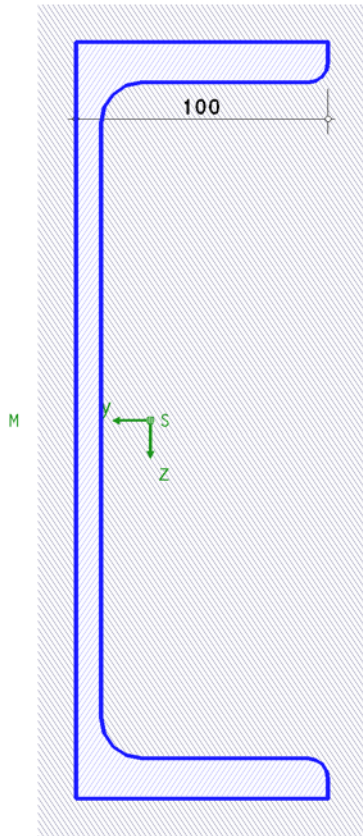


POS. 8: IMPORT VON 4H-EC3FS U-SPLICE

Welded connection EC 3-1-8 (04.25), NA: Deutschland

1. input report

scale 1:3.0



material

steel grade S355

material safety factors

resistance of cross-sections $\gamma_{M0} = 1.00$

resistance of bolts, welds, plates in bearing $\gamma_{M2} = 1.25$

geometry

section U300

plate: thickness $t_p = 35.0$ mm

surrounding fillet weld: $a_{w,2} = 6.0$ mm, $a_{w,1} = 6.0$ mm

resistance

plastic verification of cross-section

weld verification with the directional method

resolution of shear force is conventional by taking over V_y with the horizontal welds, V_z with the vertical welds.

2. table of results

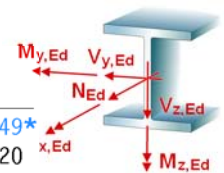
internal forces and moments and utilizations

LC	N_{Ed} kN	$M_{y,Ed}$ kNm	$V_{z,Ed}$ kN	$M_{z,Ed}$ kNm	$V_{y,Ed}$ kN	$M_{x,Ed}$ kNm	U_{σ}	$U_{c/t}$	U_w
--									
1	-33.47	81.25	-21.16	-6.13	-4.35	-0.92	0.583	0.614	0.949*
2	0.27	4.66	1.34	-5.73	2.40	-0.00	0.148	0.614	0.320
3	-33.24	80.85	-21.38	-5.83	-4.16	-0.89	0.573	0.614	0.931
4	0.11	4.94	1.50	-5.93	2.27	-0.02	0.154	0.614	0.332
5	-7.75	7.83	-5.09	14.00	5.80	-0.07	0.340	0.750	0.750
6	-28.26	69.16	-19.97	-7.69	-5.39	-0.93	0.554	0.614	0.931
7	-3.37	13.12	0.51	-4.63	3.13	0.00	0.169	0.614	0.333
8	-4.11	-0.63	-4.25	12.91	5.07	-0.07	0.281	0.750	0.643

$N_{Ed}, M_{y,Ed}, V_{z,Ed}, M_{z,Ed}, V_{y,Ed}, M_{x,Ed}$: internal forces and moments

U_{σ} : stress utilization of cross-section; $U_{c/t}$: c/t-utilization of cross-section; U_w : stress utilization of welds

*) maximum utilization



	pt. 1:	$\sigma_{w,x} = 216.65 \text{ N/mm}^2$		$\tau_{w,z} = -6.58 \text{ N/mm}^2$	$\Rightarrow U_w = 0.704 < 1$	ok
weld 4,	pt. 0:	$\sigma_{w,x} = -139.54 \text{ N/mm}^2$		$\tau_{w,z} = -6.58 \text{ N/mm}^2$	$\Rightarrow U_w = 0.454 < 1$	ok
	pt. 1:	$\sigma_{w,x} = 163.19 \text{ N/mm}^2$		$\tau_{w,z} = -6.58 \text{ N/mm}^2$	$\Rightarrow U_w = 0.530 < 1$	ok
weld 5,	pt. 0:	$\sigma_{w,x} = 163.84 \text{ N/mm}^2$	$\tau_{w,y} = -2.18 \text{ N/mm}^2$		$\Rightarrow U_w = 0.532 < 1$	ok
	pt. 1:	$\sigma_{w,x} = 81.86 \text{ N/mm}^2$	$\tau_{w,y} = -2.18 \text{ N/mm}^2$		$\Rightarrow U_w = 0.266 < 1$	ok
weld 6,	pt. 0:	$\sigma_{w,x} = 216.65 \text{ N/mm}^2$	$\tau_{w,y} = -2.18 \text{ N/mm}^2$		$\Rightarrow U_w = 0.704 < 1$	ok
	pt. 1:	$\sigma_{w,x} = 92.45 \text{ N/mm}^2$	$\tau_{w,y} = -2.18 \text{ N/mm}^2$		$\Rightarrow U_w = 0.300 < 1$	ok
weld 7,	pt. 0:	$\sigma_{w,x} = -282.10 \text{ N/mm}^2$			$\Rightarrow U_w = 0.916 < 1$	ok
	pt. 1:	$\sigma_{w,x} = -292.36 \text{ N/mm}^2$			$\Rightarrow U_w = 0.949 < 1$	ok
weld 8,	pt. 0:	$\sigma_{w,x} = 82.19 \text{ N/mm}^2$			$\Rightarrow U_w = 0.267 < 1$	ok
	pt. 1:	$\sigma_{w,x} = 92.45 \text{ N/mm}^2$			$\Rightarrow U_w = 0.300 < 1$	ok
Result:						
weld 1,	pt. 1:	$\sigma_{w,x} = -292.36 \text{ N/mm}^2$	$\tau_{w,y} = -2.18 \text{ N/mm}^2$			
Max:	$\sigma_{1,w,Ed} = 413.48 \text{ N/mm}^2 < f_{1w,d} = 435.56 \text{ N/mm}^2,$					
	$\sigma_{2,w,Ed} = 206.73 \text{ N/mm}^2 < f_{2w,d} = 352.80 \text{ N/mm}^2 \Rightarrow U_w = 0.949 < 1$					