# TILE STONE STEP-BY-STEP INSTALLATION

**Quick Tips:**

• Ensure your surface is clean, smooth, dry and free of wax, soap scum and grease.

• Carefully read and follow all instructions and precautions on the adhesive or mortar package. Mix only enough to be used within 30 minutes.
• Since variation of shades is an inherent characteristic of ceramic tile, mix tiles from several cartons as you set, for a blended effect.

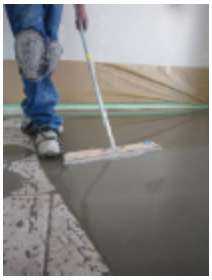
**Before Installing:** The installation guidelines contained within this Shaw document are basic instructions. For more detailed instructions and precautions please refer to and follow the installation and product application guidelines, and installation site precautions as defined in the current versions of ANSI A137.1 American National Standard Specifications for Ceramic Tile, and the Tile Council of North America (TCNA) Installation Handbook. It is the responsibility of the Homeowner, Specifier, & Installer to determine the appropriate application for Shaw Tile products. All Federal, State, & Local building codes supersede all other documentation related to the product. Additionally, it is the responsibility of the Homeowner, Specifier, & Installer to know & understand the proper care and maintenance of Shaw tile products once installed as described in Shaw's Tile Care & Maintenance Document.

## STEP 1: SURFACE PREPARATION

Tile may be installed over most structurally sound substrates, if they are clean, smooth, dry and free of wax, soap scum and grease.

- **Tip**: If installing over cement backer board, slightly wet or dampen the backer board before spreading the thin set. If the backer board is completely dry it will pull the moister out of the thin set and it won't bond properly.

Any damaged, loose or uneven areas must be repaired, patched and leveled.



Remove any moldings, trim, appliances, etc., which could interfere with installation.

Door jambs may be undercut for tile to slip under.

## STEP 2: LAYOUT

Begin by marking the center point of all four walls.

Snap chalk lines between the center points of opposite walls, which will intersect at the center of room. Make sure they're perfectly square, and adjust if necessary.

Next, lay out a row of loose tiles along the center lines in both directions, leaving spaces for uniform joints (use tile spacers). If this layout leaves cuts smaller than 1/2 tile at walls, adjust the center line by snapping a new line 1/2 tile closer to the wall.

Repeat along other center line if necessary.

Now divide the room into smaller grids (approx. 2' x 3') by snapping additional lines parallel to center lines.

### STEP 3: APPLYING ADHESIVE

Select the right adhesive for the substrate you're using. Carefully read and follow all instructions and precautions on the adhesive or mortar package. Mix only enough to be used within 30 minutes.

- MIXING THINSET

  1. Start by adding your liquid to your bucket first. Refer to the manufacturer's recommendations for the ratio of liquid to powder.
  2. Add powder in small batches to avoid clumps and bubbles of unmixed powder.
  3. Add enough powder to achieve the recommended consistency. We typically aim for a peanut butter consistency. A good tip is if you can scoop the thinset up with your trowel, turn it on its side and it stays a few seconds before falling into the bucket, it's the correct consistency.
  4. Once you've reached the right consistency, let the thinset slake for 5–10 minutes (based on manufacturer's recommendation). Slaking means letting the thinset sit in the bucket to allow the ingredients to activate and for crystals to form. This step is important to achieve good adhesion.
  5. Briefly remix thinset, and check for the correct consistency again.
  6. Start by mixing a small amount of thinset before you know how fast you will be working due to the open time (see below).
  7. NEVER rinse thinset down the drain when cleaning! This will set in and clog your pipes.

- Tip: Perform a coverage test before applying by spreading enough thin-set to install one tile, lay the tile, and then moving the tile a 1/4 inch from side to side. Pull the tile up to check for 100% coverage. If you see bare spots on the bottom of the tile, you need to make the adhesive thicker when applying it with the notched trowel.

