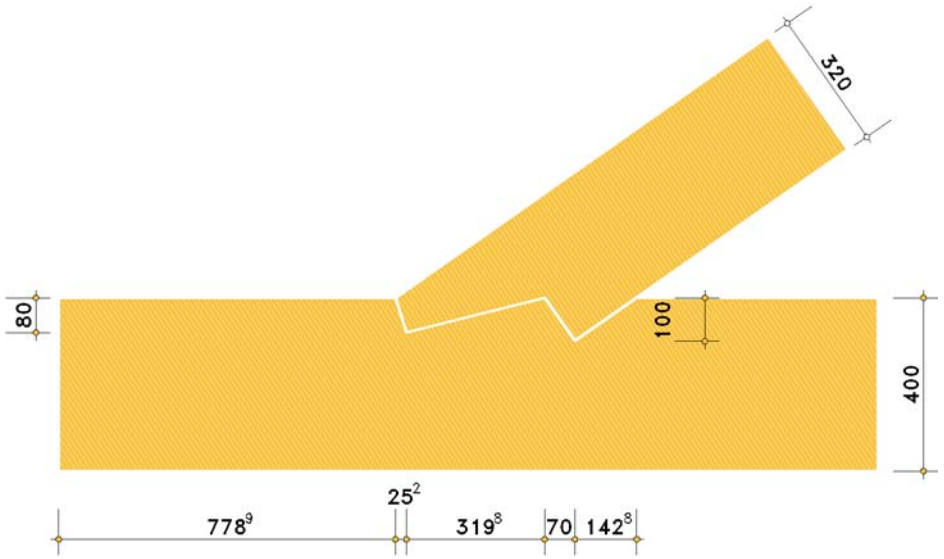
1. Input parameters

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

1.2. material and dimensions

sole plate of glue laminated timber DIN, GL32h (BS16) , ρ_k = 430 kg/m³, NKL 1
$f_{m,k}$ = 32.00 N/mm², $f_{t,k}$ = 22.50 N/mm², $f_{c,k}$ = 29.00 N/mm², $f_{v,k}$ = 3.50 N/mm², $f_{c90,k}$ = 3.30 N/mm²
strut of glue laminated timber DIN, GL24h (BS11) , ρ_k = 380 kg/m³, NKL 1
$f_{m,k}$ = 24.00 N/mm², $f_{t,k}$ = 16.50 N/mm², $f_{c,k}$ = 24.00 N/mm², $f_{v,k}$ = 3.50 N/mm², $f_{c90,k}$ = 2.70 N/mm²
sole plate **280/400 mm**, strut **280/320 mm**, γ = 35.0 °
anchoring by bolt Ø 20 mm

elevation scale 1:175, unit of length [mm]



1.3. internal forces and moments

Nr.	name	N_d kN	KLED	k_{mod} -	γ -
1	A	370.00	long-term	0.700	1.30

2. results

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

k_{cr} = 0.714, $\alpha = \gamma/2$ = 17.5 °, min l_v = 804 mm

Nr	$f_{v,d}$ N/mm²	$f_{c0,d}$ N/mm²	$f_{c90,d}$ N/mm²	$f_{c\alpha1,d}$ N/mm²	$f_{c\alpha2,d}$ N/mm²	$S_{1R,d}$ kN	$S_{2R,d}$ kN	l_{v1} mm	l_{v2} mm	u_{lv} -	$u_{SE,d1}$ -	u -
1	1.88	15.62	1.78	9.24	6.21	227.58	212.17	495	804	**1.005**	**0.841**	**1.005**

u_{max} = 1.005 > 1 ⇒ not ok. !!

2.2. sole plate bending and normal force

b_n = 259 mm, h_n = 300 mm ⇒ A_n = 77700 mm², W_n = 3885000 mm³, e_z = 50 mm

Nr	$f_{m,d}$ N/mm²	$f_{t,d}$ N/mm²	$f_{c,d}$ N/mm²	left edge N_d kN	left edge σ_{Nd} N/mm²	left edge M_d kNm	left edge $\sigma_{m,d}$ N/mm²	left edge u_σ -	right edge N_d kN	right edge σ_{Nd} N/mm²	right edge M_d kNm	right edge $\sigma_{m,d}$ N/mm²	right edge u_σ -	u -
1	17.23	12.12	15.62	0.000	0.000	0.000	0.000	0.000	303.086	3.901	-15.154	-3.901	0.548	**0.548**

u_{max} = 0.548 ≤ 1 ⇒ ok.

3. Summary

total utilization all verifications $u_{max,Ges}$ = 1.005 ≤ 1 ⇒ ok.