

### Introduction

Requirements for mesh reinforcement for deep beams for BS specification are defined as :

- Beams or columns with web depths greater than 650mm (depth between the flanges)
- Beams or columns with flange widths greater than 325mm
- Any SHS, RHS or CHS section where the depth, breadth or outer diameter exceeds 325mm

Mesh reinforcement must be fixed onto the steel using stud welded pins with non-return washers, Cafco stainless steel Helical CD Weld Pins or percussion fixings at maximum 400mm staggered centres on each edge of the mesh strip.

Promat Cafco PCG (50mm x 50mm x 1mm Plastic Coated Galvanised) mesh reinforcement may be used and secured to Cafco Stainless Steel Helical CD Weld Pins at nominal 400mm staggered centres.

Alternatively, 50mm x 50mm x 1mm plain galvanised hexagonal mesh secured to standard stud welded pins with galvanised non-return washers at the same centres may be used.

Note: Plain galvanised mesh must not be used with stainless steel fixings due to the risk of bi-metallic / galvanic corrosion risk.

The mesh must be substantially located within the mid-third of the finished spray thickness and follow the profile of the steel section.

The minimum practical SFRM thickness is 15mm if mesh is used.

The minimum required thickness and type of the Promat Cafco SFRM must be applied in accordance with the specific A/V chart for the product and the limiting temperature that the steel is being protected to.

Where a Cafco SFRM is sprayed using mesh reinforcement, the first layer should be sprayed so that the mesh can still be seen as 'exposed' (unless only 15mm is required to be applied), the subsequent coat should be sprayed as soon as possible after the initial set of the preceding coat.

- Mesh reinforcement is also required for any profile around steel which does not have re-entrant profile – it needs mesh to encapsulate the spray in this case.
- Mesh reinforcement is also required where vibration, mechanical damage and a possibility of subsequent debonding exists.
- This guidance is applicable to both primed and unprimed steels but advice on the compatibility of the Cafco SFRM with particular primers should be checked with Promat.

AUTHORITY: ASFP Yellow Book guidance and BS 8202 Part 1 code of practice

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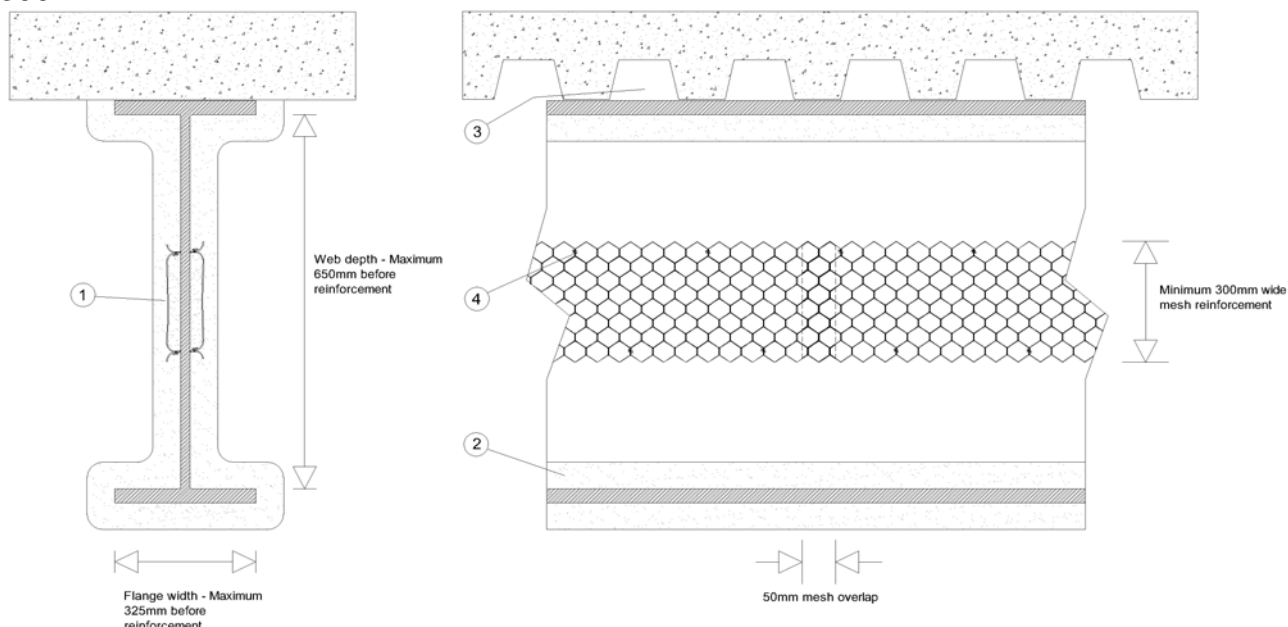


Cafero PCG mesh or galvanised hexagonal mesh is required as continuous profile reinforcement to any steel beam or column that is defined as a deep beam, the mesh must be fixed to and around the steel profile so that it is located substantially within the mid-third of the applied SFRM thickness.

### Partial Meshing – Mesh Strips

As an alternative to complete meshing around the profile, partial mesh reinforcement using strips of mesh is also acceptable providing that :

- The unmeshed portion of the web must not exceed 650mm above or below the centralized mesh area
- The unmeshed portion of the flange must not exceed 325mm before re-entrant detail occurs
- The minimum width of reinforcement permitted on either web or flange is minimum 300mm



2. Promat Cafero Sprayed Fire Resistive Material, thickness as required to achieve fire resistance according to product specification being used.
3. Trapezoidal decks fire stopped if required by filling the profile across the beam using the Cafero Sprayed Fire Resisting Material, or alternatively by installing suitable profiled mineral wool blocks - Refer to Technical Data Sheet TDS130.
4. Cafero Stainless Steel Helical CD Weld Pins for use with PCG Mesh, standard stud welded pins and non-return washers or percussion type fixings at maximum 400mm staggered centres to secure a strip of plain galvanised mesh reinforcement back to the steel substrate.

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