Bearing details

Beam spanning in plane of wall

Width of bearing; B = **203** mm; Length of bearing; l_b = **140** mm

Loading details

Concentrated dead load; G_k = **19** kN; Concentrated imposed load; Q_k = **3** kN

Design concentrated load; F = **30.8** kN

Distributed dead load; g_k = **0.0** kN/m; Distributed imposed load; q_k = **0.0** kN/m

Design distributed load; f = **0.0** kN/m

Masonry bearing type

Bearing type; **Type 2** ; Bearing safety factor; γ_{bear} = **1.50**

Check design bearing without a spreader

Design bearing stress; f_{cb} = **1.084** N/mm^2; Allowable bearing stress; f_{cp} = **1.071** N/mm^2

FAIL - Design bearing stress exceeds allowable bearing stress, use a spreader

Spreader details

Length of spreader; l_s = **330** mm; Depth of spreader; h_s = **140** mm

Edge distance; s_{edge} = **0** mm

Spreader bearing type

Bearing type; **Type 3** ; Bearing safety factor; γ_{bear} = **2.00**

Check design bearing with a spreader

Loading acts eccentrically outside middle third – triangular stress distribution

Design bearing stress; f_{cb} = **1.364** N/mm^2; Allowable bearing stress; f_{cp} = **1.429** N/mm^2

PASS - Allowable bearing stress exceeds design bearing stress

Check design bearing at 0.4 × h below the bearing level

Design bearing stress; f_{cb} = **0.130** N/mm^2; Allowable bearing stress; f_{cp} = **0.701** N/mm^2

PASS - Allowable bearing stress at 0.4 × h below bearing level exceeds design bearing stress

Beam G padstones: Provide 330x215x140mm deep dense concrete padstone or Eng. Bwk as padstone; Beam bearing min 150mm