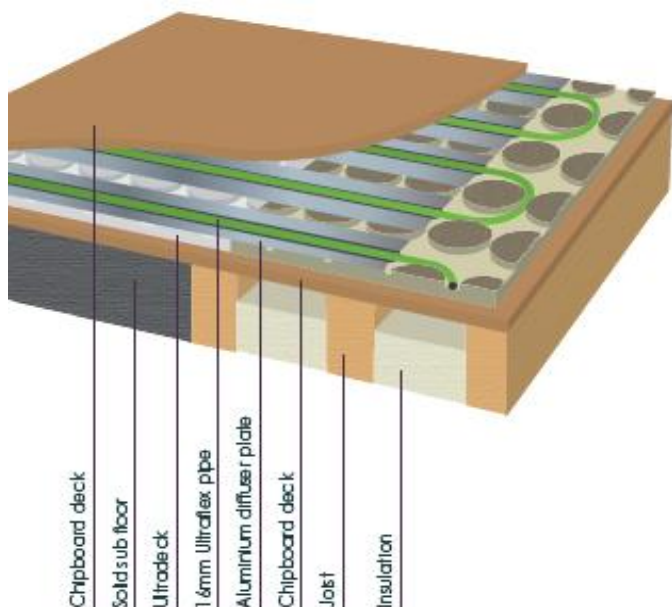


Underfloor Heating for Floating Floors, Between Joist and Battens - **UltraDeck**



UltraDeck

Lightweight High Density EPS panel solution with aluminium diffuser plates for quick installation

Quick and easy to install, UltraDeck is constructed of lightweight, high density, EPS (expanded polystyrene) panels which is an extremely versatile product having applications for various floor constructions. It can be used as a floating floor over an existing timber deck, over insulation as an alternative to screeded floors, between battens or between joists.

The panels feature multi-directional grooves to make it simple to follow pipe layouts, whilst aluminium diffuser plates disperse heat across the floor above.

UltraDeck is both lightweight and low profile, being just 25mm including 16mm UltraFlex pipe and aluminium diffuser plates.

An 18mm chipboard deck must be used on top of UltraDeck, and the final floor finish can be laid over the chipboard floor.

Floating Floor Over Existing Timber Deck

For ground floor applications over a timber suspended floor with a ventilated void, it is imperative to introduce insulation. 100mm PIR/PUR is recommended to avoid downward losses through to the void below, as this area would have the same external temperature as the outside of the building.

For intermediate floors insulation would be added for sound dampening and not for thermal reasons. 100mm of mineral wool is usually enough, unless the space below is unheated, in which case treat as a ground floor application.

Lay the 25mm EPS panel over the existing floorboards then add the aluminium diffuser plates and the 16mm UltraFlex pipe together with an 18mm chipboard deck and the final floor finish can be laid over the top to finish the installation.

Floating Floor Over Insulation

This method is often used in new build applications where a “dry” solution is required, usually for two reasons. This method does not need any drying times, unlike a screeded floor, and once laid with an 18mm chipboard flooring, the final floor finish can be laid immediately, which saves a considerable amount of time and money.

The other reason would be to lower the overall depth of the floor. The depth of a screed floor over the insulation would be 65mm as a minimum, however with a floating floor this is 25mm for the EPS panel and diffuser plates, plus 18mm chipboard floor boards, which makes an overall depth of just 43mm.

If the floor finish is going to be tiled, then consider using a bedded floor construction to ensure there is no deflection in the floor, which could lead to tiles becoming cracked.

In Between Battens

If fitting over a concrete floor and are using tiles as the final floor finish, battens at 400mm centres should be used. Insulation is required to avoid downward losses, so use PIR/PUR insulation laid between the battens of 100mm, or as required for building regulations. A gap of 25mm should be left from the top of the battens, and then the EPS UltraDeck panels can then be laid between the battens on top of the insulation. Add the aluminium diffuser plates and the 16mm Ultraflex pipes together with an 18mm chipboard deck and final floor finish can be laid over the top to finish installation.

