Installing Chipboard Overfloor Heating Boards

Main board

Universal return/transitional board

Wunda's Chipboard overfloor Heating Board system combines high compressive strength 17mm Chipboard with rapid response 200 micron thick aluminium. Engineered to provide a floor heating solution that can support heavyweight tiles such as Natural Stone & Marble.

Suitable for new build, extensions and renovation projects*, Wunda Chipboard Overfloor Boards are quick and easy to install, using simple practices and basic tools whilst avoiding the need to remove existing floors or the moisture, weight and mess of concrete/screed.

Please note:
Not to be used as structural flooring

You will need:

- Metal edge rule
- Hand saw
- Eye protection
- Dust mask
- 2mm A2 spreader

Also recommended:

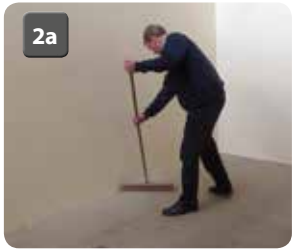
- Marker pen
- Pipe cutter
- Gloves
- Knee protection
- Router

Important: we advise wearing gloves as the aluminium edges can be sharp.

1

1 Handling of the Boards

Due to the weight of Chipboard Boards, care must be exercised when lifting, do not lift panels by the corners , instead grip firmly with two hands along one edge **(1a)** lift and carry vertically.
If a panel breaks or snaps this will not effect the system performance, the broken section can simply be fitted back in place when bonding/fixing panels to the sub-floor.



2 Floor Preparation

Chipboard Overfloor Boards can be fixed to new or existing concrete/screed or wooden floors, which must be dry & level. Remove any loose paint and floor coverings. Floors must be free from oil, grease, damp, dust debris or any other substances that will prevent the Board from laying flat or the adhesive from adhering **(2a)**.

When fixing Chipboard Overfloor Boards to a concrete/screed floor ensure a damp proof membrane has been installed, if not then apply a liquid damp proof membrane and allow to cure fully before fixing any panels.

When fixing Chipboard Overfloor Boards onto an existing 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 the Overfloor Boards.

When floor heating pipes need to pass through walls, drill the holes before laying and fixing the Boards to prevent damage. 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.

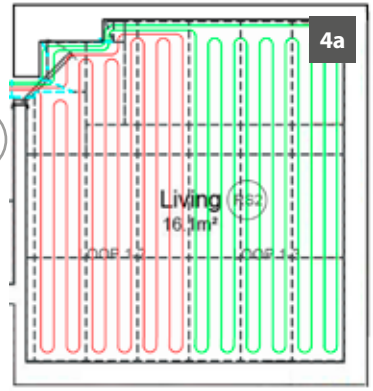
**When installing onto non-insulated screed floors, we recommend laying Wunda 10mm EPS insulation directly onto the screed subfloor first.*

Continued over >>>

3 Fitting perimeter strip

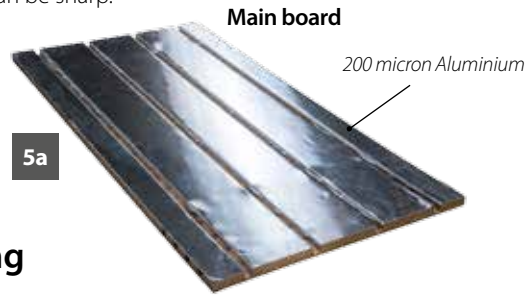
Before laying floor heating boards, remove skirting boards and any doors that will require trimming to accommodate the floor heating boards. Fit perimeter edge strip around the outside edges of the area to be heated using the sticky tape on the back **(3a)** or a hand staple gun. This will help reduce heat loss and allow for expansion. Any height excess can be trimmed off once final floor finish has been laid.

