

Ceramic and Porcelain Tile

Installation Guide

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Installing ceramic or porcelain tile

Most adhesives, mortar, and other materials are compatible. However, you must read the printed instructions and cross-check limitations to make sure they are. **Inspect all materials before starting your installation.**

Substrate preparation

An installation is only as good as the foundation it rests on. While the preparation for installation will depend on whether the substrate is gypsum board (drywall), cement board, concrete masonry units, or plywood, make sure the substrate is structurally sound and free from any sealers or contaminants for both vertical and horizontal installations. The load deflection standard is L/360 for all porcelain and ceramic tiles.

Tilebar Tech Tip:

- **Try the drip test.** Drip water on your substrate. If it's absorbed, it means your mortar adhesive will have both a mechanical and chemical bond. If the water beads up, there is a bond breaker on your substrate. This could be a wax or sealer and should be removed.
- **Use a straight edge and level.** According to ANSI A108.02, deviations on flatness of the substrate should not exceed 1/4 inch of change in 10 feet, or 1/8 inch for stone, with no bump greater than 1/16 inch.
- **Always check your adhesive instructions,** noting the suitable substrates and limitations.

Layout

Take accurate measurements of the space and develop a layout plan. To be sure the final look will meet your expectations, dry-lay your tile or create a mockup to confirm your layout and grout joint size. Locate all cuts and adjust layout as necessary. **Confirm the final layout, cuts, joints, and overall look.**

Use proper equipment to cut your tiles (wet saw, drill bits, snap cutter, or grinder). Be sure to follow all safety precautions and protections recommended by the manufacturer. Blend tile materials to ensure consistency throughout the project area. With larger tiles, waste factor is high, and more material may be needed.

Adhesives and mortar

Make sure to use the proper directional troweling techniques and proper trowel size. To achieve the appropriate coverage, see the trowel chart below:

Longest Edge Measurements	Suggested
Tile Size	Trowel Size
Mosaic Tile	1/8" x 1/8"
2" through 3"	1/8" x 1/8"
3" through 6"	1/4" x 1/4"
6" through 12"	1/4" x 3/8"
12" through 24"	1/2" x 1/2"

Note: If you are installing a tile with any edge longer than 15 inches be sure you are using a large-format mortar, specifically made for use with large and heavy materials.

Install overview

1. Mix the mortar according to instructions.
2. Clean the substrate with a damp sponge.
3. With the flat side of the trowel, "burn" the mortar into the substrate.
4. Trowel the material onto the floor or wall with the appropriately sized trowel in a consistent direction, leaving a ridged setting bed.
5. Lay tile in the mortar and flatten the mortar ridges by pushing the tile perpendicular to the trowel direction.
6. Install spacers or wedges as needed.
7. Make sure grout joints are clear of extra mortar materials.
8. Let system cure fully before grouting, usually 24 hours.

Tilebar Tech Tip:

- Do not work too far ahead. Make sure that the mortar stays fresh and has not skimmed over.
- Mosaic tile sheets can be offset to hide some of the sheet joints.
- Use a beating block or grout float to set your mosaic tile.
- Mosaic tile is mounted to the sheet, and this determines the grout joint size. Take a step back and make sure the size of the perimeter joints between sheets is the same as the joints within each sheet. If you can make out individual sheets you may need to adjust them by removing tiles from the edge. This can bridge the gap.

- Minimum mortar coverages should be evenly distributed and cover 80 percent of tiles in a dry area and 95 percent in wet areas. Once you set tiles, pull up a couple to check for proper coverage.
- Choose the appropriate grout joint size; remember smaller is not always better. The grout joint size depends on how consistent the edges of your tiles are.
- *Directional troweling:* <https://www.youtube.com/watch?v=Way5bMh-eYg&t=31s>

Grout

Grout can make or break a new tile project. A great grout job can aesthetically enhance a project, while a poor one can undermine even the best work.

Install overview

The instructions below are for reference only and based on traditional cement based grout. You should always follow the printed instructions on the packaging.

1. Mix the grout according to instructions.
2. Remove spacers as needed.
3. Use a grout float at a 45-degree angle to press in and fill all the grout joints.
4. Cut the grout off the top of the tile using the grout float, dragging it at a 90-degree angle diagonally across the tile as you would a squeegee.

5. Once the joints are filled, dress them with a sponge or scrub pad.
6. After 15 to 20 minutes, wipe again with a clean sponge and clean water and let cure.
7. After the grout has dried, there will be a haze that can be buffed with dry cloth.
8. Limit use until fully cured, usually 24 hours.

Tilebar Tech Tip:

- *Use clean water, A LOT!*
- *Do not get too far ahead. Clean in a timely manner what you just grouted.*
- *Clean sponge often, typically one swipe, flip the sponge over and one swipe, then rinse the sponge clean. Repeat.*
- *Make sure the joints do not have dust or debris in them. Also, any thin set that has squeezed up needs to be removed.*

- *All installation must have movement joints. Use a color-matched acrylic or silicone sealant to provide movement protection. Movement joints are for all transitions, base, inside, and outside corners.*
- *Keep the project area clean. Even the lightest dust could permanently stain any uncured grout joints.*
- *Use the right grout for your specific installation:*
 - *Standard polymer modified grout*
 - *High-performance cement grout*
 - *Premixed grout*
 - *Epoxy grout*

Cleaning and sealing

Keeping an installation looking new is not as difficult as you may think. Regular cleaning of the area with a neutral PH non-acidic cleaner should do the job. There are harsher cleaners available in case of an accident, but they must be used carefully by following all instructions. Always test a non-visible area before using a product on the whole space. Use a sealer on the grout to protect it from dirt and stains.

Tilebar Tech Tip:

- *Follow all manufacturer instructions closely.*
- *The more the area is used, the more often it will have to be cleaned and sealed.*
- *If an acidic cleaner is chosen, make sure you protect adjacent materials.*