STRUCTURAL DESIGN ANALYSIS

“GLASSCON – SHADOGLASS LOUVERS SYSTEM”

SOLAR SHADING LOUVERS

SAMPLE – NOT FOR USE

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1. Technical Description - Assumptions

1.1 Technical Description

Louvers consist of glass panels (Fully Tempered Glass Panel) supported by a system of aluminium and steel members. The whole louver system is bolted onto a steel UPN180 front beam, which is connected to cantilever IPE180 beams, anchored to concrete elements. Most unfavorable considerations are Building Height = 21.00m and Glass Panel Dimensions = 600x2620mm^2. The structure is modeled using the SAP2000 structural analysis software.

1.2 Design Standards and Norms

prEN 13474-3	Glass in building – Determination of the strength of glass panes – Part 3: General method of calculation and determination of strength of glass by testing

1.3 Loads - Load Combinations

- Wind loads according to EN 1991-1-4:
  - Terrain Category
  - Structure height
  - Wind velocity
  - Direction coefficient
  - Season coefficient
  - Dynamic coefficient
  - k_r = 0.19 x ($z_0/z_{0,II}$)^0.07

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- $c_r(z) = k_r \times \ln(z/z_0) = 0.713$
- Coefficient $c_0(z)$
- $v_m(z) = c_r(z) \times c_0(z) \times v_b$
- Turbulence coefficient
- $I_v(z) = k_I / (c_0(z) \times \ln(z/z_0))$
- Wind pressure at peak velocity

  $\mathbf{q_p(z)=[1+7 \times I_v(z)] \times 1/2 \times \rho \times v_m(z)^2}$

  where ρ = 1.25 kg/m³ is the air density
- External pressure coefficients $c_{p,e}$

  $c_{p,e}$ = …….

- System self weight:

The following combinations are considered:

1.35xG + 1.50W (Ultimate Limit State - ULS)

G + W (Serviceability Limit State - SLS)

1.4 Material Properties

	Modulus of Elasticity E (GPa)	Poisson Ratio ν (-)	Density ρ (kg/m³)
Steel S235	210.0	0.30	7850.0
Stainless Steel SS304 (1.4301)	210.0	0.30	7900.0
Glass	70.0	0.23	2500.0
Aluminium alloy EN AW 6060 T6	70.0	0.30	2700.0

- Bolts of quality 8.8, unless otherwise specified

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1.5 Stress and deflection limits

According to prEN 13474-3, § 5.3, Table 2, we obtain:

- $\gamma_{MA,ULS}$
- $\gamma_{MA,SLS}$

The stress limit is calculated as following (prEN 13474-3, § 8.1.1, 8.1.2, 8.1,3):

$f_{g,k} = 120\ N/mm^2$

Thus we obtain:

$f_{g,d} = 49.33\ N/mm^2$

The deflection limit is (prEN 13474-3, § 9.1.4):

w_{max} =

2. Checks

2.1 Glass Panels

Maximum Stress is

Maximum Deflection is

2.2 Connections

All connections calculations are presented in the following pages.

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MOTION PLATE TO GUIDE PLATE							
Shear Action VEd =	3,15	kN					
Number of Shear Planes	1						
Number of Bolts	1						
Diameter of Bolts d =	8,00	mm					
Bolt Material	A2		⇉	fu =	500,00	MPa	
Plate Material	6082 T651		⇉	fu =	310,00	MPa	
Plate thickness tpl =	5,00	mm					
Distance e1 =	18,00	mm					
Distance e2 =	18,00	mm					
Distance p1 =	-	mm					
Distance p2 =	-	mm					
Bolt Resistance Fv,Rd =	7,32	kN					
Bearing Resistance Fb,Rd =	16,54	kN					
CHECK	Fv,Rd	>	VEd	ok			
	Fb,Rd	>	VEd	ok			

