

PRODUCT	
FLOOR CONSTRUCTION	JOISTED OR BATTENED
DIMENSIONS	2400 X 600 mm
THICKNESS	22 mm
PANEL WEIGHT (WITH WATER & INCL 6MM PLY)*	18.9 mm
PIPE CENTRES	150 mm
PIPE CHANNELS/ EXTERNAL PIPE DIAMETER	12 mm
100MM WIDE FOIL DIFFUSER STRIPS	50 um (micron)
JOIST CENTRES	400 mm
THERMAL CONDUCTIVITY	0.14 W/mK

LOW EMISSION GRADE E1 (FORMALDEHYDE EN120) ≤ 8.0 mg per 100g

FIRE CLASS ACCORDING TO EN 13501-01 D

FSC CERTIFIED

CE MARK

INDEPENDENTLY TESTED FOR STRENGTH - PASS WITH MIN OF 6MM

FLOORING GRADE PLY BONDED & MECHANICALLY FIXED TO

CHIPBOARD (BASED ON 12MM PIPE AT 150MM CENTRES)

KH VALUES AVAILABLE ON REQUEST FOR CALCULATING OUTPUTS TO

BSEN1264

STORAGE

Note: When storing the system after delivery, it's crucial to maintain the following conditions:

1. Store in a dry, weather-tight area.
2. Keep away from direct sunlight.
3. Avoid contact with sharp objects or chemical spillages.
4. Stack chipboard, woodboard, or plywood horizontally and elevate them off the ground.
5. Prevent exposure to moisture or high humidity.
6. Ensure all areas are properly prepared, dry, and protected from the weather.
7. Check that all joists are level, even, clean from debris, and free of surface deviations such as knots or nails.

STAGE 1

IMPORTANT: The installation method for the Suspended system varies based on access to the floor void below and site requirements.

If the floor void IS NOT accessible from below:

Stages 3-7 must be completed room-by-room, starting from the room farthest from the manifold. Access panels are necessary for installing the flow and return pipework.

If the floor void IS accessible from below:

Stages 3-7 can be completed for the entire floor deck at once. No access panels are required as the pipe can be handled from below and run between joists. NOTE: This is a structural panel and cannot be routed for additional channels. Refer to the installation procedure below for flow and returns.

Measure the moisture content of the panels and plywood layer, ideally acclimatising them together before installation. The moisture content should not exceed 8-10%.

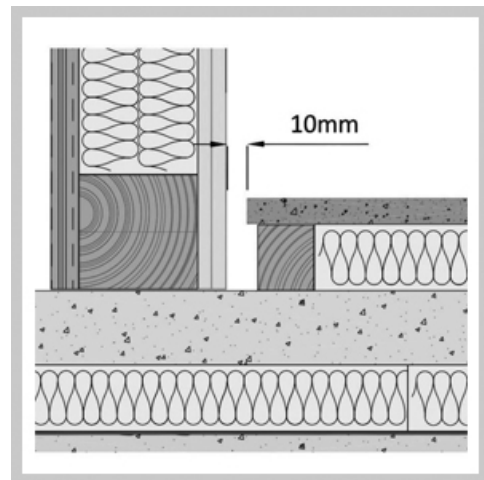
NOTE: When working with wood or insulation-based products, airborne dust and particles can pose health hazards. Follow all relevant health and safety guidelines, including using required personal safety equipment and ensuring proper extraction/ventilation.

