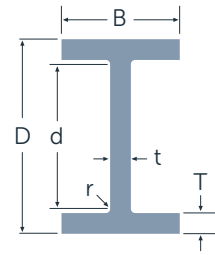
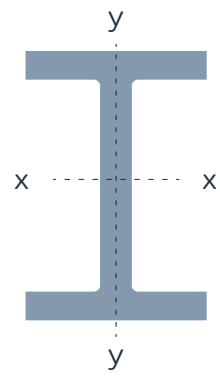


British Steel, the only UK manufacturer of structural sections, is BES 6001 certified, guaranteeing commitment to responsibly sourced materials. Our structural sections are CE marked and tested to the highest standards, providing quality and assurance for the UK construction market.



#### Universal Beams (UB) sizes

Designation  Serial size	Mass per metre  kg/m	Depth of section  D mm	Width of section  B mm	Thickness		Root radius  r mm	Depth between fillets  d mm	Ratios for local buckling		Second moment of area  I		Radius of gyration  i	
				of web  t mm	of flange  T mm			Flange  B/2T	Web  d/t	Axis  x-x cm <sup>4</sup>	Axis  y-y cm <sup>4</sup>	Axis  x-x cm	Axis  y-y cm
127 x 76 x 13	13.0	127.0	76.0	4.0	7.6	7.6	96.6	5.00	24.2	473	56	5.35	1.84
152 x 89 x 16	16.0	152.4	88.7	4.5	7.7	7.6	121.8	5.76	27.1	834	90	6.41	2.10
178 x 102 x 19	19.0	177.8	101.2	4.8	7.9	7.6	146.8	6.41	30.6	1356	137	7.48	2.37
203 x 102 x 23	23.1	203.2	101.8	5.4	9.3	7.6	169.4	5.47	31.4	2105	164	8.46	2.36
203 x 133 x 25	25.1	203.2	133.2	5.7	7.8	7.6	172.4	8.54	30.2	2340	308	8.56	3.10
203 x 133 x 30	30.0	206.8	133.9	6.4	9.6	7.6	172.4	6.97	26.9	2896	385	8.71	3.17
254 x 102 x 22	22.0	254.0	101.6	5.7	6.8	7.6	225.2	7.47	39.5	2841	119	10.10	2.06
254 x 102 x 25	25.2	257.2	101.9	6.0	8.4	7.6	225.2	6.07	37.5	3415	149	10.30	2.15
254 x 102 x 28	28.3	260.4	102.2	6.3	10.0	7.6	225.2	5.11	35.7	4005	179	10.50	2.22
254 x 146 x 31	31.1	251.4	146.1	6.0	8.6	7.6	219.0	8.49	36.5	4413	448	10.50	3.36
254 x 146 x 37	37.0	256.0	146.4	6.3	10.9	7.6	219.0	6.72	34.8	5537	571	10.80	3.48
254 x 146 x 43	43.0	259.6	147.3	7.2	12.7	7.6	219.0	5.80	30.4	6544	677	10.90	3.52
305 x 102 x 25	24.8	305.1	101.6	5.8	7.0	7.6	275.9	7.26	47.6	4455	123	11.90	1.97
305 x 102 x 28	28.2	308.7	101.8	6.0	8.8	7.6	275.9	5.78	46.0	5366	155	12.20	2.08
305 x 102 x 33	32.8	312.7	102.4	6.6	10.8	7.6	275.9	4.74	41.8	6501	194	12.50	2.15
305 x 127 x 37	37.0	304.4	123.4	7.1	10.7	8.9	265.2	5.77	37.4	7171	336	12.30	2.67
305 x 127 x 42	41.9	307.2	124.3	8.0	12.1	8.9	265.2	5.14	33.2	8196	389	12.40	2.70
305 x 127 x 48	48.1	311.0	125.3	9.0	14.0	8.9	265.2	4.48	29.5	9575	461	12.50	2.74
305 x 165 x 40	40.3	303.4	165.0	6.0	10.2	8.9	265.2	8.09	44.2	8503	764	12.90	3.86
305 x 165 x 46	46.1	306.6	165.7	6.7	11.8	8.9	265.2	7.02	39.6	9899	896	13.00	3.90
305 x 165 x 54	54.0	310.4	166.9	7.9	13.7	8.9	265.2	6.09	33.6	11696	1063	13.00	3.93
356 x 171 x 45	45.0	351.4	171.1	7.0	9.7	12.7	306.6	8.82	43.8	12195	811	14.50	3.75
356 x 171 x 51	51.0	355.0	171.5	7.4	11.5	12.7	306.6	7.46	41.4	14265	969	14.80	3.85
356 x 171 x 57	57.0	358.0	172.2	8.1	13.0	12.7	306.6	6.62	37.9	16168	1109	14.90	3.90
356 x 171 x 67	67.1	363.4	173.2	9.1	15.7	12.7	306.6	5.52	33.7	19592	1362	15.10	3.98
406 x 140 x 39	39.0	398.0	141.8	6.4	8.6	12.7	355.4	8.24	55.5	12679	410	15.90	2.86
406 x 140 x 46	46.0	403.2	142.2	6.8	11.2	12.7	355.4	6.35	52.3	15856	538	16.40	3.02
406 x 140 x 53	53.3	406.6	143.3	7.9	12.9	12.7	355.4	5.55	45.0	18454	635	16.40	3.05
406 x 178 x 54	54.1	402.6	177.7	7.7	10.9	12.7	355.4	8.15	46.2	18893	1022	16.50	3.84
406 x 178 x 60	60.1	406.4	177.9	7.9	12.8	12.7	355.4	6.95	45.0	21767	1203	16.80	3.95
406 x 178 x 67	67.1	409.4	178.8	8.8	14.3	12.7	355.4	6.25	40.4	24502	1365	16.90	3.98
406 x 178 x 74	74.2	412.8	179.5	9.5	16.0	12.7	355.4	5.61	37.4	27481	1546	17.00	4.03
406 x 178 x 85	85.3	417.2	181.9	10.9	18.2	12.7	355.4	5.00	32.6	31874	1831	17.10	4.10
457 x 152 x 52	52.3	449.8	152.4	7.6	10.9	12.7	402.6	6.99	53.0	21586	645	17.90	3.10
457 x 152 x 60	59.8	454.6	152.9	8.1	13.3	12.7	402.6	5.75	49.7	25717	795	18.30	3.22
457 x 152 x 67	67.2	458.0	153.8	9.0	15.0	12.7	402.6	5.13	44.7	29144	913	18.40	3.26
457 x 152 x 74	74.2	462.0	154.4	9.6	17.0	12.7	402.6	4.54	41.9	32891	1047	18.60	3.32
457 x 152 x 82	82.1	465.8	155.3	10.5	18.9	12.7	402.6	4.11	38.3	36806	1185	18.70	3.36
457 x 191 x 67	67.1	453.4	189.9	8.5	12.7	12.7	402.6	7.48	47.4	29597	1452	18.60	4.11
457 x 191 x 74	74.3	457.0	190.4	9.0	14.5	12.7	402.6	6.57	44.7	33536	1672	18.80	4.19
457 x 191 x 82	82.0	460.0	191.3	9.9	16.0	12.7	402.6	5.98	40.7	37268	1871	18.80	4.22
457 x 191 x 89	89.3	463.4	191.9	10.5	17.7	12.7	402.6	5.42	38.3	41232	2090	19.00	4.28

