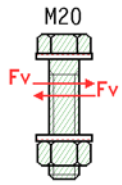
POS. 34: BOLT IN SHEAR

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

bolt in shear

Basic component 11
EC 3-1-8 (12.10), NA: Germany

M 1:5.0



connection device:
  bolt, property class 8.8, bolt size M20
  large width across flats (high tensile bolt), preloaded
  packing with thickness t_p = 10.0 mm
thread of bolt in shear plane
material safety factor: γ_{M2} = 1.25
stress:
  Lk 1 : $F_{vr,Ed}$ = 75.0 kN per bolt

design resistance

bolt category A:
design shear resistance per shear plane: $F_{v,Rd} = \alpha_v \cdot f_{ub} \cdot A / \gamma_{M2}$ = 94.08 kN, α_v = 0.60
packing with $t_p > d/3$ = 6.7 mm: reduction factor $\beta_p = 9 \cdot d/(8 \cdot d + 3 \cdot t_p)$ = 0.95 $\Rightarrow$ $F_{v,Rd}$ = 89.13 kN

verification

Lk 1: F_{Ed} = 75.0 kN < F_{Rd} = 89.1 kN $\Rightarrow$ utilization = 0.841 < 1 **ok.**