

BEWI Thermal Floor System

Installation Guide

- Position the PCC (pre-cast concrete) beams onto the structural wall, ensuring a continuous damp-proof course (DPC) is provided between the beams and the supporting wall. Position the PCC beams at approximate locations and centres as shown on the approved drawing.
- Start and End infill panels (335mm & 178mm) are designed to friction fit against the masonry walls. The masonry walls in these locations should be built up to finish floor level height to support the infill panel placement.
- Where Start and End infill panels are located in more technically demanding areas, i.e. multi directional bays with perpendicular beams, the friction fit wall surface may comprise of closure blocks between beams and additional coursing over. In these scenarios, use the Start and or End infill panels as a setting out template to position the corresponding beams. Complete any associated masonry work and then install the Start/End infill panels after. Optional stainless-steel support clips can be provided on request to act as a construction aid. These provide additional Start/End panel support during installation of the beams and infill panels.
- Accurately position the remaining beams in line with the approved layout drawing using concrete closure blocks. The concrete closure blocks are bedded in mortar. Concrete is poured between multiple beams.
- Install the remaining infill panels between the suspended concrete beams.
- Infill panels can be cut to size using a handsaw, as required, to accommodate service penetrations such as soil vent pipes. Any cut-down panel must be at least 300mm long and located at the edge of the floor, while offcuts greater than 300mm may be used elsewhere within the floor zone. Seal any gaps around service penetrations with expanding foam or other suitable insulation to minimise local cold bridging and air infiltration.
- Make-up infill panels can be used to accommodate the gaps in non non-standard beam spacing's. These are supplied 400mm wide and cut to suit on site as per the approved drawing. Make-up panel should not be installed greater than 400mm wide.
- Edge strip insulation, (min. thermal resistance resistance $\geq 0.75 \text{ m}^2 \text{ K/W}$), is installed against the perimeter walls.
- Lay the EPS Top Sheet insulation with the long edge perpendicular and over the PCC beams and infill panels ensuring that the joints are staggered and closely butted.
- A gas or damp proof membrane can be installed if required, either between the uppermost layers of insulation and the concrete topping or between the infill and Top Sheet insulation.
- If gas carcassing or underfloor heating pipes are also specified, these can be secured to the uppermost surface of the Top Sheet insulation using standard pipe clips. In this situation it's advisable to install the membrane between the infill panels and the Top Sheet insulation. Take care not to puncture the membrane.
- If a steel mesh is specified, spacers should be positioned over spreader plates, min four per m^2 and min 50mm x 50mm. These should be installed to position the steel mesh at the correct level – mid depth of the concrete topping.
- Where a membrane is not positioned directly over the uppermost layer of insulation the board joints should be taped with minimum 75mm wide masking tape prior to installation of the structural concrete topping
- To avoid damage to the insulation and any membrane, the structural concrete topping should be laid as soon as possible after installation of the Top Sheet.
- When using a concrete pump, truck or skip, concrete should not be discharged onto the EPS system from heights greater than 500mm and concrete heaps must not be formed over 300mm high.
- When wheelbarrows are used, planks must be placed to spread the wheel load to the precast concrete beams. Spot boards must be used when tipping and shovelling.
- The finished floor must not be loaded by construction materials until the concrete topping has reached its design strength. When and if appropriate to do so any loading must not exceed that defined in BBA Certificate 20/5829. If in doubt, please consult with your project structural engineer.

Health and Safety

BEWI Thermal Floor System infill panels are lightweight and easy-to-handle and can be easily moved around the site without the need for fork lift trucks.

The infill panels can be cut with a hand saw (eliminating the need to use a petrol disc cutter) and can be easily slotted into place reducing the risk of injuring hands (over traditional block procedures).

Whilst the infill panels can withstand light foot traffic, care should still be taken **not to walk unnecessarily over the installed infill panels**.

If a temporary working platform is required, the infill panels should be covered with a suitably-rigid board. To avoid damage to the infill panels, the structural concrete topping should be laid as soon as possible after the infill panels and Top Sheet have been installed.

For more information:

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