

# **STEEL PIPES & TUBES**

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## STEEL PIPES & TUBE

ERW pipes & tubes are made from HR coils manufactured by reputed steel producer. After being longitudinally slitted & edge preparation, the strip is progressively formed into a circular, rectangular, square shape by passing it through a series of forming rolls.

Continuous welding is carried out by a high frequency induction welding machine, and the seam is formed by fusing the edges without any filler metal. The welded pie, after cooling is cut in appropriate length after attaining its specified inside and outside diameter.

The pipes & tubes are conveyed to the finishing bay for finishing, testing & inspection. Hydro testing of pipes is undertaken to detect leaks and fissures prior to galvanizing and threading. The pipes are subsequently galvanized / black varnished / threaded / painted / powder coated as per specification / client requirement.

ERW pipes & tubes are extensively used in agriculture, industry, construction activities like scaffolding and casing in bore wells. Rectangular and square hollow sections are used for structural purpose considering the challenging and varied applications the pipes are produced to meet national and international specification.

### WATER PIPE LINES

Water Mains, Plumbing, Sewerage Systems  
Industrial Water Line, Plant Piping  
IS:1239, IS:3589, ASTM A 53, JIS G 3444  
EN 10255, EN 10217-1, AS:1074  
ASNZ:1163

### FIRE FIGHTING SYSTEM

ASTM A 53, ASTM A 795  
IS:3589, IS:1239

### POWER PROJECTS

Ash Handling System, LP Piping,  
IS:3589, IS:1239

### CONSTRUCTION INDUSTRIES

Scaffolding & Structural Purposes.  
IS:1161, IS:4923, EN 39  
EN 10219 - Part 1 & 2, AS NZ:1163  
ASTM A 500  
Electrical Poles & Telecom Tower (IS:1161)

### AGRICULTURE & IRRIGATION

Deep Tubewells & casing pipes IS:4270

### OTHER PURPOSES

Supply of Exhaust Piping, cold storage industry  
LPG Cylinder supporting rings (IS:1239)  
Steel Tubes for Idlers & belt conveyors (IS:9295)  
Electrical Poles & telecom Tower (IS:1161)  
HVAC (Heating Ventilation Air-Conditioning)



## STEEL PIPES & TUBE

### STEEL TUBES FOR USE IN WATER, GAS & AIR LINES

CONFORMING TO **IS 1239**

N.B. & SERIES	OUTSIDE DIAMETER		WALL THICKNESS		NOMINAL WEIGHT BLACK TUBES				NOMINAL WEIGHT GALVANIZED TUBES				SOCKETS		
					PLAIN END		SCREWED & SOCKETED		PLAIN END		SCREWED & SOCKETED		Min. O.D.	MIN. LENGTH	
(MM)	Min. (MM)	Max. (MM)	Min.	SWG	KG/M	M/ TONE	KG/M	M/ TONE	KG/M	M/ TONE	KG/M	M/ TONE	(MM)	(MM)	
15	L	21.0	21.4	2.00	14	0.947	1056	0.956	1043	0.990	1010	1.002	998	27.0	37.0
	M	21.0	21.8	2.60	12	1.21	830	1.22	822	1.25	801	1.260	794		
	H	21.0	21.8	3.20	10	1.44	696	1.45	691	1.48	677	1.489	671		
20	L	26.4	26.9	2.30	13	1.38	726	1.39	718	1.43	698	1.448	690	32.5	39.0
	M	26.5	27.3	2.60	12	1.56	642	1.57	636	1.61	620	1.628	614		
	H	26.5	27.3	3.20	10	1.87	535	1.88	530	1.92	520	1.939	516		
25	L	33.2	33.8	2.60	12	1.98	505	2.00	489	2.05	488	2.077	482	39.5	46.0
	M	33.3	34.2	3.20	10	2.41	415	2.43	411	2.48	404	2.501	400		
	H	33.3	34.2	4.00	8	2.93	341	2.95	338	3.00	334	3.022	331		
32	L	41.9	42.5	2.60	12	2.54	394	2.57	388	2.63	380	2.669	375	49.0	51.0
	M	42.0	42.9	3.20	10	3.10	323	3.13	319	3.19	314	3.227	310		
	H	42.0	42.9	4.00	8	3.79	264	3.82	261	3.88	258	3.920	255		
40	L	47.8	48.4	2.90	11	3.23	309	3.27	305	3.33	300	3.383	296	56.0	51.0
	M	47.9	48.8	3.20	10	3.56	281	3.60	277	3.66	273	3.709	270		
	H	47.9	48.8	4.00	8	4.37	229	4.41	226	4.47	224	4.518	221		
50	L	59.6	60.2	2.90	11	4.08	245	4.15	241	4.21	238	4.277	234	68.0	60.0
	M	59.7	60.8	3.60	9	5.03	199	5.10	196	5.16	197	5.234	191		
	H	59.7	60.8	4.50	7	6.19	161	6.26	160	6.32	158	6.390	156		
65	L	75.2	76.0	3.20	10	5.71	175	5.83	172	5.88	170	5.992	167	84.0	69.0
	M	75.3	76.6	3.60	9	6.42	156	6.54	153	6.59	152	6.702	149		
	H	75.3	76.6	4.50	7	7.93	126	8.05	124	8.09	124	8.206	122		
80	L	87.9	88.7	3.20	10	6.72	149	6.89	145	6.91	145	7.081	141	98.0	75.0
	M	88.0	89.5	4.00	8	8.36	120	8.53	117	8.55	117	8.725	115		
	H	88.0	89.5	4.80	6	9.9	101	10.10	99	10.13	99	10.300	97		
100	L	113.0	113.9	3.60	9	9.75	103	10.00	100	10.00	100	10.248	98	124.0	87.0
	M	113.1	115.0	4.50	7	12.2	82	12.50	80	12.40	81	12.657	79		
	H	113.1	115.0	5.40	5	14.5	69	14.80	68	14.71	68	14.966	67		
125	M	138.5	140.8	4.80	6	15.90	63	16.40	61	16.27	61	16.654	60	151.0	96.0
	H	138.5	140.8	5.40	5	17.9	56	18.40	55	18.18	55	18.568	54		
150	M	163.9	166.5	4.80	6	18.90	53	19.55	51	19.35	52	19.841	50	178.0	96.0
	H	163.9	166.5	5.40	5	21.3	47	21.90	46	21.64	46	22.133	45		

