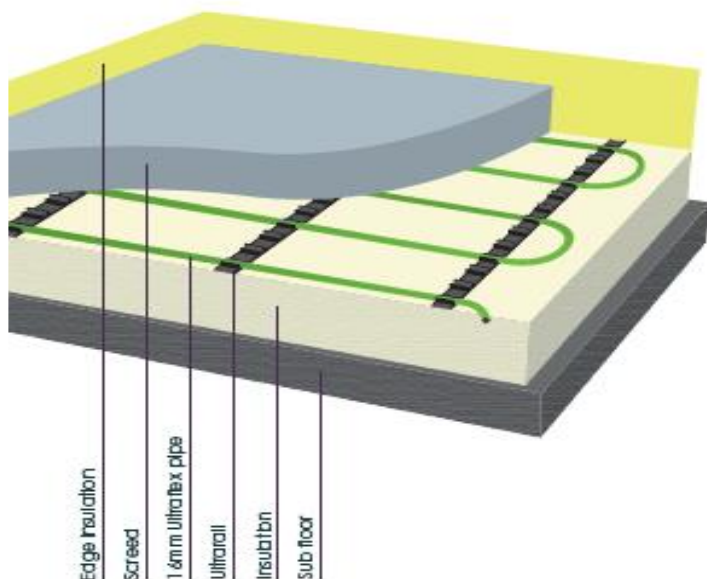


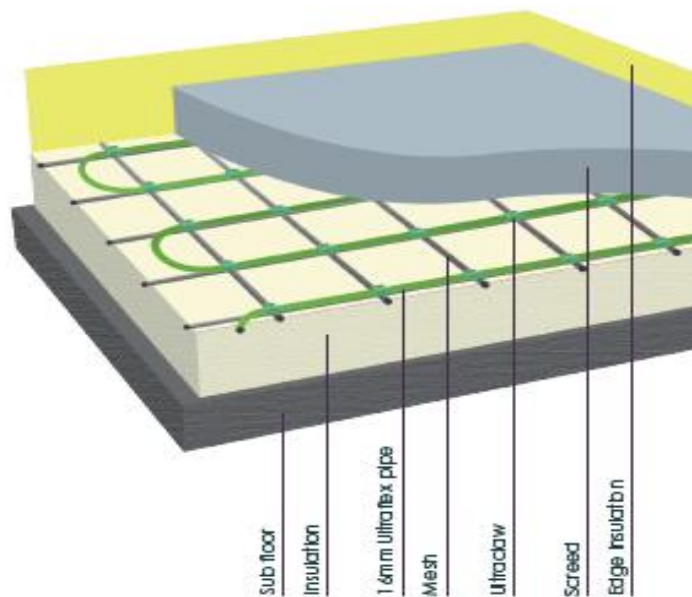
Underfloor Heating for New Builds & Extensions In-Screed



UltraRail



Ultraclaw



Screed

Underfloor Heating within screed is one of the most popular and cost-effective methods in the building industry for properties built using a solid concrete floor, concrete slabs or block and beam construction methods.

There are significant advantages to using screed as it provides a large thermal mass where the energy can be stored and released slowly and evenly to heat the room. Screed provides a high heat output of 100W/m². and this can be higher if using flow screeds of 50mm or less.

Ultraflex pipe

An extremely flexible UFH pipe for quick and easy installations and is exclusive to Mi-Heat. We are rightly proud of our Ultraflex pipe, and that is why it is at the heart of every Mi-Heat UFH system. Designed and manufactured exclusively for Mi-Heat, our 16mm Ultraflex pipe has been designed to be extremely flexible, making it quicker and easier to install in every scenario.

Strong yet featuring a tight bending radius, Ultraflex's 5-layer PE-RT (polyethylene for raised temperature) construction makes it the perfect thermally stable solution for underfloor heating.

Ultrarail

Ultrarail is a tried and tested fixing method and ensures that the pipe is always installed at the right centres, which is critical in ensuring the right heat output of the floor. Our self-adhesive Ultrarail solution provides a quick and easy way to secure UFH pipe to the insulation layer of screed floors. Lengths of the lightweight plastic rail push together to cover the required floor area and is secured to the insulation layer with a user-friendly self-adhesive strip. Reflex pipe clamp technology securely holds the UFH pipe in place, with no clips, screws or specialist tools required.

Ultraclaw

An ingenious pipe fixing system for mesh and grid screed floors. Our patent pending Ultraclaw clip makes quick work of fixing UFH pipe into position on builder's mesh. Many screed floors use a mesh or grid for structural stability. Removing the need for time-consuming, scruffy zip ties, Ultraclaw clips directly on to industry standard A142 builder's mesh to hold the UFH pipe securely where it is needed, and away from the metal reinforcing bar. Fixing can be easily done by hand, or the process made even quicker by using our specialist fixing tool.

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Insulation

For ground floors the insulation between the concrete base and the screed should be of at least 100mm, or equivalent, and which conforms to the current Part L of the Building Regulations

In upper floors insulation should be to a minimum of 30mm PIR/PUR insulation, or equivalent to prevent downward heat transmission. The edge insulation is supplied as part of the UFH by Mi-Heat, however the 125-250µm polythene protection layer and insulation can be most economically sourced from your local builders' merchants.

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 insulation and screed.

Floor Structure

A standard sand and cement screed can be installed over the Ultraflex pipe, and for domestic properties this is normally to a depth of 65mm. Greater depths are generally required for commercial applications usually between 75mm to 100mm. A142 Builders mesh may also be used to give added strength to the floor.

Another alternative is to use a pumped screed, with a reduced depth of 50mm or lower. This has distinct advantages as it can produce greater outputs sometimes up to 10-15% extra, thereby increasing the efficiency of the system. If this is being considered, extra Ultrarail parts maybe required, so please contact Mi-Heat for further advice.

Setback Time Controls

Because of the thermal mass inherent with screeded floors, setback controls are generally used. This enables the heating system, instead of turning off completely in off periods, such as night times, it will set the temperature back by 3-4° C. This enables the screed to lose some heat over that period, but not to lose so much that it takes a much longer period to heat up the next morning. It will allow the heating system to "top up" the screed with some heat during any off period, allowing it to fully heat up the next morning and warm the room in a much lesser time.

Expansion Joints

Expansion joints should be installed in areas over 40m², or with lengths greater than 8m. Expansion joints are required across doorways and other changes of section. Where Ultraflex pipe passes across expansion joints it must be covered with a sleeving for at least 200mm either side.

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 thin 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. 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. This sensor is supplied by Mi-Heat once floor coverings are known.

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 also be used in most situations, however 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.

Advantages of Screed

- ☑ Cost effective solution
- ☑ Tried and tested method
- ☑ High heat output (<100W/m²)
- ☑ Provides a thermal mass
- ☑ Uses setback time control
- ☑ Suitable for all floor coverings
- ☑ Suitable for flow screeds
- ☑ Flow screeds have faster heat up times
- ☑ Flow screeds increase efficiency