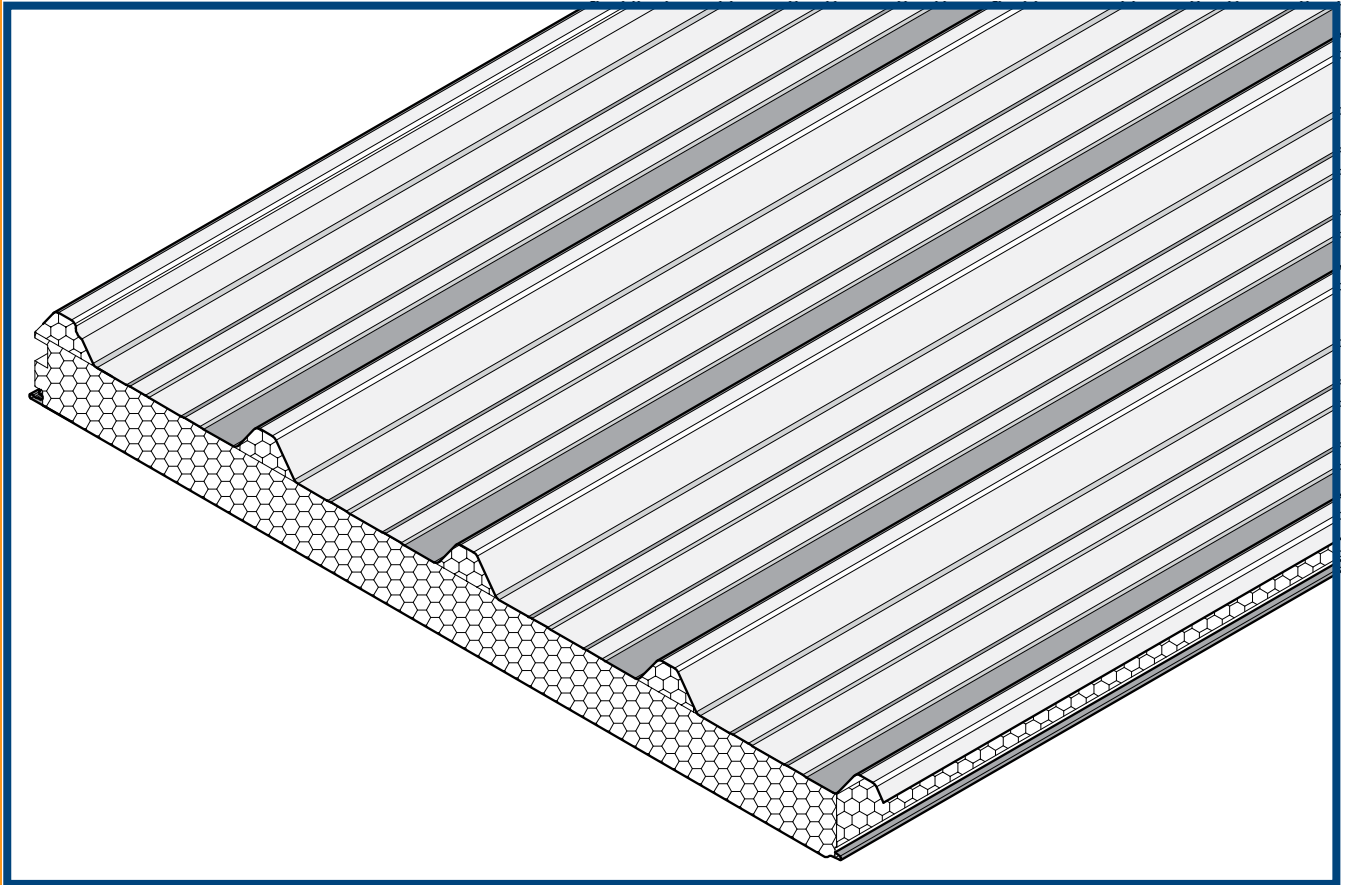


2.0 Solaris® Roof Panel

Data sheet



Solaris® roof panel is a long spanning, insulated, all-in-one roof product.

