



SPA SIPs Wall Loading Capacity and Span Tables

DESIGN CRITERIA

1. MAX WIND PRESSURES ON EXTERNAL WALLS
2. SINGLE STOREY OR UPPER FLOOR OF 2 STOREY
3. DEFLECTION RATIO SPAN/240
4. DESIGN BASED ON DISCONTINUOUS SKINS FOR ALL HEIGHTS OVER 3000mm
5. WIND CLASSIFICATIONS BASED ON AS 4055 WIND LOADS FOR HOUSING

PANEL WITH 90MM BOX SPLINES	AS4055 WIND CLASSIFICATION					
	PANEL DESIGNATION					
WALL HEIGHT	115	145	165	215	265	315
2400	N3	N6	N6	N6	N6	N6
2700	N3	N6	N6	N6	N6	N6
3000	N2	N6	N6	N6	N6	N6
3600	N1	N3	N4	N6	N6	N6
4200	N1	N1	N3	N6	N6	N6
4800	N1	N1	N1	N4	N6	N6
5400	N1	N1	N1	N3	N6	N6
6000	N1	N1	N1	N2	N4	N6

PANEL WITH 90MM BOX SPLINES	MAXIMUM WIND PRESSURE - STRENGTH LIMIT STATE					
	PANEL DESIGNATION					
WALL HEIGHT	115	145	165	215	265	315
2400	1.04	2.51	3.72	8.38	15.91	27.03
2700	0.73	1.76	2.61	5.88	11.18	18.98
3000	0.53	1.28	1.90	4.29	8.15	13.84
3600	0.31	0.74	1.10	2.48	4.72	8.01
4200	0.19	0.47	0.69	1.56	2.97	5.04
4800	0.13	0.31	0.47	1.05	1.99	3.38
5400	0.09	0.22	0.33	0.74	1.40	2.37
6000	0.07	0.16	0.24	0.54	1.02	1.73



PANEL WITH MGP10 SPLINES	AS4055 WIND CLASSIFICATION					
	PANEL THICKNESS					
WALL HEIGHT	115	145	165	215	265	315
2400	N3	N5	N6	N6	N6	N6
2700	N2	N4	N5	N6	N6	N6
3000	N1	N4	N5	N6	N6	N6
3600	N1	N2	N3	N6	N6	N6
4200	N1	N1	N2	N4	N6	N6
4800	N1	N1	N1	N3	N5	N6
5400	N1	N1	N1	N3	N4	N6
6000	N1	N1	N1	N2	N3	N5

PANEL WITH MGP10 SPLINES	MAXIMUM WIND PRESSURE - STRENGTH LIMIT STATE					
	PANEL THICKNESS					
WALL HEIGHT	115	145	165	215	265	315
2400	1.25	2.94	4.64	11.55	23.19	40.83
2700	0.88	2.06	3.26	8.11	16.29	28.68
3000	0.64	1.50	2.38	5.91	11.88	20.91
3600	0.37	0.87	1.38	3.42	6.87	12.10
4200	0.23	0.55	0.87	2.15	4.33	7.62
4800	0.16	0.37	0.58	1.44	2.90	5.10
5400	0.11	0.26	0.41	1.01	2.04	3.58
6000	0.08	0.19	0.30	0.74	1.48	2.61

PANEL WITH LVL SPLINES	AS4055 WIND CLASSIFICATION					
	PANEL THICKNESS					
WALL HEIGHT	115	145	165	215	265	315
2400	N3	N6	N6	N6	N6	N6
2700	N3	N6	N6	N6	N6	N6
3000	N2	N6	N6	N6	N6	N6
3600	N1	N3	N4	N6	N6	N6
4200	N1	N1	N3	N6	N6	N6
4800	N1	N1	N1	N4	N6	N6
5400	N1	N1	N1	N3	N6	N6
6000	N1	N1	N1	N2	N4	N6



