



Overlay Kit Installation Manual



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OVERLAY KIT OVERVIEW

Ideal for retro-fitting, Overlay kits are designed to be installed over an existing floor and can be laid onto any solid level surface including tiles, concrete or wood and do not require additional insulation installed below. The high density of the boards allows all types of flooring to be laid directly onto the boards, including tiles.



BEFORE YOU BEGIN INSTALLING:

EPS 400 Overfloor boards are lightweight and Super-Strong with a very high compressive strength and are approved by Mapei and Ultra for tiling directly onto using their flexible tile adhesives. Alternatively Laminate, Engineered wood, Carpet, Vinyl and Karndean are all suitable floor finishes. (Carpet, Vinyl and Karndean will require an intermediate layer.

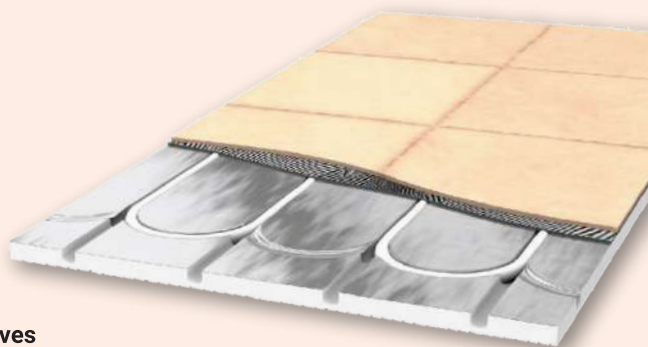
Using basic tools and a system layout drawing, installation is easily achieved by systematically cutting, arranging and sticking the boards in place using a quick drying board spray adhesive or Mapei Ultrabond ECO 380 adhesive.

YOU WILL NEED:

- Craft knife
- Metal edged rule

ALSO RECOMMENDED:

- Marker pen
- Fine toothed saw
- Pipe cutter
- Aluminium tape
- Pair of tough work gloves
- Knee protection
- Eye protection



Factory fitted with 200 micron aluminium foil:

200 Microns of thick aluminium – Super fast warm up – and rapid response, offering maximum comfort whilst using the lowest temperature water ideal for all property types.

So what's a Micron?

0.1mm = 100 Microns. 200 Microns is the optimum thickness aluminium that will give the best performance, with rapid response and even heating

FLOOR PREPARATION

1. EPS Overfloor boards can be fixed to new or existing concrete/screed or wooden floors which must be dry and level remove any loose paint or coverings. Floors must be free from oil, grease,damp,dust and debris or any other substances that will prevent the adhesive from adhering.

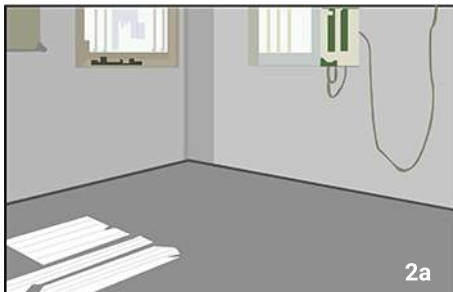
When fixing EPS Overfloor boards to a concrete or screed floor, ensure a damp proof membrane has been installed, if not or unsure then apply a liquid damp proof membrane and allow to cure fully before fixing any boards.

When fixing EPS Overfloor boards onto a wooden/timber floor ensure any loose flooring is secured, replace any missing or damaged boards. Ensure the floor is firm and level allow any adhesives to dry fully before fixing Overfloor boards.

If fixing EPS Overfloor to a non-porous substrate such as existing tiles, they will need thorough cleaning with a de-greasing agent, such as scrubbing with a combination of methylated spirits and wire wool. Coat the tiles with the recommended spray adhesive first and then coat the back of the EPS board with spray adhesive, allow both to become tacky and then bring the two surfaces together. (Test a small patch first to ensure compatibility)

FITTING PERIMETER STRIP

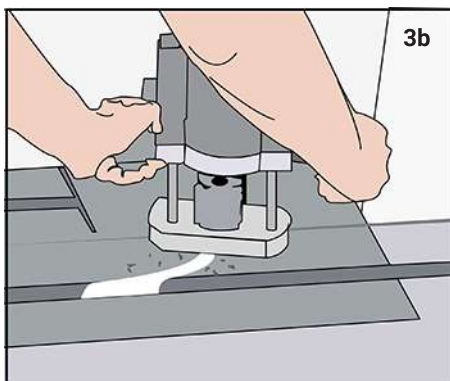
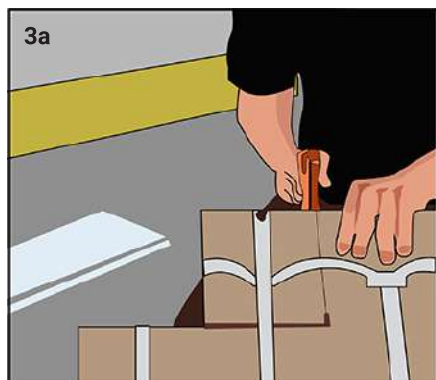
2. Before laying floor heating boards, remove skirting boards and any doors that will require trimming to accommodate the floor heating boards (2a). Fit perimeter edge strip around the outside edges of the area to be heated using the sticky tape on the back or a hand staple gun. This will help reduce heat loss and allow for expansion (2b). Any height excess can be trimmed off once final floor finish has been laid.



PLEASE NOTE: These boards are not intended to be bonded to an Asphalt surface. Please call our our technical support team for advice before commencing work.

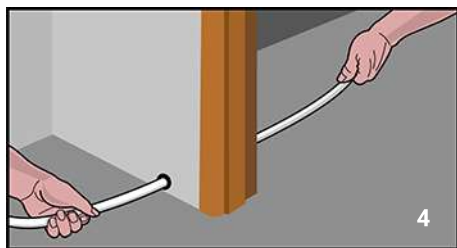
CUTTING THE BOARDS

3. Some cutting of boards will be required, this is easily achieved with a craft knife or fine toothed saw (3a). Extra pipe channels and routes can be cut by hand or using an electric router (3b).



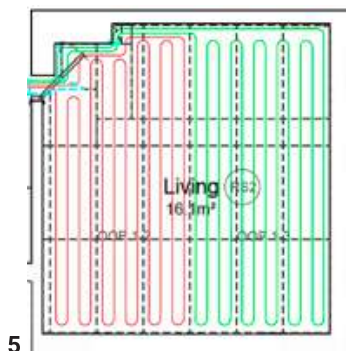
PASSING PIPE THROUGH WALLS

4. When floor heating pipes need to pass through walls, drill the holes before laying and fixing boards to prevent any damage to the boards. Protect and seal the pipe ends with tape. To prevent kinking, one person should feed the pipe through the hole whilst another draws the pipe through from the other side (4).