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3. FINITE ELEMENT MODEL

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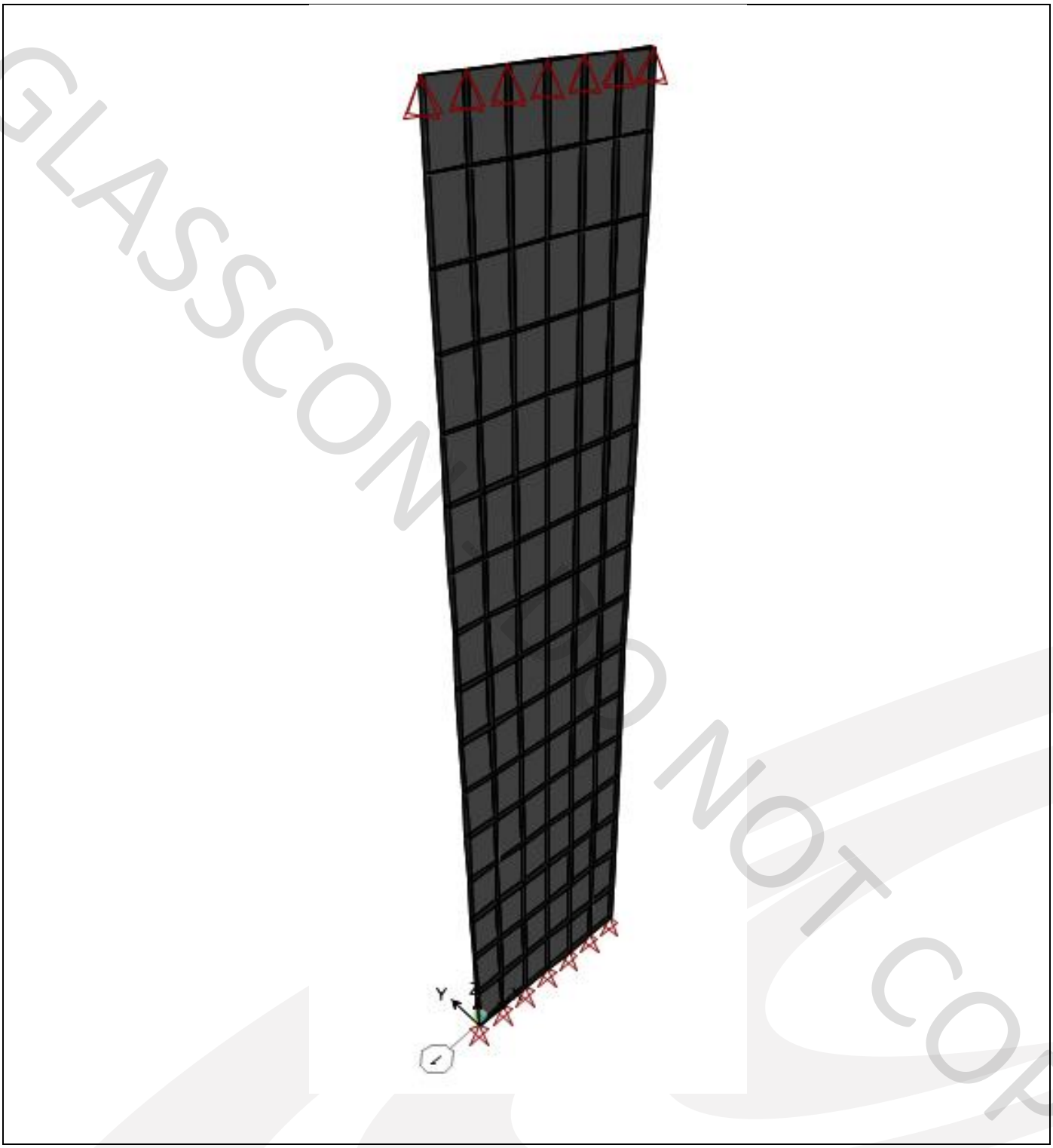

SAP17.1.1 3D View KN, m, C

persides.sdb 04/6/2015

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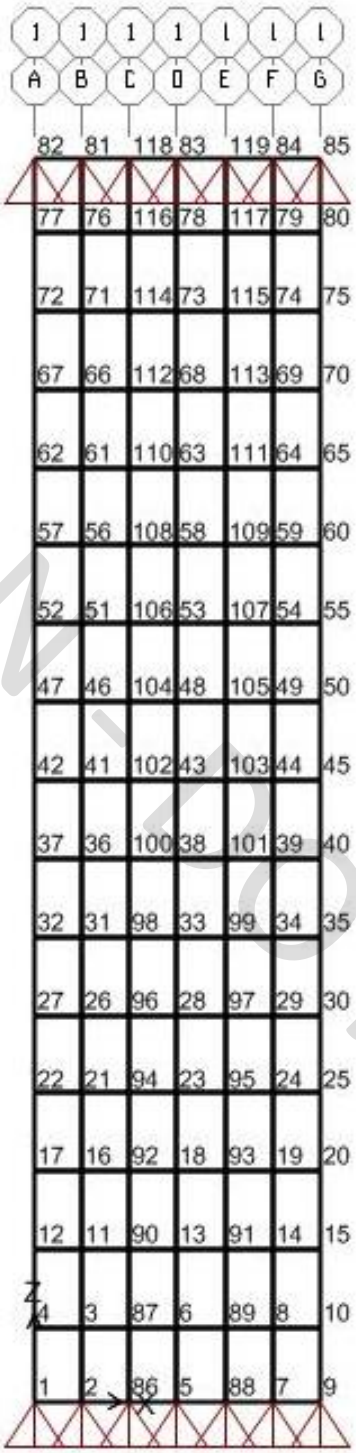

SAP17.1.1 Joints Labels KN, m, C

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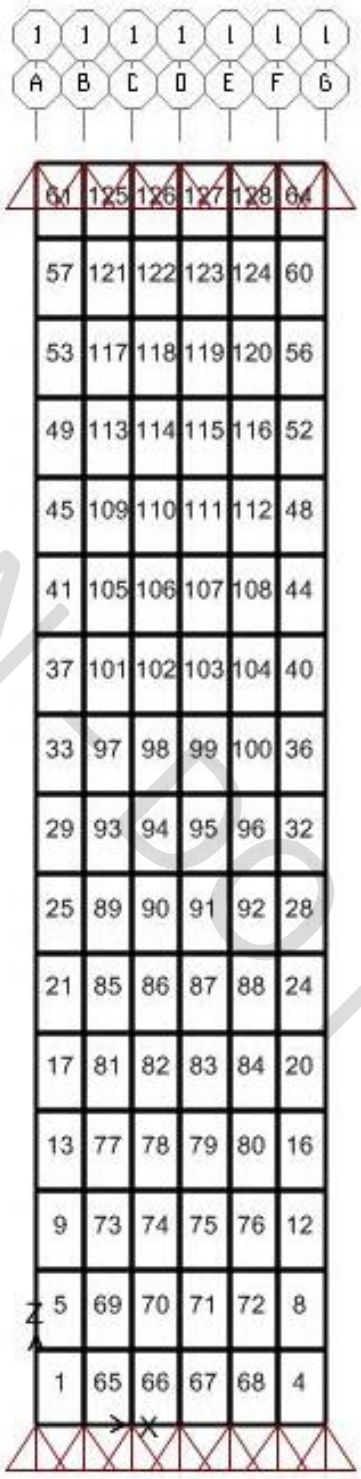

