

SECTION 10. DESIGN FOR TENSION

Any **mortarless** masonry member designed to resist axial tension must be reinforced as it is only the reinforcement that carries the tensile load. BS 5628 does not contain any provisions for masonry in direct axial tension and hence the following information is provided from the Australian version of this design manual:

The design axial tensile force must be such that:

$$F_{dt} \leq \phi f_{sy} A_s$$

Where: F_{dt} = The design tension force acting on the cross section

ϕ = 0.60 for tension

f_{sy} = the design yield strength of the reinforcement

A_s = the total cross-sectional area of the main reinforcement

Note however that the main reinforcement in the direction of the axial load must comply with the following:

- a) It must be located symmetrically in the cross-section;
- b) It must include reinforcement with a cross-sectional area of at least 100 mm² within 300mm of the edges of the member parallel to the main reinforcement;
- c) It must be placed at centres not exceeding 2000 mm.

It is essential to exercise every necessary care during construction to ensure all laps are of the specified length and properly encapsulated in fully compacted grout.