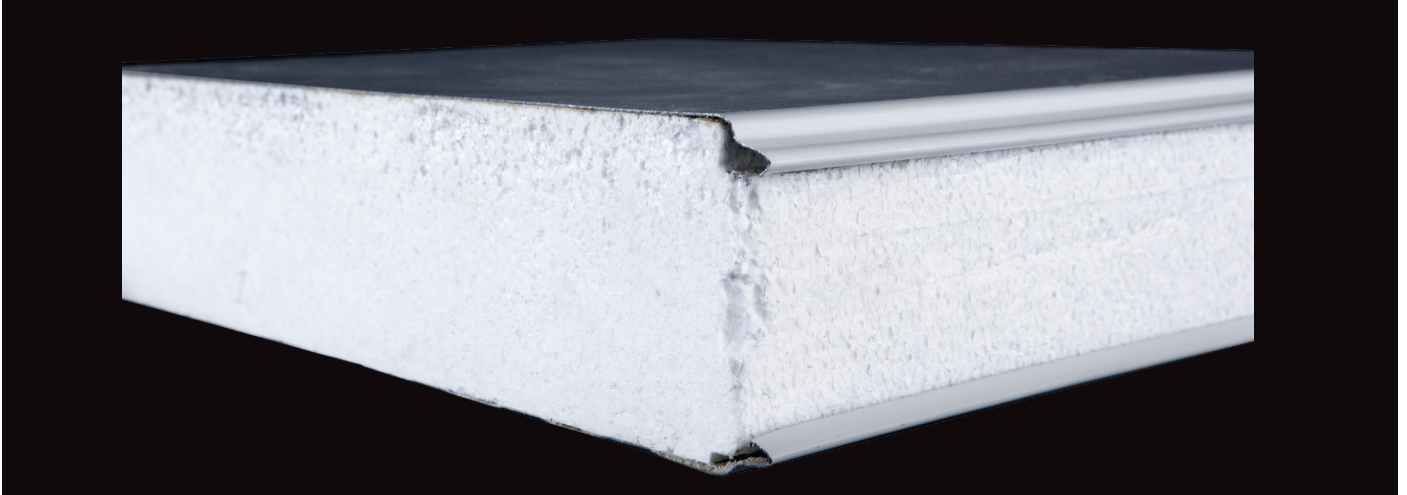


Expanded Polystyrene Core Panel



Polystyrene is the most common core material used in Isowall panels. It has a high strength to weight ratio and good water absorption resistance.

Grades available are SD (standard density) commonly used for wall panels and HD (high density) generally used for ceiling panels where greater strength and increased span capabilities are required.

Flame retardant polystyrene (FR Grade) is available in both SD and HD. Surface fire index results according to SABS 0177, part III yield the following results: Spread

of flame index 4,4. Heat contribution index 0,9. Smoke emission index 9,9. Surface fire index 4,7. Class 5.

All polystyrene used by ourselves is regularly tested to EPSASA standards and contains a flame retardant additive, which restricts the extent of burn. This does not signify that the panels are anything other than combustible and advice should be sought on specific uses.

Technical Data

The thickness and density of the Isolite polystyrene core varies according to application and temperature range. Operating constraints must be considered in the selection of panel thickness. Structural performance of the panel varies with thickness and the following table gives recommended usage limits.

