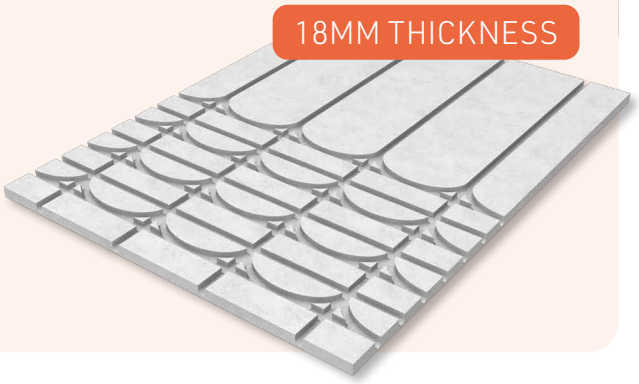
SOLID18

INSTALLATION GUIDE



INTRODUCTION

Solid18 panels utilises a 18mm high density Pre-Grooved dry screed board, which acts as a heat conducting surface, transferring the heat from the pipes to the floor above.

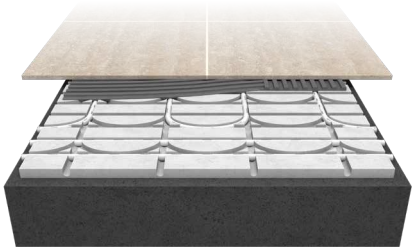
Once up to temperature, it delivers sufficient heat output to provide warm and even temperature within the living space. The best floor coverings to use with the Solid18 panels, are hard surfaces such as stone and tile, as they offer the least resistance to heat transfer compared to carpets.

The main benefits of the Solid18 panel are the pre grooved loops and leaders and the option for direct application of tiles (subject to structural integrity), as it can be applied directly with the use of flexible S2 adhesive.

PRE-INSTALLATION

It is essential for correct installation that your subfloor is prepped by being a clean, flat and where possible a level surface to lay down the Solid18 Panels so no movement is created.

For wooden subfloors, these should be flat and level before laying the Solid18 Panels. For screeded subfloors it is recommended that a levelling compound is laid prior to the Solid18 system being fitted. If the above is not carried out prior to the gypsum boards being laid, could result in the floor finish possibly breaking up and failing.



PIPE OPTIONS
Pex Al Pex

COIL SIZES
80m maximum length @ 12mm Pex

BOARD DIMENSIONS SOLID18
600mm x 800mm x 18mm (W x L x D)

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Step 1

Planning the Solid18 system Review the floor plan layout if provided, and check manifold locations are correct. Due to the nature of this system, there may be alterations to the design, and changes may need to be applied to the pipe routes.

Step 2

Lay the first Solid18 panel into a corner of the area ensuring the panel sites flush to the wall. Clean down the boards as you progress and ensure there is a 3mm bead of jointing glue along the bottom edge to bond the adjoining panel.

Step 3

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.

Step 4

Upon approaching the end of the first row of Solid18 Panels rotate the final panel of this run and lay into the adjacent corner of the area against the wall. This will leave a final cut of the Overlay to complete the first row if required.

Step 5

Upon completing the first row of Solid18 Panels, repeat the process by starting with a halved panel to begin the second run, laying the Solid18 panels in a staggered brick method as the panels are laid. Cleaning down the panels as you progress, ensuring there is a 3mm bead of jointing glue along the bottom and side edges to bond the adjoining panels together.

Step 6

Repeat Steps 3-5 until floor area is covered and allow Fastwarm Jointing glue to fully dry.

Step 7

Fix the Fastwarm Manifold to the wall, about 500mm from the floor to the top of the flow meters. Connect the first coil of 12mm pipe to the manifold with the 12mm eurocone fitting provided.

Step 8

Start to unroll the pipe and lay into the leader of the Solid18 panels until you reach the other end of the room.

When rolling out pipe if possible please use a pipe de-coiler, if not available lay pipe flat on floor and feed out pipe sideways. Do not roll pipe like a wheel as this causes the pipe to come loose and not hold in place as well.

Step 9

Start to push the pipe into the Solid18 Panel, ensuring the pipe is flush with the surface of the board (preferably using a soft rubber mallet or your foot to ensure a good fixing)*.

Step 10

Continue to lay the pipe into the Solid18 Panel by walking the pipe into the groove as you go, until you reach the opposite end of the room, allowing enough pipe to return too manifold using the pre grooved leaders in leaders in the Solid18 panels.Note some rooms may require multiple lengths of pipe.