4 Study the pipe layout drawing



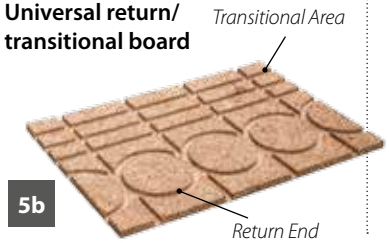
Before attempting to lay any floor heating boards, familiarise yourself with the system layout drawing, noting the manifold position. The drawing will detail the orientation and position of panels **(4a).**

Plan transitional pipe runs. Some cutting of boards will be required we advise wearing gloves as the aluminium edges can be sharp.

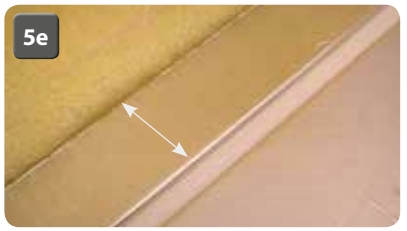


5 Preparation and cutting

Our Chipboard Overfloor system consists of 2 boards:- a main straight board **(5a)** laminated with 200 microns of aluminium and a plain universal return/transitional board **(5b)**. The main straights are used in the centre of the floor area and return ends are used across opposite walls of the area to be heated. Standard 17mm chipboard flooring can be used under kitchen cabinets and baths etc, where floor heights need to be maintained (not supplied)



Chipboard Overfloor Boards are designed for easy installation, cutting to shape where required. Transitional pipe runs, additional corners, bends and extra pipe channels will normally be required and are simply cut from a panel using a hand saw, electric jigsaw or a router to cut additional channels **(5c, 5d)** Chipboard Overfloor can be used in conjunction with our 16mm EPS transitional panels in areas of high pipe concentration, the 1mm height difference can be made up when applying tile adhesive, or alternatively using a renovation screed.



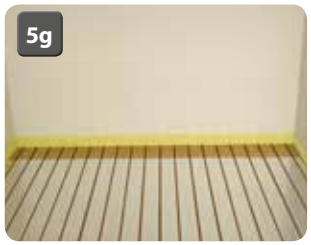
When cutting and creating new bends into a board, keep the radius gradual and no sharper than in a main panel. The water flow around a pipe circuit should always go to potential cold areas first, for example external walls and areas of high glazing. We suggest wearing flat soled shoes or trainers whilst walking on the boards.

Pipe should be set back from walls to avoid future placement of carpet grippers etc. **(5e)**. Ensure boards are dry and free from dirt, dust or any other contaminants before laying. Boards must be stored on a dry, flat, level surface, keep any off-cuts as they may be needed later on in the installation.

Continued over >>>

Before laying any boards familiarise yourself with the system layout drawing noting the direction of panels, potential cutting required and transitional areas. If you are inexperienced in laying Overfloor heating we strongly suggest completing a 'dry' lay of all panels before attempting to use any adhesive to fix the Boards.


5f


5g


5h

Identify joins between boards using a permanent marker **(5f)**. Once you are satisfied that all panels have been cut and marked for an area **(5g)** they can be lifted in preparation of fixing the boards permanently in place **(5h)**.

6 Fixing Chipboard Overfloor Boards to an existing or new floor

Boards must be **glued & screwed** to the sub floor to prevent future movement and potential 'floor squeak'.

Using Acrylic adhesive

Ensure sub floor 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. Ensure adequate ventilation, open windows and doors, do not use in confined areas. Wear suitable protective gloves, face mask and clothing.

Mapei ECO 380 **(6a)** is approved for creating a strong bond with Chipboard Overfloor Boards to all kinds of absorbent, stable and dry substrates, including concrete/screed and existing wooden floors.

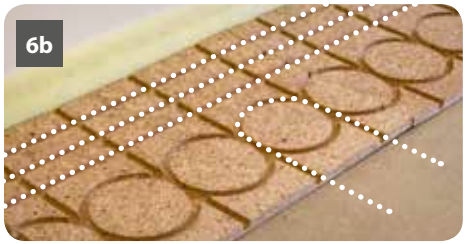
Floors must be free from oil, grease, damp, paint & debris - or any other substances that will prevent the adhesive from bonding to the floor.

