



# NATURAL STONE TILE INSTALLATION, CARE & MAINTENANCE INSTRUCTIONS

When properly installed and maintained, stone tiles can be enjoyed for many years. Please be sure to familiarize yourself and the installer with these instructions prior to starting the job. You and your installer are responsible for ensuring proper installation of the tiles. If you have any questions, contact [productwarranty@bedrosians.com](mailto:productwarranty@bedrosians.com) before moving forward.

## RECOMMENDED INSTALLATION PRODUCTS & TOOLS

### RECOMMENDED ADHESIVES

Thin-sets specifically formulated or recommended for stone must be used. White mortar is commonly recommended.

Stone products should be adhered to the substrate by use of a white premium latex modified thin-set mortar. If the stone is mesh-reinforced or water sensitive, a white epoxy adhesive must be used.

These are some recommended setting materials:

1. LATICRETE® LHT (premium latex modified thin-set)
2. ARDEX X 5® (premium latex modified thin-set)
3. LATICRETE® 300 (epoxy adhesive)- specifically for mesh-reinforced stone and water sensitive stones

### RECOMMENDED GROUTS

Non-sanded grout is highly recommended for polished marble, limestone, travertine, and onyx to prevent scratching.

1. LATICRETE® PermaColor
2. ARDEX® FL
3. BOSTIK Sanded and Unsanded

### RECOMMENDED WET SAW CUTTING BLADES

1. DeWalt® Premium Wet Saw Blade
2. BCE Premium Wet Saw Blade

### RECOMMENDED SEALANTS

To protect your natural stone from staining, and discoloration, all natural stone must be sealed before and after grouting. If you do not seal prior to grouting, a grout release must be applied to protect the stone from grout residue. Do not utilize the stone application area until it has been properly sealed. Natural stone should be resealed annually or biannually depending on the type of stone and usage level.

These are some recommended stone sealers:

1. Miracle Sealants® 511 Impregnator
2. Miracle Sealants® Porous Plus
3. StoneTech® Bulletproof

## PREPARATION AND INSTALLATION INSTRUCTIONS



### SUBSTRATE

Pursuant to the TCNA, for natural stone tile installations, special attention should be given to substrate stability, rigidity and preparation. Substrates should be sufficiently flat to allow uniform coverage and avoid excessive mortar thickness. Clean the surface well to remove all dirt and residue and remediate all cracks or unlevel areas in the substrate to ensure it is smooth and flat prior to installation.



### INSTALLATION

Please see the latest edition of the TCNA Handbook for further instruction.

1. Installer must conduct a dry mock layout under proper lighting conditions prior to installation by placing stone tiles on the floor for quality and color inspection. It is imperative that the end user inspect the product prior to installation, especially since natural stone has wide variances in color, shading, surface texture, markings, voids, pitting, fissures and veining. Once installed, the product is deemed accepted.
2. Installer must blend/mix tiles from several different boxes to achieve an even distribution of color range. This is especially important for stone tile as wide shading variation may be inherent.
3. Measure the substrate flatness to ensure it is sufficiently level. According to the TCNA, the maximum allowed variation in substrate flatness is 1/8" over a 10' area. In addition, the substrate flatness cannot exceed 1/16" variation in 24" when measured from the high points in the surface.
4. All remediation of the substrate should be completed prior to installation. This includes, but is not limited to, patching or fixing cracks and damage in the slab, out of level surfaces, crack suppression, scarification, and removal of dirt, oil, paint, grease, and other contaminants. Under no circumstances should thin-set be used to level out an uneven substrate.
5. If you are concerned about water infiltration coming through the substrate which can result in efflorescence, spread a Moisture Vapor Barrier Coating over the substrate prior to installation. Bostik D-250 is suitable for reducing moisture vapor transmission. See "Special Notes on Stone" below for more information on Efflorescence.

