

R3 Example. Reinforced Hollow Concrete Blockwork Column Subjected To Uniaxial Bending

Design a 3,0m high reinforced hollow concrete blockwork column to carry a design vertical load of 400kN (N_{Ed}) and a design bending moment of 45kN.m (M_{Ed}). If the height of the column is increased to 6,0m also assess the effect this has on the column section chosen?

The blocks to be used are dense aggregate concrete with a compressive strength (non-normalised) of 10,4N/mm². The concrete block masonry units are Group 2 of work size 440 by 215 by 215mm high with 38% voids ratio and of category I manufacturing control. The mortar is a class M6 (designation ii) General Purpose mortar with the work being constructed to class 1 execution control. The infill concrete is a C35/45. Trial column section is 440 by 440mm.