Eco 380 **must not be used to level uneven floors**.

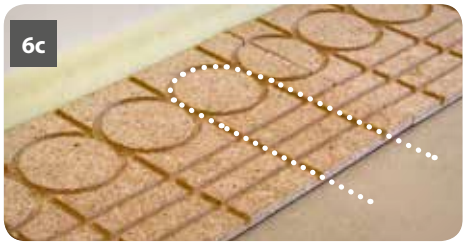
6a


6e

How the Universal End Return/Transitional panel works


6b

Universal End Return/Transitional Panel shown in **'Transitional'** orientation with straight channels positioned nearest the wall **(6a)**.

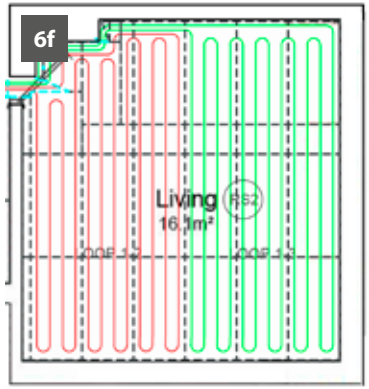

6c

Universal End Return/Transitional Panel shown in **'Return'** orientation with circular channels positioned nearest the wall **(6c)**.

Applying adhesive & laying panels on screeded floors

Starting with a few square meters at a time, apply an acrylic adhesive **(6d)**. (Wunda recommends Mapei Ultrabond Eco 380 **(6a)** to the sub-floor only, using an A2 tooth spreader **(6e)**.

Leave the adhesive until it becomes tacky – generally 10-20 minutes. The boards can now be applied to the adhesive.



6f


6d

Working from the manifold location, start by laying end return and or transitional panels along one wall **(6g)** (working in conjunction with pipe layout drawing) **(6f)**.

A single end return panel can accommodate 1 additional flow and 1 return channel **(5b)**, enough for one loop of pipe, areas with multiple loops will require extra end returns and transitional panels.

Ensure that main panels are laid flush against each other and that pipe channels are lined up **(6h)**.

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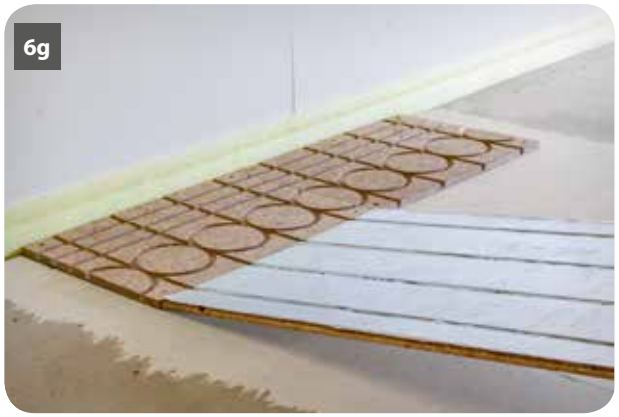


IMPORTANT...
Until boards are screwed down they may slip.

Keep all off cuts for future jobs

Once the first strip of end/transitional panels have been laid, apply more adhesive in a strip approximately 1250mm wide, parallel to the wall **(6g)**, again leave adhesive to become tacky and commence laying main panels, working towards the opposite wall.

