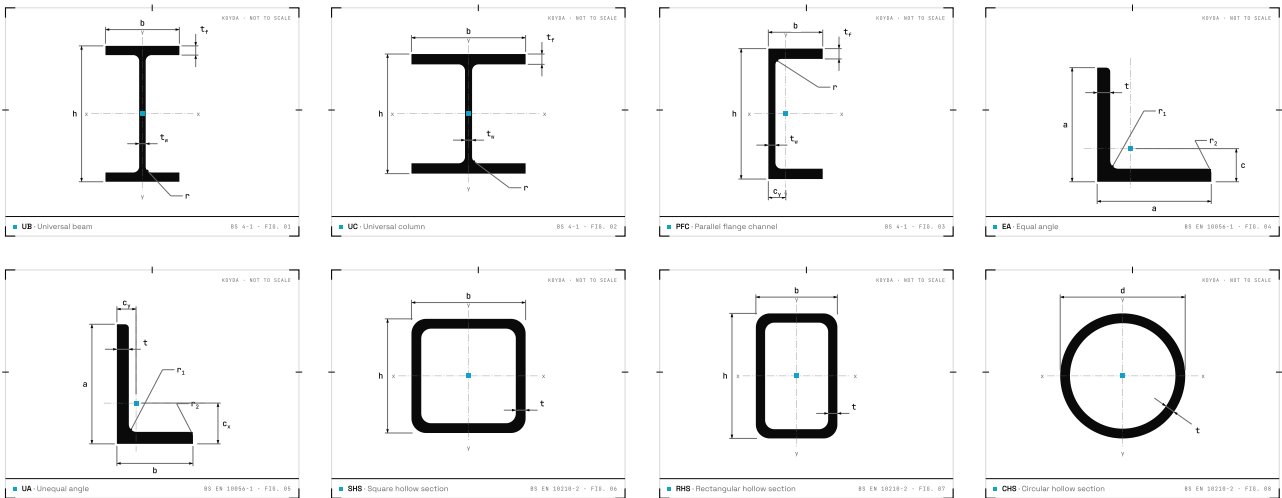


Steel Section Tables

Dimensions and properties of the standard UK hot-rolled and hot-finished steel sections: beams, columns, channels, angles and hollow sections.



CONTENTS

Contents

01	Universal beams UB	3
02	Universal columns UC	6
03	Parallel flange channels PFC	8
04	Equal angles EA	9
05	Unequal angles UA	11
06	Square hollow sections SHS	13
07	Rectangular hollow sections RHS	16
08	Circular hollow sections CHS	20
09	Standards, method and disclaimer	23
10	Contact	24

About these tables

Each section type has a diagram, a symbol key and a table of nominal dimensions and properties. Sizes are listed in the order used by the standards. Dimensions are in millimetres, area in cm², second moment of area in cm⁴ and elastic modulus in cm³. The same data is online as sortable tables and CSV files at **koyda.com/steel-section-tables**.

Values are for reference only. See page 23 for the standards, our method and the disclaimer.

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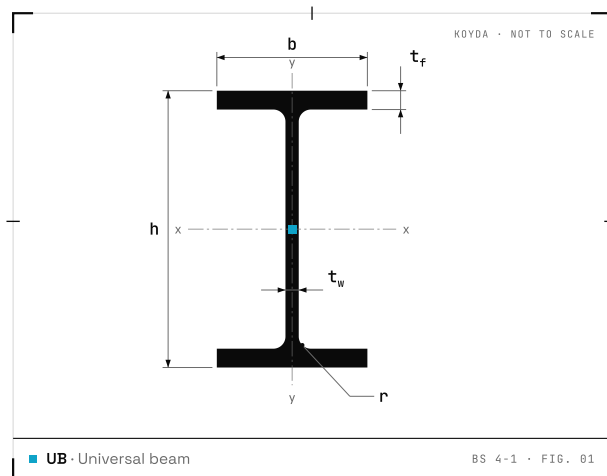
FABRICATION

Need sections cut, drilled or fabricated? Send your drawings.

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01 UB • BS 4-1 / BS EN 10365

Universal beams (UB)



Universal beams (UB) are I-sections that are deeper than they are wide, made for bending. Sizes are written depth × width × mass per metre, all nominal.

96 SIZES • 127 × 76 × 13 TO 1016 × 305 × 487

Mass	Mass per metre	kg/m
h	Depth of section	mm
b	Width of section	mm
t_w	Web thickness	mm
t_f	Flange thickness	mm
r	Root radius	mm
A	Area of section	cm ²
I_x	Second moment of area, major axis x-x	cm ⁴
W_{el,x}	Elastic section modulus, major axis x-x	cm ³

† Root radius from current manufacturer data to BS EN 10365:2017. Older BS 4-1:2005 tables give a smaller radius for these sizes, so area and I there are about 1–2% lower.

DESIGNATION	MASS kg/m	h mm	b mm	t _w mm	t _f mm	r mm	A cm ²	I _x cm ⁴	W _{el,x} cm ³
127 × 76 × 13	13.0	127.0	76.0	4.0	7.6	7.6	16.5	473	75
152 × 89 × 16	16.0	152.4	88.7	4.5	7.7	7.6	20.3	834	109
178 × 102 × 19	19.0	177.8	101.2	4.8	7.9	7.6	24.3	1,356	153
203 × 102 × 23	23.1	203.2	101.8	5.4	9.3	7.6	29.4	2,105	207
203 × 133 × 25	25.1	203.2	133.2	5.7	7.8	7.6	32	2,340	230
203 × 133 × 30	30.0	206.8	133.9	6.4	9.6	7.6	38.2	2,896	280
254 × 102 × 22	22.0	254.0	101.6	5.7	6.8	7.6	28	2,841	224
254 × 102 × 25	25.2	257.2	101.9	6.0	8.4	7.6	32	3,415	266
254 × 102 × 28	28.3	260.4	102.2	6.3	10.0	7.6	36.1	4,005	308
254 × 146 × 31	31.1	251.4	146.1	6.0	8.6	7.6	39.7	4,413	351
254 × 146 × 37	37.0	256.0	146.4	6.3	10.9	7.6	47.2	5,537	433
254 × 146 × 43	43.0	259.6	147.3	7.2	12.7	7.6	54.8	6,544	504
305 × 102 × 25	24.8	305.1	101.6	5.8	7.0	7.6	31.6	4,455	292
305 × 102 × 28	28.2	308.7	101.8	6.0	8.8	7.6	35.9	5,366	348
305 × 102 × 33	32.8	312.7	102.4	6.6	10.8	7.6	41.8	6,501	416
305 × 127 × 37	37.0	304.4	123.4	7.1	10.7	8.9	47.2	7,171	471
305 × 127 × 42	41.9	307.2	124.3	8.0	12.1	8.9	53.4	8,196	534
305 × 127 × 48	48.1	311.0	125.3	9.0	14.0	8.9	61.2	9,575	616
305 × 165 × 40	40.3	303.4	165.0	6.0	10.2	8.9	51.3	8,503	560
305 × 165 × 46	46.1	306.6	165.7	6.7	11.8	8.9	58.7	9,899	646
305 × 165 × 54	54.0	310.4	166.9	7.9	13.7	8.9	68.8	11,696	754
356 × 127 × 33	33.1	349.0	125.4	6.0	8.5	10.2	42.1	8,249	473
356 × 127 × 39	39.1	353.4	126.0	6.6	10.7	10.2	49.8	10,172	576
356 × 171 × 45	45.0	351.4	171.1	7.0	9.7	10.2	57.8	12,066	687
356 × 171 × 51	51.0	355.0	171.5	7.4	11.5	10.2	65.4	14,265	804
356 × 171 × 57	57.0	358.0	172.2	8.1	13.0	10.2	73	16,168	903

