Installation Instructions

WEM Floor Heating Kera 40

Art. 30030 – 30040, 30095

General Information

Please only use original WEM connection pipes and press fittings, otherwise no system warranty will be provided. Transitions to other systems should be made with screw-press transitions. The WEM Floor Heating should not be installed at temperatures below 5°C.

Storage

Store in a dry place and protect from weather conditions.

Installation panel Kera 40

Multi-layer composite pipe

Edge insulating strip

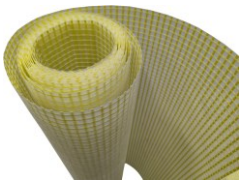
Cork strip

Profiled battens for wooden planks

Levelling fill

Optional: Base cover plate

Decoupling mat for tiles



Application Areas

The WEM Floor Heating Ceramic 40 is approved for the following application areas with suitable floor coverings and substrates:

Application Areas	Cat.*	Description	Point load [kN]	Area load [kN]/m²
1 ✓	A2/ A3	Residential buildings; hotel rooms including associated kitchens and bathrooms	1,0	1,5/2,0
2 ✓**	B1	Office buildings, doctors' surgeries; living rooms including their corridors	2,0	2,0
	D1	Areas of retail spaces up to 50 m² floor area in residential, office and comparable buildings	2,0	2,0
3 ✗	B2/ C1	Corridors in hotels, nursing homes, boarding schools; kitchens; treatment rooms including operating rooms without heavy equipment; school rooms, cafés, restaurants, dining rooms, reading rooms and reception areas	3,0	3,0/4,0

*Categories based on DIN EN 1991-1-1/NA:2012-12

** When using impact sound insulation based on mineral wool, the system is only approved for application area 1

Substrate

The substrate must be clean, dry and level. Uneven substrates can be levelled with the levelling aggregate and subsequently covered with the Base cover plate made of wood fibre (thickness 20 mm) as a clean layer.
Otherwise, the substrate is covered with impact sound insulation, e.g. 7 mm STEICO Underfloor.
When using impact sound insulation based on mineral wool, the system is only approved for application area 1 (residential buildings, hotel rooms).

Connection Pipes

The laying of supply pipes from the distributor to the individual heating circuits must be well planned in advance. When installing larger areas or several rooms, it is advisable to lay the connection pipes in a substructure of aggregate or insulation board and route them to the location where the respective flow and return of the heating circuit will be connected. Other possibilities for laying the connection pipes are either over the wall surfaces (where the pipes may need to be clad) or over the ceiling surfaces (e.g. with suspended ceilings).

Applying Edge Insulation Strips

The edge insulation strips are placed against the walls (Fig. 1) and fixed so they do not slip during installation. The lower part of the insulation strip is self-adhesive.

