

# WARM-BOARD INSTALLATION GUIDE

Floor Covering

Overfloor Screed Panel

10/12mm UFH Pipe

End Support

Concrete Slab

## Key Benefits:

- Ideal for Retrofit or New Build
- Quick & 'dry' installation
- Low profile: 15mm or 18mm
- Excellent Heat Outputs

OVERFLOOR SYSTEM



# INTRODUCTION

WARM-BOARD utilises a 15mm or an 18mm high density dry screed board, which acts as a heat conducting surface, transferring the heat from the pipes to the heated floor above. Once up to temperature, it delivers sufficient heat output to provide warm and even ambient temperatures within the living space.

The best floor coverings to combine with the WARMBOARD are hard surfaces such as stone and tile, as they offer the least resistance to heat transfer compared to carpets.

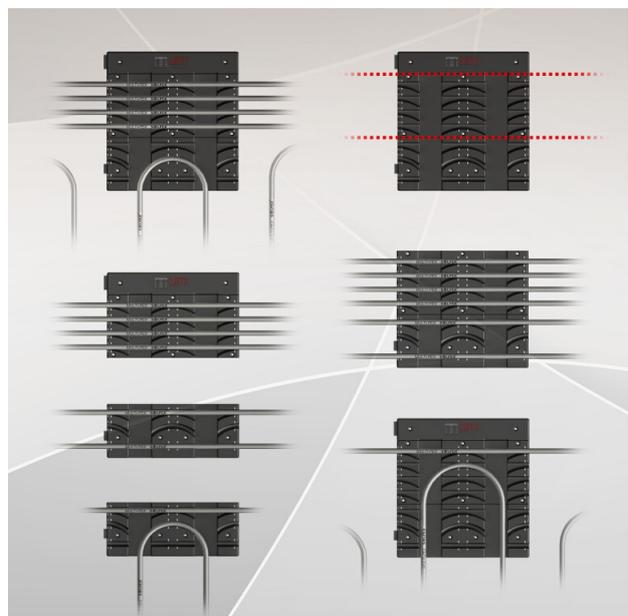
The main benefit of the WARM-BOARD, is the option for the direct application of tiles (subject to structural integrity), as it can be applied directly with the use of flexible adhesive.

However, in most instances, a 4 to 6mm levelling compound is recommended prior to tiling. When floor coverings such as carpet are to be fitted, the system design must factor in the extra heat output that will be needed; this loss in output needs to be negated by increasing the flow temperature.

# INSTALLATION

The WARM-BOARD End Support is a revolutionary, multifunctional underfloor heating pipe and floor support system. The End Support with its multiple snapping points enables a more flexible approach to underfloor heating installation, giving the installer the benefit of installing larger floor areas.

With the integral pipe securing system it allows a trouble free quick installation of the pipe work, ensuring the underfloor pipe work remains fixed in position. The word support has a multiple meaning; the product offers a support to the floor covering above around the perimeter of the room, without the requirement of a biscuit screed; it supports the pipe work once pressed into place



# TECHNICAL INFORMATION

## PIPE OPTIONS

PEX 5 layer 12mm or 10mm

## COIL SIZES

60m, 80m, 120m and 240m

## BOARD DIMENSIONS

600mm x 800mm x 18mm (WxLxD)

600mm x 800mm x 15mm (WxLxD)

## 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/m<sup>2</sup>, in accordance with BS EN 1264.

	Tile/ 6mm ply*	Engineered Wood Floor	Carpet 1.5 TOG/ 6mm ply
Flow/Return Temp	Heat Output W/m <sup>2</sup>		
50/45	96		49
45/40	78	56	39
40/35	60	43	30
35/30	42	30	21

**Not allowed as per BS EN 1264**

\*Typical heat outputs based upon BS EN 1264 20C room temperature, delta t 5, tile or stone covering  
- Due to the variability of parameters that effect the heat output of an underfloor heating system - i.e. flow temperature, pipe spacings, floor covering conditions, PLEASE contact the technical department on representation of system outputs.

\*\*Please ensure structural integrity of the floor is confirmed - The manufacturer recommends a minimum of a 4-6mm layer prior to tiling. Flexible adhesive MUST be used.

**WARNING! Before installing your underfloor heating system, you MUST ensure you are happy that the system is fit for your purpose, and that the designs are strictly followed. Please call TUS on 01283 850040 for further advice if you are unsure.**

# INSTALLATION

## 1.

### Planning the WARM BOARD system

Please follow pipe circuit layout for warm board positioning (check manifold locations are correct). Due to the nature of the WARM-BOARD system, there may be alterations to the design, and changes may need to be applied to the pipe routes.

## 2.

Start by laying the first two End Supports into the corner of the room and fix to the wood floor using the available screw holes. Alternatively, if fitting onto a concrete floor, then use either the WARM BOARD adhesive to bond the returns to the floor, or fix directly through to the concrete by raw plug and screw.

## 3.

Lay the first WARMBOARD panels against the first two End supports. Clean down the boards and ensure there is a 3mm bead of adhesive along the edges, this will ensure that the boards are secure.

### **WARNING!**

**Ensure the floor is structurally sound and level, prior to laying the panels. It is important to ensure the floor has been swept thoroughly.**

**IMPORTANT! Ensure that the warm-board panels line up with the end supports, and a 2mm gap is allowed for between each panel. Adjust the boards to suit.**

**Please ensure the insulation below the board meets the current building regulation requirements. When installing above an un-heated area or a ventilated void, you "MUST" ensure the correct U Value is achieved.**

# INSTALLATION (continued)

## 4.

Upon approaching the end of the first row, place two WARM-BOARD End Supports into the corner up against the wall. This will leave a final cut of the WARM-BOARD to complete the first row, if required.

