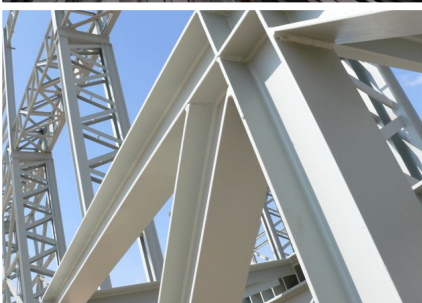


บริษัท กวงฮัวพาณิชย์ จำกัด
Kwang Hoa
Commercial Co., Ltd.



บริษัท กวฮงพาณิชย์ จำกัด ก่อตั้งขึ้นในปี พ.ศ. 2491 ด้วยการประกอบธุรกิจจำหน่ายเครื่องมือและอุปกรณ์สำหรับช่างก่อสร้าง และนำเข้าสินค้าประเภทเหล็กเส้นจากต่างประเทศเข้ามาจำหน่าย ด้วยความมุ่งมั่น ยึดถือปรัชญา ขยัน ซื่อสัตย์ อดทน ตรงต่อเวลา ส่งผลให้บริษัท กวฮงพาณิชย์ จำกัด ได้รับความเชื่อถือจากลูกค้าจำนวนมากในเรื่องของการให้บริการและราคาขายที่ยุติธรรม

จากประสบการณ์กว่า 63 ปีที่ผ่านมา บริษัท กวฮงพาณิชย์ จำกัด ได้นำเข้าเหล็กรูปพรรณจากต่างประเทศเป็นจำนวนมากในแต่ละปี ส่งผลให้ในปี พ.ศ. 2538 บริษัทฯ ได้รับการแต่งตั้งให้เป็นตัวแทนจำหน่ายของบริษัท เหล็กสยามยามาโตะ จำกัด ซึ่งเป็นผู้ผลิตเหล็ก รูปพรรณรายใหญ่ภายในประเทศไทย อันได้แก่ เหล็กเอชปีม เหล็กไอแฟรงค์ เหล็กไอบีเอ็ม เหล็กรางน้ำ เหล็กฉาก และเหล็กซีทีโพล นอกจากนี้ทางบริษัทฯ ยังเป็นตัวแทนจำหน่ายเหล็กรูปพรรณนานาชนิด ได้แก่ เหล็กแผ่นค้ำ เหล็กแผ่นลาย เหล็กค้ำซี เหล็กท่อค้ำ เหล็กกล่อง เหล็กแบน เหล็กสี่เหลี่ยมคั่น และเหล็กเส้นก่อสร้าง ฯลฯ ซึ่งส่งผลให้บริษัท กวฮงพาณิชย์ จำกัด เป็นตัวแทนจำหน่ายเหล็ก รูปพรรณครบวงจรสำหรับภาคอุตสาหกรรมการก่อสร้าง มีพนักงานผู้เชี่ยวชาญ พร้อมอุปกรณ์ และทีมงานส่งที่มีประสิทธิภาพ ทำให้สามารถรองรับการให้บริการการขาย การจัดส่งให้กับลูกค้า หน่วยงานต่างๆ ได้อย่างมีประสิทธิภาพสูงสุด และสม่ำเสมอตลอดมา

บริษัทฯ หวังเป็นอย่างยิ่งว่าจะได้มีโอกาสรับใช้ และให้บริการกับผู้มีอุปการะคุณทุกท่านอย่างต่อเนื่อง และตลอดไป

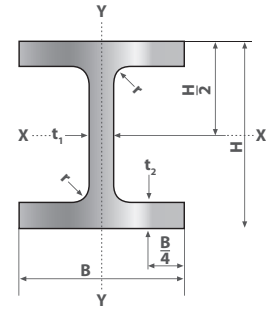
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H-Beams

TIS STANDARD
(TIS 1227 : 1996)
Size & Properties



Nominal size mm.	Weight kg/m.	Sectional Dimension					Sectional Area cm ² .	Moment of Inertia		Radius of Gyration		Modulus of Section	
		H mm.	B mm.	t ₁ mm.	t ₂ mm.	r mm.		I _x cm. ⁴	I _y cm. ⁴	i _x cm.	i _y cm.	Z _x cm. ³	Z _y cm. ³
100x50	9.3	100	50	5.0	7	8	11.85	187	14.8	3.98	1.12	37.5	5.91
100x100	17.2	100	100	6.0	8	10	21.90	383	134	4.2	2.47	77	27
125x125	23.8	125	125	6.5	9	10	30.31	847	293	5.3	3.11	136	47
150x75	14.0	150	75	5.0	7	8	17.85	666	50	6.1	1.66	89	13
150x100	21.1	148	100	6.0	9	11	26.84	1,020	151	6.2	2.37	138	30
150x150	31.5	150	150	7.0	10	11	40.14	1,640	563	6.4	3.75	219	75
175x175	40.2	175	175	7.5	11	12	51.21	2,880	984	7.5	4.38	330	112
200x100	★ 18.2	198	99	4.5	7	11	23.18	1,580	114	8.3	2.21	160	23
	21.3	200	100	5.5	8	11	27.16	1,840	134	8.2	2.22	184	27
200x150	30.6	194	150	6.0	9	13	39.01	2,690	507	8.3	3.61	277	68
200x200	49.9	200	200	8.0	12	13	63.53	4,720	1,600	8.6	5.02	472	160
	★ 56.2	200	204	12.0	12	13	71.53	4,980	1,700	8.4	4.88	498	167
	★ 65.7	208	202	10.0	16	13	83.69	6,530	2,200	8.8	5.13	628	218
250x125	★ 25.7	248	124	5.0	8	12	32.68	3,540	255	10.4	2.79	285	41
	29.6	250	125	6.0	9	12	37.66	4,050	294	10.4	2.79	324	47
250x175	44.1	244	175	7.0	11	16	56.24	6,120	984	10.4	4.18	502	113
250x250	★ 64.4	244	252	11.0	11	16	82.06	8,790	2,940	10.3	5.98	720	233
	★ 66.5	248	249	8.0	13	16	84.70	9,930	3,350	10.8	6.29	801	269
	72.4	250	250	9.0	14	16	92.18	10,800	3,650	10.8	6.29	867	292
	★ 82.2	250	255	14.0	14	16	104.70	11,500	3,880	10.5	6.09	919	304
300x150	★ 32.0	298	149	5.5	8	13	40.80	6,320	442	12.4	3.29	424	59
	36.7	300	150	6.5	9	13	46.78	7,210	508	12.4	3.29	481	68
300x200	56.8	294	200	8.0	12	18	72.38	11,300	1,600	12.5	4.71	771	160
	★ 65.4	298	201	9.0	14	18	83.36	13,300	1,900	12.6	4.77	893	189
300x300	★ 84.5	294	302	12.0	12	18	107.70	16,900	5,520	12.5	7.16	1,150	365
	★ 87.0	298	299	9.0	14	18	110.80	18,800	6,240	13.0	7.51	1,270	417
	94.0	300	300	10.0	15	18	119.80	20,400	6,750	13.1	7.51	1,360	450
	★ 106.0	300	305	15.0	15	18	134.80	21,500	7,100	12.6	7.26	1,440	466
	★ 106.0	304	301	11.0	17	18	134.80	23,400	7,730	13.2	7.57	1,540	514
350x175	★ 41.4	346	174	6.0	9	14	52.68	11,100	792	14.5	3.88	641	91
	49.6	350	175	7.0	11	14	63.14	13,600	984	14.7	3.95	775	112
	★ 57.8	354	176	8.0	13	14	73.68	16,100	1,180	14.8	4.01	909	134
350x250	★ 69.2	336	249	8.0	12	20	88.15	18,500	3,090	14.5	5.92	1,100	248
	79.7	340	250	9.0	14	20	101.50	21,700	3,650	14.6	6.00	1,280	292
350x350	★ 106.0	338	351	13.0	13	20	135.30	28,200	9,380	14.4	8.33	1,670	534
	★ 115.0	344	348	10.0	16	20	146.00	33,300	11,200	15.1	8.78	1,940	646
	★ 131.0	344	354	16.0	16	20	166.60	35,300	11,800	14.6	8.43	2,050	669
	137.0	350	350	12.0	19	20	173.90	40,300	13,600	15.2	8.84	2,300	776
	★ 156.0	350	357	19.0	19	20	198.40	42,800	11,400	14.7	8.53	2,450	809

Note ★ Please contact us in advance for these items

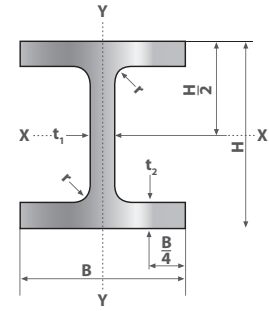


บริษัท กวงฮัฟพานิช จำกัด 60/25 หมู่ 12 ต.บางพลีใหญ่ อ.บางพลี จ.สมุทรปราการ 10540

โทร. 0-2752-0651-4, 0-2316-4984-5 แฟกซ์: 0-2752-0655, 0-2316-1134, Email: contact@khcsteel.com, www.khcsteel.com

