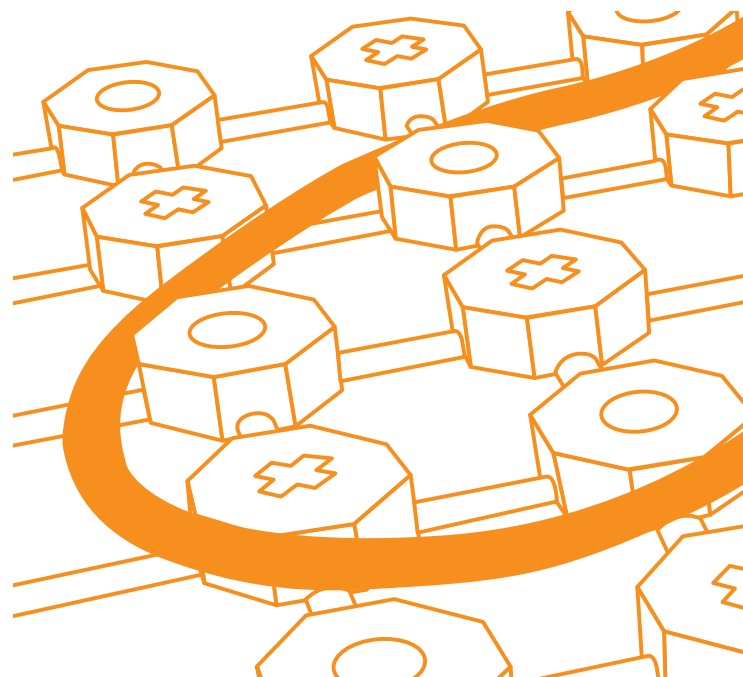


Underfloor Heating



invisible heating and cooling

by  **CALEFFI**
Hydronic Solutions





We have been working in an ideal climate for thirty years.

A climate that has brought us to a position of leadership in Italy in the field of radiant heating and cooling. RDZ was the first company to receive the management system quality certification (today UNI EN ISO 9001:2008).

RDZ has been a quality-oriented company since its very beginning, using the finest materials, developing new solutions, constantly providing excellent service. And also by creating a positive climate in the company to promote the exchange of ideas and stimulate cooperation for constant improvement.



Underfloor Heating Systems: Unparalleled Comfort

Underfloor heating is synonymous with comfort: the uniform distribution of temperature within a living or working environment generates a pleasant sensation of physical wellbeing and ensures significant energy-saving, total furnishing freedom, and clean and healthy rooms.

The temperature in rooms heated with traditional systems tends to be higher closer to the ceiling and lower at floor level, whereas underfloor heating systems allow heat to be released throughout the entire floor surface, so temperature is distributed evenly, guaranteeing an ideal climate for the needs and the comfort of the human body.

This is why underfloor heating is currently considered as the best heating system.





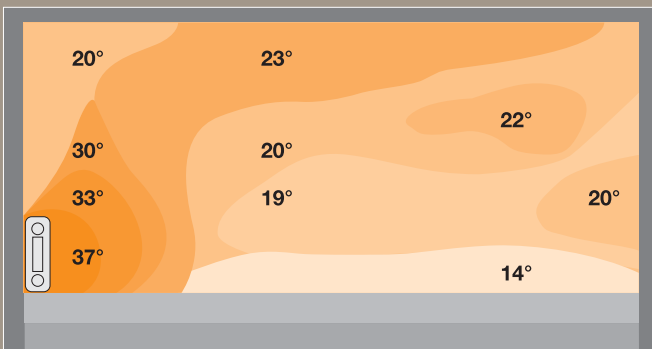


Attractive, comfortable and healthy environment

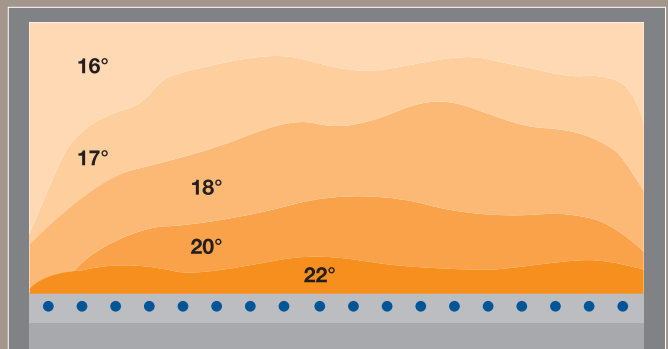
RDZ low-temperature underfloor heating systems use water circulating through a network of pipes concealed below the floor tiles. Heat diffusion into the room is primarily a result of radiation and allows users to obtain uniform temperature distribution. This special feature not only ensures a sensation of physical wellbeing, but also allows the system to function at low temperatures, thus ensuring lower energy consumption than traditional systems. Underfloor heating systems can be also covered in any type of flooring: ceramic, parquet, marble, hard brick, etc. Since it is an invisible installation, the system allows full use of the available space, with a wide range of furnishing options.



Uniform temperature distribution for optimal comfort



Temperatures in a room heated by radiators.



Temperatures in a room with underfloor heating.



Reasons for Choosing Underfloor Heating

Underfloor heating distributes room temperatures evenly and ensures the ideal condition for human comfort. Since the floor is the heated surface, cleaning and maintaining hygiene standards is also easy to perform. Furthermore, the absence of convective air flows generally created by the difference in temperature between the heating body and the surroundings limits any potential movement of dust or impurities in the air (which usually cause allergies). This not only improves the sanitary conditions of the premises, but also eliminates any problems regarding the blackening of walls and curtains.

RDZ underfloor heating systems are available in a wide range of solutions and can be applied to very different settings: new or renovated buildings, houses, shops, offices, factories, etc.

1 High comfort.

2 Low-temperature system.

3 Reduced energy consumption.

4 Better hygiene, better health.

5 Summer cooling.

6 Furnishing freedom.

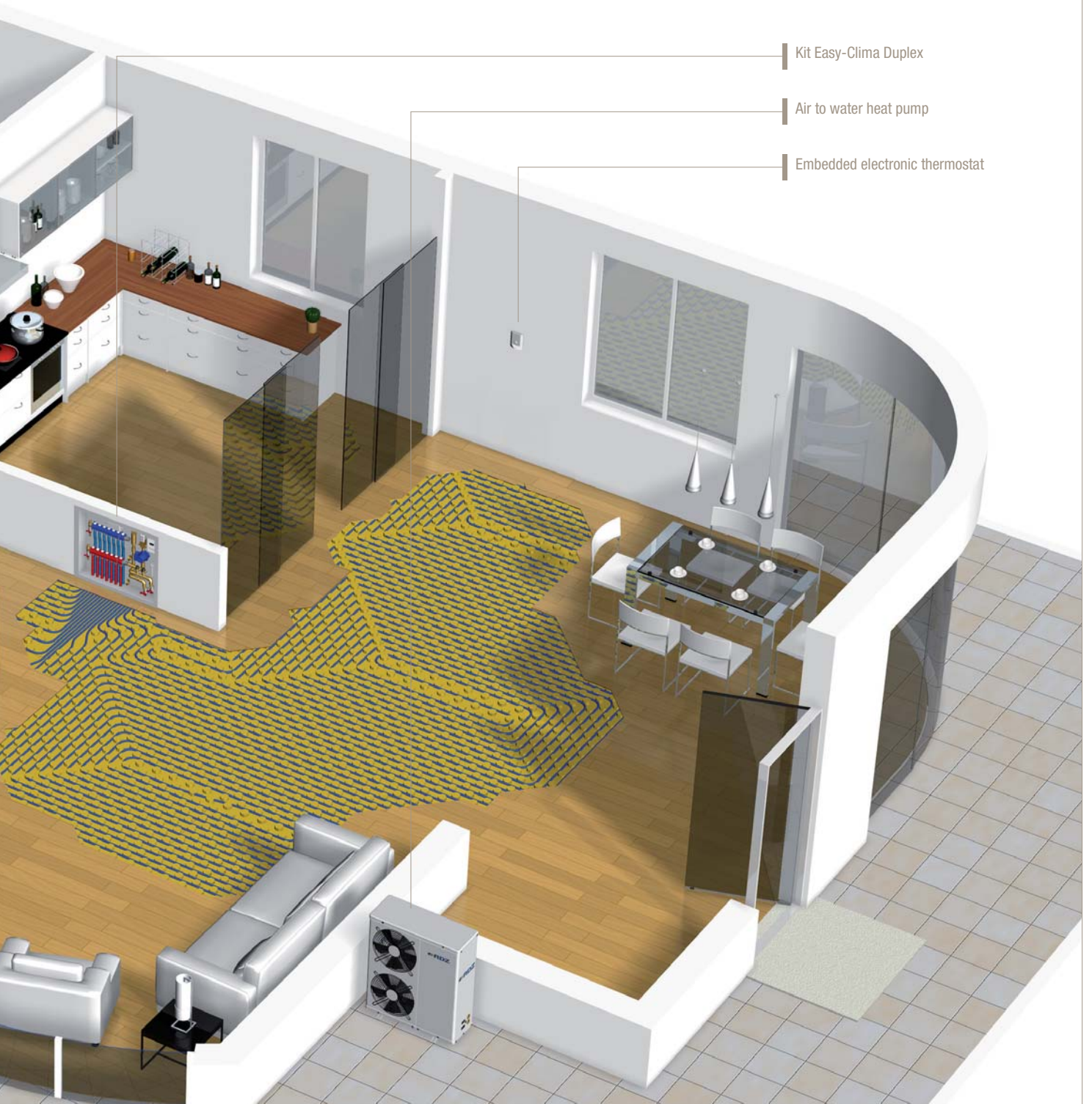
Underfloor heat



Cover underfloor system

ing: easy functioning and extraordinary comfort

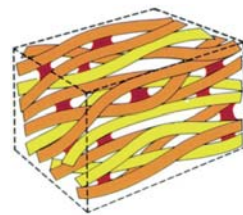
RDZ underfloor heating works on the combined use of a series of integrated components which allows the system to achieve very high performance. Its parts are manufactured exclusively from the most highly-technological materials, and its main components for the correct working operations can be summed up as follows: the floor system (insulating panels, piping, etc.), distribution manifolds for hydraulic balancing and regulation, and the thermoregulation system to optimise water and air temperature control. The greater the operating synergy of these components, the better the system performance in terms of comfort and energy-saving.



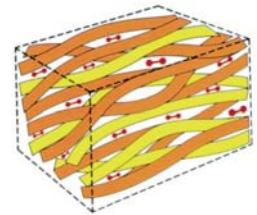


PE-Xc Piping Features

PE-Xc can be used for temperatures ranging between -50 °C and +90 °C, including peaks up to 110 °C. Embedded underfloor piping must be able to guarantee a long lifespan with the capacity to withstand internal and external chemical agents.



CROSS-LINKED PIPE



NON-CROSS-LINKED PIPE

PE-Xc pipe technical data sheet

Diameter 14		Diameter 17			Diameter 20	
Pack	Code	Pack	Code	Pack	Code	
300 m	1011430	240 m	1011754	240 m	1012524	
		600 m	1011756	600 m	1012560	
Outside diam. (mm)		Weight (kg/m)	PN at 20 °C	PN at 60 °C	PN at 95 °C	Water content l/m
14	2	0.079	16 bar	10 bar	10 bar	0.08
17	2	0.094	19 bar	12 bar	8 bar	0.13
20	2	0.112	15 bar	10 bar	6 bar	0.20
Features			Value	Unit	Reference law	
Standard					EN 15875	
Density			940/950	Kg/m ³		
Failure load			> 20	N/mm ²	EN 60811-1	
Modulus of elasticity at 20 °C			900	N/mm ²		
Breaking strain			> 200	%	EN 60811-1	
Thermal conductivity coefficient			0.35	W(m-K)		
Oxygen permeability			OK		DIN 4726	
Linear thermal expansion at 20 °C			1.4 ÷ 2·10 ⁻⁴	m/(m-K)		



PE-Xc Piping and Cross-linking

RDZ Clima piping of PE-Xc is a high-density polyethylene product, which thanks to its physical properties can be cross-linked with no need for added chemical components. The purpose of cross-linked piping is to improve the product's mechanical properties and make it more resistant to thermal ageing.

Cross-linking is the most important factor to determine the quality of polyethylene piping for thermal systems. As regards RDZ piping, the technology employed is one of the most recent and most reliable on the market.

Following extrusion, the piping passes through an electron accelerator, which works on the entire pipe structure and modifies the physical order of the polyethylene molecules, thus creating new links between the polymer chains.

Electronic cross linking acts directly on the weakest links in the system and, as a result, dramatically improves polyethylene performance and an extremely high level of uniformity for the percentage of cross linked molecules.

- > **Flexibility.**
- > **Excellent strength.**
- > **Excellent resistance to thermal ageing.**
- > **Excellent resistance to low temperatures.**
- > **Thermal memory.**
- > **Excellent corrosion-resistance.**

1



PE-Xc Pipe

High-density cross-linked polyethylene piping with anti-oxygen barrier produced in compliance with UNI EN ISO 15875 and DIN 4726, guaranteeing permanently stable and homogeneous cross linking. Diameter 17 mm, thickness 2 mm.

CODES

1011754	Ø 17-13 (240 m)
1011756	Ø 17-13 (600 m)

2



PE-Xc Pipe

High-density cross-linked polyethylene piping with anti-oxygen barrier produced in compliance with UNI EN ISO 15875 and DIN 4726, guaranteeing permanently stable and homogeneous cross linking. Diameter 14 mm, thickness 2 mm.

CODES

1011430	Ø 14-10 (300 m)
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3



PE-Xc Pipe

High-density cross-linked polyethylene piping with anti-oxygen barrier produced in compliance with UNI EN ISO 15875 and DIN 4726, guaranteeing permanently stable and homogeneous cross linking. Diameter 20 mm, thickness 2 mm.

CODES

1012524	Ø 20-16 (240 m)
1012560	Ø 20-16 (600 m)



Cover System

COVER is RDZ system for underfloor radiant heating at low temperatures. The system can be applied to a range of applications, such as houses, offices, shops, etc. and is suitable both for underfloor heating and cooling. Lately 2 new systems have been added to COVER product range; they have insulating thickness of 50 and 60 cm to improve the downward thermal insulation.

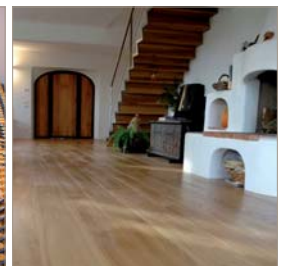
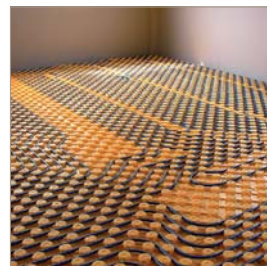


- > **Excellent thermal insulation.**
- > **Excellent panel strength.**
- > **Easy and rapid installation.**
- > **Wide range of products according to UNI EN 1264-4.**



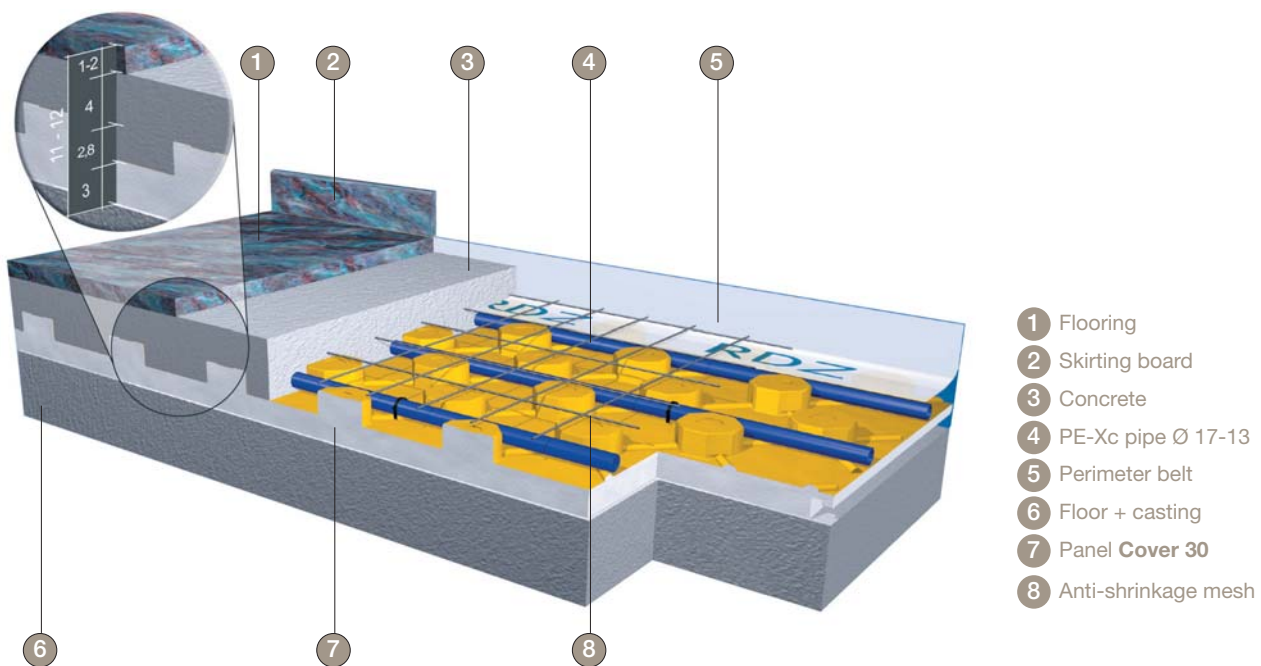
System Features

Panel:	Cover 20-30-40-50-60
Piping:	PE-Xc diam.17-13
Manifold:	Top Control, Control, Top Composit
Overall size:	9,10,11,12,13 cm (flooring excluded)
Application:	residential and commercial



