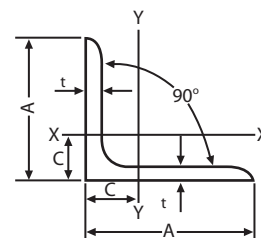


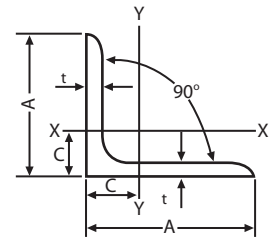
Angle Bars

Equal Angle Bars



Designation		Mass Per Metre	Root Radius		Area of Section	Distance Centre of Gravity	Second Moment of Area			Second Moment Of Area			Elastic Modulus
Section Size	Thickness		Root	Toe			Axis	Axis	Axis	Axis	Axis	Axis	Axis
A x A	t		r ¹	r ¹	A	C ^x and C ^y	x - x, y - y	u - u	v - v	x - x, y - y	u - u	v - v	x - x, y - y
mm	mm	kg/m	mm	mm	cm ²	cm	cm ⁴	cm ⁴	cm ⁴	cm	cm	cm	cm ³
20 x 20	3.0	0.89	3.5	2.4	1.11	0.59	0.38	0.60	0.16	0.59	0.74	0.38	0.27
25 x 25	3.0	1.12	3.5	2.4	1.41	0.72	0.78	1.24	0.33	0.75	0.94	0.48	0.44
	4.0	1.45	3.5	2.4	1.84	0.76	1.00	1.58	0.42	0.74	0.93	0.48	0.57
	5.0	1.76	3.5	2.4	2.25	0.80	1.19	1.87	0.52	0.73	0.91	0.48	0.70
30 x 30	3.0	1.36	5.0	2.4	1.74	0.84	1.41	2.23	0.59	0.90	1.13	0.58	0.65
	4.0	1.76	5.0	2.4	2.27	0.88	1.81	2.86	0.76	0.89	1.12	0.58	0.85
	5.0	2.16	5.0	2.4	2.78	0.92	2.17	3.42	0.92	0.88	1.11	0.58	1.04
35 x 35	6.0	1.65	5.0	2.4	3.87	1.08	4.13	6.51	1.76	1.03	1.30	0.67	1.71
38 x 38	3.0	1.72	6.0	2.4	2.24	1.03	2.99	4.72	1.25	1.15	1.45	0.75	1.08
	4.0	2.36	6.0	2.4	2.93	1.07	3.85	6.10	1.61	1.15	1.44	0.74	1.41
	5.0	2.79	6.0	2.4	3.60	1.12	4.66	7.36	1.95	1.14	1.43	0.74	1.73
	6.0	3.33	6.0	2.4	4.25	1.15	5.40	8.51	2.29	1.13	1.41	0.73	2.04
40 x 40	3.0	1.83	6.0	2.4	2.36	1.08	3.51	5.55	1.47	1.22	1.53	0.79	1.20
	4.0	2.42	6.0	2.4	3.09	1.12	4.53	7.18	1.89	1.21	1.52	0.78	1.58
	5.0	2.95	6.0	2.4	3.80	1.17	5.48	8.68	2.29	1.20	1.51	0.78	1.94
	6.0	3.52	6.0	2.4	4.49	1.20	6.37	10.10	2.69	1.19	1.50	0.77	2.28
45 x 45	4.0	2.74	7.0	2.4	3.52	1.24	6.59	10.40	2.75	1.37	1.72	0.88	2.02
	5.0	3.38	7.0	2.4	4.33	1.29	7.99	12.60	3.34	1.36	1.71	0.88	2.49
	6.0	3.96	7.0	2.4	5.12	1.33	9.31	14.70	3.90	1.35	1.69	0.87	2.93
50 x 50	3.0	2.33	7.0	2.4	2.99	1.32	7.16	11.10	2.97	1.54	1.93	1.00	1.92
	4.0	3.06	7.0	2.4	3.92	1.37	9.17	14.50	3.82	1.53	1.92	0.99	2.52
	4.5	3.40	7.0	2.4	4.38	1.39	10.20	16.10	4.23	1.52	1.92	0.98	2.82
	5.0	3.77	7.0	2.4	4.83	1.41	11.20	17.70	4.64	1.52	1.91	0.98	3.11
