

thermogboard

Surface heating and cooling solutions by Wavin

Low-Build 15 Underfloor Heating Product and Installation Guide



Solutions for Essentials

Underfloor Heating from Thermoboard

Advanced UFH technology

Thermoboard is the name for underfloor heating & cooling solutions from Wavin. Our comprehensive range covers all building construction types typically used in the UK and all types of floor constructions.

Thermoboard advanced UFH technology has been developed for both concrete-based floors and timber floors in new build and refurbishment projects. They provide cost-efficient installations for all types of environment, including residential and light commercial buildings.

What's different about Thermoboard UFH

Thermoboard UFH systems have been designed to combine easy installation with consistent heating performance in service. No specialist tools are needed for fitting.

The Low-Build 15 UFH system is an example of our long tradition of innovation. At Thermoboard, our constant aim is to help the installer work more efficiently and with more certainty of a successful outcome. The Low-Build 15 system can be supplied under either of our service facilities: QuickCalc and FullSpec.

A Low-Build 25 System is also available.

Specialist expertise

As UFH specialists, Thermoboard provides more than the systems and components alone. We ensure that specifiers, planners and installers are able to receive the full benefit of our extensive experience.

System selection tools, information and guidance are all available online and in print for even the smallest job. Our **QuickCalc** facility, accessed via **www.thermoboard.co.uk**, gives instant online project quotations and bill of materials.

For larger and more complex projects, our **FullSpec** service includes complete warranted system design, with CAD drawings and installation instructions, a dedicated project manager and direct-to-site delivery of all materials.



UFH
it's what
we do

UFH for existing floors

Thermoboard's Low-Build systems are designed to be installed directly onto existing floors, with minimum build-up and no major disruption. They make retrofitting of plumbed UFH a more practical and cost-efficient option for private home refurbishment.

Previously, this would have involved digging up solid floors or lifting floorboards – or a significant rise in floor level.

More practical and cost-efficient

The Low-Build 15 system's ultra-slim polystyrene panels are pre-routed to create a channel for 10mm polybutylene pipe. When laid, these panels cause minimal rise in floor level and less disruption to doors and skirting during installation.

Electric mat systems have often been used for similar applications because of their shallow profile. However, by comparison, plumbed UFH can save as much as two-thirds of the energy costs* of electric systems in operational service.

Practical design for simpler installation

This system does not require the purchase and placing of separate end-return panels. One end of each Universal Panel incorporates all the necessary channel options to help the installer quickly achieve the specific pipe layout that the job requires.

