

GENERAL INFORMATION

The **XPan** panels are a trademark for the thermo-insulating extruded polystyrene foam panels produced by ZENTYSS SRL using its own production lines, with the latest environment - friendly technology. The **XPan** extruded polystyrene isolating panels are according to the European regulations regarding the emission of substances that affect the ozone layer, they do not contain CFC – HCFC compounds and do not contribute to global warming.

The XPAN package panels are marked with appropriate symbols (printed on the PE foil pack):

CFC – HCFC FREE
This product does not contain harmful gases for the environment

ODP = 0
Ozone Depleting Potential

GWP < 7
Global Warming Potential

The extruded polystyrene **XPan** panels are according to the 89/106/EEC European Directive.

CONFORMITY

The XPan panels (extruded polystyrene insulating panels) have been tested according to the (SR) EN 13164:2009 standard (system 3), tests that have shown that the performances are according to the reference.

The CE conformity marking is applied by the producer on the label of the collective wrapping of the extruded polystyrene panels and on the accompanying documents.

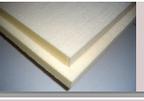
PROCESS

The production of the **XPan** panels is based on the physical expansion of the melted plastic material in the extruder, where the temperature, pressure, melted material and the quantities of blowing agents are controlled continuously.

The closed cellular structure of the panels produced using this technology and the additives mixed with the polystyrene determine superior, long-lasting technical characteristics:

- superior mechanical resistance
- reduced thermal conductivity
- homogeneous density
- high resistance to moisture
- resistance to vapor diffusion
- elasticity
- resistance to freeze-meltdown cycles
- lack of capillarity
- small specific weight (ease of handling)
- ease of cutting with usual tools
- clean, odor-free non-irritating for the skin
- increased resistance to fire

CLASSIFICATION

A	XPan classification panels - depending on the surface treatment		
1	XPan panels - with skin surfaces	<ul style="list-style-type: none"> • smooth surface • perforated surface Thickness: 15 - 120 mm	   
2	XPan panels - without skin	without skin Thickness: 15 - 120 mm	 
3	XPan panels -elaborated surfaces (with longitudinal grooves)	grooves: for breaking (narrow) and for additional adherence (wide) Thickness: 20 - 120 mm	 
B	XPan classification panels - depending on the edge type		
1	XPan panels - Straight cut	Straight Edge Thickness: 15 - 120 mm	 
2	XPan panels - Step cut	Step cut edge Thickness: 30 - 120 mm	 
3	XPan panels - “male & female” edges	“male & female” edges Thickness: 50 - 120 mm	 

XPAN - EXTRUDED POLYSTYRENE



PANELS SIZE	Length:	Width:	Thickness:
	1250 – 3000 mm	600 mm	15; 20; 30; 40;50;60;80;100;120 mm
XPAN PANELS CODES	according to (SR) EN 13164:2009		
XPan ≠ 20 mm: XPS-EN 13164–T3–DLT(1)5-CS(10/Y)250-WL(T)0.7-WD(V)3-MU150– FT2			
XPan ≠ 30-40 mm: XPS-EN 13164–T3–DLT(1)5-CS(10/Y)300-WL(T)0.7-WD(V)3-MU150–FT2			
XPan ≠ 50-60 mm: XPS-EN 13164–T2–DLT(1)5-CS(10/Y)300-WL(T)0.7-WD(V)3-MU150–FT2			
XPan ≠ 80-120 mm: XPS-EN 13164–T1–DLT(1)5-CS(10/Y)300-WL(T)0.7-WD(V)3-MU150–FT2			

RECOMMENDED APPLICATIONS

XPan panel type	perforated surface	smooth surface	without skin	without skin grooves
Insulating the perimeter of foundation walls in contact with the earth	■	■		
Interior basement wall insulation	■	■		
Floor insulation: <i>domestic floors, load bearing floors, load bearing floor slabs</i>	■	■		
Insulation building facades: <i>new or renovated buildings</i>			■	■
Internal walls Insulation	■		■	
Thermal insulation of roofs and terraces: <i>conventional flat roofs, duo roofs, promenade roofs, plus roofs, roof gardens, pitched roofs, parking decks, parapet walls, ceilings</i>	■	■		
Cold bridge insulation: <i>concrete beams and pillars insulation</i>	■			■
Sandwich panels, double metal doors Plasterboard laminates			■	■
Ice rinks: refrigeration rooms isolation	■	■		
Frost protection under roads and railways	■	■		

