

# PORCELAIN TECHNICAL INFO

## Porcelain Types

- **Impervious porcelain tiles** have > **0.50% water absorption** and possess **the density and durability** associated with porcelain products. Purportedly, all of QDI SURFACES porcelain products meet this criteria at this time and are categorized as being **frost resistant**.
- **Glazed porcelain tiles** are porcelain that have been fired with a layer of color. Most utilize **inkjet technology** to create a finished look that is preferable and offers endless possibilities in fashion and design. The texture of glazed porcelain can also emulate slate, stone or wood and can offer some **slip resistance**. This is most of what we promote at QDI SURFACES.
- **Colored Body Porcelain (also GLAZED) tiles** are created with continuous coloration similar to the **glaze surface throughout the body of the tile**. Synchronizing the color of both the glaze and body lessens the visibility of any impact chips which may occur. The color remains **consistent** throughout the tile, but any surface design **does not continue through the tile body**. We promote some of this product type at QDI SURFACES.
- **Through Body porcelain tiles (sometimes referred to as UNGLAZED PORCELAIN)** are produced using **colored raw materials** that permeate the **entire body of the tile**, incorporating uninterrupted color and pattern features seen on the surface **all the way through the tile body**. The surface design is attributed to structure and sometimes other applications evident in **a cross-section of the tile body**, providing outstanding **abrasion resistance and durability**. We promote some of this product type at QDI SURFACES.

## PEI RATINGS

All glazed tiles are **classified** under a Porcelain Enamel Institute (PEI) rating for use in a particular location.

**Unglazed** "Through body" porcelain tiles **do not have a PEI rating**. All floor tiles can be used on a **wall application** and all wall tiles CAN NOT be used in a floor application.

### ***PEI-I***

Ceramic tile suggested for wall applications only.

### ***PEI-II***

Ceramic tile suggested for wall applications and for residential bathroom floor applications only with no outside entrances for access. (soft soles and bare feet)

### ***PEI-III***

Ceramic tile suggested for residential floor applications, light to moderate traffic areas only, e.g. bathrooms, halls, living rooms.

### ***PEI-IV***

Ceramic tile suggested for residential floor applications, moderate to heavy traffic areas, e.g. bathrooms, halls, living rooms, kitchens.

### ***PEI-V***

Ceramic tile suggested for all residential floors and medium commercial floor applications.

## **Mohs Scale**

The **Mohs scale of mineral hardness** is a scale characterizing scratch resistance of various [minerals](#) through the ability of utilizing harder materials to visibly scratch other softer materials. Created in 1812 by German [geologist](#) and [mineralogist Friedrich Mohs](#) (1773-

1839), who selected the ten minerals because they were common or readily available.

Hardness	Mineral	Associations and Uses
1	Talc	Talcum powder.
2	Gypsum	Plaster of paris. Gypsum is formed when seawater evaporates from the Earth's surface.
3	Calcite	Limestone and most shells contain calcite.
4	Fluorite	Fluorine from fluorite prevents tooth decay.
5	Apatite	Apatite is a mineral in vertebrate bones and teeth.
6	Orthoclase/Feldspar	Orthoclase is a feldspar, and in German, "feld" means "field".
7	Quartz	Quartz is the most common mineral in the Earth's crust.
8	Topaz	The November birthstone. Emerald and aquamarine are varieties of beryl with a hardness of 8.
9	Corundum	Sapphire and ruby are varieties of corundum. Twice as hard as topaz.
10	Diamond	Used in jewelry and cutting tools. Four times as hard as corundum.

Hardness of some other common items for comparison:

2.5	Fingernail
2.5-3	Gold, Silver
3	Copper penny
4-4.5	Platinum
4-5	Iron
5.5	Knife blade
6-7	Glass
6.5	Iron pyrite
7+	Hardened steel file
>10	Wurtzite Boron Nitride
>10	Lonsdaleite (Hexagonal Diamond)

## DCOF, COF WET/DRY (SCOF)

Please reference the DCOF (**Dynamic coefficient of friction**), explanation in the TCNA (Tile Council of North America)

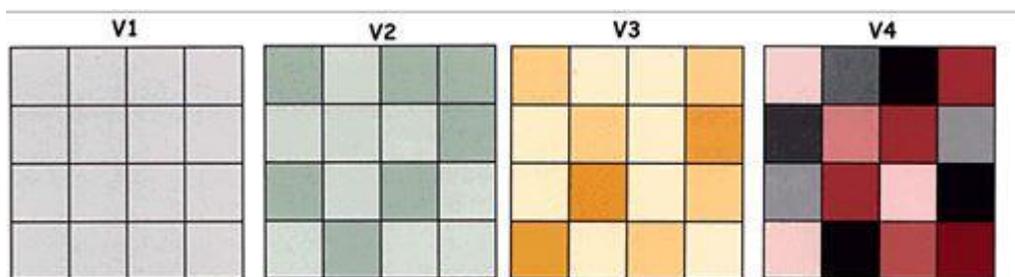
article(s) and document(s) which are are excellent and accurate sources of information.

## SHADE VARIATION IN CERAMIC & PORCELAIN TILE

There is a visual tool to address the variation on a scale of V1-V2-V3-V4. This visual will assist you with a better understanding of the product movement to be expected.

*What does V1, V2, V3 & V4 mean?*

V1 UNIFORM APPEARANCE      V2 SLIGHT VARIATION      V3 MODERATE VARIATION      V4 SUBSTANTIAL VARIATION



## DIGITAL TECHNOLOGY

**Digital technology** has revolutionized the flooring industry. Surfaces have progressively been enhanced with **movement** and **differences in coloration**, **lighter** and **darker** tonalities, mineral additions to glaze materials, flashing, and mould styles as well as other structural components. The addition of HIGH DEFINITION IMAGES (also known as DIFFERENT FACES) to all of the above elements has created an **infinite number of possibilities** for the fashion and design of today's flooring and wall tile products.