

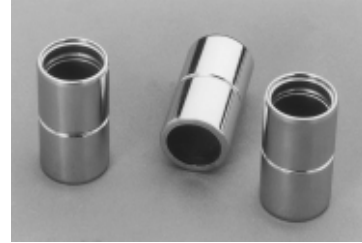


Tubes for General Applications

ISMT manufactures carbon and alloy steel seamless tubes used in a variety of industries such as material handling, railways, heavy engineering, transport, shipbuilding, defence, agri-equipment, etc.

Typical applications include the manufacture of:

- Gas cylinders
- Rollers and chain links (used in conveyor belts)
- Structural tubing in cranes, bridges, platforms, etc.
- Printing rollers
- Flow lines
- Guide rods and sleeves for linear bearings
- Pulley banks



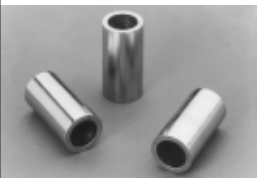
The use of tubes (instead of bars) for these applications not only reduces machining requirements but also increases the fatigue life of the final product because of the better grain structure of tubes. Moreover, tubes are lighter and easier to handle than bars and therefore reduce handling time and associated transportation costs.

Mechanical tubes produced by ISMT come in a wide size range (38.1 mm to 273 mm) and offer excellent weldability and machinability.

Tubes for Hydraulic & Pneumatic Cylinders

ISMT produces tubes used in the manufacture of high quality hydraulic and pneumatic cylinders. These tubes meet the requirements of various international specifications like BS 980, IS 3601, JIS STKM 13A, JIS STKM 16A, JIS STKM 17A, etc.

The steel used for the manufacture of these tubes is produced by the electric arc furnace route, is fully killed and is vacuum degassed ensuring a very low inclusion rating. As a result cylinders produced from these tubes have a blemish-free surface finish and a longer service life. These tubes are generally delivered in cold finished ready-to-hone condition.

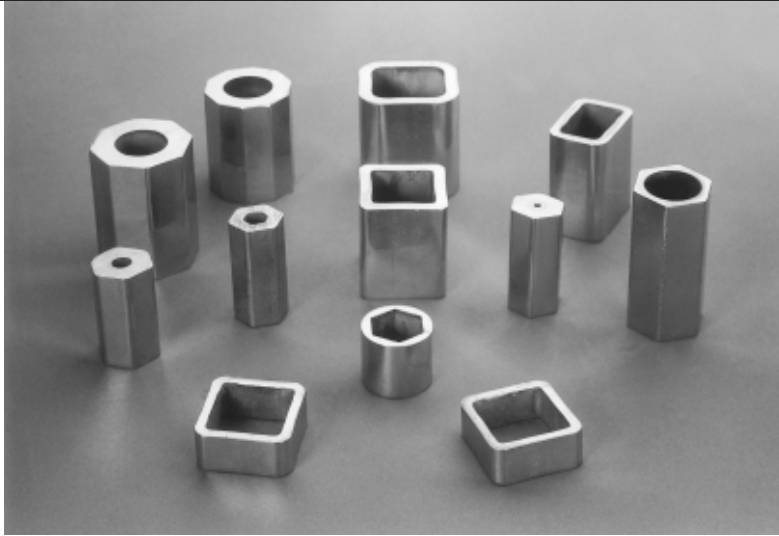


Tube Tolerances * *

Dimensional Tolerances

Description	OD (mm)	Wall t (mm)
Hot rolled D/t 3.5 – 9.9 D/t > 9.9	+/- 0.75% +/- 1.0%	+/- 7.5% +/- 10%
Cold rolled	+/- 0.5% subject to +/- 0.25 mm minimum	+/- 5.0 %
ID Calibrated Tubes	Higher of +/- 1mm or +/- 1%	As per category

**Note: Closer tolerances can be offered upon special request



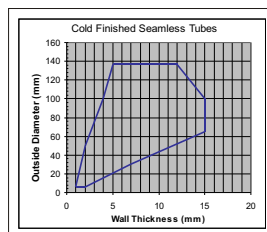
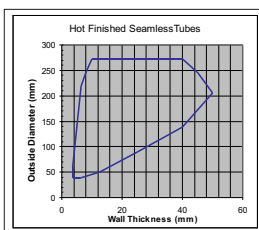
Eccentricity	
Hot finished and peeled	10% of wall thickness
All other tubes	OD < 125 MM: 5% of wall thickness
	OD > 125 MM: 10% of wall thickness

Straightness	
Cold pilgered / roto rolled	1:1000
Hot finished / hot finished and peeled	1:600

Lengths

Tubes are generally supplied in random lengths between 4 to 7 meters or customer specifications. Tubes in exact length multiple of desired unit lengths or long lengths are also offered.

Size Range



Standards

ASMT, BS, JIS, DIN, IS, GOST, API or according to customer specification

Grades

SAE 1008, 1010, 1012, 1017, 1019, 1026, 1035, 1040, 1045, 4130H, 4140H, 4142H, 8620, ST-62-N, EN8, EN16, EN19, EN24, EN31, CK15, 16NiCr4, 20MnCr5