Universal beams (UB), continued

01 • UB

DESIGNATION	MASS kg/m	h mm	b mm	t _w mm	t _f mm	r mm	A cm ²	I _x cm ⁴	W _{eL, x} cm ³
356 × 171 × 67	67.1	363.4	173.2	9.1	15.7	10.2	86	19,592	1,078
406 × 140 × 39	39.0	398.0	141.8	6.4	8.6	10.2	50.1	12,508	629
406 × 140 × 46	46.0	403.2	142.2	6.8	11.2	10.2	59.1	15,685	778
406 × 140 × 53	53.3	406.6	143.3	7.9	12.9	12.7†	68.4	18,454	908
406 × 178 × 54	54.1	402.6	177.7	7.7	10.9	10.2	69.4	18,893	939
406 × 178 × 60	60.1	406.4	177.9	7.9	12.8	10.2	77	21,767	1,071
406 × 178 × 67	67.1	409.4	178.8	8.8	14.3	10.2	86	24,502	1,197
406 × 178 × 74	74.2	412.8	179.5	9.5	16.0	10.2	95	27,481	1,331
406 × 178 × 85	85.3	417.2	181.9	10.9	18.2	12.7†	109	31,874	1,528
457 × 152 × 52	52.3	449.8	152.4	7.6	10.9	10.2	67.1	21,369	950
457 × 152 × 60	59.8	454.6	152.9	8.1	13.3	10.2	76.7	25,717	1,131
457 × 152 × 67	67.2	458.0	153.8	9.0	15.0	10.2	86	29,144	1,273
457 × 152 × 74	74.2	462.0	154.4	9.6	17.0	10.2	95	32,891	1,424
457 × 152 × 82	82.1	465.8	155.3	10.5	18.9	10.2	105	36,806	1,580
457 × 191 × 67	67.1	453.4	189.9	8.5	12.7	10.2	86	29,597	1,306
457 × 191 × 74	74.3	457.0	190.4	9.0	14.5	10.2	95.1	33,536	1,468
457 × 191 × 82	82.0	460.0	191.3	9.9	16.0	10.2	105	37,268	1,620
457 × 191 × 89	89.3	463.4	191.9	10.5	17.7	10.2	114	41,232	1,780
457 × 191 × 98	98.3	467.2	192.8	11.4	19.6	10.2	126	45,944	1,967
457 × 191 × 106	105.8	469.2	194.0	12.6	20.6	12.7†	135	49,090	2,093
457 × 191 × 133	133.3	480.6	196.7	15.3	26.3	12.7†	170	64,058	2,666
457 × 191 × 161	161.4	492.0	199.4	18.0	32.0	12.7†	206	79,996	3,252
533 × 165 × 66	65.7	524.7	165.1	8.9	11.4	12.7	83.7	35,028	1,335
533 × 165 × 75	74.7	529.1	165.9	9.7	13.6	12.7	95.2	41,100	1,550
533 × 165 × 85	84.8	534.9	166.5	10.3	16.5	12.7	108	48,631	1,818
533 × 210 × 82	82.2	528.3	208.8	9.6	13.2	12.7	105	47,539	1,800
533 × 210 × 92	92.1	533.1	209.3	10.1	15.6	12.7	117	55,227	2,072
533 × 210 × 101	101.0	536.7	210.0	10.8	17.4	12.7	129	61,519	2,292
533 × 210 × 109	109.0	539.5	210.8	11.6	18.8	12.7	139	66,822	2,477
533 × 210 × 122	122.0	544.5	211.9	12.7	21.3	12.7	155	76,043	2,793
533 × 210 × 138	138.3	549.1	213.9	14.7	23.6	12.7	176	86,088	3,136
533 × 312 × 151	150.6	542.5	312.0	12.7	20.3	12.7	192	101,000	3,710
533 × 312 × 182	181.5	550.7	314.5	15.2	24.4	12.7	231	123,222	4,475
533 × 312 × 219	218.7	560.3	317.4	18.3	29.2	12.7	279	150,976	5,389
533 × 312 × 273	273.3	577.1	320.2	21.1	37.6	12.7	348	199,000	6,890
610 × 178 × 82	81.8	598.6	177.9	10.0	12.8	20.0†	106	57,487	1,921
610 × 178 × 92	92.2	603.0	178.8	10.9	15.0	20.0†	120	66,195	2,196
610 × 178 × 100	100.3	607.4	179.2	11.3	17.2	20.0†	130	74,145	2,441
610 × 229 × 101	101.2	602.6	227.6	10.5	14.8	20.0†	131	77,398	2,569
610 × 229 × 113	113.0	607.6	228.2	11.1	17.3	20.0†	146	88,936	2,927
610 × 229 × 125	125.1	612.2	229.0	11.9	19.6	20.0†	161	100,228	3,274
610 × 229 × 140	139.9	617.2	230.2	13.1	22.1	20.0†	180	113,395	3,674
610 × 305 × 149	149.2	612.4	304.8	11.8	19.7	20.0†	191	126,738	4,139
610 × 305 × 179	179.0	620.2	307.1	14.1	23.6	20.0†	229	153,886	4,962
610 × 305 × 238	238.1	635.8	311.4	18.4	31.4	20.0†	304	210,333	6,616
686 × 254 × 125	125.2	677.9	253.0	11.7	16.2	20.0†	161	119,448	3,524
686 × 254 × 140	140.1	683.5	253.7	12.4	19.0	20.0†	180	137,723	4,030
686 × 254 × 152	152.4	687.5	254.5	13.2	21.0	20.0†	196	151,811	4,416
686 × 254 × 170	170.2	692.9	255.8	14.5	23.7	20.0†	218	171,782	4,958
762 × 267 × 134	133.9	750.0	264.4	12.0	15.5	20.0†	172	152,061	4,055

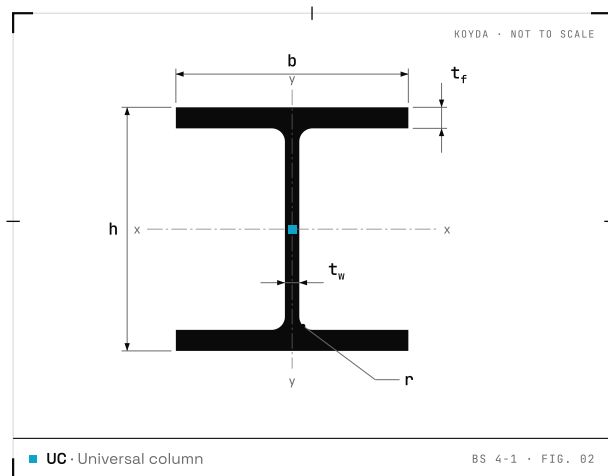
Universal beams (UB), continued

01 • UB

DESIGNATION	MASS kg/m	h mm	b mm	t _w mm	t _f mm	r mm	A cm ²	I _x cm ⁴	W _{el, x} cm ³
762 × 267 × 147	146.9	754.0	265.2	12.8	17.5	20.0†	188	169,871	4,506
762 × 267 × 173	173.0	762.2	266.7	14.3	21.6	20.0†	221	206,651	5,422
762 × 267 × 197	196.8	769.8	268.0	15.6	25.4	20.0†	252	241,326	6,270
838 × 292 × 176	175.9	834.9	291.7	14.0	18.8	20.0†	225	247,120	5,920
838 × 292 × 194	193.8	840.7	292.4	14.7	21.7	20.0†	248	280,274	6,668
838 × 292 × 226	226.5	850.9	293.8	16.1	26.8	20.0†	289	340,802	8,010
914 × 305 × 201	200.9	903.0	303.3	15.1	20.2	19.1	256	325,254	7,204
914 × 305 × 224	224.2	910.4	304.1	15.9	23.9	19.1	286	376,414	8,269
914 × 305 × 253	253.4	918.4	305.5	17.3	27.9	19.1	323	436,305	9,501
914 × 305 × 289	289.1	926.6	307.7	19.5	32.0	19.1	368	504,187	10,883
914 × 419 × 343	343.3	911.8	418.5	19.4	32.0	24.1	437	625,780	13,726
914 × 419 × 388	388.0	921.0	420.5	21.4	36.6	24.1	494	719,635	15,627
1016 × 305 × 222	222.0	970.3	300.0	16.0	21.1	30.0	283	407,961	8,409
1016 × 305 × 249	248.7	980.1	300.0	16.5	26.0	30.0	317	481,192	9,819
1016 × 305 × 272	272.3	990.1	300.0	16.5	31.0	30.0	347	553,974	11,190
1016 × 305 × 314	314.3	999.9	300.0	19.1	35.9	30.0	400	644,063	12,883
1016 × 305 × 349	349.4	1008.0	302.0	21.1	40.0	30.0	445	723,000	14,300
1016 × 305 × 393	392.7	1015.9	303.0	24.4	43.9	30.0	500	807,503	15,897
1016 × 305 × 437	437.0	1026.1	305.4	26.9	49.0	30.0	557	910,322	17,743
1016 × 305 × 487	486.7	1036.3	308.5	30.0	54.1	30.0	620	1,021,884	19,722

02 UC • BS 4-1 / BS EN 10365

Universal columns (UC)



Universal columns (UC) are H-sections with wide flanges, close to square overall. They are mainly used as columns. Sizes are written depth × width × mass per metre.

36 SIZES • 152 × 152 × 23 TO 356 × 406 × 634

Mass	Mass per metre	kg/m
h	Depth of section	mm
b	Width of section	mm
t _w	Web thickness	mm
t _f	Flange thickness	mm
r	Root radius	mm
A	Area of section	cm ²
I _x	Second moment of area, major axis x-x	cm ⁴
W _{el,x}	Elastic section modulus, major axis x-x	cm ³

† Root radius from current manufacturer data to BS EN 10365:2017. Older BS 4-1:2005 tables give a smaller radius for these sizes, so area and I there are about 1–2% lower.

DESIGNATION	MASS kg/m	h mm	b mm	t _w mm	t _f mm	r mm	A cm ²	I _x cm ⁴	W _{el,x} cm ³
152 × 152 × 23	23.0	152.4	152.2	5.8	6.8	7.6	29.2	1,250	164
152 × 152 × 30	30.0	157.6	152.9	6.5	9.4	7.6	38.3	1,748	222
152 × 152 × 37	37.0	161.8	154.4	8.0	11.5	7.6	47.1	2,210	273
152 × 152 × 44	44.0	166.0	155.9	9.5	13.6	7.6	56.1	2,703	326
152 × 152 × 51	51.2	170.2	157.4	11.0	15.7	7.6	65.2	3,227	379
203 × 203 × 46	46.1	203.2	203.6	7.2	11.0	12.7†	59.2	4,605	453
203 × 203 × 52	52.0	206.2	204.3	7.9	12.5	12.7†	66.8	5,296	514
203 × 203 × 60	60.0	209.6	205.8	9.4	14.2	12.7†	76.9	6,162	588
203 × 203 × 71	71.0	215.8	206.4	10.0	17.3	12.7†	90.9	7,655	709
203 × 203 × 86	86.1	222.2	209.1	12.7	20.5	12.7†	110	9,486	854
203 × 203 × 100	99.6	228.6	210.3	14.5	23.7	12.7†	127	11,335	992
203 × 203 × 113	113.5	235.0	212.1	16.3	26.9	12.7†	145	13,338	1,135
203 × 203 × 127	127.5	241.4	213.9	18.1	30.1	12.7†	163	15,474	1,282
254 × 254 × 73	73.1	254.1	254.6	8.6	14.2	20.0†	95.2	11,643	916
254 × 254 × 89	88.9	260.3	256.3	10.3	17.3	20.0†	115	14,504	1,114
254 × 254 × 107	107.1	266.7	258.8	12.8	20.5	20.0†	138	17,747	1,331
254 × 254 × 132	132.0	276.3	261.3	15.3	25.3	20.0†	170	22,765	1,648
254 × 254 × 167	167.1	289.1	265.2	19.2	31.7	20.0†	215	30,234	2,092
305 × 305 × 97	96.9	307.9	305.3	9.9	15.4	20.0†	125	22,504	1,462
305 × 305 × 118	117.9	314.5	307.4	12.0	18.7	20.0†	152	27,927	1,776
305 × 305 × 137	136.9	320.5	309.2	13.8	21.7	20.0†	176	33,070	2,064
305 × 305 × 158	158.1	327.1	311.2	15.8	25.0	20.0†	203	39,002	2,385
305 × 305 × 198	198.1	339.9	314.5	19.1	31.4	20.0†	254	51,159	3,010
305 × 305 × 240	240.0	352.5	318.4	23.0	37.7	20.0†	307	64,458	3,657
305 × 305 × 283	282.9	365.3	322.2	26.8	44.1	20.0†	362	79,127	4,332
356 × 368 × 129	129.0	355.6	368.6	10.4	17.5	20.0†	166	40,591	2,283

