



IS 3677:1985 - Specification for Unbonded Rock and Slag Wool for Thermal Insulation (Second Revision)

Product Definition:

Unbonded Rock and Slag Wool for Thermal Insulation, as defined in IS 3677:1985, is a high-performance insulation material used to control temperature in industrial and commercial settings. These materials are widely known for their **thermal efficiency** and **fire resistance**, and they are used in both **loose form (Type 1)** and **stitched mats (Type 2)** to provide insulation across a wide temperature range from **-200°C to 700°C**. The loose wool provides **bulk insulation**, while the mats, sometimes reinforced with materials like **wire mesh** or **kraft paper**, offer structured insulation for diverse uses.

The standard provides detailed guidelines for the **quality, performance, and application** of **unbonded rock wool** and **slag wool** used for **thermal insulation**.

Quality Parameters Expected by Consumers:

Consumers often look for **high thermal resistance**, **fire retardant properties**, and **durability** in insulation materials. **Moisture resistance**, **non-combustibility**, and **low maintenance** are also highly valued in these products, especially for insulation in humid or high-temperature environments. Additionally, consumers seek materials that have low **settling** and **vibration resistance** to ensure long-term performance.

How IS 3677:1985 Ensures Quality:

IS 3677 addresses these needs through rigorous **quality parameters**. It specifies that the **thermal conductivity (k-value)** of the wool should remain within limits across various densities, ensuring effective **heat insulation**. The material must also have **low shot content** (impurities), **incombustibility**, and limited **moisture absorption** to maintain insulation integrity in humid environments. The **standard** also defines requirements for **density**, **thickness**, and **sulphur content** to meet consumer expectations of long-lasting, **corrosion-resistant insulation**. Optional criteria such as **resistance to microorganisms**, **vibration**, and **heat stability** further ensure that the product remains effective under challenging conditions.

By adhering to IS 3677:1985, manufacturers guarantee that their products provide **reliable, fire-safe, and energy-efficient insulation** solutions for consumers.