#### TOLERANCES

##### (A) THICKNESS

Light Tubes + Not Limited  
- 8%

Medium & Heavy Tubes + Not Limited  
- 10%

##### (B) WEIGHT

Single Tube (Light Series) ± 10%

Single Tubes (Medium & Heavy Series) + Not Limited  
- 10%

For Quantities Per Load of 10 Tonnes Minimum (Light Series) + 7.5%  
- 5%

For quantities per load of 10 Tonnes ± 7.5%  
Minimum Medium & Heavy Series

##### (C) LENGTH

Unless Otherwise Specified 4 to 7 Meters

## STEEL PIPES & TUBE

### STEEL TUBES FOR WATER & SEWAGE PURPOSE

CONFORMING TO **IS 3589**

N.B. Size (MM)	Outside Diameter (MM)	Wall Thickness (MM)	Weight KG/M (MM)	Weight M / TONNE
150	168.3	2.6	10.6	94
		3.2	13.0	77
		4.0	16.2	62
		4.5	18.2	55
200	219.1	2.6	13.9	72
		3.6	19.1	52
		4.5	23.8	42
		6.3	33.1	30
250	273	3.6	23.9	42
		4.0	26.5	38
		5.0	33	30
		6.3	41.4	24

N.B. Size (MM)	Outside Diameter (MM)	Wall Thickness (MM)	Weight KG/M (MM)	Weight M / TONNE
300	323.9	4.0	31.6	31
		4.5	35.4	28
		5.6	44	23
		7.1	55.5	18
350	355.6	4.0	34.8	29
		5.0	43.2	23
		5.6	48.3	21
		8.0	68.6	15
400	406.4	4.0	39.7	25
		5.0	49.5	20
		6.3	62.2	16
		8.8	86.3	12

#### A - PHYSICAL PROPERTIES

Grade	Y.S. MPa Min	T.S. MPa Min	% Age Elongation Min
FE 330	195	330	20
FE 410	235	410	18
FE 450	275	450	15

#### B - TOLERANCES

1. Outside Diameter of Pipe  $\pm 0.75\%$
2. Thickness Upto 406.4mm OD  $\pm 10\%$
3. Unless otherwise specified, length are in single random lengths from 4to7 meters and double random length From 7 to 14 Meters



## STEEL PIPES & TUBE

### STEEL TUBES FOR WATER WELLS (CASING PIPES)

CONFORMING TO **IS 4270**

N.B. Size (MM)	Outside Diameter (MM)	Wall Thickness (MM)	Weight (Plain END) (MM)
100	114.3	5.0	13.48
125	141.3	5.0	16.80
150	168.3	5.0	20.13
175	193.7	5.4	25.10
200	219.1	5.4	28.46
225	244.5	6.0	35.29
250	273.1	7.1	46.57
300	323.9	7.1	55.47
350	355.6	8.0	68.57
350	355.6	10.0	85.22
350	355.6	12.0	101.67
400	406.4	8.0	78.60
400	406.4	10.0	97.75
400	406.4	12.0	116.71

#### A - PHYSICAL PROPERTIES

Grade	Y.S. MPa Min	T.S. MPa Min	% Age Elongation Min
FE 410	235	410	15
FE 450	275	450	13

#### B - TOLERANCES

1. Outside Diameter of Pipe  $\pm 1.0\%$
2. Thickness Upto 406.4mm OD + 15% & - 12.5%
3. Weight Single Tube + 10% & - 8%
4. Length Unless Otherwise Specified 4 to 7 Mtrs.



## STEEL PIPES & TUBE

### STEEL TUBES FOR IDLERS BELT CONVEYORS

CONFORMING TO **IS 9295**

Outside Diameter (MM)	Wall Thickness (MM)	Mass Kg/Mtr.	Mtrs. / TONNE	Outside Diameter (MM)	Wall Thickness (MM)	Mass Kg/Mtr.	Mtrs. / TONNE
63.50	3.65	5.39	186	139.70	4.50	15.00	67
	4.05	5.87	170		4.85	16.13	62
	4.50	6.55	153		5.40	17.90	56
	4.85	7.01	143		6.30	20.73	48
76.10	3.65	6.52	153	152.40	4.50	16.40	61
	4.05	7.20	139		4.85	17.65	57
	4.50	7.95	126		5.40	19.50	51
	4.85	8.52	117		6.30	22.70	44
88.9	4.05	8.47	118	165.10	4.50	17.80	56
	4.50	9.36	107		4.85	19.17	52
	4.85	10.05	99		5.40	21.27	47
	5.40	11.12	90		6.30	24.68	41
101.60	4.05	9.74	103	168.30	4.50	18.20	55
	4.50	10.78	93		4.85	19.55	51
	4.85	11.57	86		5.40	21.69	46
	5.40	12.81	78		6.30	25.17	40
114.30	4.50	12.19	82	219.10	5.40	28.50	35
	4.85	13.09	76		6.30	33.06	30
	5.40	14.50	69		7.10	37.12	27
	6.30	16.78	60				

#### A - PHYSICAL PROPERTIES

Grade	Y.S. MPa Min	T.S. MPa Min	% Age Elongation Min
ERW 210	210	330	20
ERW 240	240	410	18
ERW 310	310	450	15

#### B - TOLERANCES

1. Outside Diameter  $\pm 0.8\%$
2. Ovality Below 168.3mm OD 0.5mm
3. Ovality Including 168.3mm and Above 1.0mm
4. Weight Kg/Mtr. : Single Tube + 10%
5. For Truck Load of Ten Tonnes  $\pm 7.5\%$
6. Thickness  $\pm 10\%$

## STEEL PIPES & TUBE

### THIN WALLED FLEXIBLE QUICK COUPLING PIPES

#### CONFORMING TO IS 11722

These pipes are versatile, economical and reliable piping system available. It is easier, faster and safer to install than normal welding, threading or flanging pipes resulting in lower installation and labor costs.

