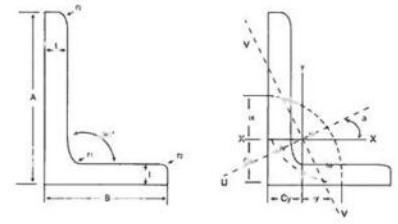
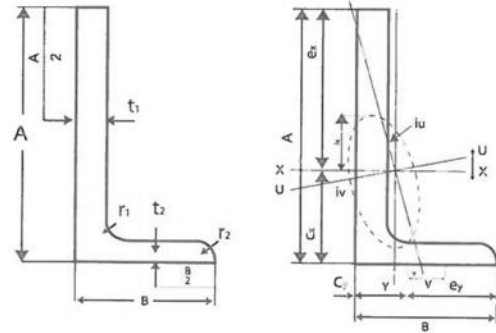


Unequal Angles



Designation Size Thickness		Mass Per Metre	Radius Root Toe		Area Of Section	Distance Centre Of Gravity		Second Moment Of Area				Radius Of Gyration				Elastic Modulus		Angle x-x Axis to u-u Axis
AxB	t		r ₁	r ₂		C _x and C _y		Axis x-x	Axis y-y	Axis u-u	Axis v-v	Axis x-x	Axis y-y	Axis u-u	Axis v-v	Axis x-x	Axis 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	
63X38	4.5	3.45	6	2.4	4.4	2.10	0.870	18.0	4.90	20.0	3.00	2.01	1.06	2.12	0.820	4.20	1.68	0.362
	6	4.43	6	2.4	5.75	2.17	0.930	23.0	6.30	25.0	3.80	1.99	1.04	2.10	0.820	5.50	2.18	0.358
75x50	6	5.65	7	2.4	7.22	2.45	1.21	40.9	14.6	47.1	8.48	2.38	1.42	2.55	1.08	8.10	3.87	0.436
	8	7.39	7	2.4	9.44	2.53	1.29	52.4	18.6	60.1	10.9	2.36	1.40	2.52	1.07	10.5	5.01	0.430
100x65	7	8.8	10	4.8	11.2	3.23	1.52	113	37.7	128	22.1	3.18	1.84	3.39	1.41	16.7	7.56	0.415
	8	9.4	10	4.8	12.7	3.28	1.56	127	42.3	144	24.9	3.17	1.83	3.38	1.40	18.9	8.57	0.414
	9	11.0	10	7.0	14.0	3.31	1.58	138	45.5	157	26.8	3.14	1.80	3.34	1.38	20.6	9.26	0.410
	10	12.3	10	4.8	15.6	3.36	1.64	154	51.1	175	30.2	3.14	1.81	3.35	1.39	23.2	10.5	0.410
	12	14.4	10	7.0	18.4	3.43	1.70	177	58.0	201	34.7	3.11	1.78	3.30	1.37	27.0	12.1	0.404
100X75	7	9.3	10	5.0	11.9	3.06	1.84	118	56.9	144	30.7	3.15	2.19	3.49	1.61	17.0	10.1	0.548
	8	10.6	10	4.8	13.5	3.11	1.88	133	64.2	163	34.6	3.14	2.18	3.48	1.60	19.3	11.4	0.548
	9	11.8	10	4.8	15.1	3.15	1.92	148	71.1	181	38.4	3.13	2.17	3.46	1.60	21.6	12.7	0.546
	10	19.0	10	4.8	16.6	3.19	1.96	162	77.7	198	42.2	3.12	2.16	3.45	1.59	23.8	14.0	0.545
	12	15.4	10	4.8	19.7	3.27	2.03	189	90.3	230	49.5	3.10	2.14	3.42	1.59	28.1	16.5	0.541
	13	16.5	10	4.8	21.2	3.31	2.07	202	96.3	245	53.1	3.09	2.13	3.40	1.58	30.2	17.7	0.539
125X75	6.5	10.0	11	4.8	12.7	4.07	1.62	206	56.6	228	34.4	4.02	2.11	4.23	1.64	24.4	9.63	0.360
	7	10.7	11	4.8	13.7	4.10	1.64	220	60.5	244	36.7	4.01	2.10	4.22	1.64	26.2	10.3	0.360
	8	12.2	11	4.8	15.5	4.14	1.69	249	68.1	275	41.3	4.00	2.10	4.21	1.63	29.7	11.7	0.360
	9	13.5	11	4.8	17.4	4.19	1.73	276	75.5	306	45.8	3.99	2.09	4.20	1.62	33.2	13.1	0.359
	10	15.0	11	4.8	19.2	4.23	1.77	303	82.6	336	50.2	3.98	2.08	4.18	1.62	36.7	14.4	0.358
	12	17.8	11	4.8	22.7	4.32	1.84	355	96.0	392	58.8	3.95	2.06	4.16	1.61	43.4	17.0	0.354
	13	19.1	10	7.0	24.3	4.35	1.87	376	101	414	61.9	3.93	2.04	4.13	1.60	46.1	17.9	0.352
150x75	7	12.1	12	5.0	15.5	5.17	1.50	364	63.1	386	40.8	4.85	2.02	5.00	1.62	37.0	10.5	0.263
	8	13.8	11	4.8	17.5	5.23	1.54	411	71.2	436	45.8	4.84	2.02	4.99	1.62	42.1	11.9	0.263
	9	15.3	12	8.5	19.4	5.25	1.55	447	75.3	473	48.7	4.79	1.97	4.93	1.58	45.8	12.7	0.259
	10	17.0	11	4.8	21.7	5.32	1.62	503	86.3	533	55.8	4.82	2.00	4.96	1.60	52.0	14.7	0.261
	12	20.2	11	4.8	25.7	5.41	1.70	591	100	626	65.3	4.79	1.98	4.93	1.59	61.6	17.3	0.259
	15	24.8	11	4.8	31.7	5.53	1.81	715	120	756	79.2	4.75	1.95	4.89	1.58	75.5	21.1	0.254
150x90	8	14.3	10	5.0	18.7	4.93	1.97	436	121	484	72.7	4.83	2.54	5.09	1.97	43.3	17.2	0.364
	9	16.4	12	6.0	20.9	4.95	2.00	485	133	537	80.5	4.81	2.52	5.06	1.96	48.2	19.0	0.361
	10	18.2	12	4.8	23.2	5.00	2.04	536	147	595	89.2	4.81	2.52	5.06	1.96	53.7	21.2	0.361
	12	21.6	12	4.8	27.6	5.09	2.12	630	172	698	105	4.78	2.50	5.03	1.95	63.6	25.0	0.359
	15	26.6	12	4.8	34.0	5.21	2.24	764	207	844	127	4.74	2.47	4.99	1.93	78.1	30.6	0.354
150x100	8	15.2	12	8.5	19.4	4.70	2.24	441	158	508	90.9	4.77	2.86	5.12	2.17	42.8	20.3	0.437
	9	17.1	12	6.0	21.8	4.77	2.30	502	181	579	104	4.79	2.88	5.15	2.18	49.1	23.5	0.439
	10	19.0	13	6.5	24.2	4.80	2.34	552	198	635	114	4.78	2.86	5.13	2.17	54.1	25.8	0.437
	12	22.4	12	8.5	28.6	4.88	2.41	642	228	738	132	4.74	2.83	5.08	2.15	63.4	30.1	0.435
	14	26.1	12	6.0	33.2	4.98	2.50	744	265	856	153	4.74	2.82	5.08	2.15	74.3	35.3	0.434
	15	27.7	12	8.5	35.2	5.01	2.53	781	276	897	161	4.71	2.80	5.04	2.14	78.2	37.0	0.431
200X100	10	23.0	15	4.8	29.4	6.95	2.03	1233	215	1309	138	6.48	2.70	6.68	2.17	94.5	27.0	0.264
	12	27.3	15	4.8	34.9	7.04	2.11	1454	252	1544	162	6.45	2.68	6.65	2.16	112	31.9	0.263
	14	31.6	15	7.5	40.3	7.12	2.18	1654	282	1755	182	6.41	2.65	6.60	2.12	128	36.1	0.261
	15	33.7	15	4.8	43.1	7.17	2.23	1772	303	1879	197	6.41	2.65	6.60	2.14	138	39.0	0.260
200x150	12	32.0	15	4.8	40.9	6.10	3.63	1667	813	2046	434	6.38	4.45	7.07	3.26	120	71.5	0.554
	15	39.6	15	4.8	50.6	6.22	3.75	2037	989	2496	530	6.34	4.42	7.02	3.23	148	87.9	0.552
	18	47.4	15	4.8	60.1	6.34	3.86	2390	1155	2923	622	6.30	4.38	6.97	3.22	175	104	0.549

