

Precast Concrete Elements for Housing

Precast concrete is a versatile flooring product that has long been an efficient solution for a wide range of buildings. For floors, stairs and landings in housing it offers a unique range of benefits.

INTRODUCTION

Precast concrete floors for housing can comprise hollowcore units, beam and block, or lattice girder floor construction. Structural floor depths vary dependent upon product type and associated loading conditions.

Hollowcore

Prestressed and reinforced hollowcore slab elements are available in a range of depths and widths to easily accommodate the longest of spans for domestic applications at ground level or for upper floors. This is the construction of choice for party floors in flats due to the inherent fire and sound resisting qualities and like beam and block it is an ideal solution for Requirement E2 in Approved Document E of the Building Regulations.



Beam and Block

This is available in a range of depths up to 225mm. Beam and block is used in conjunction with standard format building blocks to provide a fast and cost effective floor deck. It is suitable for use in both ground and upper floors and is an ideal solution for compliance with Requirement E2 in Approved Document E of the Building Regulations.

Insulated Beam and Block

Prestressed beams are used in conjunction with expanded polystyrene blocks to provide inherent thermal insulation for ground floors. The system easily satisfies the requirements of Approved Document L of the Building Regulations enabling lower running costs and improved comfort levels.





Insulated Ribbed Floor

A composite unit, which comprises ribbed floor elements of precast concrete and expanded polystyrene (EPS) to provide inherent thermal insulation for ground floors.

Compliant with the requirements of Part L of Building Regulations (England and Wales); Section 6 of Building Regulations (Scotland) and Part F of Building Regulations (Northern Ireland) enabling reduced operational costs and improved comfort levels.

Lattice Girder

Precast concrete permanent formwork is used in conjunction with a composite concrete topping. A flat and fair faced soffit is available for an exposed concrete finish.

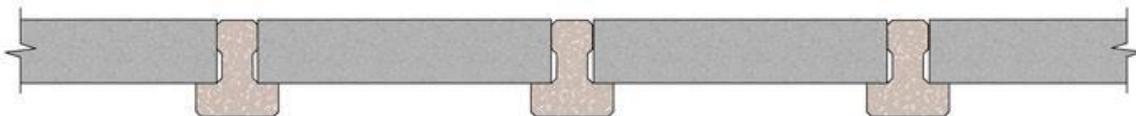


Precast Reinforced Stairs and Landings

Wide range of bespoke and standard squeak free stairs and landings available from PFF members, providing robust and instant access to upper floor levels

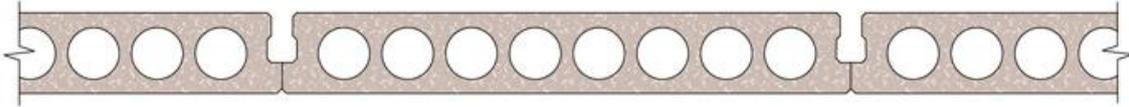
BENEFITS OF PRECAST CONCRETE FLOORING FOR GROUND FLOORS AND BASEMENTS

- Speed of construction - fastest and easiest to install
- Long spans
- Ideal for brownfield developments
- Thermal performance - compliant with Approved Document L
- Design flexibility - reduced foundation cost
- Rot, damp and vermin proof
- Ideal base for underfloor heating



BENEFITS OF PRECAST CONCRETE FLOORING FOR UPPER FLOORS

- Sound resistance - compliant with Approved Document E and squeak free
- Fire resistance - improved safety performance compared with alternative products
- Span/load performance - internal partition walls in any position
- Increased mass - improves the ability of the building to store heat.



FREQUENTLY ASKED QUESTIONS

Q: How much do precast concrete floors cost?

A: For an accurate and meaningful price forward your layout drawing to a member of the PFF for a quotation. Details of internal partitions and floor finishes along with any site access constraints should be included.

Q: Does the void beneath ground floor require ventilation?

A: It is good practice to vent the void beneath the ground floor to prevent the build up of foul air. However there is no requirement for oversite concrete.

Q: How are service penetrations accommodated?

A: Vertical service holes can be preformed in hollow core floors or for beam and block, simply omit a local block and make good.

Q: What about underfloor heating?

A: Most floors have both a ceiling and surface finish. This provides suitable zones for accommodating horizontal services.

Q: Will the use of screeds on precast concrete flooring lead to condensation in the roof space?

A: Much of the water that goes into building a house will eventually come to the surface and evaporate into the air. Sources of this water vapour include wet concrete, mortar for masonry, plaster, floor screed, emulsion paint, tile adhesive, wallpaper paste and other decorative finishes. Warm air rising in the finished house will tend to transport the water vapour into the roof space, where it may condense out. Ventilation is key to preventing the harmful effects caused by condensation in roofs. Building Regulations Approved Document C cites BS 5250 'Code of practice for control of condensation in buildings', which covers roof ventilation in Section 8.4. Additionally, NHBC Standards address the subjects of control of condensation and ventilation of roofs in clauses D11 and S11 of Chapter 7.2 'Pitched roofs'.