

On floor joists with LK Floor Joist Plate AL

DESIGN

LK Floor Heating incorporating LK Floor Joist Plate AL for installation on wooden joists c/c 400. The aluminium plate is available for both 16 mm floor heating pipes and 20 mm pipes.

Also available is a specially designed plate for use in sprung sports-floors with a joist distance of c/c 411. For more information about this product, contact LK Technical Support.

REQUIREMENTS

LK recommends the use of “weather compensation” control of flow temperature for optimum efficiency and that manifolds are balanced in line with LK design data. The settings should be recorded for future reference.

CONSTRUCTION OUTLINE

1. Floor joists

Floor joists with c/c distance of 400 mm

2. Insulation

Insulation must fill the entire joist cavity. The joist cavity must be draught proof, so that no heat can be “ventilated” away.

3. Support batten

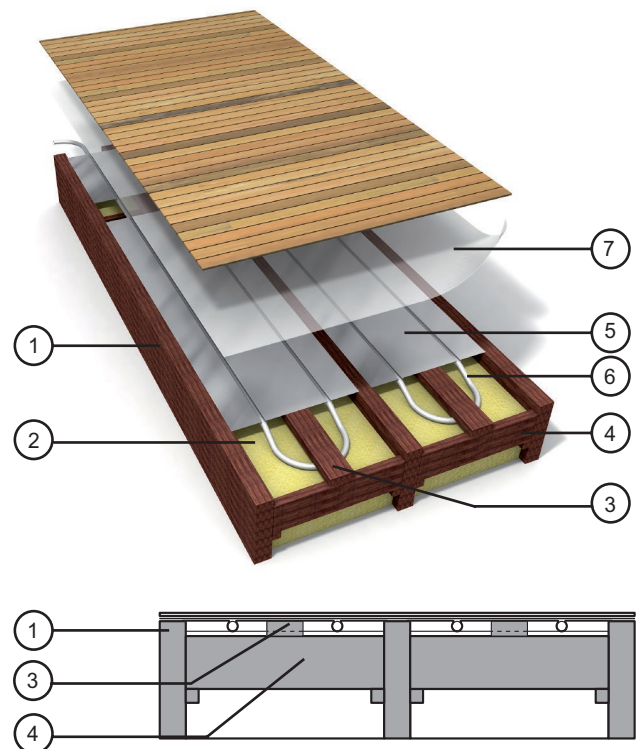
The aluminium plates require additional support from 28 x 70 battens, which are fixed to supporting noggins. The battens ensure that the plates achieve adequate contact with the underside of the floor for good thermal performance.

4. Nogging pieces

Nogging pieces dim 70 x 45 mm mounted at a max. internal distance of 600 mm.

5. Floor Joist Plate AL

LK Floor Joist Plate AL for pipes dim 16 or 20 mm with the measurements 1150 x 390 x 0.5. The plate has two omega shaped grooves at 200 mm c/c, specially designed for LK PE-X pipes. The use of working gloves is recommended when handling the plate, as the corners and edges may be sharp.



6. LK Floor heating pipes

The plate is available as standard for 16 mm floor heating pipes but also for 20 mm pipes.

7. Vapour barrier according to the floor manufacturers instructions and cell foam / rag paper

SURFACE LAYER

Parquet, solid wood or laminated (engineered) flooring

First, cover the floor heating with a vapour barrier (PE sheet) according to the floor manufacturer’s instructions and then cell foam sheet or rag paper. NOTE: Rag paper should never be laid directly on the under floor heating, as it may cause squeaking. Next, install the load-bearing floor in accordance with the supplier’s instructions and local building regulations. Always consult LK for advice on floors over 25 mm thick.

Vinyl and other plastic floorings

When using vinyl or other plastic floor coverings, a layer of 22 mm wood chipboard (or other suitable floor grade ply) must be screwed down and glued, according to the chipboard supplier’s specifications.

Ceramics or natural stone

Dry rooms

In dry rooms, ceramics and natural stone floors require a layer of 18 mm floor grade chipboard, which is screwed down to the supplier's instructions. Next, glue a layer of 13 mm floor grade plasterboard to the entire floor using LK Kiilto Floorfix DF mixed with LK Kiilto Fixbinder and water. Mixing proportions, 20 kg of LK Kiilto Floorfix DF mixed with 5 litres of LK Kiilto Fixbinder and 2 litres of water. Consumption 3.5 kg per/m², notched 8 mm.

Wet rooms

In wet room areas, ceramics and natural stone requires a layer of 22 mm floor grade chipboard, which is screwed down to the supplier's specifications. Where required to create drainage fall, apply filler to the chipboard flooring to construct a slope and seal with waterproofing. See the installation instructions from the respective suppliers, as well as local installation guidelines.

