Ottimo ceramics

Ceramic Flooring and Porcelain Tile Facts

Ceramic Flooring Tile - is a natural product made from clay, minerals, and water. Glazed ceramic tile has a coating that gives its color and finish. Ceramic flooring is very durable–it will probably outlast any other floor covering, easy to care for, scratch resistant, fire resistant, water resistant and environmentally friendly.

Porcelain Tile - is made from a blend of fine-grain clays and other minerals that produce a very dense tile that is highly resistant to moisture, staining and wear. Because of these features porcelain tile will withstand years of heavy foot traffic while maintaining its beautiful look.

Natural Stone Tile – is made from nature. It is not manmade and it is known for its natural beauty. No two stones are alike and identical.

The Porcelain Enamel Institute has published the following ratings (referred to as P.E.I. Wear Ratings) that classify use and durability of tiles:

Group 1: Light Traffic- Tiles that are suitable for residential bathrooms with light foot traffic. Generally wall tile products fall into this group. Some wall tiles can be used on the floor. Consult the manufacturer of the ceramic flooring tile for their recommended areas of application.

Group 2: Medium Traffic- Tiles that can be used in residential traffic areas, expect areas with high traffic, such as in kitchens, foyers, laundry rooms, etc.

Group 3: Medium-Heavy Traffic- Recommended for all residential and light commercial applications

Group 4: Heavy Traffic- Suitable for residential interiors and most commercial applications including shopping malls and public areas.

Group 5: Heavy-Plus Traffic- All residential and commercial areas where heavy-duty, wear ability is needed.

Most tiles are rated for hardness or scratch resistance using the MOHS Test and rating system. The test rates tiles from 1 (softest) to 10 (hardest). Ceramic flooring tile with a value of 5 or better is suitable for most residential floor applications. A rating of 7 or better is normally acceptable for most commercial applications and heavy traffic areas.

Production Types

Porcelain tiles: Come in either glazed porcelain or a through-body porcelain tile.

Through-body porcelain tiles: Have the same colors all the way through from front to the back of the tile. If they are chipped or scratched the color will not change.

Glazed Porcelain: Are similar to glazed ceramic tile. They have a design layer (glaze) on top of the tile body that is a different color and will be noticeable if chipped.

Double Loaded: Is a manufacturing process where several different clay/pigment/coloration preparations are blended at the same time of pressing. The result is a mixture of the color into each tile resulting in a limestone-like effect. No two tiles are the same but the production still falls within defined ranges of aesthetic control.

Rectified Floor Tiles: Are extremely hard and dense, which allows them to be formed in large tile sizes such as 24"x24". Unlike your typical factory-edged tiles, rectified tile has been cut to size after the firing process. This process creates a precise, 90 degree angle edge and, as a result, can be laid with a tighter grout joint.

True porcelain tile have a 0.5% or less water absorption rate, making these tiles freeze-thaw stable. This is why porcelain tiles can be used outdoor in exterior settings, as well as indoors. Porcelain tile are formed under extremely high pressure and fired at very high temperatures. This makes these tiles much denser and stronger than the common glazed ceramic tiles so they are ideal for entry ways, corridors and other high traffic areas. Porcelain tiles do require specialty setting materials for bonding to the sub-floor.

It is imperative to follow the manufacturer's instructions for the products. Please consult your installer or the dealer from which you purchased your materials. Ottimo Ceramics makes no representations as to the purpose of third party Mortars and Grouts.

Formulas for Estimating Quantities Needed

Formula for Estimating Square Footage

Formula	Example
L' x W' = SF of area being tiled	Room measures 18' x 16'= 288 SF of area
Add 10-13% for waste	288 SF x 1.10 = 316.8 SF
SF of area (including waste) /	316.8 / 16.14† = 19.63 cartons
SF in Full Box†† = Full & partial number of cartons needed Round up to the next full box = ...	Round up= 20 cartons Total of full cartons needed
Number of full cartons x SF in a box = ... Total SF to verify total SF needed	20 x 16.14† = 322.8 total SF (actual needed was 316.8)

Formula for Trim (Bullnose)

Formula	Example
Linear feet of area x 12 = linear inches	Area needing trim measures 14 LF 14 x 12 = 168 linear inches
Linear inches / length of trim = Number. ... of trim pieces needed	Length of trim pieces are 8" 168" / 8" = 21 pieces needed

Formula for Steps and Risers (Combined)

Formula	Example
Width of steps x number of	Width of steps measures 42",
steps = linear feet	No. of steps is 12
Linear feet needed	42" x 12 = 504 LF needed

Formula for Cement Backer Board

Formula	Example
SF of area / SF of board = Number	Area measures 288 SF, SF of board is 15 SF
of sheets needed	288 / 15 = 19.2 sheets (round up to 20)

Formula for Measuring For Door Clearance

Lay two tiles on floor (one on top of another), door should clear the height of the tiles.

***Percentage of waste not calculated – consult your installer.**
†This number will vary based on the size of the tile and the size of the room.
†† This number is used for demonstration purposes only.
The amount of square feet per box will vary based on the selected tile.

Installation & Maintenance

95% of porcelain is installed utilizing the thinset method. 5% is performed with a mudset installation.