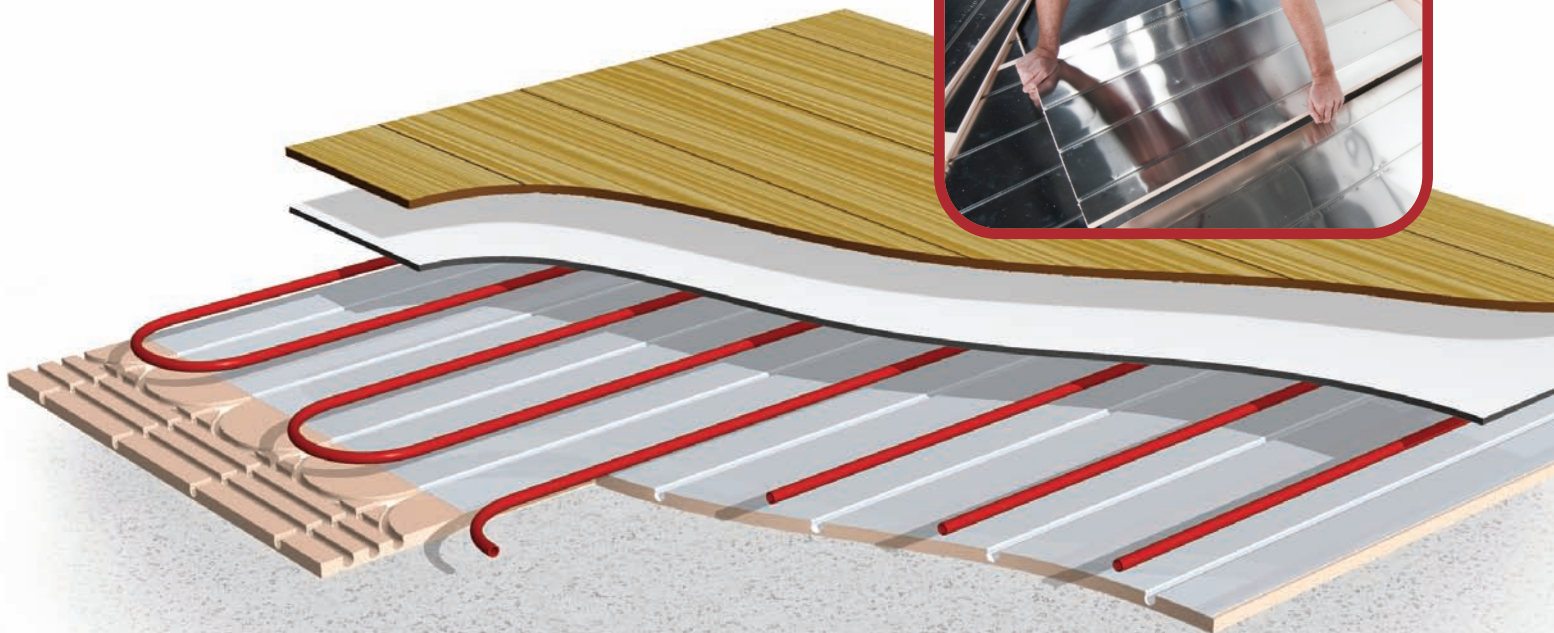
Key benefits

- Low build up height: 15mm (excluding optional load-bearing ply layer)
- Practical universal panel design: incorporating end-return, flow and through-connect channels
- Lightweight panel: easy to handle
- Easy to cut and install: only one person required**
- Robust: able to withstand point loading

- Instant online project quotations are available for this system using Thermoboard QuickCalc at www.thermoboard.co.uk

* based on using a SEDBUK A Rated boiler, and wet UFH vs electric UFH systems at typical 2010 domestic energy prices.

** qualified electrician required if mains-connected controls fitted.



Applications and Specifications

Where can Low-Build UFH be installed?

Thermoboard Low-Build 15 UFH system can be installed directly onto any existing solid or timber floor provided that it is flat and level.

This system is primarily designed to enable the easy addition of UFH to individual rooms undergoing refurbishment.

Typical examples include:

- Kitchens
- Conservatories
- Bathrooms
- Newly-separated en-suites for bedrooms
- Garage conversions

Low-Build 15 UFH has been designed for simple installation covering up to 26m² (3 circuits). For areas greater than 26m², please contact Wavin to speak to a project consultant regarding design and layout.

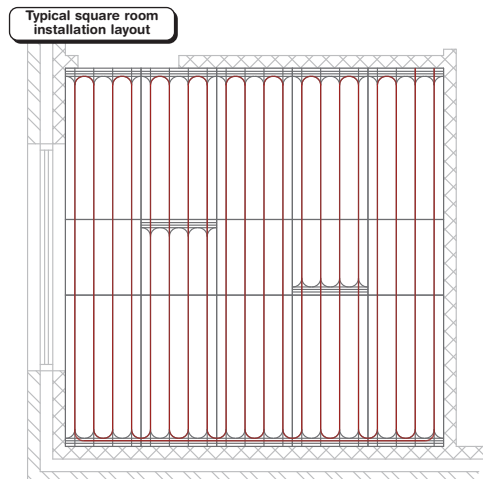
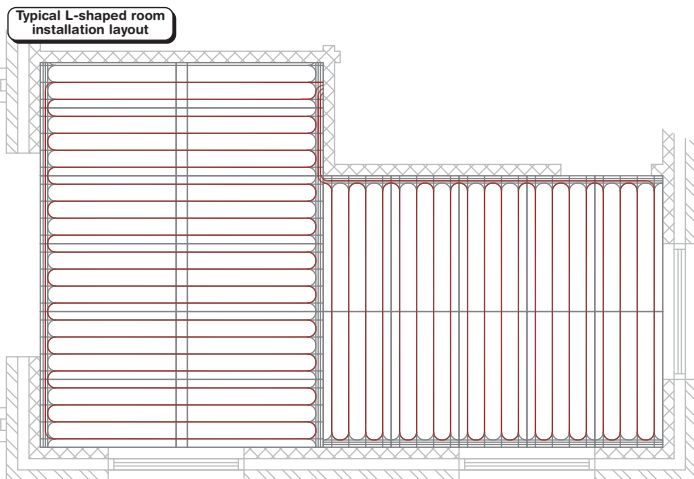
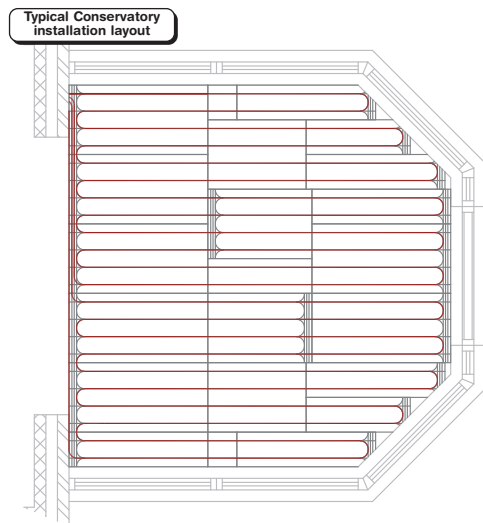
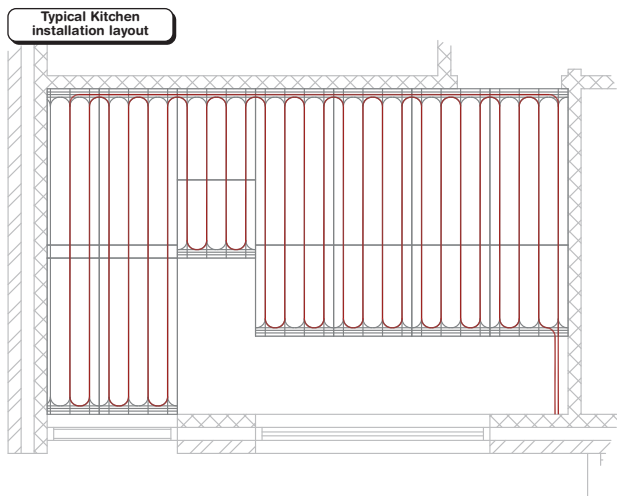
Any type of floor covering can be used with this system, including: carpets, hardwood, vinyl or tiles. In some cases, it may be advisable to add a load-bearing ply layer on top of the system panels (see table below).

