



## ARTIFICIALLY MADE ORGANIC EXTRUDED POLYSTYRENE THERMAL INSULATING MATERIAL

### DESCRIPTION

Styropan XPS extruded polystyrene is an artificially made organic thermal insulating material, with a closed-cell structure which, by polymerization and constant extrusion, takes the form of a solid foam board.

It is made from thermoplastic polystyrene, additives, colouring agents, flame retardants and propellant gases free of CFCs (chlorofluorocarbon gases).

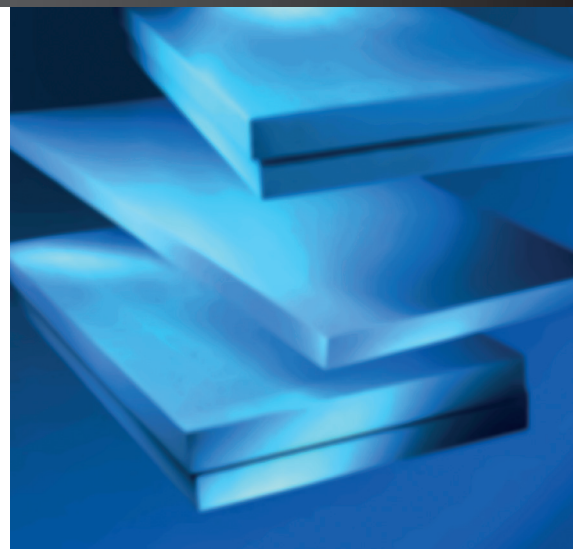
During the production process of Styropan XPS, this mixture is homogenized and liquefied in extruders, under controlled temperature and pressure conditions. This fluid is then processed through a die, from where it

emerges as a foam board and is shaped, trimmed and cut to dimension. The end product is a homogeneous insulation material with closed polyhedral cells of a diameter ranging from 0.05mm to 0.5mm and walls of just 1µm thickness.

What is impressive is that despite the fact that 97% of its volume is composed of inert gas and the remaining 3% are the cell structure's walls, extruded polystyrene Styropan XPS is a solid material with excellent thermal insulating and mechanical properties.

### PROPERTIES

Thanks to these properties, Styropan XPS can be used in a number of applications, such as



- Thermal insulation of concrete elements (beams, pillars, walls, concrete wall ties, wooden shuttering boards)
- Insulation of exterior walls (prevention of dampness – mildew)
- Thermal insulation of roofs (flat roofs, pitched roofs, tiled roofs)

### ADVANTAGES

Styropan XPS is a unique thermal insulating, money-saving and environmentally friendly building solution thanks to its properties, which are:

- Almost zero heat loss, which contributes to energy saving
- High durability
- Zero hydro absorbency
- Compression stability
- Self-extinguishing properties
- Homogenous mass density
- Dimension stability
- Excellent compatibility with other building materials

Styropan XPS is manufactured according to the European Union's norm EN13164 concerning extruded polystyrene products and the Quality Management system EN ISO 9001:2000 and is CE marked.

Styropan XPS is 100% recyclable and free of CFC, HCFC and HFC gases (chlorofluorocarbon, hydro chlorofluorocarbon and

hydro fluorocarbon gases), thus contributing to the reduction of the ozone layer depletion.

Its exceptional durability which exceeds a building's life span, contributes to the environment's protection by saving on resources and energy.



## TECHNICAL SPECIFICATIONS

PROPERTY		STANDARD	UNIT	VALUE
Minimum Density		EN 1602	kg/m³	32
Thermal Conductivity λ at 10° C	30mm	EN 12667	W/(m-K)	0.033
	50mm			0.035
	80mm			0.038
COMPRESSION STRENGTH				
STYROPAN XPS General Use (with surface skin)		EN 826	KPa	300
STYROPAN XPS External Thermal Insulation (diamond-shaped surface)				250
Water Absorption Total Immersion (maximum)		EN 12087	%	≤ 0,7
Temperature Coefficient of Linear Expansion			mm/mK	0.07
Fire resistance		EN 13501-1		Euroclass E
Resistance to Vapor Permeability μ (Air μ=1)		EN 12086		100mij
Minimum / Maximum Limits of Temperature at application			°C	-50 / +75
Dimensions	Length	EN 822	mm	1250
	Width		mm	600
Thicknesses		EN 823	mm	30, 50, 80

Thickness of Extruded Polystyrene sheet mm	R Value m <sup>2</sup> K/W	U Value W/(m <sup>2</sup> K)
30	0.91	1.10
50	1.43	0.70
80	2.11	0.47