

MECHANICAL APPLICATIONS

Tubes for General Applications

BERAL supplies carbon and alloy steel seamless tubes used in a variety of industries such as material handling, railways, heavy engineering, transport, ship-building, 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 in linear bearings
- Pulley blanks



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 BERAL come in a wide size range (38.1 mm to 273 mm), and offer excellent weldability and machinability.

Tubes for Hydraulic & Pneumatic Cylinders

BERAL supplies 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 is produced by the electric arc furnace route, is fully killed and is vacuum degassed ensuring 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 condition and ready-to-hone condition.



Tube Tolerances

Dimensional Tolerances

| Description | OD (%) | Wall t (%) |
|--|--|---------------------|
| 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.

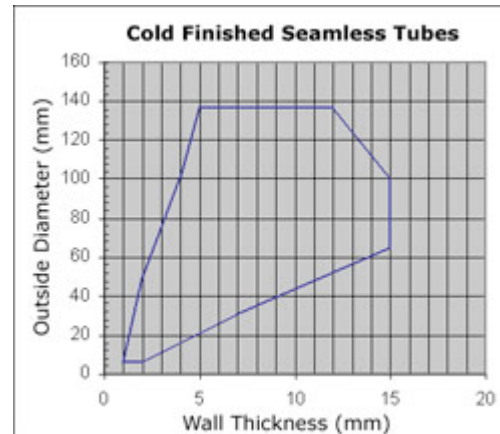
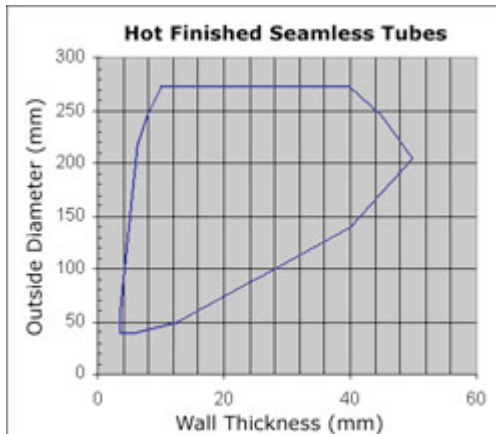
| Eccentricity | |
|-----------------------|-----------------------------------|
| Hot finished & peeled | 10% of wall thickness |
| All other tubes | OD < 125mm: 5% of wall thickness |
| | OD > 125mm: 10% of wall thickness |

| Straightness | |
|--------------------------------------|----------|
| Cold pilgered / roto-rolled | 1 : 1000 |
| Hot finished / hot finished & peeled | 1 : 600 |

Lengths

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

Size Range





BERAL Demir elik

Standards

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

Grades

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

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