

Built
to Last
forever



Every City Every Home



PRAKASH
SURYA
STEEL TUBES & PIPES

ERW Galvanized / Black Steel Pipes | Structural Steel Hollow Sections | Oil & Gas Line Pipes / Casing Pipes

Bahadurgarh Plant (Delhi NCR)



Malanpur Plant (Gwalior, M.P.)



Bhuj Plant (Gujarat)



Hindupur Plant (A.P.)



Our Manufacturing Plants



About Us

Surya Group is a vast conglomerate having business interest in Steel Pipes, CR Strips and Lighting Industry. Surya's modernised and state-of-the-art production facilities based at Bahadurgarh (Haryana), Bhuj (Gujarat), Gwalior (M.P) & Hindupur (A.P) are certified for ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007. We are the only national player having a presence in Commercial, Structural, Automobile and Oil & Gas Sector with our wide range of ERW and Spiral Welded Pipes.

Surya is catering to the varied market needs and requirements in both Steel Pipe and Lighting Industry. Surya pipes manufacturing range includes wide spectrum i.e. Plumbing, Irrigation, Process Industry, Structural Hollow Sections, Industrial usage, Automobile, Infrastructure, Construction, Oil & Gas, Casing and Line Pipe.

Surya's Steel Pipe Division is the largest Manufacturer and Exporter of Galvanized Steel Pipes. With a turnover of over Rs. 5,000 Crores, Surya's quest for growth is never ending. The organization is blessed with an intellectual team of Engineers, Technical and Quality experts to deliver products as per various National & International standards. Surya is specialized in Oil & Gas utility Line Pipe with American Petroleum Institute - API 5L Monogram up to Grade X-80, Casing & Tubing as per API 5CT. Our plants are also certified by UL, FM, SLS and CE Certifications.

The Pan-India Marketing and Distribution network provides us access and reach to every nook and corner of the Country. We are privileged to be considered as preferred brand across several segments. The group's Lighting business is commanding the Second Largest Market Share in India and provides total Lighting Solutions to its customers. Surya's PVC division, based at Kashipur (Uttarakhand) is presently manufacturing and supplying CPVC and uPVC Pipes used for various applications with world's best manufacturing technology.

The strength of Surya pipes lies in its large DIA pipes, with diameter ranging from 200 mm to 400 mm. It has achieved remarkable success in producing various special grades, including API 5L grade A, grade B as well as X42, X46, X52, X56, X60, X65, X70, X80 PSL 2 and API 5CT grade H40, J55, K55, PSL1.

ONE OF THE LARGEST
PIPE
MANUFACTURING
PLANT WITH
CAPACITY ABOUT
12,15,000 MT
(1 Million)
PER ANNUM.

FIRM
COMMITMENT
TO EXCELLENCE IN
QUALITY,
A BRAND LEADER
IN BOTH
STEEL PIPE AND
LIGHTING INDUSTRY.

THE COMPANY HAS A
WIDE MARKETING
NETWORK WITH
ITS BRANCHES,
DISTRIBUTORS AND
DEALERS
NETWORK SPREAD
ALL OVER THE
COUNTRY.

A TURNOVER
OVER
Rs. 5,000 CRORES
(US \$ 600 MILLION),
THE GROUP'S QUEST
FOR GROWTH
IS NEVER ENDING.

ONE OF
THE BIGGEST
INDIAN
CORPORATE
EXPORTING TO OVER
50 COUNTRIES.

SURYA GROUP IS
TAKING BIG STRIDES IN
ITS CHOSEN AREAS
WITH TESTED SKILLS,
COMMITMENT,
WORKFORCE
VAST EXPERIENCE
AND MATURE
LEADERSHIP.

Exports To Over 50 Countries



USA



UNITED KINGDOM



AUSTRALIA



EUROPE



CANADA



U.A.E.



MALAYSIA



MAURITIUS



OMAN



KUWAIT



SAUDI ARABIA



SINGAPORE



QATAR



GHANA



JORDAN



BAHRAIN



TANZANIA



SEYCHELLES



UGANDA



SRI LANKA



ETHIOPIA



CYPRUS



MYANMAR



EGYPT



ERW Welded Pipe Plant

ERW pipes are extensively used in agriculture, industry and construction activities like scaffolding and casing in bore wells. These are used for conveying water, gas, crude oil and chemicals at various pressures and densities over long distances. Considering the challenging and varied applications, the pipes are produced to meet very high standards of both national and international specifications.

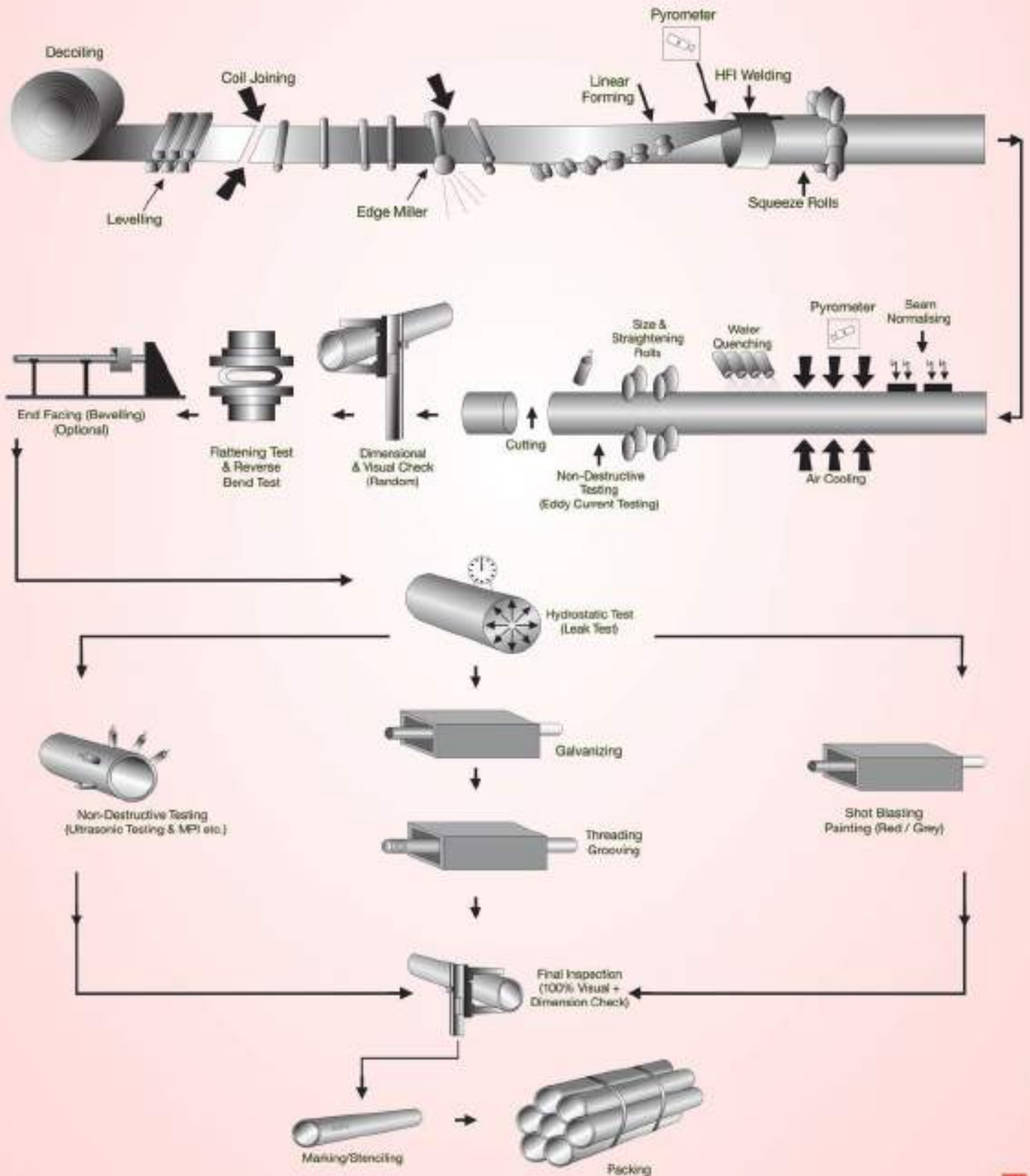
Quality assurance begins at the raw material stage and continues right through all the manufacturing operations, till the Pipes are packed for dispatch. The quality assurance department is fully backed by a modern laboratory for various metallurgical and chemical tests, and a test house for testing physical properties. It has been awarded the prestigious ISO 9001:2015 certificate for its quality systems.

