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Installation Guide for Routed EPS Board Applications 150mm x 1000mm Aluminium Plate System



Designed to Heat. Built to Last

Tekwarm

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INSTALLATION GUIDE FOR ROUTED EPS BOARD APPLICATIONS

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150MM X 1000MM ALUMINIUM PLATE SYSTEM

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1. INTRODUCTION

The Tekwarm Single Aluminium Diffusion Plate System is designed for use with routed EPS underfloor heating boards where warm water UFH pipework is installed into pre-routed channels and supported by aluminium diffusion plates.

The aluminium diffusion plates are inserted into the routed EPS boards to provide a highly conductive layer around the pipework, helping distribute heat efficiently across the floor construction.

This system is suitable for floor build-ups where routed EPS boards are installed onto a suitable substrate and then overlaid with an appropriate structural or load-spreading board, screed board, dry floor deck or other approved flooring system.

The system typically includes:

- Tekwarm routed EPS boards
- Tekwarm single aluminium diffusion plates
- Tekwarm UFH pipe
- Mechanical fixings with screws and washers, where required
- Compatible high-tack spray adhesive, where bonding is required
- Suitable overboard or floor deck
- Pipe conduit / protection sleeves where required
- Manifold assembly
- Fixing tools and accessories
- Pressure testing equipment

The Tekwarm single aluminium diffusion plates are typically **150mm x 1000mm** and are designed to fit neatly into the routed sections of the EPS boards.

This guide covers the key stages of installation, including substrate checks, EPS board fixing, aluminium plate insertion, pipe installation, manifold connection, pressure testing and over boarding.

This guide should be read alongside the Tekwarm UFH design, EPS board layout, structural requirements, overboard manufacturer's guidance, floor finish requirements and all relevant British Standards and Building Regulations.

2. IMPORTANT NOTES BEFORE STARTING

Before installation begins, check that:

- The Tekwarm UFH design has been reviewed and understood.
- The manifold location has been agreed.
- The routed EPS board layout matches the UFH design.
- The correct aluminium diffusion plates have been supplied.
- The aluminium plates are suitable for the routed EPS board channels.

- The correct pipe diameter has been supplied.
- The receiving substrate is clean, dry, level and suitable.
- The fixing method has been confirmed.
- The boards are to be mechanically fixed using screws and washers or bonded using compatible high-tack spray adhesive.
- The overboard or floor deck specification has been confirmed.
- The final floor finish has been reviewed for UFH suitability.
- The total floor build-up has been checked.
- Door thresholds and floor level transitions have been reviewed.
- Any movement joints, expansion joints or service penetrations have been considered.
- The area is dry, weather-tight and suitable for installation.

Do not install the system if the routed EPS boards cannot be fully supported, securely fixed or bonded correctly. Aluminium plates are excellent at conducting heat, but they are useless if the board beneath is moving.

3. HEALTH AND SAFETY

Installation should only be carried out by competent persons.

Always wear appropriate PPE, including:

- Safety boots
- Gloves
- Eye protection
- Knee protection
- High-visibility clothing where required
- Dust protection where cutting EPS boards
- Cut-resistant gloves when handling aluminium plates

Aluminium plates can have sharp edges. Handle with care.

Where high-tack spray adhesive is used, follow the adhesive manufacturer's safety guidance. Ensure suitable ventilation is provided and avoid naked flames, ignition sources or smoking during application.

Adhesive products should be stored and used in accordance with the manufacturer's instructions.

Keep the work area clean and free from trip hazards. UFH pipe, EPS boards, aluminium plates and loose offcuts can create trip risks during installation.

Avoid unnecessary traffic over installed boards, plates and pipework. Where access is required, use suitable temporary protection.

4. TOOLS AND EQUIPMENT REQUIRED

Typical tools and equipment required include:

- Pipe decoiler

- Pipe cutter suitable for UFH pipe
- Tape measure
- Marker pen
- Utility knife or insulation saw
- Straight edge
- Soft broom or vacuum
- Screws and washers, where mechanically fixing EPS boards
- Drill / driver
- Compatible high-tack spray adhesive, where bonding boards
- Suitable roller or hand pressure tool for bonding
- Gloves for handling aluminium plates
- Spanners / manifold connection tools
- Pressure test pump
- Hose connections
- Water supply for filling
- Temporary pipe protection sleeves/conduit
- Suitable overboard fixing tools

The exact tools required will depend on the substrate, fixing method, EPS board layout, overboard type and project specification.