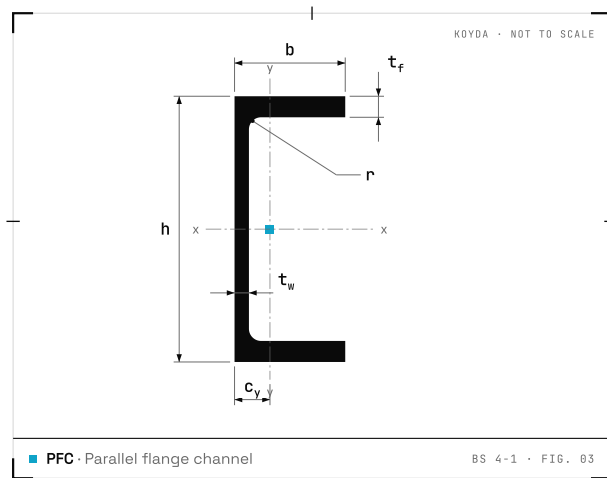
Universal columns (UC), continued

02 • UC

DESIGNATION	MASS kg/m	h mm	b mm	t _w mm	t _f mm	r mm	A cm ²	I _x cm ⁴	W _{el, x} cm ³
356 × 368 × 153	152.9	362.0	370.5	12.3	20.7	20.0†	196	48,935	2,704
356 × 368 × 177	177.0	368.2	372.6	14.4	23.8	20.0†	227	57,464	3,121
356 × 368 × 202	201.9	374.6	374.7	16.5	27.0	20.0†	259	66,607	3,556
356 × 406 × 235	235.1	381.0	394.8	18.4	30.2	20.0†	301	79,431	4,170
356 × 406 × 287	287.1	393.6	399.0	22.6	36.5	20.0†	367	100,221	5,093
356 × 406 × 340	339.9	406.4	403.0	26.6	42.9	20.0†	434	122,889	6,048
356 × 406 × 393	393.0	419.0	407.0	30.6	49.2	20.0†	502	146,964	7,015
356 × 406 × 467	467.0	436.6	412.2	35.8	58.0	20.0†	596	183,349	8,399
356 × 406 × 551	551.0	455.6	418.5	42.1	67.5	20.0†	703	227,284	9,977
356 × 406 × 634	633.9	474.6	424.0	47.6	77.0	20.0†	809	275,191	11,597

03 PFC • BS 4-1 / BS EN 10365

Parallel flange channels (PFC)



Parallel flange channels (PFC) are C-shaped sections with flanges of constant thickness. They are used for trimmers, lintels, edge beams and frames, often back to back. Sizes are written depth × width × mass per metre.

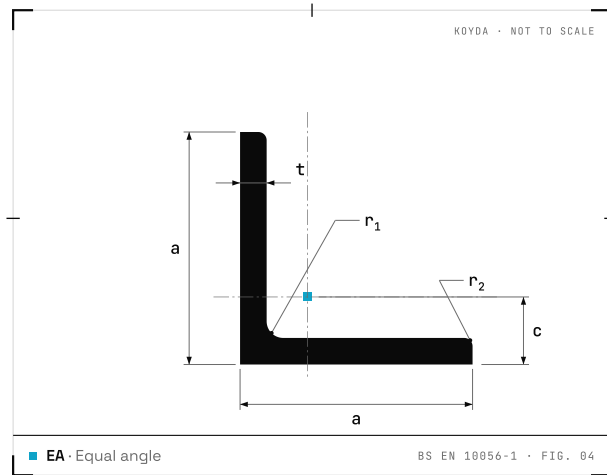
16 SIZES • 100 × 50 × 10 TO 430 × 100 × 64

Mass	Mass per metre	kg/m
h	Depth of section	mm
b	Width of section	mm
t_w	Web thickness	mm
t_f	Flange thickness	mm
r	Root radius	mm
c_y	Back of web to centroid	cm
A	Area of section	cm ²
I_x	Second moment of area, major axis x-x	cm ⁴
W_{el,x}	Elastic section modulus, major axis x-x	cm ³

DESIGNATION	MASS kg/m	h mm	b mm	t _w mm	t _f mm	r mm	c _y cm	A cm ²	I _x cm ⁴	W _{el,x} cm ³
430 × 100 × 64	64.4	430.0	100.0	11.0	19.0	15.0	2.62	82.1	21,939	1,020
380 × 100 × 54	54.0	380.0	100.0	9.5	17.5	15.0	2.79	68.7	15,034	791
300 × 100 × 46	45.5	300.0	100.0	9.0	16.5	15.0	3.05	58	8,229	549
300 × 90 × 41	41.4	300.0	90.0	9.0	15.5	12.0	2.6	52.7	7,218	481
260 × 90 × 35	34.8	260.0	90.0	8.0	14.0	12.0	2.74	44.4	4,728	364
260 × 75 × 28	27.6	260.0	75.0	7.0	12.0	12.0	2.1	35.1	3,619	278
230 × 90 × 32	32.2	230.0	90.0	7.5	14.0	12.0	2.92	41	3,518	306
230 × 75 × 26	25.7	230.0	75.0	6.5	12.5	12.0	2.3	32.7	2,748	239
200 × 90 × 30	29.7	200.0	90.0	7.0	14.0	12.0	3.12	37.9	2,523	252
200 × 75 × 23	23.4	200.0	75.0	6.0	12.5	12.0	2.48	29.9	1,963	196
180 × 90 × 26	26.1	180.0	90.0	6.5	12.5	12.0	3.17	33.2	1,817	202
180 × 75 × 20	20.3	180.0	75.0	6.0	10.5	12.0	2.41	25.9	1,370	152
150 × 90 × 24	23.9	150.0	90.0	6.5	12.0	12.0	3.3	30.4	1,162	155
150 × 75 × 18	17.9	150.0	75.0	5.5	10.0	12.0	2.58	22.8	861	115
125 × 65 × 15	14.8	125.0	65.0	5.5	9.5	12.0	2.25	18.8	483	77.3
100 × 50 × 10	10.2	100.0	50.0	5.0	8.5	9.0	1.73	13	208	41.5

04 EA • BS EN 10056-1

Equal angles (EA)



Equal angles are L-sections with two legs of the same length. They are used for bracing, frames, lintels, edge trims and brackets. Sizes are written leg × leg × thickness.

66 SIZES • 20 × 20 × 3 TO 250 × 250 × 35

Mass	Mass per metre	kg/m
a	Leg length	mm
t	Thickness	mm
r ₁	Root radius	mm
r ₂	Toe radius	mm
A	Area of section	cm ²
c	Back of leg to centroid	cm
I _x	Second moment of area about x-x (equal to y-y)	cm ⁴
W _{el,x}	Elastic section modulus, x-x (equal to y-y)	cm ³

DESIGNATION	MASS kg/m	a mm	t mm	r ₁ mm	r ₂ mm	A cm ²	c cm	I _x cm ⁴	W _{el,x} cm ³
20 × 20 × 3	0.88	20	3	3.5	1.75	1.12	0.598	0.392	0.279
25 × 25 × 3	1.12	25	3	3.5	1.75	1.42	0.723	0.803	0.452
25 × 25 × 4	1.45	25	4	3.5	1.75	1.85	0.762	1.02	0.586
25 × 25 × 5	1.78	25	5	3.5	1.75	2.26	0.799	1.21	0.711
30 × 30 × 3	1.36	30	3	5	2.5	1.74	0.835	1.4	0.649
30 × 30 × 4	1.78	30	4	5	2.5	2.27	0.878	1.8	0.85
30 × 30 × 5	2.18	30	5	5	2.5	2.78	0.918	2.16	1.04
35 × 35 × 4	2.09	35	4	5	2.5	2.67	1	2.95	1.18
40 × 40 × 3	1.84	40	3	6	3	2.35	1.07	3.45	1.18
40 × 40 × 4	2.42	40	4	6	3	3.08	1.12	4.47	1.55
40 × 40 × 5	2.97	40	5	6	3	3.79	1.16	5.43	1.91
40 × 40 × 6	3.52	40	6	6	3	4.48	1.2	6.31	2.26
45 × 45 × 3	2.09	45	3	7	3.5	2.66	1.18	4.93	1.49
45 × 45 × 4	2.74	45	4	7	3.5	3.49	1.23	6.43	1.97
45 × 45 × 4.5	3.06	45	4.5	7	3.5	3.9	1.26	7.15	2.2
45 × 45 × 5	3.38	45	5	7	3.5	4.3	1.28	7.84	2.43
45 × 45 × 6	4.00	45	6	7	3.5	5.09	1.32	9.16	2.88
50 × 50 × 3	2.33	50	3	7	3.5	2.96	1.31	6.86	1.86
50 × 50 × 4	3.06	50	4	7	3.5	3.89	1.36	8.97	2.46
50 × 50 × 5	3.77	50	5	7	3.5	4.8	1.4	11	3.05
50 × 50 × 6	4.47	50	6	7	3.5	5.69	1.45	12.8	3.61
50 × 50 × 8	5.82	50	8	7	3.5	7.41	1.52	16.3	4.68
60 × 60 × 5	4.57	60	5	8	4	5.82	1.64	19.4	4.45
60 × 60 × 6	5.42	60	6	8	4	6.91	1.69	22.8	5.29
60 × 60 × 8	7.09	60	8	8	4	9.03	1.77	29.2	6.89
60 × 60 × 10	8.69	60	10	8	4	11.1	1.85	34.9	8.41
65 × 65 × 7	6.83	65	7	9	4.5	8.7	1.85	33.4	7.18
70 × 70 × 6	6.38	70	6	9	4.5	8.13	1.93	36.9	7.27
70 × 70 × 7	7.38	70	7	9	4.5	9.4	1.97	42.3	8.41
70 × 70 × 8	8.36	70	8	9	4.5	10.6	2.01	47.5	9.52