These pipes are intended for water supply where transportation and quick assembly of pipes are the main requisite.

#### APPLICATIONS

- Irrigation including sprinkler irrigation
- Construction site water supply in civil engineering and construction projects, compressed air pipelines and networks at construction sites.
- Temporary on emergency water service
- Suction lines (Tube wells)
- De-watering in flood relief operations
- Dust suppression through sprinkling in mining, ore handling, etc.
- Wellpoint de-watering networks
- Aeration in fish farming
- Fire preventing and fighting (Coal, yard/pits, timber yard/raw material stock yards for paper mills)

Outside Diameter	Wall Thickness Type A*	Wall Thickness Type B#	Wall Thickness Type C#
25.4	-	1.40	2.00
31.8	-	1.40	2.00
38.1	-	1.40	2.00
50.8	1.00	1.60	2.50
63.5	-	1.60	2.50
76.2	1.00	1.60	2.50
101.6	1.00	1.60	3.00
127.0	1.25	1.60	3.00
152.4	1.40	1.60	3.40
203.2	-	2.00	4.00
254.0	-	2.60	4.50
304.8	-	3.10	5.00

\*Pressure activated couplers.

#mechanically clamped couplers.



# STEEL TUBES FOR STRUCTURAL PURPOSES

## STEEL TUBES

### CONFORMING TO IS 1161

NB MM (1)	OD MM (2)	Thk MM (3)	Mass kg/m (4)	Area of Cress - Section cm <sup>2</sup> (5)	Internal Volume cm <sup>3</sup> /m (6)	Surface		Moment of Inertia cm <sup>4</sup> /m (9)	Modulus of Section cm <sup>3</sup> (10)	Radius of Gyration cm (11)	Square of Radius of Gyration cm <sup>3</sup> (12)
						External cm <sup>3</sup> /m (7)	Internal cm <sup>3</sup> /m (8)				
15	21.3	2	0.952	1.21	235	669	543	0.57	0.54	0.69	0.47
	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
20	26.9	2.3	1.40	1.78	391	845	701	1.36	1.01	0.87	0.76
	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
25	33.7	2.6	1.99	2.54	638	1059	895	3.09	1.84	1.10	1.22
	33.7	3.2	2.41	3.07	585	1059	858	3.60	2.14	1.08	1.18
	33.7	4	2.93	3.73	519	1059	807	4.19	2.49	1.06	1.12
32	42.4	2.6	2.55	3.25	1087	1332	1169	6.46	3.05	1.41	1.99
	42.4	3.2	3.09	3.94	1018	1332	1131	7.62	3.59	1.39	1.93
	42.4	4	3.79	4.83	929	1332	1081	8.99	4.24	1.36	1.86
40	48.3	2.9	3.25	4.14	1419	1517	1335	10.70	4.43	1.61	2.59
	48.3	3.2	3.56	4.53	1379	1517	1316	11.59	4.80	1.60	2.56
	48.3	4	4.37	5.57	1276	1517	1266	13.77	5.70	1.57	2.47
50	60.3	2.9	4.11	5.23	2333	1894	1712	21.59	7.16	2.03	4.13
	60.3	3.6	5.03	6.41	2215	1894	1668	25.87	8.58	2.01	4.03
	60.3	4.5	6.19	7.89	2067	1894	1612	30.90	10.25	1.98	3.92
65	76.1	2.9	5.24	6.67	3882	2391	2209	44.74	11.76	2.59	6.71
	76.1	3.6	6.44	8.20	3728	2391	2165	54.01	14.19	2.57	6.59
	76.1	4.5	7.95	10.12	3536	2391	2108	65.12	17.11	2.54	6.43
80	88.9	3.2	6.76	8.62	5346	2793	2592	79.21	17.82	3.03	9.19
	88.9	4	8.38	10.67	5140	2793	2542	96.34	21.67	3.00	9.03
	88.9	4.8	9.96	12.68	4939	2793	2491	112.49	25.31	2.98	8.87
90	101.6	3.6	8.70	11.08	6999	3192	2966	133.24	26.23	3.47	12.02
	101.6	4	9.63	12.26	6881	3192	2941	146.28	28.80	3.45	11.93
	101.6	4.8	11.46	14.60	6648	3192	2890	171.39	33.74	3.43	11.74
100	114.3	3.6	9.83	12.52	9009	3591	3365	191.98	33.59	3.92	15.33
	114.3	4.5	12.19	15.52	8709	3591	3308	234.32	41.00	3.89	15.10
	114.3	5.4	14.50	18.47	8413	3591	3252	274.54	48.04	3.85	14.86
110	127	4.5	13.59	17.32	10936	3990	3707	325.29	51.23	4.33	18.78
	127	4.8	14.47	18.43	10825	3990	3688	344.50	54.25	4.32	18.69
	127	5.4	16.16	20.63	10605	3990	3651	382.04	60.16	4.30	18.52
125	139.7	4.5	15.00	19.11	13417	4389	4106	437.20	62.59	4.78	22.87
	139.7	4.8	15.97	20.34	13295	4389	4087	463.33	66.33	4.77	22.78
	139.7	5.4	17.89	22.78	13050	4389	4050	514.50	73.66	4.75	22.58
135	152.4	4.5	16.41	20.91	16151	4788	4505	572.24	75.10	5.23	27.37
	152.4	4.8	17.47	22.26	16016	4788	4486	606.76	79.63	5.22	27.26
	152.4	5.4	19.58	24.94	15748	4788	4448	674.51	88.52	5.20	27.05
150	165.1	4.5	17.82	22.70	19138	5187	4904	732.57	88.74	5.68	32.27
	165.1	4.8	18.98	24.17	18991	5187	4885	777.13	94.14	5.67	32.15
	165.1	5.4	21.27	27.09	18699	5187	4847	864.70	104.75	5.65	31.92
	165.1	5.9	23.20	29.50	18465	5187	4818	970.00	113.40	5.63	31.72
	165.1	6.3	24.67	31.43	18265	5187	4791	992.28	120.20	5.62	31.57
	165.1	8	30.99	39.48	17460	5187	4684	1221.25	147.94	5.56	30.93
150	168.3	4.5	18.18	23.16	19931	5287	5005	777.32	92.36	5.79	33.56
	168.3	4.8	19.35	24.66	19781	5287	4986	824.57	97.99	5.78	33.44
	168.3	5.4	21.69	27.64	19483	5287	4948	917.69	109.05	5.76	33.21
	168.3	6.3	25.17	32.06	19040	5287	4891	1053.42	125.18	5.73	32.85
	168.3	8	31.63	40.29	18218	5287	4785	1297.27	154.16	5.67	32.20
	168.3	10	39.04	49.73	17273	5287	4659	1563.98	185.86	5.61	31.45