LK HEATING CIRCUIT MANIFOLD

The LK Heating Circuit Manifold should be installed as shown in the design drawing. Please read the instructions enclosed with the manifold first.

LAYING PROCEDURE

The plate requires support by a 28 x 70 batten. The battens ensure that the plates come in contact with the underside of the floor. The support batten is screwed to noggins, which are mounted at a maximum distance of 600 mm.

Fix the battens to the noggins, but do not fix to noggins nearest to the walls until after the pipe is laid. When laying the pipe, lift the batten end to turn the pipe under the batten. Now fix the batten ends.

Unless otherwise specified in the LK data or drawing, lay the plates over the joists with maximum gaps between the plate ends of 150 mm. The plates must not touch. Usage is approx. 1.9 plates per m².

16 mm pipe has a minimum bend radius of 150 mm, thus 16 mm plate version is mounted, approx. 175 – 200 mm from the wall in the return zone.

20 mm pipe has a minimum bend radius of 200 mm, thus the 20 mm plate version is mounted, approx. 250 – 200 mm from the wall in the return zone.

NOTE! Additional space may be needed for any transverse supply and return piping.

Once the plates have been laid and aligned along the joists fix with (8) suitable staples or nails, four in each joist. Automatic staplers or nail guns for 25 mm flat head nails are recommended.

LAYING THE PIPE

The pipes should be laid out as shown on the LK drawings. We recommend use of the LK Pipe Decoiler to aid installation. Ensure the coil is laid so that outward flow runs along outer walls. Mark the coils with names or numbers, as per the drawing.

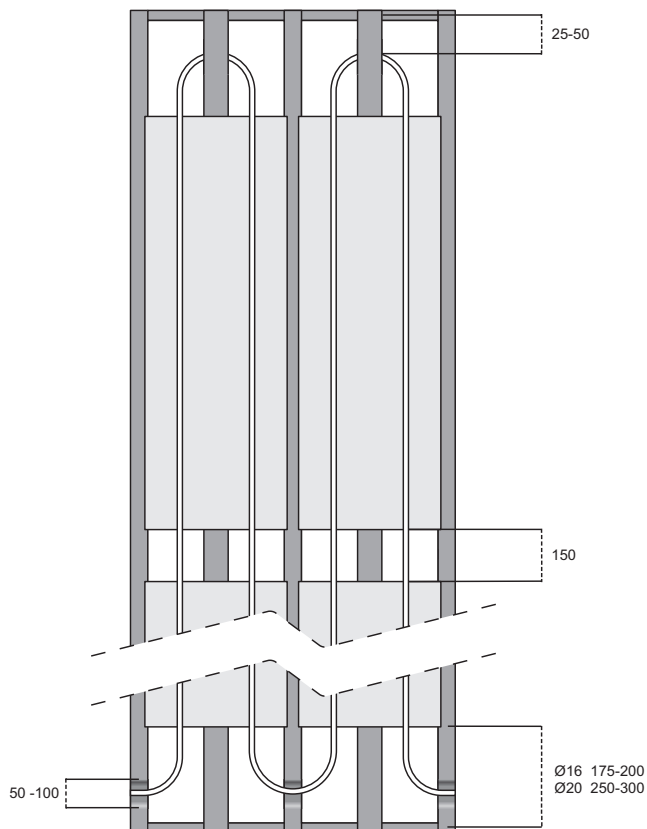
For ease and accuracy we recommend two people lay the pipe; one pulling off the pipe, the other "snapping" the pipe into plate grooves. Lightly lift the plate below the groove and then press in the pipe.

Pipes should be cut using pipe shears intended for PE-X.

Turning pipes

Turned pipe loops must not touch anything. Leave a gap of 25 – 30 mm.

When turning the pipe under the batten ends, lift the batten end and push the pipe turn under the batten. Now, fix the batten ends.



When turning above floor joists, the joist must be notched to provide space for the pipe turning. Take into consideration that notching floor joists may weaken the building structure. Consult a structural engineer.

Quality check

Once the installation has been completed, check to ensure that none of the plates have been "trodden down" or deformed during installation. This ensures that there is sufficient contact for optimum heat transfer between the plate and the floor. The plates must be protected from being trodden on during the remaining building time and when laying the flooring.

NOTE!

All of the grooves in heat transfer plates must contain pipe. If any of the grooves are not fitted with live heating pipe, the empty groove must be filled with loose cut pipe; this ensures the plate retains its shape and rigidity to maintain thermal contact with the floor.