On floor joists with Wood 22 with four side T&G

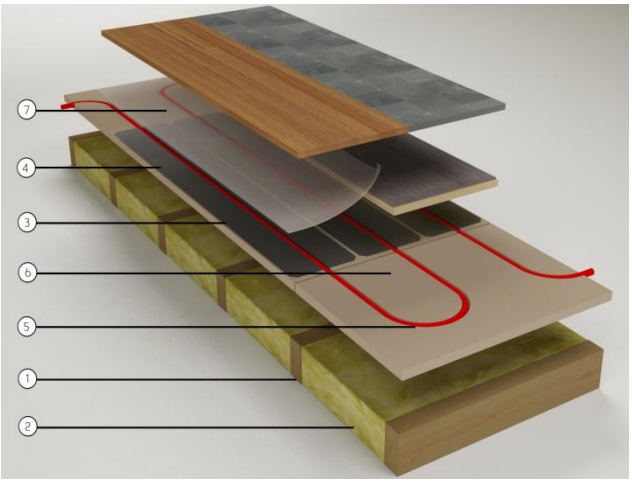
Design

Under Floor Heating using Slotted and Turning Boards Wood 22 is intended for installation on standard wood joist floors of a max. 600 mm c/c. The construction comprises of a load bearing slotted 22 mm chipboard floor, which replaces the standard board in a floor construction. Wood 22 is manufactured from environmentally approved and labelled floor grade chip-board (NOTE: as c/c 400 mm is standard for the UK, c/c 600 mm systems are safe).

Requirements

We recommend that to achieve optimum efficiency of under floor heating systems the use of weather dependent (weather compensation) flow temperature control, properly balanced and set in line with the design for adjustment of the primary and loop flow. We also recommend the settings are recorded for future reference.

Construction outline



Wood 22

1. Floor Joists

2. Insulation, Joist insulation should fill up the entire joist cavity.

The joist cavity must be sealed to prevent heat from escaping.

3. Slotted Board Wood 22, with four side tongue and groove Dim.

1800 x 600 x 22 mm with “Tongue and Groove” on all four sides.

Slotted Board Wood 22 **has 3 slots c/c 200 mm suitable for use with**

Heat Distribution Plate 16 and Universal Pipe 16mm.

4. Heat Distribution Plate 16L=1150 mm, W=190 mm

5. Universal Pipe dim.16 mm

6. Slotted Turning Board Wood 22 Dim. 400 x 800 x 22 or 595 x 800 x 22 mm

7. Vapour barrier and cell foam / rag board

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Surface layer

Parquet, solid wood or laminated floor The heating system is first covered with a moisture barrier (PE sheet) followed by rag paper or open-cell foam sheet. Parquet flooring [min. 14 mm thick] is then laid in the same direction as the floor heating circuits. Always adhere to the flooring supplier's instructions and GBR's [TRADA in UK] guidelines for wood floors on floor heating. Always ask for advice for floors exceeding 25mm thickness.

Vinyl or linoleum flooring and carpet

Dry areas

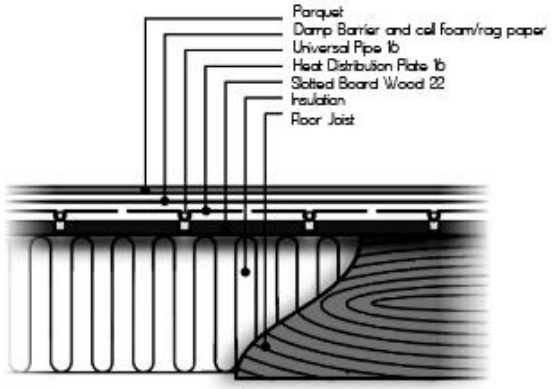
Where using decorative vinyl/linoleum, first lay open-cell sheet over the floor heating, then lay and fix chipboard [min. 16mm] or plywood [min. 12mm] to the manufactures instructions. The vinyl/linoleum is then fixed over to the manufactures instructions.

Wet areas

In wet room areas, first lay open-cell sheet over the floor heating, then lay and fix chipboard [min.16mm] or plywood [min. 12mm] to the manufactures instructions. The board must be primed, for gradient screed shower rooms, the screed must be minimum of 12mm at drains. Follow suppliers instructions. Elsewhere local Buildings Regulations apply.