## STEEL TUBES FOR STRUCTURAL PURPOSES

NB MM (1)	OD MM (2)	Thk MM (3)	Mass kg/m (4)	Area of Cress - Section cm <sup>2</sup> (5)	Internal Volume cm <sup>3</sup> /m (6)	Surface		Moment of Inertia cm <sup>4</sup> /m (9)	Modulus of Section cm <sup>3</sup> (10)	Radius of Gyration cm (11)	Square of Radius of Gyration cm <sup>3</sup> (12)
						External cm <sup>3</sup> /m (7)	Internal cm <sup>3</sup> /m (8)				
175	193.7	4.8	22.36	28.49	26619	6085	5784	1271.39	131.27	6.68	44.63
	193.7	5.4	25.08	31.94	26273	6085	5746	1416.97	146.31	6.66	44.36
	193.7	5.9	27.33	34.81	25987	6085	5715	1536.13	158.61	6.64	44.31
	193.7	6.3	29.12	37.09	25759	6085	5689	1630.05	168.31	6.63	43.95
	193.7	8	36.64	46.67	24801	6085	5583	2015.54	208.11	6.57	43.19
	193.7	10	45.30	57.71	23697	6085	5457	2441.59	252.10	6.50	42.31
	193.7	12	53.77	68.50	22618	6085	5331	2839.20	293.15	6.44	41.45
200	219.1	4.8	25.37	32.32	34471	6883	6582	1856.03	169.42	7.58	57.43
	219.1	5.6	29.49	37.56	33947	6883	6531	2141.61	195.49	7.55	57.02
	219.1	5.9	31.02	39.52	33751	6883	6513	2247.01	205.11	7.54	56.86
	219.1	6.3	33.06	42.12	33491	6883	6487	2386.14	217.81	7.53	56.65
	219.1	8	41.65	53.06	32397	6883	6381	2959.63	270.16	7.47	55.78
	219.1	10	51.57	65.69	31134	6883	6255	3598.44	328.47	7.40	54.78
	219.1	12	61.29	78.07	29895	6883	6129	4199.88	383.38	7.33	53.79
225	244.5	5.9	34.72	44.23	42529	7681	7310	3149.12	257.60	8.44	71.21
	244.5	6.3	37.01	47.14	42237	7681	7285	3346.03	273.70	8.42	70.97
	244.5	8	46.66	59.44	41007	7681	7179	4160.45	340.32	8.37	70.00
	244.5	10	57.83	73.67	39584	7681	7053	5073.15	414.98	8.30	68.86
250	273	5.9	38.86	49.51	53584	8577	8206	4417.18	323.60	9.45	89.22
	273	6.3	41.44	52.79	53256	8577	8181	4695.82	344.02	9.43	88.96
	273	8	52.28	66.60	51875	8577	8074	5851.71	428.70	9.37	87.86
	273	10	64.86	82.62	50273	8577	7948	7154.09	524.11	9.31	86.59
	273	12	77.24	98.39	48695	8577	7823	8396.14	615.10	9.24	85.33
300	323.9	6.3	49.34	62.86	76111	10176	9780	7928.90	489.59	11.23	126.14
	323.9	8	62.32	79.39	74458	10176	9673	9910.08	611.92	11.17	124.82
	323.9	10	77.41	98.61	72536	10176	9547	12158.34	750.75	11.10	123.29
	323.9	12	92.30	117.58	70639	10176	9422	14319.56	884.20	11.04	121.78
350	355.6	8	68.58	87.36	90759	11172	10669	13201.37	742.48	12.29	151.11
	355.6	10	85.23	108.57	88457	11172	10543	16223.50	912.46	12.22	149.42
	355.6	12	101.68	129.53	86361	11172	10418	19139.47	1076.46	12.16	147.76

### TOLERANCES

#### (A) Outside diameter:

- Up to and including 48.3 mm : + 0.4 mm  
- 0.8 mm
- Over 48.3 mm : ± 1.0 percent

#### (B) Thickness (for all size) :

- Welded tubes : ± 10 percent
- Seamless tubes : + Not limited  
- 12.5 percent

#### (C) Weight :

- Single tube : ± 10 percent
- 10 tonne lots : ± 7.5 percent

## STEEL TUBES FOR STRUCTURAL PURPOSES

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### STEEL HOLLOW SECTION (SHS & RHS)

#### CONFORMING TO **IS 4923**

Closed Structural (RHS / SHS) manufactured our company has several techno economic advantages over Conventional Structural.

- The raw material used to make these structural comes from reputed steel producer.
- The remarkable strength around their axis which leads to decisive advantages with regards to application technology.
- Closed Structural's behave move efficiently than Conventional Structural's due to their high torsional rigidity as well compressive strength.
- Their higher strength to weight ratio results in upto 30 to 40% saving in steel.
- The smooth, uniform profile of these sections minimize corrosion and facilitate easy, at-site fabrication.
- They also enhance the aesthetic appeal of structures.

