

Installation instructions - The Uponor Minitec product line

Pipe Dimensions	9.9mm PEX	✓	12mm PEX		16mm PEX		16mm MLC		20mm PEX	
-----------------	-----------	---	----------	--	----------	--	----------	--	----------	--

Minitec benefits

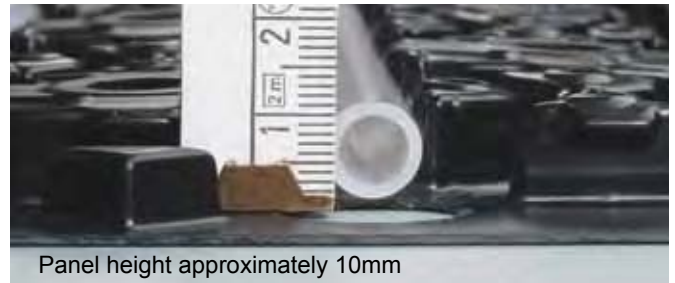
- 15mm overall build height
- Fast and Easy to install
- Bonds directly to subfloor
- Rapid heat up times
- New build and renovation projects
- Suitable for installation on most existing floors; concrete, screed, timber and tiles.
- Ideal partner for renewable technologies

PEX-a 9.9 x 1.1mm UFH pipe

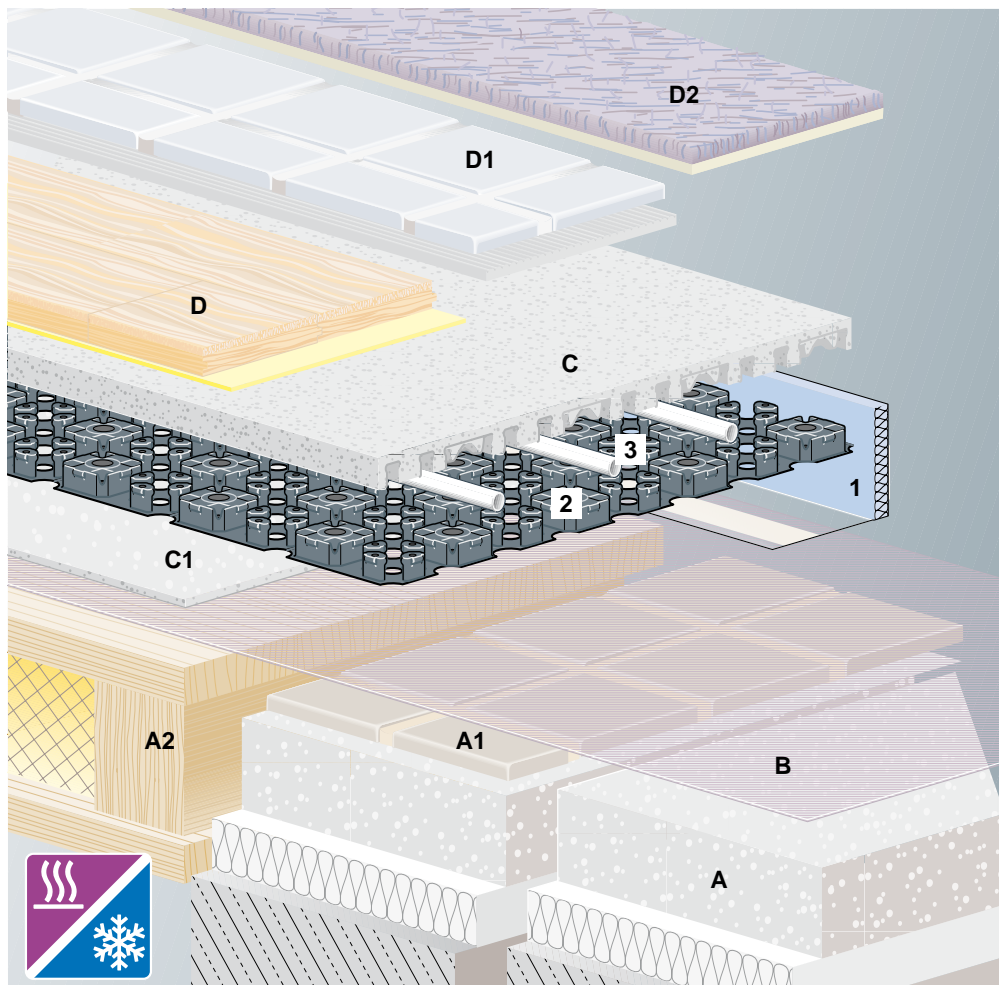
- 25 year manufacturing defect warranty
- Design life in excess of 50 years in accordance with DIN 16892
- Design pressure of 8bar at 70°C
- Available in 60, 120, 240 & 480m coil lengths
- Oxygen diffusion barrier conforming to DIN 4726
- Manufactured to ISO 9001 & 14001
- Conforms to EN ISO 15875