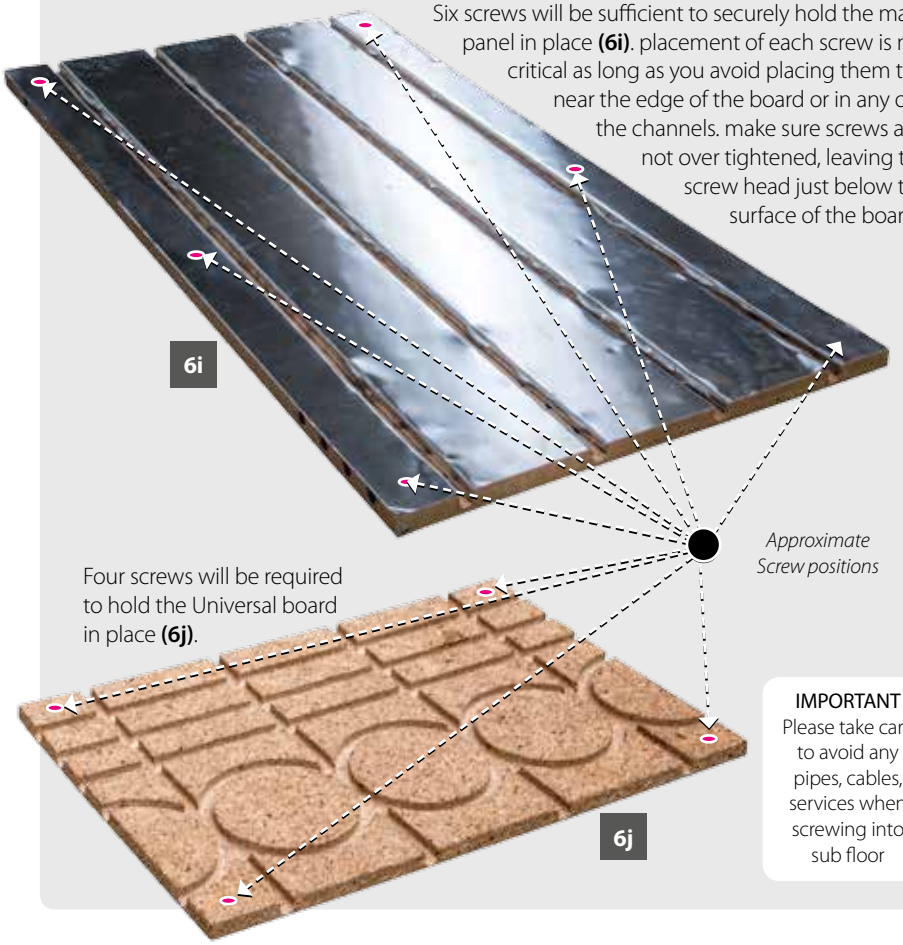
4

TIP...
To ensure pipe channels match up, a good tip is to insert short off-cuts of pipe into a couple of pipe channels where the boards meet **(6h)**.

Fixing positions for Chipboard Overfloor Boards:

In combination with adhesive, the Chipboard Overfloor Boards panels will need to be screwed to the existing concrete or wooden floor using phosphate/zinc countersunk screws (not supplied).

Six screws will be sufficient to securely hold the main panel in place **(6i)**. placement of each screw is not critical as long as you avoid placing them too near the edge of the board or in any of the channels. make sure screws are not over tightened, leaving the screw head just below the surface of the board.



IMPORTANT
Please take care to avoid any pipes, cables, services when screwing into sub floor

Continued over >>>

IMPORTANT: Make sure there are no elecrical or plumbing services directly below potential fixing points

Fixing the boards to a wooden sub floor

Once the Chipboard Overfloor Boards have been laid onto the adhesive, they will now have to be secured with phosphate/zinc countersunk screws (not supplied). First, drill pilot holes in each panel as indicated previously **(6j)** making sure the surface of the boards have been countersunk **(6k)** to allow the screw head to sit below the surface of the board. Drive each screw home being careful not to over tighten **(6l)**.

IMPORTANT: Make sure there are no elecrical or plumbing services directly below potential fixing points

Fixing the boards to a concrete sub floor

When fixing the boards to a concrete sub floor, they will have to be prepared for fixing **prior to the adhesive being applied to the floor**.

Dry lay each board in its final position, drill countersunk pilot holes as per the method above, making sure you clearly mark through each hole to the concrete below. Lift the panel, drill and fit appropriate plugs to the marked screw locations on the concrete floor.