SAP17.1.1 Area Labels KN, m, C

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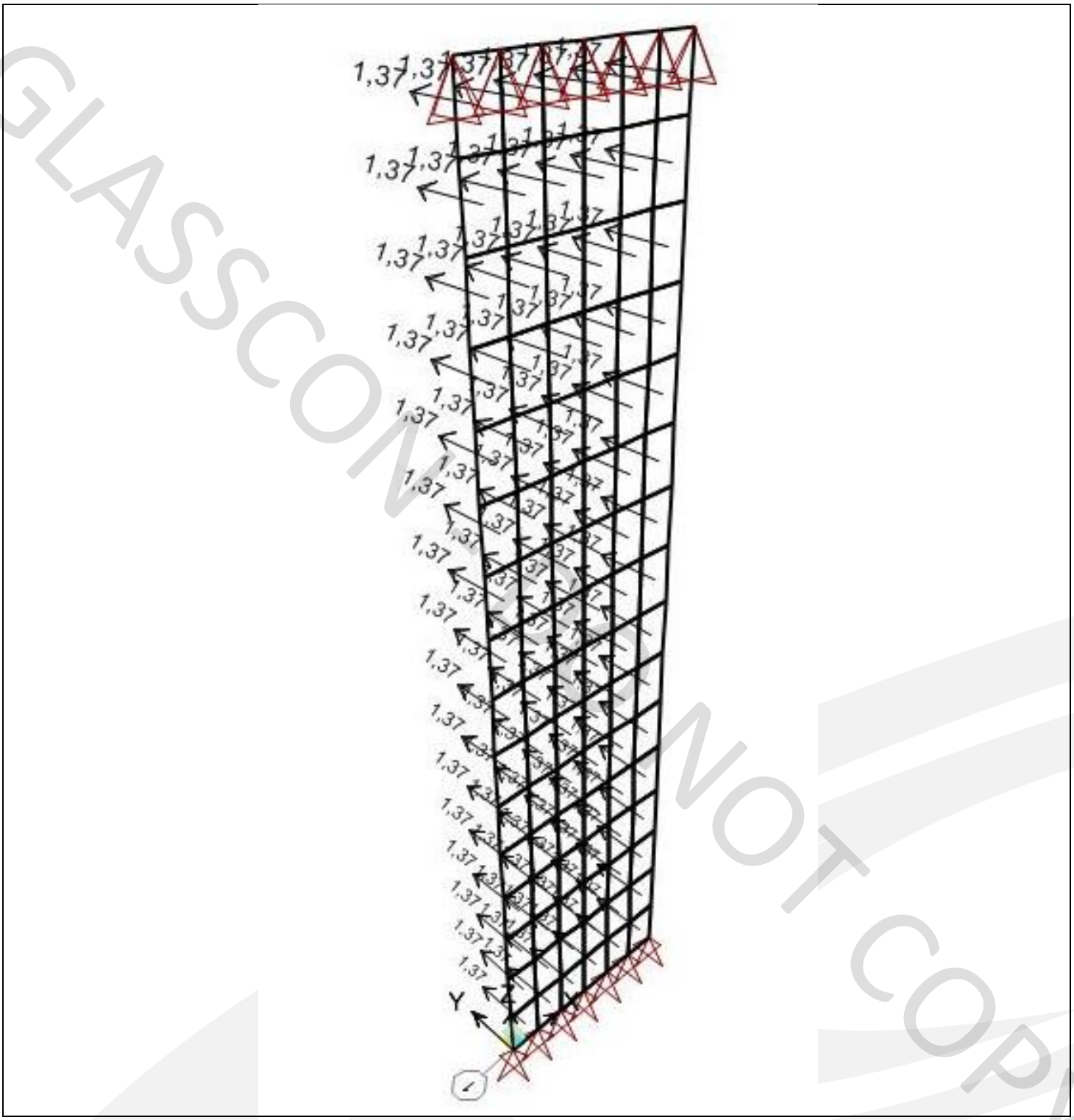

SAP17.1.1 Wind Loads KN, m, C

SAP2000 v17.1.1 6/4/15 22:55:50

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Table: Area Section Properties, Part 2 of 4

Section	InComp	CoordSys	Color	TotalWt KN	TotalMass KN-s2/m	F11Mod	F22Mod
T15-FT			Magenta	0,578	5,895E-02	1,000000	1,000000

Table: Area Section Properties, Part 3 of 4

Section	F12Mod	M11Mod	M22Mod	M12Mod	V13Mod	V23Mod	MMod	WMod
T15-FT	1,000000	1,000000	1,000000	1,000000	1,000000	1,000000	1,000	1,000