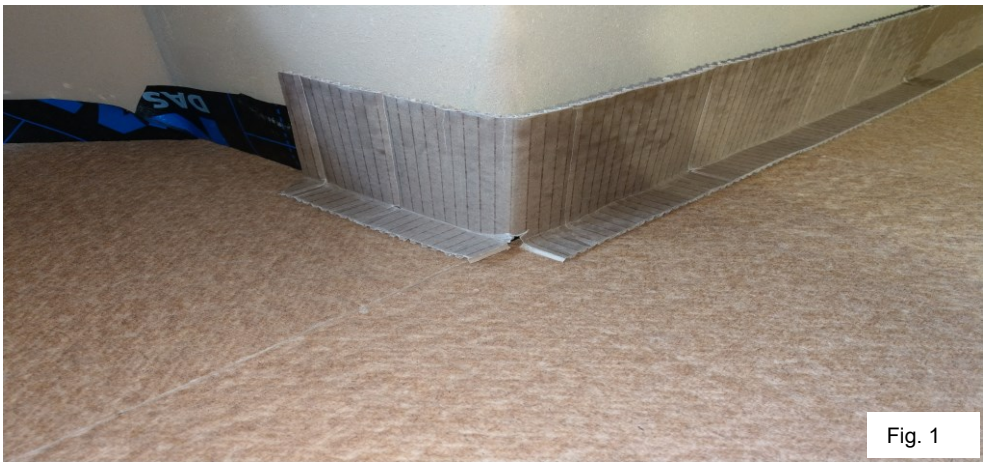


Fig. 1

1. Structure for a Wooden Plank Floor

Planning

The panels and profile strips are laid as shown in Fig. 2a. The edge areas, as well as the front sides, are filled with aggregate (CEMWOOD CW1000) after the pipe installation.
The profile strips are laid at the front with a distance of approx. 2 cm from the wall, the panels with a distance of 25 cm. When laying, a distance of 2-5 mm must be maintained between the panels at the front faces (the panels should not butt against each other in the front area). The profile strips in the edge area and the ends protruding over the panels are underlaid with cork strips.

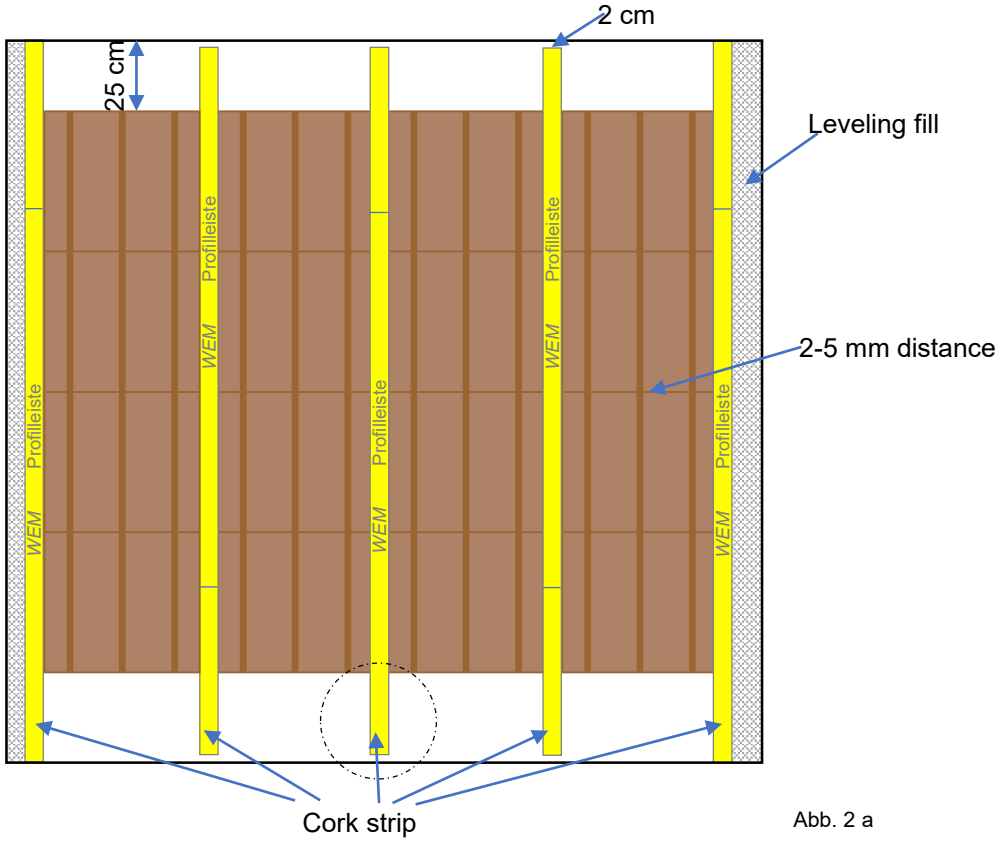


Abb. 2 a

Fig. 2 b

Fig. 2 c

Large rooms

If more than two heating circuits are required in a room and these heating circuits meet in the middle of the room, the profile strips should be laid offset so that the two partial areas are connected via the fastening of the planks (for clarification: see Fig. 3 "possible position of the planks"). Otherwise, they could slip against each other. The offset must be at least the width of a plank. The WEM cork strip must be placed under the profile strips in this "pipe bend area".

