

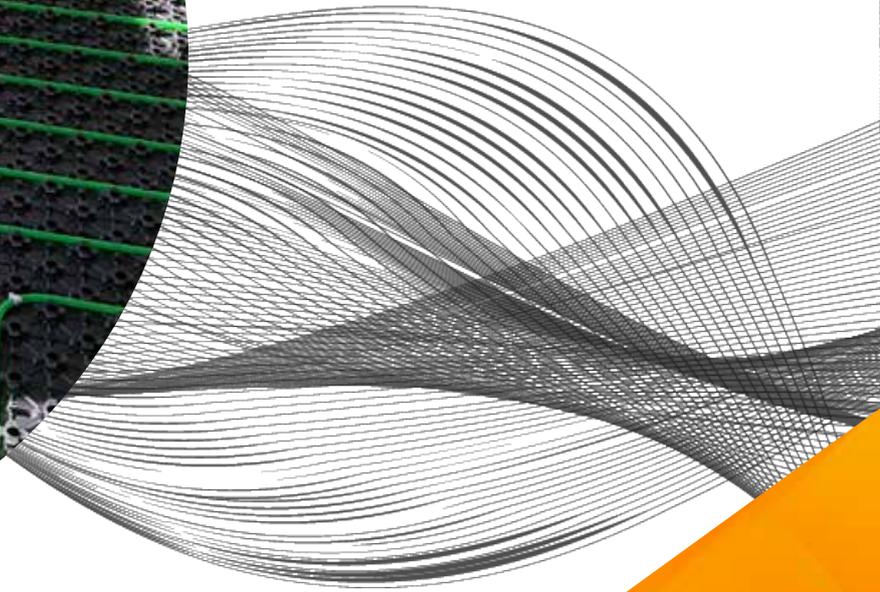
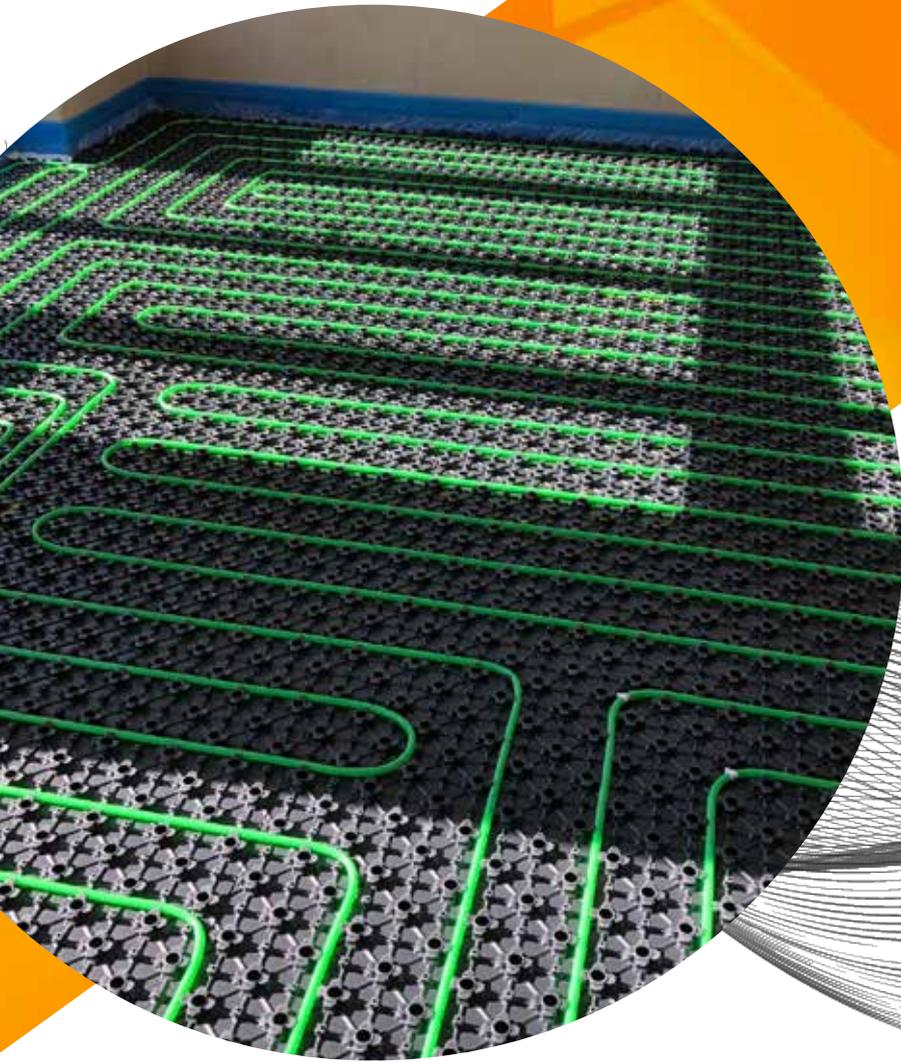


