



Indian Standard IS 4270 : 2001 Steel tubes used for water wells specification

IS 4270: 2001 specifies the requirements for steel tubes used in water wells. These tubes serve as essential components in the construction of water wells, functioning as casing pipes, screens, and pump housing. They are critical in providing structural integrity, protecting the borehole from collapsing, and facilitating efficient water extraction.

Consumers expects the following quality parameters in the product:

1. **Durability:** Resistance to corrosion, mechanical wear, and the effects of long-term exposure to water and soil.
2. **Strength:** High structural strength to withstand the pressure exerted by surrounding soil and water.
3. **Dimensional Precision:** Consistent outer diameter, wall thickness, and straightness to ensure proper fitting and alignment in well installations.
4. **Hydraulic Efficiency:** Smooth internal surfaces for unimpeded water flow and compatibility with pumping systems.
5. **Ease of Installation:** Reliable threading and coupling mechanisms to facilitate quick and secure assembly on-site.
6. **Long Service Life:** Material properties that enable the tubes to function effectively over extended periods.

IS 4270: 2001 ensures consumer expectations are met through:

1. **Material Specifications:** Defines the chemical composition and mechanical properties (yield strength, tensile strength, and elongation) of steel, ensuring tubes are robust and durable.
2. **Protective Coatings:** Recommends galvanization or other corrosion-resistant coatings to enhance longevity in wet and aggressive environments.
3. **Dimensional Standards:** Establishes precise tolerances for wall thickness, diameter, and straightness, guaranteeing reliability and compatibility.
4. **Threading Requirements:** Specifies threading dimensions and types for seamless assembly of pipes during well construction.
5. **Testing Protocols:** Mandates quality tests, including hydrostatic pressure testing, tensile testing, and visual inspections, to confirm structural integrity and performance.
6. **Marking and Identification:** Requires clear markings for grade, size, and manufacturer details, ensuring traceability and compliance.

By addressing these parameters, IS 4270 ensures that Steel tubes used for water wells deliver reliable performance and meet diverse consumer requirements.