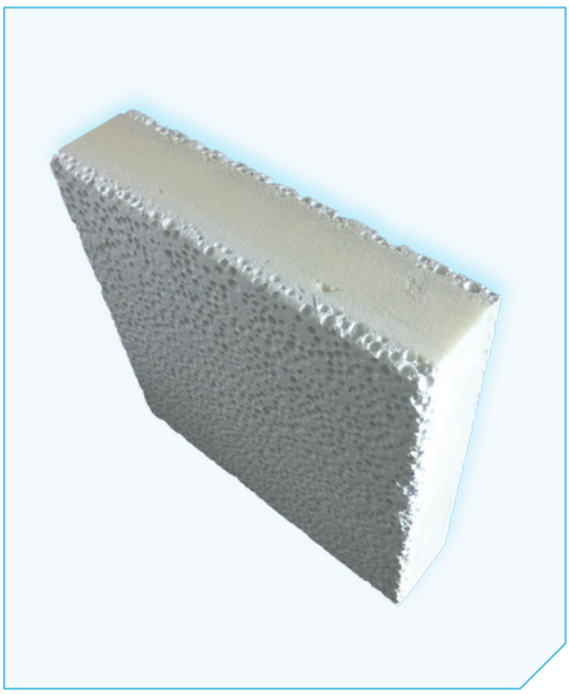
Data Sheet

Smart Wall Panel SW 50/75/100

Description

Smart Wall Panel is an energy-efficient rigid foam insulation panel made through Reaction Injection Moulding (RIM) process which comprises a non combustible insulation core sandwiched between two lightweight facer boards. It is primarily used as an insulation system for external walls, columns, and beams. It can be used in new construction projects or as a retrofit solution for existing buildings.



Features and benefits:

- Flame spread of < 25 as per ASTM E84 / UL 723 (Class A).
- Successfully passed NFPA 268 (Ignitability characteristics of exterior wall assemblies).
- Meets IBC Section 2603.5 and ASTM C1289.
- Smart Wall Panels offer very low thermal conductance.
  (U value for 50mm panel = 0.540 $W/m^2{}^oC$)
- Smart Wall Panels are light weight and can be easily cut with a knife or saw.
- Installs quickly and easily with mechanical or adhesive attachment.
- Seams can be mesh reinforced with mortar adhesive if desired to meet any local code.
- Provides exposed exterior continuous insulation in the following applications: commercial, residential, industrial and pre-cast buildings.

Limitations

- Smart Wall Panel is not a structural sheathing, always follow local codes for structural bracing.
- Smart Wall Panels must not be used as a nailing base for any other product.
- Smart Wall Panels are non-load bearing.

Delivery & Packing

- Delivered in pallets and standard pallet consists of 30 - 40 panels.

Size and Technical Data

→ Panel Dimensions – 1200 mm (L) x 600 mm (B) with variable thickness as shown in the table below. Panel dimensions can vary as per requirement.

Property	Test Method	Value
Flame Spread Index of core foam	ASTM E84	< 25 (class A)
Smoke developed from core foam	ASTM E84	< 450 (SDI = 5)
Compressive strength	ASTM D 1621	25 psi (272 kpa Grade 3)
Service temperature		-20 ^{0}C to 100 ^{0}C
Density	ASTM D 1622	32 to kg/m^3
Thermal conductivity	ASTM C 518	0.025 W/m.K

Smart Wall Panel Insulation System – U Values		
Smart Wall Panel Insulation Thickness (mm)	External walls with blocks (W/m^2.^{0}C)	External Columns & Beams (W/m^2.^{0}C)
50	0.540	0.575
60	0.447	0.471
70	0.382	0.399
80	0.333	0.346
90	0.295	0.305
100	0.265	0.273

SW PIR Insulation Thermal Values	
Insulation Thickness (mm)	$R=\frac{m^2.K}{w}$
34	1.308
44	1.692
54	2.077
64	2.462
74	2.846
84	3.231

Sample calculation of U value for Smart Wall Panel with PIR insulation 50 mm.

Thermal Transmittance (U-Value) for External Walls with Blocks (Smart Wall Panel Insulation System 50mm thick – Green Products Industries)

Sr. No.	Description of materials used		Density (kg/m^3)	Thick-ness (I) m	r $\frac{m.k}{w}$	R $\frac{m^2.K}{w}$	Notes
1	Internal Surface (RI)		–	–	–	0.121	
2	Interior Paint		–	–	–	–	Negligible
3	Interior Plaster		1800	0.015	1.754	0.020	
4	Hollow Block Wall		1500	0.200	1.096	0.200	
5	Aerated Board		450–500	0.008	7.752	0.062	
6	Smart Wall PIR Insulation	SW Panel	32–40	0.034	38.461	1.308	
7	Aerated Board		450–500	0.008	7.752	0.062	
8	External Plaster SW 15		1800	0.015	1.754	0.020	
9	Exterior Paint / SW Finish Coat		–	–	–	–	Negligible
10	Outside Air (RO)					0.059	
11	SWT 50 Starter Track/SWCB 50 Corner Bead						Negligible
12	SWP 100, Anchor						Negligible
13	CT 16, Acrylic Primer						Negligible
	Total thermal resistance for materials used in Wall (R_T):					**1.851**	

U-Value = 0.540 **W/m.^{2} ^{0}C**

Thermal Transmittance (U-Value) for External Columns & Beams (Smart Wall Panel Insulation System 50mm thick – Green Products Industries)

Sr. No.	Description of materials used	Density (kg/m³)	Thick-ness (l) m	r m.k	R m².K / w	Notes
1	Internal Surface	–	–	–	0.121	
2	Interior Paint	–	–	–	–	Negligible
3	Interior Plaster	1800	0.015	1.754	0.020	
4	Cast Concrete (Columns & Beams)	2300	0.200	0.434	0.087	
5	Aerated Board	450–500	0.008	7.752	0.062	
6	Smart Wall PIR Insulation (SW Panel)	32–40	0.034	38.461	1.308	
7	Aerated Board	450–500	0.008	7.752	0.062	
8	External Plaster SW15	1800	0.015	1.754	0.020	
9	Exterior Paint / SW Finish Coat	–	–	–	–	Negligible
10	Outside Air				0.059	
11	SW 50 Starter Track/SWCB 50 Corner Bead	–	–	–	–	Negligible
12	SWP100, Anchor	–		–	–	Negligible
13	CT 16, Acrylic Primer	–	–	–	–	Negligible
	Total thermal resistance for materials used in Wall (R_T):				**1.739**	

U-Value = 0.575 W/m.²⁰C

Green Products Industries Ltd.

Technical Information given in this data, is to the best of our knowledge and is true and accurate. All data are averages of several tests conducted under lab condition. Climatic variation such as temperature and humidity and porosity of substrate may affect the values.

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