



## **IS 5504:1997 Specification for Spiral Welded Pipes**

Spiral welded pipes are essential for various applications, particularly in sectors such as water transportation, oil and gas pipelines, and structural purposes. These pipes are manufactured by forming a helical seam along the circumference of steel sheets or plates, welded to ensure uniformity and strength. IS 5504:1997 sets the quality and performance benchmarks for spiral welded steel pipes, addressing the needs of consumers for durable and high-quality piping solutions.

This Indian Standard specifies the dimensions, chemical composition, and mechanical properties required for spiral welded pipes with diameters ranging from 457 mm to 2,000 mm and wall thicknesses up to 12.5 mm. These pipes, designed for general use, meet stringent criteria for strength, corrosion resistance, and reliability under various service conditions. The pipes are manufactured using processes such as electric resistance welding or automatic submerged arc welding, ensuring a robust weld seam.

To meet consumer expectations, the standard includes key quality parameters:

1. **Chemical Composition:** Limits on carbon (0.25%), sulfur (0.05%), and phosphorus (0.05%) content ensure corrosion resistance and strength.
2. **Mechanical Properties:** Specifications for tensile strength (minimum 410 MPa) and yield stress (minimum 240 MPa) ensure structural integrity under load.
3. **Dimensional Accuracy:** Tolerances for wall thickness (+15%, -12.5%) and diameter (+0.75% to +1%) ensure compatibility with diverse applications.

The standard also prescribes tests such as tensile, flattening, and hydrostatic tests to verify the pipe's strength, ductility, and pressure resistance. Additional specifications for bending and weld testing are included to guarantee the integrity of the spiral seam under stress.

IS 5504:1997 also addresses consumer concerns about reliability and safety through:

- **Hydrostatic Testing:** Each pipe is tested at 1.5 times the working pressure to ensure leak-proof performance.
- **Repair Guidelines:** Clear procedures for weld repair ensure that defects are minimized while maintaining safety standards.

Packaging and marking requirements ensure traceability, while optional protective coatings enhance durability. By aligning with international standards, this revision improves competitiveness and reliability.

This standard is a comprehensive guide to manufacturing spiral welded pipes that satisfy industry requirements for quality, safety, and performance. Consumers searching for robust, high-performance pipes will find IS 5504:1997 a trusted benchmark for their applications.