

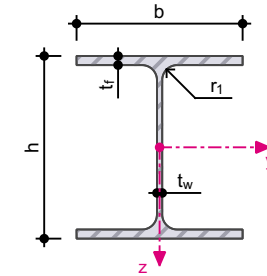


HEA

Wide Flange Beams

HEA

- Euronorm 53-62; DIN 1025-3
- SZS



	Geometry								Sectional Area	Bending		
Section	h [mm]	b [mm]	t _w [mm]	t _f [mm]	h _i [mm]	r ₁ [mm]	d [mm]	k [mm]	A [cm ²]	I _y [cm ⁴]	I _z [cm ⁴]	I _p [cm ⁴]
HEA 100	96.0	100.0	5.0	8.0	80.0	12.0	56.0	20.0	21.20	349.00	134.00	483.00
HEA 120	114.0	120.0	5.0	8.0	98.0	12.0	74.0	20.0	25.30	606.00	231.00	837.00
HEA 140	133.0	140.0	5.5	8.5	116.0	12.0	92.0	21.0	31.40	1030.00	389.00	1419.00
HEA 160	152.0	160.0	6.0	9.0	134.0	15.0	104.0	24.0	38.80	1670.00	616.00	2286.00
HEA 180	171.0	180.0	6.0	9.5	152.0	15.0	122.0	25.0	45.30	2510.00	925.00	3435.00
HEA 200	190.0	200.0	6.5	10.0	170.0	18.0	134.0	28.0	53.80	3690.00	1340.00	5030.00
HEA 220	210.0	220.0	7.0	11.0	188.0	18.0	152.0	29.0	64.30	5410.00	1950.00	7360.00
HEA 240	230.0	240.0	7.5	12.0	206.0	21.0	164.0	33.0	76.80	7760.00	2770.00	10530.00
HEA 260	250.0	260.0	7.5	12.5	225.0	24.0	177.0	37.0	86.80	10450.00	3670.00	14120.00

HEA 280	270.0	280.0	8.0	13.0	244.0	24.0	196.0	37.0	97.30	13670.00	4760.00	18430.00
HEA 300	290.0	300.0	8.5	14.0	262.0	27.0	208.0	41.0	113.00	18260.00	6310.00	24570.00
HEA 320	310.0	300.0	9.0	15.5	279.0	27.0	225.0	43.0	124.00	22930.00	6990.00	29920.00
HEA 340	330.0	300.0	9.5	16.5	297.0	27.0	243.0	44.0	133.00	27690.00	7440.00	35130.00
HEA 360	350.0	300.0	10.0	17.5	315.0	27.0	261.0	45.0	143.00	33090.00	7890.00	40980.00
HEA 400	390.0	300.0	11.0	19.0	352.0	27.0	298.0	46.0	159.00	45070.00	8560.00	53630.00
HEA 450	440.0	300.0	11.5	21.0	398.0	27.0	344.0	48.0	178.00	63720.00	9470.00	73190.00
HEA 500	490.0	300.0	12.0	23.0	444.0	27.0	390.0	50.0	198.00	86970.00	10370.00	97340.00
HEA 550	540.0	300.0	12.5	24.0	492.0	27.0	438.0	51.0	212.00	111900.00	10820.00	122720.00
HEA 600	590.0	300.0	13.0	25.0	540.0	27.0	486.0	52.0	226.00	141200.00	11270.00	152470.00
HEA 650	640.0	300.0	13.5	26.0	588.0	27.0	534.0	53.0	242.00	175200.00	11720.00	186920.00
HEA 700	690.0	300.0	14.5	27.0	636.0	27.0	582.0	54.0	260.00	215300.00	12180.00	227480.00
HEA 800	790.0	300.0	15.0	28.0	734.0	30.0	674.0	58.0	286.00	303400.00	12640.00	316040.00
HEA 900	890.0	300.0	16.0	30.0	830.0	30.0	770.0	60.0	321.00	422100.00	13550.00	435650.00
HEA 1000	990.0	300.0	16.5	31.0	928.0	30.0	868.0	61.0	347.00	553800.00	14000.00	567800.00

