

Tile & Stone Installation Systems

Installing wood-look porcelain plank tile

Wood-look porcelain plank tiles have become increasingly popular. These tiles mimic the look and texture of natural wood with formats like 4" x 24" (10 x 61 cm), 8" x 36" (20 x 91 cm), 6" x 48" (15 x 122 cm) and even as large as 8" x 72" (20 x 183 cm).

The two most common challenges with wood plank installations are lippage and disappointment with the grout color. As with any flooring installation, having clear expectations can help the end user to select the proper products, as well as avoid common pitfalls. Listed below are some considerations that should be taken into account:

Controlling lippage

Lippage is minimized by installing over a very flat subfloor. As the Tile Council of North America (TCNA) Handbook instructs:

"For tiles with at least one edge 15" [38 cm] in length, maximum allowable variation is 1/8" in 10' [3 mm in 3.05 m] from the required plane, with no more than 1/16" [1.5 mm] variation in 24" [61 cm] when measured from the high points in the surface."

Use an appropriate MAPEI self-leveling underlayment, leveling mortar or patching compound for preparing the substrate and achieving the tolerances listed above. Follow all recommendations and instructions on the appropriate Technical Data Sheets from MAPEI.

Do a dry mockup to evaluate the physical characteristics of the tiles on a flat (or freshly prepared) surface. Use at least nine tiles; ideally, use 12 to 16 or more, if possible. First, use a long straight-edge against the length of several tiles to evaluate for size consistency and whether they are square. Next, place two tiles face to face to check for warpage. Repeat both steps, using the remaining tiles. If specified (see below), attach edge-leveling system with various grout joint widths and offset percentage.

Consult tile manufacturer's instructions for offset requirements. The maximum industry offset requirement is 33% for large and heavy tile (greater than 15" or 38 cm). Some tile manufacturers require less than 33% offset due to the inherent warpage in certain tiles. Lippage can be minimized by using a smaller percentage of offset. Establish the maximum offset.

Establish the nominal width of the grout joint. The wider the grout joint, the less lippage will show. While many end users desire the narrowest possible joint, reasonably wide joints are essential for lippage control, aesthetics and safety. All

tile assemblies require a minimum grout joint width of 1/16" (1.5 mm). Industry guidelines state that the minimum joint width for large and heavy tile is at least three times the variation of the facial dimension (warpage), plus three times the variation per tile if the tiles are "out of square." For example, for a tile that has 1/16" (1.5 mm) variation in the facial dimension (warpage) and is 1/16" (1.5 mm) out of square, the minimum joint width is 3/16" (4.5 mm).

Consider the use of mechanical edge-leveling devices. These mechanical systems have quickly gained popularity since the introduction of wood-look porcelain plank and gauged porcelain tile. They work as a series of clips that hold the tile edges as close to "in-plane" as possible while the bonding mortar dries. Once dry, the plastic straps are designed to be broken off, leaving behind the plastic foot embedded in the mortar. The tuning caps or wedges of these devices are typically re-useable. These systems have been proven to improve installation efficiency by decreasing the tile adjustment time.

Mortar selection

Wood-plank tiles are considered "large and heavy tiles" because they usually have one dimension larger than 15" (38 cm) and, as such, should be installed with large-and-heavy-tile mortars (formerly known as medium-bed mortars). Large-and-heavy-tile mortars such as MAPEI's *Ultraflex™ LFT™* and *Large Tile & Stone Mortar* are designed with special ingredients. They are formulated to not slump once the mortars are mixed properly and troweled onto the properly prepared substrate, and they adhere well to the substrate and the tile.

Following industry guidelines for installing large-format tiles, use a trowel that allows for at least 80% coverage for interior applications once the tile is installed (95% in areas of direct sunlight or wet areas) and 95% for exterior applications or areas that will be subjected to load impact. It is important to check the tiles periodically during installation to ensure proper coverage. Back-buttering the tile is recommended. It may be necessary to not only flat-trowel but also to comb the mortar on the back of the tile. The mortar should be combed perpendicular to the longest side of the tile, giving the trapped air the shortest distance and the best chance to escape.

Grout selection

Typically, a grout color is selected for wood-plank tiles by closely matching the color of the tile to create a monolithic appearance or by mimicking the "French Bleed" style (a dark space in between the tiles to achieve the look of an aged natural wood floor). Grout color accuracy is a major factor in achieving the

realistic aesthetic appearance of a natural wood floor. The additional texture of such tile requires additional cleanup water, which can wash away some color pigmentation. Excessive cleanup water and scrubbing can lead to inconsistent coloration in any grout but is particularly apparent in traditional, Portland-cement-based grouts, which are susceptible to efflorescence.

Due to the increased importance in color quality and consistency and the challenges referenced above, MAPEI recommends using *MAPEI Flexcolor® CQ*, *Kerapoxy® CQ* and *Ultracolor® Plus FA* with wood-plank tiles.

