

DESIGN NOTE 1: Collar jointed walls

To reflect UK practice collar jointed walls were defined in BS 5628 to be the same as double-leaf walls but no definition of collar jointed walls is included in BS EN 1996-1-1 which adopts a wider definition for the double-leaf wall. In BS EN 1996-1-1 a double leaf wall is defined in Clause 1.5.10.4 as follows:

Wall consisting of two parallel leaves with the longitudinal joint between filled solidly with mortar and securely tied together with wall ties so as to result in common action under load.¹

Clause 5.5.1.3. indicates that the effective thickness of a collar jointed wall, t_{ef} may be taken as the actual thickness, t . This is, however, subject to the requirement in clause 6.1.2.1. that:

A double leaf wall, tied together according to Clause 6.5 may be designed as a single-leaf wall, if both leaves have a load of similar magnitude, or, alternatively, as a cavity wall.

Clause 8.5.2.3. requires double leaf walls to have *not less than j connectors per square metre evenly distributed* and the UK NA to BS EN 1996-1-1 specifies j as 2.5, the same as the normal UK spacing for wall ties.

Recognising the established UK practice for Collar Jointed walls the NA to BS EN 1996-1-1 added, in 2013, the following into Clause N.A.2.4:

For masonry, other than collar jointed aggregate concrete masonry, made with general purpose mortar and where there is a mortar joint parallel to the face of the wall through all or any part of the length of the wall the value of K obtained from Table NA.4 is multiplied by 0,8.

For collar jointed aggregate concrete masonry units made with general purpose mortar, with or without the collar filled with mortar, the unit shape factor correction to obtain the normalised strength should use the width of the wall as the unit width and the height of the masonry units.

Thus, as an example, for a collar jointed wall comprising two 215 mm high by 100 mm wide aggregate masonry units with a joint thickness of 25 mm, the shape factor based on Annex A of BS EN 772-1, using a height of 215 mm and a width of 225 mm, is 1,15. (See detailed version of this table on eurocode6.org website).

<http://eurocode6.org/Published%20support%20material/Shape%20Factors.pdf>

¹ This definition differs from that previously used in the UK in BS 5628 Part 1 which was: *Two parallel single-leaf walls, with a space between not exceeding 25 mm, and so tied together as to result in common action under load.* BS EN 1996-1-1, unlike BS 5628, requires the joint to be filled with mortar but does not place a limit on the joint width.