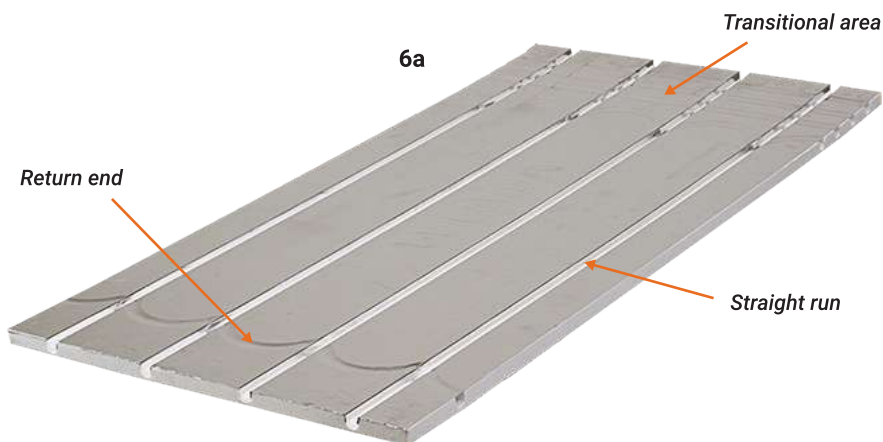
STUDY THE PIPE LAYOUT DRAWING

5. Before attempting to lay any floor heating boards, familiarise yourself with the system layout drawing, noting manifold position (5). Plan the routes for transitional pipe runs and transitional boards. Some cutting of boards will be required this is easily achieved with a fine toothed saw or craft knife. We advise wearing gloves as the aluminium edges can be sharp.

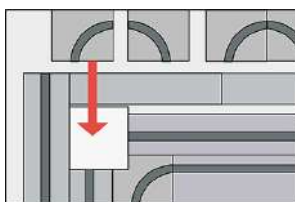


EPS BOARD PREPARATION & CUTTING

6. EPS Overfloor boards include straight pipe runs, return ends and a transitional area on every board (6a). These boards are designed for easy installation, cutting to shape where required. Transitional pipe runs, additional corners, 90°bends and extra pipe channels will normally be required and are simply cut from a main board (6b/c) These main boards should be used in conjunction with transitional boards in areas of high pipe concentration.



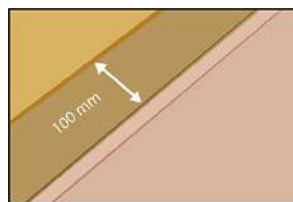
When cutting and creating new bends into a board keep the radius gradual and no sharper than in a main The water flow around a pipe circuit should go to potential cold areas first, for example walls and areas of high glazing. We suggest wearing flat soled shoes or trainers whilst walking on the boards. Pipe should be set back from walls to avoid future placement of carpet grippers etc. (6d). Ensure boards are dry and free from dirt, dust or any other contaminants before laying. Keep any off-cuts as they may be required later on.



6b



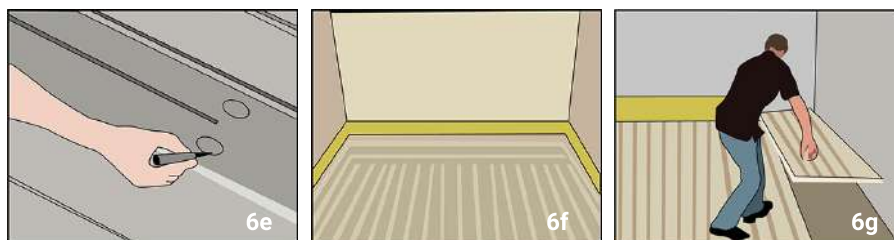
6c



6d

CONT...

Before laying any boards familiarise yourself with the system layout drawing noting direction of boards, potential cutting required and transitional areas. If you are inexperienced in laying Overfloor heating we strongly suggest completing a 'dry' lay of all boards before using any adhesive. Identify joins between boards using a marker pen (6e). Once you are satisfied that all boards have been cut and marked for an area (6f) they can be lifted in preparation of fixing the boards permanently in place (6g).

**FIXING BOARDS TO AN EXISTING OR NEW FLOOR**

7. Board spray adhesive method. Ensure subfloor is dry, clean, stable, level and free from oil, grease, loose paint and any obstructions. Secure any loose boards, fill any holes, dips or low points in the floor. When using the spray adhesive users must be aware of the environment in which the spray is to be applied.

Ensure adequate ventilation, open windows and doors, do not use in confined areas. Wear suitable protective gloves, face mask and clothing. Prior to use, check compatibility, spray a small test patch onto the substrate. Some non-porous floors such as existing tiles will need thorough cleaning with a de-greasing agent such as scrubbing with a combination of methylated spirits and wire wool. Apply a coat of spray adhesive to the existing tile surface and the underside of the Overfloor board.

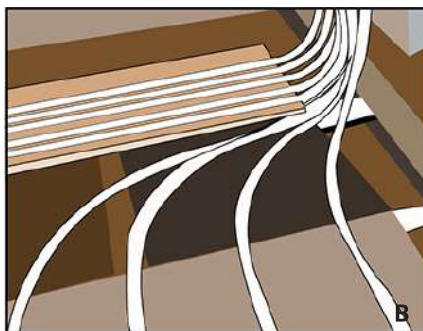
Allow both surfaces to become tacky before bringing together (we recommend testing a small patch to test compatibility). Place the board carefully onto the adhesive making sure you have selected the correct board and orientation. Apply an even and firm pressure, make sure the board is in full contact with the adhesive and floor below.

When using spray to bond EPS boards onto existing floor boards, both the floor boards and the underside of the EPS board will require a covering of spray adhesive. This is necessary as older floor boards often develop concave or convex surface due to distortions occurring in the wood over time (see illustration 7e on pg 5) and this will potentially reduce the effective adhesion area. Coating both the floor boards and board will reduce this effect and create maximum contact between the two surfaces giving a firm and secure fixing. As before, always carry out a test area with the spray adhesive and board before commencing with the rest of the install.

TRANSITIONAL AREAS

Transitional pipe boards (A) are easily cut to suit any Overfloor project where there is a concentration on pipes or where a corner needs to be formed.