	6.0	4.43	7.0	2.4	5.72	1.45	13.00	20.60	5.43	1.51	1.90	0.97	3.67
	8.0	5.78	7.0	2.4	7.44	1.53	16.50	25.90	6.97	1.49	1.87	0.97	4.74
60 x 60	5.0	4.55	8.0	2.4	5.86	1.65	19.80	31.40	8.24	1.84	2.31	1.19	4.56
	6.0	5.42	8.0	2.4	6.95	1.70	23.20	36.80	9.65	1.83	2.30	1.18	5.40
63 x 63	5.0	4.75	8.0	2.4	6.16	1.73	23.10	36.60	9.58	1.93	2.44	1.25	5.05
	6.0	5.71	8.0	2.4	7.31	1.77	27.10	42.90	11.20	1.92	2.42	1.24	5.98
	8.0	7.42	8.0	2.4	9.55	1.85	34.50	54.60	14.40	1.90	2.39	1.23	7.76
65 x 65	5.0	5.00	9.0	2.4	6.40	1.77	25.50	40.30	10.60	2.00	2.51	1.29	5.39
	6.0	5.91	9.0	2.4	7.59	1.82	29.90	47.40	12.40	1.98	2.50	1.28	6.38
	8.0	7.66	9.0	2.4	9.91	1.90	38.20	60.40	15.90	1.96	2.47	1.27	8.29
	9.0	8.55	9.0	2.4	11.00	1.94	42.00	66.40	17.60	1.95	2.45	1.26	9.21
70 x 70	6.0	6.38	9.0	2.4	8.19	1.94	37.70	59.80	15.70	2.15	2.70	1.38	7.46
	7.0	7.38	9.0	2.4	9.46	1.98	43.10	68.30	17.90	2.13	2.69	1.38	8.59
	8.0	8.29	9.0	2.4	10.71	2.02	48.30	76.50	20.10	2.12	2.67	1.37	9.70
75 x 75	6.0	6.85	10.0	4.8	8.76	2.04	45.70	72.40	19.00	2.28	2.88	1.47	8.38
	8.0	9.03	10.0	4.8	11.50	2.13	59.00	93.50	24.50	2.27	2.85	1.46	11.00
	9.0	9.96	10.0	4.8	12.80	2.17	65.30	103	27.20	2.26	2.84	1.46	12.30
	10.0	10.99	10.0	4.8	14.10	2.21	71.30	113	29.80	2.25	2.83	1.45	13.50
	12.0	13.00	10.0	4.8	16.70	2.29	82.70	130	35.00	2.23	2.80	1.45	15.90
80 x 80	6.0	7.32	10.0	4.8	9.36	2.17	56.00	88.70	23.20	2.45	3.08	1.58	9.60
	8.0	9.66	10.0	4.8	12.30	2.26	72.40	115	30.00	2.43	3.06	1.56	12.60
	10.0	11.80	10.0	4.8	15.10	2.34	87.70	139	36.50	2.41	3.03	1.55	15.50
90 x 90	6.0	8.28	11.0	4.8	10.60	2.41	81.00	128	33.70	2.76	3.48	1.78	12.30
	7.0	9.61	11.0	4.8	12.30	2.46	93.20	148	38.70	2.76	3.47	1.77	14.30
	8.0	10.90	11.0	4.8	13.90	2.50	105	167	43.50	2.75	3.46	1.77	16.20
	9.0	12.20	11.0	4.8	15.60	2.54	117	185	48.20	2.74	3.45	1.76	18.00
	10.0	13.30	11.0	4.8	17.20	2.58	128	202	52.90	2.73	3.43	1.76	19.90
	12.0	15.90	11.0	4.8	20.30	2.66	149	235	62.10	2.70	3.40	1.75	23.50
	13.0	17.00	11.0	4.8	21.90	2.70	159	251	66.60	2.69	3.39	1.74	25.20