Minitec Panel

- Panel size: 1120 x 720mm
- Total panel height: 12mm
- Pipe spacings: 50, 100 & 150mm
- Can accommodate 45° & 95° angles



Panel height approximately 10mm



- 1 Uponor Edge insulation strip
 - 2 Uponor Minitec Panel
 - 3 Uponor PE-Xa 9.9 x 1.1 mm pipe
- A** Existing screed with underlying thermal and sound insulation
- A1** Tiled floor
- A2** Timber joist floor
- B** Priming of prepared substrate
- C** Self-levelling compound
- C1** Additional levelling layer for timber joist floors
- D** Parquet/laminate floor with additional separating layer or adhesive
- D1** Tiles with tile adhesive and grout
- D2** Carpet with carpet adhesive



7F 170 -F
PE-Xa 9.9x1.1

Minitec components



Uponor Minitec panel

The sturdy Minitec panel can be walked on instantly and ensures fast and efficient installation of the Uponor PE-Xa pipes by a single installer.

They are suitable for all room geometries and do not need to be installed right to the edge of the floor.



Uponor PE-Xa pipe

The flexible Uponor PE-Xa pipes 9.9 x 1.1 mm are placed in the prepared grooves of the Uponor Minitec panels. They are held in place by the castellations of the panel, ensuring that the installation meets the relevant standards. The panel is equipped with specially designed castellations for the laying of the pipe in 90° and also in 45° bends.



Uponor edge insulation strip

The self-adhesive edging strip with self-adhesive panel is available in L and I profile allows for a proper seal along the walls and the bottom.

In the first installation step, the edging strip should be glued to the bottom. Then, the Minitec panel on it should be glued along the edge.



Uponor movement joint profile

The Uponor Minitec product line contains all components for a proper mounting in doorways and for creating joint profiles for the design shape of individual covering layers.

Design basics

Temperatures

Floor surface temperature

Special attention must be paid to the floor surface temperature, taking into account medical and physiological considerations.

The difference between the mean surface temperature of the floor and the design indoor temperature, together with the basic characteristic, form the basis on which the capacity of the heating floor surface is calculated. The maximum surface temperatures are determined by the limit heat flow density defined in BS EN 1264, which is taken into account as the theoretical design limit in the design tables and diagrams.

Room temperature, perceived temperature and mean radiation temperature.

With radiant heating systems such as the Uponor underfloor heating systems, one can expect significant energy savings compared with less efficient heating systems.

This energy efficiency is mainly due to a better adjusted room temperature and the optimal vertical temperature profile in the room. To feel comfortable, the room air temperature ϑ_L as well as the mean radiation temperature ϑ_s of the surfaces enclosing the room are relevant factors. They result in a so called perceived operative temperature. That means that people, living in rooms with underfloor heating, feel more comfortable even when the room air temperature is reduced.