HydroHeat

UNDERFLOOR HEATING LTD

Clip-Plate Install Guide







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Introduction

Within this install guide we will cover most aspects of the system in question, but if there is any information or further questions you may have, please make direct contact with our technical team who will be happy to assist.

Firstly, underfloor heating is a great addition to anyone's property, providing cleaner and more comfortable environments within the living space. At first glance it's an easy product to work with and very easy to install, although this maybe the case there are some technical guidelines that should be followed to ensure the system has a long, trouble free life.

How underfloor heating works is when your thermostat, normally positioned in each room, drops below the desired room temperature the thermostat sends a signal to the wiring centre. The wiring centre is the control panel for your UFH system, this will open the corresponding actuators, the UFH 2 port zone valve, initiate the UFH pump and send a signal to the heat source to fire up. The heat source will start to heat the water and initiate the circulating pump. Once the water reaches the UFH pump it will begin to circulate around the UFH system. When the UFH water is up to temperature the mixer valve will close but water will continue to circulate until there is no more call for heat and the room is up to the desired temperature.



Introduction

Solid floors use a screed or concrete to transfer the heat from the pipes to the finished floor level above, and when up to temperature, delivers sufficient heat output to provide warm and even ambient temperatures within the living space. The best floor covering to use with underfloor heating are hard surfaces, such as, stone and tile. These floor coverings offer the least resistance which transfer heat more effectively than with a carpet finish. For floor coverings such as carpet, 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.

TECHNICAL INFORMATION

Pipe options
PE-RT 16mm

Maximum circuit length
100m for 16mm

Clip plate dimensions
1450mm x 850mm x 21mm

Insulation

Insulation, where applicable, must conform with the current Building Regulations Part L. All underfloor heating requires a level of insulation to restrict the downward heat-loss in accordance with BS EN 1264-4 insulating layers.

System insulation

minimum heat conduction resistance of system-insulating layers below the pipes of heating/cooling systems (m²K)/W

	Heated room below or adjacent	Unheated or intermittent heated room below, adjacent or directly on the ground *)	External air temperature below or adjacent		
			External design temperature $\vartheta_d > 0^\circ\text{C}$	External design temperature $0^\circ\text{C} > \vartheta_d > -5^\circ\text{C}$	External design temperature $-5^\circ\text{C} > \vartheta_d > -15^\circ\text{C}$
Heat conduction resistance $R\lambda_{ins}$	0,75	1,25	1,25	1,50	2,00

*) with ground water level < 5m below the supporting base, the the value should be increased.

Installation

Preparation

Preparation for any job is key to a successful install. Ensuring you are prepared will reduce the number of issues encountered.

Firstly, check your delivery, make sure all products are there and accounted for against the delivery note. If there are any products missing we will need to be notified within 48 hours of delivery.

Make sure all work areas are clear and tidy and other workers are finished in the areas you need access to.

