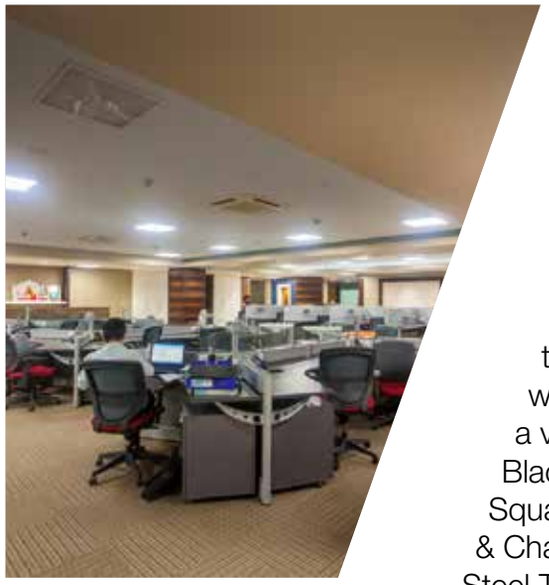
MAINAWATI

S T E E L

From The Chairman's Desk

" The journey of Mainawati was initiated very humbly in 1995 with a plant in Duhabi – Bhalua Municipality of Sunsari district (Nepal) for manufacturing ERW Steel Black & Galvanized Pipes targeting entire domestic market. With competettive pricing, consistenet quality and diversified products we are regarded as a leader in steel tubes and fabricated items. The motivated & skilled workforce is our strength."



Mainawati Steel

Mainawati Steel Industries is an industrial unit under Vishal Group. Vishal Group ltd. Is a leading commercial house of Nepal with a number of industrial & business units. Mainawati Steel Industries Pvt. Ltd. Is managed by board of directors which is headed by a chairman. Management of Mainawati Steel Industries has a long experience in industry and trading that is amply reflected in the proficiency by which the organization is being presently run. Mainawati Steel Industries was established in the year 1995. Ever since its inception, the company, adhering to the strict and rigorous norms that come with quality and consistent performance, has earned the status of becoming the country's leading manufacturer and exporter of a wide range of steel products. These products cover a variety of construction materials that include Steel Black Pipes, Plates, Galvanized Pipes, Steel Hollow Squares, Rectangular Sections, Cold Formed Angles & Channels, Steel Tubular and Telescopic Poles and Steel Towers which all conform to domestic standard norms and international specifications. From the time of its initiation, Mainawati Steel Industries has been living up to the challenging demands of supplying to local as well as export markets. The company's share in the local markets has witnessed a rising trend over the years and has helped the country by reducing dependence on costly imports and has, retroactively, saved precious foreign exchange.

Our Mission

Mainawati Steel's Mission is to create a steel company which can deliver diversified products of steel under one roof with high quality standards at the most reasonable and affordable price to all its consumer.

Our Vision

Mainawati Steel will become one of the largest G.I. Pipes and other necessary fabricated steel items in terms of volume and diversify product and will be recognized for its professional & caring management. We shall fulfill the needs & expectation of shareholders, customer and community (Society).

Quality Policy

Mainawati Steel Industries has made quality an essential part of its business. We shall manufacture & market high quality tubes and fabrication works that not only meet customer requirements but exceed their expectation. Continual productivity improvements is what we will strive for by constantly improving quality of our product and reducing rework, rejection & wastage. Trained & motivated workforce will be our strength which will lead us towards achieving our quality policy & objectives.

Mr. Trilok Agrawal, Chairman of Mainawati Steel Industries P. Ltd. is receiving NS Quality Award from Rt. Hon'ble Prime Minister Mr. Lokendra Bahadur Chanda in a special Function organised on the occasion of 33rd World Quality Day in November 21st, 2002. This News was published in the Gorkhapatra, the first National Daily of Nepal as main News.

गोरखापत्र

वर्ष १०२, अङ्क १९२ काठमाडौं २०५९ साल मङ्सिर ५ गते बिहीवार मार्ग कृष्ण द्वितीया

प्रधानमन्त्री लोकेन्द्रबहादुर चन्द वेपाल गुणस्तर तथा नापतौल विभागद्वारा सुधार आयोजित ३३औं विश्व गुणस्तर दिवस तथा एन.एस. क्वालिटी अवार्ड वितरण समारोहमा मैनावती स्टिल इन्डष्ट्रिज प्रा.लि. टुवारी, सुनसरीका अध्यक्ष त्रिलोकचन्द अग्रवाललाई एन.एस. क्वालिटी अवार्ड-२००२ प्रदान गर्नुहुदै ।

तस्वीर : भीम गुरुङ, गोरखापत्र

ACHIEVEMENT

Government of Nepal
Ministry of Industry

NEPAL BUREAU OF STANDARDS AND METROLOGY

Kathmandu

NS Quality Award-2014

This Award has been presented to

M/s MAINAWATI STEEL IND. PVT. LTD, DUHABI, SUNSARI

for its best performance on Quality Production of

Marked G.I. PIPE (NS: 199)

(BISHWOBABU PUDASAINI)
Director General
NBSM

(JAYA M. KHANAL)
Secretary
Ministry of Industry

(MAHESH BASNET)
Minister
Ministry of Industry

Date.: April 21, 2015

Laurels And Awards: For Perseverance And Diligence

Owing to the superior and consistent quality of its process & Products, the company has been recognized for adhering to the following Standards & Certificatins:

- NS (Nepal Bureau of Standard)

- ISI (Bureau of Indian Standard)

- ISO 9001:2000 Accredited (International Standard Orgazination)

In the days to come, the Mainawati Steel Industries Pvt. Ltd. will continue to look beyond the horizons and will deliver nothing less than the best for its ever-growing clientele.

BRIDGE

Suspension Bridge

- Suspended
- Suspention
- Trus

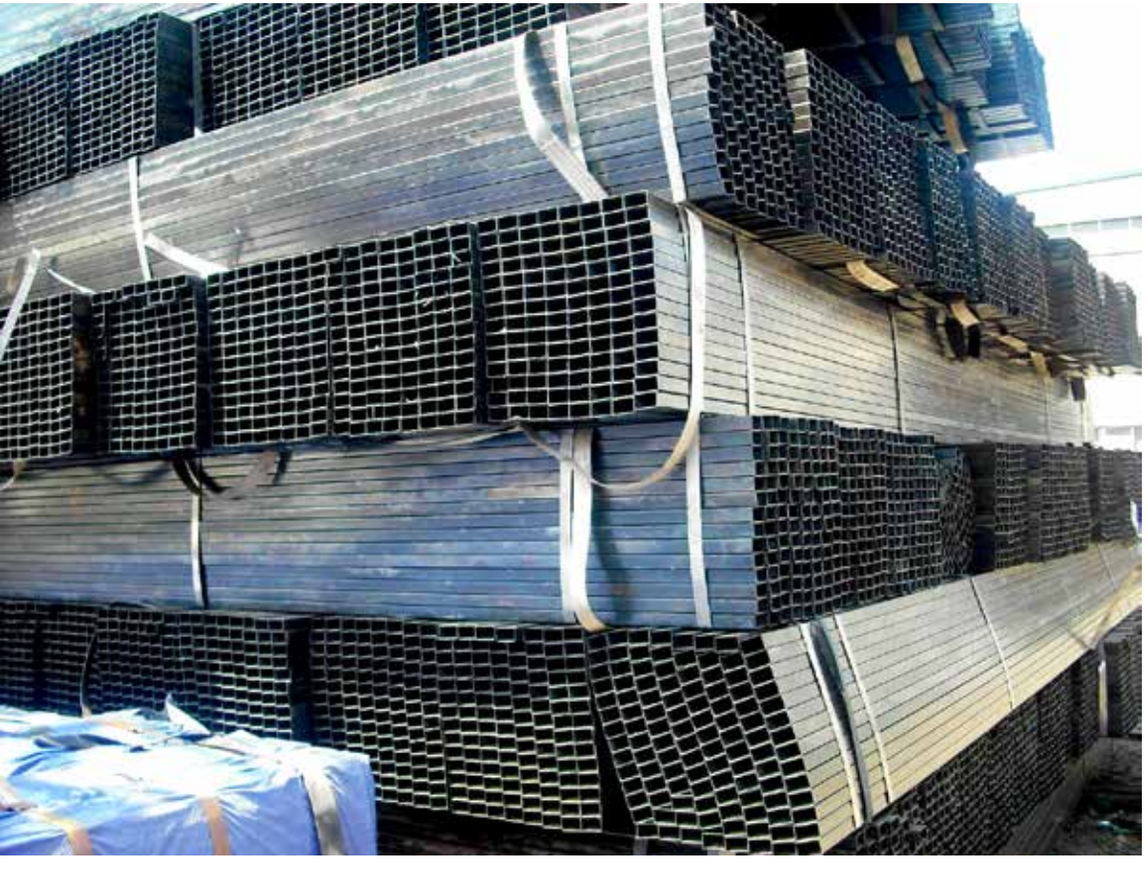
Motorable TrussGirdar

SUSPENSION BRIDGE

MOTORABLE BRIDGE

PIPE

RECTANGULAR HOLLOW SECTION (RECTANGULAR PIPE)



Manufactured using finest quality of steel, Square and Rectangular Pipes are extensively used in welded steel frames which experience loads from multiple directions. The shapes of pipes suit multiple axis loading with having uniform geometry along with two or more cross section axes. This enhances the uniform strength of these pipes, making them better choice for columns. These are manufactured through the process where flat steel plate is slowly changed in shape to achieve round where the edges are presented to weld. Then, the edges are welded together to form the master tube. This master tube, which is also referred as mother tube goes through a sequence of shaping stands, which form the final square or rectangular shape.

GENERAL APPLICATIONS

- IIndustrial Sheds
- Steel Furniture
- Bridges
- Low cost Steel Housing
- Towers
- Airports
- Tripper/Trailer body
- Bus Body Structures
- Cranes
- Material Storage Racks
- Road Dividers
- Railway Wagon / Coaches
- Hoardings
- Machine Components & Frames
- Pre-fabricated House