Using the type of trowel recommended on the adhesive package spread a 1/4" coat on the surface of one grid area, using the flat side of the trowel. Do not cover guidelines.

Next, use the notched side of trowel to comb adhesive into standing ridges by holding trowel at a 45-degree angle. Comb/rake all the trowel ridges in the same direction. This allows for full coverage and prevents hollow spots.

Then remove excess adhesive, leaving a uniform, ridged setting bed.

Don't spread a larger area than can be set in 15 minutes.

**STEP 4: CUTTING TILE**

Carefully measure tiles to be cut and mark with a pencil or felt-tip pen.

Make straight or diagonal cuts with a tile cutter, curved cuts with a nipper (chipping away small pieces for best results) and full-length curved cuts with a rod saw.

Sharp-cut edges may be smoothed with a carborundum stone.

**STEP 5: SETTING TILE**

Variation of shades is an inherent characteristic of ceramic tile – mix tiles from several cartons as you set, for a blended effect.

Begin installing tiles in the center of the room, one grid at a time. Finish each grid before moving to the next.

Start with the first tile in the corner of the grid and work outward.

Set tiles one at a time using a slight twisting motion. Don't slide tiles into place.

Insert tile spacers as each tile is set, or leave equal joints between tiles.

Fit perimeter tiles in each grid last, leaving 1/4" gap between tile and wall.

Any rectangle porcelain should never be set in a running bond pattern, rather no more than a 1/3 overlap; the joint should be widened to 3/16" and use of a large unit porcelain mortar should be employed.

When grid is completely installed, tap in all tiles with a rubber mallet or hammer and wood block to ensure a good bond and level plane.

Remove excess adhesive from joints with a putty knife and from tile with a damp sponge.

Do not walk on tiles until they are set (usually in 24 hours).

**STEP 6: GROUTING JOINTS**

Generally, you should wait about 24 hours before grouting (refer to the adhesive package for specifics).

Carefully read and follow all instructions and precautions on the grout package. Make only enough to use in about 30 minutes.

Remove tile spacers and spread grout on the tile surface, forcing down into joints with a rubber grout float or squeegee. Tilt the float at a 45-degree angle.

Remove excess grout from surface immediately with the edge of float. Tilt it at a 90-degree angle and scrape it diagonally across tiles.

Wait 15-20 minutes for grout to set slightly, then use a damp sponge to clean grout residue from surface and smooth the grout joints. Rinse sponge frequently and change water as needed.

Let dry until grout is hard and haze forms on tile surface, then polish with a soft cloth. Rinse again with sponge and clean water if necessary.

Wait 72 hours for heavy use.

Don't apply sealers or polishes for three weeks, and then only in accordance with manufacturer's recommendations.

