



Summary of IS 2501: 1995 – Specification for Solid Drawn Copper Tubes for General Engineering Purposes

Product Definition: The IS 2501:1995 standard specifies **solid drawn (seamless) copper tubes** designed for **general engineering applications**. These tubes are essential in industries that require high-quality **copper tubing** for **fluid transport, heat exchangers, and machinery components**.

Consumer Quality Expectations: Consumers expect **copper tubes** to be **durable, resistant to corrosion, and precise in dimensions**. They look for high **tensile strength**, reliable **elongation capacity**, and **uniform wall thickness** to ensure longevity and performance. Additionally, qualities like **smoothness, absence of defects** (e.g., cracks or seams), and compliance with rigorous **mechanical tests** (e.g., tensile and drift expanding tests) are also valued.

Standard's Approach to Meeting Expectations: IS 2501:1995 addresses these expectations by specifying strict requirements on **chemical composition, mechanical properties, and tolerances** for **diameter, wall thickness, and roundness**. The standard includes multiple grades (e.g., **Cu-ETP, Cu-DHP, Cu-FRTP, Cu-DPA, Cu-ATP**), each suited for different engineering applications. It mandates thorough **non-destructive tests** like **eddy current** and **hydrostatic tests** to ensure integrity. For **half-hard** and **annealed conditions**, it specifies parameters like **elongation and K value** for hydrostatic testing, enhancing **pressure resistance**. Additional tests for **microscopic structure** and **hydrogen embrittlement resistance** further assure the material's resilience and quality. The standard also includes **packing requirements** to prevent damage during transport, thus ensuring **product quality** upon delivery.

This standard thus ensures **high-quality copper tubing** by addressing every critical performance and durability criterion, ensuring products meet consumer demands in **engineering applications**.