Do this for each board, making sure you mark the board and its position on the concrete floor with a corresponding number so it can be returned to the correct position on the floor **after the adhesive has been applied** The boards can then be secured with phosphate/zinc countersunk screws to their correct positions, again making sure the screws are not over tightened.

7 Installing pipe into the boards

Once the boards and have been laid and secured in place with adhesive and screws, you are now ready to commence laying the pipe. Ensure all pipe channels are clear of debris. Check and familiarise yourself with the pipe layout drawing **(4a)** noting where to begin and pipe routes for each individual loop of pipe.

A pipe layout drawing will indicate each length of pipe required, do not cut pipe before laying (you may need to change the route due to unforeseen events).

Wunda **Pert/Al/Pert** barrier pipe is recommended for use in all overfloor systems due to it's flexible, 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 using a permanent marker **(7a)**.

Walk the pipe into the channels in the overfloor boards ensuring the pipe is pushed securely into the bottom of each channel **(7b)**.

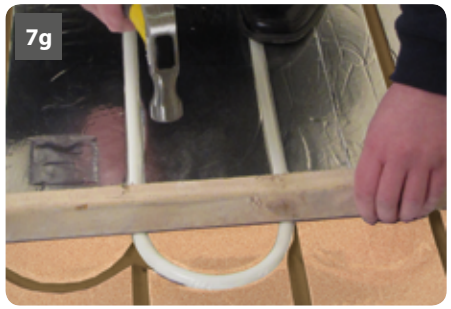
Continue to walk in the pipe on straight channels and shape the pipe by hand around end returns and bends **(7c)**.

Wunda pipe is marked every meter so you will know when to start heading back towards the manifold.

TIP...
Pert/Al/Pert pipe: 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

Continued over >>>

Some cutting of the boards will be required, this can be simply done with a hand saw. Extra bends can be created by cutting curved sections from an end panel or alternatively by using a suitable router and bit **(7d - f)**.



If pipes sit proud of the surface of the overfloor boards, make sure the channel below the pipe is clear from debris. The pipes can then be gently tapped down using a wooden batten laid across the board and pipe, then tapping with a hammer **(7g)**.

Pipe can also be secured in place with aluminium tape where required **(7h)** (not supplied).

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

Wood is a material that is extremely influenced by its environment, specifically by the moisture content of the air above and below. Depending on the relative humidity of the air and moisture content, wood will naturally vary over the seasons – and so will its volume. Underfloor heating and cooling escalate the expansion and contraction of wood. It is therefore extremely important to install wood flooring with care. Flooring manufacturers often give instructions on how wood flooring should be laid, with a maximum floor surface temperature of 27°C. This can be achieved with a floor temperature probe & hard wired thermostat.

The easiest means of installing wooden flooring is by the 'Floating floor' method, special attention must be taken to follow instructions on expansion joints. With Underfloor heating wood will dry and shrink more during the winter season than if underfloor 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 joints by approximately 50% in the case of large floorboards, underfloor heating will give rise to larger gaps between the boards during dry winter months.

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

For floating floors, it is advisable to use suitable underlay (foam with an integrated vapour barrier) underneath, allowing the flooring to move freely when wood expands and contracts over the seasons and to some extent improves footstep noise reduction.

It is also important that wood flooring which has been kept in cold (outdoor) conditions to be taken into the room in which it will be fitted, so that it can acclimatise to the new (indoor) 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 laid.

Please note:
Maple and Beech are not suitable for use with underfloor heating, due to potentially large seasonal movements of contraction and expansion in these woods causing splitting.

General recommendations for installing wood flooring

Flooring manufactures 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 our thermostats with floor probes to limit maximum 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 (we recommend Wunda's 3mm XPS breathable 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.

Engineered or multi- layered flooring

Engineered or multi layered flooring should be installed according to suppliers instructions. Parquets of a laminated type (three layers) give smaller expansion and contraction movement over the seasons.

Solid wood (floorboards)

Solid floor boards should be placed at 90° to the direction of floor heating pipe. If the floor boards are to be fixed rather than a floating floor, suitable advice should be available from your supplier, however fixing with a polymer based adhesive (**Mapei Ultrabond S955**) will allow for expansion and contraction of floor boards over the floor heating system.

