



InsulRoof EPS-FR Core Grade SL - Roof Span Table for Housing Application
FIXING TO TIMBER FRAMING

Non-Cyclonic - fixings every 2nd crest

		Panel Thickness																	
Wind Class	ULS Design	50 mm			75 mm			100 mm			125 mm			150 mm			200 mm		
	Wind	Max Span (m)		Max.	Max Span (m)		Max.	Max Span (m)		Max.	Max Span (m)		Max.	Max Span (m)		Max.	Max Span (m)		Max.
	Pressure	Single Span	Multi-Span	Cantilever	Single Span	Multi-Span	Cantilever	Single Span	Multi-Span	Cantilever	Single Span	Multi-Span	Cantilever	Single Span	Multi-Span	Cantilever	Single Span	Multi-Span	Cantilever
N1	-0.97	4.7	4.8	450	4.8	6.0	900	6.5	6.6	1200	7.3	7.5	1600	7.9	8.1	1800	9.1	9.3	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	8.5	2100
N3	-2.1	3.1	2.7	450	3.5	3.4	900	4.3	4.9	1200	4.8	5.2	1600	5.2	5.2	1800	6.0	5.2	2100
N4	-3.13	2.3	1.8	450	2.6	2.2	900	3.4	3.4	1200	3.9	3.4	1500	4.2	3.4	1500	4.8	3.4	1500
N5	-4.60	1.5	-	450	1.9	1.5	850	2.5	2.3	1000	3	2.3	1000	3.5	2.3	1000	4	2.3	1000

Non-Cyclonic - fixings every crest

		Panel Thickness																	
Wind Class	ULS Design	50 mm			75 mm			100 mm			125 mm			150 mm			200 mm		
	Wind	Max Span (m)		Max.	Max Span (m)		Max.	Max Span (m)		Max.	Max Span (m)		Max.	Max Span (m)		Max.	Max Span (m)		Max.
	Pressure	Single Span	Multi-Span	Cantilever	Single Span	Multi-Span	Cantilever	Single Span	Multi-Span	Cantilever	Single Span	Multi-Span	Cantilever	Single Span	Multi-Span	Cantilever	Single Span	Multi-Span	Cantilever
N1	-0.97	4.7	4.8	450	4.8	6.0	900	6.5	6.6	1200	7.3	7.5	1600	7.9	8.1	1800	9.1	9.3	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	1500	4.2	4.8	1500	4.8	5.6	1500
N5	-4.60	1.5	-	450	1.9	1.8	850	2.5	2.4	1000	3	3.1	1000	3.5	3.7	1000	4	4.6	1000

Cyclonic - Fixings at every crest

		Panel Thickness																	
Wind Class	ULS Design	50 mm			75 mm			100 mm			125 mm			150 mm			200 mm		
	Wind	Max Span (m)		Max.	Max Span (m)		Max.	Max Span (m)		Max.	Max Span (m)		Max.	Max Span (m)		Max.	Max Span (m)		Max.
	Pressure	Single Span	Multi-Span	Cantilever	Single Span	Multi-Span	Cantilever	Single Span	Multi-Span	Cantilever	Single Span	Multi-Span	Cantilever	Single Span	Multi-Span	Cantilever	Single Span	Multi-Span	Cantilever
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	3.5	1800
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 - $C_{rig} = -1.4$, Cyclonic - $C_{rig} = -1.85$
- 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.
- Fixing frequency as noted with 14-10 Type 17 MultiSeal screws into MGP10 timber framing (35mm embedment in JD5 minimum) are required.
- 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.