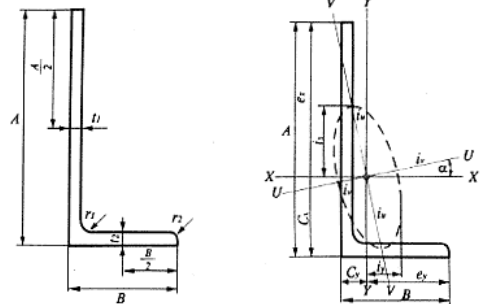


### Inverted Angle

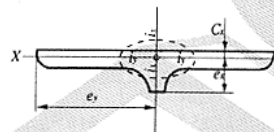
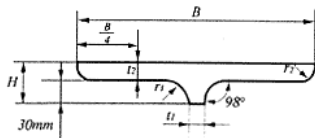
(Angles with Unequal Legs and Thickness)

- Geometrical moment of inertia :  $I = ai^2$
  - Radius of gyration of area :  $i = \sqrt{I/a}$
  - Modulus of section :  $Z = I/e$
- (a - sectional area)



Standard Sectional Dimensions of Unequal Leg and Unequal Thickness Angles and Their Sectional Area, Unit Mass and Sectional Characteristics

Standard sectional dimension					Sectional area	Unit mass	Informative reference												
A x B	t1	t2	r1	r2			Position of centre of gravity (cm)		Geometrical moment of inertia (cm <sup>4</sup> )				Radius of gyration of area (cm)				tan α	Modulus of section (cm <sup>3</sup> )	
mm	mm	mm	mm	mm	cm <sup>2</sup>	kg/m	Cx	Cy	Ix	Iy	Iu max	Iv min	ix	iy	Iu max	Iv min		Zx	Zy
200 x 90	9	14	14	7	29.66	23.3	6.36	2.15	1210	200	1290	125	6.39	2.60	6.58	2.05	0.263	88.7	29.2
250 x 90	10	15	17	8.5	37.47	29.4	8.61	1.92	2440	223	2520	147	8.08	2.44	8.20	1.98	0.182	149	31.5
	12	16	17	8.5	42.95	33.7	8.99	1.89	2790	238	2870	160	8.07	2.35	8.18	1.93	0.173	174	33.5
300 x 90	11	16	19	9.5	46.22	36.3	11.0	1.76	4370	245	4440	168	9.72	2.30	9.80	1.90	0.136	229	33.8
	13	17	19	9.5	52.67	41.3	11.3	1.75	4940	259	5020	181	9.68	2.22	9.76	1.85	0.128	265	35.8
350 x 100	12	17	22	11	57.74	45.3	13.0	1.87	7440	362	7550	251	11.3	2.50	11.4	2.08	0.124	338	44.5
400 x 100	13	18	24	12	68.59	53.8	15.4	1.77	11500	388	11600	277	12.9	2.38	13.0	2.01	0.0996	467	47.1



Standard Sectional Dimensions of T Section and Their Sectional Area, Unit Mass and Sectional Characteristics

Standard sectional dimension							Sectional area	Unit mass	Informative reference								
Nominal section	B	H	t1	t2	n	r2			Position of centre of gravity (cm)		Geometrical moment of inertia (cm <sup>4</sup> )		Radius of gyration of area (cm)		Modulus of section (cm <sup>3</sup> )		
B x t2	mm	mm	mm	mm	mm	mm	mm	cm <sup>2</sup>	kg/m	Cx	Cy	Ix	Iy	ix	iy	Zx	Zy
150 x 9	150	39	12	9	8	3	18.52	14.5	0.934	0	16.5	254	0.942	3.70	5.55	33.8	
150 x 12	150	42	12	12	8	3	23.02	18.1	1.02	0	20.7	338	0.949	3.83	6.52	45.1	
150 x 15	150	45	12	15	8	3	27.52	21.6	1.13	0	25.9	423	0.971	3.92	7.70	56.4	
200 x 12	200	42	12	12	8	3	29.02	22.8	0.935	0	22.3	799	0.877	5.25	6.83	79.9	
200 x 16	200	46	12	16	8	3	37.02	29.1	1.09	0	30.5	1070	0.907	5.37	8.68	107	
200 x 19	200	49	12	19	8	3	43.02	33.8	1.22	0	38.5	1270	0.946	5.43	10.4	127	
200 x 22	200	52	12	22	8	3	49.02	38.5	1.35	0	48.3	1470	0.993	5.47	12.6	147	
250 x 16	250	46	12	16	20	3	46.05	36.2	1.06	0	33.6	2080	0.854	6.72	9.49	167	
250 x 19	250	49	12	19	20	3	53.55	42.0	1.19	0	43.1	2470	0.897	6.80	11.6	198	
250 x 22	250	52	12	22	20	3	61.05	47.9	1.33	0	55.0	2870	0.949	6.85	14.2	229	
250 x 25	250	55	12	25	20	3	68.55	53.8	1.46	0	69.6	3260	1.01	6.90	17.2	261	

### MILD STEEL TEE BARS - WEIGHT TABLE

Size (mm)	30 x 30 x 4	35 x 35 x 4.5	40 x 40 x 4	40 x 40 x 5	45 x 45 x 5.5	50 x 50 x 6
kg/m	1.77	2.33	2.38	2.96	3.67	4.44
6m	10.62	13.98	14.28	17.76	22.02	26.64
Size (mm)	60 x 60 x 7	70 x 70 x 8	80 x 80 x 9	100 x 100 x 11	120 x 120 x 13	
kg/m	6.23	8.32	10.68	16.40	28.20	
6m	37.38	49.92	64.08	98.40	169.20	