

MULTIPIPE

Fortis LITE Underfloor Heating Installation Guide

V 1.1 - Jan 2023

Fortis LITE is a premium grade EPS board with an impressive 400 kPa compressive strength. This high-density polystyrene board is strong enough to allow direct tiling, and most other floor finishes can also be used. Finished with a 200-micron thick foil, this helps to spread the heat. Cutting of the boards can be done with a knife making installation easy.



Features

- High-density polystyrene sheets (400kPa)
- Pre-routed groove for 12mm pipe
- 1200x600mm sheet size
- 200-micron foil for heat transfer
- All-in-one panel design (no feed and return panels)

Benefits

- Lightweight and easy to lay
- Can be directly tiled
- Close pipe centres for increased output
- Can accept levelling compound on top
- Ideal for suspended floors
- Easy to alter with a router or knife

Key Parts of Assembly

Fortis LITE 16mm Board

- Board size 1200 x 600 x 16mm
- Grooved for 12mm pipe
- Pipe spacing 120mm c/c
- Pre-routed system channels inc. returns.

12mm PE-RT pipe

- Coil sizes 120m, 200m
- 12 x 1.4mm
- highly flexible and easy to handle
- EVOH barrier included

A Note on Substrates

It is essential that when installing this system, the existing subfloor is level with no movement and free from debris. If the system panels do not sit flat, this could damage the panel, pipe or floor covering. The list below shows our recommendation for suitable floor types, if your construction is not shown contact us on 01245 850799 to check suitability before laying.

- A solid concrete floor which is cured for a minimum of 6 weeks / fully dry
- Screed floors where the manufacturers fully cured time have elapsed
- Existing screed, tile floor or concrete floors that are level (if not level, a suitable levelling compound can be used but must be cured)
- Timber flooring where the floorboards are level and well secured down to the joists, with no movement when walked on.



All installation advice in this guide is given using approved Mapei products. Other manufacturers products are available to be used on this system. But first, check the compatibility with installation and bonding of polystyrene panels to a subfloor as they may differ from the guidance and require different primers or adhesives. You also need to ensure the tile adhesive will bond to foil-backed polystyrene boards for the application of tiles.

Multipipe will not accept liability for damaged floor surfaces occurring from the use of incorrect products.

Use this document as a guide for the installation of the Fortis PRO system only. We recommend reading separate manufacturer guidelines regarding using the levelling compounds and subsequent preparation of the floors to receive finished floor coverings.

Insulation on the Floor

For system efficiency, we recommend laying the system on an insulated floor. Due to how this system works, the insulation should not be above the subfloor when installing a bonded type system; this must be bonded to a structural subfloor.





Sweep the panels to ensure they are free from debris, paying particular attention to the grooves. Then make sure no other trades are in the room when laying pipe to stop contamination.



Referring to the UFH drawing, pick the pipework for each room you intend to use. Then using either a decoiler, or by hand, lay the pipework into the pipe grooves.



If you have to alter the panels, we recommend using a knife or a router to channel a new route.



After the system is laid refer to our UFH system guide on filling and pressure testing.

Laying with Levelling Compound (skip if you are tiling directly)



If using a levelling compound, prime the board with Mapei Eco Prim Grip using a brush or roller and ensure you cover the entire board and pipework. Leave to dry for a minimum of 60 minutes



Using Mapei Ultraplan Renovation Screed 3240, mix up and pour to the depths shown in the table on Page 5. Once fully cured, tiles can be bonded using Mapei Keraquick S1 tile adhesive.

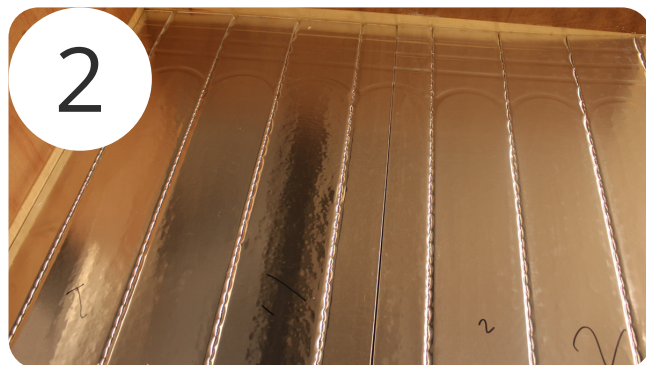
Using a levelling compound does raise the overall floor but will ensure the pipe and system are not damaged (not required for tiles).

Installation for Bonded System

Recommended for tile, bonded vinyl and bonded wood systems



Ensure the subfloor is dry, clean and free from debris. Any holes/ uneven areas should be levelled using a suitable levelling compound.



Using your supplied UFH drawing, ensure the panels are laid (loosely) in the direction shown and complete any cuts required to make the boards up.

top tip number the boards in the room, so you know which panel goes where.



Apply Mapei Keraquick S1 adhesive to the subfloor using a notched trowel to give a minimum 3mm adhesive bed. (The adhesive bed depth may need to increase if the substrate is not sufficiently level). Levelling compound may be required if areas are any deeper than 2-3mm. The Adhesive needs to be fully cured before continuing.



As an alternative, you can use a spray impact adhesive. If you decide to use a spray adhesive, ensure it is compatible with the subfloor and polystyrene insulation. A suitable product is 3M™ Hi-Temperature Polystyrene adhesive 78HT. But please ensure compatibility.



