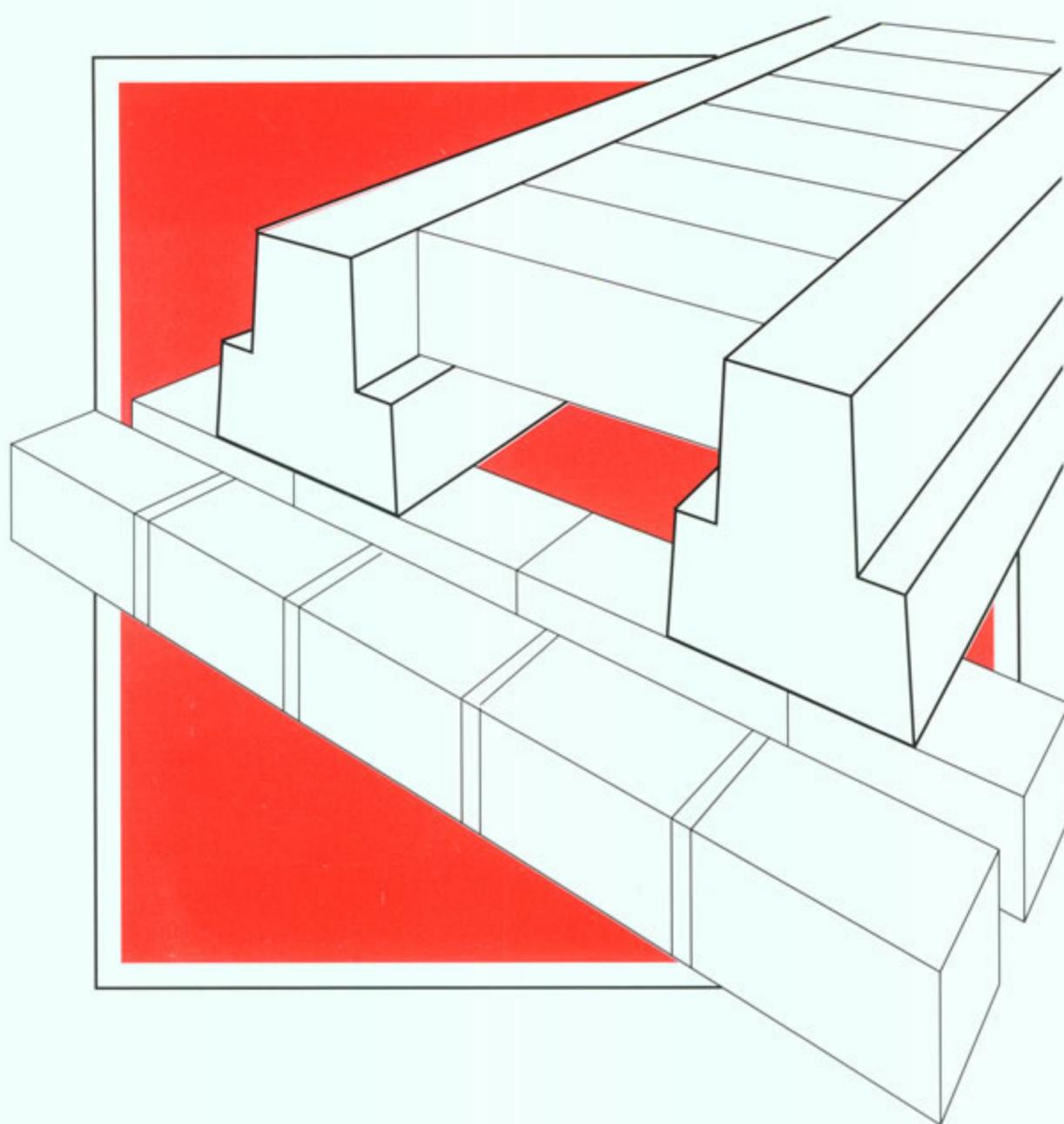


MERSEYBEAMS LTD

Beam & Block Flooring Specialists



**Magazine Road, Bromborough, Wirral,
Merseyside CH62 3LQ**

Tel: 0151-334 7346 • Fax: 0151-334 0600

COMPANY PROFILE

Based in Bromborough, Wirral, Merseyside, Merseybeams Ltd started manufacturing floor beams in 1988. Merseybeams manufacture 150mm and 225mm deep prestressed concrete beams using "mould cast" techniques in accordance with BS8110 1985 Class 2.