5. SUBSTRATE CHECKS AND PREPARATION

Before installing routed EPS boards, aluminium plates or pipework, the substrate must be inspected.

The receiving substrate should be:

- Structurally sound
- Clean and free from debris
- Dry
- Flat and level
- Free from sharp projections
- Free from oil, grease, dust, plaster residue or contaminants
- Suitable for mechanical fixing or adhesive bonding
- Capable of supporting the finished floor build-up
- Suitable for the intended floor loading

Remove all loose material, mortar droppings, plaster, timber offcuts, fixings, sharp objects and general site debris.

Sweep and vacuum the surface before installation.

The routed EPS boards must sit flat and be fully supported. Any unevenness, rocking, voids or localised high spots should be addressed before installation continues.

Do not install boards over unstable, damp, contaminated or uneven substrates.

Where the substrate is unsuitable, consult the main contractor, builder, architect, structural designer or Tekwarm technical team before proceeding.

6. FLOOR BUILD UP AND LEVEL CHECKS

Before installation, confirm the full floor build-up.

Check:

- Existing substrate level
- EPS board thickness
- Aluminium plate position
- Pipe diameter
- Overboard type and thickness
- Floor finish thickness
- Door thresholds
- Stair risers
- Skirting details
- Floor level transitions between rooms
- Movement joint positions
- Compatibility with adjoining floor areas

Do not start installation until the finished floor level has been checked and agreed.

The floor build-up must be suitable for the intended use, loading and final floor finish.

Where floor levels are tight, the routed EPS board depth, plate thickness, pipe diameter and overboard thickness must be reviewed carefully.

7. SETTING OUT THE INSTALLATION

Before fixing the EPS boards or inserting aluminium plates, review the Tekwarm UFH layout drawing.

Check:

- Room names and zones
- Manifold position
- Flow and return routes
- Pipe routes
- Loop lengths
- Pipe centres
- Board layout
- Board orientation
- Plate positions
- No-pipe zones
- Door thresholds
- Service penetrations
- Movement joints
- Overboard requirements
- Final floor finish requirements

The installer should mark out key room zones, manifold routes, no-pipe areas and any service zones before installation begins.

Pipe should generally not be installed beneath fixed units, kitchen islands, baths, shower trays, toilets, fitted wardrobes or areas where permanent fixtures may trap heat or where future fixings may penetrate the floor, unless specifically allowed within the Tekwarm design.

Dry-lay initial boards where helpful to confirm orientation, cuts and pipe routes before final fixing or bonding.

8. MANIFOLD POSITIONING AND MOUNTING

The manifold should be installed in the agreed location shown on the Tekwarm design.

The manifold should be:

- Accessible for commissioning, servicing and maintenance
- Positioned to allow neat pipe routing
- Located where all loops can return without excessive pipe congestion
- Mounted level
- Securely fixed to a suitable wall, cabinet or support frame
- Protected from impact and site damage
- Positioned high enough to allow suitable pipe bends and connections

Avoid positioning the manifold behind fixed units, in inaccessible cupboards or where future access will be restricted.

Allow sufficient space below the manifold for pipework to route neatly into the floor zone without kinks or tight bends.

Clearly identify flow and return bars before connecting pipework.

9. ROUTED EPS BOARD INSTALLATION

Tekwarm routed EPS boards should be installed in accordance with the Tekwarm UFH design and board layout.

The boards should be installed:

- Flat onto the prepared substrate
- Fully supported
- Clean and free from debris underneath
- In the correct orientation
- With routed channels aligned correctly
- With pipe routes matching the Tekwarm design
- Tightly butted together
- Without rocking, curling or movement
- With cuts kept neat and stable
- With suitable restraint to prevent movement

Boards should be positioned so that the routed channels line up between boards and allow continuous pipe routes.