INSTALL OVERVIEW

1. Store panels in a safe, dry, weather-tight area away from direct sunlight. Stack all boards horizontally, raised off the ground, and shielded from moisture or high humidity.
2. Ensure all joists and battens are level, even, and free from nails or debris before starting the installation.
3. Lay panels perpendicular to the joists or batten subfloor, ensuring each panel's end falls on a joist or batten center line. Utilize off-cuts from each run to begin the next run, and ensure each row of panels has a group of return loops at each end.
4. Apply glue to both sides of all adjoining tongues and grooves, and securely screw and glue panels to the joists using appropriate PVA adhesive.
5. For the first panel of each circuit, drill a hole at a 20-degree angle in the first routed channel and feed the pipework (flow) into the floor void. Feed the pipework through the void to the manifold location on the floor below. Insert the pipework into the routed board channels, piercing the aluminum diffuser as you progress. Drill a second 20-degree hole at the end of the circuit to drop the pipework (return) and feed it back to the manifold from below. Repeat for all circuits. Note: If access to the floor void is available from below, steps 3 to 7 can be completed for the entire floor deck at once. If not, complete steps 3-7 room by room, starting from the room farthest from the manifold, fitting the flow and return pipework from above into the void.
6. Perform a pressure test on each circuit of the system.
7. Mechanically fix a minimum of 6mm flooring grade ply over the panel, staggered and in the opposite direction, to enhance rigidity and complete the structural deck for floor finish. Note: While the structural test requires only mechanical fixing of the 6mm ply, bonding the two layers together is recommended for additional strength. With the strip foil version, bonding directly to the chipboard is feasible, while with the fully foiled version, bonding ply to foil is the option.

STAGE 2

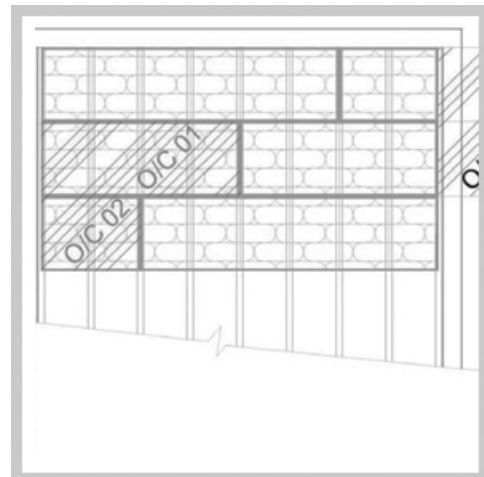
Lay the first panel in a room into a corner, leaving a minimum 10mm gap between the end and edge of the panel and the walls. The two groove edges of the panel should be placed in the corner. The opposite end of the panel must sit on the centre line of a joist.



STAGE 3

Lay the panels in a run, ensuring the end of each panel falls on a centre line of a joist. Use the off-cut of each run to start the following run of panels. Ensure that each row of panels has a group of return loops at each end.

When cutting the panels, it is recommended that the shortest length of panel should be supported across a minimum of three joists. For example, if the supports are set nominally at 400mm centres, the shortest panel length should be 800mm. It is recommended that carpenters should NOT fit very short lengths which are supported by only two joists, one at each end, unless supported by noggins.



STAGE 4

All panels must be glued with appropriate PVA adhesive on BOTH sides of the tongue and groove and fully driven together (in order to withstand loads specified in EN12871).

The panels should then be screwed and glued to the joists. At each joist, 5 no. fixings should be used x 3 screws equidistant between each routed channel then 2 screws 25mm from each top edge taking care when drilling near the pipe. A pilot hole should be drilled at these points with no.8 Particleboard screws to fix the panels to the joists. The screws should be 2.5 times the panel thickness in length. Screws should preferably be handtightened. NOTE: If access panels are required, do not glue/screw these boards until the pipe has been installed.

TONGUE AND GROOVE UFH BOARD

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NOTE: If access panels are required, do not glue/screw these boards until the pipe has been installed.

STAGE 5:

Before installing the pipe work, it is advised to sweep or vacuum the floor area as debris may have fallen into the channels.

STAGE 6:

Referring to the CAD design, insert the pipe into the panels.