Rectangular Hollow Section (RHS) as per IS 4923 : 1997

Depth	Width	Thickness	Weight	Area of Section	Moment of Inertia		Radius of Gyration		Elastic Modulus		Plastic Modulus	
					X - X	Y- Y	X - X	Y- Y	X - X	Y- Y	X - X	Y- Y
mm	mm	mm	Kg./Mtr.	cm^2	cm^4	cm^4	cm	cm	cm^3	cm^3	cm^3	cm^3
40.0	25.0	1.60	1.50	1.91	4.02	1.93	1.45	1.01	2.01	1.55	2.49	1.80
40.0	25.0	1.80	1.67	2.13	4.41	2.11	1.44	1.00	2.20	1.69	2.75	1.98
40.0	25.0	2.00	1.83	2.34	4.77	2.28	1.43	0.99	2.39	1.82	2.99	2.16
40.0	25.0	2.20	2.00	2.54	5.11	2.43	1.42	0.98	2.55	1.95	3.23	2.32
40.0	25.0	2.40	2.15	2.74	5.42	2.58	1.41	0.97	2.71	2.06	3.45	2.48
40.0	25.0	2.70	2.38	3.03	5.85	2.77	1.39	0.96	2.93	2.21	3.77	2.70
40.0	25.0	3.00	2.60	3.31	6.24	2.94	1.37	0.94	3.12	2.35	4.06	2.90
40.0	25.0	3.20	2.74	3.49	6.46	3.04	1.36	0.93	3.23	2.43	4.24	3.03
50.0	25.0	1.60	1.75	2.23	7.02	2.37	1.77	1.03	2.81	1.90	3.53	2.17
50.0	25.0	1.80	1.95	2.49	7.72	2.60	1.76	1.02	3.09	2.08	3.90	2.40
50.0	25.0	2.00	2.15	2.74	8.38	2.81	1.75	1.01	3.35	2.25	4.26	2.62
50.0	25.0	2.20	2.34	2.98	9.01	3.01	1.74	1.00	3.60	2.41	4.61	2.82
50.0	25.0	2.40	2.53	3.22	9.60	3.19	1.73	1.00	3.84	2.55	4.94	3.02
50.0	25.0	2.70	2.80	3.57	10.42	3.44	1.71	0.98	4.17	2.75	5.42	3.30
50.0	25.0	3.00	3.07	3.91	11.17	3.67	1.69	0.97	4.47	2.93	5.86	3.56
50.0	25.0	3.20	3.24	4.13	11.63	3.80	1.68	0.96	4.65	3.04	6.14	3.73
66.0	33.0	1.60	2.35	3.00	16.85	5.74	2.37	1.38	5.11	3.48	6.34	3.92
66.0	33.0	1.80	2.63	3.35	18.64	6.33	2.36	1.37	5.65	3.84	7.04	4.35
66.0	33.0	2.00	2.90	3.70	20.37	6.90	2.35	1.37	6.17	4.18	7.73	4.77
66.0	33.0	2.20	3.17	4.04	22.03	7.43	2.34	1.36	6.67	4.51	8.40	5.17
66.0	33.0	2.40	3.43	4.37	23.62	7.95	2.32	1.35	7.16	4.82	9.05	5.56
66.0	33.0	2.70	3.82	4.87	25.89	8.67	2.31	1.33	7.85	5.25	9.99	6.13
66.0	33.0	3.00	4.20	5.35	28.02	9.34	2.29	1.32	8.49	5.66	10.88	6.66
66.0	33.0	3.20	4.44	5.66	29.36	9.75	2.28	1.31	8.90	5.91	11.46	7.01
80.0	40.0	1.60	2.88	3.67	30.71	10.52	2.89	1.69	7.68	5.26	9.47	5.87
80.0	40.0	1.80	3.22	4.11	34.08	11.64	2.88	1.68	8.52	5.82	10.55	6.53
80.0	40.0	2.00	3.56	4.54	37.35	12.72	2.87	1.67	9.34	6.36	11.61	7.17
80.0	40.0	2.20	3.89	4.96	40.53	13.76	2.86	1.67	10.13	6.88	12.64	7.80
80.0	40.0	2.40	4.22	5.38	43.60	14.77	2.85	1.66	10.90	7.38	13.65	8.42
80.0	40.0	2.70	4.71	6.00	48.03	16.20	2.83	1.64	12.01	8.10	15.12	9.31
80.0	40.0	3.00	5.19	6.61	52.25	17.55	2.81	1.63	13.06	8.78	16.54	10.16
80.0	40.0	3.20	5.50	7.01	54.94	18.41	2.80	1.62	13.73	9.21	17.46	10.71

Depth	Width	Thickness	Weight	Area of Section	Moment of Inertia		Radius of Gyration		Elastic Modulus		Plastic Modulus	
					X - X	Y- Y	X - X	Y- Y	X - X	Y- Y	X - X	Y- Y
mm	mm	mm	Kg./Mtr.	cm^2	cm^4	cm^4	cm	cm	cm^3	cm^3	cm^3	cm^3
96.0	48.0	1.60	3.49	4.44	54.03	18.57	3.49	2.05	11.26	7.74	13.82	8.58
96.0	48.0	1.80	3.90	4.97	60.11	20.61	3.48	2.04	12.52	8.59	15.42	9.56
96.0	48.0	2.00	4.31	5.50	66.04	22.59	3.47	2.03	13.76	9.41	17.00	10.52
96.0	48.0	2.20	4.72	6.02	71.82	24.51	3.45	2.02	14.96	10.21	18.54	11.47
96.0	48.0	2.40	5.13	6.53	77.46	26.38	3.44	2.01	16.14	10.99	20.06	12.40
96.0	48.0	2.70	5.73	7.30	85.65	29.07	3.43	2.00	17.84	12.11	22.28	13.75
96.0	48.0	3.00	6.32	8.05	93.52	31.64	3.41	1.98	19.48	13.18	24.44	15.06
96.0	48.0	3.40	7.09	9.03	103.54	34.87	3.39	1.96	21.57	14.53	27.23	16.75
122.0	61.0	1.60	4.46	5.69	113.02	38.99	4.46	2.62	18.53	12.78	22.64	14.07
122.0	61.0	1.80	5.00	6.37	126.04	43.41	4.45	2.61	20.66	14.23	25.31	15.71
122.0	61.0	2.00	5.54	7.06	138.82	47.72	4.44	2.60	22.76	15.65	27.94	17.33
122.0	61.0	2.20	6.07	7.73	151.36	51.94	4.42	2.59	24.81	17.03	30.53	18.93
122.0	61.0	2.40	6.60	8.40	163.67	56.06	4.41	2.58	26.83	18.38	33.09	20.50
122.0	61.0	2.70	7.38	9.40	181.68	62.06	4.40	2.57	29.78	20.35	36.87	22.81
122.0	61.0	3.00	8.15	10.39	199.17	67.86	4.38	2.56	32.65	22.25	40.56	25.07
122.0	61.0	3.40	9.17	11.68	221.68	75.26	4.36	2.54	36.34	24.67	45.36	28.00
145.0	82.0	2.00	6.92	8.82	255.77	106.94	5.39	3.48	35.28	26.08	42.59	28.86
145.0	82.0	2.20	7.59	9.67	279.37	111.67	5.38	3.47	38.53	28.46	46.61	31.57
145.0	82.0	2.40	8.26	10.52	302.63	126.24	5.36	3.46	41.74	30.79	50.58	34.25
145.0	82.0	2.70	9.25	11.78	336.87	140.29	5.35	3.45	46.46	34.22	56.46	38.21
145.0	82.0	3.00	10.23	13.03	370.32	153.96	5.33	3.44	51.08	37.55	62.24	42.09
145.0	82.0	3.40	11.52	14.68	413.74	171.63	5.31	3.42	57.07	41.86	69.8	47.16
145.0	82.0	3.70	12.48	15.90	445.41	184.45	5.29	3.41	61.44	44.99	75.36	50.88
145.0	82.0	4.20	14.06	17.91	496.52	205.05	5.27	3.38	68.48	50.01	84.41	56.93
145.0	82.0	4.50	14.99	19.10	526.19	216.94	5.25	3.37	72.58	52.91	89.72	60.46
145.0	82.0	4.80	15.92	20.28	555.12	228.49	5.23	3.36	76.57	55.73	94.93	63.93
172.0	92.0	2.00	8.08	10.30	416.38	159.91	6.36	3.94	48.42	34.76	58.62	38.23
172.0	92.0	2.20	8.87	11.30	455.27	174.66	6.35	3.93	52.94	37.97	64.20	41.85
172.0	92.0	2.40	9.65	12.29	493.67	189.18	6.34	3.92	57.40	41.13	69.72	45.43
172.0	92.0	2.70	10.81	13.78	550.36	210.56	6.32	3.91	64.00	45.77	77.92	50.74
172.0	92.0	3.00	11.97	15.25	605.95	231.45	6.30	3.90	70.46	50.32	85.99	55.96
172.0	92.0	3.40	13.50	17.19	678.40	258.56	6.28	3.88	78.88	56.21	96.59	62.80
172.0	92.0	3.70	14.63	18.64	731.48	278.34	6.27	3.86	85.06	60.51	104.40	67.84
172.0	92.0	4.30	16.87	21.49	834.46	316.50	6.23	3.84	97.03	68.80	119.68	77.66
172.0	92.0	4.50	17.61	22.43	867.85	328.81	6.22	3.83	100.91	71.48	124.68	80.87
172.0	92.0	4.80	18.70	23.83	917.06	346.89	6.20	3.82	106.64	75.41	132.07	85.61

Size	Wall Thickness	Area of Cross Section	Unit Weight	Moment of Inertia		Radius of Gyration SQRT ($BD^3 - bd^3$)		Section Modulus	
D X B	t	A	M	I_{xx}	I_{yy}	r_{xx}	r_{yy}	z_{xx}	z_{yy}
mm	mm	cm^2	kg/m	cm^4	cm^4	cm	cm	cm^3	cm^3
50x25	1.4	2.02	1.59	6.59	2.21	1.81	1.04	2.64	0.88
	1.6	2.30	1.80	7.42	2.47	1.80	1.04	2.97	0.99
	1.8	2.57	2.02	8.23	2.72	1.79	1.03	3.29	1.09
	2	2.84	2.23	9.01	2.96	1.78	1.02	3.60	1.18
	2.2	3.11	2.44	9.76	3.19	1.77	1.01	3.91	1.28
	2.4	3.37	2.65	10.50	3.41	1.76	1.01	4.20	1.36
	2.7	3.76	2.95	11.55	3.71	1.75	0.99	4.62	1.48
	3	4.14	3.25	12.55	4.00	1.74	0.98	5.02	1.60
80x40	1.6	3.74	2.93	31.75	10.77	2.91	1.70	7.94	2.69
	1.8	4.19	3.29	35.40	11.96	2.91	1.69	8.85	2.99
	2	4.64	3.64	38.97	13.12	2.90	1.68	9.74	3.28
	2.2	5.09	3.99	42.48	14.24	2.89	1.67	10.62	3.56
	2.4	5.53	4.34	45.92	15.34	2.88	1.67	11.48	3.83
	2.6	5.97	4.69	49.30	16.40	2.87	1.66	12.32	4.10
	2.7	6.19	4.86	50.96	16.92	2.87	1.65	12.74	4.23
	3	6.84	5.37	55.85	18.43	2.86	1.64	13.96	4.61
	3.4	7.70	6.04	62.15	20.34	2.84	1.63	15.54	5.09
96x48	1.6	4.51	3.54	55.53	18.94	3.51	2.05	11.57	3.95
	1.8	5.05	3.97	62.01	21.08	3.50	2.04	12.92	4.39
	2	5.60	4.40	68.38	23.17	3.49	2.03	14.24	4.83
	2.2	6.14	4.82	74.65	25.21	3.49	2.03	15.55	5.25
	2.4	6.68	5.25	80.82	27.20	3.48	2.02	16.84	5.67
	2.6	7.22	5.67	86.89	29.15	3.47	2.01	18.10	6.07
	2.7	7.48	5.88	89.89	30.11	3.47	2.01	18.73	6.27
	3	8.28	6.50	98.74	32.91	3.45	1.99	20.57	6.86
	3.4	9.33	7.32	110.22	36.49	3.44	1.98	22.96	7.60
122x61	2	7.16	5.62	142.62	48.66	4.46	2.61	23.38	7.98
	2.2	7.86	6.17	155.95	53.07	4.45	2.60	25.57	8.70
	2.4	8.55	6.71	169.11	57.40	4.45	2.59	27.72	9.41
	2.6	9.25	7.26	182.12	61.66	4.44	2.58	29.86	10.11
	2.7	9.59	7.53	188.56	63.75	4.43	2.58	30.91	10.45
	3	10.62	8.34	207.65	69.93	4.42	2.57	34.04	11.46
	3.4	11.98	9.41	232.54	77.91	4.41	2.55	38.12	12.77
	3.7	12.99	10.20	250.80	83.70	4.39	2.54	41.11	13.72
	4.3	15.00	11.77	286.28	94.80	4.37	2.51	46.93	15.54

SQUARE HOLLOW SECTION (SQUARE PIPE)

Manufactured using finest quality of steel, Square and Rectangular Pipes are extensively used in welded steel frames which experience loads from multiple directions. The shapes of pipes suit multiple axis loading with having uniform geometry along with two or more cross section axes. This enhances the uniform strength of these pipes, making them better choice for columns. These are manufactured through the process where flat steel plate is slowly changed in shape to achieve round where the edges are presented to weld. Then, the edges are welded together to form the master tube. This master tube, which is POLES & PIPES also referred as mother tube goes through a sequence of shaping stands, which form the final square or rectangular shape.