MAPEI Flexcolor CQ ready-to-use grout has been designed as a cleanable grout that does not compromise color consistency, because its color is not dependent on the addition of water. *MAPEI Flexcolor CQ* can be used in grout joint widths from 1/16" to 1/2" (1.5 to 12 mm) to provide stain resistance, crack/shrinkage control and a textured appearance. *MAPEI Flexcolor CQ* can be used up to 1 year after opening in original packaging. It does not require the use of a sealer and can have foot traffic in 48 hours.

Kerapoxy CQ premium epoxy grout has been designed for areas that require high resistance to stains and chemicals. *Kerapoxy CQ* is color-consistent and durable. *Kerapoxy CQ* can be used for applications on floors as well as walls due to its nonsag, nonslump formulation. *Kerapoxy CQ* is recommended for high-traffic areas requiring high strength, chemical resistance and nonsagging. It can be used in joint widths from 1/16" to 3/8" (1.5 to 10 mm). *Kerapoxy CQ* does not require a sealer and should be protected from foot traffic for 24 hours after installation. If you or your installer is not familiar with the installation of epoxy grouts, contact MAPEI's Technical Services Department before beginning your installation for helpful tips and considerations.

Ultracolor Plus FA is specially formulated with MAPEI's High-Hydrated Cement Technology (HCT™) to eliminate the common problems related to Portland-cement grout, such as color consistency and efflorescence. *Ultracolor Plus FA* can be used in joint widths from 1/16" to 3/4" (1.5 to 19 mm).

To help with grouting wood-plank tiles, lightly moisten the tile or stone surface with a damp sponge before grouting. Some tile manufacturers recommend using a grout release or a sealer to help with the cleanup process when grouting. If a cement-based grout is selected, care must be taken in mixing, applying and cleaning in order to achieve uniform results. For details, refer to the Technical Data Sheet of the grout being considered. A stiff-bristled brush or 3M Doodlebug pad may also be helpful in removing grout residue from the surface without oversaturating the grout, as using a wet sponge would.

Maintenance

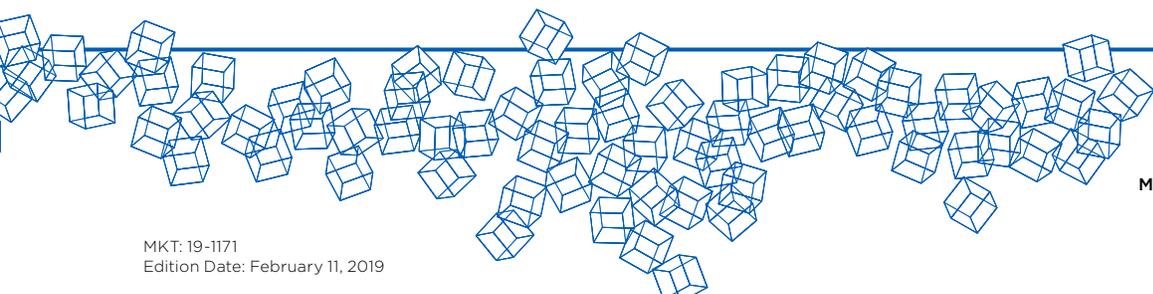
Maintenance starts with the installation. Proper cleanup and removal of the grout residue is a must. If a cement-based grout was used and residue is present after installation, clean the tiles using *UltraCare™* Cement Grout Haze Remover. If an epoxy grout was used, and grout residue is present, clean the tiles using *UltraCare* Epoxy Grout Haze Remover. These products will help to ensure that all grout residue is completely removed from the surface. If a ready-to-use (premixed) grout was used and grout residue is present, clean the tiles using *UltraCare* Heavy-Duty Stone, Tile & Grout Cleaner.

Once the tiles are properly cleaned and all grout residue is gone, sealing the tile is recommended by using *UltraCare* Penetrating Plus SB Stone & Porcelain Tile Sealer or *UltraCare* Penetrating SB Stone, Tile & Grout Sealer. These sealers are specifically designed to penetrate into the tiny pores found in porcelain tiles. Once these holes are filled, the tile becomes easier to clean and to keep clean. Be sure to wipe off all excess sealer residue that comes into contact with grout during the sealing process.

Sweep or vacuum the installation area often to remove sand, dirt, debris and other abrasives. Damp-mop the floor as often as needed to keep it in optimal condition. Use *UltraCare* Concentrated Tile & Grout Cleaner on a regular basis to maintain the floor, as this neutral-pH product is designed to maintain a variety of surfaces and will not harm the sealer. Attend to spills as soon as possible, because the risk of damage increases with the amount of time that a contaminant sits on the surface. Proper cleaning and maintaining of wood-plank tiles will ensure a lifetime of beauty to your valuable investment.

Limitations

Always check with the tile manufacturer before selecting wood-plank tiles, to ensure that they are suitable for the service environment expected in the installation. Jobsite conditions vary and may present installation issues not covered in this technical bulletin. For the most current product information, visit www.mapei.com or contact MAPEI's Technical Services Product Support Team.



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