

Rev. 03/2019

KILMA-SUPER STRONG

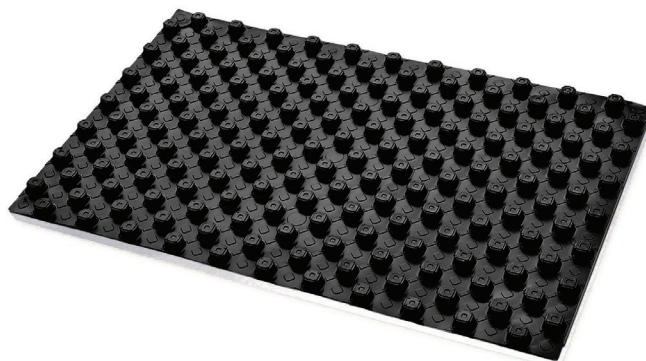
Underfloor heating panel.

KILMA-SUPER STRONG

Underfloor heating panel.



100% HBCD FREE



$\sigma_{10} \geq 1$

PRODUCTION RANGE

Code	Real Panel Sizes [mm]	Classification according to Directive 89 / 106 / EEC	Insulating thickness [mm]	Number of panels per package	Useful surface covered by a pack of panels
1361.10.00	1350 x 850	CS(10)150*, Euroclass E**	10	18	18,72 m ²
1361.18.00	1350 x 850	CS(10)150*, Euroclass E**	18	14	14,56 m ²
1361.28.00	1350 x 850	CS(10)150*, Euroclass E**	28	10	10,40 m ²
1361.42.00	1350 x 850	CS(10)150*, Euroclass E**	42	7	7,28 m ²
1361.50.00	1350 x 850	CS(10)150*, Euroclass E**	50	6	6,24 m ²

* Minimum resistance to compression at 10% of crushing: $\sigma_{10} \geq 150$ kPa (i.e. a pressure greater than or equal to 150 kPa is required for the panel to undergo crushing of 10%).

** When the flames hit the surface and (if required) the side with an exposure time of 15 seconds, the amplitude of flame propagation is not higher than 150 mm vertically from the point of application of the flame, during the 20 seconds following application. Furthermore, as regards any dripping and/or detachment of parts, during the test in compliance with the Standard EN 11925-2, there was no combustion of the paper/filter.

DESCRIPTION

Pre-formed foil sheet in printed shockproof polystyrene coupled with insulating layer (EPS), called **RBM Kilma-Super Strong**.

The **RBM Kilma-Super Strong** panel is made from coupling two distinct panels and precisely:

- A 0.6 mm thin foil of black printed shockproof polystyrene (having a high resistance to pressure and to treading).

This surface is also characterised by a shaped grid of points for fixing the pipe, with a square base geometry.

- Insulating layer of self-extinguishing smooth EPS closed cell expanded sintered polystyrene, with thickness ranging from 10 to 50 mm.

The insulating layer and the pre-formed foil are supplied already securely coupled.

Coupling between the various panels is possible due to the fact that the polystyrene strip protrudes from the insulating layer by about 50 mm, on two sides of the same, so that the coupling is carried out by overlapping the same strip, by inserting the pre-formed bosses one inside the other.

The **RBM Kilma-Super Strong** panel is highly resistant to pressure and to treading.

The panel is used together with the **RBM Kilma HI-PERFORMANCE PLUS** pipes code 2517.17.X2, RBM Kilma-Flex 17 mm pipes, code: 464.17.X2 (PE-Xc), 2009.17.X2 (PE-Xa), or 1484.17.X2 (PE-RT); or with the RBM Tita-fix 16 mm multilayer pipes, code: 1545.16.X0 (PE-RT) or 1542.16.00 (PE-Xc). For complete order codes refer to the dedicated technical data sheets.

THE USE

The **RBM Kilma-Super Strong** panel meets the need to thermally insulate the system from the rest of the structure, in order to reduce the commissioning time and to energise the radiant screed only and not the inertial mass of the building.

The product also makes it possible to minimise the contact of the pipes (for floor heating) with the insulating panels and, therefore, allows for greater system yield.

The **RBM Kilma-Super Strong** panel is used in floor radiant heating systems (with predominantly spiral pipes).

The **RBM Kilma-Super Strong** panel is also particularly suitable in **civil plants**, when you require a quick installing, single system, and when the main priority is a particularly stable pipe anchoring.