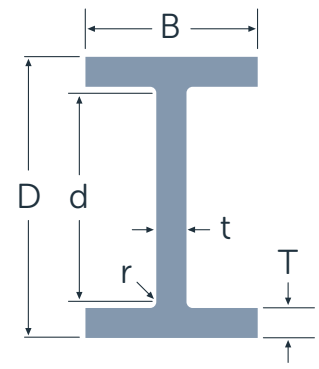


## Universal Beams (UB) sizes

Elastic modulus		Plastic modulus		Buckling parameter	Torsional index	Warping constant	Torsional constant	Area of section	Designation
Axis	Axis	Axis	Axis						
x-x	y-y	x-x	y-y	u	x	H	J	cm <sup>2</sup>	Serial size
cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>			dm <sup>6</sup>	cm <sup>4</sup>		
75	15	84	23	0.895	16.3	0.0020	2.85	16.5	127 x 76 x 13
109	20	123	31	0.890	19.6	0.0047	3.56	20.3	152 x 89 x 16
153	27	171	42	0.888	22.6	0.0099	4.41	24.3	178 x 102 x 19
207	32	234	50	0.888	22.5	0.0154	7.02	29.4	203 x 102 x 23
230	46	258	71	0.877	25.6	0.0294	5.96	32.0	203 x 133 x 25
280	57	314	88	0.881	21.5	0.0374	10.30	38.2	203 x 133 x 30
224	23	259	37	0.856	36.4	0.0182	4.15	28.0	254 x 102 x 22
266	29	306	46	0.866	31.5	0.0230	6.42	32.0	254 x 102 x 25
308	35	353	55	0.874	27.5	0.0280	9.57	36.1	254 x 102 x 28
351	61	393	94	0.880	29.6	0.0660	8.55	39.7	254 x 146 x 31
433	78	483	119	0.890	24.3	0.0857	15.30	47.2	254 x 146 x 37
504	92	566	141	0.891	21.2	0.1030	23.90	54.8	254 x 146 x 43
292	24	342	39	0.846	43.4	0.0273	4.77	31.6	305 x 102 x 25
348	31	403	48	0.859	37.4	0.0349	7.40	35.9	305 x 102 x 28
416	38	481	60	0.866	31.6	0.0442	12.20	41.8	305 x 102 x 33
471	54	539	85	0.872	29.7	0.0725	14.80	47.2	305 x 127 x 37
534	63	614	98	0.872	26.5	0.0846	21.10	53.4	305 x 127 x 42
616	74	711	116	0.873	23.3	0.1020	31.80	61.2	305 x 127 x 48
560	93	623	142	0.889	31.0	0.1640	14.70	51.3	305 x 165 x 40
646	108	720	166	0.891	27.1	0.1950	22.20	58.7	305 x 165 x 46
754	127	846	196	0.889	23.6	0.2340	34.80	68.8	305 x 165 x 54
694	95	783	147	0.875	35.8	0.2370	16.90	57.8	356 x 171 x 45
804	113	904	174	0.882	31.4	0.2860	25.10	65.4	356 x 171 x 51
903	129	1018	199	0.883	28.3	0.3300	34.90	73.0	356 x 171 x 57
1078	157	1219	243	0.887	24.0	0.4120	57.70	86.0	356 x 171 x 67
637	58	733	91	0.859	45.9	0.1550	11.60	50.1	406 x 140 x 39
787	76	897	118	0.872	38.0	0.2070	20.20	59.1	406 x 140 x 46
908	89	1040	139	0.871	33.4	0.2460	30.40	68.4	406 x 140 x 53
939	115	1064	179	0.872	37.4	0.3920	24.30	69.4	406 x 178 x 54
1071	135	1209	209	0.880	33.1	0.4660	34.80	77.0	406 x 178 x 60
1197	153	1355	237	0.880	30.0	0.5330	47.90	86.0	406 x 178 x 67
1331	172	1510	267	0.882	27.2	0.6080	64.90	95.0	406 x 178 x 74
1528	201	1742	313	0.882	24.1	0.7290	95.70	109.0	406 x 178 x 85
960	85	1106	134	0.860	42.8	0.3110	22.60	67.1	457 x 152 x 52
1131	104	1298	163	0.869	36.8	0.3870	35.40	76.7	457 x 152 x 60
1273	119	1463	187	0.869	33.0	0.4480	49.60	86.0	457 x 152 x 67
1424	136	1637	213	0.873	29.7	0.5180	68.20	95.0	457 x 152 x 74
1580	153	1822	241	0.874	27.0	0.5920	92.00	105.0	457 x 152 x 82
1306	153	1481	238	0.873	37.2	0.7050	38.70	86.0	457 x 191 x 67
1468	176	1663	272	0.878	33.4	0.8180	53.60	95.1	457 x 191 x 74
1620	196	1842	304	0.878	30.5	0.9220	71.40	105.0	457 x 191 x 82
1780	218	2024	339	0.880	27.9	1.0400	93.30	114.0	457 x 191 x 89

