

# Stone Types

A product of nature, shade variation is an inherent (we consider desirable) characteristic of natural stone. It is important to insure that the stone you have selected will meet your expectations for its intended use. Below is general information regarding the various types of stone.

## Granite

- An igneous rock with silica content of 66% or greater.
- Mohs hardness 5 and above.
- Vitrified.
- Resistant to household acids; polished granites can be etched by hydrofluoric acid found in some household cleaning agents.
- Resistant to heat.
- Resistant to staining.

## Gabbro

- An igneous rock with a silica content of 45% to 52%. The majority of the black “granites” are really gabbro.
- Vitrified.
- Mohs hardness from 5 to 7.
- Moderately resistant to household acids (see household testing).
- Stain resistant.

## Regional Metamorphic

- A term we use for igneous or sedimentary rocks which have been transformed by the effects of heat and pressure. Many of these stones are sold to us as “granite.”
- Mohs hardness from 5 to 8.
- Resistant to household acids.
- Moderately stain resistant.
- Subject to fissures, pits, void and veins of separation. May require rodding or fill.
- If resin filled is NOT heat resistant (see notes).

## Serpentine

- A high grade metamorphic rock which name stems from the serpent-like bands of green color which varies in occurrence.
- Mohs hardness from 3 to 5.
- Moderately resistant to household acids; absorbs oils and other liquids.
- Moderately heat resistant.
- Non-vitrified (see notes).
- Due to possible asbestos content will be more expensive to fabricate.

## Slate

- A metamorphic rock.
- Mohs Hardness from 2 to 5.
- Need to be tested for resistance to household acids.
- Moderately heat resistant.
- Non-Vitreous (see notes).
- Moderately stain resistant but usually hides stains well due to color variations.

## Marble

- Mohs hardness from 2 to 6.
- Not resistant to household acids; absorbs oils and other liquids.
- Easily scratched.
- Non-Vitrified (see notes).
- Stain Resistance varies from poor to moderate.
- Grade A Marbles are sound marbles with uniform and favorable working qualities. These contain no geological flaws or voids.
- Grade B Marbles are similar in character to the preceding group but with less favorable qualities. May have natural faults so a limited amount of waxing, sticking and filling may be required.
- Grade C or D marbles commonly have voids, veins and lines of separation in which it is a standard practice to repair by waxing, gluing, filling and re-polishing pieces. Liners and other forms of reinforcement are used when necessary. Broken pieces may be glued back together.

## Limestone (grade C or D)

- Mohs hardness from 2 to 5.
- Not resistant to household acids; absorbs oils and other liquids.
- Softer varieties have low scratch resistance.
- Moderately heat resistant.
- Non-Vitrified (see notes).
- Not resistant to staining.
- Commonly have voids, veins and lines of separation of which it is a common practice to fill or even glue the pieces back together.

## Travertine

- Mohs hardness of 3.
- Not resistant to household acids; absorbs oils and other liquids.
- If used in cooking areas, should be treated with oil repellent and in general areas with water repellent.
- Non-Vitrified (see notes).
- Not resistant to staining.
- Natural pits, commonly used as a decorative stone. Used by Romans in many outside walls, which are still standing after 2,000 years.

## Quartzite

- A metamorphic stone which at one time was sandstone, altered structurally by recrystallization.
- Mohs hardness from 4 to 7.
- Resistant to household acids; absorbs oils.
- If used in cooking areas, should be treated with oil repellent.
- Vitrified.
- Resists stains.
- May be used for outdoor applications in Oklahoma.

## Sandstone

- Mohs hardness from 4 to 7.5.
- Not resistant to household acids; absorbs oils and other liquids easily.
- Practical to treat with a water / soil and or oil repellent.
- Non-Vitrified (see notes).
- Not stain resistant.

## Notes:

### Acid Resistance

When we say resistant to household acids we mean vinegar, soft drinks, lemon juice, even sulfamic acid (this is a diluted form of muratic acid); **not** sulfuric acid. It is safest to test the samples provided before the final selection is made.

### Resin Enhanced

Before the slabs are polished, they are often covered with a grout like "fill" (in the case of a limestone, travertine or marble) or a polyester resin as seen in some marbles and most of the so called "granites." While the intent may be to fill the voids, the result is that the overall color of the stone is altered (enhanced). This resin is not heat resistant, nor is it resistant to ultra-violet (UV) rays. Exposure to either will fade the resin, revealing the natural color of the stone.

### Vitrified vs. Non-Vitrified

Stones which test to have a porosity of less than 1% are considered "Vitrified." Due to the amount of damage we have seen (particularly in the veins) to the stones in our yard, if left uncovered, we are not comfortable with the use of **any** slates or marbles with a thickness of less than 1½" for exterior application in Oklahoma.

### Household Testing

Tile & Design encourages its customers to subject the samples submitted to household testing prior to making a final selection. Subject your sample to the environment you will be exposing it to. It is important that you understand the limitations of the stone you have selected.