H-Beams

TIS STANDARD
(TIS 1227 : 1996)
Size & Properties

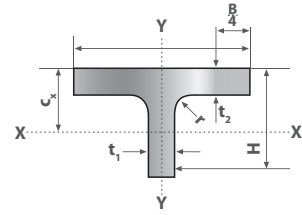


Nominal size mm.	Weight kg/m.	Sectional Dimension					Sectional Area cm ² .	Moment of Inertia		Radius of Gyration		Modulus of Section	
		H mm.	B mm.	t ₁ mm.	t ₂ mm.	r mm.		I _x cm. ⁴	I _y cm. ⁴	i _x cm.	i _y cm.	Z _x cm. ³	Z _y cm. ³
400x200	★ 56.6	396	199	7	11	16	72.16	20,000	1,450	16.7	4.48	1,010	145
	66.0	400	200	8	13	16	84.12	23,700	1,740	16.8	4.54	1,190	174
	★ 75.5	404	201	9	15	16	96.16	27,500	2,030	16.9	4.60	1,360	202
400x300	★ 94.3	386	299	9	14	22	120.10	33,700	6,240	16.7	7.21	1,740	418
	107.0	390	300	10	16	22	136.00	38,700	7,210	16.9	7.28	1,980	481
400x400	★ 140.0	388	402	15	15	22	178.50	49,000	16,300	16.6	9.54	2,520	809
	★ 147.0	394	398	11	18	22	186.80	56,100	18,900	17.3	10.10	2,850	951
	★ 168.0	394	405	18	18	22	214.40	59,700	20,000	16.7	9.65	3,030	985
	172.0	400	400	13	21	22	218.70	66,600	22,400	17.5	10.10	3,330	1,120
	★ 197.0	400	408	21	21	22	250.70	70,900	23,800	16.8	9.75	3,540	1,170
	★ 232.0	414	405	18	28	22	295.40	92,800	31,000	17.7	10.20	4,480	1,530
450x200	★ 66.2	446	199	8	12	18	84.30	28,700	1,580	18.5	4.33	1,290	159
	76.0	450	200	9	14	18	96.76	33,500	1,870	18.6	4.40	1,490	187
	★ 88.9	456	201	10	17	18	113.30	40,400	2,310	18.9	4.51	1,770	230
450x300	★ 106.0	434	299	10	15	24	135.00	46,800	6,690	18.6	7.04	2,160	448
	124.0	440	300	11	18	24	157.40	56,100	8,110	18.9	7.18	2,550	541
500x200	★ 145.0	446	302	13	21	24	184.30	66,400	9,660	19.0	7.24	2,980	639
	★ 79.5	496	199	9	14	20	101.30	41,900	1,840	20.3	4.27	1,690	185
	89.6	500	200	10	16	20	114.20	47,800	2,140	20.5	4.33	1,910	214
	★ 103.0	506	201	11	19	20	131.30	56,500	2,580	20.7	4.43	2,230	257
500x300	★ 114.0	482	300	11	15	26	145.50	60,400	6,760	20.4	6.82	2,500	451
	128.0	488	300	11	18	26	163.50	71,000	8,110	20.8	7.04	2,910	541
	★ 150.0	494	302	13	21	26	191.40	83,800	9,660	20.9	7.10	3,390	640
600x200	★ 94.6	596	199	10	15	22	120.50	68,700	1,980	23.9	4.05	2,310	199
	106.0	600	200	11	17	22	134.40	77,600	2,280	24.0	4.12	2,590	228
	★ 120.0	606	201	12	20	22	152.50	90,400	2,720	24.3	4.22	2,980	271
	★ 134.0	612	202	13	23	22	170.70	103,000	3,180	24.6	4.31	3,380	314
600x300	★ 137.0	582	300	12	17	28	174.50	103,000	7,670	24.3	6.63	3,530	511
	151.0	588	300	12	20	28	192.50	118,000	9,020	24.8	6.85	4,020	601
	175.0	594	302	14	23	28	222.40	137,000	10,600	24.9	6.90	4,620	701
700x300	★ 166.0	692	300	13	20	28	211.50	172,000	9,020	28.6	6.53	4,980	602
	185.0	700	300	13	24	28	235.50	201,000	10,800	29.3	6.78	5,760	722
800x300	★ 191.0	792	300	14	22	28	243.40	254,000	9,930	32.3	6.39	6,410	662
	210.0	800	300	14	26	28	267.40	292,000	11,700	33.0	6.62	7,290	782
900x300	★ 213.0	890	299	15	23	28	270.90	345,000	10,300	35.7	6.16	7,760	688
	243.0	900	300	16	28	28	309.80	411,000	12,600	36.4	6.39	9,140	843
	★ 286.0	912	302	18	34	28	364.00	498,000	15,700	37.0	6.56	10,900	1,040

Note ★ Please contact us in advance for these items



Cut Beams



Nominal size mm.	Weight kg/m.	Sectional Dimension					Sectional Area cm ² .	Moment of Inertia		Radius of Gyration		Modulus of Sections		Center of Gravity cm.
		H mm.	B mm.	t ₁ mm.	t ₂ mm.	r mm.		I _x cm ⁴ .	I _y cm ⁴ .	i _x cm.	i _y cm.	Z _x cm ³ .	Z _y cm ³ .	
50x50	4.70	50.0	50	5.0	7	8	5.93	11.8	7.4	1.41	1.12	3.17	3.0	1.28
50x100	8.60	50.0	100	6.0	8	10	10.95	16.1	66.9	1.21	2.47	4.03	13.4	1.00
62.5x125	11.90	62.5	125	6.5	9	10	15.16	35.0	147.0	1.52	3.11	6.91	23.5	1.19
75x75	7.00	75.0	75	5.0	7	8	8.925	42.6	24.7	2.18	1.66	7.46	6.6	1.79
75x100	10.55	74.0	100	6.0	9	11	13.42	51.7	75.3	1.96	2.37	8.84	15.1	1.55
75x150	15.75	75.0	150	7.0	10	11	20.07	66.4	282.0	1.82	3.75	10.80	37.6	1.37
87.5x175	20.10	87.5	175	7.5	11	12	25.61	115.0	492.0	2.12	4.38	15.90	56.2	1.55
100x100	★ 9.10	99.0	99	4.5	7	11	11.59	93.8	56.8	2.84	2.21	12.10	11.5	2.14
	10.65	100.0	100	5.5	8	11	13.58	114.0	67.0	2.90	2.22	14.80	13.4	2.29
100x150	15.30	97.0	150	6.0	9	13	19.51	125.0	254.0	2.53	3.61	15.80	33.8	1.79
100x200	24.95	100.0	200	8.0	12	13	31.77	184.0	801.0	2.41	5.02	22.30	80.1	1.73
	★ 28.10	100.0	204	12.0	12	13	35.77	256.0	851.0	2.67	4.88	32.40	83.4	2.09
	★ 32.85	104.0	202	10.0	16	13	41.85	251.0	1,100.0	2.45	5.13	29.50	109.0	1.91
125x125	★ 12.85	124.0	124	5.0	8	12	16.34	208.0	127.0	3.57	2.79	21.30	20.5	2.68
	14.80	125.0	125	6.0	9	12	18.83	248.0	147.0	3.63	2.79	25.60	23.5	2.78
125x175	22.05	122.0	175	7.0	11	16	28.12	289.0	492.0	3.20	4.18	29.10	56.3	2.27
125x250	★ 32.20	122.0	252	11.0	11	16	41.03	445.0	1,470.0	3.29	5.98	45.30	117.0	2.39
	★ 33.25	124.0	249	8.0	13	16	42.35	364.0	1,670.0	2.93	6.29	34.90	134.0	1.98
	36.20	125.0	250	9.0	14	16	46.09	412.0	1,820.0	2.99	6.29	39.50	146.0	2.08
	★ 41.10	125.0	255	14.0	14	16	52.34	589.0	1,940.0	3.36	6.09	59.40	152.0	2.58
150x150	★ 16.00	149.0	149	5.5	8	13	20.40	393.0	221.0	4.39	3.29	33.80	29.7	3.26
	18.35	150.0	150	6.5	9	13	23.39	464.0	254.0	4.45	3.29	40.00	33.8	3.41
150x200	28.40	147.0	200	8.0	12	18	36.19	572.0	802.0	3.97	4.71	48.20	80.2	2.83
	★ 32.70	149.0	201	9.0	14	18	41.68	662.0	949.0	3.99	4.77	55.20	94.4	2.91
150x300	★ 42.25	147.0	302	12.0	12	18	53.83	858.0	2,760.0	3.99	7.16	72.30	183.0	3.84
	★ 43.50	149.0	299	9.0	14	18	55.40	715.0	3,120.0	3.59	7.51	57.00	209.0	2.36
	47.00	150.0	300	10.0	15	18	59.89	798.0	3,380.0	3.65	7.51	63.70	225.0	2.47
	★ 53.00	150.0	305	15.0	15	18	67.39	1,110.0	3,550.0	4.05	7.26	92.50	233.0	2.03
	★ 53.00	152.0	301	11.0	17	18	67.41	903.0	3,870.0	3.66	7.57	71.40	257.0	2.55
175x175	★ 20.70	173.0	174	6.0	9	14	26.34	679.0	396.0	5.08	3.88	50.00	45.5	3.71
	24.80	175.0	175	7.0	11	14	31.57	815.0	492.0	5.08	3.95	59.30	56.2	3.75
	★ 28.90	177.0	176	8.0	13	14	36.84	955.0	590.0	5.09	4.01	68.80	67.0	3.82
175x250	★ 34.60	168.0	249	8.0	12	20	44.08	881.0	1,540.0	4.47	5.92	64.00	124.0	3.02
	39.85	170.0	250	9.0	14	20	50.76	1,020.0	1,830.0	4.48	6.00	73.10	146.0	3.09
175x350	★ 53.00	169.0	351	13.0	13	20	67.63	1,420.0	4,690.0	4.59	8.33	104.00	267.0	3.21
	★ 57.50	172.0	348	10.0	16	20	73.00	1,230.0	5,620.0	4.11	8.78	84.70	323.0	2.67
	★ 65.50	172.0	354	16.0	16	20	83.32	1,800.0	5,920.0	4.65	8.43	131.00	335.0	3.40
	68.50	175.0	350	12.0	19	20	86.94	1,520.0	6,790.0	4.18	8.84	104.00	388.0	2.86
	★ 78.00	175.0	357	19.0	19	20	99.19	2,200.0	7,220.0	4.71	8.53	158.00	404.0	3.59

(Cutting service is available upon request)

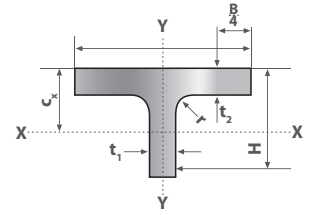
Note ★ Please contact us in advance for these items