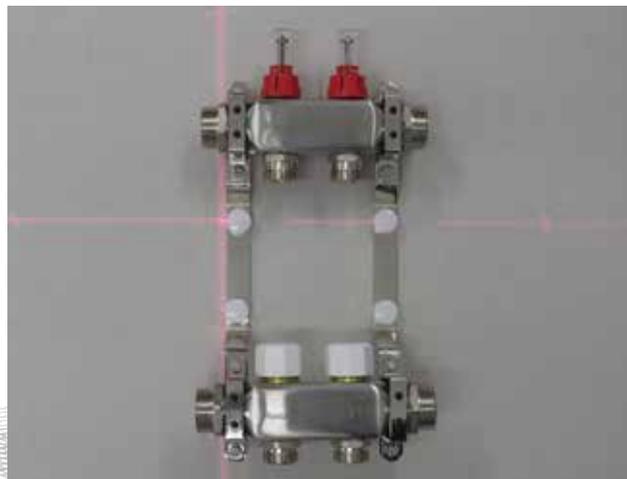
Tools required

- Plastic pipe cutters
- Drill and drill bits
- Adjustable spanner x 2
- Pump pliers
- Tape measure
- Spirit level
- Screw driver both pozi-drive and flat head
- Stanley knife
- Pipe de-coiler (optional but makes life a lot easier)

Installation

Manifold

1. Make sure that the manifold is level and that it is high enough so the pipes can be installed. Using the screws provided to mount the manifold assembly to the wall (please ensure that the screws and plugs provided are appropriate for your wall construction, if not alternative suitable fixings should be used).



2. Fit the blue handled 1" union ball valve to the return manifold and the red handled 1" union ball valve to the flow manifold using the fibre seals provided.

3. Fit the end connection with manual air vent and blue handled drain/filling valve to the return manifold and the end connection with the air vent and red handled drain/filling valve to the flow manifold, using the fibre washers provided.



Installation

Control Pack

1. Once the orientation has been determined, the straight connector, which connects the Thermoguard UFH valve to the manifold, needs to be screwed into the return port. This is tightened using the straight connector tool supplied.



2. The angled connector can then be connected to either the flow or the return port on the Thermoguard UFH valve depending on orientation of the supply pipework. Tighten with an adjustable spanner.

3. Connect the Thermoguard UFH valve to the pump using the pump nut which is pre-assembled to the Thermoguard, ensuring the pump washer is inserted. Please take note of the direction arrow on the pump body.



5. Ensure the 1 1/2" pump nut is fitted to the flow connection elbow. If not, this can be slipped over the flanged connection face. Connect the nickel plated elbow to the pump using the 1 1/2" pump nut, ensuring the pump washer is inserted. Tighten the pump union connections.

6. Connect the elbow to the flow manifold by means of the 1" MBSP connection onto the flat faced union connection, remembering to fit the 1" fibre washer. Connect the Thermoguard UFH control valve to the return manifold by means of the 1" MBSP connection onto the flat faced union connection again remembering to fit the 1" fibre washer.



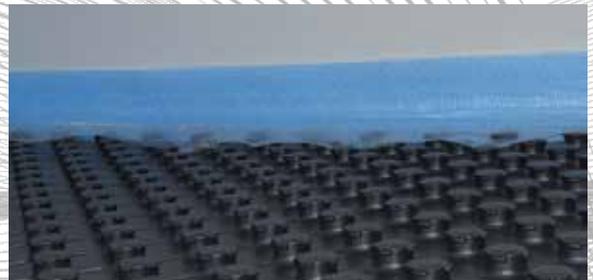
Installation

System

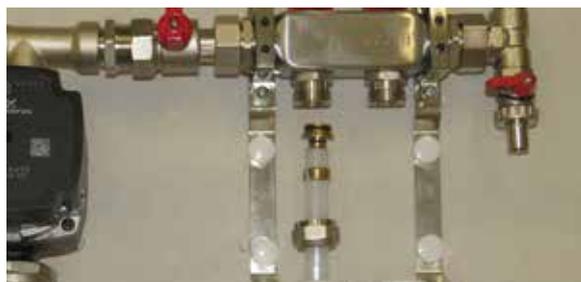
1. Install the supplied 8mm expansion foam roll around the perimeter of the room, using the self-adhesive strip to fix to the wall. This should be installed around all other building components penetrating the screed. This strip should rise from the supporting base up to the finished floor and allow for a 5mm movement of the screed.



2. Lay your insulation up against the edge insulation, ensuring the plastic flap is laid over the insulation. There is no need for a DPM as the clip plate acts as a protective barrier.