Do not force boards into position. If the boards do not align correctly, stop and check the layout before continuing.

The EPS boards must remain stable during plate insertion, pipe installation, pressure testing and over boarding.

10. FIXING ROUTED EPS BOARDS

The routed EPS boards can be fixed using either:

- Mechanical fixings with screws and washers
- Compatible high-tack spray adhesive
- A combination of both where required by site conditions

The chosen fixing method must be suitable for the substrate, project requirements and intended floor build-up.

The aim is to ensure that the EPS boards remain flat, stable and fully restrained before the aluminium plates, pipework and overboard are installed.

Mechanical Fixing with Screws and Washers

Where mechanically fixing, use suitable screws and washers compatible with the substrate and EPS board.

Fixings should:

- Hold the board securely
- Prevent board movement
- Prevent board uplift
- Avoid crushing the EPS
- Be installed flush
- Be positioned away from pipe channels where possible
- Avoid future pipe routes
- Be suitable for the substrate
- Be spaced sufficiently to prevent rocking or lifting

Before drilling or fixing, check for buried services.

Do not overtighten fixings. Overtightening can crush the EPS and create unevenness in the floor build-up.

Bonding with High-Tack Spray Adhesive

Where bonding with high-tack spray adhesive, the receiving surface must be suitable for adhesion.

The substrate should be:

- Clean
- Dry
- Dust-free

- Stable
- Free from oil, grease or contaminants
- Suitable for the adhesive being used

Apply the high-tack spray adhesive in accordance with the adhesive manufacturer's instructions.

Consider:

- Open time
- Coverage rate
- Application temperature
- Ventilation
- Compatibility with EPS
- Compatibility with the substrate
- Bond strength requirements
- Whether one-sided or two-sided application is required

Only use adhesive products confirmed as suitable for EPS. Some solvent-based products can attack or damage EPS.

Once bonded, press the boards firmly into place. Use suitable hand pressure or a roller where required to improve contact.

Do not rely on adhesive bonding where the substrate is dusty, damp, friable or contaminated.

11. BOARD JOINTS, EDGES AND CUT SECTIONS

Board joints should be tight and stable.

Pay particular attention to:

- Perimeters
- Doorways
- Manifold routes
- Small cut sections
- Pipe return areas
- Board transitions
- Service penetrations
- Movement joint locations

Cut boards should be neat, fully supported and restrained.

Small EPS infill pieces should not be left loose. They should be mechanically fixed, bonded or otherwise restrained as required.

Avoid gaps where the overboard may deflect or where heat transfer may be affected.

Where board joints are uneven, rocking or misaligned, correct them before inserting aluminium plates or pipework.

12. INSTALLING TEKWARM SINGLE ALUMINIUM DIFFUSION PLATES

Tekwarm single aluminium diffusion plates are inserted into the routed channels in the EPS boards.

The plates are typically **150mm x 1000mm** and are designed to provide a conductive heat transfer layer around the UFH pipe.

The plates should be installed:

- Into the routed EPS channels
- Flat and fully seated
- Straight and aligned
- Without rocking or lifting
- Without sharp edges contacting the pipe
- With good contact to the pipe channel
- In accordance with the Tekwarm design
- Without forcing or distorting the EPS board
- Without overlapping unless specifically designed to do so

The plates must sit properly within the routed EPS board. If the plate is sitting proud, loose, twisted or unstable, correct the issue before pipe installation.

The aluminium plate should provide a clear and consistent channel for the pipe.

Where plates are cut or trimmed, sharp edges should be removed or protected to avoid damaging the pipe.

Do not install damaged, bent or heavily distorted aluminium plates.

13. ALUMINIUM PLATE LAYOUT AND HEAT TRANSFER

The aluminium diffusion plates are an important part of the system's thermal performance.

They help:

- Spread heat from the pipe
- Improve conductivity through the floor build-up
- Reduce localised hot and cold lines
- Improve system response
- Support even floor surface temperatures
- Improve overall UFH performance

To support performance:

- Use the correct plate size.
- Install plates in the correct routed channels.
- Ensure plates are fully seated.
- Avoid damaged or distorted plates.
- Ensure pipe sits fully within the plate channel.
- Ensure the overboard sits flat above the system.
- Avoid gaps or movement between board, plate and overboard.
- Protect the system from site damage before it is covered.