Technical Features (UNI EN 13163)

		COVER 20 code 1056020	COVER 30 code 1056030	COVER 40 code 1056040	COVER 50 code 1056050	COVER 60 code 1056060
FEATURES	Thermal conductivity 10°C (UNI EN 12667)	0.035 W/(m·K)	0.035 W/(m·K)	0.035 W/(m·K)	0.035 W/(m·K)	0.035 W/(m·K)
	Compressive strength 10% (UNI 826)	120 kPa	120 kPa	120 kPa	120 kPa	120 kPa
	Compressive strength 5% (UNI 826)	115 kPa	115 kPa	115 kPa	115 kPa	115 kPa
	Compressive strength 2% (UNI 826)	82 kPa	82 kPa	82 kPa	82 kPa	82 kPa
	Thermal resistance (UNI EN 13163)	0.80 (m ² ·k)/W	1.10 (m ² ·k)/W	1.35 (m ² ·k)/W	1.65 (m ² ·k)/W	2.0 (m ² ·k)/W
	Equivalent total thickness (UNI EN 1264/3)	29 mm	39 mm	48.9 mm	58.7 mm	70.0 mm
	Temperature range	70 °C	70 °C	70 °C	70 °C	70 °C
Film thickness	150 micron	150 micron	150 micron	150 micron	150 micron	
DIMENSIONS	Length (UNI 822)	mm 1161	mm 1161	mm 1161	mm 1161	mm 1161
	Width (UNI 822)	mm 663	mm 663	mm 663	mm 663	mm 663
	Insulating thickness	mm 20	mm 30	mm 40	mm 50	mm 61.5
	Nominal thickness (UNI 823)	mm 48	mm 58	mm 68	mm 78	mm 89.5
	Package	panels no. 13 (10 m ²)				



- 1 Flooring
- 2 Skirting board
- 3 Concrete
- 4 PE-Xc pipe Ø 17-13
- 5 Perimeter belt
- 6 Floor + casting
- 7 Panel **Cover 30**
- 8 Anti-shrinkage mesh

System Components

				
Panel Cover 20/30/40/50/60	RDZ Clima pipe of PE-Xc 17 mm	Top Control preassembled manifold	Slim cabinet for manifolds (with lockset)	Plus perimeter belt
			Manifold types	
Open elbow Ø 17	Hooked clips	Thermofluidifying additive AT 30		
			Top Composit manifold	Control manifold



Acoustic Plus System

ACOUSTIC PLUS is a specific insulating panel with acoustic properties. It is made of stretch, expanded, sintered polystyrene with double density. Its components and production technology ensure unique acoustic properties to absorb the trample noise.

It has a moulded surface with reliefs according to RDZ spacing which make for fast and simple installation, and it is combined with a special plastic film in conformity with UNI EN 1264.

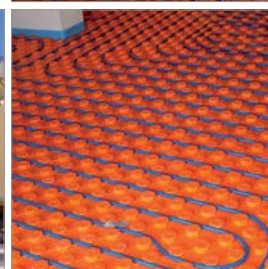


- > Outstanding acoustic performance ΔL_w : 26 dB.
- > High thermal insulation.
- > Excellent panel strength.
- > Quick and easy installation.



System Features

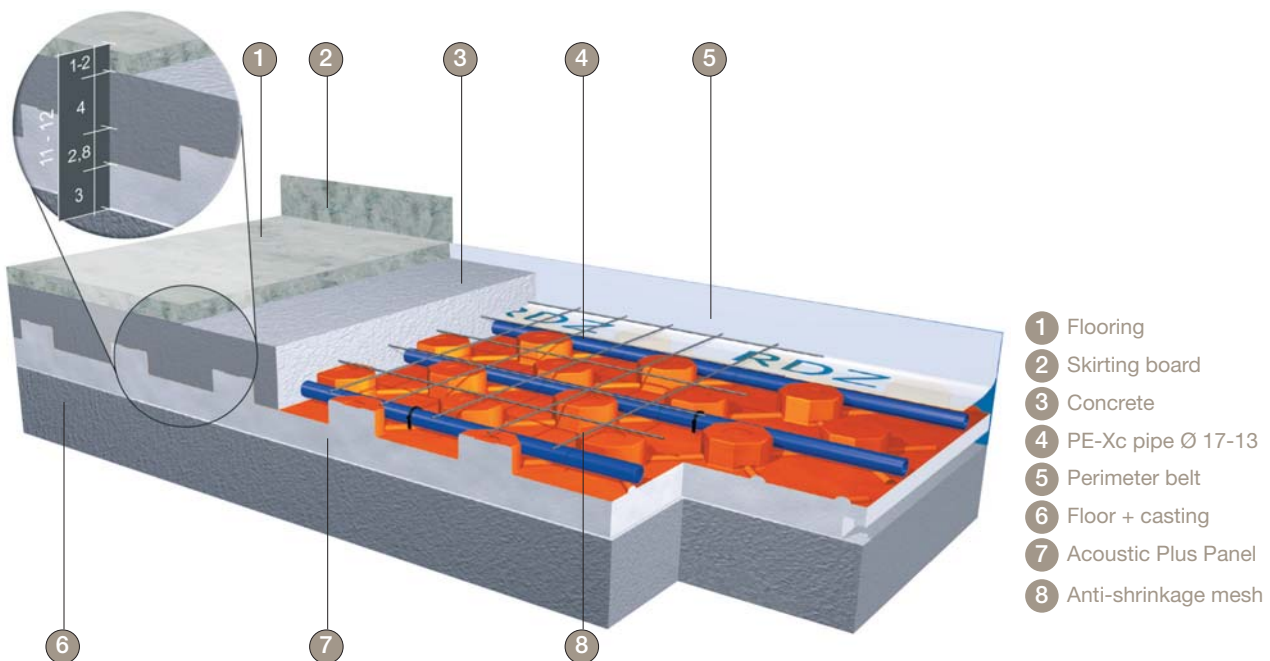
Panel:	Acoustic Plus
Piping:	PE-Xc diam.17-13
Collettore	Top Control / Control / Top Composit
Overall dimensions:	10 cm (flooring excluded)
Application:	residential and commercial



Technical Features (UNI EN 13163)

ACOUSTIC PLUS PANEL
code 1054050

Flooring type	Required thickness		
Tiles, Parquet	11-12 cm	FEATURES DIMENSIONS	Thermal conductivity 10°C (UNI EN 12667) 0.037 W/(m·K)
Marble, Wood, Brick	12-14 cm		Max. dynamic load (UNI EN 13163) CP3 (≤ 4 kPa)
Venetian terrace	14-15 cm		Thermal resistance (UNI EN 12667) 1.05 (m ² ·k)/W
			Equivalent total thickness (UNI EN 1264/3) mm 40,5
			Sound reduction index (UNI EN 140-8) ΔL_w 26 dB
			Dynamic rigidity (UNI EN 29052) SD 20 (≤ 20) MN/m ³
			Temperature range 70 °C
			Film thickness 150 micron
			Length (UNI 822) mm 1161
			Width (UNI 822) mm 663
		Insulating thickness mm 30	
		Nominal thickness (UNI 823) mm 58	
		Package panels no. 13 (10 m ²)	



- 1 Flooring
- 2 Skirting board
- 3 Concrete
- 4 PE-Xc pipe \varnothing 17-13
- 5 Perimeter belt
- 6 Floor + casting
- 7 Acoustic Plus Panel
- 8 Anti-shrinkage mesh

System Components

 Acoustic Plus Panel	 RDZ Clima pipe of PE-Xc 17 mm	 Top Control preassembled manifold	 Slim cabinet for manifold (with lockset)	 Plus perimeter belt
 Open elbow \varnothing 17	 Hooked clips	 Thermofluidifying additive AT 30	Manifold types	
			 Top Composit manifold	 Control manifold



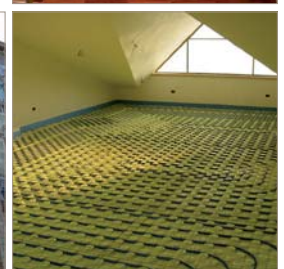
New Plus System

NEW PLUS is the low-thickness RDZ system for underfloor radiant heating at low temperatures. The system is suitable for domestic and residential sectors as well as all environments where it is necessary to reduce the overall dimensions of the radiant heating system. New Plus can be used for both underfloor heating and cooling.

- > **Minimum space requirement.**
- > **Excellent panel strength.**
- > **Quick and easy installation.**

System Features

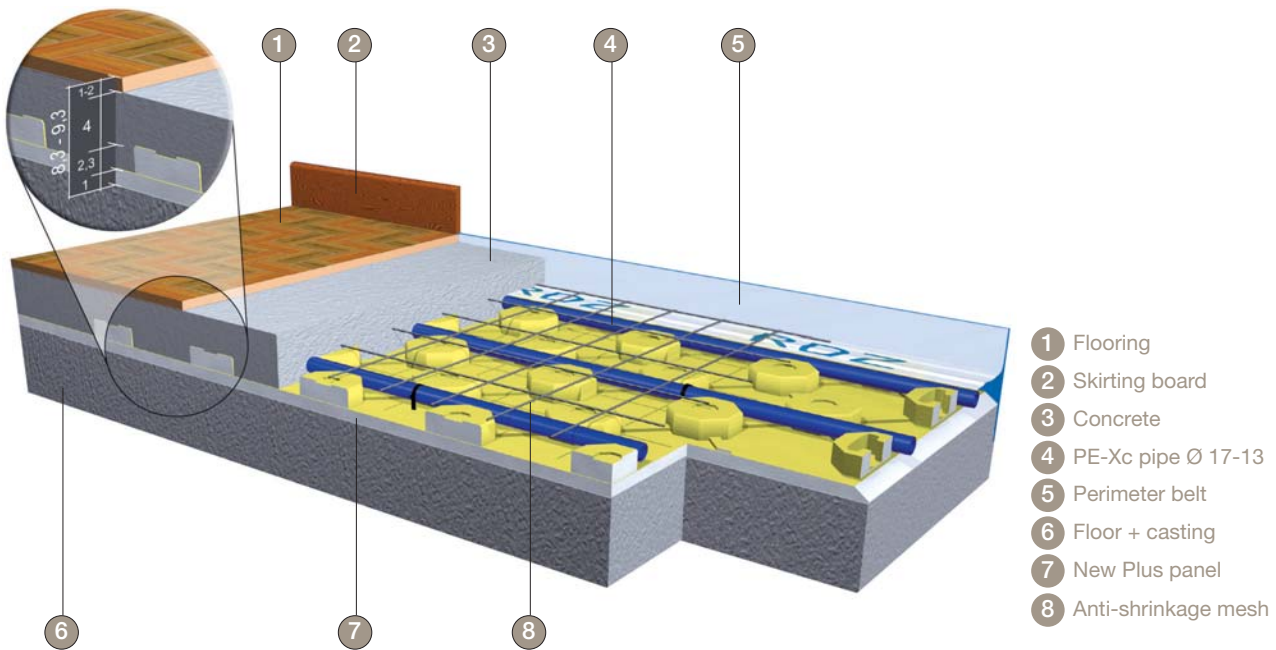
Panel:	New Plus
Piping:	PE-Xc diam.17-13
Manifold:	Top Control / Control / Top Composit
Overall dimensions:	7.3 cm (flooring excluded)
Application:	residential and commercial



Technical Features (UNI EN 13163)

NEW PLUS PANEL
code 1043011

Flooring type	Required thickness					
Tiles, Parquet	8.3 - 9.3 cm	FEATURES	Thermal conductivity 10°C	(UNI EN 12667)	0.033 W/(m·K)	
Marble, Wood, Brick	9.3 - 11.3 cm		Compressive strength 10%	(UNI 826)	250 kPa	
Venetian terrace	11.3 - 12.3 cm		Compressive strength 5%	(UNI 826)	180 kPa	
			Compressive strength 2%	(UNI 826)	130 kPa	
			Thermal resistance	(UNI EN 13163)	0.50 (m ² ·k)/W	
			Equivalent total thickness	(UNI EN 1264/3)	17.8 mm	
			Temperature range		70 °C	
			Film thickness		150 micron	
			DIMENSIONS	Length	(UNI 822)	mm 1000
				Width	(UNI 822)	mm 500
		Insulating thickness			mm 10	
		Nominal thickness		(UNI 823)	mm 33	
		Package			panels no. 20 (10 m ²)	



- 1 Flooring
- 2 Skirting board
- 3 Concrete
- 4 PE-Xc pipe Ø 17-13
- 5 Perimeter belt
- 6 Floor + casting
- 7 New Plus panel
- 8 Anti-shrinkage mesh

System Components

 New Plus Panel	 RDZ Clima pipe of PE-Xc 17 mm	 Top Control preassembled manifold	 Slim cabinet for manifold (with lockset)	 Plus perimeter belt
 Open elbow Ø 17	 Hooked clips	 Thermofluidifying additive AT 30	Manifold types	
			 Top Composit manifold	 Control manifold



Bio System

RDZ BIO system is the result of constant research into technologically advanced materials and increased attention to health.

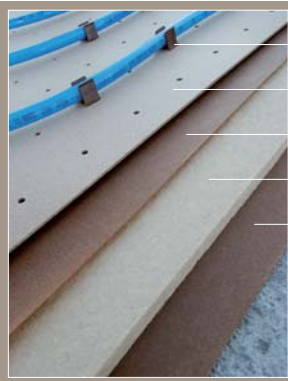
BIO uses natural products without the addition of chemicals in order to ensure environmentally-friendly products and development.

- > **Eco-friendly materials.**
- > **Respect for nature.**
- > **Healthier environment.**

System Features

Panel:	Natural + perforated panel
Piping:	PE-Xc diam.17-13
Manifold:	Top Control / Control / Top Composit
Overall dimensions:	9.5 cm (flooring excluded)
Application:	residential and commercial





- Pipe clip
- Perforated panel
- Waterproof paper
- Natural panel
- Waterproof paper

Technical Features (UNI EN 13171)

**NATURAL PANEL
code 1301000**

FEATURES			
	Thermal conductivity 10°C	(UNI EN 12667)	0.038 W/(m·K)
Dynamic rigidity	(UNI EN 29052-1)	SD 40 MN/m ³	
Max. dynamic load	(EN 13171)	CP2 (≤ 5 kPa)	
Water vapour diffusion resistance	(UNI EN 12086)	c.a. 5 μ	
Specific heat capacity		2100 J/kg·K	
Reaction to fire	(EN 13501-1)	E	
DIMENSIONS	Length	(UNI 822)	1020 mm
	Width	(UNI 822)	600 mm
	Insulating thickness	(UNI 823)	21-22 mm
	Specific weight		c.a. 150 kg/m ³
	Package		panels no. 8 (5 m ²)



System Components



Natural panel



RDZ Clim pipe
of PE-Xc 17 mm



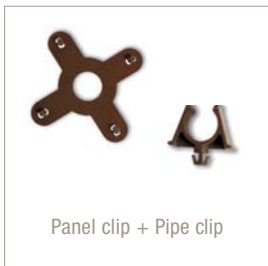
Perimeter belt



Waterproof paper



Perforated panel



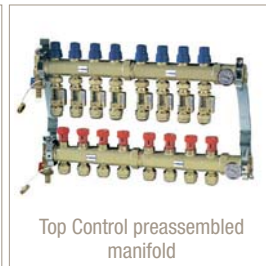
Panel clip + Pipe clip



Thermofluidifying additive AT 30



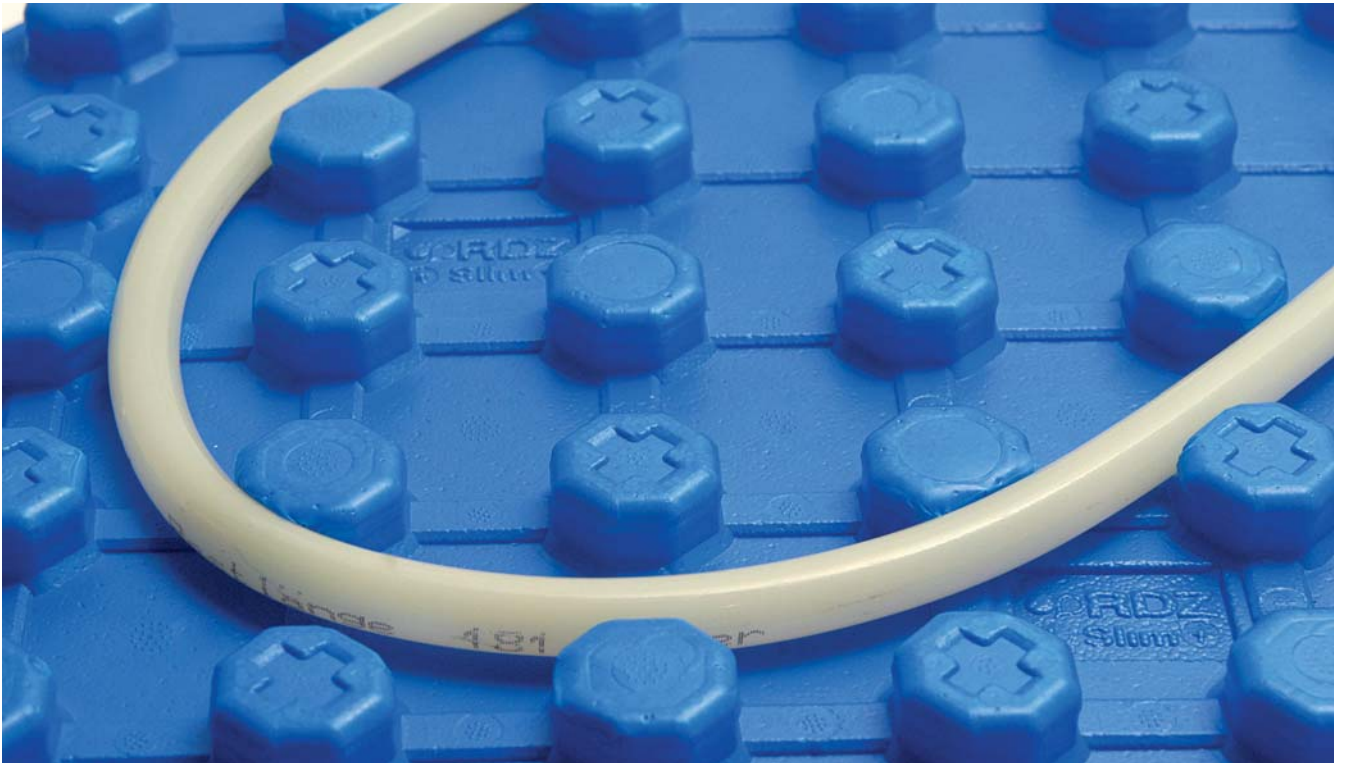
Slim cabinet
for manifold (with lockset)



Top Control preassembled
manifold



Open elbow Ø 17



Slim System

SLIM is RDZ low-thickness system for underfloor heating at low temperatures. The system has been developed to meet the increasing need for underfloor systems requiring low thickness. It is highly versatile and can be adapted to suit both new or renovated buildings. It can be used for both underfloor heating and cooling.

