



## **IS 3725:1966 - SPECIFICATION FOR RESISTANCE WIRES, TAPES, AND STRIPS FOR HEATING ELEMENTS**

Resistance wires, tapes and strips are used for manufacturing heating elements for electrical appliances.

The Indian Standard **IS 3725:1966 - Specification of Resistance Wires, Tapes, and Strips for Heating Elements**, specifies general, **mechanical** and **electrical requirements** for resistance wires, tapes and strips for heating elements used in light electrical appliances.

This standard provides **guidance** to the **manufacturers of electrical appliances to procure suitable resistance wires, tapes and strips** for making heating elements for the appliances. Key parameters that need to be taken into consideration while selection of the product include the **maximum working temperature** of the wire, tape or strip, electrical properties such as **resistance**, mechanical properties such as **tensile strength**, physical dimensions and material composition.

IS 3725 addresses these quality expectations through detailed testing and inspection guidelines. Physical and mechanical tests, such as **tensile** and **wrapping tests**, verify durability and flexibility, while electrical tests such as **measurement of resistance** confirms the resistance values and uniformity. Additionally, **endurance test** is conducted to ensure the material's longevity and reliable performance over time

Although specific **alloy compositions** are not mandated, commonly used alloys specified in the standards include nickel-chromium, nickel-chromium-iron and iron-chromium-aluminium, with recommended temperature ranges.

Conformance of resistance wires, tapes and strips to IS 3725 ensures that these materials exhibit uniform **hardness, smooth surfaces, uniform resistance** throughout their length, **mechanical durability** including ability to withstand repeated bending without breaking.

Additionally, the standard specifies marking the product with key information such as manufacturer's details, resistance values, material dimension and weight helping consumers to make appropriate choices. The standard also mandates proper packaging to prevent material damage, with specific guidelines on reel winding and spacing to facilitate safe storage and handling.