



Cement Tile Installation

Tile Setting, Sealing, and Maintenance Requirements for Commercial Floors

MUST READ

[Villa Lagoon Tile](#)

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Villa Lagoon Tile

Installation, Tile Setting, Sealing, and Maintenance Suggestions

Tools, Supplies and Equipment Needed

- Level
- Tile Wet Saw-Diamond Blade
- Carpenter's Square
- Notched 1/2" Hand Trowel
- Grout Float—Rubber
- Pencil
- Tape Measure
- Buckets for Mortar
- Chalk Line
- Tile Adhesive—Regular Thinset Mortar
- Appropriate Grout
- 6 to 8 foot Straight Edge
- Containers to Wet & Drain the Tiles
- Sponge
- Clean Rags
- Goggles for Tile Cutting
- Shur-Line or Padco Pad Paint Applicator
- VLT NanoSealant (TK-6)
- Stonelok2K Extra Low Gloss

Important

Cement tiles show nuances in design and colors. Individual tiles will not be identical. This is a result of the hand-crafted process and the nature of cement. **Mixing tiles from different boxes during setting is necessary to produce a beautiful naturally rich appearance.**

The commercial application of sealant consist of three parts:

- **Grout Release (VLT NanoSealant)**
- **Sealing (VLT NanoSealant)**
- **Final Coat (Stonelok2K Extra Low Gloss)**

Villa Lagoon Cement Tile Commercial Sealant Method

VLT Grout Release and Top-Coat NanoSealant is a new self-cross-linking waterborne co-polymer that may just be the most versatile and important high-performance coating on the market. Combined with the StoneLok 2K the surface created is suitable for commercial applications.

Precautions

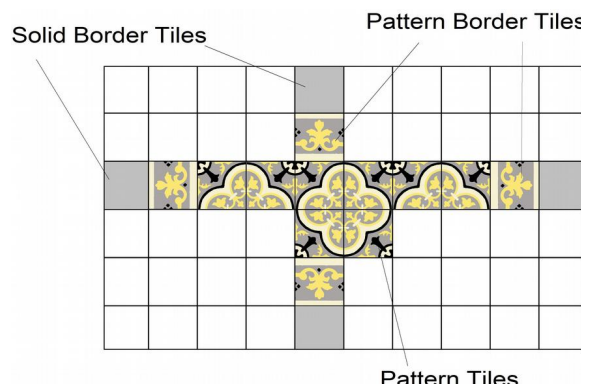
- DO NOT PRESEAL TILES BEFORE SETTING or trapped moisture can cause blotches or discoloration. Do not use any penetrating sealant when using our recommended topical sealants.
- Cement tiles are very absorbent. **Raw tiles can be easily stained** until they are appropriately sealed. Avoid walking on the raw tiles or handling with dirty hands.
- Tiles must be clean and dry before each coat of sealant. Moisture in the tile can be trapped by the sealant, and cause discoloration later.
- Always test products on a single tile before applying to the entire floor.
- Do not make any unnecessary pencil marks on cement tiles as they may be impossible to remove later.
- Cement tiles, as with all building materials, are subject to contraction and expansion depending on climate. If you are covering a large area install it as a “floating floor” using an uncoupling membrane or a similar product and/or use expansion joints to prevent cracks in your tile. Ensure that the products you are using provide adequate support for the tile.

Procedure Outline

1. Tile Layout
2. Tile Setting
3. Cleaning and Drying
4. Applying Sealant as Grout Release
5. Grouting
6. Application of Sealant
7. Mixture and Application of StoneLok 2K Extra-Low Gloss Final Coat
8. Routine Maintenance

Step 1 - Tile Layout

- Prior to installing, lay out at least one row of your tiles dry (without adhesive) in each direction of your intended tile orientation (plan) to see if any adjustments need to be made. You may need to shift the layout to balance border tiles from the walls. If using pattern tiles make careful note of the tile's orientation.
- Snap guidelines using a chalk-line to suit your layout. A light coat of clear spray or hairspray will help preserve the chalk lines on your substrate.



Step 2 - Setting the Tile

Setting our cement tile is not difficult. Preparation is a key component to success. **Remember these tiles are porous and can be stained by dirt, thinset, chalk, pencil marks and greasy hands.**

We recommend the following procedure.

