

IS 16246 : 2015 Elastomer insulated cables with limited circuit integrity when affected by fire – Specification

IS 16246:2015 "Elastomer Insulated Cables with Limited Circuit Integrity when Affected by Fire," outlines specifications for elastomer-insulated cables designed to maintain circuit integrity during a fire. These cables are used in critical applications where the uninterrupted flow of electricity is essential, such as emergency lighting, fire detection systems, and alarm circuits.

Some of the important test mentioned in the standard are:

1. **Annealing Test for Copper:** Ensures that the copper used in the cables has undergone proper heat treatment, improving its flexibility and ductility.
2. **Conductor Resistance Test:** Measures electrical resistance to ensure the cable conducts electricity efficiently, minimizing power losses.
3. **Tensile Strength and Elongation Tests:** Assess the physical robustness of the insulation and sheath, ensuring they can withstand mechanical stress without breaking or deteriorating.
4. **Ageing in Air Oven/Bomb:** Simulates long-term exposure to elevated temperatures, ensuring that the cable's materials retain their properties over time.
5. **Hot Set Test :** Evaluates the cable's performance under high temperatures and mechanical stress, ensuring it does not deform permanently under load.
6. **Oxygen Index and Smoke Density Tests:** These fire safety tests check the material's flammability and the amount of smoke generated, crucial for ensuring that cables don't contribute to the spread of fire or release harmful smoke.
7. **Flame Retardant Test :** These tests assess the cable's ability to resist catching fire or propagating flames, ensuring the safety of installations in case of a fire.
8. **Water Absorption Test:** Ensures that the insulation retains its properties in damp conditions, critical for environments where moisture is present.
9. **Circuit Integrity Test under Fire Condition:** Verifies that the cable can maintain its electrical performance during a fire, which is essential for emergency systems.

These tests ensure that the cables meet stringent safety and performance requirements, particularly in environments prone to fire hazards, ensuring reliability and protection during critical situations