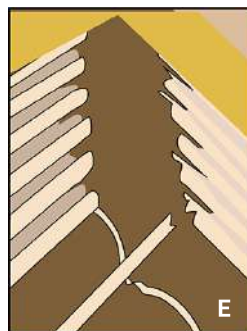
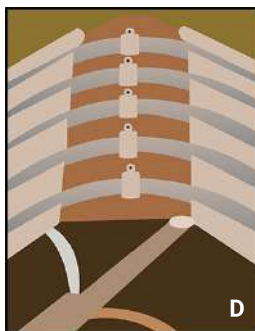
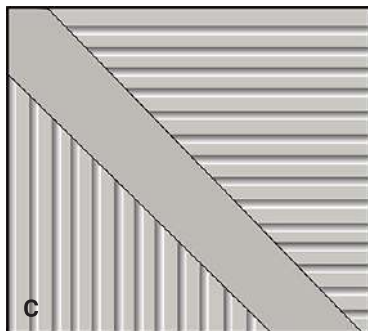
Straight pipe runs can be laid directly into the straight transitional board – cut to length and width as required (B).



Corners can be formed from a main transitional board, for example cutting two 45° will provide a 90° turn (C).

Do not push the 45° cut edges up against each other, leave a space approximately 120mm wide this will allow the pipe to be formed and bent as it changes direction from one straight channel to another. Take care not to form too tight a bend and kink the pipe. The open area between the boards can be backfilled with renovation screed, fixing the pipes with suitable nail clips to the subfloor if required before pouring renovation screed (D).

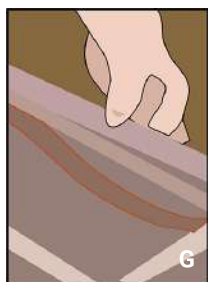
The screed should be applied & levelled off at the same height as the Overfloor board (E). Corners can also be routed out from a main board once bonded to the floor.



TRANSITIONAL AREAS (CONT...)

Extra pipe channels can easily be cut using a suitable router and bit. In order that a smooth bend is formed lay and shape the pipe onto the area where a channel is required, gently bending the pipe to follow the curve. Once the lay of pipe has been established follow the curve with a marker pen, marking directly onto the board the route to be routed (F/G).

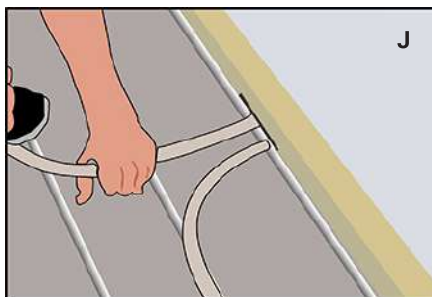
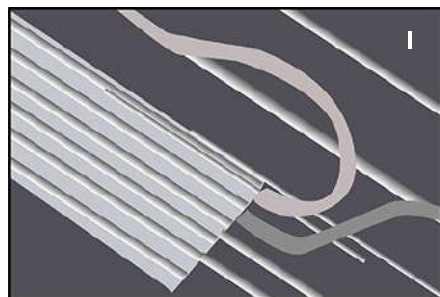
Using a router with bit set to 17mm depth gentle cut the new channel following the marker pen layout (H). Ensure the channel is clear and free from debris, if required the channel can be lined with aluminium tape. Lining with aluminium tape is not required in areas with highly concentrated/close floor heating pipes.



Where floor heating pipes are require to pass through walls suitable sized holes will be required at floor level , (18mm drill bit) (J).

Take care to avoid any services hidden within the wall, the end of the pipe must be taped off to ensure no debris enters the pipe before passing through the wall. When passing pipe through the wall, lift any pipe laid in the Overfloor boards immediately before the hole, this will make it easier to pass the pipe through the wall and prevent any kinks occurring.

The entry and exit around the holes will require backfilling with either off-cuts of Overfloor or Renovation Screed.



FIXING BOARDS TO AN EXISTING OR NEW FLOOR (CONT.)

7. When bonding the boards in place, we suggest starting in a corner and work along the furthest outside wall first, when you reach the opposite corner start a new row. Ensure that the pipe channels line up as you lay each board.



A helpful tip is to mark around the board onto the floor with a marker pen before spraying adhesive. This will allow you to spray the adhesive right up to the board edges minimising overspray and wastage. (7a)

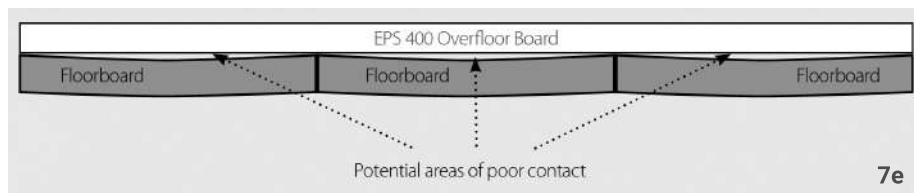
Spray at a distance of 10-20cm (4-8") towards the substrate surface, applying a uniform and even coat of adhesive, obtaining 80-100% coverage (7b) the spray is coloured to aid application. Allow the adhesive to tack off until no adhesive transfers to the knuckle when touched (7c).

Avoid over applying spray adhesive as this is not necessary with this type of adhesive. Ensure correct board or cut out section has been chosen before placing onto the spray adhesive, press down applying adequate pressure to achieve maximum contact and strength (7d).



IMPORTANT: WHEN BONDING ONTO OLDER FLOORBOARDS

When using the spray to bond EPS boards onto existing floor boards, both the floor boards and the underside of the EPS board will require a covering of spray adhesive. This is necessary as older floor boards often develop a concave or convex surface due to distortions occurring in the wood over time (see illustration 7e) and this will potentially reduce the effective adhesion area. Coating both the floor boards and board will reduce this effect and create maximum contact between the two surfaces giving a firm and secure fixing. As before, always carry out a test area with the spray and board before commencing with the rest of the install. Seriously uneven floors may require levelling first.



USING MAPEI ULTRABOND ECO 380 TO BOND BOARDS TO THE FLOOR

8. As an alternative to using spray adhesive, Mapei Ultrabond ECO 380 is approved. With a strong bond of EPS Overfloor to all kinds of absorbent, stable, level substrates including concrete/screed and existing wooden floors. Floors must be free from oil, grease, damp, paint and debris or any other substances that will prevent the adhesive from bonding to the floor. ECO 380 must be allowed to fully cure before any foot traffic or laying floor heating pipes.