Poor contact between pipe, plate and floor deck can reduce heat output.

14. PIPE HANDLING AND STORAGE

Tekwarm UFH pipe should be handled carefully.

Before installation:

- Store pipe on a clean, dry surface.
- Keep pipe in its packaging until required.
- Protect pipe from sharp objects.
- Do not drag pipe across rough surfaces or aluminium edges.
- Do not install damaged, kinked, crushed or heavily scratched pipe.
- Do not expose pipe to unnecessary heat or naked flames.
- Use a pipe decoiler to prevent twisting.

Pipe should be installed in continuous loops from the manifold and back to the manifold.

Do not join pipework within the floor build-up unless specifically approved by Tekwarm and the project design team.

Any damaged pipe should be replaced.

15. LAYING PIPEWORK INTO THE ROUTED EPS BOARDS AND ALUMINIUM PLATES

Start each loop at the manifold.

Connect the pipe to the correct manifold port or leave sufficient pipe length for connection, depending on the preferred installation method.

Lay the pipe in accordance with the Tekwarm UFH design drawing.

Pipe should be laid:

- In the correct room or zone
- Into the routed EPS channels
- Into the aluminium diffusion plate channels
- Without kinks
- Without twisting
- With smooth bends
- Without sharp contact with aluminium edges
- Without excessive tension
- With flow and return routes kept neat at the manifold
- Without lifting the EPS boards or aluminium plates

Press the pipe carefully into the aluminium plate channels so that it is held securely.

The pipe should sit fully within the channel and maintain good contact with the aluminium plate.

Where the pipe does not sit correctly, do not force it. Check the route, plate position and board alignment.

Pipe bends must respect the minimum bend radius recommended for the pipe. If a pipe kinks, the affected section should be replaced or technical advice sought.

16. PIPE BENDS, RETURNS AND MANIFOLD ROUTES

Special care is required where pipe changes direction, returns to the manifold or enters/leaves the routed EPS board area.

Pipe bends should:

- Be smooth
- Avoid kinks
- Respect the minimum bend radius
- Avoid sharp aluminium edges
- Avoid excessive stress
- Be protected where required
- Avoid lifting the EPS boards
- Avoid lifting aluminium plates

At manifold routes, pipework can become congested. Ensure the pipework is neatly arranged and protected where required.

Where the pipe exits routed channels, use suitable bends, protection sleeves or transition detailing where needed.

Do not allow pipework to sit proud where it may interfere with the overboard.

17. MAINTAINING PIPE SPACING AND SYSTEM LAYOUT

The routed EPS board system is designed to maintain pipe spacing through pre-formed channels.

Do not alter pipe routes or centres without approval.

Changing pipe spacing or routes can affect:

- Heat output
- Floor surface temperature
- System balancing
- Comfort levels
- Flow rates
- Loop pressure loss
- Boiler or heat pump efficiency
- Overboard installation
- Final floor finish performance

The pipe should be checked as installation progresses to ensure it follows the correct routed path and layout.

Pay particular attention to:

- Perimeters
- Doorways
- Manifold routes
- Areas with obstacles
- Rooms with irregular shapes
- Board joints
- Cut board sections
- Loop returns

Where pipe routing needs to change due to site conditions, seek approval before proceeding.

18. PIPE SPACING AND NO-PIPE ZONES

Pipe spacing must follow the Tekwarm design.

Pipe should not normally be installed within areas where fixings may later penetrate the floor, unless clearly identified and protected.

No-pipe zones may include:

Kitchen islands
Fixed cupboards
Shower trays
Baths
Toilets
Stair bases
Floor-mounted partitions
Service penetrations
Areas requiring future floor fixings

Mark or photograph pipe positions before screeding. This is especially useful around kitchens, islands, thresholds, stair bases, partitions and service zones.

A photographic record should be retained with the project handover information.

19. OVERBOARDING THE SYSTEM

Once the EPS boards, aluminium plates and pipework have been installed and checked, the floor should be over boarded using a suitable board or floor deck.