## 5. IMPORTANT!

Ensure that the WARM- BOARD panels line up with the end supports. Adjust the boards to suit.

Make sure the pipe leaving the board is aligned central to the opening within the End Support.

## 6.

Work your way back up the room, staggering the panels as you go. Ensure you apply the 3mm bead of WARM-BOARD glue to all edges.

## 7.

Upon completion of the first row, start the process again by placing two more WARM-BOARD End Supports next to the existing ones, and secure with the Integral Interlocking points. Following this, you will need to work your way back up the room, staggering the panels as you go. Ensure you apply the 3mm bead of WARM-BOARD glue to all edges.

## 8.

Start by fixing the underfloor heating manifold to the wall, about 500mm from the floor to the top of the flow meters. Connect the first circuit to the manifold with the manifold pipe connectors.

## 9.

Start to roll the pipe into the WARM- BOARD End Support, utilising the self-retaining pipe dips, and continue to push the pipework into the connecting pipe runs until you reach the other end of the room.

## 10.

Start to push the pipe into the WARM-BOARD, ensuring the pipe is fixed beneath the surface of the board (preferably using a rubber mallet to ensure a good fixing)

## 11.

Use a small piece of the underfloor heating pipework to place in between the groove joining two boards. This will help to keep the floor in place.

## INSTALLATION (continued)

### 12.

Continue to lay the pipe along the room until you reach the opposite end by walking the pipe into the groove as you go. Once you reach the end of the room, use the End Support to return the pipe back towards the other end.

### 13.

Complete the first circuit and connect the return pipe to the manifold using the pipe connectors supplied.

Repeat all circuits.

### 14.

Upon completion of the underfloor heating pipe circuits - ensure all pipe work is pressured tested (conforming to BS EN 1264).

#### TIP

Use a small piece of the underfloor heating pipework to place in between the groove joining two boards. This will help to keep the floor in place.

# FLOOR COVERINGS

## **Ceramic tiles. Slate, Stone etc**

The warm board can be covered with a 5-6mm bed of self levelling compound before applying tile adhesive and tiles, OR you can apply tile adhesive directly on top of the panels using a high quality S2 tile adhesive. The boards must be primed with Ultra Primer MSP.

## **Laminate and Engineered Wood**

There are a several options for preparation of the warm boards prior to laying a laminate or engineered wooden floor. If installing as a floating floor an underlay should be laid on top of the warm board prior to laying the floor covering on top, this underlay MUST be below 0.5TOG in order to maintain efficiency.

If you wish to glue the engineered/laminate down with a wood floor adhesive (this will provide a better output) you must install either a 8-10mm self-levelling compound or a 6/10mm cement board over the top of the panels first prior to gluing the flooring down to ensure an even heat distribution. We recommend a floor finish with a maximum thickness of 18mm. If using levelling compound an MSP primer must be used on the boards first.

## **Carpet and Underlay**

Prior to a carpet and underlay you can install an 8-10mm layer of self levelling compound on top of the warm boards (applying primer MSP first) or you can install a 6/10mm cement board or equivalent plywood on top. These boards can be screwed down into the panels carefully at every 150mm centres. A cement board or levelling compound will be more efficient than using a plywood, as they have a much lower thermal resistance allowing the heat to flow through more efficiently.

# FLOOR COVERINGS (continued)

## **Linoleum and Vinyl**

When applying a lino and vinyl floor finish to the warm board, a completely flat surface is required. On top of the warm board a layer of 8- 10mm of self levelling compound must be installed (priming the panels with Ultra Primer MSP first) or an equivalent 10mm cement board can be laid on top such as 'No more Ply' or 'Hardie Backer'. These boards must be screwed down at every 150mm centres or glued with a suitable adhesive. We do not recommend Plywood as there is a greater risk of movement due to expansion and the heat output will be restricted.

### **IMPORTANT!**

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

**BS EN1264 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.**

# FLUSHING THE SYSTEM

1. Once all of the circuits have been completed, and all connections are tight, connect a suitable hose to the upper and lower drain valve on the right hand side of the flow and return manifold.
2. Connect the lower drain valve to the cold water fill. Ensure both the red and blue isolators are closed and all flow meters and the lock shields are closed. Working from the left open up the flow meter and corresponding lock shield valve for the first circuit. With all of the remaining circuits dosed, open up both drain valves. You are now ready to flush out the first loop. Visually check the water coming out of the hose into a suitable drain. Ensure the water flows freely without any bubbles.
3. Repeat the process on the remaining circuits. **IMPORTANT!** When each loop has been flushed correctly, ensure that both the lock shield and the flow meter are closed. When flushing the underfloor heating system, only 1 loop at a time should be open.

# PRESSURISING THE SYSTEM

Once all of the loops are flushed and air has been removed, the system must be pressurised to a minimum of 4 bar, using a suitable pressure testing pump. Open all of the circuit lock shields, along with their subsequent flow valves, and close off the upper drain valve on the right hand side of the manifold. Connect the pressure tester to the lower valve, and raise the pressure to minimum of 4 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.

## **IMPORTANT**

**Please complete the circuit pressure test report and send to TUS to validate the warranty.**

