IS 8783 (Part 4/Sec 3) :1995 Winding Wires for Submersible Motors – Specification

Part 4 Specification for individual wires, Section 3 Polyester and Polypropylene Insulated Winding wires

IS 8783 (Part 4/Sec 3): 1995 specifies the requirements for **Polyester and Polypropylene Insulated Winding Wires** used in submersible motors. These are specialized electrical winding wires that feature dual insulation layers—an inner layer of polyester and an outer layer of polypropylene. The polyester layer provides excellent electrical insulation, while the polypropylene layer enhances mechanical strength and resistance to water, abrasion, and chemicals. These wires are designed to function efficiently in challenging environments, such as submerged conditions, where moisture resistance, durability, and reliability are critical for motor performance.

Key quality parameters that offer reliable and efficient motor operation over long periods include:
- **Electrical insulation** to prevent short circuits,
- **High thermal stability** to withstand high operating temperatures
- **High mechanical strength** for durability against abrasion and physical stress.
- **Moisture resistance** to ensure consistent performance in submerged conditions.

IS 8783 (Part 4/Sec 3): 1995 addresses compliance to above key parameters by specifying stringent design, material, and testing requirements for polyester and polypropylene insulated winding wires. The standard outlines criteria for electrical insulation properties, ensuring the wires can handle specified voltage levels without failure. It also sets parameters for thermal and mechanical performance, including resistance to high temperatures, water ingress, and abrasion. The dual insulation layers—polyester for electrical insulation and polypropylene for mechanical protection—are rigorously tested for durability under submerged conditions. By adhering to this standard, manufacturers can produce reliable, high-quality wires that meet the demands for efficiency, safety, and longevity in submersible motor applications.