

Installing Wundatherm Premium Overfloor boards

(If installing Wundatherm Premium+ or Budget boards, please refer to the appropriate Fact Sheet)

Wundatherm Premium boards have a 200kPa compressive strength and are suitable for Laminate & Engineered wood floor finishes, Carpet & Vinyl on the roll** will require an intermediate layer of Duo Boards. Free floating wood or laminate require the XPS breathable underlay. Wundatherm Premium (200Kpa) boards are not suitable for renovation screeds or heavy floor finishes such as stone & tiles.

All Wundatherm 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, please check with the flooring supplier.

**Duo board suitable for 'off the roll' carpet & vinyl.

All Wundatherm Overfloor Boards have a choice of 3 thicknesses of aluminium covering to spread the heat across the surface of the board as described below.

200 MICRONS – THICKEST ALUMINIUM FOR RAPID RESONSE

Quickest heat up time, fast even transfer of heat.

100 MICRONS – MEDIUM ALUMINIUM COVERING

Slower heat up time, slower to warm up evenly.

50 MICRONS – THINNEST ALUMINIUM COVERING

Slowest heat up time, slowest to heat up evenly.



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*

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

Floor preparation

1 **wundatherm Premium 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 **wundatherm 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 **wundatherm 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 **wundatherm boards**.

If fixing **wundatherm 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 **wundatherm board** with Wunda 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

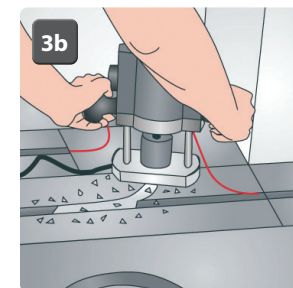
2 Before laying the **wundatherm boards**, remove skirting boards and any doors that will require trimming to accommodate the floor heating boards and final floor finish (**2a**). Fit perimeter edge strip around the outside edges of the area to be heated using the sticky tape on the back or a hand staple 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 **wundatherm board** around the room perimeter. Lay the **wundatherm 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



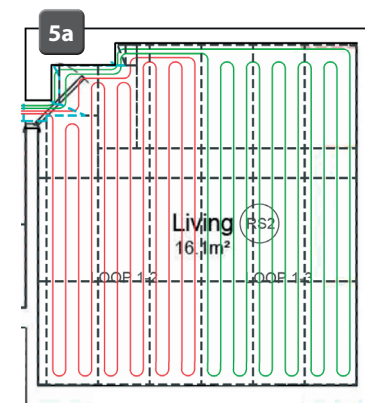
4 When floor heating pipes need to pass through walls, drill the holes before laying and fixing boards to prevent any damage to the boards. Protect and seal the pipe ends with tape. To prevent kinking, one person should feed the pipe through the hole whilst another draws the pipe through from the other 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. The drawing will detail the orientation and position of boards (**5a**). 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.

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



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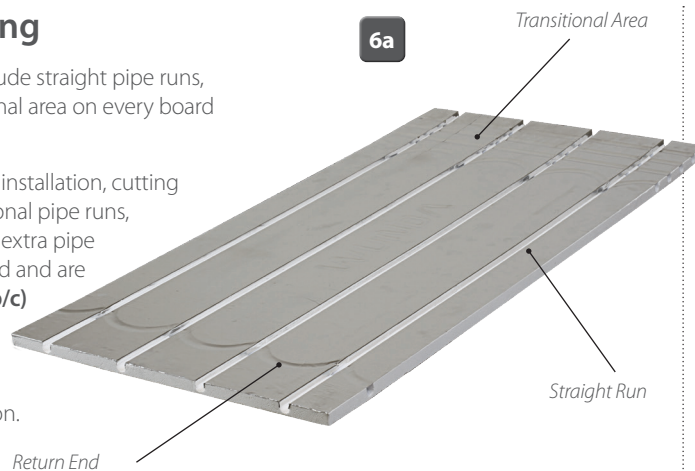
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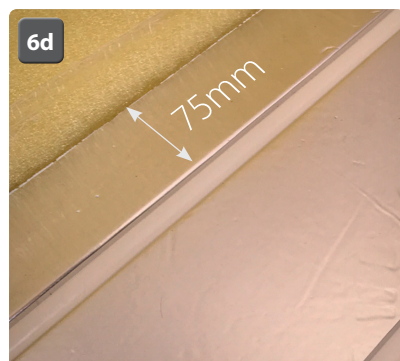
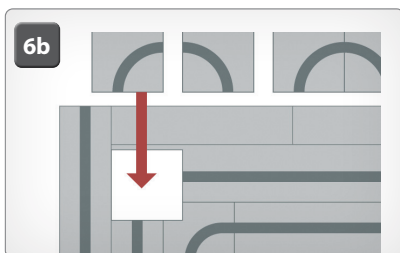
Preparation & Cutting

6 **wundatherm 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 **wundatherm** transitional boards in areas of high pipe concentration.