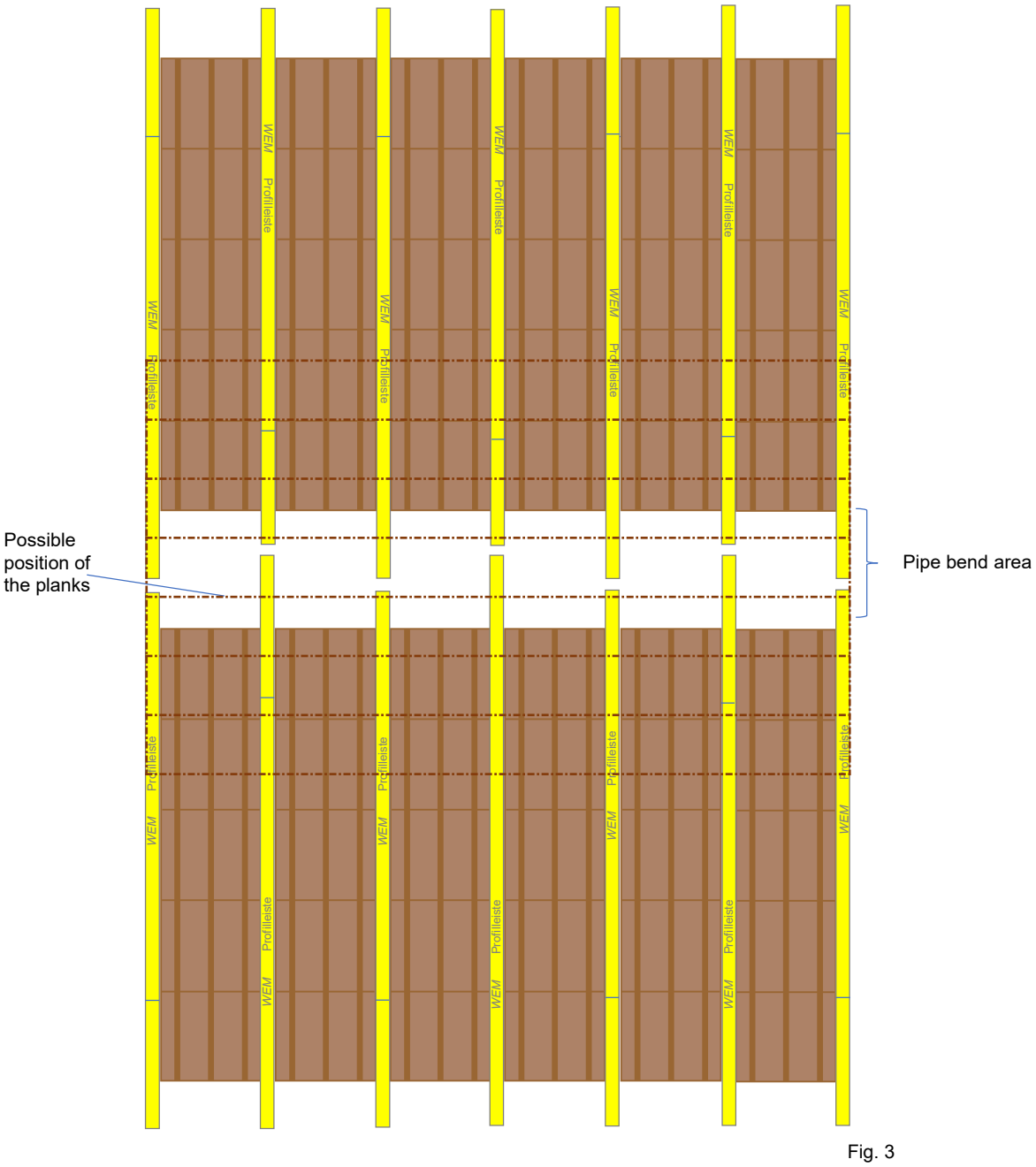


Fig. 3

Installation Panels

The KERA panels are available as "whole" and "half" panels. If necessary, the panels can be cut with a stone cutting machine (Fig. 4).

