

Movement joints in clay brick masonry

(6.1/14 - March 2021) (supersedes December 2008)



Question

The NHBC Standards clause 6.1.3 says that the spacing of movement joints in clay brickwork should be 10-12m. In what circumstances can 12m spacing be exceeded?

Considerations

- PD 6697 - Recommendations for the design of masonry structures to BS EN 1996-1-1 and BS EN 1996-2 states that for cavity walls, the spacing of vertical joints should be 10m - 12m centers unless specialist advice is obtained. For unrestrained masonry such as parapets and free standing walls, vertical joints spacing should be reduced to 5m - 6m.
- The orientation of a wall in relation to the sun will influence the degree of thermal movement.
- Window and door openings in the brickwork can induce local stress points leading to cracking around the openings.
- The brick manufacturer's recommendations should be taken into account.

Answer

It is the designer's responsibility to ensure movement joints are designed to suit the actual layout and design of the structure. The following should be taken into consideration:

- Where brickwork is in large panels with no significant openings movement joints may be provided at 12m maximum spacing or greater depending on specialist advice.
- Where brickwork is lightly restrained and/or contains a number of window and door openings movement joints should be provided at 10m maximum spacing.
- Additional movement joints may be required where the aspect ratio of the wall (length : height) is high, e.g. more than 3:1.