GENERAL APPLICATIONS

- Industrial Sheds
- Steel Furniture
- Bridges
- Low cost Steel Housing
- Towers
- Airports
- Tripper/Trailer body
- Bus Body Structures
- Cranes
- Material Storage Racks
- Road Dividers
- Railway Wagon / Coaches
- Hoardings
- Machine Components & Frames
- Pre-fabricated House

Square Hollow Section (SHS) as per IS 4923 : 1997

Depth	Width	Thick-ness	Weight	Area of Section	Moment of Inertia	Radius of Gyration	Elastic Modulus	Plastic Modulus
mm	mm	mm	Kg./Mtr.	cm^2	cm^4	cm	cm^3	cm^3
20.0	20.0	1.60	0.87	1.11	0.61	0.74	0.61	0.75
20.0	20.0	1.80	0.96	1.23	0.65	0.73	0.65	0.82
20.0	20.0	2.00	1.05	1.34	0.69	0.72	0.69	0.88
20.0	20.0	2.20	1.13	1.44	0.73	0.71	0.73	0.93
20.0	20.0	2.40	1.21	1.54	0.75	0.70	0.75	0.98
20.0	20.0	2.70	1.32	1.68	0.79	0.68	0.79	1.04
20.0	20.0	3.00	1.42	1.81	0.81	0.67	0.81	1.10
25.0	25.0	1.60	1.12	1.43	1.28	0.94	1.02	1.24
25.0	25.0	1.80	1.25	1.59	1.38	0.93	1.11	1.35
25.0	25.0	2.00	1.36	1.74	1.48	0.92	1.19	1.47
25.0	25.0	2.20	1.48	1.88	1.57	0.91	1.26	1.57
25.0	25.0	2.40	1.59	2.02	1.65	0.90	1.32	1.67
25.0	25.0	2.70	1.74	2.22	1.76	0.89	1.41	1.80
25.0	25.0	3.00	1.89	2.41	1.84	0.87	1.47	1.91
32.0	32.0	1.60	1.48	1.88	2.84	1.23	1.78	2.12
32.0	32.0	1.80	1.64	2.09	3.11	1.22	1.95	2.33
32.0	32.0	2.00	1.80	2.30	3.36	1.21	2.10	2.54
32.0	32.0	2.20	1.96	2.50	3.60	1.20	2.25	2.74
32.0	32.0	2.40	2.11	2.69	3.82	1.19	2.39	2.93
32.0	32.0	2.70	2.34	2.98	4.12	1.18	2.57	3.2
32.0	32.0	3.00	2.55	3.25	4.38	1.16	2.74	3.44
32.0	32.0	3.20	2.69	3.42	4.54	1.15	2.83	3.59
38.0	38.0	1.60	1.78	2.26	4.92	1.47	2.59	3.06
38.0	38.0	1.80	1.98	2.52	5.42	1.47	2.85	3.39
38.0	38.0	2.00	2.18	2.78	5.88	1.46	3.10	3.70
38.0	38.0	2.20	2.38	3.03	6.32	1.45	3.33	4.00
38.0	38.0	2.40	2.57	3.27	6.74	1.44	3.55	4.29
38.0	38.0	2.70	2.85	3.62	7.32	1.42	3.85	4.71
38.0	38.0	3.00	3.11	3.97	7.85	1.41	4.13	5.10
38.0	38.0	3.20	3.29	4.19	8.18	1.40	4.30	5.34

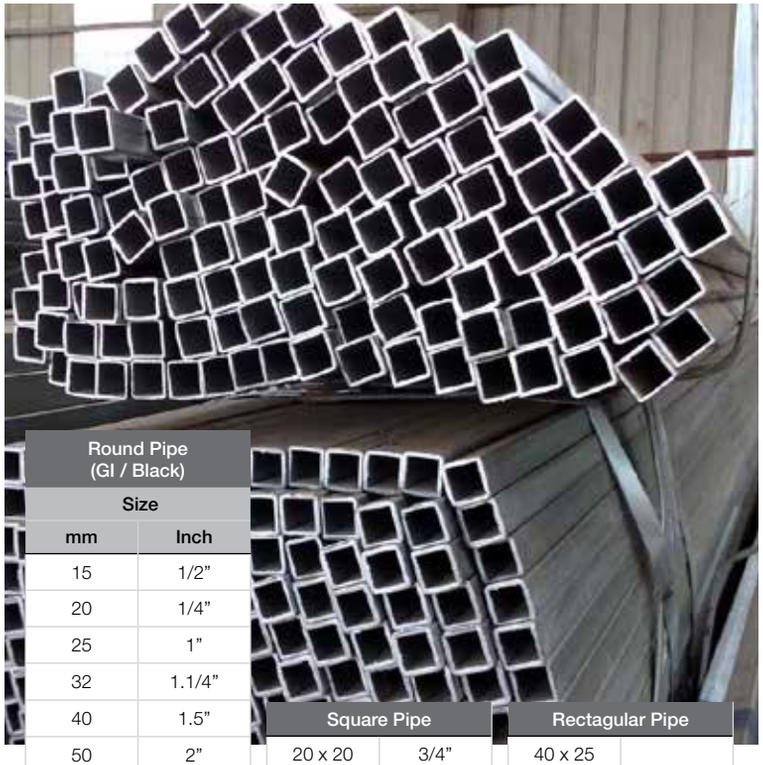
Depth	Width	Thick-ness	Weight	Area of Section	Moment of Inertia	Radius of Gyration	Elastic Modulus	Plastic Modulus
mm	mm	mm	Kg./Mtr.	cm^2	cm^4	cm	cm^3	cm^3
49.5	49.5	1.60	2.35	3.00	11.34	1.94	4.58	5.35
49.5	49.5	1.80	2.63	3.35	12.54	1.93	5.07	5.94
49.5	49.5	2.00	2.90	3.70	13.70	1.93	5.54	6.52
49.5	49.5	2.20	3.17	4.04	14.82	1.92	5.99	7.08
49.5	49.5	2.40	3.43	4.37	15.89	1.91	6.42	7.63
49.5	49.5	2.70	3.82	4.87	17.41	1.89	7.03	8.42
49.5	49.5	3.00	4.20	5.35	18.84	1.88	7.61	9.18
49.5	49.5	3.40	4.69	5.97	20.60	1.86	8.32	10.14
60.0	60.0	1.60	2.88	3.67	20.68	2.37	6.89	7.99
60.0	60.0	1.80	3.22	4.11	22.94	2.36	7.65	8.90
60.0	60.0	2.00	3.56	4.54	25.14	2.35	8.38	9.79
60.0	60.0	2.20	3.89	4.96	27.27	2.34	9.09	10.66
60.0	60.0	2.40	4.22	5.38	29.33	2.33	9.78	11.51
60.0	60.0	2.70	4.71	6.00	32.31	2.32	10.77	12.75
60.0	60.0	3.00	5.19	6.61	35.13	2.31	11.71	13.95
60.0	60.0	3.40	5.81	7.40	38.68	2.29	12.89	15.48
72.0	72.0	1.60	3.49	4.44	36.40	2.86	10.11	11.66
72.0	72.0	1.80	3.90	4.97	40.48	2.85	11.24	13.01
72.0	72.0	2.00	4.31	5.50	44.46	2.84	12.35	14.34
72.0	72.0	2.20	4.72	6.02	48.35	2.83	13.43	15.64
72.0	72.0	2.40	5.13	6.53	52.13	2.82	14.48	16.92
72.0	72.0	2.70	5.73	7.30	57.63	2.81	16.01	18.79
72.0	72.0	3.00	6.32	8.05	62.91	2.80	17.48	20.62
72.0	72.0	3.40	7.09	9.03	69.63	2.78	19.34	22.97
72.0	72.0	3.70	7.66	9.76	74.43	2.76	20.67	24.67
72.0	72.0	4.20	8.58	10.94	81.97	2.74	22.77	27.40
91.5	91.5	2.00	5.54	7.06	93.51	3.64	20.44	23.57
91.5	91.5	2.20	6.07	7.73	101.94	3.63	22.28	25.76
91.5	91.5	2.40	6.60	8.40	110.21	3.62	24.09	27.91
91.5	91.5	2.70	7.38	9.40	122.31	3.61	26.73	31.10

Depth	Width	Thick-ness	Weight	Area of Section	Moment of Inertia	Radius of Gyration	Elastic Modulus	Plastic Modulus
mm	mm	mm	Kg./Mtr.	cm^2	cm^4	cm	cm^3	cm^3
91.5	91.5	3.00	8.15	10.39	134.05	3.59	29.30	34.21
91.5	91.5	3.40	9.17	11.68	149.16	3.57	32.60	38.26
91.5	91.5	3.70	9.92	12.64	160.09	3.56	34.99	41.22
91.5	91.5	4.30	11.40	14.52	180.92	3.53	39.54	46.94
91.5	91.5	4.50	11.88	15.14	187.56	3.52	41.00	48.79
113.5	113.5	2.00	6.92	8.82	181.61	4.54	32.00	36.72
113.5	113.5	2.20	7.59	9.67	198.33	4.53	34.95	40.18
113.5	113.5	2.40	8.26	10.52	214.81	4.52	37.85	43.61
113.5	113.5	2.70	9.25	11.78	239.04	4.51	42.12	48.67
113.5	113.5	3.00	10.23	13.03	262.72	4.49	46.29	53.66
113.5	113.5	3.40	11.52	14.68	293.42	4.47	51.70	60.17
113.5	113.5	3.70	12.48	15.90	315.81	4.46	55.65	64.96
113.5	113.5	4.30	14.37	18.31	358.95	4.43	63.25	74.29
113.5	113.5	4.50	14.99	19.10	372.86	4.42	65.70	77.32
113.5	113.5	4.80	15.92	20.28	393.28	4.40	69.30	81.81
132.0	132.0	2.00	8.08	10.30	288.56	5.29	43.72	50.03
132.0	132.0	2.40	9.65	12.29	342.02	5.27	51.82	59.50
132.0	132.0	2.70	10.81	13.78	381.21	5.26	57.76	66.49
132.0	132.0	3.00	11.97	15.25	419.63	5.25	63.58	73.38
132.0	132.0	3.40	13.50	17.19	469.67	5.23	71.16	82.41
132.0	132.0	3.70	14.63	18.64	506.32	5.21	76.72	89.08
132.0	132.0	4.30	16.87	21.49	577.39	5.18	87.48	102.11
132.0	132.0	4.50	17.61	22.43	600.42	5.17	90.97	106.37
132.0	132.0	4.80	18.70	23.83	634.36	5.16	96.11	112.68

Tolerances :

Outside Diameter : ±1% with a minimum of ±0.50 mm.
Thickness : ±10%
Weight : +10% -8%
Squareness of corner : 90°±2°
Radii of corner : 3t (Max .)

