

Galvanised Pipe



SWASTIK PIPE LTD uses the Electric Resistance Welding process to manufacture pipes and tubes ranging in nominal diameter from 15mm (1/2 inch) to 300mm (12 inches) and in wall thickness from 2.00mm to 10.00mm.

Tubes are manufactured from edge trimmed Mild Steel Strips Slitted from Hot Rolled low Carbon Steel Coil conforming to IS: 10748-1995. These edge trimmed strips are mechanically formed into required circular shape and high frequency electricity, i.e., 4,50,000 cycles/second is then used to fuse the pipe together to form a weld joint thus become homogeneous part of the completed tube. The tubes then pass through the sizing section where dimensional tolerance if any are corrected, where after they are cut to length and ends beveled before hydrostatic testing.

Thereafter they are sent for protective surface finishing operation such as Hot Dipped Galvanising or Varnishing as per specific requirements. The tubes are offered beveled, plain ended or threaded with screwed & socketed.

Manufacturing Process

Step – 1

Purchasing Raw Material (Steel/Skelp)

Material received from SAIL / ESSAR Steel Ltd. / Lloyds / ISPAT or other any approved vendor. The steel shall be fully conformed to the API 5L / IS Standard Specification or as per Customer's Specification. Testing/ Checking and Identification of Raw material shall be done as per API 5L / IS Standard Specification

Step – 2

Edge Preparation & Milling

Edges of Coil / Skelp are formed in edge breaking unit at initial stage so that perfect forming is achieved at welding area. Strip edges are given mill cut on both sides with edge milling machine to make the edges clean and square for perfect butt welding with high frequency. It shall be done before passing the strip to forming process.

Step – 3

High Frequency Welding

Finally the pipe shape is performed after forming process, it passes through welding heads followed by the seam guide. The process of welding is based on ERW process. Electric welding shall be performed with a minimum welder frequency of 200 KHz. The fusion takes place through a roll assembly set for proper welding. Bead trimming shall be done as per API 5L / IS Standard or as per Customer Specification.

Step – 5

Seam Normalizing

Normalizing is carried out on weld and HAZ after welding at the temperature of 850°C to 900°C. The temperature of seam normalizing is monitored by a non contact indicator having the digital display along with recorder. Equipment: Seam Normalizer Capacity : 500 KW

Step – 6

Sizing

A set of sizing rolls is ahead of cooling zone, water cooled pipe is passed through sizing rolls which control the Ovality and required dimensions, which is finally verified with measuring instruments as specified in relevant Specification.

Step – 7

NDT Testing (Eddy Current)

Eddy current testing is the process of inducing small electrical currents in an electrically conductive article and observing the resultant reaction between the magnetic fields involved. Equipment: Eddy Current Flaw Detector (PC based)

Step – 8

Finishing of the Pipes

Finished pipe are cut to required length by cut of carriage. Thereafter both ends of pipes are beveled by the end facer. Finally each pipe are checked for its Outer diameter, Inner Diameter, Thickness, Straightness, and length.

Step – 9

Hydro Testing

After completing all the above process, all pipes transferred to the hydro testing bench. The test pressure shall be given to the pipes as per relevant specification or as per Customer Requirement.

Step – 10

Marking

Marking on the pipes shall be paint stenciled as stipulated in API 5L/ IS Standard or as per the customer's requirement, on each length of the pipe

Applications & Specification

Water, Gas & Sewage pipes

Structural Purposes

Idlers / Conveyors]

Water wells (casing pipes)

Electric Poles

Automotive Purposes

Scaffolds

Air, Steam, Oil & Gas transmission