



## FLOOR CONSTRUCTIONS

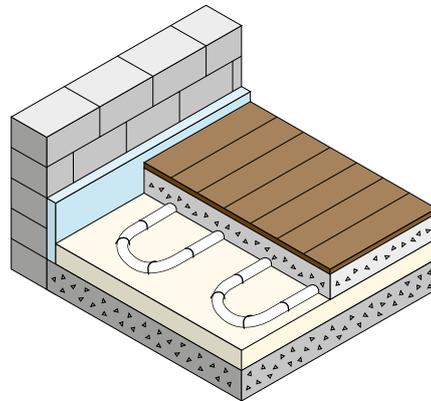
### Solid Floors

#### Overview

The underfloor heating pipes are laid onto floor grade insulation board placed over a solid concrete base. Screed is then poured over the top of the pipes. This construction is typically used on ground floors or block and beam floors.

#### Features and Benefits

- Can be easily incorporated into any screed floor design.
- Does not increase the floor height.
- 3 options for securing the pipe – staples, clamp track or pipe positioning panels to suit the project.
- Possible to archive a high output (maximum = 100W/m<sup>2</sup>).



### Key Components

#### Maincor Pipe Coils



Maincor MLCP, PE-RT/AL/PE-RT overlap welded aluminium Multi-Layer 100% barrier Composite Pipe. Maincor PERT Pipes including internal EVOH oxygen barrier in accordance with DIN 4726.

#### Clamp Track



Maincor Clamp Track is designed to secure 16mm pipe. It has a self adhesive backing for ease of installation. Allow 1m for every m<sup>2</sup> of floor area.

#### Edge Insulation



Maincor Edge Insulation is utilised around the perimeter of a room with a screeded floor to absorb expansion from the screed and prevent thermal bridging. The edge insulation also comes complete with a polyethylene section which is used to give a tight seal between edge insulation and floor insulation.

#### Pipe Positioning Panel



Maincor Pipe Positioning Panels are used for securing 16mm pipe within screeded floors. The castellated panels allow for the pipe to be secured at 50 - 300mm centres. Insulation is not included. The panels are to be overlapped. Each board covers an active area of (0.8m x 1.4m) 1.12m<sup>2</sup>

#### Pipe Staples



Maincor Pipe Staples are used to fix pipework to floor grade insulation, which must be a minimum depth of 25mm. They can be installed by hand or by staple gun.

#### Screed Foil



Maincor Screed Foil is designed to be placed directly on top of the floor grade insulation, providing a greater level of reflective insulation. Supplied in 60m x 1.25m x 4mm rolls. Thermal resistance = 0.081m<sup>2</sup>K/W.