SQUARE HOLLOW SECTION (SQUARE PIPE)



Round Pipe (GI / Black)	
Size	
mm	Inch
15	1/2”
20	1/4”
25	1”
32	1.1/4”
40	1.5”
50	2”
65	2.5”
80	3”
100	4”
125	5”
150	6”
175	7”
200	8”

Square Pipe	
20 x 20	3/4”
25 x 25	1”
32 x 32	1”
38 x 38	1.5”
50 x 50	2”
60 x 60	2”
72 x 72	3”
91.5 x 9.5	3”

Rectagular Pipe	
40 x 25	
50 x 25	
66 x 33	
80 x 40	
96 x 48	
122 x 61	
45 x 82	
172 x 92	

Size		Wall Thickness	Area of Cross Section	Unit Weight	Moment of Inertia $(BD^3-bd^3)/12$		Radius of Gyration $SQRT(BD^3-bd^3)/12$ (BD-bd)		Section Modulus $(BD^3-bd^3)/6D$	
D X B		t	A	M	I_{xx}	I_{yy}	r_{xx}	r_{yy}	z_{xx}	z_{yy}
Inch	mm	mm	cm^2	kg/m	cm^4	cm^4	cm	cm	cm^3	cm^3
3/4	20x20	1.2	0.90	0.71	0.53	0.53	0.77	0.77	0.53	0.53
		1.4	1.04	0.82	0.60	0.60	0.76	0.76	0.60	0.60
		1.6	1.18	0.92	0.67	0.67	0.75	0.75	0.67	0.67
		1.8	1.31	1.03	0.73	0.73	0.75	0.75	0.73	0.73
		2	1.44	1.13	0.79	0.79	0.74	0.74	0.79	0.79
		2.1	1.50	1.18	0.81	0.81	0.74	0.74	0.81	0.81
		2.2	1.57	1.23	0.84	0.84	0.73	0.73	0.84	0.84
1	25x25	1.2	1.14	0.90	1.08	1.08	0.97	0.97	0.86	0.86
		1.4	1.32	1.04	1.23	1.23	0.97	0.97	0.98	0.98
		1.6	1.50	1.18	1.37	1.37	0.96	0.96	1.10	1.10
		1.8	1.67	1.31	1.51	1.51	0.95	0.95	1.21	1.21
		2	1.84	1.44	1.63	1.63	0.94	0.94	1.31	1.31
		2.1	1.92	1.51	1.70	1.70	0.94	0.94	1.36	1.36
		2.2	2.01	1.58	1.75	1.75	0.94	0.94	1.40	1.40
		2.4	2.17	1.70	1.87	1.87	0.93	0.93	1.49	1.49
		2.5	2.25	1.77	1.92	1.92	0.92	0.92	1.54	1.54
		2.6	2.33	1.83	1.97	1.97	0.92	0.92	1.58	1.58
		2.7	2.41	1.89	2.03	2.03	0.92	0.92	1.62	1.62
1.5	38x38	1.2	1.77	1.39	3.99	3.99	1.50	1.50	2.10	2.10
		1.4	2.05	1.61	4.58	4.58	1.50	1.50	2.41	2.41
		1.6	2.33	1.83	5.15	5.15	1.49	1.49	2.71	2.71
		1.8	2.61	2.05	5.71	5.71	1.48	1.48	3.00	3.00
		2	2.88	2.26	6.24	6.24	1.47	1.47	3.28	3.28
		2.1	3.02	2.37	6.50	6.50	1.47	1.47	3.42	3.42
		2.2	3.15	2.47	6.75	6.75	1.46	1.46	3.56	3.56
		2.4	3.42	2.68	7.25	7.25	1.46	1.46	3.82	3.82
		2.6	3.68	2.89	7.73	7.73	1.45	1.45	4.07	4.07
		2.7	3.81	2.99	7.96	7.96	1.45	1.45	4.19	4.19
		2.9	4.07	3.20	8.42	8.42	1.44	1.44	4.43	4.43
		3	4.20	3.30	8.64	8.64	1.43	1.43	4.55	4.55
		3.1	4.33	3.40	8.85	8.85	1.43	1.43	4.66	4.66
		3.2	4.45	3.50	9.07	9.07	1.43	1.43	4.77	4.77

Size		Wall Thickness	Area of Cross Section	Unit Weight	Moment of Inertia $(BD^3-bd^3)/12$		Radius of Gyration $SQRT(BD^3-bd^3)/12$ (BD-bd)		Section Modulus $(BD^3-bd^3)/6D$	
D X B		t	A	M	I_{xx}	I_{yy}	r_{xx}	r_{yy}	z_{xx}	z_{yy}
Inch	mm	mm	cm^2	kg/m	cm^4	cm^4	cm	cm	cm^3	cm^3
2	50x50	1.4	2.72	2.14	10.72	10.72	1.98	1.98	4.29	4.29
		1.6	3.10	2.43	12.11	12.11	1.98	1.98	4.84	4.84
		1.8	3.47	2.72	13.46	13.46	1.97	1.97	5.38	5.38
		2	3.84	3.01	14.77	14.77	1.96	1.96	5.91	5.91
		2.1	4.02	3.16	15.42	15.42	1.96	1.96	6.17	6.17
		2.2	4.21	3.30	16.05	16.05	1.95	1.95	6.42	6.42
		2.4	4.57	3.59	17.30	17.30	1.95	1.95	6.92	6.92
		2.6	4.93	3.87	18.51	18.51	1.94	1.94	7.41	7.41
		2.7	5.11	4.01	19.11	19.11	1.93	1.93	7.64	7.64
		2.9	5.46	4.29	20.28	20.28	1.93	1.93	8.11	8.11
		3	5.64	4.43	20.85	20.85	1.92	1.92	8.34	8.34
		3.1	5.82	4.57	21.41	21.41	1.92	1.92	8.57	8.57
		3.2	5.99	4.70	21.97	21.97	1.92	1.92	8.79	8.79
3	72x72	1.6	4.51	3.54	37.24	37.24	2.87	0.39	10.34	10.34
		1.8	5.05	3.97	41.54	41.54	2.87	0.37	11.54	11.54
		2	5.60	4.40	45.77	45.77	2.86	0.35	12.71	12.71
		2.2	6.14	4.82	49.93	49.93	2.85	0.33	13.87	13.87
		2.4	6.68	5.25	54.01	54.01	2.84	0.32	15.00	15.00
		2.6	7.22	5.67	58.02	58.02	2.84	0.30	16.12	16.12
		2.7	7.48	5.88	60.00	60.00	2.83	0.30	16.67	16.67
		3	8.28	6.50	65.83	65.83	2.82	0.28	18.29	18.29
		3.2	8.81	6.91	69.62	69.62	2.81	0.27	19.34	19.34
		3.5	9.59	7.53	75.19	75.19	2.80	0.26	20.89	20.89

STEEL TELESCOPIC POLE

Description	SPECIFICATION								
	Top OD mm	Bottom Od mm	THK. mm	No. of Section	TOTAL LENGTH mm	WEIGHT kg	Design Working Load kgf	Yield Strength MPA	Safaty of factor
Steel Telescopic pole 8.0M	150.00	350.00	2.50	4.00	2300.00	155.00	150.00	275.00	2.00
Steel Telescopic pole9.0M	170.00	360.00	2.50	5.00	2100.00	189.00	200.00	275.00	2.00
Steel Telescopic pole9.0M	90.00	300.00	2.00	4.00	2500.00	111.00	200.00	330.00	2.00
Steel Telescopic pole 10.0M	170.00	380.00	2.50	5.00	2300.00	215.00	350.00	275.00	2.00
Steel Telescopic pole11.0M	170.00	405.00	2.50	5.00	2500.00	245.00	350.00	275.00	2.00
Steel Telescopic pole11.0M	151.00	409.00	2.0 - 2.2	5.00	2500.00	208.00	350.00	330.00	2.00
Steel Telescopic pole11.2M	119.20	430.00	2.10	5.00	2650.00	211.00	286.00	355.00	2.00
Steel Telescopic pole12.0M	100.00	430.00	2.10	6.00	2800.00	218.00	288.00	355.00	2.00
Steel Telescopic pole13.0M	170.00	454.00	2.50	6.00	2800.00	309.00	375.00	330.00	2.00

GALVANIZED IRON PIPES

The Galvanized Pipes are manufactured using steel and then coated using the process of galvanizing. These pipes are thoroughly tested and examined in accordance with international standards. The galvanized pipes are mostly demanded for plumbing or tubing purpose, which can withstand corrosion from water and other elements.

The pipes are available in several standard as well as customized sizes, widths and thickness as per the specification provided by our clients. The pipes, we manufacture are as per the Indian standards, Nepal Standards and licensed through the Bureau. Chiefly, the galvanized pipes are installed for water supply and tubing for outdoor applications, but also suitable for gas and sewage applications.

GENERAL APPLICATIONS

- Potable Water Supply
- Tube Wells & Hand pumps
- Plumbing Works
- Structure
- Bridge Railing
- Poles / Post
- Electrical Conduits
- Cooling Towers
- Electrical / Telecom Cable Ducting

Confirming to IS 1239 (Part-1) 2004 and NS 199

Equivalent To BS 1387:1985/EN 10255:2004

NOMINAL BORE & CLASS		OUTSIDE DIAMETER (OD)		WALL THICKNESS (T)		NOMINAL MASS OF STEEL TUBE				SOCKETS	
		MAX	MIN			PLAIN END		SCREWED & SOCKETED		MIN OD	MIN LENGTH
mm	Inch	mm	mm	mm	SWG	KG/MTR	MRS/MT	KG/MTR	MTRS/MT	mm	mm
15L	0.50	21.4	21.0	2.0	14	0.947	1056	0.956	1046	27.0	37.0
15M	0.50	21.8	21.0	2.6	12	1.21	826	1.22	820	27.0	37.0
15H	0.50	21.8	21.0	3.2	10	1.44	694	1.45	690	27.0	37.0
20L	0.75	26.9	26.4	2.3	13	1.38	725	1.39	719	32.5	39.0
20M	0.75	27.3	26.5	2.6	12	1.56	641	1.57	637	32.5	39.0
20H	0.75	27.3	26.5	3.2	10	1.87	535	1.88	532	32.5	39.0
25L	1.00	33.8	33.2	2.6	12	1.98	505	2.00	500	39.5	46.0
25M	1.00	34.2	33.3	3.2	10	2.41	415	2.43	412	39.5	46.0
25H	1.00	34.2	33.3	4.0	8	2.93	341	2.95	339	39.5	46.0
32L	1.25	42.5	41.9	2.6	12	2.54	394	2.57	389	49.0	51.0
32M	1.25	42.9	42.0	3.2	10	3.10	323	3.13	319	49.0	51.0
32H	1.25	42.5	41.9	4.0	8	3.79	264	3.82	262	49.0	51.0
40L	1.50	48.4	47.8	2.9	11	3.23	310	3.27	306	56.0	51.0
40M	1.50	48.8	47.9	3.2	10	3.56	281	3.60	278	56.0	51.0
40H	1.50	48.8	47.9	4.0	8	4.37	229	4.41	227	56.0	51.0
50L	2.00	60.2	59.6	2.9	11	4.08	245	4.15	241	68.0	60.0
50M	2.00	60.8	59.7	3.6	9	5.03	199	5.10	196	68.0	60.0
50H	2.00	60.8	59.7	4.5	7	6.19	162	6.26	160	68.0	60.0
65L	2.50	76.0	75.2	3.2	10	5.71	175	5.83	172	84.0	69.0
65M	2.50	76.6	75.3	3.6	9	6.42	156	6.54	153	84.0	69.0
65H	2.50	76.6	75.3	4.5	7	7.93	126	8.05	124	84.0	69.0
80L	3.00	88.7	87.9	3.2	10	6.72	149	6.89	145	98.0	75.0
80M	3.00	89.5	88.0	4.0	8	8.36	120	8.53	117	98.0	75.0
80H	3.00	89.5	88.0	4.8	6	9.90	101	10.10	99	98.0	75.0
100L	4.00	113.9	113.0	3.6	9	9.75	103	10.00	100	124.0	87.0
100M	4.00	115.0	113.1	4.5	7	12.20	82	12.50	80	124.0	87.0
100H	4.00	115.0	113.1	5.4	5	14.50	69	14.80	68	124.0	87.0
125M	5.00	140.8	138.5	4.8	6	15.90	63	16.40	61	151.0	96.0
125H	5.00	140.8	138.5	5.4	5	17.90	56	18.40	54	151.0	96.0
150M	6.00	166.5	163.9	4.8	6	18.90	53	19.5	51	178.0	96.0
150H	6.00	166.5	163.9	5.4	5	21.30	47	21.90	46	178.0	96.0

MS BLACK PIPES

MS Black Pipes, or Mild Steel Black Pipes is called MS Black Pipe because it is not galvanized and is an ideal product to be welded into pipes, tubes and other kinds of tubing. It is one of the cheapest metals available in the market. The high quality steel used to manufacture black pipes makes it one of the most used ones in the construction and general engineering industries today.

