Indian Standard IS 2255 : 1977- Specification for mild steel wire rod for the manufacture of machine screws (By Cold Heading Process)

Indian Standards IS 2255:1977, specifies the requirements for mild steel wire rods used to manufacture machine screws and threaded fasteners from wire conforming to IS 1673 : 1973.

This Indian standard was first published in 1962 and subsequently revised in 1969 and 1977.

The wire rods shall be manufactured using open-hearth, electric, basic oxygen, or a combination of these methods. If basic oxygen is used, nitrogen content shall not exceed 0.007%. The steel can be supplied in semi-killed, killed, or rimming conditions as specified by the purchaser.

This Indian standard covers key aspects including manufacturing processes, chemical composition, dimensions, delivery conditions, and packaging.

Chemical Composition: Ladle analysis limits the carbon to 0.20% maximum, manganese between 0.30%–0.60%, and phosphorus and sulphur to 0.055% each. Allowable variations for product analysis are outlined for these elements.

Wire rods shall be supplied in various nominal sizes with diameters varies from 5.5 mm to over 20 mm. It can be delivered in coils or straight lengths, either in as-rolled or annealed conditions. Diameter tolerances are provided based on size, with limits on "out of roundness."

Quality and Sampling: Finished material must be free from defects, with allowances for the first meter of coil ends. Sampling and testing requirements are provided in specifying the number of samples and permissible defect levels. Tests for physical and chemical requirements are conducted to ensure conformity, with acceptance criteria based on compliance in these tests.

Each coil or bundle must be securely fastened, labelled with size, mass, manufacture date, and manufacturer’s mark. ISI Certification marking can be applied under licensing conditions.

Overall, IS 2255:1977 ensures that mild steel wire rods meet quality standards for machine screw production, providing detailed guidelines for chemical, physical, and quality assessments.