In Between Existing Joists

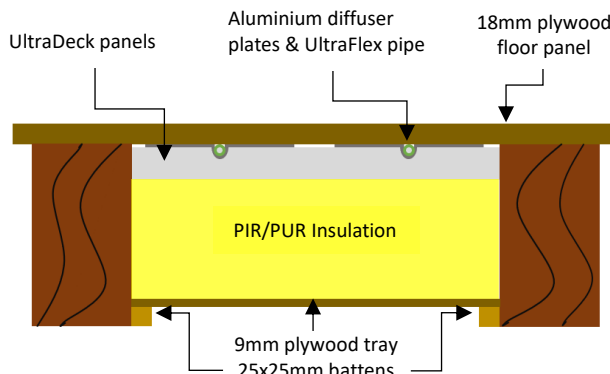
For renovations where there are low ceiling heights or where it would be difficult to use an overlay system, then fitting between joists could be considered.

For ground floors on a timber suspended floor with a ventilated void, it is imperative to introduce insulation. 100mm PIR/PUR is recommended to avoid downward losses through to the void below, as this area would have the same external temperature as the outside of the building. Use battens either side of the joists with a 9mm plywood tray to hold the insulation and the UltraDeck EPS panels. Leave a 25mm gap between the top of the joists to the top of the

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insulation to take the UltraDeck panels, the aluminium diffuser plates and the 16mm Ultraflex pipes.



For intermediate floors insulation would be added for sound dampening and not for thermal reasons. 100mm of mineral wool is usually enough, unless the space below is unheated, in which case treat as a ground floor application.

Edge Insulation

Note: The edge isolation strip supplied by Mi-Heat should be fitted around all the walls. This should be fitted to the full depth of the floor, including any insulation.

Manifold

The Mi-Heat manifold is made from stainless steel with connections to 16mm UltraFlex pipe and has isolation valves to the flow and return connections to the boiler.

Each manifold comes with a 3-bar pressure gauge, as well as two temperature gauges to ensure the 10°C temperature difference between the flow and return rails on the manifold.

Floor Coverings

Virtually any floor covering can be used, however the best is those that have little resistance to heat transference, such as stone, ceramic tiles and laminate flooring solutions.

Engineered wood flooring is also an excellent choice, and because of its laminate construction, it is very stable.

Greater care should be taken when using solid wood flooring, which should have a low moisture content of 10% or less. Before installation natural wood needs to be acclimatised to the climactic conditions in the property. For any wood flooring, a floor sensor should be installed, to protect the floor from overheating and keeping the surface temperature to maximum of 27°C. Floor sensors are supplied where required once the floor coverings are known and is supplied by Mi-Heat.

Vinyl is also another popular choice, as well as resin floors, and again a floor sensor will be required to keep the floor temperature to a maximum of 27°C.

Carpets can be used but the Tog value, when combined with an underlay, should be no greater than 2.5 togs.

If the system is powered by a heat pump rather than a traditional gas or oil-fired boiler, greater restrictions apply as the flow temperature is much lower, usually 45°C rather than 55°C.

Mi-Heat Warranties and Insurance

Manufacturer's warranty: All UltraFlex pipe supplied by Mi-Heat is covered by a 50-year warranty, the first 10 years are insurance-backed.

Product liability: Mi-Heat maintains product liability insurance to £5 million.

Professional indemnity: Mi-Heat designs are an integral part of the operational effectiveness of the UFH system, therefore Mi-Heat holds professional indemnity insurance of £5 million to cover all aspects of our design services.

Mi-Heat Designed UFH Systems

Mi-Heat will quote and design the UFH system to ensure that it will achieve an internal temperature of 21°C with an external temperature of -3°C.

At quote stage Mi-Heat will be able to advise the suitability of the desired floor construction, however if there is no other option Mi-Heat would be able to advise if further back up heating would be required, such as a small radiator or convector and at design stage, the extra output required. This involves a detailed study of the property and careful heat loss calculations to ensure that the quoted solution will be able to reach the desired internal temperatures.