

## PRODUCT DESCRIPTION

Poly Panel Industries' panels are 1200mm width stressed skin panels manufactured on an insulated panel production line.

- Panel cores are self-extinguishing grade expanded polystyrene Class SL, as supplied by Poly Panel Industries and bonded under pressure to BlueScope Steel Colorbond® pre-painted Galvabond or Zinalume base steel facings (using a two-part polyurethane adhesive). Thickness ranges with the EPS core material from 50 to 300mm in multiples of 25mm to suit thermal or structural requirements (conditions apply).
- Panels are available in continuous lengths up to 18 metres (subject to transport facilities), manufactured to order and cut to the specified length.
- Steel facings can range in thickness from 0.40mm to 0.60mm for either surface skin.
- Standard finish is an oven-cured 25% Gloss level Permagard™ White in Microban® for antibacterial protection. There are other colours in the Colorbond® range subject to availability.

## THERMAL PERFORMANCE

SL Grade EPS		
Panel Thickness (mm)	R value (m²K/W)	U factor (W/m²K)
50	1.32	0.76
75	1.97	0.51
100	2.63	0.38
150	3.95	0.25
200	5.26	0.19
250	6.58	0.15
300	7.90	0.13

## SECTION PROPERTIES

Section properties and mass for unit (1000mm) width of panel, together with the recommended maximum design skin stresses have been determined for panels of varying panel thickness and these are shown below.

0.40mm Steel Skin			
Thickness (mm)	Section Modulus (mm²)	Maximum Design Skin Stress (MPa)	Weight (kg/m²)
50	21230	65	7.7
75	32020	60	8.1
100	42800	50	8.4
150	64370	42	9.0

0.60mm Steel Skin			
Thickness (mm)	Section Modulus (mm²)	Maximum Design Skin Stress (MPa)	Weight (kg/m²)
50	31590	48	10.9
75	47770	48	11.2
100	63940	48	11.6
150	96300	48	12.2
200	128660	48	12.9
250	161020	48	13.6
300	193380	48	14.4

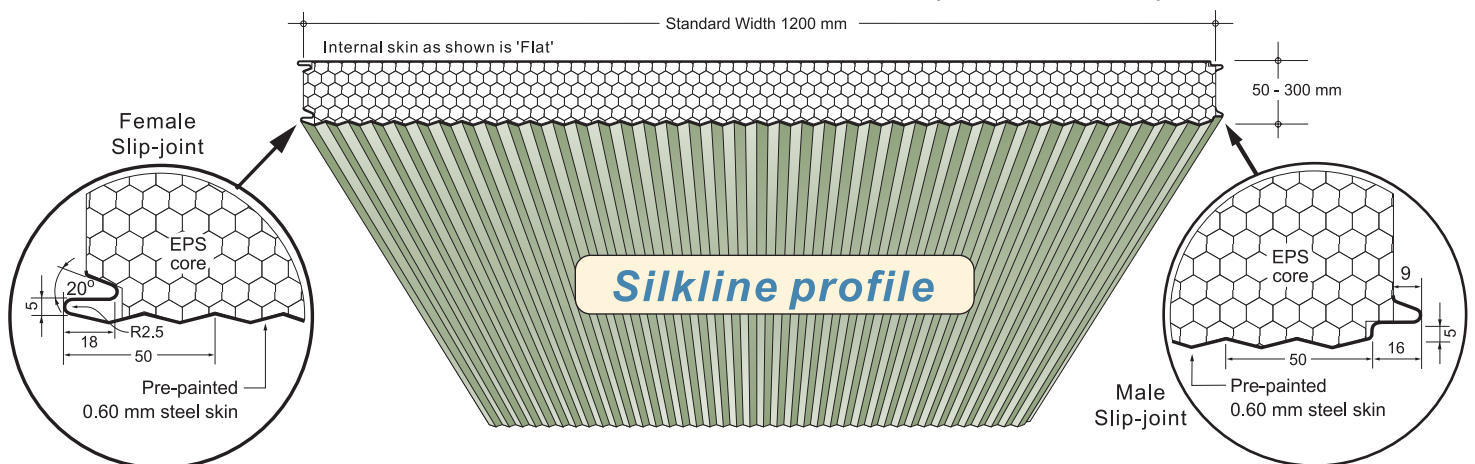
## POLYSTYRENE CORE BUTT JOINTS

The butt joints between the ends of the polystyrene core material have been made by way of finger jointing providing a mechanical bond across the end faces of the core material.

