



# Thermoformed panel made of expanded polystyrene for radiant floor systems

## ► FAST-THERM

*Thermoformed panel made of expanded polystyrene with a very easy laying, suitable for pipes with a diameter of 16 ÷ 17 mm and available in different thicknesses and thermal resistance values.*

### ■ PRESENTATION



FAST-THERM is an insulating panel for underfloor radiant systems made of closed-cell sintered polystyrene foam, coupled with a thermoformed film which facilitates the coupling between the panels.

The thermoformed film has embossed ashlars with back draft to guarantee the fixing of the pipe without any additional clips.

The panel is CE marked and suitable for radiant systems fed with water for heating and cooling applications, integrated into structures according to the UNI EN 1264-4 standards.

### ■ APPLICATIONS

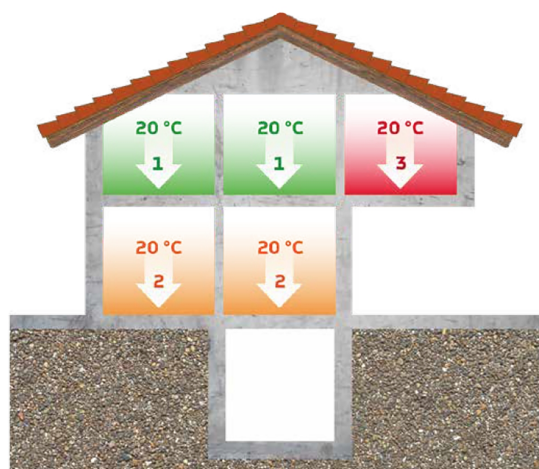


FAST-THERM is specifically designed for multiple applications, thanks to the embossed ashlars with high resistance to footsteps and to the possibility of installation even in small spaces

FAST-THERM is suitable for pipes of 16 and 17 mm diameter and is available in different thicknesses of expanded polystyrene to meet the minimum value of thermal resistance required by the UNI EN 1264-4 standard.

- 10 mm
- 20 mm
- 30 mm
- 40 mm
- 50 mm
- 63 mm

## ■ PRESCRIPTIONS



To limit heat dispersions to the underlying room through the floor, standard UNI EN 1264-4 recommends a minimum thermal resistance value ( $R_d$ ) for the insulation layers (panel) according to thermal conditions below the heated room.

	1	2	3		
<b>Application case</b>	Underlying heated environment	Underlying room not heated non-continuously heated or directly on the ground	Underlying outdoor temperature		
			Design outdoor T $T_d \geq 0 \text{ } ^\circ\text{C}$	Design outdoor T $0 \text{ } ^\circ\text{C} > T_d \geq -5 \text{ } ^\circ\text{C}$	Design outdoor T $-5 \text{ } ^\circ\text{C} > T_d \geq -15 \text{ } ^\circ\text{C}$
<b>Minimum thermal resistance of the insulation layer (<math>\text{m}^2\text{k/W}</math>)</b>	<b>0.75</b>	<b>1.25</b>	<b>1.25</b>	<b>1.50</b>	<b>2.00</b>