Product Profile: ERW Pipes

NPS	Thickness	Capacity (MT per annum)	Length	Specifications	Pipe Ends
1/2" to 16"	1.0 mm to 12.7 mm	9,00,000 (0.9 Million)	3000 mm to 12900 mm	National / International specifications including API5L upto X-80 PSL2, API 5CT* H40, J55, K55 PSL1, EN : 10255/10219, EN : 10217-1, AS : 1074, AS NZ 1163: 2016, ASTM A 53, BS EN - 39, ASTM A 500, ASTM A 252, ASTM A 795	Plain Bevelled Threaded Roll-Grooved

*(Manufactures at Surya Roshni Limited, Bhuj)

Flow Chart: ERW Pipes



Our Credentials to Quality Supremacy

Surya's relentless pursuit and quest for success is unmatched. Many such international accreditations and certifications have been awarded to Surya from governing bodies for meeting the best of quality standards. The special grades that have graced Surya and made it one of the biggest Indian companies includes API 5L grade A, API 5L grade B as well as API 5L grade X42 to X80. The state-of-the-art plants have certifications from API and ISO 9001:2015 by DNV GL.



ISO 9001:2008
70121-2010-AQ-IND-RvA
(Surya Roshni Limited, Bhu) Plant)



ISO 9001: 2015
(Surya Roshni Limited, Bahadurgarh)



ISO 9001 : 2008
10SC201508009
(Surya Roshni Limited, Malanpur, MP)





ISO 14001:2015
177047-2015-AE-IND-RvA
(Surya Roshni Limited, Bhuj Plant)



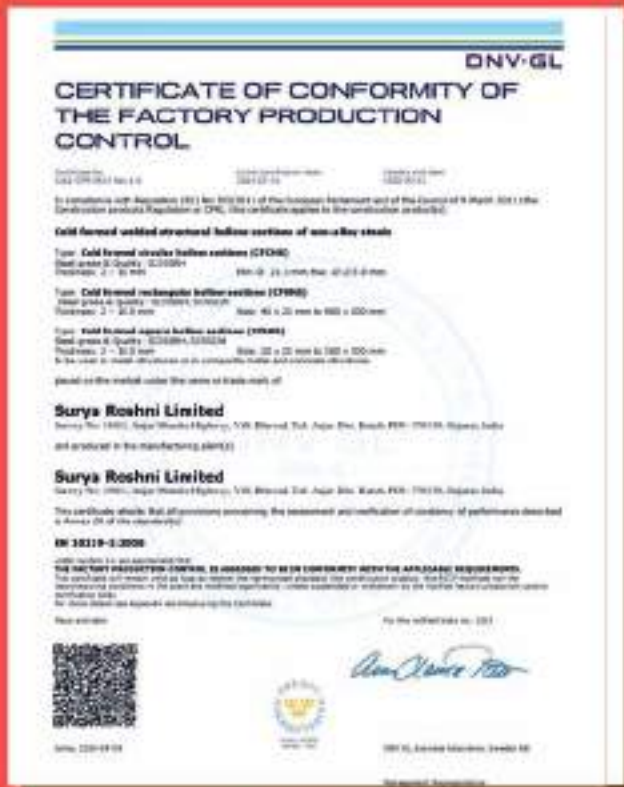
ISO 14001:2004
IESC201508002
(Surya Roshni Limited, Malanpur, MP)



OHSAS 18001:2007
260692-2018-AHSO-IND-RvA
(Surya Roshni Limited, Bhuj Plant)



UL CERTIFICATE
Manufacturer Subscriber No. 100535-262-EX15051
(Surya Roshni Limited, Behadurgarh)





FM CERTIFICATE No.: 0003047635



API 5CT License No.: 1378
(Surya Rashni Limited, Bhuj Plant)



API 5L License No.: 0222
(Surya Rashni Limited, Behadurgarh Plant)



API 5L License No.: 0794
(Surya Rashni Limited, Bhuj Plant)

Bureau of Indian Standards

Bureau of Indian Standards has given us the BIS Certification Mark License to use the standard mark on steel pipes for the following specifications.

- | | |
|-------------|---------|
| IS 1161 | IS 3601 |
| IS 1239 | IS 4270 |
| IS/ISO 3183 | IS 9295 |
| IS 3589 | IS 4923 |



Third Party Inspection Agencies who inspect / assess our products / work on behalf of our clients
The following Inspection Agencies work on behalf of our various clients like IOCL, ONGC, Reliance, GAIL, Oil India, HPCL, BPCL and NTPC.

