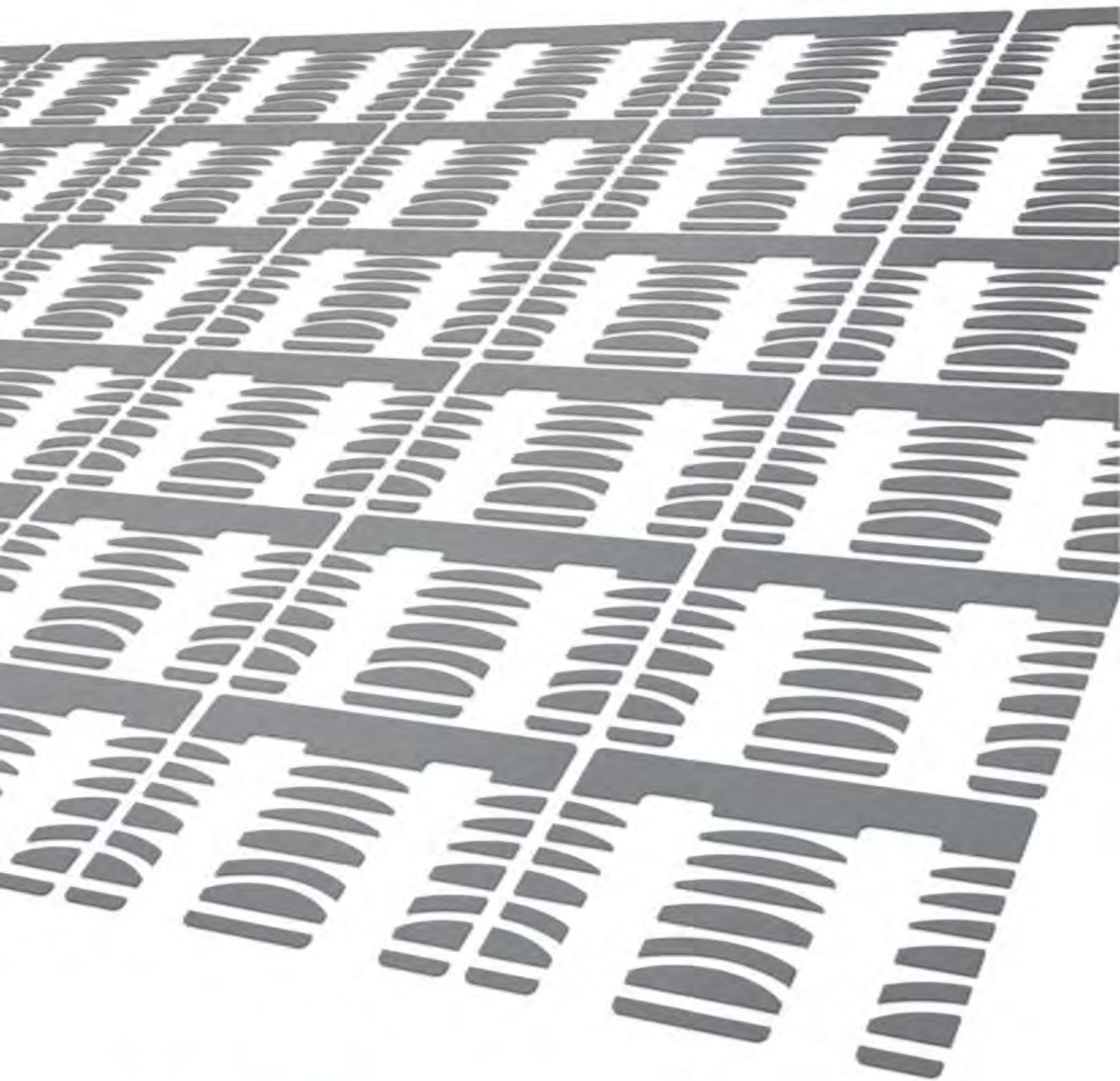


UNDERFLOOR HEATING SYSTEMS DEVELOPED BY **SOLFEX**
energy systems



WARM-BOARD INSTALLATION GUIDE



- Tile floor covering
- 18mm or 15mm WARM-BOARD
- 12mm or 10mm PEXLINE 5 Layer Pipe
- WARM-BOARD End Support
- Existing concrete floor



WARM-BOARD

Over floor 'LOW PROFILE' dry screed system

Patent Pending P30561GB1, P30562GB1

Suitability

A full 'OVER FLOOR' solution, for use on both suspended and concrete floors.