When used with 100mm standard solid building blocks as infill, our floor beams produce a simple, quick and efficient Beam & Block suspended floor. The system is suitable for ground and upper floors and also flat roof structures. The spans available (see charts) enabling most forms of construction and imposed loading to be accommodated. Quotations/contracts are offered on either a "supply only" or "supply and fix" basis. Merseybeams policy of "efficiency and service" means that most labour is directly employed thus helping to maintain continuity in standards of work. If you need any further information regarding our floor beams please contact our Technical Department.

TECHNICAL

Preparation and Void

All top soil and vegetable matter should be removed below the proposed suspended floor and it is common practice to level and blind as necessary prior to floor installation. A void below the floor is normally recommended with suitable ventilation and cross-flow. (Check with local Building Control Department for specific requirements).

Bearing

Brick / Blockwork: 100mm bearing required. Steelwork: 75mm bearing required. Staggered bearings are acceptable in most internal wall situations although on certain conditions/ spans it may prove beneficial to use a 215mm internal support wall to avoid staggers.

Double Beams/Treble beams

Non load bearing lightweight block partitions can be built off the suspended floor subject to loading/spans, by incorporating a "double / treble beam" directly under the line of the proposed wall (see detail on back cover). The rebates formed by double/treble beams should be infilled with site concrete.

Infill Blocks

Two types of block can be utilised.

- 440 x 215 x 100mm solid lightweight 3.5N / mm² - minimum density - 1500kg / m³ and
- 440 x 215 x 100mm solid dense concrete 7N / mm² - minimum density 1850kg / m³

Fixing Operation

On ground floors it is advised to lay beams on an approved DPC. Beams should be set out by the use of an infill block at each end of the beams to achieve the correct spacings. Double / treble beams should be set out first. Beams adjacent to walls at ground floor can be either against wall or offset with the first infill block sitting on the internal skin (common situation to accommodate internal soil and vent pipes). (See detail on back cover).

In first floor situations between flats, beams adjacent to external walls should be offset against the wall as above to comply with current sound regulations (see separate note).

Service holes can be accommodated by either cutting, drilling or omitting infill blocks as necessary.

Grouting

Grouting of floors is required as follows. Grout to be 1:6 cement:sharp sand (1:4 if soft sand or in wet weather). Brush floor clean, wet thoroughly and brush in grout, first in direction of floor beams then across to fill all joints and surface irregularities.

Trimmed Openings

Openings can be formed in our floors by incorporating double supporting trimming beams supported off Merseybeams proprietary steel shoe hangers reference MB / SH. (See detail on back cover).

Loading on Finished Floor

Once floor is complete, care should be taken not to load floor beyond its designed capacity and particular thought / care should be given if loading out floor with building materials.

Floor Finishes

- Cement and sand screed minimum 50mm thick (with suitable insulation).
 - Floating T & G chipboard / timber on battens (with suitable insulation*)
- Floor insulation recommendations to be checked with local building control department. NB Merseybeams load / span table includes a finishes load of 1.60 Kn / m² based on a 65mm cement and sand screed and 50mm of insulation.

Garage Floors

Garage floors can be accommodated with Beam & Block flooring if the following criteria are met:

- Imposed loading of 2.5 KN / m².
- C20 concrete screed on garage floor.
- A142 mesh reinforcement (or similar) to be incorporated into screed.

Cantilevers

Cantilever situations can be accommodated by the use of "specialist design" (Please call our Technical Department for more specific information on cantilevered applications).