Solaris® roof panel is energy efficient, hygienic, durable, aesthetically pleasing, fast and easy to install.

Applications

Residential applications are:

- Home improvement patios
- Room enclosures
- Residential roofing

Commercial and industrial applications—

- Part J compliant energy efficient product:
- Air-conditioned offices
- Warehouses
- Factories
- Shops
- Public buildings
- Food processing facilities and clean rooms

Features

- **Quick and easy** installation
- **Low pitch** design with anti-capillary waterproofing
- **Mastic groove** to achieve internal vapour barrier—cold climates
- **Economical**
- **Fire-retardant** treated core, BCA materials Group 2
- **Filled voids** for vermin resistance and improved insulation

Warranty

To the original purchaser, Retracom warrants for a period of ten (10) years, our insulated panels against de-lamination, as supplied and/or installed by Retracom. Retracom shall provide free replacement at our factory, product deemed faulty by Retracom. This warranty expressly excludes parts or components not manufactured by Retracom and such parts or components, will be subject to their manufacturer's warranty.



firesmart



foodsmart



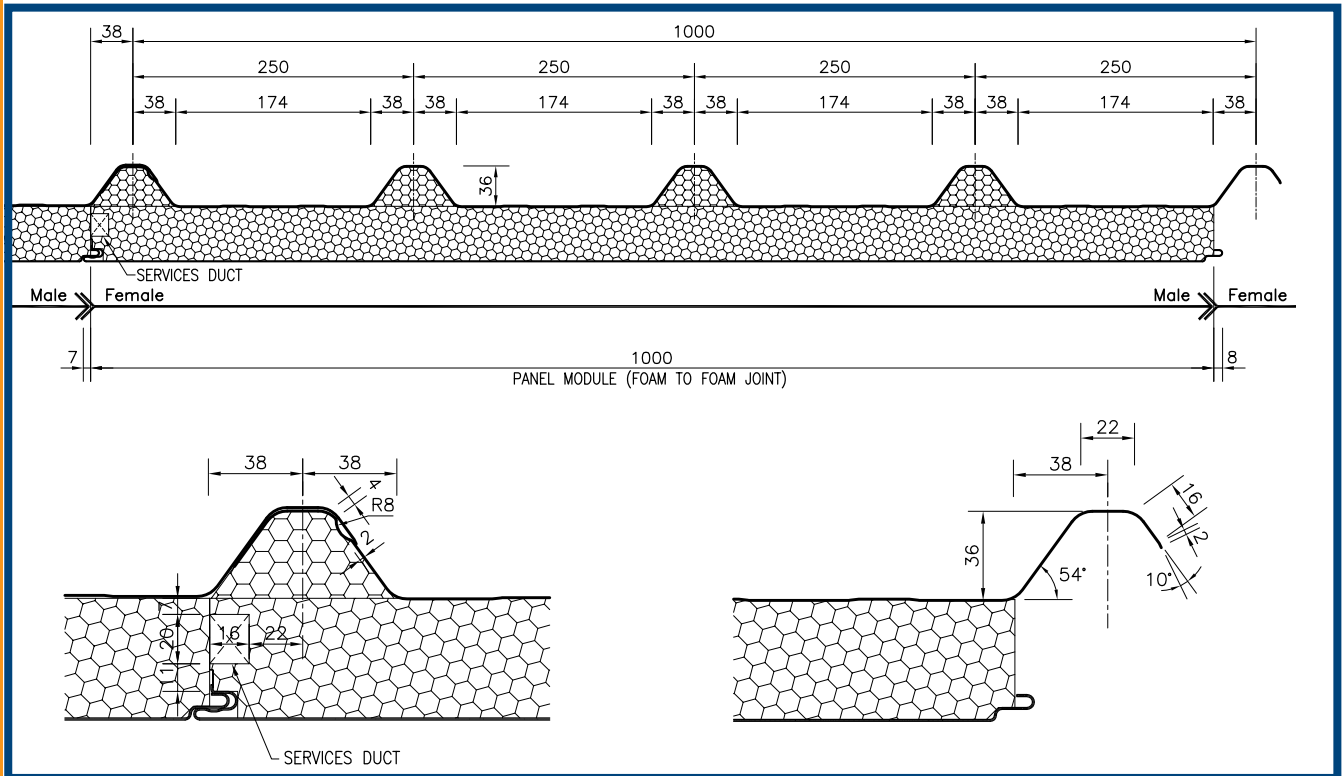
ecosmart



fibresmart

2.1 Solaris® Roof Panel

Data sheet



Specification

- **Width of module:** 1000mm
- **Thickness**
Standard—50mm, 75mm, 100mm
Non-standard—125mm, 150mm
- **Length:**
Minimum—2400mm
Maximum—transportable length 16,000mm
- **Rib profile:** Trapezoidal