Max. surface temperatures according to BS EN 1264:

- 29 °C in comfort zone
- 35 °C in edge zone
- 33 °C in comfort zone

Standard design room temperatures:

Living rooms	21 °C	Bedrooms	18-21 °C
Corridors	18 °C	Bathrooms	24 °C

Pipe specification: 9.9mm O/D PEX - MINITEC
 Floor construction: Solid floor
 Screed depth: 15mm Self-Levelling Compound
 Screed thermal conductivity: 1.0 W/mK
 Water temperature drop [K]: 10

	Suitable for occupied zone
	Suitable for perimeter zone only

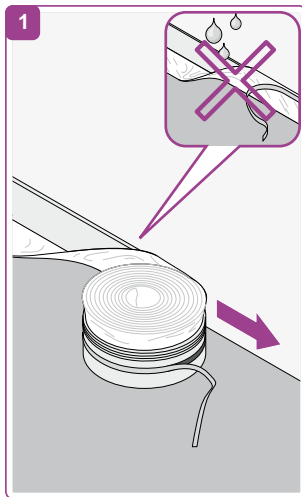
Mean water temperature MWT °C	Design room temperature Rt °C	Pipe pitch, Vz [mm]								
		50			100			150		
		Floor covering resistance, R _{λ,B} [m² K/W]								
		0.05	0.1	0.15	0.05	0.1	0.15	0.05	0.1	0.15
		W/m²	W/m²	W/m²	W/m²	W/m²	W/m²	W/m²	W/m²	W/m²
30	16	82	63	52	71	56	46	61	50	42
	18	69	53	44	60	47	39	52	42	35
	20	56	43	35	48	38	32	42	34	28
	22	42	32	27	36	28	24	31	25	21
	24	26	20	16	22	17	14	19	16	13
35	16	114	87	72	98	77	64	85	69	58
	18	102	78	64	87	70	57	76	61	52
	20	90	68	56	76	60	50	66	54	45
	22	76	59	48	65	51	42	57	46	39
	24	63	48	40	54	43	35	47	38	32
40	16	146	111	92	125	99	90	108	88	74
	18	133	102	84	114	90	75	99	80	68
	20	121	92	76	104	82	68	90	73	61
	22	108	83	68	93	73	61	80	65	55
	24	95	73	60	82	65	54	71	57	48
Maximum heat Output for Comfort Zone, q _H [W/m²]		95	95	96	85	87	90	76	80	85

Installation

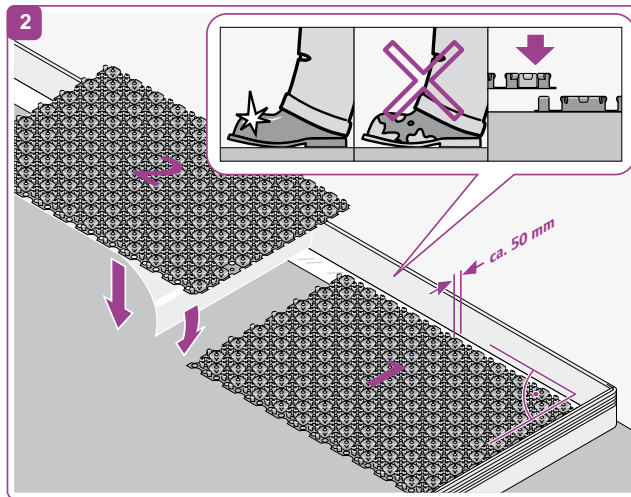
General

Uponor Minitec must be installed by competent Installers. Observe the following assembly instructions and additional instructions which are provided with the components and tools or which can be downloaded from www.uponor.co.uk

