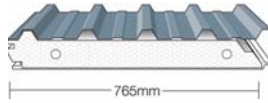




VERSALINK SPAN TABLES



In accordance with: - Wind actions: AS/NZS 1170.2:2002 - Clauses 5.3, 5.4 and D4.
Imposed load on roof: AS/NZS 1170.1:2002 – Clause 3.5.

Wind Class in accordance with AS4055-2006	Panel Core Thickness	Maximum Single Span (mm)		
		Fully Enclosed Room	One Side Open	Two/Three Sides Open
N1 (W28N)	50mm	4512	4512	4512
	75mm	5910	5590	6208
	100mm	6690	6330	7060
	125mm	7600	7190	8010
N2 (W33N)	50mm	4210	4030	4450
	75mm	4900	4690	5180
	100mm	5550	5320	5870
	125mm	6310	6040	6660
N3 (W41N)	50mm	3320	3170	3490
	75mm	3870	3690	4060
	100mm	4380	4170	4600
	125mm	4970	4740	5220
N4 (W50N)	50mm	2700	2580	2830
	75mm	3140	3000	3300
	100mm	3560	3400	3740
	125mm	4040	3860	4240
C1 (W41C)	50mm	3180	2520	3330
	75mm	3700	2940	3880
	100mm	4190	3330	4390
	125mm	4750	3780	4990
C2 (W50C)	50mm	2580	2060	2710
	75mm	3000	2390	3150
	100mm	3400	2710	3570
	125mm	3860	3080	4060
C3 (W60C)	50mm	2110	1690	2210
	75mm	2450	1970	2580
	100mm	2780	2230	2920
	125mm	3160	2530	3320

Fixing Detail:

1. Fixed to support member with 14g self-drilling screws at every alternate crest
2. Typically 4 screws to each panel, at each support.

Cyclonic Fixing:

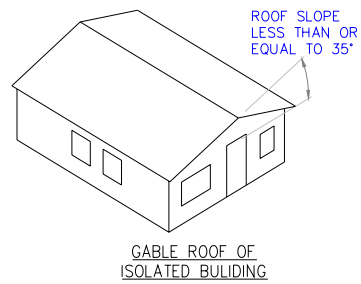
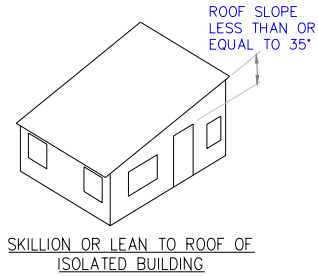
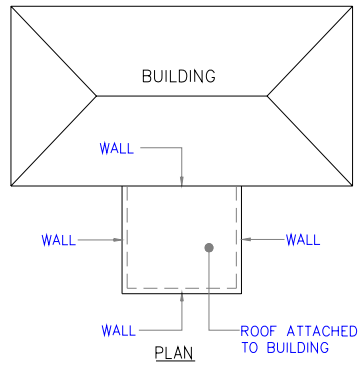
1. Fixed to support member with 14g self-drilling screws at every alternate crest with cyclone assemblies or washers suitable to the profile shape of the top sheet.
2. Typically 4 screws and cyclone assemblies or washers to each panel at each support.
3. Uplift load capacity of fixing to supporting members shall be based on engineering advice.
4. Max overhang is 25% of the allowable span.

NOTES:

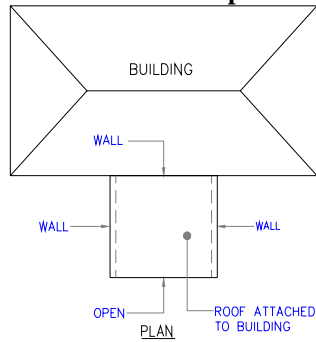
1. All windows included in the building shall be rated N1, N2, N3, N4, C1, C2, C3, in accordance with AS 2047
2. All glass included in the building shall be rated N1, N2, N3, N4, C1, C2, C3, in accordance with AS 1288.
3. For buildings in cyclonic wind regions, the building envelope (windows, doors and cladding) shall be capable of resisting impact loading equivalent to a 4 kg piece of timber of 100 mm x 50 mm cross-section, projected at 15 m/s at any angle in accordance with Clause 5.3.2, AS/NZS 1170.2:2002.