Laminate

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

Carpet

6mm plywood bonded to the overfloor boards with an polymer based adhesive (**Mapei Ultrabond S955**) or alternatively screwed down with countersunk phosphate/zinc screws (paying attention to installed pipe circuits), will prepare floor for suitable 'porous' underlays and open weave carpets that will work with Underfloor heating (combined TOG value of carpet and underlay should not exceed 2.5 TOG for floor heating to be effective). For more information on floor coverings that work with Underfloor heating contact your chosen floor covering supplier.

Resilient floor coverings

Vinyl, Linoleum, Cork, Polyurethane, Rubber and Asphalt composites are all in the category of resilient flooring, with Vinyl being the most common. These floor coverings cannot be placed directly on top of chipboard floor heating boards and therefore require an intermediate layer that makes the surface level and load bearing.

A floating T&G chipboard floor with level joints which Vinyl or Linoleum is glued to is the simplest method of installing these coverings. Alternatively bond a suitable non-insulating tile backer board directly to the chipboard floor heating boards then place floor finish on top.

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Chipboard OVERFLOOR Heating Boards

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F12

Overfloor panel - installation guide for floor tiles

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. To reduce consumption of Renovation Screed/Tile Adhesives, it is advised that any unused pipe channels are covered/filled with e.g. left over pipe and any gaps taped over.

Installing ceramic, vitrified, quarry and porcelain tiles

Option 1
- Prime both main overfloor board & end return board with MAPEI ECO PRIM GRIP
- Bond tiles directly to the overfloor boards with MAPEI KARABOND T mixed with MAPEI ISOLASTIC (100%) or MAPEI ELASTOPRAPID (minimum tile size 10cmx10cm).

Option 2
- Prime the overfloor boards with MAPEI ECO PRIM GRIP.
- Level with min. 5mm MAPEI ULTRAPLAN RENOVATION SCREED*.
- Bond tiles using MAPEI KERABOND T & MAPEI ISOLASTIC (100%) or MAPEI ELASTORAPID or MAPEI GRANIRAPID.

Option 3
- Fix a moisture stable, rigid non-insulating tilebacker board to the overfloor board with MAPEI KERABOND T & MAPEI ISOLASTIC (100%) or MAPEI ELASTORAPID
- Bond the tiles to the tilebacker board with MAPEI KERABOND T & MAPEI ISOLASTIC (100%) or MAPEI ELASTORAPID.

Installing natural stone tiles

Option 1
- Prime the overfloor boards with MAPEI ECO PRIM GRIP
- Level with min. 5mm MAPEI ULTRAPLAN RENOVATION SCREED*
- Bond tiles using MAPEI KERABOND T & MAPEI ISOLASTIC (100%) or MAPEI ELASTORAPID or MAPEI GRANIRAPID.

Option 2
- Bond a moisture stable, rigid non-insulating tilebacker board to the overfloor board. Bond with MAPEI KERABOND T & MAPEI ISOLASTIC (100%) or MAPEI ELASTORAPID
- Bond the tiles to the tilebacker board with MAPEI KERABOND T & MAPEI ISOLASTIC (100%) or MAPEI ELASTORAPID.

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

STAGE 1

Option 1
- Prime the overfloor boards with MAPEI ECO PRIM GRIP
- Level with min. 5mm MAPEI ULTRAPLAN RENOVATION SCREED*

Option 2
- Bond a moisture stable, rigid non-insulating tilebacker board to the overfloor panel. Bond with MAPEI KERABOND T & MAPEI ISOLASTIC (100%) or MAPEI ELASTORAPID

STAGE 2

Waterproofing
- Apply MAPEI MAPELASTIC AQUADEFENCE/MAPEI MAPEBAND

Fix Tiles
- Bond the tiles with MAPEI KERABOND T & MAPEI ISOLASTIC (100%) or MAPEI ELASTORAPID

Mapei products overview

Ultrabond Eco 380

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

Ultraplan Renovation Screed

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 5mm screed is required and tiles are bonded to this using **Mapei Kerabond T** and **Mapei Isolastic mix**. (used for the laying of natural stone tiles)
** Do not introduce any heat into the pipe circuit until after tiling has been laid and allowed to fully dry naturally.*

Ultrabond Eco S955 1K

Ultrabond Eco S955 1K is used for bonding a ply deck directly on to Wunda Overfloor boards.