Flow/Return Temp	Tile Direct**	Engineered Wood Floor	Carpet 1.5 TOG /6mm ply
	Heat Output W/m ²		
55/50	114		55
50/45	95		47
45/40	77	56	38
35/30	41	30	21
30/25	24	17	12

Not allowed as per BS EN 1264

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

Features & benefits using WARM-BOARD system.

- Provides ready-made pipe spacing's
- Can be used on top of all floor constructions 'RETROFIT' and 'NEW CONSTRUCTION'
- Good for large regular shaped areas
- Quick installation & direct laying of tiles
- Low Profile 15mm and 18mm
- Typical outputs up to 100 w/m²*
- (WxLxD) 800mm x 600mm x 15/18mm

Tested and verified by BSRIA

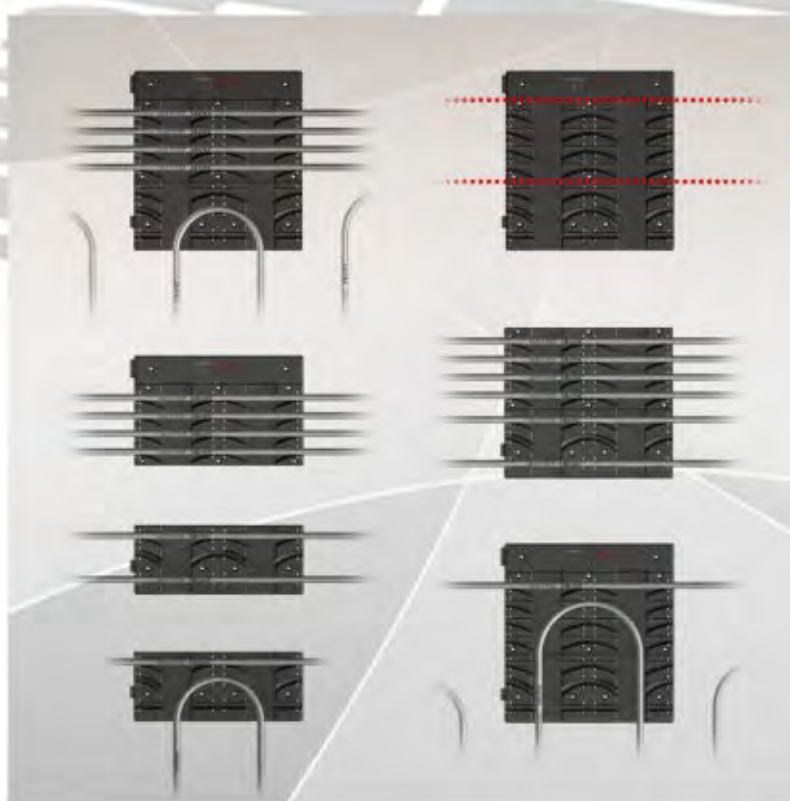


INTRODUCTION

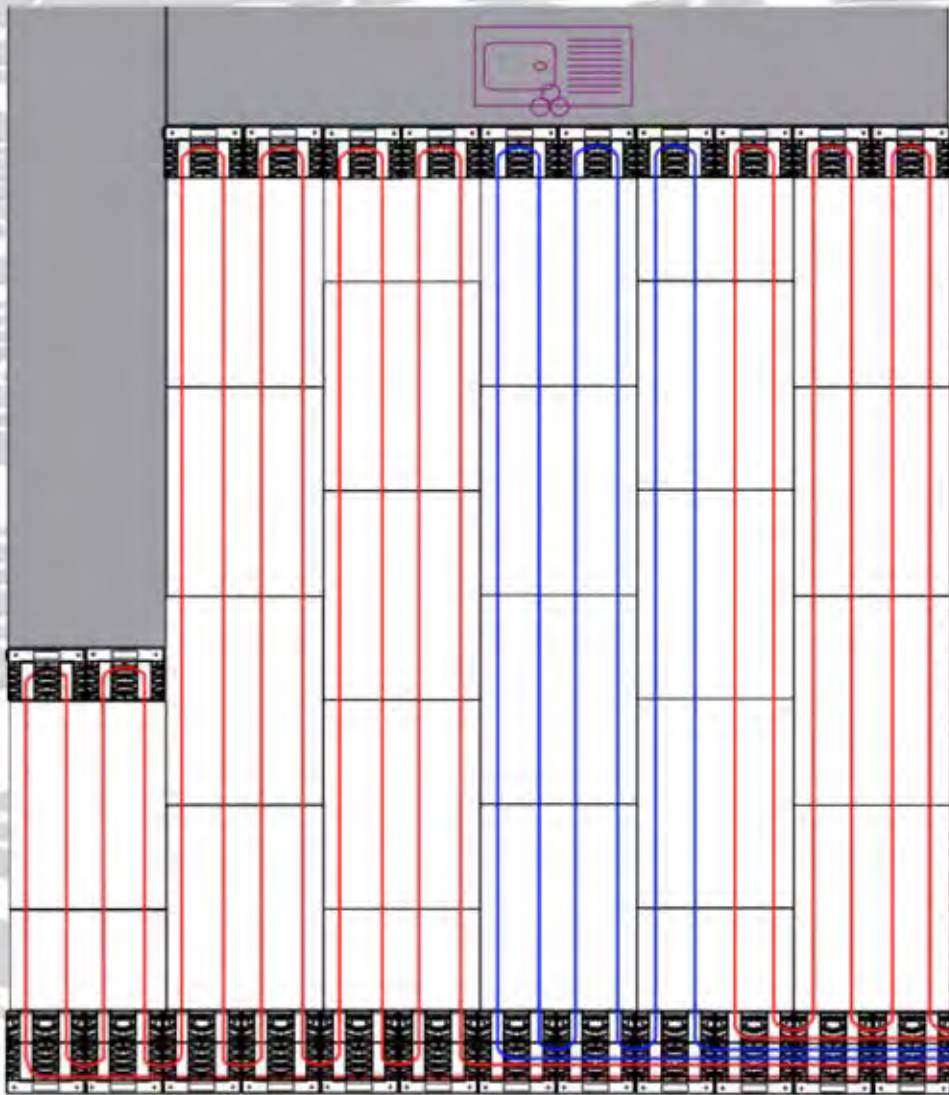
WARM-BOARD utilises a 15mm or an 18mm high density dry screed board, which acts as a heat conducting surface, transferring the heat from the pipes to the heated floor above. Once up to temperature, it delivers sufficient heat output to provide warm and even ambient temperatures within the living space.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



TYPICAL FLOOR CIRCUIT LAYOUT USING WARM-BOARD



Typical kitchen layout

TECHNICAL INFORMATION

PIPE OPTIONS

PEX 5 layer 12mm or 10mm

COIL SIZES

60m and 80m

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/m², 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 ²		
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 20°C 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 spacing's, floor covering and design conditions, PLEASE contact the technical department on 01772 312 847 to confirm a true representation of system outputs.

** Please ensure structural integrity of the floor is confirmed – SOLFEX recommends a minimum of a 6mm layer prior to tiling. Flexible adhesive MUST be used.

WARNING!

