

MUKAT



MUKAT PIPES

Manufacturer of Large Diameter SAW Pipes

- Longitudinal Welded - Spiral Welded

Introduction



Mukat Pipes Ltd., Rajpura, Large Dia Pipes division set up in 1987 is one of the leading manufacturers for large diameter Helical Submerged Arc Welded(HSAW or Spiral) and Longitudinal Submerged Arc Welded (LSAW)M.S Pipes as per IS:3589 and conforming to IS-1978, API & ASTM Standards in the widest range of 350 mm to 2500 mm in wall thickness 5 mm-25 mm upto a single length of 4 Mtrs to 12 Mtrs. Mukat Pipes is capable of producing 40,000 MT of SAW Large diameter Pipes annually and in doing so, employ stringent quality control systems so that every MUKAT SAW pipe whether Longitudinal or Spiral gives you an added assurance of quality.

Mukat SAW pipes are being extensively used for Gas, Oil, Water pipelines, Refineries, Fertilizers Plants, NTPC/State level Power Generation Units, Hydel Projects ,Water works and Industries throughout the country. Some of the country's most well – known industrial units, both in Public and Private Sectors have been MUKAT's customers for long. In Public sector some of our important customers are-Indian Oil Corporation Ltd., Gas Authority of India Ltd., Bharat Petroleum Corporation Ltd., Hindustan Petroleum Corporation Ltd., Bharat Heavy Electricals Ltd., Nuclear Power Corporation Ltd., NTPC Ltd, Gujrat State Fertilizers, Punjab Water Supply and Sewerage Board, State Electricity Boards, Public Health and Flood Control Department J&K and a host of others.

Among the Private Companies the leading customers are-Nagarjuna Fertilizers, Nicco Corporation, Blue Star Ltd., Voltas Ltd., Punj Lloyd, Larsen & Toubro Ltd., Chambal Fertilizers and ETA Engineering Private Ltd.

Mukat Pipes an ISO9001:2000 certified company, is a team of dedicated, dynamic result- oriented technocrats and professionals committed to meet the growing challenges to serve a market which covers so many varying applications. Our manufacturing flexibility, enable us to meet even the most stringent customer requirements especially those of steel grade, lot size, special sizes and deliveries.



**Our
Regular
Customers.**

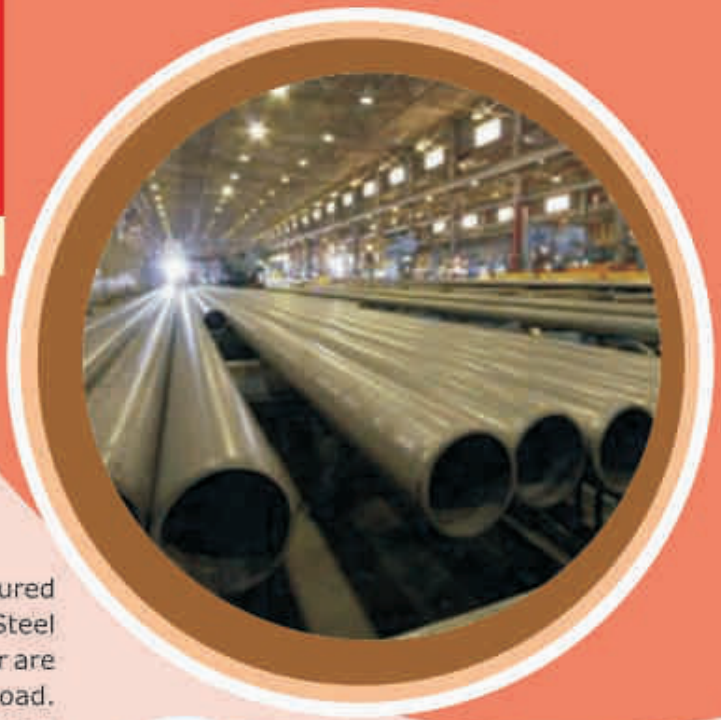


- Indian Oil Corporation Limited
- Engineers India Limited
- Hindustan Petroleum Corporation Limited
- Bharat Petroleum Corporation Limited
- Gas Authority of India Limited
- Bharat Heavy Electricals Limited
- National Fertilizer Limited
- Indian Farmer & Fertilizers Limited
- NTPC Limited
- Punjab State Electricity Board
- Punjab Water Supply & Sewerage Board
- Gujarat Water Supply & Sewerage Board
- Paharpur Cooling Towers Limited
- Larson & Toubro Limited
- Blue Star Limited
- RELIANCE –Industries Limited
- Engineering Projects India Limited
- MECON Limited
- Delhi-Metro Rail Corporation
- Delhi Jal Board
- Hindalco Industries Limited
- Irrigation & Flood Control Department-J&K
- ETA Engineering Private Limited
- Jainco Buildcon Limited