Ceramics or natural stone

For ceramics or natural stone, (In the UK, please contact for advice if 400mm joists are on site.)

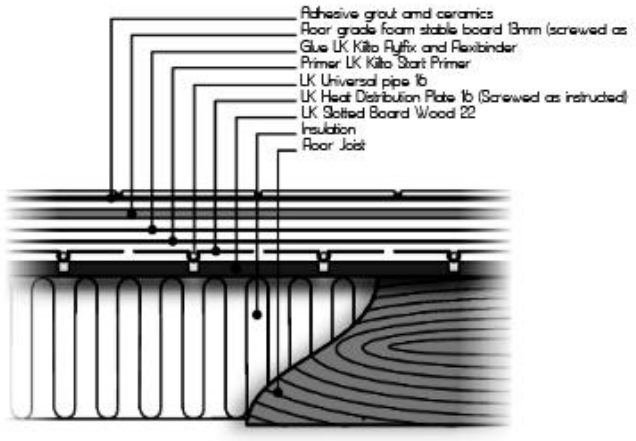


Wood 22 on floor joists (max joist distance 600 mm). Surface layer parquet min. 14 mm.

Dry areas

Heat Distribution Plate must, after completing laying the pipe, be screwed in place in a zigzag pattern c/c 150 mm. Use suitable flat headed screws (length 14-20 mm). Make sure that the floor and heat distribution plates are clean, vacuumed carefully.

Apply LK Kiilto Start Primer on the entire surface, let dry for 1-2 minutes. If there is oil or grease on the plates this must be washed off before applying primer. Glue a 13 mm floor grade form stable board for floors (for example plasterboard or fibre cement board) onto the floor with LK Kiilto Flytfix mixed with LK Kiilto Fixbinder. Apply the glue with a putty-knife, and then "comb out" the glue with a notched trowel (notched 6-8 mm). Mount the floor grade form stable board within 10-15 minutes after the glue is applied. Mark out the position of the pipes at the same time, to avoid any damages in the next step, when the boards are screwed in place. The boards are screwed in place with a screw for plaster board along all sides and between the pipe rows. Begin to screw the sides of the board 50 mm in from the corners and after that with a distance of max. 300 mm in between. Screw between the pipe rows with a distance of max. 500 mm between the screws. When the glue has dried after approx. 5 h the tiling can begin.

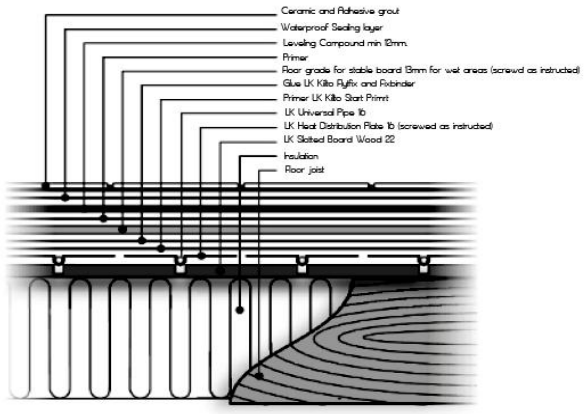


Wood 22 on floor joists (max joist distance 300 mm). Ceramics in dry areas.

Wet areas

Heat Distribution Plate must, after completing laying the pipe, be screwed in place in a zigzag pattern c/c 150 mm. Use suitable flat headed screws (length 14-20 mm). Make sure that the floor and heat distribution plates are clean, vacuumed carefully. Apply LK Kiilto Start Primer on the entire surface, let dry for 1-2 minutes. If there is oil or grease on the plates this must be washed off before applying primer. Glue a 13 mm floor grade form stable board for wet areas (for example plasterboard or fibre cement board) onto the floor with LK Kiilto Flytfix mixed with LK Kiilto Fixbinder. Apply the glue with a putty-knife, and then "comb out" the glue with a notched trowel (notched 6-8 mm). Mount the floor grade form stable board within 10-15 minutes after the glue is applied. Mark out the position of the pipes at the same

time, to avoid any damages in the next step, when the boards are screwed in place. The boards are screwed in place with a screw for plaster board along all sides and between the pipe rows. Begin to screw the sides of the board 50 mm in from the corners and after that with a distance of max. 300 mm in between. Screw between the pipe rows with a distance of max. 500 mm between the screws. When the glue has dried after approx. 5 h the tiling can begin. Use levelling compound on the boards to create a sloping floor in wet areas, min. 12 mm by the floor drain. After that a waterproofing/sealing layer and ceramic tiles. Follow the suppliers instructions



Wood 22 on floor joists (max. joist distance 300 mm). Ceramics in wet areas.