Fig. 4

Laying Installation Panels and Profile Strips

Panels and profile strips are laid alternately (tongue and groove profile) without adhesive, floating on the substrate. When laying, a distance of 2-5 mm must be maintained between the panels at the front faces (the panels should not butt against each other in the front area). The profile strips serve for the later screwing of the planks and run transversely to the plank floor. Due to the tongue and groove system, they sit flush with the panels without resting on the raw floor. This means the wooden floor rests directly on the panels, which is important for optimal heat transfer (Fig. 5).

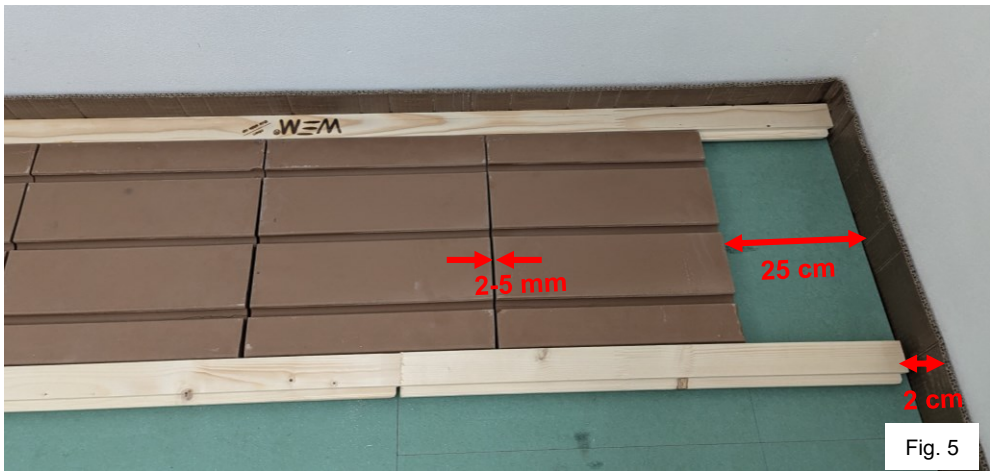


Fig. 5

Profiled batten

The profile strips are chamfered at the ends so that the pipes can be routed between the wall and profile (Fig. 6). The part of the profile strip lying in the aggregate area is underlaid with a 5 mm cork insulation strip. The insulation strip can be tacked or glued.

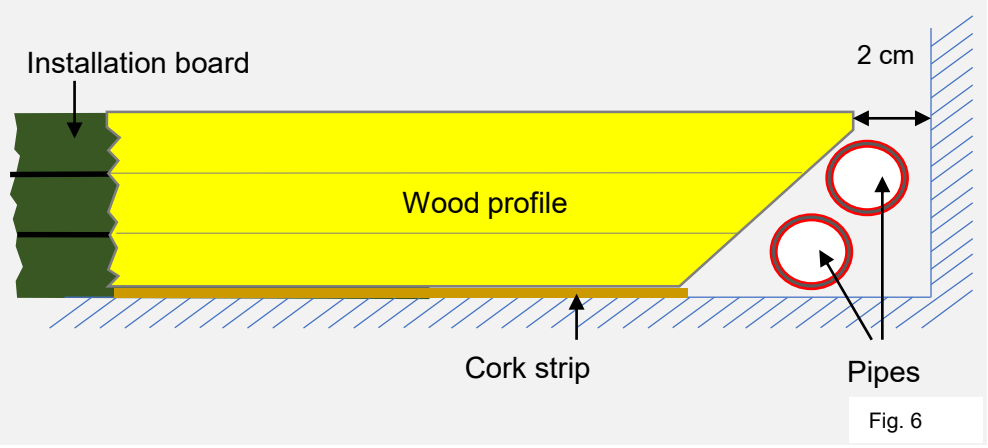


Fig. 6

The profile strips are laid offset (Fig. 7). The longitudinal joints of the strips should be arranged so that there is a minimum length or offset of at least the width of a plank to the previous strip row.

