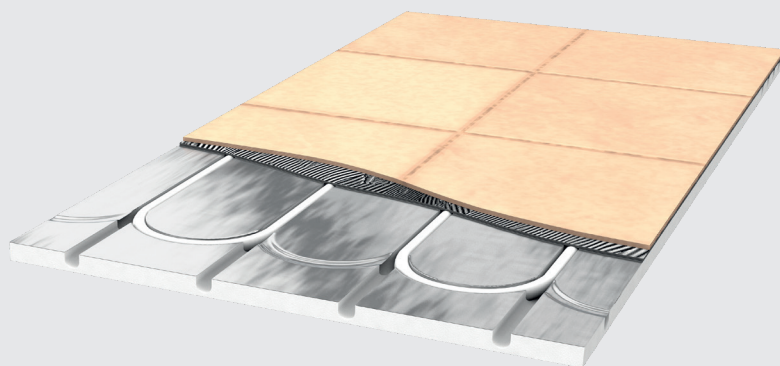


Installing Wunda Rapid Response® Overfloor boards

Overfloor boards have a high compressive strength (400kPa) and is fully approved by Mapei and Ultra for tiling directly onto, using their recommended flexible adhesives and without the need for a separate backer board or intermediate layer. Laminate and Wood flooring can also be installed with a suitable underlay or adhesive onto **Overfloor boards**. Carpet and Vinyl on the roll will require using our Duo Board or **approved 10mm** renovation screed as an intermediate layer.

All **Overfloor boards** and transitional pipe boards have been designed for quick and simple fitting, easily cut to shape where required or routing out extra corners/ channels with a suitable bit.

Please note: We always recommend the use of a floor probe where floor finishes/coverings require floor surface temperatures to be limited - e.g Natural wood/LVT, please check with the flooring supplier.



Wunda Rapid Response Overfloor Boards have been tried & tested in the Thermal Measurement Laboratory at the University of Salford, Manchester

Testing for thermal resistance for both 16mm & 20mm boards was carried out to ISO 8301:1991 / BS EN 12667 - 2001



You will need:

- Either Wunda board spray adhesive & mask
- Or Mapei Ultrabond ECO 380 & A2 spreader
- Work gloves
- Craft knife
- Metal straight edge rule
- Marker pen
- A flat & level structural subfloor

Also recommended:

- Router
- Fine tooth saw
- Knee protection
- Eye protection
- Aluminium tape
- Pipe Layout Drawing*
- Wunda recommended renovation screed (optional)

*Please speak with your account manager & ensure you are happy with the design prior to ordering your system.

Floor preparation

1 Overfloor boards can be fixed to new or existing concrete/screed or wooden floors which must be flat, dry, level, stable & structural. 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 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 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 Overfloor boards 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 Wunda spray adhesive first and then coat the back of the Overfloor boards with Wunda spray adhesive, allow both to become tacky and then bring the two surfaces together. (Test a small patch first to ensure compatibility) **Please note:** this will half the coverage achieved with Wunda spray. **Alternatively - Prime and 10mm approved levelling screed.**

Fitting perimeter strip

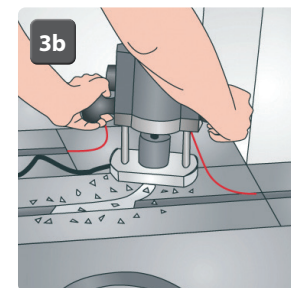
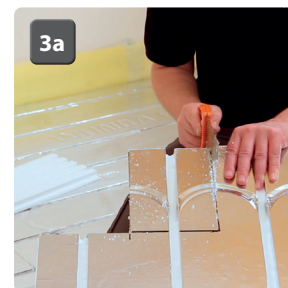
2 Before laying the floor heating boards, remove skirting boards and any doors that will require trimming to accommodate the floor heating boards and final floor finish (2a). Fit perimeter edge strip around the outside edges of the area to be heated using the sticky tape on the back or a hand staple gun. This will allow for expansion and help reduce heat loss (2b). Any height excess can be trimmed off once the final floor finish has been laid & skirting boards back down to cover. If intending to lay carpets with edge grippers, fix a suitably sized batten up to same height as the Overfloor boards around the room perimeter. Lay the Overfloor boards flush against the batten when installing, this will allow fitment of carpet gripper at a later stage, with no risk of fixing through panel or pipe.



Cutting 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 with a 16 or 12mm bit depending on pipe diameter (3b).



