



IS 368:2014 Electric Immersion Water Heaters - Specification (fifth revision)

An electric immersion water heater is a device used to heat water by directly immersing an electric heating element into the water. The heating element, typically made of metal (such as copper, steel, or stainless steel), converts electrical energy into heat when a current passes through it. This heat is then transferred to the surrounding water, raising its temperature.

Key Features and Components:

1. **Heating Element:** A metal coil or rod that generates heat when electricity flows through it. The element is submerged in water.
2. **Thermostat:** Some immersion heaters include a thermostat to control and regulate the water temperature, preventing overheating.*
3. **Power Supply:** The heater is powered by an electric current, typically connected to a standard electrical outlet or a dedicated circuit.
4. **Protective Housing:** The element is usually encased in a protective tube or housing to prevent direct contact with water and to ensure safety.

Types of Electric Immersion Water Heaters:

- **Portable:** These are small, plug-in devices designed to heat water in containers like buckets, pots, or small tanks. They are usually used for home or emergency heating purposes.
- **Fixed/Installed:** These are larger systems installed in water tanks or reservoirs, often found in households, industries, or commercial applications.

IS 368:2014 covers the safety and performance requirements of ac single phase or dc portable electric immersion water heaters with a flexible cord and connector for water heating purposes.

*Electric immersion water heaters incorporating thermostats are out of scope of this Standard.

When it comes to good quality electric immersion water heaters, consumers expect electric immersion water heaters to be **safe, energy-efficient, durable, and easy to use**. The heater should be made of high-quality materials, come with proper safety features like overheat protection and thermal cutoffs, and provide reliable performance with low maintenance.

Indian Standard IS 368 sets down the quality benchmark for electric immersion water heaters, including performance requirements, construction standards, and safety features. It mandates durability tests like endurance, overload protection, abnormal operation among others. The standard also emphasizes electrical safety tests like protection against electric shock, leakage current and electric strength, moisture resistance among others.