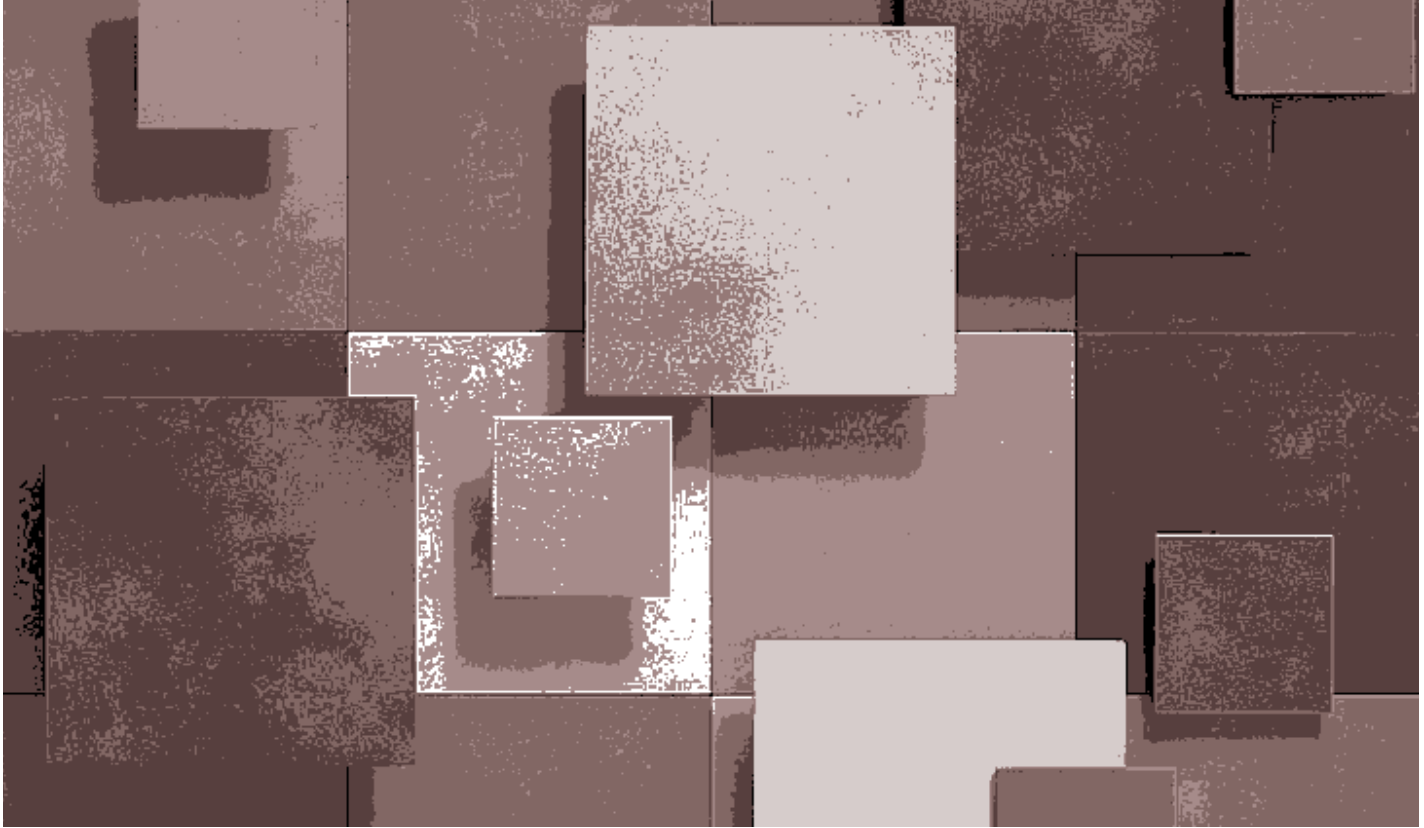


HOW TO CARE FOR PORCELAIN STONE® TILE



CLEANING & MAINTENANCE FOR CROSSVILLE'S PORCELAIN STONE® TILE PRODUCTS

CROSSVILLE® QUALITY

Our Porcelain Stone® tile is produced utilizing the most advanced equipment under very extensive and exacting process controls. Quality begins with the finest raw materials available in the United States. The ball clays, feldspar and kaolin combined with our innovative research and development program assures every Crossville® user of the finest porcelain tile available.

