



Hot-Dip Zinc Coating on Steel Reinforcement Bars - IS 12594:1988

This standard specifies requirements for applying **hot-dip zinc coatings** on **steel bars** used in concrete reinforcement to enhance **corrosion resistance** and ensure **long-term durability**. The zinc coating shields the steel from environmental exposure, which could otherwise compromise structural integrity over time

Professionals and consumers expect **high corrosion resistance**, **structural integrity**, and **uniform coating thickness** in reinforcement bars to achieve **safety** and **longevity** in concrete structures. The hot-dip zinc coating process provides a robust protective layer, forming an effective barrier against rust and corrosion, thereby extending the life of structures.

IS 12594:1988 sets precise technical requirements for achieving a durable zinc coating. The standard mandates a **minimum coating thickness** of 610 g/m² and 915 g/m² respectively for class B and class A coating, providing consistent corrosion protection across sizes. Surface preparation is detailed with pre-treatment steps like **acid cleaning and fluxing**, which are critical to achieving strong coating adhesion. Additionally, the standard specifies **mechanical property tests**, including **bend tests** to check coating flexibility and **adhesion tests** to ensure that the coating withstands typical construction handling stresses without **flaking or cracking**. Compliance with these specifications ensures reinforcement bars are manufactured to a high-quality standard, meeting industry needs for reliable and durable construction.