- > **Compact solution.**
- > **Excellent panel strength.**
- > **Versatile application.**
- > **Reduced thermal inertia.**



System Features

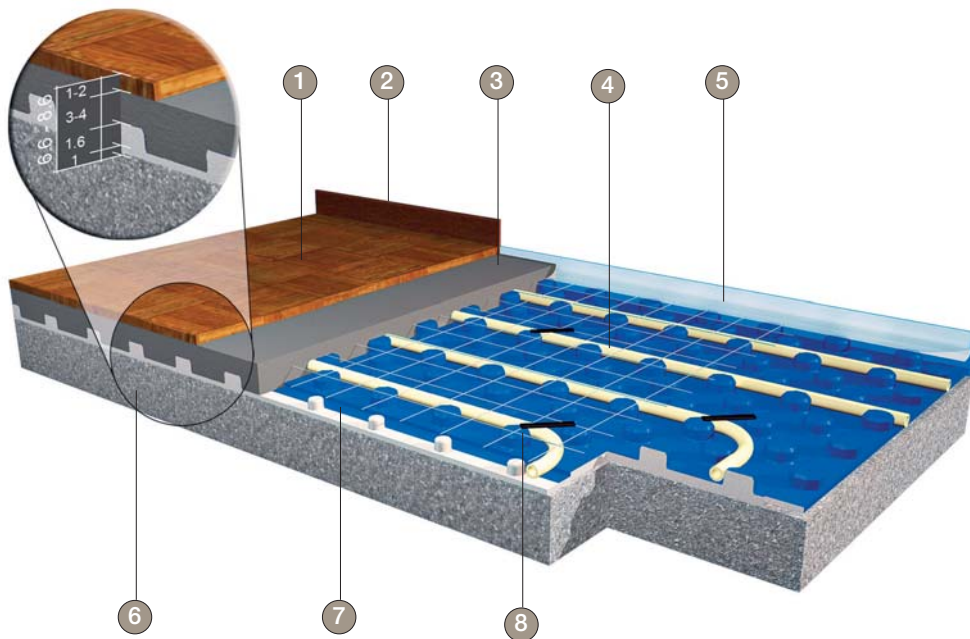
Panel:	Slim
Piping:	PE-Xc diam.14-10
Manifold:	Top Control / Control / Top Composit
Overall dimensions:	6/7 cm (flooring excluded)
Application:	residential and commercial



Technical Features (UNI EN 13163)

SLIM PANEL
code 1044050

Flooring type	Required thickness			
Tiles, Parquet	6.6 - 7.6 cm	FEATURES	Thermal conductivity 10°C (UNI EN 12667)	0.034 W/(m·K)
Marble, Wood, Brick	7.6 - 8.6 cm		Compressive strength 10% (UNI 826)	250 kPa
			Thermal resistance (UNI EN 13163)	0.40 (m ² ·k)/W
			Equivalent total thickness (UNI EN 1264/3)	13.8 mm
			Temperature range	70 °C
			Film thickness	150 micron
			Reaction to fire (EN 13501-1)	F
			DIMENSIONS	
			Length (UNI 822)	mm 1000
		Width (UNI 822)	mm 500	
		Insulating thickness	mm 10	
		Nominal thickness (UNI 823)	mm 26	
		Package	panels no. 20 (10 m ²)	



- 1 Flooring
- 2 Skirting board
- 3 Concrete
- 4 PE-Xc pipe Ø14-10
- 5 Perimeter belt
- 6 Floor + casting
- 7 Slim Panel
- 8 Anti-shrinkage mesh

System Components

 Slim panel	 RDZ Clima pipe of PE-Xc 14 mm	 Top Control preassembled manifold	 Slim cabinet for manifold (with lockset)	 Plus perimeter belt
 Pipe elbows	 Fixing clips	 Thermofluidifying additive AT 30	Manifold types	
			 Top Composit manifold	 Control manifold



NEW

Smooth Aluminized System

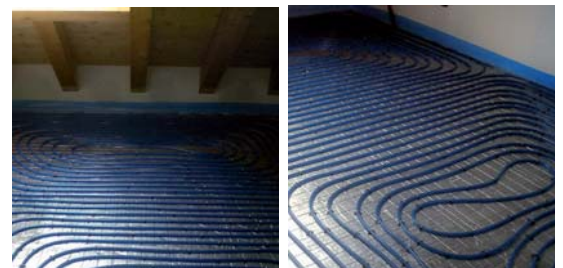
Smooth aluminized system by RDZ includes a smooth panel made of expanded polystyrene with high mechanical resistance. It is combined with an aluminized plastic film, thickness 0.15 mm. Special grooves on the surface make pipe laying easier according to RDZ spacing. This system is the ideal solution when you want to use smooth panels instead of the ones with reliefs. It can be used for both underfloor heating and cooling.

- > Available with thickness of 20 and 30 mm.
- > Excellent panel strength.
- > Versatile application.
- > Easy installation.



System Features

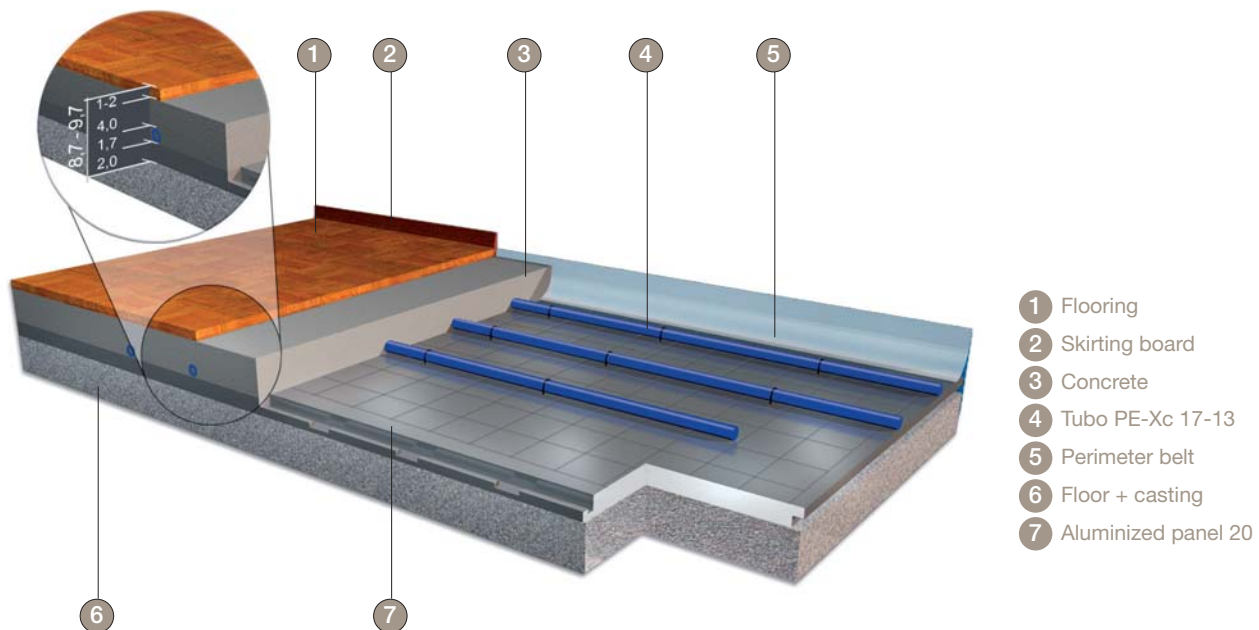
Panel:	Aluminized 20-30
Piping:	PE-Xc diam.17-13, 20-16
Manifold:	Top Control, Control, Top Composit
Overall dimensions:	7.7 - 8.7 cm (flooring excluded)
Application:	residential and commercial



Technical Features (UNI EN 13163)

ALUMINIZED PANEL
code 1056225 code 1056235

Flooring type	Required thickness	ALUMINIZED PANEL				
			code 1056225	code 1056235		
Tiles, Parquet	8.7 - 9.7 cm	FEATURES	Thermal conductivity 10°C (UNI EN 12667)	0.035 W/(m·K)	0.035 W/(m·K)	
Marble, Wood, Brick	9.7 - 11.7 cm		Compressive strength 10% (UNI 826)	120 kPa	120 kPa	
Venetian terrace	11.7 - 12.7 cm		Compressive strength 5% (UNI 826)	115 kPa	115 kPa	
			Compressive strength 2% (UNI 826)	82 kPa	82 kPa	
			Thermal resistance (UNI EN 13163)	0.55 (m ² ·k)/W	0.85 (m ² ·k)/W	
			Equivalent total thickness (UNI EN 1264/3)	20 mm	30 mm	
			Temperature range	70 °C	70 °C	
			Film thickness	150 micron	150 micron	
			DIMENSIONS	Length (UNI 822)	mm 1161	mm 1161
				Width (UNI 822)	mm 663	mm 663
		Insulating thickness		mm 20	mm 30	
		Nominal thickness (UNI 823)		mm 20	mm 30	
		Package		panels no. 13 (10 m ²)	13 (10 m ²)	



- 1 Flooring
- 2 Skirting board
- 3 Concrete
- 4 Tubo PE-Xc 17-13
- 5 Perimeter belt
- 6 Floor + casting
- 7 Aluminized panel 20

System Components

Aluminized panel 20/30	RDZ Klima pipe of PE-Xc 17 e 20 mm	Top Control preassembled manifold	Slim cabinet for manifold (with lockset)	Plus perimeter belt
			Manifold types	
Open elbow Ø 17	Clip fixer + Tape clips	Thermofluidifying additive AT 30		
			Top Composit manifold	Control manifold



Dry System

RDZ DRY is a specially-designed 'dry' underfloor heating system for any buildings where a cement screed can not be employed (required thickness: 30 mm, excluding flooring). The surface of Dry panel made of sintered polystyrene is provided with reliefs and special grooves to contain thermal diffusers holding the pipe. The supporting base consists of a double layer of zinc-plated steel plates, stuck one onto the other and disaligned. This makes it possible to create a dry concrete and to guarantee uniform distribution of the loads.



- > **Compact solution.**
- > **Reduced weight.**
- > **Immediately ready walking surface.**
- > **Low thermal inertia.**
- > **Weight distribution: zinc-plated steel plates.**



System Features

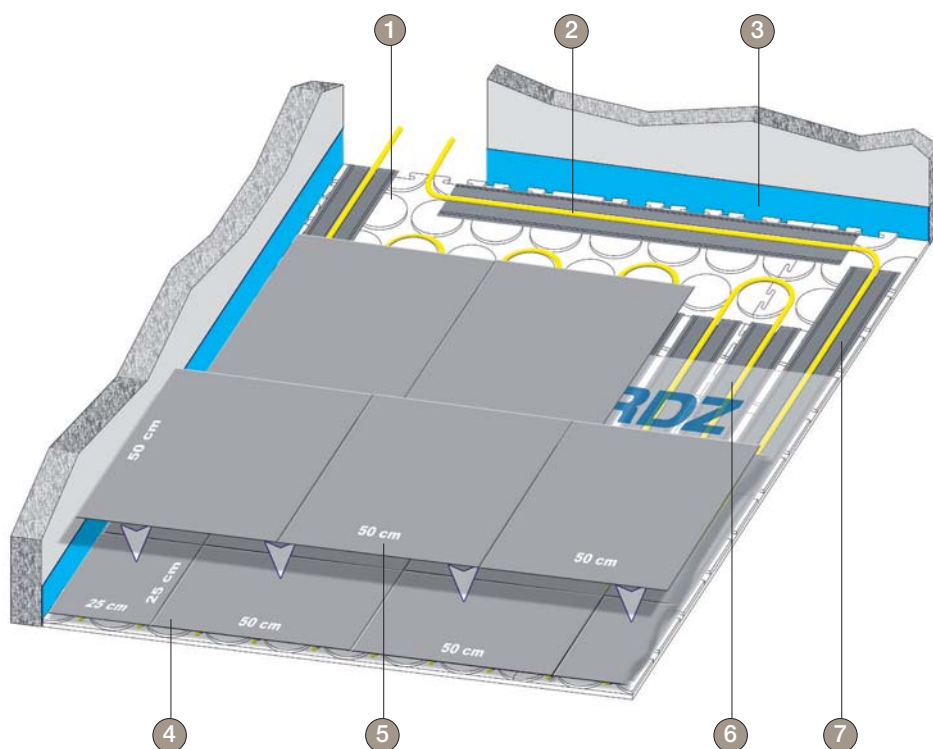
Panel:	Dry
Piping:	PE-Xc diam.14-10
Manifold:	Top Control / Control / Top Composit
Overall dimensions:	3 cm (flooring excluded)
Application:	residential and commercial



Technical Features (UNI EN 13163)

DRY PANEL
code 1201015

Flooring type	Required thickness		
Tiles, Parquet	4 - 5 cm	Thermal conductivity 10°C	(UNI EN 12667) 0.035 W/(m·K)
Marble, Wood, Brick	5 - 7 cm	Compressive strength 10%	(UNI 826) 150 kPa
		Thermal resistance	(UNI EN 13163) 0.55 (m ² ·k)/W
		Equivalent total thickness	(UNI EN 1264/3) 19.6 mm
		Temperature range	80 °C
		Reaction to fire	(EN 13501-1) E
		FEATURES	
		DIMENSIONS	
		Length	(UNI 822) mm 1120
		Width	(UNI 822) mm 560
		Insulating thickness	mm 10
		Nominal thickness	(UNI 823) mm 25
		Package	panels no. 16 (10 m ²)



- 1 Dry panel
- 2 PE-Xc pipe Ø14-10
- 3 Perimeter belt
- 4 1st layer of zinc-plated steel plates
- 5 2nd layer of zinc-plated steel plates with adhesive
- 6 Polyethylene sheet
- 7 Thermal diffusers

System Components

 RDZ Dry panel	 RDZ Clima pipe of PE-Xc 14 mm	 Top Control preassembled manifold	 Slim cabinet for manifold (with lockset)	 Plus perimeter belt
 Pipe elbows	 Thermal diffuser 14	 Zinc-plated steel sheets	 Humidity barrier sheet	Alternative manifold  Top Composit manifold



NEW Eco-Dry System

ECO-DRY by RDZ is a “dry” eco-friendly underfloor heating system for applications with reduced dimensions (30 mm flooring excluded). Dry panel with reliefs made of sintered polystyrene has a moulded surface with special grooves so that thermal diffusers can be fitted into them to hold the pipes. The supporting structure consists of a layer of eco-plates pre-shaped for their ideal combination and the even distribution of the load. Under the supporting base you can lay a sound-absorbing mat which guarantees trample noise reduction of 18 dB.

