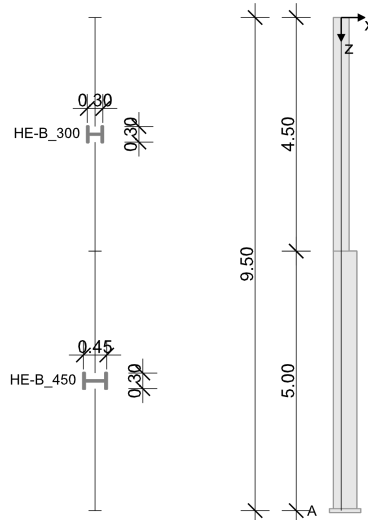


RIB Software SE	BEST V18.0 Build-No. 24072018	Type: Steel column
File: KragstützeQuerschnittsprungXZ.Besx		

### Project information

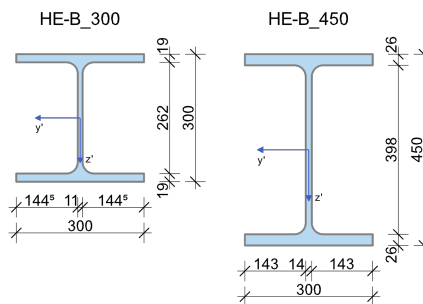
Contract	Stahlbau
Description	Kragstütze mit Querschnittsprung
Position	Beispiel 1
Structural member	Stütze in Achse A/12

### System information



Standard:	DIN EN 1993-1-1
Structural behavior:	xz-plane
Carrying resistances:	elastic - elastic / plastic

### Column geometry



h	Section height	t <sub>w</sub>	Web thickness
b <sub>f</sub>	Flange width, top/bottom	Type WP	Rolled section from the section database
t <sub>f</sub>	Flange thickness, top/bottom	Type SP	Section, welded

All cross-section dimensions in [mm].

Section	Type	Height h	Web t <sub>w</sub>	Top flange		Bottom flange		Resistance			
				b <sub>f,o</sub>	t <sub>f,o</sub>	b <sub>f,u</sub>	t <sub>f,u</sub>	A [cm <sup>2</sup> ]	I <sub>y</sub> [cm <sup>4</sup> ]	I <sub>z</sub> [cm <sup>4</sup> ]	I <sub>t</sub> [cm <sup>4</sup> ]
HE-B_300	WP	300	11	300	19	300	19	149.0	25170	8560	186
HE-B_450	WP	450	14	300	26	300	26	218.0	79890	11720	442

Section	Section	Length [m]	e <sub>x</sub> [mm]	e <sub>y</sub> [mm]	Rotation [°]
1	HE-B_300	4.50	7.5	0.0	0
2	HE-B_450	5.00	0.0	0.0	0

### Load cases

LC	Type of action	γ <sub>sup</sub>	γ <sub>inf</sub>	ψ <sub>0</sub>	ψ <sub>1</sub>	ψ <sub>2</sub>	Name
1	Permanent load	1.35	1.00	1.00	1.00	1.00	konstruktion
2	Storage rooms (Live load E)	1.50	0.00	1.00	0.90	0.80	Lager
3	wind	1.50	0.00	0.60	0.20	0.00	windlast

4	Snow	1.50	0.00	0.50	0.20	0.00	Schneelast
5	Accidental under structure	1.00	0.00	1.00	1.00	1.00	Anprall

LC	T	Single loads	h [m]	P <sub>z</sub> [kN]	e <sub>x</sub> [m]	e <sub>y</sub> [m]	M <sub>x</sub> [kNm]	M <sub>y</sub> [kNm]	P <sub>x</sub> [kN]	P <sub>y</sub> [kN]
1			9.50	200.00						
1			5.00	300.00	0.150					
2			5.00	500.00	0.150				40.00	
4			9.50	80.00						
5			1.50						120.00	

LC	T	Line loads	h <sub>a</sub> [m]	Length [m]	p <sub>xa</sub> [kN/m]	p <sub>xe</sub> [kN/m]	p <sub>ya</sub> [kN/m]	p <sub>ye</sub> [kN/m]	p <sub>za</sub> [kN/m]	p <sub>ze</sub> [kN/m]
3			0.00	9.50	2.00	2.00				

**Load case combinations**

LCC	Load case combination number	GK	Basic combination
Type	Type of the combination	AK	Impact (accidental)
		EK	Earthquake combination
relev.	The load case combination is relevant in an analysis:	LS	Safety against displacement
1,2,S	1st order theory, 2nd order theory or stability analysis	V	Deformations in the SLS

LC	relev.	Type	Combination
1	V	V	1.00*LC1+0.80*LC2+0.20*LC3+0.00*LC4+1.00*LC5
2		GK	1.35*LC1
3		GK	1.35*LC1+1.50*LC2+0.75*LC4
4		GK	1.35*LC1+1.50*LC2+0.90*LC3+0.75*LC4
5		GK	1.35*LC1+1.50*LC2+0.90*LC3
6	1	GK	1.35*LC1+1.50*LC2+1.50*LC4
7	2	GK	1.35*LC1+1.50*LC2+0.90*LC3+1.50*LC4
8	1	GK	1.35*LC1+0.90*LC3+1.50*LC4
9		GK	1.35*LC1+1.50*LC2+1.50*LC3
10	1,2,S	GK	1.35*LC1+1.50*LC2+1.50*LC3+0.75*LC4
11	1	GK	1.35*LC1+1.50*LC3+0.75*LC4
12		AK	1.00*LC1+0.90*LC2+1.00*LC5
13		AK	1.00*LC1+0.80*LC2+0.20*LC4+1.00*LC5
14		AK	1.00*LC1+0.20*LC4+1.00*LC5
15		AK	1.00*LC1+0.80*LC2+0.20*LC3+1.00*LC5
16		AK	1.00*LC1+0.20*LC3+1.00*LC5
17		AK	1.00*LC1+0.80*LC2+1.00*LC5
18		AK	1.00*LC1+1.00*LC5

**Material consumption**

Section	Length [m]	Weight [kg]
HE-B_300	4.500	526
HE-B_450	5.000	856

Σ Structural steel S235: 1382 kg