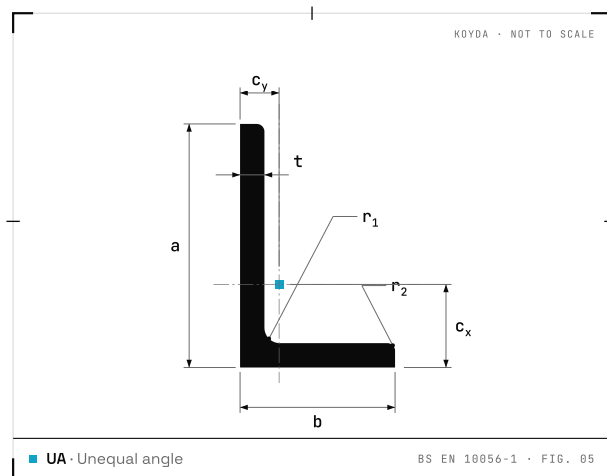
Equal angles (EA), continued

04 • EA

DESIGNATION	MASS kg/m	a mm	t mm	r ₁ mm	r ₂ mm	A cm ²	c cm	I _x cm ⁴	W _{el,x} cm ³
70 × 70 × 10	10.3	70	10	9	4.5	13.1	2.09	57.2	11.7
75 × 75 × 6	6.85	75	6	9	4.5	8.73	2.05	45.8	8.41
75 × 75 × 8	8.99	75	8	9	4.5	11.4	2.14	59.1	11
80 × 80 × 6	7.34	80	6	10	5	9.35	2.17	55.8	9.57
80 × 80 × 8	9.63	80	8	10	5	12.3	2.26	72.2	12.6
80 × 80 × 10	11.9	80	10	10	5	15.1	2.34	87.5	15.4
90 × 90 × 6	8.30	90	6	11	5.5	10.6	2.41	80.3	12.2
90 × 90 × 7	9.61	90	7	11	5.5	12.2	2.45	92.5	14.1
90 × 90 × 8	10.9	90	8	11	5.5	13.9	2.5	104	16.1
90 × 90 × 9	12.2	90	9	11	5.5	15.5	2.54	116	17.9
90 × 90 × 10	13.4	90	10	11	5.5	17.1	2.58	127	19.8
90 × 90 × 12	15.9	90	12	11	5.5	20.3	2.66	148	23.3
100 × 100 × 8	12.2	100	8	12	6	15.5	2.74	145	19.9
100 × 100 × 10	15.0	100	10	12	6	19.2	2.82	177	24.6
100 × 100 × 12	17.8	100	12	12	6	22.7	2.9	207	29.1
100 × 100 × 15	21.9	100	15	12	6	27.9	3.02	249	35.6
120 × 120 × 8	14.7	120	8	13	6.5	18.7	3.23	256	29.1
120 × 120 × 10	18.2	120	10	13	6.5	23.2	3.31	313	36
120 × 120 × 12	21.6	120	12	13	6.5	27.5	3.4	368	42.7
120 × 120 × 15	26.6	120	15	13	6.5	33.9	3.51	445	52.4
130 × 130 × 12	23.5	130	12	14	7	30	3.64	472	50.4
150 × 150 × 10	23.0	150	10	16	8	29.3	4.03	624	56.9
150 × 150 × 12	27.3	150	12	16	8	34.8	4.12	737	67.7
150 × 150 × 15	33.8	150	15	16	8	43	4.25	898	83.5
150 × 150 × 18	40.1	150	18	16	8	51	4.37	1,050	98.7
160 × 160 × 15	36.2	160	15	17	8.5	46.1	4.49	1,099	95.5
180 × 180 × 16	43.5	180	16	18	9	55.4	5.02	1,682	130
180 × 180 × 18	48.6	180	18	18	9	61.9	5.1	1,866	145
200 × 200 × 16	48.5	200	16	18	9	61.8	5.52	2,342	162
200 × 200 × 18	54.2	200	18	18	9	69.1	5.6	2,600	181
200 × 200 × 20	59.9	200	20	18	9	76.3	5.68	2,851	199
200 × 200 × 24	71.1	200	24	18	9	90.6	5.84	3,331	235
250 × 250 × 25	93.6	250	25	20	10	119	7.12	6,975	390
250 × 250 × 28	104.0	250	28	18	9	133	7.24	7,697	433
250 × 250 × 32	118.0	250	32	20	10	150	7.38	8,597	488
250 × 250 × 35	128.0	250	35	18	9	163	7.5	9,264	529

05 UA • BS EN 10056-1

Unequal angles (UA)



Unequal angles are L-sections with one long leg and one short leg. They are used where one leg needs more depth, for lintels, shelf angles and supports. Sizes are written long leg × short leg × thickness.

44 SIZES • 30 × 20 × 3 TO 200 × 150 × 18

Mass	Mass per metre	kg/m
a	Long leg	mm
b	Short leg	mm
t	Thickness	mm
r ₁	Root radius	mm
r ₂	Toe radius	mm
A	Area of section	cm ²
c _x	Back of short leg to centroid (along the long leg)	cm
c _y	Back of long leg to centroid (along the short leg)	cm
I _x	Second moment of area about x-x (parallel to the short leg)	cm ⁴
I _y	Second moment of area about y-y (parallel to the long leg)	cm ⁴

DESIGNATION	MASS kg/m	a mm	b mm	t mm	r ₁ mm	r ₂ mm	A cm ²	c _x cm	c _y cm	I _x cm ⁴	I _y cm ⁴
30 × 20 × 3	1.12	30	20	3	4	2	1.43	0.99	0.502	1.25	0.437
30 × 20 × 4	1.46	30	20	4	4	2	1.86	1.03	0.541	1.59	0.553
40 × 20 × 4	1.77	40	20	4	4	2	2.26	1.47	0.481	3.59	0.596
40 × 25 × 4	1.93	40	25	4	4	2	2.46	1.36	0.623	3.89	1.16
45 × 30 × 4	2.25	45	30	4	4.5	2.25	2.86	1.48	0.739	5.75	2.04
50 × 30 × 5	2.96	50	30	5	5	2.5	3.78	1.73	0.741	9.36	2.51
60 × 30 × 5	3.37	60	30	5	6	3	4.29	2.15	0.681	15.6	2.6
60 × 30 × 6	3.99	60	30	6	6	3	5.08	2.2	0.72	18.2	3.02
60 × 40 × 5	3.76	60	40	5	6	3	4.79	1.96	0.972	17.2	6.11
60 × 40 × 6	4.46	60	40	6	6	3	5.68	2	1.01	20.1	7.12
65 × 50 × 5	4.35	65	50	5	6	3	5.54	1.99	1.25	23.2	11.9
65 × 50 × 6	5.16	65	50	6	6	3	6.58	2.04	1.29	27.2	14
65 × 50 × 8	6.75	65	50	8	6	3	8.6	2.11	1.37	34.8	17.7
70 × 50 × 6	5.41	70	50	6	7	3.5	6.89	2.23	1.25	33.4	14.2
75 × 50 × 6	5.65	75	50	6	7	3.5	7.19	2.44	1.21	40.5	14.4
75 × 50 × 8	7.39	75	50	8	7	3.5	9.41	2.52	1.29	52	18.4
80 × 40 × 6	5.41	80	40	6	7	3.5	6.89	2.85	0.884	44.9	7.59
80 × 40 × 8	7.07	80	40	8	7	3.5	9.01	2.94	0.963	57.6	9.61
80 × 60 × 6	6.37	80	60	6	8	4	8.11	2.47	1.48	51.4	24.8
80 × 60 × 7	7.36	80	60	7	8	4	9.38	2.51	1.52	59	28.4
80 × 60 × 8	8.34	80	60	8	8	4	10.6	2.55	1.56	66.3	31.8
100 × 50 × 6	6.84	100	50	6	8	4	8.71	3.51	1.05	89.9	15.4
100 × 50 × 8	8.97	100	50	8	8	4	11.4	3.6	1.13	116	19.7
100 × 65 × 7	8.77	100	65	7	10	5	11.2	3.23	1.51	113	37.6
100 × 65 × 8	9.94	100	65	8	10	5	12.7	3.27	1.55	127	42.2
100 × 65 × 10	12.3	100	65	10	10	5	15.6	3.36	1.63	154	51

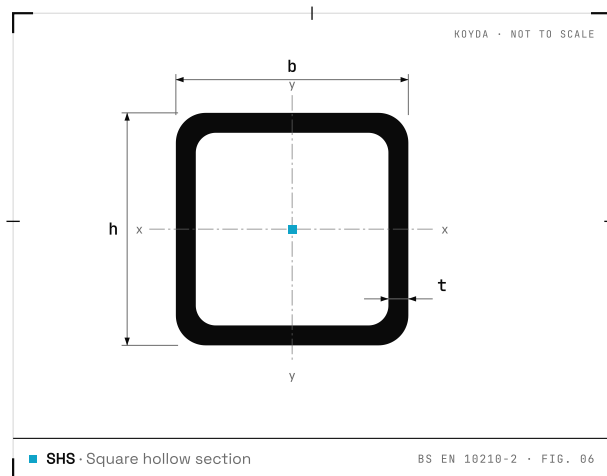
Unequal angles (UA), continued

05 • UA

DESIGNATION	MASS kg/m	a mm	b mm	t mm	r ₁ mm	r ₂ mm	A cm ²	c _x cm	c _y cm	I _x cm ⁴	I _y cm ⁴
100 × 75 × 8	10.6	100	75	8	10	5	13.5	3.1	1.87	133	64.1
100 × 75 × 10	13.0	100	75	10	10	5	16.6	3.19	1.95	162	77.6
100 × 75 × 12	15.4	100	75	12	10	5	19.7	3.27	2.03	189	90.2
125 × 75 × 8	12.2	125	75	8	11	5.5	15.5	4.14	1.68	247	67.6
125 × 75 × 10	15.0	125	75	10	11	5.5	19.1	4.23	1.76	302	82.1
125 × 75 × 12	17.8	125	75	12	11	5.5	22.7	4.31	1.84	354	95.5
150 × 75 × 10	17.0	150	75	10	11	5.5	21.6	5.32	1.61	501	85.8
150 × 75 × 12	20.2	150	75	12	11	5.5	25.7	5.41	1.69	589	99.9
150 × 75 × 15	24.8	150	75	15	11	5.5	31.6	5.53	1.81	713	120
150 × 90 × 10	18.2	150	90	10	12	6	23.2	5	2.04	533	146
150 × 90 × 12	21.6	150	90	12	12	6	27.5	5.08	2.12	627	171
150 × 90 × 15	26.6	150	90	15	12	6	33.9	5.21	2.23	761	205
200 × 100 × 10	23.0	200	100	10	15	7.5	29.2	6.93	2.01	1,219	210
200 × 100 × 12	27.3	200	100	12	15	7.5	34.8	7.03	2.1	1,441	247
200 × 100 × 15	33.7	200	100	15	15	7.5	43	7.16	2.22	1,759	299
200 × 150 × 12	32.0	200	150	12	15	7.5	40.8	6.08	3.61	1,653	803
200 × 150 × 15	39.6	200	150	15	15	7.5	50.5	6.21	3.73	2,023	979
200 × 150 × 18	47.1	200	150	18	15	7.5	60	6.33	3.85	2,376	1,146

06 SHS • BS EN 10210-2 (HOT-FINISHED)

Square hollow sections (SHS)



Square hollow sections (SHS) are square tubes. They are used for columns, posts, frames, balustrade posts and canopies. Sizes are written outside size × outside size × wall thickness. This table covers hot-finished sections.

