

## SECTION 8. DESIGN FOR COMBINED COMPRESSION AND BENDING

### 8.1 Design of compression members by simple rules

When an unreinforced **mortarless** masonry wall is designed for compression using the simple rules provisions of AS 3700 and it is required to also resist lateral loading, it must be checked independently for bending but it is not necessary to consider the interaction of vertical and lateral loads acting simultaneously. (AS 3700 Clause 7.3.3.1)

### 8.2 Design of compression members by refined calculation

**Mortarless** masonry walls designed by refined calculation are in fact designed for uniaxial bending and compression. The design formulae provided in AS 3700 Section 7 have been used to generate the design tables in this design manual, and the bending moment that acts simultaneously with the compressive force is represented in the tables by the effective eccentricity.

The calculation of compression load capacity does not however take into account the bending moments arising from applied out-of-plane lateral loads.

Reinforced **mortarless** masonry walls that are subjected to the simultaneous action of axial compression and bending from applied out-of-plane lateral loads should be designed such that the compressive load capacity is 0.85 times that given in the tables in this design manual for a concentrically loaded member, and the bending moment capacity is as per the tables in this design manual. (refer AS 3700 Clause 8.11.1)

It is noted that this rule applies to reinforced masonry members and although **mortarless** walls are designed as unreinforced for axial compression it is suggested that the rule still applies as they are designed as reinforced for bending.