# Marble/ Granite Testing

- **Water absorption:**
  The amount of water that a refractory can absorb is measured by the water absorption test. The results of water absorption tests are used for quality assurance.
  Test Method: IS: 1124-1974, IS: 13030-1991, ASTM C 97-2009

- **Mohs Hardness:**
  This test helps in determining the hardness of rock. Because granite is a rock composed of multiple minerals, only crystals of specific minerals within the granite would be tested for hardness.
  Test Method: IS: 13630 (P-13) 2006

- **Modulus Rapture:**
  The modulus of rupture (MOR) is the maximum surface stress in a bent beam at the instant of failure. One might expect this to be exactly the same as the strength measured in tension, but it is always larger because the volume subjected to this maximum stress is small, and the probability of a large flaw lying in the highly stressed region is also small.
  Test Method: IS: ASTM C 99-2009, IS: 1578 (P-5)1993

- **Dimension Testing:**
  This test is done to check the dimensional stability of the rock.
  Test Method: IS: 1130-1969, IS: 3316-1974, IS: 14223 (P-1) 1995, IS: 3622-1977, ASTM C 625, 616, 629, 503

- **PVC Flooring tile:**
  PVC Flooring provides dust-free, noise absorbing, resilient, non-porous, decorative surface. It shall consist of a thoroughly blended composition of thermoplastic binder, filler and pigments.
  Test Method: IS: 3461

- **Frost Resistance:**

  Ceramic tile frost resistance is defined as the ability of ceramic tile to withstand freeze/thaw conditions with minimal effect. The frost resistance of ceramic tile is dependent on the tile's porosity and water absorption levels. Frost damage can occur when the variety of ceramic tile absorbs moisture through its pores, causing the water to freeze internally when temperatures drop. Since water expands when it freezes, tension is then exerted inside the body of the ceramic tile. This internal pressure may become high enough to cause cracks in the ceramic tile.

  Test Method: IS: 13630 (P-10), BS EN 12371

- **Chemical Resistance test:**

  This test is done to determine the ability of the grade of granite used by a1-safetech to resist chemical attack.

  Test Method:

- **Breaking Strength:**

  Rocks are considerably weaker in tension than in compression. Characterizing tensile strength of rocks thus is of great importance in many engineering and geophysical applications. Tensile strength is defined as the failure of stress.

  Test Method: IS: 13630 (P-6)2006, IS: 4457-2007

- **Porosity**

  This test is done to determine void fraction, a measure of the void (i.e. "empty") spaces in a material, and is a fraction of the volume of voids over the total volume.

  Test Method:13030-1991