Floor Covering	Suggested Supporting Layer
Vinyl	6mm Plywood *
Tiles	12mm T&G Plywood **
Laminate	None
Carpet	6mm Plywood *
Engineered Wood	None
Solid/Natural Wood	None (but, will require 15mm battens between panels to secure flooring)

* The 6mm Plywood supporting layer consists of two 3mm Plywood layers glued together. The top layer should be laid so that the edges of the sheets on the bottom layer align with the centre of those on top.

** 6mm Plywood may be suitable for certain tile types. Consult with tile manufacturer.

Typical pipe installation layouts as referred to in Step 4 of the Installation Instructions shown on p.9



Product Specification and Component List

Connection and control options

A Low-Build 15 UFH circuit may be connected to an existing heating source, whether that is serving other UFH circuits or radiators.

Temperature control may be linked to the main heating programme, or operated as a separately controlled heating zone with its own thermostat. Separate control gives the homeowner the option of selected underfloor heating outside the normal heating season – at cool times of day during Summer months, for example.

Low-Build 15 system components

Component/Pack	Pack Code	Room/Heating Zone Size (m ²)							
		6	8	12	16	20	24	26	
Universal Panel (10-pack)	92UH310	1	-	2	1	-	2	1	
Universal Panel (15-pack)	92UH315	-	1	-	1	2	1	2	
Pipe Coil 10mm x 60m	10UH060	1	1	2	2	3	3	3	
Mixing Unit	88UH211	-	1	1	1	1	1	1	
Isolation Valves (pair)	88UH311	-	1	1	1	1	1	1	
1-Port Manifold Pack	92UH101	-	1	1	1	1	1	1	
Additional Port Pack (for manifold)	92UH103	-	-	1	1	2	2	2	
Small Room Connection Pack	92UH006	1	-	-	-	-	-	-	

EXTRA OPTION for heating zone control independent of existing main heating system: Thermostat **52UH278**