Fig. 7

Laying the Pipe

Before laying the pipe, the grooves (pipe receptacles) must be cleaned!

The multi-layer composite pipe is laid using the unrolling reel (Fig. 8).

Fig. 8

On the "outward journey", every second groove is occupied (Fig. 9).

Fig. 9

On the "return journey", the pipe is crossed at each bend (Fig. 10). The bends are bent slightly downwards so that they do not protrude above the level of the panel.

Fig. 10

Levelling Edge Areas

The areas of the pipe bends and possibly other edge areas without panels are filled with the compressible CEMWOOD CW100 levelling aggregate up to the level of the panels (Fig. 11).

Fig. 11

Laying the Floor Covering

The desired floor covering is now laid:

The wooden planks are concealed by screwing through the tongue into the profiles (Fig. 12). The fastening screws of the first and last plank must be at least 50 mm away from the wall so that the pipe cannot be damaged by screwing in.

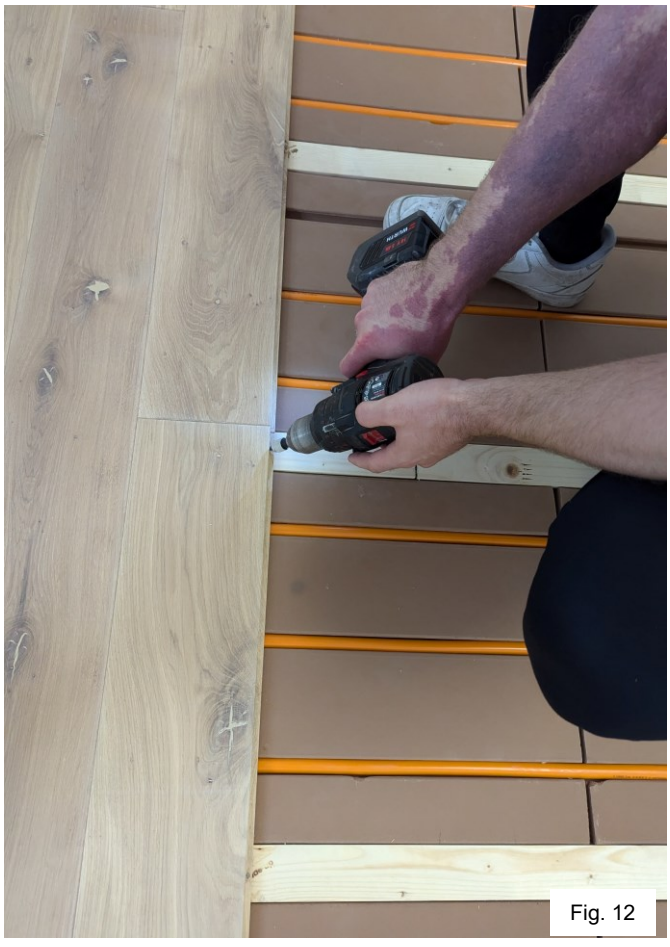


Fig. 12

2. Structure for a Tile Floor

Laying the panels

The KERA panels are laid alternately (tongue and groove profile) on a wood fibre board / impact sound insulation in a composite, the offset must be ½ panel. At the front side, there must be a minimum distance of 25 cm to the wall for the pipe bends.

