

LITECAST XT INSTALLATION GUIDELINES Beam and EPS Block

We recommend that these instructions are read in full prior to installation, this will ensure that installation is made easier and waste reduced to a minimum. **Installation should be carried out in accordance with the Code of Practice for Safe Erection of Precast Concrete Flooring and the design drawing** (attached to the delivery note).

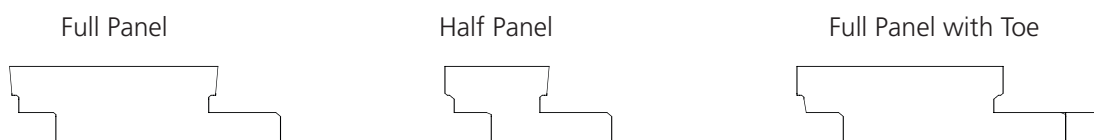
The ground beneath the floor should be free of topsoil and vegetation, leaving a subsoil base, over site concrete or blinding is not required. Typically a minimum void of 150mm (225mm in heavy clay soils) must be maintained between the underside of the polystyrene and the ground surface. This should be confirmed with local authority building control and/or NHBC inspector.

Cross flow ventilation should be provided immediately under the polystyrene in accordance with the building regulations, greater ventilations in areas where methane and/or radon are present may be required.

A damp proof course should be placed over all bearing prior to laying the ground floor beams. All bearings should be level and true, care should be taken to ensure that a bearing on blockwork of 90mm and on steelwork 75mm is maintained.

The beams should be placed vertically in accordance with the design drawings and guidelines supplied by the beam designer, blockwork should be brought up to finished floor level where running parallel to the beams.

Starting with the polystyrene, there are three core components, full panels, half panels & toes.



Installing one bay at a time and starting from the starting point on the drawing, a cut row is formed, this male cut row, cut from a full panel (the off cut to be retained) the male cut panels are rotated under the first beam along the bay and to achieve a snug fit. The beam is then pushed up tight to lock the first row of polystyrene in place between the wall and the first beam (the starting point). To ease installation the beams can be splayed slightly. Care must be taken to cut the polystyrene accurately to size and to push the beam upright to ensure that the polystyrene achieves its full 20mm bearing on the beam – this bearing and pressure on the outside wall provides a temporary pedestrian platform and temporary formwork for the structural topping.

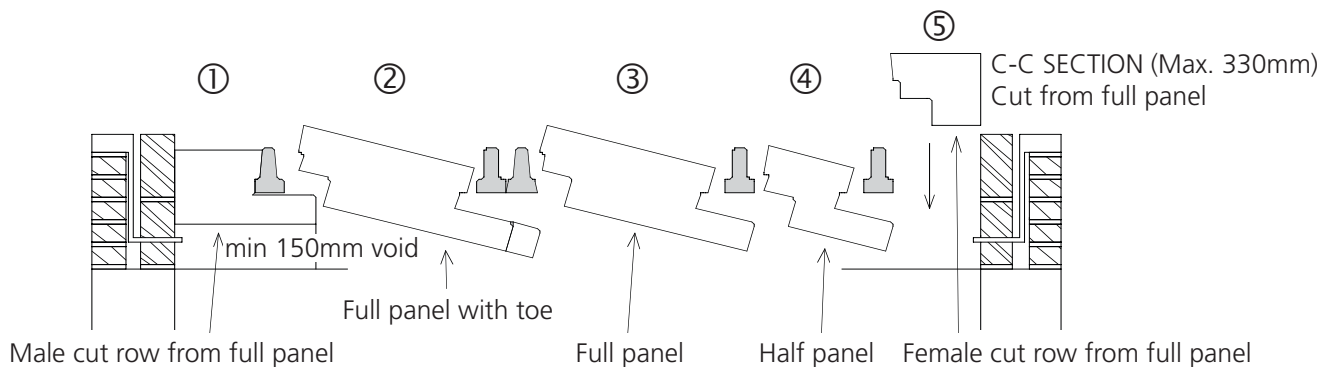
This is not intended as a working platform, should this be the case the floor should be boarded out. To aid cutting the panels have imprinted guidelines.

From this point full or half panels are installed row by row at the end of the row the panel off cut is used as the start panel in the next row, a random pattern of panels will be seen.

