Pipe

- Plypipe is a five-layer composite pipe.

- All layers are extruded by one step.
- Inside and outside layers are made of Hi-Density, Cross-Linking or Medium Density Polyethylene (HDPE or PEX)
- Its middle layer of Aluminium is 100% of gas/oxygen impermeable.
- Structural layers are tightly bonded together with high quality heating adhesive
- Pipe is corrosion proof and insusceptible to the formation of stress fractures

Controls

- We believe that proper controls are the key to successful Underfloor Heating.
- Full electronic thermostatic control comes as standard on our system. Each room can be a zone for control and economy. This is the ultimate in control.
- Logic Controllers are installed to call heat source when signalled by thermostat. Programmable Logic Controllers are use where more than one heat source unit is installed.

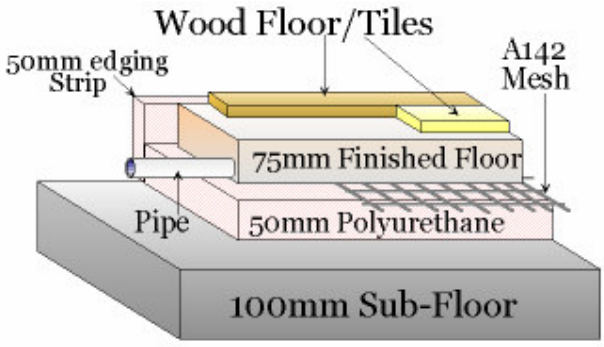
Installing Underfloor heating is simple from a customer's point of view. Just make sure that there is:

- Adequate floor insulation.
    - On the ground floor we recommend a minimum 50mm of polyurethene Floor Insulation or equivalent. (Kingspan TF70 is an example)
- Space for pipe & finished floor.
    - It is usual to have 75mm of finished/power-floated floor above the insulation.

  The floor build-ups we recommend are simple, economical and effective.

The Ground Floor

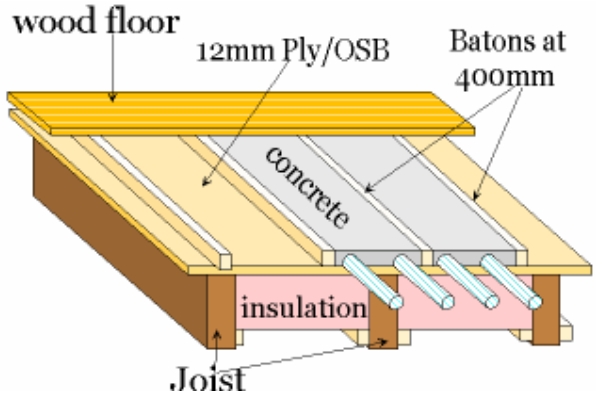
- A 100mm layer of Aerobord or 50mm Polyuretane(TF70) is laid over the radon barrier and sub-floor & covered with a vapour barrier.



- Pipe is laid without a joining on this.
- 75mm of power floated floor covers the pipe.
- Any floor covering can be fixed (floated/glued) to the concrete.

First Floor

- 12mm plywood/OSB is glued and screwed to the joists.
- 37mm x 50mm batons are laid at 400mm with an end gap of 40mm.
- Pipe is secured at correct spacing
- 4:1 sand /cement mixture covers pipe to height of batons



Electrical Specification

Single Manifold

- 4 core 1.5mm² cable (preferably NYNJ, 2 phases, neutral & earth) from each room back to Manifold. (Excluding bathrooms and En-Suites).

- Permanent feed from fuse box back to a 13amp-switch fuse spur outlet at manifold ground floor.

- 6 Core .75mm² from cylinder back to manifold, for cylinder thermostat. Connected to 4 wire 2 port motorised valve to fire boiler and pump from auxiliary connection. 4 core 2.5mm² cable from manifold back to boiler

More than 1 Manifold

- 4 core 1.5mm² cable (preferably NYNJ, 2 phases, neutral & earth) from each room (both floors) back to main manifold (ground floor Manifold). (Excluding bathrooms and En-Suites).

- Permanent feed from fuse box back to a 13amp-switch fuse spur outlet to main manifold (ground floor).

- 6 Core .75mm² from cylinder back to main manifold.

- 4 Core 2.5mm² cable from manifold back to boiler.

- 12 Core .75mm² link & 4 core 1.5mm² cable (preferably NYNJ, 2 phases, neutral & earth) between main manifold and each other manifold.

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Floor Coverings

There are almost no limits on the floor coverings you can use with our system. 70% of the heat coming from our system radiant heat, which passes through the floor covering to warm you

Tiles, stone or terrazzo:

Are the most direct conductors of heat. It is this ability to conduct heat that makes these coverings so cold in a conventional heating situation. With Underfloor Heating these will fell softly warm, comfortable to walk on barefoot on the coldest morning.

Carpet:

Is excellent as a covering provided excessive underlay is not used - keep the underlay below 2cm. Do not use a rubber or foam underlay use only a natural fibre.

Wood:

- Either solid wood or engineered coverings like laminates are perfect as the heat radiates easily through the wood if the piping density allows for enough heat output.

- We pipe all rooms at 20cm spacing so you can lay wood anywhere, at any time in the lifetime of the premises. Our system is engineered and designed to last. We expect you will want to make changes to your house as years go by.

- The vast majority of houses with underfloor heating have wooden floors. A properly laid wooden floor is elegant, luxurious and long lasting with Underfloor heating. See our Advice on Wooden Floors for the simple steps to getting that floor perfect.

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Advice on Wooden Floors

Thousands of homes with Underfloor Heating have wooden floors installed. Wood and Underfloor heating are a luxurious combination and easy to get right.

Get The Moisture Content Right

The wooden floorboards need to be laid out loosely, for a few weeks over the floor heating in order for it to acclimatise before final fixing. Even though your timber has been kiln dried, it can absorb moisture during storage and transportation so the best thing to do is let the timber acclimatise to its surroundings. Floor heating is a gentle heat and will not adversely affect wood once it has been dried to the correct moisture content.

- Warped or swollen floorboards are not caused by heating but because the floorboards are too dry or too damp when the flooring was installed.

- If the timber is too dry it will absorb moisture from the atmosphere, the board will swell and will turn up.

- If the wood is too damp it will shrink and leave gaps between the boards.

- The moisture content should be between 9% - 11% on floors with underfloor heating.

Dry Out The Concrete

Timber should not be fixed over a new concrete floor without first running the Underfloor heating system to dry out the moisture still trapped in the concrete. To do this satisfactorily, we recommend that your heating is brought up slowly by 5° per day for 5 days. We start the heating at a water temperature of 30° C. and turn it up 5° per day until we reach 40° C. The temperature then remains at 40°c.

Wooden Floor Thickness

Finished floors should not exceed 1" inch or 22 mm thickness. Don't cover a floor with plywood and then add another layer of board. This will create a big insulation barrier and will consequently affect your heat up time.

Laminated Floors

These floors are usually dry and stable by nature and generally do not need to be acclimatised as per paragraph 1. However, if you are in doubt you can check with your Flooring Supplier.

You should always make sure you are using a reputable supplier. Most timber flooring goes through a kiln drying process and your supplier should be able to explain this to you. He should also be able to demonstrate the moisture content of the timber using a moisture content tester.

There is no "special" wood that suits Underfloor Heating or that possesses qualities that make your room warmer, your heating more efficient or your fuel bills lower.
File claims for such woods under "s" for snake oil. Such magic woods from the forest of enchanted salespeople will make your pockets lighter or bank balance lower without doing **you** any good.

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