Passing pipe through walls

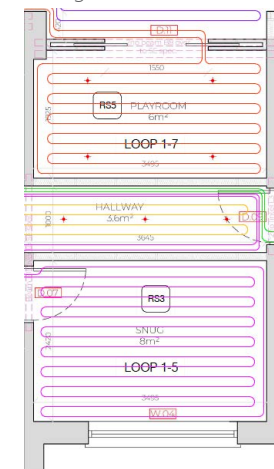


4 When floor heating pipes need to pass through walls, drill the holes before laying and fixing boards to prevent any damage to the boards. Protect and seal the pipe ends with tape. To prevent kinking, one person should feed the pipe through the hole whilst another draws the pipe through from the other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

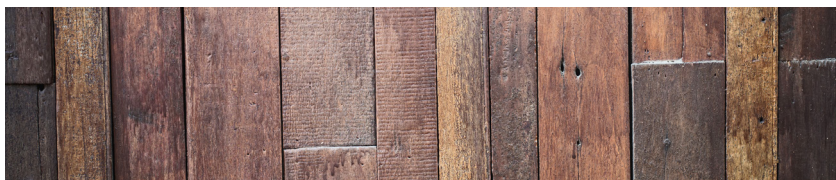
Study the pipe layout drawing

5 Before attempting to lay any floor heating boards, familiarise yourself with the system layout drawing, noting manifold position. Plan the routes for transitional pipe runs. 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.

Please note: the pipe layout drawing is optional, please request one before ordering your system.



Installing Wunda Rapid Response – Controllable floor heating onto Older style floorboards.

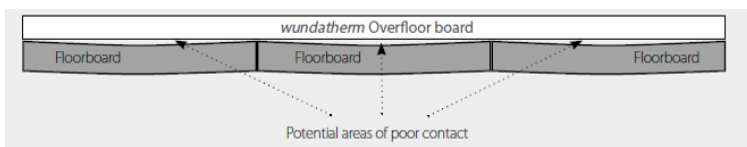


Wonky and uneven floors are common in many older properties as a result we often get asked how to level uneven floorboards in preparation to install Wunda Rapid response floor heating boards.

Over time, wooden floorboards can become uneven due to wear and tear, replacement and warping with changes of heat. This can make it difficult if you want to bond a Rapid Response floor heating system to this uneven surface. Ensuring that your wood flooring is level will ensure that the floor heating boards will have a secure bond and will last for years to come.

3

Uneven boards will cause high and low points of contact between the floor heating boards and the uneven floor boards – this will result in no bond and 'bounce or movement' of floor heating boards where there are low points in the floor boards. As per image below.



Things to check before levelling your wooden floor

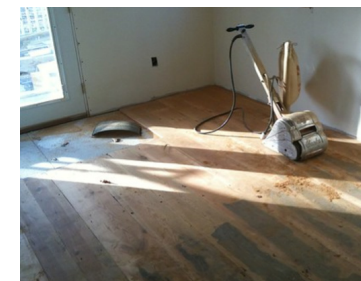
- Check for rotten floorboards; these will need replacing before you add your plywood sheets. If they aren't replaced, it can cause issues to the stability of the floor in the future.
- Also, check for any floorboards that are loose or creak as these will need to be replaced/secured before you lay the new floor. If you can, use a pipe or cable detector to determine any water pipes or electric cables and if this is causing the floorboard to creak, use screws as opposed to nails as this can cause further creaking.
- If you have any plumbing or wiring issues that you need to fix, this is the time to complete the repairs before you place the plywood sheets down.

Any nails or screws that are loose and proud of the floor surface should be taken down further to ensure that no issues are caused when bonding the Rapid Response boards. Fix your plywood sheets in place with short nails so that they don't go through your floorboards and cause any accidental damage.

How to level a Wood Floor

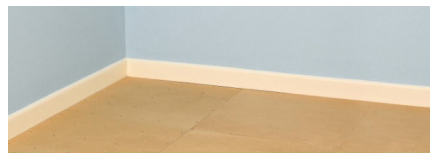
When preparing to lay a Wunda Rapid Response system, you must make sure the surface underneath is level to ensure that the boards have maximum contact with the subfloor and a secure bond. Defects in the floor may show through onto your new flooring and cause resulting in an uneven finish.

1. It's fairly common to lay 6 mm plywood over the floorboards to even out any unevenness, fixing any squeaky or loose boards first.
2. Alternatively, you may also find that you might have to sand or plane uneven floorboards that have raised slightly. This could be in preparation for your plyboards. Or, it might fix your problem of uneven floor boards.



Laying the sheets

Make sure that you lay the plywood at a right angle to the existing floorboards. Leave an expansion gap between plywood and skirting, make sure that you set the nails around 13mm in from the edges of the sheet. Work from the main door in, as you don't want to end up with a thin strip at the threshold.



Use your off-cuts

Don't waste any material, and to reduce cost, start the new row with the off-cut from the previous row. This will ensure that the joints are staggered and will reduce waste. Continue until the floor is covered.