GENERAL APPLICATIONS

- Industrial Sheds
- Bridges
- Swaged Poles
- Telecom Towers
- Scaffoldings
- Mine roof support system

Confirming to IS 1161/ 2014

NB	OD	Thk	Mass	Area of Cross-Section	Internal Volume	Surface		Moment of Inertia	Modulus of Section	Radius of Gyration	Square of Radius of Gyration
						External	Internal				
mm	mm	mm	kg/m	cm²	cm³/m	cm³/m	cm³/m	cm⁴/m	cm³	cm	cm²
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	21.3	2	0.952	1.21	235	669	543	0.57	0.54	0.69	0.47
15	21.3	2.6	1.20	1.53	204	669	506	0.68	0.64	0.67	0.45
	21.3	3.2	1.43	1.82	174	669	468	0.77	0.72	0.65	0.42
	26.9	2.3	1.40	1.78	391	845	701	1.36	1.01	0.87	0.76
20	26.9	2.6	1.56	1.98	370	845	682	1.48	1.10	0.86	0.75
	26.9	3.2	1.87	2.38	330	845	644	1.70	1.27	0.85	0.71
	33.7	2.6	1.99	2.54	638	1 059	895	3.09	1.84	1.10	1.22
25	33.7	3.2	2.41	3.07	585	1 059	858	3.60	2.14	1.08	1.18
	33.7	4	2.93	3.73	519	1 059	807	4.19	2.49	1.06	1.12
	42.4	2.6	2.55	3.25	1 087	1 332	1 169	6.46	3.05	1.41	1.99
32	42.4	3.2	3.09	3.94	1 018	1 332	1 131	7.62	3.59	1.39	1.93
	42.4	4	3.79	4.83	929	1 332	1 081	8.99	4.24	1.36	1.86
	48.3	2.9	3.25	4.14	1 419	1 517	1 335	10.70	4.43	1.61	2.59
40	48.3	3.2	3.56	4.53	1 379	1 517	1 316	11.59	4.80	1.60	2.56
	48.3	4	4.37	5.57	1 276	1 517	1 266	13.77	5.70	1.57	2.47
	60.3	2.9	4.11	5.23	2 333	1 894	1 712	21.59	7.16	2.03	4.13
50	60.3	3.6	5.03	6.41	2 215	1 894	1 668	25.87	8.58	2.01	4.03
	60.3	4.5	6.19	7.89	2 067	1 894	1 612	30.90	10.25	1.98	3.92
	76.1	2.9	5.24	6.67	3 882	2 391	2 209	44.74	11.76	2.59	6.71
65	76.1	3.6	6.44	8.20	3 728	2 391	2 165	54.01	14.19	2.57	6.59
	76.1	4.5	7.95	10.12	3 536	2 391	2 108	65.12	17.11	2.54	6.43
	88.9	3.2	6.76	8.62	5 346	2 793	2 592	79.21	17.82	3.03	9.19
80	88.9	4	8.38	10.67	5 140	2 793	2 542	96.34	21.67	3.00	9.03
	88.9	4.8	9.96	12.68	4 939	2 793	2 491	112.49	25.31	2.98	8.87
	101.6	3.6	8.70	11.08	6 999	3 192	2 966	133.24	26.23	3.47	12.02
90	101.6	4	9.63	12.26	6 881	3 192	2 941	146.28	28.80	3.45	11.93
	101.6	4.8	11.46	14.60	6 648	3 192	2 890	171.39	33.74	3.43	11.74
	114.3	3.6	9.83	12.52	9 009	3 591	3 365	191.98	33.59	3.92	15.33
100	114.3	4.5	12.19	15.52	8 709	3 591	3 308	234.32	41.00	3.89	15.10
	114.3	5.4	14.50	18.47	8 413	3 591	3 252	274.54	48.04	3.85	14.86

	127	4.5	13.59	17.32	10 936	3 990	3 707	325.29	51.23	4.33	18.78
110	127	4.8	14.47	18.43	10 825	3 990	3 688	344.50	54.25	4.32	18.69
	127	5.4	16.19	20.63	10 605	3 990	3 651	382.04	60.16	4.30	18.52
	139.7	4.5	15.00	19.11	13 417	4 389	4 106	437.20	62.59	4.78	22.87
125	139.7	4.8	15.97	20.34	13 295	4 389	4 087	463.33	66.33	4.77	22.78
	139.7	5.4	17.89	22.78	13 050	4 389	4 050	514.50	73.66	4.75	22.58
	152.4	4.5	16.41	20.91	16 151	4 788	4 505	572.24	75.10	5.23	27.37
135	152.4	4.8	17.47	22.26	16 016	4 788	4 486	606.76	79.63	5.22	27.26
	152.4	5.4	19.58	24.94	15 748	4 788	4 448	674.51	88.52	5.20	27.05
	165.1	4.5	17.82	22.70	19 138	5 187	4 904	732.57	88.74	5.68	32.27
	165.1	4.8	18.98	24.17	18 991	5 187	4 885	777.13	94.14	5.67	32.15
150	165.1	5.4	21.27	27.09	18 699	5 187	4 847	864.70	104.75	5.65	31.92
	165.1	5.9	23.20	29.50	18 465	5 189	4 818	970.00	113.40	5.63	31.72
	165.1	6.3	24.67	31.43	18 265	5 187	4 791	992.28	120.20	5.62	31.57
	165.1	8	30.99	39.48	17 460	5 187	4 684	1 221.25	147.94	5.56	30.93
	168.3	4.5	18.18	23.16	19 931	5 287	5 005	777.22	92.36	5.79	33.56
	168.3	4.8	19.35	24.66	19 781	5 287	4 986	824.57	97.99	5.78	33.44
	168.3	5.4	21.69	27.64	19 483	5 287	4 948	917.69	109.05	5.76	33.21
150	168.3	6.3	25.17	32.06	19 040	5 287	4 891	1 053.42	125.18	5.73	32.85
	168.3	8	31.63	40.29	18 218	5 287	4 785	1 297.27	154.16	5.67	32.20
	168.3	10	39.04	49.73	17 273	5 287	4 659	1 563.98	185.86	5.61	31.45
	193.7	4.8	22.36	28.49	26 619	6 085	5 784	1271.39	131.27	6.68	44.63
	193.7	5.4	25.08	31.94	26 273	6 085	5 746	1416.97	146.31	6.66	44.36
	193.7	5.9	27.33	34.81	25 987	6 085	5 715	1536.13	158.61	6.64	44.13
175	193.7	6.3	29.12	37.09	25 759	6 085	5 689	1630.05	168.31	6.63	43.95
	193.7	8	36.64	46.67	24 801	6 085	5 583	2015.54	208.11	6.57	43.19
	193.7	10	45.30	57.71	23 697	6 085	5 457	2441.59	252.10	6.50	42.31
	193.7	12	53.77	68.50	22 618	6 085	5 331	2839.20	293.15	6.44	41.45
	219.1	4.8	25.37	32.32	34 471	6 883	6 582	1856.03	169.42	7.58	57.43
	219.1	5.6	29.49	37.56	33 947	6 883	6531	2141.61	195.49	7.55	57.02
	219.1	5.9	31.02	39.52	33 751	6 883	6 513	2247.01	205.11	7.54	56.86
200	219.1	6.3	33.06	42.12	33 491	6 883	6 487	2386.14	217.81	7.53	56.65
	219.1	8	41.65	53.06	32 397	6 883	6 381	2959.63	270.16	7.47	55.78
	219.1	10	51.57	65.69	31 134	6 883	6 255	3598.44	328.47	7.40	54.78
	219.1	12	61.29	78.07	29 895	6 883	6 129	4199.88	383.38	7.33	53.79

BLACK PIPE FOR GENERAL PURPOSE

As Per IS 3601:2006

Size	Nominal Bore	Outer Diameter	Wall Thickness	Weight	Area of cross section	Outer Surface Area/m	Moment of Inertia	Section Modulus	Radius of Gyration
Inch	mm	mm	mm	kg/m	cm^2	cm^2 /m	cm^4	cm^3	cm
1/2	15	21.3	1.6	0.78	0.99	669	0.48	0.45	0.70
			1.8	0.87	1.10		0.53	0.50	0.69
			2.2	1.04	1.32		0.61	0.57	0.68
			2.3	1.08	1.37		0.63	0.59	0.68
			2.4	1.12	1.43		0.65	0.61	0.67
			2.5	1.16	1.48		0.66	0.62	0.67
			2.7	1.24	1.58		0.70	0.65	0.66
3/4	20	26.9	1.6	1.00	1.27	845	1.02	0.76	0.90
			1.8	1.11	1.42		1.12	0.84	0.89
			2.2	1.34	1.71		1.31	0.98	0.88
			2.4	1.45	1.85		1.40	1.04	0.87
			2.5	1.50	1.92		1.44	1.07	0.87
			2.7	1.61	2.05		1.52	1.13	0.86
			2.9	1.72	2.19		1.60	1.19	0.85
			3	1.77	2.25		1.63	1.21	0.85
1	25	33.7	1.6	1.27	1.61	1059	2.08	1.24	1.14
			1.8	1.42	1.80		2.30	1.37	1.13
			2.2	1.71	2.18		2.71	1.61	1.12
			2.4	1.85	2.36		2.91	1.73	1.11
			2.5	1.92	2.45		3.00	1.78	1.11
			2.7	2.06	2.63		3.18	1.89	1.10
			2.9	2.20	2.81		3.36	1.99	1.09
			3.7	2.74	3.49		3.98	2.36	1.07
1 1/4	32	42.4	1.6	1.61	2.05	1332	4.27	2.02	1.44
			1.8	1.80	2.30		4.74	2.24	1.44
			2.1	2.09	2.66		5.41	2.55	1.43
			2.2	2.18	2.78		5.63	2.66	1.42
			2.4	2.37	3.02		6.05	2.86	1.42
			2.5	2.46	3.13		6.26	2.95	1.41
			2.7	2.64	3.37		6.66	3.14	1.41
			2.9	2.82	3.60		7.06	3.33	1.40
			3.7	3.53	4.50		8.50	4.01	1.37

Size	Nominal Bore	Outer Diameter	Wall Thickness	Weight	Area of cross section	Outer Surface Area/m	Moment of Inertia	Section Modulus	Radius of Gyration
Inch	mm	mm	mm	kg/m	cm^2	cm^2 /m	cm^4	cm^3	cm
1 1/2	40	48.3	1.6	1.84	2.35	1517	6.41	2.65	1.65
			1.8	2.06	2.63		7.12	2.95	1.65
			2.1	2.39	3.05		8.15	3.37	1.64
			2.2	2.50	3.19		8.48	3.51	1.63
			2.4	2.72	3.46		9.14	3.78	1.63
			2.5	2.82	3.60		9.46	3.92	1.62
			2.7	3.04	3.87		10.09	4.18	1.62
			2.9	3.25	4.14		10.70	4.43	1.61
			3.7	4.07	5.18		12.98	5.37	1.58
2	50	60.3	1.6	2.32	2.95	1894	12.72	4.22	2.08
			21.8	20.70	26.37		64.52	21.40	1.56
			2	2.88	3.66		15.58	5.17	2.06
			2.2	3.15	4.02		16.97	5.63	2.06
			2.4	3.43	4.37		18.33	6.08	2.05
			2.5	3.56	4.54		18.99	6.30	2.05
			2.7	3.84	4.89		20.31	6.74	2.04
			3.1	4.37	5.57		22.85	7.58	2.03
			3.1	4.77	6.08		24.68	8.19	2.02
			3.7	5.16	6.58		26.46	8.78	2.01
			4.3	5.94	7.56		29.83	9.89	1.99
2 1/2	65	76.2	1.8	3.30	4.21	2394	29.13	7.65	2.63
			2	3.66	4.66		32.11	8.43	2.62
			2.2	4.01	5.11		35.04	9.20	2.62
			2.4	4.37	5.56		37.92	9.95	2.61
			2.5	4.54	5.79		39.35	10.33	2.61
			2.7	4.89	6.23		42.16	11.06	2.60
			3.1	5.59	7.12		47.64	12.50	2.59
			3.4	6.10	7.78		51.63	13.55	2.58
			3.7	6.62	8.43		55.51	14.57	2.57
			4.3	7.62	9.71		62.99	16.53	2.55
2 1/2	65	76.2	1.8	3.30	4.21	2394	29.13	7.65	2.63
			2	3.66	4.66		32.11	8.43	2.62
			2.2	4.01	5.11		35.04	9.20	2.62
			2.4	4.37	5.56		37.92	9.95	2.61
			2.5	4.54	5.79		39.35	10.33	2.61
			2.7	4.89	6.23		42.16	11.06	2.60
			3.1	5.59	7.12		47.64	12.50	2.59
			3.5	6.10	7.78		51.63	13.55	2.58
			3.7	6.62	8.43		55.51	14.57	2.57
			4.3	7.62	9.71		62.99	16.53	2.55

