United Steel Pipe Co., Ltd.

บริษัท ยูไนเต็ด สตีล ไพพ์ จำกัด

มอก. 276 : 2562
มอก. 107 : 2561
มอก. 770 : 2533
มอก. 1228 : 2561

ABOUT US

ด้วยแนวคิดแบบขับเคลื่อนโดยความต้องการของลูกค้า หรือ Customer Oriented Base บริษัท ยูไนเต็ด สตีล ไพพ์ จำกัด บริหารงานโดยให้ความต้องการของลูกค้าเป็นหลัก ลูกค้าจึงได้รับสินค้าคุณภาพสูง ในราคาที่พอใจ และได้รับสินค้าทันต่อความต้องการอยู่เสมอ นอกจากนี้บริษัทฯยังคงมุ่งมันพัฒนาการผลิตแบบเป็นมิตรต่อสิ่งแวดล้อมให้ความสำคัญกับการอนุรักษ์พลังงาน การนำกลับมาใช้ซ้ำและลดของเสีย

บนเนื้อที่กว่า 100 ไร่ ประกอบไปด้วยโรงงานและเครื่องจักรที่มีกำลังการผลิตกว่า 360,000 ตันต่อปี ผนวกกับทีมงานคุณภาพของบริษัท ยูไนเต็ด สตีล ไพพ์ จำกัด ที่มีประสบการณ์ยาวนานกว่า 30 ปี ทำให้ผลิตภัณฑ์ท่อเหล็กและผลิตภัณฑ์เหล็กอื่นๆ ของ บริษัท ยูไนเต็ด สตีล ไพพ์ จำกัด ได้รับการยอมรับว่าเป็นสินค้าคุณภาพสูง การให้บริการที่จริงใจและคำนึงถึงผลประโยชน์สูงสุดร่วมกัน ทำให้ลูกค้าพึงพอใจและไว้วางใจให้เราเป็นหนึ่งในคู่ค้าคนสำคัญมาโดยตลอด

With The Customer-Oriented Base, United Steel Pipe Co., Ltd. Is driven by its customer's need. Our customers therefore will always be served by high quality products at competitive price at the right time. We keep improving our production to be environment-friendly so as to meet green concept to protect our world environment and to reserve the source of energy. Reduce, reuse and recycle are our practice.

With the factory occupying the capacity of 360,000 tons per year on the land of 100 rai together with the 30 year long experienced team of staffs, steel pipe and other steel products of United Steel Pipe Co., Ltd. are counted as high quality products. Our excellent services and effective logistic system are also acceptable among our customers so that they have confidence in United Steel Pipe Co., Ltd. to be one of their important business partners.

วิสัยทัศน์ (Vision)

เรามุ่งมั้นที่จะเลิศในอุตสาหกรรมท่อเหล็กและเป็นบริษัทชั้นนำของประเทศที่สามารถแข่งขันในตลาดโลกได้

We aim to be the excellence in steel pipe industry and to be Thailand's leading manufacturer with competitive ness world steel market.

พันธกิจ (Mission)

- ผลิตและส่งมอบสินค้าคุณภาพสู่ลูกค้า	- Deliver high quality products.
- บริการจัดส่งตรงเวลา	- Provide good logistics
- สร้างพันธมิตรทางการค้าอย่างยั่งยืน	- Build up sustainable business partners.

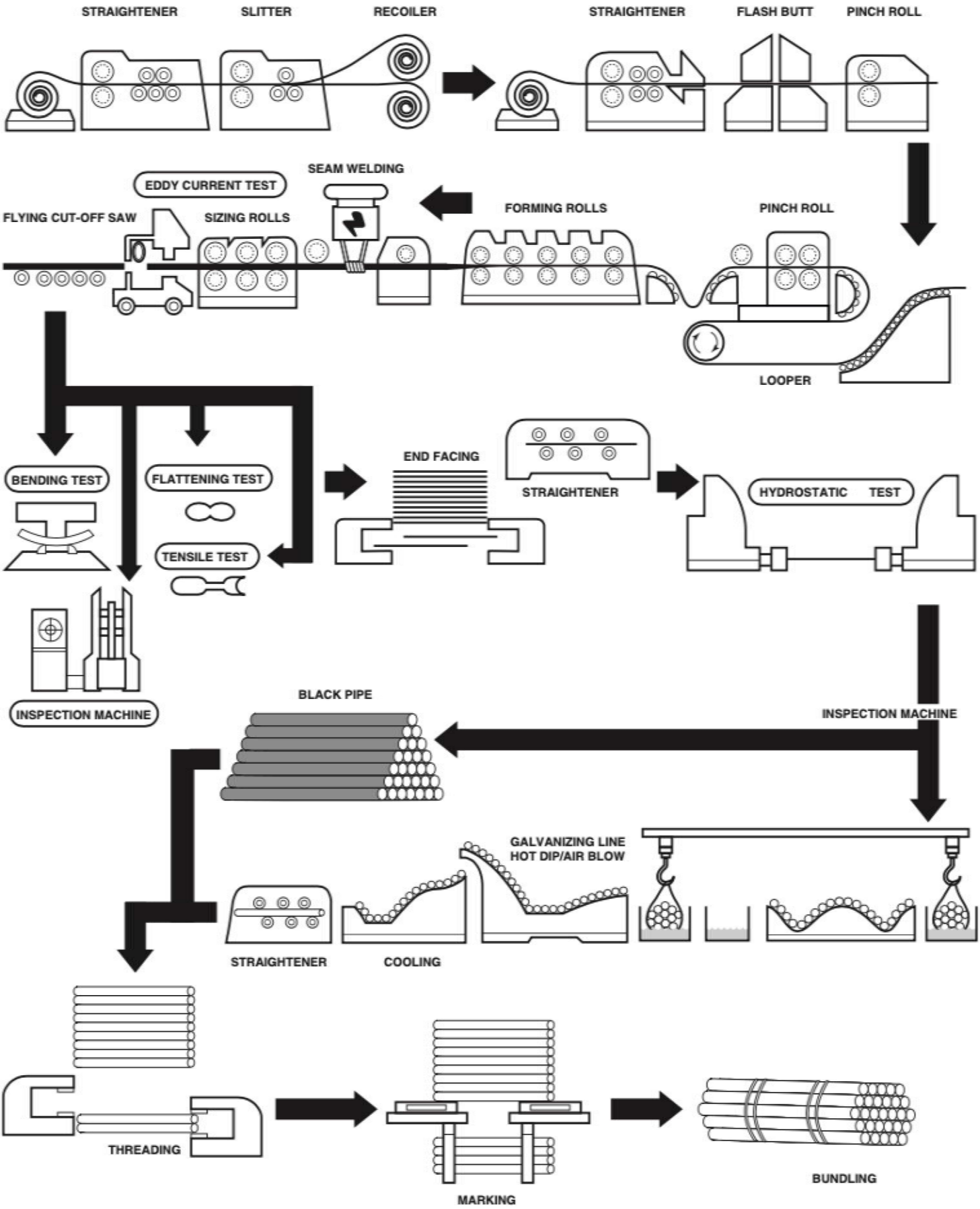
บริษัท ยูไนเต็ด สตีล ไพพ์ จำกัด

United Steel Pipe Co., Ltd.






Tube Mill Flow Chart UNITED STEEL PIPE CO.,LTD.



CARBON STEEL TUBES FOR GENERAL STRUCTURAL PURPOSES

ASTM A500 CARBON STEEL ROUND PIPE

Nominal size (DN)		Outside Diameter		Thickness		Unit Mass	
in	mm	in	mm	in	mm	Ib./ft.	kg / m
1/2	15	0.840	21.30	0.109	2.77	0.85	1.27
3/4	20	1.050	26.70	0.113	2.87	1.13	1.69
1	25	1.315	33.40	0.104 0.133 0.179	2.64 3.38 4.55	1.34 1.68 2.17	2.00 2.50 3.24
1-1/4	32	1.660	42.20	0.110 0.140 0.191	2.79 3.56 4.85	1.82 2.27 3.00	2.71 3.39 4.47
1-1/2	40	1.900	48.30	0.114 0.145	2.90 3.68	2.17 2.72	3.25 4.05
2	50	2.375	60.30	0.121 0.154 0.218	3.07 3.91 5.54	2.91 3.65 5.02	4.33 5.44 7.48
2-1/2	65	2.875	73.00	0.156 0.188 0.203 0.276	3.96 4.78 5.16 7.01	4.53 5.40 5.79 7.66	6.74 8.04 8.63 11.41
3	80	3.500	88.90	0.156 0.188 0.216	3.96 4.78 5.49	5.57 6.65 7.58	8.29 9.92 11.29
3-1/2	90	4.000	101.60	0.156 0.188 0.226	3.96 4.78 5.74	6.40 7.65 9.11	9.53 11.41 13.57
4	100	4.500	114.30	0.156 0.188 0.219 0.237	3.96 4.78 5.56 6.02	7.24 8.66 10.01 10.79	10.78 12.91 14.91 16.07
5	125	5.563	141.30	0.258 0.375	6.55 9.53	14.62 20.78	21.77 30.97
6	150	6.625	168.30	0.280 0.432	7.11 10.97	18.97 28.57	28.26 42.56
8	200	8.625	219.10	0.322 0.500	8.18 12.70	28.55 43.39	42.55 64.64

Chemical Composition							Mechanical Properties		
Electric Resistance weided (TYPE-E)	C max. %	Si max. %	Mn max. %	P max. %	S max. %	Cu max. %	Yield N/mm² (min.)	Tensile N/mm² (min.)	Elongation % (min.)
Grade A	0.300	-	1.400	0.045	0.045	0.180	230	310	25
Grade B	0.300	-	1.400	0.045	0.045	0.180	290	400	23
Grade C	0.270	-	1.400	0.045	0.045	0.180	315	425	21
Grade D	0.300	-	1.400	0.045	0.045	0.180	250	400	23

Tolerances :

Outside Diameter	:	NPS ≤ 1-1/2" : ± 0.5% OD.Not less than 0.13 mm NPS ≥ 2" : ± 0.75 % OD.
Wall Thickness	:	± 10 %

ASTM A500 CARBON STEEL SQUARE AND RECTANGULAR PIPE

ASTM A500 SQUARE

Nominal Size		Thickness	Mass per unit length
mm	in	mm	kg/m
25.4x25.4	1"x1"	2.41	1.62
		3.38	2.10
50.8x50.8	2"x2"	2.79	4.00
		3.18	4.52
		3.91	5.44
63.5x63.5	2-1/2"x2-1/2"	3.58	6.43
		4.78	8.32
		6.35	10.56
76.2x76.2	3"x3"	3.96	8.60
		4.78	10.21
		6.35	13.09
89.9x89.9	3-1/2"x3-1/2"	3.96	10.24
		4.78	12.11
		6.35	15.62
		7.92	18.88
101.6x101.6	4"x4"	4.78	13.85
		6.35	17.89
		7.92	21.61
127.0x127.0	5"x5"	4.78	17.65
		6.35	22.94
		7.92	27.93
152.4x152.4	6"x6"	4.78	21.44
		6.35	28.00
		7.92	34.25
		9.52	40.28

ASTM A500 RECTANGULAR

Nominal Size		Thick-ness	Mass per unit length
mm	in	mm	kg/m
72.6x50.8	3"x2"	3.58	6.43
		4.78	8.32
		6.35	10.56
101.6x50.8	4"x2"	3.96	8.60
		4.78	10.21
		6.35	13.09
101.6x76.2	4"x3"	3.96	10.24
		4.78	12.11
		6.35	15.62
127.0x76.2	5"x3"	4.78	13.85
		6.35	17.89
		7.92	21.61
		9.52	25.06
152.4x76.2	6"x3"	4.78	15.74
		6.35	20.42
		7.92	24.78
		9.52	28.85
152.4x101.6	6"x4"	4.78	17.65
		6.35	22.94
		7.92	27.93
		9.52	32.65
203.2x101.6	8"x4"	4.78	21.44
		6.35	28.00
		7.92	34.25
		9.52	40.28

Chemical Composition						Mechanical Properties					
MATERIAL OF GRADE	C % max.	Mn % max.	P % max.	S % max.	Cu % max	Yield		Tensile		Elongation (min)	
						Round	Sharped	Round	Sharped	Round	Sharped
						Mpa	Mpa	Mpa	Mpa	2 in	2 in
Grade A	0.300	1.400	0.045	0.045	0.180	230	270	310	310	25	25
Grade B	0.300	1.400	0.045	0.045	0.180	290	315	400	400	23	23
Grade C	0.270	1.400	0.045	0.045	0.180	315	345	425	425	21	21
Grade D	0.300	1.400	0.045	0.045	0.180	250	250	400	400	23	23

Dimention Tolerances :

Length of side :	≤ 63.5 mm	± 0.51 mm	Thickness :	± 10 %
	> 63.5 - 88.9 mm	± 0.64 mm		
	> 88.9-139.7 mm	± 0.76 mm		
	>139.7 mm	± 1%		

AS 1163 CARBON STEEL PIPE

C250				
Nominal Dimension		Outside Diameter	Thickness	Mass per unit length
mm	in	mm	mm	kg/m
15	1/2"	21.3	2.60 3.20	1.20 1.43
20	3/4"	26.9	2.60 3.20	1.56 1.87
25	1"	33.7	3.20 4.00	2.41 2.93
32	1-1/4"	42.4	3.20 4.00	3.09 3.79
40	1-1/2"	48.3	3.20 4.00 5.40	3.56 4.37 5.71
50	2"	60.3	3.60 4.50 5.40	5.03 6.19 7.31
65	2-1/2"	76.1	3.60 4.50 5.90	6.44 7.95 10.20
80	3"	88.9	4.00 5.00 5.90	8.38 10.30 12.10
90	3-1/2"	101.6	4.00 5.00	9.63 11.90
100	4"	114.3	4.50 5.40	12.20 14.50
125	5"	139.7	5.00 5.40	16.60 17.90
150	6"	165.1	5.00 5.40	19.70 21.30

C350				
Nominal Dimension		Outside Diameter	Thickness	Mass per unit length
mm	in	mm	mm	kg/m
15	1/2"	21.3	2.00	0.95
20	3/4"	26.9	2.00 2.30	1.23 1.40
25	1"	33.7	2.00 2.60	1.56 1.99
32	1-1/4"	42.4	2.00 2.60	1.99 2.55
40	1-1/2"	48.3	2.30 2.90	2.61 3.25
50	2"	60.3	2.30 2.90	3.29 4.11
65	2-1/2"	76.1	2.30 3.20	4.19 5.75
80	3"	88.9	2.60 3.20 4.80 5.50	5.53 6.76 9.96 11.30
90	3-1/2"	101.6	2.60 3.20	6.35 7.77
100	4"	114.3	3.20 3.60 4.80 6.00	8.77 9.83 13.00 16.00
125	5"	139.7	3.00 3.50	10.10 11.80
150	6"	165.1	3.00 3.50	12.00 13.90
150	6"	168.3	4.80 6.40 7.10	19.40 25.60 28.20
200	8"	219.1	4.80 6.40 8.20	25.40 33.60 42.60

Dimension Tolerances	
Outside Diameter	: ± 1% with a minimum of ± 0.5 mm : and a maximum of ± 10 mm
Thickness	: ± 10%
Weight	: -4%

GRADES	Chemical Composition (Cast or Product Analysis) % MAX						Mechanical Properties N/mm² (min.)			
	C max. %	Si max. %	Mn max. %	P max. %	S max. %	CE max. %	Yield	Tensile	Circular Hollow Sections	Rectangle Hollow Sections
C250	0.12	0.05	0.50	0.03	0.03	0.25	250	320	22	18
C350	0.20	0.045	1.60	0.03	0.03	0.43	350	430	20	16

AS 1163 SQUARE AND RECTANGULAR HOLLOW SECTION

C350 SQUARE			
Nominal Size		Thickness	Mass per unit length
mm	in	mm	kg/m
25 x 25	1"x1"	1.60	1.12
		2.00	1.36
		2.50	1.64
		3.00	1.89
50 x 50	2"x2"	1.60	2.38
		2.00	2.93
		2.50	3.60
		3.00	4.25
		4.00	5.35
75 x 75	3"x3"	2.50	5.56
		3.00	6.60
		3.50	7.53
		4.00	8.49
		5.00	10.30
		6.00	12.00
100 x 100	4"x4"	3.00	8.96
		4.00	11.60
		5.00	14.20
		6.00	16.70
		9.00	23.50
125 x 125	5"x5"	4.00	14.80
		5.00	18.20
		6.00	21.40
		9.00	30.60
150 x 150	6"x6"	5.00	22.10
		6.00	26.20
		9.00	37.70
200 x 200	8"x8"	5.00	29.90
		6.00	35.60
		9.00	51.80

C350 RECTANGULAR			
Nominal Size		Thickness	Mass per unit length
mm	in	mm	kg/m
50 x 25	2"x1"	1.60	1.75
		2.00	2.15
		2.50	2.62
		3.00	3.07
100 x 50	4"x2"	2.00	4.50
		2.50	5.56
		3.00	6.60
		3.50	7.53
		4.00	8.49
		5.00	10.30
		6.00	12.00
125 x 75	5"x3"	3.00	8.96
		4.00	11.60
		5.00	14.20
150 x 50	6"x2"	3.00	8.96
		4.00	11.60
		5.00	14.20
150 x 100	6"x4"	4.00	14.80
		5.00	18.20
		6.00	21.40
200 x 100	8"x4"	4.00	17.90
		5.00	22.10
		6.00	26.20

C450 SQUARE			
Nominal Size		Thickness	Mass per unit length
mm	in	mm	kg/m
25 x 25	1"x1"	2.30	1.53
50 x 50	2"x2"	2.30	3.34
		2.80	3.99
75 x 75	3"x3"	2.30	5.14
		2.80	6.19
		3.30	7.14
100 x 100	4"x4"	2.80	8.39
		3.30	9.73
		3.80	11.10

C450 RECTANGULAR			
Nominal Size		Thickness	Mass per unit length
mm	in	mm	kg/m
50 x 25	2"x1"	2.30	2.44
		2.80	2.89
100 x 50	4"x2"	2.30	5.14
		2.80	6.19
		3.30	7.14
125 x 75	5"x3"	2.80	8.39
		3.30	9.73
		3.80	11.10

Dimension Tolerances	
Length of side	: ± 1% with a minimum of ± 0.5 mm
Thickness	: ± 10%
Weight	: -4%

GRADES	Chemical Composition (Cast or Product Analysis) % MAX						Mechanical Properties N/mm² (min.)			
	C max. %	Si max. %	Mn max. %	P max. %	S max. %	CE max. %	Yield	Tensile	Circular Holow Sections	Rectangle Hollow Sections
C350	0.20	0.045	1.60	0.03	0.03	0.43	350	430	20	16
C450	0.20	0.045	1.70	0.03	0.03	0.43	450	500	16	14

JIS G 3444 : 2006 CARBON STEEL PIPE

Outside Diameter	OD. (Class 2) Tolerance	Thickness	THK. (Class 2) Tolerance	Unit mass
mm	mm	mm	mm	kg /m
21.7	± 0.25	2.0	± 0.3	0.97
27.2	± 0.25	2.0	± 0.3	1.24
		2.3	± 0.3	1.41
34.0	± 0.25	2.3	± 0.3	1.80
42.7	± 0.25	2.3	± 0.3	2.29
		2.5	± 0.3	2.48
48.6	± 0.25	2.3	± 0.3	2.63
		2.5	± 0.3	2.84
		2.8	± 0.3	3.16
		3.2	± 0.3	3.58
60.5	± 0.30	2.3	± 0.3	3.30
		3.2	± 0.3	4.52
		4.0	± 0.4	5.57
76.3	± 0.35	2.8	± 0.3	5.08
		3.2	± 0.3	5.77
		4.0	± 0.4	7.13
89.1	± 0.40	2.8	± 0.3	5.96
		3.2	± 0.3	6.78

Outside Diameter	OD. (Class 2) Tolerance	Thickness	THK. (Class 2) Tolerance	Unit mass
mm	mm	mm	mm	kg /m
101.6	± 0.50	3.2	± 0.3	7.76
		4.0	± 0.4	9.63
		5.0	± 0.5	11.9
114.3	± 0.55	3.2	± 0.3	8.77
		3.5	± 0.3	9.58
		4.5	± 0.4	12.2
139.8	± 0.65	3.6	± 0.3	12.1
		4.0	± 0.4	13.4
		4.5	± 0.4	15.0
		6.0	± 0.6	19.8
165.2	± 0.80	4.5	± 0.4	17.8
		5.0	± 0.5	19.8
		6.0	± 0.6	23.6
		7.1	± 0.7	27.7
216.3	± 1.05	4.5	± 0.4	23.5
		5.8	± 0.6	30.1
		6.0	± 0.6	31.1
		7.0	± 0.7	36.1
		8.0	± 0.8	41.1
		8.2	± 0.8	42.1

	Chemical Composition					Mechanical Properties		
Grade	C max. %	Si max. %	Mn max. %	P max. %	S max. %	Yield N/mm² (min.)	Tensile N/mm² (min.)	Elongation % (min.)
STK 290	-	-	-	0.050	0.050	-	290	30
STK 400	0.25	-	-	0.040	0.040	235	400	23
STK 500	0.3	0.35	0.30-1.00	0.040	0.040	355	500	15
STK 490	0.18	0.55	1.5	0.040	0.040	315	490	23

DIMENSION TOLERANCES :		
Permissible Variation		
Length	:	+ 40 mm - 0 mm

JIS G 3466 : 1988 CARBON STEEL SQUARE PIPE

Side length A x B mm	Wall Thickness STD. mm	Unit Mass kg / m
40x40	1.60 2.30	1.88 2.62
50x50	1.60 2.30 3.20	2.38 3.34 4.50
60x60	1.60 2.30 3.20	2.88 4.06 5.50
75x75	1.60 2.30 3.20 4.50	3.64 5.14 7.01 9.55
80x80	2.30 3.20 4.50	5.50 7.51 10.30
90x90	2.30 3.20	6.23 8.51

Side length A x B mm	Wall Thickness STD. mm	Unit Mass kg / m
100x100	2.30 3.20 4.00 4.50 6.00 9.00 12.00	6.95 9.52 11.70 13.10 17.00 24.10 30.20
125x125	3.20 4.50 5.00 6.00 9.00 12.00	12.00 16.60 18.30 21.70 31.10 39.70
150x150	4.50 5.00 6.00 9.00	20.10 22.30 26.40 38.20

JIS G 3466 : 1988 CARBON STEEL RECTANGULAR PIPE

Side length A x B mm	Wall Thickness STD. mm	Unit Mass kg / m
50x20	1.60 2.30	1.63 2.25
50x30	1.60 2.30	1.88 2.62
60x30	1.60 2.30 3.20	2.13 2.98 3.99
75x20	1.60 2.30	2.25 3.16
75x45	1.60 2.30 3.20	2.88 4.06 5.50