Table: Area Section Properties, Part 4 of 4

Section	GUID	Notes
T15-FT		Added 25/5/2015 11:39:29

Table: Joint Coordinates, Part 1 of 2

Joint	CoordSys	CoordType	XorR m	Y m	Z m	SpecialJt	GlobalX m
1	GLOBAL	Cartesian	0,00000	0,00000	0,00000	No	0,00000
2	GLOBAL	Cartesian	0,10000	0,00000	0,00000	No	0,10000
3	GLOBAL	Cartesian	0,10000	0,00000	0,15500	No	0,10000
4	GLOBAL	Cartesian	0,00000	0,00000	0,15500	No	0,00000
5	GLOBAL	Cartesian	0,30000	0,00000	0,00000	No	0,30000
6	GLOBAL	Cartesian	0,30000	0,00000	0,15500	No	0,30000
7	GLOBAL	Cartesian	0,50000	0,00000	0,00000	No	0,50000
8	GLOBAL	Cartesian	0,50000	0,00000	0,15500	No	0,50000
9	GLOBAL	Cartesian	0,60000	0,00000	0,00000	No	0,60000
10	GLOBAL	Cartesian	0,60000	0,00000	0,15500	No	0,60000
11	GLOBAL	Cartesian	0,10000	0,00000	0,32000	No	0,10000
12	GLOBAL	Cartesian	0,00000	0,00000	0,32000	No	0,00000
13	GLOBAL	Cartesian	0,30000	0,00000	0,32000	No	0,30000
14	GLOBAL	Cartesian	0,50000	0,00000	0,32000	No	0,50000
15	GLOBAL	Cartesian	0,60000	0,00000	0,32000	No	0,60000
16	GLOBAL	Cartesian	0,10000	0,00000	0,48500	No	0,10000
17	GLOBAL	Cartesian	0,00000	0,00000	0,48500	No	0,00000
18	GLOBAL	Cartesian	0,30000	0,00000	0,48500	No	0,30000
19	GLOBAL	Cartesian	0,50000	0,00000	0,48500	No	0,50000
20	GLOBAL	Cartesian	0,60000	0,00000	0,48500	No	0,60000
21	GLOBAL	Cartesian	0,10000	0,00000	0,65000	No	0,10000
22	GLOBAL	Cartesian	0,00000	0,00000	0,65000	No	0,00000
23	GLOBAL	Cartesian	0,30000	0,00000	0,65000	No	0,30000
24	GLOBAL	Cartesian	0,50000	0,00000	0,65000	No	0,50000
25	GLOBAL	Cartesian	0,60000	0,00000	0,65000	No	0,60000
26	GLOBAL	Cartesian	0,10000	0,00000	0,81500	No	0,10000
27	GLOBAL	Cartesian	0,00000	0,00000	0,81500	No	0,00000
28	GLOBAL	Cartesian	0,30000	0,00000	0,81500	No	0,30000
29	GLOBAL	Cartesian	0,50000	0,00000	0,81500	No	0,50000
30	GLOBAL	Cartesian	0,60000	0,00000	0,81500	No	0,60000
31	GLOBAL	Cartesian	0,10000	0,00000	0,98000	No	0,10000
32	GLOBAL	Cartesian	0,00000	0,00000	0,98000	No	0,00000
33	GLOBAL	Cartesian	0,30000	0,00000	0,98000	No	0,30000
34	GLOBAL	Cartesian	0,50000	0,00000	0,98000	No	0,50000
35	GLOBAL	Cartesian	0,60000	0,00000	0,98000	No	0,60000
36	GLOBAL	Cartesian	0,10000	0,00000	1,14500	No	0,10000
37	GLOBAL	Cartesian	0,00000	0,00000	1,14500	No	0,00000
38	GLOBAL	Cartesian	0,30000	0,00000	1,14500	No	0,30000

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39	GLOBAL	Cartesian	0,50000	0,00000	1,14500	No	0,50000
40	GLOBAL	Cartesian	0,60000	0,00000	1,14500	No	0,60000
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42	GLOBAL	Cartesian	0,00000	0,00000	1,31000	No	0,00000
43	GLOBAL	Cartesian	0,30000	0,00000	1,31000	No	0,30000
44	GLOBAL	Cartesian	0,50000	0,00000	1,31000	No	0,50000
45	GLOBAL	Cartesian	0,60000	0,00000	1,31000	No	0,60000
46	GLOBAL	Cartesian	0,10000	0,00000	1,47500	No	0,10000
47	GLOBAL	Cartesian	0,00000	0,00000	1,47500	No	0,00000
48	GLOBAL	Cartesian	0,30000	0,00000	1,47500	No	0,30000
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54	GLOBAL	Cartesian	0,50000	0,00000	1,64000	No	0,50000
55	GLOBAL	Cartesian	0,60000	0,00000	1,64000	No	0,60000
56	GLOBAL	Cartesian	0,10000	0,00000	1,80500	No	0,10000
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58	GLOBAL	Cartesian	0,30000	0,00000	1,80500	No	0,30000
59	GLOBAL	Cartesian	0,50000	0,00000	1,80500	No	0,50000
60	GLOBAL	Cartesian	0,60000	0,00000	1,80500	No	0,60000
61	GLOBAL	Cartesian	0,10000	0,00000	1,97000	No	0,10000
62	GLOBAL	Cartesian	0,00000	0,00000	1,97000	No	0,00000
63	GLOBAL	Cartesian	0,30000	0,00000	1,97000	No	0,30000
64	GLOBAL	Cartesian	0,50000	0,00000	1,97000	No	0,50000
65	GLOBAL	Cartesian	0,60000	0,00000	1,97000	No	0,60000
66	GLOBAL	Cartesian	0,10000	0,00000	2,13500	No	0,10000
67	GLOBAL	Cartesian	0,00000	0,00000	2,13500	No	0,00000
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81	GLOBAL	Cartesian	0,10000	0,00000	2,62000	No	0,10000
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85	GLOBAL	Cartesian	0,60000	0,00000	2,62000	No	0,60000
86	GLOBAL	Cartesian	0,20000	0,00000	0,00000	No	0,20000
87	GLOBAL	Cartesian	0,20000	0,00000	0,15500	No	0,20000
88	GLOBAL	Cartesian	0,40000	0,00000	0,00000	No	0,40000
89	GLOBAL	Cartesian	0,40000	0,00000	0,15500	No	0,40000
90	GLOBAL	Cartesian	0,20000	0,00000	0,32000	No	0,20000
91	GLOBAL	Cartesian	0,40000	0,00000	0,32000	No	0,40000
92	GLOBAL	Cartesian	0,20000	0,00000	0,48500	No	0,20000
93	GLOBAL	Cartesian	0,40000	0,00000	0,48500	No	0,40000
94	GLOBAL	Cartesian	0,20000	0,00000	0,65000	No	0,20000
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96	GLOBAL	Cartesian	0,20000	0,00000	0,81500	No	0,20000
97	GLOBAL	Cartesian	0,40000	0,00000	0,81500	No	0,40000
98	GLOBAL	Cartesian	0,20000	0,00000	0,98000	No	0,20000
99	GLOBAL	Cartesian	0,40000	0,00000	0,98000	No	0,40000
100	GLOBAL	Cartesian	0,20000	0,00000	1,14500	No	0,20000
101	GLOBAL	Cartesian	0,40000	0,00000	1,14500	No	0,40000
102	GLOBAL	Cartesian	0,20000	0,00000	1,31000	No	0,20000
103	GLOBAL	Cartesian	0,40000	0,00000	1,31000	No	0,40000
104	GLOBAL	Cartesian	0,20000	0,00000	1,47500	No	0,20000
105	GLOBAL	Cartesian	0,40000	0,00000	1,47500	No	0,40000