Starting with a few square meters at a time apply Mapei Ultrabond ECO 380 to the substrate using a 2mm (A2) tooth comb spreader (8a). Do not use Mapei Ultrabond ECO 380 as a filler to level out gaps, cracks or uneven substrates as this will greatly reduce the coverage achieved and increase drying times. Any uneven screed or concrete floors should be levelled with a renovation screed first.



Leave the Mapei Ultrabond ECO 380 to become tacky before laying any boards – generally 10-30 minutes dependant on the substrate, environment conditions and temperature. The boards can now be applied to the adhesive, starting with one board at a time, usually the furthest corner of the room (8b). Systematically work across the outside wall fixing each board in turn (8c). When you reach the opposite side of the room return to the beginning and start the next row ensuring that pipe channels line up.

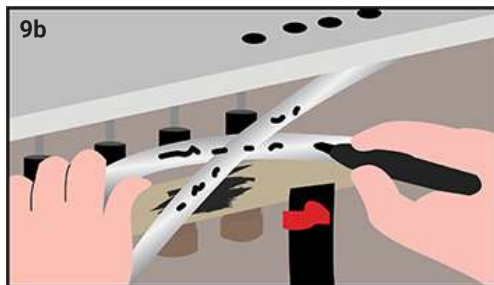
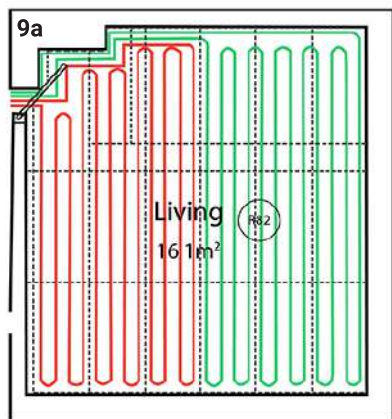


A good tip is to insert a small o cut of pipe into the pipe channel where the boards meet (8d). After laying each board, carefully walk on the board applying adequate and even pressure ensuring the board has taken to the adhesive. Take care as boards may slip on the adhesive, if any boards squeak when walked on carefully lift the board, re-apply adhesive and repeat the above steps (8a-8d). Allow sufficient time for the Mapei Ultrabond ECO 380 to fully dry before allowing any foot traffic as boards may slip and move (generally 24-48 hours drying dependant on the substrate, environment conditions and temperature.)

INSTALLING FLOOR HEATING PIPE INTO EPS BOARDS

9. Before laying pipe make sure pipe channels are clear from debris, check and familiarise yourself with the pipe layout drawing (9a) plan where to begin and the pipe routes for each individual loop of pipe.

The layout drawing will indicate the length of each pipe loop required. Do not cut the pipe before laying as you may need to change the route due to unforeseen circumstances.



Pert pipe is recommended for use in all Overfloor systems due to its flexible, lightweight and easy to handle properties. Always begin laying pipe at the manifold allowing a bit extra for final connection to manifold identify each loop flow, return and loop number using a permanent marker (9b).



If not using a pipe decoiler the pipe can be easily installed by two people, the first walks with the pipe coil and reels it out while the second person carefully walks along the pipe pushing the pipe down into the straight pipe channel (9c – 9d).

INSTALLING FLOOR HEATING PIPE INTO EPS BOARDS (CONT...)

If laying pipe without the aid of a pipe de-coiler when you reach the end of a straight run employ the technique of rotating the whole coil through 180° towards the direction of the return channel (9d/e)

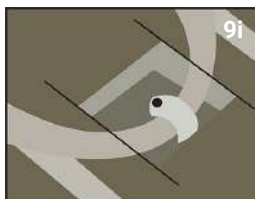
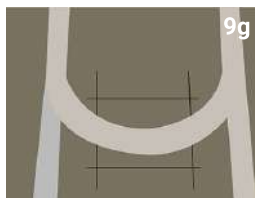
This will help deter the pipe from trying to twist, ease the pipe around and into the bend. Lay the pipe into the return or corner gently forming and pushing the pipe gently into the channel as it forms around the bend (9d/e).



Do not try and form the bend before laying the pipe as this could potentially result in a kink in the pipe. If a kink occurs, wrap the pipe in a cloth for protection and gently squeeze with pliers to reshape. Alternatively the pipe can be lifted out of the boards and moved backwards so the kinked section now lays in a straight channel.

Once all pipe has been laid into the boards, ensure each loop has been identified with flow, return and loop number (9b). This will help eliminate mistakes when connecting the pipe to the manifold at a later stage. Protect your newly laid floor heating system from site traffic by covering with boards where walking is necessary.

If pipe work is not installed correctly it may sit proud of the Overfloor board, it can be tapped down using a wooden batten across the board and gently tapped with a hammer (9f) or aluminium tape can be used to secure the pipe. Alternatively on bends simply remove a section of the EPS board and secure the pipe to the floor below using a suitable nail clip on wooden floors and replacing the nail for a raw plug and screw on screeded floors (9g-9i).



TIP!

In the unlikely event of a kink in the pipe occurring, wrap the pipe in a cloth for protection and gently squeeze with pliers to re-shape.

FLOORING WITH WOOD PRODUCTS

(INC. PARQUET, SOLID & LAMINATE)

For floating Wooden and Laminate floors it is advisable to use Underlay, allowing the floor to move freely when expanding and contracting and to help improve step noise reduction.

Wood is a material that is extremely influenced by its environment, specifically by moisture content of the air above and below. Depending on the relative humidity of the air, moisture content of the wood will naturally vary over the seasons – and so will its volume. Floor heating will escalate the expansion and contraction of wood. It is therefore extremely important to install wood flooring with care, following the manufactures guidelines.

Flooring manufacturers often give instructions on how wood flooring should be laid, with a maximum surface temperature of 27°C. This can be monitored and set using a thermostat and floor probe which will protect the floor.

The easiest means of installing wooden flooring is by the 'floating floor' method, special attention must be taken to follow manufactures instructions on expansion joints. With Floor heating wood will dry and shrink more during the winter season than if floor heating was not installed.

So it is important to keep the supply temperature of the floor heating system as low as possible and to increase the size of the expansion joint by approximately 50% in the case of large floorboards, Underfloor heating will give rise to larger gaps between boards during winter months.