Side length A x B mm	Wall Thickness STD. mm	Unit Mass kg / m
80x40	1.60 2.30 3.20	2.88 4.06 5.50
90x45	2.30 3.20	4.60 6.25
100x20	1.60 2.30	2.88 4.06
100x40	1.60 2.30 4.20	3.38 4.78 8.32
100x50	1.60 2.30 3.20 4.50	3.64 5.14 7.01 9.55

Side length A x B mm	Wall Thickness STD. mm	Unit Mass kg / m
125x40	1.60 2.30	4.01 5.69
125x75	2.30 3.20 4.00 4.50 6.00	6.95 9.52 11.70 13.10 17.00
150x75	3.20	10.80
150x80	4.50 5.00 6.00	15.20 16.80 19.80

TECHNICAL SPECIFICATIONS :

Grade	Chemical Composition					Mechanical Properties				
	C Max. %	Si Max. %	Mn Max. %	P Max. %	S Max. %	Yield (min.) N/mm²	Yield (min.) kgf/mm²	Tensile (min.) N/mm²	Tensile (min.) kgf/mm²	Elongation % (min.)
STKR41	0.25	-	-	0.040	0.040	-	25	-	41	23
STKR50	0.18	0.55	1.50	0.040	0.040	-	33	-	50	23
STKR400	0.25	-	-	0.040	0.040	245	-	400	-	23
STKR490	0.18	0.55	1.50	0.040	0.040	325	-	490	-	23

DIMENSION TOLERANCES :

Permissible Variation

Side Length : 100 mm or under
: ± 1.50 mm,
over 100 mm ± 1.50%

Wall Thickness : under 3.00 mm
: ± 0.30 mm,
3.00 mm or over
: ± 10%

Length : + not specified, - 0 mm

Angularity : ± 1.5°

TECHNICAL SPECIFICATIONS							
Chemical Composition (Max %)						Mechanical Properties (Min)	
Grade	C	Si	Mn	P	S	Yield Strength N/mm^2	Tensile Strength N/mm^2
STK400	0.25	-	-	0.04	0.04	235	400

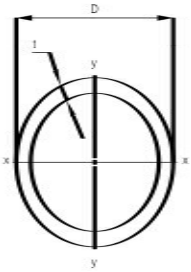
ความยืดของท่อแบบกลม สำหรับความหนาผนังท่อน้อยกว่า 8 mm และขนาดเส้นผ่านศูนย์กลางภายนอกเกิน 40 mm

Elongation % (Min)									
Grade	Test (piece)	Thickness < 8 mm							
		≤ 1	> 1 to 2	> 2 to 3	> 3 to 4	> 4 to 5	> 5 to 6	> 6 to 7	> 7 to < 8
STK400	No.12	12	14	16	17	18	20	22	23
	No.5	8	9	10	12	14	15	16	18

หมายเหตุ 1. ชิ้นทดสอบหมายเลข 12 ทดสอบตามแนวยาวของท่อ

2. ชิ้นทดสอบหมายเลข 5 ทดสอบตามแนวตั้งฉากและแนวยาวของท่อ

DIMENSION TOLERANCES		
Permissible Variation		
Outside Diameter	< 50 mm	± 0.5 mm
	≥ 50 mm	± 1%
Wall Thickness	< 4.00 mm	+ 0.6 mm , - 0.5 mm
	4.00 mm ≤ t ≤ 12.00 mm	+ 15% , - 12.5%
	≥ 12.00 mm	+15% , -1.5 mm
Length		+ not specified , -0 mm
Weight		± 10%



TIS 107-2561 CARBON STEEL ROUND TUBES FOR GENERAL STRUCTURE

Nominal Size		Outside Diameter			Thickness			Unit Mass
inch	mm	Min mm	STD mm	Max mm	Min mm	STD mm	Max mm	STD kg/m
1/2"	15	20.80	21.30	21.80	1.50	2.00	2.60	0.95
					1.60	2.10	2.70	0.99
					1.70	2.20	2.80	1.04
					1.80	2.30	2.90	1.08
					1.90	2.40	3.00	1.12
					1.95	2.45	3.05	1.14
					2.00	2.50	3.10	1.16
					2.10	2.60	3.20	1.20
					2.15	2.65	3.25	1.22
					2.20	2.70	3.30	1.24
					2.27	2.77	3.37	1.27
					2.30	2.80	3.40	1.28
					2.40	2.90	3.50	1.32
					2.50	3.00	3.60	1.35
					2.60	3.10	3.70	1.39
					2.70	3.20	3.80	1.43
3/4"	20	26.20	26.70	27.20	1.50	2.00	2.60	1.23
					1.60	2.10	2.70	1.27
					1.70	2.20	2.80	1.33
					1.80	2.30	2.90	1.41
					1.90	2.40	3.00	1.44
					1.95	2.45	3.05	1.47
					2.00	2.50	3.10	1.50
					2.10	2.60	3.20	1.56
					2.15	2.65	3.25	1.57
					2.20	2.70	3.30	1.60
					2.30	2.80	3.40	1.65
					2.37	2.87	3.47	1.69
					2.40	2.90	3.50	1.70
					2.50	3.00	3.60	1.77
					2.60	3.10	3.70	1.80
					2.70	3.20	3.80	1.85

TIS 107-2561 CARBON STEEL ROUND TUBES FOR GENERAL STRUCTURE

Nominal Size		Outside Diameter			Thickness			Unit Mass
inch	mm	Min mm	STD mm	Max mm	Min mm	STD mm	Max mm	STD kg/m
					1.50	2.00	2.60	1.56
					1.60	2.10	2.70	1.62
					1.70	2.20	2.80	1.69
					1.80	2.30	2.90	1.80
					1.90	2.40	3.00	1.83
					1.95	2.45	3.05	1.87
					2.00	2.50	3.10	1.92
					2.10	2.60	3.20	1.97
					2.14	2.64	3.24	2.00
					2.15	2.65	3.25	2.01
					2.20	2.70	3.30	2.04
					2.30	2.80	3.40	2.11
1"	25	32.90	33.40	33.90	2.40	2.90	3.50	2.18
					2.50	3.00	3.60	2.27
					2.60	3.10	3.70	2.32
					2.70	3.20	3.80	2.38
					2.80	3.30	3.90	2.45
					2.88	3.38	3.98	2.50
					2.90	3.40	4.00	2.52
					3.00	3.50	4.10	2.58
					3.10	3.60	4.20	2.65
					3.20	3.70	4.30	2.71
					3.30	3.80	4.40	2.77
					3.40	3.90	4.50	2.84
					3.50	4.00	4.60	2.90

TIS 107-2561 CARBON STEEL ROUND TUBES FOR GENERAL STRUCTURE

Nominal Size		Outside Diameter			Thickness			Unit Mass
inch	mm	Min mm	STD mm	Max mm	Min mm	STD mm	Max mm	STD kg/m
1-1/4"	32	41.70	42.20	42.70	1.50	2.00	2.60	1.99
					1.60	2.10	2.70	2.07
					1.70	2.20	2.80	2.17
					1.80	2.30	2.90	2.29
					1.90	2.40	3.00	2.36
					1.95	2.45	3.05	2.40
					2.00	2.50	3.10	2.46
					2.10	2.60	3.20	2.53
					2.15	2.65	3.25	2.58
					2.20	2.70	3.30	2.63
					2.29	2.79	3.39	2.71
					2.30	2.80	3.40	2.72
					2.40	2.90	3.50	2.81
					2.50	3.00	3.60	2.91
					2.60	3.10	3.70	2.99
					2.70	3.20	3.80	3.08
					2.80	3.30	3.90	3.17
					2.90	3.40	4.00	3.25
					3.00	3.50	4.10	3.34
					3.06	3.56	4.16	3.39
					3.10	3.60	4.20	3.42
					3.20	3.70	4.30	3.51
					3.30	3.80	4.40	3.60
					3.40	3.90	4.50	3.68
					3.50	4.00	4.60	3.79

TIS 107-2561 CARBON STEEL ROUND TUBES FOR GENERAL STRUCTURE

Nominal Size		Outside Diameter			Thickness			Unit Mass
inch	mm	Min mm	STD mm	Max mm	Min mm	STD mm	Max mm	STD kg/m
1-1/2"	40	47.80	48.30	48.80	1.50	2.00	2.60	2.28
					2.05	2.10	2.70	2.39
					2.15	2.20	2.80	2.50
					2.25	2.30	2.90	2.63
					2.35	2.40	3.00	2.72
					2.40	2.45	3.05	2.77
					2.45	2.50	3.10	2.82
					2.55	2.60	3.20	2.93
					2.60	2.65	3.25	2.98
					2.65	2.70	3.30	3.04
					2.75	2.80	3.40	3.16
					2.85	2.90	3.50	3.25
					2.95	3.00	3.60	3.35
					3.05	3.10	3.70	3.46
					3.15	3.20	3.80	3.58
					3.25	3.30	3.90	3.66
					3.35	3.40	4.00	3.76
					3.45	3.50	4.10	3.87
					3.55	3.60	4.20	3.97
					3.63	3.68	4.28	4.05
					3.65	3.70	4.30	4.07
					3.75	3.80	4.40	4.17
					3.85	3.90	4.50	4.27
					3.50	4.00	4.60	4.37

TIS 107-2561 CARBON STEEL ROUND TUBES FOR GENERAL STRUCTURE

Nominal Size		Outside Diameter			Thickness			Unit Mass
inch	mm	Min mm	STD mm	Max mm	Min mm	STD mm	Max mm	STD kg/m
					1.50	2.00	2.60	2.88
					1.60	2.10	2.70	3.01
					1.70	2.20	2.80	3.15
					1.80	2.30	2.90	3.30
					1.90	2.40	3.00	3.43
					1.95	2.45	3.05	3.50
					2.00	2.50	3.10	3.56
					2.10	2.60	3.20	3.70
					2.15	2.65	3.25	3.77
					2.20	2.70	3.30	3.84
					2.30	2.80	3.40	3.97
					2.40	2.90	3.50	4.11
2"	50	59.70	60.30	60.90	2.50	3.00	3.60	4.24
					2.57	3.07	3.67	4.33
					2.60	3.10	3.70	4.37
					2.70	3.20	3.80	4.52
					2.80	3.30	3.90	4.64
					2.90	3.40	4.00	4.77
					3.00	3.50	4.10	4.90
					3.10	3.60	4.20	5.03
					3.20	3.70	4.30	5.16
					3.30	3.80	4.40	5.30
					3.40	3.90	4.50	5.42
					3.41	3.91	4.51	5.44
					3.50	4.00	4.60	5.55

TIS 107-2561 CARBON STEEL ROUND TUBES FOR GENERAL STRUCTURE

Nominal Size		Outside Diameter			Thickness			Unit Mass
inch	mm	Min mm	STD mm	Max mm	Min mm	STD mm	Max mm	STD kg/m
					1.50	2.00	2.60	3.65
					1.60	2.10	2.70	3.83
					1.70	2.20	2.80	4.01
					1.80	2.30	2.90	4.19
					1.90	2.40	3.00	4.36
					1.95	2.45	3.05	4.45
					2.00	2.50	3.10	4.54
					2.10	2.60	3.20	4.71
					2.15	2.65	3.25	4.80
					2.20	2.70	3.30	4.88
					2.30	2.80	3.40	5.08
					2.40	2.90	3.50	5.23
					2.50	3.00	3.60	5.41
2-1/2"	65	75.34	76.10	76.86	2.60	3.10	3.70	5.58
					2.70	3.20	3.80	5.77
					2.80	3.30	3.90	5.92
					2.90	3.40	4.00	6.10
					3.00	3.50	4.10	6.27
					3.10	3.60	4.20	6.44
					3.20	3.70	4.30	6.61
					3.30	3.80	4.40	6.78
					3.40	3.90	4.50	6.94
					3.46	3.96	4.56	6.74
					3.50	4.00	4.60	7.11
					3.94	4.50	5.18	7.95
					4.03	4.60	5.29	8.11
					4.11	4.70	5.41	8.28
					4.18	4.78	5.50	8.04
					4.20	4.80	5.52	8.44
					4.29	4.90	5.64	8.60
					4.38	5.00	5.75	8.77
					4.52	5.16	5.93	8.63

TIS 107-2561 CARBON STEEL ROUND TUBES FOR GENERAL STRUCTURE

Nominal Size		Outside Diameter			Thickness			Unit Mass
inch	mm	Min mm	STD mm	Max mm	Min mm	STD mm	Max mm	STD kg/m
					1.50	2.00	2.60	4.29
					1.60	2.10	2.70	4.50
					1.70	2.20	2.80	4.70
					1.80	2.30	2.90	4.91
					1.90	2.40	3.00	5.11
					1.95	2.45	3.05	5.22
					2.00	2.50	3.10	5.33
					2.10	2.60	3.20	5.53
					2.15	2.65	3.25	5.64
					2.20	2.70	3.30	5.74
					2.30	2.80	3.40	5.96
					2.40	2.90	3.50	6.15
					2.50	3.00	3.60	6.36
3"	80	88.01	88.90	89.79	2.60	3.10	3.70	6.56
					2.70	3.20	3.80	6.78
					2.80	3.30	3.90	6.97
					2.90	3.40	4.00	7.17
					3.00	3.50	4.10	7.37
					3.10	3.60	4.20	7.57
					3.20	3.70	4.30	7.77
					3.30	3.80	4.40	7.97
					3.40	3.90	4.50	8.18
					3.46	3.96	4.56	8.29
					3.50	4.00	4.60	8.38
					3.59	4.10	4.72	8.57
					3.68	4.20	4.83	8.77
					3.76	4.30	4.95	8.97
					3.85	4.40	5.06	9.17
					3.94	4.50	5.18	9.37
					4.03	4.60	5.29	9.56
					4.11	4.70	5.41	9.76
					4.18	4.78	5.50	9.92
					4.20	4.80	5.52	9.96
					4.29	4.90	5.64	10.15
					4.38	5.00	5.75	10.30
					4.46	5.10	5.87	10.54
					4.55	5.20	5.98	10.73
					4.64	5.30	6.10	10.93
					4.73	5.40	6.21	11.12
					4.80	5.49	6.31	11.29

TIS 107-2561 CARBON STEEL ROUND TUBES FOR GENERAL STRUCTURE

Nominal Size		Outside Diameter			Thickness			Unit Mass
inch	mm	Min mm	STD mm	Max mm	Min mm	STD mm	Max mm	STD kg/m
					1.50	2.00	2.60	4.91
					1.60	2.10	2.70	5.15
					1.70	2.20	2.80	5.39
					1.80	2.30	2.90	5.63
					1.90	2.40	3.00	5.87
					1.95	2.45	3.05	5.99
					2.00	2.50	3.10	6.11
					2.10	2.60	3.20	6.35
					2.15	2.65	3.25	6.47
					2.20	2.70	3.30	6.58
					2.30	2.80	3.40	6.82
					2.40	2.90	3.50	7.06
3-1/2"	90	100.58	101.60	102.62	2.50	3.00	3.60	7.29
					2.60	3.10	3.70	7.53
					2.70	3.20	3.80	7.76
					2.80	3.30	3.90	8.00
					2.90	3.40	4.00	8.23
					3.00	3.50	4.10	8.47
					3.10	3.60	4.20	8.70
					3.20	3.70	4.30	8.93
					3.30	3.80	4.40	9.17
					3.40	3.90	4.50	9.39
					3.46	3.96	4.56	9.53
					3.50	4.00	4.60	9.63
					3.59	4.10	4.72	9.86
					3.68	4.20	4.83	10.09
					3.76	4.30	4.95	10.32
					3.85	4.40	5.06	10.55
					3.94	4.50	5.18	10.78
					4.03	4.60	5.29	11.00
					4.11	4.70	5.41	11.23
					4.18	4.78	5.50	11.41
					4.20	4.80	5.52	11.46
					4.29	4.90	5.64	11.69
					4.38	5.00	5.75	11.90
					4.46	5.10	5.87	12.14
					4.55	5.20	5.98	12.36
					4.64	5.30	6.10	12.59
					4.73	5.40	6.21	12.81
					4.81	5.50	6.33	13.03
					4.90	5.60	6.44	13.26
					4.99	5.70	6.56	13.48
					5.02	5.74	6.60	13.57
					5.08	5.80	6.67	13.70
					5.16	5.90	6.79	13.92
					5.25	6.00	6.90	14.10

TIS 107-2561 CARBON STEEL ROUND TUBES FOR GENERAL STRUCTURE

Nominal Size		Outside Diameter			Thickness			Unit Mass
inch	mm	Min mm	STD mm	Max mm	Min mm	STD mm	Max mm	STD kg/m
					1.50	2.00	2.60	5.54
					1.60	2.10	2.70	5.81
					1.70	2.20	2.80	6.08
					1.80	2.30	2.90	6.35
					1.90	2.40	3.00	6.62
					1.95	2.45	3.05	6.76
					2.00	2.50	3.10	6.89
					2.10	2.60	3.20	7.16
					2.15	2.65	3.25	7.30
					2.20	2.70	3.30	7.43
					2.30	2.80	3.40	7.70
					2.40	2.90	3.50	7.97
4"	100	113.16	114.30	115.44	2.50	3.00	3.60	8.23
					2.60	3.10	3.70	8.50
					2.70	3.20	3.80	8.77
					2.80	3.30	3.90	9.03
					2.90	3.40	4.00	9.30
					3.00	3.50	4.10	9.56
					3.10	3.60	4.20	9.83
					3.20	3.70	4.30	10.09
					3.30	3.80	4.40	10.36
					3.40	3.90	4.50	10.62
					3.46	3.96	4.56	10.78
					3.50	4.00	4.60	10.90
					3.59	4.10	4.72	11.14
					3.68	4.20	4.83	11.40
					3.76	4.30	4.95	11.66
					3.85	4.40	5.06	11.92
					3.94	4.50	5.18	12.20
					4.03	4.60	5.29	12.44
					4.11	4.70	5.41	12.70
					4.18	4.78	5.50	12.91
					4.20	4.80	5.52	12.96
					4.29	4.90	5.64	13.22
					4.38	5.00	5.75	13.50
					4.46	5.10	5.87	13.73
					4.55	5.20	5.98	13.99
					4.64	5.30	6.10	14.25
					4.73	5.40	6.21	14.50
					4.81	5.50	6.33	14.76
					4.87	5.56	6.39	14.91
					4.90	5.60	6.44	15.01
					4.99	5.70	6.56	15.27
					5.08	5.80	6.67	15.52
					5.16	5.90	6.79	15.77
					5.25	6.00	6.90	16.00
					5.27	6.02	6.92	16.07
					5.34	6.10	7.02	16.28
					5.43	6.20	7.13	16.53
					5.51	6.30	7.25	16.80

TIS 107-2561 CARBON STEEL ROUND TUBES FOR GENERAL STRUCTURE

Nominal Size		Outside Diameter			Thickness			Unit Mass
inch	mm	Min mm	STD mm	Max mm	Min mm	STD mm	Max mm	STD kg/m
					1.50	2.00	2.60	6.79
					1.60	2.10	2.70	7.13
					1.70	2.20	2.80	7.46
					1.80	2.30	2.90	7.79
					1.90	2.40	3.00	8.13
					1.95	2.45	3.05	8.29
					2.00	2.50	3.10	8.46
					2.10	2.60	3.20	8.79
					2.15	2.65	3.25	8.96
					2.20	2.70	3.30	9.12
					2.30	2.80	3.40	9.45
					2.40	2.90	3.50	9.78
5"	125	138.30	139.70	141.10	2.50	3.00	3.60	10.10
					2.70	3.20	3.80	10.77
					3.00	3.50	4.10	11.75
					3.10	3.60	4.20	12.10
					3.30	3.80	4.40	12.74
					3.50	4.00	4.60	13.39
					3.94	4.50	5.18	15.00
					4.20	4.80	5.52	15.97
					4.38	5.00	5.75	16.60
					4.64	5.30	6.10	17.57
					4.73	5.40	6.21	17.89
					5.08	5.80	6.67	19.15
					5.25	6.00	6.90	19.80
					5.51	6.30	7.25	20.70
					5.73	6.55	7.53	21.77

TIS 107-2561 CARBON STEEL ROUND TUBES FOR GENERAL STRUCTURE

Nominal Size		Outside Diameter			Thickness			Unit Mass
inch	mm	Min mm	STD mm	Max mm	Min mm	STD mm	Max mm	STD kg/m
					1.90	2.40	3.00	9.64
					1.95	2.45	3.05	9.83
					2.00	2.50	3.10	10.03
					2.10	2.60	3.20	10.43
					2.15	2.65	3.25	10.62
					2.20	2.70	3.30	10.82
					2.30	2.80	3.40	11.21
					2.40	2.90	3.50	11.60
					2.50	3.00	3.60	12.20
					2.70	3.20	3.80	12.78
					3.10	3.60	4.20	14.35
					3.30	3.80	4.40	15.13
6"	150	163.55	165.20	166.85	3.50	4.00	4.60	16.20
					3.59	4.10	4.72	16.29
					3.94	4.50	5.18	17.80
					4.20	4.80	5.52	18.99
					4.38	5.00	5.75	19.80
					4.73	5.40	6.21	21.28
					5.08	5.80	6.67	22.80
					5.25	6.00	6.90	23.60
					5.51	6.30	7.25	25.20
					5.60	6.40	7.36	25.06
					6.21	7.10	8.17	27.70
					6.22	7.11	8.18	28.26

TIS 107-2561 CARBON STEEL ROUND TUBES FOR GENERAL STRUCTURE

Nominal Size		Outside Diameter			Thickness			Unit Mass
inch	mm	Min mm	STD mm	Max mm	Min mm	STD mm	Max mm	STD kg/m
7"	175	188.79	190.70	192.61	2.70	3.20	3.80	14.80
					3.00	3.50	4.10	16.16
					3.10	3.60	4.20	16.61
					3.50	4.00	4.60	18.42
					3.59	4.10	4.72	18.87
					3.94	4.50	5.18	20.70
					4.38	5.00	5.75	22.90
					4.73	5.40	6.21	24.68
					5.08	5.80	6.67	26.45
					5.25	6.00	6.90	27.30
					5.51	6.30	7.25	28.65
					5.60	6.40	7.36	29.09
					6.13	7.00	8.05	31.70
					6.30	7.20	8.28	32.58
					6.39	7.30	8.40	33.02
					7.00	8.00	9.20	36.05
					7.16	8.18	9.41	36.82
					7.18	8.20	9.43	36.90
8"	200	214.14	216.30	218.46	2.70	3.20	3.80	16.98
					3.00	3.50	4.10	18.37
					3.10	3.60	4.20	18.88
					3.50	4.00	4.60	21.20
					3.59	4.10	4.72	21.46
					3.94	4.50	5.18	23.50
					4.38	5.00	5.75	26.40
					4.73	5.40	6.21	28.09
					5.08	5.80	6.67	30.10
					5.25	6.00	6.90	31.10
					5.51	6.30	7.25	33.10
					5.60	6.40	7.36	33.12
					6.13	7.00	8.05	36.10
					6.30	7.20	8.28	37.13
					6.39	7.30	8.40	37.63
					7.00	8.00	9.20	41.10
					7.16	8.18	9.41	42.55
					7.18	8.20	9.43	42.10

