

## **IS 1554 (Part 1) – PVC (Heavy Duty) Cables**

Generation, Transmission, and Distribution are the three major components of electrical power systems, in which Electric Cables form an integral part of power transmission and distribution. PVC insulated (HD) cables are widely used for residential, commercial and industrial purposes for electric power and lighting.

BIS has published the Indian Standard IS 1554 (Part 1) ‘PVC Insulated (Heavy Duty) Electric Cables - For Working Voltages up to and including 1100 V’ for cables of a wide range of types for electric supply and control purposes.

The requirements of armoured/un-armoured, single core/twin-core/three-core/multi-core PVC insulated/sheathed cables that are designed to meet heavy duty applications are covered in this Standard. Armoured cables specified in this Standard are suitable for use in mines also. Special categories of cables (FR - Flame Retardant and FRLSH - Flame Retardant, Low Smoke and Halogen) covered in this Standard are required to comply with additional requirements for improved fire performance.

The properties of copper/aluminium conductor, physical requirements of insulation/sheath, high voltage test/insulation resistance test on cable etc. forms important part of this Standard.

**Resistance Test** performed on conductors determines how easily the current will flow through cables. **Tensile Test** establishes whether insulation/sheath have requisite tensile strength and elongation to withstand mechanical stresses during installation. **Halogen Acid Gas Evolution Test** carried out on polymeric material components used in cable construction is an index of corrosivity and determines the amount of halogen acid gas evolved during combustion. **Flammability Test** verifies the flame propagation property and evaluates the potential performance of cables in case of fire. **High Voltage Test** conducted on cables by imposing higher voltage stress shows whether the cable quality and safety is as per design and standards. **Insulation Resistance Test** on cables is helpful in detecting the imperfections in dielectric that affects the quality of cable.

By complying with various parameters/characteristics specified in IS 1554 (Part 1), it ensures that the Quality of PVC Insulated (HD) Cables meets the Indian Standards.