123 SIZES • 40 × 40 × 3.2 TO 400 × 400 × 17.5

Mass	Mass per metre	kg/m
h	Outside size (h = b)	mm
t	Thickness	mm
A	Area of section	cm ²
I	Second moment of area	cm ⁴
W _{el}	Elastic section modulus	cm ³

DESIGNATION	MASS kg/m	h mm	t mm	A cm ²	I cm ⁴	W _{el} cm ³
40 × 40 × 3.2	3.61	40	3.2	4.6	10.2	5.11
40 × 40 × 3.6	4.01	40	3.6	5.1	11.1	5.54
40 × 40 × 4.0	4.39	40	4.0	5.59	11.8	5.91
40 × 40 × 5.0	5.28	40	5.0	6.73	13.4	6.68
40 × 40 × 6.3	6.33	40	6.3	8.07	14.7	7.34
50 × 50 × 3.2	4.62	50	3.2	5.88	21.2	8.49
50 × 50 × 3.6	5.14	50	3.6	6.54	23.2	9.27
50 × 50 × 4.0	5.64	50	4.0	7.19	25	9.99
50 × 50 × 5.0	6.85	50	5.0	8.73	28.9	11.6
50 × 50 × 6.3	8.31	50	6.3	10.6	32.8	13.1
50 × 50 × 8.0	10.0	50	8.0	12.8	36	14.4
60 × 60 × 3.2	5.62	60	3.2	7.16	38.2	12.7
60 × 60 × 3.6	6.27	60	3.6	7.98	41.9	14
60 × 60 × 4.0	6.90	60	4.0	8.79	45.4	15.1
60 × 60 × 5.0	8.42	60	5.0	10.7	53.3	17.8
60 × 60 × 6.3	10.3	60	6.3	13.1	61.6	20.5
60 × 60 × 8.0	12.5	60	8.0	16	69.7	23.2
70 × 70 × 3.2	6.63	70	3.2	8.44	62.3	17.8
70 × 70 × 3.6	7.40	70	3.6	9.42	68.6	19.6
70 × 70 × 4.0	8.15	70	4.0	10.4	74.7	21.3
70 × 70 × 5.0	9.99	70	5.0	12.7	88.5	25.3
70 × 70 × 6.3	12.3	70	6.3	15.6	104	29.7
70 × 70 × 8.0	15.0	70	8.0	19.2	120	34.2
70 × 70 × 10.0	18.0	70	10.0	22.9	133	38
80 × 80 × 3.2	7.63	80	3.2	9.72	95	23.7
80 × 80 × 3.6	8.53	80	3.6	10.9	105	26.2
80 × 80 × 4.0	9.41	80	4.0	12	114	28.6
80 × 80 × 5.0	11.6	80	5.0	14.7	137	34.2
80 × 80 × 6.3	14.2	80	6.3	18.1	162	40.5
80 × 80 × 8.0	17.5	80	8.0	22.4	189	47.3
80 × 80 × 10.0	21.1	80	10.0	26.9	214	53.5
90 × 90 × 3.6	9.66	90	3.6	12.3	152	33.8
90 × 90 × 4.0	10.7	90	4.0	13.6	166	37

Square hollow sections (SHS), continued

06 • SHS

DESIGNATION	MASS kg/m	h mm	t mm	A cm ²	I cm ⁴	W _{eL} cm ³
90 × 90 × 5.0	13.1	90	5.0	16.7	200	44.4
90 × 90 × 6.3	16.2	90	6.3	20.7	238	53
90 × 90 × 8.0	20.1	90	8.0	25.6	281	62.6
90 × 90 × 10.0	24.3	90	10.0	30.9	322	71.6
100 × 100 × 3.6	10.8	100	3.6	13.7	212	42.3
100 × 100 × 4.0	11.9	100	4.0	15.2	232	46.4
100 × 100 × 5.0	14.7	100	5.0	18.7	279	55.9
100 × 100 × 6.3	18.2	100	6.3	23.2	336	67.1
100 × 100 × 8.0	22.6	100	8.0	28.8	400	79.9
100 × 100 × 10.0	27.4	100	10.0	34.9	462	92.4
120 × 120 × 4.0	14.4	120	4.0	18.4	410	68.4
120 × 120 × 5.0	17.8	120	5.0	22.7	498	83
120 × 120 × 6.3	22.2	120	6.3	28.2	603	100
120 × 120 × 8.0	27.6	120	8.0	35.2	726	121
120 × 120 × 10.0	33.7	120	10.0	42.9	852	142
120 × 120 × 12.5	40.9	120	12.5	52.1	982	164
140 × 140 × 5.0	21.0	140	5.0	26.7	807	115
140 × 140 × 6.3	26.1	140	6.3	33.3	984	141
140 × 140 × 8.0	32.6	140	8.0	41.6	1,200	171
140 × 140 × 10.0	40.0	140	10.0	50.9	1,420	202
140 × 140 × 12.5	48.7	140	12.5	62.1	1,650	236
140 × 140 × 14.2	54.4	140	14.2	69.3	1,790	256
140 × 140 × 16.0	60.1	140	16.0	76.6	1,920	274
150 × 150 × 4.0	18.2	150	4.0	23.2	821	109
150 × 150 × 5.0	22.6	150	5.0	28.7	1,000	134
150 × 150 × 6.3	28.1	150	6.3	35.8	1,220	163
150 × 150 × 8.0	35.1	150	8.0	44.8	1,490	199
150 × 150 × 10.0	43.1	150	10.0	54.9	1,770	236
150 × 150 × 12.5	52.7	150	12.5	67.1	2,080	277
150 × 150 × 14.2	58.9	150	14.2	75	2,260	302
150 × 150 × 16.0	65.2	150	16.0	83	2,430	324
160 × 160 × 5.0	24.1	160	5.0	30.7	1,220	153
160 × 160 × 6.3	30.1	160	6.3	38.3	1,500	187
160 × 160 × 8.0	37.6	160	8.0	48	1,830	229
160 × 160 × 10.0	46.3	160	10.0	58.9	2,190	273
160 × 160 × 12.5	56.6	160	12.5	72.1	2,580	322
160 × 160 × 14.2	63.3	160	14.2	80.7	2,810	351
160 × 160 × 16.0	70.2	160	16.0	89.4	3,030	379
180 × 180 × 6.3	34.0	180	6.3	43.3	2,170	241
180 × 180 × 8.0	42.7	180	8.0	54.4	2,660	296
180 × 180 × 10.0	52.5	180	10.0	66.9	3,190	355
180 × 180 × 12.5	64.4	180	12.5	82.1	3,790	421
180 × 180 × 14.2	72.2	180	14.2	92	4,150	462
180 × 180 × 16.0	80.2	180	16.0	102	4,500	500
200 × 200 × 5.0	30.4	200	5.0	38.7	2,440	245
200 × 200 × 6.3	38.0	200	6.3	48.4	3,010	301
200 × 200 × 8.0	47.7	200	8.0	60.8	3,710	371
200 × 200 × 10.0	58.8	200	10.0	74.9	4,470	447
200 × 200 × 12.5	72.3	200	12.5	92.1	5,340	534
200 × 200 × 14.2	81.1	200	14.2	103	5,870	587

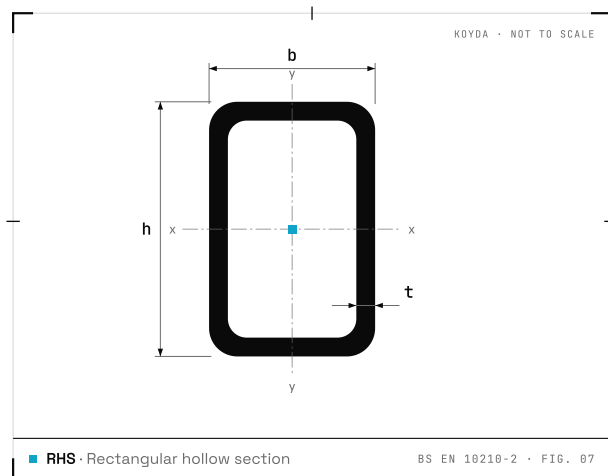
Square hollow sections (SHS), continued

06 • SHS

DESIGNATION	MASS kg/m	h mm	t mm	A cm ²	I cm ⁴	W _{eL} cm ³
200 × 200 × 16.0	90.3	200	16.0	115	6,390	639
200 × 200 × 17.5	97.7	200	17.5	124	6,790	679
220 × 220 × 8.0	52.7	220	8.0	67.2	5,000	455
220 × 220 × 10.0	65.1	220	10.0	82.9	6,050	550
220 × 220 × 12.5	80.1	220	12.5	102	7,250	659
220 × 220 × 14.2	90.1	220	14.2	115	8,010	728
220 × 220 × 16.0	100.0	220	16.0	128	8,750	795
220 × 220 × 17.5	109.0	220	17.5	138	9,320	848
250 × 250 × 5.0	38.3	250	5.0	48.7	4,860	389
250 × 250 × 6.3	47.9	250	6.3	61	6,010	481
250 × 250 × 8.0	60.3	250	8.0	76.8	7,460	596
250 × 250 × 10.0	74.5	250	10.0	94.9	9,060	724
250 × 250 × 12.5	91.9	250	12.5	117	10,900	873
250 × 250 × 14.2	103.0	250	14.2	132	12,100	967
250 × 250 × 16.0	115.0	250	16.0	147	13,300	1,060
250 × 250 × 17.5	125.0	250	17.5	159	14,200	1,140
260 × 260 × 10.0	77.7	260	10.0	98.9	10,200	788
260 × 260 × 12.5	95.8	260	12.5	122	12,400	951
260 × 260 × 14.2	108.0	260	14.2	137	13,700	1,060
260 × 260 × 16.0	120.0	260	16.0	153	15,100	1,160
260 × 260 × 17.5	131.0	260	17.5	166	16,100	1,240
300 × 300 × 6.3	57.8	300	6.3	73.6	10,500	703
300 × 300 × 8.0	72.8	300	8.0	92.8	13,100	875
300 × 300 × 10.0	90.2	300	10.0	115	16,000	1,070
300 × 300 × 12.5	112.0	300	12.5	142	19,400	1,300
300 × 300 × 14.2	126.0	300	14.2	160	21,600	1,440
300 × 300 × 16.0	141.0	300	16.0	179	23,800	1,590
300 × 300 × 17.5	153.0	300	17.5	194	25,600	1,710
350 × 350 × 8.0	85.4	350	8.0	109	21,100	1,210
350 × 350 × 10.0	106.0	350	10.0	135	25,900	1,480
350 × 350 × 12.5	131.0	350	12.5	167	31,500	1,800
350 × 350 × 14.2	148.0	350	14.2	189	35,200	2,010
350 × 350 × 16.0	166.0	350	16.0	211	38,900	2,220
350 × 350 × 17.5	180.0	350	17.5	229	41,900	2,400
400 × 400 × 8.0	97.9	400	8.0	125	31,900	1,590
400 × 400 × 10.0	122.0	400	10.0	155	39,100	1,960
400 × 400 × 12.5	151.0	400	12.5	192	47,800	2,390
400 × 400 × 14.2	170.0	400	14.2	217	53,500	2,680
400 × 400 × 16.0	191.0	400	16.0	243	59,300	2,970
400 × 400 × 17.5	208.0	400	17.5	264	64,000	3,200