บริษัท กวงฮัฟพานิช จำกัด 60/25 หมู่ 12 ต.บางพลีใหญ่ อ.บางพลี จ.สมุทรปราการ 10540

โทร. 0-2752-0651-4, 0-2316-4984-5 แฟกซ์: 0-2752-0655, 0-2316-1134, Email: contact@khcsteel.com, www.khcsteel.com

Cut Beams



Nominal size mm.	Weight kg/m.	Sectional Dimension					Sectional Area cm ² .	Moment of Inertia		Radius of Gyration		Modulus of Sections		Center of Gravity cm
		H mm.	B mm.	t ₁ mm.	t ₂ mm.	r mm.		I _x cm ⁴ .	I _y cm ⁴ .	i _x cm.	i _y cm.	Z _x cm ³ .	Z _y cm ³ .	
200x200	★ 28.30	198	199	7.0	11	16	36.08	1,190.0	723.0	5.76	4.48	76.40	72.7	4.17
	33.00	200	200	8.0	13	16	42.06	1,400.0	868.0	5.76	4.54	88.60	86.8	4.23
	★ 37.75	202	201	9.0	15	16	48.08	1,605.0	1,015.0	5.78	4.59	101.00	101.0	4.31
200x300	★ 47.15	193	299	9	14	22	60.05	1,530	3,120	5.04	7.21	95.50	209.0	3.33
	53.50	195	300	10	16	22	67.98	1,730	3,600	5.05	7.28	108.00	240.0	3.41
200x400	★ 70.00	194	402	15	15	22	89.23	2,480	8,130	5.27	9.54	158.00	404.0	3.70
	★ 73.5	197	398	11	18	22	93.41	2,050	9,460	4.68	10.10	123.00	475.0	3.01
	86.00	200	400	13	21	22	109.30	2,480	11,200	4.76	10.10	147.00	560.0	3.21
	★ 98.50	200	408	21	21	22	125.30	3,650	11,900	5.40	9.75	229.00	584.0	4.07
	★ 116.00	207	405	18	28	22	147.70	3,620	15,500	4.95	10.20	213.00	776.0	3.68
225x200	★ 33.10	223	199	8	12	18	42.15	1,880	790	6.67	4.33	109.00	79.4	5.10
	38.00	225	200	9	14	18	48.38	2,160	936	6.68	4.40	124.00	93.6	5.15
	★ 44.45	228	201	10	17	18	56.67	2,499	1,155	6.64	4.51	141.40	114.9	5.13
225x300	★ 53.00	217	299	10	15	24	67.52	2,350	3,350	5.89	7.04	133.00	224.0	4.04
	62.00	220	300	11	18	24	78.69	2,680	4,060	5.84	7.18	149.00	270.0	4.05
	★ 72.50	223	302	13	21	24	92.16	3,232	4,830	5.92	7.24	179.00	320.0	4.27
250x200	★ 39.75	248	199	9	14	20	50.64	2,840	922	7.49	4.27	150.00	92.6	5.90
	44.80	250	200	10	16	20	57.12	3,210	1,070	7.50	4.33	169.00	107.0	5.96
	★ 51.50	253	201	11	19	20	65.65	3,670	1,290	7.48	4.43	190.00	128.0	5.95
250x300	★ 57.00	241	300	11	15	26	72.76	3,420	3,380	6.85	6.82	178.00	225.0	4.92
	64.00	244	300	11	18	26	81.76	3,620	4,060	6.66	7.07	184.00	270.0	4.66
	★ 75.00	247	302	13	21	26	95.70	4,351	4,830	6.74	7.10	219.60	320.0	4.89
300x200	★ 47.30	298	199	10	15	22	60.23	5,190	989	9.29	4.05	236.00	99.4	7.79
	53.00	300	200	11	17	22	67.21	5,810	1,140	9.30	4.12	262.00	114.0	7.84
	★ 60.00	303	201	12	20	22	76.24	6,570	1,360	9.28	4.22	292.00	135.0	7.79
300x300	★ 67.00	306	202	13	23	22	85.33	7,340	1,590	9.27	4.31	322.00	157.0	7.79
	★ 68.50	291	300	12	17	28	87.24	6,360	3,830	8.54	6.63	280.00	256.0	6.39
	75.50	294	300	12	20	28	96.24	6,710	4,510	8.35	6.85	288.00	301.0	6.08
350x300	★ 87.50	297	302	14	23	28	111.20	7,920	5,290	8.44	6.90	339.00	350.0	6.33
	★ 83.00	346	300	13	20	28	105.70	11,300	4,510	10.30	6.53	425.00	301.0	7.99
	92.50	350	300	13	24	28	117.70	12,000	5,410	10.10	6.78	438.00	361.0	7.55
400x300	★ 95.50	396	300	14	22	28	121.70	17,100	4,960	12.10	6.38	593.00	331.0	9.66
	105.00	400	300	14	26	28	133.70	18,800	5,860	11.90	6.62	610.00	391.0	9.18
450x300	★ 106.50	445	299	15	23	28	135.45	26,000	5,143	13.86	6.16	790.03	344.0	11.59
	121.50	450	300	16	28	28	154.90	29,240	6,322	13.74	6.39	866.37	421.5	11.25
	★ 143.00	456	302	18	34	28	182.00	34,251	7,833	13.72	6.56	997.41	518.7	11.26

(Cutting service is available upon request)

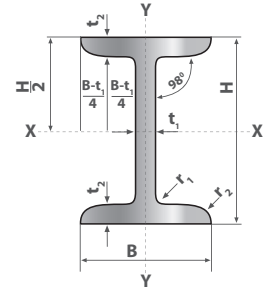
Note ★ Please contact us in advance for these items

- Please seek for our Reconrnmation.



I-Beams

TIS STANDARDS
(TIS 1227: 1996)



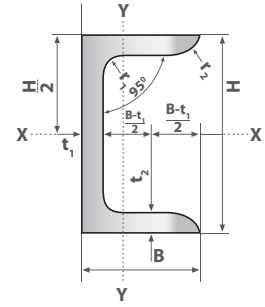
Standard Sectional Dimension mm.					Sectional Area cm. ²	Weight kg/m.	Reference					
HxB	t ₁	t ₂	r ₁	r ₂			Geometrical Moment of Inertia cm. ⁴		Radius of Gyration cm.		Modulus of Section cm. ³	
							I _x	I _y	i _x	i _y	Z _x	Z _y
100x75	★ 5.0	8.0	7	3.5	16.43	12.9	281	47.3	4.14	1.70	56.2	12.6
125x75	★ 5.5	9.5	9	4.5	20.45	16.1	538	57.5	5.13	1.68	86	15.3
150x75	5.5	9.5	9	4.5	21.83	17.1	819	57.5	6.12	1.62	109	15.3
150x125	★ 8.5	14.0	13	6.5	46.15	36.2	1,760	385	6.18	2.89	235	61.6
180x100	★ 6.0	10.0	10	5.0	30.06	23.6	1,670	138	7.45	2.14	186	27.5
200x100	7.0	10.0	10	5.0	33.06	26.0	2,170	138	8.11	2.05	217	27.7
200x150	9.0	16.0	15	7.5	64.16	50.4	4,460	753	8.34	3.43	446	100.0
250x125	7.5	12.5	12	6.0	48.79	38.3	5,180	337	10.30	2.63	414	53.9
	10.0	19.0	21	10.5	70.73	55.5	7,310	538	10.20	2.76	585	86.0
300x150	8.0	13.0	12	6.0	61.58	48.3	9,480	588	12.40	3.09	632	78.4
	10.0	18.5	19	9.5	83.47	65.5	12,700	886	12.30	3.26	849	118.0
	11.5	22.0	23	11.5	97.88	76.8	14,700	1,080	12.20	3.32	978	143.0
350x150	9.0	15.0	13	6.5	74.58	58.5	15,200	702	14.30	3.07	870	93.5
	12.0	24.0	25	12.5	111.10	87.2	22,400	1,180	14.20	3.26	1,280	158.0
400x150	10.0	18.0	17	8.5	91.73	72.0	24,100	864	16.20	3.07	1,200	115.0
	12.5	25.0	27	13.5	122.10	95.8	31,700	1,240	16.10	3.18	1,580	165.0
450x175	11.0	20.0	19	9.5	116.80	91.7	39,200	1,510	18.30	3.60	1,740	173.0
	13.0	26.0	27	13.5	146.10	115.0	48,800	2,020	18.30	3.72	2,170	231.0
600x190	13.0	25.0	25	12.5	169.40	133.0	98,400	2,460	24.10	3.81	3,280	259.0
	16.0	35.0	38	19.0	224.50	176.0	130,000	3,540	24.10	3.97	4,330	373.0

Note ★ Please contact us in advance for these items



Cannels

TIS STANDARDS
(TIS 1227: 1996)