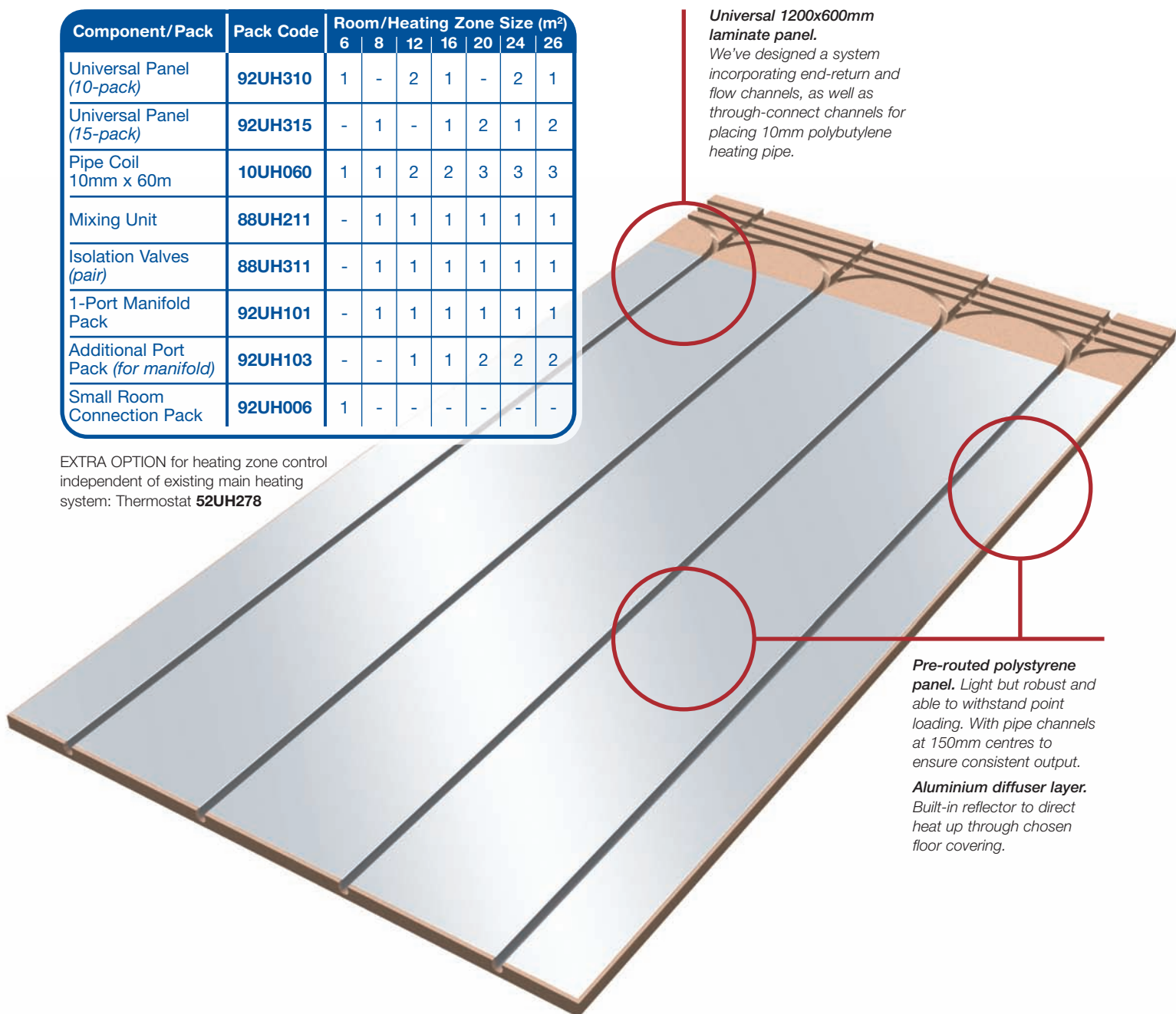
Product specification

Polystyrene panel, incorporating thin aluminium heat diffuser layer, with pre-routed channels for placement of 10mm polybutylene pipe.

Universal design to eliminate requirement for separate end-return panels.

- Panel size: 1200x600x15mm
- Channels at 150mm centres
- Maximum circuit length: 60m, covering 9m²
- Maximum floor area: 26m², up to 3 circuits

For areas greater than 26m², please contact Wavin to speak to a project consultant.



Universal 1200x600mm laminate panel.

We've designed a system incorporating end-return and flow channels, as well as through-connect channels for placing 10mm polybutylene heating pipe.

Pre-routed polystyrene panel. Light but robust and able to withstand point loading. With pipe channels at 150mm centres to ensure consistent output.

Aluminium diffuser layer. Built-in reflector to direct heat up through chosen floor covering.

Tools required for cutting Panels and Pipe

- Utility Knife
- Pipe Cutter

Tools required for mounting and connecting the manifold

Areas greater than 6m² (Mixing Unit)

- Spirit Level & Pencil
- Drill & Drill Bits for mounting (fixings supplied)
- Wrenches for making connections
- Screwdrivers suitable for making electrical connections

Areas less than 6m² (Small Room Connection Pack)

- Spirit Level & Pencil
- Drill & Drill Bits for mounting
- 150mm Core Drill required for flush installation
- Wrenches for making connections
- Screwdrivers

Preparation

- Make sure the existing floor (onto which Low Build UFH is to be laid) is flat, level, clean and dry
- If extending an existing heating system ensure the boiler has sufficient capacity to power the additional circuit(s). If replacing existing heating circuits the heat demand will not change and the existing boiler will be sufficient

Hints and tips

PIPE

When cutting or trimming Thermoboard 10mm UFH pipe for connection to the manifold

- Ensure pipe is cut square with appropriate cutter
- Do NOT use a hacksaw, wheeled tube cutter or utility knife
- Remove any burrs or roughness – as per normal plumbing Good Practice

When placing the pipe

- Do NOT bend Thermoboard 10mm pipe more tightly than a radius of 60mm
- If pipe is kinked or damaged, it MUST be replaced
- Use the pipe packaging to control the pipe whilst uncoiling
- Uncoil pipe from the inside of the coil
- Use pipe supports and clamps to secure the pipe work where it converges below the manifold

GENERAL

- Do not install UFH in floor areas that will be covered by major fixtures

EXAMPLES

- in Kitchens: under cupboards, work surfaces, oven, fridge freezer
- in Bathrooms: under sanitaryware, bath, shower

NOTE: It is possible to install low build panels with no pipework to maintain level floor height for kitchen appliances

TESTING

- Use a Hydraulic Pressure Tester (available from most hire shops)

STEP-BY-STEP GUIDE

Step 1 Select suitable location for the Control System

- Control system (either the Small Room Connection Pack or the Single Zone Control System) must be installed within the room area to be heated

NOTE: Mixing Unit can be located outside of area to be heated if required (max length 15m from manifold connection)

- Ideal height is 200mm from floor

NOTE: For installations requiring 3 circuits (greater than 20m²) the Single Zone Control System MUST be located centrally in the room. For installations requiring up to 2 circuits it can be located in the corner or centrally

For areas greater than 6m² or for areas less than 6m² see page 8



**Low-Build
UFH
in 8 easy
steps**

Step 2 Assemble the Single Zone Control System

- The Single Zone Control System consists of 1 Port Manifold Pack (92UH101), Isolation Valves (88UH311) and the Mixing Unit (88UH211)

- The Single Zone Control System can accommodate between 1 and 4 heating circuits, which will work together as a single heating zone

- Connect the Isolation Valves (88UH311) to the Mixing Unit (88UH211)

- Connect the 1" to 15mm Adaptors to the Mixing Unit

- Insert a 15x10x15mm Branched Reduced Tee into each 1" to 15mm Adaptor

If more than one circuit is required, attach a Manifold Additional Port Pack 92UH103.

