



SUPRAFRAME BRACING

Design reference



House Framing Solutions



Roofing & Walling Solutions



Rainwater Solutions



Structural Solutions



Fencing Solutions



Home Improvements

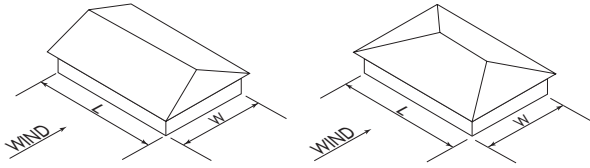


Customer Support



Wind Normal to Ridge of Hip or Gable Roof House

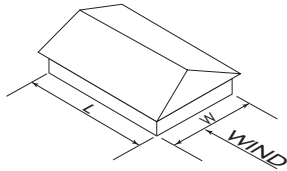
Horizontal Load per metre of House Length (L) (kN/m)



Roof Slope (degrees)

Building Width (m)	10°		15°		17.5°		20°		25°		30°	
	Single/Upper	Lower	Single/Upper	Lower	Single/Upper	Lower	Single/Upper	Lower	Single/Upper	Lower	Single/Upper	Lower
<4	1.1	3.2	1.1	3.2	1.1	3.2	1.1	3.3	1.4	3.7	1.6	3.9
5	1.1	3.2	1.1	3.2	1.1	3.2	1.1	3.3	1.5	3.8	1.7	4.1
6	1.1	3.2	1.1	3.2	1.1	3.2	1.2	3.3	1.5	3.9	1.8	4.2
7	1.1	3.2	1.1	3.2	1.2	3.3	1.3	3.4	1.7	4.0	2.0	4.3
8	1.1	3.2	1.1	3.2	1.2	3.4	1.4	3.5	1.8	4.1	2.1	4.4
9	1.1	3.2	1.1	3.3	1.3	3.4	1.5	3.6	1.9	4.3	2.2	4.5
10	1.1	3.2	1.1	3.3	1.3	3.4	1.5	3.7	2.1	4.4	2.3	-
11	1.1	3.2	1.2	3.3	1.3	3.5	1.6	3.8	2.2	4.5	2.4	-
12	1.1	3.2	1.2	3.3	1.4	3.6	1.7	3.9	2.3	4.6	2.6	-

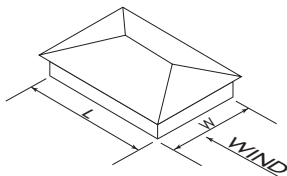
Wind Parallel to Ridge of Gable Roof House



Roof Slope (degrees)

Building Width (m)	10°		15°		17.5°		20°		25°		30°	
	Single/Upper	Lower	Single/Upper	Lower	Single/Upper	Lower	Single/Upper	Lower	Single/Upper	Lower	Single/Upper	Lower
<4	4.2	11.3	4.5	11.5	4.6	11.6	4.7	11.8	5.0	12.0	5.3	12.3
5	5.6	14.8	6.0	15.2	6.2	15.4	6.4	15.6	6.8	16.0	7.3	16.5
6	7.0	18.4	7.6	18.9	7.9	19.2	8.2	19.5	8.8	20.1	9.5	20.8
7	8.5	22.0	9.3	22.8	9.7	23.2	10.1	23.6	11.0	24.4	12.0	25.4
8	10.1	25.7	11.1	26.7	11.6	27.3	12.2	27.8	13.3	28.9	14.6	30.2
9	12.1	30.5	13.4	31.8	14.1	32.5	14.8	33.2	16.3	34.7	18.0	36.3
10	14.2	35.3	15.8	37.0	16.7	37.8	17.6	38.7	19.5	40.6	21.6	-
11	16.3	40.2	18.4	42.3	19.5	43.3	20.6	44.5	23.0	46.8	25.6	-
12	18.6	45.2	21.1	47.7	22.4	49.0	23.8	50.3	26.6	53.2	29.8	-

Wind Parallel to Ridge of Hip Roof House



Roof Slope (degrees)

Building Width (m)	10°		15°		17.5°		20°		25°		30°	
	Single/Upper	Lower	Single/Upper	Lower	Single/Upper	Lower	Single/Upper	Lower	Single/Upper	Lower	Single/Upper	Lower
<4	3.6	10.6	3.8	10.8	4.0	11.1	4.4	11.4	4.9	11.9	5.1	12.1
5	4.6	13.8	4.9	14.1	5.3	14.5	5.7	14.9	6.4	15.6	6.8	15.9
6	5.7	17.1	6.1	17.4	6.6	17.9	7.1	18.5	8.0	19.3	8.5	19.8
7	6.8	20.3	7.3	20.8	7.9	21.4	8.6	22.1	9.8	23.2	10.5	23.9
8	7.8	23.5	8.5	24.2	9.3	24.9	10.2	25.8	11.6	27.2	12.5	28.1
9	9.2	27.6	10.0	28.4	10.9	29.3	12.1	30.4	13.8	32.2	14.9	33.1
10	10.6	31.7	11.5	32.7	12.6	33.7	14.0	35.1	16.1	37.1	17.3	-
11	11.9	35.8	13.1	36.9	14.3	38.2	15.9	39.8	18.3	42.1	19.8	-
12	13.3	39.9	14.6	41.2	16.1	42.7	17.9	44.5	20.7	47.2	22.3	-

