

## Ceramic Tiles – Label Information

**Label Categories** Ceramic tiles are shipped in cartons with labels containing icons (symbols) and important information about the tiles, including:

- Grade
- PEI (Porcelain Enamel Institute Wear) rating
- Water absorption (W.A.)
- Coefficient of friction rating (C.O.F.)
- Frost
- Tone

With so many indicators, which ratings and values are important for your choice of tiles? In general, The Home Depot recommends the following set of ratings as a guideline for selecting floor tiles:

**GRADE:** Use Grade 1 or 2 tiles for floors. Grade 3 tiles are suitable only for walls.

**PEI WEAR RATING:** Use floor tiles with a PEI wear rating of III, IV or IV+.

**C.O.F.:** Use tiles that provide good traction (COF greater than or equal to 0.60).

**WATER ABSORPTION (W.A.):** Water absorption standards vary. In general, use:

- less than 7% for areas that are occasionally wet (bathrooms, kitchens).
- Less than 3% for areas that are constantly wet (showers).

Elsewhere, water absorption is unimportant.

**FROST:** Frost resistance is an issue for outdoor installation only.

**TONE:** Personal taste determines which variations in floor tile tone are most suitable, so choose the tiles you like best.



### Grade

Grade is the numerical ranking that reflects tile quality.

**GRADE 1:** Highest quality. Recommended for walls or floors.

**GRADE 2:** Similar to Grade 1, but with slight imperfections. Recommended for walls or floors.

**GRADE 3:** Lowest quality. Thinner tile designed for walls, not floors. Floor tiles are allowed on walls. Grade 3 tiles are not allowed on floors.



### PEI Wear Rating

Porcelain Enamel Institute (PEI) Wear Rating

Indicates tile's resistance to abrasion; reflects suitability for floor traffic.

Icon: Bit drilling into a tile

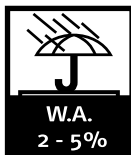
**PEI I AND II:** Lowest resistance. Not suitable for floors (walls only).

**PEI III:** Moderate resistance. Suitable for all residential uses.

**PEI IV:** High resistance. Suitable for all residential and light commercial uses.

**PEI IV+:** Highest resistance. Suitable for all residential and all commercial and heavy traffic uses.

Note: PEI wear ratings apply to glazed ceramic floor tiles only.



**Water Absorption (W.A.)**

A tile's rate of water absorption: weight of water absorbed as percentage of tile weight.  
 Icon: Umbrella shielding rain

**NONVITREOUS:** High absorption (more than 7% water absorbed). Not suitable for outdoor use or for rooms with a lot of moisture, such as bathrooms.

**SEMIVITREOUS:** Moderate absorption (3% - 7% water absorbed). Not suitable for outdoor use or for wet rooms, such as bathrooms.

**VITREOUS:** Low absorption (0,5% - 3% water absorbed). Suitable for outdoor use and for wet rooms, such as bathrooms.

**IMPERVIOUS:** Lowest absorption (less than 0.5% water absorbed). Suitable for all interior and exterior uses.

Notes:

- Glazed tiles are resistant to water at the tile surface, but susceptible at the edges.
- All grouts, except epoxies, will allow some moisture absorption.
- Only vitreous and impervious tiles should be used outdoors or in bathrooms.
- Most glazed tile is fired to give an absorption rate of less than or equal to 3%, which places them in a frost-proof category (vitreous and impervious).
- Glazed white body (talc clay) wall tiles are nonvitreous with more than 7% absorption. If these tiles become saturated and are installed in an exterior freeze environment, the tiles will be damaged by the freeze-thaw cycle, resulting in cracked tile or spalling (chipping or crumbling) of the glaze finish.

In general, the more resistant a tile is to water, the more it will cost. Impervious and vitreous tiles tend to be more expensive than semivitreous and nonvitreous tiles.



**C.O.F. (Coefficient of Friction)**

The coefficient of friction value represents the tile's natural resistance to slip, measured by the force required to move an object across the tile divided by its weight.

Icon: Sliding person  
 Range: 0–1

**LOWER NUMBERS:** Indicate less friction: floor will provide less traction and be more slippery.

**HIGHER NUMBERS:** Indicate more friction: floor will provide greater traction and be less slippery.

**RECOMMENDED OR REQUIRED VALUES**

**C.O.F. GREATER THAN .50** – Recommended for standard residential application

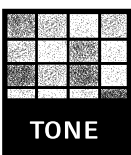
**C.O.F. GREATER THAN .60** – Required for commercial applications to meet or exceed ADA (Americans with Disabilities Act) guidelines



**Frost**

Indicates presence or lack of frost resistance or whether tiles not directly exposed to the elements will crack because of freeze-thaw cycles. Frost rating is not applicable if tiles will be used indoors.

Icon: Snowflake; if present, indicates tiles are frost-resistant



**Tone**

Multishaded grid indicating that the carton contains variations in tone from tile to tile, which is true for most types of tile, except for pure colors, such as black and white.