Bonding Panels

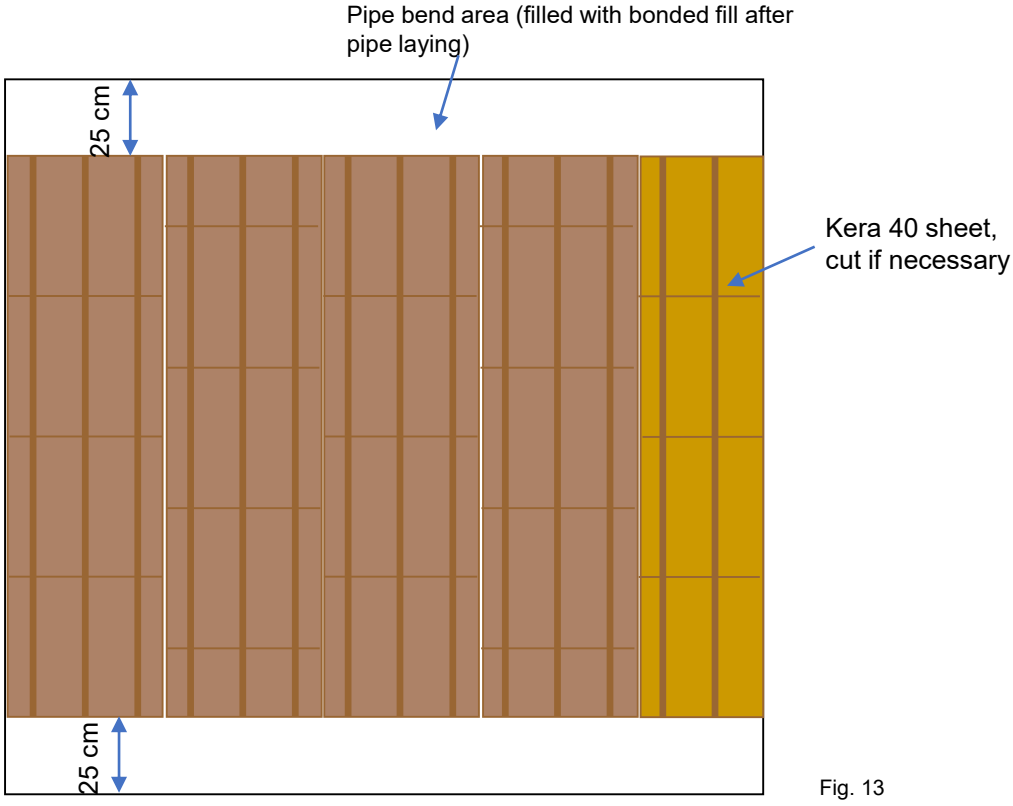


Fig. 13

The panels are bonded to each other in the tongue and groove with a standard tile adhesive (flexible adhesive C2, S1) (Fig. 14). Excess on the panel surface should be removed. The tile adhesive must be completely dry before pipe installation can begin.

Fig. 14

Laying the Pipe

Before laying the pipe, the grooves (pipe receptacles) must be cleaned!

The multi-layer composite pipe is laid using the unrolling reel. The following laying patterns are possible:

Pattern 1 (Fig. 15):
On the "outward journey", every second groove is occupied. On the "return journey", the pipe is crossed at each bend. The bends are bent slightly downwards so that they do not protrude above the level of the panel.