	Bending							Shear		Torsion		
Section	i _y [mm]	i _z [mm]	i _p [mm]	max S _y [cm ³]	max S _z [cm ³]	W _y [cm ³]	W _z [cm ³]	A _y [cm ²]	A _z [cm ²]	I _t [cm ⁴]	I _{t,s} [cm ⁴]	W _t [cm ³]
HEA 100	40.6	25.1	47.7	41.50	10.07	72.80	26.80	13.29	4.46	5.26	258.40	6.58

HEA 120	48.9	30.2	57.5	59.50	14.47	106.00	38.50	15.94	5.28	6.02	450.03	7.53
HEA 140	57.3	35.2	67.2	86.50	20.90	155.00	55.60	19.66	6.65	8.16	769.17	9.60
HEA 160	65.7	39.8	76.8	123.00	28.95	220.00	76.90	24.18	8.41	12.30	1228.55	13.67
HEA 180	74.5	45.2	87.1	162.00	38.62	294.00	103.00	28.88	9.52	14.90	1860.99	15.68
HEA 200	82.8	49.8	96.6	215.00	50.26	389.00	134.00	34.37	11.55	21.10	2703.90	21.10
HEA 220	91.7	55.1	107.0	284.00	66.80	515.00	178.00	40.72	13.67	28.60	3999.64	26.00
HEA 240	101.0	60.0	117.5	372.00	86.80	675.00	231.00	49.02	16.18	41.70	5711.60	34.75
HEA 260	110.0	65.0	127.8	460.00	106.22	836.00	282.00	55.75	17.85	52.60	7650.79	42.08
HEA 280	119.0	70.0	138.1	555.00	128.00	1010.00	340.00	62.04	20.39	62.40	10032.74	48.00
HEA 300	127.0	74.9	147.4	690.00	158.35	1260.00	421.00	71.96	23.44	85.60	13355.12	61.14
HEA 320	136.0	74.9	155.3	815.00	175.19	1480.00	466.00	79.07	26.57	108.00	16820.26	69.68
HEA 340	144.0	74.6	162.2	925.00	186.42	1680.00	496.00	83.73	29.83	128.00	20291.87	77.58
HEA 360	152.0	74.3	169.2	1040.00	197.65	1890.00	526.00	88.37	33.29	149.00	24233.03	85.14
HEA 400	168.0	73.4	183.3	1280.00	214.50	2310.00	571.00	94.06	40.67	190.00	32735.22	100.00
HEA 450	189.0	72.9	202.6	1610.00	236.90	2900.00	631.00	103.24	48.20	245.00	46115.04	116.67
HEA 500	210.0	72.4	222.1	1970.00	259.30	3550.00	691.00	112.14	56.21	310.00	62789.91	134.78
HEA 550	230.0	71.5	240.9	2310.00	270.50	4150.00	721.00	116.59	64.60	353.00	79994.05	147.08
HEA 600	250.0	70.5	259.8	2680.00	281.71	4790.00	751.00	121.02	73.53	399.00	99897.28	159.60
HEA 650	269.0	69.7	277.9	3070.00	292.91	5470.00	782.00	125.43	82.95	450.00	122697.58	173.08
HEA 700	288.0	68.4	296.0	3520.00	304.13	6240.00	812.00	130.09	95.92	515.00	148570.70	190.74
HEA 800	326.0	66.5	332.7	4350.00	315.64	7680.00	843.00	135.22	114.21	599.00	203512.36	213.93

HEA 900	363.0	65.0	368.8	5400.00	338.01	9480.00	903.00	144.10	137.34	739.00	277761.44	246.33
HEA 1000	400.0	63.5	405.0	6400.00	349.19	11190.00	934.00	148.42	157.54	825.00	356893.54	266.13