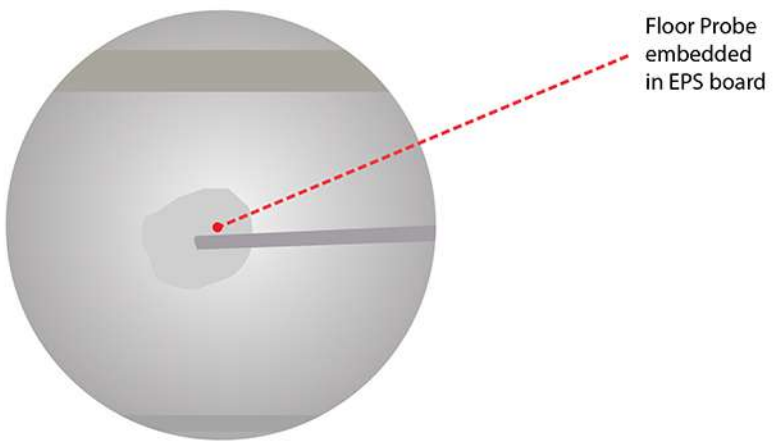
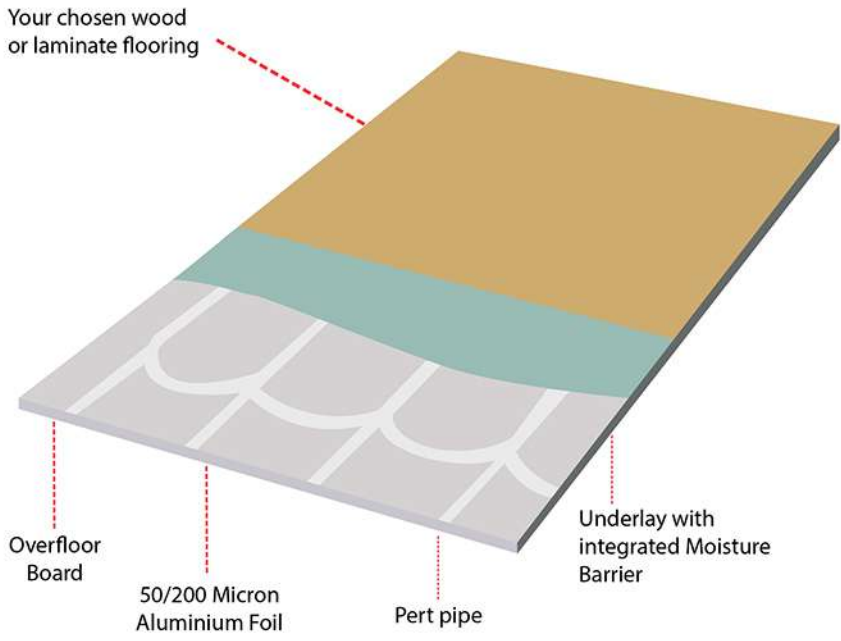
Generally for wood floating floors, it is important to have some form of vapour barrier underneath. Some wood flooring manufactures require a polythene vapour barrier (0.2mm thick and age tested) to prevent vapour moisture potentially coming from below which could damage the wood flooring.

It is important for wood flooring which has been kept in cold conditions to be taken into the room in which it will be fitted so that it can acclimatise to the new environment and this may take several weeks. Some large wood products unless kiln dried may need a longer acclimatisation period in order to dry to a sufficiently low moisture content before it can be fixed.

PLEASE NOTE:

Maple and Beech woods are not suitable with underfloor heating due to potentially large seasonal movements of contraction and expansion in the woods causing splitting.

HOW THE OVERFLOOR BOARD WORKS WITH YOUR CHOSEN FLOORING



GENERAL RECOMMENDATIONS FOR INSTALLING WOOD FLOORING

Flooring manufacturers give instructions on how wood flooring should be laid, and make reference to floor surface temperatures not exceeding 27°C . We always recommend the use of thermostats with floor probes to limit floor surface temperatures. The maximum total thickness of wood floor covering should not exceed 25mm.

Install the wood flooring on top of a suitable underlay, remembering to leave adequate space at the expansion joints for the wood to expand and contract over the seasons, usually the space is made available along adjacent walls so that the space will be covered by skirting board on wall.

PARQUET

Parquet should be installed according to suppliers instructions. Parquets of a laminated type (three layers) give smaller expansion and contraction over the seasons. Solid parquets have larger moisture movements than laminated parquets.

SOLID WOOD (FLOORBOARDS)

Solid floorboards should be placed so that the direction of the grain is at 90 degrees to the direction of the pipe. If the floorboards are to be fixed rather than a floating floor, suitable advice should be available from your supplier, however fixing with an acrylic adhesive will allow for expansion and contraction of floorboards over the system.

LAMINATE

Laminates are usually quite thin (7 - 10mm), which from an energy perspective are more efficient than other thicker wood floorings. They should either be glued or 'clicked' together according to the manufacturers instructions. Several laminates are delivered with a vapour barrier and/or an acoustic layer attached to the bottom.

CARPET

The use of 6mm plywood sheets screwed down with countersunk screws, paying close attention to the installed floor heating pipes below will provide a firm stable base for laying of suitable 'porous' underlay and open weave carpets that will work with floor heating. Combined TOG value of carpet and underlay should not exceed 2.5 TOG maximum for the floor heating to be effective. Alternatively 6mm plywood can be bonded to the overfloor boards giving a permanent fixture using a polymer based adhesive such as MAPEI ULTRABOND S955. For more information on floor covering suitability with use with floor heating please contact your chosen floor covering supplier.

RESILIENT FLOOR COVERINGS

Vinyl, Linoleum, Cork, Polyurethane, Rubber and Asphalt composites are in the category of resilient flooring, where vinyl is by far the most common. These coverings cannot be placed directly on the overfloor boards and will therefore require an intermediate layer that makes the top surface level and load bearing.

A floating T&G chipboard floor with level joints which vinyl or linoleum is glued to, is the simplest way of working with these coverings. Alternatively bond a suitable backer board to the overfloor board, then place floor finish on top.

If using Karndean or Amtico as a floor finish, you can prime the board and put a 5mm bed of renovation screed as an intermediate layer.



ULTRA TILE ADHESIVE – INSTALLATION GUIDE FOR TILING ONTO 400EPS OVERFLOOR BOARDS

Installing ceramic, vitrified, quarry, porcelain & natural stone tiles

Before commencing tiling all EPS400 boards must be installed correctly and provide a sound, stable and level substrate. The EPS boards must be clean and free from contamination or substances which could inhibit adhesion. Floor heating pipes must be installed and pressure tested prior to floor finish being laid.