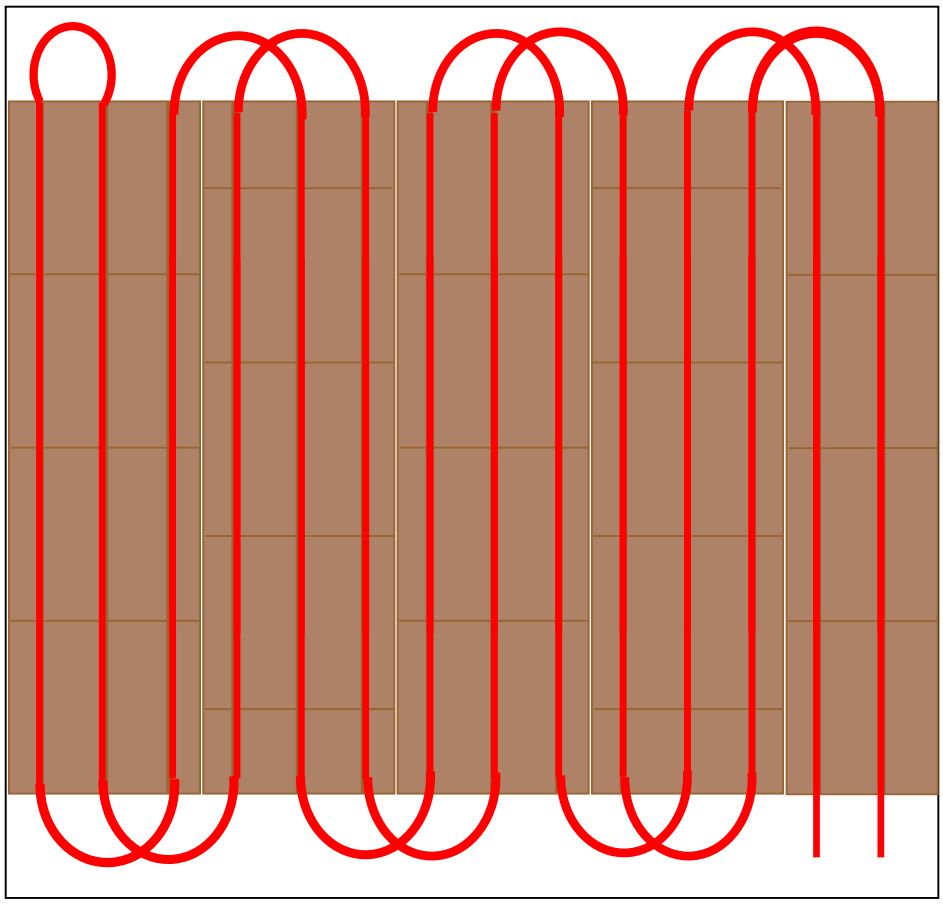


Fig. 15

Laying the Pipe

Pattern 2 (Fig 16):
On the "outward journey", two grooves (pipe receptacles) are alternately left free and two are occupied, and so on. The same procedure is followed on the "return journey".

