Beam & Block Floors
Combining traditional building methods with modern materials to provide effective solutions for ground and upper floors in both domestic and commercial structures.
Beam & Block is a robust solution for cost effective suspended floors. It is suitable for use on ground and upper floors on all kinds of construction, from residential to commercial buildings.

The system is quick, easy and economical to install and offers numerous advantages including improved acoustic performance and fire resistance.

Particularly suitable on intermediate floors for houses, where sound reduction, fire resistance and thermal mass are amongst its key benefits.

The system consists of inverted "I" beams with either lightweight aircrete (Thermalite) or dense and medium dense aggregate block infill.

BIM Objects for Beam & Block available to download
forterra.co.uk/bim

Beam & Block components
1 150mm or 225mm prestressed beam
2 100mm deep building block infill
3 Split course block
4 Damp-proof course
5 Insulation (if required)
6 Membrane (if required)
7 Air vents
8 Finish screed/concrete topping to architect’s specification
Beam & Block
Benefits

Quality service
Available nationwide either supply only or supply and fix
Complies with all relevant standards and manufactured in accordance with BS EN 15037

Flexibility
Range of beam types available providing solutions for all levels to all building types
Ideally suited to difficult brownfield sites

High performance
Prestressed beams span further, reducing foundation costs
Superior levels of fire resistance and sound reduction
Superior load span capability enabling use in a wide variety of applications
Unaffected by damp, rot or vermin

Simplicity of construction
Quick to install
Working platform for early access for follow on trades

Sustainable
Thermal mass helps reduce the carbon footprint over the lifetime of the building
Structural Performance

Load-span Tables

Prestressed beam details

Bison Precast prestressed concrete beams exhibit an upward curve known as camber which is a result of the compressive force near the bottom generated by the prestressing tendons. An allowance of span/300 should be taken into account in floor finishes or bearing levels.

Load-span tables

The load-span tables opposite are given as a guide only. Further advice is available on request.

The beams are positioned in accordance with the layout drawings, perpendicular to the end supports with a nominal bearing of 100mm to each end when supported by brick or block. A 75mm nominal bearing is required when supported by steelwork.

The beams may be staggered at the internal walls and multiple beams may be required to support partition walls. A wide range of infill blocks are available for use with the system including Thermalite, Aircrete and Floorblock.

Forterra also provides a choice of medium and dense aggregate blocks. Where required, blocks should be cut using suitable mechanical means to leave a clean, vertical, square-edged face.

Once all the blocks have been placed in position the floor is grouted using a 4:1 sharp sand/cement mixture, which is brushed in the direction of the beams and then at right angles to ensure all joints are completely filled.

Camber details

Construction details

All Bison Precast flooring systems are supported by comprehensive layout drawings, specifications and relevant details applicable to each application.

There are three beam types which are produced in standard profiles of 150 x 125mm, 150 x 215mm and 225 x 135mm (depth x width) to give a range of capacities to suit all loading options. Beams are placed at appropriate centres depending on span and applied load (see loadspan chart).

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*The floor self weight includes the weight of the beams and the concrete blocks.
Beam & Block offers simple and robust detailing, the main details being illustrated below. For construction purposes please refer to site specific layout drawings provided by Bison Precast.

1 Edge detail parallel to span
Section showing edge block laid on a split course block and built into the perimeter wall.

2 Staggered bearing
Section showing beams sharing a minimum 100mm bearing on internal wall.

3 Load supported off floor
Section showing multiple beams concreted together to support wall over. Number of beams and centres required are dependent on the weight of the wall.

4 Edge detail perpendicular to span
Beam ends laid onto a DPC and spaced out using the block infill, with a minimum of 100mm bearing. Blocks are bedded onto split course blocks and built into the wall.

5 Change of span direction
Section showing the change in direction of beam span and the maximum cantilever allowing for run-out purposes.

*Contact Bison Precast for further cantilever details

150mm max*
Forterra is a leading manufacturer of a diverse range of clay and concrete building products, used extensively within the construction sector, and employs over 1,600 people across 17 facilities in the UK. It is the second largest brick and aircrete block manufacturer in the country, and the only producer of the iconic London Brick. Other trusted brands from Forterra include Thermalite, Conbloc, Ecostock, Butterley, Cradley, Red Bank, Jetfloor and Formpave. forterra.co.uk

For the complete Bison Precast brochure range, visit forterra.co.uk/bison-precast-concrete