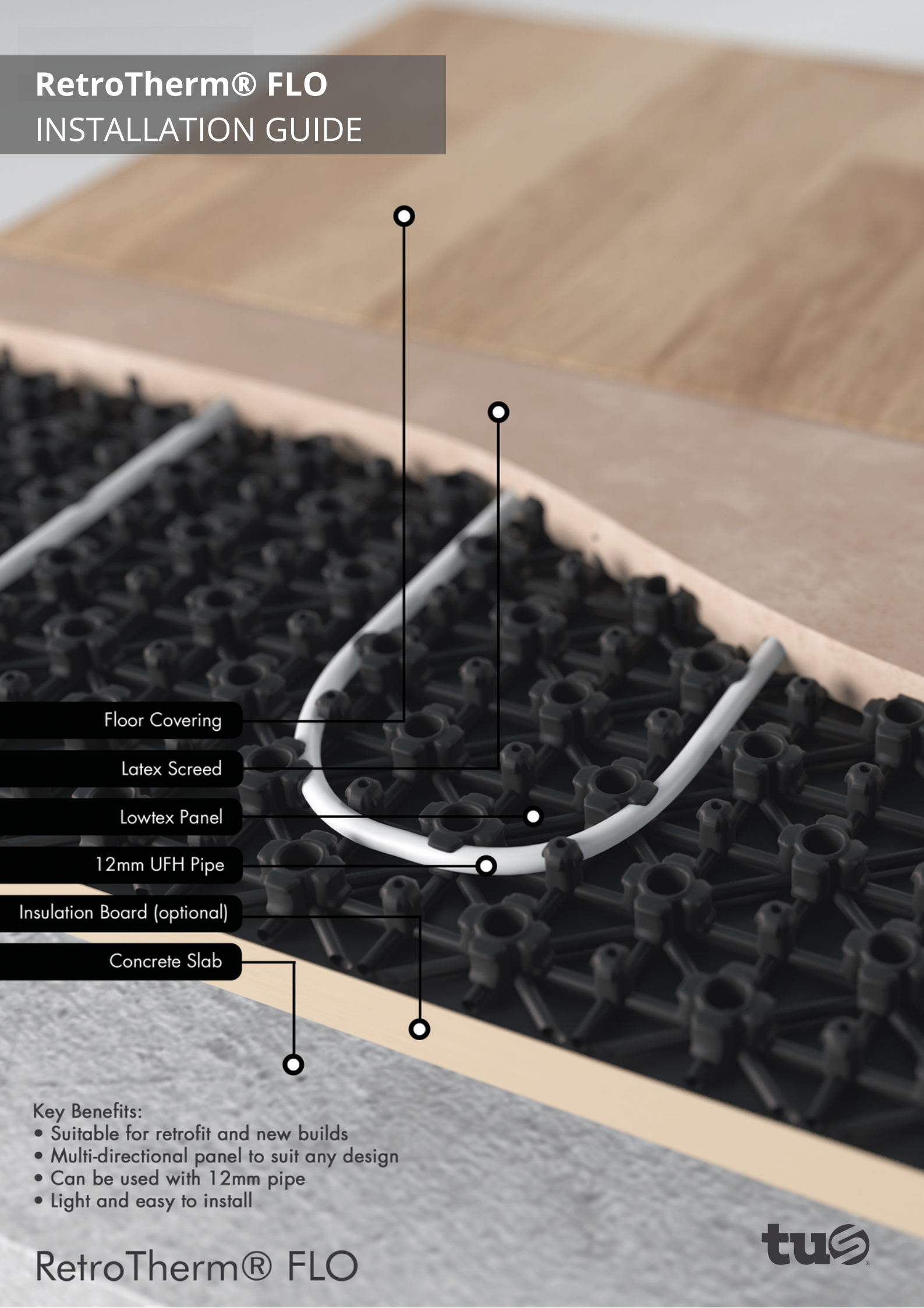
RetroTherm® FLO
INSTALLATION GUIDE



Key Benefits:
- Suitable for retrofit and new builds
- Multi-directional panel to suit any design
- Can be used with 12mm pipe
- Light and easy to install

RetroTherm® FLO

RetroTherm® FLO UFH SYSTEM

INTRODUCTION

Suitable for both retrofit and new build applications, RetroTherm® FLO is a multi-directional panel that suits any underfloor heating design.