Suitable overboard materials may include:

- Chipboard
- OSB

- Plywood
- Cement board
- Screed board
- Dry floor-board systems
- Other approved structural or load-spreading boards

The selected overboard must be:

- Suitable for the intended loading
- Suitable for use over UFH
- Suitable for the floor finish
- Compatible with the project build-up
- Installed in accordance with the board manufacturer's instructions
- Fixed correctly
- Glued where required
- Fit for the intended purpose

The overboard should sit flat over the routed EPS boards, aluminium plates and pipework without rocking, bouncing or creating high points.

The overboard should be fixed and/or glued as required using manufacturer-approved products and methods.

Fixings must not penetrate or damage the UFH pipe.

Before fixing boards, clearly identify pipe routes and safe fixing zones.

Where chipboard is used, tongue-and-groove joints should be glued where required by the board manufacturer.

Where plywood, OSB, cement board or screed board is used, follow the manufacturer's guidance on thickness, orientation, expansion gaps, fixing centres, adhesive, primer and suitability for the final floor finish.

20. FIXING PRECAUTIONS DURING OVERBOARDING

When over boarding, take extreme care to avoid pipe damage.

Before fixing:

- Check pipe routes.
- Photograph pipe routes.
- Mark safe fixing zones.
- Confirm aluminium plate positions.
- Confirm board fixing method.
- Use suitable fixing lengths.
- Avoid fixing into pipe channels.
- Avoid over-penetration.
- Do not use fixings where pipe location is uncertain.

The overboard fixing pattern should follow the board manufacturer's instructions and structural requirements.

Where adhesive or glue is specified, use the correct product. The adhesive must be compatible with the board, EPS system and intended floor build-up.

After over boarding, do not drag heavy materials across the floor unless suitable protection is used.

21. MANIFOLD CONNECTIONS

Once each loop has been installed, return the pipe to the correct manifold connection.

Cut the pipe cleanly and square using a suitable pipe cutter.

Connect each loop to the correct manifold port using the appropriate Tekwarm manifold connection set.

Ensure:

- Pipe ends are clean and undamaged
- Connections are fully inserted
- Compression fittings are tightened correctly
- Flow and return are connected to the correct bars
- Each loop is clearly labelled
- Loop references match the Tekwarm design drawing
- Pipework below the manifold is neat and protected
- Pipe bends into the manifold are smooth and not stressed

Do not overtighten manifold connections. Follow the manifold fitting guidance.

Each loop should be clearly labelled with the room name or circuit number.

22. FILLING THE SYSTEM

Before pressure testing, the system must be filled with water, and air must be removed from each circuit.

Typical filling procedure:

- Close the manifold isolation valves from the primary heating system.
- Connect a water supply to the manifold fill point.
- Connect a hose from the drain point to a suitable drain.
- Open one UFH loop at a time.
- Flush water through the loop until air is removed and water runs clear.
- Close the completed loop.
- Repeat for each loop.
- Once all loops are filled and vented, open all loops ready for pressure testing.

The system must be fully vented. Air left in the pipework can affect the pressure test and later system performance.

Pressure testing should be carried out hydraulically using water unless otherwise stated by the project specification or Tekwarm guidance.

23. PRESSURE TESTING BEFORE OVERBOARDING OR FLOOR FINISH

The Tekwarm UFH system must be pressure tested before it is permanently covered or concealed.

Pressure testing confirms the integrity of the pipework and manifold connections before the system becomes difficult to access.

Ideally, the system should be pressure tested before over boarding and kept under suitable pressure during over boarding so accidental damage can be identified.

A typical pressure testing process is:

- Ensure all pipe loops are connected to the manifold.
- Ensure all loop valves are open.
- Ensure the manifold is isolated from the primary heating system.
- Connect a suitable hydraulic pressure test pump.
- Fill and fully vent all loops.
- Increase the pressure gradually.
- Check all manifold connections and visible pipework.
- Maintain the required test pressure for the required test period.
- Record the test pressure, duration, date and installer details.
- Inspect for any pressure loss or visible leaks.
- Do not overboard or conceal the system until the pressure test has passed.