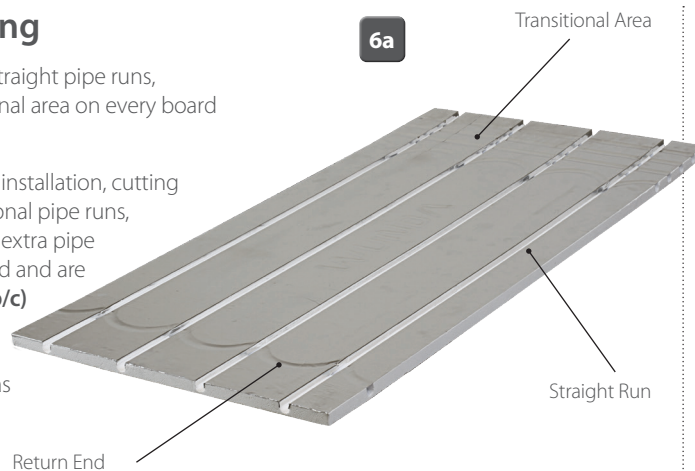
Uneven floors could be a signal that you have structural problems with your home, including foundation issues or damaged floor joists. They can, however, be harmless and occur with general wear and tear.

In properties with concrete subfloors, it's a case of levelling out the higher areas and filling dips with a latex self-levelling compound.

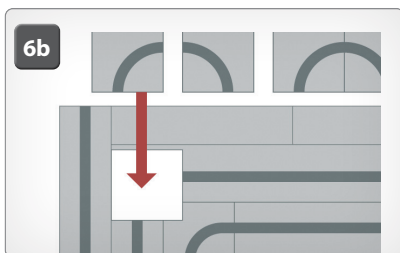
Preparation & Cutting

6 Overfloor boards include straight pipe runs, return ends and a transitional area on every board (6a).

The 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). The main boards should be used in conjunction with Wunda transitional boards in areas of high pipe concentration.

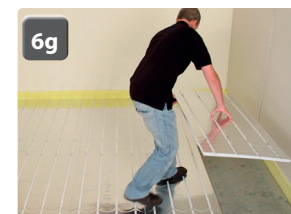


4



When cutting and creating new bends into a board, keep the radius gradual and no sharper than in a main board. The water flow around a pipe circuit should always go to potential cold areas first, for example external 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 limit heat loss into the wall and 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.

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 boards** 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 wundatherm 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 Wunda spray adhesive users must be aware of the environment in which the spray is to be applied. The cans need to be at least 16°C for the spray to work. If cold please warm cans prior to use with warm water.

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 boards**. 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 Wunda spray to fix **Overfloor boards** onto existing floor boards, both the floor boards and the underside of the **Overfloor boards** will require a covering of Wunda spray adhesive*. This is necessary as coating both the floor boards and board will create maximum contact between the two surfaces giving a firm and secure fixing. As before, always carry out a test area with Wunda spray and board before commencing with the rest of the installation. *This will half the coverage achieved with Wunda spray.

Occasionally some Rapid Response boards may arrive with a slight curve, this due to local environmental changes in temperature, humidity and climate. The correct use of Wunda spray adhesive will securely bond these boards in place to dry, flat, clean and solid subfloors. Ensure the spray is fully warmed up and well shaken before use, as per the instructions on the spray can.

Transitional areas

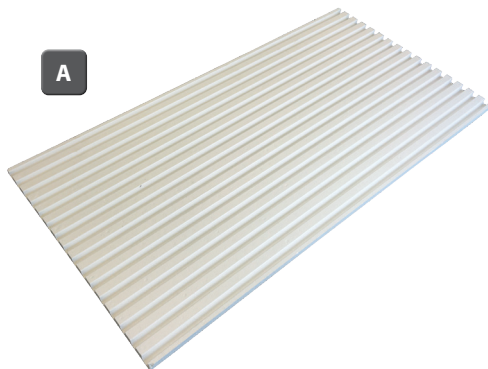
Wunda transitional boards **(A)** are easily cut to suit any **Overfloor boards** project where there is a concentration on pipes or where a corner needs to be formed.

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

Transitional boards must be bonded to the sub-floor using our recommended adhesive.

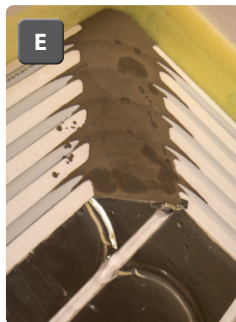


Corners can be formed from a transitional board, for example cutting two opposite 45° will provide a 90° turn **(C)**.

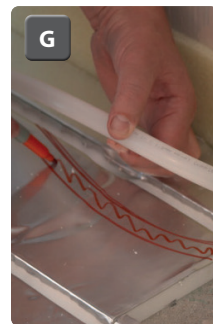


Do not push the 45° cut edges up against each other, leave a gap approximately 120mm wide **(C)** this will allow the pipe to be formed and bent as it changes direction from one straight channel to another. Take care not to form too tight a bend and kink the pipe. The open area between the boards can be back filled using one of our levelling screeds, either Mapei UltraPlan Renovation screed or Ultra Floor **ProLevel ultimate**, taking care to follow the instruction on the packets.

Apply and level off at the same height as the Overfloor board **(D/E)**. Alternatively corners can be routed out from a main board once bonded to the floor.