Lay the boards onto the adhesive and press down to the bed onto the adhesive. As you go across the floor, ensure full compression of the panel to the adhesive bed. Also, check as you go that the panels remain level and the grooves align.



If fitting to a timber subfloor, we recommend large flange head fixing screws every 300mm across the entire board as well. Allow the adhesive to cure for a minimum of 3 hours (depending on temperature) but ideally overnight to ensure the adhesive is fully cured.

Thickness of Levelling Compound Required

Floor Finish	Minimum Thickness (mm)
Tiles / natural stone	6mm
Vinyl (Amtico/Kardean etc.)	10mm
Engineered wood or laminate (bonded down)	10mm
Carpet (tog rating <2.5 inc. underlay)	10mm

N.B. These are recommended thicknesses of levelling compound but please check with the floor manufacturer as they may differ.

Direct Tiling to Boards



Fix the tiles using Mapei Keraquick S1 incorporating Mapei Latex Plus additive. Ensure that every pipe channel and void surrounding the pipe is fully encapsulated and covered with tile adhesive. Use a notched trowel to ensure good adhesion to the surface and tile.



Lay your tiles, ensure 24hrs is left for the adhesive to dry.

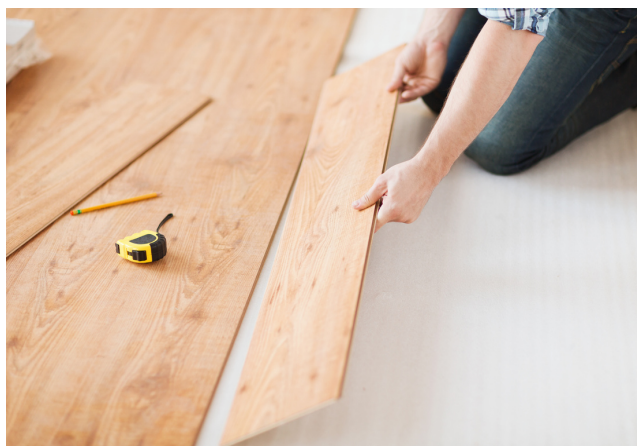


Once cured, tiles can be grouted using Mapei Ultracolor Plus. Allow the tiles to fully cure before walking on the surface. All movement joints can be filled with Mapei Mapesil AC (for ceramic and porcelain tiles) or Mapei Mapesil LM (for natural stone tiles). Allow the tiled area to cure for a minimum of 10 days before turning the heating system on and heat up as per the guidance in the main UFH installation guide.



If the tiler wishes to install a decoupling membrane between the UFH boards and tiles, we recommend following the procedure in 11a with Mapei Keraquick S1 then fixing the mat down onto the adhesive bed. Once cured, the tiling can commence to the tilers normal regime. But please ensure any adhesives used are suitable for UFH systems.

Direct Bonded Timber Floor



First, follow the preparation and laying steps from page 3, "Installation for Bonded System" (steps 1-10). Check with your wood floor supplier with suitability to directly bond the wood flooring to the UFH system. If they need a separation layer, follow the instructions on page 4, "laying with levelling compound".

Our recommended adhesives in both instances are the Mapei Ultrabond S955 1k adhesive. Other products may perform, but compatibility will need to be tested.

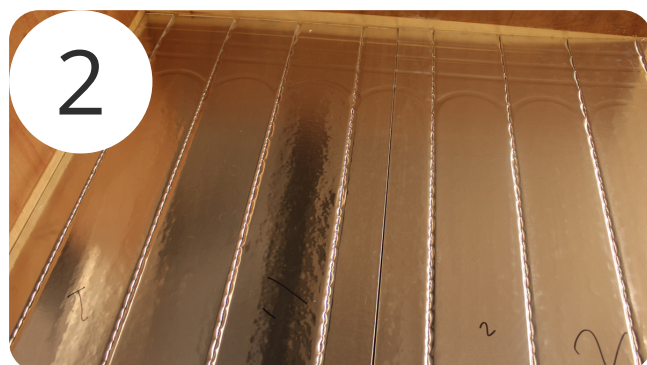
Please note: With any wood flooring finish, we recommend using a floor sensor set at 27°C, fitted between two pipes in the UFH panel.

Installation Methods For Floating Floor Systems

Recommended for laminate and floating engineered flooring



Ensure the subfloor is dry, clean and free from debris. Any holes/ uneven areas should be levelled using a suitable levelling compound.



Using your supplied UFH drawing, ensure the panels are laid in the directions shown and do any cuts required to make the boards fit.



If you need to alter the panels, we recommend using a knife or a router to channel a new route. Ideal for feeds or avoiding fixed furniture.



Sweep the panels to ensure they are free from debris paying particular attention to the grooves. Then make sure no other trades are in the room when laying pipe to stop contamination.



Referring to the UFH drawing, pick the pipework for each room that you intend to use. Using either a decoiler or by hand lay the pipework into the pipe grooves, ensuring it is pressed into the grooves.



After the pipe in the system is laid, we recommend following our main UFH system guide on filling and pressure testing.



Allow the floor finish to acclimatise to the indoor room temperature for at least 24 hours as it may swell or shrink depending on the climate.



Before laying a laminate or engineered floor, we recommend using an underlay to help spread the heat and reduce system noise. The underlay has to be approved for use with underfloor heating systems.



After the system is laid, we recommend following our UFH system guide on pressure testing and starting up your system.

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