Kerabond T and Isolastic

Kerabond T and Isolastic is a two part mix used to bond tiles directly to Wunda Overfloor boards (used for laying of ceramic, vitrified, quarry and porcelain tiles).
Drying time - allow 7 days 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 AQUADEFENSE.

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

Technical Information

Main and Return Panel profile

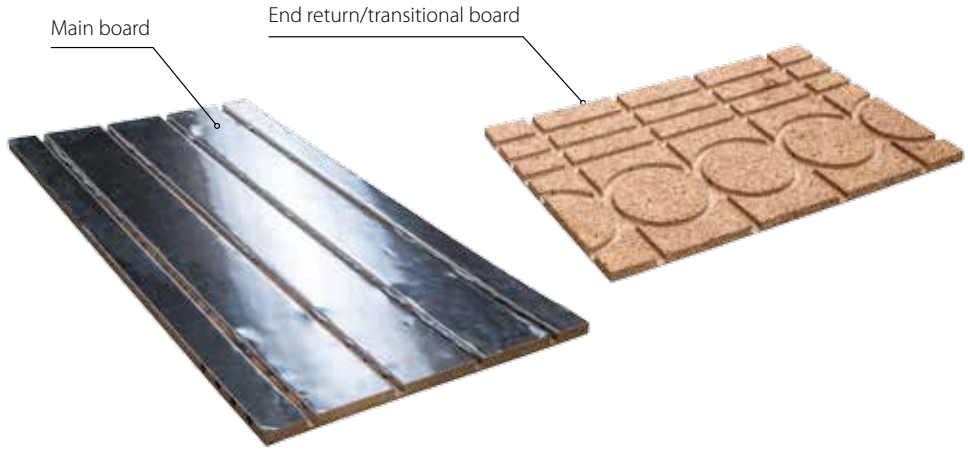
	Main Board	Universal Transitional/ End Return Board
Pipe dimension	12mm Pert/Al/Pert	12mm Pert/Al/Pert
Thickness	17mm	17mm
Length	1200mm	400mm
Width	600mm	600mm
Weight	9kg	4.1kg
Pipe Spacing	150mm	150mm
Material	17mm Chipboard	17mm Chipboard
Aluminium Heat Diffuser Foil	200 micron thick	Plain

Approximate heat input temperature 50°C

*Approximate heat output from the Chipboard Overfloor system with 200 micron aluminium covering	Under ceramic tiles	Under wood/laminate	Under carpet (1.5 tog max)
	75w per m^2	**58w** per m^2	**50w** per m^2

* In a well insulated double glazed room

The output of Wunda Chipboard Overfloor Heating Boards will vary dependent on flow temperature, thermal conductivity of floor coverings, insulation levels double glazing etc.



NOTE: Good practice is to use 22mm feed from boiler to manifold. UFH manifolds should always be connected to 22mm flow and return heating pipe, rather than 15mm supply pipe

Important Information

The heat output of this floor heating system must be limited to a maximum supply water 55 °C and a maximum floor surface temperature of 27°C when choosing wooden floor finishes. Floor heating cannot compensate for large heat loses of an inadequately insulated house. Please note that Chipboard Overfloor systems can give an approximate heat output of up to 80W/m^2 with ceramic and stone tile coverings and up to 60W/m^2 with wooden coverings (up to 16mm thick).

"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."

Your notes:

Tech support opening hours are subject to change - please visit our website for the latest information

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