R982Q PREFORMED INSULATING PANEL FOR RADIANT SYSTEMS

Description

The preformed panel R982Q is used in radiant floor systems as insulating support for the pipes. The use of the panel is essential to make a modern and functional system, as it permits to air-condition the rooms quickly and it engages restrained powers, by limiting the bulk of the radiant structures and reducing the heat dispersions downwards. With the use of the insulating panel, the radiant floor systems have significantly improved, either in terms of comfort or energy saving.

The use of preformed insulating panels moreover allows to maintain room comfort temperatures, but limiting the temperature surface of the floor as prescribed by the EN 1264 standard (max. 29°C for the living rooms), with a consequent absolute absence of physiologist indispositions, and structural problems that are typical of the no longer used old installation techniques. Thanks to the insulating panel contribution, it is therefore possible to reduce the quantities of laid pipes, so limiting the number of radiant circuits, the circulating water flows, the diameters of the supply pipes, the lifts of the circulators and the involved powers, with consequent immediate overall energy savings and by respecting the environment.

Versions and packaging

Product code	Size	Sheet number	Total useful surface
R982QY013	T50 - h37	10	11,20 m²
R982QY015	T50 - h50	7	7,84 m²
R982QY016	T50 - h60	10	11,20 m²
R982QY017	T50 - h75	8	8,96 m²

T = pitch (mm); h = height (mm)

Features

The preformed insulating panel R982Q, made of (EPS) expanded sintered polystyrene complying with EN 13163, is characterized by the joining with a special protection layer in polystyrene (PS) of 0,4 mm. The high thickness of the covering allows obtaining an optimal mechanical resistance of the notches, creating the most appropriate panel density according to the requested thermal and acoustic insulating features.

The adopted solutions for defining the profiles permit a solid and precise joining among the panels, the laying of the radiant circuits without using fixing clips in most installations, and an appreciable result in the casting of the concrete with additives, avoiding the creation of air pockets that would inevitably reduce the output of the radiant floor.

The use of the R982Q preformed panel allows a remarkable saving of manpower in the pipe laying, and it permits to make circuits wit pitches multiple of 50 mm (the typical ones of the radiant floor heating and cooling systems), in an orderly manner even in the most difficult plant situations. In the models with total thickness equal to 50, 60, 75 mm, in addition to the thermal insulation function and the support for the radiant circuits, the improvement of the soundproofing to trample equal to 26 dB is obtained due to the dynamic stiffness of class SD30. The model with total thickness equal to 37mm, allows to install a radiant floor system even when the available spaces are limited, as for example in the restorations.

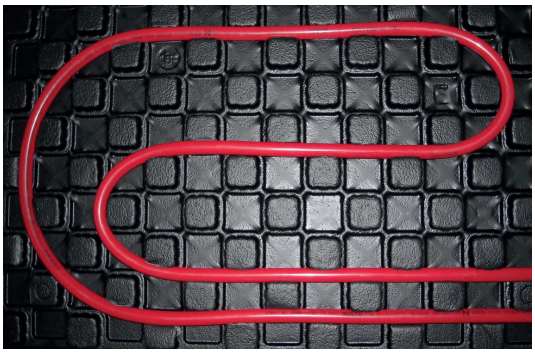

fig.1 The arrangement and the geometry of the notches determine a yielding lateral surface during the pipe laying, that gets deformed by creating a solid and precise housing for the radiant circuits. This feature allows eliminating the use of pipe fixing clips.

Dimensions

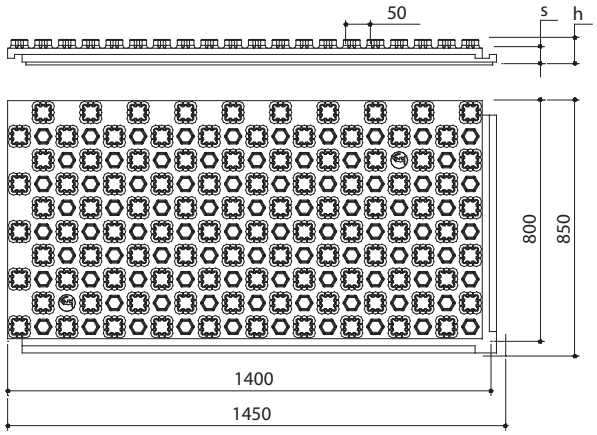

fig.2
R982QY013: h 37 mm; s 15 mm
R982QY015: h 50 mm; s 28 mm
R982QY016: h 60 mm; s 38 mm
R982QY017: h 75 mm; s 53 mm

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Sound absorption

The preformed insulating panels R982Q T50-h50 (R982QY015), T50-h60 (R982QY016), T50-h75 (R982QY017) are marked by a shaped profile of the bottom surface, that is a characteristic that distinguish them also as sound absorbing element in compliance with EN 13163. The panels R982QY015, R982QY016, R982QY017 are actually placed in class SD 30, that is the same as declaring a dynamic stiffness s' ≤ 30 MN/m3, calculated according to EN 13172.

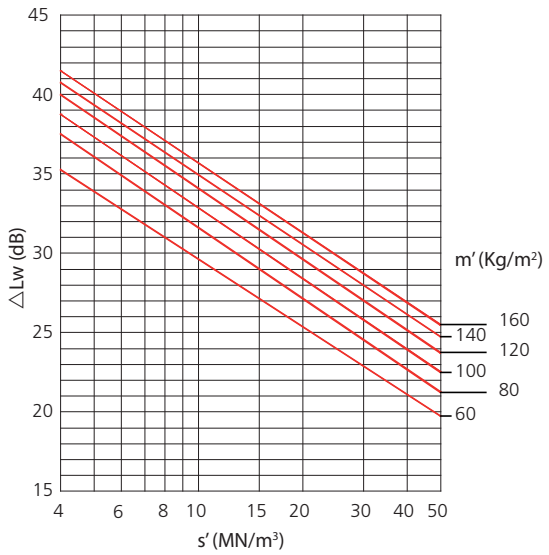

fig.3 Figure C1 of the UNI EN 12354-2 standard, shows as, with an equal bulk for m' surface unit of the concrete, a limited value of the s' dynamic stiffness determines a higher improvement of the LW soundproofing to trample.