TIS 107-2561 CARBON STEEL SQUARE & RECTANGULAR PIPE FOR GENERAL STRUCTURE

TECHNICAL SPECIFICATIONS							
Chemical Composition (Max %)						Mechanical Properties (Min)	
Grade	C	Si	Mn	P	S	Yield Strength N/mm^2	Tensile Strength N/mm^2
STKR400	0.25	-	-	0.04	0.04	245	400

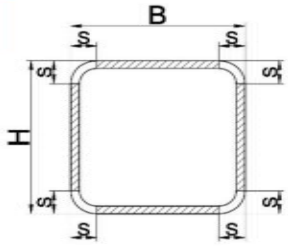
ความยืดของท่อเหลี่ยมจัตุรัสและท่อแบบสี่เหลี่ยมผืนผ้า สำหรับความหนาผนังท่อน้อยกว่า 8 mm

Elongation % (Min)								
Grade	Thickness < 8 mm							
	≤ 1	> 1 to 2	> 2 to 3	> 3 to 4	> 4 to 5	> 5 to 6	> 6 to 7	> 7 to < 8
STKR400	12	14	16	17	18	20	22	23

หมายเหตุ 1. ท่อแบบสี่เหลี่ยมจัตุรัสที่มีขนาดระบุน้อยกว่า 40 mm x 40 mm และท่อแบบสี่เหลี่ยมผืนผ้าที่มีขนาดระบุด้านยาว (H) น้อยกว่า 40 mm ให้ใช้ ชิ้นทดสอบหมายเลข 13B ทดสอบตามแนวยาวท่อ

2. ท่อแบบสี่เหลี่ยมจัตุรัสที่มีขนาดระบุตั้งแต่ 40 mm x 40 mm ขึ้นไป และท่อแบบสี่เหลี่ยมผืนผ้าที่มีขนาดระบุด้านยาว (H) ตั้งแต่ 40 mm ขึ้นไป ให้ใช้ ชิ้นทดสอบหมายเลข 5 ทดสอบตามแนวยาวของท่อ

DIMENSION TOLERANCES		
Permissible Variation		
Side Length	≤ 100 mm	± 1.5 mm
	> 100 mm	± 1.5%
Wall Thickness	< 3.00 mm	± 0.3 mm
	≥ 12.00 mm	± 10%
Length		+ not specified , -0 mm
Weight		± 10%



TIS 107-2561 CARBON STEEL SQUARE PIPE FOR GENERAL STRUCTURE

Side Length BxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
20x20	1.60	0.89
	1.70	0.95
	1.90	1.04
	2.00	1.05
	2.30	1.21
25x25	1.60	1.16
	1.70	1.21
	1.90	1.33
	2.00	1.36
	2.10	1.45
	2.30	1.57
	2.40	1.62
	2.45	1.65
	2.50	1.64
	2.60	1.73
	2.65	1.76
	2.80	1.80
	2.90	1.85
	3.00	1.89
	3.20	2.03

Side Length BxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
25.4x25.4	1.60	1.17
	1.70	1.24
	1.90	1.36
	2.00	1.42
	2.10	1.48
	2.30	1.60
	2.40	1.61
	2.41	1.62
	2.45	1.68
	2.50	1.71
	2.60	1.77
	2.65	1.79
	2.80	1.87
	2.90	1.93
	3.00	1.97
	3.20	2.07

Side Length BxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
30x30	1.60	1.37
	1.70	1.45
	1.90	1.53
	2.00	1.68
	2.10	1.76
	2.30	1.91
	2.40	2.00
	2.45	2.04
	2.50	2.03
	2.60	2.14
	2.65	2.18
	2.80	2.26
	2.90	2.32
	3.00	2.36
	3.20	2.51

TIS 107-2561 CARBON STEEL SQUARE PIPE FOR GENERAL STRUCTURE

Side Length BxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
32x32	1.60	1.48
	1.70	1.56
	1.85	1.68
	1.90	1.72
	2.00	1.80
	2.05	1.84
	2.10	1.88
	2.25	2.00
	2.30	2.04
	2.40	2.11
	2.45	2.15
	2.50	2.19
	2.60	2.26
	2.65	2.30
	2.70	2.34
	2.80	2.41
	2.85	2.44
	2.90	2.48
	3.00	2.55
	3.10	2.62
	3.20	2.69
	3.30	2.75
	3.40	2.82
	3.50	2.88
	3.60	2.95
	3.70	3.01

Side Length BxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
38x38	1.60	1.78
	1.70	1.88
	1.85	2.03
	1.90	2.08
	2.00	2.18
	2.05	2.23
	2.10	2.28
	2.25	2.42
	2.30	2.47
	2.40	2.57
	2.45	2.61
	2.50	2.66
	2.60	2.75
	2.65	2.80
	2.70	2.85
	2.80	2.94
	2.85	2.98
	2.90	3.03
	3.00	3.12
	3.10	3.20
	3.20	3.29
	3.30	3.38
	3.40	3.46
	3.50	3.54
	3.60	3.63
	3.70	3.71
	3.80	3.79
	3.90	3.87
	4.00	3.95

Side Length BxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
40x40	1.60	1.88
	1.70	2.00
	1.90	2.10
	2.00	2.31
	2.10	2.42
	2.30	2.62
	2.40	2.73
	2.45	2.81
	2.50	2.82
	2.60	2.94
	2.65	3.01
	2.80	3.13
	2.90	3.23
	3.00	3.30
	3.20	3.51
	4.00	4.20

TIS 107-2561 CARBON STEEL SQUARE PIPE FOR GENERAL STRUCTURE

Side Length BxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
50x50	1.60	2.38
	1.70	2.55
	1.90	2.83
	2.00	2.93
	2.10	3.10
	2.30	3.34
	2.40	3.51
	2.45	3.57
	2.50	3.60
	2.60	3.77
	2.65	3.84
	2.80	4.04
	2.90	4.16
	3.00	4.25
	3.20	4.50
	4.00	5.45

Side Length BxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
50.8x50.8	1.60	2.45
	1.70	2.59
	1.90	2.86
	2.00	3.02
	2.10	3.15
	2.30	3.43
	2.40	3.58
	2.45	3.64
	2.50	3.70
	2.60	3.84
	2.65	3.91
	2.79	4.00
	2.80	4.11
	2.90	4.24
	3.00	4.38
	3.18	4.52
	3.20	4.63
	3.91	5.44
	4.00	5.62

Side Length BxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
60x60	1.60	2.88
	1.70	3.08
	1.90	3.42
	2.00	3.56
	2.10	3.76
	2.30	4.06
	2.40	4.26
	2.45	4.34
	2.50	4.39
	2.60	4.59
	2.65	4.67
	2.80	4.91
	2.90	5.07
	3.00	5.19
	3.20	5.50
	4.00	6.71

TIS 107-2561 CARBON STEEL SQUARE PIPE FOR GENERAL STRUCTURE

Side Length BxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
63.5x63.5	1.60	3.08
	1.70	3.27
	1.90	3.63
	2.00	3.81
	2.10	3.99
	2.30	4.35
	2.40	4.53
	2.45	4.61
	2.50	4.70
	2.60	4.88
	2.65	4.96
	2.80	5.22
	2.90	5.39
	3.00	5.56
	3.20	5.90
	3.58	6.43
	4.00	7.21

Side Length BxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
70x70	1.60	3.41
	1.70	3.61
	1.90	4.02
	2.00	4.22
	2.10	4.42
	2.30	4.82
	2.40	5.02
	2.45	5.11
	2.50	5.17
	2.60	5.41
	2.65	5.50
	2.80	5.79
	2.90	5.99
	3.00	6.13
	3.20	6.55
	4.00	7.97

Side Length BxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
75x75	1.60	3.64
	1.70	3.88
	1.90	4.32
	2.00	4.53
	2.10	4.75
	2.30	5.14
	2.40	5.39
	2.45	5.50
	2.50	5.60
	2.60	5.81
	2.65	5.92
	2.80	6.23
	2.90	6.44
	3.00	6.65
	3.20	7.01
	4.00	8.66
	4.50	9.55

TIS 107-2561 CARBON STEEL SQUARE PIPE FOR GENERAL STRUCTURE

Side Length BxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
76.2x76.2	1.60	3.72
	1.70	3.94
	1.90	4.39
	2.00	4.61
	2.10	4.83
	2.30	5.27
	2.40	5.48
	2.45	5.59
	2.50	5.70
	2.60	5.91
	2.65	6.02
	2.80	6.34
	2.90	6.55
	3.00	6.76
	3.20	7.18
	3.96	8.60
	4.00	8.81

Side Length BxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
80x80	1.60	3.91
	1.70	4.15
	1.90	4.62
	2.00	4.85
	2.10	5.08
	2.30	5.50
	2.40	5.77
	2.45	5.88
	2.50	6.00
	2.60	6.22
	2.65	6.34
	2.80	6.67
	2.90	6.90
	3.00	7.07
	3.20	7.51
	4.00	9.22

Side Length BxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
88.9x88.9	1.60	4.36
	1.70	4.62
	1.90	5.15
	2.00	5.41
	2.10	5.67
	2.30	6.18
	2.40	6.44
	2.45	6.57
	2.50	6.70
	2.60	6.95
	2.65	7.08
	2.80	7.46
	2.90	7.71
	3.00	7.96
	3.20	8.45
	3.96	10.24
	4.00	10.40

TIS 107-2561 CARBON STEEL SQUARE PIPE FOR GENERAL STRUCTURE

Side Length BxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
90x90	1.60	4.41
	1.70	4.68
	1.80	4.95
	2.00	5.48
	2.10	5.74
	2.30	6.23
	2.40	6.52
	2.45	6.65
	2.50	6.78
	2.60	7.04
	2.65	7.17
	2.80	7.55
	2.90	7.81
	3.00	8.01
	3.20	8.51
	3.70	9.81
	4.00	10.50

Side Length BxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
100x100	1.60	4.92
	1.70	5.22
	1.90	5.81
	2.00	6.10
	2.10	6.40
	2.30	6.95
	2.40	7.28
	2.45	7.42
	2.60	7.86
	2.65	8.00
	2.90	8.72
	3.00	8.96
	3.20	9.52
	3.60	10.69
	3.70	10.97
	4.00	11.70
	4.10	12.07
	4.50	13.10
	5.00	14.40
	5.40	15.53
	6.00	17.00
	6.30	17.50

Side Length BxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
101.6x101.6	1.60	5.00
	1.70	5.30
	1.90	5.90
	2.00	6.21
	2.10	6.50
	2.30	7.10
	2.40	7.40
	2.45	7.54
	2.60	7.99
	2.65	8.13
	2.90	8.86
	3.00	9.15
	3.20	9.73
	3.60	10.87
	3.70	11.15
	4.00	12.00
	4.10	12.28
	4.50	13.38
	4.78	13.85
	5.00	14.74
	5.40	15.81
	6.00	17.38
	6.30	18.15

TIS 107-2561 CARBON STEEL SQUARE PIPE FOR GENERAL STRUCTURE

Side Length BxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
120x120	1.60	5.92
	1.70	6.28
	1.90	7.00
	2.00	7.36
	2.10	7.72
	2.30	8.43
	2.40	8.78
	2.45	8.96
	2.60	9.49
	2.65	9.66
	2.90	10.54
	3.00	10.80
	3.20	11.58
	3.60	12.95
	3.70	13.29
	4.00	14.20
	4.10	14.64
	4.50	15.98
	5.00	17.50
	5.40	18.93
	6.00	20.70
	6.30	21.40

Side Length BxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
125x125	2.00	7.67
	2.10	8.05
	2.30	8.79
	2.40	9.16
	2.45	9.34
	2.60	9.90
	2.65	10.08
	2.90	10.99
	3.20	12.00
	3.60	13.52
	3.70	13.87
	4.00	14.94
	4.10	15.29
	4.50	16.60
	4.80	17.73
	5.00	18.30
	5.40	19.77
	6.00	21.70

Side Length BxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
127x127	2.00	7.80
	2.10	8.18
	2.30	8.93
	2.40	9.31
	2.45	9.50
	2.60	10.06
	2.65	10.25
	2.90	11.18
	3.20	12.28
	3.60	13.74
	3.70	14.11
	4.00	15.19
	4.10	15.55
	4.50	16.97
	4.78	17.65
	4.80	18.03
	5.00	18.73
	5.40	20.11
	6.00	22.16
	6.35	22.94

TIS 107-2561 CARBON STEEL SQUARE PIPE FOR GENERAL STRUCTURE

Side Length BxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
140x140	2.00	8.62
	2.10	9.04
	2.30	9.87
	2.40	10.29
	2.60	11.12
	2.65	11.33
	2.90	12.36
	3.20	13.59
	3.60	15.21
	3.70	15.62
	4.00	16.80
	4.10	17.22
	4.50	18.81
	4.80	19.99
	5.00	20.70
	5.40	22.32
	6.00	24.50
	6.30	25.40

Side Length BxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
150x150	2.10	9.70
	2.30	10.60
	2.40	11.04
	2.60	11.94
	2.65	12.16
	2.90	13.27
	3.20	14.59
	3.60	16.34
	3.70	16.78
	4.00	18.00
	4.10	18.51
	4.50	20.10
	5.00	22.30
	5.40	24.01
	6.00	26.40
	6.30	27.40
	8.00	33.90
	9.00	38.20

TIS 107-2561 CARBON STEEL RECTANGULAR PIPE FOR GENERAL STRUCTURE

Side Length HxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
40x20	1.60	1.40
	1.70	1.48
	1.90	1.63
	2.00	1.68
	2.10	1.78
	2.30	1.93
	2.40	2.00
	2.45	2.04
	2.50	2.03
	2.60	2.14
	2.65	2.18
	2.90	2.34
	3.00	2.36
	3.20	2.54
50x20	1.60	1.63
	1.70	1.75
	1.90	1.93
	2.00	2.02
	2.10	2.11
	2.30	2.25
	2.40	2.38
	2.45	2.42
	2.50	2.46
	2.60	2.55
	2.65	2.59
	2.90	2.80
	3.00	2.88
	3.20	3.04

Side Length HxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
50x25	1.60	1.75
	1.70	1.85
	1.85	2.00
	1.90	2.05
	2.00	2.15
	2.05	2.20
	2.10	2.25
	2.25	2.39
	2.30	2.44
	2.40	2.53
	2.45	2.58
	2.50	2.62
	2.60	2.71
	2.65	2.76
	2.70	2.80
	2.80	2.89
	2.85	2.94
	2.90	2.98
	3.00	3.07
	3.10	3.15
	3.20	3.24
	3.30	3.32
	3.40	3.41
	3.50	3.49
	3.60	3.57
	3.70	3.65
	3.80	3.73
	3.90	3.81
	4.00	3.88

Side Length HxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
50x30	1.60	1.88
	1.70	2.01
	1.90	2.23
	2.00	2.31
	2.10	2.44
	2.30	2.62
	2.40	2.75
	2.45	2.81
	2.50	2.82
	2.60	2.96
	2.65	3.01
	2.90	3.26
	3.00	3.30
	3.20	3.54
60x30	1.60	2.13
	1.70	2.27
	1.90	2.54
	2.00	2.64
	2.10	2.77
	2.30	2.98
	2.40	3.13
	2.45	3.19
	2.50	3.25
	2.60	3.37
	2.65	3.42
	2.90	3.71
	3.00	3.82
	3.20	3.99

TIS 107-2561 CARBON STEEL RECTANGULAR PIPE FOR GENERAL STRUCTURE

Side Length HxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
60x40	1.60	2.40
	1.70	2.55
	1.90	2.83
	2.00	2.93
	2.10	3.10
	2.30	3.36
	2.40	3.50
	2.45	3.57
	2.50	3.60
	2.60	3.77
	2.65	3.84
	2.90	4.16
	3.00	4.25
	3.20	4.55
70x50	1.60	2.91
	1.70	3.08
	1.90	3.42
	2.00	3.56
	2.10	3.76
	2.30	4.10
	2.40	4.26
	2.45	4.34
	2.50	4.39
	2.60	4.59
	2.65	4.67
	2.90	5.07
	3.00	5.19
	3.20	5.55

Side Length HxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
75x20	1.60	2.25
	1.70	2.41
	1.90	2.68
	2.00	2.81
	2.10	2.94
	2.30	3.16
	2.40	3.32
	2.45	3.38
	2.50	3.45
	2.60	3.57
	2.65	3.63
	2.90	3.94
	3.00	4.06
	3.20	4.29
75x38	1.60	2.71
	1.70	2.87
	1.85	3.11
	1.90	3.18
	2.00	3.34
	2.05	3.42
	2.10	3.50
	2.25	3.73
	2.30	3.81
	2.40	3.96
	2.45	4.04
	2.50	4.11
	2.60	4.26
	2.65	4.34
	2.70	4.41

Side Length HxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
75x38	2.80	4.56
	2.85	4.64
	2.90	4.71
	3.00	4.86
	3.10	5.00
	3.20	5.15
	3.30	5.29
	3.40	5.44
	3.50	5.58
	3.60	5.72
	3.70	5.86
	3.80	6.00
	3.90	6.13
	4.00	6.27
75x45	1.60	2.88
	1.70	3.08
	1.90	3.42
	2.00	3.59
	2.10	3.76
	2.30	4.06
	2.40	4.26
	2.45	4.34
	2.50	4.43
	2.60	4.59
	2.65	4.67
	2.90	5.07
	3.00	5.23
	3.20	5.50

TIS 107-2561 CARBON STEEL RECTANGULAR PIPE FOR GENERAL STRUCTURE

Side Length HxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
76.2x50.8	1.60	3.08
	1.70	3.27
	1.90	3.63
	2.00	3.81
	2.10	3.99
	2.30	4.35
	2.40	4.52
	2.45	4.61
	2.50	4.71
	2.60	4.88
	2.65	4.96
	2.90	5.39
	3.00	5.56
	3.20	5.90
	3.58	6.43
80x40	1.60	2.88
	1.70	3.08
	1.90	3.42
	2.00	3.56
	2.10	3.76
	2.30	4.06
	2.40	4.26
	2.45	4.34
	2.50	4.39
	2.60	4.59
	2.65	4.67
	2.90	5.07
	3.00	5.19
	3.20	5.50

Side Length HxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
80x60	1.60	3.41
	1.70	3.61
	1.90	4.02
	2.00	4.19
	2.10	4.42
	2.30	4.82
	2.40	5.01
	2.45	5.11
	2.50	5.17
	2.60	5.41
	2.65	5.50
	2.90	5.99
	3.00	6.13
	3.20	6.55
90x45	1.60	3.28
	1.70	3.48
	1.90	3.87
	2.00	4.06
	2.10	4.26
	2.30	4.60
	2.40	4.82
	2.45	4.92
	2.50	5.02
	2.60	5.20
	2.65	5.30
	2.90	5.76
	3.00	5.94
	3.20	6.25

Side Length HxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
90x50	1.60	3.41
	1.70	3.61
	1.90	4.02
	2.00	4.19
	2.10	4.42
	2.30	4.82
	2.40	5.01
	2.45	5.11
	2.50	5.17
	2.60	5.41
	2.65	5.50
	2.90	5.99
	3.00	6.13
	3.20	6.55
100x20	1.60	2.88
	1.70	3.06
	1.90	3.42
	2.00	3.56
	2.10	3.76
	2.30	4.06
	2.40	4.26
	2.45	4.34
	2.50	4.43
	2.60	4.59
	2.65	4.67
	2.90	5.07
	3.00	5.23
	3.20	5.55

TIS 107-2561 CARBON STEEL RECTANGULAR PIPE FOR GENERAL STRUCTURE

Side Length HxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
100x40	1.60	3.38
	1.70	3.61
	1.90	4.02
	2.00	4.22
	2.10	4.42
	2.30	4.78
	2.40	5.01
	2.45	5.11
	2.50	5.17
	2.60	5.41
	2.65	5.50
	2.90	5.99
	3.00	6.13
	3.20	6.55
100x50	1.60	3.64
	1.70	3.86
	1.90	4.31
	2.00	4.52
	2.10	4.73
	2.30	5.14
	2.40	5.39
	2.45	5.50
	2.50	5.56
	2.60	5.81
	2.65	5.92
	2.90	6.44
	3.00	6.60
	3.20	7.01
	4.00	8.59

Side Length HxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
100x60	1.60	3.91
	1.70	4.15
	1.90	4.62
	2.00	4.85
	2.10	5.08
	2.30	5.54
	2.40	5.77
	2.45	5.88
	2.50	5.96
	2.60	6.22
	2.65	6.34
	2.90	6.90
	3.00	7.07
	3.20	7.56
100x80	1.60	4.41
	1.70	4.63
	1.90	5.21
	2.00	5.48
	2.10	5.74
	2.30	6.26
	2.40	6.52
	2.45	6.65
	2.50	6.74
	2.60	7.04
	2.65	7.17
	2.90	7.81
	3.00	8.01
	3.20	8.56

Side Length HxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
101.6x76.2	1.60	4.36
	1.70	4.62
	1.90	5.15
	2.00	5.41
	2.10	5.67
	2.30	6.18
	2.40	6.44
	2.45	6.57
	2.50	6.70
	2.60	6.95
	2.65	7.08
	2.90	7.71
	3.00	7.96
	3.20	8.45
	3.96	10.24
120x60	1.60	4.41
	1.70	4.68
	1.90	5.21
	2.00	5.48
	2.10	5.74
	2.30	6.26
	2.40	6.52
	2.45	6.65
	2.50	6.74
	2.60	7.04
	2.65	7.17
	2.90	7.81
	3.00	8.01
	3.20	8.56

TIS 107-2561 CARBON STEEL RECTANGULAR PIPE FOR GENERAL STRUCTURE

Side Length HxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
120x80	1.60	4.92
	1.70	5.22
	1.90	5.81
	2.00	6.10
	2.10	6.40
	2.30	6.98
	2.40	7.28
	2.45	7.42
	2.50	7.57
	2.60	7.86
	2.65	8.00
	2.90	8.72
	3.00	8.96
	3.20	9.57
	4.00	11.70
125x40	1.60	4.01
	1.70	4.26
	1.90	4.74
	2.00	5.01
	2.10	5.25
	2.30	5.69
	2.40	5.93
	2.45	6.08
	2.50	6.18
	2.60	6.43
	2.65	6.54
	2.90	7.12
	3.00	7.35
	3.20	7.81
	3.60	8.71
	3.70	8.94
	3.80	9.16
	4.00	9.60