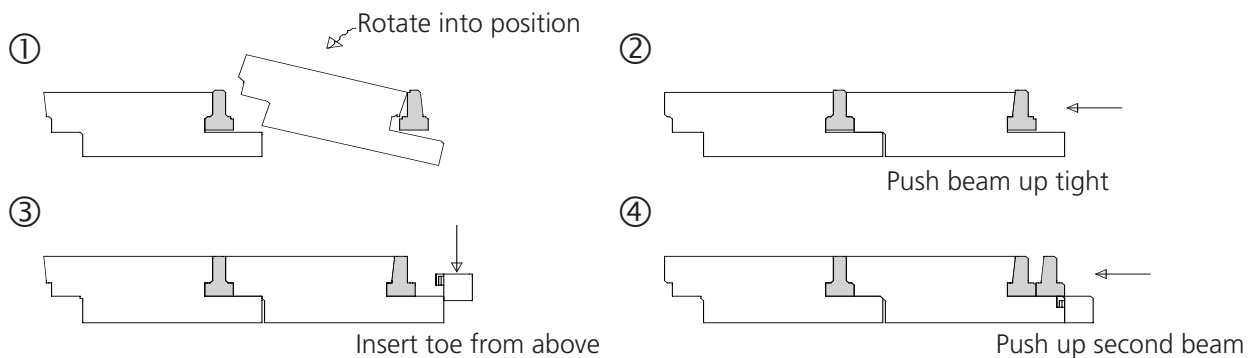
At the end of the bay the last row will be a female cut row, again taking the off cut from the starting male row of the bay the panel should be cut to width and inserted to achieve a snug fit. (This cut row takes up any tolerance).

Grouting is not required.

Leanmix or structural concrete will be required between multiple beams. (Refer to the drawing for this information).



In the case of multiple beams toe extensions are provided in order to prevent a cold bridge. Installation of the panels is as above, however if the toe fouls the substructure or underfloor drainage the following procedure should be used to add the toe extension by inserting the toe from the top down prior to the next beam being slid into position as illustrated below.



Any awkward gaps around services and the like are to be filled with expanding foam (excess foam to be cut off flush with the top of the EPS).

Concrete closure blocks are provided where the beams take bearing on the inside skin of the outside cavity wall.

We recommend a membrane is laid at this point to aid concrete control and achieve an airtightness/methane/radon barrier. The membrane should be carefully installed in accordance with the architect/engineers specification care being taken to ensure proper folding overlapping, tapping of joints and top hat details.

To avoid damage to polystyrene panels, the structural topping is laid as soon as possible after the blocks have been installed.

In the case of underfloor heating this is clipped to a clamp track, stapling should be avoided as this may penetrate the membrane and the tails brought up to the manifold. PMP (plastic/metal/plastic) pipework should always be used and a minimum 45mm cover achieved over the top of the pipework.

The structural concrete screed-containing fibres in accordance with BS EN 14889-2:2006. Minimum thickness of 75mm. Self compacting containing PCP or PCE; conventional to be workability S3.

- Self Compacting Micro fibre: GradeC28/35 reinforced with Fibrin PC 12, ratio 0.6Kg/m (or similar approved).
- Self Compacting Macro fibre: GradeC28/35 reinforced with Propex Novomesh 950, ratio 3kg/m³ (or similar approved).
- Conventional Micro fibre: GradeC25/30 reinforced with Fibrin XT Ultra, ratio 0.9kg/m³ (or similar approved).
- Conventional Macro fibre: GradeC28/35 reinforced with Grace Strux 90/40; Boner Durus S300; Propex HPP45 ratio 3kg/m³.

If you experience difficulty installing the floor, ring the **Litecast HelpLine 02476356161**

LITECAST INSTALLATION GUIDELINES

Beam and Concrete Block (Garages etc)

Installation should be carried out in accordance with the Code of Practice for Safe Erection of Precast Concrete Flooring and the design drawing (attached to the delivery note).

The ground beneath the floor should be free of topsoil and vegetation. No over-site concrete or sand blinding is necessary. Typically a minimum void of 150mm (225mm in heavy clay soils) must be maintained between underside of the floor beam and the ground surface. This should be confirmed with local authority building control.

Cross flow ventilation should be provided, recommended positioning of vent & airbricks shown on the drawing (V).

Floor joists/beams are supplied either 150mm or 225mm depth.