DIMENSIONAL FEATURES

Nominal pitch of the shaped grooves for pipe positioning	50 mm and multiples
Coupling with other panels of the same type	By overlapping the same
Overall surface	1350 x 850 mm
Useful surface	1300 x 800 mm
Useful surface covered by a Kilma-Super Strong panel	1,04 m ²
Shockproof polystyrene foil thickness	0,6 mm
Thickness of insulating panel	10-18-28-42-50 mm
Piping diameter applicable to the panel	14 ÷ 17 mm

CONSTRUCTION FEATURES

Pre-formed foil	Pre-formed foil sheet in 0,6 mm thick printed shockproof polystyrene
Coupled insulating panel	Insulating panel in self-extinguishing EPS closed cell expanded sintered polystyrene, with pre-formed grooves. Variable insulation thickness 10 ÷ 50 mm

TECHNICAL FEATURES

Code	1361.10.00	1361.18.00	1361.28.00	1361.42.00	1361.50.00
Declared thermal resistance R_D=	0,303	0,545	0,848	1,273	1,515
Declared thermal conductivity	$\lambda_D = 0,033 \text{ W / m K}$				
Dimensional tolerances	T1 – L2 – W2 – S2 – P10				
EPS Classification (according to UNI-EN 13163)	EPS 150				
Compressive strength at 10% crushing	$\sigma_{10} \geq 150 \text{ kPa level CS(10)150}$				
Reaction to fire	Euroclass "E"				
Dimensional stability (23°C/50% R.H.)	DS(N) 2				
Water absorption for long time full immersion	$W_{it} < 6\% \text{ level WL(T) 6}$				
Resistance to bending	BS 250				
Transmission to water steam	$\mu 30 \div 70$				

NORMATIVE REFERENCES

EU REGULATION NO. 305 / 2011 (CPR)

UNI-EN 13163

Thermal insulation products for buildings - Factory made expanded polystyrene (EPS) products - Specification.

The standard in question, calls upon the following standards:

UNI-EN 13172:2012

Thermal Insulating Products - Evaluation of Conformity.

UNI-EN 826:2013

Thermal Insulating Products for Building Applications - Determination of Compression Behaviour.

UNI-EN 12667:2002

Thermal performance of building materials and products - Determination of thermal resistance by means of guarded hot plate and heat

flow meter methods - Products of high and medium thermal resistance.

UNI-EN 11925-2:2010

Reaction to fire tests for building products.

UNI-EN 13501:2009

Classification to fire of building products and elements - Classification according to the results of the reaction tests and resistance to fire, excluding ventilation systems.











UNI-CEI-EN-ISO 13943:2010

Safety in case of fire - Vocabulary.

UNI-EN 13238:2010

Reaction to fire tests for building products - Conditioning procedures and general rules for selection of substrates.

