



IS 4159:2021-MINERAL FILLED SHEATHED HEATING ELEMENTS- SPECIFICATION

Heating elements are devices that generate heat using electricity, commonly used in various heating appliances. Mineral filled sheathed heating elements are filled with mineral insulators such as magnesium oxide and are enclosed in metallic sheaths. They are generally used in household heating appliances, such as water heaters, cooking appliances, kettles, oil heaters and air heaters having water, oil or air as heating medium.

It is essential that these heating elements operate safely without causing any **risk of electrical hazards** for persons or surrounding, are **durable** and **efficient**.

The Indian Standard, IS 4159:2021, titled “*Mineral Filled Sheathed Heating Elements-Specification*” covers the general and **safety requirements** of mineral filled sheathed heating elements intended for installation in heating appliances. These requirements include **protection against electric shock**, **Moisture resistance**, **Mechanical strength**, **Endurance**, operational safety under abnormal conditions, resistance to **leakage** and ability to **withstand hydrostatic pressure**.

Heating elements conforming to IS 4159 undergo rigorous testing to check fulfilment of the above specified requirements. These tests simulate various conditions and ensure that the products is electrically safe for use, **withstands operational stress** without compromising safety, is **durable under continuous operation** and its construction is mechanically sound. Further, it is ensured that elements maintain optimal heat discharge and avoid **overheating to prevent fire hazards**.

Additionally, the standard mandates marking the product with key information such as rated voltage, power and manufacturer’s information, helping consumers make informed choices and use the product safely.

BIS standard mark on the heating element ensures that it conforms to IS 4159 signifying overall safety, reliable operation and durability of the product.