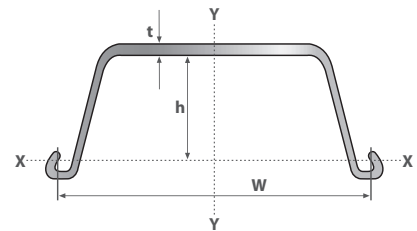


Standard Sectional Dimension mm.					Sectional Area cm. ²	Weight kg./m.	Reference							
HxB	t ₁	t ₂	r ₁	r ₂			Position of Center of Gravity cm.		Moment of Inertia cm. ⁴		Radius of Gyration cm.		Modulus of Section cm. ³	
							C _x	C _y	I _x	I _y	i _x	i _y	Z _x	Z _y
75x40	5.0	7.0	8	4.0	8.818	6.92	0	1.28	75.3	12.2	2.92	1.17	20.1	4.47
100x50	5.0	7.5	8	4.0	11.92	9.36	0	1.54	188	26.0	3.97	1.48	37.6	7.52
125x65	6.0	8.0	8	4.0	17.11	13.40	0	1.90	424	61.8	4.98	1.90	67.8	13.40
150x75	6.5	10.0	10	5.0	23.71	18.60	0	2.28	861	117.0	6.03	2.22	115.0	22.40
150x75	9.0	12.5	15	7.5	30.59	24.00	0	2.31	1,050	147.0	5.86	2.19	140.0	28.30
180x75	7.0	10.5	11	5.5	27.20	21.40	0	2.13	1,380	131.0	7.12	2.19	153.0	24.30
200x80	7.5	11.0	12	6.0	31.33	24.60	0	2.21	1,950	168.0	7.88	2.32	195.0	29.10
200x90	8.0	13.5	14	7.0	38.65	30.30	0	2.74	2,490	277.0	8.02	2.68	249.0	44.20
250x90	9.0	13.0	14	7.0	44.07	34.60	0	2.40	4,180	294.0	9.74	2.58	334.0	44.50
	11.0	14.5	17	8.5	51.17	40.20	0	2.40	4,680	329.0	9.56	2.54	374.0	49.90
300x90	9.0	13.0	14	7.0	48.57	38.10	0	2.22	6,440	309.0	11.50	2.52	429.0	45.70
	10.0	15.5	19	9.5	55.74	43.80	0	2.34	7,410	360.0	11.50	2.54	494.0	54.10
	12.0	16.0	19	9.5	61.90	48.60	0	2.28	7,870	379.0	11.30	2.48	525.0	56.40
380x100	10.5	16.0	18	9.0	69.39	54.50	0	2.41	14,500	535.0	14.50	2.78	763.0	70.50
	★13.0	16.5	18	9.0	78.96	62.00	0	2.33	15,600	565.0	14.10	2.67	823.0	73.60
	13.0	20.0	24	12.0	85.71	67.30	0	2.54	17,600	655.0	14.30	2.76	926.0	87.80

Note ★ Please contact us in advance for these items

Steel Sheet Piles

(Grade SY295 or SY390)
TIS STANDARDS
(TIS 1390: 1996)

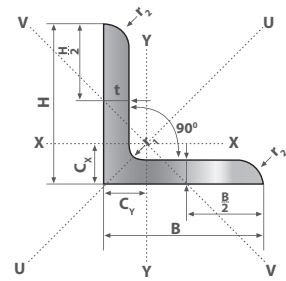


Section	Dimensions			Sectional Area	Weight		Moment of Inertia		Section Modulus	
	w	h	t	per pile	per pile	per wall width	per pile	per wall width	per pile	per wall width
	mm.	mm.	mm.	cm. ²	kg/m.	kg/m. ²	cm. ⁴	cm. ⁴	cm. ³	cm. ³ /m.
	in.	in.	in.	in. ²	lbs/ft	lbs/ft. ²	in. ⁴	in/ft. ⁴	in. ³	in. ³ /ft.
SP-III A	400	150	13.1	74.40	58.4	146	2,790	22,800	250	1,520
	15.7	5.91	0.516	11.53	39.2	29.9	67	167	15.3	2.83
SP-III	400	125	13	76.42	60	150	2,220	16,800	223	1,340
	15.7	4.92	0.512	11.85	40.3	30.7	53.3	123	13.6	24.9
SP-IV	400	170	15.5	96.99	76.1	190	4,670	38,600	362	2,270
	15.7	6.69	0.610	15.03	51.1	38.9	112	283	22.1	42.2



Equal Angles

TIS STANDARDS
(Tis 1227: 1996)



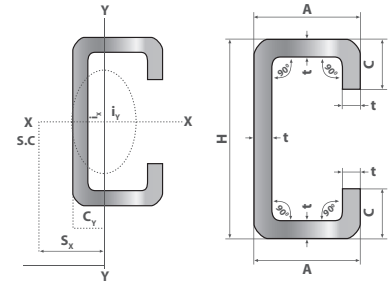
Standard Sectional Dimension mm.				Sectional Area cm. ²	Unit Weight kg/m.	Reference											
HxB	t	r ₁	r ₂			Position of Center of Gravity cm.		Geometrical Moment of Inertia cm. ⁴				Radius of Gyration of Area cm.				Modulus of Section cm. ³	
						C _x	C _y	I _x	I _y	Max i _x	Min i _y	i _x	i _y	Max i _x	Min i _y	Z _x	Z _y
25x25	3	4	2.0	1.427	1.12	0.719	0.719	0.797	0.797	1.26	0.332	0.747	0.747	0.940	0.483	0.448	0.448
	5	3.5	2.4	2.26	1.77	0.80	0.80	1.20	1.20	1.89	0.52	0.73	0.73	0.91	0.48	0.71	0.71
30x30	3	4	2.0	1.727	1.36	0.844	0.844	1.42	1.42	2.26	0.590	0.908	0.908	1.14	0.585	0.661	0.661
	5	5	2.4	2.78	2.18	0.92	0.92	2.16	2.16	3.41	0.92	0.88	0.88	1.11	0.57	1.04	1.04
40x40	3	4.5	2.0	2.336	1.83	1.09	1.09	3.53	3.53	5.60	1.46	1.23	1.23	1.55	0.790	1.21	1.21
	4	6	2.4	3.079	2.42	1.12	1.12	4.47	4.47	7.09	1.85	1.21	1.21	1.52	0.78	1.56	1.56
	5	4.5	3.0	3.755	2.95	1.17	1.17	5.42	5.42	8.59	2.25	1.20	1.20	1.51	0.774	1.91	1.91
	6	6.0	2.4	4.48	3.52	1.20	1.20	6.31	6.31	9.98	2.65	1.19	1.19	1.49	0.770	2.26	2.26
45x45	★ 4	6.5	3.0	3.492	2.74	1.24	1.24	6.50	6.50	10.3	2.70	1.36	1.36	1.72	0.880	2.00	2.00
	★ 5	6.5	3.0	4.302	3.38	1.28	1.28	7.91	7.91	12.5	3.29	1.36	1.36	1.71	0.874	2.46	2.46
50x50	3	7.0	2.4	2.96	2.33	1.31	1.31	6.86	6.86	10.8	2.88	1.52	1.52	1.91	0.990	1.86	1.86
	4	6.5	3.0	3.892	3.06	1.37	1.37	9.06	9.06	14.4	3.76	1.53	1.53	1.92	0.983	2.49	2.49
	5	6.5	3.0	4.802	3.77	1.41	1.41	11.1	11.1	17.5	4.58	1.52	1.52	1.91	0.976	3.08	3.08
	6	6.5	4.5	5.644	4.43	1.44	1.44	12.6	12.6	20.0	5.23	1.50	1.50	1.88	0.963	3.55	3.55
60x60	★ 4	6.5	3.0	4.692	3.68	1.61	1.61	16.0	16.0	25.4	6.62	1.85	1.85	2.33	1.19	3.66	3.66
	★ 5	6.5	3.0	5.802	4.55	1.66	1.66	19.6	19.6	31.2	8.09	1.84	1.84	2.32	1.18	4.52	4.52
65x65	5	8.5	3.0	6.367	5.00	1.77	1.77	25.3	25.3	40.1	10.50	1.99	1.99	2.51	1.28	5.35	5.35
	6	8.5	4.0	7.527	5.91	1.81	1.81	29.4	29.4	46.6	12.20	1.98	1.98	2.49	1.27	6.26	6.26
	8	8.5	6.0	9.761	7.66	1.88	1.88	36.8	36.8	58.3	15.30	1.94	1.94	2.44	1.25	7.96	7.96
70x70	★ 6	8.5	4.0	8.127	6.38	1.93	1.93	37.1	37.1	58.9	15.30	2.14	2.14	2.69	1.37	7.33	7.33
75x75	6	8.5	4.0	8.727	6.85	2.06	2.06	46.1	46.1	73.2	19.00	2.30	2.30	2.90	1.48	8.47	8.47
	9	8.5	6.0	12.69	9.96	2.17	2.17	64.4	64.4	102.0	26.70	2.25	2.25	2.84	1.45	12.1	12.1
	12	8.5	6.0	16.56	13.00	2.29	2.29	81.9	81.9	129.0	34.50	2.22	2.22	2.79	1.44	15.7	15.7
80x80	★ 6	8.5	4.0	9.327	7.32	2.18	2.18	56.4	56.4	89.6	23.20	2.46	2.46	3.10	1.58	9.70	9.70
90x90	★ 6	10	5.0	10.55	8.28	2.42	2.42	80.7	80.7	128	33.40	2.77	2.77	3.48	1.78	12.3	12.3
	7	10	5.0	12.22	9.59	2.46	2.46	93.0	93.0	148	38.30	2.76	2.76	3.48	1.77	14.2	14.2
	10	10	7.0	17.00	13.3	2.57	2.57	125	125	199	51.70	2.71	2.71	3.42	1.74	19.5	19.5
	★ 12	11	4.8	20.30	15.9	2.66	2.66	148	148	234	61.70	2.70	2.70	3.40	1.75	23.3	23.3
	★ 13	10	7.0	21.71	17.0	2.69	2.69	156	156	248	65.30	2.68	2.68	3.38	1.73	24.8	24.8
100x100	7	10	5.0	13.62	10.7	2.71	2.71	129	129	205	53.20	3.08	3.08	3.88	1.98	17.7	17.7
	10	10	7.0	19.00	14.9	2.82	2.82	175	175	278	72.00	3.04	3.04	3.83	1.95	24.4	24.4
	12	12	4.8	22.70	17.8	2.90	2.90	207	207	328	85.70	3.02	3.02	3.80	1.94	29.1	29.1
	★ 13	10	7.0	24.31	19.1	2.94	2.94	220	220	348	91.10	3.00	3.00	3.78	1.94	31.1	31.1
120x120	8	12	5.0	18.76	14.7	3.24	3.24	258	258	410	106	3.71	3.71	4.67	2.38	29.5	29.5
130x130	9	12	6.0	22.74	17.9	3.53	3.53	366	366	583	150	4.01	4.01	5.06	2.57	38.7	38.7
	12	12	8.5	29.76	23.4	3.64	3.64	467	467	743	192	3.96	3.96	5.00	2.54	49.9	49.9
	15	12	8.5	36.75	28.8	3.76	3.76	568	568	902	234	3.93	3.93	4.95	2.53	61.5	61.5
150x150	12	14	7.0	34.77	27.3	4.14	4.14	740	740	1180	304	4.61	4.61	5.82	2.96	68.1	68.1
	15	14	10.0	42.74	33.6	4.24	4.24	888	888	1410	365	4.56	4.56	5.75	2.92	82.6	82.6
	19	14	10.0	53.38	41.9	4.40	4.40	1090	1090	1730	451	4.52	4.52	5.69	2.91	103	103
175x175	★ 12	15	11.0	40.52	31.8	4.73	4.73	1170	1170	1860	480	5.38	5.38	6.78	3.44	91.8	91.8
	★ 15	15	11.0	50.21	39.4	4.85	4.85	1440	1440	2290	589	5.35	5.35	6.75	3.42	114	114
200x200	15	17	12.0	57.75	45.3	5.46	5.46	2180	2180	3470	891	6.14	6.14	7.75	3.93	150	150
	20	17	12.0	76.00	59.7	5.67	5.67	2820	2820	4490	1160	6.09	6.09	7.68	3.90	197	197
	25	17	12.0	93.75	73.6	5.86	5.86	3420	3420	5420	1410	6.04	6.04	7.61	3.88	242	242
250x250	25	24	12.0	119.40	93.7	7.10	7.10	6950	6950	11000	2860	7.63	7.63	9.62	4.90	388	388
	35	24	18.0	162.60	128.0	7.45	7.45	9110	9110	14400	3790	7.49	7.49	9.42	4.83	519	519

