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

Non-Cyclonic

		Panel Thickness																					
		50 mm			75 mm			100 mm			125 mm			150 mm			175 mm			200 mm			
		Max Span (m)		Max. Cantilever	Max Span (m)		Max. Cantilever	Max Span (m)		Max. Cantilever	Max Span (m)		Max. Cantilever	Max Span (m)		Max. Cantilever	Max Span (m)		Max. Cantilever	Max Span (m)		Max. Cantilever
Wind Class	ULS Design Wind Pressure (kPa)	Single Span	Multi-Span	(mm)	Single Span	Multi-Span	(mm)	Single Span	Multi-Span	(mm)	Single Span	Multi-Span	(mm)	Single Span	Multi-Span	(mm)	Single Span	Multi-Span	(mm)	Single Span	Multi-Span	(mm)
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

		Panel Thickness																					
		50 mm			75 mm			100 mm			125 mm			150 mm			175 mm			200 mm			
		Max Span		Max. Cantilever	Max Span		Max. Cantilever	Max Span		Max. Cantilever	Max Span		Max. Cantilever	Max Span		Max. Cantilever	Max Span		Max. Cantilever	Max Span		Max. Cantilever
Wind Class	ULS Design Wind Pressure (kPa)	Single Span	Multi-Span	(mm)	Single Span	Multi-Span	(mm)	Single Span	Multi-Span	(mm)	Single Span	Multi-Span	(mm)	Single Span	Multi-Span	(mm)	Single Span	Multi-Span	(mm)	Single Span	Multi-Span	(mm)
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. Non-trafficable maintenance access (concentrated load) of 140kg on any span has been allowed for, in roof pans only. Avoid stepping on the ribs.
6. Distributed live load of 0.25kPa (as per AS/NZS 1170.1) has been allowed for.
7. Non-Cyclonic Fixings: 14g-14 Buildex or Ideal screws into minimum 1.5mm BMT G450 steel. Fixings to every rib using Multiseal washers.
8. Cyclonic Fixings:
   a) For 50mm-100mm thick panels fixing with 14g-14 Buildex screws into minimum 1.5mm BMT G450 steel. Fixings to be every rib and pan using Multiseal washers.
   b) For 125mm-200mm thick panels fixing with 14g-14 Ideal Fastener screws into minimum 1.9mm BMT G450 steel. Fixings to be every rib and pan using Squarelok (BX) washers on ribs and Multiseal washers in pans.
9. 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.
10. Span tables have been developed by Bligh Tanner Consulting Engineers by interpretation of physical testing

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