The Tekwarm UFH system should be hydraulically pressure tested before the pipework is permanently concealed. Unless project-specific guidance states otherwise, the system should be tested to 4 bar and checked for pressure stability and visible leaks. The system should remain under suitable pressure during over boarding and any subsequent floor installation works.

Where there is a risk of freezing, do not leave the system filled with untreated water unless suitable frost protection measures are in place.

Do not proceed if the pressure test has failed or unexplained pressure loss is observed.

24. PRESSURE TEST RECORD

A pressure test record should be completed before the system is permanently covered.

Recommended information to record:

- Project name
- Plot / area / room reference
- Installer name
- Date of test
- Manifold reference
- Number of loops tested

- Pipe diameter
- Test pressure
- Test duration
- Start pressure
- End pressure
- Ambient temperature
- Any pressure loss
- Confirmation of visual inspection
- Installer signature
- Client / site representative signature where required

A copy of the pressure test record should be retained as part of the project handover file.

25. PRE-OVERBOARD INSPECTION CHECKLIST

Before over boarding, check:

- ✓ Substrate clean, dry, level and suitable
- ✓ EPS boards fully supported
- ✓ EPS boards fixed or bonded securely
- ✓ No loose, rocking or lifted boards
- ✓ Board joints tight and stable
- ✓ Correct high-tack spray adhesive used where bonding
- ✓ Correct screws and washers used where mechanically fixing
- ✓ Fixings flush and not crushing EPS
- ✓ Aluminium diffusion plates installed correctly
- ✓ 150mm x 1000mm plates installed where specified
- ✓ Plates fully seated into routed channels
- ✓ No bent or damaged plates installed
- ✓ No sharp aluminium edges contacting pipe
- ✓ Pipework installed to design
- ✓ Pipe fully seated in aluminium plate channels
- ✓ Pipe bends smooth and not kinked
- ✓ No pipework sitting proud
- ✓ Loops connected to manifold
- ✓ Loops labelled correctly
- ✓ System filled and vented
- ✓ Pressure test completed and recorded
- ✓ System left under pressure for over boarding
- ✓ Pipe routes photographed
- ✓ Safe fixing zones marked for over boarding

26. PRE-FLOOR FINISH CHECKLIST

Before installing final floor finishes, check:

- Overboard type suitable for UFH

- Overboard installed to manufacturer's guidance
- Boards fixed correctly
- Boards glued where required
- No fixings have damaged UFH pipework
- Floor is flat, stable and suitable
- UFH pressure has remained stable
- UFH commissioning has been completed where required
- Floor finish manufacturer's UFH guidance has been reviewed
- Maximum floor surface temperature has been confirmed
- Any required primers, adhesives or decoupling layers have been specified

Different floor finishes have different UFH requirements. Timber, laminate, vinyl, carpet, tiles and resin finishes all have different rules.

27. COMMISSIONING AND INITIAL HEAT-UP

The UFH system should not be operated at full temperature immediately after installation.

Commissioning should be carried out gradually and in accordance with:

- Tekwarm guidance
- Heat source manufacturer's guidance
- Floor finish manufacturer's guidance
- Overboard manufacturer's guidance
- Project specification
- Relevant UFH standards

The initial heat-up cycle should be controlled and gradual.

Do not use the UFH system to force-dry wet trades or accelerate construction works unless specifically approved.

A gradual commissioning process helps reduce thermal shock, movement, floor finish failure and unnecessary stress within the floor build-up.

28. FLOOR FINISH CONSIDERATIONS

Before installing floor finishes, check:

- Overboard surface condition
- Board moisture content where relevant
- Floor stability
- UFH commissioning records
- Floor finish manufacturer's requirements
- Adhesive compatibility
- Maximum floor surface temperature
- Need for primers, smoothing compounds or membranes
- Expansion gap requirements

- Suitability of the board for the chosen finish

Resilient floor finishes, timber, laminate, vinyl, carpet and tiles all have different requirements.

The floor finish installer must confirm that the overboard is suitable before installing the final covering.

