



Indian Standard - IS 1239 (Part 1):2004- Steel Tubes, Tubulars and Other Wrought Fittings Part 1: Steel Tubes

This standard IS 1239 (Part 1):2004 covers the requirements for welded and seamless plain end or screwed and socketed steel tubes intended for use for water, non-hazardous gas, air and steam. This standard is applicable to tubes of size 6 mm nominal bore to 150 mm nominal bore.

In IS 1239 (Part 1), steel tubes are classified on the basis of i) Class – Light, Medium and Heavy ii) Grade (of steel) iii) Size (NB) iv) Manufacturing process - Seamless/ERW/HFIW etc. v) End condition - Plain/Bevel ended/Screwed End/Screwed and socketed vi) Surface Condition: Black/Galvanized

Required Tests: To ensure the steel meets the stringent quality and performance standards, several tests are mandated:

- **Chemical Composition Analysis:** Verifies the presence and proportion of alloying elements, ensuring the steel's properties align with specified requirements.
- **Mechanical Testing:** Includes tensile tests to determine strength and ductility, bend tests to evaluate flexibility and resistance to cracking.
- **Dimensional Inspection:** Ensures the steel conforms to specified dimensions and tolerances, critical for maintaining structural integrity and compatibility in construction.
- **Surface Examination:** Checks for defects such as cracks, inclusions, and surface imperfections that could compromise the steel's performance and longevity.
- **Leak Proof Testing:** In this test, Hydrostatic test is carried out at a pressure of 5 Mpa and the same maintained for at least 3 seconds. The tube is considered pass if there is no leakage observed during the test

Overall, the steel tubes as defined by IS 1239-1 offers a balanced combination of strength, flexibility, and reliability. Rigorous testing ensures that each batch meets the necessary standards, guaranteeing safety and performance in its various applications.