Crossville® is focused on maintaining its commitment to quality so our products meet and exceed your expectations. As with every interior surfacing material, our products require nominal care in order to maintain a satisfactory appearance and acceptable sanitation. These guidelines have been prepared so your particular Crossville® installation will look beautiful for years.

INITIAL CLEANING AND MAINTENANCE

The single-most important step for future daily maintenance involves the complete removal of grout and construction dirt after Crossville® products have been installed. Grout manufacturers print instructions for proper mixing, curing, and cleaning of grout on each container. These directions must be followed. In most cases, Crossville® Porcelain Stone® can be cleaned successfully by scrubbing the installation with hot water and a neutral detergent, followed by a thorough rinsing, then removing the rinse water with a wet vacuum or dry toweling. If grout residue still remains, further cleaning of the tile should be accomplished in consultation with the grout manufacturer and Crossville®.

Some grout manufacturers distribute proprietary products which they recommend for the removal of their particular grout from the surface of tile. These products can be diluted for removal of light deposits of grouting materials with the possibility of using stronger concentrations when more aggressive cleaning is required.

Equipment recommended for more aggressive cleaning are floor scrubbers or floor buffing machines equipped with a nylon pad or brush. A wet vacuum should be used to pick up suspended grout residue and construction dirt completely.

Acid washing is rarely recommended, and is not usually necessary to successfully clean a new installation if the cleaning is done in a timely fashion. Caution should be exercised when using acid, or acid-based cleaners as they can adversely affect the grout.

If a customer insists on use of an acid for cleaning the installation, he or she should be cautioned to use sulfamic acid or phosphoric acid mixed in a solution according to manufacturers' instructions. It is important that before the acid solution is placed on the floor, the grout joints be thoroughly saturated with water first. Grouts which contain latex can actually bond more strongly to the tile surfaces if cleaned with acid. Latex or polymer modified grouts should be cleaned with a solution recommended by the grout manufacturer. Contractors or installers should also wait until the grout joint has fully cured, usually 7 to 10 days before using acidic cleaners.

Once the initial cleaning has been thoroughly completed, our daily maintenance procedures can be followed for continuous and long-lasting beauty.

SPECIAL GROUTING SITUATIONS

Before grouting any Crossville® products, regardless of whatever grout color is chosen, Crossville® strongly

recommends that a test patch be done by the contractor to determine if the grout pigment will contaminate the surface of the tile. Special care and testing should be done when light-colored tiles are to be grouted with a contrasting dark-colored grout or vice-versa. If the grout pigment discolors the surface of the tile, Crossville® recommends that the tile be treated with a grout release agent similar to Aqua Mix Floor Shine and Hardener or Custom CBP Pre-Grouting Sealer before grouting. If no grout discoloration occurs, the contractor can proceed with grouting, taking care to follow the recommended procedures of the manufacturer.

With the introduction of CROSS-SHEEN®, a process which closes the pores in the tile and makes it more stain resistant, the need to use a pre-treatment is virtually eliminated on all Crossville® products except the polished surface.

Due to the surface texture of CROSS-SLATE®, CROSS-TREAD®, and other highly textured Crossville® Porcelain Stone® tile, it is advisable to use a grout release, if only to improve the cleanability of the grout from the surface of the tile.

When contamination of the surface is a possibility, the procedures outlined below should be followed:

1. Prior to grouting, apply the grout release in accordance with the manufacturer's recommendations. This can be done in one or two coats. If more than one coat is applied, allow sufficient dry time between coats and before installing the grout.
2. Grout and clean excess grout from the surface of the tile as normal.
3. After the grout achieves its set, clean the floor with a solution similar to Aqua Mix Heavy Duty Tile and Grout Cleaner or TileLab Heavy Duty Cleaner & Stripper or a product recommended by the grout release manufacturer.

