R979

Description

The R979 pre-formed insulating panel is designed according to an innovative concept that involves the coupling of two different elements:
1) a pre-formed insulating sheet in sintered foam polystyrene (EPS)
2) a surface coating sheet in thermoformed polystyrene (0,6 mm thick)
The combination of these two elements, along with the intrinsic characteristics of each of them, produces a panel whose effective density is lower than that of a classic pre-formed insulation panel, but with greater resistance to deformation caused by footfall.

Versions and product codes

Product code	Size	No. of panels	Total effective surface [m²]
R979Y043	T50 – h32	12	13,44
R979Y044	T50 – h42	8	8,96
R979Y045	T50 – h52	6	6,72
R979Y046	T50 – h62	10	11,20
R979Y047	T50 – h75	8	8,96

T = pitch [mm]; h = height [mm]

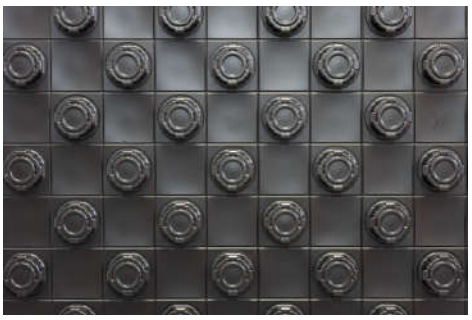
Warning.
Store in covered place, not expose to direct sunlight also after the installation, until laying the screed.

Use

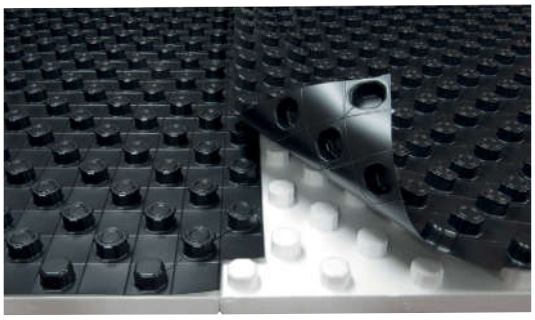
The use of the R979 pre-formed insulating panel is essential for creating a modern, practical radiant system as it allows the rooms to be heated quickly and with reduced power usage (given that it limits the mass of the heated structures and reduces downward heat loss).
In fact, the use of the R979 pre-formed insulation panel produces comfortable ambient temperatures while keeping floor surface temperatures down to around 24÷26 °C (as set out in UNI EN 1264); this means the complete absence of the physiological discomfort and structural problems typical of the old installation techniques, no longer used.
With the improved performance brought about by the pre-formed insulating panel, users can reduce the number of pipes laid and the corresponding flow rate of circulating water, thereby limiting the number of circuits, the diameters of the supply pipes, circulator pressure and boiler room capacity, resulting in immediate energy savings that help safeguard the environment.

Characteristics

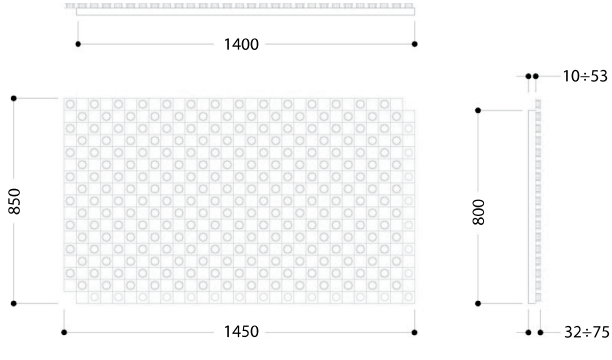
The particular configuration with its pre-formed protuberances firmly holds pipes with an outside diameter of 16 to 18 mm.



The use of the R979 pre-formed insulation panel therefore saves time when laying the pipes, and allows the creation of circuits with 50 mm pitches and multiples thereof. The available thicknesses (with a total height from 32 mm to 75 mm) allow the user to create underfloor heating and cooling systems in all sites, even when the available space is limited (e.g. renovation projects).
All the R979 pre-formed insulation panels have a simple, efficient coupling system. On two sides, the dimensions of the surface coating element are 50 mm greater than the dimensions of the insulating sheet below. The overlap of the two excess borders between adjacent panels thus guarantees reciprocal embedding, to ensure that the radiant circuits have an even support base without any thermal bridges (which would be formed if the panels were linked without a solid coupling).



