



IS 1554 (Part 2):1988 - PVC Insulated (Heavy Duty) Electric Cables for Working Voltages from 3.3 kV up to and Including 11 kV

A good PVC-insulated heavy-duty electric cable is defined by its electrical performance, mechanical durability, and resistance to environmental stresses. These cables are crucial for power transmission and distribution in industrial, commercial, and residential applications, ensuring efficient and safe operation under high-voltage conditions.

Key factors contributing to the cable's quality include high conductivity of the conductor, robust PVC insulation, and excellent thermal and mechanical properties. To meet diverse application needs, IS 1554 (Part 2):1988 specifies requirements for the materials and construction of these cables.

The standard has the following key performance requirements:

1. **Voltage Rating:** Ensures cables reliably operate within the specified range of 3.3 kV to 11 kV.
2. **Thermal Resistance:** Specifies insulation and sheath resistance to heat and pressure under prolonged use.
3. **Moisture and Chemical Resistance:** Defines the PVC insulation's ability to withstand exposure to moisture and chemicals without degradation.
4. **Mechanical Strength:** Specifies the cable's resistance to mechanical stresses, including impact and pressure, to ensure durability in challenging environments.
5. **Insulation Resistance:** Ensures reliable electrical performance by maintaining high resistance to electrical leakage.
6. **Current-Carrying Capacity:** Specifies the maximum current the cable can safely handle without overheating.
7. **Marking:** Provides guidelines for marking cables with voltage grade, insulation type, and size for clear identification and proper use.

This standard provides methods of sampling, testing, and inspection to ensure consistent quality and performance under various environmental and operational conditions. Additionally, it emphasizes the construction and material properties of the cables to meet stringent safety and reliability standards. The marking clause of the standard prescribes the requirements to identify the cable for its intended use.