#### APPLICATION

- Agricultural Implement Frames
- Amusement Park and Playground Equipments
- Automobile Chassis
- Bridges
- Bus Stands
- Conveyor Gantries, Trestles Cranes
- Drilling Rags
- Exhibition Stalls
- Furniture, Partition Frames
- Flood Light Masts
- Guard Rails, Staircases
- Industrial Lifting Equipment
- Industrial Sheds
- Large Span Portal Frames Material Storage
- Racks
- Mine Roof Support System (cogs, props)
- Pallets
- Pedestrian Walkovers (Footbridge)
- Sign Supporting Structure
- Space Frames
- Sports Galleries
- Transmission Line Towers
- Trolleys
- Truck and Bus Body Members
- Trusses, Columns and Purlings
- And lots of other applications....



## STEEL TUBES FOR STRUCTURAL PURPOSES

### SQUARE HOLLOW SECTION (SHS)

CONFORMING TO **IS 4923**

SHS DxD	DEPTH D	WIDTH D	THICKNESS	WEIGHT	AREA OF SECTION	MOMENT OF INERTIA	RADIUS OF GYRATION	ELASTIC OF MODULUS	PLASTIC MODULUS
[MM]	[MM]	[MM]	[MM]	KG/M	Cm2	Cm4	Cm	Cm3	Cm3
1	2	3	4	5	6	7	8	9	10
20.0 X 20.0	20.0	20.0	2.0	1.15	1.33	0.58	0.68	0.61	0.61
	20.0	20.0	2.6	1.46	2.17	0.63	0.66	0.66	0.66
25.0 X 25.0	25.0	25.0	2.6	1.69	2.16	1.72	0.89	1.38	1.76
	25.0	25.0	3.2	1.98	2.53	1.89	0.86	1.51	1.98
32.0 X 32.0	32.0	32.0	2.6	2.26	2.88	4.02	1.18	2.51	3.11
	32.0	32.0	3.2	2.69	3.42	4.54	1.15	2.84	3.59
	32.0	32.0	4.0	3.19	4.07	5.02	1.11	3.14	4.11
40.0 X 40.0	40.0	40.0	2.6	2.92	3.72	8.45	1.51	4.22	5.12
	40.0	40.0	3.2	3.49	4.45	9.72	1.48	4.86	6.01
	40.0	40.0	3.6	3.85	4.91	10.45	1.46	5.22	6.53
	40.0	40.0	4.0	4.20	5.35	11.07	1.44	5.54	7.01
49.5 X 49.5	50	50	2.9	4.07	5.19	18.37	1.88	7.42	8.93
	50	50	3.6	4.93	6.28	21.42	1.85	8.66	10.60
	50	50	4.5	5.95	7.58	24.64	1.80	9.96	12.47
60.0 X 60.0	60.0	60.0	2.6	4.55	5.8	31.33	2.33	10.44	13.35
	60.0	60.0	3.6	6.11	7.79	40.37	2.28	13.46	16.22
	60.0	60.0	4.5	7.43	9.47	47.20	2.23	15.73	19.32
72.0 X 72.0	72.0	72.0	3.2	6.71	8.54	66.32	2.79	18.42	21.80
	72.0	72.0	4.0	8.22	10.47	79.03	2.75	21.95	26.32
	72.0	72.0	4.8	9.66	12.31	90.31	2.71	25.09	30.49
80.0 X 80.0	80.0	80.0	3.2	7.51	9.57	92.71	3.11	27.29	27.92
	80.0	80.0	4.0	9.22	11.75	111.05	3.07	27.76	33.07
	80.0	80.0	4.8	11.03	13.85	127.58	3.04	31.90	38.45
91.5 X 91.5	91.5	91.5	3.6	9.67	12.32	156.49	3.56	34.21	40.24
	91.5	91.5	4.5	11.88	15.14	187.57	3.52	41.00	48.79
	91.5	91.5	5.4	14.01	17.85	215.68	3.48	47.14	56.77
100.0 X 100.0	100.0	100.0	4.0	11.73	14.95	226.35	3.89	45.27	53.30
	100.0	100.0	5.0	14.41	18.36	271.10	3.84	54.22	64.59
	100.0	100.0	6.0	16.98	21.63	311.47	3.79	62.69	75.10
113.5 X 113.5	113.5	113.5	4.5	14.99	19.10	372.88	4.42	65.71	77.33
	113.5	113.5	4.8	15.92	20.28	393.31	4.40	69.30	81.81
	113.5	113.5	5.4	17.74	22.60	432.58	4.38	76.23	90.55
	113.5	113.5	6.0	19.53	24.87	469.81	4.35	82.79	98.96
132.0 X 132.0	132.0	132.0	4.8	18.71	23.83	634.39	5.16	96.12	112.69
	132.0	132.0	5.4	20.88	26.59	700.11	5.13	106.08	125.02
	132.0	132.0	6.0	23.01	29.31	762.98	5.10	115.60	136.98
150.0 X 150.0	150.0	150.0	5.0	22.26	28.36	982.12	5.89	130.95	152.98
	150.0	150.0	6.0	26.40	33.63	1145.91	5.84	152.79	179.88
180.0 X 180.0	180.0	180.0	4.0	21.90	27.90	1434.00	7.17	159.00	184.00
	180.0	180.0	5.0	27.20	34.60	1755.00	7.12	195.00	226.00
	180.0	180.0	6.0	32.05	40.83	2036.00	7.06	226.00	280.00
	180.0	180.0	8.0	42.50	54.10	2633.00	6.98	293.00	346.00

Apart from above mentioned sizes, we also manufacture customized and need based requirement.