Fire Protection

150mm System

When used on upper floors, the composite structure of beam & block, screed and suitable ceiling finish will achieve 1 hour fire resistance. 225mm System Achieves 1 hour resistance.

Fixings

Floor beams should not be drilled, shotfired to, or contain any other fixings.

Soffits

Where Beam & Block is used for upper floors Merseybeams supply batten hangers to support a batten grid for fixing plasterboard ceilings. (see detail on back cover).

Camber

Prestressed floor beams will have an inherent camber which will be negligible on spans up to 5m on 150mm deep & 6m on 225mm deep.

Sound Insulation

Clients are referred to the Building Regulations (1992) (Approved Documents E2 / E3) for full information regarding sound insulation between "separating floors" e.g. flats, halls of residence, hotels etc. The main points are summarised as follows for information purposes only:

- Type 1 floor - mass of 365kg / m² (including any directly bonded screed) to receive a soft covering.
- Type 2 floor - mass of 300kg / m² (including any directly bonded screed) to receive a floating finish (cement and sand or floating timber raft on resilient layer).
- Where the beams are parallel to the wall the first joint should be 300mm from the cavity face of the wall leaf.
- Carry any resilient layers up at all edges to isolate the floating layer.

The Merseybeams 150mm system meets the requirements of a type 1 floor if used in conjunction with a 65mm thick directly bonded screed.

The Merseybeams 225mm system meets both sound regulations (type 1 & 2) when used at S418 layout (see charts).

Merseybeams therefore offer 225mm Deep System on all upper floors applicable to sound regulations.

Staircases

Merseybeams can also, as part of the package, design and manufacture precast concrete staircases. All staircase components are designed and manufactured in accordance with BS8110 : 1985 1997. Full working drawings and design calculations are provided. All varieties and profiles are made to measure to suit your requirements.

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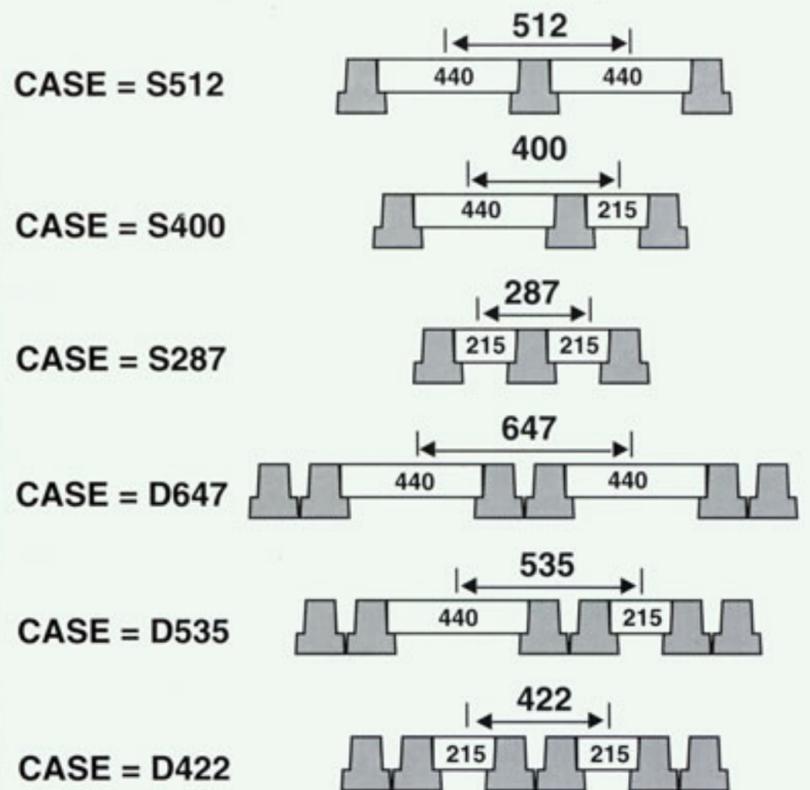
150mm DEEP SYSTEM