Screed as an alternative solution for dry and wet areas alternatively, screed (including self-levelling) can be laid over the under floor heating. Lay 2 layers of good quality DPM over the under floor heating and ensure the DPM forms a skirt up walls of at least 65 mm. Tape seal all joints. Lay the screed minimum 45 mm deep. Wet areas require waterproofing applied to the manufacturer's directions.

Heating Circuit Manifold

The Heating Circuit Manifold should be assembled in the intended place as shown in the drawing. Please read the instructions enclosed with the manifold first. Lay the piping out before assembling slotted and turning boards to avoid obstructing access to the supply and return lines.

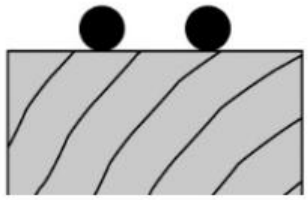
Floor Joist – level standards

Floor joists and Wood 22 floor board installations must be level to the requirements of HUS-AMA, table 43.DC/-1, class A. That is, the floor must be level to a maximum vertical deviation of ± 3 mm at a measurement length of 2 metres and ± 1.2 mm at a measurement length of 0.25 metre. Elsewhere, local building regulations apply.

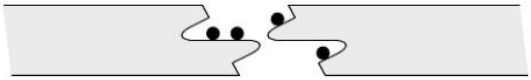
Assembly of Slotted and Turning Boards Wood 22

Slotted and turning boards are laid at right angles to the joists The maximum allowed distance between joists is 600mm. Slotted boards has got tongue and groove on all four sides which makes it possible allows continuous installation, i.e. joints can be made between the joists. Short sided joints must not be positioned closer than 200 mm to the short sided joint in the next row if the joints occur between the same pair of joists. The turning boards have not tongue and groove on the long sides. When the short side of the slotted board meets the turning board the tongue/groove of the slotted board must be cut/ removed. Observe that the joint between the slotted board and the turning board needs to be supported in the middle by a floor joist.

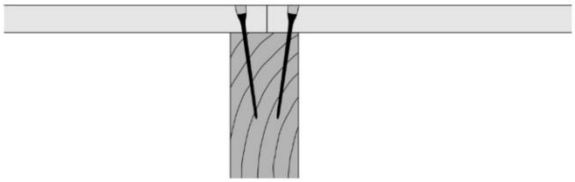
If the installer decides not use turning boards, but to use a routing tool, the board must be fully supported from beneath. To produce the correct routed profile, the use of Router Steel is recommended. Wood 22 floor boards must be fully supported by joists or studs along all walls. Ensure 10mm expansion gap is left around all walls and fixtures. Glue the boards thoroughly to the joists and studs using Casco mounting glue 3303 or the equivalent.



The grooves and joints of the boards must be glued using Casco mounting glue 3303 or the equivalent. The amount of glue must be generous so that an excess will be pressed out during laying; excess should then be wiped off. The amount of glue required is approx. 1.3 L per 10 square metres of floor area.



Screw the boards to each joist and joist support using a row of screws. Where the short joints meet insert a row of screws in each board on the same joist, with a maximum screw distance of 150 mm along all supported outer edges and short joints and 300 mm along the intermediate supports. Use 3.9 x 55 mm chipboard screws countersunk approx. 2 mm into the board. Complete the installation one board at a time.