- > **Compact solution.**
- > **Reduced weight.**
- > **Immediately ready walking surface.**
- > **Ecp-friendly materials.**
- > **Lower costs.**

System Features

Panel:	Dry
Piping:	PE-Xc diam.14-10
Collettore	Top Control / Control / Top Composit
Overall dimensions:	3 cm (flooring excluded)
Application:	residential and commercial

Eco-plates

Plates made of recycled and recyclable material with very high resistance. It is waterproof and cannot be affected by chemical agents. Top performance with underfloor heating. The perimeter of the plates is pre-shaped to ensure ideal combination.
 Size lxxd 700x1260x5 mm
 Density 1.100 kg/m³ (ISO 1183)

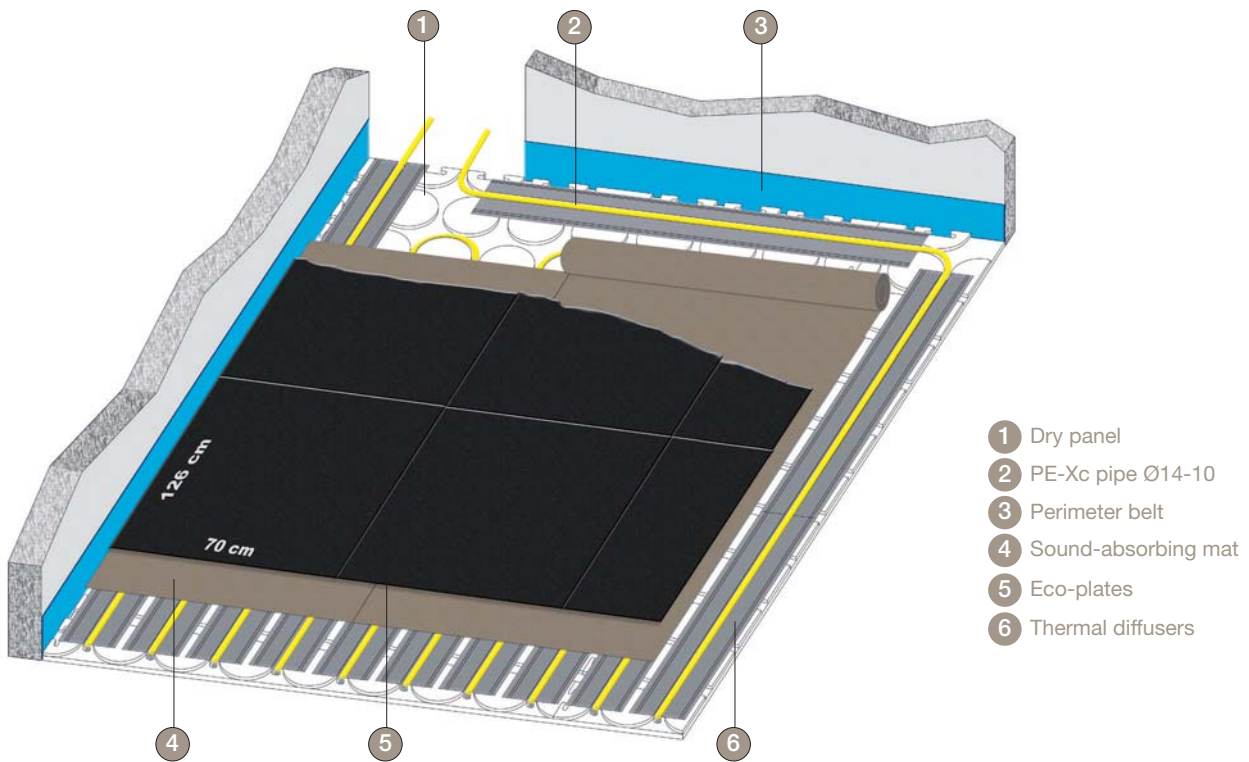
Sound-absorbing Mat

Sound-absorbing mat with reduced thickness made of atoxic, ecofriendly material, whose density is extremely high, 1.700 kg/m³, and makes it possible to reduce trample noise up to 18 dB.
 Size lxxp 11.765x850x0,7 mm - Rolls of 10 m²
 Density 1.700 kg/m³
 Trample noise reduction 18 dB (DIN EN ISO 140-8)

Technical Features (UNI EN 13163)

DRY PANEL
code 1201015

Flooring type	Required thickness			
Tiles, Parquet	4 - 5 cm	FEATURES	Thermal conductivity 10°C (UNI EN 12667)	0.035 W/(m·K)
Marble, Wood, Ceramic brick	5 - 7 cm		Compressive strength 10% (UNI 826)	150 kPa
			Thermal resistance (UNI EN 13163)	0.55 (m²·k)/W
			Equivalent total thickness (UNI EN 1264/3)	19.6 mm
			Temperature range	80 °C
			Reaction to fire (EN 13501-1)	E
		DIMENSIONS	Length (UNI 822)	mm 1120
			Width (UNI 822)	mm 560
			Insulating thickness	mm 10
			Nominal thickness (UNI 823)	mm 25
			Package	panels no. 16 (10 m²)



- 1 Dry panel
- 2 PE-Xc pipe Ø14-10
- 3 Perimeter belt
- 4 Sound-absorbing mat
- 5 Eco-plates
- 6 Thermal diffusers

System Components

 RDZ Dry panel	 RDZ Clima pipe of PE-Xc 14 mm	 Top Control preassembled manifold	 Slim cabinet for manifold (with lockset)	 Plus perimeter belt
 Pipe elbows	 Thermal diffuser 14	 Eco-plate	 Sound-absorbing mat	Alternative manifold  Top Composit manifold



Industrial Shaped Panel

RDZ high-density industrial SHAPED PANEL system is successfully used to heat large industrial premises where it is essential to guarantee the thermal performance of the area and reduce inertia to a minimum.

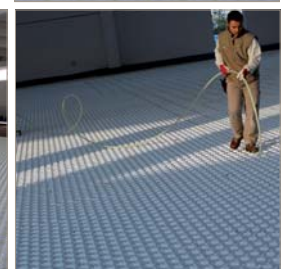
The insulating panel can be positioned directly on the rolled screed surface and fixed after the required sealing operations have been carried out. This system is especially recommended when there is ground water in the subsoil or subsurface.

- > Excellent panel strength.
- > High performing thermal insulation.
- > Reduced thermal inertia.
- > Easy installation.



System Features

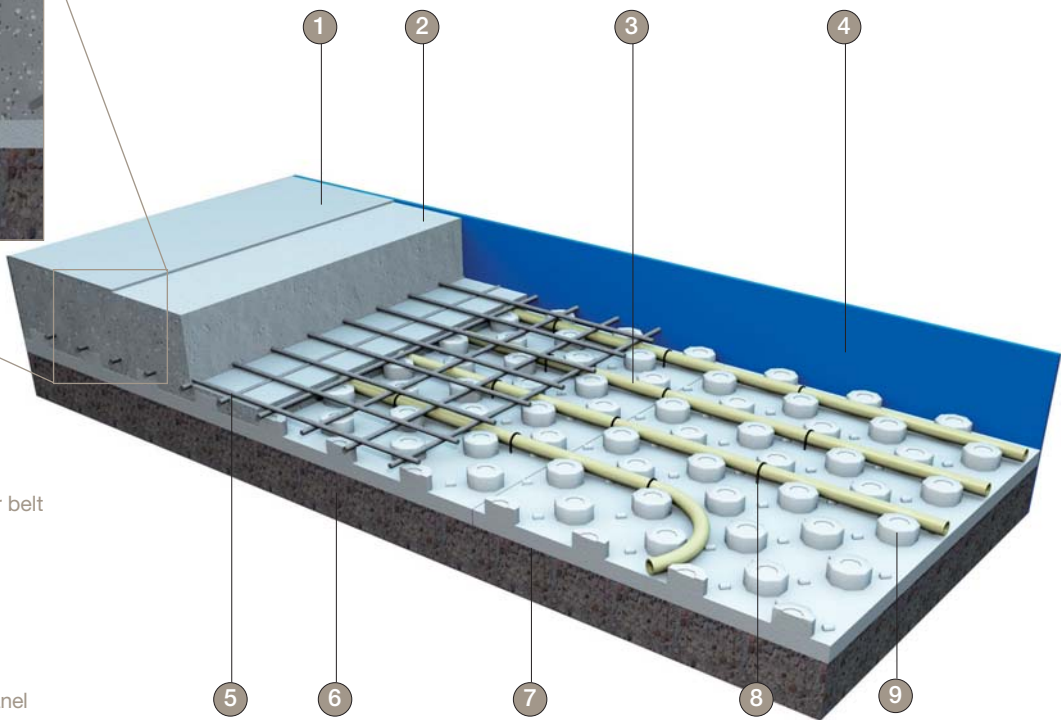
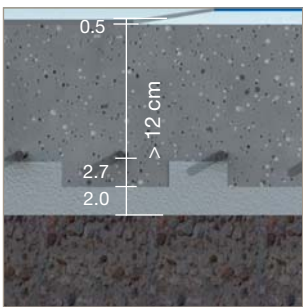
Panel:	Industrial Shaped
Piping:	PE-Xc diam. 20-16
Manifold:	Control
Overall dimensions:	>12 cm (approximate value)
Application:	Industrial



Technical Features (UNI EN 13163)

INDUSTRIAL SHAPED PANEL
code 1040240

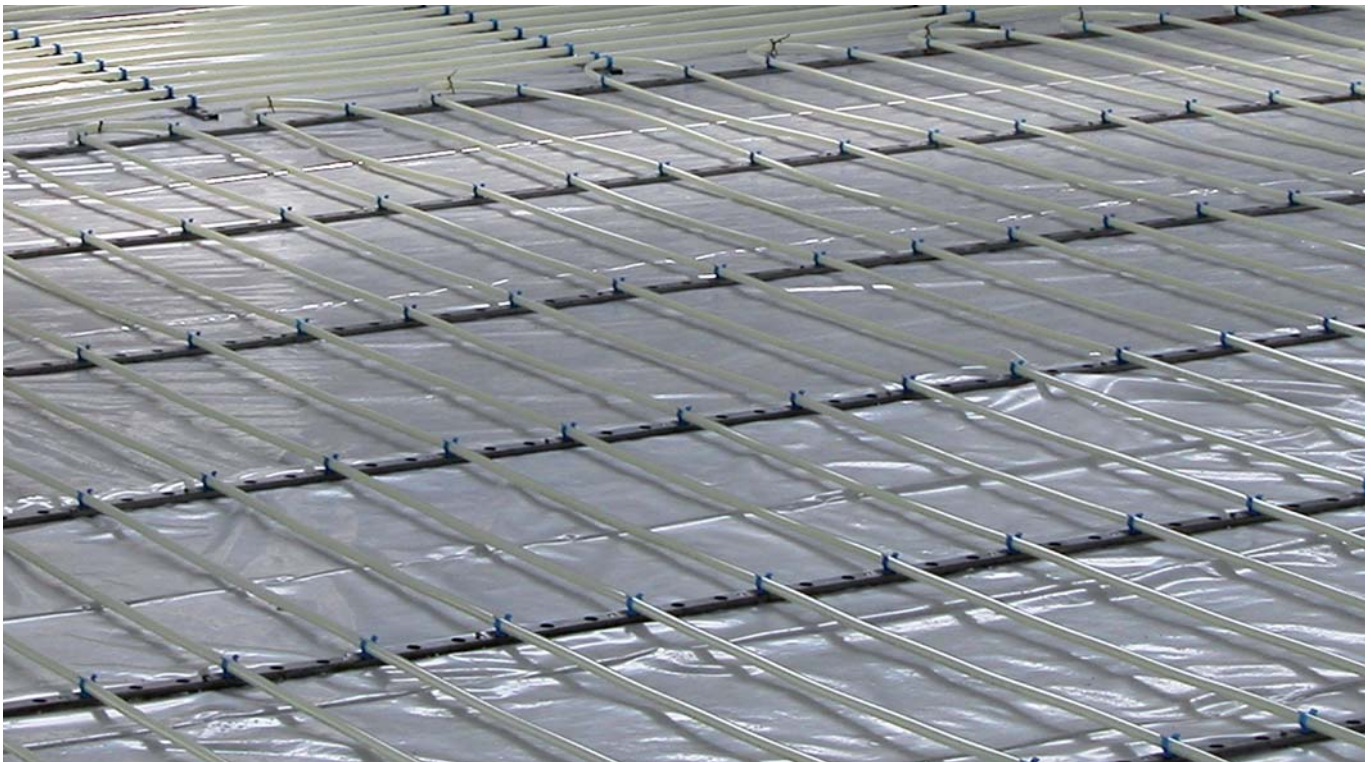
Flooring type	Required thickness		
Industrial flooring	>12 cm*		
	*approximate values to check with structural calculation		
FEATURES	Thermal conductivity 10°C	(UNI EN 12667)	0.033 W/(m·K)
	Compressive strength 10%	(UNI 826)	200 kPa
	Compressive strength 5%	(UNI 826)	180 kPa
	Compressive strength 2%	(UNI 826)	130 kPa
	Thermal resistance	(UNI EN 13163)	0.80 (m ² ·k)/W
DIMENSIONS	Equivalent total thickness	(UNI EN 1264/3)	26.4 mm
	Temperature range		70 °C
	Length	(UNI 822)	mm 1170
	Width	(UNI 822)	mm 837
	Insulating thickness		mm 20
	Nominal thickness	(UNI 823)	mm 47
	Package		panels no. 20 (20 m ²)



- 1 Quarz
- 2 Concrete
- 3 PE-Xc pipe Ø 20-16
- 4 Industriale perimeter belt
- 5 Reinforced mesh
- 6 Fixed rolled screed
- 7 Nylon
- 8 Hooked clips
- 9 Industrial Shaped Panel

System Components

 Industrial Shaped Panel 20	 RDZ Clima pipe of PE-Xc 20 mm	 Control preassembled manifold	 External cabinet	 Industrial perimeter belt
 Supporting elbows	 Hooked clips	 Humidity barrier sheet		



Modulbarra - Supporting Bars

RDZ industrial system with MODULBARRA is the ideal heating solution for industrial warehouses where it is necessary to optimise screed compressive strength. The system includes modular metal bars with plastic fixing clips to hold the heating pipes. The bars can be positioned directly onto the rolled screed and fixed into position after the required sealing operations have been carried out, or simply onto an insulating layer. Another version of Modulbarra system consists of plastic supporting bars of $\varnothing 20$.

- > High strength screed.
- > Easy installation.



System Features

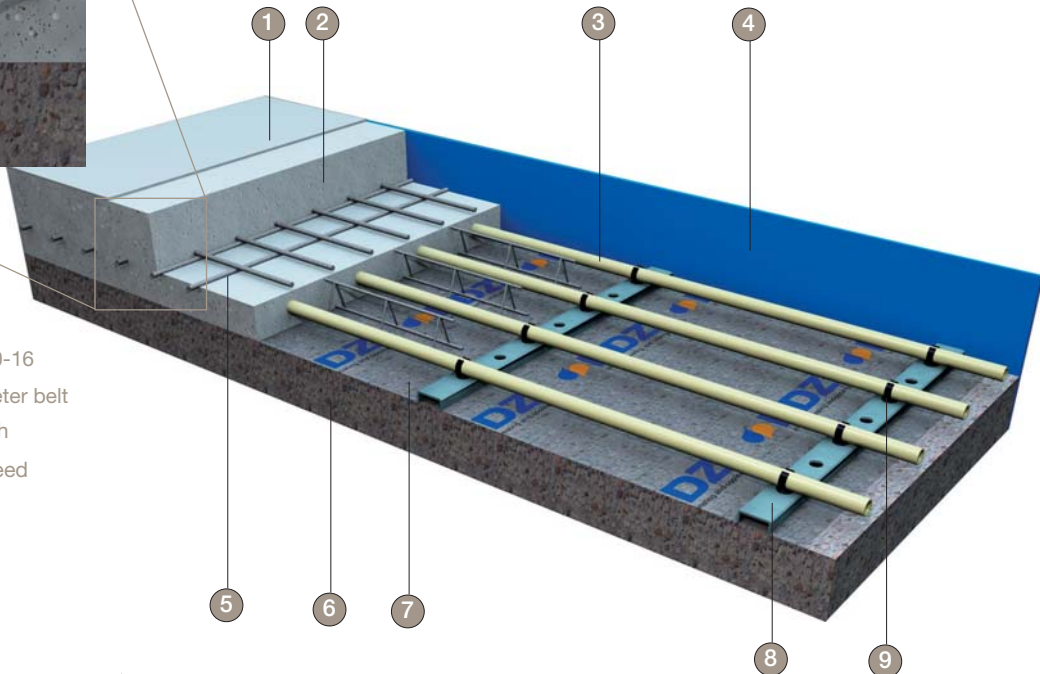
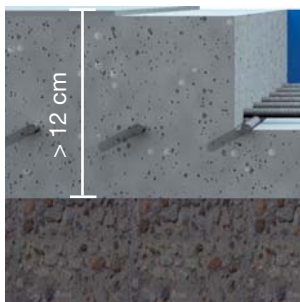
Panel:	Smooth extruded or nothing
Support:	Modulbarra - Supporting bars
Piping:	PE-Xc diam. 20-16
Manifold:	Top Control / Control
Overall dimensions:	>12 cm (approximate values)
Application:	Industrial



Technical Features (UNI EN 13163)