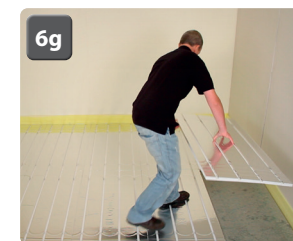


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When cutting and creating new bends into a board, keep the radius gradual and no sharper than in a main board. The water flow around a pipe circuit should always go to potential cold areas first, for example external walls and areas of high glazing. 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 **wundatherm** 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 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 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 **wundatherm** 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 Wunda spray to fix **wundatherm boards** onto existing floor boards, both the floor boards and the underside of the **wundatherm board** 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 install.

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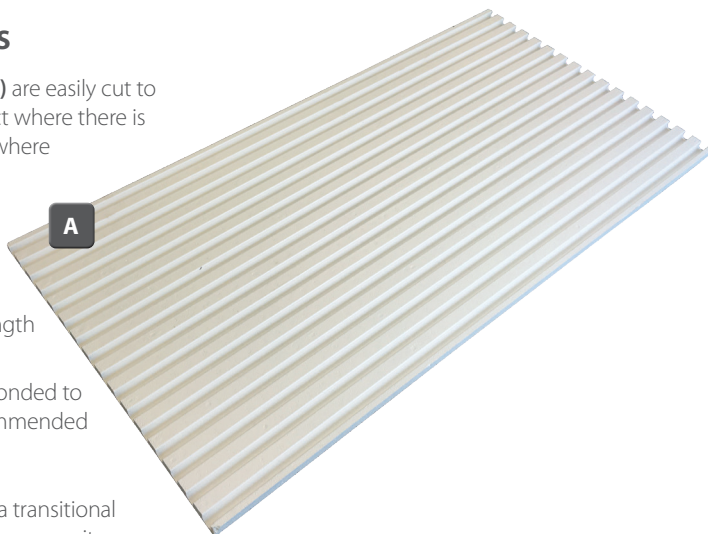
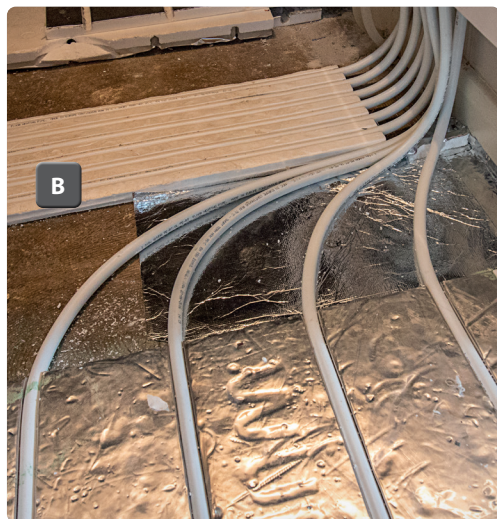
Transitional areas

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

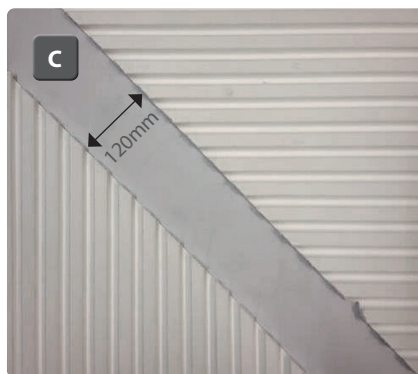
Straight pipe runs can be laid directly into the straight transitional board – cut to length and width as required (B).

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

4 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.



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 **wundatherm** 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 **wundatherm** board or back filled using one of our levelling screeds either Mapei UltraPlan Renovation screed or Ultra Floor Level IT Two, taking care to follow the instruction on the packets. Apply and level off at the same height as the **wundatherm** board. You may wish to use pipe conduit to protect the outer layer of the pipe when running through walls.

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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.

Bonding boards using Wunda quick dry spray adhesive.

7 Wunda spray adhesive is designed specifically for quick and strong bonding of **wundatherm 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.

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 **wundatherm** 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**).