## SURFACE PROFILES

- The PPI Slip-joint® forms the edges of both skins with a male and female joint to either edge. Panels can be finished flat or with a low profile of 0.75mm depth to either surface:

- 100mm profile or • Silkline profile.



**SAFE LOAD TABLES**

Safe uniform design loads expressed in kN/m<sup>2</sup> have been determined for panels of varying panel thickness for simply supported spans of lengths ranging from 2.0m to 9.0m and these are shown below:

EXPANDED POLYSTYRENE PANELS DENSITY - NOMINAL 13.5kg/m <sup>3</sup> (0.40mm Steel Skin - 100mm Rib Profile)														
MAXIMUM DESIGN UNIFORM LOADS FOR SINGLE SPAN PANELS														
NOMINAL PANEL THICKNESS	SAFE UNIFORM LOADS kN/m <sup>2</sup> (Self Load has been deducted)													
	Single Span - Length in metres													
	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	9.0
50	1.38	1.10	0.92	0.79	0.69	0.55	0.44	0.36	0.31	0.26	0.23	0.20	-	-
75	1.92	1.54	1.28	1.10	0.96	0.76	0.61	0.51	0.43	0.36	0.31	0.27	0.24	-
100	2.14	1.71	1.43	1.22	1.07	0.85	0.68	0.57	0.48	0.41	0.35	0.30	0.27	0.21
150	2.70	2.16	1.80	1.54	1.35	1.07	0.87	0.71	0.60	0.51	0.44	0.38	0.34	0.27

EXPANDED POLYSTYRENE PANELS DENSITY - NOMINAL 13.5kg/m <sup>3</sup> (0.60mm Steel Skin - 100mm Rib Profile)														
MAXIMUM DESIGN UNIFORM LOADS FOR SINGLE SPAN PANELS														
NOMINAL PANEL THICKNESS	SAFE UNIFORM LOADS kN/m <sup>2</sup> (Self Load has been deducted)													
	Single Span - Length in metres													
	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	9.0
50	1.71	1.36	1.14	0.97	0.76	0.60	0.49	0.40	0.34	0.29	0.25	0.22	0.19	0.15
75	2.58	2.06	1.72	1.47	1.15	0.91	0.73	0.61	0.51	0.43	0.37	0.33	0.29	0.23
100	3.45	2.76	2.30	1.97	1.53	1.21	0.98	0.81	0.68	0.58	0.50	0.44	0.38	0.30
150	5.20	4.16	3.47	2.97	2.31	1.83	1.48	1.22	1.03	0.88	0.75	0.66	0.58	0.46
200	6.95	5.56	4.63	3.97	3.09	2.44	1.98	1.63	1.37	1.17	1.01	0.88	0.77	0.61
250	8.70	6.96	5.80	4.97	3.86	3.05	2.47	2.04	1.72	1.46	1.26	1.10	0.97	0.76
300	10.44	8.35	6.96	5.97	4.64	3.67	2.97	2.45	2.06	1.76	1.52	1.32	1.16	0.92

- Notes**
- 1) The tabulated safe loads are recommended unfactored maximum nett loads. (In the assessment of the design loads, the designer should take into account the self weight of the panel).
  - 2) Compliance with these recommendations will ensure that deflections do not exceed span/90. Where more severe deflection restrictions are required, specific testing of deflection characteristics is recommended for the various span/thickness combinations.
  - 3) A minimum design load of 0.5kN/m<sup>2</sup> is recommended for general applications. Circumstances may require different design loading.
  - 4) Where panels are continuous across a support, it is recommended that stress cuts be made across the inside (or cold side) steel skin adjacent to the supports to prevent buckling of the outer (warm side) skin at the support. Fixings should be provided on both sides of the stress cut.
  - 5) The finger joints at the butt joints of the polystyrene core material occur every 5 metres. These provide a mechanical bond between the polystyrene core sheets. Adhesive bonding is not required.

Poly Panel Industries reserves the right at all times and without notice to make any changes, modifications or improvements to its technical data or products, which in its considered opinion are felt to be necessary.

Produced May 2009



**QUEENSLAND  
POLY PANEL INDUSTRIES (AUST) PTY. LTD.**  
129 Cobalt Street, Carole Park,  
Queensland 4300  
☎ (07) 3718 9555 📠 (07) 3718 9556  
Website: [www.polypanel.com.au](http://www.polypanel.com.au)  
Email: [sales@polypanel.com.au](mailto:sales@polypanel.com.au)