Step 11

Complete the first circuit and connect the return pipe to the manifold using a eurocone connection. Repeat for all other circuits for the project.

Step 12

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

** For best results lay the pipe flat on the floor, rather than right angle to the floor.*

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HEAT OUTPUT

	Tile	Engineered Wood Floor	Carpet 1.5 TOG/6mm Ply
Flow/ Return Temperature	**Heat output W/m2**		
50/45	96	64	49
45/40	78	56	39
40/35	60	43	30
35/30	42	30	21

Provided by others

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', in accordance with BS EN 1264.

*Typical heat output based upon &SEN 1264 20°c room temperature, delta t 5, tile or stone covering - Due to the variability of parameter 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 01268 744479 to confirm a true representation of system output.

**For Tiling please ensure the panels are laid onto a flat and structurally sound floor. Fastwarm® recommends either a 6mm layer of levelling compound or a bed of S2 grade flexible tile adhesive using a 10mm notched trowel. The panels must be primed using Ultra MSP primer.

Before installing your Fastwarm® 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 01268 744479 for further advice if you are unsure.

WARNING

Ensure all floors are structurally sound, debris free and level / flat. It is important that floors are thoroughly cleaned before panels are laid. Debris and uneven floors will compromise how the Solid18 panels sit above the floor and will cause issues with the final floor coverings. Ensure that the Solid18 Panels line up with the adjoining Solid18 panel to ensure straight runs. A 3mm bead of jointing glue must be used to ensure the Solid18 panels are securely bonded Please ensure the insulation below the boards meet current building regulations. When installing above an unheated area or ventilated void, you 'MUST' ensure the required U-Value is achieved.

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.

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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 6 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 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.

FLOOR COVERINGS

Ceramic tiles, Slate, Stone etc

Tile/Stone finished floor coverings can be installed directly on top of the Solid18 panels. Fastwarm Solid18 panels must first be primed using Prime IT MSP. The tiles can then be secured on top using a suitable S2 flexible tile adhesive.

Engineered Hardwoods

Engineered hardwood floors can be applied direct to the Solid18 Panels as the panels beneath 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. Fastwarm® recommend a maximum thickness of 18mm on top.

Carpet & Underlay

When applying an Underlay and carpet finish to the Solid18 Panel, a completely flat surface is required. Fastwarm recommend a 10mm intermediate dry screed board, or a 10-12mm layer of self levelling compound can be applied (The board MUST be primed with Prime IT MSP when using levelling compound). Using one of these two methods will improve the efficiency of the underfloor heating system. However should the installer request a 6mm plywood floor can be laid. Please note that the floor covering must not exceed 2.5tog maximum.

Linoleum & Vinyl

When applying an Vinyl or Lino Floor finish to the Solid18 Panel, a completely flat surface is required. Fastwarm recommend a 10mm intermediate dry screed board, or a 10-12mm layer of self levelling compound can be applied (The boards MUST be primed with Prime IT MSP when using levelling compound). Using one of these two methods will improve the efficiency of the underfloor heating system.

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.

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			Likely space Heating SPF		Overlay Board			
	Temperature Star Rating	Heating Circuit Flow Temperature	GSHP	ASHP	Tile Direct ***	Tile/ 6mm Ply*	Engineered Wood Floor Direct	6mm Ply/ Underlay/ Carpet
Room Specific Heat Load 30 w/m2	6	35	4.3	3.6	42	33	30	
	5	40	4.1	3.4	60	46	43	30
	4	45	3.7	3	87	66	56	39
	3	50	3.4	2.7	96	73		49
	2	55	3.1	2.4		86		58
	1	60	2.8	2.1				
Room Specific Heat Load 30 to 50 w/m2	6	35	4.3	3.6	42	33	30	21
	5	40	4.1	3.4	60	46	43	30
	4	45	3.7	3	87	66	56	39
	3	50	3.4	2.7	96	73		49
	2	55	3.1	2.4		86		58
	1	60	2.8	2.1				
Room Specific Heat Load 50 to 80 w/m2	6	35	4.3	3.6				
	5	40	4.1	3.4	60			
	4	45	3.7	3	87	66	56	
	3	50	3.4	2.7	96	73		49
	2	55	3.1	2.4		86		58
	1	60	2.8	2.1				
Room Specific Heat Load 80 to 100 w/m2	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				

* 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.

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

Important

The Underfloor heating system should NOT be brought into service for at least 14 days.

After this time you should start the system at 20-25 degrees C water temp, run for 3 days then increase by 5 degrees per day until design temperature is reached.

If you are in any doubt about any part of the installation process, then call us for advice on 01268 744479.