

Technical Product Information

WEM Underfloor Heating System 40 Article no. 30010-40

for timber planks

Description The WEM underfloor heating System 40 is a dry system. It consists of installation boards made of 40-mm-thick wood-fibre material, thermally conductive plates and the WEM Multi-Layer Composite Pipe, which has a diameter of 16 mm and profiled wood battens to fix the planks with screws.



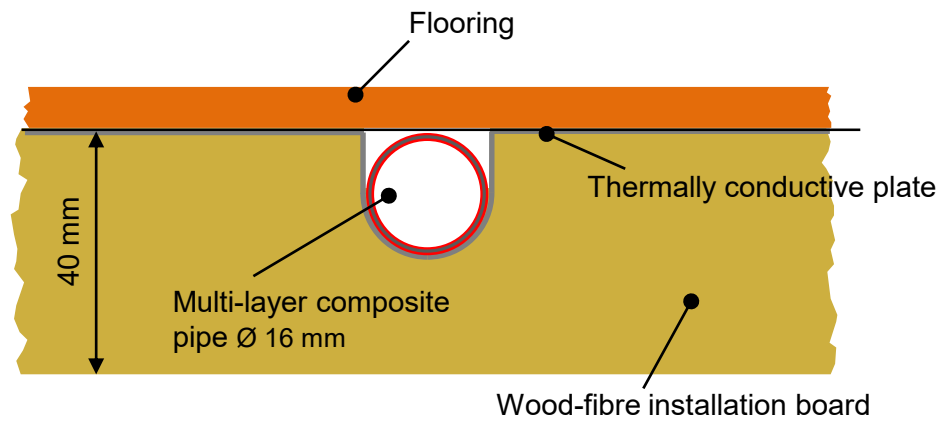
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Scope of application The WEM Underfloor Heating is a low-temperature system and can be used as an exclusive source of heating or to support the existing heating system.

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. 15 kg/m²)
 - Good impact sound insulation (reduction of 13 dB)
 - Low structural height (40 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
Levelling fill	Wrapped wooden chips
Wooden profiles	Spruce, fir
Cork insulation strips	Pressed cork, DIN ISO 16000-9 and DIN EN 717-1
Optional components	
Base cover board, thickness 20 mm	Wood fibre, as per DIN EN 13171

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	0.04 W/(mK)
Compressive resistance σ_d	0.05 N/mm ²
Specific thermal capacity C_p	2.1 kJ/(kgK)
Vapour diffusion resistance μ	5
Dimensions	1 015 x 390 x 40 mm
Surface area	0.396 m ²
Area weight	Approx. 6.4 kg/m ²

Profiled wood batten	
Edge design	Tongue and groove
Material class	D (normally flammable) as per DIN EN 13501-1
Compressive resistance σ_d	40 N/mm ²
Specific thermal capacity C_p	2.72 kJ/kg·K
Vapour diffusion resistance μ	40
Dimensions	2 000 x 50 x 35 mm
Surface area	0.1 m ²
Area weight	Approx. 16.45 kg/m ²

Technical data of the individual components

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 m ²
Area weight	Approx. 3.14 kg/m ²

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

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/mm ²
Bulk density	Approx. 320 kg/m ³
Filling height	5 to 60 mm
Chip size	1 to 5 mm
Area weight	Approx. 3.2 kg/m ² per cm of filling height

Technical data of the individual components

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

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 m ²
Area weight	5 kg/m ²

Cork strip	
Burning behaviour	Euroclass E
Thermal conductivity	0.041 W/(m·K)
Vapour diffusion resistance μ	5 to 10
Compressive strain at 10 % compression (DIN EN 826(2))	0.104 N/mm ²
Dimensions	50 x 5 mm 12 m per reel

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/m ²]	
		20 mm softwood	20 mm oak
18 °C	35 / 30	35	42.5
	40 / 35	51	60
	45 / 40	67.5	77.5
20 °C	35 / 30	30	35
	40 / 35	45	52.5
	45 / 40	60	70
22 °C	35 / 30	23	27.5
	40 / 35	37.5	45
	45 / 40	52.5	62.5
24 °C	35 / 30	17.5	22.5
	40 / 35	32.5	38.8
	45 / 40	47.5	55