## STEEL TUBES FOR STRUCTURAL PURPOSES

### RECTANGULAR HOLLOW SECTION (RHS)

CONFORMING TO **IS 4923**

RHS DXB	DEPTH D	WIDTH D	THICKNESS	WEIGHT	AREA OF SECTION	MOMENT OF INERTIA		RADIUS OF GYRATION		ELASTIC OF MODULUS		PLASTIC MODULUS ABOUT	
						X-X	Y-Y	X-X	Y-Y	X-X	Y-Y	X-X	Y-Y
[MM]	[MM]	[MM]	[MM]	KG/M	Cm <sup>2</sup>	Cm <sup>4</sup>		Cm		Cm <sup>3</sup>		Cm <sup>3</sup>	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
50.0 X 25.0	50	25	2.9	2.98	3.80	10.93	3.60	1.70	0.97	4.37	2.88	5.72	3.48
	50	25	3.2	3.24	4.13	11.63	3.80	1.68	0.95	4.65	3.04	6.14	3.73
60.0 X 40.0	60	40	2.9	4.12	5.25	24.74	13.11	2.17	1.58	8.25	6.56	10.25	7.73
	66	33	2.9	4.07	5.19	27.33	9.12	2.29	1.33	8.28	5.53	10.59	6.49
66.0 X 33.0	66	33	3.6	4.93	6.28	31.87	10.52	2.25	1.29	9.66	6.37	12.56	7.66
	66	33	4.5	5.95	7.58	36.64	11.93	2.20	1.25	11.10	7.23	14.77	8.94
	75	25	2.9	4.12	5.25	29.82	7.72	2.38	1.21	8.52	5.14	11.07	6.04
75.0 X 25.0	75	25	3.2	4.50	5.73	32.04	8.24	2.37	1.20	9.15	5.49	11.98	6.51
	75	25	4.0	5.45	6.95	37.23	9.42	2.31	1.16	10.64	6.28	14.20	7.66
	80	40	2.9	5.03	6.41	50.87	17.11	2.82	1.63	12.72	8.56	16.07	9.88
80.0 X 40.0	80	40	3.2	5.50	7.01	54.94	18.41	2.80	1.62	13.74	9.21	17.46	10.72
	80	40	4.0	6.71	8.55	64.79	21.49	2.75	1.59	16.20	10.74	20.91	12.77
	96	48	3.2	6.71	8.54	98.61	33.28	3.40	1.97	20.54	13.87	25.85	15.91
96.0 X 48.0	96	48	4.0	8.22	10.47	117.54	39.32	3.50	1.94	24.94	16.30	31.21	19.14
	96	48	4.8	9.66	12.31	134.35	44.55	3.30	1.90	27.99	18.56	36.13	22.08
	100	50	3.2	7.01	8.93	112.29	37.95	3.60	2.06	22.46	15.18	28.20	17.37
100.0 X 50.0	100	50	4.0	8.59	10.95	134.14	44.95	3.50	2.03	26.83	17.98	34.10	20.93
	122	61	3.6	9.67	12.32	232.61	78.83	4.34	2.35	38.13	25.84	47.71	29.42
	122	61	4.5	11.88	15.14	278.39	93.78	4.29	2.49	45.73	30.75	57.85	35.56
122.0 X 61.0	122	61	5.4	14.01	17.85	320.83	107.03	4.24	2.45	52.60	35.09	67.29	41.22
	145	82	4.8	15.92	20.28	555.16	228.50	5.23	3.36	76.57	55.73	94.93	63.93
	145	82	5.4	17.74	22.60	610.85	250.59	5.20	3.33	84.26	61.12	105.07	70.66
145.0 X 82.0	172	92	4.8	18.71	23.83	917.13	346.91	6.20	3.82	106.64	75.41	132.08	85.61
	172	92	5.4	20.88	26.59	1012.47	381.74	6.17	3.79	117.73	82.99	146.55	94.86
172.0 X 92.0	200	100	5.0	22.26	28.36	1459.28	496.94	9.03	4.72	231.34	99.39	181.38	112.10
	200	100	6.0	26.40	33.63	1703.34	576.92	9.20	4.67	284.95	115.38	213.28	131.51
	200	100	8.0	34.38	43.79	2146.27	719.19	8.07	4.57	284.95	143.84	272.81	167.44
200.0 X 100.0	220	140	5.0	26.97	34.36	2313.39	1155.24	8.21	6.54	210.31	165.03	253.74	186.31
	220	140	6.3	33.81	43.07	2849.53	1417.84	8.13	6.48	259.05	202.55	315.09	231.02
220.0 X 140.0													

Grade	Y.S. MPa Min	T.S. MPa Min	Elongation	
			25.4 MM & Under	Over 25.4 MM
YSt - 210	310	210	12	20
YSt - 240	410	240	10	15
YSt - 310	450	310	8	10

Apart from above mentioned sizes, we also manufacture customized and need based requirement.

## RIGID STEEL CONDUIT & ACCESSORIES

### RIGID STEEL CONDUIT FOR ELECTRICAL INSTALLATIONS CONFORMING TO IS 9537 (Part-2)

Black stove enameled Steel Conduit Pipes and Galvanized Steel Conduit Pipes have high corrosion resistance and considered non-combustible.

These rigid steel conduit can be used indoors, outdoors, underground, concealed or exposed, for future wiring changes and provide excellent mechanical protection to conductors & cables.

DIMENSIONS			
Nominal Size of Conduit (MM)	Outside Diameter (MM)	Tolerance in Outside Diameter (MM)	Thickness (MM)
20	20	-0.3	1.4 to 1.8
25	25	-0.4	1.4 to 1.8
32	32	-0.4	1.4 to 1.8
40	40	-0.4	1.6 to 2.2
50	50	-0.5	1.6 to 2.2



## STEEL TUBES FOR CITY GAS DISTRIBUTION

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### CONFORMING TO IS: 1239 & IS: 13871

Galvanized Iron (GI) pipes are used in above ground service lines up to consumer meter or meter control valve. GI Pipes are used for transportation of Piped Natural Gas in households.