Side Length HxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
125x50	1.60	4.26
	1.70	4.52
	1.85	4.91
	1.90	5.03
	2.00	5.29
	2.05	5.42
	2.10	5.54
	2.25	5.92
	2.30	6.05
	2.40	6.30
	2.45	6.42
	2.50	6.55
	2.60	6.79
	2.65	6.92
	2.70	7.04
	2.80	7.29
	2.85	7.41
	2.90	7.53
	3.00	7.78
	3.10	8.02
	3.20	8.26
	3.30	8.50
	3.40	8.74
	3.50	8.98
	3.60	9.22
	3.70	9.46
	3.80	9.70
	3.90	9.93
	4.00	10.16
	4.10	10.40
	4.20	10.63
	4.30	10.86
	4.40	11.09

Side Length HxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
125x50	4.50	11.32
	4.60	11.55
	4.70	11.77
	4.80	12.00
	4.90	12.22
	5.00	12.45
	5.10	12.67
	5.20	12.89
	5.30	13.11
	5.40	13.33
	5.50	13.55
	5.60	13.77
	5.70	13.98
	5.80	14.20
	5.90	14.41
	6.00	14.63

TIS 107-2561 CARBON STEEL RECTANGULAR PIPE FOR GENERAL STRUCTURE

Side Length HxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
125x75	1.60	4.92
	1.70	5.22
	1.90	5.81
	2.00	6.10
	2.10	6.40
	2.30	6.95
	2.40	7.28
	2.45	7.42
	2.60	7.86
	2.65	8.00
	2.90	8.72
	3.00	9.00
	3.20	9.52
	3.60	10.69
	3.70	10.97
	3.80	11.25
	4.00	11.70
	4.10	12.07
	4.50	13.10
140x80	1.60	5.38
	1.70	5.71
	1.90	6.38
	2.00	6.72
	2.10	7.04
	2.30	7.71
	2.40	8.05
	2.45	8.19
	2.60	8.72
	2.65	8.83
	2.90	9.70
	3.00	9.94

Side Length HxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
140x80	3.20	10.70
	3.60	11.98
	3.70	12.13
	3.80	12.65
	4.00	13.00
	4.10	13.58
	4.50	14.84
150x50	1.60	4.89
	1.70	5.19
	1.85	5.63
	1.90	5.78
	2.00	6.07
	2.05	6.22
	2.10	6.37
	2.25	6.80
	2.30	6.95
	2.40	7.24
	2.45	7.38
	2.50	7.53
	2.60	7.82
	2.65	7.96
	2.70	8.10
	2.80	8.39
	2.85	8.53
	2.90	8.67
	3.00	8.96
	3.10	9.24
	3.20	9.52
	3.30	9.80
	3.40	10.08
	3.50	10.36

Side Length HxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
150x50	3.60	10.64
	3.70	10.91
	3.80	11.19
	3.90	11.46
	4.00	11.73
	4.10	12.01
	4.20	12.28
	4.30	12.55
	4.40	12.82
	4.50	13.08
	4.60	13.35
	4.70	13.62
	4.80	13.88
	4.90	14.15
	5.00	14.41
	5.10	14.67
	5.20	14.93
	5.30	15.19
	5.40	15.45
	5.50	15.71
	5.60	15.97
	5.70	16.22
	5.80	16.48
	5.90	16.73
	6.00	16.98

TIS 107-2561 CARBON STEEL RECTANGULAR PIPE FOR GENERAL STRUCTURE

Side Length HxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
150x75	2.00	6.88
	2.10	7.22
	2.30	7.89
	2.40	8.23
	2.45	8.38
	2.60	8.90
	2.65	9.04
	2.90	9.93
	3.20	10.80
	3.60	12.27
	3.70	12.42
	3.80	12.95
	4.10	13.94
	4.50	15.26
	4.80	16.28
	5.40	18.31
	6.00	20.25
150x80	2.00	7.03
	2.10	7.39
	2.30	8.07
	2.40	8.42
	2.45	8.58
	2.60	9.12
	2.65	9.25
	2.90	10.18
	3.20	11.20
	3.60	12.60
	3.70	12.71
	3.80	13.25

Side Length HxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
150x80	4.10	14.26
	4.50	15.20
	4.80	16.50
	5.00	16.80
	5.40	18.65
	6.00	19.80
150x100	2.00	7.47
	2.10	7.85
	2.30	8.60
	2.40	8.98
	2.45	9.34
	2.60	9.73
	2.65	10.08
	2.90	10.87
	3.20	12.00
	3.60	13.54
	3.70	13.87
	3.80	14.44
	4.00	14.90
	4.10	15.42
	4.50	16.60
	4.80	17.82
	5.00	18.30
	5.40	20.08
	6.00	21.70
	6.30	22.40

Side Length HxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
160x80	2.00	7.33
	2.10	7.70
	2.30	8.43
	2.40	8.80
	2.45	8.96
	2.60	9.51
	2.65	9.66
	2.90	10.61
	3.20	11.66
	3.60	13.08
	3.70	13.29
	3.80	13.81
	4.00	14.20
	4.10	14.87
	4.50	16.32
	4.80	17.33
	5.00	17.50
	5.40	19.50
	6.00	20.70

TIS 107-2561 CARBON STEEL RECTANGULAR PIPE FOR GENERAL STRUCTURE

Side Length HxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
180x100	2.00	8.59
	2.10	9.02
	2.30	9.88
	2.40	10.31
	2.45	10.50
	2.60	11.14
	2.65	11.33
	2.90	12.43
	3.20	13.67
	3.60	15.35
	3.70	15.62
	3.80	16.20
	4.00	16.80
	4.10	17.38
	4.50	19.08
	4.80	20.35
	5.00	20.70
	5.40	22.89
	6.00	24.50

Side Length HxB	Thickness STD	Unit Mass STD
mm	mm	kg/m
200x100	2.70	12.38
	2.90	13.30
	3.20	14.67
	3.60	16.48
	4.00	18.00
	4.10	18.76
	4.50	20.10
	5.00	22.30
	5.40	24.59
	6.00	26.40
	6.30	27.40
	8.00	34.79
	9.00	38.20

BS 1139 : 1990 METAL SCAFFOLDING

Nominal Size (DN)	Outside Diameter			Thickness			Weight Plain End STD.
	max.	STD.	min.	max.	STD.	min.	
in (mm)	mm	mm	mm	mm	mm	mm	kg / m
1-1/2 (40)	48.8	48.3	47.8	4.80	4.0	3.60	4.37

TECHNICAL SPECIFICATIONS :

Chemical Composition				Mechanical Properties				
C max. %	Si max. %	P max. %	S max. %	Tensile (min.)		Yield (min.)		Elongation (min.) %
				N/mm²	Kgf /m²	N/mm²	Kgf /m²	
0.20	0.30	0.060	0.060	340-460	34.7-46.9	210	21.4	22

DIMENSION TOLERANCES :

Permissible Variation

Outside Diameter	:	± 0.5 mm
Wall Thickness	:	+ 0.8 mm , - 0.4 mm
Length	:	± 6.0 mm
Weight	:	± 7.5% Quantities of 150 m and over ± 4%

EN 39 : 2001 METAL SCAFFOLDING

TUBE TYPE	Nominal Size (DN)	Outside Diameter			Thickness		Weight Plain End STD.
		max.	STD.	min.	STD.	min.	
	in (mm)	mm	mm	mm	mm	mm	kg / m
3	1-1/2 (40)	48.8	48.3	47.8	3.2	2.88	3.56
4	1-1/2 (40)	48.8	48.3	47.8	4.0	3.60	4.37

TECHNICAL SPECIFICATIONS :

Chemical Composition						Mechanical Properties		
C max. %	Si max. %	Mn max. %	P max. %	S max. %	Al min. %	Yield min. MPa¹	Tensile min. MPa¹	Elongation % (min.)
0.20	0.05	1.40	0.04	0.045	0.020	235	340/520	24

DIMENSION TOLERANCES :

Permissible Variation

Outside Diameter (OD.)	:	± 0.5 mm
Wall Thickness	:	- 10%
Length	:	+ 40 mm / - 0 mm
Weight	:	± 7.5% Quantities of 150 m and over ± 5%

BS 1139 : 1990 METAL SCAFFOLDING

Nominal Size (DN)	Outside Diameter			Thickness			Weight Plain End STD.
	max.	STD.	min.	max.	STD.	min.	
in (mm)	mm	mm	mm	mm	mm	mm	kg / m
1-1/2 (40)	48.8	48.3	47.8	4.80	4.0	3.60	4.37

TECHNICAL SPECIFICATIONS :

Chemical Composition				Mechanical Properties				
C max. %	Si max. %	P max. %	S max. %	Tensile (min.)		Yield (min.)		Elongation (min.) %
				N/mm²	Kgf /m²	N/mm²	Kgf /m²	
0.20	0.30	0.060	0.060	340-460	34.7-46.9	210	21.4	22

DIMENSION TOLERANCES :

Permissible Variation

Outside Diameter	:	± 0.5 mm
Wall Thickness	:	+ 0.8 mm , - 0.4 mm
Length	:	± 6.0 mm
Weight	:	± 7.5% Quantities of 150 m and over ± 4%

EN 39 : 2001 METAL SCAFFOLDING

TUBE TYPE	Nominal Size (DN)	Outside Diameter			Thickness		Weight Plain End STD.
		max.	STD.	min.	STD.	min.	
	in (mm)	mm	mm	mm	mm	mm	kg / m
3	1-1/2 (40)	48.8	48.3	47.8	3.2	2.88	3.56
4	1-1/2 (40)	48.8	48.3	47.8	4.0	3.60	4.37

TECHNICAL SPECIFICATIONS :

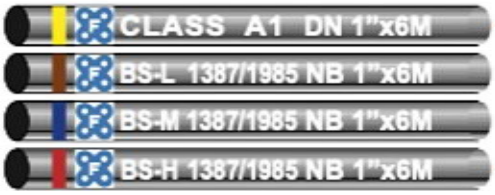
Chemical Composition						Mechanical Properties		
C max. %	Si max. %	Mn max. %	P max. %	S max. %	Al min. %	Yield min. MPa¹	Tensile min. MPa¹	Elongation % (min.)
0.20	0.05	1.40	0.04	0.045	0.020	235	340/520	24

DIMENSION TOLERANCES :

Permissible Variation

Outside Diameter (OD.)	:	± 0.5 mm
Wall Thickness	:	- 10%
Length	:	+ 40 mm / - 0 mm
Weight	:	± 7.5% Quantities of 150 m and over ± 5%

EN 10255 (BS 1387:1985) CARBON STEEL PIPES



Marking

Class	CLASS A1	Light	Medium	Heavy
Color	Yellow	Brown	Blue	Red

USP CLASS A1 BLACK AND GALVANIZED STEEL PIPE

Nominal Size (DN)	Designation of thread	Outside Diameter		Thickness			Mass of black tube	
		max.	min.	mm			Plain end STD.	Screwed and socketed STD.
mm	in	mm	mm	max.	STD.	min.	kg / m	kg / m
15	1/2	20.9	20.5	2.09	1.9	1.71	0.881	0.890
20	3/4	26.7	26.2	2.20	2.0	1.80	1.21	1.22
25	1	32.8	32.2	2.53	2.3	2.07	1.71	1.73
32	1-1/4	41.8	41.2	2.53	2.3	2.07	2.22	2.25
40	1-1/2	48.1	47.5	2.75	2.5	2.25	2.79	2.83
50	2	59.6	59.0	2.75	2.5	2.25	3.50	3.56
65	2-1/2	75.9	75.0	3.08	2.8	2.52	5.02	5.12
80	3	88.5	87.7	3.19	2.9	2.61	6.09	6.25
100	4	113.6	112.8	3.52	3.2	2.88	8.68	8.90
125	5	139.7	137.8	3.96	3.6	3.24	12.00	12.35
150	6	165.0	163.0	3.96	3.6	3.24	14.24	14.67
GALVANIZED IRON (GI) PIPES GRADE SGCC, SGHC, SGCD, SGMCC AVAILABLE								

LIGHT CLASS BLACK & GALVANIZED STEEL PIPE

Nominal Size (DN)	Designation of thread	Outside diameter		Thickness	Mass of black tube	
		max.	min.	mm	Plain end STD.	Screwed and socketed STD.
mm	in	mm	mm		kg / m	kg / m
15	1/2	21.4	21.0	2.0	0.947	0.956
20	3/4	26.9	26.4	2.3	1.38	1.39
25	1	33.8	33.2	2.6	1.98	2.00
32	1-1/4	42.5	41.9	2.6	2.54	2.57
40	1-1/2	48.4	47.8	2.9	3.23	3.27
50	2	60.2	59.6	2.9	4.08	4.15
65	2-1/2	76	75.2	3.2	5.71	5.83
80	3	88.7	87.9	3.2	6.72	6.89
100	4	113.9	113.0	3.6	9.75	10.00

MEDIUM CLASS BLACK & GALVANIZED STEEL PIPE

Nominal Size (DN)	Designation of thread	Outside diameter		Thickness	Mass of black tube	
		max.	min.	mm	Plain end STD.	Screwed and socketed STD.
mm	in	mm	mm		kg / m	kg / m
15	1/2	21.7	21.1	2.6	1.21	1.22
20	3/4	27.2	26.6	2.6	1.56	1.57
25	1	34.2	33.4	3.2	2.41	2.43
32	1-1/4	42.9	42.1	3.2	3.10	3.13
40	1-1/2	48.8	48.0	3.2	3.57	3.61
50	2	60.8	59.8	3.6	5.03	5.10
65	2-1/2	76.6	75.4	3.6	6.43	6.55
80	3	89.5	88.1	4.0	8.37	8.54
100	4	114.9	113.3	4.5	12.20	12.50
125	5	140.6	138.7	5.0	16.60	17.10
150	6	166.1	164.1	5.0	19.70	20.30

HEAVY CLASS BLACK & GALVANIZED STEEL PIPE

Nominal Size (DN)	Designation of thread	Outside diameter		Thickness	Mass of black tube	
		max. mm	min. mm	mm.	Plain end kg / m	Screwed and socketed kg / m
mm	in					
15	1/2	21.7	21.1	3.2	1.44	1.45
20	3/4	27.2	26.6	3.2	1.87	1.88
25	1	34.2	33.4	4.0	2.94	2.96
32	1-1/4	42.9	42.1	4.0	3.80	3.83
40	1-1/2	48.8	48.0	4.0	4.38	4.42
50	2	60.8	59.8	4.5	6.19	6.26
65	2-1/2	76.6	75.4	4.5	7.93	8.05
80	3	89.5	88.1	5.0	10.30	10.50
100	4	114.9	113.3	5.4	14.50	14.80
125	5	140.6	138.7	5.4	17.90	18.40
150	6	166.1	164.1	5.4	21.30	21.90

Chemical Composition				Mechanical Properties			Hydrostatic
C max. %	Mn max. %	P max. %	S max. %	Yield (min.) N / mm²	Tensile (min.) N / mm²	Elongation % (min.)	Test (time 5 sec.) bar
0.20	1.20	0.045	0.045	195	320-460	20	50

1 bar=1.01972 kgf/cm²

DIMENSION TOLERANCES :				
Tolerance	A1 Class	Light Class	Medium Class	Heavy Class
Wall Thickness :	- 10% + not specified	- 8% + not specified	- 10% + not specified	- 10% + not specified
Length :	+50mm, -0mm			
Weight :	+ 10%, - 8% per piece / ± 4% per bundle (over 500 ft.)			

USP CARBON STEEL PIPES AND GAVALNIZED IRON (GI) PIPE

USP CLASS S BLACK AND GALVANIZED STEEL PIPES

Nominal Size (DN)	Designation of thread	Outside Diameter		Thickness			Mass of black tube	
		max.	min.	mm			Plain end STD.	Screwed and socketed STD.
mm	in	mm	mm	max.	STD.	min.	kg / m	kg / m
15	1/2	20.8	20.2	1.65	1.5	1.35	0.703	0.711
20	3/4	26.4	25.8	1.65	1.5	1.35	0.91	0.92
25	1	32.8	32.0	1.98	1.8	1.62	1.36	1.38
32	1-1/4	41.8	41.0	2.20	2.0	1.80	1.94	1.97
40	1-1/2	47.8	47.0	2.20	2.0	1.80	2.24	2.27
50	2	59.6	58.8	2.20	2.0	1.80	2.82	2.87
65	2-1/2	75.8	74.8	2.75	2.5	2.25	4.49	4.93
80	3	88.4	87.4	2.75	2.5	2.25	5.26	5.39
100	4	113.8	112.8	2.86	2.6	2.34	7.10	7.28
125	5	139.7	137.8	3.74	3.4	3.06	11.35	11.68
150	6	165.0	163.0	3.74	3.4	3.06	13.47	13.87
GALVANIZED IRON (GI) PIPES GRADE SGCC, SGHC, SGCD, SGMCC AVAILABLE								

USP CLASS M BLACK AND GALVANIZED STEEL PIPES

Nominal Size (DN)	Designation of thread	Outside Diameter		Thickness			Mass of black tube	
		max.	min.	mm			Plain end STD.	Screwed and socketed STD.
mm	in	mm	mm	max.	STD.	min.	kg / m	kg / m
15	1/2	21.2	20.6	2.20	2.0	1.80	0.932	0.941
20	3/4	26.8	26.2	2.20	2.0	1.80	1.21	1.22
25	1	33.2	32.4	2.75	2.5	2.25	1.87	1.89
32	1-1/4	42.2	41.4	2.75	2.5	2.25	2.42	2.45
40	1-1/2	48.3	47.5	2.75	2.5	2.25	2.80	2.83
50	2	59.8	59.0	2.86	2.6	2.34	3.64	3.70
65	2-1/2	76.0	75.0	2.97	2.7	2.43	4.85	4.95
80	3	88.7	87.7	3.30	3.0	2.70	6.30	6.45
100	4	113.8	112.8	3.74	3.4	3.06	9.21	9.44
125	5	140.1	138.2	4.40	4.0	3.60	13.33	13.73
150	6	165.6	163.6	4.40	4.0	3.60	15.84	16.32
GALVANIZED IRON (GI) PIPES GRADE SGCC, SGHC, SGCD, SGMCC AVAILABLE								

Mechanical Properties			Hydrostatic	DIMENSION TOLERANCES :	
Yield (min.) N / mm²	Tensile (min.) N / mm²	Elongation % (min.)	Test (time 5 sec.) bar	Permissible Variation	
---	320	20	50	Wall Thickness :	± 10 %
				Length :	+ 40 mm - 0 mm
				Weight :	± 10 % per piece

1 bar = 1.01972 kgf / cm²

USP PLAIN - END BLACK AND GALVANIZED STEEL PIPES

Nominal Size (DN)	Outside Diameter		Thickness			Weight Plain End
	max.	min.	mm			STD.
in (mm)	mm	mm	max.	STD.	min.	kg / m
1/2 (15)	20.8	20.2	1.32	1.2	1.08	0.571
			1.54	1.4	1.26	0.659
			1.87	1.7	1.53	0.788
3/4 (20)	26.4	25.8	1.32	1.2	1.08	0.74
			1.54	1.4	1.26	0.85
			1.87	1.7	1.53	1.02
1 (25)	32.8	32.0	1.32	1.2	1.08	0.92
			1.54	1.4	1.26	1.07
			1.87	1.7	1.53	1.29
			2.20	2.0	1.80	1.50
1-1/4 (32)	41.8	41.0	1.32	1.2	1.08	1.19
			1.54	1.4	1.26	1.38
			1.87	1.7	1.53	1.66
			2.20	2.0	1.80	1.94
1-1/2 (40)	47.8	47.0	1.32	1.2	1.08	1.37
			1.54	1.4	1.26	1.59
			1.87	1.7	1.53	1.92
			2.20	2.0	1.80	2.24
2 (50)	59.6	58.8	1.32	1.2	1.08	1.72
			1.54	1.4	1.26	2.00
			1.87	1.7	1.53	2.41
			2.20	2.0	1.80	2.82
2-1/2 (65)	75.8	74.8	1.87	1.7	1.53	3.09
			2.20	2.0	1.80	3.62
			2.64	2.4	2.16	4.31
3 (80)	88.4	87.4	1.87	1.7	1.53	3.61
			2.20	2.0	1.80	4.24
			2.64	2.4	2.16	5.06
3-1/2 (90)	102.6	100.6	2.20	2.0	1.80	4.91
			2.75	2.5	2.25	6.11
			3.30	3.0	2.70	7.29
4 (100)	113.8	112.8	2.64	2.4	2.16	6.56
			3.30	3.0	2.70	8.16
5 (125)	139.7	137.8	2.64	2.4	2.16	8.07
			3.30	3.0	2.70	10.04
6 (150)	165.0	163.0	2.64	2.4	2.16	9.56
			3.30	3.0	2.70	11.91
8 (200)	218.0	214.6	3.74	3.4	3.06	17.85
			4.62	4.2	3.78	21.97

GALVANIZED IRON (GI) PIPES GRADE SGCC, SGHC, SGCD, SGMCC AVAILABLE

Size	OD.	Tolerance	Thickness	Weight
in	mm	mm	mm	kg / m
1 (A)	29.5	± 0.4	1.2	0.84
			1.4	0.97

DIMENSION TOLERANCES :	
Permissible Variation	
Wall Thickness :	± 10 %
Length :	+ 40 mm - 0 mm
Weight :	± 10 % per piece