| Subfloor Detail | Description |
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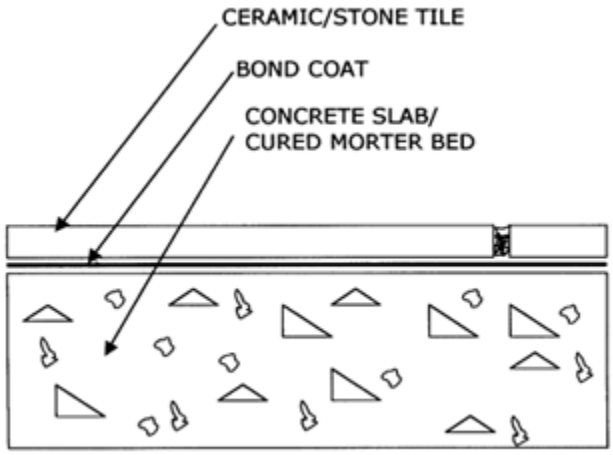
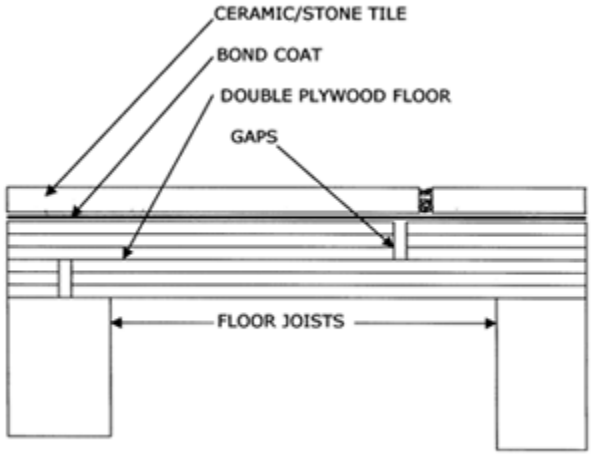
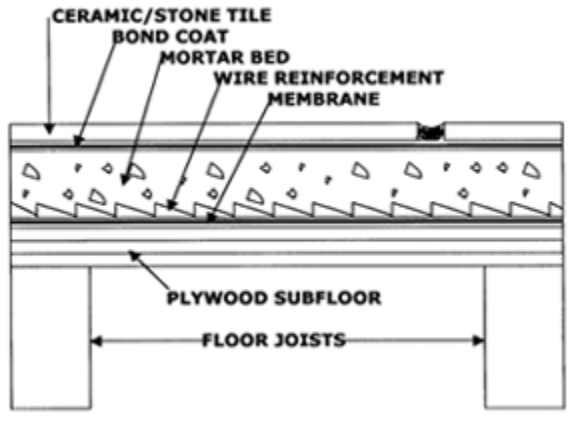
|  <br>FIGURE A | In Figure A, we see stone or ceramic tile placed directly over a concrete slab. This would be accomplished after the slab was fully cured and prepared to receive tile. This means that any cracks were repaired and any surface contaminants removed. This is a “thin set” method. |
|  <br>FIGURE B | In Figure B, we see stone or ceramic tile bonded to a double plywood wood floor. Believe it or not, this is a good method where the thickness of the floor is a factor. This is a situation where the maximum thickness requirements prevent the use of a reinforced mortar bed and tile installation. This method can actually impart more resistance to deflection than cement backer board units. |
|  <br>FIGURE C | In Figure C, we see a typical residential mortarbed method. This method can be used over a structurally sound wood sub floor. For residential floors, a mortar bed thickness of 3/4" is acceptable. For light commercial duty floors, a 1-1/4" thickness is might be recommended. |

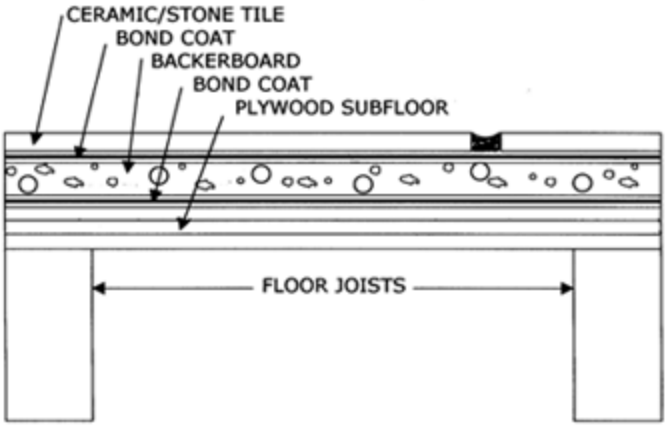



FIGURE D

In Figure D, we see a typical backer board installation. There are three basic types of cement backer board, cement fiber, glass mesh, and latex cement coated foam core board.

