

# INSTALLATION GUIDE

## Tekwarm Foil Faced EPS Routed Insulation Boards with UFH

### MATERIALS NEEDED:

- Tekwarm foil faced EPS routed insulation boards
- 12mm or 16mm UFH pipes
- Fixings (screws / nails suitable for fixing floorboards / overboard)
- UFH manifold and pressure testing kit
- Overlay boards (floorboards, chipboard, or Tekwarm HD overlay board)
- Adhesive (if specified by the panel manufacturer)
- Conduit for insulating pipework running between joists
- Noggins (additional supporting timbers)
- Tools: Tape measure, circular saw, power drill/driver, utility knife, pipe cutter, pressure testing pump, spirit level, and safety equipment

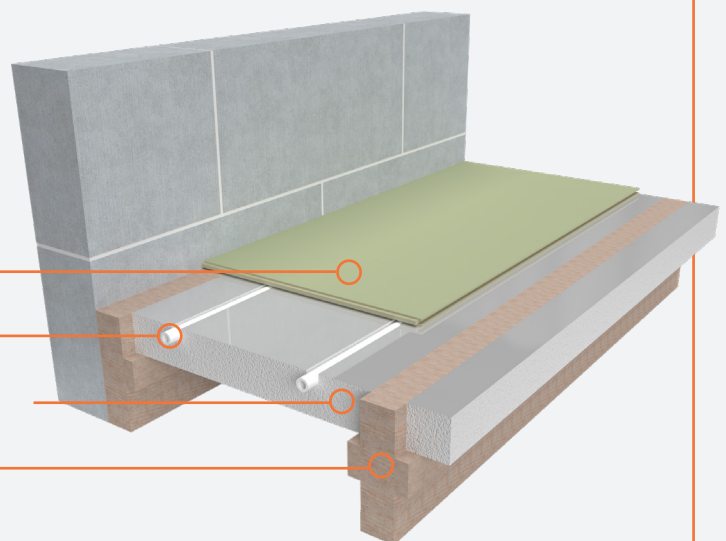
### INSTALLATION OVER TIMBER SUBSTRATE with overlay board finish

overlay board

ufh pipes

tekwarm foil faced eps routed insulation boards

joists





PRE-INSTALLATION STEP:  
**obtain a professional design layout**

1. **Consult the Manufacturer:** Before starting the installation, consult with the manufacturer (Tekwarm) to obtain a professional design layout for your UFH system. This design will ensure accurate heat outputs based on the following factors:
    - **Materials:** The type of UFH boards and overlay boards.
    - **Pipe Spacing:** The correct spacing of the UFH pipes to ensure even heat distribution.
    - **Heat Source:** The compatibility of your heat source with the UFH system.
    - **Floor Finish:** The type of floor finish that will be used on top of the overlay boards.
  2. **Review the Design:** Carefully review the provided design layout and ensure all details are understood and can be implemented on-site.
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STEP 1:  
**prepare the subfloor**

1. **Inspect Joists:** Ensure joists are level, evenly spaced (400mm or 600mm centres), and structurally sound. Joists must be capable of supporting the load of the insulation boards, UFH system, and floor finishes.
  2. **Clean Surface:** Remove any debris or obstacles from the joists.
  3. **Temporary Boards:** Loosely place temporary boards to walk on and work from.
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STEP 2:  
**prepare for manifold installation**

1. **Check CAD Drawings:** Confirm the design is correct to the actual room space and dimensions.
2. **Fit the Manifold:** Referring to the drawings supplied, fit the manifold in the correct position.
3. **Flow and Return Pipe Run:** Investigate/confirm the flow and return pipe run back route from room to manifold, checking if floor penetration point is correct on the drawings. Temporarily remove floorboards in any rooms that the flow and return pipework runs through to provide access to install the pipework.

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**STEP 3:**  
**install noggins**

1. **Measure and Cut Noggins:** Measure the space between joists and cut noggins to fit snugly.
  2. **Install Noggins:** Install noggins between the joists to provide additional support for the routed EPS boards.
  3. **Noggin positioning:** The top of the noggin should be positioned at the exact height below the joist, equivalent to the thickness of the Routed EPS Board to ensure the top of the board finishes flush with the top of the joists.
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**STEP 4:**  
**lay tekwarm foil faced eps routed insulation boards**

1. **Measure and Cut:** Measure the space between joists and cut insulation boards to fit, ensuring cuts are straight and panels fit tightly together. The boards should finish flush with the top of the joists.
  2. **Support at Edges:** Ensure all edges of the insulation boards are fully supported by joists or noggins.
  3. **Position and Fix Boards:** Position the boards between the joists, ensuring they are flush with the top of the joists. Secure the boards with screws or nails as needed. Ensure proper alignment and support at all edges.
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**STEP 5:**  
**lay ufh pipes**

1. **Install Pipes:** Lay the 12mm or 16mm UFH pipes into the routed grooves of the insulation boards. Cut the pipes as needed with a pipe cutter, ensuring clean and straight cuts.
2. **Connect to Manifold:** Connect the pipes to the UFH manifold according to the manufacturer's instructions. Make sure the connections are secure.
3. **Secure Pipes:** Ensure pipes are securely seated in the grooves and do not protrude above the panel surface.