Lsaw Pipes



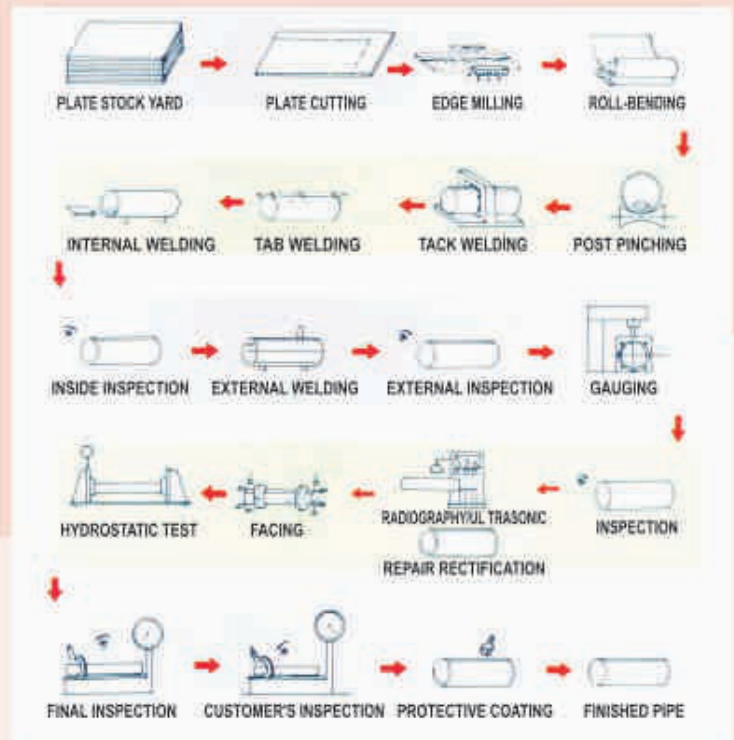
High quality mild steel plates (MSP) are procured from well-known manufacturers like Steel Authority of India, Essar Steel, Tata Steel, or are imported from leading steel mills abroad. Thereafter, physical and chemical properties are checked in the laboratory and verified with the test certificates. These plates are accurately cut to the required dimension, edges are prepared as per manufacturing codes, and then fed into the rolling machine for processing.

The plates are rolled in the rolling machine into cylindrical shape of lengths varying from 4-12 mtrs. After post-pinching operation, the slit pipes are subjected to tack welding. Thereafter, the longitudinal seam is submerged arc welded both from outside and inside, to form a strong weld joint. During the process of welding, and thereafter, strict inspection is enforced.

The pipes are then moved to the gauging & sizing press to achieve perfect roundness. The pipe ends are bevelled wherever required by the customer. Each pipe is subjected to strict quality control. The pipes undergo ultrasonic testing apart from radiography and hydrostatic testing as per the relevant codes and specifications to which the pipes are manufactured. Each pipe bears Sr.No., Specification Code, Size, O.D., Wt., etc.



Process Flow Chart



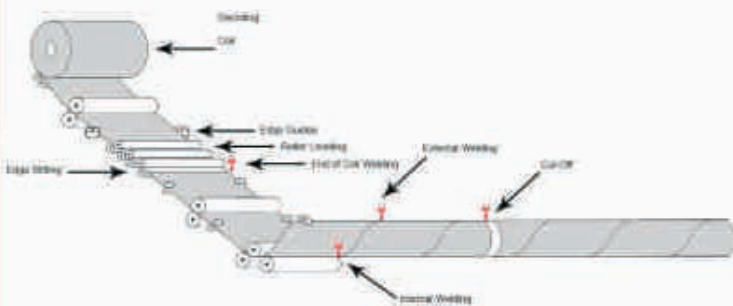
HSAW / Spiral Pipes



Helical Submerged Arc Welded Pipes or commonly called Spiral Pipes are made from high quality hot rolled coils (HRC). The automatic Pipe Mill decoils the strip, straightens it, prepares the edges for welding and feeds it into spiral forming station to form a pipe, which is welded internally and externally using the most advanced Submerged Arc Welded Technology. Once formed and welded the pipe is cut to the required length, all operations being carried out simultaneously without halting the production process. The pipe then rolls onto the bench for visual inspection, edge bevelling, radiography, ultrasonic testing, hydrostatic testing as per the relevant codes and the specifications to which the pipes are manufactured.

