Altis Flow
Under Floor Heating
Installation Guide

Altis Flow is a new way of laying UFH that provides fantastic outputs and, as well as being one of the thinnest systems on the market, and partners perfectly with heat pumps. No matter if you have existing concrete, screed, timber or even tiles, providing the floor is level, and structurally sound, Altis Flow should work for your project.

Use this document as a guide for the installation of the Altis Flow system only. We recommend reading separate manufacturer guidelines regarding using the levelling compound and subsequent preparation of the floors to receive finished floor coverings.

Features

- High density recycled polystyrene sheets
- Nubs every 50mm
- 1050 x 650mm sheet size
- All-in-one panel design (no feed and return panels)

Benefits

- Lightweight, easy to lay
- Closer pipe centres can be used
- Compatible with most existing floors
- High thermal mass so great output at low temperatures
- Direct tiling
- Fast heat-up times

Key Parts of Assembly

Altis Flow System Panel

- Board size 1050x650mm
- For use with 12mm pipework
- Castellations for 50mm spacings.
- Made from high impact recycled polystyrene
- High bond self-adhesive backing

Flooring without insulation: for system efficiency, we recommend laying the system on an insulated floor. Due to how this system works, the insulation should not be above the subfloor (under the Altis Flow panel) for the Altis flow system to work, it needs to be directly bonded to the subfloor.

The Altis system will perform with uninsulated slabs but will lose more energy to the ground.
Please note: if on an un-insulated floor you may not lay this system on a vented floor.

Altis Flow Under Floor Heating

A Note on Sub Floors

It is essential that when installing this system, the existing subfloor is level with no movement and is free from debris. If the system panels do not sit flat, this can cause an issue when applying the levelling compound as panels may not bond fully, or you can experience uneven heating. We recommend using this list below of suitable subfloors. If your construction is not listed contact us on 01245 850799 to check suitability before laying.

- Solid concrete floor which is cured for a minimum of 6 weeks and is fully dry
- Screed floors where the manufacturers fully cured time have elapsed
- Existing screed, tile floor or concrete floors that are level (if not level a suitable levelling compound can be used but must be cured first)
- Timber flooring where the floorboards are level and well secured down to the joists, any gaps should be sealed

System Weight

Thanks to Altis Flow's design, it opens up possibilities for installing on suspended floors, giving a fantastic output and alternative to radiators. However, please take care of additional loading on a joisted floor because the Altis Flow system is extremely heavy when dried. Check with the structural engineer before installation.

Dried System Weight to 20mm coverage using Mapei Ultraplan Renovation Screed 3240: 45.4kg/m² For every further mm, add 2.5kg

Dried System Weight to 25mm coverage using Gyvlon low profile screed: 50.51kg/m For every further mm, add 2.05kg

All product advice in this guide is given using approved Mapei products. Other products are available to be used on this system. But first, check the manufacturer of adhesives and compounds for correct application as described in the guide. Multipipe will not accept liability for damaged floor surfaces occurring from the use of incorrect products.

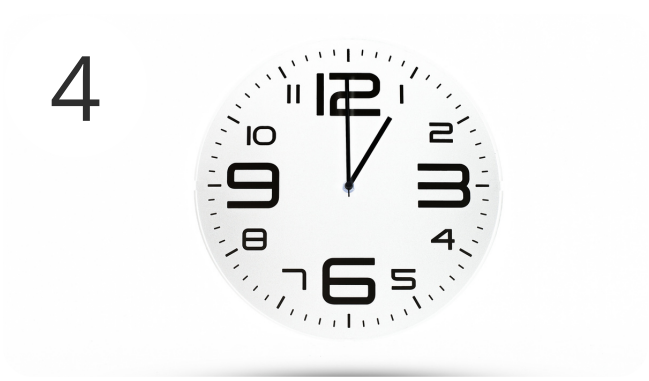
Altis Flow
Under Floor Heating

Installation All Types of Floor Finishing

Ensure the subfloor is dry, clean and free from debris. Any holes/ uneven areas should be levelled using the Mapei Ultraplan Renovation Screed 3240. (see page 8)

If fixing to timber floor ensure the panels are well screwed down, and any holes in the floor are plugged using a waterproof mastic.
There should be no flexing in the boards as you walk over them. Lastly, make sure the system's weight (see above) does not cause any structural issues.