29. COMMON INSTALLATION MISTAKES TO AVOID

Avoid the following:

- Installing over an uneven or contaminated substrate
- Failing to clean the substrate before installation
- Using adhesive on dusty, damp or friable surfaces
- Using spray adhesive that is not compatible with EPS
- Failing to provide ventilation when using spray adhesive
- Overtightening screws and crushing the EPS board
- Using washers that are too small
- Leaving EPS boards loose, rocking or unsupported
- Failing to align routed channels correctly
- Leaving gaps between boards
- Installing damaged or bent aluminium plates
- Allowing aluminium plates to sit proud
- Leaving sharp aluminium edges near the pipe
- Failing to seat the pipe fully into the plate channels
- Kinking pipe at bends or returns
- Changing pipe routes without approval
- Installing pipe below fixed furniture without design approval
- Failing to photograph pipe routes before over boarding
- Fixing overboard through pipework
- Using unsuitable overboard material
- Failing to glue boards where required
- Using incorrect fixings or adhesive
- Failing to pressure test before covering the system
- Not keeping the system under pressure during over boarding
- Installing floor finishes without checking UFH suitability
- Running the UFH system too hot too soon

A routed EPS board system works brilliantly when the layers are stable, tight and flat. If the boards are loose and the plates are proud.

30. TEKWARM SINGLE ALUMINIUM DIFFUSION PLATE INSTALLATION SEQUENCE

1. Review the Tekwarm UFH design.
2. Confirm manifold position.
3. Check total floor build-up.
4. Check substrate is clean, dry, level and suitable.

5. Dry-lay routed EPS boards where required to confirm layout.
6. Confirm board channels align with the Tekwarm design.
7. Mechanically fix EPS boards using suitable screws and washers, or bond using compatible high-tack spray adhesive.
8. Ensure boards are flat, stable and fully supported.
9. Secure small cut sections and perimeter pieces.
10. Insert Tekwarm 150mm x 1000mm single aluminium diffusion plates into the routed channels.
11. Ensure plates are fully seated and not sitting proud.
12. Remove or protect sharp aluminium edges where required.
13. Lay pipework from the manifold.
14. Press pipe securely into the aluminium plate channels.
15. Check pipe is fully seated and not kinked.
16. Protect pipe at transitions where required.
17. Return pipe loops to the manifold.
18. Cut, connect and label each loop.
19. Fill and flush each loop individually.
20. Vent all air from the system.
21. Hydraulically pressure test the system.
22. Record the test results.
23. Leave the system under suitable pressure.
24. Photograph pipe routes and plate layout.
25. Mark safe fixing zones for over boarding.
26. Install suitable overboard in accordance with manufacturer's guidance.
27. Fix and glue boards as required using correct products.
28. Confirm pressure remains stable after over boarding.
29. Proceed with floor finish installation only once approved.

31. INSTALLER HANDOVER CHECKLIST

The installer should provide the following information at handover:

- UFH design drawing
- Manifold schedule
- Pipe layout photographs
- Plate layout photographs
- Loop identification records
- Pressure test certificate
- Board fixing method used
- Confirmation whether screws and washers or high-tack spray adhesive were used
- Confirmation that routed EPS boards were flat and fully supported
- Confirmation aluminium plates were installed and fully seated
- Confirmation overboard type installed
- Confirmation board fixing and gluing method used
- Commissioning guidance
- Any deviations from design
- Any areas requiring special attention

32. DISCLAIMER

This guide is provided as general installation guidance for Tekwarm Castellated Panel UFH systems with self-adhesive backing. It does not replace project-specific design, manufacturer instructions, screed supplier guidance, structural advice or statutory requirements.

All installations must be carried out by competent persons and in accordance with the Tekwarm design, relevant British Standards, Building Regulations, screed manufacturer guidance and floor finish manufacturer requirements.

Where site conditions differ from the design or specification, works should stop and advice should be sought before proceeding.

Tekwarm / TekGroup accepts no responsibility for failures caused by incorrect installation, unsuitable substrates, unapproved design changes, poor adhesion due to unsuitable receiving surfaces, incorrect panel restraint, panel uplift, screed passing beneath panels, incorrect screed installation, premature heating, inadequate drying, incompatible floor finishes or failure to follow relevant manufacturer guidance.