36mm profile height
- **Pitch (minimum):**
Single span—1.5°
Multispan—3.0°
(See Roof Drainage Chart)
- **Skins:**
Roof—0.42mm Hi-Ten
Ceiling—0.5mm
- **Colours:**
Roof side
 White
 Paper Bark
 Classic Cream
Ceiling side
 White (standard)
 Classic Cream
- **Flatness:**
The core sheets are finger jointed and drum sanded to give the flattest surface possible.
- **Standard ceiling finish:**
Stripable film to underside 'Smooth' with commercial flatness.
- **Core:**
SL grade encapsulated polystyrene (EPS)
Trapezoidal filled EPS/SL.
- **Gutter cut back:** 60mm
- **BCA Materials Group Classification:** Group 2
(Group 1 is available with additional fixings)
- **Spans:**
Span table and safe load tables are available for various structure types within geographic regions.
- **Jointing System:**
Tongue and groove Retracom Flushline MkII joints.
- **Expansion joints:**
Required as per roof installation code. See Solaris drawing. Required every 16 metres max. Overhang 250mm at 5° minimum pitch.
- **Sheet laps:**
Not recommended and not subject to warranty.
- **Temperature:**
Maximum skin temperature—80°C.

Notes

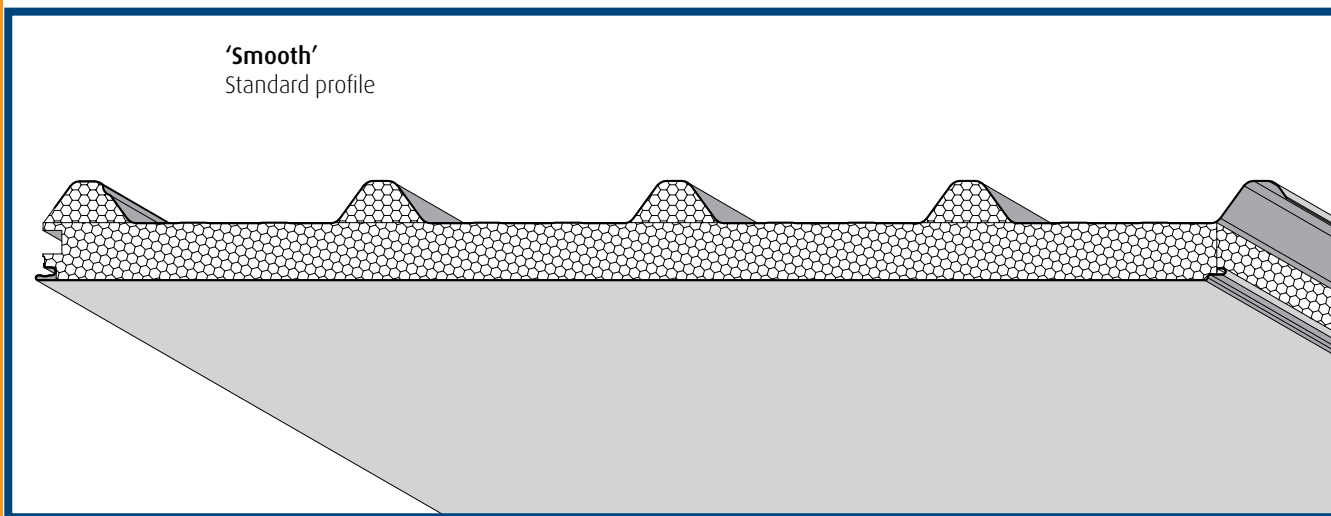
* Flatness appearance—'Commercial': Surface deformations are faintly detectable to the eye when observed in artificial or direct light and are apparent to the eye when observed in low incident light.
Flatness appearance—'Architectural': Surface deformations are difficult to detect and are faintly detectable to the eye when observed in low incident light.