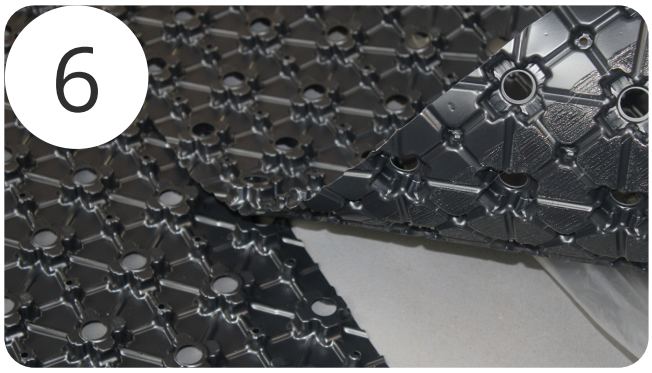
Prime the entire area using a brush or roller, taking care not to miss any areas. Prime low porosity areas with Mapei Eco Prim Grip Primer. Prime porous areas with Mapei Eco Prim T Plus (diluted 1-2 with clean water).



Leave for a minimum of one hour for the primer to dry.

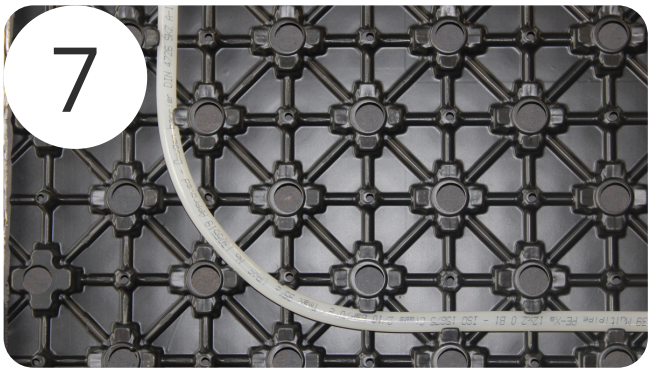
Roll out the edge insulation and ensure the apron faces into the room. The insulation must be stuck to the back wall, and the floor (this ensures there is no run out). If you must cross a door threshold (where pipes pass) cut a slot to allow the pipework in, then reseal using tape and mastic.

Altis Flow Under Floor Heating



Start by applying the self-adhesive sheets in the first row, and overlap the first nub. When laying the second row, make sure you overlap the panels by one nub.

Top tip make sure the smaller nub faces into the room as this is needed for the overlaps



Once all panels are in place, and using your provided UFH diagram, lay the pipework into the boards.
Where you have a tight turn, please do not force the pipe and bring it back one nub.

If any pipes are loose or for your feeds, use a 12mm plastic pipe clip nailed to the floor to secure the pipe.

After the system is laid and connected back to the manifold, we recommended following our UFH system guide on filling and pressure testing.

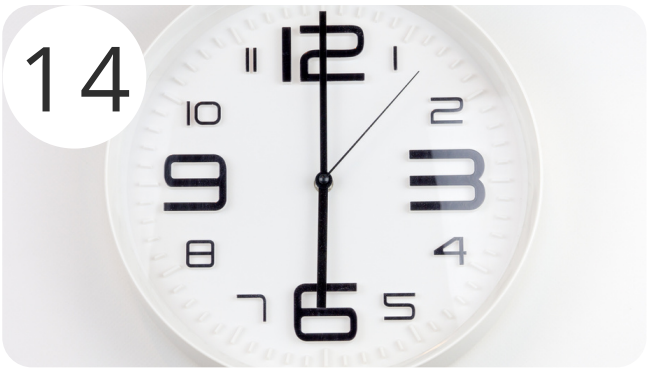
Once the system is laid, we recommend limiting footfall on the system until the levelling compound is laid, to limit the risk of damage to the pipes (If you are not applying the screed straight away). use clean crawl boards over the pipe.