Technical data

R982QY013 insulating panel	
Product code	R982QY013
Useful dimensions	1400 mm x 800 mm
Useful surface	1,12 m²
Panel dimensions	1450 mm x 850 mm
Panel surface	1,23 m²
Total thickness	37 mm Plate: 15 mm + notch: 22 mm
Pipe diameter	15 mm ÷ 18 mm
Allowed pitches	Multiples of 50 mm
Pipe quantity per m²	100 mm pitch: 10 m 150 mm pitch: 6,67 m
Preformed insulating plate	
Material	Expanded sintered polystyrene PS30 (EPS150)
Density	30 Kg/m³
Heat conduction λ_D	0,034 W/m·K
Thermal resistance R_λ	0,88 m²·K/W
Minimum compression resistance to 10% crush	150 kPa (1,5 kg/cm²)
Fire-fighting protection according to DIN4102	B2 (euroclass E)
Classification according to EN13163	EPS – EN13163 – T1 – L1 – W1 – S1 – P3 DS(N)5 – DLT(1)5 – BS250 – CS(10)150
Protection layer	
Material	Polystyrene (PS)
Thickness	0,4 mm

R982QY015 insulating panel	
Product code	R982QY015
Useful dimensions	1400 mm x 800 mm
Useful surface	1,12 m²
Panel dimensions	1450 mm x 850 mm
Panel surface	1,23 m²
Total thickness	50 mm Plate: 28 mm + notch: 22 mm
Pipe diameter	15 mm ÷ 18 mm
Allowed pitches	Multiples of 50 mm
Pipe quantity per m²	100 mm pitch: 10 m 150 mm pitch: 6,67 m
Preformed insulating plate	
Material	Expanded sintered polystyrene PST – TK 5000
Density	23 Kg/m³
Heat conduction, λ_D	0,034 W/m·K
Thermal resistance R_λ	1,27 m²·K/W
Movable load	5,0 kPa
Compressibility	2 mm
Dynamic stiffness	30 MN/m³
Fire-fighting protection according to DIN4102	B2 (euroclass E)
Classification according to EN13163	EPS – EN13163 – T4 – L1 – W1 – S1 – P3 DS(N)5 – BS100 – SD30 – CP2
Protection layer	
Material	Polystyrene (PS)
Thickness	0,4 mm

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R982QY016 insulating panel	
Product code	R982QY016
Useful dimensions	1400 mm x 800 mm
Useful surface	1,12 m^2
Panel dimensions	1450 mm x 850 mm
Panel surface	1,23 m^2
Total thickness	60 mm Plate: 38 mm + notch: 22 mm
Pipe diameter	15 mm ÷ 18 mm
Allowed pitches	Multiples of 50 mm
Pipe quantity per m^2	100 mm pitch: 10 m 150 mm pitch: 6,67 m
Preformed insulating plate	
Material	Expanded sintered polystyrene PST – TK 5000
Density	23 Kg/m^3
Heat conduction, λ_D	0,034 W/m·K
Thermal resistance R_λ	1,56 m^2·K/W
Movable load	5,0 kPa
Compressibility	2 mm
Dynamic stiffness	30 MN/m^3
Fire-fighting protection according to DIN4102	B2 (euroclass E)
Classification according to EN13163	EPS – EN13163 – T4 – L1 – W1 – S1 – P3 DS(N)5 – BS100 – SD30 – CP2
Protection layer	
Material	Polystyrene (PS)
Thickness	0,4 mm

R982QY017 insulating panel	
Product code	R982QY017
Useful dimensions	1400 mm x 800 mm
Useful surface	1,12 m^2
Panel dimensions	1450 mm x 850 mm
Panel surface	1,23 m^2
Total thickness	75 mm Plate: 53 mm + notch: 22 mm
Pipe diameter	15 mm ÷ 18 mm
Allowed pitches	Multiples of 50 mm
Pipe quantity per m^2	100 mm pitch: 10 m 150 mm pitch: 6,67 m
Preformed insulating plate	
Material	Expanded sintered polystyrene PST – TK 5000
Density	23 Kg/m^3
Heat conduction, λ_D	0,034 W/m·K
Thermal resistance R_λ	2,00 m^2·K/W
Movable load	5,0 kPa
Compressibility	2 mm
Dynamic stiffness	30 MN/m^3
Fire-fighting protection according to DIN4102	B2 (euroclass E)
Classification according to EN13163	EPS – EN13163 – T4 – L1 – W1 – S1 – P3 DS(N)5 – BS100 – SD30 – CP2
Protection layer	
Material	Polystyrene (PS)
Thickness	0,4 mm

Normative references

- UNI EN 1264
  Water based surface embedded heating and cooling systems
- EN 13163
  Thermal insulation products for buildings – Factory made products of expanded polystyrene (EPS) – Specification
- UNI EN 12354-2
  Building acoustics- estimation of acoustic performance of buildings from the performance of elements- impact sound insulation between rooms

Product specifications

R982Q

Preformed insulating panel for the pipe laying in radiant floor systems, made of expanded sintered polystyrene (EPS) with protection layer in polystyrene (PS) of 0,4 mm, black color. Thickness from 37 to 75 mm. Laying distance between axis 50 mm.

Additional information

For additional information please check the Giacomini website at the following address: www.giacomini.com

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