- **DON'T** do a full offset with plank tiles. By doing a 50% offset, where the middle of a tile is exactly in line with the grout joint of the next row, you have maximized the amount of unevenness, or lippage, between the tiles. In fact, unless the tile manufacturers say otherwise, the American National Standards Specifications for the Installation of Ceramic Tile sets the limit at 33% maximum offset (ANSI A108.02 Section 4.3.8). This means that on a 24 inch long tile the maximum offset is 8″lippage from wood plank tiles in an offset pattern
- **The floor has to be extraordinarily flat.** If your floor isn't flat this will accentuate the problems with the crown of the tiles as you can see in the image on the left. For large format tile, which is any tile with at least one edge longer that 15 in., the maximum allowable variation is 1/8″ in 10ft. Floors are just not that flat nowadays.

Thinset installation: Consists of applying a latex modified cement and sand adhesive with a notched trowel to a suitable substrate such as a cement floor. The tiles are set into the adhesive, leveled and allowed to set. Use appropriate size notch trowels and tap or twist the tiles into place to properly bed the tiles. Lack of thinset coverage can lead to cracked tile and grout and loss of bond to the tiles. Industry standards require a minimum coverage of 80% be attained for interior, non-wet areas; a minimum coverage of 95% be attained for any interior, wet area or any exterior installation. The grout joint are then filled using a sand preparation gauged with a liquid latex. The finished floor is cleaned.

Mudset installation: Is similar except the concrete substrate is recessed to allow 1 ½" to 2" sand/cement mixture to be installed as a leveling bed before the tiles are placed. Mudset floors are not bonded to the substrate typically so that any movement or cracking of the concrete underneath is not telegraphed through to the mudset application on top. Mudset is used for longest lasting institutional use and can be easily worked to include necessary pitching to floor drain in water prevalent areas.

Polished tile installation: Polished porcelain tile and glazed polished porcelain tile must be sealed prior to grouting and the grout color must match the predominant color of the tile. Polished tile must be treated with extra care and must be handled similar to natural stones.

Natural stone installation: Natural stone products are quarried from natural formations, rather than made at a factory. No two pieces are alike and there are inherent variances in all stone. All natural stones must be sealed and must follow sealant manufactuers' guide. Sealant will alter the appearance of the natural color, so please be sure to test small areas prior.

Maintenance: During construction the finished floor should be protected against damaged by other trades. The finish floor should be covered by Ivan plywood or Kraft paper depending on the expected amount of construction activity to be allowed on newly installed area.

- Keeping ceramic, porcelain tile & grout free of dust and dry, sandy soil will minimize scratches, wear patterns and grout soiling that can develop from everyday use and traffic.
- Use walk-off mats to trap abrasive soil before it gets into the house or building.
- Sweep, dust or vacuum surfaces regularly to remove loose soil and dust.
- Clean the tile & grout using warm water and a clean nonabrasive cloth sponge or mop.
- Use a neutral cleaner such as Stone & Tile Cleaner or Revitalizer that is specially formulated for ceramic, porcelain tile & grout to help remove soils that sweeping, dusting, vacuuming or damp mopping leave behind.
- For extremely soiled tile, clean with KlenzAll heavy duty alkaline cleaner and degreaser.
- Do not use ordinary household cleaners, as you may degrade the sealer that was applied to the grout to protect against stains.
- **DON'T** use top sealers such as floor finishes - those that become a coating over the tile and grout joints, are not recommended for porcelain tile. They will change the appearance of the tile by coating the surface and giving matte-finished tiles a shiny finish. When a particular type of tile is selected for the coefficient of friction values, the values can be changed by the application of the sealer. Rather than improving the ability to maintain the surface, top sealers will increase the maintenance requirement. Top-coating sealers will also show traffic patterns as the sealer becomes scratched or wears away. Some sealers may even peel off in spots.

Removing Transit Wax from Porcelain:

Many porcelain tiles these days come with a transit wax; a coating that is intended to offer some protection to the tiles whilst they are in the boxes, during transit (they can scratch each other as they are stacked so closely.) It can sometimes help to prevent grout staining but, in my experience, it does not always do this successfully. Moreover, it is NOT a sealer and if the porcelain is one that does need sealing, then this wax will need removing. Should you remove the wax before or after grouting? – This is a common question and a recent poll amongst Tilers showed that the consensus is '*before*'. How do we remove the wax? – Well that can depend on the wax; some waxes respond better to alkaline cleaners while others need a solvent-type stripper. However the vast majority can be removed using a safe abrasive product designed for the job, such as **Nanoscrub, by Aqua Mix.** I have outlined the process we use below:

1. Pre wet the floor/tile
2. Shake the bottle of Nanoscrub well, to remix the contents as they settle. Follow the instructions for the cleaner.
3. Apply the Nanoscrub to the tiles and agitate using a white nylon scrub pad (hard enough to do the job, without damaging the tiles)
4. This can be done by hand, or with a rotary machine.
5. Clean away by mopping with warm, and wipe clean with a towel or soft cloths.
6. Allow to air dry completely.

ALWAYS TEST FIRST ON AN INCONSPICUOUS AREA TO DETERMINE RESULTS!