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 the channel is required, gently bending the pipe to follow a gentle 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 16/12mm depth depending on pipe, gently 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 required to pass through walls, suitably sized holes will be required at floor level using an 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 **Overfloor boards** immediately before the hole, this will make it easier to pass the pipe through the wall and help prevent any kinks occurring. The area at entry and exit around the holes may require back filling with either off cuts of **Overfloor boards** board or back filled using one of our levelling screeds either Mapei UltraPlan Renovation screed or Ultra Floor **ProLevel ultimate**, taking care to follow the instruction on the packets. Apply and level off at the same height as the **Overfloor boards**. You may wish to use pipe conduit to protect the outer layer of the pipe when running through walls.

PLEASE NOTE: Spray should be shaken well before use and kept above 16° for best results. If the spray splatters and comes out uneven, this is due to being stored in a cold environment - the adhesive should be gently warmed in warm water before use and periodically during use as the spray can temperature will gradually cool down.

Bonding boards using Wunda spray adhesive.

Ensure subfloor is suitably strong, stable and flat enough to bond to.

- 7** Wunda spray adhesive is designed specifically for quick and strong bonding of **Overfloor boards** to Concrete, Screed and Wood. Available in 500ml spray cans and 22ltr canisters for use with our hose and spray gun. 500ml spray cans will cover up to 5M² when applied to one surface, a 22ltr canister will cover up to 150M² when applied to one surface and has a 2 year shelf life.

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 each board on to the floor with a marker pen before spraying adhesive. This will allow you to spray the adhesive right up to the edges minimising overspray and wastage **(7a)**.

Spray should be shaken well before use and kept above 16° for best results, if the spray splatters and comes out uneven this is due to being stored in a cold environment and the adhesive should be gently warmed in warm water before use and periodically during use as the spray can temperature will gradually cool down.

Spray at a distance of 10-20cm (4-8") towards the substrate surface, applying a uniform and even coat of adhesive and obtain **80-100%** coverage **(7b)**. Do not over apply the spray, overlap each pass of spray so as to create an even coat of adhesive. Release the spray at the end of each sweep so as to avoid puddles of adhesive – a good tip is to watch our online video 'Installing **Overfloor boards** with Wunda Spray Adhesive'. Allow the adhesive to tack off until no adhesive transfers to the knuckle when touched **(7c)** then position the board onto the adhesive, pressing down firmly to good contact with the adhesive **(7d)**.

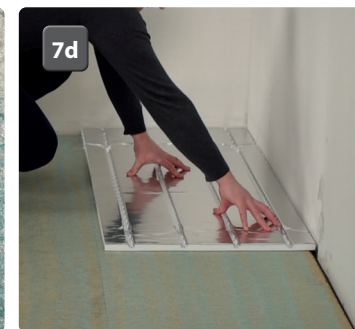
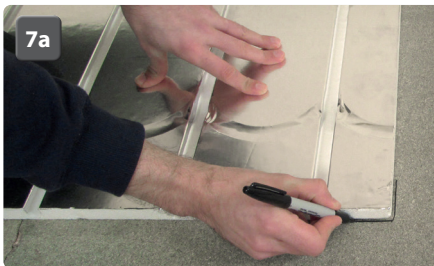
Avoid over applying spray adhesive, as this is not necessary and will result in poor coverage results. Some subfloors may require a coat of adhesive to the subfloor and a perimeter coat around the underside of the **Overfloor boards** (please note: this will reduce coverage). Always perform a small test area before commencing full installation and spray use.

The use of stainless steel / zinc coated screws and large washers at 300mm spacings across the boards might be necessary to hold certain boards down and prevent movement.

Important: When bonding onto older floor boards

Make sure your existing floorboards are flat and in good condition.

Please replace any old boards and fix loose ones and ensure any screw or nail heads are below the surface of the wood.



NOTE: If using the 500ml spray can, the nozzle can be set to one of three positions - LOW, MEDIUM & HIGH, as indicated L, M, H on the raised area below the nozzle. We recommend setting the spray pattern between M & H.



Using Mapei Ultrabond Eco 380 to bond boards to the floor

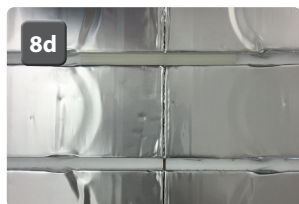
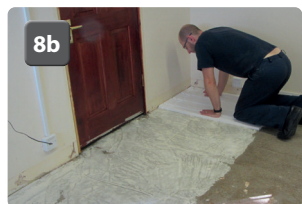
8 As an alternative to using Wunda spray adhesive, Mapei Ultrabond ECO 380 is approved. With a strong bond of **Overfloor boards** to all kinds of absorbent, stable, level substrates including concrete/screed and existing wooden floors, which must be must be flat, dry, level, stable & structural. Floors 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, plus effecting the ability to **bond properly**. Any uneven screed or concrete floors should be levelled with a renovation screed first. Mapei recommend Ultraplan Renovation Screed for this.

