Steel profiles

SIGMA50

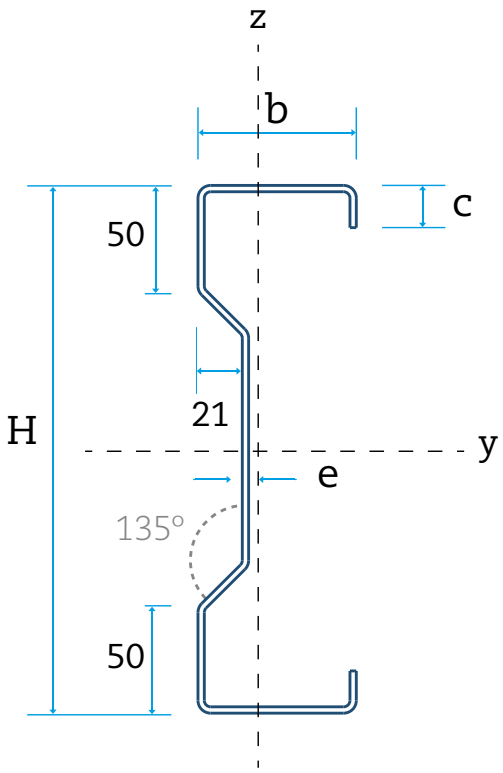
SIGMA80

BASIC MECHANICAL CHARACTERISTICS													
H [mm]	e [mm]	b [mm]	c [mm]	d [mm]	p [kg/m]	A [cm²]	Y_G [mm]	I_y [cm⁴]	W_y [cm³]	I_z [cm⁴]	I_t [cm⁴]	I_w [cm⁶]	REFERENCE
200	2	50	25	50	5.322	7.05	-3.1	388.70	38.87	20.23	.09	2,391.04	**200 × 2**
200	2.5	50	25	50	6.653	8.80	-3.2	481.89	48.19	24.68	.18	2,902.49	**200 × 2.5**
200	3	50	25	50	7.983	10.53	-3.4	572.71	57.27	28.86	.31	3,376.95	**200 × 3**
225	2	50	25	50	5.715	7.54	-2.9	518.49	46.09	20.27	.10	3,076.02	**225 × 2**
225	2.5	50	25	50	7.144	9.41	-3.0	643.34	57.19	24.74	.19	3,736.72	**225 × 2.5**
225	3	50	25	50	8.572	11.27	-3.2	765.24	68.02	28.95	.33	4,350.70	**225 × 3**
250	2	50	25	50	6.107	8.03	-2.7	671.83	53.75	20.31	.10	3,825.52	**250 × 2**
250	2.5	50	25	50	7.634	10.03	-2.8	834.21	66.74	24.80	.20	4,648.98	**250 × 2.5**
250	3	50	25	50	9.161	12.01	-3.0	992.99	79.44	29.02	.35	5,414.89	**250 × 3**
275	2	50	25	50	6.500	8.52	-2.5	850.25	61.84	20.35	.11	4,635.72	**275 × 2**
275	2.5	50	25	50	8.125	10.64	-2.7	1,056.40	76.83	24.85	.21	5,634.68	**275 × 2.5**
275	3	50	25	50	9.750	12.75	-2.8	1,258.25	91.51	29.09	.37	6,564.21	**275 × 3**
300	2	50	25	50	6.892	9.01	-2.4	1,055.30	70.35	20.38	.12	5,504.75	**300 × 2**
300	2.5	50	25	50	8.615	11.26	-2.5	1,311.86	87.46	24.89	.23	6,691.60	**300 × 2.5**
300	3	50	25	50	10.338	13.49	-2.7	1,563.34	104.22	29.15	.39	7,796.14	**300 × 3**
300	4	50	25	50	13.471	17.88	-2.9	2,051.23	136.75	36.95	.93	9,770.05	**300 × 4**
325	3	50	25	50	14.230	14.23	-2.5	1,910.57	117.57	29.21	.42	9,109.64	**325 × 3**
325	4	50	25	50	18.870	18.87	-2.8	2,509.19	154.41	37.04	.99	11,416.62	**325 × 4**
350	3	50	25	50	14.970	14.97	-2.4	2,302.26	131.56	29.26	.44	10,504.44	**350 × 3**
350	4	50	25	50	19.860	19.86	-2.6	3,026.13	172.92	37.13	1.04	13,164.62	**350 × 4**
375	3	50	25	50	15.710	15.71	-2.3	2,740.71	146.17	29.30	.46	11,980.73	**375 × 3**
375	4	50	25	50	20.850	20.85	-2.5	3,605.14	192.27	37.20	1.09	15,014.48	**375 × 4**
400	3	50	25	50	16.450	16.45	-2.2	3,228.25	161.41	29.35	.48	13,538.91	**400 × 3**