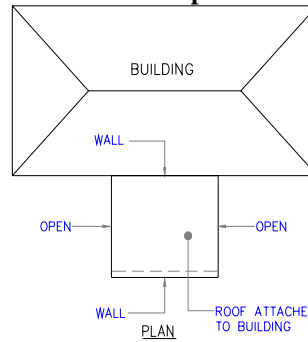
Full Enclosed Room



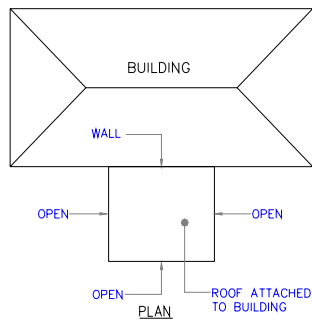
One-Side Open



Two-Sides Open



Three-Sides Open





This span table and structural engineering certification is based on:

1. Referenced Building Code of Australia [1] and Australian Standards [2] to [11];
2. Referenced design manual [12] and research report [13];
3. Structural load testing; and
4. Structural analysis and design calculations held on file.

The adequacy of the structural insulated roof panels for cyclonic wind loading is based on:

- 1) Documented adequacy of the performance of ribbed type roofing profiles when all crests are fastened with cyclone assemblies or washers when the region around the fastener (self-drilling screws) is free of large stress concentrations [13].
- 2) Fatigue behaviour is very much dependent on the local plastic buckling deformation load on the fastener [13]. The imposed load on a fastener for the recommended spans is restricted to below the local plastic buckling deformation load including a factor of safety.
- 3) Interpretation of recommendations in AS/NZS 4600:2005 [9] for fatigue including screw connections subject to cyclic loading
- 4) Evidence from field or site in cyclonic wind regions in the last 20 years that structural insulated roof panels installed to supporting members in accordance with recommendations in this document have performed adequately [14].

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Registered Professional Engineer of Queensland - RPEQ, Membership Number 7652
Principal Engineer - Innovative Construction Engineering Solutions Pty Ltd

References:

- [1] Building code of Australia (BCA), Volume Two, Australian Building Codes Board, ACT 2601.
- [2] Australian/New Zealand Standard AS/NZS1170.0:2002 Structural design actions – General principles.
- [3] Australian/New Zealand Standard AS/NZS1170.0 Supp 1:2002 Structural design actions – General principles – Commentary (Supplement to AS/NZS 1170.0:2002).
- [4] Australian/New Zealand Standard AS/NZS1170.1:2002 Structural design actions – Permanent, imposed and other actions.
- [5] Australian/New Zealand Standard AS/NZS1170.1 Supp 1:2002 Structural design actions – Permanent, imposed and other actions – Commentary (Supplement to AS/NZS 1170.1:2002).
- [6] Australian/New Zealand Standard AS/NZS1170.2:2002 Structural design actions, Part 2: Wind actions.
- [7] Australian/New Zealand Standard AS/NZS1170.2:2002 Structural design actions – Wind actions – Commentary (Supplement to AS/NZS 1170.2:2002).
- [8] Australian Standard AS 4055-2006 Wind loads for housing.
- [9] Australian/New Zealand Standard AS/NZS 4600:2005 Cold-formed steel structures
- [10] Australian Standard AS 3566.1 – 2002 Self-drilling screws for the building and construction industries, Part 1: General requirements and mechanical properties
- [11] Australian Standard AS 3566.2 – 2002 Self-drilling screws for the building and construction industries, Part 2: Corrosion resistance requirements
- [12] Gregory J. Hancock, Design of Cold-Formed Steel Structures (To Australian/New Zealand Standard AS/NZS 4600:2005), Australian Steel Institute, Fourth Edition, 2007
- [13] M. Mahendran, Fatigue behaviour of light gauge steel roof claddings under simulated cyclonic wind forces. Technical Report No. 39, February 1993, James Cook Cyclone Structural Testing Station.
- [14] Discussions and communications with APS Versiclad.