- Insert an additional 15x10x15mm Branched Reduced Tee in to the existing Branched Reduced Tee (see opposite)

- Insert 15mm Blanking Pegs into the end of the last 15x10x15mm Branched Reduced Tee

This completes the Control System assembly.

If the Mixing Unit is to be located outside of the area to be heated:

- With pipe inserts in place insert standard 15mm Hep₂O pipe (max length 15m) into the 15mm Adaptors

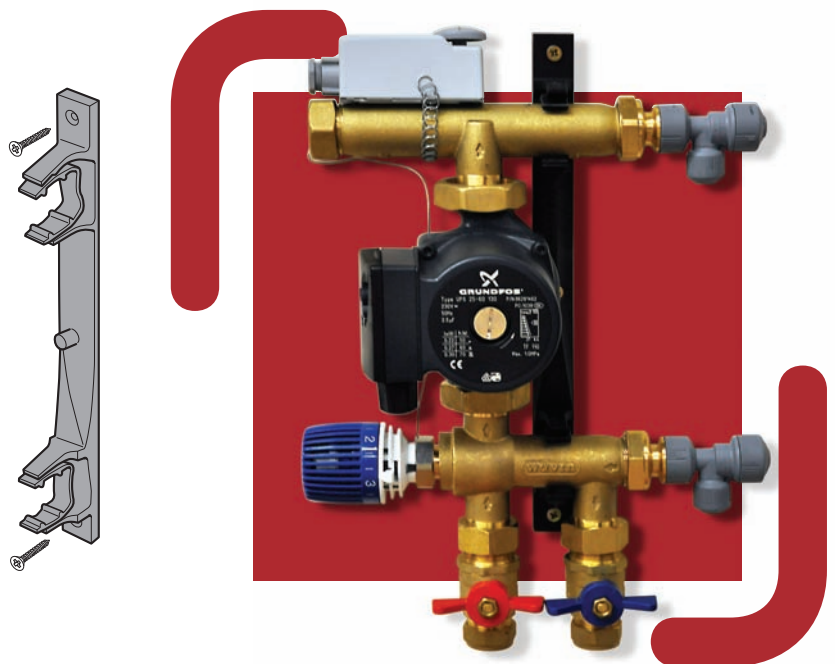
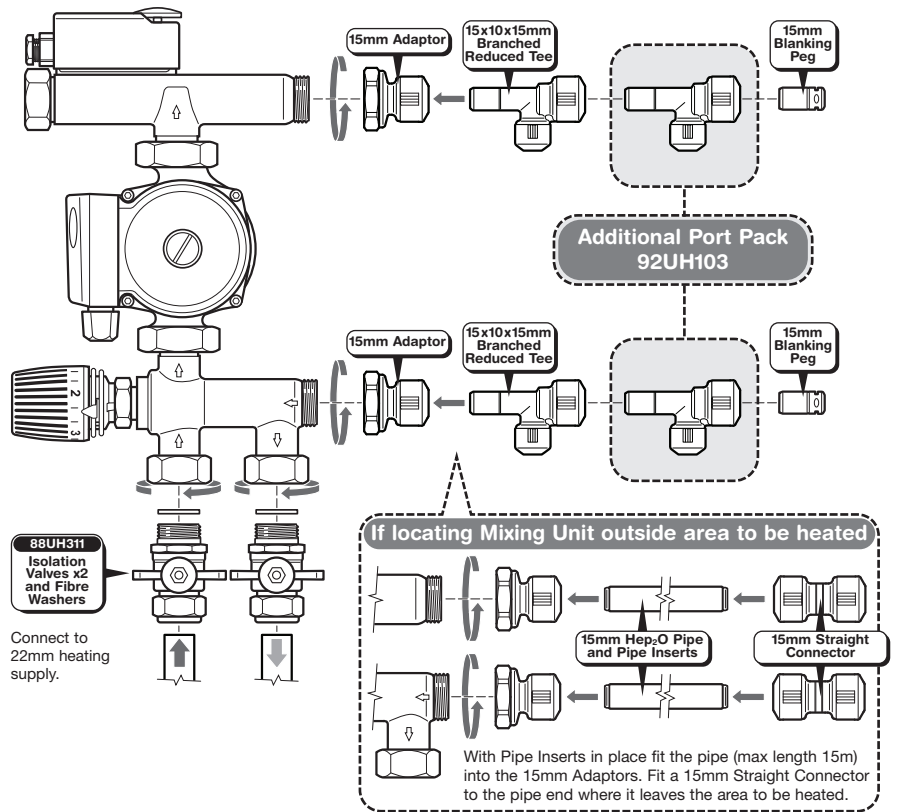
- Connect a 15mm Straight Connector on to the end of the 15mm pipe where it leaves the area to be heated

Step 3 Mount the Control System

- Mount the Control System on a suitable wall using the screws provided
- Ensure bracket is vertical and the pump shaft is horizontal

NOTE: If it is intended to mount the Mixing Unit within a floor space:

- Loosen the pump and rotate so the printed black face of the pump is vertical before re-tightening