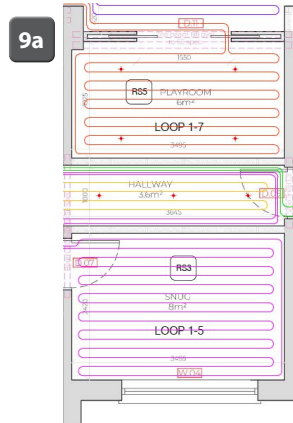
7

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 off 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 wundatherm boards



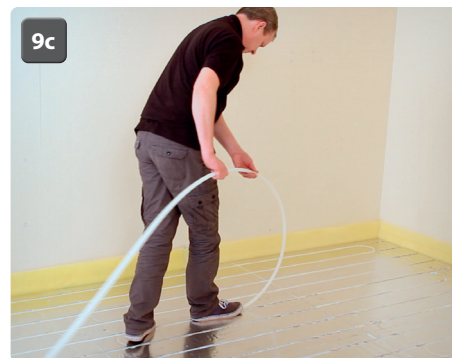
9 Before laying pipe make sure all pipe channels are clear from debris, check and familiarise yourself with the pipe layout drawing **(9a)**, plan where to begin and the pipe routes for each individual loop of pipe.

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.

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

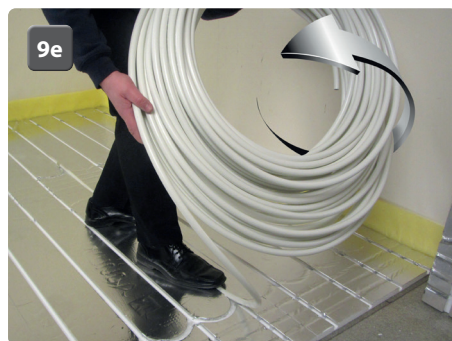
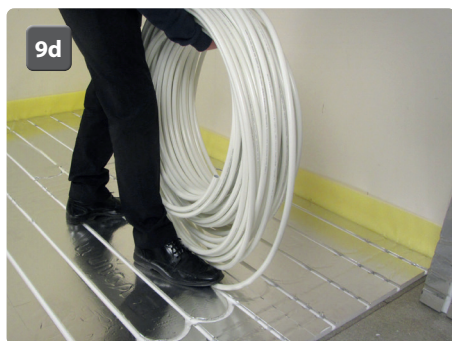


If not using a pipe decoiler the pipe can be easily installed by two people, the first walks with the pipe coil and reels it out while the second person carefully walks along the pipe pushing the pipe down into the straight pipe channel **(9c – 9d)**.



Continued over...

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)



8

This will help deter the pipe from trying to twist and keep tension pointing downwards, ease the pipe around and into the bend. Lay the pipe into the return or corner, gently forming and pushing the pipe into the channel as it works 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 warm wet cloth for protection and gently squeeze with pliers to re-shape. 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 prior to installation of final floor finish.

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.

If levelling compound or renovation screed is to be used, the aluminium of all unused pipe channel's must be cut to expose the empty channel, ready for filling with an approved levelling compound.



TIP:

In the unlikely event of a kink in the pipe occurring, wrap the pipe in a warm wet cloth for protection and gently squeeze with pliers to re-shape. Be careful not to over work it and kink the other way. Pressure test as normal but investigate the kinked area prior to covering.

Overfloor board

Flooring with wood products (inc. Parquet, Solid and Laminate)

For floating Wooden and Laminate floors it is advisable to use Wunda XPS 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 manufacturers 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 Wunda 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.

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.

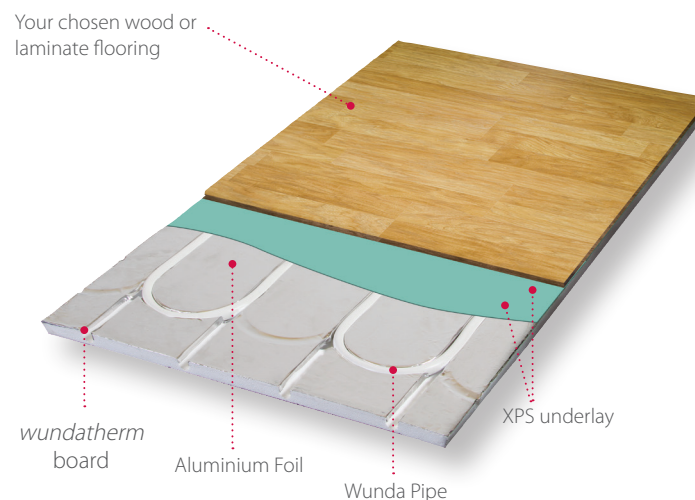
Again, check with your flooring supplier for the best practise.

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.

When using a Wunda approved levelling compound directly onto overfloor boards (As described on pages 10 & 12). The floor probe must be located at the upper most surface of the approved levelling compound in order to measure and limit floor surface temperatures.

