



## **Indian Standard IS 12836: 1989 -36 - Nickel iron soft magnetic rods**

Relay cores are crucial components in electrical relays, used to control circuits by opening and closing contacts. Nickel iron soft magnetic rods, made from high-purity nickel-iron alloys, are often used in these cores due to their excellent magnetic properties. They offer superior permeability and low coercivity, ensuring efficient magnetic flux conduction with minimal energy loss. These rods enable precise and reliable control of electrical circuits by allowing quick and easy magnetization and demagnetization, essential for the accurate operation of relays.

The Indian Standard, IS 12836: 1989, specifies requirements for 36-nickel iron soft magnetic rods, including their chemical composition, mechanical properties, and magnetic characteristics. The standard outlines the permissible levels of elements like nickel, carbon, manganese, iron, and other impurities, which influence the rods' magnetic properties and hardness.

Additionally, the standard specifies critical magnetic requirements such as Coercive Force, aging coefficient of Coercive Force, and Minimum Values of Magnetic Flux Density. Low coercive force and aging coefficient ensure efficient and stable performance, while high magnetic flux density enables effective control and switching of electrical circuits. These parameters are essential for ensuring optimal relay operation and long-term reliability.

The standard also includes requirements for the finish and dimensions of the rods, such as diameter, length, and straightness, ensuring they meet precise specifications for high-quality performance.

In summary, IS 12836: 1989 outlines the requirements for 36-nickel iron soft magnetic rods, focusing on their chemical composition, mechanical properties, and essential magnetic characteristics. The standard ensures that these rods provide efficient, stable, and reliable performance in relay cores, with specific guidelines for their dimensions and finish to maintain high-quality standards.