SMOOTH EXTRUDED PANEL code 1030330 | code 1030430

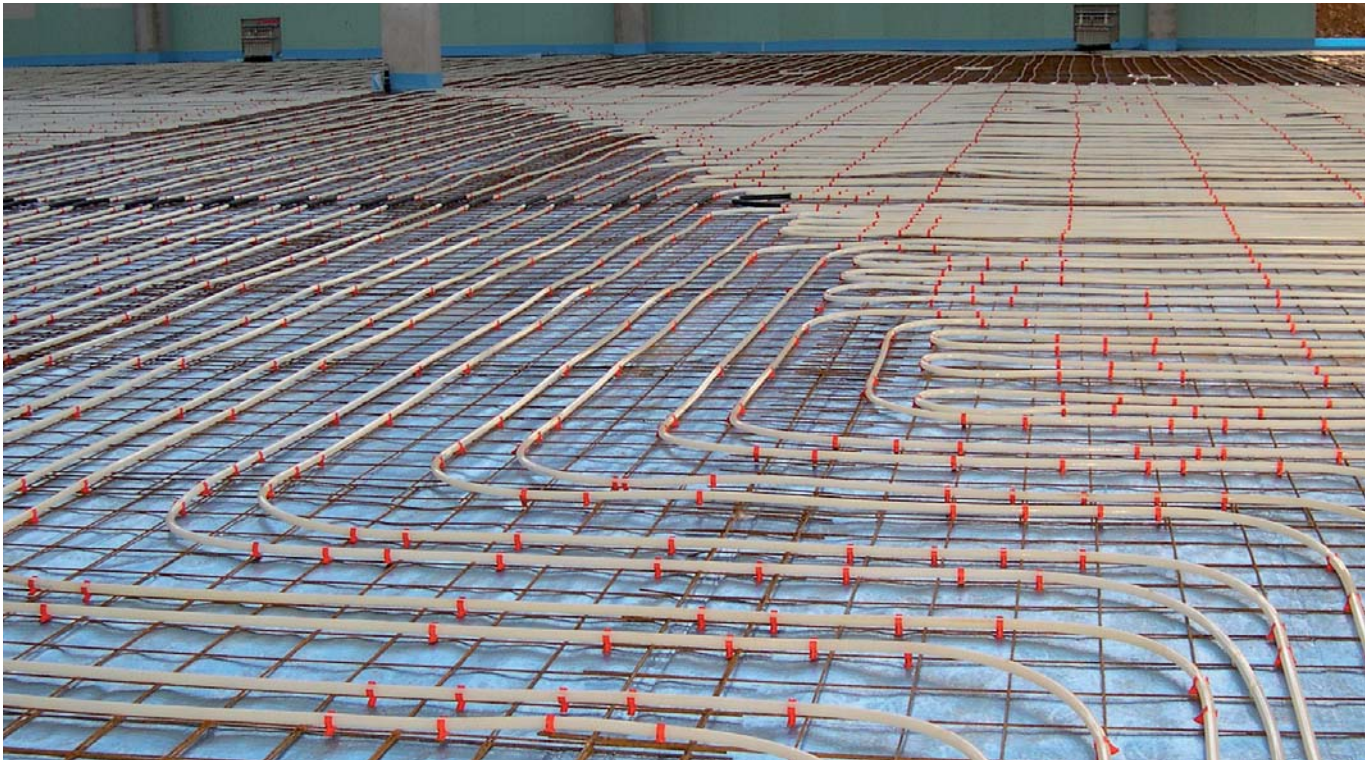
Flooring type	Required thickness	FEATURES		DIMENSIONS	
Industrial flooring	>12 cm*	Thermal conductivity 10°C (UNI EN 12667)	0.033 W/(m·K)	0.033 W/(m·K)	0.033 W/(m·K)
		Compressive strength 10% (UNI 826)	300 kPa	300 kPa	300 kPa
		Thermal resistance (UNI EN 13163)	0.90 (m²·k)/W	1.20 (m²·k)/W	1.20 (m²·k)/W
		Equivalent total thickness (UNI EN 1264/3)	30 mm	40 mm	40 mm
		Temperature range	75 °C	75 °C	75 °C
		Reaction to fire (EN ISO 11925/2)	E	E	E
		Length (UNI 822)	mm 1250	mm 1250	mm 1250
		Width (UNI 822)	mm 600	mm 600	mm 600
		Insulating thickness	mm 30	mm 40	mm 40
		Package	panels no. 14 (10.5 m²)	10 (7.50 m²)	10 (7.50 m²)



- 1 Quarz
- 2 Concrete
- 3 PE-Xc pipe Ø 20-16
- 4 Industrial perimeter belt
- 5 Reinforced mesh
- 6 Fixed rolled screed
- 7 Nylon
- 8 Modulbarra
- 9 Duoclips

System Components

 Modulbarra	 RDZ Clima pipe of PE-Xc 20 mm	 Preassembled Control manifold	 External cabinet	 Industrial perimeter belt
 PVC supporting bars + Clips 40 mm	 Support elbows	 Duoclips	 Humidity barrier sheet	 Smooth extruded insulating panel



Industry System - Supporting Bars

INDUSTRY SYSTEM by RDZ is a specific-designed system for large-scale industrial applications. Its special feature lies in the use of 25-mm PE-Xa piping and 2-inch stainless steel manifolds. The system can be positioned directly onto the rolled screed and fixed into position after the required sealing operations have been carried out, or simply onto an insulating layer (smooth panels or insulating casting). INDUSTRY SYSTEM is particularly suitable to heat up large areas by using a limited number of circuits, and consequently, fewer manifolds.

Two installation versions are possible: either on mesh with clips or with supporting bars made of PVC \varnothing 25.

- > **Simplified manifold positioning.**
- > **Reduced installation costs.**
- > **High-performance screed strength.**



System Features

Panel:	Smooth extruded or nothing
Support:	Metal mesh with 6mm wire - Supporting bars
Piping:	PE-Xa diam. 25-20.4
Manifold:	Industry System 2"
Overall dimensions:	>15 cm
Application:	Industrial



Technical Features (UNI EN 15875)

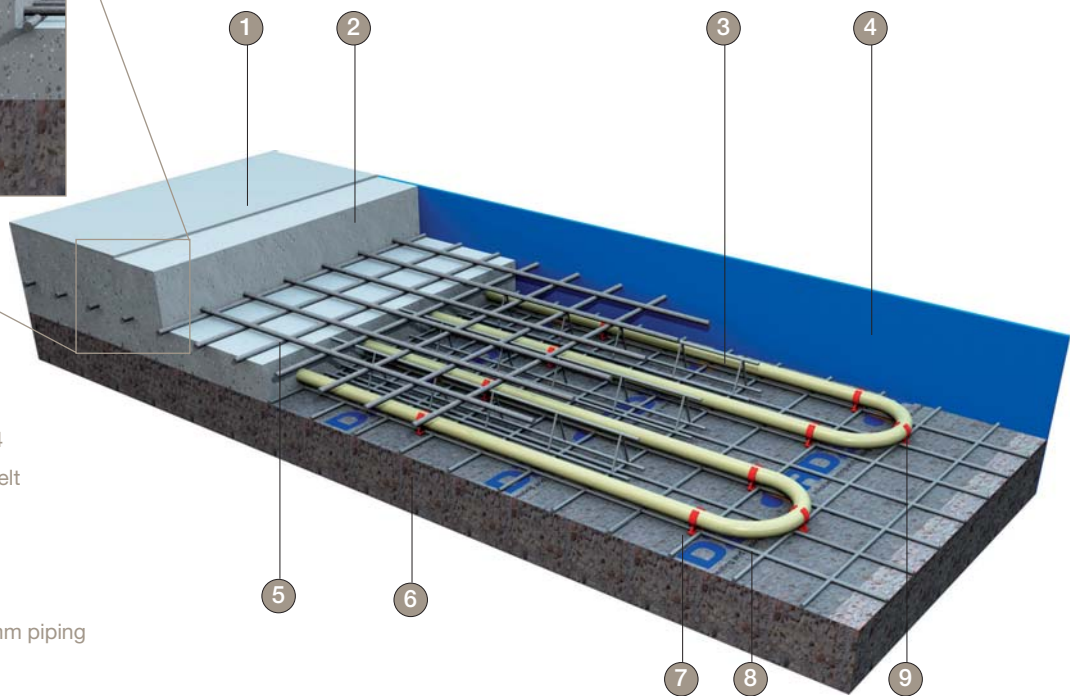
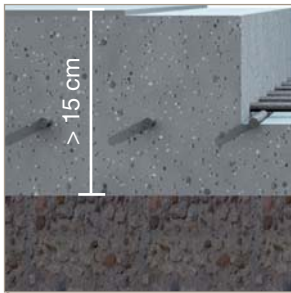
PE-Xa pipe

Conf. 200 m: Code 1013520 - Conf. 600 m: Code 1013560

Outside diameter	25 mm
Thickness	2.3 mm
Weight	0.17 kg/m
Operating pressure at 20 °C	15 bar
Operating pressure at 60 °C	10 bar
Operating pressure at 95 °C	6 bar
Standard	EN 15875

Features	Value	Unit	Regulation
Standard		kg/m ³	EN 15875
Density	≥ 926	%	ISO 1183 Method D
Breaking load at 20°C	≥ 70	N/mm ²	EN 579
Modulus of elasticity at 20°C	≥ 1800	%	ISO 6259-3
Breaking strain at 20°C	> 500	W(m·K)	ISO 6259-3
Thermal conductivity coefficient	0.40	mg/(m ² ·d)	DIN 52612-1
Oxygen permeability	≤ 0.32	m/(m·K)	DIN 52612-3.5
Linear expansion coefficient at 20°C	1.5·10 ⁻⁴		DIN 53752

High-density polyethylene piping, cross-linked through system "a", equipped with anti-oxygen barrier in compliance with UNI EN ISO 16892 and DIN 4726. This system guarantees permanent and stable homogenous cross-linking with no risk of system feature discontinuity over time.



- 1 Quarz
- 2 Concrete
- 3 PE-Xa pipe Ø 25-20.4
- 4 Industrial perimeter belt
- 5 Reinforced mesh
- 6 Fixed rolled screed
- 7 Nylon
- 8 Support mesh for 6-mm piping
- 9 Industry clips

System Components

<p>Industry System manifold</p>	<p>RDZ Clima pipe of PE-Xa</p>	<p>Industry brackets</p>	<p>Industrial perimeter belt</p>	<p>Industry elbows</p>
<p>PVC supporting bars Clips - Small blocks</p>	<p>Clips Industry</p>	<p>Humidity barrier sheet</p>	<p>Smooth extruded insulating panel</p>	



RDZ Manifolds

RDZ manifolds are specially designed and manufactured for underfloor heating applications. They are preassembled in the production plant and, as such, simple to install. Their specific features make it possible to control the difference in temperature of the system, the individual circuits and their flow rate. Special attention has been paid to the lock-shield valve: considering the limited flow rates involved, the gate valve profile allows simple yet precise adjustment and balancing. The required depth is also reduced (8 cm) in order to simplify positioning in hollow brick walling.

- > **Solid and reliable**
- > **Simple to adjust**
- > **Preassembled**
- > **Easy installation**
- > **Wide range**

1

Top Composit Preassembled Manifold

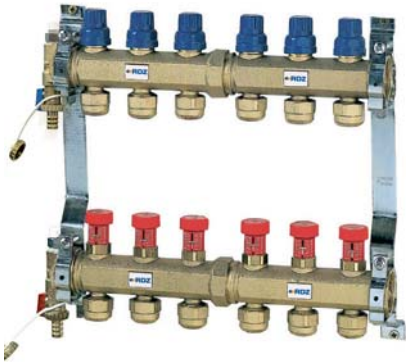


Made of technopolymer Ø 1" for pipe distribution in buildings. Top Composit manifolds are equipped with flow meters for each individual circuit, inflow and counterflow liquid-crystal digital thermometer displays, intercepting valves (for electrothermal heads), micrometric lockshields with data labels to locate rooms, end fittings with ball air vent valves and ball waste valves with hose nozzles and plugs, brackets which can be installed into cabinets or fixed to the wall, and push-fit fittings for 17-13 or 14-10 polyethylene pipes. Operating pressure: 4 bar. Temperature range: 5-60 °C

Pipe (Ø 17)	Pipe (Ø 14)	Outlets	Overall size* cm
1181703	1181403	3+3	37
1181704	1181404	4+4	42
1181705	1181405	5+5	47
1181706	1181406	6+6	52
1181707	1181407	7+7	57
1181708	1181408	8+8	62
1181709	1181409	9+9	67
1181710	1181410	10+10	72
1181711	1181411	11+11	77
1181712	1181412	12+12	82

* Manifold with ball valve and pipe union

2



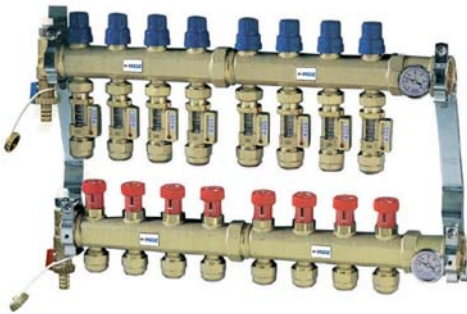
Top Control manifolds Ø 1¼" are made of brass and used to distribute piping. They are equipped with shut-off valves (suitable for electrothermal heads), micrometric lock-shield valves with data plates to locate rooms, ball air valves and ball wash-out valves with rubber-holders and plugs, brackets with vibration-damping rubber tops, which can be installed into cabinets or fixed to the wall, and fittings for 14-10, 17-13 or 20-16 polyethylene pipes.

Control Preassembled Manifold

Pipe (Ø 17)	Pipe (Ø 14)	Pipe (Ø 20)	Outlets	Overall size* cm
1152803	1153703	1153903	3+3	37
1152804	1153704	1153904	4+4	42
1152805	1153705	1153905	5+5	47
1152806	1153706	1153906	6+6	53
1152807	1153707	1153907	7+7	58
1152808	1153708	1153908	8+8	63
1152809	1153709	1153909	9+9	68
1152810	1153710	1153910	10+10	73
1152811	1153711	1153911	11+11	79
1152812	1153712	1153912	12+12	84
1152813	1153713	1153913	13+13	89

* Manifold with ball valve and pipe union

3



Control manifolds Ø 1¼" are made of brass and used to distribute piping. They are equipped with shut-off valves (for electrothermal heads), micrometric lockshield valves with data plates to locate rooms, ball air valves and ball wash-out valves with rubber-holders and plugs, brackets with vibration-damping rubber tops, which can be installed into cabinets or fixed to the wall, and fittings for 14-10, 17-13 or 20-16 polyethylene pipes.

Top Control Preassembled Manifold

Pipe (Ø 17)	Pipe (Ø 14)	Pipe (Ø 20)	Outlets	Overall size* cm
1152703	1153603	1153803	3+3	40
1152704	1153604	1153804	4+4	45
1152705	1153605	1153805	5+5	50
1152706	1153606	1153806	6+6	56
1152707	1153607	1153807	7+7	61
1152708	1153608	1153808	8+8	66
1152709	1153609	1153809	9+9	71
1152710	1153610	1153810	10+10	76
1152711	1153611	1153811	11+11	82
1152712	1153612	1153812	12+12	87
1152713	1153613	1153813	13+13	92

* Manifold with ball valve and pipe union

4



2-inch stainless steel manifolds to distribute 25-mm pipes in warehouses.

It includes interception ball valves and regulation valves, an air vent cock and a load cock, inflow and counterflow thermometers (0-60 °C), and fittings for 25-mm pipes.

Industry System Manifold

Pipe (Ø 25)	Outlets	Overall size* cm
1145005	5+5	49
1145006	6+6	57
1145007	7+7	65
1145008	8+8	73
1145009	9+9	81
1145010	10+10	89
1145011	11+11	97
1145012	12+12	105
1145013	13+13	113
1145014	14+14	121
1145015	15+15	129

* Manifold only



Thermoregulation Kit

Thermoregulation Kits act as substations and contain all the required setting components. They require little extra space compared to a standard distribution manifold. DUPLEX KIT works with a wall boiler equipped with incorporated circulator and is also suitable for high-temperature heating equipment and applications such as in bathrooms where not only underfloor heating but also other heating units are installed. KITS are available with various thermoregulation systems, ranging from the simple yet reliable fixed point thermostat to the electronic climate control for heating and cooling with temperature and relative humidity control.

- > Complete preassembled solutions
- > Reduced space requirements
- > Equipped with electrical wiring
- > Simple installation
- > Reduced installation costs

1



Kit PF Duplex

KIT for distribution and control with double temperature in RDZ underfloor systems and high-temperature installations. It includes: primary shut-off valve, metal cabinet with adjustable feet, brackets, protective cover against plaster, white door with adjustable frame and locking, Control manifolds, a 3-way mixing valve with thermostatic control, temperature range up to 50 °C (heating only), 3-speed circulation pump, micrometric lockshield, a single-acting valve, shut-off valves, thermometers, lock-shield valves, 2-way manifolds for high temperature circuits (set for electrothermal head), air vent valves and valves for load and discharge of the system, electronic safety thermostat, air trap, a connector to the electrical system and wired system.