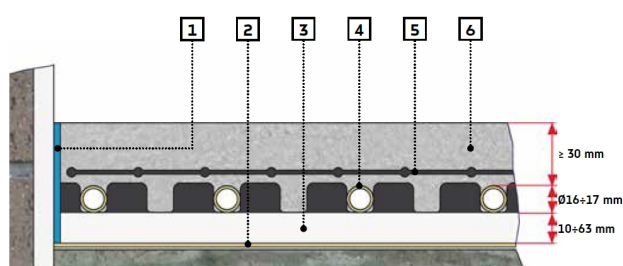
## ■ TECHNICAL SPECIFICATIONS

Features	Standard	THERM10	THERM20	THERM30	THERM40	THERM50	THERM63
<b>Material class</b>	UNI EN 13163	EPS 200	EPS 150	EPS 150	EPS 150	EPS 150	EPS 150
<b>Plastic film</b>	-	600 $\mu\text{m}$	600 $\mu\text{m}$	600 $\mu\text{m}$	600 $\mu\text{m}$	600 $\mu\text{m}$	600 $\mu\text{m}$
<b>Thermal conductivity</b>	EN 12667	0.033 $\text{W/m}^*\text{K}$	0.034 $\text{W/m}^*\text{K}$	0.034 $\text{W/m}^*\text{K}$	0.034 $\text{W/m}^*\text{K}$	0.034 $\text{W/m}^*\text{K}$	0.034 $\text{W/m}^*\text{K}$
<b>Thermal resistance</b>	EN 12667	0.45 $\text{m}^2\text{K/W}$	0.75 $\text{m}^2\text{K/W}$	1.03 $\text{m}^2\text{K/W}$	1.32 $\text{m}^2\text{K/W}$	1.62 $\text{m}^2\text{K/W}$	2.00 $\text{m}^2\text{K/W}$
<b>Compressive strength at 10% deformation</b>	UNI EN 826	200 kPa	150 kPa	150 kPa	150 kPa	150 kPa	150 kPa

## ■ CONSTRUCTION DETAILS

Features	Standard	Value	Class
Durability of thermal conductivity against heat, atmospheric agents, degradation and aging	UNI EN 13163-13	The thermal conductivity of EPS does not change over time	-
Reaction to fire	EN ISO 11925-2:2010; EC 1:2011	EUROCLASSE - E - UNI EN 13501:2011	E
Durability of reaction to fire against heat, atmospheric agents, degradation and aging	UNI EN 13163:2013	The reaction to fire of EPS does not change over time	E
Long-term water absorption (25%)	UNI EN 12087:2013	0.5 (150 KpA); 2 (200 KpA)	WL(T)0.5 (150 Kpa); WL(T) 2 (200 kPa)
Dimensional tolerance of thickness (mm)	UNI EN 823:2013	± 2	(T)2
Dimensional stability at 23 °C and 50 % U.R. (%)	UNI EN 12086:2013	0.2	DS(N)2
Resistance to water vapor diffusion of EPS $\mu$ (num)	UNI EN 12086:2013	30-70 (150 kPa); 40-100 (200 kPa)	Z 30-70 (150 kPa); Z 40-100 (200 kPa)

## ■ COMPONENTS OF THE RADIANT SYSTEM



1. Perimeter edging
2. Humidity barrier
3. Insulation panel
4. Piping
5. Electro-welded mesh
6. Screed with additive

## ■ INSTALLATION

FAST-THERM can be installed in many situations depending on the thickness available for the radiant system to be placed under the floor of the house and in compliance with UNI EN 1264-4.

The minimum size required to use this type of panel is 56 mm.

The laying step of the pipe is 5 cm and its multiples, while the installable pipes are those of 16 and 17 mm diameter.

## ■ DIMENSIONS

Code	Insulation thickness	Total thickness	Useful dimensions	Pcs for package	Packaging
THERM10	10 mm	32 mm	140 x 80 cm	22	24.64 m <sup>2</sup>
THERM20	20 mm	42 mm	140 x 80 cm	16	17.92 m <sup>2</sup>
THERM30	30 mm	52 mm	140 x 80 cm	12	13.44 m <sup>2</sup>
THERM40	40 mm	62 mm	140 x 80 cm	10	11.20 m <sup>2</sup>
THERM50	50 mm	72 mm	140 x 80 cm	8	8.96 m <sup>2</sup>
THERM63	63 mm	85 mm	140 x 80 cm	6	6.72 m <sup>2</sup>

## ■ SPECIFICATION SUMMARY

**IVAR FAST-THERM THERM10:** Panel made of sintered expanded polystyrene with closed cells EPS 200 coupled with thermoformed film HIPS 600 µm with embossed ashlar. Panel marked CE, suitable for radiant systems fed with water for heating and cooling integrated into the structures according to the UNI EN 1264 standard. On the perimeter edges of the panel a batten is provided to allow a solid coupling between adjacent panels. The embossed ashlar with back draft guarantee the fixing of the pipe without any additional clips. Insulation thickness: 10 mm. Total thickness: 32 mm. Multiple laying steps: 50 mm. Pipes diameter: 16/2 - 17/2 mm. Panel dimensions: 1400 x 800 mm. Thermal conductivity: 0,033 W/mK.