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106	GLOBAL	Cartesian	0,20000	0,00000	1,64000	No	0,20000
107	GLOBAL	Cartesian	0,40000	0,00000	1,64000	No	0,40000
108	GLOBAL	Cartesian	0,20000	0,00000	1,80500	No	0,20000
109	GLOBAL	Cartesian	0,40000	0,00000	1,80500	No	0,40000
110	GLOBAL	Cartesian	0,20000	0,00000	1,97000	No	0,20000
111	GLOBAL	Cartesian	0,40000	0,00000	1,97000	No	0,40000
112	GLOBAL	Cartesian	0,20000	0,00000	2,13500	No	0,20000
113	GLOBAL	Cartesian	0,40000	0,00000	2,13500	No	0,40000
114	GLOBAL	Cartesian	0,20000	0,00000	2,30000	No	0,20000
115	GLOBAL	Cartesian	0,40000	0,00000	2,30000	No	0,40000
116	GLOBAL	Cartesian	0,20000	0,00000	2,46500	No	0,20000
117	GLOBAL	Cartesian	0,40000	0,00000	2,46500	No	0,40000
118	GLOBAL	Cartesian	0,20000	0,00000	2,62000	No	0,20000
119	GLOBAL	Cartesian	0,40000	0,00000	2,62000	No	0,40000

Table: Joint Coordinates, Part 2 of 2

Joint	GlobalY	GlobalZ	GUID
	m	m	
1	0,00000	0,00000	
2	0,00000	0,00000	
3	0,00000	0,15500	
4	0,00000	0,15500	
5	0,00000	0,00000	
6	0,00000	0,15500	
7	0,00000	0,00000	
8	0,00000	0,15500	
9	0,00000	0,00000	
10	0,00000	0,15500	
11	0,00000	0,32000	
12	0,00000	0,32000	
13	0,00000	0,32000	
14	0,00000	0,32000	
15	0,00000	0,32000	
16	0,00000	0,48500	
17	0,00000	0,48500	
18	0,00000	0,48500	
19	0,00000	0,48500	
20	0,00000	0,48500	
21	0,00000	0,65000	
22	0,00000	0,65000	
23	0,00000	0,65000	
24	0,00000	0,65000	
25	0,00000	0,65000	
26	0,00000	0,81500	
27	0,00000	0,81500	
28	0,00000	0,81500	
29	0,00000	0,81500	
30	0,00000	0,81500	
31	0,00000	0,98000	
32	0,00000	0,98000	
33	0,00000	0,98000	
34	0,00000	0,98000	
35	0,00000	0,98000	
36	0,00000	1,14500	
37	0,00000	1,14500	
38	0,00000	1,14500	
39	0,00000	1,14500	
40	0,00000	1,14500	
41	0,00000	1,31000	
42	0,00000	1,31000	
43	0,00000	1,31000	
44	0,00000	1,31000	
45	0,00000	1,31000	
46	0,00000	1,47500	
47	0,00000	1,47500	
48	0,00000	1,47500	

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49	0,00000	1,47500
50	0,00000	1,47500
51	0,00000	1,64000
52	0,00000	1,64000
53	0,00000	1,64000
54	0,00000	1,64000
55	0,00000	1,64000
56	0,00000	1,80500
57	0,00000	1,80500
58	0,00000	1,80500
59	0,00000	1,80500
60	0,00000	1,80500
61	0,00000	1,97000
62	0,00000	1,97000
63	0,00000	1,97000
64	0,00000	1,97000
65	0,00000	1,97000
66	0,00000	2,13500
67	0,00000	2,13500
68	0,00000	2,13500
69	0,00000	2,13500
70	0,00000	2,13500
71	0,00000	2,30000
72	0,00000	2,30000
73	0,00000	2,30000
74	0,00000	2,30000
75	0,00000	2,30000
76	0,00000	2,46500
77	0,00000	2,46500
78	0,00000	2,46500
79	0,00000	2,46500
80	0,00000	2,46500
81	0,00000	2,62000
82	0,00000	2,62000
83	0,00000	2,62000
84	0,00000	2,62000
85	0,00000	2,62000
86	0,00000	0,00000
87	0,00000	0,15500
88	0,00000	0,00000
89	0,00000	0,15500
90	0,00000	0,32000
91	0,00000	0,32000
92	0,00000	0,48500
93	0,00000	0,48500
94	0,00000	0,65000
95	0,00000	0,65000
96	0,00000	0,81500
97	0,00000	0,81500
98	0,00000	0,98000
99	0,00000	0,98000
100	0,00000	1,14500
101	0,00000	1,14500
102	0,00000	1,31000
103	0,00000	1,31000
104	0,00000	1,47500
105	0,00000	1,47500
106	0,00000	1,64000
107	0,00000	1,64000
108	0,00000	1,80500
109	0,00000	1,80500
110	0,00000	1,97000
111	0,00000	1,97000
112	0,00000	2,13500
113	0,00000	2,13500
114	0,00000	2,30000
115	0,00000	2,30000