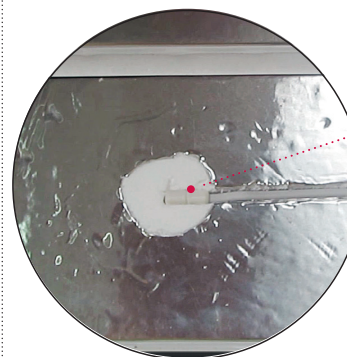
How the Overfloor board works with your chosen flooring



When laying wood & laminate

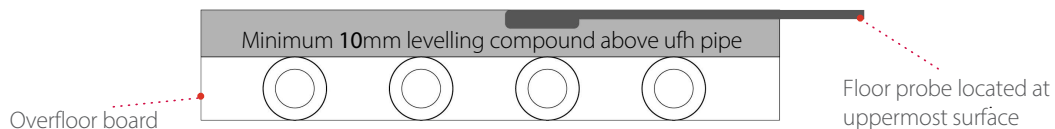
Floor Probe embedded in the overfloor board

Always ensure the probe head is in contact with the floor finish it is limiting. This example is when free floating with an underlay.



Please note:

When designing the UFH system try and keep grain of wood going at 90 degrees to the direction of the pipe to avoid the pipe running parallel with wood joins.



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. Wunda always recommends the use of thermostats with floor probes to limit floor surface temperatures. The maximum resistance of all floor coverings should not exceed 2 tog, or 0.2 m² K/W

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 boards on the 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. With small form factor blocks, we recommend 10mm renovation screed as an intermediate layer, either Mapei or Ultra.

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

If intending to lay carpets with edge grippers, fix a suitable sized batten around the perimeter of the room up to the same height as the Overfloor board, this will allow fitment of carpet gripper at a later stage.

Carpet will require a flat surface, you can use our duoboard system (see factsheet U04) No more than 2 tog 0.2m² K/W of resistance for underlay and carpet when using Duo Board. For Renovation 10mm Screed as an intermediate layer (for EPS 400 Overfloor board (400kPa) only) gives 2.5 tog 0.25m² K/W resistance for carpet & underlay combined.

Alternatively:-

Prime the aluminium and exposed floor heating pipes of the **Rapid Response** boards with MAPEI ECO-PRIM GRIP and once dry a minimum 10mm depth of MAPEI ULTRAPLAN RENOVATION SCREED to form a solid and level surface for the carpet.
Or, prime with ULTRA PRIME IT, followed by 10mm of **ProLevel Ultimate**

LVT/Composite, Cork Planks

Prime the aluminium and exposed floor heating pipes of the EPS 400 Overfloor board (400kPa) boards with MAPEI ECO-PRIM GRIP and once dry a minimum 10mm depth of MAPEI ULTRAPLAN RENOVATION SCREED to form a solid and level surface for your final floor finish. Or, prime with ULTRA PRIME IT, followed by 10mm of **ProLevel Ultimate**.



Installation guide for using Ultra products with Rapid Response® (400kPa) Overfloor Heating Boards

Rapid Response Overfloor Heating Boards are a range of underfloor heating systems with pre-cut channels that house warm water pipes and are suitable for use over a variety of existing floors.

The upper surface of the boards have a bonded layer of aluminium foil to aid dispersion of the heat rapidly across the floor. Please see separate information for installing Carpet, Vinyl & Linoleum Sheet, Solid Wood (Floorboards), Parquet, Laminate Flooring direct to our overfloor board or in combination with Wunda Duo-Boards as specified.

The following guidance is specific to using Instarmac UltraFloor & UltraTilefix materials with Rapid Response® Boards.

- Installing Ceramic, Porcelain, Quarry & Natural Stone Tiles.
- Installing Carpet Tiles, LVT, Vinyl Tiles & Planks

PREPARATION

Once the warm water pipes have been fitted to the EPS 400 Overfloor board (400kPa), the following criteria must be checked and assured before continuing:

1. Ensure that the EPS 400 Overfloor board (400kPa) are secured to the substrate and that there is no movement in the boards. It is essential to the performance of any cementitious products, to be installed, that the boards are solid and stable in position and firmly fixed. Movement of the boards will need to be rectified before continuing as this may lead to cracking or debonding of the next course of materials.
2. It is essential that the under floor heating is pressure tested to ensure no leaks are evident in the pipework and the system is working as required. Once confirmed, the heating should remain switched off for the duration of the flooring installation.
3. Under no circumstances should the floor heating be used to aid the drying of any cementitious levelling or adhesive compounds to be used. Force drying in this way is likely to affect the hydration process of the cement, reducing its strength and overall performance.
4. Any pipes rising out of the channels should be firmly reset. All pipes need to be firmly fixed into the board channels before continuing.

5. Once steps 1 to 4 are completed, it is essential that any unused channels bridged with foil should be broken through and the foil edges pressed firmly into the walls of the channels. This is to prevent unsupported weak spots in the finished flooring being susceptible to point loading.
6. Vacuum the complete surface ensuring all debris has been removed from the boards, pipes and broken through channels. **All unused pipe channel's must be cut to expose the empty channel, ready for filling with an approved levelling compound.**
7. Once clean, we recommend priming the entire surface with a neat application of UltraFloor Prime it MSP. Would recommend the use of a paintbrush to coat the pipes and empty channels thoroughly, followed by a roller to coat the board across the entire foil surface. Avoid thick sections or pooling of primer in channels and around pipes that will only serve to delay drying.
8. Ensure the primer is fully dry before continuing; typically, this is within 2 hours but is dependent on temperature conditions and application thickness. It is essential that all exposed surface including unused channels and pipes are primed thoroughly and are dry before continuing.