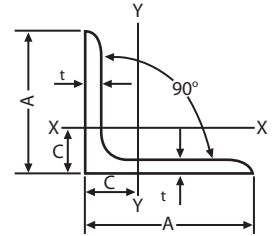
Equal Angle Bars



Designation		Mass Per Metre	Root Radius		Area of Section	Distance Centre of Gravity	Second Moment of Area			Second Moment Of Area			Elastic Modulus
Section Size	Thickness		Root	Toe			Axis	Axis	Axis	Axis	Axis	Axis	Axis
A x A	t		r ¹	r ¹	A	C ^x and C ^y	x - x, y - y	u - u	v - v	x - x, y - y	u - u	v - v	x - x, y - y
mm	mm	kg/m	mm	mm	cm ²	cm	cm ⁴	cm ⁴	cm ⁴	cm	cm	cm	cm ³
100 x 100	6.0	9.20	12.0	4.8	11.90	2.65	113	178	47.00	3.08	3.88	1.99	15.30
	7.0	10.70	12.0	4.8	13.70	2.70	130	206	53.90	3.08	3.87	1.98	17.80
	8.0	12.20	12.0	4.8	15.60	2.75	146	232	60.60	3.07	3.86	1.97	20.20
	10.0	15.00	12.0	4.8	19.20	2.83	178	283	73.80	3.05	3.84	1.96	24.80
	12.0	17.80	12.0	4.8	22.80	2.91	208	330	86.50	3.02	3.81	1.95	29.40
	13.0	19.10	12.0	4.8	24.50	2.95	222	352	92.80	3.01	3.79	1.95	31.50
	15.0	21.90	12.0	4.8	28.00	3.02	250	395	105	2.99	3.76	1.94	35.80
120 x 120	8.0	14.70	13.0	4.8	18.80	3.24	259	411	107	3.71	4.67	2.38	29.50
	10.0	18.20	13.0	4.8	23.30	3.32	316	502	130	3.69	4.64	2.37	36.40
	12.0	21.60	13.0	4.8	27.60	3.41	371	588	153	3.66	4.62	2.36	43.10
	15.0	26.60	13.0	4.8	34.00	3.52	448	710	186	3.63	4.57	2.34	52.80
125 x 125	8.0	14.90	14.0	4.8	19.70	3.36	294	466	122	3.87	4.87	2.49	32.20
	10.0	19.09	14.0	4.8	24.30	3.44	360	570	149	3.84	4.84	2.47	39.70
	12.0	22.67	14.0	4.8	28.90	3.53	422	669	174	3.82	4.81	2.46	47.00
130 x 130	8.0	15.90	14.0	4.8	20.50	3.48	332	527	138	4.03	5.07	2.59	34.90
	9.0	17.90	14.0	4.8	22.90	3.53	370	586	153	4.02	5.06	2.58	39.00
	10.0	19.70	14.0	4.8	25.30	3.57	406	645	168	4.01	5.05	2.57	43.10
	12.0	23.50	14.0	4.8	30.10	3.65	477	758	197	3.98	5.02	2.56	51.10
	15.0	28.80	14.0	4.8	37.10	3.77	578	916	240	3.95	4.97	2.54	62.60
	16.0	30.70	14.0	4.8	39.40	3.81	610	966	253	3.94	4.95	2.54	66.30
150 x 150	8.0	18.00	16.0	4.8	23.80	3.97	518	820	215	4.66	5.87	3.01	46.90
	10.0	23.00	16.0	4.8	29.50	4.06	635	1008	263	4.64	5.85	2.99	58.00
	12.0	27.30	16.0	4.8	35.00	4.14	748	1187	309	4.62	5.82	2.97	68.90
	15.0	33.60	16.0	4.8	43.20	4.26	909	1442	375	4.59	5.78	2.95	84.60
	16.0	35.70	16.0	4.8	45.90	4.30	960	1523	397	4.57	5.76	2.94	89.80
	18.0	40.10	16.0	4.8	51.20	4.38	1060	1680	440	4.55	5.73	2.93	99.80
	19.0	41.90	16.0	4.8	53.80	4.42	1109	1756	462	4.54	5.71	2.93	105.00
175 x 175	12.0	31.80	16.0	4.8	41.00	4.77	1208	1920	497	5.43	6.84	3.48	94.90
	15.0	39.40	16.0	4.8	50.70	4.89	1474	2342	606	5.39	6.80	3.46	117.00
200 x 200	12	36.55	18.0	4.8	47.20	5.38	1829	2906	753	6.23	7.85	4.00	125.00
	13.0	39.49	18.0	4.8	50.90	5.42	1967	3126	809	6.22	7.84	3.99	135.00
	15.0	45.30	18.0	4.8	58.30	5.50	2237	3555	919	6.19	7.81	3.97	154.00
	16.0	48.50	18.0	4.8	62.00	5.54	2369	3765	973	6.18	7.79	3.96	164.00
	18.0	54.20	18.0	4.8	69.40	5.62	2627	4174	1080	6.15	7.76	3.95	183.00
	20.0	59.90	18.0	4.8	76.60	5.70	2877	4569	1185	6.13	7.72	3.93	201.00
	24.0	71.10	18.0	4.8	90.80	5.85	3357	5322	1391	6.08	7.65	3.91	237.00
	25.0	73.60	18.0	4.8	94.30	5.89	3472	5502	1442	6.07	7.64	3.91	246.00
	26.0	76.80	18.0	4.8	97.80	5.93	3586	5680	1492	6.05	7.62	3.91	255.00
	25.0	93.70	20.0	4.8	120.00	7.14	7030	11170	2891	7.67	9.67	4.92	394.00
250 x 250	28.0	104.00	20.0	4.8	133.00	7.25	7741	12290	3195	7.63	9.61	4.90	436.00
	32.0	118.00	20.0	4.8	151.00	7.40	8650	13710	3593	7.58	9.54	4.89	491.00
	35.0	128.00	20.0	4.8	164.00	7.51	9305	14720	3887	7.54	9.49	4.88	532.00
300 x 300	35.0	155.00	24.0	18.0	197.00	8.71	16300	25900	6690	9.09	11.50	5.82	766.00
350 x 350	35.0	182.00	24.0	18.0	232.00	9.96	26600	42300	10800	10.70	13.50	6.83	1060.00