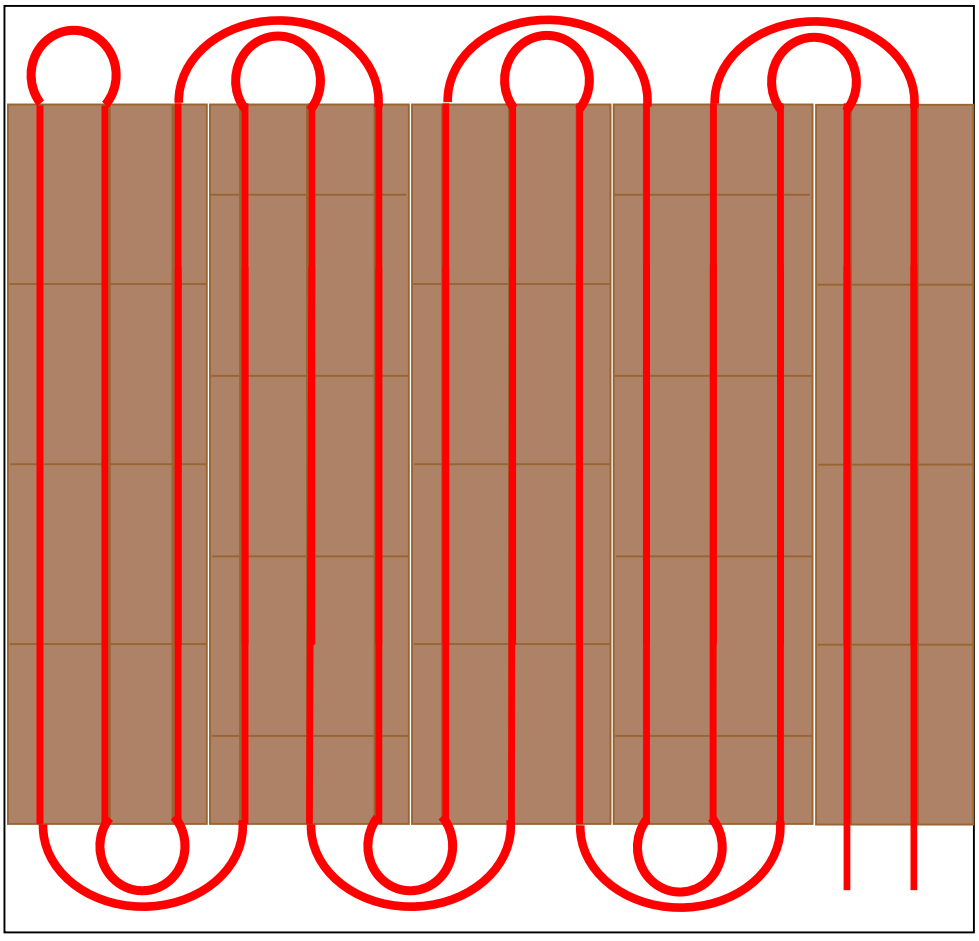


Fig. 16

Filling the Edge Area

The areas of the pipe bends and possibly edge areas without panels are filled with the bound aggregate "CEMWOOD 3000" and levelled to the panel level.

Heat up

The system must be heated up before the next steps!

The pipework is connected to the heating system via the heating circuit manifolds. After filling and pressure testing, the underfloor heating system is pressurised with hot water. The temperature should correspond to the maximum design temperature (e.g. 35° C, max. 45° C). The floor is heated until the return temperature is approx. 5 K below the flow temperature.

Tiling

When the aggregate has set and dried, tiling can begin.

First, a layer of tile adhesive (flexible adhesive C2, S1) is applied to the entire surface with a 6 mm notched trowel. A decoupling mat (e.g. DURABAS FGT from DURAL) is embedded in the tile adhesive.

After drying, the tiles are applied to the decoupling mat with flexible adhesive (C2, S1). The edge length of the tiles must not exceed 90 cm x 90 cm.

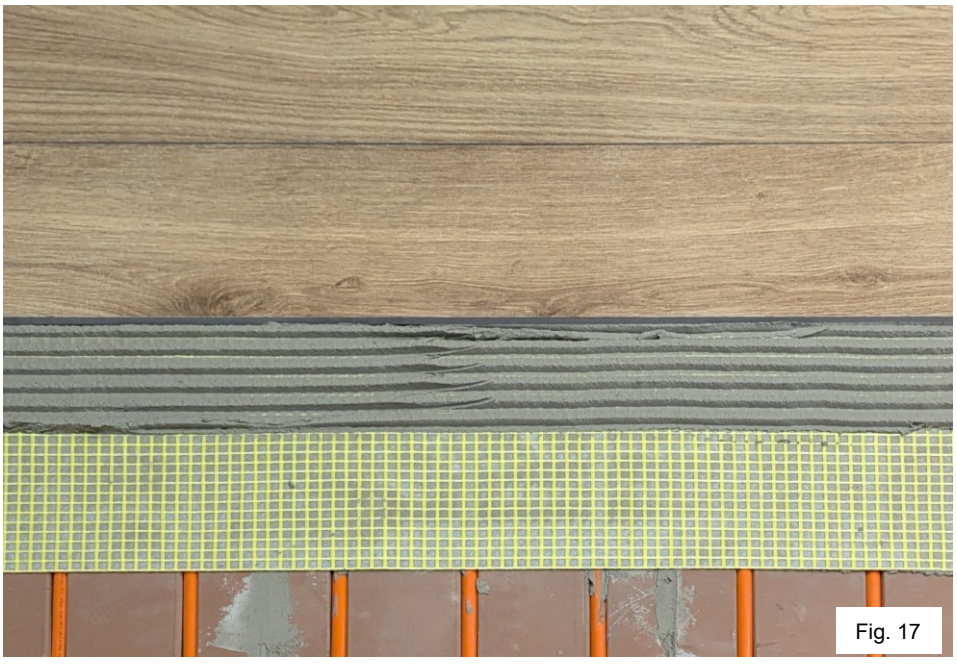


Fig. 17

After the drying time of the tile adhesive, the floor can be grouted or subjected to load.