Tiling to EPS 400 Overfloor boards (400kPa) (Ceramic, Porcelain, Quarry, Natural Stone)

Option 1. (Minimum tile size 10cm x 10cm)

- a. Use a straight sided trowel to apply UltraTilefix ProFlex S2 tile adhesive to the prepared boards to fill in the unused channels (see note 5) or any deep sections cut outs in the boards.
- b. Whilst still wet apply the same adhesive using a rounded notch floor trowel to suit the installation, over the complete surface. Bed tiles immediately. Pressure applied to the tile should be sufficient to create 100% contact of the adhesive with the back of the tile.
- c. Ensure that if using large format tiles (tile with at least one side 300mm or greater) that the back of the tile is also back buttered with the adhesive to ensure there is 100% contact creating a secure bond.
- d. Once cured (24 - 48hrs dependent on conditions) use UltraTilefix ProGrout Flexible to grout the joint to complete the installation.
- e. On completion of installation of tiles and after grouting has cured hard, the floor should remain at ambient temperature for a minimum of 7 days with the underfloor heating pipes switched off. After this period, the water heating temperature is increased gradually to reach working temperature slowly. A maximum rate of temperature increase would 5°C per day is recommended. Failure to follow this instruction could damage the installation.



Option 2. (All tile sizes)

- Prime with Ultra Prime IT first and allow to dry. Then apply Ultra ProLevel Ultimate to the prepared boards ensuring a minimum depth of 10mm above the top of the heating pipes. To ensure maximum flow properties ensure the leveller is mixed for 3 minutes before pouring. **follow the water ratios to ProLevel Ultimate, as per the instructions printed on the bag.**
- Ensure all unused channels & pipe sections are filled with the compound initially.
- Allow the leveller to cure for 48 hrs before considering tiling over.
- When cured apply UltraTilefix ProFlex S2 tile adhesive to the leveller using a rounded notch floor trowel to suit the installation. Bed tiles immediately. Pressure applied to the tile should be sufficient to create 100% contact of the adhesive with the back of the tile.
- Ensure that if using large format tiles (tile with at least one side 300mm or greater) that the back of the tile is also back buttered with the adhesive to ensure there is 100% contact creating a secure bond.
- Once cured (24 - 48hrs dependent on conditions) use UltraTilefix ProGrout Flexible to grout the joint to complete the installation.

NB: If installing Option 2 in a bathroom, shower room or wet room area then it is advisable to include a waterproofing system between stages (c) and (d). Ultra TileFix ProShield Tanking Kit can be used provide waterproofing protection, dependent on the floor design.

- On completion of installation of tiles and after grouting has cured hard, the floor should remain at ambient temperature for a minimum of 7 days with the underfloor heating pipes switched off. After this period, the water heating temperature is increased gradually to reach working temperature slowly. A maximum rate of temperature increase would 5°C per day is recommended. Failure to follow this instruction could damage the installation.



Preparing EPS 400 Overfloor boards (400kPa) before laying Carpet Tiles, LVT, Vinyl Tile & Planks

- Apply Ultra ProLevel Ultimate to the prepared boards ensuring a minimum depth of 10mm above the top of the heating pipes. To ensure maximum flow properties ensure the leveller is mixed for 3 minutes before pouring.
- Ensure all unused channels & pipe sections are filled with the compound initially.
- Allow the leveller to cure for 48 hrs before considering installing floor covering.
- Install floor covering as per manufacturer's recommendations.
- On completion of installation of the final floor covering, the floor should remain at ambient temperature for a minimum of 7 days with the underfloor heating pipes switched off. After this period, the water heating temperature is increased gradually to reach working temperature slowly. A maximum rate of temperature increase would 5°C per day is recommended. Failure to follow this instruction could damage the installation.

Precautions:

- Prior to installing **Rapid Response**, the floor should be level, in order that the boards sit flat and are fully supported. This will also ensure 100% contact of the board into adhesive. Any uneven areas need to **levelled** before starting.
- Whether pre-levelling the existing floor or applying board adhesive direct, all dirt, debris, grease or contamination should be removed thoroughly and the complete floor area vacuumed to ensure clean and dust free. Do not sweep using brush or broom, this will only serve to spread the dust.
- Any loose or flaking floor paint, should be mechanically scarified to remove.
- If moisture exists in the original screed then this needs to be rectified before installation of the **Rapid Response** System. Please see potential use of UltraFloor DPM IT Rapid Cure.