Dimensions and properties to BS EN 10365:2017

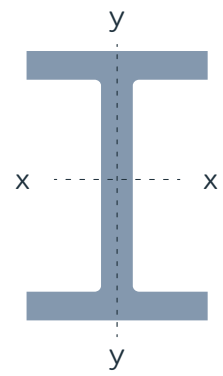




### Universal Beams (UB) sizes

Designation  Serial size	Mass per metre  kg/m	Depth of section  D mm	Width of section  B mm	Thickness		Root radius  r mm	Depth between fillets  d mm	Ratios for local buckling		Second moment of area  I		Radius of gyration  i	
				of web  t mm	of flange  T mm			Flange  B/2T	Web  d/t	Axis	Axis	Axis	Axis
								cm <sup>4</sup>	cm <sup>4</sup>	cm	cm		
457 x 191 x 98	98.3	467.2	192.8	11.4	19.6	12.7	402.6	4.92	35.3	45944	2348	19.1	4.32
457 x 191 x 106	105.8	469.2	194.0	12.6	20.6	12.7	402.6	4.71	32.0	49090	2515	19.1	4.31
457 x 191 x 133	133.3	480.6	196.7	15.3	26.3	12.7	402.6	3.74	26.3	64058	3350	19.4	4.43
457 x 191 x 161	161.4	492.0	199.4	18.0	32.0	12.7	402.6	3.12	22.4	79996	4251	19.7	4.54
533 x 165 x 66	65.7	524.7	165.1	8.9	11.4	12.7	476.5	7.24	53.5	35028	859	20.5	3.20
533 x 165 x 74	74.7	529.1	165.9	9.7	13.6	12.7	476.5	6.10	49.1	41058	1040	20.8	3.30
533 x 165 x 85	84.8	534.9	166.5	10.3	16.5	12.7	476.5	5.05	46.3	48631	1275	21.2	3.44
533 x 210 x 82	82.2	528.3	208.8	9.6	13.2	12.7	476.5	7.91	49.6	47539	2007	21.3	4.38
533 x 210 x 92	92.1	533.1	209.3	10.1	15.6	12.7	476.5	6.71	47.2	55227	2389	21.7	4.51
533 x 210 x 101	101.0	536.7	210.0	10.8	17.4	12.7	476.5	6.03	44.1	61519	2692	21.9	4.57
533 x 210 x 109	109.0	539.5	210.8	11.6	18.8	12.7	476.5	5.61	41.1	66822	2943	21.9	4.60
533 x 210 x 122	122.0	544.5	211.9	12.7	21.3	12.7	476.5	4.97	37.5	76043	3388	22.1	4.67
533 x 210 x 138	138.3	549.1	213.9	14.7	23.6	12.7	476.5	4.53	32.4	86088	3864	22.1	4.68
533 x 312 x 150	150.6	542.5	312.0	12.7	20.3	12.7	476.5	7.68	37.5	100633	10285	22.9	7.32
533 x 312 x 182	181.5	550.7	314.5	15.2	24.4	12.7	476.5	6.44	31.3	123222	12667	23.1	7.40
533 x 312 x 219	218.7	560.3	317.4	18.3	29.2	12.7	476.5	5.43	26.0	150976	15589	23.3	7.48
533 x 312 x 272	273.2	577.1	320.2	21.1	37.6	12.7	476.5	4.26	22.6	198578	20615	23.9	7.70
610 x 178 x 82	81.8	598.6	177.9	10.0	12.8	20.0	533.0	6.95	53.3	57487	1209	23.3	3.37
610 x 178 x 92	92.2	603.0	178.8	10.9	15.0	20.0	533.0	5.96	48.9	66195	1439	23.5	3.47
610 x 178 x 100	100.3	607.4	179.2	11.3	17.2	20.0	533.0	5.21	47.2	74145	1661	23.9	3.58
610 x 229 x 101	101.2	602.6	227.6	10.5	14.8	20.0	533.0	7.69	50.8	77398	2917	24.3	4.72
610 x 229 x 113	113.0	607.6	228.2	11.1	17.3	20.0	533.0	6.60	48.0	88936	3437	24.7	4.85
610 x 229 x 125	125.1	612.2	229.0	11.9	19.6	20.0	533.0	5.84	44.8	100228	3935	24.9	4.94
610 x 229 x 140	139.9	617.2	230.2	13.1	22.1	20.0	533.0	5.21	40.7	113395	4509	25.1	5.00
610 x 305 x 149	149.2	612.4	304.8	11.8	19.7	20.0	533.0	7.74	45.2	126738	9309	25.8	6.98
610 x 305 x 179	179.0	620.2	307.1	14.1	23.6	20.0	533.0	6.51	37.8	153886	11410	25.9	7.06
610 x 305 x 238	238.1	635.8	311.4	18.4	31.4	20.0	533.0	4.96	29.0	210333	15839	26.3	7.21
686 x 254 x 125	125.2	677.9	253.0	11.7	16.2	20.0	605.5	7.81	51.8	119448	4385	27.2	5.22
686 x 254 x 140	140.1	683.5	253.7	12.4	19.0	20.0	605.5	6.68	48.8	137723	5186	27.7	5.37
686 x 254 x 152	152.4	687.5	254.5	13.2	21.0	20.0	605.5	6.06	45.9	151811	5786	27.9	5.44
686 x 254 x 170	170.2	692.9	255.8	14.5	23.7	20.0	605.5	5.40	41.8	171782	6633	28.1	5.51
762 x 267 x 134	133.9	750.0	264.4	12.0	15.5	20.0	679.0	8.53	56.6	152061	4790	29.8	5.28
762 x 267 x 147	146.9	754.0	265.2	12.8	17.5	20.0	679.0	7.58	53.0	169871	5457	30.0	5.38
762 x 267 x 173	173.0	762.2	266.7	14.3	21.6	20.0	679.0	6.17	47.5	206651	6852	30.5	5.56
762 x 267 x 197	196.8	769.8	268.0	15.6	25.4	20.0	679.0	5.28	43.5	241326	8177	31.0	5.70
838 x 292 x 176	175.9	834.9	291.7	14.0	18.8	20.0	757.3	7.76	54.1	247120	7800	33.2	5.89
838 x 292 x 194	193.8	840.7	292.4	14.7	21.7	20.0	757.3	6.74	51.5	280274	9068	33.6	6.05
838 x 292 x 226	226.5	850.9	293.8	16.1	26.8	20.0	757.3	5.48	47.0	340802	11361	34.3	6.27
914 x 305 x 201	200.9	903.0	303.3	15.1	20.2	19.1	824.4	7.51	54.6	325254	9423	35.7	6.07
914 x 305 x 224	224.2	910.4	304.1	15.9	23.9	19.1	824.4	6.36	51.8	376414	11236	36.3	6.27
914 x 305 x 253	253.4	918.4	305.5	17.3	27.9	19.1	824.4	5.47	47.7	436305	13301	36.8	6.42
914 x 305 x 289	289.1	926.6	307.7	19.5	32.0	19.1	824.4	4.81	42.3	504187	15597	37.0	6.51



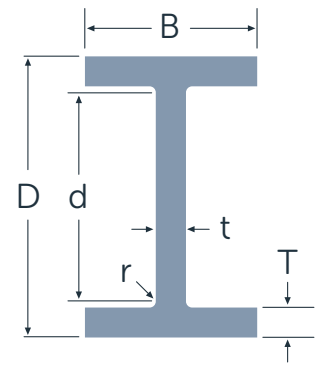


## Universal Beams (UB) sizes

Elastic modulus		Plastic modulus		Buckling parameter	Torsional index	Warping constant	Torsional constant	Area of section	Designation
Axis	Axis	Axis	Axis						
x-x	y-y	x-x	y-y	u	x	H	J	cm <sup>2</sup>	Serial size
cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>			dm <sup>6</sup>	cm <sup>4</sup>		
1967	244	2243	379	0.881	25.5	1.180	124.0	126.0	457 x 191 x 98
2093	259	2399	406	0.878	24.2	1.270	149.0	135.0	457 x 191 x 106
2666	341	3080	535	0.880	19.4	1.730	298.0	170.0	457 x 191 x 133
3252	426	3789	672	0.882	16.3	2.250	524.0	206.0	457 x 191 x 161
1335	104	1561	166	0.847	47.0	0.566	32.0	83.7	533 x 165 x 66
1552	125	1808	200	0.853	41.1	0.691	47.9	95.2	533 x 165 x 74
1818	153	2107	243	0.862	35.5	0.857	73.8	108.0	533 x 165 x 85
1800	192	2059	300	0.864	41.6	1.330	51.5	105.0	533 x 210 x 82
2072	228	2360	355	0.872	36.5	1.600	75.7	117.0	533 x 210 x 92
2292	256	2612	399	0.874	33.2	1.810	101.0	129.0	533 x 210 x 101
2477	279	2829	436	0.875	30.9	1.990	126.0	139.0	533 x 210 x 109
2793	320	3196	500	0.877	27.6	2.320	178.0	155.0	533 x 210 x 122
3136	361	3613	568	0.873	25.0	2.670	250.0	176.0	533 x 210 x 138
3710	659	4142	1009	0.885	27.8	7.010	216.0	192.0	533 x 312 x 150
4475	806	5030	1237	0.885	23.4	8.770	373.0	231.0	533 x 312 x 182
5389	982	6109	1514	0.884	19.8	11.000	642.0	279.0	533 x 312 x 219
6882	1288	7859	1985	0.890	15.9	15.000	1288.0	348.0	533 x 312 x 272
1921	136	2252	220	0.846	45.3	1.040	57.0	106.0	610 x 178 x 82
2196	161	2569	260	0.850	40.4	1.240	81.0	120.0	610 x 178 x 92
2441	185	2844	298	0.857	36.8	1.450	107.0	130.0	610 x 178 x 100
2569	256	2939	402	0.865	40.9	2.520	86.7	131.0	610 x 229 x 101
2927	301	3339	471	0.872	36.4	2.990	123.0	146.0	610 x 229 x 113
3274	344	3734	537	0.875	32.9	3.450	168.0	161.0	610 x 229 x 125
3674	392	4200	614	0.876	29.6	3.990	233.0	180.0	610 x 229 x 140
4139	611	4625	938	0.887	32.2	8.180	208.0	191.0	610 x 305 x 149
4962	743	5578	1145	0.886	27.3	10.200	351.0	229.0	610 x 305 x 179
6616	1017	7517	1575	0.886	21.1	14.500	803.0	304.0	610 x 305 x 238
3524	347	4040	544	0.863	42.6	4.800	124.0	161.0	686 x 254 x 125
4030	409	4604	640	0.869	37.7	5.720	179.0	180.0	686 x 254 x 140
4416	455	5047	712	0.872	34.7	6.430	231.0	196.0	686 x 254 x 152
4958	519	5677	813	0.873	31.2	7.430	322.0	218.0	686 x 254 x 170
4055	362	4683	571	0.855	48.7	6.460	125.0	172.0	762 x 267 x 134
4506	412	5195	648	0.859	44.4	7.400	166.0	188.0	762 x 267 x 147
5422	514	6237	809	0.865	37.5	9.400	277.0	221.0	762 x 267 x 173
6270	610	7206	960	0.869	32.8	11.300	417.0	252.0	762 x 267 x 197
5920	535	6836	843	0.857	46.0	13.000	227.0	225.0	838 x 292 x 176
6668	620	7668	974	0.863	41.3	15.200	312.0	248.0	838 x 292 x 194
8010	773	9183	1212	0.870	34.7	19.300	522.0	289.0	838 x 292 x 226
7204	621	8352	982	0.854	46.8	18.400	291.0	256.0	914 x 305 x 201
8269	739	9535	1163	0.861	41.3	22.100	422.0	286.0	914 x 305 x 224
9501	871	10942	1370	0.866	36.2	26.400	626.0	323.0	914 x 305 x 253
10883	1014	12570	1601	0.867	31.9	31.200	926.0	368.0	914 x 305 x 289

