IS 10632 (Part 2) : 1983 - Specification for non magnetic stainless steels for electrical applications: Part 2 specific requirements for binding wires

Nonmagnetic tinned stainless steel wires for binding of armatures and rotors are used to provide structural support and secure the windings in electric motors and generators. These wires are coated with a thin layer of tin to enhance corrosion resistance and ensure long-lasting durability. The nonmagnetic nature of these wires ensures that it has minimum magnetic interference and the electrical machinery performs optimally.

A grade of austenitic chrome-nickel stainless steels with Nickel and Chromium 13.0 to 14.0 %, has exceptionally low permeability even after heavy cold drawing, high resistivity and good resistance to corrosion, is austenitic up to the melting point and possess high strength after cold working. It thus possesses all the properties which are required for binding wire. The chemical composition of this grade of stainless steel is specified in the standard IS 10632 (Part 2) :1983. It is used extensively as armature binding wire in rotors and generators.

The main properties required in binding wire is that it should have adequate strength, shall be able to bend, rebend and wrapped without breaking, have a minimum resistivity and should be amagnetic. To ensure that these properties are present in the wire, the standard prescribes tensile test, bend test, wrapping test, specifies the minimum electrical resistivity and test to check amagnetic property of the stainless steel. The standard also specifies dimensions and tolerances for round wire and flattened wire. The requirement of tin coating is also specified in the standard.