Beam & Block - Technical Specifications

RHF | BBTS | 250714

Building Regulations
When supplied and fixed in accordance with Agrément Certificate no. 85/1566 the Rackham system meets all the requirements of the latest Building Regulations.

Rackham Floor Beams
Prestressed concrete floor beams, 175mm standard, 175mm WIDE and 225mm deep are supplied in lengths to suit individual layouts, in 50mm increments.

Infill Blocks
Unless otherwise stated on Rackham layout drawings these should be standard concrete blocks 440x215x100mm to BS EN 771-3, density as shown on Rackham layout drawings. Minimum compressive strength of 3.5kN/mm² and tested laterally to requirements of Agrément Certificate No. 85/1566.

Weight of Construction
175mm standard beam weight - 34kg/m. The calculated dead weight of the grouted floor is 181kg/m² (based on block density of 1275kg/m³).
175mm ***WIDE*** beam weight - 56kg/m. The calculated dead weight of the grouted floor is 205kg/m² (based on block density of 1275kg/m³).
225mm beam weight - 65kg/m. The calculated dead weight of the grouted floor is 290kg/m² (based on a block density of 2000kg/m³).

Imposed Loads
Normally 1.5kN/m² unless otherwise stated on the Rackham layout drawing. Extra Rackham beams are provided, where necessary, to carry block partitions.

Domestic garages (with reinforced concrete topping) are designed to carry a distributed load of 2.5kN/m or concentrated load of 9kN.

No other loads e.g. Wind buttressing loads, newel posts etc, are allowed for unless otherwise noted on the Rackham layout drawing.

Structural Calculations
The design method and calculations for this floor have been checked and approved by the Agrément Board. Specific calculations can be provided in connection with all schemes, if required.

Bearings
Rackham beams are normally supported by the inner skin of the cavity walls. A double bearing can be taken on internal 100mm brick or block walls by staggering the beam layout.

Fixing

1. Units should always be lifted as near to each end as possible and always handled and stacked the right way up. Timber skids should be used in stacking, placed within 300mm of the beam ends.

2. It is recommended that blocks should be placed between the ends of the Rackham beams as they are laid in position and then 'tightened up'. This will space the Rackham beam correctly and should enable the remaining blocks to be placed without difficulty. The bearings should be level so that all beams are vertical (hard packing can be used if necessary) and the shoulders will then provide a bearing for the blocks of 15mm (±3mm tolerance).

3. The whole floor should be grouted with 3:1 sand/cement screed (using coarse sand) as soon as possible after fixing of Rackham beams/blocks is complete. 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 and provides a monolithic construction.

4. Walls running parallel with the Rackham beams are usually required to support a row of blocks and bearing levels should be prepared accordingly.

5. Partitions can be built off the floor providing these have been allowed for in the design and are shown on the Rackham layout drawing. It is sometimes necessary to placed either two or three beams together to carry the additional load and in such cases care should be taken to ensure that the partitions are built directly over these units which must be grouted solidly together.

6. Care should be taken to **avoid overloading** the floor during construction. Generally this will be achieved if the following guidelines are observed:
    a. Planks are laid across the beams before stacking
    b. Building materials are placed as near as possible to the floor bearings.
    c. Bricks or blocks or similar are restricted to a total weight of 350kg (e.g. 120 bricks or 20 blocks on each beam)

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RACKHAM® HOUSEFLOORS