CARBON STEEL TUBES FOR ORDINARY USE

ASTM A53-95 GRADE A & B BLACK AND GALVANIZED STEEL PIPES

NPS Designator in	Outside Diameter mm	OD. Tolerance mm	Wall Thickness mm	SCH NO.	Plain End Weight kg /m	Threads & Couplings kg /m	Hydrostatic Test Pressure	
							Grade A psi (Mpa)	Grade B psi (Mpa)
1/2	21.3	±0.4	2.77	40	1.27	1.27	700 (4.83)	700 (4.83)
3/4	26.7	±0.4	2.87	40	1.69	1.69	700 (4.83)	700 (4.83)
1	33.4	±0.4	3.38	40	2.50	2.50	700 (4.83)	700 (4.83)
1-1/4	42.2	±0.4	3.56	40	3.39	3.40	1,200(8.27)	1,300(8.96)
1-1/2	48.3	±0.4	3.68	40	4.05	4.06	1,200(8.27)	1,300(8.96)
2	60.3	±0.6	3.91	40	5.44	5.46	2,300(15.86)	2,500(17.24)
2-1/2	73	±0.7	5.16	40	8.63	8.67	2,500(17.24)	2,500(17.24)
3	88.9	±0.8	5.49	40	11.29	11.35	2,220(15.31)	2,500(17.24)
3-1/2	101.6	±1.0	5.74	40	13.57	13.71	2,030(14.00)	2,370(16.34)
4	114.3	±1.1	6.02	40	16.07	16.23	1,900(13.10)	2,210(15.24)
5	141.3	±1.4	6.55	40	21.77	22.07	1,670(11.51)	1,950(13.44)
6	168.3	±1.6	7.11	40	28.26	28.58	1,520(10.48)	1,780(12.27)
8	219.1	±2.1	7.04	30	36.31	38.07	1,160(7.80)	1,350(9.31)
			8.18	40	42.55	43.73	1,340(9.24)	1,570(10.82)
Wall Thickness of 3.18 mm , 3.96 mm , 4.78 mm , 5.16 mm , 5.56 mm , 6.35 mm								
3	88.9	±0.8	3.18	-	6.72	-	1,290(8.89)	-
			3.96	-	8.29	-	1,600(11.03)	-
			4.78	-	9.92	-	1,930(13.31)	-
3-1/2	101.6	±1.0	3.18	-	7.72	-	1,120(7.72)	-
			3.96	-	9.53	-	1,400(9.65)	-
			4.78	-	11.41	-	1,690(11.65)	-
4	114.3	±1.1	3.18	-	8.71	-	1,000(6.89)	-
			3.96	-	10.78	-	1,250(8.62)	-
			4.78	-	12.91	-	1,500(10.34)	-
			5.56	-	14.91	-	1,750(12.07)	-
5	141.3	±1.4	3.96	-	13.41	-	1,010(6.96)	-
			4.78	-	16.09	-	1,220(8.41)	-
			5.56	-	18.61	-	1,420(9.79)	-
6	168.3	±1.6	4.78	-	19.27	-	1,020(7.03)	-
			5.56	-	22.31	-	1,190(8.20)	-
			6.35	-	25.36	-	1,360(9.38)	-
8	219.1	±2.1	4.78	-	25.26	-	780(5.38)	-
			5.16	-	27.22	-	850(5.86)	-
			5.56	-	29.28	-	910(6.27)	-
			6.35	-	33.31	-	1,040(7.17)	-

Chemical Composition					Mechanical Properties	
Type E (ERW)	C max. %	Mn max. %	P max. %	S max. %	Yield (min.) PSI (Mpa)	Tensile (min.) PSI (Mpa)
GRADE A	0.25	0.95	0.05	0.045	30,000(205)	48,000(330)
GRADE B	0.30	1.20	0.05	0.045	35,000(240)	60,000(415)

1 Mpa = 1.01972 x 10 kgf/cm²

DIMENSION TOLERANCES :	
Permissible Variation	
Wall Thickness	: - 12.5 % + not specified
Length	: + 40 mm - 0 mm
Weight	: ± 10 % per piece

ASTM A53 Grade A, B,

EN 10255 HEAVY
EN 10255 MEDIUM
EN 10255 LIGHT

JIS G3452 SGP
JIS 3454 STPG370, STPG410

TIS 276 TYPE 1, 2, 3, 4
TIS 277 TYPE 1, 2, 3, 4

JIS G 3452 : 1988 CARBON STEEL PIPE

Nominal Diameter (mm)	Nominal Diameter (in)	Outside Diameter mm	Tolerances on Outside Diameter: Pipe to be cut In Taper Thread	Tolerances on Outside Diameter: Other Pipes	Wall Thickness mm	Tolerances On Thickness	Unit mass Plain Ends kg / m
15	1/2	21.7	± 0.5 mm	± 0.5 mm	2.8		1.31
20	3/4	27.2	± 0.5 mm	± 0.5 mm	2.8		1.68
25	1	34.0	± 0.5 mm	± 0.5 mm	3.2		2.43
32	1-1/4	42.7	± 0.5 mm	± 0.5 mm	3.5		3.38
40	1-1/2	48.6	± 0.5 mm	± 0.5 mm	3.5		3.89
50	2	60.5	± 0.5 mm	± 0.5 mm	3.8		5.31
65	2-1/2	76.3	± 0.7 mm	± 0.75 mm	4.2	+ Not Specified - 12.5%	7.47
80	3	89.1	± 0.8 mm	± 0.85 mm	4.2		8.79
90	3-1/2	101.6	± 0.8 mm	± 1.0 mm	4.2		10.10
100	4	114.3	± 0.8 mm	± 1.1 mm	4.5		12.20
125	5	139.8	± 0.8 mm	± 1.3 mm	4.5		15.00
150	6	165.2	± 0.8 mm	± 1.6 mm	5.0		19.80
200	8	216.3	± 1.0 mm	± 1.7 mm	5.8		30.10

Chemical Composition			Mechanical Properties (%)			
Grade	P max. %	S max. %	Hydrostatic Testing (25.5 kgf / cm²)	Tensile N/mm²	Elongation (%) No.11, 12 Longitudinal	Elongation (%) No.5 Transverse
SGP	0.040	0.040				
Tolerances of Length : + 50 mm - 0 mm			2.5 Mpa	290 min.	30 min.	25 min.

TIS 276-2562 CARBON STEEL PRESSURE PIPES

Grade	Chemical Composition (max %)				Mechanical Properties (Min)			Hydrostatic Test Pressure (time 5 sec) Mpa / psi
	C	Mn	P	S	Yield N/mm^2	Tensile N/mm^2	Elongation %	
A	0.25	0.95	0.050	0.045	205	330	Table 1	Table 1
STPG370	0.29	0.27-0.94	0.050	0.050	215	370	Table 2	Table 3
S 195T	0.20	1.40	0.035	0.030	195	320-520	20	5 (725.19)

Table 1 Elongation & Hydrostatic Test Pressure of Grade A

Nominal size DN	OD (mm)	Thickness (mm)	Elongation (min) %	Hydrostatic Pressure Test Mpa (psi)	Nominal size DN	OD (mm)	Thickness (mm)	Elongation (min) %	Hydrostatic Pressure Test Mpa (psi)
15 (1/2")	21.3	2.77	24	4.8 (697)	80 (3")	88.9	3.18	25	8.9 (1291)
		3.73	25	5.9 (856)			3.96	26	11.0 (1596)
		4.78	26	6.2 (900)			4.78	27	13.3 (1930)
		7.47	29	6.9 (1001)			5.49	28	15.3 (2220)
20 (3/4")	26.7	2.87	24	4.8 (697)			6.35	29	17.2 (2495)
		3.91	25	5.9 (856)			7.14	30	17.2 (2495)
		5.56	27	6.5 (943)			7.62	30	17.2 (2495)
		7.82	29	6.9 (1001)			11.13	32	17.2 (2495)
25 (1")	33.4	3.38	24	4.8 (697)			15.24	35	17.2 (2495)
		4.55	26	5.9 (856)	90 (3-1/2")	101.6	3.18	25	7.7 (1117)
		6.35	28	6.5 (943)			3.96	26	6.7 (972)
		9.09	30	6.9 (1001)			4.78	27	11.7 (1697)
32 (1-1/4")	42.2	3.56	24	8.3 (1204)			5.74	29	14.0 (2031)
		4.85	26	12.4 (1799)			6.35	29	15.5 (2249)
		6.35	28	13.1 (1900)			7.14	30	17.2 (2495)
		9.70	30	15.2 (2205)			8.08	31	19.3 (2800)
40 (1-1/2")	48.3	3.68	24	8.3 (1204)	100 (4")	114.3	3.18	25	6.9 (1001)
		5.08	26	12.4 (1799)			3.96	26	8.6 (1248)
		7.14	28	13.4 (1944)			4.78	27	10.3 (1494)
		10.16	30	15.2 (2205)			5.56	28	12.1 (1755)
50 (2")	60.3	3.91	26	15.9 (2307)			6.02	29	13.1 (1900)
		5.54	28	17.2 (2495)			6.35	29	13.8 (2002)
		8.74	31	17.2 (2495)			7.14	30	15.1 (2191)
		11.07	32	17.2 (2495)			7.92	30	17.2 (2495)
65 (2-1/2")	73.0	5.16	28	17.2 (2495)			8.56	31	18.6 (2698)
		7.01	30	17.2 (2495)			11.13	32	19.3 (2800)
		9.52	31	17.2 (2495)			13.49	34	19.3 (2800)
		14.02	34	17.2 (2495)			17.12	35	19.3 (2800)

Table 1 Elongation & Hydrostatic Test of Grade A

Nominal size DN	OD (mm)	Thickness (mm)	Elongation (min) %	Hydrostatic Pressure Test Mpa (psi)
125 (5")	141.3	3.96	26	7.0 (1016)
		4.78	27	8.4 (1219)
		5.56	28	9.8 (1422)
		6.55	29	11.5 (1668)
		7.14	30	12.5 (1813)
		7.92	30	13.9 (2017)
		8.74	31	15.4 (2234)
		9.52	31	16.8 (2437)
		12.70	33	19.3 (2800)
		15.88	35	19.3 (2800)
		19.05	36	19.3 (2800)
150 (6")	168.3	4.78	27	7.0 (1016)
		5.56	28	8.2 (1190)
		6.35	29	9.4 (1364)
		7.11	30	10.5 (1523)
		7.92	30	11.7 (1697)
		8.74	31	12.9 (1871)
		9.52	31	14.1 (2046)
		10.97	32	16.2 (2350)
		14.27	34	19.3 (2800)
		18.26	36	19.3 (2800)
		21.95	36	19.3 (2800)
200 (8")	219.1	4.78	30	5.1 (740)
		5.16	30	5.9 (856)
		5.56	31	6.3 (914)
		6.35	32	7.2 (1045)
		7.04	32	7.8 (1132)
		7.92	33	9.0 (1306)
		8.18	33	9.2 (1335)
		8.74	34	9.9 (1436)
		9.52	34	10.8 (1567)
		10.31	35	11.7 (1697)
		11.13	36	12.6 (1828)
		12.70	36	14.4 (2089)
		15.09	36	17.2 (2495)
		18.26	36	19.3 (2800)
		20.62	36	19.3 (2800)
		22.22	36	19.3 (2800)
		23.01	36	19.3 (2800)

Table 2 The elongation of the STPG370 pipe wall thickness is less than 8 mm.

หมายเลขชิ้นทดสอบ	Thickness (mm)						
	> 1ถึง ≤ 2	> 2ถึง ≤ 3	> 3ถึง≤ 4	> 4ถึง ≤ 5	> 5 ถึง ≤ 6	> 6 ถึง ≤ 7	> 7 ถึง< 8
12A 12B หรือ 12C[2)]	21	22	24	26	27	28	30
5[3)]	16	18	19	20	22	24	25

หมายเหตุ [2)] เตรียมชิ้นทดสอบตามแนวขนานกับแนวยาวท่อ

[3)] เตรียมชิ้นทดสอบตามแนวตั้งฉากกับแนวยาวท่อ

Table 3 Hydrostatic Test Pressure of Grade STPG370

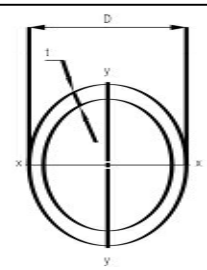
Grade	Nominal size DN mm (inch)	OD mm	Thickness mm	Hydrostatic Pressure Test Mpa / psi
STPG370	**15 (1/2")**	21.7	2.80	6.0 (871)
			3.20	9.0 (1306)
			3.70	12.0 (1741)
STPG370	**20 (3/4")**	27.2	2.90	6.0 (871)
			3.40	9.0 (1306)
			3.90	12.0 (1741)
STPG370	**25 (1")**	34.0	3.40	6.0 (871)
			3.90	9.0 (1306)
			4.50	12.0 (1741)
STPG370	**32 (1-1/4")**	42.7	3.60	6.0 (871)
			4.50	9.0 (1306)
			4.90	12.0 (1741)
STPG370	**40 (1-1/2")**	48.6	3.70	6.0 (871)
			4.50	9.0 (1306)
			5.10	12.0 (1741)
STPG370	**50 (2")**	60.5	3.20	3.5 (508)
			3.90	6.0 (871)
			4.90	9.0 (1306)
			5.50	12.0 (1741)
STPG370	**65 (2-1/2")**	76.3	4.50	3.5 (508)
			5.20	6.0 (871)
			6.00	9.0 (1306)
			7.00	12.0 (1741)

Nominal size DN mm (inch)	OD mm	Thickness mm	Hydrostatic Pressure Test Mpa / psi
80 (3")	89.1	4.50	3.5 (508)
		5.50	6.0 (871)
		6.60	9.0 (1306)
		7.60	12.0 (1741)
90 (3-1/2")	101.6	4.50	3.5 (508)
		5.70	6.0 (871)
		7.00	9.0 (1306)
		8.10	12.0 (1741)
100 (4")	114.3	4.90	3.5 (508)
		6.00	6.0 (871)
		7.10	9.0 (1306)
		8.60	12.0 (1741)
125 (5")	139.8	5.10	3.5 (508)
		6.60	6.0 (871)
		8.10	9.0 (1306)
		9.50	12.0 (1741)
150 (6")	165.2	5.50	3.5 (508)
		7.10	6.0 (871)
		9.30	9.0 (1306)
		11.00	12.0 (1741)
200 (8")	216.3	6.40	3.5 (508)
		7.00	5.0 (726)
		8.20	6.0 (871)
		10.30	9.0 (1306)
		12.70	12.0 (1741)

TIS 276-2562 CARBON STEEL PRESSURE PIPES

Grade	Nominal Size (DN)		Outside diameter	Wall Thickness	Weigth	Grade	Outside diameter	Wall Thickness	Weigth	Grade	Outside diameter	Wall Thickness	Weigth
	inch	mm	mm	mm	kg/m		mm	mm	kg/m		mm	mm	kg/m
				2.77	1.27			2.80	1.31			2.00	0.947
A	1/2"	15	21.3	3.73	1.62	STPG370	21.7	3.20	1.46	S 195T	21.3	2.30	1.08
				4.78	1.95			3.70	1.64			2.60	1.21
				7.47	2.55							3.20	1.44
				2.87	1.69			2.90	1.74				1.40
A	3/4"	20	26.7	3.91	2.20	STPG370	27.2	3.40	2.00	S 195T	26.9	2.30	1.39
				5.56	2.90			3.90	2.24				1.38
				7.82	3.64							2.60	1.56
												3.20	1.87
				3.38	2.50			3.40	2.57			2.60	1.98
A	1"	25	33.4	4.55	3.24	STPG370	34.0	3.90	2.89	S 195T	33.7	2.90	2.20
				6.35	4.24				3.27			3.20	2.41
				9.09	5.45							4.00	2.93
				3.56	3.39			3.60	3.47			2.60	2.54
A	1-1/4"	32	42.2	4.85	4.47	STPG370	42.7	4.50	4.24	S 195T	42.4	2.90	2.82
				6.35	5.61			4.90	4.57			3.20	3.10
				9.70	7.77							4.00	3.79
				3.68	4.05			3.70	4.10				3.25
A	1-1/2"	40	48.3	5.08	5.41	STPG370	48.6	4.50	4.89	S 195T	48.3	2.90	3.24
				7.14	7.25			5.10	5.47				3.23
				10.16	9.56							3.20	3.56
												4.00	4.37
				3.91	5.44			3.20	4.52			2.90	4.08
A	2"	50	60.3	5.54	7.48	STPG370	60.5	3.90	5.44	S 195T	60.3	3.20	4.51
				8.74	11.11			4.90	6.72				4.49
				11.07	13.44			5.50	7.46			3.60	5.03
												4.50	6.19

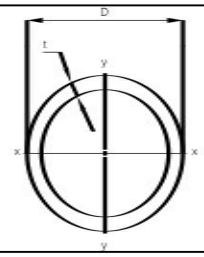
DIMENSION TOLERANCES		
Permissible Variation		
Outside Diameter	DN ≤ 40	± 0.4 mm
	DN ≥ 50	± 1%
Wall Thickness		+ Not Limit
		- 12.5%
Weigth		± 10%



TIS 276-2562 CARBON STEEL PRESSURE PIPES

Grade	Nominal Size (DN)		Outside diameter	Wall Thickness	Weigth	Grade	Outside diameter	Wall Thickness	Weigth	Grade	Outside diameter	Wall Thickness	Weigth
	inch	mm	mm	mm	kg/m		mm	mm	kg/m		mm	mm	kg/m
				5.16	8.63			4.50	7.97				5.75
A	2-1/2"	65	73.0	7.01	11.41	STPG370	76.3	5.20	9.12	S 195T	76.1	3.20	5.73
				9.52	14.90			6.00	10.40				5.71
				14.02	20.39			7.00	12.00			3.60	6.42
												4.50	7.93
				3.18	6.72			4.50	9.39			3.20	6.76
A	3"	80	88.9	3.96	8.29	STPG370	89.1	5.50	11.30	S 195T	88.9		6.72
				4.78	9.92			6.60	13.40			3.60	7.55
				5.49	11.29			7.60	15.30			4.00	8.36
				6.35	12.93							5.00	10.30
				7.14	14.40								
				7.62	15.27								
				11.13	21.35								
				15.24	27.68								
				3.18	7.72			4.50	10.80				
A	3-1/2"	90	101.6	3.96	9.53	STPG370	101.6	5.70	13.50				
				4.78	11.41			7.00	16.30				
				5.74	13.57			8.10	18.70				
				6.35	14.92								
				7.14	16.63								
				8.08	18.63								
				3.18	8.71			4.90	13.20			3.60	9.83
A	4"	100	114.3	3.96	10.78	STPG370	114.3	6.00	16.00	S 195T	114.3		9.75
				4.78	12.91			7.10	18.80			4.00	10.80
				5.56	14.91			8.60	22.40			4.50	12.20
				6.02	16.07							5.40	14.50
				6.35	16.90								
				7.14	18.87								
				7.92	20.78								
				8.56	22.32								
				11.13	28.32								
				13.49	33.54								
				17.12	41.03								

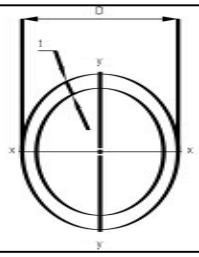
DIMENSION TOLERANCES		
Permissible Variation		
Outside Diameter	DN ≤ 40	± 0.4 mm
	DN ≥ 50	± 1%
Wall Thickness		+ Not Limit
		- 12.5%
Weigth		± 10%



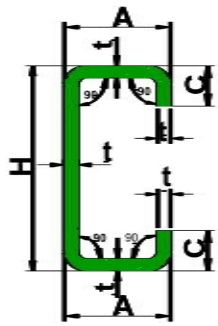
TIS 276-2562 CARBON STEEL PRESSURE PIPES

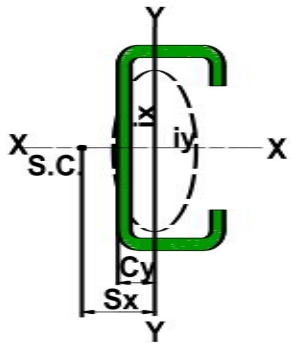
Grade	Nominal Size (DN)		Outside diameter	Wall Thickness	Weigth	Grade	Outside diameter	Wall Thickness	Weigth	Grade	Outside diameter	Wall Thickness	Weigth
	inch	mm	mm	mm	kg/m		mm	mm	kg/m		mm	mm	kg/m
A	5"	125	141.3	3.96	13.41	STPG370	139.8	5.10	16.90	S 195T	139.7	4.50	15.00
				4.78	16.09			6.60	21.70			5.00	16.60
				5.56	18.61			8.10	26.30			5.40	17.90
				6.55	21.77			9.50	30.50				
				7.14	23.62								
				7.92	26.05								
				8.74	28.57								
				9.52	30.94								
				12.70	40.28								
				15.88	49.11								
				19.05	57.43								
A	6"	150	168.3	4.78	19.27	STPG370	165.2	5.50	21.70	S 195T	165.1	4.50	17.80
				5.56	22.31			7.10	27.70			5.00	19.80
				6.35	25.36			9.30	35.80			5.40	21.30
				7.11	28.26			11.00	41.80				
				7.92	31.32								
				8.74	34.39								
				9.52	37.28								
				10.97	42.56								
				14.27	54.20								
				18.26	67.56								
				21.95	79.22								
A	8"	200	219.1	4.78	25.26	STPG370	216.3	6.40	33.10				
				5.16	27.22			7.00	36.10				
				5.56	29.28			8.20	42.10				
				6.35	33.31			10.30	52.30				
				7.04	36.31			12.70	63.80				
				7.92	41.24								
				8.18	42.55								
				8.74	45.34								
				9.52	49.20								
				10.31	53.08								
				11.13	57.08								
				12.70	64.64								
				15.09	75.92								
				18.26	90.44								
				20.62	100.92								
				22.22	107.88								
				23.01	111.27								

DIMENSION TOLERANCES		
Permissible Variation		
Outside Diameter	DN ≤ 40	± 0.4 mm
	DN ≥ 50	± 1%
Wall Thickness		+ Not Limit
		- 12.5%
Weigth		± 10%



TIS 1228-2561 LIP CHANNEL STEEL





Grade	Chemical Composition (Max %)				Mechanical Properties (Min)		
	C	Mn	P	S	Yield Strength N/mm^2	Tensile Strength N/mm^2	Elongation % (min)
SSCS330	-	-	0.050	0.050	205	330 - 430	t ≤ 5 mm = 26 t > 5 mm = 21
SSCS400	-	-	0.050	0.050	245	400 - 510	t ≤ 5 mm = 21 t > 5 mm = 17

DIMENSION TOLERANCES :			
Specified Item and Dimension			Dimensional Tolerances
Length of side	A และ H	< 150 mm	± 1.50 mm
		150 mm to ≤ 300 mm	± 2.00 mm
		> 300 mm	± 3.00 mm
	C		± 2.00 mm
Thickness	1.60 mm to > 2.00 mm		± 0.22 mm
	2.00 mm to > 2.50 mm		± 0.25 mm
	2.50 mm to > 3.15 mm		± 0.28 mm
	3.15 mm to > 4.00 mm		± 0.30 mm
	4.00 mm to > 5.00 mm		± 0.45 mm
	5.00 mm to 6.00 mm		± 0.60 mm
Length	≤ 7 m		- 0 mm , + 40 mm
	> 7 m		+ 40 mm , then +5 mm for each 1 m length that over 7 m
Angle Between Adjacent Plate Portions			± 1.5°
Culvature			≤ 0.2 % of the overall length
Weight			± 10%