Floor joists/beams should be lifted as close to each end as possible. Forklift trucks can be used for lifting, forks should be placed at least one metre apart and lift 1 row at any one time, care should be taken to avoid any sudden movement that could result in floor joists/beams being damaged. **It is important that floor joists/beams be handled and stacked the right way at all times – (see our stacking guide overleaf).** All floor joists/beams will have an inherent upward camber (upward bow).

A damp proof course should be placed over all bearings prior to laying a ground floor. All bearings must be level, so that floor joist/beams are vertical, the shoulders of the floor joists/beams will then provide a nominal 20mm bearing for the blocks. Care should be taken to provide floor joists/beams with a 90mm bearing on masonry and 75mm on steel at each end and are normally supported by the inner skin of the cavity walls. Internal bearings are taken on internal 100mm brick/block walls by staggering the joist/beam layout. Floor joist/beams should be set out bay by bay.

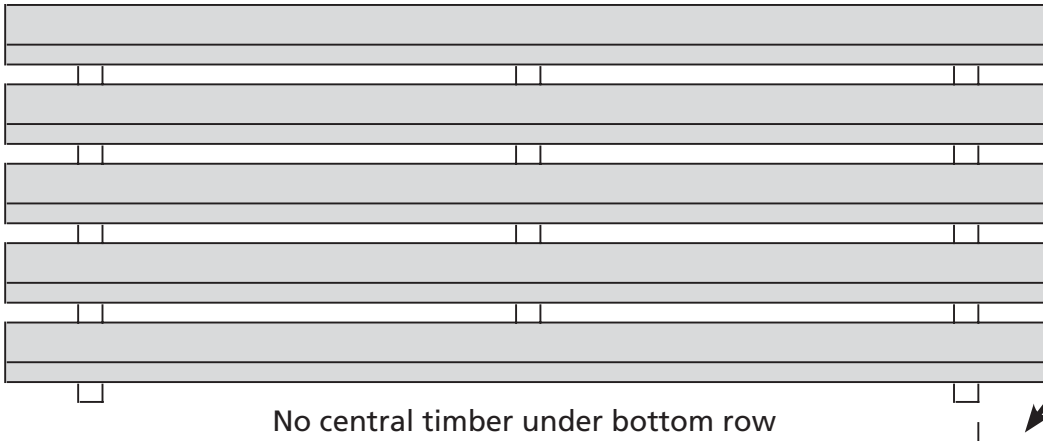
'Start' points, as indicated on our drawings, are normally under partitions or at other crucial positions and should be adhered to. **It is recommended that infill blocks be placed between the ends of the floor joists/beams correctly to enable the remaining blocks to be placed.** Slip bricks are to be used to infill the gap between the infill blocks and the dpc, these should be bedded in mortar. Vertical holes for the passage of services can be accommodated between floor joists/beams by omitting infill blocks and making good after. Infill blocks should be in accordance with BSEN 15037-2 suitable for flooring, **care should be taken to ensure that the density of blocks supplied complies with the design criteria. Where blocks intersect with load bearing walls they must be of satisfactory strength (as specified by your engineer).**

To seal the floor, the whole floor area should be grouted with a nominal 6:1 sharp sand/cement mix as soon as possible after the fixing of floor joist/beam and blocks are completed. This should be done by brushing the grout over the floor with a stiff broom (after the surface has been well 'wetted') so that the grout penetrates into the joints (block to block & block to joist/beam) to provide a rigid construction. Garages **must not** be grouted (due to composite action). Where no membrane is used, a minimum of 50mm thick grade C20 concrete screed must be used with 1 layer of A98/A142 reinforcing mesh. Where a membrane is used, a minimum of 75mm thick grade C20 concrete with 1 layer of A98/A142 reinforcement mesh is required.

If you experience difficulty installing the floor, ring the **Litecast Helpline 02476356161.**

STACKING GUIDELINES

Timber bearers should be placed on firm level ground. There must be no central timber on the bottom row. Incorrect stacking will result in excessive camber and possibly broken beams.