The RetroTherm® FLO system uses a 12mm PE-Xa pipe and can be covered with screed as low as 18mm in total making it a fantastic option in renovation projects over existing solid floors.

Installation is faster and more flexible than other low profile panels systems due to the multi-directional nature of the panels.

Floor Preparation

It is essential that the sub-floor is prepared and made sound and level and free of dust before the RetroTherm® FLO panels are installed.

If required, use a self-levelling compound to fill in any holes or areas to ensure a flat surface before laying any panels. Laying panels on uneven surfaces could result in the floor finish cracking or failing over time.

We have made assumptions that current building regulations have been followed and a suitable layer of floor insulation has been included within the floor construction.

COMPONENTS USED:
UFH Manifold & Control Pack: Size dependant on UFH design
Pipe: 12x2mm PEXa (Coil Sizes: 80m/240m)
RetroTherm® FLO Panel: L1050 x W650 x D15mm

TOOLS REQUIRED:
Pipe De-Coiler, Pipe Shears, Pipe Reamer, Adjustable Spanner, suitable cutting tool for cutting plastic panels to size.

TECHNICAL INFORMATION

UFH DESIGN

Prior to installation please ensure you have received your detailed UFH CAD proposal from your account manager and you are happy that the system design meets your requirements.

INSULATION

Provided by others - In accordance with Part 'L' of the current Building Regulations, a suitable layer of insulation material should be included within the floor construction. It is the responsibility of the Architect or Builder to ensure compliance. However, in all instances insulation must be installed beneath the underfloor heating system in order to ensure that any downward heat loss does not exceed 10W/m2, in accordance with BS EN 1264.

HEAT OUTPUTS

	Tile/ 6mm ply*	Engineered Wood Floor	Carpet & Underlay 2 TOG/
Flow/Return Temp	Heat Output W/m2		
50/45	128	85	66
45/40	102	68	53
40/35	77	51	40

Not allowed as per BS EN 1264

*PLEASE NOTE: The above are typical heat outputs based upon BS EN 1264, 20°C room temperature, and a delta T of 5°C.

This is not necessarily representative of the system you are installing. A number of variables including screed depth, flow temperature, pipe spacings, floor covering and insulation levels will dictate heat output levels.

Details of heat outputs specific to your project are displayed on the UFH CAD design provided.

If you are unsure about any aspect of your design or installation please contact TUS on 01283 850040 or email info@tradeunderfloor.co.uk

INSTALLATION

1 - INSTALLING THE MANIFOLD

The manifold location will be shown on your UFH CAD design. When you have located the correct positioning fix the manifold firmly to a wall ensuring there is adequate space available for access to either side of the manifold for future servicing and maintenance.

Manifolds are usually fitted at least 600mm from the floor to allow pipes to be connected up to the manifold easily.

Refer to the manufacturers instructions provided for detailed installation instructions regarding the manifold, ball valves and pipe connectors.

2 - INSTALLING THE RETROTHERM® FLO PANELS

2.1 - Ensure the sub-base and room edges are sealed and waterproofed. Install edge insulation strip around the perimeter walls to allow for expansion in the screed and to limit the heat transfer to walls.

2.2 - Temporarily lay the RetroTherm®FLO panels out across the floor to best fill the space available.

When you are satisfied with the layout, remove the backing paper from the adhesive on the underside of the panels and press firmly in place on the sub-base.

2.3 - Continue laying panels in subsequent rows until you have completed the whole area.

2.4 - Once the main floor areas have been covered with panels, you will likely have some small areas where there are gaps between panels. Cut panels into smaller sections and fill these areas as best as possible.