Dimensions and properties to BS EN 10365:2017

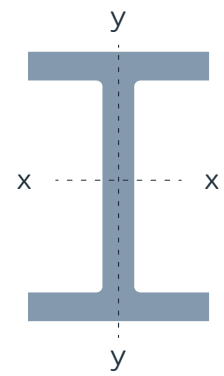




### Universal Beams (UB) sizes

Designation  Serial size	Mass per metre  kg/m	Depth of section  D mm	Width of section  B mm	Thickness		Root radius  r mm	Depth between fillets  d mm	Ratios for local buckling		Second moment of area I		Radius of gyration i	
				of web  t mm	of flange  T mm			Flange  B/2T	Web  d/t	Axis  x-x cm <sup>4</sup>	Axis  y-y cm <sup>4</sup>	Axis  x-x cm	Axis  y-y cm
914 x 419 x 343	343.3	911.8	418.5	19.4	32.0	24.1	799.6	6.54	41.2	625780	39156	37.8	9.46
914 x 419 x 388	388.0	921.0	420.5	21.4	36.6	24.1	799.6	5.74	37.4	719635	45438	38.2	9.59
1016 x 305 x 222	222.0	970.3	300.0	16.0	21.1	30.0	868.1	7.11	54.3	407961	9546	38.0	5.81
1016 x 305 x 249	248.7	980.1	300.0	16.5	26.0	30.0	868.1	5.77	52.6	481192	11754	39.0	6.09
1016 x 305 x 272	272.3	990.1	300.0	16.5	31.0	30.0	868.1	4.84	52.6	553974	14004	40.0	6.35
1016 x 305 x 314	314.3	999.9	300.0	19.1	35.9	30.0	868.1	4.18	45.5	644063	16232	40.1	6.37
1016 x 305 x 349	349.4	1008.1	302.0	21.1	40.0	30.0	868.1	3.78	41.1	723131	18460	40.3	6.44
1016 x 305 x 393	392.7	1015.9	303.0	24.4	43.9	30.0	868.1	3.45	35.6	807503	20496	40.2	6.40
1016 x 305 x 437	437.0	1026.1	305.4	26.9	49.0	30.0	868.1	3.12	32.3	910322	23447	40.4	6.49
1016 x 305 x 487	486.7	1036.3	308.5	30.0	54.1	30.0	868.1	2.85	28.9	1021884	26721	40.6	6.57





## Universal Beams (UB) sizes

Elastic modulus		Plastic modulus		Buckling parameter	Torsional index	Warping constant	Torsional constant	Area of section	Designation
Axis	Axis	Axis	Axis						
x-x	y-y	x-x	y-y	u	x	H	J	cm <sup>2</sup>	Serial size
cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>			dm <sup>6</sup>	cm <sup>4</sup>		
13726	1871	15478	2889	0.883	30.1	75.8	1193	437	914 x 419 x 343
15627	2161	17666	3340	0.885	26.7	88.9	1734	494	914 x 419 x 388
8409	636	9808	1019	0.850	45.7	21.5	390	283	1016 x 305 x 222
9819	784	11350	1244	0.861	39.8	26.8	582	317	1016 x 305 x 249
11190	934	12827	1469	0.873	35.0	32.2	835	347	1016 x 305 x 272
12883	1082	14850	1712	0.872	30.7	37.7	1264	400	1016 x 305 x 314
14346	1223	16593	1940	0.872	27.9	43.3	1718	445	1016 x 305 x 349
15897	1353	18538	2167	0.868	25.5	48.4	2330	500	1016 x 305 x 393
17743	1535	20769	2467	0.868	23.1	56.0	3185	557	1016 x 305 x 437
19722	1732	23208	2799	0.867	21.1	64.4	4299	620	1016 x 305 x 487

Dimensions and properties to BS EN 10365:2017

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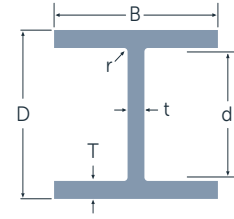
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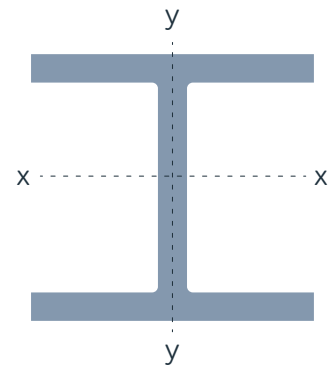


British Steel, the only UK manufacturer of structural sections, is BES 6001 certified, guaranteeing commitment to responsibly sourced materials. Our structural sections are CE marked and tested to the highest standards, providing quality and assurance for the UK construction market.



