

THE SYSTEM

Insulation system reduces the heat transfer through the envelope of a building.

Extruded polystyrene boards have closed cells with common sides and is produced with fully automated extrusion process in accordance with international specifications and standards. Extruded polystyrene has a high resistance to water absorption. The manufacturing process, combined with intrinsic qualities of the static component thermoplastic material gives it predictable performance and high insulating value.

ROOF INSULATION

Roof Insulation mostly known as the inverted roof concept or upside-down roofing, succeeds in insulating both the waterproofing membrane and the slab from extreme thermal stress.

WALL INSULATION

Interior Wall Insulation : It is used where existing buildings require insulation, building with special exterior finishes and building with intermittent air conditioning. The Internal lining (Wall fix) can be used either with adhesives or by mechanical fasteners. Cavity Wall Insulation – It is an advantage where an external brick of any type and finish is required. Also, for any type for air conditioned buildings or GRC panels with adhesive or mechanical fasteners.

Exterior Insulation - It is most efficient way of insulating buildings without interrupting structure elements. It can be fixed behind granite or GRC panels with adhesive or mechanical fasteners.

FLOOR INSULATION

Floor finish is particularly important in the hot weather areas, especially where the soil temperature is very high. Good floor insulation helps reduce heat flow through the floor into air conditioned buildings. Extruded Polystyrene boards are efficient due to their high compressive strength, high resistance to water absorption, moisture penetration and low thermal conductivity.



ADVANTAGES

Thermal Insulation Boards have several advantages, amongst are:

- Closed and uniform cell structure • Extremely low moisture absorption
- Very good mechanical strength • Long-term high insulation, performance efficiency
- Good dimensional stability • High resistance to temperature cycling
- High resistance to ageing • Very high resistance to water absorption.
- Does not require a vapor barrier. • Not affected by cavity masonry wall construction.
- High long-term insulation value. • Protects the inner walls from condensation.

Strong rigid board, not easily damaged • Easy to handle, cut and install. • The boards are specially long to help cover more areas and therefore reduce installation time and cost. • Available in a wide range of thicknesses. • It has Tongue and Groove profiles on all four edges to eliminate thermal bridging. • It does not rot or settle. • It is extremely cost-effective in cavity wall applications.

CHARACTERISTICS

Property (Average) ¹	Test Standard ²	Units	35-36	26	21	40	45	48
Density, min.	DIN 53420 ASTM D-1622	kg/m ³ lbs/ft ³	32-35/36 2.2	26 1.6	21 - 24 1.3	40 2.5	45 2.8	48 2.9
Thermal conductivity ³ fresh as manufactured at 4.4°C (40°F) mean test temperature	DIN 52612 or DIN 52616	W/m.K Btu.in/ft ² .hr.°f	0.016 0.110	0.016 0.110	0.016 0.110	0.016 0.110	0.016 0.110	0.016 0.110
Laboratory value at 10°C (50°F) mean test temperature	ASTM C-177 or ASTM C-518	W/m.K Btu.in/ft ² .hr.°f	0.027 0.190	0.027 0.190	0.028 0.200	0.025 0.170	0.025 0.170	0.025 0.170
5 years aged (design) value at 24°C (75°F) mean test temperature		W/m.K Btu.in/ft ² .hr.°f	0.032 0.220	0.032 0.220	0.032 0.220	0.032 0.210	0.030 0.210	0.030 0.210
Compressive strength ⁴ at 10% Deflection	DIN 53421 ASTM D-1621	kPa psi	300 43	210 30	150 22	400 57	450 65	700 100
Compressive Elastic Modulus		psi	1800	1400	1300	2200	2600	---
Water vapor permeability	ASTM C-355	perm . cm perm . in	0.79 0.47	0.84 0.50	0.94 0.56	0.67 0.40	0.67 0.40	0.67 0.40
Water absorption by submersion ⁵	DIN 53428 ASTM D-2842 (±1% by Vol. precision)	DIN 53428 ASTM D-2842 (±1% by Vol. precision)	% by Vol. % by Vol.	0.20 <1.00	0.20 <1.00	0.20 <1.00	0.20 <1.00	0.20 <1.00
Capillarity	-	-	None	None	None	None	None	None
Linear coefficient of Thermal expansion & contraction (heat soaking conditions)	- -	°C ⁻¹ °F ⁻¹	43x10 ⁻⁶ 24x10 ⁻⁶	49x10 ⁻⁶ 27x10 ⁻⁶	49x10 ⁻⁶ 27x10 ⁻⁶	43x10 ⁻⁶ 24x10 ⁻⁶	43x10 ⁻⁶ 24x10 ⁻⁶	43x10 ⁻⁶ 24x10 ⁻⁶
Irreversible dimensional variation (temperature changes up to 65°C(158°F) After 24 hours exposure After 168 hours exposure	ASTM D-2126 Method G	% %	0.1 0.3	0.5 0.7	0.5 0.7	0.1 0.3	0.1 0.3	0.1 0.3
Flexural strength (at yield) Machine (length) direction cross (width) direction	ASTM C-203	kg/cm ²	84	70	44	8.8	9.9	9.9
		psi	120	100	62	125	140	140
		kg/cm ²	5.2	4.4	3.0	5.5	6.0	6.0
		psi	75	62	42	78	85	85
Fire classification	DIN 4102	Building Material Class	B1	B1	B1	B1	B1	B1