Note ★ Please contact us in advance for these items



Light Lip Channels

(Tis 1228)



Dimensions mm.		Sectional Area cm. ²	Weight kg./m.	Center of Gravity cm.		Secondary Moment of Area cm. ⁴		Radius of Gyration of Area cm.		Modulus of Section cm. ³		Center of Shear cm.	
HxAxC	t			C _x	C _y	I _x	I _y	i _x	i _y	Z _x	Z _y	S _x	S _y
250x75x25	4.5	18.92	14.90	0	2.07	1,690	129	9.44	2.62	135	23.8	5.1	0
200x75x25	★ 4.5	16.67	13.10	0	2.32	990	121	7.61	2.69	99	23.3	5.6	0
	★ 4.0	14.95	11.70	0	2.32	895	110	7.74	2.72	89.5	21.3	5.7	0
	3.2	12.13	9.52	0	2.33	736	92.3	7.70	2.76	73.6	17.8	5.7	0
200x75x20	★ 4.5	16.22	12.70	0	2.19	963	109	7.71	2.60	96.3	20.6	5.3	0
	★ 4.0	14.55	11.40	0	2.19	871	100	7.74	2.62	87.1	18.9	5.3	0
	3.2	11.81	9.27	0	2.19	716	84.1	7.79	2.67	71.6	15.8	5.4	0
150x75x25	4.5	14.42	11.30	0	2.65	501	109	5.90	2.75	66.9	22.5	6.3	0
	4.0	12.95	10.20	0	2.65	455	99.8	5.93	2.78	60.6	20.6	6.3	0
	3.2	10.53	8.27	0	2.66	375	83.6	5.97	2.82	50.0	17.3	6.4	0
150x75x20	★ 4.5	13.97	11.00	0	2.50	489	99.2	5.92	2.66	65.2	19.8	6.0	0
	★ 4.0	12.55	9.85	0	2.51	445	91.0	5.95	2.69	59.3	18.2	5.8	0
	3.2	10.21	8.01	0	2.51	366	76.4	5.99	2.74	48.9	15.3	5.1	0
150x65x20	★ 4.0	11.75	9.22	0	2.11	401	63.7	5.84	2.33	53.5	14.5	5.0	0
	3.2	9.567	7.51	0	2.11	332	53.8	5.89	2.37	44.3	12.2	5.1	0
	2.3	7.012	5.50	0	2.12	248	41.1	5.94	2.42	33.0	9.37	5.2	0
150x50x20	★ 4.5	11.72	9.20	0	1.54	368	35.7	5.60	1.75	49.0	10.50	3.7	0
	3.2	8.607	6.76	0	1.54	280	28.3	5.71	1.81	37.4	8.19	3.8	0
	2.3	6.322	4.96	0	1.55	210	21.9	5.77	1.86	28.0	6.33	3.8	0
125x50x20	★ 4.5	10.59	8.32	0	1.68	238	33.5	4.74	1.78	38.0	10.00	4.0	0
	★ 4.0	9.548	7.50	0	1.68	217	33.1	4.77	1.81	34.7	9.38	4.0	0
	3.2	7.807	6.13	0	1.68	181	26.6	4.82	1.85	29.0	8.02	4.0	0
	2.3	5.747	4.51	0	1.69	137	20.6	4.88	1.89	21.9	6.22	4.1	0
120x60x25	★ 4.5	11.72	9.20	0	2.25	252	58.0	4.63	2.22	41.9	15.50	5.3	0
120x60x20	★ 3.2	8.287	6.51	0	2.12	186	40.9	4.74	2.22	31.0	10.50	4.9	0
	★ 2.3	6.092	4.78	0	2.13	140	31.3	4.79	2.27	23.3	8.10	5.1	0
120x40x20	★ 3.2	7.007	5.50	0	1.32	144	15.3	4.53	1.48	24.0	5.71	3.4	0
100x50x20	★ 4.5	9.469	7.43	0	1.86	139	30.9	3.82	1.81	27.7	9.82	4.3	0
	★ 4.0	8.548	6.71	0	1.86	127	28.7	3.85	1.83	25.4	9.13	4.3	0
	3.2	7.007	5.50	0	1.86	107	24.5	3.90	1.87	21.3	7.81	4.4	0
	2.8	6.205	4.87	0	1.88	99.8	23.2	3.96	1.91	20.0	7.44	4.3	0
	2.3	5.172	4.06	0	1.86	80.7	19.0	3.95	1.92	16.1	6.06	4.4	0
	2.0	4.537	3.56	0	1.86	71.4	16.9	3.97	1.93	14.3	5.40	4.4	0
	1.6	3.672	2.88	0	1.87	58.4	14.0	3.99	1.95	11.7	4.47	4.5	0
90x45x20	★ 3.2	6.367	5.00	0	1.72	76.9	18.3	3.48	1.69	17.1	6.57	4.1	0
	★ 2.3	4.712	3.70	0	1.73	58.6	14.2	3.53	1.74	13.0	5.14	4.1	0
	★ 1.6	3.352	2.63	0	1.73	42.6	10.5	3.56	1.77	9.46	5.80	4.2	0
75x45x15	2.3	4.137	3.25	0	1.72	37.1	11.8	3.00	1.69	9.90	4.24	4.0	0
	2.0	3.637	2.86	0	1.72	33.0	10.5	3.01	1.70	8.79	3.76	4.0	0
	1.6	2.952	2.32	0	1.72	27.1	8.71	3.03	1.72	7.24	3.13	4.1	0
75x35x15	★ 2.3	3.677	2.89	0	1.29	31.0	6.58	2.91	1.34	8.28	2.98	3.1	0
70x40x25	★ 1.6	3.032	2.38	0	1.80	22.0	8.00	2.69	1.62	6.29	3.64	4.4	0
60x30x10	2.3	2.872	2.25	0	1.06	15.6	3.32	2.33	1.07	5.20	1.71	2.5	0
	2.0	2.537	1.99	0	1.06	14.0	3.01	2.35	1.09	4.65	1.55	2.5	0
	1.6	2.072	1.63	0	1.06	11.6	2.56	2.37	1.11	3.88	1.32	2.5	0

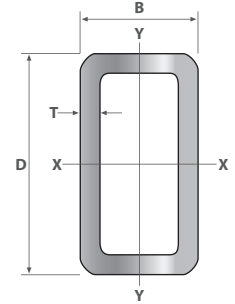
Note ★ Please contact us in advance for these items



Rectangular Tubes

Dimension Tolerances

Outside Diameter : $\leq 100 \text{ mm} : \pm 1.5 \text{ mm}$ Thickness : $2.0 \leq t \leq 3.2 : \pm 0.30 \text{ mm}$ Weight : $\pm 10\%$
 $> 100 \text{ mm} : \pm 1.5 \%$ $4.0 \leq t \leq 8.0 : \pm 10\%$



