Indian Standard IS 7092 (Part 2) : 1987; Specification for aluminium alloy tube for irrigation purposes: Part 2 extruded tube

IS 7092 (Part 2): 1987 specifies the requirements for extruded aluminium alloy tubes used in irrigation systems. These tubes are manufactured using high-strength aluminium alloys to ensure durability, corrosion resistance, and lightweight properties. They are primarily used in the distribution of water for agricultural irrigation, providing an efficient and durable solution for transporting water under various environmental conditions..

Consumers expect the following quality parameters in extruded aluminium alloy tubes for irrigation purposes:

1. **Corrosion Resistance**: Essential for longevity, especially when exposed to water, fertilizers, or harsh weather.
2. **Strength and Durability**: High tensile strength to withstand pressure and external forces.
3. **Dimensional Accuracy**: Uniform thickness, diameter, and straightness for proper fitment and functionality in irrigation systems.
4. **Lightweight**: Ease of handling and installation in agricultural fields.
5. **Leakage Prevention**: High-quality material and manufacturing processes to ensure leak-proof performance.
6. **Environmental Suitability**: Resistance to varying climatic conditions, including extreme temperatures and humidity.

IS 7092 (Part 2): 1987 addresses these quality parameters through the following testing requirements:

1. **Corrosion Resistance**: The standard specifies the use of aluminium alloys known for their corrosion resistance, ensuring long service life.
2. **Strength and Durability**: Mechanical properties, such as tensile strength and elongation, are clearly defined and tested to meet performance criteria.
3. **Dimensional Accuracy**: Strict tolerances for tube dimensions, including outer diameter, wall thickness, and straightness, ensure compatibility and reliability.
4. **Material Composition**: The chemical composition of the aluminium alloy is standardized to achieve optimal strength, durability, and resistance to environmental factors.
5. **Leakage Prevention**: Testing procedures include hydrostatic pressure tests to ensure tubes can withstand operational pressures without leakage.
6. **Testing Protocols**: The standard mandates rigorous inspections and tests, including mechanical tests, dimensional checks, and surface finish assessments, to verify compliance with quality requirements.

By addressing these expectations, IS 7092 (Part 2): 1987 ensures that extruded aluminium alloy tubes meet the functional, durability, and environmental needs of irrigation systems, offering a reliable solution for agricultural water distribution.