It is not always possible to lay multiple pipes into a panel (for example where multiple pipes run alongside each other coming out of the manifold) so these areas can be left and filled in with self-levelling compound to the same height as the panels post-installation.

3 - INSTALLING THE PIPE INTO THE RETROTHERM® FLO PANELS

3.1 - When all panels are laid it is time to start installing the pipe. Lay the pipe in accordance with the UFH CAD design and return to the manifold at the appropriate distance. Our pipes are labelled every linear metre so you can easily see how much pipe you have laid and check this against the CAD design if necessary.

3.2 - Lay the pipe by pushing it into the grooves within each panel. The specifically designed nodules on the panels will guarantee the pipe is held in place however it is important to ensure the pipes are pushed in firmly and sit below the top of the panels.

3.3 - Once you have completed the first loop, connect the pipe to the return rail (bottom rail on the manifold) and begin laying the next loops.

3.4 - Once all loops are complete and connected to the manifold ensure the system is filled, vented and pressure tested as outlined in the next steps.

FILLING & VENTING THE SYSTEM

1. Once all of the circuits have been completed, and all connections are tight, connect a suitable hose to the upper drain valve and a second hose to the lower drain valve on the right hand side of the flow and return manifold.

2. Connect the Upper drain valve to the cold water fill. Ensure both the red and blue isolating ball valves are closed and all flow meters are closed on the flow rail. On the return rail, all actuator valves should be open. Working from the left open up the flow meter on the first manifold port. With all of the remaining circuits closed, open up both drain valves. You are now ready to flush out the first loop. Visually check the water coming out of the hose from the lower drain valve is flowing freely without any bubbles into a suitable drain/bucket.

3. Repeat the process on the remaining circuits. **IMPORTANT!** When each loop has been flushed correctly, ensure that the flow meter is closed before moving on to the next port. When flushing the underfloor heating system, only 1 loop at a time should be open. When all loops are flushed, open all flow meters and close the lower drain valve first and then the upper to maintain pressure within the manifold.

You can now vent any remaining air in the system through the manual or auto air vents.

PRESSURISING THE SYSTEM

Once all of the loops are flushed and air has been removed, the system should be pressurised to 6 bar, using a suitable pressure testing pump.

Open all of the circuit flow meters and close off the upper drain valve on the right hand side of the manifold. Connect the pressure tester to the lower drain valve, and raise the pressure to 6 bar.

TESTING PERIOD

We recommend holding the system at 6 bar pressure for 1 hour.
The pressure gauge may drop even though there are no leaks. This is due to the temperature change of the water. Generally in 1 hour you will recognise a leak.

IMPORTANT! make sure a suitably responsible person witnesses the pressure test, and signs to say the test was successful. Make sure you carry out a thorough visual inspection of all the pipework before you leave site.

CIRCUIT PRESSURE TESTING REPORT

Floor Name	Room Name	Circuit No.	Pass/Fail	Key Notes

Installer/Tester:
Name: Signature: Date:

Witness:
Name: Signature: Date:

FLOOR COVERINGS & SELF LEVELLING

The table below shows the suggested installation methods to be followed to ensure the best outputs are achieved without risk to the floor finish.

Floor Finish	Levelling Compound Minimum Thickness
Tiles	For applications where ceramic type tiles are being installed over the RetroTherm® FLO system, the latex screed needs only to be level with the top of the nodules on the panel. Minimum screed depth 15mm. Tile adhesive, suitable for use with underfloor heating, can then be applied directly on top of the panel.
Carpet / Wood / Laminate / Vinyl / LVT	For applications where carpet, laminate and vinyl are being installed over the RetroTherm® FLO system, an additional 3mm of latex screed should be installed over the top of the panel to create a solid, smooth screed surface. Minimum screed depth 18mm. Install the floor finishes in accordance with the manufacturers recommendations.

IMPORTANT!
Please confirm with the floor covering manufacturer that it is suitable for use with underfloor heating.

BS EN 1264 advises that, in occupied areas, the floor temperature MUST NOT exceed 29°C. It also states that, when using timber floor coverings, the surface temperature must not exceed 27°C.

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