## PREPARATION AND INSTALLATION INSTRUCTIONS (CONT.)



### INSTALLATION

6. Mark out grid lines on the surface to be tiled.
7. Key in thin-set over the substrate with the flat side of a trowel. The thin-set must be troweled in the same direction. According to the TCNA, the minimum mortar coverage for stone in wet and dry areas is 95% with no voids exceeding 2 square inches and no voids within 2 inches of tile corners. All corners and edges of the stone tiles must be fully supported and back-buttering is recommended in all areas. Spot bonding is never acceptable.
8. When setting stone tile, firmly and fully embed into the thin-set until the thin-set is 1/3 the depth of the stone tile. Wait the thin-set manufacturer's instructed time before grouting.
9. Use a penetrating-type sealer on the natural stone, prior to grouting, to protect the stone against grout residue.
10. Once the thin-set has cured, spread grout with a rubber float, completely filling the joints.
11. Following the grout manufacturer's instructions, use a damp sponge to wipe off excess grout from the stone's surface and rub all joints to ensure even levels of grout within each joint. Repeat with a clean sponge. Before the grout cures, remove any liquid residue with a clean dry cloth.
12. Once the grout has cured, re-seal the stone tiles and seal the grout joints. Do not utilize the area where you've installed the stone, until it has been sealed.
13. Natural stone must be resealed, typically every year or every other year, depending on the level of use and porosity of the stone.



### MOVEMENT JOINTS

Since stone expands and contracts, a 100% silicon caulking is recommended in all corners where the stone meets the floor or wherever there is a change of plane.

## CARE AND MAINTENANCE INSTRUCTIONS



### ROUTINE CLEANING

Specific cleaning and maintenance requirements vary depending on the stone tile's surface and texture and any present contaminants.

Below are some general cleaning and maintenance guidelines.

1. Sweep, vacuum or use a soft lint-free cloth to wipe loose dirt and dust from the surface of the stone.
2. Mop or wipe the surface with a pH neutral stone specific solution using a clean sponge, cloth or mop. Use only a neutral, non-abrasive and non-acidic cleaner. Do not use vinegar or any cleaners containing ammonia, bleach, acids or strong alkalis. Stones with a polished finish are especially sensitive to harsh chemicals. It is important that the cleaner is a non-oil, non-wax, non-soap and non-animal fat based product. These products act like a magnet, attracting dirt and dust.
3. Rinse the stone thoroughly with clean water to remove any leftover cleaning solution.
4. Dry the stone with a clean cloth to increase shine and prevent water spots.
5. Always clean up spills quickly.
6. To remove soap scum or water deposits, a minimally abrasive cleanser and a soft to medium bristle brush can be used.
7. Always test cleaning solutions on a small inconspicuous area before proceeding to clean the entire surface area.

## SPECIAL NOTES ON STONE

1. **Water Sensitive Stones:** Some types of green and black-colored marbles such as Green Serpentine and Black Nero Marquina are highly water sensitive and will warp or curl when exposed to water or water-based adhesives. Agglomerate stones and Lagos Azul Limestone are also water sensitive and will warp with exposure to unbalanced water. Use an epoxy adhesive for these stone types.



2. **Iron Staining:** Most slate and white marbles have a naturally occurring percentage of iron randomly throughout the stone. If exposed to moisture, water, or other oxidizers like acids or household bleach, the stone may rust or discolor. Use of a sealer will not prevent this occurrence.
3. **Voids or Pitting:** Due to normal wear, surface restoration, and/or polishing, cracks and voids may appear or existing fill may detach and fall out. These voids can be readily repaired. For example, since travertine is a capillary filled stone, it usually develops new voids or loosened filler with exposure to high traffic. Once the shallow pores are exposed, clean any loose debris out but do not use sharp instruments that may exacerbate the hole. Seal the surrounding area of the stone and fill the hole using sanded or epoxy grout in a color that matches the stone. Once the void has been filled and the grout has dried, the stone should be resealed.
4. **Efflorescence:** Efflorescence is the evaporation of soluble salts on the surface of stone tile, which appear as a white and cloudy residue. The soluble salts migrate from soil or masonry to the surface of the stone and grout joints where the water evaporates. Natural stones are not generally the source of efflorescence, however, they can sometimes provide efficient paths for the migration. Efflorescence can occur in all stone varieties, but is accentuated in darker stones. Use of a soft to medium bristle brush will clean off the cloudy residue but will not prevent the reoccurrence of efflorescence.
5. **Slate Flaking:** The foliated layers on slate tend to flake post-installation as the stone settles, potentially exposing different colors or textures. This is not a defect in the stone and the flaking will eventually subside. No remedy is necessary.



## ATTENTION

Please visit [bedrosians.com](https://www.bedrosians.com) for product details and approved applications. Reference the most current ANSI and TCNA Handbooks for current industry installation standards. Improper installation, care and/or maintenance voids warranty.

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