Move on to Step 4, page 9

Installation Instructions for Areas Less than 6m²

Step 2 Mount the Connection Pack Casing

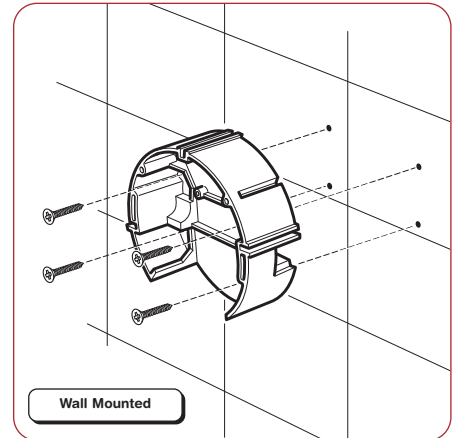
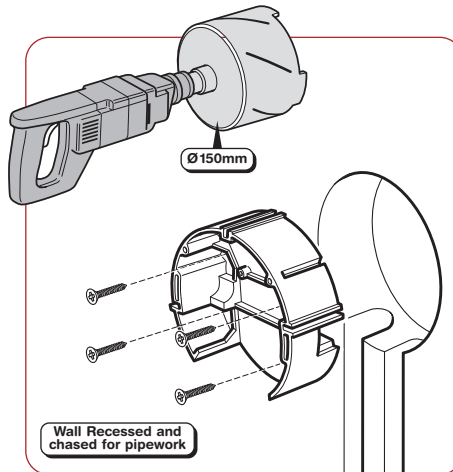
Connection Pack should be located close to the pipe circuit to be installed.

Wall recessed

- Use 150mm core drill to drill recess hole in wall
- Chase wall for flow and return pipework
- Mount casing using screws provided

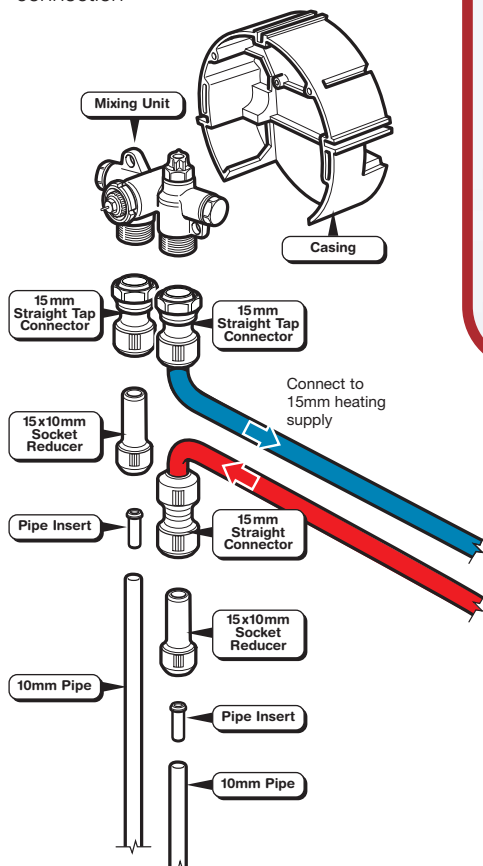
Wall mounted

- Use casing to mark screw positions on wall
- Mount casing using screws provided



Step 3 Assemble the Small Room Connection Pack (92UH006)

- Connect the 15mm straight tap connectors to the Small Room Connection Pack Mixing Unit
- Insert one of the 15x10mm Socket Reducers into the return tap connector (left)
- Insert the second 15x10mm Socket Reducers into another 15mm Straight Connector
- This completes assembly ready for pipe connection



Laying Panels and Inserting the Pipe

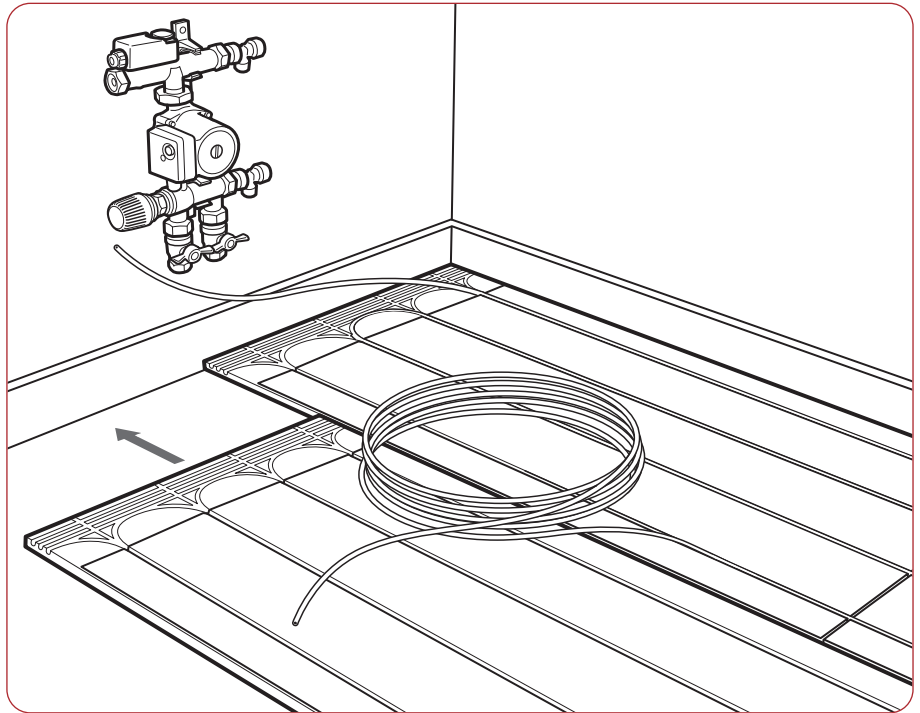
Step 4 Lay Universal Panels

Refer to typical pipe layouts on page 4 for guidance according to room shape/type.