Below floor pipe turning with Turning Board Wood 22

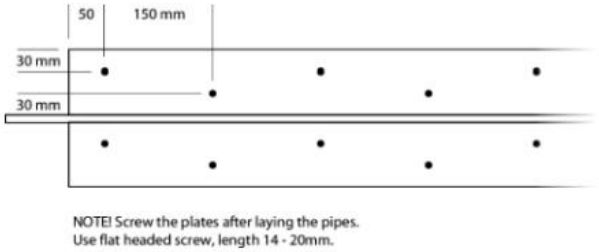
The joists' when turning pipes are left open and are only covered after pipe laying is finished. The pipe coils are crooked down with the aid of the turning board. A turning box can be shortened to 300mm using an extra floor stud or noggin. The turning board may be cut in two equal parts for the 300mm box, and the second part can be used in the turning box at the opposite end, or trimmed to suit for 400 mm for UK standard joist settings.

Above floor pipe turning with Slotted Turning Board Wood 22 When turning pipes above floors, the slotted turning board must be fitted and the pipes must be laid at the same time. Please note that the laying of the supply and return pipe ends is done before the slotted turning board is fitted.

Heat Distribution Plate (aluminium)

Heat Distribution Plate is laid edge to edge with the slotted board in the turning compartment. The plates may be laid out at a distance of between 10 - 100 mm and pressed down into the board slots. The plates can be shortened by snapping across the break lines. The slots in the board must be carefully cleaned (vacuum-clean the slots) before the plates are laid out.

When using ceramics as surface layer must Heat Distribution Plates be screwed in place in a zigzag pattern. See illustration below.

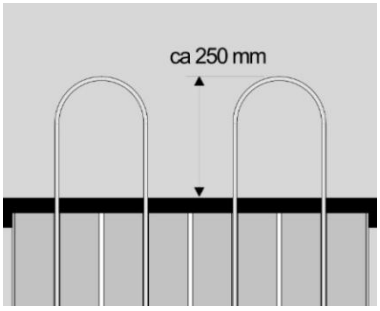


NOTE! Screw the plates after laying the pipes.
Use flat headed screw, length 14 - 20mm.

Laying the pipe

Lay the under floor heating pipe out according to the layout drawing. Using LK Pipe Decoiler will aid pipe laying. Ensure the direction of flow in the loop is such that the supply line is closest to the outer wall. Number and name the circuits according to the drawing. Check before you lay the pipe that the plates are clean (vacuum-clean the slots).

When turning pipes under the floor, the pipes must not touch the floor joist. Leave a space of 25 - 50 mm. Pull the pipe turn out approx. 250 mm from the slotted board; see figure below.



Press or tread down the under floor heating pipe into the slot of the plate. After assembly the pipe must lie in the slot and must never under any circumstances touch the over-lying floor. Entry and exit from the floor joist boxes for supply/return of the circuits is made from the cut-outs in the turning boards. Pipes should be cut using pipe shears intended for PE-X.

Handling instructions

General

Before the boards are fitted, it is important that they be conditioned in the climate in which they will be used.

V20

Slotted Boards and Turning Boards marked “quality class V20” are intended for use in dry indoor environments, climate classes 0 and 1. They must not be used outdoors or in such a way that they are exposed to damp or to air with a very high humidity level.

V313

Moisture-resistant Slotted Boards and Turning Boards marked “quality class V313” are intended for use in climate classes 0, 1 and 2, i.e. in both dry indoor environments and rather damper environments, up to 80 % relative humidity. A higher humidity level can be permitted for short periods (a few days). However, the boards must not be exposed to water in the form of precipitation or otherwise without being protected.

Protection during transport

During transport out of doors, sheets of chip board must be protected in such a way - e.g. by a tarpaulin - that they are not exposed to dirt and precipitation. If exposed to high humidity for a lengthy period, boards with profiled edges may suffer damage to their profiles, making assembly difficult. For the same reason the boards should generally be handled with care.

Protection during storage

Sheets of chip board should be stored indoors. If this is not possible, storage out of doors should be of short duration and the boards must be carefully covered, e.g. with a tarpaulin, to protect them from precipitation. Remember to allow for ventilation if they are closely packed. Sheets of chip board must be stored on a flat and level surface.

NOTE!
The boards must never be stacked directly on the ground. The ideal storage conditions are 15-25 °C and 50-60 % relative humidity. The relative humidity must not exceed 80 % for lengthy periods.