



IS 7098(Part 3) Cross-Linked Polyethylene Insulated Thermoplastic Sheathed Cables — Specification (For Working Voltages from 66 kV up to and including 220 kV)

Cross-linked Polyethylene (XLPE) Insulated PVC Sheathed Cables are designed for power transmission and distribution in which the conductor is insulated with cross-linked polyethylene (XLPE), a thermosetting polymer. XLPE insulation offers excellent electrical insulation, high thermal resistance, and resilience to heat and stress without deforming, making it suitable for medium and high voltage applications.

For XLPE insulated thermoplastic sheathed cables used in high-voltage applications (66 kV to 220 kV), consumers expect **high dielectric strength, low partial discharge, and high insulation resistance** for optimal electrical performance. Thermal stability is also essential to enable **safe operation at high temperatures** and to **resist thermal aging**. Mechanically, the cables should be **durable, flexible, and resistant to abrasion, impacts, and physical stress**, with a **specified minimum bending radius**. A suitable **moisture barrier** is also required to prevent water ingress, which can severely impact the cable's insulation and overall performance. These parameters ensure reliable, safe, and efficient cable performance in high-voltage conditions.

The Indian Standard **IS 7098(Part 3)** specifies requirements for XLPE insulated thermoplastic sheathed cables designed for high-voltage applications, ranging from 66 kV to 220 kV. This standard covers essential parameters such as **material specifications, including XLPE insulation and thermoplastic sheathing**, which provide electrical reliability and protection against environmental stresses. It also provides **construction requirements** to ensure the cable's mechanical strength, flexibility, and longevity. Additionally, it mandates rigorous **test methods for insulation resistance, thermal stability, and partial discharge** to ensure high safety and performance levels.

The **DPIIT Quality Control Order** mandates that all XLPE Insulated PVC Sheathed Cables (for working voltages from 66 kV up to and including 220 kV) sold, manufactured, or imported in India must comply with IS 7098(Part 3) and display the **BIS Standard Mark**, making it an essential reference for high-voltage cable manufacturing and installation in India.