Crossville recommends a two-bucket mopping approach as exemplified by the WaveBreak® mopping system offered by Rubbermaid®. For specific details call (800)347-9800 or go to rubbermaidwavebreak.com.

Of course, these are general recommendations. Any specific recommendations suggested by the individual manufacturers should be followed.

PENETRATING SEALERS

If polished tiles are used in areas which are prone to excessive spills or are light in color and are installed with a dark-colored grout or vice versa; use of a penetrating-type sealer is required prior to grouting. A penetrating sealer is one that does not leave a coating on top of the tile. Rather, these sealers assist in filling the microscopic surface pores.

The grinding involved in the polishing process produces microscopic surface pores on all polished tile products. Penetrating sealers can fill these pores, making the tile even more impervious to surface staining, resulting in easier maintenance. Penetrating sealers do not alter the appearance of our Crossville® products since they are designed only to fill the microscopic pores and not to coat the tile. Slip resistance also should not be affected.

Proper application of penetrating sealers is important. Follow the manufacturer's application guidelines. If you have questions prior to application, contact the manufacturer directly. The following is a suggested application procedure for a penetrating sealer:

1. Surface must be thoroughly clean and free of any foreign matter that may prevent the sealer from penetrating.
2. Apply using a sponge brush, paint pad, cotton towel, or sponge.
3. One thin application should be sufficient.
4. Completely remove excess sealer from the surface within 5 minutes using a clean cotton cloth, rag or absorbent paper towels. Penetrating-type sealers must not be allowed to dry on tile surface.

Penetrating sealers are applied only once, and generally do not require constant maintenance through reapplication.

TOP FINISHES AND WAXES

Crossville's dense, low-absorptive, porcelain body inhibits the penetration of contaminants and, therefore, is a tile that is easy to maintain. The low-absorptive nature of our porcelain tile not only inhibits dirt and stains, but also prevents top-finishes and most chemicals from penetrating the surface.

Top finishes, those that become a coating over the tile and grout joints, are not recommended by Crossville® for its Porcelain Stone® tile. They will change the appearance of the tile by coating the surface and giving matte-finished tiles a shiny finish. When a particular type of tile is selected for the coefficient of friction values, the values can be changed by the application of the finish. Rather than improving the ability to maintain the surface, top finishes will increase the maintenance requirement. Top-coating finishes also will show traffic patterns as the finish becomes scratched or wears away. Some finishes may even peel off in spots.

Problems most frequently encountered with the use of top-coating finishes are:

1. Wear patterns are easily developed over time.
2. Finish applied to a floor which has not been properly cleaned will cause the floor to look hazy.
3. Finishes applied to textured surfaces will wear unevenly on the raised areas as compared to the low areas.
4. Improperly applied finishes can turn a milky-white color.
5. Multiple coats of top finish can cause discoloration of the tile surface.

When problems such as these occur, the finish must be stripped off of the tile and a new coat of finish re-applied. This is a costly and unnecessarily repetitive procedure.

PROPER CARE DURING CONSTRUCTION

Since Crossville® products are considered to be a finish material, they should not be installed until all heavy construction is completed.

Between the installation and putting the floor into service, it is imperative to properly protect the tile and grout in order to avoid construction-related cleaning problems. Generally, there is a build-up of dirt and debris on every construction site. This dirt and debris may cause the grout, and sometimes the tile, to be adversely affected.

Crossville® recommends that a protective cover be put over the tile surface to safeguard the appearance. The cover could include uncolored Kraft paper, cardboard, plywood, or any other clean covering that will not

damage the integrity of the installation. Do not use plastic as it may not allow the grout and thin-set to properly cure, and it also may become extremely slippery as construction dust settles. Proper and diligent care must be used to maintain the protective cover during construction. This will insure a quality appearance when the floor is opened for continuous use.

CHEMICAL RESISTANCE

Crossville® Porcelain Stone® tiles are chemical resistant to both strongly acidic or strongly alkaline chemical products, with the exception of **hydrofluoric acids or compounds containing fluoride salts and derivatives**. Hydrofluoric acid is the only acid which will attack our tiles, due to their molecular structure.