LOAD SPAN TABLE

CLEAR SPAN SHOWN INCLUDES SELF WEIGHT
1.60Kn/m² FOR FINISHES AND IMPOSED LOADS
AS INDICATED

| LAYOUT | IMPOSED LOADING (Kn/m ²) | | | |
|-----------|--------------------------------------|--|------|------|
| CONDITION | 1.50 | | 3.00 | 5.00 |
| S512 | 4.31 | | 3.80 | 3.33 |
| S400 | 4.84 | | 4.28 | 3.76 |
| S287 | 5.62 | | 4.99 | 4.40 |
| D647 | 5.32 | | 4.71 | 4.16 |
| D535 | 5.80 | | 5.15 | 4.55 |
| D422 | 6.00 | | 5.72 | 5.07 |

150mm LAYOUT CONDITIONS



* Above chart based on use of Solid Dense Concrete Infill Blocks with an average density of 1900kg/m³.

* Above table is for information purposes only, for specific calculations contact our Technical Department.

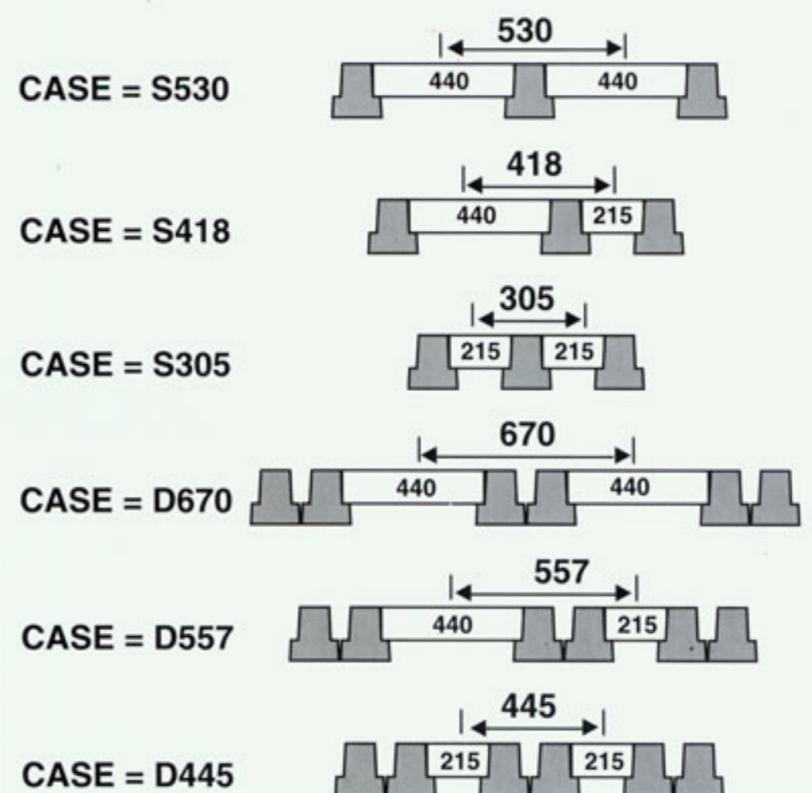
225mm DEEP SYSTEM

LOAD SPAN TABLE

CLEAR SPAN SHOWN INCLUDES SELF WEIGHT
1.60Kn/m² FOR FINISHES AND IMPOSED LOADS
AS INDICATED

| LAYOUT | IMPOSED LOADING (Kn/m ²) | | | |
|-----------|--------------------------------------|--|------|------|
| CONDITION | 1.50 | | 3.00 | 5.00 |
| S530 | 6.23 | | 5.54 | 4.67 |
| S418 | 6.90 | | 6.16 | 5.47 |
| S305 | 7.83 | | 7.04 | 6.28 |
| D670 | 7.52 | | 6.75 | 6.01 |
| D557 | 8.00 | | 7.28 | 6.51 |
| D445 | 8.00 | | 7.95 | 7.15 |

