

Stainless Steel Wire Rod IS 6527:1995

Stainless steel wire rods are extensively used across various industries due to their strength and corrosion resistance. Common applications include the manufacture of fasteners, automotive and machinery components, and medical and food equipment. They are also widely used in the chemical, food packaging, construction, and marine industries.

IS 6527:1995 specifies the requirements for stainless steel (SS) wire rods, excluding those used for electrode manufacturing. The standard defines specifications for ten stainless steel grades, which include:

- a. Ferritic: X04Cr13
- b. Martensitic (3 types): X12Cr13, X20Cr13, X30Cr13
- c. Austenitic (6 types): X02Cr18Ni11, X04Cr18Ni10, X08Cr18Ni9, X04Cr17Ni12Mo2, X02Cr17Ni12Mo2, X10Cr17Mn6Ni4

The requirements for each grade cover both chemical and mechanical properties. Chemical specifications include acceptable levels of carbon, silicon, manganese, nickel, chromium, molybdenum, sulfur, and phosphorus. Mechanical properties specified include 0.2% proof stress, ultimate tensile strength, percentage elongation, and hardness. An optional corrosion resistance test, as per IS 10461 (Parts 1 and 2), is also incorporated.

The standard further specifies dimensional tolerances (diameter tolerance and out-of-roundness) across four diameter ranges: 5.5mm–9.5mm, over 9.5mm up to 16mm, over 16mm up to 20mm, and over 20mm. Recommended annealing temperatures and cooling media for different grades are also included in the standard.