- Lloyd's Register of Industrial Service
- Engineers India Limited (EIL)
- Bureau Veritas
- Projects & Development India Limited (PDIL)
- SGS India
- Mecor
- TUV
- ABSIV
- DNV
- INTERTEK
- RITES & many other reputed national and international agencies

ERW Steel Tubes for ordinary uses in Water, Gas and Air Lines

Conforming To IS 1239 (PART-1): 2004

NO. AND 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	
					KGM	M/TONNE	KGM	M/TONNE	KGM	M/TONNE	KGM	M/TONNE	MM	MM	
MM	Minimum MM	Maximum MM	MM	SWG											
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	536	1.88	530	1.92	520	1.939	516		
25	L	33.2	33.8	2.60	12	1.98	505	2.00	498	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	195	5.18	194	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	19.50	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 and Heavy Tubes
 - + not limited
 - 10%

B. Weight

- Single Tube (Light series)
 - + 10%
 - 8%

- Single Tubes (Medium and Heavy series) \pm 10%
- For quantities per load of 10 tonnes minimum (Light series)
 - + 7.5%
 - 5%
- For quantities per load of 10 tonnes minimum (medium and heavy series) \pm 7.5%

C. Length

Unless otherwise specified
4 to 7 meters



Large Dia ERW Pipes

ERW STEEL TUBES FOR WATER AND SEWAGE PURPOSES

CONFORMING TO IS 3589:2001

(GRADE FE 330 FE 410 AND FE 450)

N.R. SIZE	OUTSIDE DIAMETER	WALL THICKNESS	WEIGHT (PLAIN END)	
			KG/M	M/TONNRE
MM	MM	MM		
150	168.3	2.6	10.6	94
		3.2	13.0	77
		4.0	16.2	62
		4.5	18.2	56
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
300	323.9	4.0	31.6	31
		4.5	35.4	26
		5.6	44	23
		7.1	55.5	18
350	355.6	4.0	34.7	29
		5.0	43.2	23
		5.6	48.3	21
		6.0	68.6	15
400	406.4	4.0	39.7	25
		5.0	49.5	20
		6.3	62.2	16
		6.8	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

- i) Outside diameter of ERW pipe $\pm 0.75\%$
- ii) Thickness $\pm 10\%$
- iii) Unless otherwise specified, lengths are in single random lengths from 4 to 7 meters and double random lengths from 7 to 14 meters.

ERW STEEL TUBES FOR WATER WELLS (CASING PIPES)

CONFORMING TO IS 4270:2001

FE 410 AND FE 450

N.B. AND SERIES	OUTSIDE DIAMETER	THICKNESS	NOMINAL WEIGHT BLACK TUBES PLAIN END
MM	MM	MM	KG/M
100	114.3	5.0	13.48
125	141.3	5.0	16.80
150	168.3	5.0	20.19
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	85.29
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. min MPa (min)	% age Elongation (Min)
FE 410	235	410	15
FE 450	275	450	13

B - TOLERANCES

- i) Outside diameter of pipe $\pm 1.0\%$
- ii) Thickness $\pm 15\%$
upto 406.4mm OD $- 12.5\%$
- iii) Weight $\pm 10\%$
Single Tube $- 8\%$
- iv) Length unless otherwise specified 4 to 7 mtrs



ERW Steel Tubes For Idlers Belt Conveyors

IS 9295:1983

DIMENSIONS AND NOMINAL MASSES
Grade YSt 210, YSt 240, YSt 310

OUTSIDE DIAMETER MM	WALL THICKNESS MM	MASS Kg/Mtr.	Mtrs./ TONNE
63.50	3.65	5.39	186
	4.05	5.87	170
	4.50	6.55	153
	4.85	7.01	143
76.10	3.65	6.52	153
	4.05	7.20	139
	4.50	7.95	126
	4.85	8.52	117
88.9	4.05	8.47	118
	4.50	9.36	107
	4.85	10.05	99
	5.40	11.12	90
101.60	4.05	9.74	103
	4.50	10.78	93
	4.85	11.57	86
	5.40	12.81	78
114.30	4.50	12.19	82
	4.85	13.09	76
	5.40	14.50	69
	6.30	16.76	60

OUTSIDE DIAMETER MM	WALL THICKNESS MM	MASS Kg/Mtr.	Mtrs./ TONNE
139.70	4.50	15.00	67
	4.85	16.13	62
	5.40	17.90	56
	6.30	20.73	48
152.40	4.50	16.40	61
	4.85	17.65	57
	5.40	19.50	51
	6.30	22.70	44
165.10	4.50	17.80	56
	4.85	19.17	52
	5.40	21.27	47
	6.30	24.67	41
168.30	4.50	18.20	55
	4.85	19.55	51
	5.40	21.69	46
	6.30	25.17	40
219.10	5.40	28.50	35
	6.30	33.06	30
	7.10	37.12	27

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

Outside Diameter	± 0.8%
Ovality below 168.3mm OD	0.5mm
Ovality including 168.3mm and above	1.0mm
Weight Kg/Mtr: Single Tube	± 10%
For truck load of ten tonnes	± 7.5%
Thickness	± 10%