PANEL WITH LVL SPLINES	MAXIMUM WIND PRESSURE - STRENGTH LIMIT STATE					
	PANEL THICKNESS					
WALL HEIGHT	115	145	165	215	265	315
2400	1.41	3.32	5.25	13.06	26.23	46.18
2700	0.99	2.33	3.69	9.17	18.42	32.43
3000	0.72	1.70	2.69	6.69	13.43	23.64
3600	0.42	0.98	1.56	3.87	7.77	13.68
4200	0.26	0.62	0.98	2.44	4.89	8.62
4800	0.18	0.41	0.66	1.63	3.28	5.77
5400	0.12	0.29	0.46	1.15	2.30	4.05
6000	0.09	0.21	0.34	0.84	1.68	2.96

SECTION PROPERTIES FOR DESIGN

		115	145	165	215	265	315
OSB SIPS - NO SPLINES	ϕM_b (kNm)	1.66	2.93	3.98	7.30	11.62	16.94
	E _{ixx}	3.039E+10	7.145E+10	1.131E+11	2.81E+11	5.646E+11	9.939E+11
OSB SIPS - 90MM BOX SPLINES	ϕM_b (kNm)	2.57	1.63	2.04	3.26	4.77	6.57
	E _{ixx}	4.344E+10	1.046E+11	1.559E+11	3.538E+11	6.752E+11	1.15E+12
OSB SIPS - 150MM BOX SPLINES	ϕM_b (kNm)	0.74	1.18	1.35	1.75	2.16	2.57
	E _{ixx}	5.213E+10	1.266E+11	1.845E+11	4.024E+11	7.489E+11	1.254E+12
OSB SIPS - MGP SPLINES	ϕM_b (kNm)	0.50	0.89	1.21	2.22	3.53	5.15
	E _{ixx}	5.394E+10	1.268E+11	2.007E+11	4.988E+11	1.002E+12	1.764E+12
OSB SIPS - LVL SPLINES	ϕM_b (kNm)	1.65	2.92	3.97	7.28	11.60	16.91
	E _{ixx}	6.101E+10	1.434E+11	2.269E+11	5.641E+11	1.133E+12	1.995E+12
OSB SIPS - DOUBLE MGP SPLINES	ϕM_b (kNm)	1.01	1.78	2.42	4.43	7.06	10.29
	E _{ixx}	7.749E+10	1.822E+11	2.883E+11	7.165E+11	1.439E+12	2.534E+12
OSB SIPS - DOUBLE LVL SPLINES	ϕM_b (kNm)	3.31	5.85	7.94	14.57	23.19	33.81
	E _{ixx}	9.162E+10	2.154E+11	3.408E+11	8.472E+11	1.702E+12	2.996E+12



BOX BEAM LINTELS CAPACITY AND SPAN TABLES

DESIGN CRITERIA

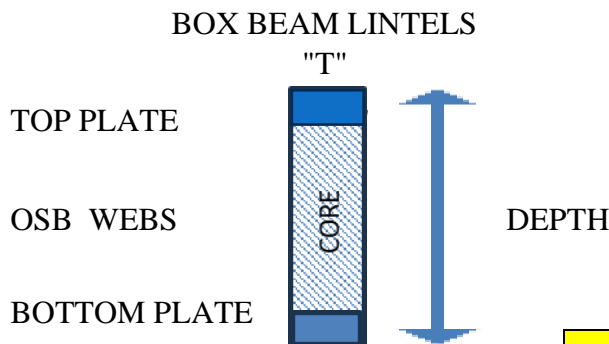
1. MAX ROOF COMBINATION WIND/GRAVITY PRESSURES LESS THAN 1.0
2. SINGLE STOREY OR UPPER FLOOR OF 2 STOREY
3. DEFLECTION RATIO SPAN/240
4. DESIGN BASED ON SPICED SKINS AND CONTINUOUS PLATES TOP AND BOTTOM
5. GRAVITY ROOF DEAD LOAD AT 90 kG/m²
6. SHEET ROOF WITH UPLIFT << THAN TILED ROOF GRAVITY

NOTE:

SPAN TABLES ARE FOR 115 WIDE REPRESENTING TYPICAL WALL PANEL ASSEMBLIES

OTHER PANEL THICKNESS ARE PROPORTIONATELY LARGER THAN THE ULTIMATE LOADS TABULATED.