#### Universal Columns (UC) sizes

Designation  Serial size	Mass per metre  kg/m	Depth of section  D mm	Width of section  B mm	Thickness		Root radius  r mm	Depth between fillets  d mm	Ratios for local buckling		Second moment of area I		Radius of gyration i	
				of web  t mm	of flange  T mm			Flange  B/2T	Web  d/t	Axis  x-x cm <sup>4</sup>	Axis  y-y cm <sup>4</sup>	Axis  x-x cm	Axis  y-y cm
152 x 152 x 23	23.0	152.4	152.2	5.8	6.8	7.6	123.6	11.20	21.30	1250	400	6.54	3.70
152 x 152 x 30	30.0	157.6	152.9	6.5	9.4	7.6	123.6	8.13	19.00	1748	560	6.76	3.83
152 x 152 x 37	37.0	161.8	154.4	8.0	11.5	7.6	123.6	6.71	15.50	2210	706	6.85	3.87
152 x 152 x 44	44.0	166.0	155.9	9.5	13.6	7.6	123.6	5.73	13.00	2703	860	6.94	3.92
152 x 152 x 51	51.2	170.2	157.4	11.0	15.7	7.6	123.6	5.01	11.20	3227	1022	7.04	3.96
203 x 203 x 46	46.1	203.2	203.6	7.2	11.0	12.7	155.8	9.25	21.60	4605	1549	8.82	5.11
203 x 203 x 52	52.0	206.2	204.3	7.9	12.5	12.7	155.8	8.17	19.70	5296	1778	8.91	5.16
203 x 203 x 60	60.0	209.6	205.8	9.4	14.2	12.7	155.8	7.25	16.60	6162	2065	8.95	5.18
203 x 203 x 71	71.0	215.8	206.4	10.0	17.3	12.7	155.8	5.97	15.60	7655	2538	9.18	5.28
203 x 203 x 86	86.1	222.2	209.1	12.7	20.5	12.7	155.8	5.10	12.30	9486	3128	9.28	5.33
203 x 203 x 100	99.6	228.6	210.3	14.5	23.7	12.7	155.8	4.44	10.70	11335	3680	9.43	5.38
203 x 203 x 113	113.5	235.0	212.1	16.3	26.9	12.7	155.8	3.94	9.56	13338	4286	9.59	5.44
203 x 203 x 127	127.5	241.4	213.9	18.1	30.1	12.7	155.8	3.55	8.61	15474	4921	9.74	5.50
254 x 254 x 73	73.1	254.1	254.6	8.6	14.2	20.0	185.7	8.96	21.60	11643	3910	11.10	6.41
254 x 254 x 89	88.9	260.3	256.3	10.3	17.3	20.0	185.7	7.41	18.00	14504	4860	11.20	6.49
254 x 254 x 107	107.1	266.7	258.8	12.8	20.5	20.0	185.7	6.31	14.50	17747	5931	11.30	6.55
254 x 254 x 132	132.0	276.3	261.3	15.3	25.3	20.0	185.7	5.16	12.10	22765	7535	11.60	6.65
254 x 254 x 167	167.1	289.1	265.2	19.2	31.7	20.0	185.7	4.18	9.67	30234	9875	11.90	6.78
305 x 305 x 97	96.9	307.9	305.3	9.9	15.4	20.0	237.1	9.91	23.90	22504	7310	13.40	7.65
305 x 305 x 118	117.9	314.5	307.4	12.0	18.7	20.0	237.1	8.22	19.80	27927	9061	13.60	7.73
305 x 305 x 137	136.9	320.5	309.2	13.8	21.7	20.0	237.1	7.12	17.20	33070	10702	13.70	7.80
305 x 305 x 158	158.1	327.1	311.2	15.8	25.0	20.0	237.1	6.22	15.00	39002	12572	13.90	7.87
305 x 305 x 198	198.1	339.9	314.5	19.1	31.4	20.0	237.1	5.01	12.40	51159	16303	14.20	8.01
305 x 305 x 240	240.0	352.5	318.4	23.0	37.7	20.0	237.1	4.22	10.30	64458	20319	14.50	8.13
305 x 305 x 283	282.9	365.3	322.2	26.8	44.1	20.0	237.1	3.65	8.85	79127	24641	14.80	8.25
356 x 368 x 129	129.0	355.6	368.6	10.4	17.5	20.0	280.6	10.50	27.00	40591	14613	15.60	9.39
356 x 368 x 153	152.9	362.0	370.5	12.3	20.7	20.0	280.6	8.95	22.80	48935	17556	15.80	9.46
356 x 368 x 177	177.0	368.2	372.6	14.4	23.8	20.0	280.6	7.83	19.50	57464	20532	15.90	9.51
356 x 368 x 202	201.9	374.6	374.7	16.5	27.0	20.0	280.6	6.94	17.00	66607	23692	16.00	9.57
356 x 406 x 235	235.1	381.0	394.8	18.4	30.2	20.0	280.6	6.54	15.30	79431	30997	16.20	10.10
356 x 406 x 287	287.1	393.6	399.0	22.6	36.5	20.0	280.6	5.47	12.40	100221	38682	16.50	10.30
356 x 406 x 340	339.9	406.4	403.0	26.6	42.9	20.0	280.6	4.70	10.50	122889	46859	16.80	10.40
356 x 406 x 393	393.0	419.0	407.0	30.6	49.2	20.0	280.6	4.14	9.17	146964	55374	17.10	10.50
356 x 406 x 467	467.0	436.6	412.2	35.8	58.0	20.0	280.6	3.55	7.84	183349	67842	17.50	10.70
356 x 406 x 551	551.0	455.6	418.5	42.1	67.5	20.0	280.6	3.10	6.67	227284	82681	18.00	10.80
356 x 406 x 634	633.9	474.6	424.0	47.6	77.0	20.0	280.6	2.75	5.89	275191	98138	18.40	11.00



## Universal Columns (UC) sizes

Elastic modulus		Plastic modulus		Buckling parameter	Torsional index	Warping constant	Torsional constant	Area of section	Designation
Axis	Axis	Axis	Axis						
x-x	y-y	x-x	y-y	u	x	H	J	cm <sup>2</sup>	Serial size
cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>			dm <sup>6</sup>	cm <sup>4</sup>		
164	53	182	80	0.840	20.70	0.0212	4.63	29.2	152 x 152 x 23
222	73	248	112	0.849	16.00	0.0308	10.50	38.3	152 x 152 x 30
273	91	309	140	0.848	13.30	0.0399	19.20	47.1	152 x 152 x 37
326	110	372	169	0.848	11.50	0.0499	31.70	56.1	152 x 152 x 44
379	130	438	199	0.848	10.10	0.0610	48.80	65.2	152 x 152 x 51
453	152	502	231	0.848	17.30	0.1430	23.30	59.2	203 x 203 x 46
514	174	572	265	0.849	15.50	0.1670	33.20	66.8	203 x 203 x 52
588	201	660	306	0.847	13.80	0.1970	49.10	76.9	203 x 203 x 60
709	246	803	374	0.853	11.80	0.2500	82.70	90.9	203 x 203 x 71
854	299	981	457	0.850	10.10	0.3180	140.00	110.0	203 x 203 x 86
992	350	1153	535	0.852	8.94	0.3860	214.00	127.0	203 x 203 x 100
1135	404	1333	619	0.853	8.04	0.4640	311.00	145.0	203 x 203 x 113
1282	460	1521	705	0.854	7.32	0.5490	435.00	163.0	203 x 203 x 127
916	307	1014	467	0.851	16.30	0.5630	66.10	95.2	254 x 254 x 73
1114	379	1246	577	0.851	13.90	0.7170	114.00	115.0	254 x 254 x 89
1331	458	1507	699	0.849	12.00	0.8990	188.00	138.0	254 x 254 x 107
1648	577	1892	881	0.851	10.00	1.1900	341.00	170.0	254 x 254 x 132
2092	745	2446	1140	0.852	8.30	1.6400	661.00	215.0	254 x 254 x 167
1462	479	1612	727	0.851	18.70	1.5600	98.40	125.0	305 x 305 x 97
1776	590	1977	897	0.851	15.80	1.9800	171.00	152.0	305 x 305 x 118
2064	692	2316	1054	0.851	13.90	2.3900	261.00	176.0	305 x 305 x 137
2385	808	2700	1232	0.852	12.30	2.8700	394.00	203.0	305 x 305 x 158
3010	1037	3460	1583	0.854	10.10	3.8800	758.00	254.0	305 x 305 x 198
3657	1276	4267	1953	0.854	8.64	5.0300	1307.00	307.0	305 x 305 x 240
4332	1530	5125	2345	0.855	7.58	6.3600	2084.00	362.0	305 x 305 x 283
2283	793	2502	1200	0.845	19.40	4.1800	161.00	166.0	356 x 368 x 129
2704	948	2987	1436	0.845	16.70	5.1100	261.00	196.0	356 x 368 x 153
3121	1102	3478	1672	0.845	14.80	6.0900	396.00	227.0	356 x 368 x 177
3556	1265	3994	1921	0.845	13.20	7.1600	576.00	259.0	356 x 368 x 202
4170	1570	4709	2385	0.835	11.90	9.5400	834.00	301.0	356 x 406 x 235
5093	1939	5835	2951	0.835	10.10	12.3000	1474.00	367.0	356 x 406 x 287
6048	2326	7022	3546	0.836	8.77	15.5000	2391.00	434.0	356 x 406 x 340
7015	2721	8245	4156	0.837	7.80	18.9000	3611.00	502.0	356 x 406 x 393
8399	3292	10025	5037	0.840	6.81	24.3000	5905.00	596.0	356 x 406 x 467
9977	3951	12099	6062	0.841	6.01	31.1000	9381.00	703.0	356 x 406 x 551
11597	4629	14258	7112	0.843	5.43	38.8000	13920.00	809.0	356 x 406 x 634

