

# INSTALLATION GUIDE

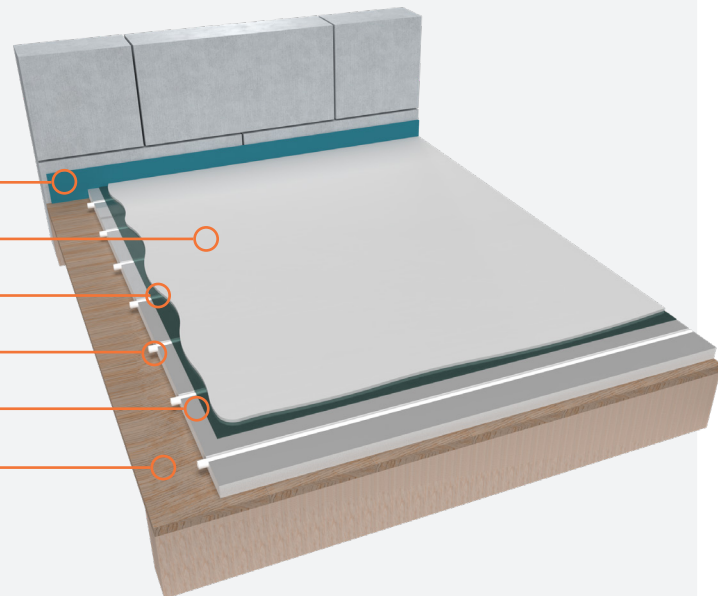
## Tekwarm Routed EPS Panels Over a Suspended Timber Substrate with UFH

### INSTALLATION OPTIONS

This guide covers instructions for installation of Tekwarm Routed EPS Panels over suspended timber substrate, the below options show the required products for the desired finish before installing the final floor covering.

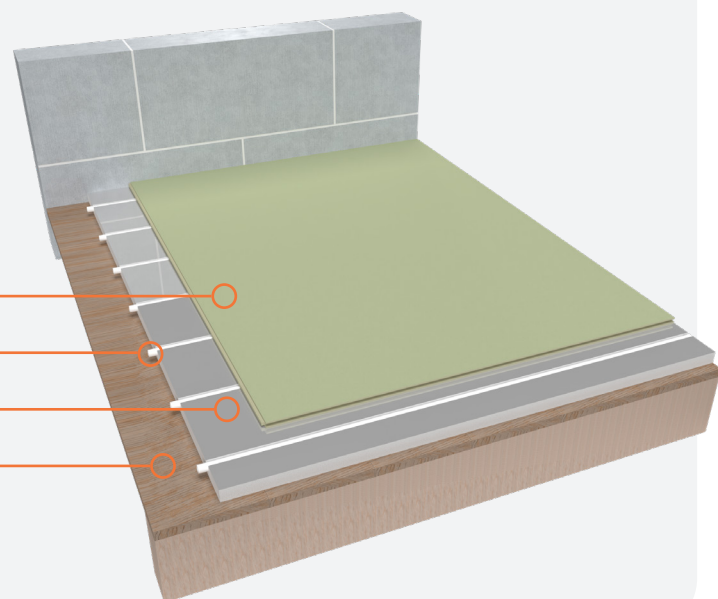
#### INSTALLATION OVER TIMBER SUBSTRATE with screed finish

- perimeter strip
- tekcem 550 fibre screed
- tekcem tekgrip or tekprime primer
- ufh pipes
- tekwarm routed eps panels
- suspended timber substrate



#### INSTALLATION OVER TIMBER SUBSTRATE with overlay board finish

- overlay board
- ufh pipes
- tekwarm routed eps panels
- suspended timber substrate



## MATERIALS NEEDED:

### MATERIALS REQUIRED FOR ALL INSTALL OPTIONS

- **Tekwarm Routed EPS Panels**  
*Various thicknesses and grades of compressive strength available, also available either plain or aluminium foil-faced for improved heat transfer.*
- UFH pipes (10mm, 12mm, or 16mm diameter)
- S1 flexible adhesive (optional, for bonding EPS panels to the substrate)
- Fixings (screws and washers suitable for UFH boards)
- Adhesive (if specified by the panel manufacturer)
- UFH manifold and pressure testing kit
- Tools: Tape measure, circular saw, power drill/driver, utility knife, pipe cutter, pressure testing pump, spirit level, trowel, and safety equipment

### ADDITIONAL MATERIALS FOR SCREED FINISH

- **Tekcem 550 fibre screed** (or equivalent)

### ADDITIONAL MATERIALS FOR OVERLAY BOARD FINISH

- **Tekwarm Overlay Board** (or equivalent)

#### IMPORTANT NOTES:

1. **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.
2. **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.



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 Subfloor:** Ensure the timber base is clean, dry, and free from dust, debris, and any substances that might affect adhesion.
2. **Repair Cracks and Holes:** Fill any cracks or holes with a suitable repair compound and ensure the subfloor is level and stable.
3. **Ensure Stability:** It is essential that the subfloor is well fixed and solid. Any movement in the subfloor can cause the system to 'squeak' or the screed to crack. Securely fix all loose boards and ensure the subfloor is structurally sound before proceeding.