Dimensions

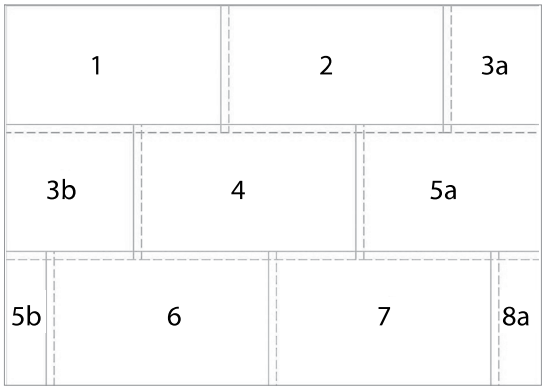


Dimensions in mm

Laying

The laying of the R979 pre-formed insulating panels is quick and simple, thanks to the presence of excess borders on both sides so the panels can be perfectly embedded.

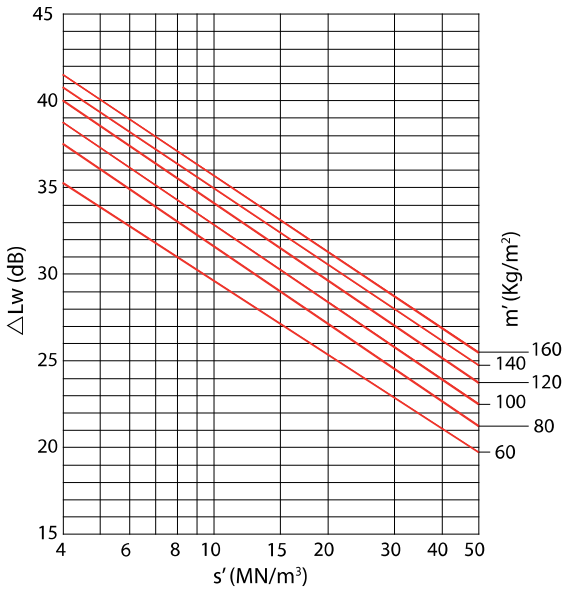
After laying the K369A wall insulation (fundamental in insulation terms for eliminating the thermal bridge of the edge and allowing minimal floor expansion) on the compartment walls, lay and interlock the panels, staggering each subsequent row. The staggering of the rows helps prevent the panels from rising for reasons related to supporting surface detachment or to the rigidity of the pipe which, especially in the bends, tends to rise due to the mechanical memory acquired during the rolling.



The two excess borders are removed from sheet no.1 using a normal cutter, then it is positioned in the corner you have decided to start from.
Sheet no.2 should only be trimmed on its longest side; the border on the shorter side will be used to couple it with sheet no.1. This operation is repeated on all the sheets of the first row.
Subsequent rows will be laid by coupling each panel with the adjacent row (maintaining the stagger) and with an aligned element.
Once the pipe laying process is completed, before proceeding to the pouring of the screed, it is advisable to lay a net of electro-welded wide mesh on the panel to stiffen the screed which will then have a greater capacity to withstand heavy, concentrated loads (e.g. furniture or cabinets of considerable weight) without being crushed.
The space required for the installation of a radiant panel system in a residential property is represented by the height of the pre-formed insulation panel (from 32 mm to 75 mm) plus the thickness of the screed (at least 30 mm, according to UNI EN 1264 -4) and the surface finish in tiles or glued parquet.
Systems using the R979 pre-formed insulating panel and the K369 wall insulation are characterised by high thermal performance and reduced set-up times, thanks to their limited thermal inertia which derives from the moderate mass of the structure in question.

Sound absorption

In compliance with EN 13163, the R979Y045, R979Y046, R979Y047 panels are in class 30SD (equivalent to declaring a dynamic rigidity of s' ≤ 30 MN / m^3, as calculated according to EN13172).



Note.
Figure C1 of the UNI EN 12354-2 standard (fig.7) shows how, for a given mass per unit area of the screed, a limited value of dynamic rigidity leads to an improvement in the soundproofing at the highest ΔLw footfall level.

