



Aluminium Conductors - Galvanized Steel Reinforced are widely used for transmission of power across long distances. *Aluminium Conductors - Galvanized Steel Reinforced* offer excellent conductivity and easy replaceable in high voltage circuits.

The Indian Standard IS 398 Part 5, *Aluminium Conductors for Overhead Transmission Purposes, Part 5: Aluminium Conductors - Galvanized Steel Reinforced for Extra High Voltage (400 kV and Above)*, provides specifications for high-strength aluminum conductors reinforced with galvanized steel (ACSR) specifically for extra-high voltage (EHV) transmission lines operating at 400 kV and above. This standard ensures that these conductors are built to meet the rigorous demands of high-voltage transmission across long distances and under challenging environmental conditions.

Key elements of IS 398 Part 5 include:

1. **Material Specifications:** Defines the requirements for both the aluminum and galvanized steel components. The aluminum layers provide high conductivity, while the galvanized steel core offers additional tensile strength to support the conductor under heavy load and long spans.
2. **Construction Details:** Outlines the construction of the conductors, including strand arrangement, size, and the lay length (twist length) for both aluminum and steel layers. This design maximizes strength and flexibility, essential for high-voltage lines subject to strong mechanical stress.
3. **Electrical and Mechanical Testing:** Specifies mandatory testing to verify tensile strength, electrical resistance, elongation, and stress-strain characteristics. These tests ensure that the conductor can withstand high electrical loads, environmental factors, and mechanical stress typical in EHV applications.
4. **Corrosion Resistance:** Includes requirements for galvanizing the steel core to prevent corrosion, which is crucial for maintaining conductor integrity over time, especially in exposed and harsh environments.
5. **Quality Control:** Sets protocols for quality assurance and manufacturing consistency, ensuring each conductor meets the necessary performance and safety standards.

IS 398 Part 5 provides the rigorous standards needed to ensure that galvanized steel-reinforced aluminum conductors (ACSR) perform reliably in India's extra-high voltage transmission networks, which require robust construction to support long-distance power transmission with minimal losses and maximum stability.

SP 30 : 2023 National Electrical Code of India, provides details on their use, selection, evaluation of suitability and preferred locations for placement in power system.