ERW Steel Tubes For Mechanical & General Engineering Purpose IS 3601:2006

DIMENSIONS AND DESIGN PROPERTIES OF STEEL TUBES
Grade WT 160 & WT 210

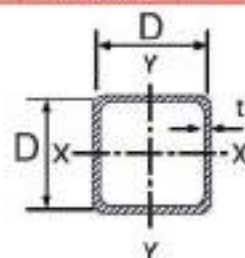
Outside Diameter	Thickness	Mass	Area of Cross Section	Moment of Inertia	Modules of Sections	Radius of Gyration	Outside Diameter	Thickness	Mass	Area of Cross Section	Moment of Inertia	Modules of Sections	Radius of Gyration
mm	mm	KG/M	cm ²	cm ⁴	cm ³	cm	mm	mm	KG/M	cm ²	cm ⁴	cm ³	cm
1	2	3	4	5	6	7	1	2	3	4	5	6	7
21.3	1.8	0.866	1.10	0.53	0.50	0.69	152.4	5.40	17.90	22.80	514.50	73.70	4.75
	2.0	0.952	1.21	0.57	0.54	0.69		6.30	20.70	26.30	591.00	84.70	4.73
	2.6	1.20	1.53	0.68	0.64	0.67		4.50	16.40	20.90	572.20	75.10	5.23
	3.2	1.43	1.82	0.77	0.72	0.65		5.00	18.20	23.20	629.50	82.60	5.21
26.9	1.8	1.11	1.42	1.12	0.83	0.89	165.1	5.40	19.60	24.90	674.50	88.50	5.20
	2.0	1.23	1.56	1.22	0.91	0.88		4.50	17.80	22.70	732.60	88.70	5.68
	2.3	1.40	1.78	1.36	1.01	0.87		5.00	19.70	25.10	806.60	97.70	5.66
	2.6	1.56	1.96	1.48	1.10	0.86		5.40	21.20	27.10	864.70	105.00	5.65
33.7	3.2	1.87	2.38	1.70	1.27	0.85	168.3	6.30	24.80	31.40	992.00	120.00	5.63
	2.0	1.56	1.99	2.51	1.49	1.12		4.00	16.20	20.64	696.87	82.81	5.81
	2.3	1.78	2.27	2.81	1.67	1.11		4.50	18.20	23.20	777.20	98.40	5.79
	2.6	1.99	2.54	3.09	1.84	1.10		5.00	20.10	25.70	855.80	102.00	5.78
42.4	3.2	2.41	3.07	3.60	2.14	1.08	193.7	5.40	21.70	27.60	917.70	109.00	5.76
	4.0	2.93	3.73	4.19	2.49	1.06		6.30	25.20	32.10	1053.00	125.00	5.73
	2.3	2.27	2.90	5.85	2.76	1.42		7.10	28.20	35.94	1169.66	139.00	5.70
	2.6	2.55	3.25	6.46	3.05	1.41		8.00	31.60	39.70	1288.00	153.00	5.69
48.3	3.2	3.09	3.94	7.62	3.59	1.39	219.1	5.00	23.30	29.60	1320.00	136.00	6.67
	3.6	3.44	4.39	8.33	3.93	1.38		5.40	25.10	31.90	1417.00	146.00	6.66
	4.0	3.79	4.83	8.90	4.24	1.36		5.90	27.30	34.80	1536.00	159.00	6.64
	2.3	2.61	3.32	8.80	3.64	1.63		6.30	29.10	37.00	1600.00	165.00	6.60
60.3	2.6	2.93	3.73	9.77	4.05	1.62	193.7	8.00	36.60	46.30	2004.00	207.00	6.57
	2.9	3.25	4.14	10.70	4.43	1.61		4.5	23.80	30.32	1746.18	159.40	7.59
	3.2	3.56	4.53	11.59	4.80	1.60		5.0	26.40	33.60	1928.00	176.00	7.57
	3.6	3.97	5.05	12.69	5.25	1.59		5.6	29.50	37.60	2142.00	195.00	7.56
76.1	4.0	4.37	5.57	13.77	5.70	1.57	168.3	6.3	33.10	42.00	2404.00	219.00	7.54
	2.3	3.29	4.19	17.65	5.85	2.05		8.0	41.60	52.00	1940.00	268.00	7.52
	2.6	3.70	4.71	19.64	6.51	2.04		A - PHYSICAL PROPERTIES					
	2.9	4.11	5.23	21.59	7.16	2.03							
88.9	3.2	4.51	5.74	23.47	7.78	2.02	Grade	Y.S.	T.S.	% age Elongation (Min.)			
	3.6	5.03	6.41	25.87	8.58	2.01		MPa (min)	MPa (min)	As welded (less than or equal to 33.7mm OD)	As welded (more than 33.7mm OD)		
	4.0	5.55	7.07	28.15	9.34	2.00	WT160	160	310	15	22		
	4.5	6.19	7.89	30.90	10.20	1.98	WT210	210	330	12	20		
101.6	2.6	5.24	6.00	40.57	10.66	2.60	WT240	240	410	10	15		
	2.9	5.75	6.67	44.74	11.76	2.59	WT310	310	450	6	10		
	3.2	6.44	7.33	48.78	12.80	2.58	B - MANUFACTURING TOLERANCE						
	3.6	7.11	8.20	54.01	14.20	2.57							
114.3	4.5	7.95	10.10	65.12	17.10	2.54	Over mm	Up to & including mm	Tolerance on Outside Diameter mm				
	5.0	8.77	11.16	70.87	18.63	2.52	-	25.4	±0.15				
	2.9	6.15	7.83	72.47	16.30	3.04	25.4	51.0	±0.18				
	3.2	6.76	8.62	79.21	17.80	3.03	51.0	63.5	±0.25				
139.7	4.0	8.38	10.70	96.34	21.70	3.00	63.5	76.1	±0.25				
	5.0	10.30	13.20	116.40	26.20	2.97	76.1	88.9	±0.31				
	5.4	11.10	14.00	123.80	27.80	2.97	88.9	101.6	±0.36				
	5.6	11.50	14.65	127.64	28.72	2.95	101.6	114.3	±0.43				
152.4	3.6	8.70	11.10	133.20	26.20	3.47	114.3	152.4	±0.58				
	4.0	9.63	12.30	146.20	28.80	3.45	152.4	168.3	±0.65				
	5.0	11.90	15.20	177.50	34.90	3.42	168.3	-	±0.75				
	3.2	8.77	11.16	172.33	30.15	3.93	Note: The tolerance of thickness excluding the weld shall be ± 10%. Sizes other than specified above may be supplied as per customer requirement.						
3.6	9.83	12.50	192.00	33.60	3.92								
4.5	12.20	15.50	234.30	41.00	3.89								
5.4	14.50	18.50	274.50	48.00	3.86								
168.3	6.3	16.80	21.20	315.00	55.10	3.83	Note: The tolerance of thickness excluding the weld shall be ± 10%. Sizes other than specified above may be supplied as per customer requirement.						
	3.60	12.10	15.38	356.36	51.02	4.81							
	4.00	13.40	17.04	392.57	56.20	4.80							
	4.50	15.00	19.10	437.20	62.60	4.78							
193.7	5.00	16.60	21.20	480.50	68.80	4.77	Note: The tolerance of thickness excluding the weld shall be ± 10%. Sizes other than specified above may be supplied as per customer requirement.						

Steel Hollow Sections For Structural Use (SHS)

DIMENSIONS AND DEPTH PROPERTIES OF SQUARE HOLLOW SECTIONS IS 4923:2017 GRADE YSt 210, YSt 240, YSt 310

SHS DxD	DEPTH D	WIDTH D	THICKNESS	WEIGHT	AREA OF SECTION	MOMENT OF INERTIA	RADIUS OF GYRATION	ELASTIC MODULUS	PLASTIC MODULUS
MM	MM	MM	MM	KG/M	Cm ²	Cm ⁴	Cm	Cm ³	Cm ³
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	1.89	2.16	1.72	0.99	1.38	1.76
	25.0	25.0	3.2	1.99	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	9.86	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	62.29	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	20.98	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 Hollow Sections For Structural Use (RHS)