STAGE 1

Ultra Floor Prime IT Multi-surface primer

Prime It Multi-surface primer is used to prepare the aluminium surface of our EPS400 Overfloor boards prior to tiling directly onto using Granfix ULTIMATE FLEX tile adhesive. Applied neat to the entire surface of the aluminium, pipe and any exposed pipe channels – 1 tub = 50sqm coverage.

Prime IT Multi-surface primer must be applied neat to the entire aluminium surface of Overfloor boards prior to bonding tiles with Granfix ULTIMATE FLEX tile adhesive. All boards must be secured to the substrate in accordance with our Overfloor installation instructions, all boards must be clean, dry and all floor heating pipe work laid before priming. DO-NOT fill empty pipe channels with off cuts of pipe – leave exposed.

Prime the entire surface of the aluminium, floor heating pipes and any empty pipe channels with a neat coat of Prime IT using a suitable roller. Once the primer has fully dried tiles can be fixed using Granfix ULTIMATE FLEX tile adhesive. Any empty pipe channels must first be filled with adhesive using a smooth edged trowel before finally applying with a notched trowel to achieve the bed thickness required.

Under no circumstances should the floor heating be used to aid or speed up the drying of any floor heating board adhesives or tile adhesives including grout. When heating the system for the first time, ensure any heat is introduced gradually to protect the floor from thermal shock.

IMPORTANT: Movement/Expansion joints – should be incorporated as British standard recommendations.

STAGE 2

Granfix ULTIMATE FLEX adhesive

Granfix ULTIMATE FLEX is a highly polymer modified single part S2 flexible tile adhesive designed for use with floor heating. Tried, tested & approved by ULTRA for tiling Ceramics, Slate, Quarries, Porcelain & Limestone directly onto EPS400 Overfloor boards when primed with Prime IT. Coverage +/- 4 sqm per 20kg bag at 3mm depth with backbuttering.

The entire aluminium surface of EPS400 heating boards, empty pipe channels and floor heating pipes must be primed with Prime IT prior to tiling with ULTIMATE FLEX tile adhesive. The product sets in 40 minutes and can accept light foot traffic in 2 hours at 20°C. Used to fix most floor tiles directly onto the Overfloor board without the need for an admix, when set ULTIMATE FLEX is water resistant.

When grouting the grout selected must have 'flexible' characteristics, once the tiling and grout has been carried out, the temperature must remain the same for a minimum of 7 days. After this time, the floor heating can be brought up to full working temperature slowly. A maximum water temperature increase of 5°C per day is recommended.

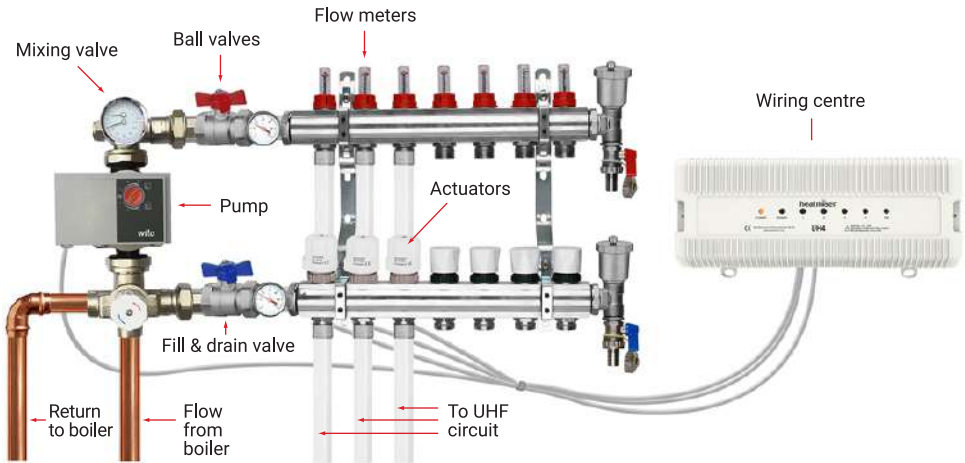
- Approved for use to bond directly onto EPS400 Overfloor boards
- Conforms to BS EN 12004 & 12002 C2FS2
- Pot life 40 minutes
- Grout after 3.5 hours
- Applications 3mm – 20mm
- Underfloor heating compatible
- Ultimate S2 flexibility
- No Admix required
- Water resistant

WETROOM SYSTEM

WETROOM SYSTEM can be used to prepare areas prior to tiling providing strength and flexibility and still enable tiles to adhere. This two-component system consists of a brush applied flexible waterproof coating and 10m membrane tape. Compatible for use with floor heating, tiles can be applied 24 hours after application.

WETROOM SYSTEM can be applied to most common substrates including moisture sensitive backgrounds such as EPS400 floor heating board, plaster, plasterboard and tile backing boards, it may be used beneath ceramic, porcelain, natural stone and glass tiles.

PUMP & MANIFOLD ASSEMBLY



1. Attach manifold to wall.
 2. Fit ball valves to manifold, the end with the loose nut to manifold (remember the washers!).
 3. Assemble pump & mixing valve as shown.
 4. Connect supply pipework to mixing valve using $\frac{3}{4}$ " male iron compression fittings.
- DO NOT APPLY HEAT TO MIXING VALVE**

FILLING THE MANIFOLD SYSTEM

1. It is **IMPORTANT** that the underfloor heating system is properly filled with water and purged completely of air to ensure correct operation, it is therefore necessary to follow the procedure below.
2. **IT IS NOT ADEQUATE TO FILL THE SYSTEM USING THE BOILER FILLING LOOP!**
3. Connect a hose from a mains pressure cold water supply to the hose connection on the top (flow) manifold, and another hose from the hose connection on the bottom (return) manifold to a drain.
4. Ensure that all the white caps on the bottom (return) manifold are screwed down, closing the valves.
5. Ensure that the main flow & return ball valves are closed on the manifold.
6. Turn on the water and open the hose connection valve on the top (flow) manifold.
7. Open the first circuit valve by unscrewing the white cap allowing water to flow into the pipe.
8. Open the hose connection valve on the bottom (return manifold) allowing water to flow freely into the drain until the water is clear with no air bubbles.
9. Open the second circuit valve (white cap) and close the first.
10. Open the third circuit valve and close the second etc.

FILLING THE MANIFOLD SYSTEM (cont.)

11. Continue until the last circuit has been purged and close the hose connection valve on the bottom (return) manifold before closing the last circuit valve (white cap).
12. While under pressure, check manifold & pipework for leakage.
13. Close hose connection valve on the top (flow manifold) and remove the hoses.