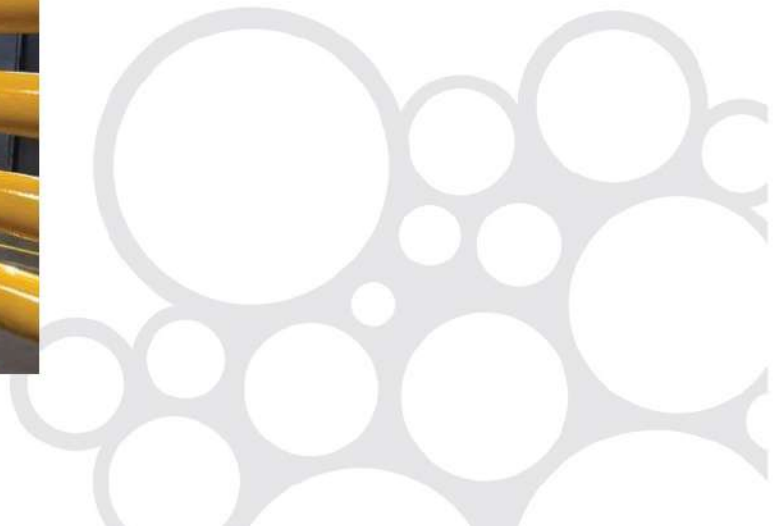
Sizes: NB 15 mm, NB 20 mm, NB 25 mm

Supplied as:

- a) Galvanised Pipe
- b) Galvanised & Powder Coated pipes

Approved by:

- Indraprastha Gas Ltd.
- Adani Gas Ltd.
- Maharashtra Natural Gas Ltd
- GAIL Gas Ltd.
- Bhagyanagar Gas Ltd.
- Avantika Gas Ltd.
- Assam Gas Ltd.
- Godavari Gas Ltd.
- Green Gas Ltd.
- Gujarat Gas Limited



## HDPE PIPES

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### HDPE SPRINKLER PIPES & FITTINGS FOR IRRIGATION CONFORMING TO IS 14151 (PART-1) & 14151 (PART-2)

With increasing demand of food grains and field crops and with lower availability of water, a sprinkler system is used now a days for a much efficient use of water for irrigation. This primarily is a system of spraying of water through nozzles (sprinklers). Keeping in step with technology and the market demand, we offer quality HDPE quick coupled pipes, fittings and accessories for sprinkler irrigation. This system can be used in even in undulating fields with excellent results and is useful for almost all types of soils and crops. The system, while helping in reducing the requirement of water for irrigation, effectively prevents soil erosion.

#### FEATURES

- More than 40% water saving in comparison to flood irrigation.
- Well suited for irrigation of undulating fields-levelling of land is not required.
- Portable, light weight and easy to handle.
- Extensive saving in transportation and labor cost.
- Easy and quick installation by using coupler type joint provided with pipes and fittings.
- Excellent corrosion resistant properties.
- UV Stabilized - Provides protection from ultra violet sun rays which makes it suitable for exposed application.
- Highly flexible, crack and impact proof - sustains high pressures and high temperatures.
- Chemically inert - Makes it suitable for liquid fertilizers and pesticides.
- Strong, durable and long lasting.
- Cost effective.

#### APPLICATIONS

Suitable for almost all crops like wheat, gram, pulses, vegetables, cotton, tea, coffee and field crops like hay, corn and soybean. It is also suitable for gardens maintained in residences, industries, hotels, resorts, public and government premises as also large green patches like the golf and race courses.



## HDPE PIPES

### HDPE SPRINKLER PIPES & FITTINGS FOR IRRIGATION CONFORMING TO IS 14151 (PART-1) & 14151 (PART-2)

Nominal Size (MM)	OUTER DIAMETER (MM)		DIMENSIONS							
			CLASS 1		CLASS 2		CLASS 3		CLASS 4	
			MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
50	50.0	50.5	-	-	-	-	2.00	2.40	2.9	3.8
63	63.0	63.6	-	-	2.00	2.40	2.50	2.90	3.8	4.4
75	75.0	75.7	2.00	2.40	2.50	2.90	3.00	3.40	4.5	5.2
90	90.0	90.8	2.20	2.60	2.90	3.40	3.50	4.10	5.3	6.1
110	110.0	111.0	2.70	3.20	3.40	3.90	4.20	4.80	6.5	7.4



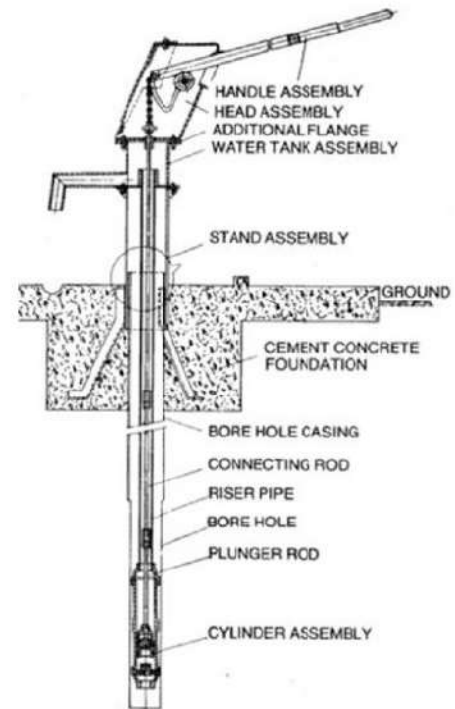


## DEEPWELL WATER HANDPUMPS

### INDIA MARK-II DEEP WELL HAND PUMP

#### FEATURES

- India Mark II Deep Well Hand pump / hand well pump as per Bureau of Indian Standard Specifications with 63.5mm dia cast iron brass sleeved cylinder assembly.
- The above-ground mechanism is fabricated from welded steel plates and sections for strength, and hot-dip galvanized for corrosion resistance.
- A chain and quadrant mechanism of the pump handle provides easy and accurate alignment of the connecting rod.
- The handle bar (32±1) mm has a high mechanical advantage and is designed to counter balance the weight of the connecting rods to reduce the pumping effort required by the user.
- Sealed ball bearings for the handle on a stainless steel axle adds to the ease of operation and lower maintenance needs.



