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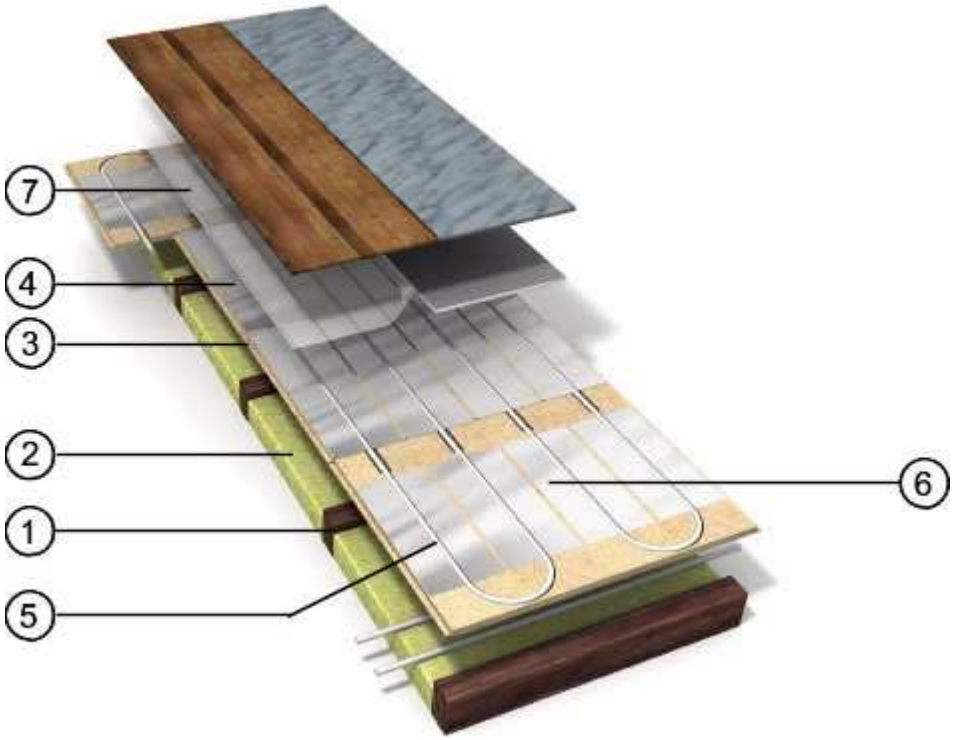
# HeatBoard Joisted Floor System

## Design

The Floor Heating Warehouse Underfloor Heating using Heatboard Slotted and Turning Boards is intended for installation on standard wood joist floors of a max. 600mm c/c (ideally suited to UK standard 400mm joists). The construction comprises of a load bearing slotted 22mm chipboard floor, which replaces the standard board in a floor construction.

## Construction Outline



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1. **Floor joists**
2. **Insulation** Joist insulation should fill up the entire joist cavity.
3. **HeatBoard** Dim. 1200 x 800 x 22 mm
4. **Heat Distribution Plate** L=1150mm
5. **Pipe** The Floor Heating Warehouse 16mm Pex-Al-Pex Pipe
6. **HeatBoard Slotted Turning Board** Dim. 595 x 800 x 22mm
7. **Vapour Barrier** and cell foam/rag board according to the floor manufacturer's instructions

# Floor Finishes:

## Wood, Laminate and Parquet Floors

The heating system is first covered with a vapour barrier (PE sheet) followed by rag paper or open-cell foam sheet according to the floor manufacturer's instructions. Flooring [min. 14mm thick] is then laid in the same direction as the floor heating circuits. Consult flooring supplier & follow flooring supplier's instructions for wood floors on floor heating.

## Vinyl or linoleum flooring

### Dry areas

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

### Wet areas

In wetroom areas, lay open-cell sheet (suitable for use with underfloor heating), over the floor heating, then lay and fix chipboard [min. 16mm] or plywood [min. 12mm].

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## Ceramics or natural stone

**Dry areas**

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

Apply Primer on the entire surface, let dry for 1-2 hours. If there is oil or grease on the plates this must be washed off before applying primer. Glue a 12mm floor grade form stable board for floors (for example fibre cement board) onto the floor with glue. Apply the glue with a putty-knife, and then “comb out” the glue with a notched trowel (notched 6-8mm). 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. 300mm in between. Screw between the pipe rows with a distance of max. 500mm between the screws. When the glue has dried after approx. 5 hours the tiling can begin.