DAILY MAINTENANCE

General maintenance and cleaning of Crossville® Porcelain Stone® tile will vary depending on the surface texture and soil load. General cleaning should be performed first by sweeping or vacuuming to remove loose soil or other surface contaminants, then lightly damp mopping with clean water.

Depending on the soil load, a more aggressive cleaning process may be required. This could include the use of a neutral cleaner or a general household cleaner, followed by a thorough rinsing. Please refer to the Cleaning Chart for suggested cleaners.

There are five steps that are critical and should always be remembered for the successful maintenance of porcelain tiles:

1. All spills should be cleaned as quickly as possible.
2. Use only the recommended dilution of detergent. More is not always better; higher concentrations of detergent in the cleaning solution will only make it more difficult to rinse.
3. Allow the proper dwell (remain on the floor) time. The detergent solution must be given time to act on the soil load. Generally 5-10 minutes is sufficient.
4. Scrub with a nylon pad or bristle brush.
5. Rinse thoroughly with clean, clear water to remove the dirty detergent solution and emulsified soil. Rinsing is a critical step in the maintenance procedure. Remove the rinse water with a wet vacuum, dry mop or toweling. If dirty detergent solution is not removed and is allowed to dry on the surface, a coating will form which is very difficult to remove.

In addition to the above steps, slightly different cleaning techniques should be administered for each of the surface textures offered by Crossville®: Unpolished Matte Finish, Polished, CROSS-SLATE®, CROSS-TREAD®, CROSS-SHEEN®, CROSSDOT®, and CROSS-GRIP®.

The use of auto-scrubbers and/or wet extraction machinery can make routine cleaning easier and more efficient.

CROSS-SHEEN® AND UNPOLISHED MATTE FINISH TILE

Crossville's CROSS-SHEEN® finish is not a glaze, but rather a special surface preparation sprayed on the tile before firing. CROSS-SHEEN® closes the pores, resulting in a permanent surface finish that has a high degree of stain resistance.

The following represents a simple procedure for maintaining CROSS-SHEEN® and unpolished matte finish tile floors with a moderate soil load. For best results:

1. Sweep or vacuum the floor of all loose dirt and other foreign materials.
2. Saturate the floor with a mild cleaning solution and hot water, agitate, and allow it to dwell (remain on the floor) 5-10 minutes. Do not allow cleaning solutions to dry. It may be best to complete small areas at a time.
3. Remove the dirty cleaning solution and rinse the surface with clean, clear water.
4. Buff with a dry mop or towel.

If the Crossville® CROSS-SHEEN® or unpolished finish product is extremely dirty, a more aggressive cleaning method may be necessary:

1. Sweep or vacuum the floor of dirt and other foreign material.
2. If there are difficult-to-remove contaminants on the surface of the tile, first attempt to identify the specific spill or contaminant. Different surface contaminants require different cleaning methods and chemicals (see chart).
3. Saturate the floor with cleaning solution and hot water, agitate, and allow it to dwell (remain on the floor) 5-10 minutes. After the dwell time, scrub the cleaning solution with a floor machine equipped with a nylon pad or bristle brush. For residential applications and small areas, use a hand brush or nylon pad.
4. Remove the dirty cleaning solution and rinse the surface with clean, clear water. This can be accomplished with a mop or a wet vacuum. It may be necessary to rinse the tile several times to thoroughly remove the cleaning agent from the surface.

POLISHED TILE

For Crossville® polished porcelain tiles, please follow these instructions for general cleaning:

1. Sweep or vacuum the floor of loose dirt. An untreated, dry dust mop may be more effective than a soft-bristle broom.
2. Mop with a mild cleaning solution. Use 50% less detergent concentrate than one would use on an unpolished floor.
3. Rinse the floor thoroughly with clean, clear water.
4. Dry thoroughly with a soft cloth or buffing pad to increase the shine and prevent water spots.

