

General Porcelain Tile Installation Guidelines for Wood Plank Tiles

Applications

- These general guidelines are for interior residential flooring applications with limited water exposure only. Bathrooms, kitchens, mudrooms, laundry, and foyers are areas that fall under limited water exposure. For installation methods for shower areas, or other similar saturated water areas consult with Tile Council of North America (TCNA) installation guidelines. The installer on site is responsible for making the final decision on the installation method needed to install the flooring properly and be within industry standards.

Jobsite Conditions

- The building should be enclosed with all doors and windows in place.
- Crawlspace, basements, and garages under the flooring should be dry and well ventilated
- Crawlspace must be a minimum 18" from the bottom of the floor joist to the ground. The ground of the crawlspace must have a minimum 6 mil thick polyethylene film covering the entire crawlspace ground.
- All gutters should be in place and functioning properly. Yard grading should be sloped to run water away from the home foundation.
- Home should be in normal living conditions.
- All construction trades should be completed before tile flooring installation begins. Hardwood or carpet installation should be installed after tile installation is completed and dried.
- Permanent lighting must be installed prior to installation.

Acclimation

- Porcelain tile does not require any specific acclimation time.

Substrate Requirements

- Wood framed and concrete surfaces that will be tiled shall be in conformance with the TCNA guidelines and International Building Code (IRC) for residential applications.
- Maximum allowable variation is 1/8" in 10', with no more than a 1/16" variation in 24".
- Grind down high spots in concrete, and sand down high spots in plywood. Plywood seams should be flat and level.
- Substrates should be clean and free of drywall compounds, dust, paint, adhesives, sealers, curing compounds, waxes, or any other potential contaminants.
- Slabs should be well cured with a broom finish texture.
- When cracks are seen in concrete, crack isolation barriers or uncoupling membranes should be used. These products will help stop cracks from telegraphing to the tile floor. These membranes can also be used on crack free slabs and wood subfloors to add additional crack protection to the finished floor and grouts.
- All OSB subfloors should be covered with a plywood underlayment or a cement backer board. The thickness of the underlayment used would be determined by joist spacing and thickness of the existing OSB.

Interior Plywood Subfloors Joist Spacing 16" OC

****There are many different ways to install porcelain tile over plywood subfloor systems. These general guidelines will only cover a few. For installations that are not shown in this guide or for installations where joist spacing exceeds 16" OC, refer to TCNA installation guidelines.**

Method 1: *Plywood subfloor and plywood underlayment*

- 19/32" min exterior grade plywood installed over floor joist with 1/8" gaps between plywood panels.
- Minimum 15/32" exterior grade plywood installed perpendicular to first layer of plywood, with 1/4" gaps between panels. Follow the American Plywood Association requirements for fastening the second layer of plywood.
- Optional water proof membrane meeting ANSI A118.10 can be used over the plywood prior to applying the mortar
- Porcelain tile can be bonded to second layer of plywood using appropriate mortar that meets ANSI A1118.4 or better standards.

Method 2: *Plywood subfloor and cement backer board, or fiber-cement backer board*

- 19/32" min. exterior grade plywood installed over floor joist with 1/8" gaps between plywood panels.
- 1/4" min. cement backer board. Backer board should be installed according to the backer board manufactures specifications.
- Optional water proof membrane meeting ANSI A118.10 can be applied over the cement backer board.
- Porcelain tile can be bonded to the backer board using appropriate mortar that meets ANSI A118.4 or better standards.

Method 3: *Plywood subfloor and Fiber Fusion water proofing and crack isolation underlayment*

- 5/8" min. exterior grade plywood installed over floor joist.
- Fiber Fusion underlayment bonded to plywood subfloor. Install according to manufactures recommendations.
- Porcelain tile can be installed directly to Fiber Fusion underlayment using appropriate mortar that meets ANSI A118.4 or better standards.

Interior On and Above Ground Concrete

****There are many different ways to install porcelain tile over concrete floors. These general guidelines do not cover all possible applications. For installations that are not shown refer to TCNA installation guidelines.**

- Optional: cementitious self-leveling underlayment to level concrete.
- Fiber Fusion underlayment bonded to concrete. Install according to manufactures recommendations.
- Porcelain tile can be installed directly to Fiber Fusion underlayment using appropriate mortar that meets ANSI A118.4 or better standards.

