

DESIGN EXAMPLE V7

A single storey cavity wall of actual height 2500 mm comprises 2 no. 100 mm Group 1 concrete blockwork masonry units. Masonry units are of work size 440 mm by 100 mm by 215 mm (length-width-height) and have a normalised compressive strength (f_b) of 4,0 N/mm² and are supplied to attestation of conformity Category I. Masonry is assembled in an M4 class mortar to Class 2 execution control.

The wall inner leaf only is loadbearing and supports a timber roof at its head. The roof is supported on a timber wallplate which is aligned on the wallhead so as to give an effective eccentricity of vertical loading of $t/6$.

Calculate the design vertical load capacity of this wall using the standard EC6 Part 1.1 design assumptions of a strut in buckling double curvature.

Reassess the design vertical load capacity of the wall using the BS 5628 Part 1 strut model with resultant vertical load concentric at the base of the wall inner leaf.