Pipe (Ø 14)	Pipe (Ø 17)	Pipe (Ø 20)	Version	Size l x h x d (cm)
3411403	3411703	3412003	Kit PF Duplex 3	65x83÷89x13
3411404	3411704	3412004	Kit PF Duplex 4	65x83÷89x13
3411405	3411705	3412005	Kit PF Duplex 5	65x83÷89x13
3411406	3411706	3412006	Kit PF Duplex 6	80x83÷89x13
3411407	3411707	3412007	Kit PF Duplex 7	80x83÷89x13
3411408	3411708	3412008	Kit PF Duplex 8	80x83÷89x13
3411409	3411709	3412009	Kit PF Duplex 9	100x83÷89x13
3411410	3411710	3412010	Kit PF Duplex 10	100x83÷89x13
3411411	3411711	3412011	Kit PF Duplex 11	100x83÷89x13
3411412	3411712	3412012	Kit PF Duplex 12	100x83÷89x13

2

NEW



Kit Easy-Clima Duplex

Kit for distribution and regulation with double temperature is used for floor systems and high-temperature systems. It is equipped with: a metal cabinet with adjustable feet, brackets, a protective cover against plaster, a white door with adjustable frame and lockset, Control manifolds, a three-way mixing valve, a synchronous, reversible motor, a three-speed circulation pump, a micrometric lockshield, a single-acting valve, intercepting valves, thermometers, a valve to balance flow rates, two-way manifolds for high-temperature circuits (suitable for the electrothermal head), air vent valves and valves for load and discharge of the system, a safety electric thermostat, an air trap, and a connector to the electrical system and wired system. It includes a climatic electronic controller with Proportional-Integral technology to control flow temperature in low-temperature systems, and electronic safety thermostat. The control system is equipped with keypad and 4-digit display to set and control the parameters. Direct control from keypad or digital input for Winter/Summer, Comfort/Economy and On/Off commutation. The system can be controlled through external thermostats and humidistats. It can be also equipped with Easy Clima Controller as optional component, which makes it possible to control the information recorded by Easy-Clima control unit. If it is combined with a temperature/humidity sensor, it can control winter temperature and summer temperature and dehumidification.

Pipe (Ø 14)	Pipe (Ø 17)	Pipe (Ø 20)	Version	Size l x h x d (cm)
3451403	3451703	3452003	Kit Easy-Clima Duplex 3	65x83÷89x13
3451404	3451704	3452004	Kit Easy-Clima Duplex 4	65x83÷89x13
3451405	3451705	3452005	Kit Easy-Clima Duplex 5	65x83÷89x13
3451406	3451706	3452006	Kit Easy-Clima Duplex 6	80x83÷89x13
3451407	3451707	3452007	Kit Easy-Clima Duplex 7	80x83÷89x13
3451408	3451708	3452008	Kit Easy-Clima Duplex 8	80x83÷89x13
3451409	3451709	3452009	Kit Easy-Clima Duplex 9	100x83÷89x13
3451410	3451710	3452010	Kit Easy-Clima Duplex 10	100x83÷89x13
3451411	3451711	3452011	Kit Easy-Clima Duplex 11	100x83÷89x13
3451412	3451712	3452012	Kit Easy-Clima Duplex 12	100x83÷89x13

3



Kit VJ 0-10 Duplex

Kit for distribution and control, with double temperature for underfloor systems and high-temperature installations. It includes: metal cabinet with adjustable feet, brackets, protective cover against plaster, white door with adjustable frame and locking, Control manifolds, a 3-way mixing valve, 0-10 analog actuator, 3-speed circulation pump, micrometric lockshield, a single-acting valve, shut-off valves, thermometers, lock-shield valves, 2-way manifolds for high temperature circuits (set for electrothermal head), valves for load and discharge of the system, electronic safety thermostat, air trap, a connector to the electrical system and wired system. The system can be controlled by an external control unit.

Pipe (Ø 14)	Pipe (Ø 17)	Pipe (Ø 20)	Version	Size l x h x d (cm)
3415403	3415703	3415003	Kit VJ 0-10 Duplex 3	65x83÷89x13
3415404	3415704	3415004	Kit VJ 0-10 Duplex 4	65x83÷89x13
3415405	3415705	3415005	Kit VJ 0-10 Duplex 5	65x83÷89x13
3415406	3415706	3415006	Kit VJ 0-10 Duplex 6	80x83÷89x13
3415407	3415707	3415007	Kit VJ 0-10 Duplex 7	80x83÷89x13
3415408	3415708	3415008	Kit VJ 0-10 Duplex 8	80x83÷89x13
3415409	3415709	3415009	Kit VJ 0-10 Duplex 9	100x83÷89x13
3415410	3415710	3415010	Kit VJ 0-10 Duplex 10	100x83÷89x13
3415411	3415711	3415011	Kit VJ 0-10 Duplex 11	100x83÷89x13
3415412	3415712	3415012	Kit VJ 0-10 Duplex 12	100x83÷89x13

It is not equipped with a thermoregulation control unit.



NEW

Compact Thermoregulation Kit

New range of regulation and distribution kit with single-block group made of thermo-plastic material. It is equipped with a mixing valve and a thermostatic head with temperature range between 10-50 °C, a 3-speed or electronic circulation pump with variable flow and pressure, ideal for regulation and control in small underfloor heating systems.

Next production: kit with climatic regulation or external controller for small underfloor heating and cooling systems.

Very easy installation and modular supply according to working stages in the building site.

- > **Compact group with mixer/pump**
- > **Easy installation**
- > **Modularity**
- > **Split supply**

Example of application

STAGE 1:
cabinet installation



STAGE 2:
installation of low- and high-temperature manifolds



STAGE 3:
installation of COMPACT mixing module/pump



STAGE 4:
installation of painted door and frame



An important aspect is represented by the fact that during the installation in the building site only the cabinet is installed. This reduces the risks of theft or damage.

Kit Compact PF-C

New KIT COMPACT PF-C for distribution and set-point regulation. It includes a single thermoplastic block from highly innovative technology, made up of a mixing valve and a thermostatic head with temperature range 10 – 50 °C, and a 3-speed or electronic circulation pump with variable flow and pressure. It represents the ideal solution to control small underfloor heating systems or combined systems with RDZ floor systems and high-temperature installations.

KIT COMPACT PF-C also contains unidirectional valve, shut-off valves, thermometers, balancing lockshield valve with closing by-pass for primary circuit, fill/drain and vent valves, electronic safety thermostat, thermoplastic air trap, and thermoplastic TOP COMPOSIT manifolds Ø 1" with push-fit fittings for RDZ CLIMA pipe Ø 14-10 or 17-13, connector for electric installation and wired system. In addition, it includes a metal cabinet with adjustable mounts, brackets, a protective cover and white door with adjustable frame and lockset.

NOTE: In C versions the manifolds for the underfloor systems are TOP COMPOSIT models.



NB. High-temperature manifolds and variable-flow circulation pump are not included and shall be ordered separately.

Pipe (Ø 14)	Pipe (Ø 17)	Version	Size l x h x d (cm)
3111403	3111703	Kit Compact PF-C 3	75x85÷91x14
3111404	3111704	Kit Compact PF-C 4	75x85÷91x14
3111405	3111705	Kit Compact PF-C 5	75x85÷91x14
3111406	3111706	Kit Compact PF-C 6	75x85÷91x14
3111407	3111707	Kit Compact PF-C 7	90x85÷91x14
3111408	3111708	Kit Compact PF-C 8	90x85÷91x14
3111409	3111709	Kit Compact PF-C 9	90x85÷91x14
3111410	3111710	Kit Compact PF-C 10	110x85÷91x14
3111411	3111711	Kit Compact PF-C 11	110x85÷91x14
3111412	3111712	Kit Compact PF-C 12	110x85÷91x14

Kit Compact PF-OT

New KIT COMPACT PF-OT for distribution and set-point regulation. It includes a single thermoplastic block from a highly innovative technology, made up of a mixing valve and a thermostatic head with temperature range 10 – 50 °C, and a 3-speed or electronic circulation pump with variable flow and pressure. It represents the ideal solution to control small underfloor heating systems or combined systems with RDZ floor systems and high-temperature installations.

KIT COMPACT PF-OT also contains unidirectional valve, shut-off valves, thermometers, balancing lockshield valve with closing by-pass for primary circuit, fill/drain and vent valves, electronic safety thermostat, thermoplastic air trap, and brass CONTROL manifolds Ø 1"1/4 for RDZ CLIMA pipe Ø 14-17-20, connector for electric installation and wired system. In addition, it includes a metal cabinet with adjustable mounts, brackets, a protective cover and white door with adjustable frame and lockset.

NOTE: In OT versions the manifolds for the underfloor systems are CONTROL models.



NB. High-temperature manifolds and variable-flow circulation pump are not included and shall be ordered separately.

Pipe (Ø 14)	Pipe (Ø 17)	Pipe (Ø 20)	Version	Size l x h x d (cm)
3110403	3110703	3110203	Kit Compact PF-OT 3	75x85÷91x14
3110404	3110704	3110204	Kit Compact PF-OT 4	75x85÷91x14
3110405	3110705	3110205	Kit Compact PF-OT 5	75x85÷91x14
3110406	3110706	3110206	Kit Compact PF-OT 6	90x85÷91x14
3110407	3110707	3110207	Kit Compact PF-OT 7	90x85÷91x14
3110408	3110708	3110208	Kit Compact PF-OT 8	90x85÷91x14
3110409	3110709	3110209	Kit Compact PF-OT 9	110x85÷91x14
3110410	3110710	3110210	Kit Compact PF-OT 10	110x85÷91x14
3110411	3110711	3110211	Kit Compact PF-OT 11	110x85÷91x14
3110412	3110712	3110212	Kit Compact PF-OT 12	110x85÷91x14

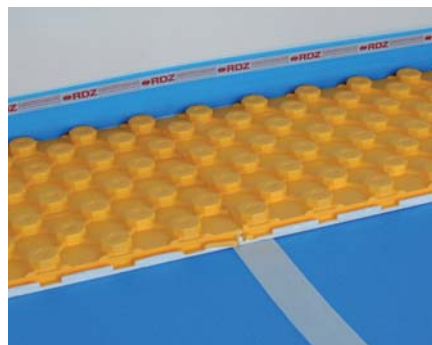


Components for Floor Acoustic Insulation

In order to improve the acoustic insulation of the floor base, RDZ offers a range of specific components which can be used with RDZ radiant floor systems. The main component is the Acoustic mat, which should be laid under the insulating panels to improve the acoustic performance of the base. It is made of elastic expanded dense polyethylene, and it is characterized by dynamic rigidity of 50.7 MN/m³ guaranteeing trample noise absorption between 20 and 25 dB and a dynamic load value of 13 kPa according to UNI EN 12431, so as it can keep constant properties over time.

Additional components are represented by: the adhesive L-shaped edge insulation made of expanded polyethylene, which is used to absorb concrete expansions and improve the acoustic insulation of the surface; the adhesive tape, which is used to seal the soundabsorbing layer; the door edge, which shall be used in corners and wall edges.

- > Complete and versatile system
- > Easy installation
- > High performance
- > Compliance with European regulations



FLOOR ACOUSTIC INSULATION COMPONENTS

1



Acoustic Mat

Sound-absorbing mat made of elastic expanded dense polyethylene in rolls. It shall be laid under RDZ radiant panels to increase the acoustic performance of the structural base. Thickness 10 mm. Density 30/33 kg/m³. Thermal conductivity 0.04 W/m·K. Trample noise insulation ΔL_w from lab calculation: between 20 and 25 dB.

Trample noise insulation $L'_{n,w}$ in the building site: 58 ÷ 59 dB. Dynamic rigidity 43 MN/m³.

Code	1054230
Height	1300 mm
Length	50 m
Thickness	10 mm
Package	roll of 65 m ²

2



Acoustic Adhesive Tape

Adhesive tape made of expanded polyethylene used to seal the sound absorbing layer (Acoustic mat).

Package: rolls of 100 mm, thickness 3 mm.

Code	1054240
Height	100 mm
Length	25 m
Thickness	3 mm
Package	roll of 25 m

3



Acoustic Perimeter Belt

Adhesive edge insulation made of expanded polyethylene with small cuts on the backside to adjust its height. It is equipped with a sheet made of expanded polyethylene, which shall be laid on the sound-absorbing mat. The main function of this edge insulation is to absorb concrete expansions and to improve the acoustic insulation of the surface.

Sound-absorbing sheet: h 120 mm, th 2 mm, l 50 m.

Code	1054200
Height	160 mm
Length	50 m
Thickness	6 mm
Package	roll of 50 m

4



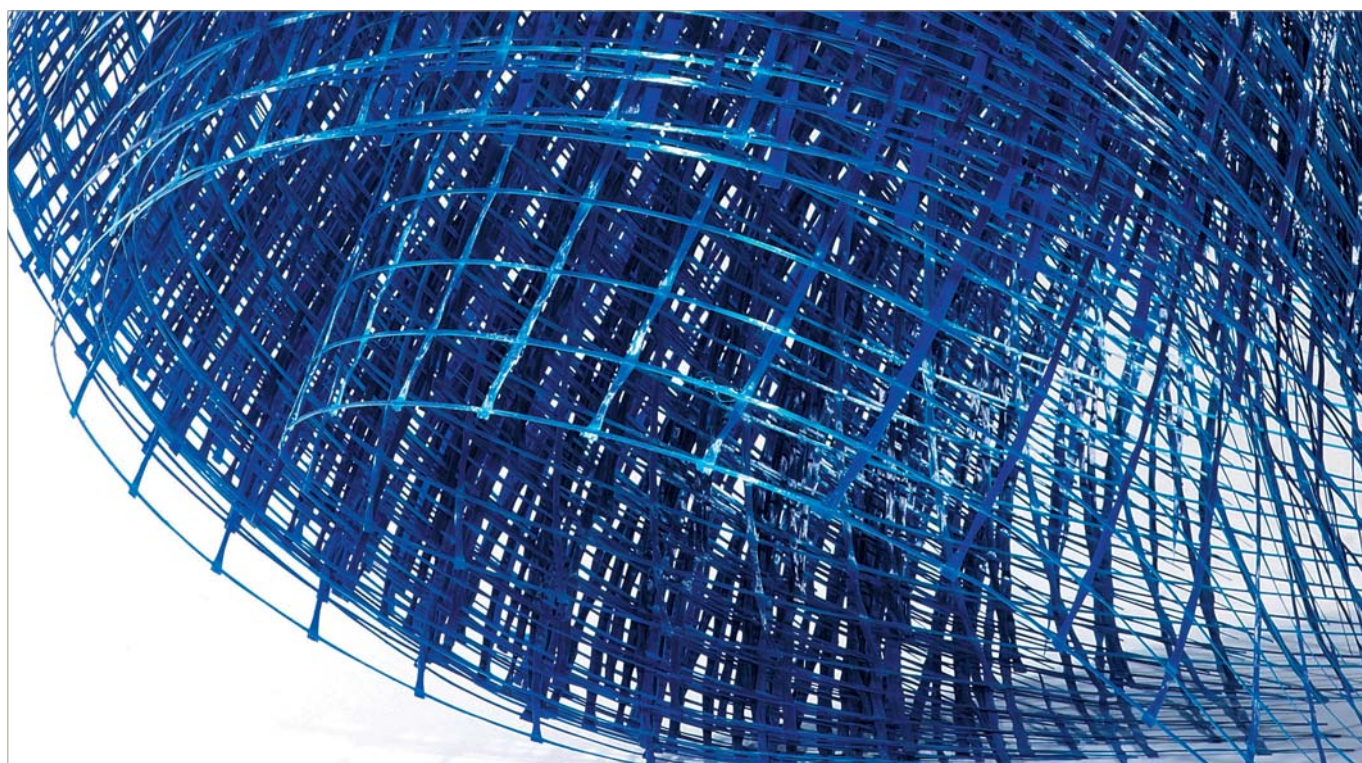
Acoustic Door Edge

Adhesive belt made of expanded polyethylene, which shall be used in corners and wall edges.

Base: l 50 mm.

Code	1054210
Height	160 mm
Thickness	6 mm
Package	10 items





Accessories

CABINETS

1



Slim Cabinet

Made of zinc-plated steel and suitable for Control, Top Control and Top Composit manifolds. The cabinet has a reduced thickness of 8 cm to be fitted into wall partitions.

Code	1157550
Version	Slim 50
Width	50 cm
Weight	9.8 Kg
Top Control manifold outlets	up to 5+5
Control outlets	up to 6+6
Top Composit manifold outlets	up to 6+6

Code	1157575
Version	Slim 75
Width	75 cm
Weight	14.2 Kg
Top Control manifold outlets	up to 10+10
Control outlets	up to 11+11
Top Composit manifold outlets	up to 11+11

Code	1157599
Version	Slim 100
Width	100 cm
Weight	17.1 Kg
Top Control manifold outlets	up to 13+13
Control outlets	up to 13+13
Top Composit manifold outlets	up to 12+12

2



External Cabinet

Zinc dust spray painted steel cabinet for Control and Top Control manifolds with 20-mm pipe fittings for industrial systems. Depth 20 cm; height 80 cm. Open rear for postsystem layout positioning and drilled holes for side entry; white dust spray painted door with lock.

Code	1158075
lxhxd	75x80x20 cm
manifolds	up to 10 outlets

Code	1158100
lxhxd	100x80x20 cm
manifolds	from 11 to 13 outlets

BELTS

1

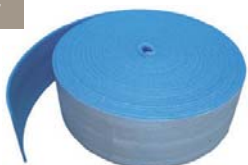


Plus Perimeter Belt

Made of 100% closed-cell expanded polyethylene with an adhesive strip on one side and a special polyethylene combined sheet on the other in order to avoid mortar infiltration between the belt and panel. The belt is equipped with pre-scored edges to allow better fitting to the required height. The main function of Plus perimeter belt is to absorb any floor swelling and to provide thermal and acoustic insulation for the walls.