400	4	50	25	50	21.840	21.84	-2.4	4,249.32	212.47	37.28	1.14	16,966.89	**400 × 4**
200	2	80	20	50	6.249	8.03	5.6	492.24	49.22	57.38	.10	5,810.19	**200 × 2**
200	2.5	80	20	50	7.811	10.03	5.4	611.11	61.11	70.50	.20	7,103.91	**200 × 2.5**
200	3	80	20	50	9.373	12.01	5.2	727.32	72.73	83.02	.35	8,325.73	**200 × 3**
225	2	80	20	50	6.641	8.52	5.3	648.87	57.68	57.53	.11	7,546.59	**225 × 2**
225	2.5	80	20	50	8.301	10.64	5.1	806.16	71.66	70.67	.21	9,234.82	**225 × 2.5**
225	3	80	20	50	9.962	12.75	4.9	960.17	85.35	83.21	.37	10,832.36	**225 × 3**
250	2	80	20	50	7.034	9.01	5.0	832.11	66.57	57.66	.12	9,490.67	**250 × 2**
250	2.5	80	20	50	8.792	11.26	4.8	1,034.47	82.76	70.82	.23	11,620.37	**250 × 2.5**
250	3	80	20	50	10.550	13.49	4.6	1,232.86	98.63	83.38	.39	13,638.25	**250 × 3**
275	2	80	20	50	7.426	9.50	4.7	1,043.51	75.89	57.77	.12	11,635.91	**275 × 2**
275	2.5	80	20	50	9.283	11.87	4.5	1,297.96	94.40	70.96	.24	14,252.48	**275 × 2.5**
275	3	80	20	50	11.139	14.23	4.4	1,547.70	112.56	83.54	.42	16,733.81	**275 × 3**
300	2	80	20	50	7.819	9.99	4.5	1,284.59	85.64	57.88	.13	13,978.21	**300 × 2**
300	2.5	80	20	50	9.773	12.49	4.3	1,598.54	106.57	71.08	.25	17,126.12	**300 × 2.5**
300	3	80	20	50	11.728	14.97	4.2	1,906.98	127.13	83.68	.44	20,113.09	**300 × 3**
300	4	80	20	50	15.355	19.86	3.8	2,507.46	167.16	107.13	1.04	25,621.82	**300 × 4**
325	3	80	20	50	12.317	15.71	4.0	2,313.03	142.34	83.81	.46	23,772.19	**325 × 3**
325	4	80	20	50	16.140	20.85	3.6	3,043.82	187.31	107.28	1.09	30,294.26	**325 × 4**
350	3	80	20	50	12.905	16.45	3.8	2,768.17	158.18	83.92	.48	27,708.47	**350 × 3**
350	4	80	20	50	16.925	21.84	3.5	3,645.34	208.31	107.42	1.14	35,319.84	**350 × 4**
375	3	80	20	50	13.494	17.19	3.6	3,274.69	174.65	84.03	.50	31,920.11	**375 × 3**
375	4	80	20	50	14.710	22.83	3.3	4,315.12	230.14	107.55	1.19	40,696.21	**375 × 4**
400	3	80	20	50	14.083	17.93	3.5	3,834.92	191.75	84.13	.52	36,405.79	**400 × 3**
400	4	80	20	50	18.495	23.82	3.2	5,056.25	252.81	107.66	1.25	46,421.67	**400 × 4**
						[mm²] × 10^2		[mm⁴] × 10^4	[mm³] × 10^3	[mm⁴] × 10^4	[mm⁴] × 10^4	[mm⁶] × 10^6	