WEATHERSTONE XT, PLAN, CROSS-TREAD® AND CROSSDOT®

When public safety and insurance factors are a concern, Crossville® offers its WEATHERSTONE XT, PLAN, CROSS-TREAD® and CROSSDOT® tile for improved slip resistance. While these tiles are adeptly suited for their requirements, it is necessary to pay additional attention and take adequate care when cleaning these textures. The undulation of the surface makes it necessary to clean the entire surface, including the low points, which necessitates some additional, practical dirt removal procedures. Standard damp-mopping may not effectively clean these finishes. Also, it is necessary to thoroughly rinse the tile to completely remove all dirty cleaning solution.

For cleaning of WEATHERSTONE XT, PLAN, CROSS-TREAD® AND CROSSDOT® surfaces, please follow these instructions:

1. Sweep or vacuum floor debris. If sweeping, use a soft-bristle broom. Sweep in two directions. First, follow the direction of the tile, then sweep diagonally to the tile to ensure complete removal of all foreign material.
2. Saturate the surface with a neutral detergent cleaning solution and hot water and agitate. Looped-end, tail-banded mops, such as the Super Stitch Blend Mop from Rubbermaid (800-347-9800), are the most durable for textured-surface tile. Allow the cleaning solution to remain on the floor for 5-10 minutes. Scrub the floor with a brush in a circular motion. Dual-surface floor scrub brushes with side bristles by Carlisle SMP (800-654-8210, carlisleSMP.com) are ideal for cleaning textured floor tile and cove base.
3. Rinse the floor with clean, clear water to suspend contaminants and completely remove any soiled cleaning solution.
4. Remove rinse water with a wet vacuum or dry toweling.

In high-traffic areas, or areas where the surface is exposed to a heavy-soil load, it may be necessary to scrub the floor once a day and damp-mop at intervals during the business day.

When occasional deep cleaning is required for particularly dirty or stained areas, the use of a wet vacuum in conjunction with a stiff bristled deck brush is recommended. There is also an array of power washing and auto scrubbing equipment by **Karcher (800) 444-7654 www.karcher-usa.com, Oreck (800) 989-3535 www.oreck.com, and Tornado (800) VACUUMS www.tornadovac.com** that can greatly improve the speed and efficiency of cleaning large exterior or transitional surface areas.

CROSS-GRIP®

CROSS-GRIP® is another special-purpose, high coefficient of friction tile designed to maximize safety in food service and similar installations.

The cleaning regimen for CROSS-GRIP® is the same as for WEATHERSTONE XT, PLAN, CROSS-TREAD® and CROSSDOT®.

ULTIMETAL

ULTIMETAL'S raised, metalized glaze finish provides the tile with a shimmering, traction-enhanced surface; however, as with any textured surface this quality also has the ability to capture dirt or create moisture spots in the low points of the facial glaze. Hard water or dried mineral residue may occasionally require agitation with a stiff bristle brush promptly followed by damp mopping using a terrycloth or microfiber mop. As with all Porcelain Stone®, only a small amount of detergent is required. A pH-neutral cleaner such as Mr. Clean® Neutral Floor Cleaner or Spic and Span® Floor Cleaner (pH-neutral formulation) is recommended.

STONE LOOK TILE & CROSS-SLATE®

Crossville's natural stone-look and CROSS-SLATE® tile has a subtle textured surface. The cleaning and maintenance procedures for stone-look tile are the same as for CROSS-SHEEN® and unpolished matte finished tile.

As outlined above, the use of cleaning machines and **wet-extraction** equipment can be used on our various tiles and textures.

SUGGESTED CLEANERS FOR CROSSVILLE® PORCELAIN STONE® TILES

General household cleaners suggested for cleaning Crossville® Porcelain Stone® tile include: Mr. Clean® Neutral Floor Cleaner, Windex, Lysol, Spic and Span®, Comet, Bon Ami, 409, Fantastic, Soft Scrub and Soft Scrub with bleach. For specific problem stains, please use the following stain removal chart.