EPS 400 overfloor board & Mapei guide for tiling using Mapei adhesives

In all circumstances the board must have been installed correctly and provide a sound, stable substrate. Additionally it must be clean and free from contamination or substances which could inhibit adhesion. All unused pipe channel's must be cut to expose the empty channel, ready for filling.

Installing ceramic, vitrified, quarry and porcelain tiles

- Option 1**
- Bond tiles directly to the **Rapid Response** with MAPEI KERABOND T & ISOLASTIC (100%) or MAPEI KERAQUICK S1 & LATEX PLUS
- Option 2**
- Prime the **Rapid Response** with MAPEI ECO PRIM GRIP.
 - Level with a minimum **10mm** MAPEI ULTRAPLAN RENOVATION SCREED*
 - Bond tiles using MAPEI KERABOND T & MAPEI ISOLASTIC (100%) or MAPEI KERAQUICK S1 & LATEX PLUS

Installing natural stone tiles

- Option 1**
- Prime the aluminium surface with MAPEI ECO PRIM GRIP
 - Level with min. **10mm** MAPEI ULTRAPLAN RENOVATION SCREED*
 - Bond tiles using MAPEI KERABOND T & MAPEI ISOLASTIC (100%) or MAPEI ELASTORAPID or MAPEI GRANIRAPID or MAPEI KERAQUICK S1 & LATEX PLUS

Installing ceramic, porcelain & natural stone tiles in a wet room

STAGE 1

- Option 1**
- Prime the aluminium surface with MAPEI ECO PRIM GRIP
 - Level with min. **10mm** MAPEI ULTRAPLAN RENOVATION SCREED*

STAGE 2

- Waterproofin**
- Apply MAPEI MAPELASTIC AQUADEFENCE/MAPEI MAPEBAND
- Fix Tiles**
- Bond the tiles with MAPEI KERABOND T & MAPEI ISOLASTIC (100%) or MAPEI ELASTORAPID or MAPEI KERAQUICK S1 & LATEX PLUS

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.

Mapei products overview

Ultrabond Eco 380

Ultrabond Eco 380 is an adhesive with a quick and strong bond of **Rapid Response** boards to all kinds of absorbent and stable substrates used in the building industry including screed/concrete and existing floorboards



Ultraplan Renovation Screed - to provide a level surface to accept floor tile.

Ultraplan Renovation Screed is a fibre reinforced self levelling compound suitable for applying onto Wunda Overfloor boards after first priming the Overfloor Board with **Mapei Eco Prim Grip**.

A minimum **10mm** screed is required

* Do not introduce any heat into the pipe circuit until renovation screed has fully cured.



Ultrabond Eco S955 1K

Ultrabond Eco S955 1K is used for bonding a ply deck or bonded wood finish directly on to **wundatherm** boards.



Kerabond T and Isolastic

Kerabond T and Isolastic is a two part mix (Ratio 100 : 33, Kerabond : Isolastic) used to bond tiles directly to **wundatherm** boards (used for laying of ceramic, vitrified, quarry and porcelain tiles). **Drying time** - allow 7 days before introducing heat gradually.



Keraquick S1 and Latex Plus

Keraquick S1 and Latex Plus is a two part mix (Ratio 100 : 30, Keraquick S1 : Latex Plus) used to bond tiles directly to **wundatherm** boards (used for laying of ceramic, vitrified, quarry and porcelain tiles). **Drying time** - allow 24 hours before introducing heat gradually.

Mapei Aquadefence and Mapeband

Mapei Aquadefence is a ready to use, flexible, ultra rapid drying waterproofing membrane for use in wet rooms. **Mapeband** is an Alkali-resistant rubber tape with textile backing/edges for the flexible waterproofing of edges and expansion joints. Used with MAPELASTIC AQUADEFENCE.



Technical Information

Rapid Response® Overfloor Boards	20mm	16mm
Length	1200mm	1200mm
Width	600mm	600mm
EPS Density	110.2 kg/m ³	116 kg/m ³
Compressive Strength	400 kPa	400 kPa
Board weight	1.59 kg	1.33 kg/m ³
External Diameter of Pipe	16mm	12mm
Thermal Resistance	0.447 m ² k/w +/- 2.5%	0.379 m ² k/w +/- 2.8%

Please note: Advised maximum lengths for individual pipe circuits is 100 linear metres for 16mm pipe and 60 linear metres for 12mm pipe.

Important Information

The heat output of this underfloor heating system must be limited to a maximum supply water temperature of 45°C and a maximum floor surface temperature of 27°C for wooden floors. Underfloor heating cannot compensate for large heat losses of an inadequately insulated house. Please note that underfloor heating systems can give an approximate heat output of 96.5W/m² with ceramic and stone tile coverings and 65.3W/m² with wooden coverings (up to 16mm thick) and 51.5W/m² with carpet.

Outputs in line with BSEN 1264

"When mixed floor solutions are being served from the same manifold, a floor probe must be used in the floor solution with the lower maximum supply temperature. This is to limit the temperature in these floor areas and prevent damage to the floor solution and/or floor finish."

Please check our website for tech support videos