- Note:**
1. The table is suitable for maximum wall heights of 2700 mm. For 3000 mm high walls increase wind forces by 15%
 2. For W28N, multiply forces in table by 0.72
 3. For W41N, multiply forces in table by 1.54
 4. It is possible to interpolate within the table.
 5. Shaded areas apply to single storey construction only.
 6. This table is derived from AS 4055 - 1992 'Wind Loads for Housing'.

BRACING

Wind Normal to Ridge of Hip or Gable Roof House

Bracing Type	A	B	C	D
Strap Size (mm)	25 x 1.0	25 x 1.2	32 x 1.2	32 x 1.6

Racking Resistance Force (kN) and Tie Down Requirements

Wall Height (mm)	Strap Bracing Type	Wall Panel Length (mm)								
		1200			1800			2400		
		1 screw	2 screws	3 screws	1 screw	2 screws	3 screws	1 screw	2 screws	3 screws
2400	A	1.64	1.09	1.25	0.86	1.46	1.68	1.01	1.72	1.97
	B	0.71	1.25	1.50	0.96	1.68	2.10	1.13	1.97	2.40
	C	0.66	1.40	2.17	0.88	1.90	2.92	1.04	2.30	3.43
	D	0.87	1.95	2.68	1.17	2.61	3.60	1.38	3.08	4.24
2700	A	0.58	0.99	1.13	0.79	1.35	1.55	0.95	1.60	1.86
	B	0.64	1.13	1.40	0.88	1.55	1.90	1.13	1.86	2.30
	C	0.60	1.30	1.97	0.82	1.70	2.69	0.98	2.10	3.22
	D	0.79	1.77	2.43	1.08	2.41	3.32	1.30	2.89	3.98
3000	A	0.53	0.90	1.04	0.74	1.25	1.44	0.89	1.52	1.74
	B	0.59	1.04	1.30	0.82	1.44	1.70	0.99	1.74	2.10
	C	0.54	1.20	1.80	0.76	1.60	2.50	0.92	2.00	3.03
	D	0.72	1.62	2.22	1.00	2.24	3.08	1.22	2.72	3.74


Note: 1. Screws are #10-16 x 16 wafer heads.

2. Refer to design manual for strap connection details and the tie down details.

3. The above racking resistance forces allow for one Ø6 mm hole in each strap for tensioning purposes.

4. Screw must go through strap, stud and plate.

Tie down notes:

 Use on TITACON (or equivalent) & Ø32 x 2.5 washer

 Use on M10 CHEMSET & 50 x 50 x 3.0 washer

 Use on M12 Chemset & tie-down bracket or strap

Sheet Bracing

Sheet Bracing Type	Stud Spacing (mm)	Racking Capacity kN/m	
		0.6 mm Stud	0.75 mm Stud
2400mm Wall Height			
Plywood F8/7 mm	450	-	2.85
Panel Rib 0.42 BMT G550	450	-	3.00
Sheet Steel BMT G550	450	-	3.66
0.40BMT G300	450	-	4.24
0.60BMT G550	450	-	3.45
2700mm Wall Height			
Plasterboard - single sided	600	0.5	0.5
Plasterboard - double sided	600	1.0	1.0
Hardibrace 5.5 mm, single sided	450	4.0	4.0
	600	3.6	4.0
Harditex, 7.5 mm single sided	600	2.4	2.5
Harditex, 6 mm single sided	600	2.3	2.3
Villaboard, 6 mm single sided	600	2.8	3.0
Villaboard, 7.5 mm single sided	600	3.7	3.7

Note: Refer to the Design Manual for Fastener Spacings and Tie Down specifications.

Maximum Spacing of Bracing Walls (m)

	Building width (m)	Roof slope				
		10°	15°	17.5°	20°	25°
W33N	<4	-	-	-	-	7.8
	5 - 16	-	-	-	-	-
W41N	<4	7.4	7.5	7.0	6.4	5.1
	5	-	-	8.6	7.9	6.0
	6	-	-	-	8.8	6.7
	7	-	-	-	-	7.1
	8	-	-	-	-	7.6
	9	-	-	-	-	7.9
	10	-	-	-	-	8.4
	11	-	-	-	-	8.7
	12 - 16	-	-	-	-	-

Note: 1. Maximum wall spacing for W28N is 9 m in all cases.

2. Bracing wall spacings in shaded areas are limited to 9.0 m.

3. It is permissible to interpolate within the table.

4. For W33N and W41N, where the roof slope is greater than 25°, refer to the Design Manual.