#### Pipe Staple Gun

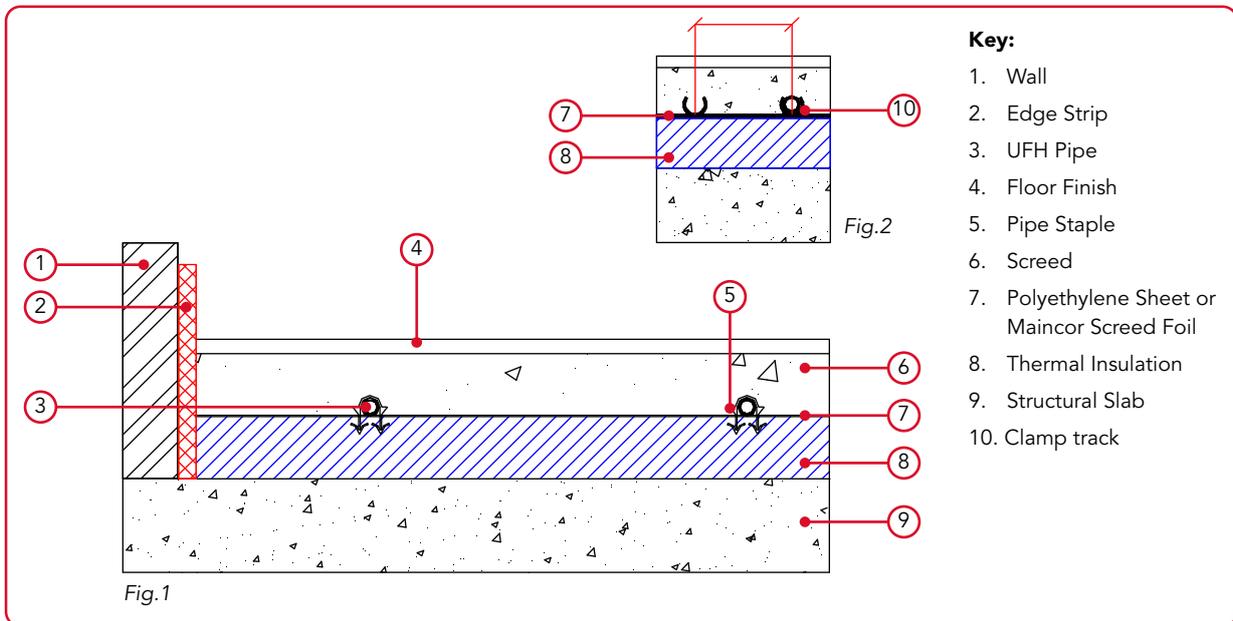


Maincor Pipe Staple Guns are used for ease of installation and provide fast effective pipe fixing.

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#### Technical Details



The figure above shows a typical makeup of a screed floor. Using this method it is possible to achieve a high output (maximum output =  $100\text{w/m}^2$  within occupied areas). The pipe is secured to thermal insulation (supplied by others) by the Maincor Pipe Staples and a screed is laid over the pipe. The pipe is usually laid at 200mm centres and the Staples are to be used every 300mm. Please note that a minimum of 25mm of insulation is required to hold the clips. A staple gun is available for efficient fixing of the Maincor Pipe Staples and is recommended for regular underfloor heating installers.

An alternative method of fixing is shown in Fig 2. In this case the Maincor Clamp Track with an adhesive backing is used to secure the pipe. 1m of clamp track is to be used for every  $1\text{m}^2$  of floor heating.

#### Insulation Requirements

Floor grade insulation to comply with Part L of the Building Regulations. If insulation is fitted below the concrete slab it is recommended that a further 25mm is fitted above the slab. In addition to the floor grade thermal insulation, perimeter insulation is also required for screed floors. Edge strip insulation is to be used around all interior and external walls. It takes up the slight expansion of the screed and reduces the heat loss to the buildings structure. Expansion joints are recommended within BS EN 1264 where the floor area exceeds  $40\text{m}^2$  or 8m in length. We recommend that UHF installer follow advice from the screed contractors as requirements will differ dependent on the project and the screed type. On intermediate floors with heated areas below insulation with a minimum thermal resistance of  $0.75\text{m}^2\text{K/W}$  is recommended as per BS EN1264.

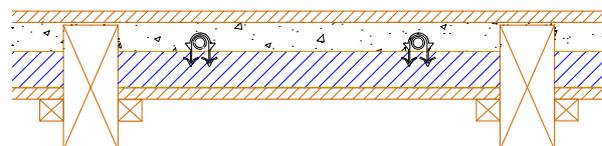
#### Screed

The polyethylene sheet (7) or Maincor Screed Foil is used to prevent screed from slipping between the insulation sheets. The Maincor Screed Foil will provide a greater level of reflective

insulation and improve the thermal performance of the floor. Please note that this sheet or foil will be punctured and will not act as a DPM. A DPM is to be included for ground floor installations where there is no basement level below. A 65-75mm 4:1 sand cement screed is recommended. This can be reduced to 50mm if a liquid screed or reinforced screed is used. The screed should be allowed to fully cure and dry in accordance with British Standards and the manufactures instructions. The UHF should not be used to speed up the drying time of the screed.

#### Screed Infill

It's possible to use a screed infill between joists in a timber suspended floor construction. This will offer a thermal mass and the screed will act as the heat emitter, however the output will be limited to  $70\text{W/m}^2$ . In this type of floor construction, the screed is not acting as a structural floor; its sole purpose is to enhance the performance of the underfloor heating. A timber floor is to be fitted above the level of the screed and this is to be supported by the joists (not the screed). Typically, the screed would be supported by a rigid insulation layer which in turn would be supported by a timber panel. The timber panel is to be fitted to noggins that are to be attached to the sides of the joists. The screed will add weight to the flooring system and this should be considered in the structural design of the property. Typically, a 20-25mm screed would be laid.



Screed Infill Cross Section.