Dimensions and properties to BS EN 10365:2017

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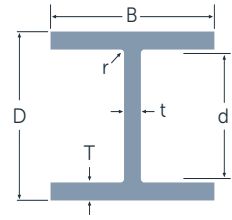
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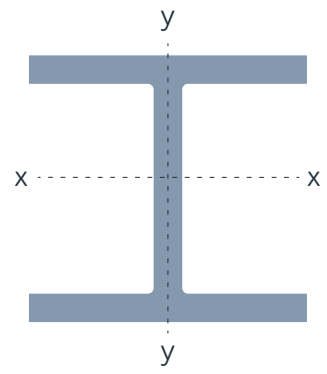


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#### Universal Bearing Piles (UBP) sizes

Designation	Mass per metre	Depth of section	Width of section	Thickness		Root radius	Depth between fillets	Ratios for local buckling		Second moment of area I		Radius of gyration i	
				of web	of flange			Flange	Web	Axis	Axis	Axis	Axis
				t	T								
Serial size	kg/m	D	B	t	T	r	d			cm <sup>4</sup>	cm <sup>4</sup>	cm	cm
203 x 203 x 45	44.9	200.2	205.9	9.5	9.5	10.2	160.8	10.80	16.9	4100	1384	8.46	4.92
203 x 203 x 54	53.9	204.0	207.7	11.3	11.4	10.2	160.8	9.11	14.2	5027	1705	8.55	4.98
254 x 254 x 63	63.0	247.1	256.6	10.6	10.7	20.0	185.7	12.00	17.5	9097	3019	10.50	6.06
254 x 254 x 71	71.0	249.7	258.0	12.0	12.0	20.0	185.7	10.80	15.5	10307	3442	10.60	6.10
254 x 254 x 85	85.1	254.3	260.4	14.4	14.3	20.0	185.7	9.10	12.9	12521	4219	10.60	6.18
305 x 305 x 79	78.9	299.3	306.4	11.0	11.1	20.0	237.1	13.80	21.6	16700	5329	12.80	7.23
305 x 305 x 88	88.0	301.7	307.8	12.4	12.3	20.0	237.1	12.50	19.1	18680	5987	12.80	7.26
305 x 305 x 95	94.9	303.7	308.7	13.3	13.3	20.0	237.1	11.60	17.8	20300	6531	12.90	7.30
305 x 305 x 110	110.0	307.9	310.7	15.3	15.4	20.0	237.1	10.10	15.5	23818	7712	13.00	7.38
305 x 305 x 126	126.1	312.3	312.9	17.5	17.6	20.0	237.1	8.89	13.5	27663	9005	13.10	7.45
305 x 305 x 149	149.1	318.5	316.0	20.6	20.7	20.0	237.1	7.63	11.5	33322	10914	13.20	7.55
305 x 305 x 186	186.0	328.3	320.9	25.5	25.6	2.0	273.1	6.27	10.7	42254	14138	13.40	7.76
305 x 305 x 223	222.9	337.9	325.7	30.3	30.4	20.0	237.1	5.36	7.8	52954	17583	13.60	7.85
356 x 368 x 109	108.9	346.4	371.0	12.8	12.9	20.0	280.6	14.40	21.9	30977	10989	14.90	8.85
356 x 368 x 133	133.0	352.0	373.8	15.6	15.7	20.0	280.6	11.90	18.0	38329	13683	15.00	8.95
356 x 368 x 152	152.0	356.4	376.0	17.8	17.9	20.0	280.6	10.50	15.8	44317	15880	15.10	9.02
356 x 368 x 174	173.9	361.4	378.5	20.3	20.4	20.0	280.6	9.28	13.8	51355	18467	15.20	9.10



## Universal Bearing Piles (UBP) sizes

Elastic modulus		Plastic modulus		Buckling parameter	Torsional index	Warping constant	Torsional constant	Area of section	Designation
Axis	Axis	Axis	Axis						
x-x	y-y	x-x	y-y	u	x	H	J	cm <sup>2</sup>	Serial size
cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>			dm <sup>6</sup>	cm <sup>4</sup>		
410	134	459	206	0.827	18.6	0.126	19.2	57.2	203 x 203 x 45
493	164	557	252	0.827	15.8	0.158	32.7	68.7	203 x 203 x 54
736	235	822	362	0.831	18.9	0.422	41.1	82.3	254 x 254 x 63
826	267	926	411	0.830	17.2	0.486	56.5	92.4	254 x 254 x 71
985	324	1115	500	0.828	14.8	0.608	92.6	110.0	254 x 254 x 85
1116	348	1238	533	0.834	22.8	1.110	52.2	102.0	305 x 305 x 79
1238	389	1380	597	0.832	20.8	1.250	70.3	114.0	305 x 305 x 88
1337	423	1494	649	0.832	19.5	1.380	86.9	122.0	305 x 305 x 95
1547	496	1740	763	0.831	17.2	1.650	131.0	142.0	305 x 305 x 110
1772	576	2005	887	0.830	15.3	1.960	193.0	162.0	305 x 305 x 126
2092	691	2390	1068	0.829	13.2	2.420	310.0	191.0	305 x 305 x 149
2574	881	2977	1363	0.826	11.5	3.240	520.0	235.0	305 x 305 x 186
3134	1080	3673	1682	0.827	9.41	4.160	977.0	285.0	305 x 305 x 223
1789	592	1979	904	0.825	23.4	3.060	91.2	140.0	356 x 368 x 109
2178	732	2428	1120	0.823	19.7	3.870	160.0	171.0	356 x 368 x 133
2487	845	2789	1295	0.823	17.5	4.550	235.0	195.0	356 x 368 x 152
2842	976	3208	1499	0.822	15.5	5.370	345.0	223.0	356 x 368 x 174

Dimensions and properties to BS EN 10365:2017

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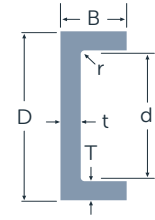
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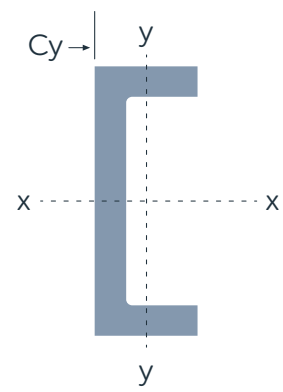


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#### Parallel Flange Channels (PFC) sizes

Designation	Mass per metre	Depth of section	Width of section	Thickness		Distance of Cy	Root radius	Depth between fillets	Ratios for local buckling		Second moment of area		Radius of gyration
				of web	of flange				Flange	Web	Axis	Axis	
				D	B				t	T	B/2T	d/t	
Serial size	kg/m	mm	mm	mm	mm	cm	mm	mm			cm <sup>4</sup>	cm <sup>4</sup>	cm
100 x 50 x 10	10.2	100	50	5.0	8.5	1.73	9	65	5.88	13.0	208	32	4.00
125 x 65 x 15	14.8	125	65	5.5	9.5	2.25	12	82	6.84	14.9	483	80	5.07
150 x 75 x 18	17.9	150	75	5.5	10.0	2.58	12	106	7.50	19.3	861	131	6.15
150 x 90 x 24	23.9	150	90	6.5	12.0	3.30	12	102	7.50	15.7	1162	253	6.18
180 x 75 x 20	20.3	180	75	6.0	10.5	2.41	12	135	7.14	22.5	1370	146	7.27
180 x 90 x 26	26.1	180	90	6.5	12.5	3.17	12	131	7.20	20.2	1817	277	7.40
200 x 75 x 23	23.4	200	75	6.0	12.5	2.48	12	151	6.00	25.2	1963	170	8.11
200 x 90 x 30	29.7	200	90	7.0	14.0	3.12	12	148	6.43	21.1	2523	314	8.16
230 x 75 x 26	25.7	230	75	6.5	12.5	2.30	12	181	6.00	27.8	2748	181	9.17
230 x 90 x 32	32.2	230	90	7.5	14.0	2.92	12	178	6.43	23.7	3518	334	9.27
260 x 75 x 28	27.6	260	75	7.0	12.0	2.10	12	212	6.25	30.3	3619	185	10.10
260 x 90 x 35	34.8	260	90	8.0	14.0	2.74	12	208	6.43	26.0	4728	353	10.30
300 x 90 x 41	41.4	300	90	9.0	15.5	2.60	12	245	5.81	27.2	7218	404	11.70
300 x 100 x 46	45.5	300	100	9.0	16.5	3.05	15	237	6.06	26.3	8229	568	11.90
380 x 100 x 54	54.0	380	100	9.5	17.5	2.79	15	315	5.71	33.2	15034	643	14.80
430 x 100 x 64	64.4	430	100	11.0	19.0	2.62	15	362	5.26	32.9	21939	722	16.30



