IS 5950- Shot firing cables (for use other than in shafts)

IS 5950 specifies the requirements for “shot firing cables” used in mining and other similar applications other than in shafts. These cables are designed to withstand the harsh conditions typically found in such environments.

Here are the key definitions:

1. ”Shot Firing Cables”: These are specialized cables used to transmit electrical signals for detonating explosives in mining operations. They are designed to be durable and reliable under extreme conditions.

2. “Types of Cables”:

- “Type I”: PVC Insulated and Unsheathed, Twin cable (Parallel Twin) for single-shot and multi-shot firing.

- “Type II”: PVC Insulated and Sheathed, Single-core cable for multi-shot firing.

3. “Insulation and Sheathing”: The cables are insulated with PVC and may or may not have an additional sheath for extra protection.

4. “Conductor Material”: Typically made from plain annealed copper wire, ensuring good electrical conductivity.

5. “Cross-Sectional Area”: The standard specifies the nominal cross-sectional area of the conductor, which can vary based on the type of cable.

These cables are crucial for the safe and efficient operation of mining activities, ensuring that the electrical signals for detonation are transmitted reliably.

Consumers expect several key quality parameters from shot firing cables which are addressed in IS 5950:

1. “Material Quality”: The insulation and conductors must be of high quality, offering resistance to environmental factors such as moisture, chemicals, and abrasion.

2. “Conductor Purity”: The copper used in the conductors should be of high purity to ensure good electrical conductivity.

3. “Insulation Thickness”: The thickness of the insulation should meet specified standards to ensure durability and protection.

4. ” Strength”: The cables should have high tensile strength to withstand mechanical stresses during use.

5. “Elongation”: The cables should have adequate elongation properties to allow for flexibility without breaking.

6. “Flammability”: The cables should meet flammability standards to ensure they do not easily catch fire.

7. “Heat Resistance”: The cables should be able to withstand high temperatures without degradation.

8. “Electric Strength”: They should withstand high-voltage surges to ensure safety in shot firing applications.

9. “Resistance to Humidity”: The cables should perform well under humid conditions without degradation.

10. “Durability”: The cables should be durable and able to withstand frequent use without failure.

These parameters ensure that shot firing cables are safe, reliable, and suitable for the harsh conditions typically found in mining operations.