Material Spec: EN10025 S275JR
BS4360 Gr43A
JIS G3101 SS400

Unequal Angle Bars



Designation		Mass Per Metre	Root Radius		Area of Section	Distance Centre of Gravity		Second Moment of Area				Radius Of Gyration				Elastic Modulus		Angle x-x Axis to u-u Axis
Section Size	Thickness		Root	Toe				Axis	Axis	Axis	Axis	Axis	Axis	Axis	Axis	Axis	Axis	
A x B	t		r ¹	r ²	A	C ^x	C ^y	x - x	y - y	u - u	v - v	x - x	y - y	u - u	v - v	x - x	y - y	
mm	mm	kg/m	mm	mm	cm ²	cm	cm	cm ⁴	cm ⁴	cm ⁴	cm ⁴	cm	cm	cm	cm	cm ³	cm ³	
63 x 38	4.5	3.5	6.0	2.4	4.4	2.10	0.87	18.0	4.9	20.0	3.0	2.01	1.06	2.12	0.82	4.20	1.68	0.36
	6.0	4.4	6.0	2.4	5.8	2.17	0.93	23.0	6.3	25.0	3.8	1.99	1.04	2.10	0.82	5.50	2.18	0.36
75 x 50	6.0	5.7	7.0	2.4	7.2	2.45	1.21	40.9	14.6	47.1	8.5	2.38	1.42	2.55	1.08	8.10	3.87	0.44
	8.0	7.4	7.0	2.4	9.4	2.53	1.29	52.4	18.6	60.1	10.9	2.36	1.40	2.52	1.07	10.50	5.01	0.43
100 x 65	7.0	8.8	10.0	4.8	11.2	3.23	1.52	113.0	37.7	128.0	22.1	3.18	1.84	3.39	1.41	16.70	7.56	0.42
	8.0	9.94	10.0	4.8	12.7	3.28	1.56	127.0	42.3	144.0	24.9	3.17	1.83	3.38	1.40	18.90	8.57	0.41
	9.0	11.0	10.0	7.0	14.0	3.31	1.58	138.0	45.5	157.0	26.8	3.14	1.80	3.34	1.38	20.60	9.26	0.41
	10.0	12.3	10.0	4.8	15.6	3.36	1.64	154.0	51.1	175.0	30.2	3.14	1.81	3.35	1.39	23.20	10.50	0.41
	12.0	14.4	10.0	7.0	18.4	3.43	1.70	177.0	58.0	201.0	34.7	3.11	1.78	3.30	1.37	27.00	12.10	0.40
100 x 75	7.0	9.3	10.0	5.0	11.9	3.06	1.84	118.0	56.9	144.0	30.7	3.15	2.19	3.49	1.61	17.00	10.10	0.55
	8.0	10.6	10.0	4.8	13.5	3.11	1.88	133.0	64.2	163.0	34.6	3.14	2.18	3.48	1.60	19.30	11.40	0.55
	9.0	11.8	10.0	4.8	15.1	3.15	1.92	148.0	71.1	181.0	38.4	3.13	2.17	3.46	1.60	21.60	12.70	0.55
	10.0	13.0	10.0	4.8	16.6	3.19	1.96	162.0	77.7	198.0	42.2	3.12	2.16	3.45	1.59	23.80	14.00	0.55
	12.0	15.4	10.0	4.8	19.7	3.27	2.03	189.0	90.3	230.0	49.5	3.10	2.14	3.42	1.59	28.10	16.50	0.54
125 x 75	6.5	10.0	11.0	4.8	12.7	4.07	1.62	206.0	56.6	228.0	34.4	4.02	2.11	4.23	1.64	24.40	9.63	0.36
	7.0	10.7	11.0	4.8	13.7	4.10	1.64	220.0	60.5	244.0	36.7	4.01	2.10	4.22	1.64	26.20	10.30	0.36
	8.0	12.2	11.0	4.8	15.5	4.14	1.69	249.0	68.1	275.0	41.3	4.00	2.10	4.21	1.63	29.70	11.70	0.36
	9.0	13.5	11.0	4.8	17.4	4.19	1.73	276.0	75.5	306.0	45.8	3.99	2.09	4.20	1.62	33.20	13.10	0.36
	10.0	15.0	11.0	4.8	19.2	4.23	1.77	303.0	82.6	336.0	50.2	3.98	2.08	4.18	1.63	36.70	14.40	0.36