** Subject to minimum quantities

2.2 Solaris® Roof Panel

Profiles

'Smooth'
Standard profile



2.3 Solaris® Roof Panel

Wind Pressures for General Structures (kPa)

Region A

	Terrain Category 2			Terrain Category 2.5			Terrain Category 3		
	Wall	Roof		Wall	Roof		Wall	Roof	
		H/D<0.5	H/D>1.0		H/D<0.5	H/D>1.0		H/D<0.5	H/D>1.0
5m high	1.01	1.21	1.51	0.92	1.10	1.38	1.01	1.21	1.51
10m high	1.22	1.46	1.82	1.02	1.22	1.53	1.22	1.46	1.82
15m high	1.34	1.61	2.01	1.14	1.37	1.71	1.34	1.61	2.01

Region B

	Terrain Category 2			Terrain Category 2.5			Terrain Category 3		
	Wall	Roof		Wall	Roof		Wall	Roof	
		H/D<0.5	H/D>1.0		H/D<0.5	H/D>1.0		H/D<0.5	H/D>1.0
5m high	1.61	1.94	2.42	1.48	1.77	2.21	1.61	1.94	2.42
10m high	1.95	2.34	2.92	1.63	1.96	2.45	1.95	2.34	2.92
15m high	2.15	2.58	3.22	1.83	2.20	2.75	2.15	2.58	3.22

Region C

	Terrain Category 2			Terrain Category 2.5			Terrain Category 3		
	Wall	Roof		Wall	Roof		Wall	Roof	
		H/D<0.5	H/D>1.0		H/D<0.5	H/D>1.0		H/D<0.5	H/D>1.0
5m high	3.51	4.16	5.20	2.98	3.53	4.41	3.51	4.16	5.20
10m high	3.89	4.61	5.76	3.47	4.12	5.15	3.89	4.61	5.76
15m high	4.45	5.28	6.60	3.97	4.70	5.88	4.45	5.28	6.60

Region D

	Terrain Category 2			Terrain Category 2.5			Terrain Category 3		
	Wall	Roof		Wall	Roof		Wall	Roof	
		H/D<0.5	H/D>1.0		H/D<0.5	H/D>1.0		H/D<0.5	H/D>1.0
5m high	5.66	6.71	8.39	4.80	5.69	7.11	5.66	6.71	8.39
10m high	6.27	7.43	9.29	5.60	6.64	8.30	6.27	7.43	9.29
15m high	7.18	8.51	10.64	6.40	7.58	9.48	7.18	8.51	10.64

Wind Load Conversions (non-cyclonic)

Wind Classification (Domestic)	Region & Category (Commerical/Industrail)
N1 (W28)	Reg A, Cat 3
N2 (W33)	Reg A, Cat 2.5 - Reg B, Cat 3
N3 (W41)	Reg A, Cat 2, Reg B, Cat 2.5
N4 (W50)	Reg B, Cat 2

