

Technical Guidance

Restraint straps to gable walls of garages



Question

Are lateral restraint straps needed to the gable walls of masonry garages?

Considerations

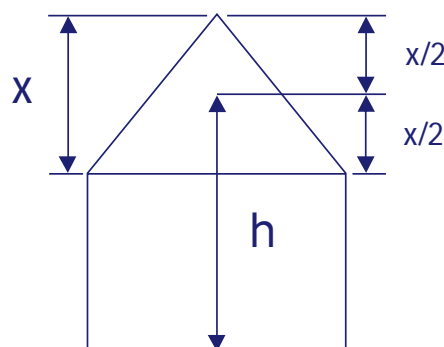
- NHBC Standards clause 9.1 - D5(a) says that garage walls should have adequate lateral restraint against wind loading.
- NHBC Standards clause 7.2 - D4(c) refers to restraint strapping for gable walls of dwellings of masonry construction to provide lateral restraint.
- BS 8103 Parts 1 and 2 'Structural design of low-rise buildings' gives guidance on the provision of lateral restraint to masonry walls.

Answer

For garages of masonry construction, the gable should be restrained at rafter level with restraint straps.

For larger gable walls, restraint should also be provided at ceiling level. Larger gable walls are where the height (h) exceeds:

- $16 \times$ thickness of the wall for single leaf walls
- $16 \times$ (sum of thicknesses of leaves + 10mm) for cavity walls



Note: h should be measured from top of the foundation or from the underside of the floor slab where this provides effective lateral restraint.

The restraint at rafter level may be provided by restraint straps or by a gable ladder (see Technical Guidance 7.2/07)

Where straps are used they should have a minimum cross section of 30mm x 5mm and be fixed to the rafters with solid blocking (or be fixed to the longitudinal bracing) at 2m maximum centres.

