

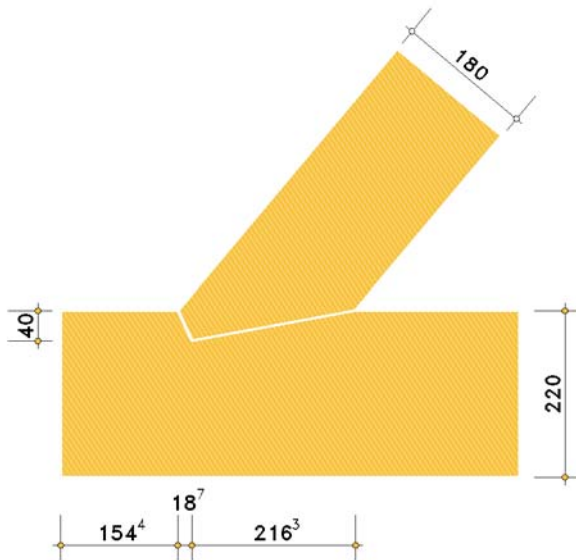
### 1. Input parameters

#### 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  
 $f_{m,k} = 24.00 \text{ N/mm}^2$ ,  $f_{t,k} = 14.50 \text{ N/mm}^2$ ,  $f_{c,k} = 21.00 \text{ N/mm}^2$ ,  $f_{v,k} = 4.00 \text{ N/mm}^2$ ,  $f_{c90,k} = 2.50 \text{ N/mm}^2$   
 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 <sub>d</sub> kN	KLED	K <sub>mod</sub> -	$\gamma$ -
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

$k_{cr} = 0.500$ ,  $\alpha = \gamma/2 = 25.0^\circ$ ,  $\min l_v = 173 \text{ mm}$  (es wird eine Mindestvorholzlänge from 200 mm empfohlen)

Nr	$f_{v,d}$ N/mm <sup>2</sup>	$f_{c0,d}$ N/mm <sup>2</sup>	$f_{c90,d}$ N/mm <sup>2</sup>	$f_{c\alpha,d}$ N/mm <sup>2</sup>	$S_{1R,d}$ kN	$l_v$ mm	$u_{1v}$ -	$u_{SE,d1}$ -	$u$ -
1	2.77	14.54	1.73	9.70	66.10	173	1.000	0.790	1.000

$u_{max} = 1.000 \leq 1 \Rightarrow \text{ok.}$

#### 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	$f_{m,d}$ N/mm <sup>2</sup>	$f_{t,d}$ N/mm <sup>2</sup>	$f_{c,d}$ N/mm <sup>2</sup>	left edge					right edge					
				N <sub>d</sub> kN	$\sigma_{Nd}$ N/mm <sup>2</sup>	M <sub>d</sub> kNm	$\sigma_{m,d}$ N/mm <sup>2</sup>	$u_\sigma$ -	N <sub>d</sub> kN	$\sigma_{Nd}$ N/mm <sup>2</sup>	M <sub>d</sub> kNm	$\sigma_{m,d}$ N/mm <sup>2</sup>	$u_\sigma$ -	$u$ -
1	16.62	10.04	14.54	0.000	0.000	0.000	0.000	0.000	33.554	1.331	-0.671	-0.888	0.186	0.186

$u_{max} = 0.186 \leq 1 \Rightarrow \text{ok.}$

### 3. Summary

total utilization all verifications  $u_{max,Ges} = 1.000 \leq 1 \Rightarrow \text{ok.}$