TECHNICAL DATA

Characteristic	EN 13164 code	Thickness [mm]	Unit	Value
Thermal conductivity	λ_D	15 – 60	W/m [°] K	0,033
		80-120		0,034
Thermal resistance	R_D	15	m ² °K/W	0,45
		20		0,61
		30		0,91
		40		1,21
		50		1,52
		60		1,82
		80		2,35
		100		2,94
Compressive stress or compressive strength at 10% deformation *	CS(10/Y)	15 - 20	KPa	≥ 250
		30 - 120		≥ 300
Shear strength	ζ	15 - 120	KPa	190
Water vapor transmission	MU	15 - 120	-	150

XPan - EXTRUDED POLYSTYRENE



Characteristic	EN 13164 code	Thickness [mm]	Unit	Value
Long term water absorption by immersion	WL(T)0,7	15 - 120	%	≤ 0,7
Water absorption by diffusion	WD(V)	15 - 120	%	≤ 3
Reaction to fire*	-	15 - 20	Euro-class	F
		30 - 120		E
Capillarity	-	15 - 120	-	0
Freeze-thaw-resistance	FT2	15 - 120	%	1
Maximum service temperature	-	15 - 120	°C	-50 ÷ +70
Global Warming Potential GWP				< 7
Ozone Depleting Potential ODP				0

$$1 \text{ N/mm}^2 = 1 \text{ MPa} = 1000 \text{ kPa}$$

* Characteristics of compressive strength and reaction to fire class are relevant under this specifications, after following the period of maturation. Maturation period is between 30 days for panel thickness of 20 mm and 150 days for 120 mm panel thickness.

XPan PACKAGING, MARKING, TRANSPORTATION.

- *packaging*: packs 1250 x 600 x 400 (420) mm, packed in LDPE shrink film;
- *marking*: on labels / on packaging / on panel - according to SR EN 13164:2009, paragraph 8 (identification and main technical characteristics);
- *transport* - with transport vehicles clean and covered to protect goods during transport.

It is forbidden:

- ☞ *extruded polystyrene transport together with the materials that may damage the panels (solvents, fuels, paints, materials that can move during transport).*
- *storage*: in original packaging and in areas covered, on wooden grids, clean, ventilated, away from direct sunlight and sources of heat and fire or corrosive and hard objects that may y damage the product shear.

WARNING ! No smoking and no working with open flames in the trailer or warehouse.

WARRANTY

The guarantee period of **XPan** panels is 12 months from the date of manufacture, under the conditions of packaging, storage and transportation provided above.

NOTE:

1. **XPan** panels are completely ecological and do not contain Freon (CFC, HCFC).
2. The resistance to fire and resistance to compression characteristics are relevant according to the regulations declared after the maturation period.
3. **XPan** panels aren't biodegradable and do not represent a threat to water and soil
4. The resulting waste can be recycled but should not be mixed with other polymers
5. When using panels without a complete maturation period (minimum 30 days from the production date), users need to consider a decrease in the product's fire resistance and easier burning of the panels.
6. **DO NOT USE** open flame when using **XPan** panels (when used together with hydro-isolating membranes, an open flame **MUST NOT BE USED**- auto-adhesive membranes needs to be used in this situations).
7. **IMPORTANT**: when installing the **XPan** panels (after mounting) protection against external
8. factors must be ensured. Excessive heating due to direct sunlight exposure can cause the deformation of the thermo-isolating panels. We recommend the immediate installing of the system's other components. For isolating terraces, over the **XPan** panels that are installed directly on the hydro-isolation, a geo-textile separation layer must be applied, and afterwards a protection layer (which also has ballast role). The protection layer can be made of:
 - a layer of concrete or concrete slabs – for circulated terraces
 - a permeable layer, resistant to UV and that does not wear out in time (gravel with large grain) for not circulated terraces.

WARNING! Darkly-colored film and membranes are not adequate as a **temporary** protection layer.