NOTE:

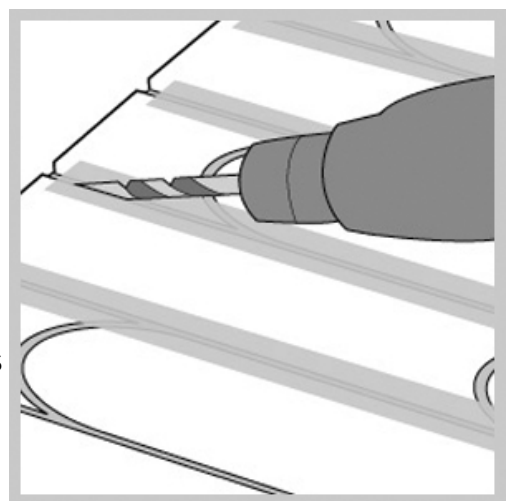
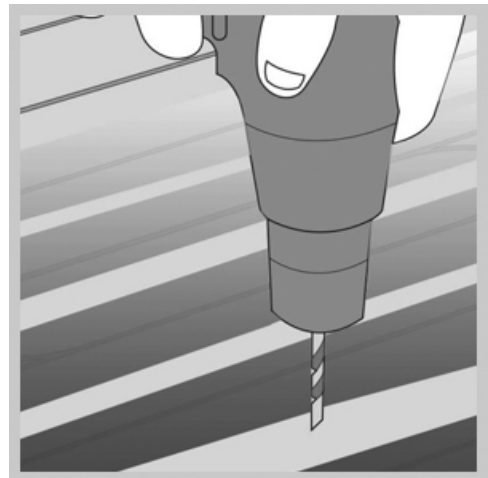
The minimum temperature for laying the pipe should be +5°C.

If the pipework is kinked during the installation, the coil must be replaced or the pipe repaired with a connector and then pressure tested. No connections should be made unless fully accessible following the completion of the finished floor.

All exposed pipework within the joist spaces must be insulated.

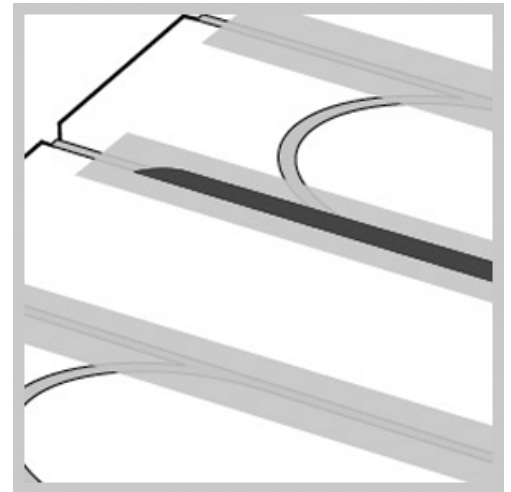
Access Panels

If there are any access panels, drill a 12.5mm hole at a 20 degree angle through the panel at the point at which the flow pipe needs to drop into the batten space.



STAGE 7

Feed one end of the pipe through the hole from above through to the manifold, notching or drilling as required (Figure 2). Where there is limited access, a plain access panel can be created and/or 12mm interconnecting fittings used. Once the pipework has been installed into the room, the access panel can then be glued and screwed as per Stage 5.



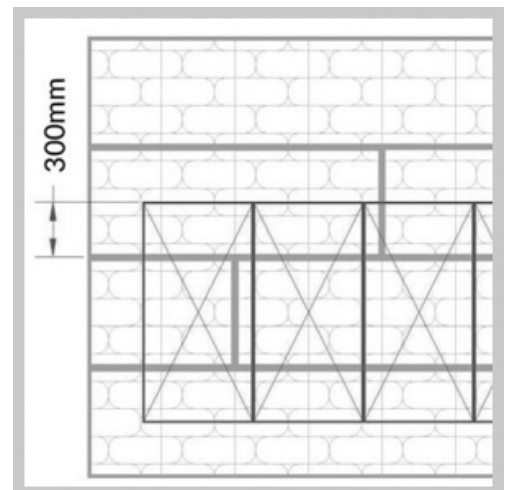
Running pipe between joists: Where flow and return pipework runs through the joists, there must be a notch or hole. Notching and drilling in solid wood joists must be done in accordance with Building Regulations Part A such that:

- Holes should be drilled through the neutral axis and should be positioned between 0.25 and 0.4 times the joist span length.
- Must not be less than 3 diameters (of the hole) apart.
- Notches must not deeper than 0.125 times the joist depth, and they should not be closer to a support than 0.07 times the span, not further away than 0.25 times the span.

