

Padstone Calculator



BEAM A Floor - 460 Oakwood Lane, Leeds, West Yorkshire LS9 6QX

01/02/2024

COMPLIES WITH LATEST EUROPEAN DESIGN CODES
Structural calculations for padstones

Beam End Reaction = 52.60 kN (factored) Variable Load Safety Factor = 1.5
Factored Load at End of Beam Permanent Load Safety Factor = 1.35

Characteristic strength of masonry = 2.6 N/mm² (Brickwork usually = 4.5 N/mm²)

(3.6N Blockwork usually = 2.6 N/mm²)
Width of beam end bearing = 203 mm
Length of beam end bearing = 150 mm
(A Engineering Brick = 13.2 N/mm²)
(B Engineering Brick = 10.5 N/mm²)
(Weak Brickwork = approx 2.8 N/mm²)

(7.3N Blockwork usually = 4.2 N/mm²)

(10.4N Blockwork usually = 5.4 N/mm²)

ym = 3.0

Bearing Factor = 1.25

Results

Maximum Bearing Stress = 1.08 N/mm² Actual Bearing Stress = 1.73 N/mm²

Stress under padstone = 0.56 N/mm²

Padstone Required

Padstone Results

Characteristic strength of Padstone = 15.0 N/mm² (A Engineering Brick = 13.2 N/mm²) (B Engineering Brick = 10.5 N/mm²) Width of Padstone = 440 (Concrete C15 = 15 N/mm^2) mm Length of Padstone = (Concrete $C30 = 30 \text{ N/mm}^2$) 215 mm (Concrete C40 = 40 N/mm²) (Steel Plate = 275 N/mm²) Allowable padstone stress = 6.25 N/mm² Stress under beam end bearing = Therefore Padstone Stress OK 1.73 N/mm² N/mm² Allowable masonry stress = 1.08

Therefore Masonry Stress OK