TIS 1228-2561 LIP CHANNEL STEEL

Diamension	Thickness	Cross section area	Weigth	Center of Gravity		Secondary Moment of Area		Radius of Gyration		Modulus of Section		Center of shear	
mm	mm	cm^2	kg/m	cm		cm^4		cm		cm^3		cm	
H x A x C	t	a		Cx	Cy	Ix	Iy	ix	iy	Zx	Zy	Sx	Sy
60x30x10	1.60	2.072	1.63	0	1.06	11.6	2.56	2.37	1.11	3.88	1.32	2.5	0
	1.70	2.190	1.72	0	1.06	12.2	2.68	2.36	1.11	4.08	1.38	2.5	0
	1.80	2.307	1.81	0	1.06	12.8	2.79	2.36	1.10	4.28	1.44	2.5	0
	1.85	2.365	1.86	0	1.06	13.1	2.85	2.36	1.10	4.38	1.47	2.5	0
	1.90	2.423	1.90	0	1.06	13.4	2.90	2.35	1.10	4.47	1.50	2.5	0
	2.00	2.537	1.99	0	1.06	14.0	3.01	2.35	1.09	4.65	1.55	2.5	0
	2.05	2.594	2.04	0	1.06	14.3	3.07	2.34	1.09	4.75	1.58	2.5	0
	2.10	2.650	2.08	0	1.06	14.5	3.12	2.34	1.08	4.84	1.60	2.5	0
	2.20	2.760	2.17	0	1.06	15.1	3.22	2.34	1.08	5.02	1.66	2.5	0
	2.25	2.817	2.21	0	1.06	15.3	3.26	2.33	1.08	5.11	1.68	2.5	0
	2.30	2.872	2.25	0	1.06	15.6	3.32	2.33	1.07	5.20	1.71	2.5	0
70x40x25	1.60	3.032	2.38	0	1.80	22.0	8.00	2.69	1.62	6.29	3.64	4.4	0
	1.70	3.210	2.52	0	1.80	23.2	8.46	2.69	1.62	6.64	3.84	4.3	0
	1.80	3.387	2.66	0	1.80	24.4	8.87	2.68	1.62	6.97	4.03	4.3	0
	1.85	3.475	2.73	0	1.80	25.0	9.08	2.68	1.62	7.14	4.12	4.3	0
	1.90	3.563	2.80	0	1.80	25.6	9.28	2.68	1.61	7.31	4.21	4.3	0
	2.00	3.737	2.93	0	1.80	26.7	9.68	2.67	1.61	7.63	4.39	4.3	0
	2.05	3.824	3.00	0	1.80	27.3	9.87	2.67	1.61	7.79	4.48	4.3	0
	2.10	3.910	3.07	0	1.80	27.8	10.10	2.67	1.60	7.95	4.57	4.3	0
	2.20	4.082	3.20	0	1.80	28.9	10.40	2.66	1.60	8.27	4.74	4.3	0
	2.25	4.167	3.27	0	1.80	29.5	10.60	2.66	1.60	8.43	4.83	4.3	0
	2.30	4.252	3.34	0	1.80	30.0	10.80	2.66	1.60	8.58	4.91	4.3	0
	2.40	4.421	3.47	0	1.80	31.1	11.20	2.65	1.59	8.89	5.08	4.3	0
	2.45	4.505	3.54	0	1.80	31.6	11.40	2.65	1.59	9.04	5.16	4.3	0
	2.50	4.589	3.60	0	1.80	32.1	11.50	2.65	1.59	9.19	5.24	4.3	0
	2.60	4.756	3.73	0	1.80	33.2	11.90	2.64	1.58	9.48	5.40	4.3	0
	2.65	4.838	3.80	0	1.80	33.7	12.10	2.64	1.58	9.62	5.47	4.2	0
	2.70	4.921	3.86	0	1.80	34.2	12.20	2.64	1.58	9.77	5.55	4.2	0
	2.80	5.085	3.99	0	1.80	35.2	12.60	2.63	1.57	10.10	5.70	4.2	0
	2.85	5.166	4.06	0	1.80	35.7	12.70	2.63	1.57	10.20	5.77	4.2	0
	2.90	5.247	4.12	0	1.80	36.2	12.90	2.63	1.57	10.30	5.85	4.2	0
	3.00	5.408	4.25	0	1.80	37.1	13.20	2.62	1.56	10.60	5.99	4.2	0
	3.10	5.568	4.37	0	1.80	38.1	13.50	2.61	1.56	10.90	6.13	4.2	0
	3.20	5.727	4.50	0	1.80	39.0	13.80	2.61	1.55	11.10	6.27	4.2	0

TIS 1228-2561 LIP CHANNEL STEEL

Diamension	Thickness	Cross section area	Weigth	Center of Gravity		Secondary Moment of Area		Radius of Gyration		Modulus of Section		Center of shear	
mm	mm	cm^2	kg/m	cm		cm^4		cm		cm^3		cm	
H x A x C	t	a		Cx	Cy	Ix	Iy	ix	iy	Zx	Zy	Sx	Sy
75x35x15	1.60	2.632	2.07	0	1.29	22.8	4.80	2.95	1.35	6.09	2.18	3.1	0
	1.70	2.785	2.19	0	1.29	24.1	5.04	2.94	1.35	6.42	2.29	3.1	0
	1.80	2.937	2.31	0	1.29	25.3	5.28	2.93	1.34	6.74	2.39	3.1	0
	1.85	3.013	2.36	0	1.29	25.9	5.40	2.93	1.34	6.90	2.44	3.1	0
	1.90	3.088	2.42	0	1.29	26.5	5.51	2.93	1.34	7.06	2.50	3.1	0
	2.00	3.237	2.54	0	1.29	27.6	5.73	2.92	1.33	7.37	2.60	3.1	0
	2.05	3.311	2.60	0	1.29	28.2	5.84	2.92	1.33	7.53	2.65	3.1	0
	2.10	3.385	2.66	0	1.29	28.8	5.95	2.92	1.33	7.68	2.69	3.1	0
	2.20	3.532	2.77	0	1.29	29.9	6.16	2.91	1.32	7.98	2.79	3.1	0
	2.25	3.605	2.83	0	1.29	30.5	6.27	2.91	1.32	8.13	2.84	3.1	0
	2.30	3.677	2.89	0	1.29	31.0	6.58	2.91	1.34	8.28	2.98	3.1	0
	2.40	3.821	3.00	0	1.29	32.1	6.57	2.90	1.31	8.57	2.97	3.1	0
	2.45	3.893	3.06	0	1.29	32.7	6.67	2.90	1.31	8.71	3.01	3.1	0
	2.50	3.964	3.11	0	1.29	33.2	6.76	2.89	1.31	8.85	3.06	3.1	0
	2.60	4.106	3.22	0	1.29	34.2	6.95	2.89	1.30	9.13	3.14	3.1	0
	2.65	4.176	3.28	0	1.29	34.8	7.04	2.88	1.30	9.27	3.18	3.1	0
	2.70	4.246	3.33	0	1.29	35.3	7.13	2.88	1.30	9.40	3.22	3.1	0
	2.80	4.385	3.44	0	1.29	36.3	7.31	2.88	1.29	9.67	3.30	3.1	0
	2.85	4.454	3.50	0	1.29	36.8	7.39	2.87	1.29	9.80	3.34	3.1	0
	2.90	4.522	3.55	0	1.29	37.3	7.48	2.87	1.29	9.93	3.38	3.1	0
	3.00	4.658	3.66	0	1.29	38.2	7.64	2.86	1.28	10.20	3.45	3.1	0
	3.10	4.793	3.76	0	1.29	39.2	7.80	2.86	1.28	10.40	3.52	3.1	0
	3.20	4.927	3.87	0	1.29	40.1	7.96	2.85	1.27	10.70	3.59	3.1	0
75x45x15	1.60	2.952	2.32	0	1.72	27.1	8.71	3.03	1.72	7.24	3.13	4.1	0
	1.70	3.125	2.45	0	1.72	28.6	9.17	3.03	1.71	7.64	3.30	4.1	0
	1.80	3.297	2.59	0	1.72	30.1	9.61	3.02	1.71	8.03	3.46	4.1	0
	1.85	3.383	2.66	0	1.72	30.8	9.83	3.02	1.71	8.22	3.54	4.1	0
	1.90	3.468	2.72	0	1.72	31.6	10.10	3.02	1.70	8.41	3.61	4.1	0
	2.00	3.637	2.86	0	1.72	33.0	10.50	3.01	1.70	8.79	3.76	4.0	0
	2.05	3.721	2.92	0	1.72	33.7	10.70	3.01	1.69	8.98	3.84	4.0	0
	2.10	3.805	2.99	0	1.72	34.4	10.90	3.01	1.69	9.17	3.92	4.0	0
	2.20	3.972	3.12	0	1.72	35.8	11.30	3.00	1.69	9.54	4.06	4.0	0
	2.25	4.055	3.18	0	1.72	36.4	11.50	3.00	1.68	9.72	4.13	4.0	0
	2.30	4.137	3.25	0	1.72	37.1	11.80	3.00	1.69	9.90	4.24	4.0	0
	2.40	4.301	3.38	0	1.72	38.5	12.10	2.99	1.68	10.30	4.34	4.0	0
	2.45	4.383	3.44	0	1.72	39.1	12.30	2.99	1.67	10.40	4.41	4.0	0
	2.50	4.464	3.50	0	1.71	39.8	12.50	2.98	1.67	10.60	4.48	4.0	0
	2.60	4.626	3.63	0	1.71	41.1	12.80	2.98	1.67	10.90	4.61	4.0	0

TIS 1228-2561 LIP CHANNEL STEEL

Diamension	Thickness	Cross section area	Weigth	Center of Gravity		Secondary Moment of Area		Radius of Gyration		Modulus of Section		Center of shear	
mm	mm	cm^2	kg/m	cm		cm^4		cm		cm^3		cm	
H x A x C	t	a		Cx	Cy	Ix	Iy	ix	iy	Zx	Zy	Sx	Sy
75x45x15	2.65	4.706	3.69	0	1.71	41.7	13.00	2.98	1.66	11.10	4.67	4.0	0
	2.70	4.786	3.76	0	1.71	42.3	13.20	2.97	1.66	11.30	4.74	4.0	0
	2.80	4.945	3.88	0	1.71	43.6	13.60	2.97	1.66	11.60	4.86	4.0	0
	2.85	5.024	3.94	0	1.71	44.2	13.70	2.97	1.65	11.80	4.93	4.0	0
	2.90	5.102	4.01	0	1.71	44.8	13.90	2.96	1.65	11.90	4.99	4.0	0
	3.00	5.258	4.13	0	1.71	46.0	14.20	2.96	1.65	12.30	5.11	4.0	0
	3.10	5.413	4.25	0	1.71	47.2	14.60	2.95	1.64	12.60	5.22	4.0	0
	3.20	5.567	4.37	0	1.71	48.3	14.90	2.95	1.64	12.90	5.33	4.0	0
90x45x20	1.60	3.352	2.63	0	1.73	42.6	10.50	3.56	1.77	9.46	5.80	4.2	0
	1.70	3.550	2.79	0	1.73	45.0	11.10	3.56	1.77	9.99	4.00	4.2	0
	1.80	3.747	2.94	0	1.73	47.3	11.60	3.55	1.76	10.50	4.20	4.2	0
	1.85	3.845	3.02	0	1.73	48.5	11.90	3.55	1.76	10.80	4.30	4.2	0
	1.90	3.943	3.10	0	1.73	49.6	12.20	3.55	1.76	11.00	4.40	4.2	0
	2.00	4.137	3.25	0	1.73	51.9	12.70	3.54	1.75	11.50	4.59	4.2	0
	2.05	4.234	3.32	0	1.73	53.1	13.00	3.54	1.75	11.80	4.68	4.2	0
	2.10	4.330	3.40	0	1.73	54.2	13.20	3.54	1.75	12.00	4.77	4.2	0
	2.20	4.522	3.55	0	1.73	56.4	13.70	3.53	1.74	12.50	4.96	4.2	0
	2.25	4.617	3.62	0	1.73	57.5	14.00	3.53	1.74	12.80	5.05	4.2	0
	2.30	4.712	3.70	0	1.73	58.6	14.20	3.53	1.74	13.00	5.14	4.1	0
	2.40	4.901	3.85	0	1.73	60.7	14.70	3.52	1.73	13.50	5.31	4.1	0
	2.45	4.995	3.92	0	1.73	61.8	15.00	3.52	1.73	13.70	5.40	4.1	0
	2.50	5.089	3.99	0	1.73	62.9	15.20	3.51	1.73	14.00	5.48	4.1	0
	2.60	5.276	4.14	0	1.73	65.0	15.70	3.51	1.72	14.40	5.65	4.1	0
	2.65	5.368	4.21	0	1.73	66.0	15.90	3.51	1.72	14.70	5.73	4.1	0
	2.70	5.461	4.29	0	1.73	67.0	16.10	3.50	1.72	14.90	5.81	4.1	0
	2.80	5.645	4.43	0	1.73	69.1	16.60	3.50	1.71	15.30	5.97	4.1	0
	2.85	5.736	4.50	0	1.73	70.1	16.80	3.50	1.71	15.60	6.05	4.1	0
	2.90	5.827	4.57	0	1.73	71.1	17.00	3.49	1.71	15.80	6.13	4.1	0
	3.00	6.008	4.72	0	1.73	73.0	17.40	3.49	1.70	16.20	6.28	4.1	0
	3.10	6.188	4.86	0	1.73	75.0	17.80	3.48	1.70	16.70	6.43	4.1	0
	3.20	6.367	5.00	0	1.73	76.9	18.30	3.48	1.69	17.10	6.57	4.1	0
100x50x20	1.60	3.672	2.88	0	1.87	58.4	14.00	3.99	1.95	11.70	4.47	4.5	0
	1.70	3.890	3.05	0	1.87	61.7	14.70	3.98	1.95	12.30	4.70	4.5	0
	1.80	4.170	3.22	0	1.87	65.0	15.50	3.98	1.94	13.00	4.94	4.5	0
	1.85	4.215	3.31	0	1.87	66.6	15.80	3.97	1.94	13.30	5.06	4.5	0
	1.90	4.323	3.39	0	1.87	68.2	16.20	3.97	1.94	13.60	5.17	4.5	0
	2.00	4.537	3.56	0	1.86	71.4	16.90	3.97	1.93	14.30	5.40	4.4	0

TIS 1228-2561 LIP CHANNEL STEEL

Diamension	Thickness	Cross section area	Weigth	Center of Gravity		Secondary Moment of Area		Radius of Gyration		Modulus of Section		Center of shear	
mm	mm	cm^2	kg/m	cm		cm^4		cm		cm^3		cm	
H x A x C	t	a		Cx	Cy	Ix	Iy	ix	iy	Zx	Zy	Sx	Sy
	2.05	4.644	3.65	0	1.86	73.0	17.30	3.96	1.93	14.60	5.51	4.4	0
	2.10	4.750	3.73	0	1.86	74.5	17.60	3.96	1.93	14.90	5.62	4.4	0
	2.20	4.962	3.90	0	1.86	77.6	18.30	3.96	1.92	15.50	5.84	4.4	0
	2.25	5.067	3.98	0	1.86	79.2	18.70	3.95	1.92	15.80	5.95	4.4	0
	2.30	5.172	4.06	0	1.86	80.7	19.00	3.95	1.92	16.10	6.06	4.4	0
	2.40	5.381	4.22	0	1.86	83.7	19.70	3.94	1.91	16.70	6.27	4.4	0
	2.45	5.485	4.31	0	1.86	85.2	20.00	3.94	1.91	17.00	6.37	4.4	0
	2.50	5.589	4.39	0	1.86	86.7	20.30	3.94	1.91	17.30	6.48	4.4	0
	2.60	5.796	4.55	0	1.86	89.7	21.00	3.93	1.90	17.90	6.68	4.4	0
	2.65	5.898	4.63	0	1.86	91.1	21.30	3.93	1.90	18.20	6.78	4.4	0
	2.70	6.001	4.71	0	1.86	92.6	21.60	3.93	1.90	18.50	6.88	4.4	0
	2.80	6.205	4.87	0	1.88	99.8	23.20	3.96	1.91	20.00	7.44	4.3	0
	2.85	6.306	4.95	0	1.86	96.9	22.50	3.92	1.89	19.40	7.17	4.4	0
100x50x20	2.90	6.407	5.03	0	1.86	98.3	22.80	3.92	1.89	19.70	7.26	4.4	0
	3.00	6.608	5.19	0	1.86	101.0	23.40	3.91	1.88	20.20	7.45	4.4	0
	3.10	6.808	5.34	0	1.86	104.0	24.00	3.90	1.88	20.80	7.63	4.4	0
	3.20	7.007	5.50	0	1.86	107.0	24.50	3.90	1.87	21.30	7.81	4.4	0
	3.30	7.204	5.66	0	1.86	109.0	25.10	3.89	1.87	21.80	7.99	4.4	0
	3.40	7.400	5.81	0	1.86	112.0	25.60	3.89	1.86	22.40	8.16	4.4	0
	3.50	7.595	5.96	0	1.86	114.0	26.20	3.88	1.86	22.90	8.33	4.4	0
	3.60	7.788	6.11	0	1.86	117.0	26.70	3.88	1.85	23.40	8.49	4.4	0
	3.70	7.980	6.26	0	1.86	120.0	27.20	3.87	1.85	23.90	8.65	4.4	0
	3.80	8.171	6.41	0	1.86	122.0	27.70	3.87	1.84	24.40	8.81	4.4	0
	3.90	8.360	6.56	0	1.86	125.0	28.20	3.86	1.84	24.90	8.96	4.4	0
	4.00	8.548	6.71	0	1.86	127.0	28.70	3.85	1.83	25.40	9.13	4.3	0
	4.10	8.735	6.86	0	1.86	129.0	29.10	3.85	1.83	25.90	9.26	4.3	0
	4.20	8.920	7.00	0	1.86	132.0	29.60	3.84	1.82	26.30	9.40	4.3	0
	4.30	9.104	7.15	0	1.86	134.0	30.00	3.84	1.82	26.80	9.54	4.3	0
	4.40	9.287	7.29	0	1.86	136.0	30.40	3.83	1.81	27.30	9.67	4.3	0
	4.50	9.469	7.43	0	1.86	139.0	30.90	3.82	1.81	27.70	9.82	4.3	0
	1.60	3.672	2.88	0	1.33	78.2	8.90	4.61	1.55	13.00	3.32	3.4	0
	1.70	3.890	3.05	0	1.33	82.6	9.30	4.61	1.55	13.80	3.50	3.4	0
120x40x20	1.80	4.107	3.22	0	1.33	87.0	9.80	4.60	1.54	14.50	3.67	3.4	0
	1.85	4.215	3.31	0	1.33	89.1	10.00	4.60	1.54	14.90	3.75	3.4	0
	1.90	4.323	3.39	0	1.33	91.3	10.20	4.60	1.54	15.20	3.84	3.4	0
	2.00	4.537	3.56	0	1.33	95.5	10.70	4.59	1.53	15.90	4.00	3.4	0
	2.05	4.644	3.65	0	1.33	97.6	10.90	4.59	1.53	16.30	4.08	3.4	0
	2.10	4.750	3.73	0	1.33	99.7	11.10	4.58	1.53	16.60	4.16	3.4	0

TIS 1228-2561 LIP CHANNEL STEEL

Diamension	Thickness	Cross section area	Weigth	Center of Gravity		Secondary Moment of Area		Radius of Gyration		Modulus of Section		Center of shear	
mm	mm	cm^2	kg/m	cm		cm^4		cm		cm^3		cm	
H x A x C	t	a		Cx	Cy	Ix	Iy	ix	iy	Zx	Zy	Sx	Sy
120x40x20	2.20	4.962	3.90	0	1.33	104.0	11.50	4.58	1.52	17.30	4.32	3.4	0
	2.25	5.067	3.98	0	1.33	106.0	11.70	4.57	1.52	17.70	4.40	3.4	0
	2.30	5.172	4.06	0	1.33	108.0	11.90	4.57	1.52	18.00	4.47	3.4	0
	2.40	5.381	4.22	0	1.33	112.0	12.30	4.56	1.51	18.70	4.62	3.4	0
	2.45	5.485	4.31	0	1.33	114.0	12.50	4.56	1.51	19.00	4.70	3.4	0
	2.50	5.589	4.39	0	1.33	116.0	12.70	4.56	1.51	19.30	4.77	3.4	0
	2.60	5.796	4.55	0	1.33	120.0	13.10	4.55	1.50	20.00	4.91	3.4	0
	2.65	5.898	4.63	0	1.33	122.0	13.30	4.55	1.50	20.30	4.98	3.4	0
	2.70	6.001	4.71	0	1.33	124.0	13.50	4.54	1.50	20.60	5.05	3.4	0
	2.80	6.205	4.87	0	1.33	128.0	13.90	4.54	1.49	21.30	5.19	3.4	0
	2.85	6.306	4.95	0	1.33	130.0	14.00	4.53	1.49	21.60	5.26	3.4	0
	2.90	6.407	5.03	0	1.33	132.0	14.20	4.53	1.49	21.90	5.32	3.4	0
	3.00	6.608	5.19	0	1.33	135.0	14.60	4.52	1.48	22.50	5.45	3.4	0
	3.10	6.808	5.34	0	1.33	139.0	14.90	4.52	1.48	23.20	5.58	3.4	0
	3.20	7.007	5.50	0	1.32	144.0	15.30	4.53	1.48	24.00	5.71	3.4	0
	3.30	7.204	5.66	0	1.33	146.0	15.60	4.50	1.47	24.40	5.83	3.3	0
	3.40	7.400	5.81	0	1.33	150.0	15.90	4.50	1.47	24.90	5.94	3.3	0
	3.50	7.595	5.96	0	1.33	153.0	16.20	4.49	1.46	25.50	6.06	3.3	0
	3.60	7.788	6.11	0	1.33	157.0	16.50	4.48	1.46	26.10	6.17	3.3	0
	3.70	7.980	6.26	0	1.33	160.0	16.80	4.48	1.45	26.70	6.28	3.3	0
	3.80	8.171	6.41	0	1.33	163.0	17.10	4.47	1.45	27.20	6.38	3.3	0
	3.90	8.360	6.56	0	1.33	167.0	17.30	4.46	1.44	27.80	6.48	3.3	0
	4.00	8.548	6.71	0	1.33	170.0	17.60	4.46	1.44	28.30	6.58	3.2	0
	4.10	8.735	6.86	0	1.33	173.0	17.90	4.45	1.43	28.80	6.68	3.2	0
	4.20	8.920	7.00	0	1.33	176.0	18.10	4.44	1.43	29.40	6.77	3.2	0
	4.30	9.104	7.15	0	1.33	179.0	18.40	4.44	1.42	29.90	6.86	3.2	0
	4.40	9.287	7.29	0	1.33	182.0	18.60	4.43	1.42	30.40	6.95	3.2	0
	4.50	9.469	7.43	0	1.33	185.0	18.80	4.42	1.41	30.90	7.04	3.2	0
120x60x20	1.60	4.312	3.38	0	2.13	101.0	22.90	4.83	2.30	16.80	5.92	5.2	0
	1.70	4.570	3.59	0	2.13	106.0	24.20	4.82	2.30	17.70	6.25	5.2	0
	1.80	4.827	3.79	0	2.13	112.0	25.40	4.82	2.29	18.70	6.57	5.2	0
	1.85	4.955	3.89	0	2.13	115.0	26.00	4.82	2.29	19.20	6.73	5.2	0
	1.90	5.083	3.99	0	2.13	118.0	26.60	4.81	2.29	19.60	6.88	5.2	0
	2.00	5.337	4.19	0	2.13	123.0	27.80	4.81	2.28	20.60	7.19	5.2	0
	2.05	5.464	4.29	0	2.13	126.0	28.40	4.81	2.28	21.00	7.35	5.2	0
	2.10	5.590	4.39	0	2.13	129.0	29.00	4.80	2.28	21.50	7.50	5.2	0
	2.20	5.842	4.59	0	2.13	134.0	30.20	4.80	2.27	22.40	7.80	5.2	0
	2.25	5.967	4.68	0	2.13	137.0	30.80	4.79	2.27	22.90	7.95	5.2	0

