Technical Product Information

WEM Underfloor Heating

Article no. 30020-40

Description

The WEM underfloor heating is a dry system. It consists of a 400-mm-thick wood-fibre boards that accommodate the multi-ply composite pipes, which have a diameter of 16 mm. Typical floorings are timber planks or tiles. The tiles are laid on top of a load-distribution layer (e.g. CREATON floor pavement tiles). If wooden planks are installed, profiled wood battens are used.

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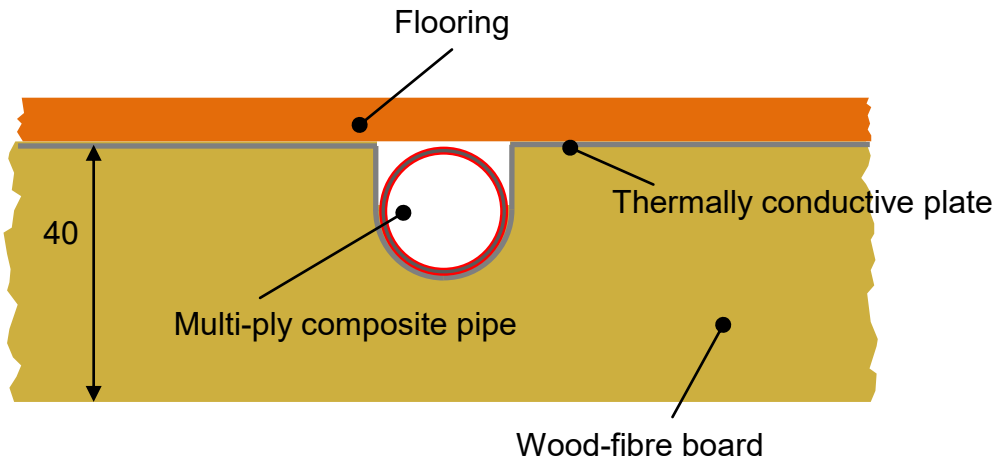
Scope of application

The low-temperature heating is used either as an exclusive source of heating or to support the existing heating system. Due to the low weight and the low structural height, it is well suited for new construction as well for refurbishment of old buildings.
Since the WEM Underfloor Heating is a dry system, it is ideal for solid timber houses and timber frame houses.

Benefits

- Easy and quick installation
- No drying times
- Low weight (ca. 15 kg/m²)
- Good impact sound insulation (reduction of 13 dB)
- Low structural height (40 mm)
- Combinable with WEM Wall and Ceiling Heating systems



Materials

System components	
Wood-fibre boards	As per DIN EN 13171
Profiled wood battens	Spruce/pine
Thermally conductive plates	Galvanized steel
Multi-ply composite pipe	WEM Multi-Ply Composite Pipe, ∅ 16 x 2 mm (PE-RT/aluminium/PE-RT), tested as per DIN DVGW*
Edge insulating strip	Coated corrugated cardboard
Levelling fill	Wrapped wooden chips

Technical data

Wood-fibre boards for pipe laying and levelling	
Edge design	Tongue and groove
Material class	E (normally inflammable) as per DIN EN 13501-1
Compressive resistance σ_d	0.05 N/mm²
Specific thermal capacity C_p	2.1 kJ/kgK
Vapour diffusion resistance μ	5
Dimensions	1015 x 390 x 40 mm
Surface area	0.396 m²
Area weight	Approx. 6.4 kg/m²

*DVGW = German Technical and Scientific Association for Gas and Water

Profiled wood batten	
Edge design	Tongue and groove
Material class	D (normally inflammable) as per DIN EN 13501-1
Compressive resistance σ_d	40 N/mm²
Specific thermal capacity C_p	2.72 kJ/kgK
Vapour diffusion resistance μ	40
Dimensions	2000 x 50 x 35 mm
Surface area	0.1 m²
Area weight	Approx. 16.45 kg/m²

Thermally conductive plate	
Material class	A1 (non-combustible) As per DIN EN 13501-1
Specific thermal capacity C_p	0.5 kJ/kgK
Dimensions	997 x 120 x 40 mm
Surface area	0.12 m²
Area weight	Approx. 3.14 kg/m²

Multi-ply composite pipe	
Max. temperature/pressure	95°C
Max. pressure	10 bar
Material class	D (normally inflammable) as per DIN EN 13501-1
Connections	WEM Press-Fit Fittings (press contour U16)
Weight	Approx. 0.12 kg/m
Water content	Approx. 0.11 kg/m

Edge insulating strip	
Material class (installed state)	D (normally inflammable) as per DIN EN 13501-1
Dimensions	10 x 140 mm
Length (reel)	25 m

Levelling fill	
Material class	E (normally inflammable) as per DIN EN 13501-1
Thermal conductivity	0.06 W/(mK)
Compressive resistance σ_d	8.2 N/mm²
Bulk density	Approx. 320 kg/m³
Filling height	5 to 60 mm
Chip size	1 to 5 mm
Area weight	Approx. 3.2 kg/m² per cm of filling height

Heating power

The performance of the heating depends on the water temperature, the desired indoor temperature and the installed flooring. The following table gives an overview of the heat outputs in combination with the most frequent flooring materials.

Indoor temp. [°C]	Heating medium temp. supply/return [°C]	Heating power [W/m²]			
		20 mm oak	20 mm soft wood	20 mm gypsum fibres dry screed elements with tiles	20 mm CREATON floor pavement and tiles
18°C	35 / 30	42.5	35	42.5	60
	40 / 35	60	51	60	90
	45 / 40	77.5	67.5	77.5	>100*
20°C	35 / 30	35	30	35	50
	40 / 35	52.5	45	52.5	75
	45 / 40	70	60	70	100
22°C	35 / 30	27.5	22.5	27.5	40
	40 / 35	45	37.5	45	65
	45 / 40	62.5	52.5	62.5	90
24°C	35 / 30	22.5	17.5	22.5	30
	40 / 35	38.8	32.5	38.8	55
	45 / 40	55	47.5	55	80

* not permissible according to DIN EN 1264 (surface temperature > 29 °C)