COMMISIONING

1. Screed or chipboard flooring should be laid immediately after pipelaying to protect the pipe.
2. Concrete screed floors must be cured before any heat is applied, a general rule of thumb is to allow 1 day per 2 millimetres of screed.
3. Timber floor with drymix infill can have heat applied immediately, the drymix must be dried completely before laying the flooring.
4. Hardwood timber flooring must be 'conditioned' before fixing.
5. It is important to purge the pipework from the boiler to the manifold, to avoid air being introduced into the underfloor heating system.
6. It is not normally necessary to balance the system but if required follow this procedure. The system is balanced by running the pump, and adjusting the flow to each zone by turning the square spigots under the white caps on the bottom manifold, the flow in the respective sight glasses should be set at a figure calculated by dividing the length of pipe for that zone by 40. Example: Circuit 1, $85\text{m}/40 = \text{approx } 2$ on the scale. Low profile systems circuit at $70\text{m}/40=1.75$.
7. Fit actuators to valves after connecting the control wiring.
8. It is important that the actuators are screwed tightly on to the valve.
9. Initially start the system with the thermo-static valve set at min (35°C).
10. Increase the setting by 5° per day, up to a maximum of 50° for concrete floors, max 65° for timber floors.
11. The flow & return from the boiler should be connected to the manifold connections shown using compression couplings.
12. NOTE. When first starting up the system it may take 12-24 hours for the heating effect.

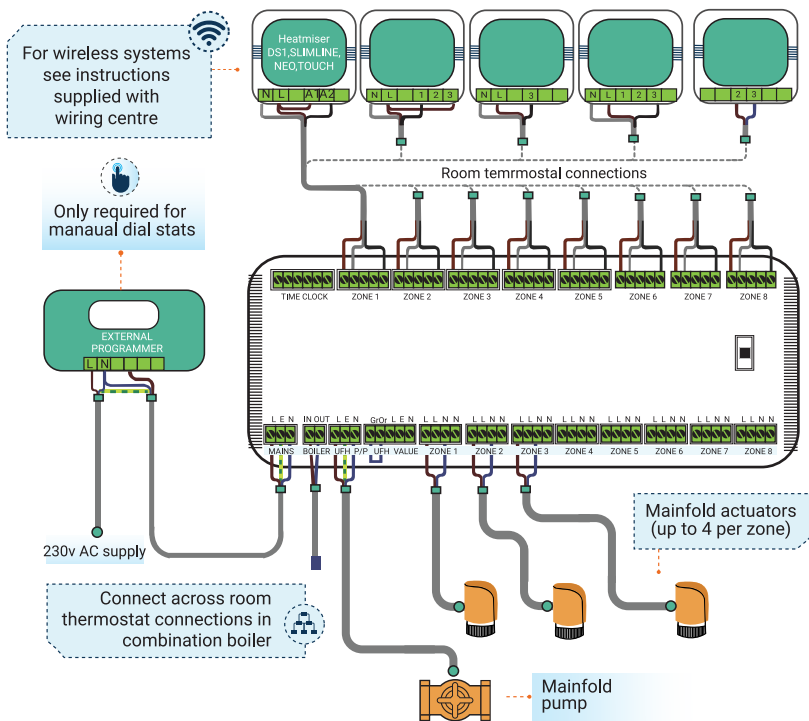
MAINTENANCE We recommend that the following maintenance be carried out annually.

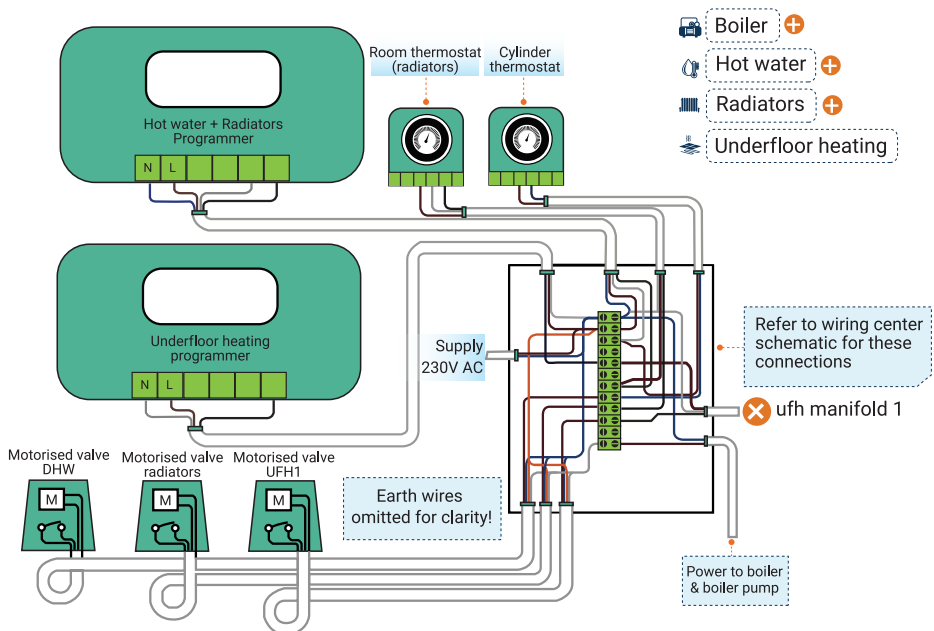
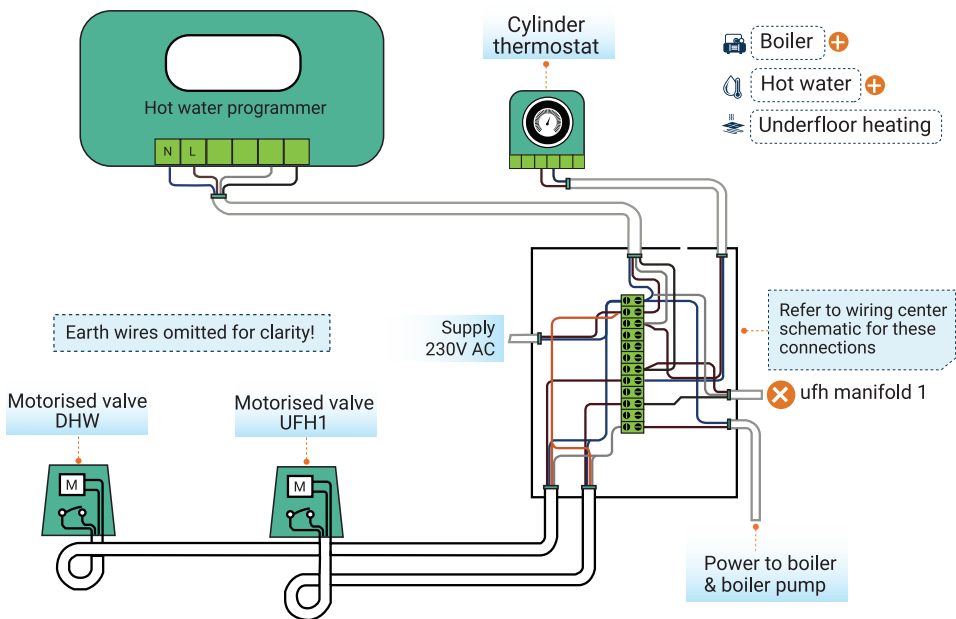
1. Check that all actuator nuts are tightened firmly and that actuators are not loose.
2. Remove end plug from pump and check that pump rotates when energised.
3. Turn up thermostats & check that actuators move into open position also check flow gauges are indicating. If not, re-pressurise manifold, remove indicator, clean & replace, repressurise manifold.