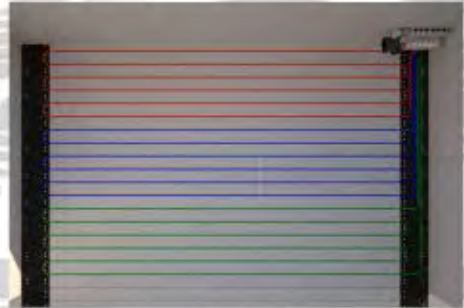
Before installing your SOLFEX underfloor heating system, you MUST ensure you are happy that the system is fit for your purpose, and that the designs are strictly followed. Please call the office on 01772 312 847 for further advice if you are unsure.

INSTALLATION

1.

Planning the WARM-BOARD system-

Read the WARM-BOARD floor plan layout, and 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.



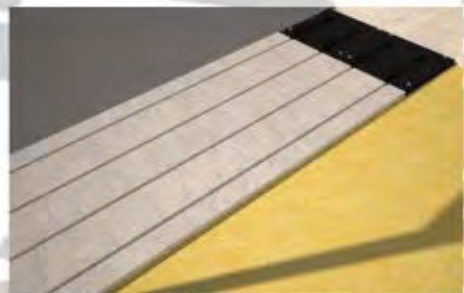
2.

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 WARM-BOARD 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!

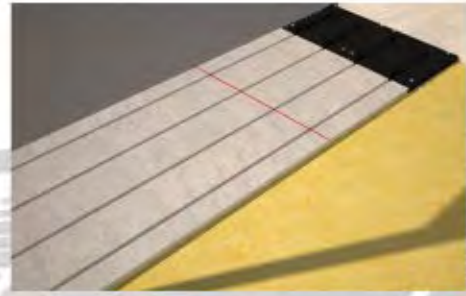
Ensure the floor is structurally sound and level, prior to laying the panels. It is important to ensure the floor has been swept thoroughly.

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.

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.

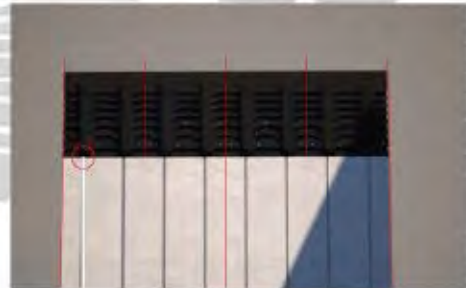


5.

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

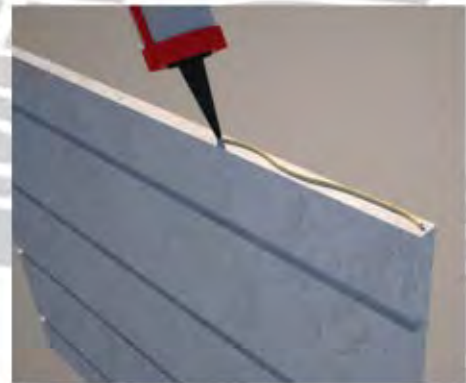
Make sure the pipe leaving the board is aligned central to the opening within the End Support.

Please see the red circle on the image to the right.



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.



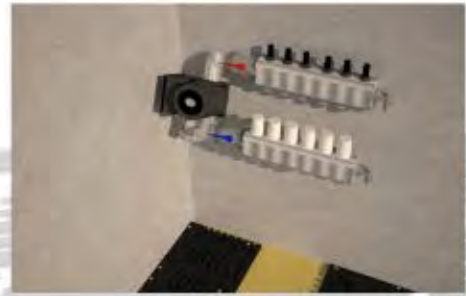
7.

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 inter-locking 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 ISIS 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 euro cone adaptors



9.

Start to roll the pipe into the WARM-BOARD End Support, utilising the self-retaining pipe clips, 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.



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 a euro cone connection.

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

Tile/stone finished floor coverings can be laid onto a thin layer separating the WARM-BOARD from the tile, for example, a 6mm thick ply board. It is a recommendation that a high quality flexible adhesive and grout is used to improve the structural integrity of the heated tiled floor.

