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Please note this Installation Guide is for the installation of the WarmFloor panels only and must not be used for design purposes. WarmFloor blocks must be installed to the approved and issued Milbank layout drawing.

## Installation

DPC must be laid on all support walls before the floor beams are positioned and MC to ensure that all walls are built up to finish floor level where required.

Position the floor beams in each of the bays and install the WarmFloor panels in accordance with the approved Milbank layout drawing, ensuring the panels are installed in the direction as shown and fitted tight between the beams.

Where a bay starts with a section F-F (350mm max), cut the starter panel (1) from a full panel and use the remainder as the end panel (2) for section H-H (275mm max). Wall to be built up by the MC to finish floor level prior to floor installation.

Panels to be cut using a fine tooth hand saw to fit neatly around service penetrations.

Last panel in the row between the beams must be cut and installed tight against the internal wall. The remainder of panel is to be used in next row.

Repeat this procedure until the WarmFloor panels cover the whole floor area.

An extended toe panel is used to accommodate multiple beams. See Sections C-C, D-D & E-E.

Gaps between multiple beams are to be filled in by MC using concrete topping.

The MC is to infill between beam ends on all loadbearing walls after the WarmFloor panels are installed. Ensure crushing of masonry infill matches loadbearing wall above. See sections L-L, T-T & Y-Y.

A single course of bricks to be laid around the perimeter of the building to form shuttering for the concrete topping.

Edge strips (by MC) are attached to the inner face of the brick course to prevent thermal bridging. See sections F-F, G-G, HH & L-L.

Walking on the panels is prohibited. If a temporary working platform is required, the panels need to be covered with spreader boards laid across the beams.

Lay the concrete topping. Concrete topping should be laid as soon as possible to avoid damaging the panels. \*Concrete topping must not be poured / dropped any higher than 300mm above the top of the panels, to avoid damaging the panels.

*\* The concrete used for the topping shall be in accordance with the requirements of BS EN 206-1:2006. Concrete strength may be specified by the Floor Designer or Engineer, the minimum recommended concrete strength class is C25/30.*

The maximum nominal size of the aggregate will depend upon several factors including thickness of the insitu concrete topping layer, mesh size and position of the mesh within the layer, method of compaction etc. It is unusual for the maximum aggregate size to be greater than 20mm.

## Minimum Concrete Topping Specification

**Beam Type:** Milbank prestressed beams are designed as Self-bearing beams which alone provide the final strength of the floor independent of any other constituent part of the system (i.e. blocks or structural screed).

**Block Type:** Expanded Polystyrene Blocks are classified as Type R1. They perform no mechanical function in the final floor system, but may act as formwork during construction of the floor.

## **Mesh reinforced Screed:**

65mm minimum thickness, C25/30 concrete reinforced with A142 mesh.

Self-levelling or self-compacting concrete can also be used and should meet the minimum requirements of standard concrete, including the provision for reinforcement.

## **Fibre reinforcement:**

*NHBC only permit the use of Class II synthetic polymer fibres (macro-synthetic fibres >0.3mm dia.) or steel fibres in accordance with BS EN 14889-1:2006 instead of steel mesh reinforcement in structural screed/ concrete toppings.*

*Micro-fibres - Class I synthetic polymer fibres (micro synthetic fibres <0.3mm dia.) are not acceptable to NHBC.*

*There is no current British Standard or authoritative guidance that provides verified common structural design rules for fibre reinforced concrete used as a structural topping to beam and block floors.*

*The structural capacity of the complete structural floor system (beams and concrete topping with fibre reinforced topping) has to be verified by an appropriate independent technical approval authority by load testing of floor assemblies.*

## **Handling / Storage of WarmFloor Panels**

WarmFloor panels are delivered to site in packs, direct from the manufacturer. Each pack will be labelled with panel depth, followed by pane size, e.g. Standard Single, Half Single, Standard Double, Half Double, Standard Triple or Half Triple, shown on sections A-A, B-B, C-C, D-D & E-E.

To avoid damaging the panels, handle panels carefully during unloading, storage and installation. Care must also be taken not to overload the floor beams or WarmFloor panels during the construction period.

EPS panels should be stored in their original packaging, under cover and protected from direct sunlight.

Long-term effect of direct exposure to ultra violet radiation causes a slight embrittlement of the EPS. The short term (i.e. a few weeks) yellowing of the material has no significant effect on the mechanical strength of the material.

Keep panels out of contact with solvents and materials containing volatile organic compounds.

Do not expose to naked flame or other ignition sources during storage or installation.

EPS is combustible and all areas where the product is used or stored must be designated very strictly "no smoking" and free of other potential ignition hazards.

Store the panels well away from highly inflammable materials such as paint or similar materials.

Small amounts of residual pentane (blowing agent) may be given off by the finished product. For this reason it should be stored in well ventilated areas.

Ideally EPS should be stacked on flat ground, under cover, in a fenced compound or building accessible only to authorised persons and protected from high winds & damp surfaces. Protect from direct sunlight if exposure is likely to be longer than one week.

Individual stock piles at sites should contain no more than 60 cubic metres (larger volumes should be divided into 2 or more areas separated by at least 20 metres),