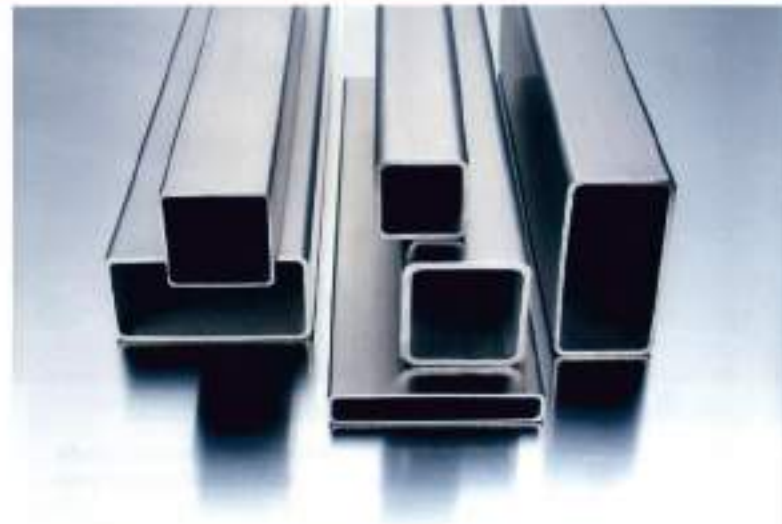
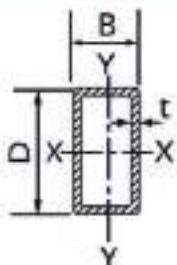
Dimensions and Properties of Rectangular Hollow Sections IS 4923:2017

Grade YSt 210, YSt 240, YSt 310

RHS DxB	DEPTH D	WIDTH B	THICKNESS	WEIGHT	AREA OF SECTION	MOMENT OF INERTIA ABOUT		RADIUS OF GYRATION ABOUT		ELASTIC MODULUS ABOUT		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 ²	CM ⁴		CM		CM ³		CM ³	
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	1.56	8.25	6.56	10.25	7.73
66.0 X 33.0	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	33	3.6	4.93	6.28	31.87	10.52	2.25	1.29	9.68	6.37	12.56	7.86
	66	33	4.5	5.95	7.58	36.64	11.93	2.20	1.25	11.10	7.23	14.77	8.94
75.0x25.0	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	25	3.2	4.50	5.73	32.04	8.24	2.37	1.20	9.15	5.48	11.98	6.51
	75	25	4.0	5.45	6.95	37.23	9.42	2.31	1.16	10.84	6.28	14.20	7.96
80.0 X 40.0	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	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	5.71	8.55	64.79	21.49	2.75	1.59	16.20	10.74	20.91	12.77
96.0 X 48.0	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	48	4.0	8.22	10.47	117.54	39.32	3.50	1.94	24.49	16.30	31.21	18.14
	96	48	4.8	9.66	12.31	134.35	44.55	3.30	1.90	27.99	18.56	36.13	22.08
100.0 X 50.0	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	50	4.0	8.59	10.95	134.14	44.95	3.50	2.03	26.83	17.98	34.16	20.93
122.0 X 61.0	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	278.94	93.78	4.29	2.49	45.73	30.75	57.85	35.56
	122	61	5.4	14.01	17.85	320.83	107.03	4.24	2.45	52.80	35.09	67.29	41.22
145.0 X 82.0	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
172.0 X 92.0	172	92	4.8	18.71	23.83	917.13	346.91	6.20	3.82	106.84	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
200.0X100.0	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
220.0X140.0	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

Note : Sizes other than specified above may be supplied as per customer requirement

GRADE	T.S. (MIN) MPa	Y.S. (MIN) MPa	% ELONGATION	
			25.4 MM & UNDER	OVER 25.4 MM
YSt - 210	330	210	12	20
YSt - 240	410	240	10	15
YSt - 310	450	310	8	10



Steel Tubes For Structural Purposes

Conforming to IS 1161: 2014 (CHS)

Grade YSt 210, YSt 240, YSt 310

N.B. and Series	Outside Diameter	Thick-ness	Nominal weight Black Tubes Plain End		Calculated Nominal weight Galvanized Tubes Plain End	
			kg/m	m/tonne	kg/m	m/tonne
15	21.3	2.0	0.952	1051	0.996	1004
		2.6	1.20	834	1.24	806
		3.2	1.43	700	1.47	681
20	26.9	2.3	1.40	717	1.45	689
		2.6	1.56	642	1.61	620
		3.2	1.87	535	1.92	520
25	33.7	2.6	1.99	502	2.06	484
		3.2	2.41	415	2.44	410
		4.0	2.93	341	2.96	336
32	42.4	2.6	2.55	392	2.64	379
		3.2	3.09	323	3.13	319
		4.0	3.79	264	3.83	261
40	48.3	2.9	3.25	308	3.35	299
		3.2	3.56	281	3.61	277
		4.0	4.37	229	4.42	226
50	60.3	2.9	4.10	244	4.23	236
		3.6	5.03	199	5.09	196
		4.50	6.19	161	6.25	160
65	76.1	2.90	5.23	191	5.40	185
		3.60	6.44	155	6.51	154
		4.50	7.95	126	8.02	125
80	88.9	3.20	6.763	148	6.96	144
		4.00	8.37	119	8.47	118
		4.80	9.95	100	10.04	100
90	101.6	3.60	8.70	115	8.92	112
		4.00	9.63	104	9.73	103
		4.80	11.46	87	11.56	86
100	114.3	3.6	9.83	102	10.08	99
		4.5	12.18	82	12.30	81
		5.4	14.50	69	14.62	68
110	127	4.5	13.59	74	13.87	72
		4.8	14.46	69	14.58	69
		5.4	16.19	62	16.31	61
125	139.7	4.5	15.00	67	15.27	65
		4.8	15.96	63	16.08	62
		5.4	17.88	56	17.99	56

N.B. and Series	Outside Diameter	Thick-ness	Nominal weight Black Tubes Plain End		Calculated Nominal weight Galvanized Tubes Plain End	
			kg/m	m/tonne	kg/m	m/tonne
135	152.4	4.5	16.41	61	16.70	60
		4.8	17.47	57	17.59	57
		5.4	19.58	51	19.69	51
150	165.1	4.5	17.82	56	18.13	55
		4.8	18.97	53	19.09	52
		5.4	21.27	47	21.38	47
150	168.3	4.5	18.18	55	18.49	54
		4.8	19.35	52	19.47	51
		5.4	21.69	46	21.81	46
175	193.7	6.3	25.17	40	25.28	40
		4.8	22.36	45	22.70	44
		5.4	25.07	40	25.19	40
200	219.1	5.9	27.32	37	27.44	36
		4.8	25.37	39	25.73	39
		5.6	29.48	34	29.60	34
200	219.1	5.9	31.02	32	31.14	32
		6.3	33.06	30	33.18	30
		8	41.65	24	42.13	24
250	273	10	51.57	19	51.55	19
		5.9	38.86	26	39.46	25
		6.3	41.44	24	41.43	24
250	273	8	52.28	19	52.26	19
		10	64.86	15	64.84	15
		6.3	49.34	20	50.06	20
300	323.9	8	62.32	16	62.30	16
		10	77.41	13	77.39	13
		12	92.3	11	92.27	11
350	355.6	8	68.58	15	69.37	14
		10	85.23	12	85.21	12
		12	101.68	10	101.65	10