### Parallel Flange Channels (PFC) sizes

Radius of gyration	Elastic modulus		Plastic modulus		Buckling parameter	Torsional index	Warping constant	Torsional constant	Area of section	Designation
	Axis	Axis	Axis	Axis						
	x-x	y-y	x-x	y-y	u	x	H	J		Serial size
cm	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>			dm <sup>6</sup>	cm <sup>4</sup>	cm <sup>2</sup>	
1.58	41.54	9.9	48.9	17.6	0.942	10.0	0.0005	2.53	13.0	100 x 50 x 10
2.06	77.30	18.8	89.9	33.5	0.942	11.1	0.0019	4.72	18.8	125 x 65 x 15
2.40	115.00	26.6	132.0	47.3	0.946	13.1	0.0047	6.10	22.8	150 x 75 x 18
2.89	155.00	44.4	179.0	77.0	0.936	10.8	0.0089	11.80	30.4	150 x 90 x 24
2.38	152.00	28.8	176.0	52.0	0.946	15.3	0.0075	7.34	25.9	180 x 75 x 20
2.89	202.00	47.4	232.0	83.5	0.949	12.8	0.0141	13.30	33.2	180 x 90 x 26
2.39	196.00	33.8	227.0	60.8	0.956	14.8	0.0107	11.10	29.9	200 x 75 x 23
2.88	252.00	53.4	291.0	94.6	0.954	12.9	0.0197	18.30	37.9	200 x 90 x 30
2.35	239.00	34.8	278.0	63.2	0.947	17.3	0.0153	11.80	32.7	230 x 75 x 26
2.86	306.00	55.0	355.0	99.2	0.950	15.1	0.0279	19.30	41.0	230 x 90 x 32
2.30	278.00	34.4	328.0	62.0	0.932	20.5	0.0203	11.70	35.1	260 x 75 x 28
2.82	364.00	56.3	425.0	102.1	0.942	17.2	0.0379	20.60	44.4	260 x 90 x 35
2.77	481.00	63.1	568.0	114.0	0.934	18.4	0.0581	28.80	52.7	300 x 90 x 41
3.13	549.00	81.7	641.0	148.3	0.944	17.0	0.0813	36.80	58.0	300 x 100 x 46
3.06	791.00	89.2	933.0	160.7	0.932	21.2	0.1500	45.70	68.7	380 x 100 x 54
2.97	1020.00	97.9	1222.0	175.9	0.917	22.5	0.2190	63.00	82.1	430 x 100 x 64

Dimensions and properties to BS EN 10365:2017

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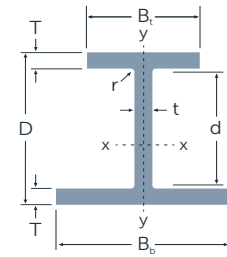
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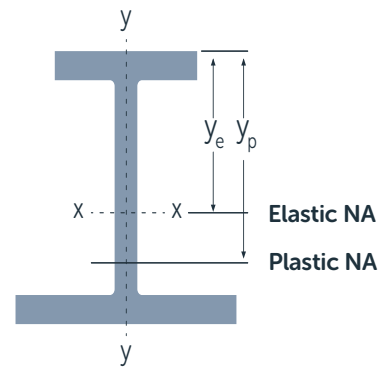


#### Asymmetric Beams (ASB) sizes

Designation	Mass per metre	Depth of section	Width of top flange	Width of bottom flange	Thickness		Root radius	Depth between fillets	Ratios for local buckling			Elastic neutral axis position	Second moment of area	
					of web	of flange			Top flange	Bottom flange	Web		Axis	Axis
					t	T			B <sub>t</sub> /2T	B <sub>b</sub> /2T	d/t		y <sub>e</sub>	x-x
Serial size	kg/m	D	B <sub>t</sub>	B <sub>b</sub>	mm	mm	mm	mm			cm	cm <sup>4</sup>	cm <sup>4</sup>	
280 ASB 74	73.6	272	175	285	10	14	27	190	6.25	10.18	19.00	15.7	12366	3337
280 ASB 100*	100.3	276	184	294	19	16	27	190	5.75	9.19	10.00	15.6	15679	4250
280 ASB 105	104.7	288	176	286	11	22	27	190	4.00	6.50	17.27	16.8	19426	5301
280 ASB 124	123.9	296	178	288	13	26	27	190	3.42	5.54	14.62	17.2	23630	6414
280 ASB 136*	136.4	288	190	300	25	22	27	190	4.32	6.82	7.60	16.2	22390	6262
300 ASB 153*	152.8	310	190	300	27	24	27	208	3.96	6.25	7.70	17.4	28398	6840
300 ASB 155	155.4	326	179	289	16	32	27	208	2.80	4.52	13.00	18.9	34514	7989
300 ASB 185*	184.6	320	195	305	32	29	27	208	3.36	5.26	6.50	18.0	35657	8752
300 ASB 196	195.5	342	183	293	20	40	27	208	2.29	3.66	10.40	19.8	45871	10463
300 ASB 249*	249.2	342	203	313	40	40	27	208	2.54	3.91	5.20	19.2	52920	13194

The elastic and plastic neutral axis position is measured from the upper surface of the beam

\* These sections have been specifically developed with thicker webs for improved performance in fire



## Asymmetric Beams (ASB) sizes

Elastic modulus			Radius of gyration		Plastic neutral axis position	Plastic modulus		Buckling parameter	Torsional index	Warping constant	Torsional constant	Area of section	Designation
Axis x-x	Axis x-x	Axis y-y	Axis x-x	Axis y-y		Axis x-x	Axis y-y						
Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	u	x	H	J	Serial size	
cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>	cm	cm	cm	cm <sup>3</sup>	cm <sup>3</sup>			dm <sup>6</sup>	cm <sup>4</sup>		cm <sup>2</sup>
788	1075	234	11.4	5.93	21.3	994	404	0.832	15.90	0.338	80.1	95.1	280 ASB 74
1007	1307	289	11.0	5.74	18.4	1310	512	0.816	12.80	0.451	170.0	129.0	280 ASB 100*
1157	1619	371	12.0	6.27	25.2	1456	634	0.832	11.80	0.574	219.0	135.0	280 ASB 105
1372	1906	445	12.2	6.35	25.6	1745	762	0.833	10.40	0.721	347.0	159.0	280 ASB 124
1379	1777	417	11.3	5.98	19.2	1821	742	0.815	10.00	0.710	396.0	175.0	280 ASB 136*
1628	2088	456	12.1	5.93	20.4	2160	816	0.822	9.97	0.895	513.0	195.0	300 ASB 153*
1825	2519	553	13.2	6.35	27.3	2361	949	0.843	9.40	1.070	620.0	198.0	300 ASB 155
1984	2547	574	12.3	6.10	21.0	2658	1030	0.822	8.56	1.200	871.0	235.0	300 ASB 185*
2321	3185	714	13.6	6.48	28.1	3055	1229	0.845	7.86	1.500	1177.0	249.0	300 ASB 196
2757	3528	843	12.9	6.45	22.6	3761	1512	0.825	6.80	2.000	2004.0	317.0	300 ASB 249*