Crossville® recommends the use of professional cleaning and maintenance products. If additional information or assistance is required on a contaminant not listed, or if you need to find out where the products are sold, please call us, or contact one of the following:

Custom Building Products
800/272-8786
Seal Beach, CA 90740
www.custombuildingproducts.com

TEC Specialty Products, Inc.
800/832-9023
315 South Hicks Road
Palatine, IL 60067
www.tecspecialty.com

Aqua Mix, Inc.
800/366-6877
250 Benjamin Drive
Corona, CA 92879
www.aquamix.com

Miracle Sealants Co.
800/350-1901 ext. 3013
12318 Lower Azusa Rd.
Arcadia, CA 91006-5872
www.miraclesealants.com

Rubbermaid Commercial Products
800/810-7847
www.rubbermaidcommercialproducts.com

These products are used by tile and maintenance professionals and may not be readily available in all areas. Most household cleaners are sufficient to clean common stains as long as they conform to the standards set forth in the Daily Maintenance Section. In the case where stain removal becomes a problem, contact a cleaning and maintenance product supplier or your local tile distributor for professional suggestions.

In keeping with its commitment to quality, Crossville® will offer its Technical Service Department for individualized assistance. This department can assist you in the proper installation and maintenance of all Crossville® Porcelain Stone® tiles. Contact Crossville® Technical Services at (931) 484-2110.

	STAIN	TEC	CUSTOM	AQUA MIX	MIRACLE SEALANTS	COMMON
Food Groups	Mustard Ketchup Mayonnaise Tea Bags Ice Cream Beer/Wine Orange Juice Grape Juice Coffee Coke Soy Sauce	Everyday or Superclean STG	TileLab Stain Remover or TileLab Heavy Duty Cleaner & Stripper or TileLab Grout & Tile Cleaner	Concentrated Tile Cleaner or Tile Plus More or Grout Deep Clean	Porcelain and Ceramic Tile Cleaner	Mr. Clean® Neutral Floor Cleaner 409 Spic and Span® Fantastic Comet Windex Lysol Soft Scrub Mr. Clean Magic Eraser
Oil & Grease	Vegetable Mineral Petroleum Wax Sealer Meat Grease Hydraulic Oil Trans. Fluid Linseed Oil Lipstick Rubber Shoe Polish Paint (Oil Based)	Superclean STG or Stain Be Gone	TileLab Heavy Duty Cleaner & Stripper	Heavy-Duty Tile & Grout Cleaner*	Porcelain and Ceramic Tile Cleaner	Mr. Clean Neutral Floor Cleaner 409 Spic and Span Fantastic Comet Windex Lysol Soft Scrub Mr. Clean Magic Eraser
Markers/Graffiti	Felt Tip Ink Water Mrkr Permanent Fluorescent Crayon	Superclean STG or Like New	TileLab Stain Remover	Sealer & Adhesive Remover	Porcelain and Ceramic Tile Cleaner	Comet Soft Scrub Mr. Clean Neutral Floor Cleaner ZUD Mr. Clean Magic Eraser
Water-Based Agents	Water Base Paint or Stain	Superclean STG	TileLab Stain Remover	Sealer & Adhesive Remover	Porcelain and Ceramic Tile Cleaner	Mr. Clean Neutral Floor Cleaner Comet Mr. Clean Magic Eraser
Tile Grout	Cement Latex or Polymer Epoxy	Banish or Like New Banish Banish EX	TileLab Sulfamic Acid Cleaner or Grout Haze Remover	Sulfamic Acid Crystals or Phosphoric Acid Substitute or Grout Haze Clean-Up* Phosphoric Acid Substitute or Grout Haze Clean-Up* Sealer & Adhesive Remover	GCFR GCFR Epoxy Grout Film Remover	White Vinegar Lime-A-Way Mr. Clean Magic Eraser

*For problem stains, it may be necessary to use an abrasive powder compound in conjunction with the above cleaners: With Heavy-Duty Tile & Grout Cleaner or Grout Haze Clean-Up, use Aqua Mix Poultice. Please be careful to follow manufacturers recommended procedures when using any cleaning product. To download a copy of "How to Care for Porcelain Stone® tile," be sure to visit our web site at www.crossvilleinc.com.



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