Notes

- Pressures are for interlocking sandwich panels used for external cladding of a base structure.
- H/W is the reaction of the average roof height to the minimum width of the building.
- For values of h/d between 0.5 and 1.0, use linear interpolation.
- Full in.
- Assumptions:
 - Md = 1.0 - Sandwich Panel is not an critical element of the base structure.
 - Ms = Mt = 1.0 - Relatively flat and unshielded site.
 - Kl = 1.0 - Panel is interlocked to distribute pressures, and is a structural element.
 - Ka = Kc = 1.0
- External Pressures - Walls: Cpe = +0.7, -0.5, Roof: Cpe = +0.2, -0.9 (h/d0.5), -1.5(h/d>1.0)
- Internal Pressure - Region A & B - Cpi = +0.2, -0.3, Region C & D: Cpi = +0.7, -0.65

2.4 Solaris® Roof Panel

Table 1. Allowable Panel Spans (mm)

Pressure (kPa)	Panel Thickness		
	50mm	75mm	100mm
0.5	5600	7700	8500
0.75	5600	6650	7300
1	5250	5750	6300
1.25	4700	5150	5650
1.5	4300	4700	5150
1.75	4000	4350	4750
2	3650	4050	4450
2.5	2900	3650	4000
3	2450	3300	3650
3.5	2100	3050	3350
4	1800	2750	3150
4.5	1600	2450	2950
5	-	2200	2800
6	-	-	2450

Table 2. Design Pressures (kPa)

Panel Span (mm)	Panel Thickness		
	50mm	75mm	100mm
2000	3.6	5.5	-
2500	2.9	4.4	5.8
3000	2.4	3.6	4.4
3500	2.1	2.7	3.2
4000	1.7	2.1	2.5
4500	1.3	1.6	1.9
5000	1.1	1.3	1.6
5500	0.9	1.1	1.3
6000	-	0.9	1.1
6500	-	0.7	0.9
7000	-	0.6	0.8
7500	-	0.5	0.7
8000	-	-	0.6
8500	-	-	0.5

Table 3. Bearing Capacity (kN/m)

Thickness (mm)	Support Location	Bearing Width						
		50mm	70mm	90mm	100mm	150mm	200mm	250mm
50	internal	4.2	5.3	6.4	7.0	9.8	12.6	15.4
	external	3.5	4.6	5.7	6.3	9.1	11.9	14.7
75	internal	4.9	6.0	7.1	7.7	10.5	13.3	16.1
	external	3.9	5.0	6.1	6.7	9.5	12.3	15.1
100	internal	5.6	6.7	7.8	8.4	11.2	14.0	16.8
	external	4.2	5.3	6.4	7.0	9.8	12.6	15.4

Notes

- Table 1 shows the maximum allowable spacing of roof supports, and table 2 shows maximum design pressures, for single span or continuous span Solaris® roofing panel.
- Pressures in table 1 and 2 are for ultimate design wind pressure with 1:500 year return period, applied in either direction. Permanent, long-term, snow, and other loadings are not allowed for. Pressure do not include the self weight of the panel.
- Maximum deflections of span/150 for a 1:20 year return period are used for wind loading, in regions A, B, C or D, as per AS1170.1.
- Largest spans are checked for deflections of span/200, and structural capacity, for self weight and 0.25kPa/1.1kN live load as per AS1170.1.
- Largest spans may develop thermal bowing of up to span/180, for a 35°C temperature gradient (-10°C to 60°C external, 25°C internal). Thermal effects are not taken into account for panel spans.
- Expansion joints are to be included as required, but at no more than 16m spacing.
- Panels are to be fixed to supports with 14kg tek screws with washers to each rib. The pullout capacity of the screws shall be checked.
- Table 3 shows the allowable bearing capacity of the Solaris Panel, for design pressure acting towards the support, per metre of support length. Last updated 21/01/10

2.5 Solaris® Roof Panel

Spans and overhangs (mm) Domestic awnings only

- Select the Solaris® panel thickness from the span table below for the wind condition on site (refer building inspector if required).
- Refer to drawings PR-09-008-01 to 09 for complete configuration and engineering of the patio roof system.