- Lay the Universal Panels with flow and returns against the walls at opposing ends of the room

NOTE: Position the flow/returns along the wall on which the Control System is mounted

- If any panel requires trimming to size
 - Place 2 panels in position with one overlapping the other
 - Mark edge of overlap of upper panel on lower panel using a marker pen
 - Using a utility knife cut the panel along the marked line using a straight edge such as a spirit level
 - Ensure cut edge is clean



Step 5 Insert the Pipe

When installing more than a single circuit (greater than 8m²)

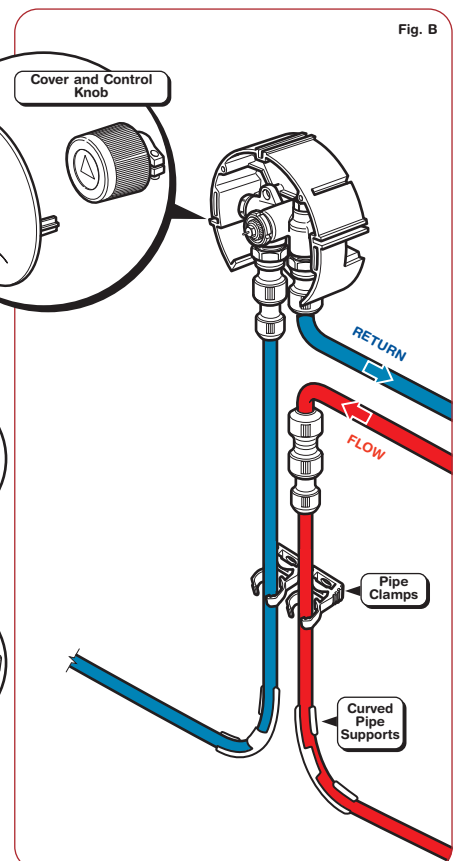
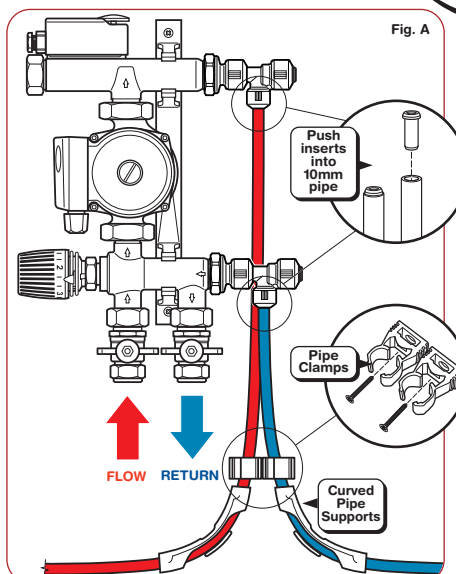
- Divide the heating zone into equally sized areas to be heated by each pipe circuit

For each circuit

- Starting from the Control System, feed the pipe into the channels, finishing back at the Control System
- Use the 10mm curved bend supports at the base of the wall below the Control System to create a tidy installation
- Cut the heating pipe to length and insert the support sleeves
- Insert the pipe into the flow and return ports on the Control System. (see **Fig A** for areas greater than 6m² and **Fig B** for areas less than 6m²)
- Secure the pipe to the wall with the Pipe Clamps

For areas less than 6m² (using Small Room Connection Pack **Fig. B**)

- Attach the Control Knob and Cover over the Connection Pack Unit



Connecting the System

Step 6 Connect to the heating system

Whether installing the Low-Build 15 System into an area less than 6m² or greater than 6m², the system can be installed with or without boiler interlock (Option A or B below).

Please follow the relevant set of Connection Diagrams for your system configuration, paying close attention to the diagram notes.