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116	0,00000	2,46500
117	0,00000	2,46500
118	0,00000	2,62000
119	0,00000	2,62000

Table: Connectivity - Area, Part 1 of 2

Area	NumJoints	Joint1	Joint2	Joint3	Joint4	Perimeter m	AreaArea m2
1	4	1	2	3	4	0,510000	0,015500
4	4	7	9	10	8	0,510000	0,015500
5	4	4	3	11	12	0,530000	0,016500
8	4	8	10	15	14	0,530000	0,016500
9	4	12	11	16	17	0,530000	0,016500
12	4	14	15	20	19	0,530000	0,016500
13	4	17	16	21	22	0,530000	0,016500
16	4	19	20	25	24	0,530000	0,016500
17	4	22	21	26	27	0,530000	0,016500
20	4	24	25	30	29	0,530000	0,016500
21	4	27	26	31	32	0,530000	0,016500
24	4	29	30	35	34	0,530000	0,016500
25	4	32	31	36	37	0,530000	0,016500
28	4	34	35	40	39	0,530000	0,016500
29	4	37	36	41	42	0,530000	0,016500
32	4	39	40	45	44	0,530000	0,016500
33	4	42	41	46	47	0,530000	0,016500
36	4	44	45	50	49	0,530000	0,016500
37	4	47	46	51	52	0,530000	0,016500
40	4	49	50	55	54	0,530000	0,016500
41	4	52	51	56	57	0,530000	0,016500
44	4	54	55	60	59	0,530000	0,016500
45	4	57	56	61	62	0,530000	0,016500
48	4	59	60	65	64	0,530000	0,016500
49	4	62	61	66	67	0,530000	0,016500
52	4	64	65	70	69	0,530000	0,016500
53	4	67	66	71	72	0,530000	0,016500
56	4	69	70	75	74	0,530000	0,016500
57	4	72	71	76	77	0,530000	0,016500
60	4	74	75	80	79	0,530000	0,016500
61	4	77	76	81	82	0,510000	0,015500
64	4	79	80	85	84	0,510000	0,015500
65	4	2	86	87	3	0,510000	0,015500
66	4	86	5	6	87	0,510000	0,015500
67	4	5	88	89	6	0,510000	0,015500
68	4	88	7	8	89	0,510000	0,015500
69	4	3	87	90	11	0,530000	0,016500
70	4	87	6	13	90	0,530000	0,016500
71	4	6	89	91	13	0,530000	0,016500
72	4	89	8	14	91	0,530000	0,016500
73	4	11	90	92	16	0,530000	0,016500
74	4	90	13	18	92	0,530000	0,016500
75	4	13	91	93	18	0,530000	0,016500
76	4	91	14	19	93	0,530000	0,016500
77	4	16	92	94	21	0,530000	0,016500
78	4	92	18	23	94	0,530000	0,016500
79	4	18	93	95	23	0,530000	0,016500
80	4	93	19	24	95	0,530000	0,016500
81	4	21	94	96	26	0,530000	0,016500
82	4	94	23	28	96	0,530000	0,016500
83	4	23	95	97	28	0,530000	0,016500
84	4	95	24	29	97	0,530000	0,016500
85	4	26	96	98	31	0,530000	0,016500
86	4	96	28	33	98	0,530000	0,016500
87	4	28	97	99	33	0,530000	0,016500
88	4	97	29	34	99	0,530000	0,016500

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89	4	31	98	100	36	0,530000	0,016500
90	4	98	33	38	100	0,530000	0,016500
91	4	33	99	101	38	0,530000	0,016500
92	4	99	34	39	101	0,530000	0,016500
93	4	36	100	102	41	0,530000	0,016500
94	4	100	38	43	102	0,530000	0,016500
95	4	38	101	103	43	0,530000	0,016500
96	4	101	39	44	103	0,530000	0,016500
97	4	41	102	104	46	0,530000	0,016500
98	4	102	43	48	104	0,530000	0,016500
99	4	43	103	105	48	0,530000	0,016500
100	4	103	44	49	105	0,530000	0,016500
101	4	46	104	106	51	0,530000	0,016500
102	4	104	48	53	106	0,530000	0,016500
103	4	48	105	107	53	0,530000	0,016500
104	4	105	49	54	107	0,530000	0,016500
105	4	51	106	108	56	0,530000	0,016500
106	4	106	53	58	108	0,530000	0,016500
107	4	53	107	109	58	0,530000	0,016500
108	4	107	54	59	109	0,530000	0,016500
109	4	56	108	110	61	0,530000	0,016500
110	4	108	58	63	110	0,530000	0,016500
111	4	58	109	111	63	0,530000	0,016500
112	4	109	59	64	111	0,530000	0,016500
113	4	61	110	112	66	0,530000	0,016500
114	4	110	63	68	112	0,530000	0,016500
115	4	63	111	113	68	0,530000	0,016500
116	4	111	64	69	113	0,530000	0,016500
117	4	66	112	114	71	0,530000	0,016500
118	4	112	68	73	114	0,530000	0,016500
119	4	68	113	115	73	0,530000	0,016500
120	4	113	69	74	115	0,530000	0,016500
121	4	71	114	116	76	0,530000	0,016500
122	4	114	73	78	116	0,530000	0,016500
123	4	73	115	117	78	0,530000	0,016500
124	4	115	74	79	117	0,530000	0,016500
125	4	76	116	118	81	0,510000	0,015500
126	4	116	78	83	118	0,510000	0,015500
127	4	78	117	119	83	0,510000	0,015500
128	4	117	79	84	119	0,510000	0,015500