	Warping					Plasticity						
Section	max ω [cm ²]	I_{ω} [cm ⁶]	i_{ω} [mm]	W_{ω} [cm ⁴]	max S_{ω} [cm ⁴]	$W_{pl,y}$ [cm ³]	$W_{pl,z}$ [cm ³]	$W_{pl,\omega}$ [cm ⁴]	$\alpha_{pl,y}$ [--]	$\alpha_{pl,z}$ [--]	$\alpha_{pl,\omega}$ [--]	$A_{pl,y}$ [cm ²]
HEA 100	22.00	2581.00	23.1	117.32	44.00	83.00	41.20	176.00	1.140	1.537	1.500	16.00
HEA 120	31.80	6472.00	27.8	203.52	76.32	119.00	58.90	305.28	1.123	1.530	1.500	19.20
HEA 140	43.58	15060.00	32.6	345.61	129.64	173.00	84.70	518.54	1.116	1.523	1.500	23.80
HEA 160	57.20	31410.00	37.1	549.13	205.92	246.00	118.00	823.68	1.118	1.534	1.500	28.80
HEA 180	72.67	60210.00	41.9	828.48	310.69	324.00	157.00	1242.74	1.102	1.524	1.500	34.20
HEA 200	90.00	108000.00	46.3	1200.00	450.00	430.00	204.00	1800.00	1.105	1.522	1.500	40.00
HEA 220	109.45	193300.00	51.2	1766.10	662.17	568.00	271.00	2648.69	1.103	1.522	1.500	48.40
HEA 240	130.80	328500.00	55.9	2511.47	941.76	744.00	352.00	3767.04	1.102	1.524	1.500	57.60
HEA 260	154.38	516400.00	60.5	3345.10	1254.30	920.00	430.00	5017.19	1.100	1.525	1.500	65.00
HEA 280	179.90	785400.00	65.3	4365.76	1637.09	1110.00	518.00	6548.36	1.099	1.524	1.500	72.80
HEA 300	207.00	1200000.00	69.9	5797.10	2173.50	1380.00	642.00	8694.00	1.095	1.525	1.500	84.00
HEA 320	220.87	1512000.00	71.1	6845.50	2567.67	1630.00	710.00	10270.69	1.101	1.524	1.500	93.00
HEA 340	235.12	1824000.00	72.1	7757.58	2909.67	1850.00	756.00	11638.69	1.101	1.524	1.500	99.00
HEA 360	249.38	2177000.00	72.9	8729.82	3273.05	2080.00	803.00	13092.19	1.101	1.527	1.500	105.00
HEA 400	278.25	2942000.00	74.1	10573.23	3965.06	2560.00	873.00	15860.25	1.108	1.529	1.500	114.00
HEA 450	314.25	4146000.00	75.3	13193.32	4949.44	3220.00	966.00	19797.75	1.110	1.531	1.500	126.00
HEA 500	350.25	5643000.00	76.1	16111.35	6041.81	3940.00	1060.00	24167.25	1.110	1.534	1.500	138.00

HEA 550	387.00	7189000.00	76.5	18576.23	6966.00	4620.00	1110.00	27864.00	1.113	1.540	1.500	144.00
HEA 600	423.75	8978000.00	76.7	21187.02	7945.31	5360.00	1160.00	31781.25	1.119	1.545	1.500	150.00
HEA 650	460.50	11027000.00	76.8	23945.71	8979.75	6140.00	1200.00	35919.00	1.122	1.535	1.500	156.00
HEA 700	497.25	13352000.00	76.6	26851.68	10069.31	7040.00	1260.00	40277.25	1.128	1.552	1.500	162.00
HEA 800	571.50	18290000.00	76.1	32003.50	12001.50	8700.00	1310.00	48006.00	1.133	1.554	1.500	168.00
HEA 900	645.00	24962000.00	75.7	38700.78	14512.50	10800.00	1420.00	58050.00	1.139	1.573	1.500	180.00
HEA 1000	719.25	32074000.00	75.2	44593.67	16722.56	12800.00	1470.00	66890.25	1.144	1.574	1.500	186.00