Side Length		Thickness mm.	Calculate Weight kg/m.	Cross Sectional Area cm. ²	Geometrical Moment of Inertia cm. ⁴		Modulus of Section cm. ³		Radius of Gyration cm.	
in	mm.				I _x	I _y	Z _x	Z _y	i _x	i _y
D x B		T	W	A	I _x	I _y	Z _x	Z _y	i _x	i _y
2x1	50x25	2.30	2.44	3.10	9.31	3.10	3.72	2.48	1.73	1.00
		3.20	3.24	4.13	11.60	3.80	4.65	3.04	1.68	0.96
2 ³ / ₈ x1 ¹ / ₄	60x30	2.30	2.98	3.80	16.80	5.65	5.61	3.76	2.11	1.22
		3.20	3.99	5.09	21.40	7.08	7.15	4.72	2.05	1.18
3x1 ¹ / ₂	75x38	2.30	3.81	4.85	34.60	12.00	9.23	6.30	2.67	1.57
		3.20	5.15	6.56	45.00	15.40	12.00	8.09	2.62	1.53
3x1 ³ / ₄	75x45	2.30	4.06	5.17	38.90	17.60	10.40	7.82	2.74	1.84
		3.20	5.50	7.01	50.80	22.80	13.50	10.10	2.69	1.80
3 ¹ / ₂ x1 ³ / ₄	90x45	★ 2.30	4.60	5.86	61.00	20.80	13.60	9.22	3.23	1.88
		★ 3.20	6.25	7.97	80.20	27.00	17.80	12.00	3.17	1.84
4x2	100x50	2.30	5.14	6.55	84.80	29.00	17.00	11.60	3.60	2.10
		3.20	7.01	8.93	112.00	38.00	22.50	15.20	3.55	2.06
		4.00	8.59	10.95	142.00	46.70	28.40	18.70	3.55	2.03
		4.50	9.55	12.17	147.00	48.90	29.30	19.50	3.47	2.00
5x2	125x50	3.20	8.26	10.53	198.00	46.70	31.60	18.70	4.33	2.11
		4.00	10.20	12.95	238.00	55.60	38.00	22.60	4.28	2.07
		4.50	11.3	14.42	261.00	60.60	41.70	24.20	4.25	2.05
5x3	125x75	2.30	6.95	8.85	192.00	87.50	30.60	23.30	4.65	3.14
		3.20	9.52	12.13	257.00	117.00	41.10	31.10	4.60	3.10
		4.00	11.70	14.95	311.00	141.00	49.70	37.50	4.56	3.07
		4.50	13.10	16.67	342.00	155.00	54.80	41.20	4.53	3.04
		6.00	17.00	21.63	428.00	192.00	68.50	51.10	4.45	2.98
6x2	150x50	3.20	9.52	12.12	330.36	57.07	44.05	22.83	5.22	2.17
		4.50	13.08	16.67	448.48	75.27	59.80	30.11	5.19	2.13
		6.00	16.98	21.63	574.03	93.15	76.54	37.26	5.15	2.08
		9.00	24.08	30.67	792.93	120.21	105.72	48.08	5.08	1.98
6x3	150x75	3.20	10.80	13.73	402.00	137.00	53.60	36.60	5.41	3.16
		4.50	15.20	19.37	563.00	211.00	75.00	52.90	5.39	3.30
6x3	150x80	★ 6.00	19.80	25.23	710.00	264.00	94.70	66.10	5.31	3.24
		★ 9.00	31.10	39.67	1,130.00	595.00	151.00	119.00	5.33	3.87
6x4	150x100	3.20	12.00	15.33	488.00	262.00	65.10	52.50	5.64	4.14
		4.50	16.60	21.17	658.00	352.00	87.70	70.40	5.58	4.08
		6.00	21.70	27.63	835.00	444.00	111.00	88.80	5.50	4.01
8x4	200x100	★ 9.00	31.10	39.67	1,130.00	595.00	151.00	119.00	5.33	3.87
		4.50	20.10	25.67	1,330.00	455.00	131.00	90.90	7.20	4.21
		6.00	26.40	33.63	1,700.00	577.00	170.00	115.00	7.12	4.14
★ 9.00	38.20	48.67	2,350.00	782.00	235.00	156.00	6.94	4.01		

Note ★ Please contact us in advance for these items



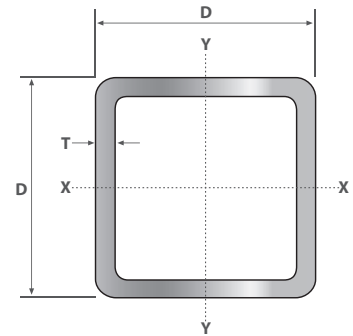
Square Tubes

Dimension Tolerances

Outside Diameter : $\leq 100 \text{ mm} : \pm 1.5 \text{ mm}$
 $> 100 \text{ mm} : \pm 1.5 \%$

Thickness : $2.0 \leq t \leq 3.2 : \pm 0.30 \text{ mm}$
 $4.0 \leq t \leq 8.0 : \pm 10 \%$

Weight : $\pm 10 \%$



Side Length		Thickness mm.	Calculate Weight kg/m.	Cross Sectional Area cm. ²	Geometrical Moment of Inertia cm. ⁴	Modulus of Section cm. ³	Radius of Gyration cm.	
in	mm.							
D x B		T	W	A	I _x , I _y	Z _x , Z _y	i _x , i _y	
1x1	25x25	2.00	1.36	1.74	1.48	1.19	0.92	
		2.30	1.53	1.97	1.61	1.29	0.90	
		3.20	1.98	2.53	2.26	1.81	0.90	
1 ¹ / ₄ x 1 ¹ / ₄	32x32	2.30	2.04	2.60	3.71	2.32	1.20	
		3.20	2.69	3.42	4.54	2.84	1.15	
1 ¹ / ₂ x 1 ¹ / ₂	38x38	2.30	2.47	3.15	6.54	3.44	1.44	
		3.20	3.29	4.19	8.18	4.30	1.40	
2x2	50x50	1.60	2.38	3.03	11.70	4.68	1.96	
		2.00	2.91	3.70	13.90	5.57	1.94	
		2.30	3.34	4.25	15.90	6.34	1.93	
		3.20	4.50	5.73	20.40	8.16	1.89	
		★	4.00	5.35	6.81	22.90	9.15	1.83
2 ³ / ₈ x 2 ³ / ₈	60x60	★	5.00	6.39	8.14	25.70	10.30	1.78
		1.60	2.88	3.68	20.70	6.89	2.37	
		2.30	4.06	5.18	28.30	9.44	2.34	
3x3	75x75	3.20	5.50	7.00	36.90	12.30	2.30	
		2.30	5.14	6.55	57.10	15.20	2.95	
		3.20	7.01	8.93	75.50	20.10	2.91	
3.20	75x75	4.00	8.59	10.95	90.20	24.10	2.87	
		4.50	9.55	12.17	98.60	26.30	2.85	
		★	2.30	6.23	7.93	101.00	22.40	3.56
3 ¹ / ₂ x 3 ¹ / ₂	90x90	★	3.20	8.51	10.85	135.00	29.90	3.52
		2.30	6.95	8.85	140.00	27.90	3.97	
4x4	100x100	3.20	9.52	12.13	187.00	37.50	3.93	
		4.00	11.70	14.95	226.00	45.30	3.89	
		4.50	13.10	16.67	249.00	49.90	3.87	
		6.00	17.00	21.63	311.00	62.30	3.79	
		★	5.00	18.30	23.36	553.00	88.40	4.86
5x5	125x125	6.00	21.70	27.63	641.00	103.00	4.82	
		3.20	12.00	15.33	376.00	60.10	4.95	
		4.50	16.60	21.17	506.00	80.90	4.89	
6x6	150x150	★	5.00	18.30	23.36	553.00	88.40	4.86
		3.20	14.54	18.52	675.22	90.03	5.99	
		4.50	20.10	25.67	896.00	120.00	5.91	
		5.00	22.30	28.36	982.00	131.00	5.89	
		6.00	26.40	33.63	1,150.00	153.00	5.84	
8x8	200x200	4.50	27.20	34.67	2190.00	219.00	7.95	
		6.00	35.80	45.63	2830.00	283.00	7.88	
		★	8.00	46.90	59.79	3620.00	362.00	7.78
		★	9.00	52.30	66.67	3990.00	399.00	7.73
		★	12.00	67.90	86.53	4980.00	498.00	7.59
10x10	250x250	5.00	38.00	48.36	4810.00	384.00	9.97	
		6.00	45.20	57.63	5670.00	454.00	9.92	
		★	8.00	59.50	75.79	7320.00	585.00	9.82
		★	9.00	66.50	84.67	8090.00	647.00	9.78
		★	12.00	86.80	110.50	10300.00	820.00	9.63
12x12	300x300	4.50	41.30	52.67	7630.00	508.00	12.00	
		6.00	54.70	69.63	9960.00	664.00	12.00	
		★	9.00	80.60	102.70	14300.00	956.00	11.80
		★	12.00	106.00	134.50	18300.00	1220.00	11.70
		★	9.00	94.70	120.70	23200.00	1320.00	13.90
14x14	350x350	★	12.00	124.00	158.50	29800.00	1700.00	13.70

Note ★ Please contact us in advance for these items

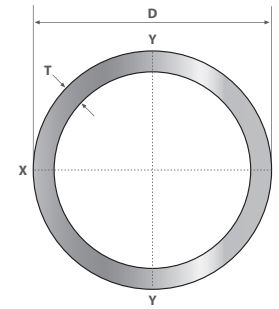


Carbon Steel Pipes

FOR GENERAL STRUCTURAL PURPOSES

Dimension Tolerances

Outside Diameter : $\leq 50 \text{ mm} : \pm 0.5 \text{ mm}$ Thickness : $2.0 \leq t \leq 3.2 : \pm 0.30 \text{ mm}$ Weight : $\pm 10\%$
 $> 50 \text{ mm} : \pm 1\%$ $4.0 \leq t \leq 8.0 : \pm 10\%$



Nominal Diameter	Outside Diameter	Thickness	Calculate Weight	Cross Sectional Area	Geometrical Moment of Inertia	Modulus of Section	Radius of Gyration
DN	D	T	W	A	I	Z	i
in	mm.	mm.	kg/m.	cm. ²	cm. ⁴	cm. ³	cm.
1/2 (15)	21.70	2.0	0.97	1.24	0.61	0.56	0.70
3/4 (20)	27.20	2.0	1.24	1.58	1.26	0.93	0.89
		2.3	1.41	1.80	1.41	1.03	0.88
1 (25)	34.00	2.3	1.80	2.29	2.89	1.70	1.12
1 1/4 (32)	42.70	2.3	2.29	2.92	5.97	2.80	1.43
		★ 2.5	2.48	3.16	6.40	3.00	1.42
		3.2	3.09	3.94	7.62	3.59	1.40
		★ 2.5	2.84	3.62	9.65	3.97	1.63
		2.8	3.16	4.03	10.60	4.36	1.62
		3.2	3.58	4.56	11.80	4.86	1.61
2 (50)	60.50	2.3	3.30	4.21	17.80	5.90	2.06
		3.2	4.52	5.76	23.70	7.84	2.03
		4.0	5.57	7.10	28.50	9.41	2.00
2 1/2 (65)	76.30	2.3	4.20	5.35	36.64	9.60	2.62
		2.8	5.08	6.47	43.70	11.50	2.60
		3.2	5.77	7.35	49.20	12.90	2.59
		4.0	7.13	9.09	59.50	15.60	2.58
3 (80)	89.10	2.8	5.96	7.59	70.70	15.90	3.05
		3.2	6.78	8.64	79.80	17.90	3.04
		4.0	8.39	10.69	97	21.80	3.01
3 1/2 (90)	101.60	3.2	7.76	9.89	120	23.60	3.48
		4.0	9.63	12.26	146	28.80	3.45
4 (100)	114.30	3.2	8.77	11.17	172	30.20	3.93
		3.5	9.58	12.18	187	32.70	3.92
		4.5	12.20	15.52	234	41.00	3.89
5 (125)	139.80	3.6	12.10	15.40	357	51.10	4.82
		4.0	13.40	17.07	394	56.30	4.80
		4.5	15.00	19.13	438	62.70	4.79
		6.0	19.80	25.22	566	80.20	4.74
6 (150)	165.20	4.5	17.80	22.72	734	88.90	5.68
		5.0	19.80	25.16	808	97.80	5.67
		6.0	23.60	30.01	952	115.00	5.63
		7.1	27.70	35.26	1,100	134.00	5.60