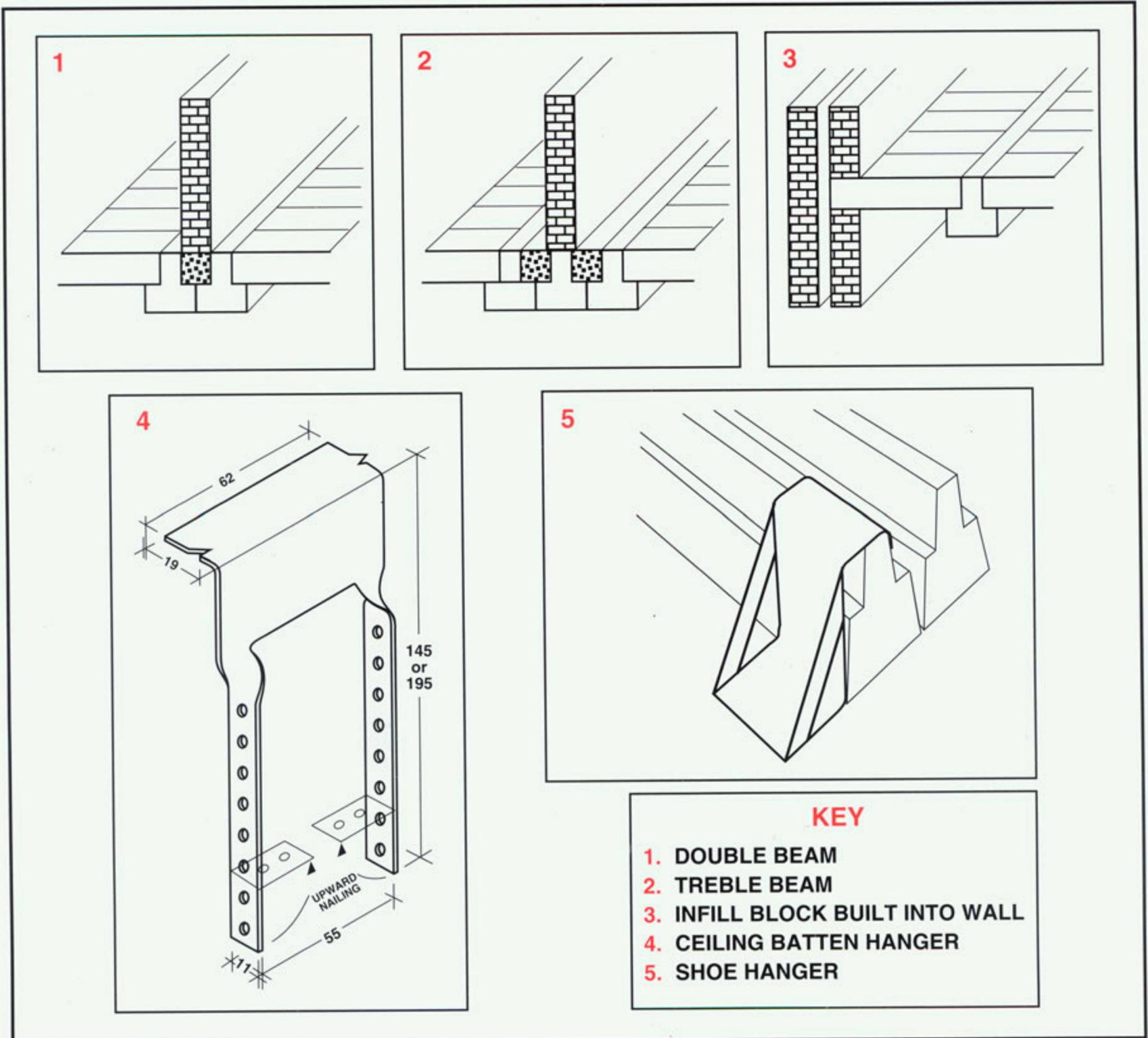
225mm LAYOUT CONDITIONS



* Above chart based on use of Solid Dense Concrete Infill Blocks with an average density of 1900kg/m³.

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MERSEYBEAMS DETAILS



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