Inverted Angles



Dimensions and Sectional Properties

Nominal Size (mm)	Standard Sectional Dimensions (mm)				Sectional Area (cm ²)	Unit Weight (kg/m)	Center of Gravity (cm)		Moment of Inertia (mm ⁴)				Radius of Gyration (cm)				tan α	Modulus of Section (cm ³)		
	A X B	t ₁	t ₂	r ₁			r ₂	C _x	C _y	Max. I _x	min I _y	max I _u	min I _v	max i _x	min i _y	max i _u		min i _v	S _x	S _y
200 X 90	200 X 90	9	14	14	7	29.66	23.3	6.36	2.16	1,210	200	1,290	125	6.39	2.60	6.58	2.05	0.263	88.7	29.2
250 X 90	250 X 90	10	15	17	8.5	37.47	29.4	8.61	1.92	2,440	223	2,520	147	8.08	2.44	8.20	1.98	0.182	149	31.5
	250 X 90	12	16	17	8.5	42.95	33.7	8.99	1.89	2,790	238	2,870	160	8.07	2.35	8.18	1.93	0.173	174	33.5
300 X 90	300 X 90	11	16	19	9.5	46.22	36.3	11.0	1.76	4,370	245	4,440	168	9.72	2.30	9.80	1.90	0.136	229	33.8
	300 X 90	13	17	19	9.5	52.67	41.3	11.3	1.75	4,940	259	5,020	181	9.68	2.22	9.76	1.85	0.128	264	35.8
350 X 100	350 X 100	12	17	22	11	57.74	45.3	13.0	1.87	7,440	362	7,550	251	11.3	2.50	11.4	2.08	0.124	338	44.5
400 X 100	400 X 100	13	18	24	12	68.59	53.8	15.4	1.77	11,500	388	11,600	277	12.9	2.38	13.0	2.01	0.0996	467	47.1
450 X 125	*450 X 125	11.5	18	24	12	73.11	57.4	16.2	2.29	15,700	768	16,000	525	14.7	3.24	14.8	2.68	0.126	547	75.2

Note : (These sizes indicated by an asterisk (*) are not included in regular rolling schedules.)