Technical data

Pre-formed insulation panel R979Y043	
Effective dimensions	1400 x 800 mm
Effective surface	1,12 m^2
Panel dimensions	1450 x 850 mm
Panel surface	1,23 m^2
Total thickness	32 mm insulating sheet: 10 mm + protuberance: 22 mm
Pipe diameter	16÷18 mm
Allowed pitches	multiples of 50 mm
Pre-formed insulating sheet	
Material	Sintered foam polystyrene EPS200
Density	30 Kg/m^3
Thermal conductivity, λ_D	0,033 W/(m K)
Thermal resistance R_λ	0,73 m^{2}K/W
Minimum compression resistance at 10% crushing	200 kPa (2,0 kg/cm^2)
Anti-fire protection	Class E
EN13163 classification	EPS – EN13163 – L(3) – W(3) – T(2) – CS(10)200 – WL(T)2 – Z 40 – 100
Protection layer	
Material	Thermoformed polystyrene
Thickness	0,6 mm
Colour	Black

Pre-formed insulation panel R979Y044	
Effective dimensions	1400 x 800 mm
Effective surface	1,12 m^2
Panel dimensions	1450 x 850 mm
Panel surface	1,23 m^2
Total thickness	42 mm insulating sheet: 20 mm + protuberance: 22 mm
Pipe diameter	16÷18 mm
Allowed pitches	multiples of 50 mm
Pre-formed insulating sheet	
Material	Sintered foam polystyrene EPS150
Density	25 Kg/m^3
Thermal conductivity, λ_D	0,034 W/(m K)
Thermal resistance R_λ	1,00 m^2K/W
Minimum compression resistance at 10% crushing	150 kPa (1,5 kg/cm^2)
Anti-fire protection	Class E
EN13163 classification	EPS – EN13163 – L(3) – W(3) – T(2) – CS(10)150 – WL(T)1 – Z 30 – 70
Protection layer	
Material	Thermoformed polystyrene
Thickness	0,6 mm
Colour	Black

Pre-formed insulation panel R979Y045	
Effective dimensions	1400 x 800 mm
Effective surface	1,12 m^2
Panel dimensions	1450 x 850 mm
Panel surface	1,23 m^2
Total thickness	52 mm insulating sheet: 30 mm + protuberance: 22 mm
Pipe diameter	16÷18 mm
Allowed pitches	multiples of 50 mm
Pre-formed insulating sheet	
Material	Sintered foam polystyrene EPS150
Density	25 Kg/m^3
Thermal conductivity, λ_D	0,034 W/(m K)
Thermal resistance R_λ	1,30 m^2K/W
Dynamic rigidity	30 MN/m^3
Minimum compression resistance at 10% crushing	150 kPa (1,5 kg/cm^2)
Anti-fire protection	Class E
EN13163 classification	EPS – EN13163 – L(3) – W(3) – T(2) – CS(10)150 – WL(T)1 – Z 30 – 70
Protection layer	
Material	Thermoformed polystyrene
Thickness	0,6 mm
Colour	Black

Pre-formed insulation panel R979Y046	
Effective dimensions	1400 x 800 mm
Effective surface	1,12 m^2
Panel dimensions	1450 x 850 mm
Panel surface	1,23 m^2
Total thickness	62 mm insulating sheet: 40 mm + protuberance: 22 mm
Pipe diameter	16÷18 mm
Allowed pitches	multiples of 50 mm
Pre-formed insulating sheet	
Material	Sintered foam polystyrene EPS150
Density	25 Kg/m^3
Thermal conductivity, λ_D	0,034 W/(m K)
Thermal resistance R_λ	1,59 m^2K/W
Dynamic rigidity	30 MN/m^3
Minimum compression resistance at 10% crushing	150 kPa (1,5 kg/cm^2)
Anti-fire protection	Class E
EN13163 classification	EPS – EN13163 – L(3) – W(3) – T(2) – CS(10)150 – WL(T)1 – Z 30 – 70
Protection layer	
Material	Thermoformed polystyrene
Thickness	0,6 mm
Colour	Black

Pre-formed insulation panel R979Y047	
Effective dimensions	1400 x 800 mm
Effective surface	1,12 m^2
Panel dimensions	1450 x 850 mm
Panel surface	1,23 m^2
Total thickness	75 mm insulating sheet: 53 mm + protuberance: 22 mm
Pipe diameter	16÷18 mm
Allowed pitches	multiples of 50 mm
Pre-formed insulating sheet	
Material	Sintered foam polystyrene EPS150
Density	25 Kg/m^3
Thermal conductivity, λ_D	0,034 W/(m K)
Thermal resistance R_λ	2,00 m^2K/W
Dynamic rigidity	30 MN/m^3
Minimum compression resistance at 10% crushing	150 kPa (1,5 kg/cm^2)
Anti-fire protection	Class E
EN13163 classification	EPS – EN13163 – L(3) – W(3) – T(2) – CS(10)150 – WL(T)1 – Z 30 – 70
Protection layer	
Material	Thermoformed polystyrene
Thickness	0,6 mm
Colour	Black