TIS 1228-2561 LIP CHANNEL STEEL

Diamension	Thickness	Cross section area	Weigth	Center of Gravity		Secondary Moment of Area		Radius of Gyration		Modulus of Section		Center of shear	
mm	mm	cm^2	kg/m	cm		cm^4		cm		cm^3		cm	
H x A x C	t	a		Cx	Cy	Ix	Iy	ix	iy	Zx	Zy	Sx	Sy
120x60x20	2.30	6.092	4.78	0	2.13	140.0	31.30	4.79	2.27	23.30	8.10	5.1	0
	2.40	6.341	4.98	0	2.13	145.0	32.50	4.79	2.26	24.20	8.39	5.1	0
	2.45	6.465	5.08	0	2.13	148.0	33.00	4.78	2.26	24.70	8.53	5.1	0
	2.50	6.589	5.17	0	2.13	151.0	33.60	4.78	2.26	25.10	8.67	5.1	0
	2.60	6.836	5.37	0	2.13	156.0	34.70	4.77	2.25	26.00	8.96	5.1	0
	2.65	6.958	5.46	0	2.13	158.0	35.20	4.77	2.25	26.40	9.10	5.1	0
	2.70	7.081	5.56	0	2.13	161.0	35.80	4.77	2.25	26.80	9.23	5.1	0
	2.80	7.325	5.75	0	2.13	166.0	36.80	4.76	2.24	27.70	9.51	5.1	0
	2.85	7.446	5.85	0	2.13	169.0	37.40	4.76	2.24	28.10	9.64	5.1	0
	2.90	7.567	5.94	0	2.13	171.0	37.90	4.76	2.24	28.50	9.77	5.1	0
	3.00	7.808	6.13	0	2.13	176.0	38.90	4.75	2.23	29.40	10.00	5.1	0
	3.10	8.048	6.32	0	2.13	181.0	39.90	4.75	2.23	30.20	10.30	5.1	0
	3.20	8.287	6.51	0	2.12	186.0	40.90	4.74	2.22	31.00	10.50	4.9	0
	3.30	8.524	6.69	0	2.12	191.0	41.90	4.73	2.22	31.90	10.80	4.9	0
	3.40	8.760	6.88	0	2.12	196.0	42.80	4.73	2.21	32.70	11.00	4.9	0
	3.50	8.995	7.06	0	2.12	201.0	43.80	4.72	2.21	33.40	11.30	4.9	0
	3.60	9.228	7.24	0	2.12	205.0	44.70	4.72	2.20	34.20	11.50	4.9	0
	3.70	9.460	7.43	0	2.12	210.0	45.60	4.71	2.20	35.00	11.70	4.9	0
	3.80	9.691	7.61	0	2.12	215.0	46.50	4.71	2.19	35.80	12.00	4.9	0
	3.90	9.920	7.79	0	2.12	219.0	47.40	4.70	2.18	36.50	12.20	4.9	0
	4.00	10.148	7.97	0	2.12	224.0	48.20	4.69	2.18	37.30	12.40	4.9	0
	4.10	10.375	8.14	0	2.12	228.0	49.00	4.69	2.17	38.00	12.60	4.9	0
	4.20	10.600	8.32	0	2.12	232.0	49.90	4.68	2.17	38.70	12.80	4.9	0
	4.30	10.824	8.50	0	2.12	237.0	50.70	4.68	2.16	39.50	13.00	4.9	0
	4.40	11.047	8.67	0	2.11	241.0	51.50	4.67	2.16	40.20	13.20	4.9	0
	4.50	11.269	8.85	0	2.11	245.0	52.20	4.67	2.15	40.90	13.40	4.9	0
120x60x25	1.60	4.472	3.51	0	2.27	103.0	25.10	4.80	2.37	17.10	6.73	5.5	0
	1.70	4.740	3.72	0	2.27	109.0	26.50	4.79	2.36	18.10	7.10	5.5	0
	1.80	5.007	3.93	0	2.27	115.0	27.90	4.79	2.36	19.10	7.47	5.5	0
	1.85	5.140	4.03	0	2.27	118.0	28.60	4.78	2.36	19.60	7.65	5.5	0
	1.90	5.273	4.14	0	2.27	120.0	29.20	4.78	2.35	20.10	7.83	5.5	0
	2.00	5.537	4.35	0	2.27	126.0	30.60	4.77	2.35	21.00	8.19	5.5	0
	2.05	5.669	4.45	0	2.27	129.0	31.20	4.77	2.35	21.50	8.37	5.5	0
	2.10	5.800	4.55	0	2.27	132.0	31.90	4.77	2.35	22.00	8.54	5.5	0
	2.20	6.062	4.76	0	2.27	138.0	33.20	4.76	2.34	22.90	8.89	5.5	0
	2.25	6.192	4.86	0	2.27	140.0	33.80	4.76	2.34	23.40	9.06	5.5	0
	2.30	6.322	4.96	0	2.27	143.0	34.50	4.76	2.34	23.90	9.23	5.5	0

TIS 1228-2561 LIP CHANNEL STEEL

Diamension	Thickness	Cross section area	Weigth	Center of Gravity		Secondary Moment of Area		Radius of Gyration		Modulus of Section		Center of shear	
mm	mm	cm^2	kg/m	cm		cm^4		cm		cm^3		cm	
H x A x C	t	a		Cx	Cy	Ix	Iy	ix	iy	Zx	Zy	Sx	Sy
120x60x25	2.40	6.581	5.17	0	2.26	149.0	35.70	4.75	2.33	24.80	9.57	5.5	0
	2.45	6.710	5.27	0	2.26	151.0	36.40	4.75	2.33	25.20	9.73	5.5	0
	2.50	6.839	5.37	0	2.26	154.0	37.00	4.75	2.33	25.70	9.90	5.5	0
	2.60	7.096	5.57	0	2.26	159.0	38.20	4.74	2.32	26.60	10.20	5.5	0
	2.65	7.223	5.67	0	2.26	162.0	38.80	4.74	2.32	27.00	10.40	5.5	0
	2.70	7.351	5.77	0	2.26	165.0	39.40	4.74	2.32	27.50	10.50	5.5	0
	2.80	7.605	5.97	0	2.26	170.0	40.60	4.73	2.31	28.40	10.90	5.5	0
	2.85	7.731	6.07	0	2.26	173.0	41.20	4.73	2.31	28.80	11.00	5.5	0
	2.90	7.857	6.17	0	2.26	175.0	41.80	4.72	2.31	29.20	11.20	5.5	0
	3.00	8.108	6.37	0	2.26	181.0	42.90	4.72	2.30	30.10	11.50	5.5	0
	3.10	8.358	6.56	0	2.26	186.0	44.00	4.71	2.30	30.90	11.80	5.5	0
	3.20	8.607	6.76	0	2.26	191.0	45.20	4.71	2.29	31.80	12.10	5.4	0
	3.30	8.854	6.95	0	2.26	196.0	46.30	4.70	2.29	32.60	12.40	5.4	0
	3.40	9.100	7.14	0	2.26	201.0	47.30	4.70	2.28	33.50	12.70	5.4	0
	3.50	9.345	7.34	0	2.26	206.0	48.40	4.69	2.28	34.30	12.90	5.4	0
	3.60	9.588	7.53	0	2.26	210.0	49.40	4.69	2.27	35.10	13.20	5.4	0
	3.70	9.830	7.72	0	2.26	215.0	50.50	4.68	2.27	35.90	13.50	5.4	0
	3.80	10.071	7.91	0	2.26	220.0	51.50	4.67	2.26	36.70	13.80	5.4	0
	3.90	10.310	8.09	0	2.26	225.0	52.50	4.67	2.26	37.40	14.00	5.4	0
	4.00	10.548	8.28	0	2.26	229.0	53.40	4.66	2.25	38.20	14.30	5.4	0
	4.10	10.785	8.47	0	2.26	234.0	54.40	4.66	2.25	39.00	14.50	5.4	0
	4.20	11.020	8.65	0	2.26	238.0	55.30	4.65	2.24	39.70	14.80	5.4	0
	4.30	11.254	8.83	0	2.26	243.0	56.20	4.65	2.24	40.50	15.00	5.4	0
	4.40	11.487	9.02	0	2.25	247.0	57.20	4.64	2.23	41.20	15.30	5.4	0
	4.50	11.720	9.20	0	2.25	252.0	58.00	4.63	2.22	41.90	15.50	5.3	0
125x50x20	1.60	4.072	3.20	0	1.69	98.4	15.10	4.91	1.93	15.70	4.58	4.1	0
	1.70	4.315	3.39	0	1.69	104.0	16.00	4.91	1.92	16.60	4.82	4.1	0
	1.80	4.557	3.58	0	1.69	110.0	16.80	4.90	1.92	17.50	5.07	4.1	0
	1.85	4.678	3.67	0	1.69	112.0	17.20	4.90	1.92	18.00	5.19	4.1	0
	1.90	4.798	3.77	0	1.69	115.0	17.60	4.90	1.91	18.40	5.30	4.1	0
	2.00	5.037	3.95	0	1.69	120.0	18.30	4.89	1.91	19.30	5.54	4.1	0
	2.05	5.156	4.05	0	1.69	123.0	18.70	4.89	1.91	19.70	5.65	4.1	0
	2.10	5.275	4.14	0	1.69	126.0	19.10	4.88	1.90	20.10	5.77	4.1	0
	2.20	5.512	4.33	0	1.69	131.0	19.80	4.88	1.90	21.00	6.00	4.1	0
	2.25	5.630	4.42	0	1.69	134.0	20.20	4.88	1.90	21.40	6.11	4.1	0
	2.30	5.747	4.51	0	1.69	137.0	20.60	4.88	1.89	21.90	6.22	4.1	0
	2.40	5.981	4.70	0	1.69	142.0	21.30	4.87	1.89	22.70	6.43	4.1	0
	2.45	6.098	4.79	0	1.69	144.0	21.70	4.86	1.88	23.10	6.54	4.1	0

TIS 1228-2561 LIP CHANNEL STEEL

Diamension	Thickness	Cross section area	Weigth	Center of Gravity		Secondary Moment of Area		Radius of Gyration		Modulus of Section		Center of shear	
mm	mm	cm^2	kg/m	cm		cm^4		cm		cm^3		cm	
H x A x C	t	a		Cx	Cy	Ix	Iy	ix	iy	Zx	Zy	Sx	Sy
125x50x20	2.50	6.214	4.88	0	1.69	147.0	22.00	4.86	1.88	23.50	6.65	4.1	0
	2.60	6.446	5.06	0	1.69	152.0	22.70	4.85	1.88	24.30	6.86	4.1	0
	2.65	6.561	5.15	0	1.69	154.0	23.10	4.85	1.87	24.70	6.96	4.1	0
	2.70	6.676	5.24	0	1.69	157.0	23.40	4.85	1.87	25.10	7.06	4.1	0
	2.80	6.905	5.42	0	1.69	162.0	24.10	4.84	1.87	25.90	7.26	4.1	0
	2.85	7.019	5.51	0	1.69	164.0	24.40	4.84	1.86	26.30	7.36	4.1	0
	2.90	7.132	5.60	0	1.69	167.0	24.70	4.84	1.86	26.70	7.46	4.1	0
	3.00	7.358	5.78	0	1.69	172.0	25.40	4.83	1.86	27.50	7.65	4.1	0
	3.10	7.583	5.95	0	1.69	176.0	26.00	4.82	1.85	28.20	7.84	4.1	0
	3.20	7.807	6.13	0	1.68	181.0	26.60	4.82	1.85	29.00	8.02	4.0	0
	3.30	8.029	6.30	0	1.68	186.0	27.20	4.81	1.84	29.70	8.21	4.0	0
	3.40	8.250	6.48	0	1.68	191.0	27.80	4.81	1.84	30.50	8.39	4.0	0
	3.50	8.470	6.65	0	1.68	195.0	28.40	4.8	1.83	31.20	8.56	4.0	0
	3.60	8.688	6.82	0	1.68	200.0	29.00	4.79	1.83	31.90	8.73	4.0	0
	3.70	8.905	6.99	0	1.68	204.0	29.50	4.79	1.82	32.60	8.90	4.0	0
	3.80	9.121	7.16	0	1.68	208.0	30.10	4.78	1.82	33.30	9.06	4.0	0
	3.90	9.335	7.33	0	1.68	213.0	30.60	4.77	1.81	34.00	9.22	4.0	0
	4.00	9.548	7.50	0	1.68	217.0	33.10	4.77	1.81	34.70	9.38	4.0	0
	4.10	9.760	7.66	0	1.68	221.0	31.60	4.76	1.80	35.40	9.53	4.0	0
	4.20	9.970	7.83	0	1.68	225.0	32.10	4.76	1.79	36.10	9.68	4.0	0
	4.30	10.179	7.99	0	1.68	230.0	32.60	4.75	1.79	36.70	9.82	4.0	0
	4.40	10.387	8.15	0	1.68	234.0	33.10	4.74	1.78	37.40	9.96	4.0	0
	4.50	10.590	8.32	0	1.68	238.0	33.50	4.74	1.78	38.00	10.00	4.0	0
150x50x20	1.60	4.472	3.51	0	1.55	151.0	16.10	5.81	1.90	20.10	4.66	3.9	0
	1.70	4.740	3.72	0	1.55	160.0	17.00	5.81	1.89	21.30	4.91	3.9	0
	1.80	5.007	3.93	0	1.55	168.0	17.80	5.80	1.89	22.40	5.16	3.9	0
	1.85	5.140	4.03	0	1.55	173.0	18.20	5.80	1.88	23.00	5.28	3.9	0
	1.90	5.273	4.14	0	1.55	177.0	18.70	5.79	1.88	23.60	5.40	3.9	0
	2.00	5.537	4.35	0	1.55	185.0	19.50	5.79	1.88	24.70	5.64	3.9	0
	2.05	5.669	4.45	0	1.55	190.0	19.90	5.78	1.87	25.30	5.76	3.9	0
	2.10	5.800	4.55	0	1.55	194.0	20.30	5.78	1.87	25.80	5.88	3.9	0
	2.20	6.062	4.76	0	1.55	202.0	21.10	5.77	1.87	26.90	6.11	3.9	0
	2.25	6.192	4.86	0	1.55	206.0	21.50	5.77	1.86	27.50	6.22	3.9	0
	2.30	6.322	4.96	0	1.55	210.0	21.90	5.77	1.86	28.00	6.33	3.8	0
	2.40	6.581	5.17	0	1.55	218.0	22.70	5.76	1.86	29.10	6.56	3.8	0
	2.45	6.710	5.27	0	1.55	222.0	23.00	5.76	1.85	29.60	6.67	3.8	0
	2.50	6.839	5.37	0	1.55	226.0	23.40	5.75	1.85	30.20	6.78	3.8	0
	2.60	7.096	5.57	0	1.54	234.0	24.20	5.75	1.84	31.20	6.99	3.8	0

TIS 1228-2561 LIP CHANNEL STEEL

Diamension	Thickness	Cross section area	Weigth	Center of Gravity		Secondary Moment of Area		Radius of Gyration		Modulus of Section		Center of shear	
mm	mm	cm^2	kg/m	cm		cm^4		cm		cm^3		cm	
H x A x C	t	a		Cx	Cy	Ix	Iy	ix	iy	Zx	Zy	Sx	Sy
150x50x20	2.65	7.223	5.67	0	1.54	238.0	24.50	5.74	1.84	31.80	7.10	3.8	0
	2.70	7.351	5.77	0	1.54	242.0	24.90	5.74	1.84	32.30	7.20	3.8	0
	2.80	7.605	5.97	0	1.54	250.0	25.60	5.73	1.83	33.30	7.41	3.8	0
	2.85	7.731	6.07	0	1.54	254.0	25.90	5.73	1.83	33.80	7.51	3.8	0
	2.90	7.857	6.17	0	1.54	258.0	26.30	5.73	1.83	34.40	7.61	3.8	0
	3.00	8.108	6.37	0	1.54	265.0	27.00	5.72	1.82	35.40	7.81	3.8	0
	3.10	8.358	6.56	0	1.54	273.0	27.70	5.71	1.82	36.40	8.00	3.8	0
	3.20	8.607	6.76	0	1.54	280.0	28.30	5.71	1.81	37.40	8.19	3.8	0
	3.30	8.854	6.95	0	1.54	288.0	29.00	5.70	1.81	38.40	8.38	3.8	0
	3.40	9.100	7.14	0	1.54	295.0	29.60	5.69	1.80	39.30	8.56	3.8	0
	3.50	9.345	7.34	0	1.54	302.0	30.20	5.69	1.80	40.30	8.74	3.8	0
	3.60	9.588	7.53	0	1.54	309.0	30.80	5.68	1.79	41.20	8.91	3.8	0
	3.70	9.830	7.72	0	1.54	316.0	31.40	5.67	1.79	42.20	9.08	3.8	0
	3.80	10.071	7.91	0	1.54	323.0	32.00	5.67	1.78	43.10	9.25	3.8	0
	3.90	10.310	8.09	0	1.54	330.0	32.60	5.66	1.78	44.00	9.41	3.8	0
	4.00	10.548	8.28	0	1.54	337.0	33.10	5.65	1.77	44.90	9.57	3.7	0
	4.10	10.785	8.47	0	1.54	344.0	33.70	5.65	1.77	45.80	9.73	3.7	0
	4.20	11.020	8.65	0	1.54	350.0	34.20	5.64	1.76	46.70	9.88	3.7	0
	4.30	11.254	8.83	0	1.54	357.0	34.70	5.63	1.76	47.60	10.00	3.7	0
	4.40	11.487	9.02	0	1.54	363.0	35.20	5.63	1.75	48.50	10.20	3.7	0
	4.50	11.720	9.20	0	1.54	368.0	35.70	5.60	1.75	49.00	10.50	3.7	0
150x65x20	1.60	4.952	3.89	0	2.12	177.0	29.90	5.99	2.46	23.70	6.83	5.3	0
	1.70	5.250	4.12	0	2.12	188.0	31.50	5.98	2.45	25.00	7.21	5.3	0
	1.80	5.547	4.35	0	2.12	198.0	33.20	5.97	2.45	26.40	7.58	5.2	0
	1.85	5.695	4.47	0	2.12	203.0	34.00	5.97	2.44	27.10	7.76	5.2	0
	1.90	5.843	4.59	0	2.12	208.0	34.80	5.97	2.44	27.80	7.95	5.2	0
	2.00	6.137	4.82	0	2.12	218.0	36.40	5.96	2.44	29.10	8.31	5.2	0
	2.05	6.284	4.93	0	2.12	223.0	37.20	5.96	2.43	29.80	8.49	5.2	0
	2.10	6.430	5.05	0	2.12	228.0	38.00	5.96	2.43	30.40	8.67	5.2	0
	2.20	6.722	5.28	0	2.12	238.0	39.50	5.95	2.42	31.70	9.02	5.2	0
	2.25	6.867	5.39	0	2.12	243.0	40.30	5.95	2.42	32.40	9.20	5.2	0
	2.30	7.012	5.50	0	2.12	248.0	41.10	5.94	2.42	33.00	9.37	5.2	0
	2.40	7.301	5.73	0	2.12	258.0	42.50	5.94	2.41	34.30	9.71	5.2	0
	2.45	7.445	5.84	0	2.12	262.0	43.30	5.94	2.41	35.00	9.88	5.2	0
	2.50	7.589	5.96	0	2.12	267.0	44.00	5.93	2.41	35.60	10.00	5.2	0
	2.60	7.876	6.18	0	2.12	277.0	45.50	5.93	2.40	36.90	10.40	5.2	0
	2.65	8.018	6.29	0	2.12	281.0	46.20	5.92	2.40	37.50	10.50	5.2	0
	2.70	8.161	6.41	0	2.12	286.0	46.90	5.92	2.40	38.10	10.70	5.2	0