DIMENSIONAL TOLERANCE:

SECTION TYPE	GRADE	OUTSIDE DIMENSION	THICKNESS	SQUARE NESS	CORNER RADIUS	WEIGHT INDIVIDUAL LENGTHS	WEIGHT ON LOT OF 10 MT	CUSTOMIZED OFFER
RHS / SHS IS 4923	YSt - 210 YSt - 240 YSt - 310	±1% with a minimum of ± 0.50 mm	±10%	90deg ±2deg	3t max	-8%, +10%	± 7.5%	Length - 4M to 12 M Thickness - 1.0 mm to 8.0 mm
CHS IS 1161	YSt - 210 YSt - 240 YSt - 310	OD upto and incl 48.3 +0.4/- 0.8mm; over 48.3 ± 1%	±10%	NA	NA	± 10%	± 7.5%	

TECHNICAL DATA OF PIPES CONFORMING TO API 5L- (45th Edition)

Size	Outside Diameter		Wall Thickness		Mass of Plain End Pipe		Standard Test Pressure								
	mm	inch	mm	inch	Kg/Mtr.	Lb/Ft.	GrA	GrB	GrX42	GrX46	GrX52	GrX56	GrX60	GrX65	GrX70
							MPa	MPa	MPa	MPa	MPa	MPa	MPa	MPa	
30"	889	3.500	2.10	0.083	4.50	3.00	6.0	7.0	8.2	9.1	10.2	11.1	11.8	12.8	13.7
			2.80	0.109	5.95	3.95	8.0	9.3	11.0	12.1	13.6	14.7	15.7	17.0	18.3
			3.20	0.125	6.76	4.51	9.1	10.6	12.5	13.8	15.6	16.8	17.9	19.4	20.9
			3.60	0.141	7.57	5.06	10.2	11.6	14.1	15.6	17.5	19.0	20.2	21.9	23.6
			4.00	0.156	8.37	5.58	11.3	13.2	15.7	17.3	19.4	21.1	22.4	24.3	26.2
			4.40	0.172	9.17	6.12	12.5	14.6	17.2	19.0	21.4	23.2	24.6	26.7	28.8
			4.80	0.188	9.95	6.66	13.6	15.5	18.8	20.7	23.3	25.3	26.9	29.2	31.4
			5.50	0.216	11.31	7.58	15.6	18.2	21.5	23.8	26.7	29.0	30.8	33.4	36.0
4"	1016	4.000	2.10	0.083	5.15	3.48	5.2	6.1	7.2	7.9	8.9	9.7	10.3	11.2	12.0
			2.80	0.109	6.82	4.53	6.9	8.1	9.6	10.6	11.9	12.9	13.7	14.9	16.0
			3.20	0.125	7.76	5.18	7.9	9.3	11.0	12.1	13.6	14.7	15.7	17.0	18.3
			3.60	0.141	8.70	5.82	8.9	10.4	12.3	13.6	15.3	16.6	17.6	19.1	20.6
			4.00	0.156	9.63	6.41	9.9	11.6	13.7	15.1	17.0	18.4	19.6	21.3	22.9
			4.40	0.172	10.55	7.04	10.9	12.7	15.1	16.6	18.7	20.3	21.6	23.4	25.2
			4.80	0.188	11.46	7.66	11.9	13.9	16.4	18.1	20.4	22.1	23.5	25.5	27.5
			5.70	0.226	13.48	9.12	14.1	16.5	19.5	21.5	24.2	26.3	27.9	30.3	32.7
4½"	1143	4.500	2.10	0.083	5.81	3.92	4.6	5.4	6.4	7.1	7.9	8.6	9.1	9.9	10.7
			3.20	0.125	8.77	5.85	7.1	8.2	9.7	10.8	12.1	13.1	13.9	15.1	16.3
			3.60	0.141	9.83	6.57	7.9	9.3	11.0	12.1	13.6	14.7	15.7	17.0	18.3
			4.00	0.156	10.88	7.24	8.8	10.3	12.2	13.4	15.1	16.4	17.4	18.9	20.4
			4.40	0.172	11.92	7.96	9.7	11.3	13.4	14.8	16.6	18.0	19.2	20.8	22.4
			4.80	0.188	12.96	8.67	10.6	12.0	14.6	16.1	18.1	19.7	20.9	22.7	24.4
			5.20	0.203	13.99	9.32	11.5	13.4	15.8	17.5	19.7	21.3	22.7	24.6	26.5
			5.60	0.219	15.01	10.02	12.3	14.4	17.0	18.8	21.2	22.9	24.4	26.5	28.5
			6.00	0.237	16.02	10.80	13.2	15.4	18.3	20.2	22.7	24.6	26.1	28.3	30.6
			6.40	0.250	17.03	11.36	14.1	16.5	19.5	21.5	24.2	26.2	27.9	30.2	32.6
			7.10	0.280	18.77	12.59	15.7	18.0	21.3	23.9	26.8	29.1	30.9	33.5	36.2
			5.9/16"	1413	5.563	2.10	0.083	7.21	4.86	3.7	4.4	5.2	5.7	6.4	7.0
3.20	0.125	10.90				7.27	5.7	6.7	7.9	8.7	9.8	10.6	11.3	12.2	13.2
4.00	0.156	13.54				9.02	7.1	8.3	9.9	10.9	12.2	13.2	14.1	15.3	16.5
4.80	0.188	16.16				10.80	8.6	10.0	11.8	13.0	14.7	15.9	16.9	18.3	19.8
5.60	0.219	18.74				12.51	10.0	11.7	13.8	15.2	17.1	18.5	19.7	21.4	23.1
6.60	0.258	21.92				14.63	11.8	13.7	16.3	17.9	20.2	21.9	23.3	25.2	27.2
6.5/8"	1683	5.625	2.10	0.083	8.61	5.80	3.1	4.6	5.4	6.0	6.7	7.3	7.8	8.4	9.1
			2.80	0.109	11.43	7.59	4.2	6.1	7.2	8.0	9.0	9.7	10.4	11.2	12.1
			3.20	0.125	13.03	8.69	4.8	7.0	8.3	9.1	10.3	11.1	11.8	12.8	13.8
			3.60	0.141	14.62	9.77	5.4	7.8	9.3	10.3	11.6	12.5	13.3	14.4	15.6
			4.00	0.156	16.21	10.79	6.0	8.7	10.3	11.4	12.8	13.9	14.8	16.0	17.3
			4.40	0.172	17.78	11.87	6.6	9.6	11.4	12.5	14.1	15.3	16.3	17.6	19.0
			4.80	0.188	19.35	12.94	7.2	10.6	12.4	13.7	15.4	16.7	17.8	19.3	20.7
			5.20	0.203	20.91	13.94	7.8	11.4	13.4	14.8	16.7	18.1	19.2	20.9	22.5
			5.60	0.219	22.47	15.00	8.4	12.2	14.5	16.0	18.0	19.5	20.7	22.5	24.2
			6.40	0.250	25.55	17.04	9.6	14.0	16.5	18.3	20.5	22.2	23.7	25.7	27.7
			7.10	0.280	28.22	18.99	10.6	15.5	18.4	20.2	22.8	24.7	26.3	28.5	30.7
			7.90	0.312	31.25	21.06	11.8	17.3	20.4	22.5	25.3	27.5	29.2	31.7	34.1
8.70	0.344	34.24	23.10	13.0	19.0	22.5	24.8	27.9	30.2	32.2	34.9	37.6			
6.5/8"	2191	8.625	3.20	0.125	17.04	11.36	3.7	5.4	6.4	7.0	7.9	8.6	9.1	9.9	10.6
			4.00	0.156	21.22	14.12	4.6	6.7	7.9	8.8	9.9	10.7	11.4	12.3	13.3
			4.80	0.188	25.37	16.96	5.5	8.1	9.5	10.5	11.8	12.8	13.6	14.8	15.9
			5.20	0.203	27.43	18.28	6.0	8.7	10.3	11.4	12.8	13.9	14.8	16.0	17.3
			5.60	0.219	29.48	19.68	6.4	9.4	11.1	12.3	13.8	15.0	15.9	17.3	18.6
			6.40	0.250	33.57	22.36	7.4	10.7	12.7	14.0	15.8	17.1	18.2	19.7	21.3
			7.00	0.277	36.61	24.72	8.1	11.7	13.9	15.3	17.3	18.7	19.9	21.6	23.2
			7.90	0.312	41.14	27.73	9.1	13.3	15.7	17.3	19.5	21.1	22.4	24.3	26.2
			8.20	0.322	42.65	28.58	9.4	13.6	16.3	18.0	20.2	21.9	23.3	25.3	27.2
			8.70	0.344	45.14	30.45	10.0	14.6	17.3	19.1	21.4	23.2	24.7	26.8	28.9
			9.50	0.375	49.10	33.07	10.9	15.9	18.9	20.8	23.4	25.4	27.0	29.3	31.5
			10½"	2731	10.750	4.00	0.156	26.94	17.87	5.2	6.1	7.2	8.0	9.0	9.7
4.80	0.188	31.76				21.23	6.3	7.3	8.7	9.6	10.8	11.7	12.4	13.4	14.5
5.20	0.203	34.39				22.89	6.6	7.8	9.4	10.4	11.7	12.6	13.4	14.6	15.7
5.60	0.219	36.94				24.65	7.3	8.5	10.1	11.2	12.5	13.6	14.5	15.7	16.9
6.40	0.250	42.09				28.06	8.4	9.8	11.6	12.7	14.3	15.5	16.5	17.9	19.3
7.10	0.279	46.67				31.23	9.3	10.8	12.8	14.1	15.9	17.2	18.3	19.9	21.4
7.60	0.307	51.03				34.27	10.2	11.9	14.1	15.5	17.5	18.9	20.1	21.8	23.5
8.70	0.344	56.72				38.27	11.4	13.0	15.7	17.3	19.5	21.1	22.5	24.4	26.3
9.30	0.365	60.50				40.52	12.2	14.2	16.8	18.5	20.8	22.6	24.0	26.1	28.1
11.10	0.438	71.72				48.26	14.5	18.9	20.0	22.1	24.9	26.9	28.7	31.1	33.5

