

POS. 35: BOLT IN BEARING

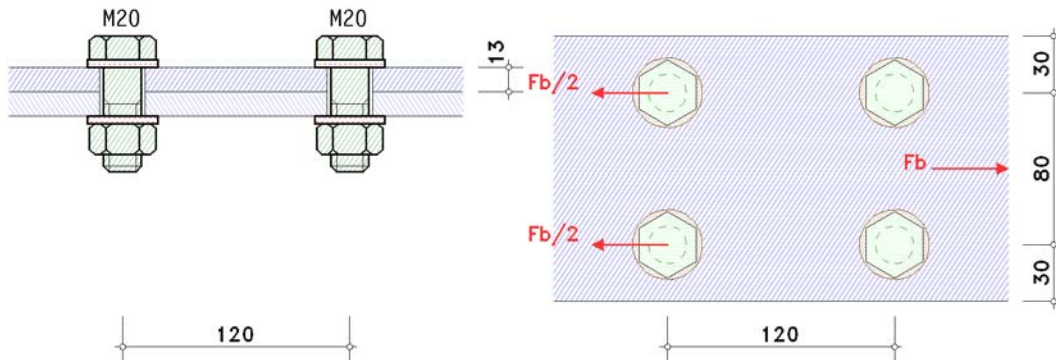
4H-EC3GK version: 1/2012-1k

bolt in bearing on beam flange, column flange, end-plate or cleat

Basic component 12

EC 3-1-8 (12.10), NA: Germany

M 1:4.0



connection device:

- bolt, property class 8.8, bolt size M20
- large width across flats (high tensile bolt), preloaded

connected plates:

- connection plate: plate thickness $t = 13.0$ mm, steel grade S 275

bearing resistance in direction of load transfer (inner bolt):

- pitch $p_1 = 120.0$ mm

bearing resistance perpendicular to direction of load transfer (end bolt):

- edge distance $e_2 = 30.0$ mm pitch $p_2 = 80.0$ mm

material safety factor: $\gamma_{M2} = 1.25$

stress:

- Lk 1 : $F_{br,Ed} = 50.0$ kN per bolt

design resistance

bearing resistance: $F_{b,Rd} = (k_1 \cdot \alpha_b \cdot f_u \cdot d \cdot t) / \gamma_{M2} = 189.45$ kN, $k_1 = 2.12$, $\alpha_b = 1.00$

verification

Lk 1: $F_{Ed} = 50.0$ kN < $F_{Rd} = 189.5$ kN \Rightarrow utilization = 0.264 < 1 ok.