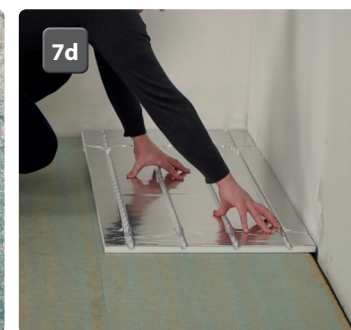
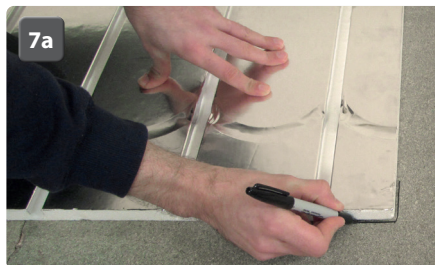
Avoid over applying spray adhesive, as this is not necessary and will result in poor coverage results.

Some subfloors may require a coat of adhesive to the subfloor and a perimeter coat around the underside of the **wundatherm** board. Always perform a small test area before commencing full installation and spray use.

Important: When Bonding onto older floorboards

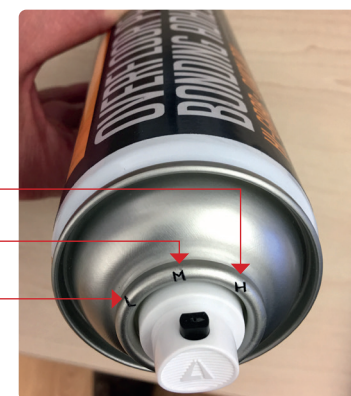
Make sure your existing floorboards are flat and in good condition.

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



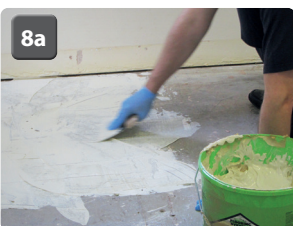
NOTE: If using the 500ml spray can, the nozzle can be set to one of three positions - LOW, MEDIUM & HIGH, as indicated L, M, H on the raised area below the nozzle. We recommend setting the spray pattern between M & H.

High (H)
Medium (M)
Low (L)



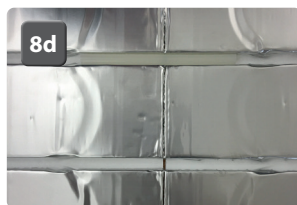
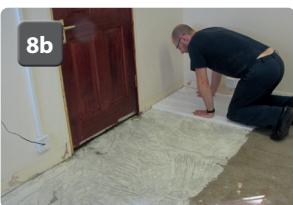
Using Mapei Ultrabond Eco 380 to bond boards to the floor

8 As an alternative to using Wunda spray adhesive, Mapei Ultrabond ECO 380 is approved. With a strong bond of **wundatherm** boards to all kinds of absorbent, stable, level substrates including concrete/screed and existing wooden floors, which 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.



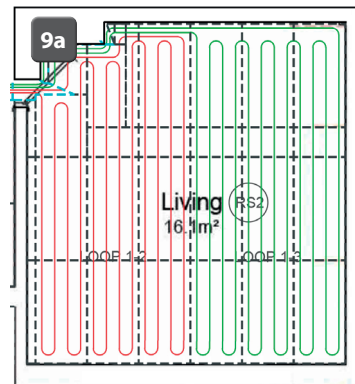
Starting with a few square meters at a time apply Mapei Ultrabond ECO 380 to the substrate using a 2mm (A2) tooth comb spreader (**8a**). Do not use Mapei Ultrabond ECO 380 as a filler to level out gaps, cracks or uneven substrates as this will greatly reduce the coverage achieved and increase drying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

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



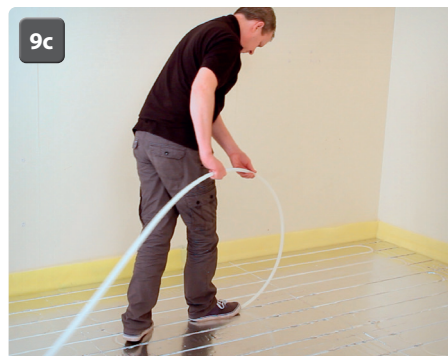
9 Before laying pipe make sure all pipe channels are clear from debris, check and familiarise yourself with the optional pipe layout drawing (**9a**), plan where to begin and the pipe routes for each individual loop of pipe.

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 **wundatherm** 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**).