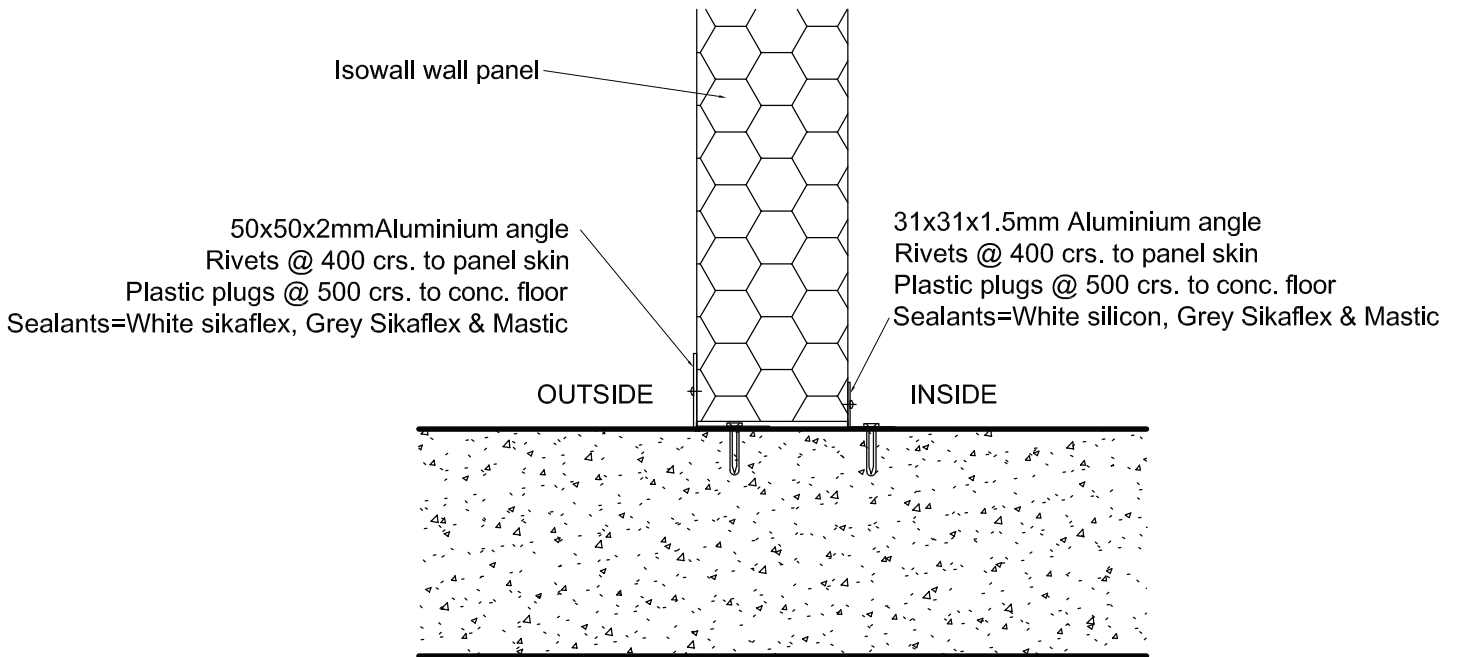
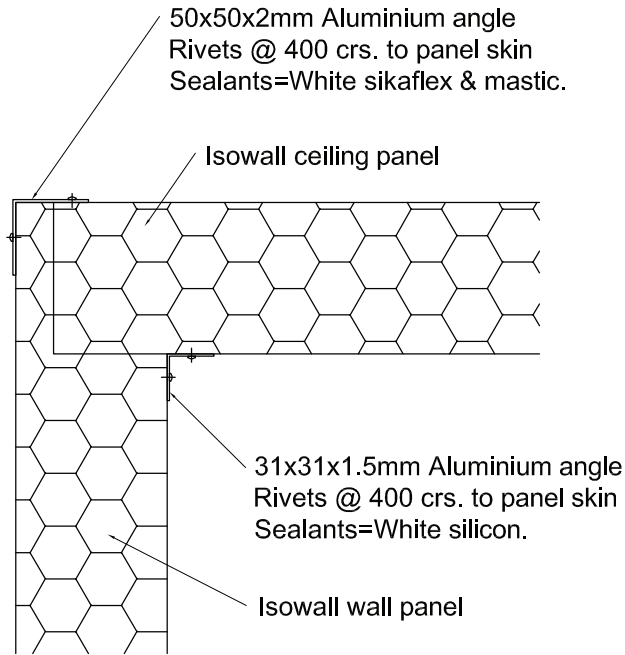
Span data for EPS panels:

Core Thickness (mm)	Max. Unsupported Wall Height (mm)	Max Unsupported Ceiling Length (mm)	'U' Value (W/m ² .K)	'R' Value (m ² .K/W)	Panel Weight (0.5mm coil) (kg/m ²)
50	3000	2500	0.67	1.49	10
75	5000	5500	0.47	2.12	10.3
100	6000	6000	0.36	2.77	10.7
125	7500	7000	0.29	3.44	11.1
150	8500	7600	0.24	4.16	11.5
200	11000	8500	0.18	5.55	12.3

All maximum ceiling spans must be reduced by 25% if exposed to direct sunlight.

Table highlighting the material properties of the various polystyrene densities

Material Properties	UNIT	Type		
		SD	HD	EHD
Density	kg/m ³	15	20	30
K value Thermal conductivity	W/m.K	0.040	0.038	0.036
Water- Vapour Diffusion Resistance Value	-	20	30	60
Compression strength at 10% deformation	kPa	60	100	165
Short term compression strength	kPa	80	120	210
Long term compression strength	kPa	20	30	50
Shear strength	kPa	190	270	460
Tensile strength	kPa	200	280	440
Water absorption fully submerged after 7 days	%volume	1.7	0.6	0.5
Water absorption fully submerged after 1 year	%volume	5.0	4.0	3.0
Linear expansion co-efficient		7.10 ⁻⁵	7.10 ⁻⁵	7.10 ⁻⁵
Co-efficient of friction	M/m	0.5	0.5	0.5
Heat capacity	J/kg K	1500	1500	1500
Temperature range	°C	-110/+70	-110/+70	-110/+70
Limited exposure maximum temperature	°C	+110	+110	+110
Youngs modulus	kPa	4000	6000	1000



Isowall
Isowall Southern Africa (Pty) Ltd
Reg. No. 1982/010393/07

TITLE:
**FIXING MAT'L USED FOR
EPS (POLYSTYRENE
PANELS)**

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