Product specifications

R979Y043

Pre-formed insulating panel for radiant underfloor systems. Black colour. Height 32 mm (insulating sheet 10 mm, protuberances 22 mm). Consisting of a sintered foam polystyrene (EPS200) insulation sheet and a polystyrene (PS) protective layer of 0,6 mm. For pipes with Ø 16÷18 mm. Centre distance for laying 50 mm. Dimensions: 1450x850 mm (effective dimensions: 1400x800 mm). Effective panel surface 1,12 m^2. Thermal conductivity 0,033 W/(m K). Thermal resistance 0,73 m^2K/W. Density 30 kg/m^3. Minimum compression resistance at 10 % crushing 200 kPa. Anti-fire protection: class E.

R979Y044

Pre-formed insulating panel for radiant underfloor systems. Black colour. Height 42 mm (insulating sheet 20 mm, protuberances 22 mm). Consisting of a sintered foam polystyrene (EPS150) insulation sheet and a polystyrene (PS) protective layer of 0,6 mm. For pipes with Ø 16÷18 mm. Centre distance for laying 50 mm. Dimensions: 1450x850 mm (effective dimensions: 1400x800 mm). Effective panel surface 1,12 m^2. Thermal conductivity 0,034 W/(m K). Thermal resistance 1,00 m^2K/W. Density 25 kg/m^3. Minimum compression resistance at 10 % crushing 150 kPa. Anti-fire protection: class E.

R979Y045

Pre-formed insulating panel for radiant underfloor systems. Black colour. Height 52 mm (insulating sheet 30 mm, protuberances 22 mm). Consisting of a sintered foam polystyrene (EPS150) insulation sheet and a polystyrene (PS) protective layer of 0,6 mm. For pipes with Ø 16÷18 mm. Centre distance for laying 50 mm. Dimensions: 1450x850 mm (effective dimensions: 1400x800 mm). Effective panel surface 1,12 m^2. Thermal conductivity 0,034 W/(m K). Thermal resistance 1,30 m^2K/W. Density 25 kg/m^3. Minimum compression resistance at 10 % crushing 150 kPa. Anti-fire protection: class E.

R979Y046

Pre-formed insulating panel for radiant underfloor systems. Black colour. Height 62 mm (insulating sheet 40 mm, protuberances 22 mm). Consisting of a sintered foam polystyrene (EPS150) insulation sheet and a polystyrene (PS) protective layer of 0,6 mm. For pipes with Ø 16÷18 mm. Centre distance for laying 50 mm. Dimensions: 1450x850 mm (effective dimensions: 1400x800 mm). Effective panel surface 1,12 m^2. Thermal conductivity 0,034 W/(m K). Thermal resistance 1,59 m^2K/W. Density 25 kg/m^3. Minimum compression resistance at 10 % crushing 150 kPa. Anti-fire protection: class E.

R979Y047

Pre-formed insulating panel for radiant underfloor systems. Black colour. Height 75 mm (insulating sheet 53 mm, protuberances 22 mm). Consisting of a sintered foam polystyrene (EPS150) insulation sheet and a polystyrene (PS) protective layer of 0,6 mm. For pipes with Ø 16÷18 mm. Centre distance for laying 50 mm. Dimensions: 1450x850 mm (effective dimensions: 1400x800 mm). Effective panel surface 1,12 m^2. Thermal conductivity 0,034 W/(m K). Thermal resistance 2,00 m^2K/W. Density 25 kg/m^3. Minimum compression resistance at 10 % crushing 150 kPa. Anti-fire protection: class E.

Normative references

- **UNI EN 1264:** Underfloor heating – Systems and components.
- **EN 13163:** Thermal insulation products for buildings – Factory made products of expanded polystyrene (EPS) – Specification.
- **UNI EN 12354-2:** Acoustics in construction – Evaluation of acoustic performance of buildings starting from products performance – Trampling insulation.