TECHNICAL DATA OF PIPES CONFORMING TO API 5L- (45th Edition)

12%	323.9	12.750	4.40	0.172	3487	23.13	4.8	57	67	7.4	8.3	9.0	9.6	10.4	11.2
	323.9		4.80	0.188	3777	25.25	5.3	62	73	8.1	9.1	9.8	10.5	11.3	12.2
	323.9		5.20	0.203	4087	27.23	5.7	67	79	8.7	9.8	10.6	11.3	12.3	13.2
	323.9		5.60	0.219	4396	29.34	6.2	72	85	9.4	10.6	11.5	12.2	13.2	14.3
	323.9		6.40	0.250	50.11	33.41	7.1	82	97	10.7	12.1	13.1	13.9	15.1	16.3
	323.9		7.10	0.281	55.47	37.46	7.8	91	108	11.9	13.4	14.5	15.5	16.8	18.1
	323.9		7.90	0.312	61.58	41.48	8.7	102	120	13.3	14.9	16.2	17.2	18.7	20.1
	323.9		8.40	0.330	65.35	43.81	9.3	108	128	14.1	15.9	17.2	18.3	19.8	21.4
	323.9		8.70	0.344	67.62	45.62	9.8	112	132	14.6	16.4	17.8	18.9	20.5	22.1
	323.9		9.50	0.375	73.65	49.81	10.5	122	145	16.0	17.9	19.4	20.7	22.4	24.2
	323.9		10.30	0.406	79.65	53.57	11.4	132	157	17.3	19.5	21.1	22.4	24.3	26.2
	323.9		11.10	0.438	85.62	57.65	12.2	143	169	18.6	21.0	22.7	24.2	26.2	28.3
	14		355.6	14.000	4.80	0.188	41.52	27.78	4.8	58	67	7.3	8.3	8.9	9.5
355.6		5.20	0.203		44.93	29.94	5.2	61	72	8.0	8.9	9.7	10.3	11.2	12.1
355.6		5.30	0.210		45.78	30.96	5.3	62	73	8.1	9.1	9.9	10.5	11.4	12.3
355.6		5.60	0.219		48.33	32.26	5.6	68	78	8.6	9.6	10.4	11.1	12.0	13.0
355.6		6.40	0.250		55.11	36.75	6.4	75	89	9.8	11.0	11.9	12.7	13.8	14.8
355.6		7.10	0.281		61.02	41.21	7.1	83	98	10.9	12.2	13.2	14.1	15.3	16.5
355.6		7.90	0.312		67.74	45.65	7.9	93	110	12.1	13.6	14.7	15.7	17.0	18.3
355.6		8.70	0.344		74.42	50.22	8.7	102	121	13.3	15.0	16.2	17.3	18.7	20.2
355.6		9.50	0.375		81.08	54.62	9.5	111	132	14.5	16.3	17.7	18.8	20.4	22.0
355.6		10.30	0.406		87.71	59.00	10.3	121	143	15.8	17.7	19.2	20.4	22.2	23.9
355.6		11.10	0.438		94.30	63.50	11.1	130	154	17.0	19.1	20.7	22.0	23.9	25.7
16	406.4	16.000	4.80	0.188	47.54	31.78	4.2	49	58	6.4	7.2	7.8	8.3	9.0	9.7
	406.4		5.20	0.203	51.45	34.28	4.6	53	63	7.0	7.8	8.5	9.0	9.8	10.5
	406.4		5.60	0.219	55.35	36.95	4.9	57	68	7.5	8.4	9.1	9.7	10.5	11.4
	406.4		6.40	0.250	63.13	42.03	5.6	66	78	8.6	9.6	10.4	11.1	12.0	13.0
	406.4		7.10	0.281	69.91	47.22	6.2	73	86	9.5	10.7	11.6	12.3	13.4	14.4
	406.4		7.90	0.312	77.83	52.32	6.9	81	96	10.6	11.9	12.9	13.7	14.9	16.0
	406.4		8.70	0.344	85.32	57.57	7.6	89	106	11.6	13.1	14.2	15.1	16.4	17.7
	406.4		9.50	0.375	92.98	62.84	8.3	97	115	12.7	14.3	15.5	16.5	17.9	19.3
	406.4		10.30	0.406	100.81	67.88	9.0	105	125	13.8	15.5	16.8	17.9	19.4	20.9
	406.4		11.10	0.438	108.2	72.86	9.8	114	135	14.9	16.7	18.1	19.3	20.9	22.5

