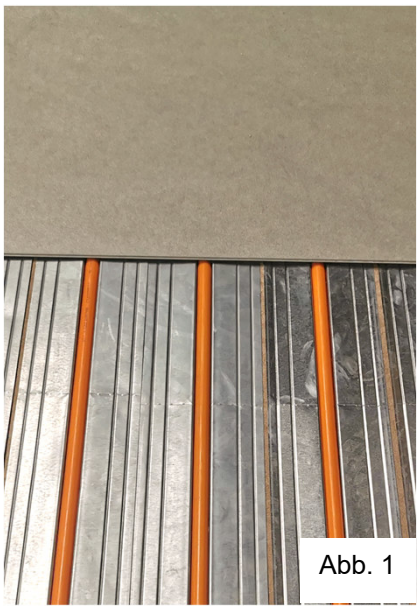
Technical Product Information

WEM Underfloor Heating System 30

Article no. 30020-73

Description

The WEM underfloor heating is a dry system. It consists of installation boards made of 30-mm-thick wood-fibre material, thermally conductive plates that are inserted in the boards and the WEM Multi-Layer Composite Pipe, which has a diameter of 16 mm. This system is suitable for floating floor coverings and tiles. Tile flooring is installed on top of a load-distribution layer (e. g. Fermacell dry screed). Parquet flooring is glued to cement-fibre boards (Ceralan boards).



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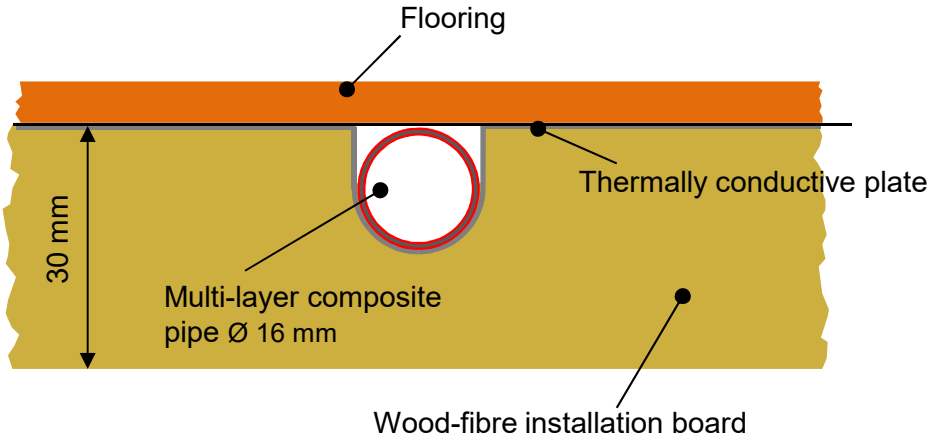
Scope of application

The WEM Underfloor Heating is a low-temperature system and can be used as an exclusive source of heating or to support the existing heating system. Due to its low weight and low structural height, it is well suited for new construction as well as for the 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 (approx. 14 kg/m²)
- Good impact sound insulation
- Low structural height (30 mm)
- Combinable with WEM Wall or Ceiling Heating systems



Materials

System components	
Installation and levelling boards	Wood fibre, as per DIN EN 13171
Thermally conductive plate	Galvanized steel
Metal composite pipe	WEM Multi-layer Composite Pipe, Ø 16 x 2 mm (PE-RT/aluminium/PE-RT), tested as per DIN DVGW* ** DVGW = German Technical and Scientific Association for Gas and Water*
Edge insulating strip	Coated corrugated cardboard

Optional components	
Base cover board, thickness 20 mm	Wood fibre, as per DIN EN 13171
Ceralan dry screed	Fibre cement board
Levelling fill	Wrapped wooden chips

Technical data of the individual components

Installation and levelling boards	
Edge design	Tongue and groove
Material class	E (normally flammable) as per DIN EN 13501-1
Thermal conductivity	0.048 W/(mK)
Compressive resistance [kPa]	≥ 150
Specific thermal capacity C_p	2.1 kJ/(kgK)
Vapour diffusion resistance μ	5
Dimensions	1000 x 500 x 30 mm
Surface area	0.5 m²
Area weight	Approx. 9,2 kg/m²

Thermally conductive plate	
Material class	A1 (non-combustible) as per DIN EN 13501-1
Specific thermal capacity C_p	0.5 kJ/kg·K
Dimensions	997 x 120 x 0.4 mm
Surface area	0.12 m²
Area weight	Approx. 3.14 kg/m²

Technical data of the individual components

Multi-layer composite pipe	
Max. temperature	95 °C
Max. pressure	10 bars
Material class	D (normally flammable) 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 flammable) as per DIN EN 13501-1
Dimensions	10 x 140 mm
Length (reel)	25 m

Technical data of the optional components

Levelling fill	
Material class	E (normally flammable) as per DIN EN 13501-1
Thermal conductivity	0.06 W/(m·K)
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

Technical data of the individual components

Base cover board	
Material class	E (normally flammable) as per DIN EN 13501-1
Thermal conductivity	0.048 W/(m·K)
Compressive strength (kPa)	≥ 150
Vapour diffusion resistance μ	5
Dimensions	1 350 x 600 x 20 mm
Surface area	0.466 m²
Area weight	5 kg/m²

Ceralan dry screed board	
Edge design	Micro-chamfer on four sides
Burning behaviour (EN 9239-1)	A_2
Thermal resistance	0,05 m²K/W
Residual indentation (EN 433)	0.00 mm²
Dimensional stability (EN 434)	< 0.01 %
Dimensions	1.195 x 620 x 6 mm
Surface area	0.74 m²
Area weight	Approx. 12.3 kg/m²

Heating power

The performance of the heating depends on the water temperature, the desired indoor temperature and the installed flooring. The following table provides performance data for the flooring materials that we tested.

Indoor temp. [°C]	Heating medium temp. supply/ return [°C]	**Heating power [W/m²]**		
		20 mm gypsum fibre dry screed with tiles	6 mm Ceralan parquet 15 mm	ESB 15 mm
18 °C	35 / 30	42.5	55	50
	40 / 35	60	74	67.3
	45 / 40	77.5	93	84.5
20 °C	35 / 30	35	47.5	43.1
	40 / 35	52.5	66.5	60.4
	45 / 40	70	85.5	77.6
22 °C	35 / 30	27.5	40	36.2
	40 / 35	45	59	53.5
	45 / 40	62.5	78	70.7
24 °C	35 / 30	22.5	32.5	29.3
	40 / 35	38.8	51.5	46.6
	45 / 40	55	70.5	63.8