Before laying the Mapei Ultraplan Renovation Screed 3240 use the tables at the back of this guide to ensure you have enough bags to complete, as this product has a short working window.

Altis Flow Under Floor Heating

Mix off the flooring if possible to reduce the chance of damage to the pipe. Mix Mapei Ultraplan Renovation Screed 3240 fully in line with the manufacturer's guidelines, see separate datasheet for more detail.

Starting from the furthest point, we recommend marking the screed level to ensure you have the correct level. At the very least, you need to ensure that pipe and nubs are entirely buried and do not show. Any dips you see with the pipe indicate not enough coverage. Although this is a liquid-based product and there is an element of self-levelling, it might need working into corners of the room.



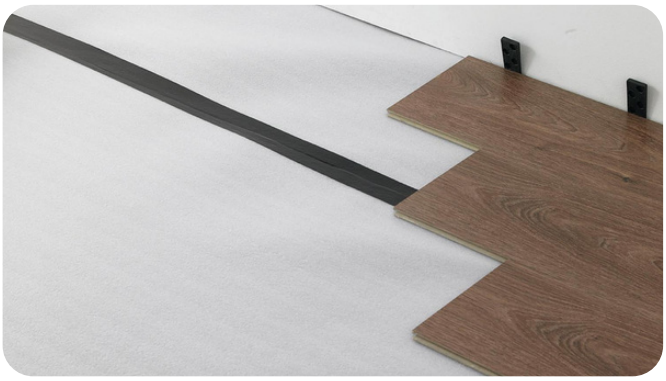
Six hours after the screed has been laid (in average ambient temperatures), the system can be walked on. You must wait an additional three days before any floor coverings can be applied.

If any cracking occurs in the surface, this may be due to excessive water or that the mix has dried too quickly.
Providing the cracks are only hairline in size this will not affect the performance of the UFH system.

Laying Floating Finished Floors

For any type of floating finished floor, e.g. laminate, we recommend installing approved floor insulation under the laminate to reduce step noise. A 10mm expansion gap should be laid around the entire room including at door thresholds. When the floor covering manufacturer stipulates a maximum floor surface temperature, please ensure a floor sensor probe (22-23020) is fitted to the underside of the flooring.

We highly recommend that your flooring is left in the room to be laid overnight to allow it to acclimatise.