**Wet areas**

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The boards are screwed in place along all sides and between the pipe rows. Begin to screw the sides of the board 50mm in from the corners and after that with a distance of max. 300mm in

between. Screw between the pipe rows with a distance of max. 500mm between the screws. When the glue has dried after approx. 5 hours the tiling can begin. Use levelling compound on the boards to create a sloping floor in wet areas, min. 12mm by the floor drain. After that a waterproofing/sealing layer and ceramic tiles. Follow the suppliers instructions.

**Alternative solution for dry and wet areas**

As an alternative to the above, a screed/self leveling screed can be laid over the underfloor heating. Lay 2 layers of good quality DPM over the underfloor heating and ensure the DPM forms a skirt up walls of at least 100mm. Overlap all joints by a minimum 200mm and tape seal all joints. Lay the screed to a minimum 50mm depth. For wet areas the area must be sealed/waterproofed according to manufacturers requirements.

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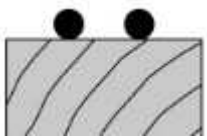
# Assembly of HeatBoard Slotted and Turning Boards

Slotted and turning boards are laid at right angles to the joists The maximum allowed distance between joists is 600mm. HeatBoard Slotted boards are tongue and grooved on all four sides.

Short sided joints must not be positioned closer than 200mm to the short sided joint in the next row if the joints occur between the same pair of joists. The turning boards are not tongue and grooved 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.

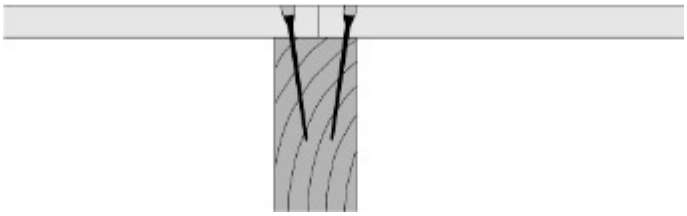
If the installer decides not use turning boards, but to use a routing tool, the board must be fully supported from beneath.The HeatBoard floor boards must be fully supported by joists or studs along all walls. Ensure 10mm expansion gap is left around all walls and fixtures.

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. 1.2 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 150mm along all supported outer edges and short joints and 300mm along the intermediate supports. Use 3.9 x 55mm chipboard screws countersunk approx. 2mm into the board. Complete the installation one board at a time.



# Pipe turning with HeatBoard Slotted Turning Board

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 flow and return pipe ends is done before the slotted turning board is fitted.

# Heat Distribution Plate (aluminium)

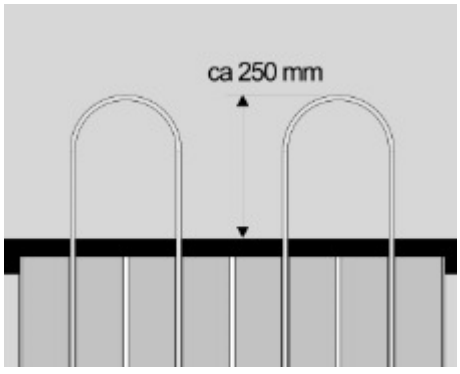
The Aluminium Heat Distribution Plate is laid out at a spacing distance between plates of between 10-100mm and pressed down into the board slots. The plates can be shortened by snapping across the break lines. The slots in the board must be carefully cleaned (vacuum-clean the slots) before the plates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

When using ceramics as surface layer Heat Distribution Plates must be screwed in place in a zigzag pattern as described above.


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

# Laying the pipe

Lay the underfloor heating pipe out according to the layout diagram. Ensure the direction of flow in the loop is such that the flow pipe is closest to the outer wall. Number and name the loops according to the drawing. Check before you lay the pipe that the plates are clean (vacuum-clean the slots).




Press or tread down the underfloor 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 flow/return of the circuits is made from the cut-outs in the turning boards.

Pipes should be cut using pipe shears intended for PEX-AL-PEX Pipe.

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# Handling instructions

## General

At delivery and before assembly; always check that the boards do not have any visible defects. Before the boards are fitted, it is important that they be conditioned for 2-3 days in the climate in which they will be used.
Read these assembly instructions before beginning to install HeatBoard. If something is unclear or indistinct, contact your supplier before installing

## Standard HeatBoard Grade

Standard HeatBoard 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.

## Moisture Resistant HeatBoard Grade

Moisture-resistant HeatBoard 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. However, the boards must not be exposed to water in the form of precipitation or otherwise without being protected.

## 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.
The boards 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.