



IS 14494: 2019 - Elastomer Insulated Flexible Cables for Use in Mines – Specification

IS 14494: 2019 is a standard that specifies requirements for **elastomer insulated flexible cables** used in mines. These cables are designed for various voltage grades, including 1.1, 3.3, 3.8/6.6, and 6.35/11 kV. These cables are used in **coal mines, quarries**, and other miscellaneous **mines**. They are designed to withstand **high temperatures** and harsh conditions, ensuring reliable performance in demanding environments.

These cables are able to withstand **mechanical stress** and environmental factors without degradation. The cables perform reliably under **high voltage** conditions, ensuring safety and efficiency. The cables maintain their performance even at **high temperatures**, both under normal operation and short circuit conditions. The cables are **flexible** enough to be installed easily in various configurations without damage. The **insulation** is robust and resistant to wear and tear, ensuring long-term reliability.

IS 14494: 2019 addresses these expectations by setting specific requirements for the construction and performance of **elastomer insulated flexible cables**. The standard includes guidelines for **Material Specifications** which ensures the use of high-quality materials that meet durability and performance criteria. The standard defines tests for **tensile strength, elongation, insulation resistance**, and **high voltage** performance to verify the cables' quality. Providing detailed **construction guidelines** to ensure the cables are built to withstand harsh conditions. Setting **performance benchmarks** for temperature resistance, flexibility, and high voltage operation to ensure the cables meet consumer expectations. For instance, the **requirement of Armour** mandates the use of strands of galvanized steel wires which shall have a **tensile strength** of not less than 250 N/sqmm and not more than 580 N/sqmm. There is also a requirement for **flammability of sheath** which specifies Period of burning after removal of the flame shall not exceed 60 s and the unaffected portion from the lower edge of the top clamp shall be at least 50 mm.

The **Quality Control Order (QCO)** for **IS 14494: 2019** ensures that elastomer insulated flexible cables for use in mines meet specific quality and performance standards. This QCO mandates that manufacturers adhere to the guidelines and requirements set forth in the standard, including material specifications, construction details, and performance criteria.

By adhering to **IS 14494: 2019**, manufacturers can produce cables that meet the high standards expected by consumers, ensuring safety, reliability, and efficiency in mining operations.