A With Boiler Interlock

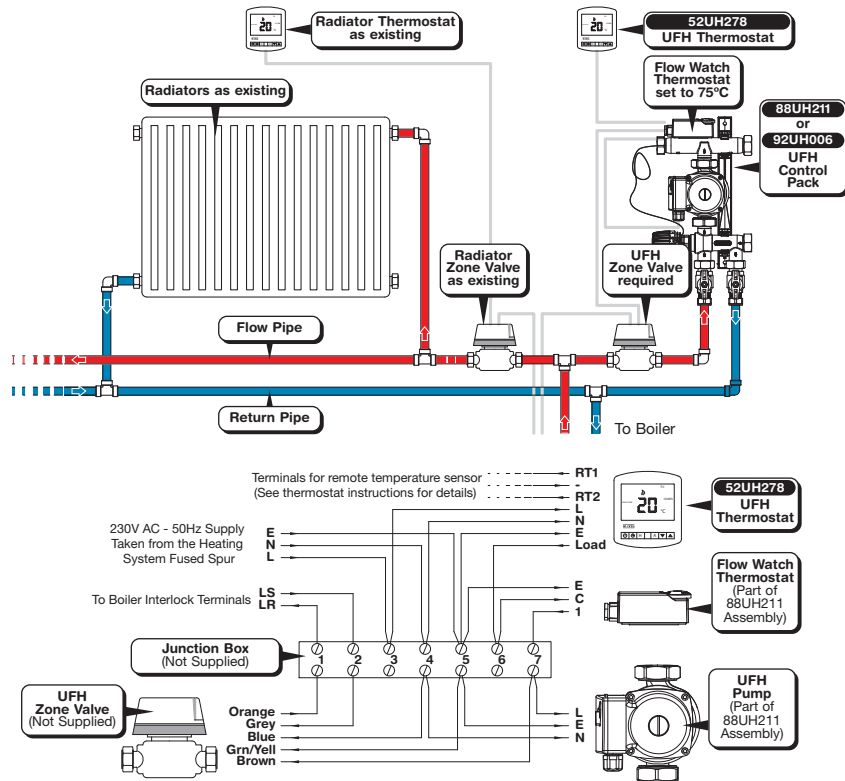
Plumbing Connections

All components must be installed and earthed in accordance with local regulations.

Electrical Connections

For installations using the Small Room Connection Pack (92UH006) in place of the Single Zone Control System the Flow watch thermostat and UFH Pump are not installed and terminals 6 and 7 should be linked together with a short length of wire.

The UFH Thermostat (52UH278) should not be installed in Wet Rooms, e.g. Bathrooms. When controlling Wet Rooms, the UFH Thermostat should be located in a suitable location outside of the Wet Room, with the Remote Sensor Probe installed inside the Wet Room.

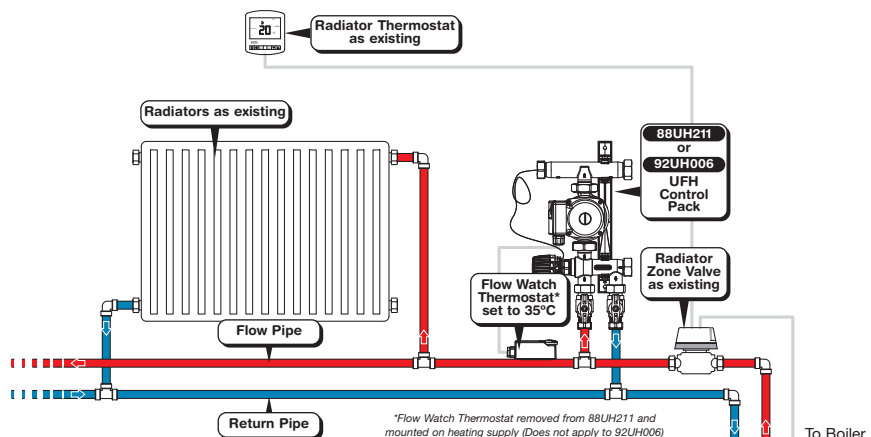


B Without Boiler Interlock

Plumbing Connections

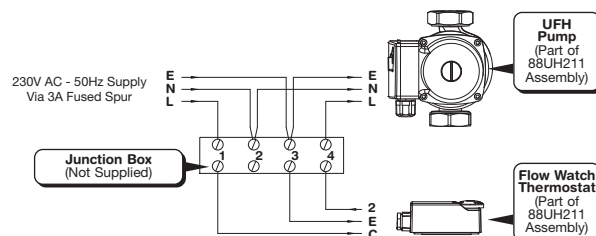
For installation using the Small Room Connection Pack (92UH006), no power supply or any other electrical connections are required.

All components must be installed and earthed in accordance with local regulations.



Electrical Connections

As the Small Room Connection Pack (92UH006) does not require a power supply, the following diagram only relates to installations using the Single Zone Control System.



Step 7 Pressure Testing

- Before connecting to the existing heating system
 - Fill the Low-Build 15 system with water.
 - Using a Hydraulic Pressure Tester pressurise to minimum of 1.5 x operating pressure of the boiler for 2 hours (typically mains water pressure will suffice).
 - If any joints are leaking, remake the joint.
 - If any pipework is damaged and leaking the pipe circuit must be replaced.

Step 8 System Commissioning (for areas greater than 6m²)

- Set the pump and temperature:
 - Commission the Grundfos circulator in accordance with the manufacturer's instructions and set it to speed III.
 - Adjust the flow water temperature by turning the thermostatic actuator. Refer to the table in the Quick Install Guide supplied with the Mixing Unit.
 - Pull out the discrete white lock ring around the base of the blue thermostatic actuator, rotate until the 2 notches line up either side of the white arrow and push back into position.
 - Set the Flow Watch thermostat to 75°C if installed with boiler interlock, 35°C if installed without boiler interlock.

everything
you need
for UFH
success



Thermoboard – ensuring the right solution

Under the Thermoboard brand Wavin offers solutions for surface heating and cooling for domestic and light commercial environments. Thermoboard systems and services are designed to enable speedy selection and correct installation of the right solution for each situation – ensuring project success, with complete peace of mind.

UFH
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