## **6** STEP 6: **pressure test ufh system**

1. **Prepare for Testing:** Close all manifold valves and connect the pressure testing pump to the system.
  2. **Test Pressure:** Pressurize the system to the recommended pressure (typically around 4-6 bar) and maintain this pressure for at least 24 hours. If pressure testing with air, the test should be at a maximum of 1 bar and maintained for 1-2 hours.
  3. **Check for Leaks:** Inspect all connections and pipes for leaks. If any leaks are found, depressurize the system, fix the leaks, and retest.
  4. **Release Pressure:** Once the system passes the pressure test, release the pressure according to the manufacturer's instructions.
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## **7** STEP 7: **install overlay boards**

1. **Select Overlay Board:** Use a suitable overlay board and ensure the selected overlay board is compatible with your UFH system and requirements for thickness and load expectation.
  2. **Measure and Cut:** Measure and cut overlay boards to fit the room dimensions.
  3. **Lay Overlay Boards:** Lay the overlay boards over the routed insulation boards and UFH pipes, ensuring they are well-aligned and tightly fitted.
  4. **Fix Overlay Boards:** Secure the overlay boards with screws or nails, ensuring fixings do not penetrate the UFH pipes beneath.
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## **8** STEP 8: **final inspection**

1. **Check for Levelness:** Use a spirit level to ensure the entire floor is level and there are no raised edges or gaps.
  2. **Ensure Fixings Are Secure:** Verify all screws are properly countersunk and the floor is stable.
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## **9** STEP 9: **clean up**


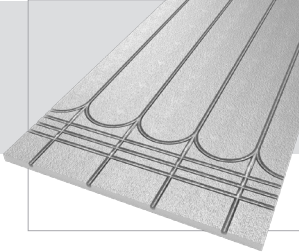
1. **Remove Debris:** Clean up any debris and tools from the installation area.
2. **Final Check:** Perform a final inspection to ensure all work has been completed to a high standard and all materials have been used correctly.

## IMPORTANT NOTES:

- Floor Finishes:** When installing floor finishes above the UFH system, always check with the floor finish manufacturer for any specific stipulations for overlaying over a UFH floor. Follow any guidance provided to ensure compatibility and performance.
- Commissioning UFH System:** For systems that are overlaid with Tekcem 550 screed, ensure that the UFH system is commissioned in line with the guidance set out in BS1264, BS8203, and BS8204. The system should be commissioned prior to the application of floor finishes. Refer to specific commissioning details that may be available from Tekcem.
- Solid Substrate Importance:** Ensuring a solid and well-fixed substrate is crucial to prevent screed cracking or system squeaking. The subfloor must be securely fixed and structurally sound before installation.

## SUMMARY

By following these steps, obtaining a professional design layout from the manufacturer, and using the recommended overlay board types, you will ensure a successful and durable installation of Tekwarm foil faced EPS routed insulation boards with a UFH system. This approach guarantees accurate heat outputs and optimal performance of your UFH system, while ensuring the structural integrity and stability of the flooring system.

**TEKWARM**

**FOILED CR 400 KPA  
UFH BOARD**

**Lightweight 400 KPA grade Expanded Polystyrene insulation routed on one side to allow for fast and accurate pipe installation.**

Boards are available with the TFF (Top Foil Faced) finish, where the foil is flat and overlays the board without entering the grooves.

Tekwarm EPS UFH Board is manufactured from CFC and HCFC free EPS, grooved on one face as required at 150mm or 200mm centres, to suit 16mm diameter underfloor heating pipes, with radius returns as standard.

The panel size is 1200mm x 600mm and boards are available in a range of thicknesses starting at 20mm.

Other routed pipe layouts and patterns are available, further details upon request.

TFTWFEP5400UFH1022V1

**INSTALLATION**

Tekwarm Foiled CR 400 KPA UFH Boards allow for a speedy installation over a solid ground floor on a suitable DPM. The boards are also suitable for use over other substrates when installed in a fully supported application, with a DPM as necessary.

**SUITABLE FOR**

Tekwarm Foiled CR 400 KPA UFH Board is suitable for use in new build or retro fit installations.

**DURABILITY**

Tekwarm Foiled CR 400 KPA UFH Boards are designed to last for the life of the building without any loss in thermal performance and is rot proof and will not promote the growth of mould or fungi.

**ENVIRONMENTAL**

Tekwarm Foiled CR 400 KPA UFH Boards (insulation only) has a Global Warming Potential (GWP) of zero, and a low O-Zone Depletion Potential (ODP).