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

Non-Cyclonic - 35mm screw embedment in JD5 timber

		Panel Thickness																		
		50 mm			75 mm			100 mm			125 mm			150 mm			175 mm			200 mm		
		Max Span (m)		Max.	Max Span (m)		Max.	Max Span (m)		Max.	Max Span (m)		Max.	Max Span (m)		Max.	Max Span (m)		Max.	Max Span (m)		Max.
Wind Class	ULS Design Wind Pressure (kPa)	Single Span	Multi-Span	Cantilever (mm)	Single Span	Multi-Span	Cantilever (mm)	Single Span	Multi-Span	Cantilever (mm)	Single Span	Multi-Span	Cantilever (mm)	Single Span	Multi-Span	Cantilever (mm)	Single Span	Multi-Span	Cantilever (mm)	Single Span	Multi-Span	Cantilever (mm)
N1	-0.97	4.5	4.3	550	5.7	5.5	900	6.5	6.6	1200	7.2	7.4	1600	7.9	7.4	2200	8.5	7.5	2200	9.1	7.5	2200
N2	-1.34	3.8	3.5	550	4.8	4.5	900	5.4	5.2	1200	6.0	5.2	1600	6.6	5.2	2200	7.1	5.2	2200	7.6	5.2	2200
N3	-2.1	2.9	2.6	550	3.8	3.2	900	4.3	3.2	1200	4.7	3.2	1400	5.2	3.2	1400	5.6	3.2	1400	5.9	3.2	1400
N4	-3.13	2.2	1.9	550	3.0	2.1	900	3.5	2.1	900	3.8	2.1	900	4.2	2.1	900	4.5	2.1	900	4.8	2.1	900
N5	-4.60	1.6	-	550	2.3	-	600	2.7	-	600	3.1	-	600	3.4	-	600	3.6	-	600	3.6	-	600

Non-Cyclonic - 70mm screw embedment in JD5 timber

		Panel Thickness																		
		50 mm			75 mm			100 mm			125 mm			150 mm			175 mm			200 mm		
		Max Span (m)		Max.	Max Span (m)		Max.	Max Span (m)		Max.	Max Span (m)		Max.	Max Span (m)		Max.	Max Span (m)		Max.	Max Span (m)		Max.
Wind Class	ULS Design Wind Pressure (kPa)	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	Single Span	Multi-Span	Cantilever
N1	-0.97	4.5	4.3	550	5.7	5.5	900	6.5	6.6	1200	7.2	7.5	1600	7.9	8.1	2400	8.6	9.6	2550	9.1	9	2750
N2	-1.34	3.8	3.5	550	4.8	4.5	900	5.4	5.6	1200	6.0	6.4	1600	6.6	7.4	2400	7.1	8.2	2550	7.6	9.0	2750
N3	-2.1	2.9	2.6	550	3.8	3.5	900	4.3	4.2	1200	4.7	4.9	1600	5.2	5.6	2400	5.6	5.8	2450	5.9	5.7	2400
N4	-3.13	2.2	1.9	550	3.0	2.3	900	3.5	3.2	1200	3.8	3.7	1600	4.1	3.7	1600	4.6	3.8	1600	4.8	3.8	1600
N5	-4.60	1.6	-	550	2.3	1.8	900	2.7	2.4	1100	3.1	2.5	1100	3.4	2.5	1100	3.8	2.6	1100	3.9	2.5	1100

Cyclonic - 40mm screw embedment in JD5 timber

		Panel Thickness																		
		50 mm			75 mm			100 mm			125 mm			150 mm			175 mm			200 mm		
		Max Span		Max.	Max Span		Max.	Max Span		Max.	Max Span		Max.	Max Span		Max.	Max Span		Max.	Max Span		Max.
Wind Class	ULS Design Wind Pressure (kPa)	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	Single Span	Multi-Span	Cantilever
C1	-2.78	2.7	2.2	550	3.2	2.8	900	3.7	3.5	1200	4.0	5.0	1600	4.5	5.2	1800	4.8	5.2	2400	5.1	5.2	2650
C2	-4.13	1.8	1.5	550	2.6	1.8	900	3.0	2.3	1200	3.3	3.4	1200	3.6	3.4	1600	4.0	3.4	1600	4.2	3.4	1800
C3	-6.08	-	-	-	1.9	-	650	2.4	1.6	800	2.7	2.3	1100	3.0	2.3	1100	3.2	2.3	1100	3.4	2.3	1200
C4	-8.21	-	-	-	-	-	-	1.8	-	600	2.3	1.7	800	2.6	1.7	800	2.8	1.7	800	2.9	1.7	900

Notes:

1. Wind speeds and coefficients based on AS 4055 - Wind Loads for Housing.
2. Roof pressure coefficients based on the following worst case assumptions:
   a) External Pressure - Ratio of building height to least horizontal dimension on plan, h/d < 0.5. C_{pe} = -0.9
   b) 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
   c) Local Pressure - Least Horizontal Dimension on Plan < 20m (a = 4m). K_l = 1.5
   d) Combination Factor - K_c = 0.9
   e) Non-cyclonic - C_{fig} = -1.4, Cyclonic - C_{fig} = -1.85
3. Serviceability deflection limit of span/150 has been allowed for.
4. 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.).
5. Concentrated load of 140kg (as per AS/NZS 1170.1) on any one panel has been allowed for as a separate loadcase.
6. Distributed live load of 0.25kPa (as per AS/NZS 1170.1) has been allowed for.
7. Non-Cyclonic Fixings: 14g-10 Type 17 Buildex or Ideal screws with Multiseal washers to every rib. Embedment depths as noted.
8. Cyclonic Fixings at each rib and pan, embedment depths as noted:
   a) For 50-100mm thick panels fixing with 14g-10 Type 17 Buildex screws with Multiseal washers into every rib and pan.
   b) For 125-200mm thick panels fixing with 14g-10 Type 17 Ideal Fasteners screws into every rib and pan with Squarelok (BX) washers on ribs and Multiseal washers in pans.
8. Overhangs:
   a) Max. Overhang min. of value stated or 40% of backspan.
   b) Overhangs include an allowance for a 1.1kN concentrated load based on strength limit state as a separate loadcase.
9. Span tables have been developed by Bligh Tanner Consulting Engineers by interpretation of physical testing conducted & reported by BRANZ.

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