

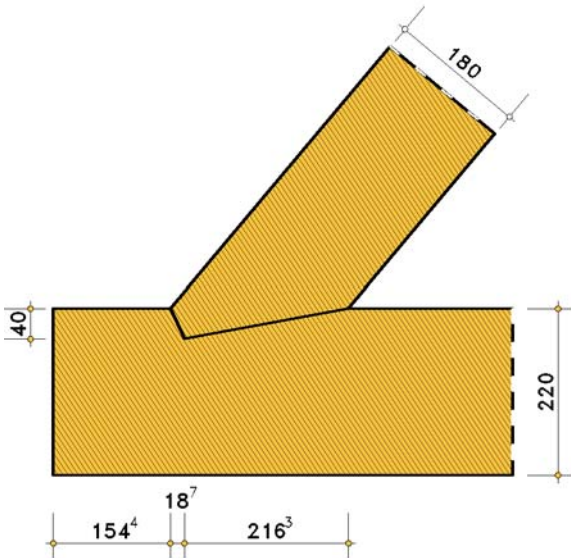
1. Input parameters

1.1. frontal offset acc. to DIN EN 1995-1-1/NA:2013-08, NCI NA.12.1

1.2. material and dimensions

both beams from solid coniferous timber, C24 (S10) , $\rho_k = 350 \text{ kg/m}^3$, NKL 2
 $f_{m,k} = 24.00 \text{ N/mm}^2$, $f_{t,k} = 14.00 \text{ N/mm}^2$, $f_{c,k} = 21.00 \text{ N/mm}^2$, $f_{v,k} = 4.00 \text{ N/mm}^2$, $f_{c90,k} = 2.50 \text{ N/mm}^2$
 sole plate 140/220 mm, strut 140/180 mm, $\gamma = 50.0^\circ$
 anchoring by bolt $\varnothing 12 \text{ mm}$

elevation scale 1:100, unit of length [mm]



1.3. internal forces and moments

| Nr. | name | N _d kN | KLED | k _{mod} - | γ |
|-----|------|----------------------|----------|-----------------------|------|
| 1 | S | 52.20 | sh.-term | 0.900 | 1.30 |

2. results

2.1. compression in contact surfaces acc. to DIN EN 1995-1-1/NA, NCI NA.12.1

$k_{cr} = 0.500$, $\alpha = \gamma/2 = 25.0^\circ$, $\min l_v = 173 \text{ mm}$

| Nr | f _{v,d} N/mm ² | f _{c0,d} N/mm ² | f _{c90,d} N/mm ² | f _{cα,d} N/mm ² | S _{1R,d} kN | l _v mm | u _{lv} - | u _{SE,d1} - | u - |
|----|---------------------------------------|--|---|--|-------------------------|----------------------|----------------------|-------------------------|--------|
| 1 | 2.77 | 14.54 | 1.73 | 9.70 | 66.10 | 173 | 0.541 | 0.790 | 0.790 |

$u_{max} = 0.790 \leq 1 \Rightarrow \text{ok.}$

2.2. sole plate bending and normal force

$b_n = 140 \text{ mm}$, $h_n = 180 \text{ mm} \Rightarrow A_n = 25200 \text{ mm}^2$, $W_n = 756000 \text{ mm}^3$, $e_z = 20 \text{ mm}$

| Nr | left edge | | | | | | | | right edge | | | | | u - |
|----|---------------------------------------|---------------------------------------|---------------------------------------|----------------------|--------------------------------------|-----------------------|---------------------------------------|---------------------|----------------------|--------------------------------------|-----------------------|---------------------------------------|---------------------|--------|
| | f _{m,d} N/mm ² | f _{t,d} N/mm ² | f _{c,d} N/mm ² | N _d kN | σ _{Nd} N/mm ² | M _d kNm | σ _{m,d} N/mm ² | u _σ - | N _d kN | σ _{Nd} N/mm ² | M _d kNm | σ _{m,d} N/mm ² | u _σ - | |
| 1 | 16.62 | 9.69 | 14.54 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 33.554 | 1.331 | -0.671 | -0.888 | 0.191 | 0.191 |

$u_{max} = 0.191 \leq 1 \Rightarrow \text{ok.}$

3. Summary

total utilization all verifications $u_{max,Ges} = 0.790 \leq 1 \Rightarrow \text{ok.}$