3. Cover the whole floor with HydroHeat clip plates, ensuring they are overlapped so no screed can escape to the insulation below. The plastic sheet from the edge insulation needs to be fixed above the plate.



4. Ensure each UFH pipe is cut square using a plastic pipe cutter and not damaged. Using the euroconnus feed the nut then olive over the pipe before inserting the euro insert into the pipe. Now connect the pipe to the manifold using an adjustable spanner. It is advised to label up each circuit using the identity stickers provided to identify which zone each loop serves.

5. Following the HydroHeat pipe layout design, begin to lay your pipe from the manifold location in a serpentine or spiral pattern and secured into the HydroHeat panels. Continue this until all circuits are complete.



6. Upon completion of the underfloor heating pipe circuits – ensure all pipework is pressure tested.

Commissioning

Filling & flushing the system

1. When initially filling the UFH heating system it is important to remove air in the pipework. In order to do this a hose should be connected to the upper fill valve and the bottom valve should be opened to allow the water to be flushed into a bucket or drain. The bucket option is preferred as you will be able to see when all the air bubbles have been removed.



2. First isolate all but one of the heating circuits by turning off the relevant decorator caps. Next flush out the open circuit with clean water until the bubbles cease to appear. Isolate this circuit and open the next one. Please note: The manifold flow meters are delivered in the closed position, these need to be opened for water to flow through the loops.

3. Repeat this until all circuits have been filled. Introduce any inhibitor or anti-freeze at this stage.



4. Flow rates should be set to correspond with the system design. This is achieved, with the pump running, by lifting the locking collars at the base of the flow indicators and twisting the indicator base until the desired flow is indicated, then re-fit the locking collars.

Do not twist the glass as this will completely remove the gauge, this is designed only to be removed for cleaning purposes, and when the flow has been isolated.

Commissioning

Pressure testing

1. Firstly, pressurise the system to 3 bar and walk ALL circuits looking for leaks.
2. Once this has been completed and no leaks have been found increase the pressure to 6 bar and check once again for leaks.
3. When you are satisfied there are no leaks leave the system pressurised for 1 hour minimum.

The system should be left pressurised at 3 bar pressure before the screed is laid until it is fully cured. Under no instances should the underfloor heating be used to dry the screed and it should be left off until fully cured. Follow the screed suppliers specification for drying times.

Technical Advice

Pipe clearances

All pipes should be 75mm from any vertical structures, walls, pillars ect. and 200mm from fireplaces, smoke ducts, open or walled shafts and lift wells.

Expansion joints

For heating screeds that are to be covered with a floor covering, such as tile or stone, the area must not exceed 40m² or a maximum length of 8 meters. If these are exceeded then an expansion joint must be installed. Expansion joints and perimeter strip may only be crossed by connecting pipe, when this is unavoidable, flexible insulation tube should be used at a minimum length of 300mm.

Screed laying

The temperature of the screed and the temperature of the room should not fall below 5°C, and should be maintained above 5°C for no less than 3 days.

Initial heat up

Screeds should be completely cured before beginning this process, please speak with your screed supplier/installer for their recommended drying times. The initial heating of the screed should be commenced at a 25°C water flow temperature which should be maintained for a minimum of 3 days. The temperature should then be increased gradually over 5 days until it reaches the desired system temperature, this should be held for 4 days minimum.

THE UNDERFLOOR HEATING SHOULD NOT BE USED TO DRY THE SCREED.

Technical Advice

Floor coverings

Carpets

Carpets are suitable to be laid onto the screed. Always check with the manufacturer to ensure they are underfloor heating suitable. When using carpet with underfloor heating you must not exceed 2.5 tog with both carpet and underlay combined.

Tiles and Stone

Tiles are suitable to be laid onto screed systems. It is advised that an anti-fracture mat is installed, this is to prevent damage to the UFH system if the tiles ever need changing. Flexible, underfloor heating suitable tile adhesive must be used at all times

Wood and Laminate

Most wood and laminate is suitable for use with underfloor heating. We design our systems to not exceed a surface temperature of 27°C but you should check with the flooring manufacturer to establish the maximum surface temperature (we will need to account for this when designing your system)