Nominal Diameter	Outside Diameter	Thickness	Calculate Weight	Cross Sectional Area	Geometrical Moment of Inertia	Modulus of Section	Radius of Gyration
DN	D	T	W	A	I	Z	i
in	mm.	mm.	kg/m.	cm. ²	cm. ⁴	cm. ³	cm.
7 (175)	190.70	4.50	20.70	26.32	1140	120	6.59
		★ 5.30	24.20	30.87	1330	139	6.56
		6.00	27.30	34.82	1490	156	6.53
		★ 7.00	31.70	40.40	1710	179	6.50
		★ 8.20	36.90	47.01	1960	206	6.46
		4.50	23.50	29.94	1680	155	7.49
		5.80	30.10	38.36	2130	197	7.45
8 (200)	216.30	6.00	31.10	39.64	2190	203	7.44
		7.00	36.10	46.03	2520	233	7.40
		★ 8.00	41.10	52.35	2840	263	7.37
		★ 8.20	42.10	53.61	2910	269	7.36
		6.00	38.70	49.27	4210	315	9.24
10 (250)	267.40	★ 6.60	42.40	54.08	4600	344	9.22
		7.00	45.00	57.26	4860	363	9.21
		★ 8.00	51.20	65.19	5490	411	9.18
		9.00	57.30	73.06	6110	457	9.14
12 (300)	318.50	9.30	59.20	75.41	6290	470	9.13
		6.00	46.20	58.91	7190	452	11.10
		6.90	53.00	67.55	8200	515	11.00
		★ 8.00	61.30	78.04	9410	591	11.00
		9.00	68.70	87.51	10500	659	10.90
14 (350)	355.60	★ 10.30	78.30	99.73	11900	744	10.90
		★ 6.40	55.10	70.21	10700	602	12.30
		7.90	67.70	86.29	13000	734	12.30
		9.00	76.90	98.00	14700	828	12.30
		★ 9.50	81.10	103.30	15500	871	12.20
16 (400)	406.40	12.00	102.00	129.50	19100	1080	12.20
		★ 12.70	107.00	136.80	20100	1130	12.20
		7.90	77.60	98.90	19600	967	14.10
		9.00	88.20	112.40	22200	1090	14.10
		★ 9.50	93.00	118.50	23300	1150	14.00
		12.00	117.00	148.70	28900	1420	14.00
		★ 12.70	123.00	157.10	30500	1500	13.90

Note ★ Please contact us in advance for these items



P plates

SS400

(Metric Size)

Kilograms of Standard Size (JIS - 0.7293 Kg/mm. ft²)

Thickness	Unit Weight	Width x Length, ft. ² Area, ft. ²										
		3x6 ★	4x8	4x10 ★	4x16 ★	4x20 ★	5x10	5x20	5x30 ★	5x40 ★	6x30 ★	6x40 ★
mm.	kg/ft. ²	18	32	40	64	80	50	100	150	200	180	240
3.2	2.334	42	74.7	93.4	149	187	117	233	350	467	420	560
4.5	3.282	59.1	105	131	210	263	164	328	492	656	591	788
5	★ 3.646	65.6	117	146	233	292	182	365	547	729	656	875
6	4.376	78.8	140	175	280	350	219	438	656	875	788	1,050
7	★ 5.105	91.9	183	204	327	408	255	510	766	1,021	919	1,225
8	5.384	105	187	233	373	467	292	583	875	1,167	1,050	1,400
9	6.564	118	210	263	420	525	328	656	985	1,313	1,182	1,575
10	7.293	131	233	292	467	583	365	729	1,094	1,459	1,313	1,750
11	★ 8.022	144	257	321	513	642	401	802	1,203	1,604	1,444	1,925
12	8.752	158	280	350	560	700	438	875	1,313	1,750	1,575	2,100
12.7	★ 9.262	167	296	370	593	741	463	926	1,389	1,852	1,667	2,223
13	★ 9.481	171	303	379	607	758	474	948	1,422	1,896	1,707	2,275
14	★ 10.21	184	327	408	653	817	510	1,021	1,532	2,042	1,838	2,450
15	10.94	197	350	438	700	875	547	1,094	1,641	2,188	1,969	2,626
16	11.67	210	373	467	747	934	584	1,167	1,750	2,334	2,101	2,801
17	★ 12.40	223	397	496	794	992	620	1,240	1,860	2,480	2,232	2,976
18	★ 13.13	236	420	525	840	1,050	656	1,313	1,970	2,626	2,363	2,151
19	13.86	249	444	554	887	1,109	693	1,386	2,079	2,772	2,495	3,326
20	14.59	263	467	584	934	1,167	730	1,459	2,188	2,918	2,626	3,502
21	★ 15.32	276	490	613	980	1,226	766	1,532	2,298	3,064	2,758	3,677
22	16.04	289	513	642	1,027	1,283	802	1,604	2,406	3,208	2,887	3,850
23	★ 16.77	302	537	671	1,073	1,342	838	1,677	2,516	3,354	3,019	4,025
24	★ 17.50	315	560	700	1,120	1,400	875	1,750	2,625	3,500	3,150	4,200
25	18.23	328	583	729	1,167	1,458	912	1,823	2,734	3,646	3,281	4,375
25.4	★ 18.52	333	593	741	1,185	1,482	926	1,852	2,778	3,704	3,334	4,445
26	★ 18.96	341	607	758	1,213	1,517	948	1,896	2,844	3,792	3,413	4,550
27	★ 19.69	354	630	788	1,260	1,575	984	1,969	2,954	3,938	3,544	4,726
28	20.42	368	653	817	1,307	1,634	1,021	2,042	3,063	4,084	3,676	4,901
29	★ 21.15	381	677	846	1,354	1,692	1,058	2,115	3,172	4,230	3,807	5,076
30	21.88	394	700	875	1,400	1,750	1,094	2,188	3,282	4,376	3,938	5,251
32	23.34	420	747	934	1,494	1,867	1,167	2,334	3,501	4,668	4,201	5,602
34	★ 24.80	446	794	992	1,587	1,984	1,240	2,480	3,720	4,960	4,464	5,952
36	★ 26.25	472	840	1,050	1,680	2,100	1,312	2,625	3,938	5,250	4,725	6,300
38	★ 27.71	499	887	1,108	1,773	2,217	1,386	2,771	4,156	5,542	4,988	6,650
40	★ 29.17	525	933	1,167	1,867	2,334	1,458	2,917	4,376	5,834	5,251	7,001
45	★ 32.82	591	1,050	1,313	2,100	2,626	1,641	3,282	4,923	6,564	5,908	7,877
50	★ 36.46	656	1,167	1,458	2,333	2,917	1,823	3,646	5,469	7,292	6,563	8,750
55	★ 40.11	722	1,284	1,604	2,567	3,209	2,006	4,011	6,016	8,022	7,220	9,626
60	★ 43.76	788	1,400	1,750	2,801	3,501	2,188	4,376	6,564	8,752	7,877	10,502
65	★ 47.40	853	1,517	1,896	3,034	3,792	2,370	4,740	7,110	9,480	8,532	11,376
70	★ 51.05	919	1,634	2,042	3,267	4,084	2,552	5,104	7,658	10,210	9,189	12,252

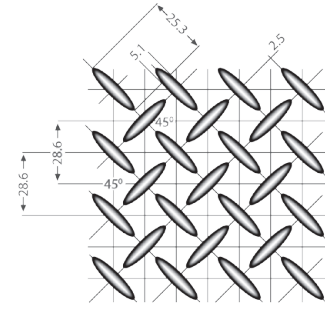
Note ★ Please contact us in advance for these items



Checkered Plates

SS400

Standard Size and Weight Table, kg/cut-length sheet



Thickness mm.	Weight kg/m. ²	Width and Length, mm. (Figures in the lower e.g. 3x6 are nominal sizes in feet.)							
		914x1,829 ★ (3x6)	914x3,658 ★ (3x12)	1,219x2,438 (4x8)	1,219x3,048 ★ (4x10)	1,219x4,877 ★ (4x16)	1,219x6,096 ★ (4x20)	1,524x3,048 (5x10)	1,524x6,096 ★ (5x20)
2.3	19.73	33.0	66.0	58.6	73.3	177	-	-	-
3.2	26.79	44.8	89.6	79.6	99.6	159	199	-	-
4.5	36.99	61.8	124	110	137	220	275	172	344
6.0	48.77	81.5	163	145	181	290	362	227	453
★ 8.0	64.47	108	216	192	240	383	479	299	599
9.0	72.32	121	242	215	269	430	537	336	672
★ 10.0	80.17	134	268	238	298	477	596	372	745

Note ★ Please contact us in advance for these items

D

Deformed Bars

SD 30, SD 40

Size and Weight

Name	Diameter (mm.)	Weight (kg/m.)	Cross Section Area (sq.cm.)	Circumference (cm.)
DB 10	10	0.616	.785	3.14
DB 12	12	0.888	1.131	3.77
DB 16	16	1.578	2.010	5.03
DB 20	20	2.466	3.146	6.29
DB 22	★ 22	2.984	3.801	6.91
DB 25	25	3.853	4.908	7.86
DB 28	28	4.834	6.157	8.80
DB 32	★ 32	6.313	8.042	10.06
DB 36	★ 36	7.990	10.178	11.31
DB 40	★ 40	9.865	12.566	12.60