Plank Installation

Layout: The layout should be a collaboration between the home owner and tile installer. Wood plank tiles can be installed in the center of the room to create a balanced layout, or can be installed starting at one wall and working toward the opposite wall to place cut planks in a less noticeable location. In some cases the install may start at a focal point in the room. The final layout is a matter of personal preference.

Lippage: Larger tile products are not “perfectly flat” and the use of a Lippage kit is always recommended to reduce the height differences between planks and allow for a joint stagger greater than 33% of plank length. If a Lippage Kit is not used: a 33% offset is required for this tile product. This recommended offset along with a bigger grout joint between tiles, will help minimize lippage in the finished installation.

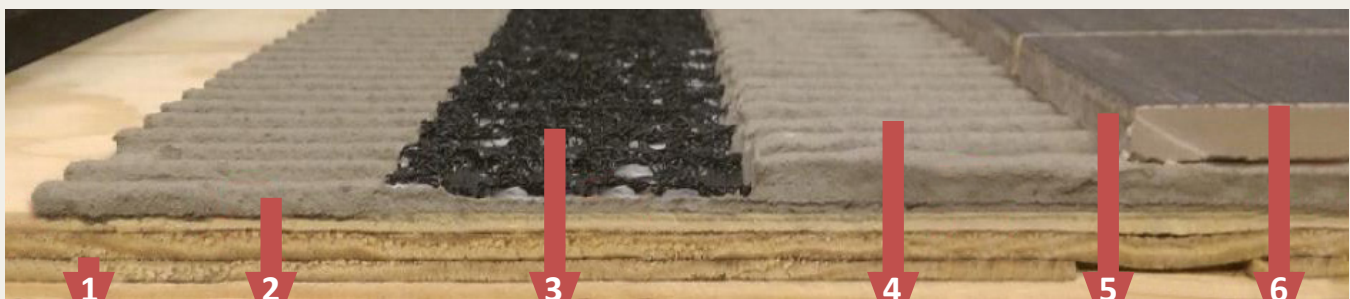
Movement joints: Above ground areas and areas with direct sunlight exposure required movement joints every 8' to 12'. Other interior areas on grade or below grade require movement joints every 20' to 25' in each direction. All expansion joints, isolation joints, saw joints in concrete should continue in the tile work. Perimeter joints are also needed around vertical surfaces such as walls, pipes, tubs, and other floors. Special sealants are designed to fill in the movement joints. Follow TCNA movement joint guidelines.

Mortar: For tiles measuring up to 6" x 36" use a polymer-modified thin set mortar to bond porcelain tile to concrete, plywood, cement board, or Fiber Fusion underlayment. For tiles larger than 6" x 36" use Bostik Big Tile and Stone Medium Bed Mortar. Use trowel sizes recommended by mortar manufacture. Recommended mortar coverage is 95% and needs to support the corners and edges. Back buttering the planks is required. When applying the mortar use the flat part of the trowel to key in the mortar onto the substrate. Then use the notch part of the trowel moving in one direction to create ridges to set the tiles into. Set the tiles into the mortar and press down while pushing perpendicular to the mortar ridges.

Grout Spacing: For rectified tiles the minimum grout space size is 1/16"; For non-rectified tiles the minimum is 1/8". A bigger grout joint may be required based on tile dimension, subfloor conditions, and lighting to minimize the appearance of lippage. **The use of lippage spacers systems designed to reduce trip hazards and chipping are highly recommended.**

** sub-floors must meet specifications for flatness when using 1/16" spacing.

Grouts: For residential applications we recommend either cement based grouts or urethane based grouts. For best protection from stains and grout cracking, urethane grouts are preferred over cement based grouts. Follow the grout manufactures directions for grout application, cure times, and cleaning.



1
*Plywood
or
Concrete*

2
*Thin-set
Mortar*

3
*Fiber Fusion: crack
isolation, waterproofing,
uncoupling membrane*

4
*Thin-set or
Big Tile and Stone
Medium Bed Mortar*

5
*Porcelain
Tile*

6
Grout