- Examine all the tiles for damage. There is some color variation between tiles. It is the nature of the hand-made tiles, not a flaw in the tile.
- Prepare the thinset mortar. It should be stiff enough to stand up, using a 1/2" trowel.
- Unsealed cement tile is very absorbent so **PRE-WETTING THE BACK SIDE OF THE TILES PRIOR TO SETTING IS REQUIRED.**
 - Fill a bucket with water. Briefly dip the tiles in the water (3 to 5 seconds) let the excess drip away in a second bucket or vessel (a beer cooler works great). Avoid letting the tiles sit in water for long periods of time.
 - **This is a good time to mix tiles from different boxes,** so that color variations are not laid in rows or clusters.
- Working in 2-3 square foot areas, spread the thinset on the tiling surface using the hand trowel.
- Use a 1/2" or 3/4" notched trowel.
- Press the tile down firmly with your hands, **DO NOT USE A HAMMER OR RUBBER MALLET.** This can break the tiles. **Traditionally cement tiles are set abutted to one another without spacers with a very narrow grout line - 1/8".**
- Avoid getting the thinset on the surface of the tile. **The thinset can stain the unsealed tile.**
- Follow the chalk line guides in one direction using whole tiles. Be sure to check for squareness, alignment and lippage on every tile. One good test for levelness is to slide a coin across your tiles.



Pre-wet tiles by dipping them for 3 to 5 seconds in water prior to setting. Then letting them drip off excess in a beer cooler

Step 3 - Cleaning and Drying (Before Applying Grout Release Sealant)

- Once the tiles are set, let stand/cure 24 hours until dry. Look for any surface dirt or dried mortar and remove with a razor blade carefully without scratching the surface. **DO NOT USE ACIDS, VINEGAR, ON CEMENT TILE.** A razor blade for scraping or medium sandpaper 220 with water is acceptable. Very fine sandpaper may polish instead of remove debris. It is acceptable to use drugstore Hydrogen Peroxide to remove some stains on cement tile. Oxyclean can be safely used too.
- **Allow tiles to dry out completely.** If tiles are sealed and/or waxed when wet, it can impede evaporation and result in ghosting under the sealant and or discoloration.
- During drying protect tile at all times from workmen, foot traffic, etc. [Ramboard®](#) is a breathable product on a roll made for this purpose.
- For best results, you can test that your tiles are thoroughly dry by using painter's tape to cover a small area of tile with plastic wrap, and allowing it to sit overnight. If the underside of the plastic has any moisture on it in the morning, the tiles are still not dry enough. **This test is highly recommended in humid environments, and in installations with radiant heating.** Powering "on" a sub-floor heating system (even for a brief test) while the tile is still damp can permanently damage your installation.

Step 4 - Applying Sealant as a Grout Release

We recommend the VLT NanoSealant as the grout release and a second coat after grouting as a top-coat sealant. Failure to use a grout release can result in the tiles being permanently embedded with grout residue or stained.

VLT NanoSealant is UV stable for exterior and interior use, over either tight or open surfaces.

Apply at 50°F - 85°F ambient air and substrate temperature.



Grout Release: using the VLT NanoSealant

Directions for application:

- Surface must be clean, dry and free from contaminants such as grease, oil, or wax a lint. **Any debris left on the floor will be there permanently after sealing.**
- It is important that the tile be dry. We recommend 24-36 hours after the tiles has been set. **NOTE:** Any residual moisture may cause ghosting/whitening of the sealant.
- The key for best results is applying the product in thin coats. Thick coats take longer to dry/cure and reduces abrasion and stain resistance.
- Apply the product prior to grouting using a **pad paint applicator**. Available at big box stores and paint shops and many models and refills available online at Amazon.
- Pour a portion of the NanoSealant into a paint roller pan.
- Dip the applicator in the mixture and let drip off. Rake off excess on edge of pan.
- **ATTENTION:** The key to success is putting a thin coat of the product on the tile. **DO NOT** allow the sealant to puddle on the tile. Excess sealant will not dry evenly and can inhibit curing.
- Spread a thin coat of the mixture evenly using vertical or horizontal motions without pressure. Let the applicator glide over the tiles' surface.
- **DO NOT** go back over an area until it is dry to the touch.
- Let dry/cure for **at least 24 hrs before grouting**. For maximum hardness let cure for 48 hours.
- **IMPORTANT:** some tiles are more porous than others, try the sealant as first coat (grout release) full strength on a spare tile. If it tends to make too many bubbles which leave a pimpled mark around them, dilute your first coat with 25% water. Subsequent coats can then be full strength.