The above system is very flexible and can be used to manufacture a large range of diameter and thickness using the same basic raw material.

Manufacturing Process





Pipe Weight

Where :

Wpe = plain-end weight, rounded to the nearest 0.01 lb/ft (0.01 kg/m)
 D=outside diameter, rounded to the nearest 0.001 in (0.1 mm for sizes less than 457 mm, 1 mm for sizes 457 mm & larger)
 t=Specified wall thickness, rounded to the nearest 0.001 in (0.1 mm)

English Formula :

$$Wpe = 10.68 (D-t) t$$

Metric Formula :

$$Wpe = 0.02466 (D-t) t$$

PIPE WEIGHT KG/MTR AS PER IS-3589-2001

OUTSIDE DIAMETER		THICKNESS IN MM						
Inch	mm	6	8	10	12	14	16	18
14	355.6	51.73	68.57					
16	406.4	59.24	78.60	97.75				
18	457.2	66.76	88.82	110.28				
20	508.0	74.28	98.64	122.81				
22	558.8	81.79	108.66	135.33				
24	609.6	89.31	118.68	147.86				
26	660.4	96.83	128.71	160.39				
28	711.2	104.34	138.73	172.92				
30	762.0	111.86	148.75	185.44				
32	812.8	119.37	158.77	197.97				
34	863.6	126.89	168.79	210.50	252.01	293.52		
36	914.4	134.41	178.81	223.03	267.04	310.85		
38	965.2	141.93	188.84	235.55	282.07	328.39	374.52	420.44
40	1016.0		198.86	248.08	297.10	345.93	394.56	442.99
42	1066.8		208.88	260.61	312.14	363.47	414.60	465.94
44	1117.6		218.90	273.13	327.17	381.01	434.65	488.09
46	1168.4		228.92	285.66	342.20	398.55	454.69	510.64
48	1219.2		238.95	298.19	357.23	416.08	474.73	533.19
50	1270.0			310.72	372.27	433.62	494.78	555.74
52	1320.8			323.24	387.30	451.16	514.82	578.29
54	1371.6			335.77	402.33	468.70	534.87	600.84
56	1422.4			348.30	417.37	486.24	554.91	623.39
58	1473.2			360.83	432.40	503.77	574.95	645.93
60	1524.0			373.35	447.43	521.31	595.00	668.48
62	1574.8			385.88	462.46	538.85	615.04	691.03
64	1625.6			398.41	477.50	556.39	635.08	713.58
66	1676.4			410.93	492.53	573.93	655.13	736.13
68	1727.2			423.46	507.56	591.47	675.17	758.68
70	1778.0				522.59	609.00	695.21	781.23
72	1828.8				537.62	626.54	715.26	803.78
74	1879.6				552.66	644.08	735.30	826.33
76	1930.4				567.69	661.62	755.35	848.88
78	1981.2				582.73	679.16	775.39	871.43
80	2032.0				597.76	696.69	795.43	893.97
82	2082.8				612.79	714.23	815.48	916.52
84	2133.6				627.82	731.77	835.52	939.07
86	2184.4				642.86	749.31	855.56	961.62
88	2235.2				657.89	766.85	875.61	984.17
90	2286.0				672.92	784.39	895.65	1006.72
92	2336.8				687.95	801.92	915.69	1029.27
94	2387.6				702.99	819.46	935.74	1051.82
96	2438.4				718.02	837.00	955.78	1074.37
98	2489.2				733.05	854.54	975.83	1096.92
100	2540.0				748.08	872.08	995.87	1119.47