07 RHS • BS EN 10210-2 (HOT-FINISHED)

Rectangular hollow sections (RHS)



Rectangular hollow sections (RHS) are rectangular tubes. They are used for beams, frames, lintels, stair stringers and posts. Sizes are written depth × width × wall thickness. This table covers hot-finished sections.

161 SIZES • 50 × 30 × 3.2 TO 500 × 300 × 17.5

Mass	Mass per metre	kg/m
h	Outside depth (the larger side)	mm
b	Outside width	mm
t	Thickness	mm
A	Area of section	cm ²
I _x	Second moment of area, major axis x-x	cm ⁴
I _y	Second moment of area, minor axis y-y	cm ⁴
W _{el,x}	Elastic section modulus, major axis x-x	cm ³
W _{el,y}	Elastic section modulus, minor axis y-y	cm ³

DESIGNATION	MASS kg/m	h mm	b mm	t mm	A cm ²	I _x cm ⁴	I _y cm ⁴	W _{el,x} cm ³	W _{el,y} cm ³
50 × 30 × 3.2	3.61	50	30	3.2	4.6	14.2	6.2	5.68	4.13
50 × 30 × 3.6	4.01	50	30	3.6	5.1	15.4	6.67	6.16	4.45
50 × 30 × 4.0	4.39	50	30	4.0	5.59	16.5	7.08	6.6	4.72
50 × 30 × 5.0	5.28	50	30	5.0	6.73	18.7	7.89	7.49	5.26
50 × 30 × 6.3	6.33	50	30	6.3	8.07	20.6	8.5	8.26	5.66
60 × 40 × 3.2	4.62	60	40	3.2	5.88	27.8	14.6	9.27	7.29
60 × 40 × 3.6	5.14	60	40	3.6	6.54	30.4	15.9	10.1	7.93
60 × 40 × 4.0	5.64	60	40	4.0	7.19	32.8	17	10.9	8.52
60 × 40 × 5.0	6.85	60	40	5.0	8.73	38.1	19.5	12.7	9.77
60 × 40 × 6.3	8.31	60	40	6.3	10.6	43.4	21.9	14.5	11
60 × 40 × 8.0	10.0	60	40	8.0	12.8	47.9	23.7	16	11.9
80 × 40 × 3.2	5.62	80	40	3.2	7.16	57.2	18.9	14.3	9.46
80 × 40 × 3.6	6.27	80	40	3.6	7.98	62.8	20.6	15.7	10.3
80 × 40 × 4.0	6.90	80	40	4.0	8.79	68.2	22.2	17.1	11.1
80 × 40 × 5.0	8.42	80	40	5.0	10.7	80.3	25.7	20.1	12.9
80 × 40 × 6.3	10.3	80	40	6.3	13.1	93.3	29.2	23.3	14.6
80 × 40 × 8.0	12.5	80	40	8.0	16	106	32.1	26.5	16.1
90 × 50 × 3.2	6.63	90	50	3.2	8.44	89.1	35.3	19.8	14.1
90 × 50 × 3.6	7.40	90	50	3.6	9.42	98.3	38.7	21.8	15.5
90 × 50 × 4.0	8.15	90	50	4.0	10.4	107	41.9	23.8	16.8
90 × 50 × 5.0	9.99	90	50	5.0	12.7	127	49.2	28.3	19.7
90 × 50 × 6.3	12.3	90	50	6.3	15.6	150	57	33.3	22.8
90 × 50 × 8.0	15.0	90	50	8.0	19.2	174	64.6	38.6	25.8
90 × 50 × 10.0	18.0	90	50	10.0	22.9	194	70.2	43	28.1
100 × 50 × 3.2	7.13	100	50	3.2	9.08	116	38.8	23.2	15.5
100 × 50 × 3.6	7.96	100	50	3.6	10.1	128	42.6	25.6	17
100 × 50 × 4.0	8.78	100	50	4.0	11.2	140	46.2	27.9	18.5
100 × 50 × 5.0	10.8	100	50	5.0	13.7	167	54.3	33.3	21.7
100 × 50 × 6.3	13.3	100	50	6.3	16.9	197	63	39.4	25.2

Rectangular hollow sections (RHS), continued

07 • RHS

DESIGNATION	MASS kg/m	h mm	b mm	t mm	A cm ²	I _x cm ⁴	I _y cm ⁴	W _{eL,x} cm ³	W _{eL,y} cm ³
100 × 50 × 8.0	16.3	100	50	8.0	20.8	230	71.7	46	28.7
100 × 50 × 10.0	19.6	100	50	10.0	24.9	259	78.4	51.8	31.4
100 × 60 × 3.2	7.63	100	60	3.2	9.72	131	58.8	26.2	19.6
100 × 60 × 3.6	8.53	100	60	3.6	10.9	145	64.8	28.9	21.6
100 × 60 × 4.0	9.41	100	60	4.0	12	158	70.5	31.6	23.5
100 × 60 × 5.0	11.6	100	60	5.0	14.7	189	83.6	37.8	27.9
100 × 60 × 6.3	14.2	100	60	6.3	18.1	225	98.1	45	32.7
100 × 60 × 8.0	17.5	100	60	8.0	22.4	264	113	52.8	37.8
100 × 60 × 10.0	21.1	100	60	10.0	26.9	299	126	59.9	42.1
120 × 60 × 3.6	9.66	120	60	3.6	12.3	227	76.3	37.9	25.4
120 × 60 × 4.0	10.7	120	60	4.0	13.6	249	83.1	41.5	27.7
120 × 60 × 5.0	13.1	120	60	5.0	16.7	299	98.8	49.9	32.9
120 × 60 × 6.3	16.2	120	60	6.3	20.7	358	116	59.7	38.8
120 × 60 × 8.0	20.1	120	60	8.0	25.6	425	135	70.8	45
120 × 60 × 10.0	24.3	120	60	10.0	30.9	488	152	81.4	50.5
120 × 80 × 3.6	10.8	120	80	3.6	13.7	276	147	46	36.7
120 × 80 × 4.0	11.9	120	80	4.0	15.2	303	161	50.4	40.2
120 × 80 × 5.0	14.7	120	80	5.0	18.7	365	193	60.9	48.2
120 × 80 × 6.3	18.2	120	80	6.3	23.2	440	230	73.3	57.6
120 × 80 × 8.0	22.6	120	80	8.0	28.8	525	273	87.5	68.1
120 × 80 × 10.0	27.4	120	80	10.0	34.9	609	313	102	78.1
150 × 100 × 4.0	15.1	150	100	4.0	19.2	607	324	81	64.8
150 × 100 × 5.0	18.6	150	100	5.0	23.7	739	392	98.5	78.5
150 × 100 × 6.3	23.1	150	100	6.3	29.5	898	474	120	94.8
150 × 100 × 8.0	28.9	150	100	8.0	36.8	1,090	569	145	114
150 × 100 × 10.0	35.3	150	100	10.0	44.9	1,280	665	171	133
150 × 100 × 12.5	42.8	150	100	12.5	54.6	1,490	763	198	153
160 × 80 × 4.0	14.4	160	80	4.0	18.4	612	207	76.5	51.7
160 × 80 × 5.0	17.8	160	80	5.0	22.7	744	249	93	62.3
160 × 80 × 6.3	22.2	160	80	6.3	28.2	903	299	113	74.8
160 × 80 × 8.0	27.6	160	80	8.0	35.2	1,090	356	136	89
160 × 80 × 10.0	33.7	160	80	10.0	42.9	1,280	411	161	103
160 × 80 × 12.5	40.9	160	80	12.5	52.1	1,480	465	186	116
200 × 100 × 4.0	18.2	200	100	4.0	23.2	1,220	416	122	83.2
200 × 100 × 5.0	22.6	200	100	5.0	28.7	1,500	505	149	101
200 × 100 × 6.3	28.1	200	100	6.3	35.8	1,830	613	183	123
200 × 100 × 8.0	35.1	200	100	8.0	44.8	2,230	739	223	148
200 × 100 × 10.0	43.1	200	100	10.0	54.9	2,660	869	266	174
200 × 100 × 12.5	52.7	200	100	12.5	67.1	3,140	1,000	314	201
200 × 100 × 14.2	58.9	200	100	14.2	75	3,420	1,080	342	216
200 × 100 × 16.0	65.2	200	100	16.0	83	3,680	1,150	368	229
200 × 120 × 5.0	24.1	200	120	5.0	30.7	1,680	762	168	127
200 × 120 × 6.3	30.1	200	120	6.3	38.3	2,060	929	207	155
200 × 120 × 8.0	37.6	200	120	8.0	48	2,530	1,130	253	188
200 × 120 × 10.0	46.3	200	120	10.0	58.9	3,030	1,340	303	223
200 × 120 × 12.5	56.6	200	120	12.5	72.1	3,580	1,560	358	260
200 × 120 × 14.2	63.3	200	120	14.2	80.7	3,910	1,690	391	282
200 × 120 × 16.0	70.2	200	120	16.0	89.4	4,220	1,810	422	302
200 × 150 × 5.0	26.5	200	150	5.0	33.7	1,970	1,260	197	169
200 × 150 × 6.3	33.0	200	150	6.3	42.1	2,420	1,550	242	207