Wind Rating	Solaris® Thickness	3 sides open A		3 sides open B		2 sides open		1 side open		Enclosed	
		Span	Overhang	Span	Overhang	Span	Overhang	Span	Overhang	Span	Overhang
N1	50mm	7500	900	6900	900	5800	900	5300	900	5500	900
	75mm	8200	900	7600	900	6400	900	5800	900	6100	900
	100mm	8900	900	8300	900	6900	900	6300	900	6600	900
N2	50mm	6400	900	5900	900	4900	900	4500	900	4700	900
	75mm	7000	900	6500	900	5400	900	4900	900	5100	900
	100mm	7600	900	7000	900	5900	900	5400	900	5600	900
N3	50mm	5100	900	4700	900	3900	900	3600	900	3800	900
	75mm	5600	900	5200	900	4300	900	3900	900	4100	900
	100mm	6100	900	5600	900	4700	900	4300	900	4500	900
N4	50mm	4200	900	3900	900	3200	800	3000	800	3100	800
	75mm	4600	900	4200	900	3500	900	3200	800	3400	900
	100mm	5000	900	4600	900	3900	900	3500	900	3700	900
N5	50mm	3400	850	3200	900	2700	700	2300	600	2500	600
	75mm	3800	900	3500	900	2900	700	2700	700	2800	700
	100mm	4100	900	3800	900	3200	800	2900	700	3000	700
C1	50mm	-	-	-	-	-	-	-	-	-	-
	75mm	5600	900	5200	900	4300	900	3900	900	3400	850
	100mm	-	-	-	-	-	-	-	-	-	-
C2	50mm	-	-	-	-	-	-	-	-	-	-
	75mm	4600	900	4200	900	3500	875	3200	800	2800	700
	100mm	-	-	-	-	-	-	-	-	-	-
C3	50mm	-	-	-	-	-	-	-	-	-	-
	75mm	3800	900	3500	875	2900	725	2700	675	-	-
	100mm	-	-	-	-	-	-	-	-	-	-
C4	50mm	-	-	-	-	-	-	-	-	-	-
	75mm	3200	800	3000	750	2200	550	-	-	-	-
	100mm	-	-	-	-	-	-	-	-	-	-

Notes to "3 Sides Open"

- Case "A" can be used for:
 - Roofs attached to or under the eaves level of a single-story residence elevated no more than 1.0m above ground.
 - Roofs at ground level attached to a double-story residences.
- Case "B" can be used for:
 - Elevated roofs for a single story residences.
 - Roofs attached to the eaves of a double-story residence.
 - Where the average height of the roofs is no more than 85% of the average height of the roof of the residence it is attached to.
- For situations that are outside of Case "B", use the span table for "Two Sides Open".

2.6 Solaris® Roof Panel

Maximum roof lengths

	1.5°** roof slope	2.0°** roof slope	3.0°** roof slope	5.0° roof slope	7.5° roof slope	10.0° roof slope
150mm/hr*	16m	16m	16m	210m	250m	290m
200mm/hr*	16m	16m	16m	160m	190m	220m
250mm/hr*	15m	16m	16m	120m	160m	170m
300mm/hr*	14m	16m	16m	100m	120m	140m
400mm/hr*	12m	16m	16m	80m	95m	110m
450mm/hr*	10m	16m	16m	60m	70m	80m

* Peak rainfall intensity

** Continuous sheet required from ridge to gutter

Stacking Information

Panel Thickness	Panel Quantity & Height (mm), Nominated by Length								
	4m	Height	6m	Height	10m	Height	12m	Height	Weight m2
50mm	17	1215	10	710	6	440	5	405	10.0 kg
75mm	12	1145	9	900	5	530	5	530	10.3 kg
100mm	10	1210	8	975	5	655	5	655	10.7 kg
(Average Max. Weight = 600kg)									

Code	Description
PKG —120	Patio Pack
PKG —120	Long Haul Pack

*Note: *Dimensions are in "mm" *Do not scale