- **H** *Total profile height*
- **e** *Profile thickness*
- **b** *Flange width*
- **c** *Tab width*
- **d** *Profile track*
- **p** *Profile weight per linear metre*
- **A** *Profile crude section*
- Y_G *Position of the centre of gravity, G, with respect to the web midpoint*
- I_y *Crude section moment of inertia with respect to the principal y-y axis*
- W_y *Crude section resistant module with respect to the y-y axis*
- I_z *Crude section moment of inertia with respect to the principal z-z axis*
- I_t *Crude section resistant module with respect to the z-z axis*
- I_w *Crude section moment of inertia in torsion*

Proof strength used 250 N/mm²

REFERENCE	EUROCODE CHARACTERISTICS $A_{eff.}$ [cm²]	$I_{eff.y}$ [cm⁴]	$W_{eff.y}$ [cm³]
200 × 2	7.05	388.04	38.59
200 × 2.5	8.80	481.89	48.19
200 × 3	10.53	572.71	57.27
225 × 2	7.42	518.49	46.09
225 × 2.5	9.41	643.34	57.19
225 × 3	11.27	765.24	68.02
250 × 2	7.54	670.38	53.57
250 × 2.5	9.78	834.21	66.74
250 × 3	12.01	992.99	79.44
275 × 2	7.61	846.79	61.45
275 × 2.5	9.96	1,056.40	76.83
275 × 3	12.33	1,258.25	91.51
300 × 2	7.65	1,049.22	69.73
300 × 2.5	10.08	1,311.86	87.46
300 × 3	12.54	1,563.34	104.22
300 × 4	17.64	2,051.23	136.75
325 × 3	12.69	1,910.57	117.57
325 × 4	18.00	2,509.19	154.41
350 × 3	12.80	2,302.26	131.56
350 × 4	18.27	3,026.13	172.92
375 × 3	12.89	2,740.71	146.17
375 × 4	18.49	3,605.14	192.27
400 × 3	12.97	3,228.25	161.41
400 × 4	18.66	4,249.32	212.47
200 × 2	7.32	457.79	43.80
200 × 2.5	9.48	585.47	57.03
200 × 3	11.56	706.34	69.37
225 × 2	7.66	602.65	51.30
225 × 2.5	10.05	770.58	66.67
225 × 3	12.24	930.32	81.13
250 × 2	7.76	771.83	59.14
250 × 2.5	10.38	986.94	76.81
250 × 3	12.94	1,192.18	93.51
275 × 2	7.81	966.94	67.37
275 × 2.5	10.51	1,236.37	87.44
275 × 3	13.22	1,494.12	106.47
300 × 2	7.84	1,189.41	76.00
300 × 2.5	10.59	1,520.67	98.57
300 × 3	13.39	1,838.33	120.04
300 × 4	19.19	2,460.97	162.32
325 × 3	13.50	2227.03	134.19
325 × 4	19.50	2983.28	181.53
350 × 3	13.57	2,662.43	148.93
350 × 4	19.73	3,568.52	201.54
375 × 3	13.63	3,146.75	164.27
375 × 4	19.90	4,219.68	222.34
400 × 3	13.66	3,682.22	180.19
400 × 4	20.03	4,939.75	243.93
	[mm²] × 10²	[mm⁴] × 10⁴	[mm³] × 10³



Manufacturing possibilities
H: 200 to 450 mm
e: 1.5 to 4 mm
b standard: 50 or 80 mm
b special: 60/70/75/85

$A_{eff.}$ *Profile cross section under uniform compression*

$I_{eff.y}$ *Cross section moment of inertia under bending with respect to the y-y axis*

$W_{eff.y}$ *Cross section resistant module under bending with respect to the y-y axis*

* ***For further effective mechanical characteristics, please contact*** **BRAUSA.**

Parametric verification of the purlins used in the roof and facade enclosures. Analysis in line with European standard Eurocode-3 Part 1-3 EN 1993-1-3 "Design of steel structures. Supplementary rules for cold formed thin gauge members and sheeting" (version 2006).