Rectangular hollow sections (RHS), continued

07 • RHS

DESIGNATION	MASS kg/m	h mm	b mm	t mm	A cm ²	I _x cm ⁴	I _y cm ⁴	W _{eL,x} cm ³	W _{eL,y} cm ³
200 × 150 × 8.0	41.4	200	150	8.0	52.8	2,970	1,890	297	253
200 × 150 × 10.0	51.0	200	150	10.0	64.9	3,570	2,260	357	302
200 × 150 × 12.5	62.5	200	150	12.5	79.6	4,240	2,670	424	356
200 × 150 × 14.2	70.0	200	150	14.2	89.2	4,640	2,920	464	389
200 × 150 × 16.0	77.7	200	150	16.0	99	5,040	3,150	504	420
250 × 100 × 5.0	26.5	250	100	5.0	33.7	2,610	618	209	124
250 × 100 × 6.3	33.0	250	100	6.3	42.1	3,210	751	257	150
250 × 100 × 8.0	41.4	250	100	8.0	52.8	3,940	909	315	182
250 × 100 × 10.0	51.0	250	100	10.0	64.9	4,730	1,070	379	214
250 × 100 × 12.5	62.5	250	100	12.5	79.6	5,620	1,240	450	249
250 × 100 × 14.2	70.0	250	100	14.2	89.2	6,160	1,340	493	269
250 × 100 × 16.0	77.7	250	100	16.0	99	6,690	1,430	535	287
250 × 150 × 5.0	30.4	250	150	5.0	38.7	3,360	1,530	269	204
250 × 150 × 6.3	38.0	250	150	6.3	48.4	4,140	1,870	331	250
250 × 150 × 8.0	47.7	250	150	8.0	60.8	5,110	2,300	409	306
250 × 150 × 10.0	58.8	250	150	10.0	74.9	6,170	2,760	494	367
250 × 150 × 12.5	72.3	250	150	12.5	92.1	7,390	3,260	591	435
250 × 150 × 14.2	81.1	250	150	14.2	103	8,140	3,580	651	477
250 × 150 × 16.0	90.3	250	150	16.0	115	8,880	3,870	710	516
250 × 150 × 17.5	97.7	250	150	17.5	124	9,450	4,100	756	546
300 × 100 × 5.0	30.4	300	100	5.0	38.7	4,150	731	276	146
300 × 100 × 6.3	38.0	300	100	6.3	48.4	5,110	890	341	178
300 × 100 × 8.0	47.7	300	100	8.0	60.8	6,300	1,080	420	216
300 × 100 × 10.0	58.8	300	100	10.0	74.9	7,610	1,280	508	255
300 × 100 × 12.5	72.3	300	100	12.5	92.1	9,100	1,490	607	297
300 × 100 × 14.2	81.1	300	100	14.2	103	10,000	1,610	669	321
300 × 100 × 16.0	90.3	300	100	16.0	115	10,900	1,720	729	344
300 × 100 × 17.5	97.7	300	100	17.5	124	11,600	1,800	775	360
300 × 200 × 5.0	38.3	300	200	5.0	48.7	6,320	3,400	421	340
300 × 200 × 6.3	47.9	300	200	6.3	61	7,830	4,190	522	419
300 × 200 × 8.0	60.3	300	200	8.0	76.8	9,720	5,180	648	518
300 × 200 × 10.0	74.5	300	200	10.0	94.9	11,800	6,280	788	628
300 × 200 × 12.5	91.9	300	200	12.5	117	14,300	7,540	952	754
300 × 200 × 14.2	103.0	300	200	14.2	132	15,800	8,330	1,060	833
300 × 200 × 16.0	115.0	300	200	16.0	147	17,400	9,110	1,160	911
300 × 200 × 17.5	125.0	300	200	17.5	159	18,600	9,720	1,240	972
350 × 150 × 5.0	38.3	350	150	5.0	48.7	7,660	2,050	437	274
350 × 150 × 6.3	47.9	350	150	6.3	61	9,480	2,520	542	337
350 × 150 × 8.0	60.3	350	150	8.0	76.8	11,800	3,100	673	414
350 × 150 × 10.0	74.5	350	150	10.0	94.9	14,300	3,740	818	498
350 × 150 × 12.5	91.9	350	150	12.5	117	17,300	4,450	988	593
350 × 150 × 14.2	103.0	350	150	14.2	132	19,200	4,890	1,100	652
350 × 150 × 16.0	115.0	350	150	16.0	147	21,100	5,320	1,200	709
350 × 150 × 17.5	125.0	350	150	17.5	159	22,600	5,640	1,290	752
350 × 250 × 6.3	57.8	350	250	6.3	73.6	13,200	7,880	754	631
350 × 250 × 8.0	72.8	350	250	8.0	92.8	16,400	9,800	940	784
350 × 250 × 10.0	90.2	350	250	10.0	115	20,100	11,900	1,150	955
350 × 250 × 12.5	112.0	350	250	12.5	142	24,400	14,400	1,400	1,160
350 × 250 × 14.2	126.0	350	250	14.2	160	27,200	16,000	1,550	1,280
350 × 250 × 16.0	141.0	350	250	16.0	179	30,000	17,700	1,720	1,410

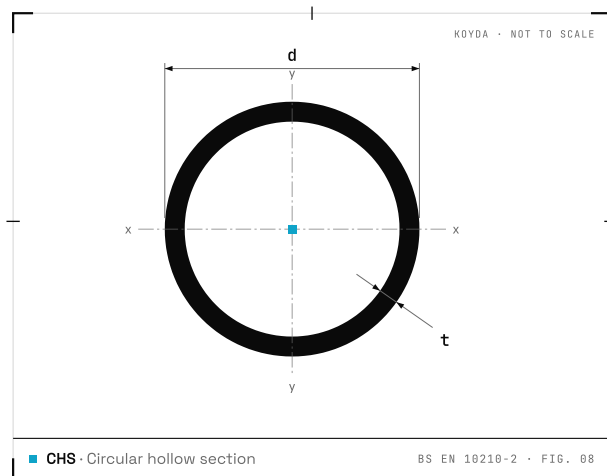
Rectangular hollow sections (RHS), continued

07 • RHS

DESIGNATION	MASS kg/m	h mm	b mm	t mm	A cm ²	I _x cm ⁴	I _y cm ⁴	W _{eL,x} cm ³	W _{eL,y} cm ³
350 × 250 × 17.5	153.0	350	250	17.5	194	32,200	18,900	1,840	1,510
400 × 200 × 6.3	57.8	400	200	6.3	73.6	15,700	5,380	785	538
400 × 200 × 8.0	72.8	400	200	8.0	92.8	19,600	6,660	978	666
400 × 200 × 10.0	90.2	400	200	10.0	115	23,900	8,080	1,200	808
400 × 200 × 12.5	112.0	400	200	12.5	142	29,100	9,740	1,450	974
400 × 200 × 14.2	126.0	400	200	14.2	160	32,400	10,800	1,620	1,080
400 × 200 × 16.0	141.0	400	200	16.0	179	35,700	11,800	1,790	1,180
400 × 200 × 17.5	153.0	400	200	17.5	194	38,400	12,600	1,920	1,260
400 × 300 × 8.0	85.4	400	300	8.0	109	25,700	16,500	1,280	1,100
400 × 300 × 10.0	106.0	400	300	10.0	135	31,500	20,200	1,580	1,350
400 × 300 × 12.5	131.0	400	300	12.5	167	38,500	24,600	1,920	1,640
400 × 300 × 14.2	148.0	400	300	14.2	189	43,000	27,400	2,150	1,830
400 × 300 × 16.0	166.0	400	300	16.0	211	47,500	30,300	2,380	2,020
400 × 300 × 17.5	180.0	400	300	17.5	229	51,200	32,600	2,560	2,170
450 × 250 × 8.0	85.4	450	250	8.0	109	30,100	12,100	1,340	971
450 × 250 × 10.0	106.0	450	250	10.0	135	36,900	14,800	1,640	1,180
450 × 250 × 12.5	131.0	450	250	12.5	167	45,000	18,000	2,000	1,440
450 × 250 × 14.2	148.0	450	250	14.2	189	50,300	20,000	2,240	1,600
450 × 250 × 16.0	166.0	450	250	16.0	211	55,700	22,000	2,480	1,760
450 × 250 × 17.5	180.0	450	250	17.5	229	60,000	23,700	2,670	1,890
500 × 200 × 8.0	85.4	500	200	8.0	109	34,000	8,140	1,360	814
500 × 200 × 10.0	106.0	500	200	10.0	135	41,800	9,890	1,670	989
500 × 200 × 12.5	131.0	500	200	12.5	167	51,000	11,900	2,040	1,190
500 × 200 × 14.2	148.0	500	200	14.2	189	56,900	13,200	2,280	1,320
500 × 200 × 16.0	166.0	500	200	16.0	211	63,000	14,500	2,520	1,450
500 × 200 × 17.5	180.0	500	200	17.5	229	67,900	15,600	2,720	1,560
500 × 300 × 8.0	97.9	500	300	8.0	125	43,700	20,000	1,750	1,330
500 × 300 × 10.0	122.0	500	300	10.0	155	53,800	24,400	2,150	1,630
500 × 300 × 12.5	151.0	500	300	12.5	192	65,800	29,800	2,630	1,980
500 × 300 × 14.2	170.0	500	300	14.2	217	73,700	33,200	2,950	2,220
500 × 300 × 16.0	191.0	500	300	16.0	243	81,800	36,800	3,270	2,450
500 × 300 × 17.5	208.0	500	300	17.5	264	88,300	39,600	3,530	2,640

08 CHS • BS EN 10210-2 (HOT-FINISHED)

Circular hollow sections (CHS)



Circular hollow sections (CHS) are round tubes. They are used for columns, handrails, canopies and feature steelwork. Sizes are written outside diameter × wall thickness. This table covers hot-finished sections.