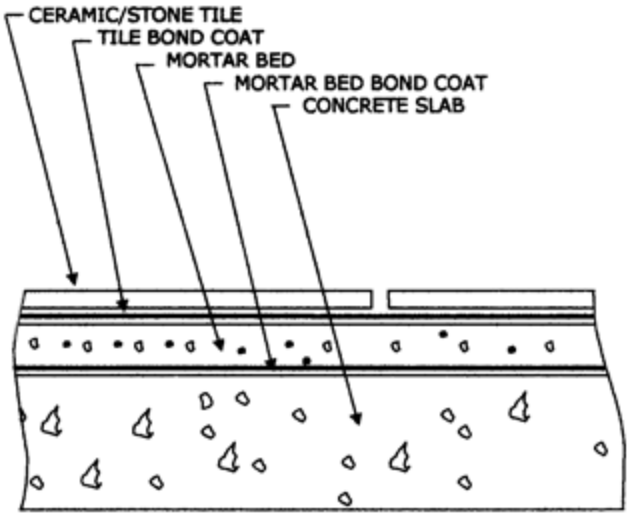



FIGURE E

In Figure E, we see a mortar bed directly bonded to a concrete slab. Note that there is no reinforcing shown in the illustration. The reason is that the concrete slab acts as the supporting structure to give the strength to the mortar bed. It is imperative, however, that the mortar bed be permanently bonded to the slab. If the bond were to separate, the mortar bed would lack sufficient flexural strength, under load and deflection, to maintain the integrity of the installation. Simply put, if the bond breaks, so will the tile above.

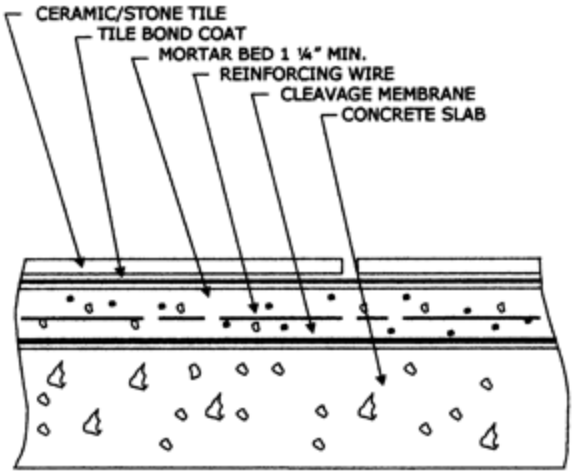



FIGURE F

In Figure F, we see a mortar bed that rests above a cleavage membrane. Note the presence of wire reinforcing (2" X 2" 16/16 min.) in the bed. Note also the minimum thickness of 1 ¼" is noted on the illustration. The key difference is that the strength of this mortar bed depends on its own reinforcing and thickness to resist breaking from deflection and load above or below. That is why this is the preferred industry method over structures that are subject to bending and deflection. This includes slabs constructed in the "post tensioned" method. Unfortunately, there is not always room for 1 ¼" of mortar bed and tile in today's structures. Read on to Figure G.

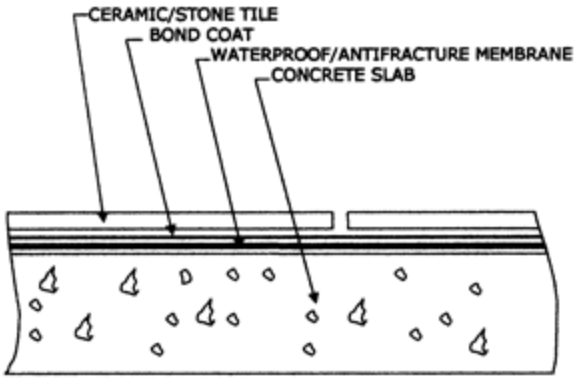



FIGURE G

In Figure G, we see a classic example of a membrane bonded to a concrete slab. This represents either the entire slab covered with a membrane to waterproof it or to provide crack suppression beneath the tile layer. This can also represent crack suppression membranes in the area of known cracks and not a membrane applied to the entire slab. Figure G is the answer to concrete slabs which have cracked or will crack. This is also a preferred method over slabs built in the post tensioned process where not enough room is available for a 1 ¼" mortar bed as shown in Figure F.

For additional information contact Tile Council North America 864-646-8453 or https://www.tcnatile.com/products-and-services/publications.html?=0