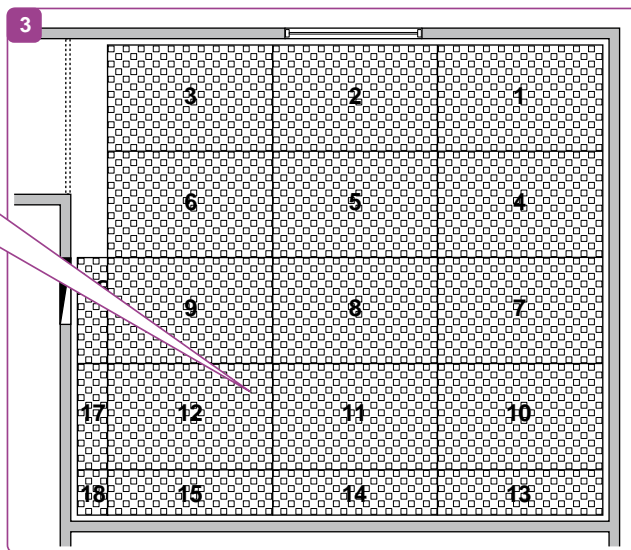
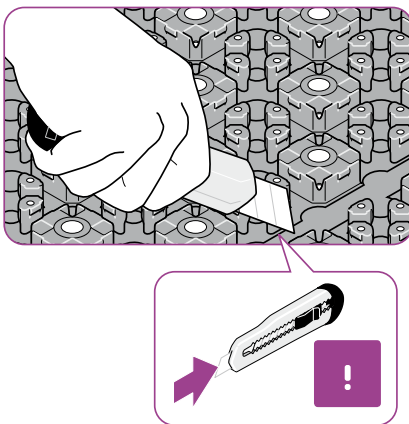
Overview of the installation steps