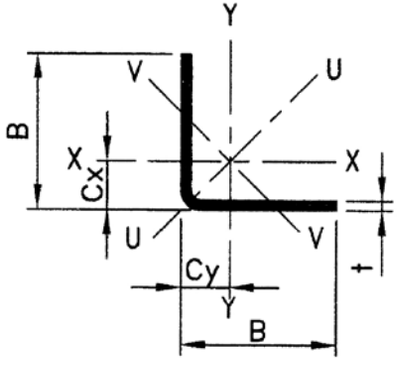
Size	Nominal Bore	Outer Diameter	Wall Thickness	Weight	Area of cross section	Outer Surface Area/m	Moment of Inertia	Section Modulus	Radius of Gyration
Inch	mm	mm	mm	kg/m	cm^2	cm^2 /m	cm^4	cm^3	cm
3	80	88.9	1.8	3.87	4.93	2793	46.73	10.51	3.08
			2	4.29	5.46		51.57	11.60	3.07
			2.2	4.70	5.99		56.34	12.67	3.07
			2.4	5.12	6.52		61.05	13.73	3.06
			2.5	5.33	6.79		63.37	14.26	3.06
			2.7	5.74	7.31		67.98	15.29	3.05
			3.1	6.56	8.36		76.99	17.32	3.04
			3.5	7.37	9.39		85.75	19.29	3.02
			3.7	7.77	9.90		90.03	20.25	3.02
			4.2	8.77	11.18		100.47	22.60	3.00
			4.3	8.97	11.43		102.51	23.06	2.99
4	100	114.3	2	5.54	7.06	3591	111.27	19.47	3.97
			2.2	6.08	7.75		121.75	21.30	3.96
			2.4	6.62	8.44		132.12	23.12	3.96
			2.5	6.89	8.78		137.26	24.02	3.95
			2.7	7.43	9.47		147.46	25.80	3.95
			3.1	8.50	10.83		167.52	29.31	3.93
			3.5	9.56	12.18		187.15	32.75	3.92
			3.7	10.09	12.86		196.79	34.43	3.91
			4.2	11.40	14.53		220.45	38.57	3.90
			4.3	11.66	14.86		225.10	39.39	3.89
			4.5	12.19	15.52		234.32	41.00	3.89
			4.8	12.96	16.51		247.96	43.39	3.88
5	125	139.7	2	6.79	8.65	4389	205.11	29.36	4.87
			2.2	7.46	9.50		224.65	32.16	4.86
			2.4	8.13	10.35		244.01	34.93	4.86
			2.5	8.46	10.78		253.63	36.31	4.85
			2.7	9.12	11.62		272.74	39.05	4.84
			3.1	10.44	13.30		310.45	44.45	4.83
			3.5	11.76	14.98		347.49	49.75	4.82
			3.7	12.41	15.81		365.76	52.36	4.81
			4.2	14.03	17.88		410.72	58.80	4.79
			4.3	14.36	18.29		419.59	60.07	4.79
			4.5	15.00	19.11		437.20	62.59	4.78
			4.8	15.97	20.34		463.33	66.33	4.77

Size	Nominal Bore	Outer Diameter	Wall Thickness	Weight	Area of cross section	Outer Surface Area/m	Moment of Inertia	Section Modulus	Radius of Gyration
Inch	mm	mm	mm	kg/m	cm^2	cm^2 /m	cm^4	cm^3	cm
6	150	165.1	2	8.04	10.25	5187	340.81	41.29	5.77
			2.2	8.84	11.26		373.53	45.25	5.76
			2.4	9.63	12.27		406.00	49.18	5.75
			2.5	10.02	12.77		422.15	51.14	5.75
			2.7	10.81	13.78		454.26	55.03	5.74
			3.2	12.78	16.28		533.48	64.63	5.73
			3.5	13.95	17.77		580.30	70.30	5.71
			3.7	14.73	18.76		611.22	74.04	5.71
			4.2	16.67	21.23		687.50	83.28	5.69
			4.3	17.05	21.72		702.58	85.11	5.69
			4.5	17.82	22.70		732.57	88.74	5.68
			4.8	18.98	24.17		777.13	94.14	5.67
7	175	193.7	2.5	11.79	15.02	6085	686.34	70.87	6.76
			2.7	12.72	16.20		738.94	76.30	6.75
			3.1	14.57	18.56		843.15	87.06	6.74
			3.5	16.42	20.91		946.03	97.68	6.73
			4.2	19.63	25.00		1122.92	115.94	6.70
			4.5	21.00	26.75		1197.52	123.65	6.69
			4.8	22.36	28.49		1271.39	131.27	6.68
			5	23.27	29.64		1320.23	136.32	6.67
			5.3	24.63	31.37		1392.91	143.82	6.66
			6	27.77	35.38		1559.72	161.05	6.64
8	200	219.1	2.5	13.35	17.01	6883	997.78	91.08	7.66
			2.7	14.41	18.36		1074.64	98.10	7.65
			3.1	16.51	21.04		1227.08	112.01	7.64
			3.5	18.61	23.71		1377.81	125.77	7.62
			4.2	22.26	28.36		1637.51	149.48	7.60
			4.5	23.82	30.34		1747.24	159.49	7.59
			4.8	25.37	32.32		1856.03	169.42	7.58
			5	26.40	33.63		1928.04	176.00	7.57
			5.3	27.94	35.60		2035.29	185.79	7.56
			6	31.53	40.17		2281.95	208.30	7.54

Black Pipe Others (IS 1239)

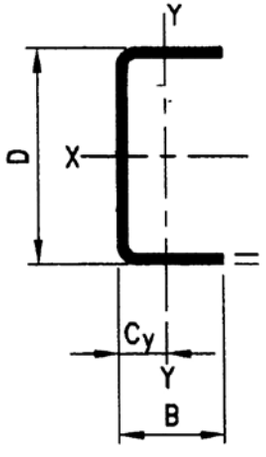
NOMINAL BORE & CLASS		OUTSIDE DIAMETER (OD)		WALL THICKNESS (T)		NOMINAL MASS OF STEEL TUBE				SOCKETS	
		MAX	MIN			PLAIN END		SCREWED & SOCKETED		MIN OD	MIN LENGTH
mm	Inch	mm	mm	mm	SWG	KG/MTR	MRS/MT	KG/MTR	MTRS/MT	mm	mm
15L	0.50	21.4	21.0	2.0	14	0.947	1056	0.956	1046	27.0	37.0
15M	0.50	21.8	21.0	2.6	12	1.21	826	1.22	820	27.0	37.0
15H	0.50	21.8	21.0	3.2	10	1.44	694	1.45	690	27.0	37.0
20L	0.75	26.9	26.4	2.3	13	1.38	725	1.39	719	32.5	39.0
20M	0.75	27.3	26.5	2.6	12	1.56	641	1.57	637	32.5	39.0
20H	0.75	27.3	26.5	3.2	10	1.87	535	1.88	532	32.5	39.0
25L	1.00	33.8	33.2	2.6	12	1.98	505	2.00	500	39.5	46.0
25M	1.00	34.2	33.3	3.2	10	2.41	415	2.43	412	39.5	46.0
25H	1.00	34.2	33.3	4.0	8	2.93	341	2.95	339	39.5	46.0
32L	1.25	42.5	41.9	2.6	12	2.54	394	2.57	389	49.0	51.0
32M	1.25	42.9	42.0	3.2	10	3.10	323	3.13	319	49.0	51.0
32H	1.25	42.5	41.9	4.0	8	3.79	264	3.82	262	49.0	51.0
40L	1.50	48.4	47.8	2.9	11	3.23	310	3.27	306	56.0	51.0
40M	1.50	48.8	47.9	3.2	10	3.56	281	3.60	278	56.0	51.0
40H	1.50	48.8	47.9	4.0	8	4.37	229	4.41	227	56.0	51.0
50L	2.00	60.2	59.6	2.9	11	4.08	245	4.15	241	68.0	60.0
50M	2.00	60.8	59.7	3.6	9	5.03	199	5.10	196	68.0	60.0
50H	2.00	60.8	59.7	4.5	7	6.19	162	6.26	160	68.0	60.0
65L	2.50	76.0	75.2	3.2	10	5.71	175	5.83	172	84.0	69.0
65M	2.50	76.6	75.3	3.6	9	6.42	156	6.54	153	84.0	69.0
65H	2.50	76.6	75.3	4.5	7	7.93	126	8.05	124	84.0	69.0
80L	3.00	88.7	87.9	3.2	10	6.72	149	6.89	145	98.0	75.0
80M	3.00	89.5	88.0	4.0	8	8.36	120	8.53	117	98.0	75.0
80H	3.00	89.5	88.0	4.8	6	9.90	101	10.10	99	98.0	75.0
100L	4.00	113.9	113.0	3.6	9	9.75	103	10.00	100	124.0	87.0
100M	4.00	115.0	113.1	4.5	7	12.20	82	12.50	80	124.0	87.0
100H	4.00	115.0	113.1	5.4	5	14.50	69	14.80	68	124.0	87.0
125M	5.00	140.8	138.5	4.8	6	15.90	63	16.40	61	151.0	96.0
125H	5.00	140.8	138.5	5.4	5	17.90	56	18.40	54	151.0	96.0
150M	6.00	166.5	163.9	4.8	6	18.90	53	19.5	51	178.0	96.0
150H	6.00	166.5	163.9	5.4	5	21.30	47	21.90	46	178.0	96.0

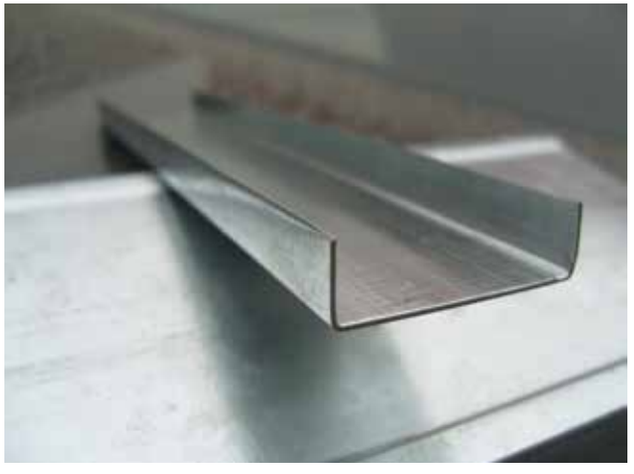
ANGLE (EQUAL)