Step 5 - Grouting the Tile

IMPORTANT: Do not use dark tinted grout unless it matches the color of your tile. This can stain your tiles in light areas. Test your grout on a spare tile. On solid color tiles, use grout of a similar color. On multi-color tiles, use mid-range gray untinted grout (sidewalk color).

- Before grouting make sure the first sealant coat is completely dry and has cured a minimum of 24 hours.
- Generally cement tiles are set abutted to one another with a small grout line. The only exception is for outdoor use or designs where some clients may prefer a wider grout line for better waterproofing.
- If the grout line is 1/8" or less, **unsanded** grout is recommended. With larger grout space use sanded grout.
- If closely spaced, mix the grout to a slurry consistency... slightly runny; not thick.
- Apply the grout to areas of 3-4 square feet and push the grout around the area using a grout float or squeegee. Repeat in 30 minutes, if using very thin grout.
- Clean up excess off the face of the tile using a soft sponge and water. Avoid pulling the grout from the grout line by wiping at an angle to all grout lines.
- Let dry/cure for minimum of 24 hours.

Step 6 - NanoSealant as the Primer for the Top-coat Sealant

This is the second of three coats, for commercial applications.

- Surface must be clean, dry and free from contaminants such as grease, oil, or wax a lint. **Any debris left on the floor will be there permanently after sealing.**
- It is important that the surface be dry.
- The key for best results is applying the product in thin coats. Thick coats take longer to dry/cure and reduces abrasion and stain resistance and may look cloudy.
- Pour a portion of the NanoSealant into a paint roller pan.
- Dip the applicator in the mixture and let drip off. Rake off excess on edge of pan.
- Spread the mixture thinly and evenly using vertical or horizontal motions without pressure. Let the applicator glide over the tiles' surface.
- **DO NOT** go back over an area until it is dry to the touch.
- Let dry/cure for at least 24 hrs before allowing traffic. **For maximum hardness let cure for 48 hours.**

Step 7 - Mixture and Application of StoneLok 2K XTRA Low Gloss

This is the third, and final coat for commercial applications.

- The StoneLok 2K has two components:
 1. **Part A:** Resin (Large Bottle)
 2. **Part B:** Catalyst (Small Bottle)
- If using 1 gallon units, use a 2 gallon container. **Never mix** more than 1 gallon at a time.

Mixture

1. Vigorously shake Part A
2. Pour All of **Part A** into the empty container, then add all of **Part B**
3. Blade stir with drill at **SLOW SPEED for 5 minutes**.
4. Let set for **30 minutes** (Induction Time)
5. After waiting 30 minutes **add water as below**
 - For GLOSS and LOW GLOSS
 - For 1-gallon units, add 24.3 Oz of clean water (720 ml)
 - For 3-pint unit ADD 9.1 OZ clean water (270 ml)
 - For XTRA Low Gloss (recommended)
 - For 1-gallon units, add 28.1 Oz of clean water (830 ml)
 - For 3-pint unit ADD 10.5 OZ clean water (310 ml)
6. Blade mix again for **1-2 minutes at SLOW SPEED**

The POT LIFE NOW = 2 HOURS

Application

Airless Sprayer

- Use an airless sprayer at lowest pressure with a 6-15 or 6-17 nozzle and 100'-150' of hose.
- Apply a thin, even coat -- typically 4 - 5 mils wet film thickness [~400 sq.ft. per gallon over sealed or tight surface; about 350 sq.ft./gallon over more porous substrate].
- **It should look like a thin layer of no-fat milk: the floor is "foggy-hazy", never white.**
- Walking backwards, spray each pass about 4' – 6' across, with a feather release at each change of direction, and an overlap of at least 50%.
- Plan the application so that you can work WET to WET and continuously monitor coverage guidelines.

Roller Application

- If an airless sprayer is not available, a short-nap roller (3/16" or max 1/4") or **Shur-line paint pad** may be used by very skilled applicators. Product must be applied in "V's/W's" as below.
- **NOTE: Be sure not to overwork/over-roll. Change rollers or pads as needed!**
- As above, continuously monitor coverage guidelines and work WET to WET.
- If edge cut-in is needed, this must be done simultaneously with adjacent application, not before.