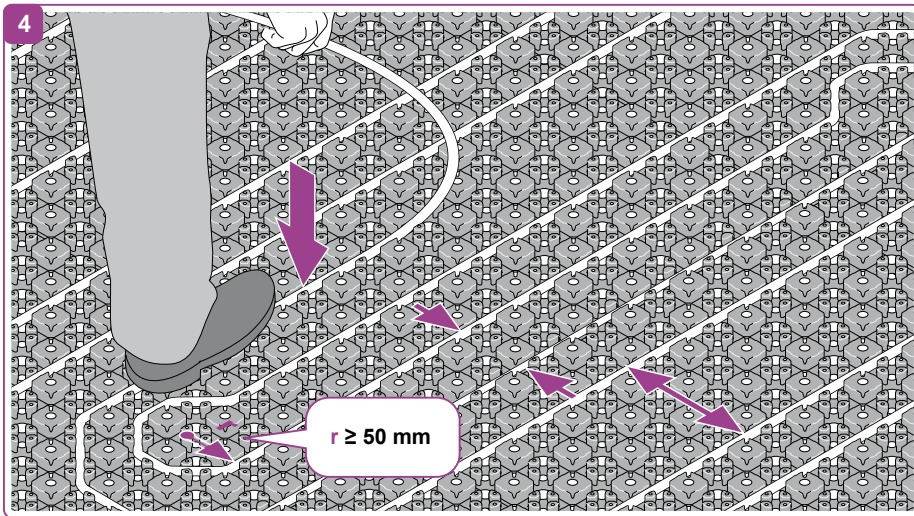
Mounting edge strips



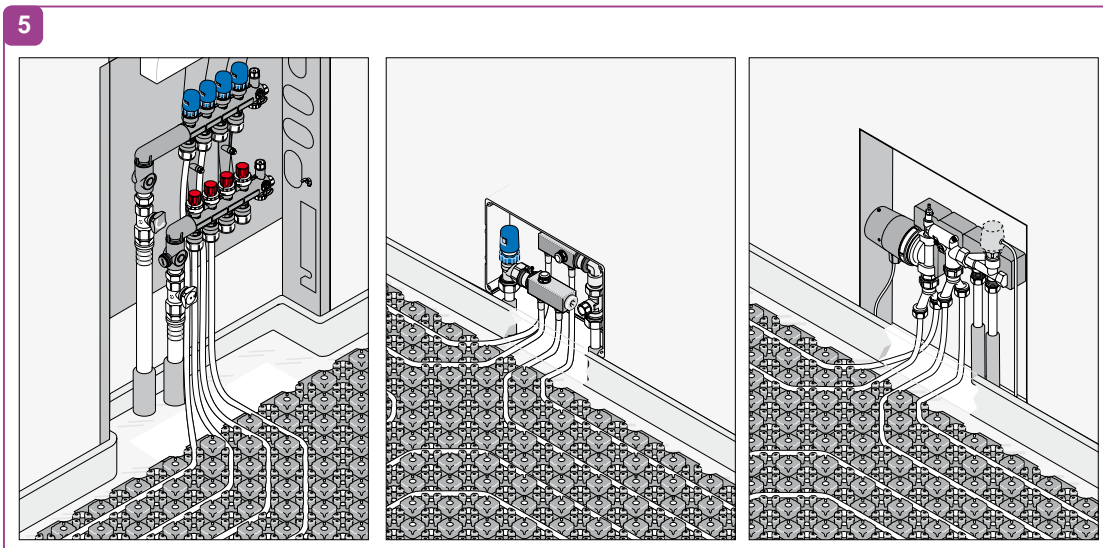
Installing Minitec panel



Installation steps for Minitec panel



Installing pipes in Minitec panel



Connecting PE-Xa pipes

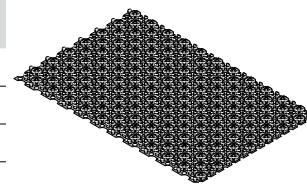
Get to know more about Uponor Minitec

This QR code leads you to
the film:



Technical data

Uponor Minitec panel			
Material	Polystyrene		
Max. traffic load (including levelling compound)	5,0 kN/m ²		
Pipe spacing	Vz 5, 10, 15		
Panel dimensions (l x w)	1,120 mm x 720 mm		
Total element height	12 mm		
System type	Wet system*		
Volumetric share of levelling layer (at layer thickness 15 mm)	Vz 5 approx. 12.4 l/m ²	Vz 10 approx. 13.2 l/m ²	Vz 15 approx. 13.5 l/m ²
DIN reg. no.	7F170-F		



* on existing load distribution layer

Uponor PE-Xa pipe	
Pipe dimensions	9.9 x 1.1 mm
SDR (Standard Dimension Ratio)	Value 9 (acc. EN ISO 15875)
S (Pipe Series)	Value 4 (acc. EN ISO 15875)
Material	PE-Xa (acc. EN 16892)
Colour	Nature
Manufactured	According to DIN EN 16892 / DIN EN ISO 15875-2
Oxygen tightness	According to DIN 4726, section 3.5
Density	0.94 g/cm ³ (acc. EN 16892)
Thermal conductivity	0.35 W/mK
Mean thermal linear expansion coefficient at	70 °C: 0.15 mm/m K (acc. EN 16892)
Crystallite melting temperature	133 °C
Building material class	B2
Min. bending radius	50 mm
Pipe roughness	0.007 mm
Water content	0.0465 l/m
Pipe marking	[length] m PE-Xa 9.9 x1.1 oxygen-tight according to DIN 4726 EN ISO 15875 class 4/8 bar [DIN approval mark] 3V279 PE-X
Max. continuous operating pressure (water at 20 °C)	19.1 bar (safety factor SF = 1.25 (according to DIN EN ISO 15875 for 20 °C), for 50 operating years
Max. continuous operating pressure (water at 70 °C)	8.8 bar (safety factor SF = 1.5 (according to DIN EN ISO 16893), for 50 operating years
Application class according to DIN EN ISO 15875	4 (underfloor heating)
At permissible operating pressure	8 bar
DIN CERTCO reg. no.	3V 279 PE-Xa
Pipe couplings Uponor	9.9 x 1.1 type couplings
Optimum installation temperature	≥ 0 °C
UV protection	lightproof cardboard box (unused piping must be stored in cardboard box!)