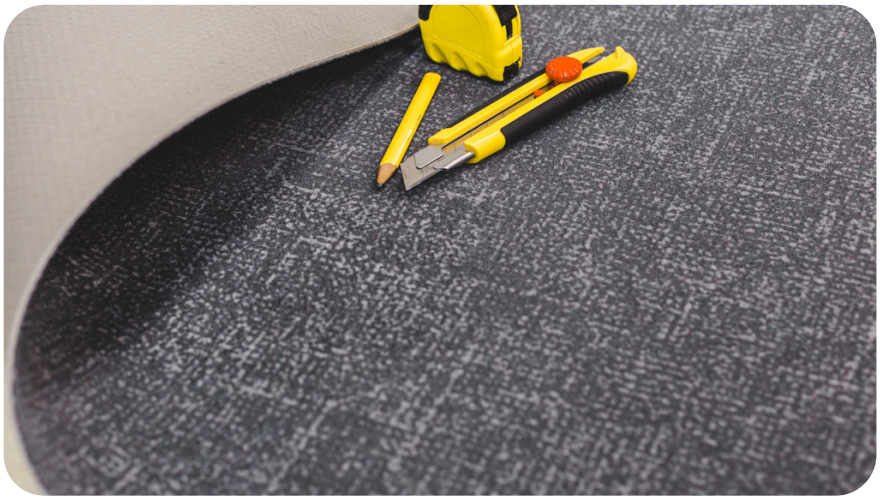


Laying Tile Flooring

1. Ensure you allow enough time for all surfaces and levelling compounds to be fully cured
2. If the surface of the levelling compound became contaminated during drying or laitance is present (milky or powdery surface). Then grinding of the floor surface may be required. Please ensure when grinding, you do not remove too much of the surface as this could damage the pipework system.
3. If you use a decoupling membrane, a notched trowel must be used to apply the tile adhesive, before sticking the membrane fabric side down. This should then be fully cured before laying tiles. The use of decoupling membranes is not mandatory but may be requested by some tilers.
4. Once the surface is cured, we recommend using Mapei Keraquick S1 tile adhesive applied using a notched trowel to the entire underside of each tile for full system adhesion.
5. For tiles above 600x600mm in size or non-moisture stable natural stone then please also add to the tile adhesive Mapei Latex Plus additive
6. Once the tiles are laid, leave a minimum of 2-3 hours but ideally overnight before grouting.
7. For grouting, we recommend Mapei Ultracolor Plus grout.
8. All movement joints can be filled with either Mapei Mapesil AC (for ceramic and porcelain tiles) or Mapei Mapesil LM (for natural stone tiles).

Laying Carpets

1. When installing Carpet on the Altis Flow system, you first need to check the overall system TOG rating or R-Value. It is recommended that the Tog rating does not exceed 2.5 Tog, including the underlay. Anything thicker than this, please call our technical helpline on 01245 850799 to check system performance against your heat loss.
2. If you are stretching the Carpet and using gripper rods, these should only ever be stuck down and not nailed as this could damage both the levelling compound or pipework system.



Laying Stick Vinyl or Wood Systems

1. We recommend checking the maximum floor surface temperature with the manufacturer before laying the Altis Flow as the fitting of a floor probe may be required.
2. Once the system is laid, and fully cured, a stick vinyl system can be directly applied to the floor surface. To ensure good adhesion, Mapei would not recommend that the smoothing compound is primed prior to bonding the resilient floor coverings with Mapei adhesives. Note: do not use the UFH system to accelerate drying times for any part of the system as this can cause cracking.

Altis Flow Under Floor Heating

Bagged Product Quantities

All quantities below are given using Mapei Ultraplan Renovation Screed 3240, for any other products call our technical line on 01245 850799 for advice on the suitability. All bagged amounts are given as an estimate due to the nature of deviations in the floor. However, a +/- 2.5mm in the floor height is allowed for in the first table. Note: The maximum depth for each pour of Mapei Ultraplan Renovation Screed 3240 is 30mm. If a second layer is required we recommend applying it approx. 3 hours after the first pour at +23˚C and up to 8 hours in cooler conditions. If the first layer is completely dry, prime with Mapei Eco Prim T Plus diluted 1:2 with clean water.

Bags Required over the Altis Flow system

The table below shows how many bags of Mapei Ultraplan Renovation Screed 3240 you will need allowing for a 2.5mm deviation on the floor surface in the bag amount, any more than this then please use the table below.

Ensure the floors are reprimed with Prime with Mapei Eco Prim Grip Primer for low porosity areas or with Prime with Mapei Eco Prim T Plus (diluted 1-2 with clean water) for porous areas.

Altis Flow Build-up (mm)	Floor Area (m^2)									
	5	10	15	20	25	30	35	40	45	50
18	6	11	16	21	26	31	36	41	46	51
20	6	12	17	23	28	34	40	45	51	56
22	7	13	19	25	31	37	43	49	55	62
24	7	14	20	27	34	40	47	54	60	67
26	8	15	22	29	36	43	51	58	65	72

For systems out of level by more than +/- 2.5mm over the whole floor area use the table below in addition to the bags in the table above for your total system coverage

Floor Depth Variation	Floor Area (m^2)									
	5	10	15	20	25	30	35	40	45	50
+/- 2.5mm	0	0	0	0	0	0	0	0	0	0
+/- 5mm	1	2	3	3	4	5	5	6	7	7
+/- 7.5mm	2	3	5	6	7	9	10	11	13	14
+/- 10mm	3	5	7	9	11	13	15	17	19	21
+/- 12.5mm	3	6	9	11	14	17	20	22	25	28
+/- 15mm	4	7	11	14	18	21	24	28	31	35
+/- 17.5mm	5	9	13	17	21	25	29	33	37	41
+/- 20mm	5	10	15	20	24	29	34	39	43	48

After the system is fully laid and cured, we recommended following our UFH system guide on starting up the system for the first time. This is very important to ensure you do not damage the floor surface.