Roller Application Procedure:

- Visually measure off an area about 4' X 4'
- Load roller and create a "V" or "W" in the work area.
- **Do NOT pour product onto surface.**
- Working in a pull/push mode (away from you and towards you), Quickly Spread the material. Work with a free hand. **The idea is just to spread the material evenly.** Lightly backroll. **DO NOT OVERWORK**
- Repeat next to the first area, overlapping the new "V"- "W" Slightly into the old work area.
- WORK QUICKLY so that overlaps are WET to WET.
- YOU WANT THE LOOK TO BE "HAZY FOGGY", like no-fat milk: NEVER WHITE. IF THERE ARE ANY WHITE SPOTS (from drips, too heavy application, etc) IMMEDIATELY ROLL OUT. White spots that are left will cause CO2 to be produced in the curing process and will become a white, crispy styrofoam-like place on the surface. This can usually be sanded down and retouched --- but it's better not to make the problem.

Cure Conditions

- The water must leave the film for cure. Movement of air speeds cure time by removing the pillow of moist air that forms as the water leaves the coating.
- In closed, "air-off" jobs, or if the air will be turned off within the first 12 hours of cure, it is very important to have box fans blowing about 2' - 3' up and across the surface to maximize the cure speed and final resin density, and to ensure finish gloss as specified.
- Significantly extended cure times due to lack of air circulation will result in higher gloss levels.
- The material is typically print-free in 10 - 12 hours Floors are typically walkable by LIGHT traffic in 15 - 18 hours.

In Construction Areas

- It's best to keep everything off the substrate for 24 hours (48 if possible) and final strength takes 3 - 4 days.
- If needed for ongoing construction or transport, sealed surface can be covered with Kraft paper and Masonite or Ramboard about 15 hours after coating.
- NEVER COVER WITH PLASTIC!
- DO NOT leave the covering on for extended time. For FINAL CURE, YOU MUST UNCOVER for the first 2 - 3 nights to avoid the build up of humidity under the cover. re-cover in the morning.

Ongoing Maintenance of Cement Tiles

- Never use acid cleaners for cement tiles. **Use only pH neutral mild detergent.** See our website (www.VillaLagoonTile.com) for suggestions.
- If needed, re-apply sealant to high traffic areas.
- Swiffer® or similar cleaning tools are a good choice for tile floors. See our website for links to special 3M® sticky cloths that are more efficient than grocery store types.
- SureGrip Daily Cleaner is used by some of our commercial clients (www.suregripfloorsystems.com).
- Many stains can be removed with inexpensive drug store Hydrogen Peroxide. Saturate a clean cloth or white paper towel and let it sit on the stain. It does not harm the tile and is similar to teeth bleaching. See our website for more stain removal tips.

Stonelok 2K Safety Information

SPECIAL PRECAUTIONS [HANDLING/STORAGE/USE]

WARNING: Avoid contact with eyes, skin and clothing. Do not swallow. When handling, do not eat, drink or smoke. Wash thoroughly after handling. Keep out of reach of children. Emergency Phone Number 24 hours 1-800-424-9300 (Chemtrec)

HANDLING

Keep containers closed when not in use. Minimize contact with air to reduce contamination with mold, fungus or other organisms which could cause decomposition or spoilage. Keep from freezing.

FOR INDUSTRY USE ONLY - OTHER PRECAUTIONS

Dispose of packaging or containers in accordance with local, regional, national and international organizations.

EMERGENCY AND FIRST AID PROCEDURES

SWALLOWING: Treat symptomatically. Get medical attention.
SKIN: Wash with soap and water. Get medical attention if irritation develops.
INHALATION: Remove exposed person to fresh air if adverse effects are observed.
EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. If eye irritation persists, obtain medical attention, preferably from an ophthalmologist.

STABILITY and REACTIVITY

STABILITY: Material is normally stable at moderately elevated temperatures and pressures.

CONDITIONS TO AVOID: None known.

INCOMPATIBILITY (materials to avoid): Acids, bases, strong oxidizing agents.

For further information call Villa Lagoon Tile 1-251-968-3375

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