Size	Thickness	Weight	Cross section Area	Surface Area	Center Of Gravity		Moment of inertia	Radius of Gyration	Section modulus
mm	mm	kg/m	cm^2	m2/m	cm	cm	cm^4	cm	cm^3
A*B	Thickness	M	A	SA	Cx=Cy	Cx=Cy	Ixx=Iyy	rxx=ryy	Zxx=Zyy
35x35	2	1.04	1.32	0.14	0.97	2.53	1.62	1.1	0.64
	2.5	1.28	1.63		1	2.5	2	1.1	0.8
	3	1.52	1.94		1.01	2.49	2.3	1.09	0.92
40x40	2	1.19	1.51	0.16	1.1	2.9	2.43	1.27	0.84
	2.5	1.47	1.88		1.12	2.88	2.96	1.25	1.03
	3	1.75	2.23		1.15	2.85	3.49	1.25	1.23
	3.6	2.06	2.63		1.16	2.84	4.05	1.25	1.42
	4	2.31	2.94		1.22	2.78	5.35	1.35	1.92
50x50	3	2.22	2.83	0.2	1.4	3.6	7.01	1.57	1.94
	3.6	2.63	3.35		1.42	3.58	8.14	1.57	2.27
	4	2.87	3.66		1.45	3.55	8.95	1.56	2.53
60x60	3	2.69	3.43	0.24	1.63	4.37	12.4	1.9	2.83
	3.2	2.85	3.64		1.63	4.36	13.12	1.9	3.01
	3.6	3.18	4.06		1.66	4.34	14.57	1.89	3.35
	4	3.5	4.46		1.7	4.32	15.9	1.886	3.7

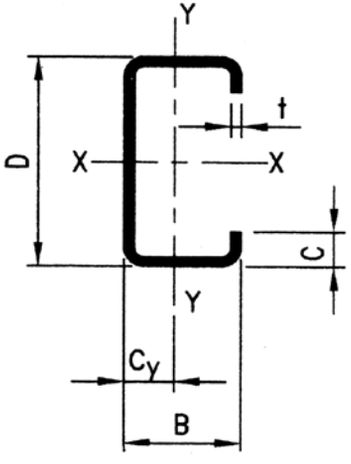
LIGHT CHANNEL (COLD FORMED)

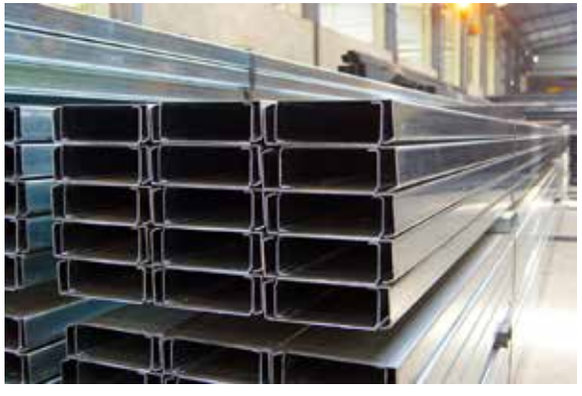




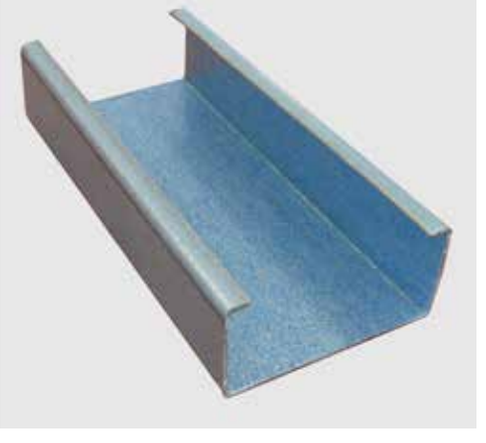
Size	Thickness	Weight	Surface Area	Cross section Area	Moment of inertia		Section modulus		Radius of Gyration		Center Of Gravity
mm	mm	kg/m	m2/m	cm^2	cm^4		cm^3		cm		cm
HxB	Thickness	M	SA	A	Ixx	Iyy	Zxx	Zyy	rxx	ryy	Cyy
100x50	2	3.13	0.392	3.83	65.55	10.36	12.9	2.79	4.13	1.64	13.3
	3	4.91	0.388	6.25	98.93	15.94	19.65	4.34	3.97	1.6	1.42
	4	5.74	0.384	7.31	111.12	18.07	22.21	5.08	3.86	1.56	1.45
	5	7.04	0.38	8.96	130.27	21.49	26.07	6.16	3.81	1.55	1.51
	6	8.37	0.376	10.66	151.84	25.03	30.37	7.25	3.75	1.53	1.55
120x40	3	4.46	0.388	5.65	113.3	9.57	18.88	3.13	4.48	1.3	0.94
	3.6	5.31	0.386	6.76	134.49	10	22.41	3.29	4.46	1.22	0.96
	4	5.87	0.384	7.47	147.35	10.22	24.56	3.38	4.44	1.17	0.97
150x50	3	5.61	0.488	7.15	227.46	19.83	30.33	5.13	4.64	1.66	1.14
	3.6	6.72	0.486	8.57	270.63	21.2	36.08	5.52	5.62	1.57	1.16
	4	7.37	0.484	9.47	297.37	21.78	39.65	5.69	5.6	1.52	1.17
	5	8.97	0.48	11.4	346	24.7	46.2	6.56	5.51	1.47	1.24

LIPPED CHANNEL

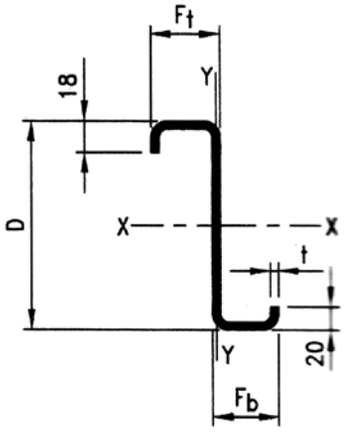




Size	Thickness	Weight	Surface Area	Cross section Area	Moment of inertia		Section modulus		Radius of Gyration		Center Of Gravity
mm	mm	kg/m	m2/m	cm^2	cm^4		cm^3		cm		cm
HxBxC	Thickness	M	SA	A	Ixx	Iyy	Zxx	Zyy	rxx	ryy	Cyy
100x50x20	2	3.51	0.464	4.47	69.69	16.48	13.94	5.25	3.95	1.92	1.86
	2.3	4	0.462	5.08	78.46	18.41	15.69	5.84	3.93	1.9	1.85
	2.8	4.76	0.458	6.07	92.13	21.34	18.43	6.77	3.9	1.8	1.85
100x65x20	2	3.98	0.524	5.07	1	30.77	16.82	7.69	4.07	2.46	2.5
	2.3	4.53	0.522	5.77	94.93	34.53	18.99	8.63	4.06	2.45	2.5
	2.8	5.42	0.518	6.91	111.98	40.33	22.4	10.06	4.03	2.42	2.49
	3.15	6.03	0.515	7.68	123.93	44.05	24.79	10.99	4.02	2.39	2.49
120x50x20	2	3.82	0.504	4.87	107.02	17.62	4.69	1.9	17.84	5.36	1.71
	2.3	4.35	0.502	5.54	120.7	19.69	4.67	1.89	20.12	5.98	1.71
	2.8	5.2	0.498	6.63	142.18	22.83	4.63	1.86	23.7	6.92	1.7
140x65x20	2	4.61	0.604	5.87	182.65	34.76	5.58	2.43	26.09	8.05	2.18
	2.55	5.78	0.6	7.37	226.18	42.44	5.54	2.4	32.31	9.8	2.17
	2.8	6.3	0.598	8.03	245.03	45.68	5.52	2.39	35	10.55	2.17
	3.15	7.02	0.595	8.94	270.46	49.94	5.5	2.36	38.64	11.51	2.16



ZED SECTION



Size	Thick-ness	Weight	Surface Area	Cross section Area	Moment of inertia				Radius of Gyration Min	Ange Tan a	Section modulus				Product Moment of Inertia	Torsion Constant	Warping Constant
mm	mm	kg/m	m2/m	cm^2	cm^4				cm	cm^2	cm^3				cm^4		cm^4
HxBxC	Thick-ness	M	SA	A	Ixx	Iyy	Iuu	Ivv	rw	Tan a	Zxx	Zyy	Zuu	Zvv	Ixy	J	Cw
120x45x20	2	3.66	0.488	4.66	99.7	23	144	8.94	1.39	0.39	16.6	5.22	16.3	3.39	35.7	0.06	629
	2.3	4.16	0.486	5.3	112	25.5	128	9.96	1.37	0.39	18.7	5.82	18.4	3.78	39.9	0.09	704
	2.55	4.56	0.485	5.82	122	27.5	139	10.7	1.36	0.39	12.4	6.3	20.1	4.08	43.3	0.12	764
125x45x20	2	3.37	0.498	4.76	110	23	124	9.14	1.39	0.37	17.6	5.22	17.2	3.45	37.3	0.06	686
	2.3	4.25	0.496	5.41	124	25.5	139	10.2	1.37	0.37	19.8	5.82	19.5	3.85	41.8	0.09	769
	2.55	4.66	0.495	5.94	135	27.5	151	11	1.36	0.37	21.6	6.3	21.3	4.15	45.3	0.13	834
230x75x20	2	6.32	0.828	8.06	636	87.5	686	38.1	2.18	0.29	55.3	11.8	53.2	8.52	172	0.16	8550
	2.3	7.23	0.826	9.2	723	98.3	778	32.9	2.16	0.29	62.9	33.3	60.5	9.58	194	0.22	9670
	2.55	7.97	0.825	10.2	793	107	854	46.7	2.14	0.28	69	14.5	66.6	10.4	212	0.4	10600
	3.15	9.72	0.821	12.4	956	126	1030	55.2	2.11	0.28	83.2	17.2	80.6	12.3	253	0.11	12600
250x75x20	2	6.64	0.868	8.46	775	87.5	822	39.7	2.17	0.26	62	11.8	59.8	8.71	187	0.11	10300
	2.3	7.59	0.866	9.66	881	98.3	934	34.7	2.15	0.35	70.5	13.3	68.2	9.81	212	0.17	11600
	2.55	8.37	0.865	10.7	967	107	1025	38.7	2.14	0.25	77.4	14.5	75	10.7	231	0.23	12700
	3.15	10.2	0.861	13	1170	126	1235	57.5	2.1	0.25	93.3	17.2	90.8	12.6	276	0.43	15200
300x75x20	2	7.42	0.968	9.46	1200	87.5	1240	43.1	2.14	0.2	79.81	11.6	77.8	9.11	226	0.13	15400
	2.3	8.49	0.966	10.8	1360	98.3	1410	48.5	2.12	0.2	90.8	13.3	88.7	10.3	256	0.19	17400
	2.55	9.37	0.965	11.9	1500	107	1550	52.9	2.1	0.19	99.7	14.5	97.6	11.2	279	0.26	19100
	3.15	11.5	0.961	14.6	1810	126	1870	52.5	2.07	0.19	121	17.2	118	13.2	333	0.48	22800

DETAILS OF SPECIFICATION OF SOME OF THE RAW MATERIALS GENERALLY IN USE

IS-10748 - 1995 (HOT ROLLED STEEL SHEETS)

CHEMICAL COMPOSITION						MECHANICAL PROPERTIES			
Grade	C Max	Mn Max	P Max	S Max	Si Max	Yield Strength	Ultimate Tensile Strength	Elongation%	Internal diameter of bend
	%	%	%	%	%	MPa	MPa	%	t
I	0.10	0.50	0.04	0.04	For semi	170	290	30	T
II	0.12	0.60	0.04	0.04	killed	210	330	28	2T
III	0.16	1.20	0.04	0.04	quality Si	240	410	25	2T
IV	0.20	1.30	0.04	0.04	content	275	430	20	3T
V	0.25	1.30	0.04	0.04	shall be	310	490	15	3T

Carbon Equivalent 0.45 Ma for grade IV & V.