103 SIZES • 42.4 × 3.2 TO 508 × 17.5

Mass	Mass per metre	kg/m
d	Outside diameter	mm
t	Thickness	mm
A	Area of section	cm ²
I	Second moment of area	cm ⁴
W _{el}	Elastic section modulus	cm ³

DESIGNATION	MASS kg/m	d mm	t mm	A cm ²	I cm ⁴	W _{el} cm ³
42.4 × 3.2	3.09	42.4	3.2	3.94	7.62	3.59
42.4 × 3.6	3.44	42.4	3.6	4.39	8.33	3.93
42.4 × 4.0	3.79	42.4	4.0	4.83	8.99	4.24
42.4 × 5.0	4.61	42.4	5.0	5.87	10.5	4.93
48.3 × 3.2	3.56	48.3	3.2	4.53	11.6	4.8
48.3 × 3.6	3.97	48.3	3.6	5.06	12.7	5.26
48.3 × 4.0	4.37	48.3	4.0	5.57	13.8	5.7
48.3 × 5.0	5.34	48.3	5.0	6.8	16.2	6.69
48.3 × 6.3	6.53	48.3	6.3	8.31	18.7	7.76
60.3 × 3.2	4.51	60.3	3.2	5.74	23.5	7.78
60.3 × 3.6	5.03	60.3	3.6	6.41	25.9	8.58
60.3 × 4.0	5.55	60.3	4.0	7.07	28.2	9.34
60.3 × 5.0	6.82	60.3	5.0	8.69	33.5	11.1
60.3 × 6.3	8.39	60.3	6.3	10.7	39.5	13.1
60.3 × 8.0	10.3	60.3	8.0	13.1	46	15.3
76.1 × 3.2	5.75	76.1	3.2	7.33	48.8	12.8
76.1 × 3.6	6.44	76.1	3.6	8.2	54	14.2
76.1 × 4.0	7.11	76.1	4.0	9.06	59.1	15.5
76.1 × 5.0	8.77	76.1	5.0	11.2	70.9	18.6
76.1 × 6.3	10.8	76.1	6.3	13.8	84.8	22.3
76.1 × 8.0	13.4	76.1	8.0	17.1	101	26.4
88.9 × 3.2	6.76	88.9	3.2	8.62	79.2	17.8
88.9 × 3.6	7.57	88.9	3.6	9.65	87.9	19.8
88.9 × 4.0	8.38	88.9	4.0	10.7	96.3	21.7
88.9 × 5.0	10.3	88.9	5.0	13.2	116	26.2
88.9 × 6.3	12.8	88.9	6.3	16.3	140	31.5
88.9 × 8.0	16.0	88.9	8.0	20.3	168	37.8
88.9 × 10.0	19.5	88.9	10.0	24.8	196	44.1
114.3 × 3.6	9.83	114.3	3.6	12.5	192	33.6
114.3 × 4.0	10.9	114.3	4.0	13.9	211	36.9
114.3 × 5.0	13.5	114.3	5.0	17.2	257	45
114.3 × 6.3	16.8	114.3	6.3	21.4	313	54.7
114.3 × 8.0	21.0	114.3	8.0	26.7	379	66.4

Circular hollow sections (CHS), continued

08 • CHS

DESIGNATION	MASS kg/m	d mm	t mm	A cm ²	I cm ⁴	W _{eL} cm ³
114.3 × 10.0	25.7	114.3	10.0	32.8	450	78.7
139.7 × 3.6	12.1	139.7	3.6	15.4	357	51.1
139.7 × 4.0	13.4	139.7	4.0	17.1	393	56.2
139.7 × 5.0	16.6	139.7	5.0	21.2	481	68.8
139.7 × 6.3	20.7	139.7	6.3	26.4	589	84.3
139.7 × 8.0	26.0	139.7	8.0	33.1	720	103
168.3 × 5.0	20.1	168.3	5.0	25.7	856	102
168.3 × 6.3	25.2	168.3	6.3	32.1	1,050	125
168.3 × 8.0	31.6	168.3	8.0	40.3	1,300	154
168.3 × 10.0	39.0	168.3	10.0	49.7	1,560	186
168.3 × 12.5	48.0	168.3	12.5	61.2	1,870	222
193.7 × 5.0	23.3	193.7	5.0	29.6	1,320	136
193.7 × 6.3	29.1	193.7	6.3	37.1	1,630	168
193.7 × 8.0	36.6	193.7	8.0	46.7	2,020	208
193.7 × 10.0	45.3	193.7	10.0	57.7	2,440	252
193.7 × 12.5	55.9	193.7	12.5	71.2	2,930	303
193.7 × 14.2	62.9	193.7	14.2	80.1	3,240	335
193.7 × 16.0	70.1	193.7	16.0	89.3	3,550	367
219.1 × 5.0	26.4	219.1	5.0	33.6	1,930	176
219.1 × 6.3	33.1	219.1	6.3	42.1	2,390	218
219.1 × 8.0	41.6	219.1	8.0	53.1	2,960	270
219.1 × 10.0	51.6	219.1	10.0	65.7	3,600	328
219.1 × 12.5	63.7	219.1	12.5	81.1	4,340	397
219.1 × 14.2	71.8	219.1	14.2	91.4	4,820	440
219.1 × 16.0	80.1	219.1	16.0	102	5,300	483
244.5 × 5.0	29.5	244.5	5.0	37.6	2,700	221
244.5 × 6.3	37.0	244.5	6.3	47.1	3,350	274
244.5 × 8.0	46.7	244.5	8.0	59.4	4,160	340
244.5 × 10.0	57.8	244.5	10.0	73.7	5,070	415
244.5 × 12.5	71.5	244.5	12.5	91.1	6,150	503
244.5 × 14.2	80.6	244.5	14.2	103	6,840	559
244.5 × 16.0	90.2	244.5	16.0	115	7,530	616
273 × 5.0	33.0	273	5.0	42.1	3,780	277
273 × 6.3	41.4	273	6.3	52.8	4,700	344
273 × 8.0	52.3	273	8.0	66.6	5,850	429
273 × 10.0	64.9	273	10.0	82.6	7,150	524
273 × 12.5	80.3	273	12.5	102	8,700	637
273 × 14.2	90.6	273	14.2	115	9,700	710
273 × 16.0	101.0	273	16.0	129	10,700	784
273 × 17.5	110.0	273	17.5	140	11,500	844
323.9 × 5.0	39.3	323.9	5.0	50.1	6,370	393
323.9 × 6.3	49.3	323.9	6.3	62.9	7,930	490
323.9 × 8.0	62.3	323.9	8.0	79.4	9,910	612
323.9 × 10.0	77.4	323.9	10.0	98.6	12,200	751
323.9 × 12.5	96.0	323.9	12.5	122	14,800	917
323.9 × 14.2	108.0	323.9	14.2	138	16,600	1,020
323.9 × 16.0	121.0	323.9	16.0	155	18,400	1,140
323.9 × 17.5	132.0	323.9	17.5	168	19,800	1,220
355.6 × 6.3	54.3	355.6	6.3	69.1	10,500	593
355.6 × 8.0	68.6	355.6	8.0	87.4	13,200	742

Circular hollow sections (CHS), continued

08 • CHS

DESIGNATION	MASS kg/m	d mm	t mm	A cm ²	I cm ⁴	W _{eL} cm ³
355.6 × 10.0	85.2	355.6	10.0	109	16,200	912
355.6 × 12.5	106.0	355.6	12.5	135	19,900	1,120
355.6 × 14.2	120.0	355.6	14.2	152	22,200	1,250
355.6 × 16.0	134.0	355.6	16.0	171	24,700	1,390
355.6 × 17.5	146.0	355.6	17.5	186	26,600	1,500
406.4 × 10.0	97.8	406.4	10.0	125	24,500	1,200
406.4 × 12.5	121.0	406.4	12.5	155	30,000	1,480
406.4 × 14.2	137.0	406.4	14.2	175	33,700	1,660
406.4 × 16.0	154.0	406.4	16.0	196	37,400	1,840
406.4 × 17.5	168.0	406.4	17.5	214	40,500	1,990
457 × 10.0	110.0	457	10.0	140	35,100	1,540
457 × 12.5	137.0	457	12.5	175	43,100	1,890
457 × 14.2	155.0	457	14.2	198	48,500	2,120
457 × 16.0	174.0	457	16.0	222	54,000	2,360
457 × 17.5	190.0	457	17.5	242	58,400	2,560
508 × 10.0	123.0	508	10.0	156	48,500	1,910
508 × 12.5	153.0	508	12.5	195	59,800	2,350
508 × 14.2	173.0	508	14.2	220	67,200	2,650
508 × 16.0	194.0	508	16.0	247	74,900	2,950
508 × 17.5	212.0	508	17.5	270	81,200	3,200

09 REFERENCE

Standards, method and disclaimer

Standards

BS 4-1:2005	Structural steel sections. Specification for hot-rolled sections (UB, UC, PFC)
BS EN 10365:2017	Hot rolled steel channels, I and H sections. Dimensions and masses
BS EN 10056-1:2017	Structural steel equal and unequal leg angles. Dimensions
BS EN 10210-2:2019	Hot finished steel structural hollow sections. Tolerances, dimensions and sectional properties
BS EN 10219-2:2019	Cold formed welded steel structural hollow sections (not covered by these tables)

Method

Sizes and dimensions are compiled from the standard section ranges and checked against current manufacturer data (British Steel for beams, columns, channels and large angles; Tata Steel Celsius for hollow sections) and independent published tables. We recalculated area, second moment of area and elastic modulus from the nominal dimensions for every size, and show a value only where it matches a published figure. Diagrams and layout are our own.

Every table was cross-checked against at least two independent published sources, and each size was checked against a calculation from its nominal dimensions. Where the sources disagreed we used current manufacturer data and noted the difference. Plastic modulus, radius of gyration and torsion constants are not included.

Notes

- Designations are nominal serial sizes. Use the tabulated dimensions for detailing.
- Mass is per metre length, based on a steel density of 7,850 kg/m³.
- Hollow sections are hot-finished to BS EN 10210-2. Cold-formed sections to BS EN 10219-2 have different corner radii and properties and are not covered.
- † on beam and column tables: see the note on those pages.

DISCLAIMER

Reference only. Values are nominal figures for the standard UK section ranges. Check them against current manufacturer data, and have a structural engineer confirm sizes before you use them in design. Koyda Ltd accepts no liability for decisions based on these tables.

10 CONTACT

Contact

Koyda Ltd designs, fabricates and installs structural steel and architectural metalwork for contractors and clients across London and the South East.

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