



InsulRoof EPS-FR Core Grade SL - Roof Span Table for Housing Application

Fixing to 1.5 BMT G450 Steel Framing

Non-Cyclonic

		Panel Thickness																	
Wind Class	ULS Design Wind Pressure (kPa)	50 mm			75 mm			100 mm			125 mm			150 mm			200 mm		
		Max Span (m)		Max. Cantilever (mm)	Max Span (m)		Max. Cantilever (mm)	Max Span (m)		Max. Cantilever (mm)	Max Span (m)		Max. Cantilever (mm)	Max Span (m)		Max. Cantilever (mm)	Max Span (m)		Max. Cantilever (mm)
		Single Span	Multi-Span		Single Span	Multi-Span		Single Span	Multi-Span		Single Span	Multi-Span		Single Span	Multi-Span		Single Span	Multi-Span	
N1	-0.97	4.7	5.5	450	5.6	6.6	900	6.5	7.5	1200	7.3	8.3	1600	7.9	9.1	1800	9.1	9.9	2100
N2	-1.34	4.0	4.4	450	4.7	5.5	900	5.5	6.3	1200	6.1	7.0	1600	6.6	7.6	1800	7.6	8.8	2100
N3	-2.1	3.1	2.7	450	3.5	4.1	900	4.3	4.9	1200	4.8	5.5	1600	5.2	6.0	1800	6.0	6.9	2100
N4	-3.13	2.3	1.8	450	2.6	2.7	900	3.4	3.6	1200	3.9	4.4	1600	4.2	4.8	1800	4.8	4.9	2100
N5	-4.60	1.5	-	450	1.9	1.8	850	2.5	2.4	1150	3	3.1	1400	3.5	3.3	1450	4	3.3	1450

Cyclonic

		Panel Thickness																	
Wind Class	ULS Design Wind Pressure (kPa)	50 mm			75 mm			100 mm			125 mm			150 mm			200 mm		
		Max Span (m)		Max. Cantilever (mm)	Max Span (m)		Max. Cantilever (mm)	Max Span (m)		Max. Cantilever (mm)	Max Span (m)		Max. Cantilever (mm)	Max Span (m)		Max. Cantilever (mm)	Max Span (m)		Max. Cantilever (mm)
		Single Span	Multi-Span		Single Span	Multi-Span		Single Span	Multi-Span		Single Span	Multi-Span		Single Span	Multi-Span		Single Span	Multi-Span	
C1	-2.78	2.6	2.0	450	3.2	3.1	900	3.7	4.1	1200	4.1	4.7	1600	4.5	5.2	1800	5.2	5.9	2100
C2	-4.13	1.7	-	450	2.6	2.0	900	3.0	2.7	1200	3.3	3.4	1600	3.7	4.1	1800	4.2	4.8	2100
C3	-6.08	-	-	-	1.7	-	850	2.3	1.8	1150	2.7	2.3	1200	3.0	2.8	1550	3.4	3.6	1850
C4	-8.21	-	-	-	-	-	-	1.7	-	850	2.1	1.7	900	2.5	2	1150	2.9	2.6	1350

Notes:

- Wind speeds and coefficients based on AS 4055 - Wind Loads for Housing.
- Roof pressure coefficients based on the following worst case assumptions:
 - External Pressure - Ratio of building height to least horizontal dimension on plan, $h/d < 0.5$. $C_{pe} = -0.9$
 - Internal Pressure - Non-Cyclonic - Building has no dominate openings & more than one permeable wall or is effectively sealed. $C_{pi} = +0.2$
- Cyclonic - Based on dominate opening pressure. $C_{pi} = +0.7$
 - Local Pressure - Least Horizontal Dimension on Plan $< 20m$ ($a = 4m$). $K_l = 1.5$
 - Combination Factor - $K_c = 0.9$
 - Non-cyclonic - $C_{fig} = -1.4$, Cyclonic - $C_{fig} = -1.85$
- Serviceability deflection limit of span/150 has been allowed for.
- Self weight of the panel has been allowed for, plus an allowance of up to $25kg/m^2$ ($0.25kPa$ dead load) for light duty fittings (lights, etc.).
- Non-trafficable maintenance access (concentrated load) of $140kg$ on any span has been allowed for.
- Distributed live load of $0.25kPa$ (as per AS/NZS 1170.1) has been allowed for.
- Fixings to be:
 - 7x Buildex 14-14 Climaseal® Tek Screws per panel into 1.5 BMT G450 steel at minimum every second corrugation for non-cyclonic regions
 - 13x Buildex 14-14 Climaseal® Tek Screws with cyclonic washers per panel into 1.5 BMT G450 steel at every corrugation for cyclonic regions
- Overhangs:
 - Max. Overhang min. of value stated or 40% of backspan.
 - Overhangs include an allowance for a $1.1kN$ concentrated load based on strength limit state as a separate loadcase.
- Span tables have been developed by Bligh Tanner Consulting Engineers by interpretation of physical testing conducted & reported by BRANZ.