150 x 75	7.0	12.1	12.0	5.0	15.5	5.17	1.50	364.0	63.1	386.0	40.8	4.85	2.02	5.00	1.62	37.00	10.50	0.26
	8.0	13.8	11.0	4.8	17.5	5.23	1.54	411.0	71.2	436.0	45.8	4.84	2.02	4.99	1.62	42.10	11.90	0.26
	9.0	15.3	12.0	8.5	19.4	5.25	1.55	447.0	75.3	473.0	48.7	4.79	1.97	4.93	1.58	45.80	12.70	0.26
	10.0	17.0	11.0	4.8	21.7	5.32	1.62	503.0	86.3	533.0	55.8	4.82	2.00	4.96	1.60	52.00	14.70	0.26
	12.0	20.2	11.0	4.8	25.7	5.41	1.70	591.0	100.0	626.0	65.3	4.79	1.98	4.93	1.59	61.60	17.30	0.26
150 x 90	8.0	14.3	10.0	5.0	18.7	4.93	1.97	436.0	121.0	484.0	72.7	4.83	2.54	5.09	1.97	43.30	17.20	0.36
	9.0	16.4	12.0	6.0	20.9	4.95	2.00	485.0	133.0	537.0	80.5	4.81	2.52	5.06	1.96	48.20	19.00	0.36
	10.0	18.2	12.0	4.8	23.2	5.00	2.04	536.0	147.0	595.0	89.2	4.81	2.52	5.06	1.96	53.70	21.20	0.36
	12.0	21.6	12.0	4.8	27.6	5.09	2.12	630.0	172.0	698.0	105.0	4.78	2.50	5.03	1.95	63.60	25.00	0.36
	15.0	26.6	12.0	4.8	34.0	5.21	2.24	764.0	207.0	844.0	127.0	4.74	2.47	4.99	1.93	78.10	30.60	0.35
150 x 100	8.0	15.2	12.0	8.5	19.4	4.70	2.24	441.0	158.0	508.0	90.9	4.77	2.86	5.12	2.17	42.80	20.30	0.44
	9.0	17.1	12.0	6.0	21.8	4.77	2.30	502.0	181.0	579.0	104.0	4.79	2.88	5.15	2.18	49.10	23.50	0.44
	10.0	19.0	13.0	6.5	24.2	4.80	2.34	552.0	198.0	635.0	114.0	4.78	2.86	5.13	2.17	54.10	25.80	0.44
	12.0	22.4	12.0	8.5	28.6	4.88	2.41	642.0	228.0	738.0	132.0	4.74	2.83	5.08	2.15	63.40	30.10	0.44
	14.0	26.1	12.0	6.0	33.2	4.98	2.50	744.0	265.0	856.0	153.0	4.74	2.82	5.08	2.15	74.30	35.30	0.43
200 x 100	10.0	23.0	15.0	4.8	29.4	6.95	2.03	1,233.0	215.0	1,309.0	138.0	6.48	2.70	6.68	2.17	94.50	27.00	0.26
	12.0	27.3	15.0	4.8	34.9	7.04	2.11	1,454.0	252.0	1,544.0	162.0	6.45	2.68	6.65	2.16	112.00	31.90	0.26
	14.0	31.6	15.0	7.5	40.3	7.12	2.18	1,654.0	282.0	1,755.0	182.0	6.41	2.65	6.60	2.12	128.00	36.10	0.26
	15.0	33.7	15.0	4.8	43.1	7.17	2.23	1,772.0	303.0	1,879.0	197.0	6.41	2.65	6.60	2.14	138.00	39.00	0.26
	12.0	32.0	15.0	4.8	40.9	6.10	3.63	1,667.0	813.0	2,046.0	434.0	6.38	4.45	7.07	3.26	120.00	71.50	0.55
200 x 150	15.0	39.6	15.0	4.8	50.6	6.22	3.75	2,037.0	989.0	2,496.0	530.0	6.34	4.42	7.02	3.23	148.00	87.90	0.55
	18.0	47.4	15.0	4.8	60.1	6.34	3.86	2,390.0	1,155.0	2,923.0	622.0	6.30	4.38	6.97	3.22	175.00	104.00	0.55

Material Spec: EN10025 S275JR
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