Continue laying the panels and pipe until all circuits are complete. Once the panels and pipe have been installed, the circuits should be hydraulically pressure tested. It is preferable for the pipe to be kept under pressure while the covering deck is laid. If this is not possible, the pressure test must be carried out for a second time once the covering deck has been installed.

STAGE 8

A 6mm flooring grade ply covering laid in the opposing direction to the panels, glued and screwed to complete the structural deck. The covering should be positioned so that each ply panel overlaps the tongue and groove edges of the panel by 300mm.

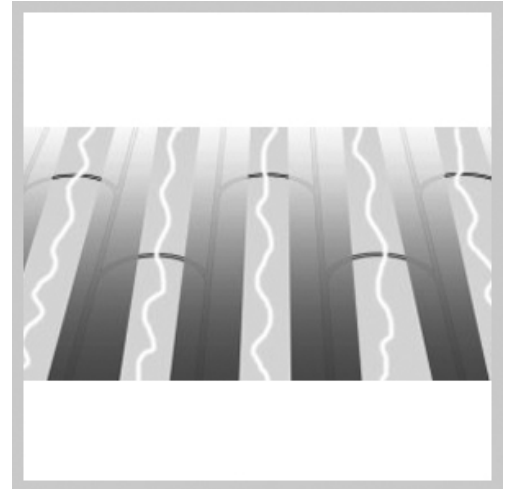


STAGE 9

To glue the covering down, apply sufficient PVA glue in a serpentine pattern to the 50mm wide strips of exposed panel. Do not apply glue to the foil strips of the panel.

To ensure good contact between the overlay and panels, screw (screws at least 25mm long) the ply at 150mm centres 18mm from the edge of each ply sheet, then at 150mm centres across the whole panel, preferably in the centre line between the pipe runs, making sure to avoid any of the pipework straights and loops.

Note: It is best practice to predetermine and mark the pipe and screw positions on the top surface of the ply layer to avoid the straights and loop ends of the pipe runs.



QUICK GUIDE TO FILLING THE SYSTEM

1. If the manifold is being used to pressure test all circuits at once, close both primary isolation valves.
2. Connect a pressure tester to any drain valve, vent the system of air and increase the pressure to 6 bar.
3. Once at this pressure, leave for 60 minutes. If the pressure has dropped examine the pipework. It may be necessary to pressure test individual circuits to determine if there has been damage to the pipe.
4. If the pressure is maintained and passes the test, record the results on the pressure test certificate. Have the test witnessed and certified by a third party.
5. Maintain this test pressure whilst the floor deck and finish are being laid.

NOTES ON WOOD FLOORING

When laying hardwood floors, ensure the timber's moisture content is between 8-10%. Verify with the flooring supplier that the proposed floor is suitable for underfloor heating.

Tongued and grooved joints in the floor deck should be glued with PU adhesive or a PVAc adhesive conforming to durability class D3 of BS EN 204. Leave a clear gap of at least 10mm around the periphery of a timber floor deck, under the skirting, to accommodate any swelling due to changes in moisture content. Remove all wedges used during the floor deck installation once the deck is complete.

During the initial heat-up, set the mixing valve to supply a temperature between 20°C and 25°C, which must be maintained for at least 3 days. After this period, the flow temperature can be increased to the design maximum and should be held for a further 4 days to complete the process.