# IS 4457 : 2007 - Ceramic unglazed vitreous acid resisting tiles

**IS 4457:2007** specifies the requirements and performance criteria for **ceramic unglazed vitreous acid-resisting tiles**. These tiles are designed for industrial and commercial applications where high chemical resistance, durability, and mechanical strength are essential. Commonly used in chemical plants, laboratories, food processing facilities, and areas exposed to aggressive chemicals, these tiles ensure safety and longevity under harsh operating conditions.

Consumers of acid-resisting tiles expect superior quality in terms of chemical resistance, durability, and ease of maintenance. A critical parameter is **acid resistance**, as the tiles must withstand prolonged exposure to strong acids without deterioration or loss of functionality. **Mechanical strength** is equally important, with tiles required to **endure heavy loads**, impacts, and abrasion typical of industrial environments. Consumers also demand **uniformity in size**, thickness, and surface finish for seamless installation and **aesthetic appeal**. Additionally, tiles are expected to exhibit low water absorption and resistance to thermal stresses, ensuring long-term performance in challenging environments.

IS 4457:2007 comprehensively addresses these quality parameters. It defines the physical and chemical properties of the tiles, specifying a maximum water absorption limit of 0.5%(0.6 % individual), ensuring **minimal porosity** and **high durability**. The standard also outlines performance tests for chemical resistance, abrasion resistance, and breaking strength to validate the product's suitability for **heavy-duty applications**. Dimensional tolerances are specified to ensure **uniformity**, while the tiles are subjected to thermal shock tests to assess their **resistance to temperature variations**.

By adhering to IS 4457:2007, manufacturers can produce ceramic unglazed vitreous acid-resisting tiles that meet consumer expectations for durability, reliability, and chemical resistance, making them ideal for demanding industrial and commercial applications.