Code	1071250
Thickness	5 mm
Height	150 mm
Length	50 m (rolls)
Weight	2.3 Kg
Colour	Blue

2



Industrial Perimeter Belt

Made of 100% closed-cell expanded polyethylene with an adhesive strip on one side to facilitate application. Thickness and height make it suitable for industrial systems. The main function of the industrial perimeter belt is to absorb any floor swelling and to provide thermal and acoustic insulation for the walls.

Code	1071110
Thickness	10 mm
Height	250 mm
Length	50 m (rolls)
Weight	4.5 Kg
Colour	Blue

MESHES

1

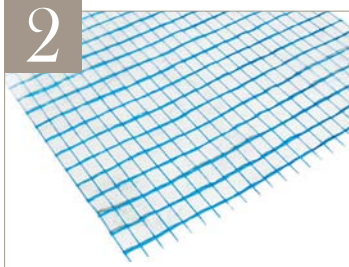


Anti-shrinkage Mesh in high-adherence Sheets

Mesh made of high-adherence zinc-plated steel with anti-shrinkage and floor screed reinforcing function. Package includes metal sheets to facilitate positioning on the work surface and fixed to the system before laying the screed.

Code	1092010
Wire Ø	2 mm
Mesh	75x75 mm
Package	20 sheets 1x2 m, total 40 m ²

2



Fibreglass Mesh to Reinforce Screed

Alkali-proof fibreglass mesh to reinforce screed. It is packaged in sheet form to facilitate laying and it is fixed to the system before casting the screed.

Code	1092100
Sheet	1x2 m
Mesh	40x70 mm
Package	20 sheets 1x2 m, total 40 m ²

ADDITIVES

1



Thermofluidifying Additive AT 30

Thermofluidifying additive is used to reduce water content in the concrete mixture and thereby facilitate the working of the floor screed; improving its compactness, mechanical properties and thermal conductivity. This product fully complies with UNI EN 934-2/2002 standards. Mixing proportions: 3 litres/m³.

Code 1091010	can 10 l
Code 1091015	can 15 l
Code 1091020	can 20 l

2



Inhibitor XR20

Inhibiting agent for heating systems. This treatment is used to prevent scaling and deposits on metal parts. It can be employed in all systems, even those with aluminium components. It solves circulation problems due to the presence of scale, sludge, slurry and deposits. It controls microbiological growth, and is suitable for all kinds of system. Proportion used: 2% of system water.

Code 1091103	can 3 l
Code 1091110	can 10 l

CLIPS

1



Fixing Clips

Fixing clips are made of plastic and used to fix the pipe to the panel close to the supporting elbows and the electrowelded anti-shrinkage mesh into position.

Code	1111000
Package	500 items

2



Hooked Clips

Made of plastic and used to secure the pipe to the panel.

Code	1017000
Package	100 items

3



Clips for Mesh

Plastic clips used to fix the pipe (Ø 17) to the 3-mm wire electrowelded mesh.

Code	1140630
Package	500 items in preassembled rows

4



Duoclips

Plastic clips used to fix the pipe to Modulbarra.

Code	1016000
For pipe Ø	17 mm
Package	500 items

Code	1016020
For pipe Ø	20 mm
Package	500 items

5



Industrial Clips

Clips for 20-mm pipes of plastic and designed to support the pipe on either a 6-mm or 3-mm electrowelded mesh.

Code	1140206
Size Ø	20 mm mesh 6 mm
Package	100 items

Code	1140203
Size Ø	20 mm mesh 3 mm
Package	100 items

6



Industry System Clips

Clips for 25-mm pipes of plastic and designed to support the pipe on a 6-mm electrowelded mesh.

Code	1140625
Size Ø	25 mm mesh 6 mm
Package	100 items

ELBOWS

1



Open Elbow Ø 17 and Industry Elbow Ø 25

It is made of plastic and it is used to support in vertical position the pipes close to the manifolds and to protect them from potential knocks or damage.

Code	1130517
Size Ø	17 mm
Package	single

Code	1140025
Size Ø	25 mm
Package	single

2



Supporting Elbows

It is made of plastic and it is used to support in vertical position the pipes close to the manifolds and to protect them from potential knocks or damage.

Code	1130032
Size Ø	32 mm
Package	single

Code	1130025
Size Ø	25 mm for pipe Ø 14 mm
Package	single

JOINTS

1



Dilation Joint

Dilation joint with adhesive base made of expanded polyethylene. It is ideal to cut the concrete, for example, at the doors, in order to guarantee the right dilation. Its upper part shall be leveled out once the screed is ready.

Size : h 100 mm, th 7.5-9.5 mm, l 2000 mm.

Code	1054220
Package	10 m

UNWINDERS

1



Unwinder

Made of tropicalized steel, the unwinder features ball bearings to guarantee optimal decoiling. It can be adjusted according to the size of the roll and can be completely disassembled. It is particularly suitable for 600-m rolls.

Code	1201000
Package	single

ELECTROTHERMIC HEADS

1



RDZ Black Electrothermic Head with or without microswitch

Thermo-electric actuator to control each circuit through a room thermostat. Input 230V. Degree of protection IP 44. It can be used with TOP COMPOSIT - TOP CONTROL - CONTROL manifolds and high-temperature outlets of Kit and MTR.

Code	1055220
Input	230 V
Package	single

Code	1056220
Input	230 V+micro
Package	single

2



RDZ White Electrothermic Head with or without microswitch

Thermo-electric actuator to control each circuit through a room thermostat. It can be installed upside-down. Display of the functioning mode (open/close), easy installation thanks to its fixing cotter pin, removable cable for easy replacement. Input 230 V. Degree of protection IP 44. It can be used with MAXI - TOP COMPOSIT - TOP CONTROL - CONTROL manifolds and high-temperature outlets of Kit and MTR.

Code	6301010
Input	230 V
Package	single

Code	6301020
Input	230 V+micro
Package	single

Code	6301025
Input	24 V+micro
Package	single



Certified Performance according to UNI EN 1264 Cover System 20/30/40

Thermal outputs for COVER 20/30/40 are certified according to: DIN EN 1264-2:2009-01, DIN EN 1264-3:2009-11, DIN EN 1264-4:2009-11, DIN EN 1264-5:2009-01.



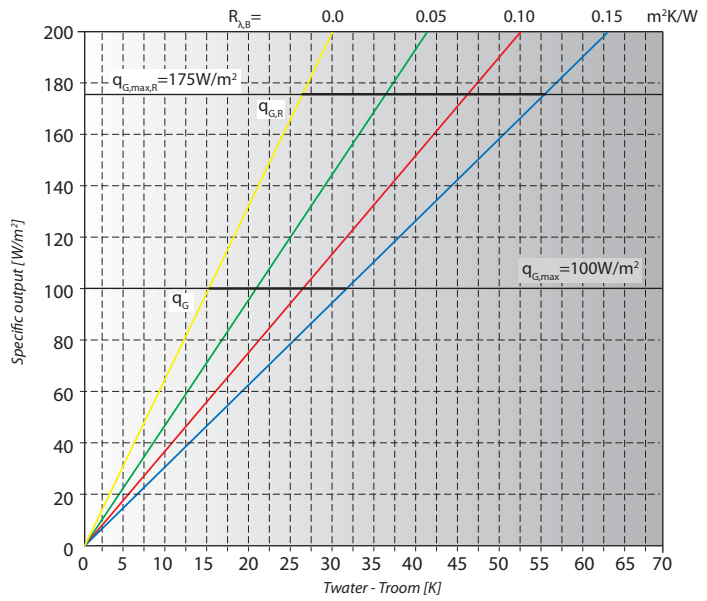
Information about the system

Panel	Panel type	Cover 20/30/40	
	Panel thermal conductivity λ_{INS}	0.035	W/(m·K)
	Relief thermal conductivity λ_W	0.035	W/(m·K)
Concrete	Total thickness	0.070	m
	Thickness above the pipe S_u	0.045	m
	Thermal conductivity λ_E	1.2	W/(m·K)
	Value Ψ	11.2	%
	Thermal conductivity λ'_E	1.070	W/(m·K)
Pipe	Material	PE-Xc	
	Outside diameter D	0.017	m
	Thickness S_R	0.002	m
	Thermal conductivity λ_R	0.35	W/(m·K)

HEATING OUTPUTS SYSTEM COVER 20, 30, 40 INCLINATION OF THE CHARACTERISTIC CURVES

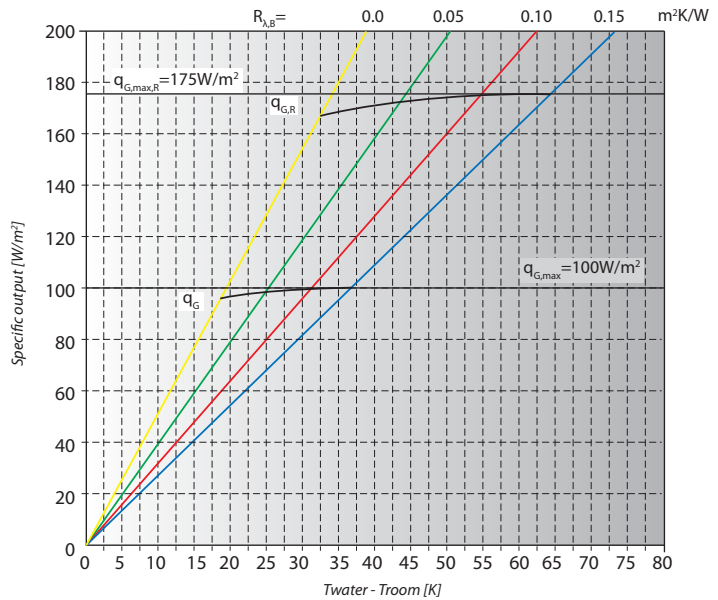
OUTPUT DIAGRAM WITH SPACING 83

T (mm)	83
$R_{\lambda,B}$ [m^2K/W]	$q/\Delta\theta_H$ [W/m^2K]
0.00	6.580
0.05	4.825
0.10	3.817
0.15	3.159



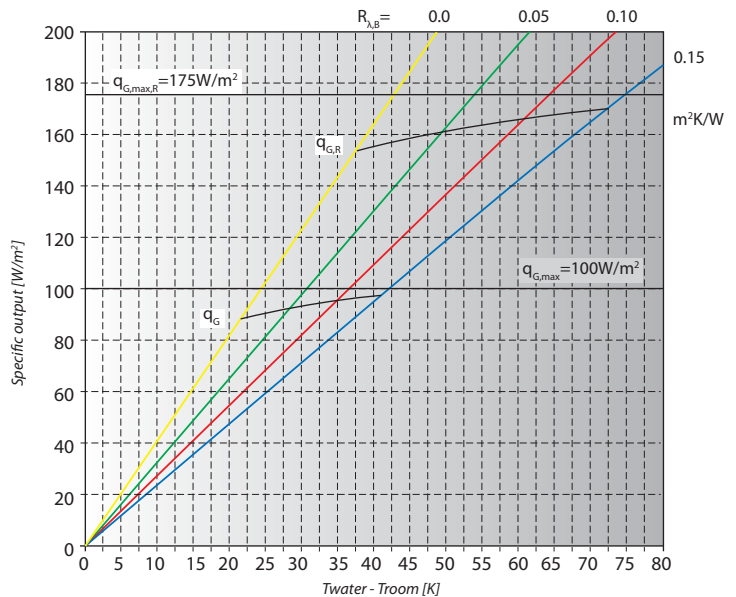
OUTPUT DIAGRAM WITH SPACING 166

T (mm)	166
$R_{\lambda,B}$ [m^2K/W]	$q/\Delta\theta_H$ [W/m^2K]
0.00	5.163
0.05	3.944
0.10	3.221
0.15	2.727



OUTPUT DIAGRAM WITH SPACING 249

T (mm)	249
$R_{\lambda,B}$ [m^2K/W]	$q/\Delta\theta_H$ [W/m^2K]
0.00	4.080
0.05	3.238
0.10	2.724
0.15	2.357



COOLING OUTPUTS SYSTEM COVER 20, 30, 40

Values detected for $\Delta\theta_{C,N}$ fixed at 8 K

OUTPUT DIAGRAM WITH SPACING 83

T (mm) $R_{\lambda,B}$ [m ² K/W]	83 $q/\Delta\theta_H$ [W/m ² K]
0.00	4.563
0.05	3.649
0.10	3.041
0.15	2.606

T (mm) $R_{\lambda,B}$ [m ² K/W]	83 $q_{C,N}$ [W/m ²]
0.00	36.5
0.05	29.2
0.10	24.3
0.15	20.8

OUTPUT DIAGRAM WITH SPACING 166

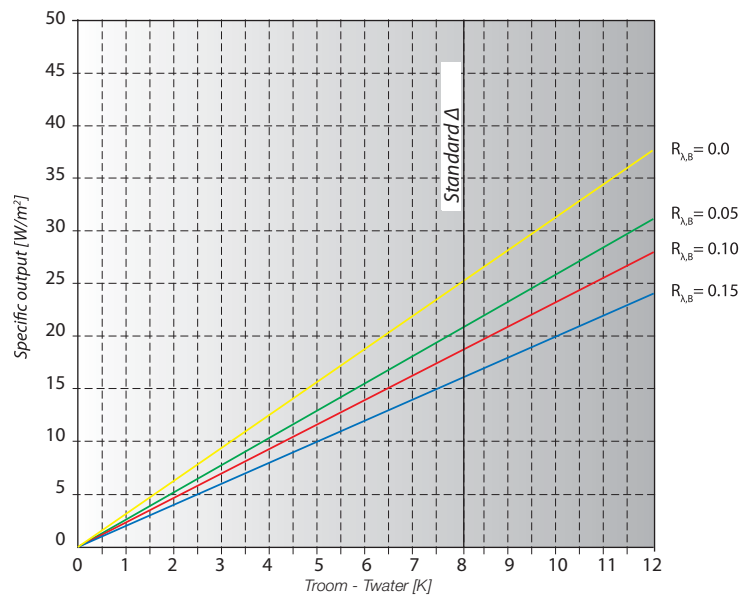
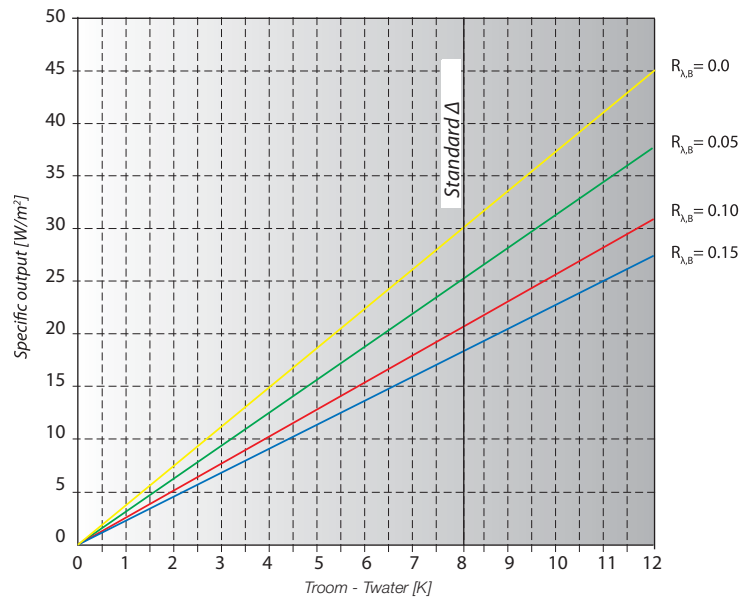
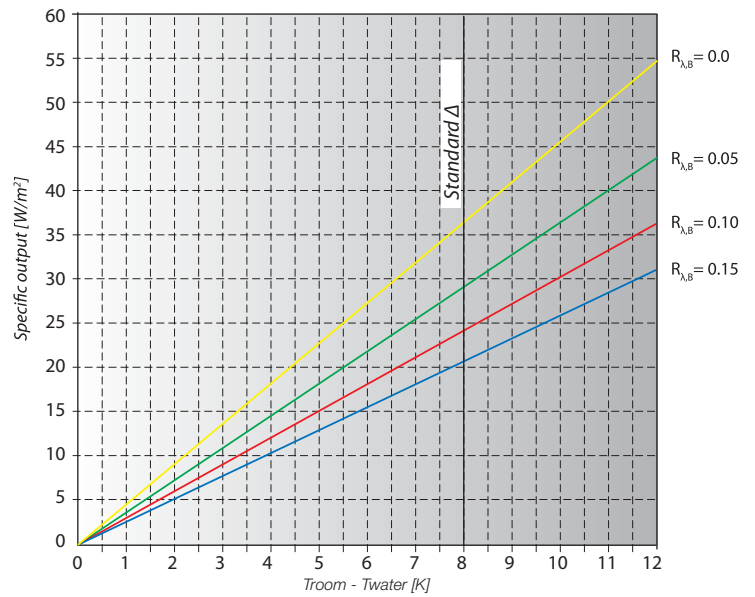
T (mm) $R_{\lambda,B}$ [m ² K/W]	166 $q/\Delta\theta_H$ [W/m ² K]
0.00	3.783
0.05	3.106
0.10	2.634
0.15	2.287

T (mm) $R_{\lambda,B}$ [m ² K/W]	166 $q_{C,N}$ [W/m ²]
0.00	30.3
0.05	24.8
0.10	21.1
0.15	18.3

OUTPUT DIAGRAM WITH SPACING 249

T (mm) $R_{\lambda,B}$ [m ² K/W]	249 $q/\Delta\theta_H$ [W/m ² K]
0.00	3.142
0.05	2.645
0.10	2.285
0.15	2.010

T (mm) $R_{\lambda,B}$ [m ² K/W]	249 $q_{C,N}$ [W/m ²]
0.00	25.1
0.05	21.2
0.10	18.3
0.15	16.1



Please, check that the temperature of the radiant surface calculated according to UNI EN 1264 is higher than the dew point detected in each room. In order to avoid condensation on the radiant surface it is important to use controllers equipped with suitable sensors.