The elastic and plastic neutral axis position is measured from the upper surface of the beam

\* These sections have been specifically developed with thicker webs for improved performance in fire

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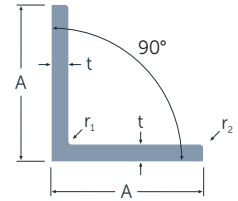
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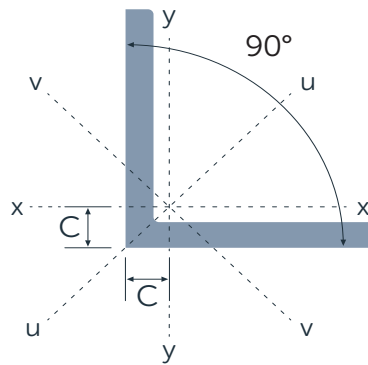


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#### Equal Angles (EA) sizes

Designation	Mass per metre	Depth of section	Width of section	Thickness	Root radius	Toe radius	Area of section	Distance to centre of gravity	Second moment of area		
									I		
Serial size									Axis	Axis	Axis
A x A x t		h	b	s	r <sub>1</sub>	r <sub>2</sub>		C	x-x, y-y	u-u	v-v
mm x mm x mm	kg/m	mm	mm	mm	mm	mm	cm <sub>2</sub>	cm	cm <sup>4</sup>	cm <sup>4</sup>	cm <sup>4</sup>
120 x 120 x 8	14.7	120	120	8	13	6.5	18.7	3.23	256	411	107
120 x 120 x 10	18.2	120	120	10	13	6.5	23.2	3.31	313	497	129
120 x 120 x 12	21.6	120	120	12	13	6.5	27.5	3.40	368	584	152
120 x 120 x 15	26.6	120	120	15	13	6.5	33.9	3.51	445	710	186
150 x 150 x 10	23.0	150	150	10	16	8.0	29.3	4.03	624	990	258
150 x 150 x 12	27.3	150	150	12	16	8.0	34.8	4.12	737	1170	303
150 x 150 x 15	33.8	150	150	15	16	8.0	43.0	4.25	898	1430	370
150 x 150 x 18	40.1	150	150	18	16	8.0	51.0	4.37	1050	1680	440
200 x 200 x 16	48.5	200	200	16	18	9.0	61.8	5.52	2342	3720	960
200 x 200 x 18	54.2	200	200	18	18	9.0	69.1	5.60	2600	4150	1050
200 x 200 x 20	59.9	200	200	20	18	9.0	76.3	5.68	2851	4530	1170
200 x 200 x 24	71.1	200	200	24	18	9.0	90.6	5.84	3331	5280	1380



## Equal Angles (EA) sizes

Radius of gyration i			Elastic modulus Axis	Torsional constant J	Equivalent slenderness coefficient Fa	Surface area		Designation Serial size A x A x t mm x mm x mm
Axis x-x, y-y cm	Axis u-u cm	Axis v-v cm				Axis x-x, y-y cm <sup>3</sup>	cm <sup>4</sup>	
3.69	4.69	2.39	29.1	4.44	4.56	0.47	31.87	120 x 120 x 8
3.67	4.63	2.36	36.0	8.41	3.61	0.47	25.76	120 x 120 x 10
3.65	4.61	2.35	42.7	14.21	2.99	0.47	21.69	120 x 120 x 12
3.62	4.58	2.34	52.4	27.04	2.37	0.47	17.60	120 x 120 x 15
4.62	5.81	2.97	56.9	10.80	4.51	0.59	25.51	150 x 150 x 10
4.60	5.80	2.95	67.8	18.21	3.77	0.59	21.44	150 x 150 x 12
4.57	5.77	2.93	83.5	34.62	3.01	0.59	17.36	150 x 150 x 15
4.54	5.74	2.94	98.8	58.57	2.48	0.59	14.63	150 x 150 x 18
6.16	7.76	3.94	162.0	56.09	3.85	0.78	16.18	200 x 200 x 16
6.13	7.75	3.90	181.0	78.95	3.43	0.78	14.46	200 x 200 x 18
6.11	7.71	3.92	199.0	107.19	3.05	0.78	13.09	200 x 200 x 20
6.06	7.63	3.90	235.0	181.89	2.50	0.78	11.03	200 x 200 x 24

Dimensions and properties to BS EN 10056-1

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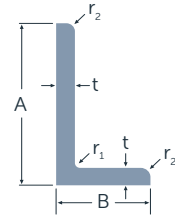
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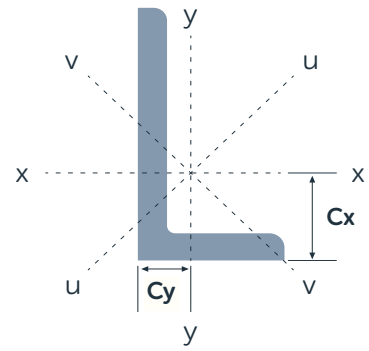


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#### Unequal Angles (UA) sizes

Designation	Mass per metre	Depth of section	Width of section	Thickness of web	Root radius	Toe radius	Area of section	Distance to centre of gravity		Second moment of area			
										Axis	Axis	Axis	Axis
Serial size													
A x B x t		h	b	s	r <sub>1</sub>	r <sub>2</sub>		C <sub>x</sub>	C <sub>y</sub>	x-x	y-y	u-u	v-v
mm x mm x mm	kg/m	mm	mm	mm	mm	mm	cm <sup>2</sup>	cm	cm	cm <sup>4</sup>	cm <sup>4</sup>	cm <sup>4</sup>	cm <sup>4</sup>
200 x 100 x 10	23.0	200	100	10	15	7.5	29.2	6.93	2.01	1219	210	1290	135
200 x 100 x 12	27.3	200	100	12	15	7.5	34.8	7.03	2.10	1441	247	1530	159
200 x 100 x 15	33.7	200	100	15	15	7.5	43.0	7.16	2.22	1759	299	1860	193
200 x 150 x 12	32.0	200	150	12	15	7.5	40.8	6.08	3.61	1653	803	2030	430
200 x 150 x 15	39.6	200	150	15	15	7.5	50.5	6.21	3.73	2023	979	2480	526
200 x 150 x 18	47.1	200	150	18	15	7.5	60.0	6.33	3.85	2376	1146	2920	623



## Unequal Angles (UA) sizes

Radius of gyration <i>i</i>				Elastic modulus		Angle axis x-x to axis y-y tan $\alpha$	Torsional constant  J	Equivalent slenderness coefficient		Mono- symmetry index  Ya	Designation  Serial size A x B x t mm x mm x mm
Axis	Axis	Axis	Axis	Axis	Axis			Min	Max		
x-x	y-y	u-u	v-v	x-x	y-y			Fa	Fa		
cm	cm	cm	cm	cm <sup>3</sup>	cm <sup>3</sup>			cm <sup>4</sup>	cm <sup>3</sup>		
6.46	2.68	6.65	2.15	93.3	26.3	0.263	10.7	5.26	7.92	13.90	200 x 100 x 10
6.43	2.67	6.63	2.14	111.0	31.3	0.262	18.0	4.42	6.57	11.50	200 x 100 x 12
6.40	2.64	6.58	2.12	137.0	38.4	0.260	34.3	3.54	5.17	9.19	200 x 100 x 15
6.36	4.44	7.05	3.25	119.0	70.5	0.552	20.9	4.43	5.70	6.97	200 x 150 x 12
6.33	4.40	7.01	3.23	147.0	86.9	0.551	39.9	3.53	4.50	5.55	200 x 150 x 15
6.29	4.37	6.98	3.22	174.0	103.0	0.549	67.9	2.93	3.72	4.60	200 x 150 x 18

Dimensions and properties to BS EN 10056-1

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