TIS 1228-2561 LIP CHANNEL STEEL

Diamension	Thickness	Cross section area	Weigth	Center of Gravity		Secondary Moment of Area		Radius of Gyration		Modulus of Section		Center of shear	
mm	mm	cm^2	kg/m	cm		cm^4		cm		cm^3		cm	
H x A x C	t	a		Cx	Cy	Ix	Iy	ix	iy	Zx	Zy	Sx	Sy
150x65x20	2.80	8.445	6.63	0	2.12	295.0	48.30	5.92	2.39	39.40	11.00	5.2	0
	2.85	8.586	6.74	0	2.12	300.0	49.00	5.91	2.39	40.00	11.20	5.2	0
	2.90	8.727	6.85	0	2.12	305.0	49.70	5.91	2.39	40.60	11.30	5.2	0
	3.00	9.008	7.07	0	2.11	314.0	51.10	5.90	2.38	41.90	11.70	5.2	0
	3.10	9.288	7.29	0	2.11	323.0	52.50	5.90	2.38	43.10	12.00	5.2	0
	3.20	9.567	7.51	0	2.11	332.0	53.80	5.89	2.37	44.30	12.20	5.1	0
	3.30	9.844	7.73	0	2.11	341.0	55.10	5.88	2.37	45.50	12.60	5.1	0
	3.40	10.120	7.94	0	2.11	350.0	56.40	5.88	2.36	46.60	12.80	5.1	0
	3.50	10.395	8.16	0	2.11	359.0	57.70	5.87	2.36	47.80	13.10	5.1	0
	3.60	10.668	8.37	0	2.11	367.0	58.90	5.87	2.35	49.00	13.40	5.1	0
	3.70	10.940	8.59	0	2.11	376.0	60.10	5.86	2.34	50.10	13.70	5.1	0
	3.80	11.211	8.80	0	2.11	384.0	61.30	5.85	2.34	51.20	14.00	5.1	0
	3.90	11.480	9.01	0	2.11	393.0	62.50	5.85	2.33	52.40	14.20	5.1	0
	4.00	11.750	9.22	0	2.11	401.0	63.70	5.84	2.33	53.50	14.50	5.0	0
	4.10	12.015	9.43	0	2.11	409.0	64.80	5.84	2.32	54.60	14.80	5.0	0
	4.20	12.280	9.64	0	2.11	417.0	65.90	5.83	2.32	55.70	15.00	5.0	0
	4.30	12.544	9.85	0	2.11	425.0	67.00	5.82	2.31	56.70	15.30	5.0	0
	4.40	12.807	10.05	0	2.10	433.0	68.10	5.82	2.31	57.80	15.50	5.0	0
	4.50	13.069	10.26	0	2.10	441.0	69.20	5.81	2.30	58.90	15.70	5.0	0
150x75x20	1.60	5.272	4.14	0	2.52	195.0	42.00	6.08	2.82	26.00	8.44	6.1	0
	1.70	5.590	4.39	0	2.52	206.0	44.40	6.08	2.82	27.50	8.92	6.1	0
	1.80	5.907	4.64	0	2.52	218.0	46.70	6.07	2.81	29.00	9.38	6.1	0
	1.85	6.065	4.76	0	2.52	223.0	47.90	6.07	2.81	29.80	9.62	6.1	0
	1.90	6.223	4.88	0	2.52	229.0	49.00	6.07	2.81	30.50	9.85	6.1	0
	2.00	6.537	5.13	0	2.52	240.0	51.30	6.06	2.80	32.00	10.30	6.1	0
	2.05	6.694	5.25	0	2.52	246.0	52.40	6.06	2.80	32.80	10.50	6.1	0
	2.10	6.850	5.38	0	2.52	251.0	53.50	6.05	2.80	33.50	10.80	6.1	0
	2.20	7.162	5.62	0	2.52	262.0	55.80	6.05	2.79	34.90	11.20	6.1	0
	2.25	7.317	5.74	0	2.52	268.0	56.90	6.05	2.79	35.70	11.40	6.1	0
	2.30	7.472	5.87	0	2.52	273.0	57.90	6.04	2.78	36.40	11.60	6.1	0
	2.40	7.781	6.11	0	2.52	284.0	60.10	6.04	2.78	37.80	12.10	6.1	0
	2.45	7.935	6.23	0	2.52	289.0	61.20	6.04	2.78	38.50	12.30	6.1	0
	2.50	8.089	6.35	0	2.52	294.0	62.20	6.03	2.77	39.20	12.50	6.1	0
	2.60	8.396	6.59	0	2.52	305.0	64.30	6.03	2.77	40.70	12.90	6.1	0
	2.65	8.548	6.71	0	2.52	310.0	65.40	6.02	2.77	41.40	13.10	6.1	0
	2.70	8.701	6.83	0	2.52	315.0	66.40	6.02	2.76	42.10	13.30	6.1	0
	2.80	9.005	7.07	0	2.52	326.0	68.50	6.02	2.76	43.40	13.70	6.1	0
	2.85	9.156	7.19	0	2.51	331.0	69.50	6.01	2.75	44.10	13.90	6.1	0

TIS 1228-2561 LIP CHANNEL STEEL

Diamension	Thickness	Cross section area	Weigth	Center of Gravity		Secondary Moment of Area		Radius of Gyration		Modulus of Section		Center of shear	
mm	mm	cm^2	kg/m	cm		cm^4		cm		cm^3		cm	
H x A x C	t	a		Cx	Cy	Ix	Iy	ix	iy	Zx	Zy	Sx	Sy
150x75x20	2.90	9.307	7.31	0	2.51	336.0	70.50	6.01	2.75	44.80	14.10	6.1	0
	3.00	9.608	7.54	0	2.51	346.0	72.50	6.00	2.75	46.20	14.50	6.1	0
	3.10	9.908	7.78	0	2.51	356.0	74.50	6.00	2.74	47.50	14.90	6.1	0
	3.20	10.207	8.01	0	2.51	366.0	76.40	5.99	2.74	48.90	15.30	6.1	0
	3.30	10.504	8.25	0	2.51	376.0	78.30	5.99	2.73	50.20	15.70	6.0	0
	3.40	10.800	8.48	0	2.51	386.0	80.20	5.98	2.72	51.50	16.10	6.0	0
	3.50	11.095	8.71	0	2.51	396.0	82.00	5.97	2.72	52.80	16.40	6.0	0
	3.60	11.388	8.94	0	2.51	406.0	83.90	5.97	2.71	54.10	16.80	6.0	0
	3.70	11.680	9.17	0	2.51	415.0	85.70	5.96	2.71	55.40	17.20	6.0	0
	3.80	11.971	9.40	0	2.51	425.0	87.50	5.96	2.70	56.60	17.50	6.0	0
	3.90	12.260	9.62	0	2.51	434.0	89.20	5.95	2.70	57.90	17.90	6.0	0
	4.00	12.550	9.85	0	2.51	445.0	91.00	5.95	2.69	59.30	18.20	5.8	0
	4.10	12.835	10.08	0	2.50	453.0	92.60	5.94	2.69	60.40	18.50	6.0	0
	4.20	13.120	10.30	0	2.50	462.0	94.30	5.93	2.68	61.60	18.90	6.0	0
	4.30	13.404	10.52	0	2.50	471.0	95.90	5.93	2.68	62.80	19.20	6.0	0
	4.40	13.687	10.74	0	2.50	480.0	97.60	5.92	2.67	64.00	19.50	6.0	0
	4.50	13.970	11.00	0	2.50	489.0	99.20	5.92	2.66	65.20	19.80	6.0	0
150x75x25	1.60	5.432	4.26	0	2.67	199.0	45.70	6.06	2.90	26.60	9.46	6.5	0
	1.70	5.760	4.52	0	2.67	211.0	48.30	6.05	2.90	28.20	10.00	6.5	0
	1.80	6.087	4.78	0	2.67	223.0	50.90	6.05	2.89	29.70	10.50	6.5	0
	1.85	6.250	4.91	0	2.67	228.0	52.10	6.05	2.89	30.50	10.80	6.5	0
	1.90	6.413	5.03	0	2.67	234.0	53.40	6.04	2.89	31.20	11.00	6.5	0
	2.00	6.737	5.29	0	2.67	246.0	55.90	6.04	2.88	32.80	11.60	6.5	0
	2.05	6.899	5.42	0	2.67	251.0	57.10	6.04	2.88	33.50	11.80	6.5	0
	2.10	7.060	5.54	0	2.67	257.0	58.40	6.03	2.88	34.30	12.10	6.5	0
	2.20	7.382	5.79	0	2.67	268.0	60.80	6.03	2.87	35.80	12.60	6.5	0
	2.25	7.542	5.92	0	2.66	274.0	62.00	6.02	2.87	36.50	12.80	6.5	0
	2.30	7.702	6.05	0	2.66	279.0	63.20	6.02	2.87	37.20	13.10	6.5	0
	2.40	8.021	6.30	0	2.66	290.0	65.60	6.02	2.86	38.70	13.60	6.5	0
	2.45	8.180	6.42	0	2.66	296.0	66.80	6.01	2.86	39.40	13.80	6.5	0
	2.50	8.339	6.55	0	2.66	301.0	68.00	6.01	2.85	40.20	14.10	6.5	0
	2.60	8.656	6.79	0	2.66	312.0	70.30	6.00	2.85	41.60	14.50	6.5	0
	2.65	8.813	6.92	0	2.66	317.0	71.40	6.00	2.85	42.30	14.80	6.5	0
	2.70	8.971	7.04	0	2.66	323.0	72.60	6.00	2.84	43.00	15.00	6.5	0
	2.80	9.285	7.29	0	2.66	334.0	74.90	5.99	2.84	44.50	15.50	6.4	0
	2.85	9.441	7.41	0	2.66	339.0	76.00	5.99	2.84	45.20	15.70	6.4	0
	2.90	9.597	7.53	0	2.66	344.0	77.10	5.99	2.83	45.90	15.90	6.4	0
	3.00	9.908	7.78	0	2.66	355.0	79.30	5.98	2.83	47.30	16.40	6.4	0

TIS 1228-2561 LIP CHANNEL STEEL

Diamension	Thickness	Cross section area	Weigth	Center of Gravity		Secondary Moment of Area		Radius of Gyration		Modulus of Section		Center of shear	
mm	mm	cm^2	kg/m	cm		cm^4		cm		cm^3		cm	
H x A x C	t	a		Cx	Cy	Ix	Iy	ix	iy	Zx		Sx	Sy
150x75x25	3.10	10.218	8.02	0	2.66	365.0	81.50	5.98	2.82	48.70	16.80	6.4	0
	3.20	10.530	8.27	0	2.66	375.0	83.60	5.97	2.82	50.00	17.30	6.4	0
	3.30	10.834	8.50	0	2.66	386.0	85.80	5.97	2.81	51.40	17.70	6.4	0
	3.40	11.140	8.74	0	2.66	396.0	87.90	5.96	2.81	52.80	18.10	6.4	0
	3.50	11.445	8.98	0	2.66	406.0	89.90	5.95	2.80	54.10	18.60	6.4	0
	3.60	11.748	9.22	0	2.66	416.0	92.00	5.95	2.80	55.40	19.00	6.4	0
	3.70	12.050	9.46	0	2.66	426.0	94.00	5.94	2.79	56.70	19.40	6.4	0
	3.80	12.351	9.70	0	2.65	435.0	96.00	5.94	2.79	58.00	19.80	6.3	0
	3.90	12.650	9.93	0	2.65	445.0	97.90	5.93	2.78	59.30	20.20	6.3	0
	4.00	12.950	10.20	0	2.65	455.0	99.80	5.93	2.78	60.60	20.60	6.3	0
	4.10	13.245	10.40	0	2.65	464.0	102.00	5.92	2.77	61.90	21.00	6.3	0
	4.20	13.540	10.63	0	2.65	474.0	104.00	5.91	2.77	63.20	21.40	6.3	0
	4.30	13.834	10.86	0	2.65	483.0	105.00	5.91	2.76	64.40	21.80	6.3	0
	4.40	14.127	11.09	0	2.65	492.0	107.00	5.90	2.76	65.60	22.10	6.3	0
	4.50	14.420	11.30	0	2.65	501.0	109.00	5.90	2.75	66.90	22.50	6.3	0
200x75x20	2.40	8.981	7.05	0	2.20	552.0	66.10	7.84	2.71	55.20	12.50	5.5	0
	2.45	9.160	7.19	0	2.20	563.0	67.30	7.84	2.71	56.30	12.70	5.5	0
	2.50	9.339	7.33	0	2.20	573.0	68.40	7.84	2.71	57.30	12.90	5.5	0
	2.60	9.696	7.61	0	2.20	594.0	70.80	7.83	2.70	59.40	13.30	5.5	0
	2.65	9.873	7.75	0	2.20	605.0	71.90	7.83	2.70	60.50	13.60	5.5	0
	2.70	10.051	7.89	0	2.20	615.0	73.10	7.82	2.70	61.50	13.80	5.5	0
	2.80	10.405	8.17	0	2.20	636.0	75.30	7.82	2.69	63.60	14.20	5.5	0
	2.85	10.581	8.31	0	2.20	646.0	76.40	7.81	2.69	64.60	14.40	5.5	0
	2.90	10.757	8.44	0	2.19	656.0	77.60	7.81	2.69	65.60	14.60	5.4	0
	3.00	11.108	8.72	0	2.19	676.0	79.80	7.80	2.68	67.60	15.00	5.4	0
	3.10	11.458	8.99	0	2.19	697.0	81.90	7.80	2.67	69.70	15.40	5.4	0
	3.20	11.810	9.27	0	2.19	716.0	84.10	7.79	2.67	71.60	15.80	5.4	0
	3.30	12.154	9.54	0	2.19	736.0	86.20	7.78	2.66	73.60	16.20	5.4	0
	3.40	12.500	9.81	0	2.19	756.0	88.30	7.78	2.66	75.60	16.60	5.4	0
	3.50	12.845	10.08	0	2.19	776.0	90.30	7.77	2.65	77.60	17.00	5.4	0
	3.60	13.188	10.35	0	2.19	795.0	92.30	7.76	2.65	79.50	17.40	5.4	0
	3.70	13.530	10.62	0	2.19	814.0	94.30	7.76	2.64	81.40	17.80	5.4	0
	3.80	13.871	10.89	0	2.19	833.0	96.30	7.75	2.63	83.30	18.10	5.4	0
	3.90	14.210	11.15	0	2.19	852.0	98.20	7.74	2.63	85.20	18.50	5.4	0
	4.00	14.550	11.40	0	2.19	871.0	100.00	7.74	2.62	87.10	18.90	5.3	0
	4.10	14.885	11.68	0	2.19	890.0	102.00	7.73	2.62	89.00	19.20	5.3	0
	4.20	15.220	11.95	0	2.19	908.0	104.00	7.72	2.61	90.80	19.50	5.3	0
	4.30	15.554	12.21	0	2.19	927.0	106.00	7.72	2.61	92.70	19.90	5.3	0
	4.40	15.887	12.47	0	2.19	945.0	107.00	7.71	2.60	94.50	20.20	5.3	0
	4.50	16.220	12.70	0	2.19	963.0	109.00	7.71	2.60	96.30	20.60	5.3	0

TIS 1228-2561 LIP CHANNEL STEEL

Diamension	Thickness	Cross section area	Weigth	Center of Gravity		Secondary Moment of Area		Radius of Gyration		Modulus of Section		Center of shear	
mm	mm	cm^2	kg/m	cm		cm^4		cm		cm^3		cm	
H x A x C	t	a		Cx	Cy	Ix	Iy	ix	iy	Zx	Zy	Sx	Sy
200x75x25	2.40	9.221	7.24	0	2.33	567.0	72.40	7.84	2.80	56.70	14.00	5.9	0
	2.45	9.405	7.38	0	2.33	578.0	73.70	7.84	2.80	57.80	14.30	5.9	0
	2.50	9.589	7.53	0	2.33	588.0	75.00	7.83	2.80	58.80	14.50	5.9	0
	2.60	9.956	7.82	0	2.33	610.0	77.50	7.83	2.79	61.00	15.00	5.8	0
	2.65	10.138	7.96	0	2.33	621.0	78.80	7.82	2.79	62.10	15.30	5.8	0
	2.70	10.321	8.10	0	2.33	631.0	80.10	7.82	2.79	63.10	15.50	5.8	0
	2.80	10.685	8.39	0	2.33	652.0	82.60	7.81	2.78	65.20	16.00	5.8	0
	2.85	10.866	8.53	0	2.33	663.0	83.80	7.81	2.78	66.30	16.20	5.8	0
	2.90	11.047	8.67	0	2.33	674.0	85.10	7.81	2.78	67.40	16.50	5.8	0
	3.00	11.408	8.96	0	2.33	694.0	87.50	7.80	2.77	69.40	16.90	5.8	0
	3.10	11.768	9.24	0	2.33	715.0	89.90	7.80	2.76	71.50	17.40	5.8	0
	3.20	12.130	9.52	0	2.33	736.0	92.30	7.70	2.76	73.60	17.80	5.7	0
	3.30	12.484	9.80	0	2.33	756.0	94.70	7.78	2.75	75.60	18.30	5.7	0
	3.40	12.840	10.08	0	2.33	776.0	97.00	7.78	2.75	77.60	18.80	5.7	0
	3.50	13.195	10.36	0	2.33	797.0	99.30	7.77	2.74	79.70	19.20	5.7	0
	3.60	13.548	10.64	0	2.33	817.0	102.00	7.76	2.74	81.70	19.60	5.7	0
	3.70	13.900	10.91	0	2.33	836.0	104.00	7.76	2.73	83.60	20.10	5.7	0
	3.80	14.251	11.19	0	2.33	856.0	106.00	7.75	2.73	85.60	20.50	5.7	0
	3.90	14.600	11.46	0	2.33	876.0	108.00	7.74	2.72	87.60	20.90	5.7	0
	4.00	14.950	11.70	0	2.32	895.0	110.00	7.74	2.72	89.50	21.30	5.7	0
	4.10	15.295	12.01	0	2.32	914.0	112.00	7.73	2.71	91.40	21.70	5.7	0
	4.20	15.640	12.28	0	2.32	933.0	114.00	7.73	2.71	93.30	22.10	5.7	0
	4.30	15.984	12.55	0	2.32	952.0	117.00	7.72	2.70	95.20	22.50	5.7	0
	4.40	16.327	12.82	0	2.32	971.0	119.00	7.71	2.69	97.10	22.90	5.6	0
	4.50	16.670	13.10	0	2.32	990.0	121.00	7.61	2.69	99.00	23.30	5.6	0

FLAT BAR

Metric Size

Width mm	Thickness (mm) / Unit Weight (Kg / m)							
	2.45	2.65	2.80	3.00	4.00	4.50	5.00	6.00
25	0.48	0.52	0.55	0.59	0.79	0.88	0.98	1.18
30	0.58	0.62	0.66	0.71	0.94	1.06	1.18	1.41
40	0.77	0.83	0.88	0.94	1.26	1.41	1.57	1.88
50	0.96	1.04	1.10	1.18	1.57	1.77	1.96	2.36
60	1.15	1.25	1.32	1.41	1.88	2.12	2.36	2.83
65	1.25	1.35	1.43	1.53	2.04	2.30	2.55	3.06
75	1.44	1.56	1.65	1.77	2.36	2.65	2.94	3.53
100	1.92	2.08	2.20	2.36	3.14	3.53	3.93	4.71

Mechanical Properties		
Yield (min.) N/mm²	Tensile (min.) N/mm²	Elongation % (min.)
235	382	21

Chemical Composition		
C max. %	P max. %	S max. %
0.25	0.05	0.05

STEEL PLATE

Metric Size

Thickness	Unit Weight	Width x Length ft² / Width x Length mm²		Thickness	Unit Weight	Width x Length ft² / Width x Length mm²	
		4 x 8	5 x 10			4 x 8	5 x 10
mm	Kg /m²	1219 x 2438	1524 x 3048	mm	Kg /m²	1219 x 2438	1524 x 3048
1.00	7.85	23.3	36.5	6.00	47.10	140.0	218.8
1.20	9.42	28.0	43.8	6.50	51.03	151.6	237.0
1.40	10.99	32.7	51.1	7.00	54.95	163.3	255.3
1.60	12.56	37.3	58.3	7.40	58.09	172.6	269.8
1.80	14.13	42.0	65.6	7.50	58.88	175.0	273.5
2.00	15.70	46.7	72.9	8.00	62.80	186.6	291.7
2.30	18.06	53.7	83.9	8.50	66.73	198.3	309.9
2.50	19.62	58.3	91.2	9.00	70.65	210.0	328.2
2.60	20.41	60.7	94.8	9.50	74.58	221.6	346.4
2.80	21.98	65.3	102.1	10.00	78.50	233.3	364.6
2.90	22.77	67.7	105.7	10.50	82.43	245.0	382.9
3.00	23.55	70.0	109.4	11.00	86.35	256.6	401.1
3.20	25.12	74.7	116.7	11.50	90.28	268.3	419.3
3.40	26.69	79.3	124.0	12.00	94.20	280.0	437.6
3.50	27.48	81.7	127.6	12.50	98.13	291.6	455.8
3.70	29.05	86.3	134.9	13.00	102.05	303.3	474.0
4.00	31.40	93.3	145.9	13.50	105.98	314.9	492.3
4.30	33.76	100.3	156.8	14.00	109.90	326.6	510.5
4.50	35.33	105.0	164.1	14.50	113.83	338.3	528.7
5.00	39.25	116.6	182.3	15.00	117.75	349.9	547.0
5.30	41.61	123.6	193.3	15.50	121.68	361.6	565.2
5.50	43.18	128.3	200.6	16.00	125.60	373.3	583.4

Tensile strength and elongation					Chemical composition	
GRADES	Yield (min.) Up to 16 mm	Tensile (min.) Mpa	Thickness mm	Elongation (min.)	P max. %	S max. %
SS330	205	330 to 430	≤ 5	26	0.05	0.05
			> 5 to 16	21		
SS400	245	400 to 510	≤ 5	21	0.05	0.05
			> 5 to 16	17		

ตารางสรุปผลิตภัณฑ์ตามมาตรฐานสากล

ประเภท	การใช้งาน	มาตรฐานผลิตภัณฑ์		ชนิดท่อ			
CARBON STEEL TUBES FOR GENERAL STRUCTURAL PURPOSES				กลมดำ	ท่อชุบ	ผีนผ้า	จัตุรัส
สำหรับงานโครงสร้าง	งานวิศวกรรมโยธา, งานสถาปัตยกรรม, งานเสาเข็ม, นั่งร้าน, งานโครงถัก, เสา, งานอุตสาหกรรมและงานโครงสร้างต่างๆ ฯลฯ	ASTM A500	Grade A, B, C	√		√	√
		AS 1163	C250, C350, C450	√		√	√
		BS 1139	Scaffolding	√	√		
		EN 10219	235, 275J0H, 355J2H	√		√	√
		EN 39: 2001	S235GT	√	√		
		JIS G3444	STK290, STK400 STK490, STK500	√			
		JIS G3466	STKR400, STKR490			√	√
		มอก.107	STK400, STKR400	√	√	√	√
		GI	SGCC, SGHC, SGMCC		√	√	√

CARBON STEEL TUBES FOR ORDINARY USES				กลมดำ	ท่อชุบ
สำหรับงานระบบ	งานระบบสุขาภิบาล, ดับเพลิง, ท่อน้ำเย็นเครื่องปรับอากาศ, ระบบส่งน้ำการเกษตร, ระบบบำบัดน้ำเสีย, ระบบน้ำประปาภายในอาคาร ฯลฯ	ASTM A53	Grade A, B	√	√
		EN 10255 (แทน BS1387)	HEAVY	√	√
			MEDIUM	√	√
			LIGHT	√	√
		JIS G3452	SGP	√	√
		JIS G3454	STPG370, STPG410	√	
		มอก.276	ASTM A53A, STPG370, S195T	√	√

HOT ROLLED STRUCTURE STEEL SECTION				Lip channel Steel
เหล็กโครงสร้างรูปพรรณขึ้นรูปเย็นตัวซีมีขอบ	โครงหลังคาบ้านพักอาศัย, โรงงานอุตสาหกรรม ฯลฯ	JIS G3350	SSCS330, SSCS400	เหล็กรูปตัวซีมีขอบ
		มอก.1228		

บริษัท ยูไนเต็ด สตีล ไพพ์ จำกัด
United Steel Pipe Co., Ltd.