MAIN COMPONENTS THAT CAN BE USED WITH THE PANELS KILMA-SUPER STRONG

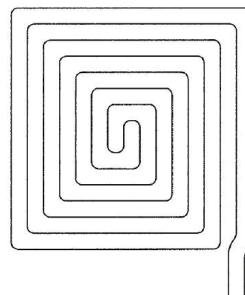
	Code	Description	System
	603.18.12	Bend former for curves at 90°, made of polyamide with fibreglass. Bend former and pipe protector near their connection to the manifold.	Kilma-Isi
	464.17.X2 2009.17.X2 1484.17.X2	KILMA-FLEX pipe, in high density crosslinked polyethylene pipe with anti-oxygen barrier in EVOH. Used in size (external Φ x pipe thickness): 17x2 mm. Available in versions PE-Xc (code 0464.XX.X2), PE-Xa (code 2009.XX.X2) and PE-RT (code 1484.XX.X2). For order codes, refer to the Kilma price list.	Kilma-Isi
	217.17.00	Fitting for polyethylene pipe of 17x2 mm and with connection EUROCONUS G3/4" UNI-EN-ISO 228.	Kilma-Isi
	1542.16.X0 1545.16.X0	Tita-fix multilayer pipe made of three layers: internal layer in polyethylene, intermediate layer in welded aluminium and external layer in polyethylene. Available in versions PE-Xc (code 1542.XX.00), or PE-RT (code 1545.XX.X0). For order codes, refer to the Tita-fix price list.	Kilma-Isi
	224.16.00	Compression fitting for multilayer pipe. Used in sizes 16x2 mm with connection EUROCONUS G3/4" UNI-EN-ISO 228.	Kilma-Isi
	476.40.02	Electro-welded and galvanised binding mesh with the function of drastically reducing the formation of cracks in concrete screed and supplied in bundles of 20 panels: overlapping of 75 mm; link 75x75 mm; dimensions 991x2060 mm; wire diameter 2 mm; area covered by 20 panels: 40.8 m ² .	Kilma-Isi
	472.15.12	Base edging joint: expansion joint in expanded polyethylene, coupled with LPDE mortar containment sheet, adhesive on full height (150 mm), with a thickness of 8 mm and supplied in rolls of 60 m.	Kilma-Isi
	483.25.02 483.32.02	Corrugated sheath: (diameter 25-32 mm) used as pipe protector. It becomes an indispensable protection when the pipes cross the expansion joints. Supplied in 50 m rolls.	Kilma-Isi
	475.10.02 475.25.02	"KILMA-THERM" additive: superfluidifying liquid additive for concrete screeds to improve the workability or the performance characteristics. Supplied in cans of 10 or 25 Kg (approximately 9.80 ÷ 24.50 l), used with an amount equal to 0.9 ÷ 1.1 l every 100 kg of cement.	Kilma-Isi
	475.10.12	Polypropylene fibre additive used to eliminate the risk of cracks as a result of plastic shrinkage in floors not properly dried out and humid, improves the performance of the screed, decreases the workability of the concrete (that is, however, easily restored by introducing the additive "KILMA-THERM" - 0.5 ÷ 0.7 l every 100 kg of cement). Supplied in packs of 1 kg, it is a non-flammable product and requires a dosing (for mixes with average cement content) of 0.9 Kg per m ³ of screed.	Kilma-Isi

TO KNOW MORE

In order to independently adjust the ambient temperature, each room must be heated with one or more specifically dedicated circuits.

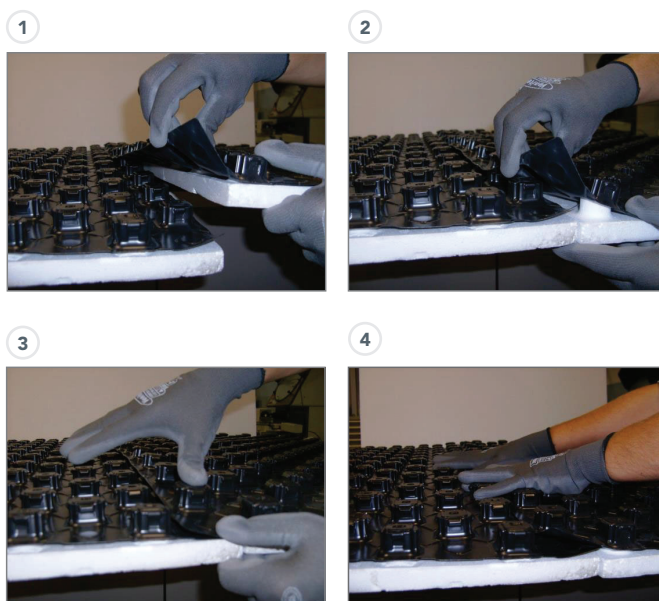
The pipes can be installed on the panels with a development **in a spiral**. This method is used in most applications because it allows for a more homogeneous surface temperature (the supply and return pipes will develop alternately between them), and allows an easier installation (only two curves required at 180°: those in which the development of the spiral is reversed).

The spiral can be at **constant** or **variable distance**: the choice is arbitrary, but it is a good rule to use a variable centre distance when, in line with the glass panels or very dispersant walls, there is the need to bring the pipes closer. Moreover, it is recommended to maintain a higher pitch in the centre of the spiral and a lower pitch at the limits to compensate for the heat loss and consequent asymmetries.



OPERATIONS FOR COUPLING SEVERAL PANELS KILMA-SUPER STRONG

1. Place the panels in adjacent positions.
2. Centre the pre-formed grooves of the panels and place them one inside the other.
3. Press the pre-formed grooves so that they are securely fixed..
4. With an even pressure, adjust the positioned panels.



RBM spa reserves the right to improve and change the described products and related technical data at any moment and without prior notice: always refer to the instructions attached with the supplied components; this sheet is an aid, should the instructions be extremely schematic. Our technical office is always at your disposal for any doubt, problem or explanation.