**IVAR FAST-THERM THERM20:** Panel made of sintered expanded polystyrene with closed cells EPS 150 coupled with thermoformed film HIPS 600 µm with embossed ashlar. Panel marked CE, suitable for radiant systems fed with water for heating and cooling integrated into the structures according to the UNI EN 1264 standard. On the perimeter edges of the panel a batten is provided to allow a solid coupling between adjacent panels. The embossed ashlar with back draft guarantee the fixing of the pipe without any additional clips. Insulation thickness: 20 mm. Total thickness: 42 mm. Multiple laying steps: 50 mm. Pipes diameter: 16/2 - 17/2 mm. Panel dimensions: 1400 x 800 mm. Thermal conductivity: 0,034 W/mK.

**IVAR FAST-THERM THERM30:** Panel made of sintered expanded polystyrene with closed cells EPS 150 coupled with thermoformed film HIPS 600 µm with embossed ashlar. Panel marked CE, suitable for radiant systems fed with water for heating and cooling integrated into the structures according to the UNI EN 1264 standard. On the perimeter edges of the panel a batten is provided to allow a solid coupling between adjacent panels. The embossed ashlar with back draft guarantee the fixing of the pipe without any additional clips. Insulation thickness: 30 mm. Total thickness: 52 mm. Multiple laying steps: 50 mm. Pipes diameter: 16/2 - 17/2 mm. Panel dimensions: 1400 x 800 mm. Thermal conductivity: 0,034 W/mK.

**IVAR FAST-THERM THERM40:** Panel made of sintered expanded polystyrene with closed cells EPS 150 coupled with thermoformed film HIPS 600 µm with embossed ashlar. Panel marked CE, suitable for radiant systems fed with water for heating and cooling integrated into the structures according to the UNI EN 1264 standard. On the perimeter edges of the panel a batten is provided to allow a solid coupling between adjacent panels. The embossed ashlar with back draft guarantee the fixing of the pipe without any additional clips. Insulation thickness: 40 mm. Total thickness: 62 mm. Multiple laying steps: 50 mm. Pipes diameter: 16/2 - 17/2 mm. Panel dimensions: 1400 x 800 mm. Thermal conductivity: 0,034 W/mK.

**IVAR FAST-THERM THERM50:** Panel made of sintered expanded polystyrene with closed cells EPS 150 coupled with thermoformed film HIPS 600 µm with embossed ashlar. Panel marked CE, suitable for radiant systems fed with water for heating and cooling integrated into the structures according to the UNI EN 1264 standard. On the perimeter edges of the panel a batten is provided to allow a solid coupling between adjacent panels. The embossed ashlar with back draft guarantee the fixing of the pipe without any additional clips. Insulation thickness: 50 mm. Total thickness: 72 mm. Multiple laying steps: 50 mm. Pipes diameter: 16/2 - 17/2 mm. Panel dimensions: 1400 x 800 mm. Thermal conductivity: 0,034 W/mK.

**IVAR FAST-THERM THERM63:** Panel made of sintered expanded polystyrene with closed cells EPS 150 coupled with thermoformed film HIPS 600 µm with embossed ashlar. Panel marked CE, suitable for radiant systems fed with water for heating and cooling integrated into the structures according to the UNI EN 1264 standard. On the perimeter edges of the panel a batten is provided to allow a solid coupling between adjacent panels. The embossed ashlar with back draft guarantee the fixing of the pipe without any additional clips. Insulation thickness: 63 mm. Total thickness: 85 mm. Multiple laying steps: 50 mm. Pipes diameter: 16/2 - 17/2 mm. Panel dimensions: 1400 x 800 mm. Thermal conductivity: 0,034 W/mK.

## ■ CODES

<b>THERM10</b>	IVAR FAST-THERM Insulation thickness: 10 mm. Total thickness: 32 mm
<b>THERM20</b>	IVAR FAST-THERM Insulation thickness: 20 mm. Total thickness: 42 mm
<b>THERM30</b>	IVAR FAST-THERM Insulation thickness: 30 mm. Total thickness: 52 mm
<b>THERM40</b>	IVAR FAST-THERM Insulation thickness: 40 mm. Total thickness: 62 mm
<b>THERM50</b>	IVAR FAST-THERM Insulation thickness: 50 mm. Total thickness: 72 mm
<b>THERM63</b>	IVAR FAST-THERM Insulation thickness: 63 mm. Total thickness: 85 mm

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