Engineered Hardwoods

Engineered hardwood floors can be applied direct to the WARM-BOARD, as the WARM-BOARD below provides a structural base and support for the floor above. Care needs to be taken when selecting the thickness of the engineered wood floor, as the thicker the board, the lower the available heat output. SOLFEX recommend a maximum thickness of 18mm on top.

Carpet & Underlay

SOLFEX recommend an intermediate plywood layer of 6mm, to be fitted prior to the laying of the carpet and underlay.

Linoleum & vinyl

When applying a lino and vinyl finish to the WARM-BOARD, a completely flat surface is required. Typically, a 10mm intermediate dry screed board, or a 10-12mm layer of self-levelling compound can be applied. Using one of these two methods will improve the efficiency of the underfloor heating system.

IMPORTANT!

Please confirm with the floor covering manufacturer that it is suitable for underfloor heating. BS EN 1264 advises that, in occupied areas the floor temperature **MUST** not exceed 29°C, however, it also states that, when using timber floor coverings then ensure that this surface temperature does 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 white 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 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 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.

PRESSURISE 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 tester such as a Rothenburger. 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!

IMPORTANT – Please complete the circuit pressure test report, and send to SOLFEX to validate the warranty

CIRCUIT PRESSURE TESTING REPORT

FLOOR NAME	ROOM NAME	CIRCUIT NO.	PASS/FAIL	KEY NOTES

TESTERS NAME:

TESTERS SIGNATURE:

DATE:

WITNESS NAME:

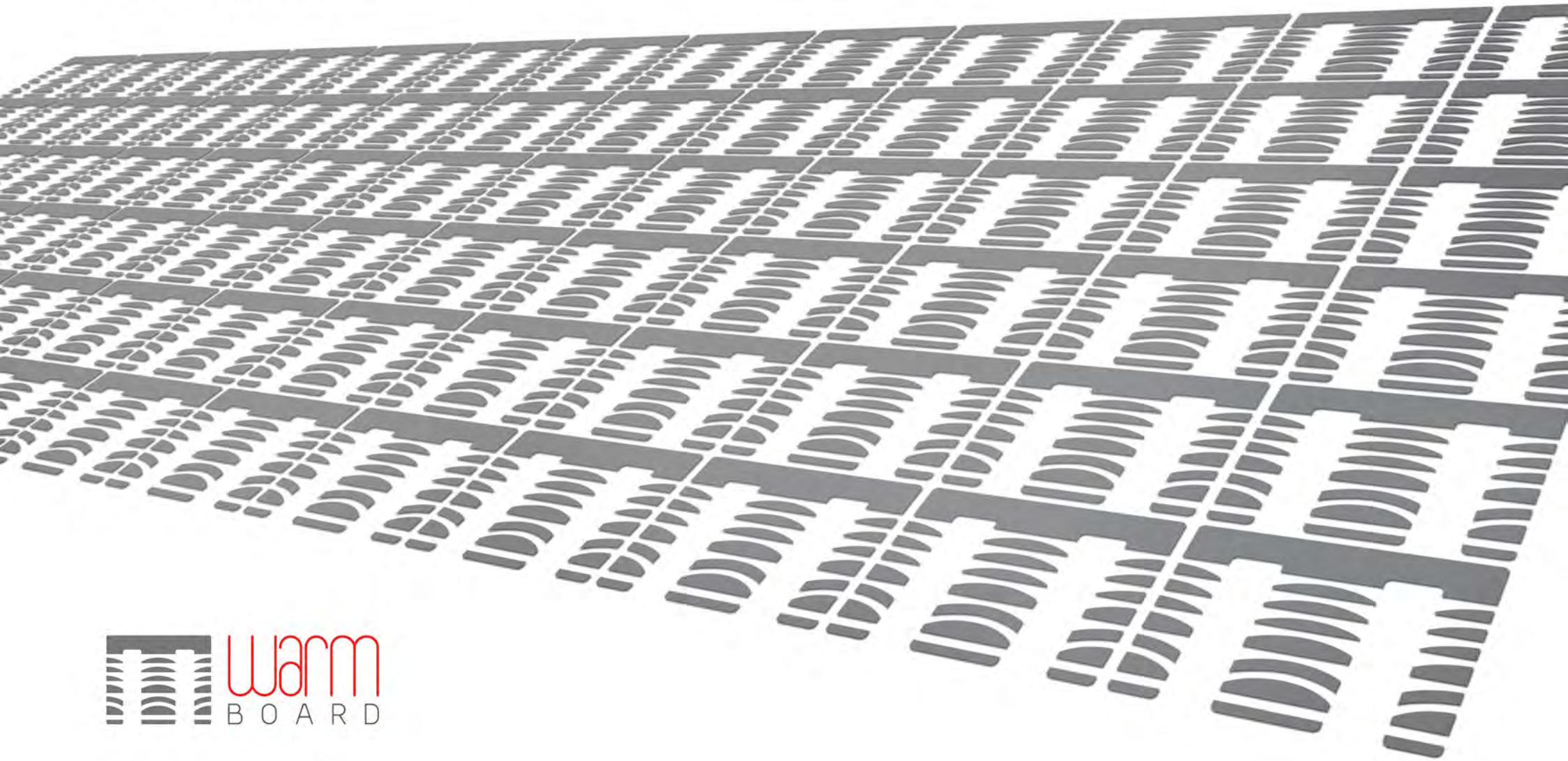
WITNESS SIGNATURE:

DATE:

Heat Emitter Guide

WARM-BOARD

Floating Floor





	Temperature Star Rating	Heating Circuit Flow Temp C	Likely Space Heating SPF		WARM-BOARD				WARM-BOARD LIGHT	
			GSHP	ASHP	TILE DIRECT ***	TILE/ 6mm PLY*	Engineered Wood Floor Direct	6mm Ply/ Underlay/ Carpet	Engineered Wood Floor Direct	6mm Ply/ Underlay/ Carpet*
Room specific Specific Heat Load 30 w/m ²	6	35	4.3	3.6	42	33	30		33	
	5	40	4.1	3.4	60	46	43	30	48	36
	4	45	3.7	3	87	66	56	39	62	47
	3	50	3.4	2.7	96	73		49		57
	2	55	3.1	2.4		86		58		
Room specific Specific Heat Load 30 to 50 w/m ²	6	35	4.3	3.6	42	33	30	21	33	
	5	40	4.1	3.4	60	46	43	30	48	36
	4	45	3.7	3	87	66	56	39	62	47
	3	50	3.4	2.7	96	73		49		57
	2	55	3.1	2.4		86		58		68
Room specific Specific Heat Load 50 to 80 w/m ²	6	35	4.3	3.6						
	5	40	4.1	3.4	60					
	4	45	3.7	3	87	66	56		62	
	3	50	3.4	2.7	96	73		49	77	57
	2	55	3.1	2.4		86		58		68
Room specific Specific Heat Load 80 to 100 w/m ²	6	35	4.3	3.6						
	5	40	4.1	3.4						
	4	45	3.7	3	87					
	3	50	3.4	2.7	96					
	2	55	3.1	2.4		86				
	1	60	2.8	2.1						

REDUCE FABRIC AND VENTILATION HEAT LOSS - System cannot perform at the design parameters stated; consider reducing heat loss and/or load-sharing design with other emitter types



GO AHEAD - System may perform at the stated efficiencies with the selected floor construction.**



DOES NOT CONFORM TO BS EN 1264



*Typical heat outputs based upon BS EN 1264 part 2 - for guide purposes only

**For conformation of heat outputs- Please contact the office for clarification.

**All data is based upon a delta t of 5 degrees, pre grooved at 150mm pipe centres.

**The document should not be used as a design tool. It is for guide purposes only.

*** SOLFEX cannot verify the structural integrity of tiling direct to the WARM-BOARD – we recommend a minimum of a 6mm no more ply board to be applied prior to tiling



WARM-BOARD Floating Floor