Tolerances :-

1) Outside diameter of Body & Ends :

Specified OD (mm)	Body Tolerance	Ends Tolerance (mm)	Out-of-roundness tolerances (mm)	
			Pipe except the end	Pipe end
≤ 88.9 to 168.3	±0.0075 D	-0.40, +1.60	0.020 D	0.015 D
> 168.3 to 610	±0.0075 D but max. of ±0.20 mm	±0.006 D, but max. of ±1.60 mm	0.020 D	0.015 D
> 610 to 1422	±0.006 D but max. of ±4.0 mm	±1.60 mm	0.015 D	0.010 D
> 1422	As agreed			

2) Thickness :

≤ 5.0 mm = ±0.5 mm

> 5.0 to < 15.0 = ±0.1t

> 15.0 mm = ±1.5 mm

(where t = wall thickness)

3) Mass :

+10%, -3% of

standard weight

Mechanical properties :

PSL 1	Gr.A	Gr.B	Gr.X42	Gr.X46	Gr.X52	Gr.X56	Gr.X60	Gr.X65	Gr.X70
Yield strength MPa (min.)	210	245	290	320	350	390	415	450	485
Tensile strength MPa (min.)	335	415	415	435	450	490	520	535	570
Elongation (% Min.)	Min. along shall be determined by $A = 1940 \frac{U}{\sigma}$ (Where A=Area of test specimen, U=Min. specified tensile strength)								

PSL 2	Gr. AM	Gr. BM	Gr.X42M	Gr.X46M	Gr.X52M	Gr.X56M	Gr.X60M	Gr.X65M	Gr.X70M
Yield strength MPa (min.)	-	245-450e	290-495	320-525	350-530	390-545	415-595	450-600	485-635
Tensile strength MPa (min.)	-	415-655	415-655	435-655	460-760	490-760	520-760	535-760	570-760
Elongation (% Min.)	Min. along shall be determined by $A = 1940 \frac{U}{\sigma}$ (Where A=Area of test specimen, U=Min. specified tensile strength)								
Ratio (YS/TS) Max.	0.93								

e = For pipe with D < 219.1 mm, the maximum yield strength shall be ≤ 485 MPa

TECHNICAL DATA OF PIPE CONFORMING TO API 5L - (45th Edition)

CHEMICAL COMPOSITION FOR PSL 1 WELDED PIPES UP TO 25 mm WALL THICKNESS

Steel Grade (Steel Name)	Mass fraction based upon heat and product analysis % maximum			
	C max	Mn max	P max	S max
L 210 or Grade A	0.22	0.90	0.030	0.030
L 245 or Grade B	0.26	1.20	0.030	0.030
L 290 or X 42	0.26	1.30	0.030	0.030
L 320 or X 46	0.26	1.40	0.030	0.030
L 360 or X 52	0.26	1.40	0.030	0.030
L 390 or X 56	0.26	1.40	0.030	0.030
L 415 or X 60	0.26	1.40	0.030	0.030
L 450 or X 65	0.26	1.45	0.030	0.030
L 485 or X 70	0.26	1.65	0.030	0.030

CHEMICAL COMPOSITION FOR PSL 2 WELDED PIPES UP TO 25 mm WALL THICKNESS

Steel Grade (Steel Name)	Mass fraction based upon heat and product analysis % maximum								Carbon Equivalent (% Maximum)	
	C	Si	Mn	P	S	V	Nb	Ti	CE (IIW)	CE (PCM)
L 245M or Grade BM	0.22	0.45	1.20	0.025	0.015	0.05	0.05	0.04	0.43	0.25
L 290M or X 42M	0.22	0.45	1.30	0.025	0.015	0.05	0.05	0.04	0.43	0.25
L 320M or X 46M	0.22	0.45	1.30	0.025	0.015	0.05	0.05	0.04	0.43	0.25
L 360M or X 52M	0.22	0.45	1.40	0.025	0.015	*	*	*	0.43	0.25
L 390M or X 56M	0.22	0.45	1.40	0.025	0.015	*	*	*	0.43	0.25
L 415M or X 60M	0.12	0.45	1.60	0.025	0.015	*	*	*	0.43	0.25
L 450M or X 65M	0.12	0.45	1.60	0.025	0.015	*	*	*	0.43	0.25
L 485M or X 70M	0.12	0.45	1.70	0.025	0.015	*	*	*	0.43	0.25
L 555M or X 80M	0.12	0.45	1.85	0.025	0.015	*	*	*	0.43	0.25

*This is as per API Specification 5L

Destructive & Non-Destructive Testing

Hydrostatic Testing 100% of pipe shall be tested at a pressure specified in above table

NDT

PSL-1

Weld seam of each pipe shall be tested by online Eddy Current Test

PSL-2

Weld seam and pipe body (if required) shall be tested by Ultrasonic Test (after hydro test)

Flattening (0° & 90°)

For pipes over size 2.375"

1. Flatten up to 1/2 of OD (no crack in weld)
2. Flatten up to 1/3 of OD (no cracks or breaks other than in weld)
3. Full Flattening (no Lamination or burnt metal)

Reverse Bend Test

As per API 5L or Customer Specification to determine strength of weld

Metallography

For Grain size and Grain Structure

Impact Testing

For PSL-2 Pipes only (at 0°C) Min. value for one sample = 22 J, Min. Avg. value of 3 samples = 27 J

Valuable Clients :



MAHARASHTRA JEEVAN PRADHIKARAN
 WATER SUPPLY AND SANITATION DEPARTMENT MAHARASHTRA