ALL LOADS TABULATED ARE ULTIMATE LIMIT STATE.



BOX BEAM LINTELS MATERIAL PROPERTIES			
FLANGES	MGP10	M_b	111.78
E	10000	ϕ	0.8
G	670	ϕM_b	93.15
f_c	23	ϕ_s	0.6
f_s	4.5	ϕ_{s_v}	77.76

PROPERTIES FOR DESIGN		FLANGE DIMENSIONS		
	PANEL "T"	WIDTH	THICKNESS	AREA
PLATES	115	90	45	4050
SECTION PROPERTIES				
DEPTH	EFFECT DEPTH	I_{xx}	ϕM_b	ϕV_s
1200	1155	2701400625	89.424	77.76



PROPERTIES FOR DESIGN		FLANGE DIMENSIONS	
	PANEL "T"	WIDTH	THICKNESS
PLATES	115	90	45
SECTION PROPERTIES			
DEPTH	EFFECT DEPTH	I _{xx}	ϕMb
1200	1155	2701400625	89.424

Depth 300mm	Opening Width					
	1200	2400	2700	3000	3600	4200
Defl Control	Max. Line Load kN/m					
End Shear Control	243.84	30.48	21.41	15.61	9.03	5.69
Shear Deflection	32.40	16.20	14.40	12.96	10.80	9.26
	6.07E-05	7.58E-06	5.33E-06	3.88E-06	2.25E-06	1.41E-06
	Max Roof Span For 90 kG/m ² (meters)					
	36.00	18.00	16.00	14.40	12.00	10.29

Depth 450mm	Opening Width					
	1200	2400	2700	3000	3600	4200
Defl Control	Max. Line Load kN/m					
End Shear Control	615.09	76.89	54.00	39.37	22.78	14.35
Shear Deflection	48.60	24.30	21.60	19.44	16.20	13.89
	1.02E-04	1.28E-05	8.96E-06	6.53E-06	3.78E-06	2.38E-06
	Max Roof Span For 90 kG/m ² (meters)					
	54.00	27.00	24.00	21.60	18.00	15.43

Depth 600mm	Opening Width					
	1200	2400	2700	3000	3600	4200
Defl Control	Max. Line Load kN/m					
End Shear Control	1155.09	144.39	101.41	73.93	42.78	26.94
Shear Deflection	64.80	32.40	28.80	25.92	21.60	18.51
	1.44E-04	1.80E-05	1.26E-05	9.19E-06	5.32E-06	3.35E-06
	Max Roof Span For 90 kG/m ² (meters)					
	72.00	36.00	32.00	28.80	24.00	20.57

Depth 900mm	Opening Width					
	1200	2400	2700	3000	3600	4200
Defl Control	Max. Line Load kN/m					
End Shear Control	2741.34	342.67	240.67	175.45	101.53	63.94
Shear Deflection	97.20	48.60	43.20	38.88	32.40	27.77
	2.27E-04	2.84E-05	2.00E-05	1.45E-05	8.42E-06	5.30E-06
	Max Roof Span For 90 kG/m ² (meters)					
	108.00	54.00	48.00	43.20	36.00	30.86



**STRUCTURAL
PANELS
AUSTRALIA**

phone: 1300 301 885
 email: enquiries@structuralpanels.com.au
 web: www.structuralpanels.com.au

Depth 1200mm	Opening Width					
	1200	2400	2700	3000	3600	4200
Defl Control	Max. Line Load kN/m					
End Shear Control	5002.59	625.32	439.19	320.17	185.28	116.68
Shear Deflection	129.60	64.80	57.60	51.84	43.20	37.03
	3.11E-04	3.89E-05	2.73E-05	1.99E-05	1.15E-05	7.26E-06
	Max Roof Span For 90 kG/m ² (meters)					
	144.00	72.00	64.00	57.60	48.00	41.14