Certified Performance according to UNI EN 1264 Acoustic System

Thermal outputs for Acoustic System are certified according to: DIN EN 1264-2:2009-01, DIN EN 1264-3:2009-11, DIN EN 1264-4:2009-11, DIN EN 1264-5:2009-01.



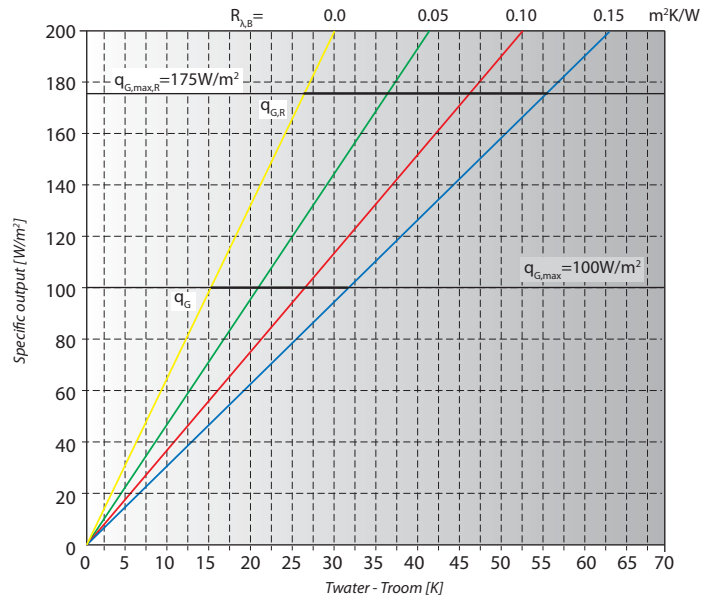
Information about the system

Panel	Panel type	ACOUSTIC	
	Panel thermal conductivity λ_{INS}	0.037	W/(m·K)
	Relief thermal conductivity λ_w	0.037	W/(m·K)
Concrete	Total thickness	0.070	m
	Thickness above the pipe S_u	0.045	m
	Thermal conductivity λ_E	1.2	W/(m·K)
	Value Ψ	11.2	%
	Thermal conductivity λ'_E	1.070	W/(m·K)
Pipe	Material	PE-Xc	
	Outside diameter D	0.017	m
	Thickness S_R	0.002	m
	Thermal conductivity λ_R	0.35	W/(m·K)

HEATING OUTPUTS ACOUSTIC SYSTEM INCLINATION OF THE CHARACTERISTIC CURVES

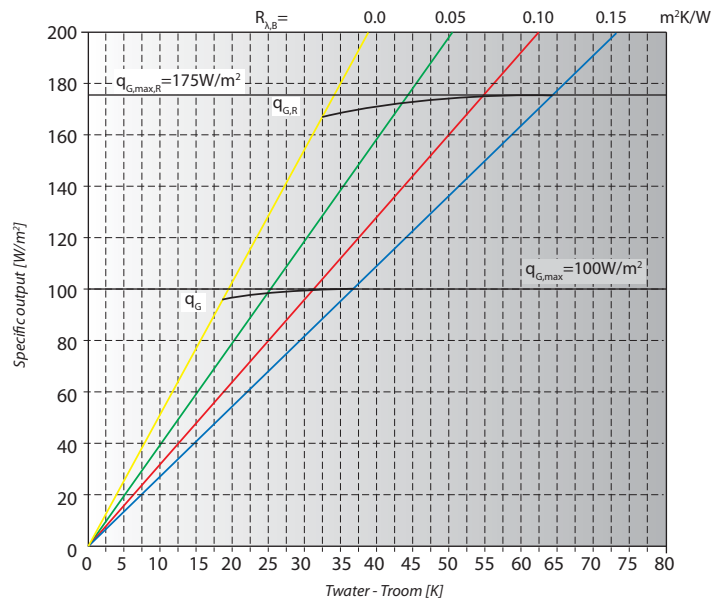
OUTPUT DIAGRAM WITH SPACING 83

T (mm) $R_{\lambda,B}$ [m^2K/W]	83 $q/\Delta\theta_H$ [W/m^2K]
0.00	6.580
0.05	4.825
0.10	3.817
0.15	3.159



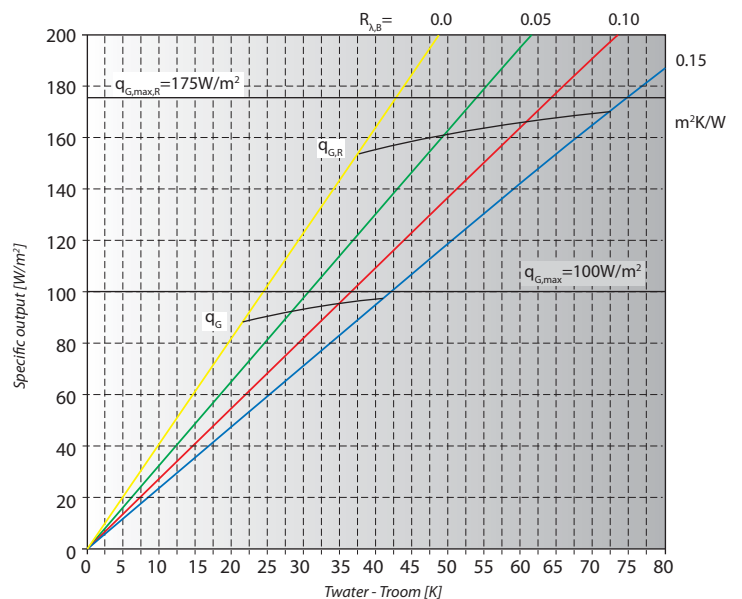
OUTPUT DIAGRAM WITH SPACING 166

T (mm) $R_{\lambda,B}$ [m^2K/W]	166 $q/\Delta\theta_H$ [W/m^2K]
0.00	5.163
0.05	3.944
0.10	3.221
0.15	2.727



OUTPUT DIAGRAM WITH SPACING 249

T (mm) $R_{\lambda,B}$ [m^2K/W]	249 $q/\Delta\theta_H$ [W/m^2K]
0.00	4.080
0.05	3.238
0.10	2.724
0.15	2.357



COOLING OUTPUTS ACOUSTIC SYSTEM

Values detected for $\Delta\theta_{C,N}$ fixed at 8 K

OUTPUT DIAGRAM WITH SPACING 83

T (mm) $R_{\lambda,B}$ [m ² K/W]	83 $q/\Delta\theta_H$ [W/m ² K]
0.00	4.563
0.05	3.649
0.10	3.041
0.15	2.606

T (mm) $R_{\lambda,B}$ [m ² K/W]	83 $q_{C,N}$ [W/m ²]
0.00	36.5
0.05	29.2
0.10	24.3
0.15	20.8

OUTPUT DIAGRAM WITH SPACING 166

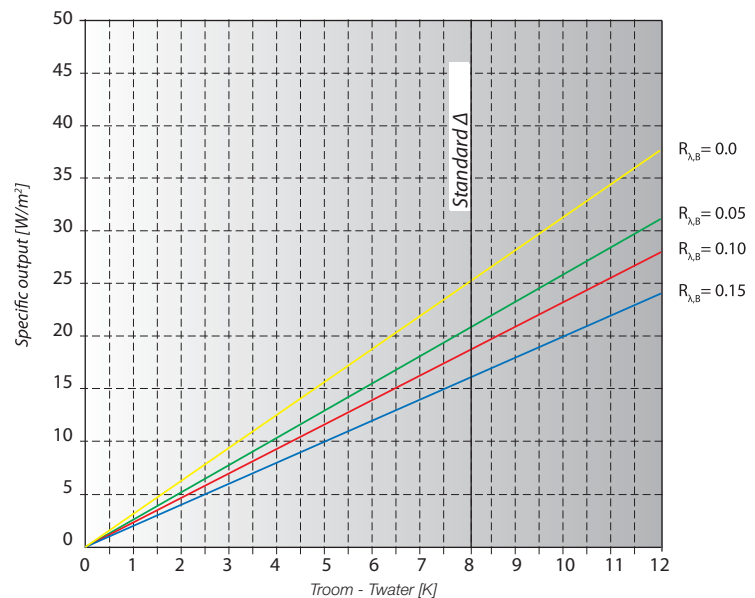
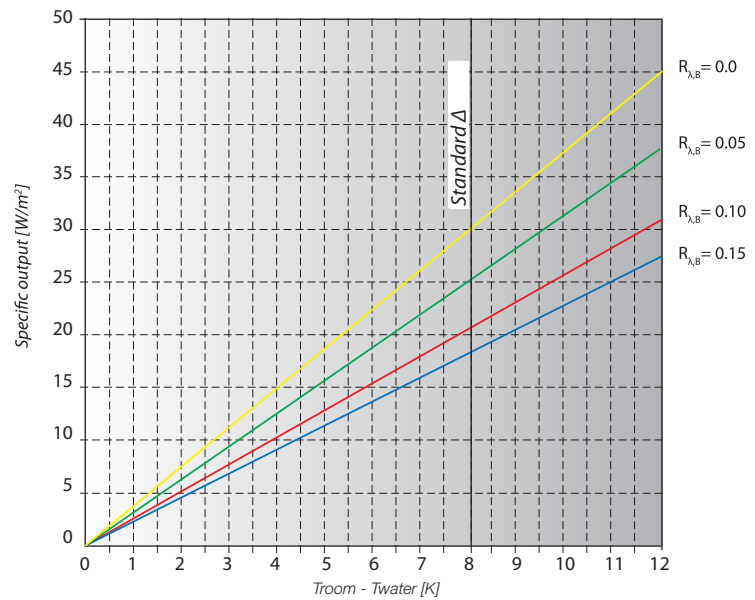
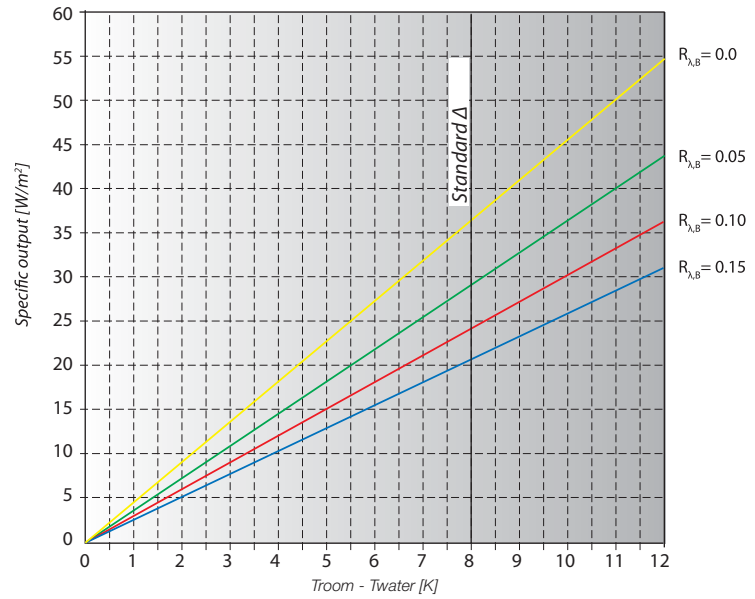
T (mm) $R_{\lambda,B}$ [m ² K/W]	166 $q/\Delta\theta_H$ [W/m ² K]
0.00	3.783
0.05	3.106
0.10	2.634
0.15	2.287

T (mm) $R_{\lambda,B}$ [m ² K/W]	166 $q_{C,N}$ [W/m ²]
0.00	30.3
0.05	24.8
0.10	21.1
0.15	18.3

OUTPUT DIAGRAM WITH SPACING 249

T (mm) $R_{\lambda,B}$ [m ² K/W]	249 $q/\Delta\theta_H$ [W/m ² K]
0.00	3.142
0.05	2.645
0.10	2.285
0.15	2.010

T (mm) $R_{\lambda,B}$ [m ² K/W]	249 $q_{C,N}$ [W/m ²]
0.00	25.1
0.05	21.2
0.10	18.3
0.15	16.1



Please, check that the temperature of the radiant surface calculated according to UNI EN 1264 is higher than the dew point detected in each room. In order to avoid condensation on the radiant surface it is important to use controllers equipped with suitable sensors.



Certified Performance according to UNI EN 1264 Dry System

Thermal outputs for Dry system are certified according to: DIN EN 1264-2:2009-01, DIN EN 1264-3:2009-11, DIN EN 1264-4:2009-11, DIN EN 1264-5:2009-01.



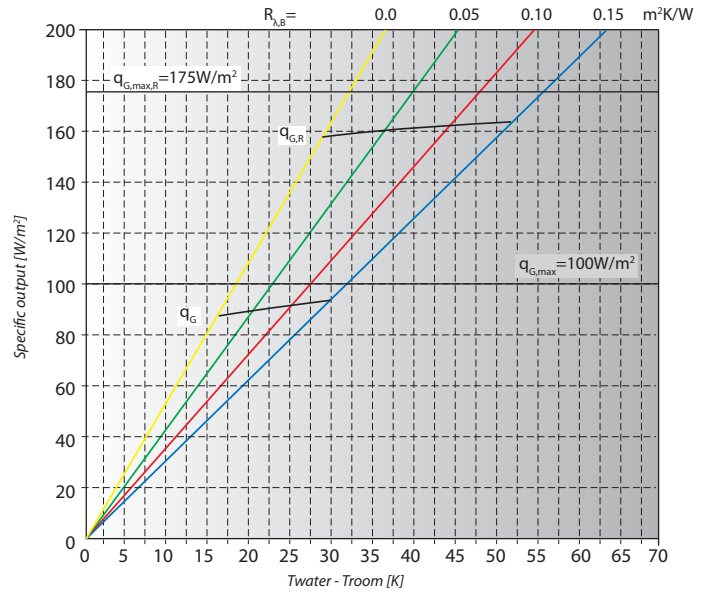
Information about the system

Panel	Panel type	DRY	
	Panel thermal conductivity λ_{INS}	0.035	W/(m·K)
Heat diffuser	Material	Galvanized steel	
	Thickness S_{WL}	0.4	mm
	Width L	122	mm
Plates	Material	Galvanized steel	
	Thickness S_W	2 (2x1 mm)	mm
Pipe	Material	PE-Xc	
	Outside diameter D	0.014	m
	Thickness S_R	0.002	m
	Thermal conductivity λ_R	0.35	W/(m·K)

HEATING OUTPUTS DRY SYSTEM INCLINATION OF THE CHARACTERISTIC CURVES

OUTPUT DIAGRAM SPACING 140

T (mm)	140
$R_{\lambda,B}$ [m^2K/W]	K_H [W/m^2K]
0.00	5.445
0.05	4.380
0.10	3.663
0.15	3.148



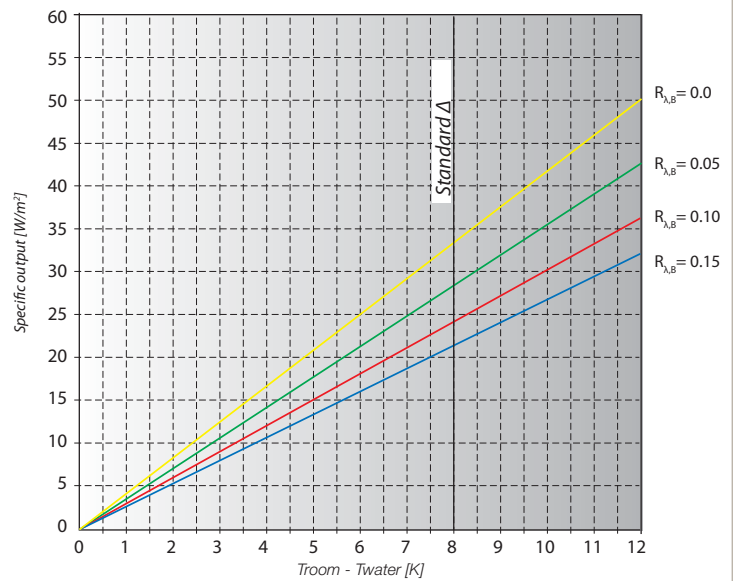
COOLING OUTPUTS DRY SYSTEM

Values detected for $\Delta\theta_{C,N}$ fixed at 8 K

OUTPUT DIAGRAM SPACING 140

T (mm)	140
$R_{\lambda,B}$ [m^2K/W]	K_H [W/m^2K]
0.00	4.195
0.05	3.533
0.10	3.052
0.15	2.686

T (mm)	140
$R_{\lambda,B}$ [m^2K/W]	$q_{C,N}$ [W/m^2]
0.00	33.6
0.05	28.3
0.10	24.4
0.15	21.5



Please, check that the temperature of the radiant surface calculated according to UNI EN 1264 is higher than the dew point detected in each room. In order to avoid condensation on the radiant surface it is important to use controllers equipped with suitable sensors.



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