	Plasticity						Other					
Section	A _{pl,z} [cm ²]	N _{pl} [kN]	V _{pl,y} [kN]	V _{pl,z} [kN]	M _{pl,y} [kNm]	M _{pl,z} [kNm]	G [kg/m]	A _m [m ² /m]	V [cm ³ /m]	A _m /V [1/m]	A _w [cm ²]	w [mm]
HEA 100	4.40	499.219	217.084	59.698	19.51	9.67	16.6	0.561	2120.00	264.623	4.00	56.0
HEA 120	5.30	595.569	260.500	71.909	28.09	13.83	19.9	0.677	2530.00	267.589	4.90	66.0
HEA 140	6.85	738.449	322.912	92.905	40.78	19.94	24.6	0.794	3140.00	252.866	6.38	76.0
HEA 160	8.58	911.395	390.751	116.411	57.63	27.65	30.5	0.906	3880.00	233.505	8.04	86.0
HEA 180	9.69	1063.675	464.016	131.471	76.36	36.78	35.6	1.020	4530.00	225.166	9.12	100.0
HEA 200	11.70	1265.418	542.709	158.742	100.96	47.90	42.2	1.140	5380.00	211.896	11.05	110.0
HEA 220	13.93	1512.403	656.678	188.998	133.62	63.59	50.5	1.260	6430.00	195.956	13.16	120.0
HEA 240	16.35	1806.159	781.501	221.832	175.04	82.65	60.3	1.370	7680.00	178.385	15.45	94.0
HEA 260	17.81	2040.939	881.903	241.675	216.22	101.10	68.1	1.480	8680.00	170.507	16.88	100.0
HEA 280	20.56	2286.397	987.731	278.953	261.45	121.77	76.4	1.600	9730.00	164.440	19.52	110.0
HEA 300	23.46	2645.267	1139.689	318.299	325.17	150.69	88.7	1.720	11300.00	152.212	22.27	120.0
HEA 320	26.51	2923.507	1261.799	359.613	382.71	166.80	97.3	1.760	12400.00	141.935	25.11	120.0
HEA 340	29.78	3137.475	1343.205	404.081	434.98	177.66	104.4	1.790	13300.00	134.586	28.21	120.0
HEA 360	33.25	3355.672	1424.612	451.127	490.92	188.55	112.3	1.830	14300.00	127.972	31.50	120.0
HEA 400	40.81	3736.842	1546.721	553.699	602.17	205.14	124.8	1.910	15900.00	120.126	38.72	120.0
HEA 450	48.18	4184.517	1709.534	653.761	755.89	226.91	139.7	2.010	17800.00	112.921	45.77	120.0
HEA 500	56.04	4643.002	1872.347	760.336	928.16	248.76	155.4	2.110	19800.00	106.566	53.28	120.0

HEA 550	64.50	4977.172	1953.753	875.119	1086.33	260.14	166.4	2.210	21200.00	104.245	61.50	120.0
HEA 600	73.45	5322.622	2035.160	996.550	1257.57	271.59	177.4	2.310	22600.00	102.212	70.20	120.0
HEA 650	82.89	5679.352	2116.566	1124.629	1442.27	283.14	190.0	2.410	24200.00	99.587	79.38	120.0
HEA 700	96.13	6122.092	2197.972	1304.334	1652.74	295.35	204.1	2.500	26000.00	96.154	92.22	126.0
HEA 800	114.30	6717.970	2279.379	1550.792	2044.76	308.40	224.5	2.700	28600.00	94.406	110.10	130.0
HEA 900	137.60	7533.420	2442.192	1866.920	2541.03	332.42	252.0	2.900	32100.00	90.343	132.80	130.0
HEA 1000	158.24	8151.940	2523.598	2146.890	3014.21	345.40	272.4	3.100	34700.00	89.337	153.12	130.0

	Other
Section	W ₁ [mm]
HEA 100	0.0
HEA 120	0.0
HEA 140	0.0
HEA 160	0.0
HEA 180	0.0
HEA 200	0.0
HEA 220	0.0
HEA 240	35.0
HEA 260	40.0
HEA 280	45.0
HEA 300	45.0
HEA 320	45.0
HEA 340	45.0
HEA 360	45.0
HEA 400	45.0
HEA 450	45.0
HEA 500	45.0

HEA 550	45.0
HEA 600	45.0
HEA 650	45.0
HEA 700	45.0
HEA 800	40.0
HEA 900	40.0
HEA 1000	40.0