CORRECT

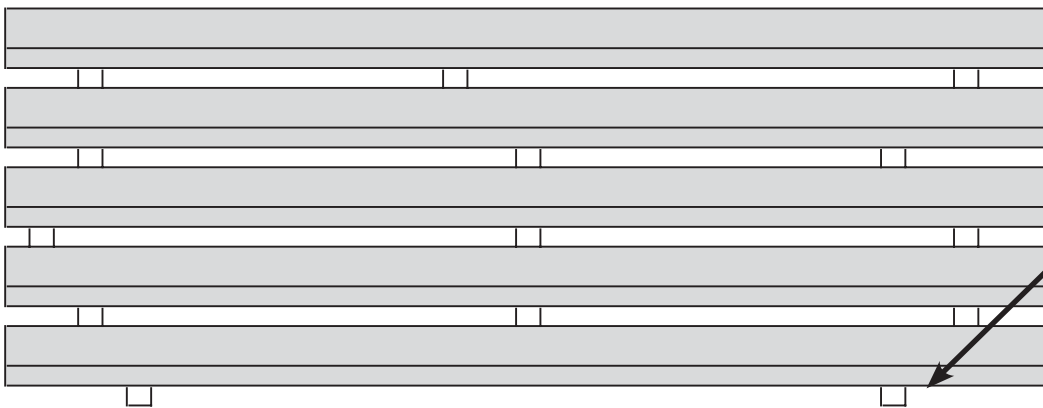


Beams of similar length

Timber supports in line

Timbers positioned no more than 200mm (8") from the end

No central timber under bottom row



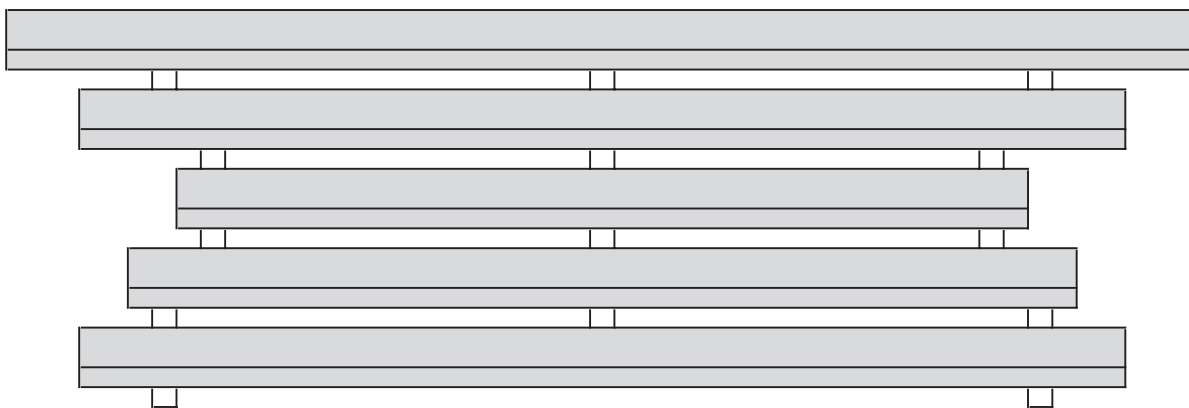
INCORRECT



Timber supports not in line

These beams will crack at this point

No central timber under bottom row



INCORRECT

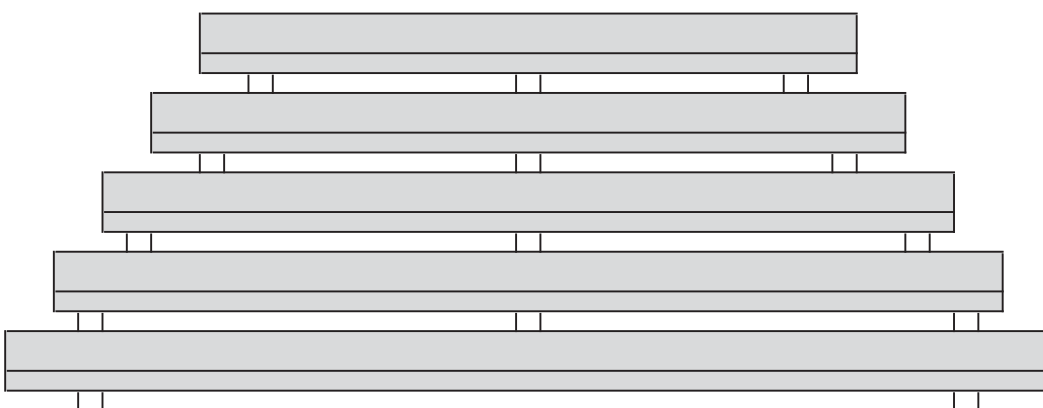


Longer beams overhanging beams below

Danger to pedestrians

Abnormal loadings on beams below

No central timber under bottom row



CORRECT



Beams stacked in pyramid fashion

No central timber under bottom row