SERVICE	SERV :(D+FP) - 0.7(1.0EY (Sismo Reducido)+ 0.3EX (Sismo Reducido))
32	sLCB32	Add	SERVICE	SERV :(D+FP) - 0.7(1.0EY (Sismo Reducido)- 0.3EX (Sismo Reducido))
33	sLCB33	Add	SERVICE	SERV :(D+FP) + 0.75(0.6)Carga de Viento
34	sLCB34	Add	SERVICE	SERV :(D+FP) - 0.75(0.6)Carga de Viento
35	sLCB35	Add	SERVICE	SERV :(D+FP) + 0.75(0.7)(1.0EX (Sismo Reducido)+0.3EY (Sismo Reducido))
36	sLCB36	Add	SERVICE	SERV :(D+FP) + 0.75(0.7)(1.0EX (Sismo Reducido)-0.3EY (Sismo Reducido))
37	sLCB37	Add	SERVICE	SERV :(D+FP) + 0.75(0.7)(1.0EY (Sismo Reducido)+0.3EX (Sismo Reducido))
38	sLCB38	Add	SERVICE	SERV :(D+FP) + 0.75(0.7)(1.0EY (Sismo Reducido)-0.3EX (Sismo Reducido))
39	sLCB39	Add	SERVICE	SERV :(D+FP) - 0.75(0.7)(1.0EX (Sismo Reducido)+0.3EY (Sismo Reducido))
40	sLCB40	Add	SERVICE	SERV :(D+FP) - 0.75(0.7)(1.0EX (Sismo Reducido)-0.3EY (Sismo Reducido))
41	sLCB41	Add	SERVICE	SERV :(D+FP) - 0.75(0.7)(1.0EY (Sismo Reducido)+0.3EX (Sismo Reducido))
42	sLCB42	Add	SERVICE	SERV :(D+FP) - 0.75(0.7)(1.0EY (Sismo Reducido)-0.3EX (Sismo Reducido))
43	sLCB43	Add	SERVICE	SERV :0.6D + 0.6Carga de Viento
44	sLCB44	Add	SERVICE	SERV :0.6D - 0.6Carga de Viento
45	sLCB45	Add	SERVICE	SERV :0.6(D+FP) + 0.7(1.0EX (Sismo Reducido)+ 0.3EY (Sismo Reducido))
46	sLCB46	Add	SERVICE	SERV :0.6(D+FP) + 0.7(1.0EX (Sismo Reducido)- 0.3EY (Sismo Reducido))
47	sLCB47	Add	SERVICE	SERV :0.6(D+FP) + 0.7(1.0EY (Sismo Reducido)+ 0.3EX (Sismo Reducido))
48	sLCB48	Add	SERVICE	SERV :0.6(D+FP) + 0.7(1.0EY (Sismo Reducido)- 0.3EX (Sismo Reducido))
49	sLCB49	Add	SERVICE	SERV :0.6(D+FP) - 0.7(1.0EX (Sismo Reducido)+ 0.3EY (Sismo Reducido))
50	sLCB50	Add	SERVICE	SERV :0.6(D+FP) - 0.7(1.0EX (Sismo Reducido)- 0.3EY (Sismo Reducido))

PROJECT TITLE : INVERNADERO 2 PUL TIPO 1

MIDAS	Company		Client	
	Author	AMAURY URUETA	File Name	Midas Invernadero Tipo 1.mdl

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51      sLCB51          Add     SERVICE  SERV :0.6(D+FP) - 0.7(1.0EY (Sismo Reducido)+
                                          0.3EX (Sismo Reducido))
52      sLCB52          Add     SERVICE  SERV :0.6(D+FP) - 0.7(1.0EY (Sismo Reducido)-
                                          0.3EX (Sismo Reducido))
53     ENV MAY    Envelope      ACTIVE
54    ENV SERV    Envelope     SERVICE
```