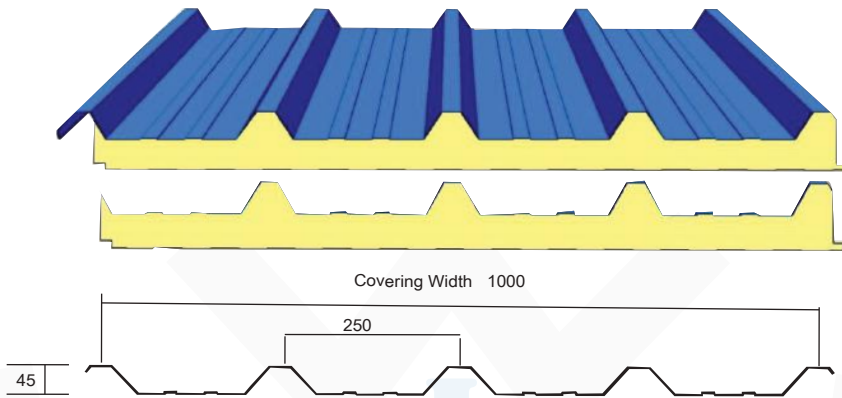




PROFILE 45/250 SANDWICH PANEL



TECHNICAL DATA SHEET

RIGID POLYISOCYANURATE (PIR) FOAM FOR ROOF/WALL PANELS

PHYSICAL AND MECHANICAL PROPERTIES	
Insulation Core	Rigid Cellular Certified "Fire-Resistant" Polyisocyanurate (PIR) foam
Closed-Cell Content	> 93% as per DIN ISO 4590
Thermal Conductivity (Lambda Value)	0.023 W/m ² .K
Trapezoid Corrugated Panels for Roof	50,75 & 100 mm thick Roof 45/250 Composite PIR Panel
Overall Density	42 ± 2 kg/m ³ as per BS EN 1602

U VALUE - CALCULATIONS

T: Core Thickness (mm)	50	60	75	100	150
Weight - Steel (kg/m ²) ²	10.70	11.10	11.70	12.70	14.70
Weight - Aluminum (kg/m ²) ³	5.80	6.20	6.80	7.80	9.80
U value - PIR (W/m ² K) ⁴	0.36	0.31	0.25	0.19	0.13
U value - PUR (W/m ² K) ⁴	0.40	0.34	0.28	0.21	0.14

- 1 Steel - The above based on 0.50mm GI/0.5 GI metal facing.
- 2 Aluminium - Based on 0.70mm thick outer and 0.50mm thick inner metal facing

Compression Strength	0.140 Mpa as per BS EN 826
Tensile Strength	0.140 Mpa
Shear Strength	0.120 Mpa as per ASTM C 273
Dimensional Stability Test conducted at 90% relative humidity and 70 ±/2 deg C.	Length and Width < 2% and Thickness < 6 % as per BS EN 1604
Heat Exposure test at 90% relative humidity and 70 +/- 2 deg C.	Length and Width < 2% and Thickness < 6 % as per BS EN 1604
Dimensional Stability (48 Hrs.)	As per BS EN 1604 -1
Average Water Absorption (2 Hrs.) by Vol (%)	< 1 % (tested as per ASTM C 209)

DIMENSIONAL TOLERANCE

Thickness (mm)	T ≤ 100 mm ± 2 mm, T > 100 mm ± 2%
Width (mm)	± 2 mm
Length (mm)	L ≤ 3000 ± 5 mm, L > 3000 ± 10 mm

TEST CERTIFICATES FOR FIRE-PROPERTIES

ASTM D 1929 : 2016 Flammability Testing	Passed self Ignition Temperature of PIR Foam greater than 540 deg C .
Classification for Reaction for fire	Classification of B-S1-do as per BSEN 13501-1:2007+A1:2009
Dubai Central Laboratory (DCL)	Passed (EN 13165, ISO 11925-2 Single Flame test)
ASTM E84	Passed (Class A) with less Flame spread and less Smoke development





LOAD TABLE

ISO THERM Load Table Based On Given Parameters

ALUMINIUM

(t) Panel Core Thickness (mm)	I x (cm ⁴) for 1m width	z top for 1m width cm ³	z bottom for 1m width cm ³	Moment kN m Top	Moment kN m Bottom
50	35	9	28	1.08	3.28
75	85	18	30	2.09	3.52
100	174	31	40	3.56	4.62

Based on 0.7 mm external and 0.5 mm internal Aluminium skin

(t) Panel Thickness (mm)	Allowable Uniform Loads kN/m ²																	
	1.0 m		1.5 m		2.0 m		2.5 m		3.0 m		3.5 m		4.0 m		4.5 m		5.0 m	
	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D
50	8.63	13.52	3.84	4.00	2.16	1.69	1.38	0.86	0.96	0.50	0.70	0.32	0.54	0.21	0.43	0.15	0.35	0.11
75	16.71	32.71	7.42	9.69	4.18	4.09	2.67	2.09	1.86	1.21	1.36	0.76	1.04	0.51	0.82	0.36	0.67	0.26
100	28.45	66.86	12.65	19.81	7.11	8.36	4.55	4.28	3.16	2.48	2.32	1.56	1.78	1.04	1.41	0.73	1.14	0.53

fy Al 170 N/mm² permissible span - deflection ratio = 100

GI/STEEL

(t) Panel Thickness (mm)	I x (cm ⁴) for 1m width	z top for 1m width cm ³	z bottom for 1m width cm ³	z top for 1m width cm ³	Moment kN m Bottom
50	27	7	25	1.17	4.26
75	71	14	29	2.37	4.93
100	148	24	39	4.05	6.63

Based on 0.5mm GI External and 0.5mm Internal Skin

(t) Panel Thickness (mm)	Allowable Uniform Loads kN/m ²																	
	1.0 m		1.5 m		2.0 m		2.5 m		3.0 m		3.5 m		4.0 m		4.5 m		5.0 m	
	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D	S	D
50	9.39	30.48	4.17	9.03	2.35	3.81	1.50	1.95	1.04	1.13	0.77	0.71	0.59	2.48	0.46	0.33	0.38	0.24
75	18.94	79.51	8.42	23.56	4.74	9.94	3.03	5.09	2.10	2.94	1.55	1.85	1.18	1.24	0.94	0.87	0.76	0.64
100	32.37	166.60	14.39	49.36	8.09	20.82	5.18	10.66	3.60	6.17	2.64	3.89	2.02	2.60	1.60	1.83	1.29	1.33

Permissible span-deflection ratio = 100

fy GI 250 N/mm²

T = Thickness S = Strength D = Deflection