Table: Connectivity - Area, Part 2 of 2

Area	Volume m3	CentroidX m	CentroidY m	CentroidZ m	GUID
1	0,000233	0,05000	0,00000	0,07750	
4	0,000233	0,55000	0,00000	0,07750	
5	0,000248	0,05000	0,00000	0,23750	
8	0,000248	0,55000	0,00000	0,23750	
9	0,000248	0,05000	0,00000	0,40250	
12	0,000248	0,55000	0,00000	0,40250	
13	0,000248	0,05000	0,00000	0,56750	
16	0,000248	0,55000	0,00000	0,56750	
17	0,000248	0,05000	0,00000	0,73250	
20	0,000248	0,55000	0,00000	0,73250	
21	0,000248	0,05000	0,00000	0,89750	
24	0,000248	0,55000	0,00000	0,89750	

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25	0,000248	0,05000	0,00000	1,06250
28	0,000248	0,55000	0,00000	1,06250
29	0,000248	0,05000	0,00000	1,22750
32	0,000248	0,55000	0,00000	1,22750
33	0,000248	0,05000	0,00000	1,39250
36	0,000248	0,55000	0,00000	1,39250
37	0,000248	0,05000	0,00000	1,55750
40	0,000248	0,55000	0,00000	1,55750
41	0,000248	0,05000	0,00000	1,72250
44	0,000248	0,55000	0,00000	1,72250
45	0,000248	0,05000	0,00000	1,88750
48	0,000248	0,55000	0,00000	1,88750
49	0,000248	0,05000	0,00000	2,05250
52	0,000248	0,55000	0,00000	2,05250
53	0,000247	0,05000	0,00000	2,21750
56	0,000247	0,55000	0,00000	2,21750
57	0,000248	0,05000	0,00000	2,38250
60	0,000248	0,55000	0,00000	2,38250
61	0,000233	0,05000	0,00000	2,54250
64	0,000233	0,55000	0,00000	2,54250
65	0,000233	0,15000	0,00000	0,07750
66	0,000233	0,25000	0,00000	0,07750
67	0,000233	0,35000	0,00000	0,07750
68	0,000233	0,45000	0,00000	0,07750
69	0,000248	0,15000	0,00000	0,23750
70	0,000248	0,25000	0,00000	0,23750
71	0,000248	0,35000	0,00000	0,23750
72	0,000248	0,45000	0,00000	0,23750
73	0,000248	0,15000	0,00000	0,40250
74	0,000248	0,25000	0,00000	0,40250
75	0,000248	0,35000	0,00000	0,40250
76	0,000248	0,45000	0,00000	0,40250
77	0,000248	0,15000	0,00000	0,56750
78	0,000248	0,25000	0,00000	0,56750
79	0,000248	0,35000	0,00000	0,56750
80	0,000248	0,45000	0,00000	0,56750
81	0,000248	0,15000	0,00000	0,73250
82	0,000248	0,25000	0,00000	0,73250
83	0,000248	0,35000	0,00000	0,73250
84	0,000248	0,45000	0,00000	0,73250
85	0,000248	0,15000	0,00000	0,89750
86	0,000248	0,25000	0,00000	0,89750
87	0,000248	0,35000	0,00000	0,89750
88	0,000248	0,45000	0,00000	0,89750
89	0,000248	0,15000	0,00000	1,06250
90	0,000248	0,25000	0,00000	1,06250
91	0,000248	0,35000	0,00000	1,06250
92	0,000248	0,45000	0,00000	1,06250
93	0,000248	0,15000	0,00000	1,22750
94	0,000248	0,25000	0,00000	1,22750
95	0,000248	0,35000	0,00000	1,22750
96	0,000248	0,45000	0,00000	1,22750
97	0,000248	0,15000	0,00000	1,39250
98	0,000248	0,25000	0,00000	1,39250
99	0,000248	0,35000	0,00000	1,39250
100	0,000248	0,45000	0,00000	1,39250
101	0,000248	0,15000	0,00000	1,55750
102	0,000248	0,25000	0,00000	1,55750
103	0,000248	0,35000	0,00000	1,55750
104	0,000248	0,45000	0,00000	1,55750
105	0,000248	0,15000	0,00000	1,72250
106	0,000248	0,25000	0,00000	1,72250
107	0,000248	0,35000	0,00000	1,72250
108	0,000248	0,45000	0,00000	1,72250
109	0,000248	0,15000	0,00000	1,88750
110	0,000248	0,25000	0,00000	1,88750
111	0,000248	0,35000	0,00000	1,88750

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112	0,000248	0,45000	0,00000	1,88750
113	0,000248	0,15000	0,00000	2,05250
114	0,000248	0,25000	0,00000	2,05250
115	0,000248	0,35000	0,00000	2,05250
116	0,000248	0,45000	0,00000	2,05250
117	0,000247	0,15000	0,00000	2,21750
118	0,000247	0,25000	0,00000	2,21750
119	0,000247	0,35000	0,00000	2,21750
120	0,000247	0,45000	0,00000	2,21750
121	0,000248	0,15000	0,00000	2,38250
122	0,000248	0,25000	0,00000	2,38250
123	0,000248	0,35000	0,00000	2,38250
124	0,000248	0,45000	0,00000	2,38250
125	0,000233	0,15000	0,00000	2,54250
126	0,000233	0,25000	0,00000	2,54250
127	0,000233	0,35000	0,00000	2,54250
128	0,000233	0,45000	0,00000	2,54250

Table: Load Pattern Definitions

LoadPat	DesignType	SelfWtMult	AutoLoad	GUID	Notes
DEAD	DEAD	1,000000			
W	WIND	0,000000	None		