TESTING PRESSURE AS PER IS- 3589-2001 GRADE-410

OUTSIDE DIAMETER		THICKNESS IN MM						
Inch	mm	6	8	10	12	14	16	18
14	355.6	48.63	61.00					
16	406.4	42.47	51.00	51.00				
18	457.2	37.75	51.00	51.00				
20	508.0	33.97	45.30	51.00				
22	558.8	30.88	41.18	51.00				
24	609.6	28.31	37.75	47.19				
26	660.4	26.13	34.84	43.56				
28	711.2	24.27	32.36	40.44				
30	762.0	22.65	30.20	37.75				
32	812.8	21.23	28.31	35.39				
34	863.6	19.96	26.65	33.31	39.97	46.63		
36	914.4	18.87	25.17	31.46	37.75	44.04		
38	965.2	17.88	23.84	29.80	35.76	41.72	47.68	51.00
40	1016.0		22.65	28.31	33.97	39.84	45.90	50.96
42	1066.8		21.57	26.96	32.36	37.75	43.14	48.53
44	1117.6		20.59	26.74	30.88	36.03	41.18	46.33
46	1168.4		19.69	24.62	29.54	34.47	39.39	44.31
48	1219.2		18.87	23.59	28.31	33.03	37.75	42.47
50	1270.0			22.65	27.18	31.71	36.24	40.77
52	1320.8			21.78	26.13	30.49	34.64	39.20
54	1371.6			20.97	25.17	29.36	33.65	37.75
56	1422.4			20.22	24.27	28.31	32.36	36.40
58	1473.2			19.52	23.43	27.33	31.24	35.14
60	1524.0			18.87	22.65	26.42	30.20	33.97
62	1574.8			18.27	21.92	25.57	29.22	32.88
64	1625.6			17.69	21.23	24.77	28.31	31.85
66	1676.4			17.16	20.69	24.02	27.45	30.88
68	1727.2			16.65	20.18	23.31	26.65	29.88
70	1778.0				19.41	22.65	25.88	29.12
72	1828.8				18.87	22.02	25.17	28.31
74	1879.6				18.36	21.42	24.49	27.55
76	1930.4				17.88	20.90	23.84	26.82
78	1981.2				17.42	20.33	23.23	26.13
80	2032.0				16.99	19.82	22.65	25.48
82	2082.8				16.57	19.33	22.10	24.86
84	2133.6				16.18	18.87	21.67	24.27
86	2184.4				15.80	18.44	21.07	23.70
88	2235.2				15.44	18.02	20.59	23.16
90	2286.0				15.10	17.62	20.13	22.65
92	2336.8				14.77	17.23	19.69	22.16
94	2387.6				14.46	16.87	19.28	21.69
96	2438.4				14.16	16.51	18.87	21.23
98	2489.2				13.87	16.18	18.49	20.80
100	2540.0				13.59	15.85	18.12	20.38



Test Pressure

Where :

P=hydrostatic test pressure in pounds per sq.in.(kpa)
 S=fibre stress in pounds per sq.in.(Mpa), equal to the % of the specified minimum yield strength for various sizes.
 t=specified wall thickness in inches (mm)
 D=specified outside diameter in inches (mm)

English Formula

Metric Formula

$$P = \frac{2St}{D}$$

$$P = \frac{2000St}{D}$$


$$P = \frac{2St}{D}$$

$$P = \frac{2000St}{D}$$

Quality Assurance



During the last decade, quality has achieved prime importance in almost all the sectors such as manufacturing, production, services etc. This is because the only way to ensure customer satisfaction and loyalty is by delivering goods of utmost quality. Mukat Pipes ensures utmost quality in all the products that it manufactures. Mukat Pipes have been approved for manufacture of various grades/specifications of SAW pipes by EIL (ENGINEERS INDIA LTD.), MECON, RITES, SGS, DNV and LLOYDS REGISTER OF INDUSTRIAL SERVICES, NTPC LTD and others.

The Unit is approved by BIS for use of  Monogram and action is on to obtain the Certificates of Authority to use the official monogram of API.

Coating

To prevent the corrosion of the pipe and as per customer requirement coating is applied.

Mainly used coating techniques are :

- External Cement Mortar Guniting.
- External Coal Tar Enamel Coating.
- External Epoxy Coating.
- Internal Cement Mortar Lining.
- Internal Epoxy Coating.



MUKAT PIPES LIMITED

Rajpura-Patiala Road, Rajpura-140 401

Distt. Patiala, Punjab, INDIA

Phones : 01762-225040, 325498

Fax : (91)-01762-222390

e-mail : mukatpipes@gmail.com

website : www.mukatpipes.com

