Technical Guidance

Lateral restraint straps to beam and block and precast or pre-stressed intermediate floors

Question

Is it acceptable to fix lateral restraint straps that have a turn down at only one end into a beam and block and precast or pre-stressed intermediate floors?

Considerations

- BS 5628 'Code of Practice for use of masonry' and NHBC Standards clauses 6.3 – D3(c) and 6.4 – S27(f) show the lateral restraint between concrete floors and internal and external walls being provided by restraint straps with a turn down at both ends.
- Restraint straps with a turn down at both ends require tight tolerances to ensure each strap coincides with joints in the beam and block and precast or pre-stressed flooring whilst maintaining full contact with the restrained face of the wall.
- Screw fixing of the restraint straps into the top of a concrete beam or underside of a precast or pre-stressed plank could damage the steel reinforcement within the concrete.

Answer

Where tolerances permit, restraint straps that have a turn down at each end are the preferred option as they avoid the necessity to screw fix the straps into the concrete floors.

Restraint straps with a turn down at one end may be used provided they are adequately fixed to either the infill blocks in a beam and block floor or the top of a precast or pre-stressed floor plank.

The fixing method should suit the material being fixed into as follows:

1) Aerated concrete infill blocks:

   Use at least eight 50mm long x 12 gauge zinc plated screws and plastic plugs @ 125mm centres.
   Minimum strap length 1.2m at maximum 2.0m centres along the wall.
   or
   At least four 50mm long X 12 gauge zinc plated screws and plastic plugs @ 250mm centres.
   Minimum strap length 1.2m at 1.0m centres along the wall.

2) Precast or pre-stressed concrete planks and dense concrete infill blocks:

   Use at least four 50mm long x 12 gauge zinc plated screws and plastic plugs @ 250mm centres.
   Minimum strap length 1.2m at maximum 2.0m centres along the wall.

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