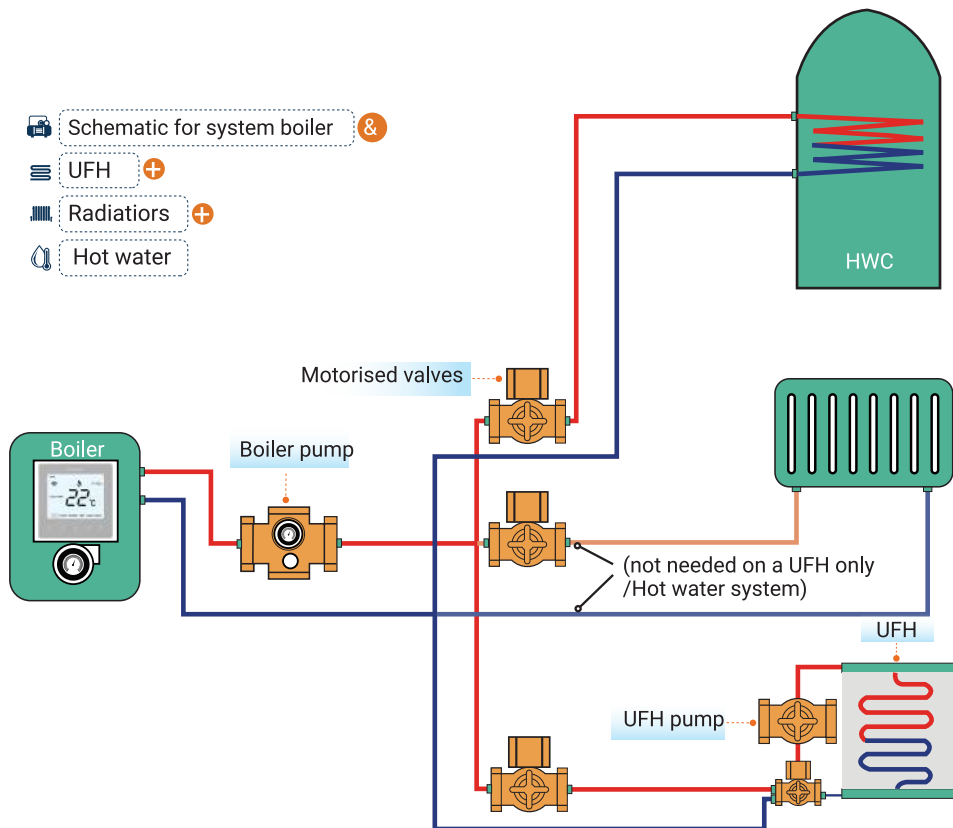
ELECTRICAL SETUP


1. Wiring from thermostats to manifold wiring centre should be 1mm 3core + earth (6243Y).
NB: A network system must be wired in 'CAT6' cable.
2. The wiring centre has a back entry to avoid surface wiring.
3. Where one room has more than one pipe circuit it will be necessary to connect all the circuit actuators to that particular zone on the controller, controlled by one thermostat.
4. Thermostat position in the room is not critical but positions affected by the sun should be avoided, mounting height approx 1.5M

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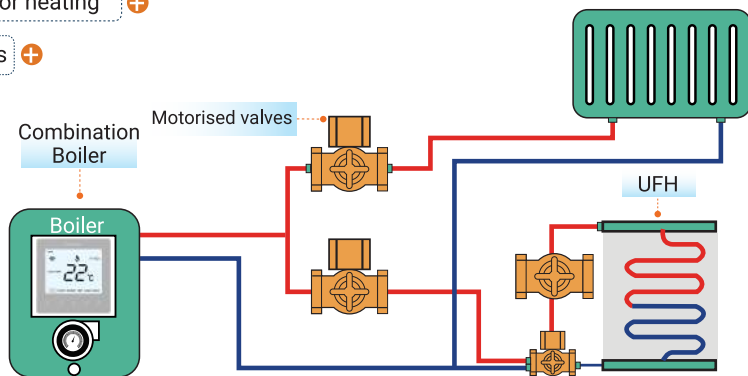




 Schematic for gas combination boiler &

 Underfloor heating +

 Radiators +



TYPICAL FIXING METHODS

UNDER NEW CONCRETE OR SCREED FLOORS

A cost effective solution for installing water underfloor heating into new build properties or new extensions.

This type of system installation is the most popular and cost effective type on the market today, the pipes are incased in screed or concrete meaning that the whole floor warms up like one huge storage radiator. This system is normally for new build houses or extensions/conservatories.

CLIP RAIL SYSTEM



BETWEEN JOISTS OR SUSPENDED FLOORS

Installing water underfloor heating between joists is easy using our different installation solutions.

Please note all in joist systems require the pipe spacing to be 200mm apart or less. This means you need to select a conservatory style kit or a multiple room kit - standard room kits are designed with the pipe spacing at 250mm centers which would mean you would not have enough pipe in the kit.

SPREADER PLATE SYSTEM



OVER EXISTING FLOORS

Installing water underfloor heating over existing floors is simple using our different installation solutions.

Our overfloor systems can be installed directly over any solid sub-floor such as existing floorboards, plywood or concrete/screed floors, or any solid surface such as existing tiles/wooden floors.

OVERLAY FLOOR PANELS



TYPICAL FIXING METHODS

PLASTIC EGG CRATE SYSTEM



CLIPPED DIRECT WITH STAPLES



IN JOIST FOIL BOARDS