**2****STEP 2:  
lay tekwarm eps panels**

1. **Measure and Cut:** Measure the room and cut EPS panels to fit, ensuring cuts are straight and panels fit tightly together.
2. **Start Laying Panels:** Begin laying the first board in a corner of the room, ensuring the grooves are positioned correctly for the UFH pipes according to the design layout.
3. **Fix Boards:**
  - **Adhesive (Optional):** Apply S1 flexible adhesive to the back of the panels to bond them to the substrate, following the manufacturer's instructions for application and drying times.
  - **Mechanical Fixing:** Secure the UFH boards to the subfloor using screws and washers available from The UFH Group. Place screws and washers at intervals of 150mm along the edges and 300mm in the field of the board. Ensure screws are countersunk to avoid protrusions.

**3****STEP 3:  
lay ufh pipes**

1. **Follow the Design Layout:** Lay the UFH pipes (12mm) into the routed grooves of the UFH boards exactly as specified in the professional design layout. Ensure correct spacing and pipe routing.
2. **Install Pipes:** Lay the UFH pipes into the routed grooves of the UFH boards. Cut the pipes as needed with a pipe cutter, ensuring clean and straight cuts.
3. **Use Aluminium Plates:** The system can also use single or double aluminium plates for improved heat transfer. Place these plates according to the design layout to optimize heat distribution.
4. **Connect to Manifold:** Connect the pipes to the UFH manifold according to the manufacturer's instructions. Make sure the connections are secure.
5. **Secure Pipes:** Ensure pipes are securely seated in the grooves and do not protrude above the board surface.

**4****STEP 4:  
pressure test ufh system**

1. **Prepare for Testing:** Close all manifold valves and connect the pressure testing pump to the system.
2. **Test Pressure:** Pressurise the system to the recommended pressure (typically around 4-6 bar) and maintain this pressure for at least 24 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.

**5****STEP 5:  
preparing the floor for finishing****OPTION 1 - LEVELLING SCREED OVER UFH BOARDS**

1. **Prime the UFH Boards:** Apply Tekcem Tekgrip primer to the UFH boards following the manufacturer's instructions. This will help the screed bond properly to the boards.
2. **Mix Tekcem 550 Fibre Screed:** Prepare the Tekcem 550 fibre screed according to the manufacturer's mixing instructions.
3. **Apply Screed:** Pour the mixed screed over the UFH boards, spreading it evenly with a trowel to achieve a nominal thickness of 6-10mm. Ensure a smooth and level surface.
4. **Allow to Cure:** Allow the screed to cure completely as per the manufacturer's recommendations before proceeding.

**OPTION 2 - INSTALL OVERLAY BOARDS**

1. **Select Overlay Board:** Use a minimum of 6mm overlay boards for optimal performance, available from The UFH Group.
2. **Measure and Cut:** Measure and cut overlay boards to fit the room dimensions.
3. **Lay Overlay Boards:** Lay the overlay boards over the UFH boards and pipes, ensuring they are well-aligned and tightly fitted.
4. **Fix Overlay Boards:** Secure the overlay boards with screws, ensuring fixings do not penetrate the UFH pipes beneath.

**6****STEP 6:  
final inspection**


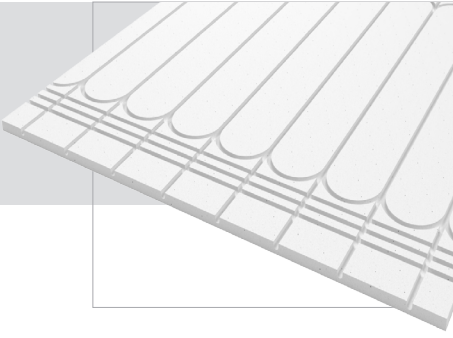
1. **Check for Levelness:** Use a spirit level to ensure the entire floor is level and there are no raised edges or gaps.
2. **Ensure Fixings Are Secure:** Verify all screws are properly countersunk and the floor is stable.

**7****STEP 7:  
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.

**SUMMARY**

By following these steps, obtaining a professional design layout from the manufacturer, using the recommended overlay board thicknesses, and applying an optional levelling screed with Tekcem 550 fibre screed after priming with Tekcem Tekgrip, you will ensure a successful and durable installation of Tekwarm routed EPS panels with a UFH system over a timber base. This approach guarantees accurate heat outputs and optimal performance of your UFH system, while ensuring compatibility with the chosen floor finishes. Ensuring a solid and well-fixed substrate is crucial to prevent screed cracking or system squeaking.

## TEKWARM

# EPS UFH BOARD

**Lightweight Expanded Polystyrene insulation available in 70, 100, 150, 200 and 250 grades, routed on one side to allow for fast and easy pipe installation.**

Tekwarm EPS UFH Board is manufactured from CFC and HCFC free EPS, grooved on one face as required to suit either 12 or 16mm diameter underfloor heating pipes, with radius returns as standard.

The panel size is 1200mm x 1200mm and boards are available in a range of thicknesses starting at 15mm, in 5mm increments.

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

**INSTALLATION**

Tekwarm EPS UFH Board 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 Gridboard UFH Board is suitable for use in new build or retro fit installations.

**DURABILITY**

Tekwarm Gridboard UFH Board is 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.

**ENVIROMENTAL**

Tekwarm Gridboard UFH Board Expanded Polystyrene has a Global Warming Potential (GWP) of zero and a low O-Zone Depletion Potential (ODP). Our Expanded Polystyrene is 100% recyclable.

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