Note ★ Please contact us in advance for these items

S

Square Bars

Size in	lb/ft.	kg/m.
1/4	0.2125	0.316
3/8	0.4718	0.711
1/2	0.8500	1.265
5/8	1.3281	1.977
3/4	1.9125	2.846
1	3.4000	5.060
1 1/4	5.3130	7.907
1 1/2	7.6500	11.385
2	13.6000	20.239
2 1/2	21.2500	31.624
3	30.6000	45.538
3 1/2	41.6500	61.982
4	54.4000	80.956
5	85.0000	126.494

R

Round Bars SR24

Size and Weight

Name	Diameter (mm.)	Weight (kg/m.)	Cross Section Area (sq.cm.)	Circumference (cm.)
RB 6	6	0.222	0.283	1.88
RB 9	9	0.499	0.636	2.82
RB 12	12	0.888	1.131	3.77
RB 15	15	1.387	1.767	4.71
RB 19	19	2.226	2.835	5.96
RB 25	25	3.853	4.909	7.85
RB 28	★ 28	4.834	6.158	8.79
RB 34	★ 34	7.127	9.079	10.68

Note ★ Please contact us in advance for these items



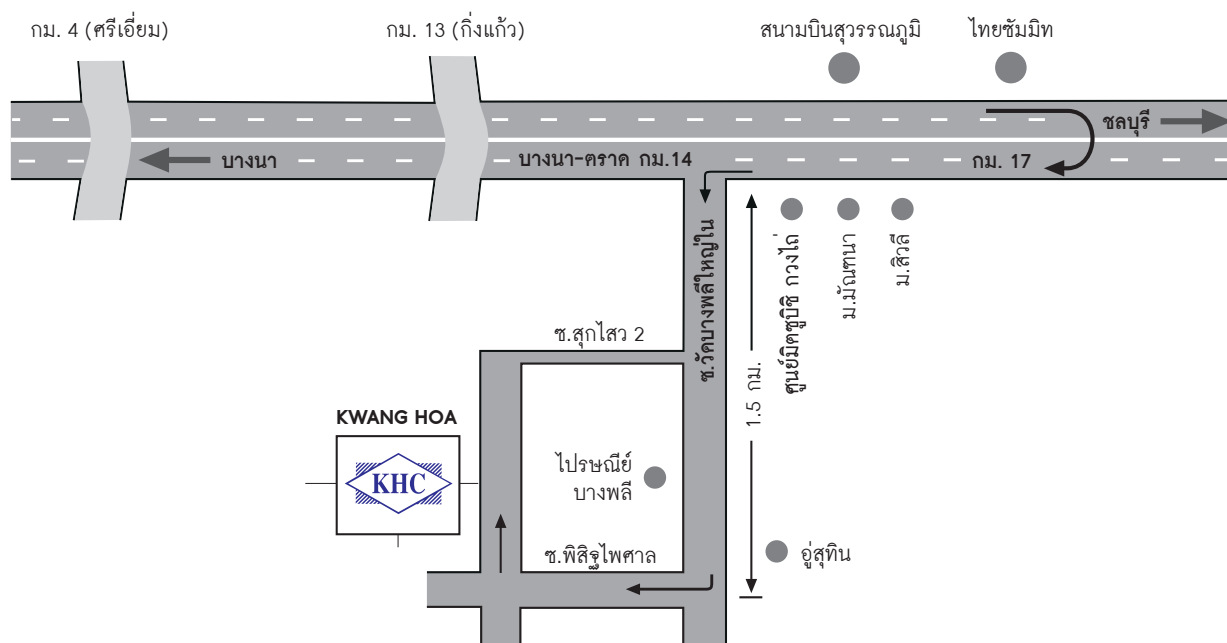
F lat Bars

(Metric Size)

Standard Sectional Dimension		Sectional Area cm. ²	Unit Weight kg/m.	Standard Sectional Dimension		Sectional Area cm. ²	Unit Weight kg/m.	Standard Sectional Dimension		Sectional Area cm. ²	Unit Weight kg/m.	Standard Sectional Dimension		Sectional Area cm. ²	Unit Weight kg/m.	
Thick-ness mm.	Width mm.			Thick-ness mm.	Width mm.			Thick-ness mm.	Width mm.			Thick-ness mm.	Width mm.			
4.5	25	1.125	0.88	9	180	16.20	12.7	16	300	48.00	37.7	25	180	45.00	35.3	
	32	1.440	1.13		200	18.00	14.1		19	38	7.22		5.67	200	50.00	39.2
	38	1.710	1.34		230	20.70	16.2			44	8.36		6.56	230	57.50	45.1
	44	1.980	1.55		250	22.50	17.7			50	9.50		7.46	250	62.50	49.1
	50	2.250	1.77		12	25	3.00			2.36	65		12.35	9.69	280	70.00
6	25	1.500	1.18	32		3.81	3.01	75	14.25	11.2	28	100	28.00	22.0		
	32	1.920	1.51	38		4.56	3.58	90	17.10	13.4		125	35.00	27.5		
	38	2.280	1.79	44		5.28	4.14	100	19.00	14.9		150	42.00	33.0		
	44	2.640	2.07	50		6.00	4.71	125	23.75	18.6		180	50.40	39.6		
	50	3.000	2.36	65	7.80	6.12	150	28.50	22.4	200		56.00	44.0			
	65	3.900	3.06	75	9.00	7.06	180	34.20	26.8	230	64.40	50.6				
	75	4.500	3.53	90	10.80	8.48	200	38.00	29.8	250	70.00	55.0				
	90	5.400	4.24	100	12.00	9.42	230	43.70	34.3	280	78.40	61.5				
8	100	6.000	4.71	125	15.00	11.8	250	47.50	37.3	32	100	32.00	25.1			
	125	7.500	5.89	150	18.00	14.1	280	53.20	41.8		125	40.00	31.4			
	25	2.000	1.57	180	21.60	17.0	22	50	11.00		8.64	150	48.00	37.7		
		32	2.560		2.01	200		24.00	18.8		65	14.30	11.2	180	57.60	45.2
		38	3.040		2.39	230		27.60	21.7		75	16.50	13.0	200	64.00	50.2
		44	3.520		2.76	250		30.00	23.6	90	19.80	15.5	230	73.60	57.8	
		50	4.000		3.14	280		33.60	26.4	100	22.00	17.3	250	80.00	62.8	
	65	5.200	4.08	300	36.00	28.3	125	27.50	21.6	280	89.60	70.3				
	75	6.000	4.71	16	32	5.12	4.02	150	33.00	25.9	36	100	36.00	28.3		
	90	7.200	5.65		38	6.08	4.77	180	39.60	31.1		125	45.00	35.3		
100	8.000	6.28	44		7.04	5.53	200	44.00	34.5	150		54.00	42.4			
9	125	10.000	7.85		50	8.00	6.28	230	50.60	39.7		180	64.80	50.9		
	25	2.250	1.77		65	10.40	8.16	250	55.00	43.2		200	72.00	56.5		
	32	2.280	2.26	75	12.00	9.42	280	61.60	48.4	230	82.80	65.0				
	38	3.420	2.68	90	14.40	11.3	300	66.00	51.8	250	90.00	70.6				
	44	3.960	3.11	100	16.00	12.6	25	50	12.50	9.81	280	100.80	79.1			
	50	4.500	3.53	125	20.00	15.7		65	16.25	12.8	300	108.00	84.8			
	65	5.850	4.59	150	24.00	18.8		75	18.75	14.7						
	75	6.750	5.30	180	28.80	22.6		90	22.50	17.7						
90	8.100	6.36	200	32.00	25.1	100	25.00	19.6								
100	9.000	7.06	230	36.80	28.9	125	31.25	24.5								
125	11.250	8.83	250	40.00	31.4	150	37.50	29.4								
150	13.500	10.60	280	44.80	35.2											



Map to Kwang Hoa Commercial Co., Ltd.



บริษัท กวางฮัวพานิช จำกัด

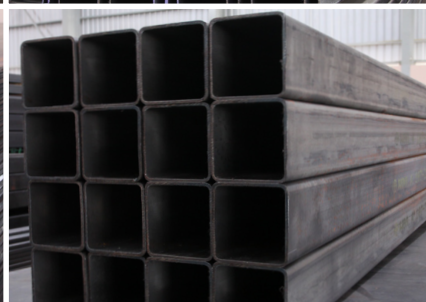
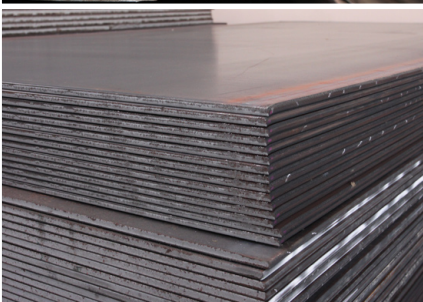
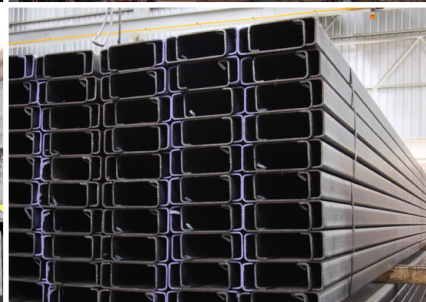
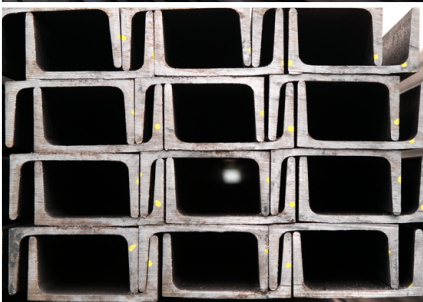
60/25 หมู่ 12 ต.บางพลีใหญ่ อ.บางพลี จ.สมุทรปราการ 10540

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