R2: Example. Reinforced Brickwork Beam

Design a simply supported reinforced brickwork beam to clear span 3,80m carrying a characteristic dead load of 20,0kN/m (includes self-weight) and a characteristic single imposed load of 8,0kN/m. The bricks to be used have a declared (air dry) compressive strength (non-normalised) of 55N/mm$^2$ and are of Group 1 configuration with the manufacturing control being category I. The mortar is class M6, (designation ii) General Purpose mortar and the masonry work is to class 1 execution control.

Figure 1: Elevation and section of the reinforced beam