#### STROKE LENGTH & DISCHARGE OF PUMPS

Hand Pump Type	Stroke Length	Discharge Minimum in liters (40 Strokes/Minute)
Standard	125±4	15

- The water tank assembly has an appropriate coupler to suit 32 mm NB medium class galvanized iron (GI) riser pipes or uPVC pipes.
- Riser pipes are comprised of locally available standard 32 mm NB GI pipes. Other options such as upvc, HDPE & FGP are also available.
- Connecting rods are of bright steel bar with threaded and couplers and are electro-galvanized against corrosion. Alternatively stainless steel rods are also available for better performance.
- The cylinder is made from a cast iron with brass liner and gun metal Plunger Valve and check valve components. All nitrile rubber parts like Pump Bucket, Sealing Ring, Upper Valve Seating & Lower Valve seating are made from high quality Nitrile Rubber.



#### SPECIFICATION :

Minimum Bore Size	100 mm.
Internal dia. of Cylinder	63.5 mm
Stroke length	125±4 mm
Operating depth (approx.)	up to 45 meters

## DEEPWELL WATER HANDPUMPS

### EXTRA DEEPWELL HAND PUMP

Extra Deep Well Hand Pumps discharges 12 litres (minimum) per minute per 40 strokes with an average installation range of the cylinders varying between 45 m to 90 m below ground level. These pumps are available with Normal Stand & telescopic stand.

Using finest quality steel and integrated with advanced working mechanism. These pumps offer optimum water discharge and are suitable for preventive maintenance with simple tools. These products are highly reliable and durable.

The Extra Deep Well Pumps set consists of the followings:

- Optional Telescopic Stand Assembly
- Pump Head
- Connecting Rod, Mild Steel Electro Galvanized (20 nos.)
- Option-Connecting Rod SS (20 Nos.)
- Cylinder assembly
- Riser Pipe 32 mm (1 1/4" NB with socket (20 Nos.)
- Set of Hex Bolts and Nuts
- Heavier sq. section (40mm) handle Assy. fixed with bearings (2 Nos.), T-Bar and (3 nos. of triangular counter weights if required)
- Chain with coupling
- Third plate (intermediate flange)
- Water Tank Assembly with 32mm (1-1/4") R.P. Holder
- Normal Stand Assembly

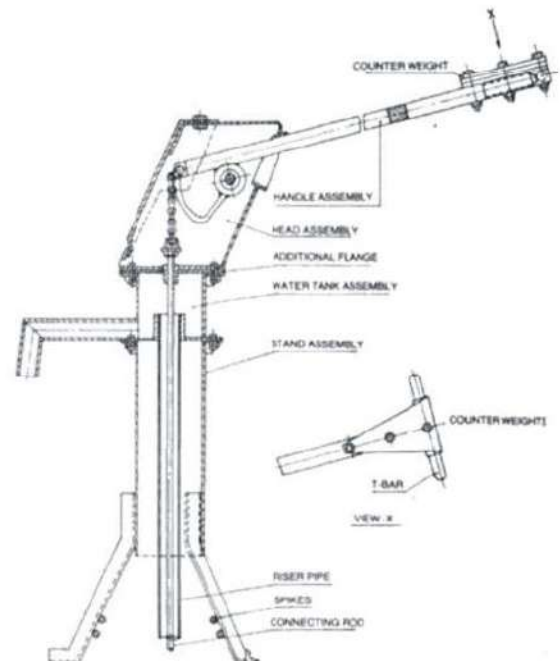


### STROKE LENGTH & DISCHARGE OF PUMPS

Hand Pump Type	Stroke Length	Discharge Minimum in liters (40 Strokes/Minute)
Extra Deep	100±4	12

#### SPECIFICATION :

Minimum Bore Size	100 mm.
Internal dia. of Cylinder	63.5 mm
Stroke length	100±4 mm
Up to 60 meter	up to 45 meters
61 meter to 70 meter	One Weight
71 meter to 80 meter	Two Weight
81 meter to 90 meter	Three Weight



## DEEPWELL WATER HANDPUMPS

### AFRIDEV HAND PUMP: DESIGNED FOR AFRICA

The Afridev Pump was designed on the basis of field trials in Africa.

The Afridev hand pump is a pump which can pump water from up to 45-60 meters below ground surface. This pump is designed with a cylinder which allows the piston to be extracted without removing the rising main.

All the specifications of the Pump are controlled by SKAT and the specifications have undergone 5 Revisions.

It is widely used in almost all the regions of Africa and is one of the biggest success stories of the continent.



### THIS PUMP IS VERY POPULAR IN MOST PARTS OF AFRICA. THE SALIENT FEATURES OF THIS PUMP ARE :

- Static water level - 20 mtr to 450 mtr
- Cylinder Assembly - it is made of UPVC pipe with brass liner inside and plunger valve and foot valve either brass or nylon (Derlin)
- Riser pipe - UPVC (OD 63 mm x thickness 4.7 mm)
- Casing Pipe - 100 mm to 200 mm it can also be used in Dug Wells
- Pump Rod - it is either Threaded or Eye Hook type made of SS or MS
- Bearing bushes are made from especially high quality plastics
- Pump is hot dip galvanized, use high quality zinc.
- Variable handle settings are possible to meet changes in water levels at different times.
- Customization of spout length and Pedestal is possible.
- Choice of Eye & hook connecting rod or threaded connecting rod.
- Discharge - 16.5 ltr per minute in 40 stroke
- Stroke length -  $225 \pm 6$  mm with an installation depth range between 15m to 45 m.
- Easy to install can be accomplished by village women mechanics.
- Alternative stainless steel lined cylinder available for aggressive water conditions.
- Quick release Eye & Hook tool-less ends on Connecting Rods with rubber Centralizers facilitate maintenance and protect the riser pipe against internal wear.
- Connecting rods are available in Mild Steel as well as Stainless Steel.
- Special tools for installation & maintenance of Afridev is available.
- Installation Manual is also provided with each pump.