Table: Combination Definitions, Part 1 of 3

ComboName	ComboType	AutoDesign	CaseType	CaseName	ScaleFactor	SteelDesign
ULS	Linear Add	No	Linear Static	DEAD	1,350000	None
ULS			Linear Static	W	1,500000	
SLS	Linear Add	No	Linear Static	DEAD	1,000000	None
SLS			Linear Static	W	1,000000	

Table: Combination Definitions, Part 2 of 3

ComboName	CaseName	ConcDesign	AlumDesign	ColdDesign
ULS	DEAD	None	None	None
ULS	W			
SLS	DEAD	None	None	None
SLS	W			

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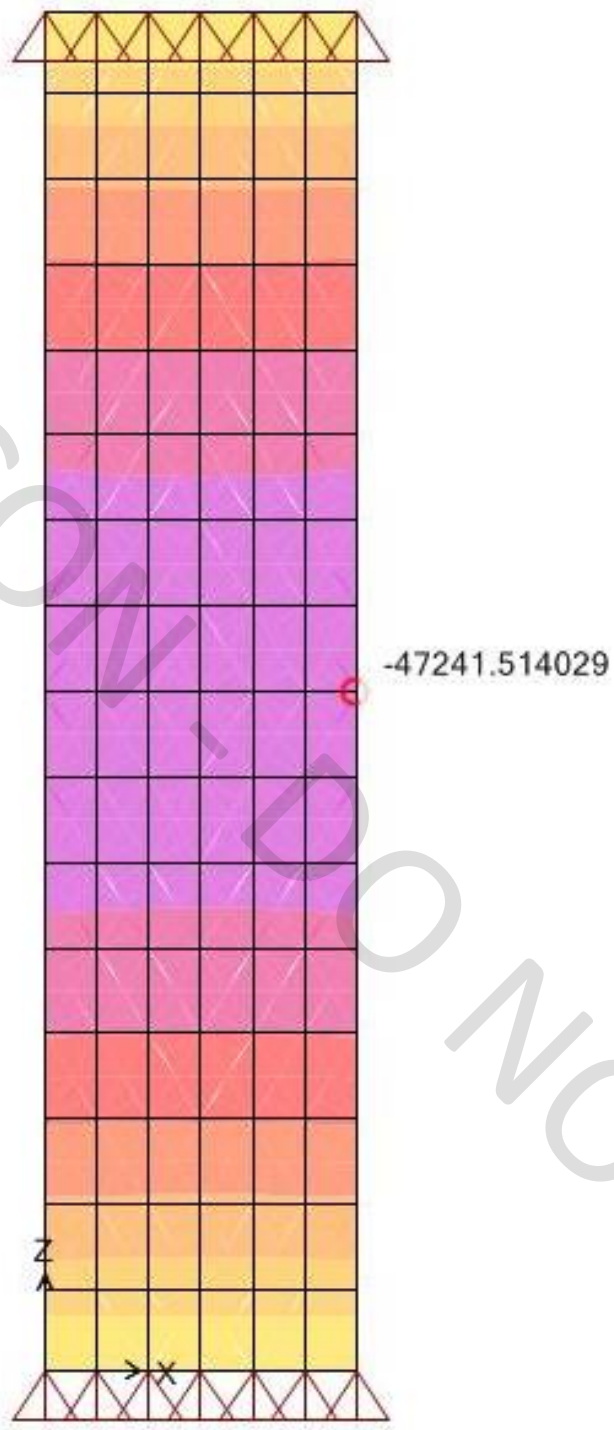

SAP17.1.1 Stresses S22 (ULS) KN, m, C

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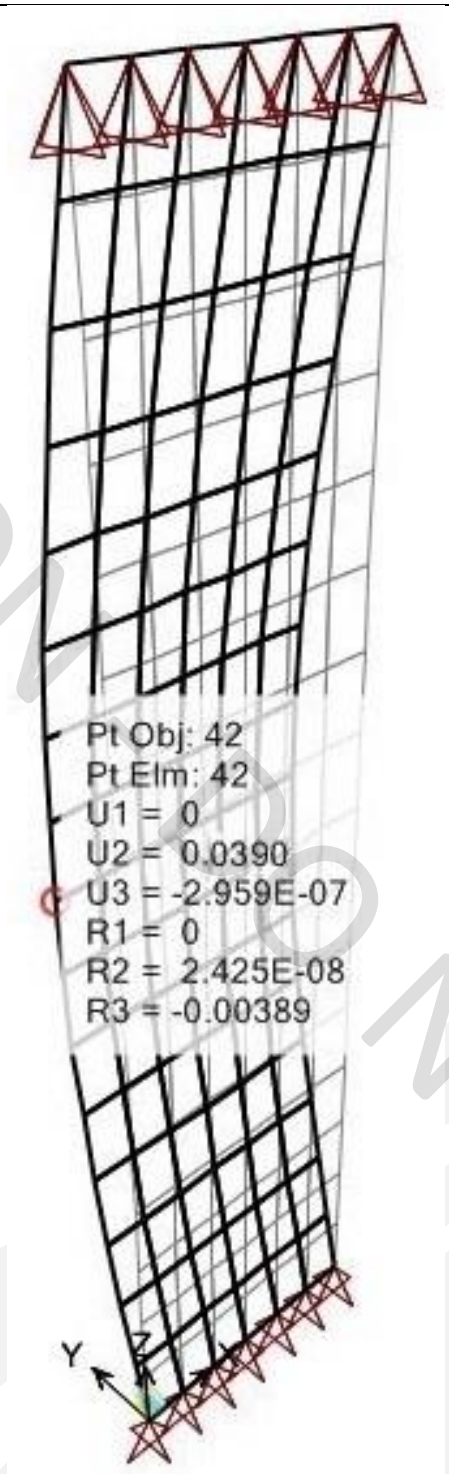

SAP17.1.1 Joint Displacements (SLS) KN, m, C

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