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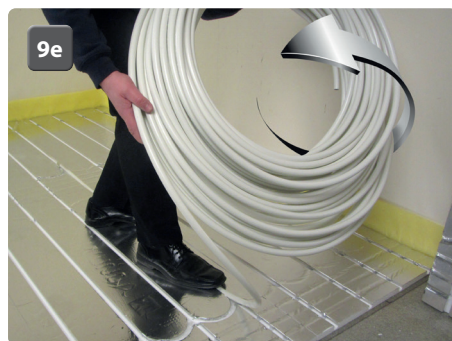
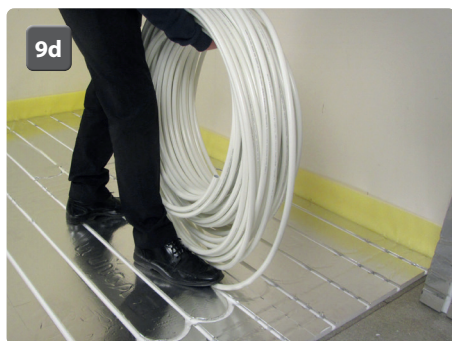
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If laying pipe without the aid of a pipe de-coiler, when you reach the end of a straight run, employ the technique of rotating the whole coil through 180° towards the direction of the return channel (9d/e)



7

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 **wundatherm** 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.



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.

Wundatherm Premium

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.

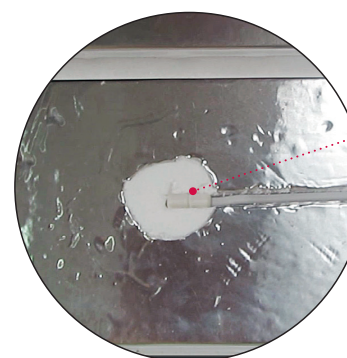
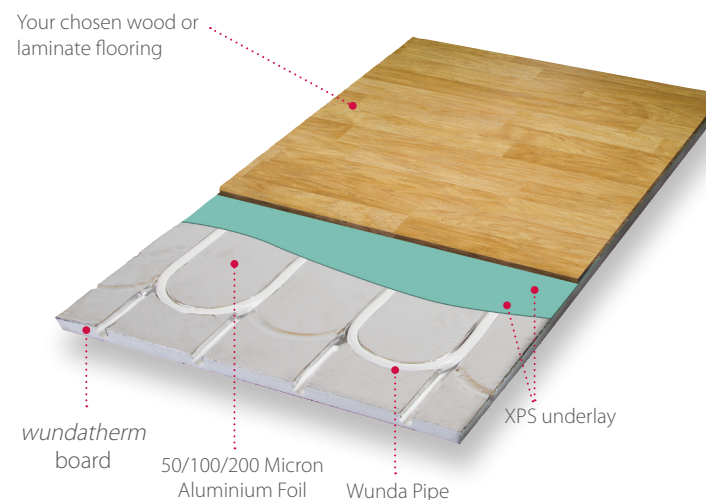
It is important for wood flooring which has been kept in cold conditions to be taken into the room in which it will be fitted, so that it can acclimatise to the new environment and this may take several weeks. Some large wood products (unless kiln dried) may need a longer acclimatisation period in order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

How the Overfloor board works with your chosen flooring



Floor Probe embedded in EPS board

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.

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.

9

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.

Use 3mm XPS underlay as an intermediate layer prior to laying free floating wood or laminate. Check with the floor manufacturer/supplier if floor probes are required.

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 **wundatherm** 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 Screed as an intermediate layer (for Wundatherm Premium+ boards only) gives 2.5 tog 0.25m² K/W resistance for carpet & underlay combined.

Vinyl & Linoleum (off the roll)

These floor finishes cannot be placed directly onto the Wundatherm Premium boards and will require an intermediate layer that gives a level, sound and uniform surface.

All Wundatherm Premium systems will require an intermediate layer of Wunda Duo-Board laid correctly in a Brick Bond fashion, this will provide a level, firm and joint free surface on which to lay carpet, vinyl or lino of the roll.



Technical Information

Wundatherm Premium Overfloor Boards	16mm	20mm
Length	1200mm	1200mm
Width	600mm	600mm
EPS Density	41 kg/m ³	41 kg/m ³
Compressive Strength	200 kPa	200 kPa
Board weight	0.94 kg	0.99 kg
External Diameter of Pipe	12mm	16mm

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 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

All wundatherm Overfloor Boards have a choice of 3 thicknesses of aluminium covering to spread the heat across the surface of the board as described below.

200 MICRONS – THICKEST ALUMINIUM FOR RAPID RESONSE

Quickest heat up time, fast even transfer of heat.

100 MICRONS – MEDIUM ALUMINIUM COVERING

Slower heat up time, slower to warm up evenly.

50 MICRONS – THINNEST ALUMINIUM COVERING

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