



3, Berriweri Place, Casula, NSW 2170, Australia
Ph: 02 9821 2199 Fax 02 9601 1152
Email: info@versiclad.com.au
www.versiclad.com.au

24th August 2021

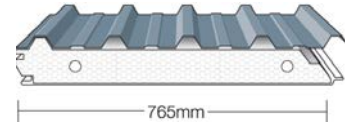
Ref: VERSI-48/VERSALINK765/WLST-V1

- Document Control:**
1. This is a CONTROLLED DOCUMENT and for use only by the recipient to whom it is submitted by Versiclad Pty Ltd.
 2. This document is uncontrolled when printed.
 3. This document has total = 6-off sheets
 3. This document dated **24th August 2021** supersedes all previous document(s).

CONTROLLED DOCUMENT for use only by the recipient to whom it is submitted by Versiclad Pty Ltd. This document is uncontrolled when printed. Total = 6-off sheets.

VERSI-48_VERSALINK765_WindLoadSpanTable_V1_CONTROLLED&Signed_240821.doc / pdf

Sheet 1 of 6



VERSALINK 765 WIND LOAD SPAN TABLE

In accordance with: - Wind actions: AS/NZS 1170.2 - Clauses 5.3, 5.4, and D4;
 AS 4055.

Imposed load on roof: AS/NZS 1170.1 – Clause 3.5: 1.1 kN
 (110kg) per panel, concentrated load for typical foot-traffic.

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

Notes:

- This Table is only applicable for Structural Insulated Roof Panels (SIRP) manufactured with insulation butt-joint position off-centre. Off-centre means a full piece of 2500 mm length insulation installed in the middle of the panel. Same as in SIRP used in structural load tests.**
- This table shall be studied in conjunction with all the information included in this document on: Sheets 1, 2, 3, 4, 5, 6.**

CONTROLLED DOCUMENT for use only by the recipient to whom it is submitted by Versiclad Pty Ltd. This document is uncontrolled when printed. Total = 6-off sheets.

VERSI-48_VERSALINK765_WindLoadSpanTable_V1_CONTROLLED&Signed_240821.doc / pdf

Fixing Detail:

1. Fixed to support member with 14g self-drilling screws at every crest
2. Typically screws on all crests of a panel, 4-off screws to each panel, at each support.
3. Uplift load capacity of fixing to supporting members shall be based on engineering advice: - 1) Screw pull-out; and 2) Screw pull-over; and 3) Depth of penetration in to supporting members.

Cyclonic Fixing:

1. Fixed to support member with 14g self-drilling screws at every crest with cyclone assemblies or washers suitable to the profile shape of the top sheet.
2. Typically 4-off 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: - 1) Screw pull-out; and 2) Screw pull-over; and 3) Depth of penetration in to supporting members.

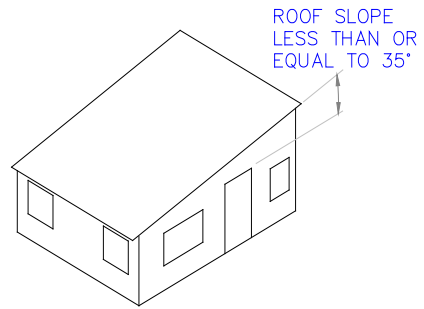
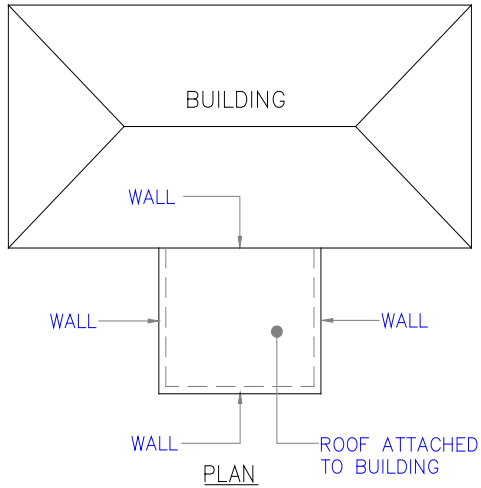
Panel Overhang:

1. Maximum span overhang in direction of panel length = 25% of allowable span; and Back-span shall be at least 2 x cantilever span – *prior to construction & installation, in case this statement is not clear, this statement shall be clarified with VERSICLAD.*
2. Maximum side overhang in direction of panel width = 300 mm

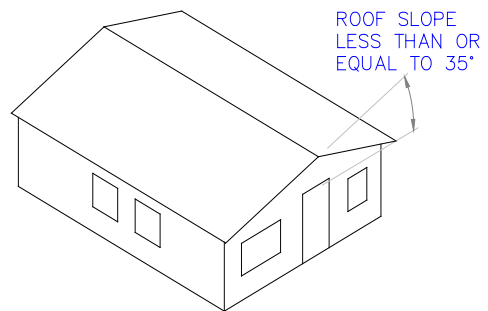
NOTES applicable to Span Tables:

1. All windows included in the building shall be rated N1, N2, N3, N4, C1, C2, C3, in accordance with AS 2047 (latest revision): - Windows and external glazed doors in buildings.
2. All glass included in the building shall be rated N1, N2, N3, N4, C1, C2, C3, in accordance with AS 1288 (latest revision): – Glass in buildings – Selection and Installation.
3. For buildings in cyclonic wind regions, the building envelope (windows, doors and cladding) shall be capable of resisting impact loading from windborne debris in accordance with Clause 5.3.2 – Openings and Clause 2.5.8 – Impact Loading from Windborne Debris, in AS/NZS 1170.2.
4. Performance of the installed VERSALINK structural insulated roof panels due to thermal expansion and contraction shall be verified by the Architect or Building Designer based on local weather and climate.

Full Enclosed Room

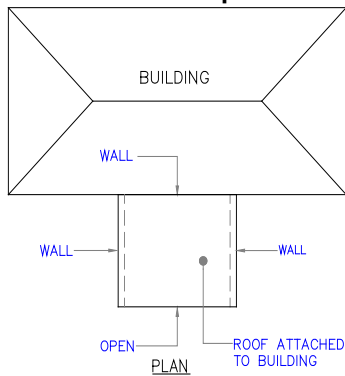


SKILLION OR LEAN TO ROOF OF ISOLATED BUILDING

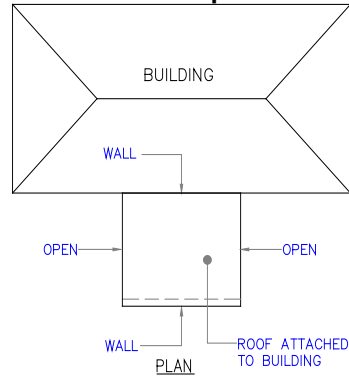


GABLE ROOF OF ISOLATED BUILDING

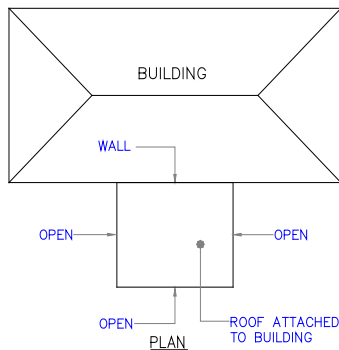
One-Side Open



Two-Sides Open



Three-Sides Open



CONTROLLED DOCUMENT for use only by the recipient to whom it is submitted by Versiclad Pty Ltd. This document is uncontrolled when printed. Total = 6-off sheets.

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 corrugated roofing when alternate 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 [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].



Kishore Honavar

MIEAust CPEng - Chartered Professional Engineer 733503
National Engineering Register (NER) – Engineers Australia. APEC Engineer IntPE(Aus)
Registered Professional Engineer of Queensland – RPEQ 7652
Registered Professional Engineer in Victoria – Reg No. PE0003690
Director & Principal Engineer - Innovative Construction Engineering Solutions Pty Ltd

CONTROLLED DOCUMENT for use only by the recipient to whom it is submitted by Versiclad Pty Ltd. This document is uncontrolled when printed. Total = 6-off sheets.

VERSI-48_VERSALINK765_WindLoadSpanTable_V1_CONTROLLED&Signed_240821.doc / pdf

Sheet 5 of 6

References:

- [1] National Construction Code, Volume Two, Building Code of Australia. Australian Building Codes Board, ACT 2601.
 - [2] Australian/New Zealand Standard AS/NZS1170.0 Structural design actions – General principles.
 - [3] Australian/New Zealand Standard AS/NZS1170.0 Supp 1 (R2016) Structural design actions – General principles – Commentary (Supplement to AS/NZS 1170.0).
 - [4] Australian/New Zealand Standard AS/NZS1170.1 Structural design actions – Permanent, imposed and other actions.
 - [5] Australian/New Zealand Standard AS/NZS1170.1 Supp 1 Structural design actions – Permanent, imposed and other actions – Commentary (Supplement to AS/NZS 1170.1).
 - [6] Australian/New Zealand Standard AS/NZS1170.2 Structural design actions, Part 2: Wind actions.
 - [7] Australian/New Zealand Standard AS/NZS1170.2 Structural design actions –Wind actions – Commentary (Supplement to AS/NZS 1170.2).
 - [8] Australian Standard AS 4055 Wind loads for housing.
 - [9] Australian/New Zealand Standard AS/NZS 4600 Cold-formed steel structures
 - [10] Australian Standard AS 3566.1, Self-drilling screws for the building and construction industries, Part 1: General requirements and mechanical properties.
 - [11] Australian Standard AS 3566.2 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), Australian Steel Institute, Fourth Edition.
 - [13] M. Mahendran, Fatigue behaviour of corrugated roofing under cyclic wind loading, Technical Report No. 35, Cyclone Testing Station.
 - [14] Discussions and communications with Versiclad Pty Ltd.
-