IS-2062 - 1999 (HOT ROLLED STEEL SHEETS FOR PIPE MAKING)

CHEMICAL COMPOSITION						MECHANICAL PROPERTIES					
Grade	C Max	Mn Max	P Max	S Max	Si Max	Yield Strength			Ultimate Tensile Strength	Elongation%	Internal diameter of bend
	%	%	%	%	%		MPa		MPa	%	t
						<20	20-40	>40			
A	0.23	1.50	0.50	0.05	0.40	250	240	230	410	23	3T
B	0.22	1.50	0.45	0.05	0.40	250	240	230	410	23	2T
C	0.20	1.50	0.40	0.04	0.40	250	240	230	410	23	2T

LIST OF SOME OF THE TOLERANCES OF DIFFERENT TUBULAR PRODUCTS

Sl. No.	Standard No. / Product	Type	TOLERANCES					
			Outside Diameter	Maximum Thickness		Maximum Mass		Length
				Minus %	Plus %	Minus %	Plus %	
1	N.S. 199/2046	L	As per table in relevant standard	8	NL	8	10	Pipe length including socket or as agreed to between the purchaser and the supplier.
	Galvanized Steel Pipes	M		10	NL	10	10	
		H		10	NL	10	10	
2	N.S. 1239 (Part-I) / 1990	L	As per table in relevant standard	8	NL	8	10	Pipe length including socket or as agreed to between the purchaser and the supplier.
	Black Steel Pipes	M		10	NL	10	10	
		H		10	NL	10	10	
3	B.S. 1387/1995	L	As per table in relevant standard	8	NL	8	10	For specified length +6mm, - 00mm only
	Black Steel Pipes	M		10	NL	8	10	
		H		10	NL	8	10	
4	N.S. 427/058	L	Upto and including 48.3mm to 0.4mm and -0.8mm over 48.3mm+-1.0%	10	NL	8	10	Piple length including sockert or as agreed to between the purchaser and the supplier.
	Black Steel Pipes	M		10	NL	10	10	
		H		10	NL	10	10	
5	I.S.1161 / 1979	L	Upto and including 48.3mm to 0.4mm and -0.8mm over 48.3mm+-1.0%	10	NL	8	10	Generally 4 to 7 Mtrs or as agreed to between the purchaser and the supplier.
	Mild Stell Tubes used for structure	M		10	NL	10	10	
		H		10	NL	10	10	
6	I.S.3601/1984	CQ M H	Upto and including 40mm MB + 0.5 mm 1.0mm, over 40mm NB +-1% +-0.5mm	10	10	10	10	Generally 4 to 7 mtrs, 50% short random length of 1.0 to 4.0 mtr can be supplied for sizes 76.20 and 114.3 OD. For balance sizeds 7.5%
	Mild Stell Tubes used for structure							
7	I.S. 811 / 1987		As per table in relevant standard	5	5	5	5	+-1.5%
	Cold formed angles channels							
8	I.S. 4923 / 1985		+- 1% of specified Dimension	10	10	8	10	+- 6mm
	Steel Hollow Sections							
9	I.S. 4720 / 1983		+- 1% of specified Dimension	12.5	15	8	10	+- 25mm
	Steel tubes used for water wells							
10	I.S. 3589 / 1991		+- 75% of specified Dimension	10	10	10	10	Random length 4 to 7 mtrs where exact length specified tolerances +- 10mm.
	ERW Steel pipes for Water, gas & sewage (168.3 to 219.1mm)							
11	B.S. 879 / 1965		As per table in relavant standard	10	10	Upto 6”		Generally 4 to 7 mtrs. 50% short random length of 1.0 to 4.0 mtr can be supplied for sized 76.20 and 114.3 OD, For balance sizes 7.5%
	Steel tubes used for water wells					1	1	
						above 6”		
						0.75	0.75	

TOWER

We design, fabricate, supply and erect various types of Communication, Transmission tower and Mono poles such as

- Graund Base Tower Different height
- Rooftop Tower Different height
- Pole Tower
- Self supporting communication tower
- Transmission Tower
- Substation Structure

HYDROPOWER

We design, fabricate and supply various structure of micro hydropower such as

- Headrace pipe
- Penstock pipe
- Expansion joint
- By furcation for penstock pipe
- Steel bend
- Steel Gates (Flushing gates)

EQUIPMENTS

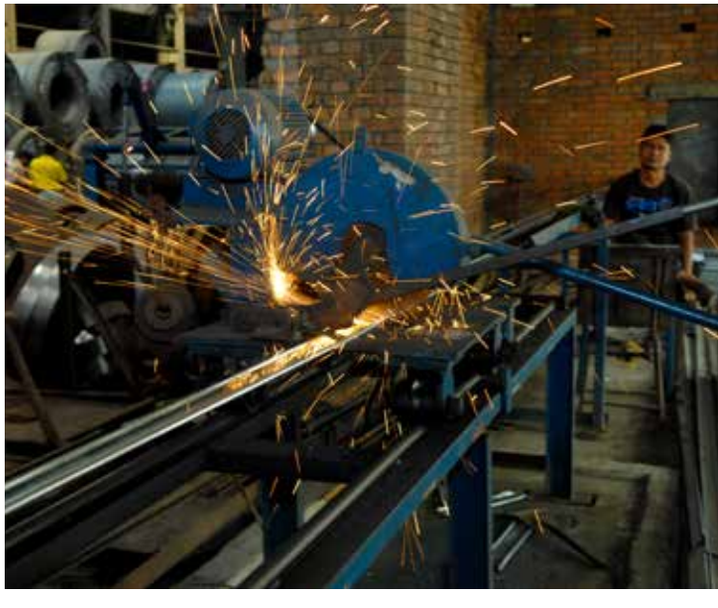
S.NO	NAME & TYPE	NO/ SET	CAPACITY
1	**SAWS-** POWER HACK-SAWA	2	10" WIDE × 4" THICK
	BEND - SAW CUTTER	1	10" WIDE × 8" THICK
	ABRESSIVE WHEEL SAW	3	6" WIDE X 4" THICK
2	**DRILLING MACHINE-** BENCH DRILL M/C	3	20 MM DIA DRILLING
	BENCH DRILL M/C	3	1NO.40 MM , 2 NO. 25 MM DRILLING
	HAND DRILL M/C	3	18 MM DIA DRILLING
	MAGNET DRILL M/C	2	18 MM DIA HOLING CAPACITY
	RADIAL DRILL M/C	1	40 MM
	VERTICAL BORING/ DRILLING M/C	1	50 MM
3	**WELDING MACHINE WITH VOLTAGE STABLIZER-** ARC WELDING M/C (OIL COOLED)	17	350 AMPS
	ARC WELDING M/C (AIR COOLED)	4	350 AMPS
	ARC WELDING M/C (D.C. GENERATOR)	4	450 AMPS
	ARC WELDING M/C (RECTIFIER)	3	350 AMPS
	MIGMATIC WELDING M/C	2	1 NO. 400 AMPS, 1NO. 350 AMPS
4	**GRINDERS-** ANGULAR HAND GRINDER	2	7" WHEEL
	ANGULAR HAND GRINDER	2	7" WHEEL
	ANGULAR HAND GRINDER	4	4" WHEEL
	HAND GRINDER	10	5" WHEEL
5	**LATHE MACHINE-** LATHE M/C	3	6 FEET BED
	LATHE M/C	2	1NO. 4FEET , 1 NO.3 FEET BED
	LATHE M/C	1	8 FEET BED
6	**GAS/CUTTING EQUIPMENT-** WHEEL CUTTER	2	8" WIDE × 3" THICK
	WHEEL CUTTER	3	10" WIDE × 4" THICK
	PIPE, ANGLE, CHANNEL CUTTING M/C	1	½" TO 2" PIPE
	THREAD CUTTING M/C	1	½" TO 2" PIPE
	PUG CUTTING M/C	2	UP TO 50MM THICK PLATE CUTTING
	HAND CUTTING SET	4	

S.NO	NAME & TYPE	NO/ SET	CAPACITY
7	**BLACKSMITH SHOP**	2	
8	**MILLING M/C**	2 NO	LENGTH 3 FT, 400MM DIA, DOUBLE SPINDLE
9	**GALVANIZING PLANT WITH COMPLETE SET UP–** FOR A.STRUCTURE AND PIPE B.POLE & STRUCTURE	2 UNITS	A.0.6 M WIDE × 7 M LONG × 1. 2 M DEEP KETTLE B. 0.6 M WIDE X 3.6 M LONG X 0.6 M DEEP KETTLE
	TEMPRETURE METER	4	0 TO 1200 C (LC =1 C)
	HYDRO METER	2	
	PH-METER	1	
	ADHESION TESTING HAMMER	1	
	ZINC COAT MEASURING INSTRUMENT	1	
	WEIGHTING MACHINE		
	A. WEIGH-BRIDGE	1	80 MT (LC=10KG)
	B. ELECTRONIC WEIGHTING M/C	2	5 MT (LC= 0.5KG)
	C. ELECTRONIC WEIGHTING M/C	1	60 KG(LC=0. 005KG)
	D. WEIGHTING SCALE MACHANICAL	2	300 KG (LC= 0.2 KG)
10	**OTHERS-** SHEET SHEARING M/C	1	10MM THICK × 0.6 M LONG
	SHEET SHEARING M/C	1	4MM THICK × 3.0 M LONG
	SHEET SHEARING M/C	1	4MM THICK × 1.5 M LONG
	MECHANICAL PRESS	1	75 METRIC TON
	MECHANICAL PRESS	2	1 NO. 200 MT AND 1.NO.35 MT
	HYDRAULIC PRESS M/C	5	3 NOS.40 MT, 2 NOS 25 MT
	PIPE PRESS M/C	1	½" TO 2" PIPE
	HYDRAULIC PRESS M/C	1	70 METRIC TON
	MULTI PURPOSE PRESS M/C A. MPP1	1	CUTTING: CHANNEL ISMC 100, ANGLE ISA 120 X120 X10, FLAT 300 X15, ROD 40Ø PUNCHING 40Ø X 10 MM
	B. MPP2	1	CUTTING: ANGLE ISA 100 X100 X10, FLAT 300 X10, ROD 40Ø PUNCHING 25Ø X 12 MM

S.NO	NAME & TYPE	NO/ SET	CAPACITY
	SHEET ROLLING M/C	1	4MM THICK × 3 M LONG
	SHEET BENDING MACHINE	1	3MM THICK × 2.5 M LONG
	PIPE SWAGING M/C	2	150 MT (2½' TO 8" TUBE SWAGING) – '' –
	ROD THREADING M/C	4	5/8" DIA CAPACITY
	SHAPER	2	24"
	PIPE AND COLD ROLLED SECTION ROLLING MILL	1 UNIT	½" TO 8" DIA TUBE ROLLING AND UP TO 6" WIDE COLD ROLLED SECTION ROLLING CAPACITY
		1	40 METRIC TON
11	**LIST OF MACHINERY, EQUIPMENT FOR HYDRO MECHANICAL PENSTOCK PIPES/STEEL POLES & ACCESSORIES**		
	CNC SHEET ROLLING MACHINE	2	I) 12 X 3000 MM II) 45 X 3000 MM
	AUTOMATIC MIG WELDING MACHINE	1	COLUMN & BOOM VERTICAL STROCK 2000 MM HORIZONTAL STROKE 3000 MM SR NO. 120600
	AUTOMATIC SUB MERGE ARC WELDING MACHINE	1	WELD AMPS-1200 MAX. HAND WELD AMPS-1000 MAX. CONT. AUTO WELD AMPS-1000 VERTICAL STOCK-2000 MM HORIZONTAL STOCK – 3000 MM
	HYDRAULIC GATE SHEARING MACHINE	1	8 X 3200 MM
	CNC PRESS BRACK MACHINE	1	CP-350X2MT LENGTH-4.5MTS X 2
	BEVELLING MACHINES	1	MAX PLATE THICK-40MM
	CNC PLASMA ARC CUTTING MACHINE	1	MAX PLATE THICK-25MM
	ULTRASONIC TESTING EQUIPMENT	1	10MM TO 5 METER (IN STEEL) IN HOT KEY MODE , IT HAS 13 PRESET VALUES FINE MODE ADJUSTABLE IN STEP OF 1 MM
	PORTABLE X – RAY MACHINE	1	VIEW PORT-200X60 MM VIEW PIECES DENSITY - <4.0 D CONTINUOUS HIGHEST BRIGHTNESS – 12 HRS.
	SAND BLAST MACHINE UNITS	1	

Note: M/C = Machine, MFD = Manufactured, MT = Metric Ton

Updated as on 17th June, 2014



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You can contact MSI in a number of ways

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