



## RESOURCES



# *Best Practices - Manufacturing*

## *Manufacturing Tolerances*

An inherent characteristic of all fired products is that they may bow, wedge and warp, to a certain degree, causing them to potentially vary in size from batch to batch. Even with regulatory controls in place, these variations in size and color may be inevitable and are due to changes in moisture and thermal loads that alter the product during manufacturing. Batches of tile are identified and separated into lots by specific shade and caliber. Multiple shades and calibers of a single item are accepted within a certain range. To find out what the acceptable out of square and warping tolerance limits are, product types can be referenced in ANSI A137 manufacturing standards. For installation guidance, the TCNA Handbook or ANSI A108 should be observed as they are written with manufacturing tolerances in mind.

## *Face Pattern Repeat*

Although advancements in inkjet technology allow for an increased number of faces before a repeat, all boxes are packaged at random. A box of tile may not be comprised of all unique faces. You may have repeats in your final shipment depending on the square footages that were ordered. Specific face patterns cannot be sorted or requested prior to shipping.

## *Shade Lot Variation / Trim Coordination*

All tiles, whether manufactured or natural stone, are from a particular caliber and shade lot. It is not uncommon for the specific lot your order came from to no longer be available as early as a few weeks after making your original purchase. Block availability from a natural stone quarry and/or the shade and caliber lots of manmade tiles from a particular production run at a factory may be different with each order. On occasion, matching lots may be available. However, it is important to always order appropriate overages for cuts, pattern layouts, and future repairs to ensure a proper match. Trim pieces are intended to coordinate but also may not be made from a matching size and shade caliber. A lot check is recommended when specific requirements must be met. In some cases, special order options may be available.

## *Varying Size and Finish Within a Series*

Due to the inherent nature of all fired products, size calibers must be observed when ordering multiple tiles, from the same series, for a single application. Field tiles that are used together in a pattern, or ones that must line up with trim, need to be verified against actual dimensions, not nominal dimensions. When specific alignment or coordination of colors and finishes are required, specific lots need to be checked by request to ensure compatibility between products, even if all components are assembled from a single series.

## *Country of Origin and Quality*

All tiles are intended to be produced according to the guidelines set forth by ANSI and NSI manufacturing tolerances, regardless of the country of origin. Country of origin will not necessarily play a role in product performance or quality. The quality and performance of a product are observed in the technical characteristics and lab test results of a series.

## *Markings on Back of Tile*

Arrows and other markings on the back of a tile are not related to the installation or direction the tile should be installed in any way unless explicitly noted on the product packaging, marketing and/or manufacturer's instructions.

## *Metals*

Many modern mosaics and field tiles are made from actual aluminum, stainless steel, metallic foil backing, or metallic glazes. Often times these metals can be adversely affected by weathering, heat and moisture. It is always important to double check usage to ensure your product will not fail in your intended application. Scratching, oxidation, discoloration from heat and chemicals, appearance of finger prints and water spots are not considered a defect, but a natural reaction expected of metals exposed to certain conditions.

## *Cast Metal Tiles*

Cast metal tiles contain real metal particles that are combined with polymers and cast into molds. Due to the presence of real metal in these tiles, they are not recommended for exterior applications that are exposed to the elements. Cast metal tile is suitable for interior and covered exterior walls only and is not recommended for floors. The use of a non-sanded grout is recommended as sanded grout may scratch and dull the finish. These tiles are not suitable for pools, or fountains, but may be used in showers and backsplashes as long as they are not exposed to any harsh chemicals or abrasive cleaning.

### *Glass Tile Types*

There are various styles of glass on the market today. “Back painted” is a general term that describes the color application process to what typically starts out as a clear slab of glass tile and has color applied to the back surface. If you hold the back painted tile sideways, you can see right through the lens. Not all back painted glass tiles are the same; there are subtle differences in manufacturing that define where these tiles can or cannot be used. It is imperative that the glass tile is installed over the proper substrate. To avoid adversely affecting the color of glass tile, white mortar is required for all installations. As most glass has translucent properties, it is important to ensure adequate coverage of mortar by lightly back buttering the tiles. Some types of back painted or back foiled glass are not suitable for exterior or wet applications as the coloring is not designed to hold up to these types of conditions. Glass tiles with a frosted finish will generally not do well when exposed to pool chemicals. For these reasons, usage may be color specific within a series.

### *Crackled and Crazed Ceramic Finishes*

Crackled and crazed finishes are considered a desired look, not a defect, in the glaze of certain tiles. The tiles may be used on wet area walls if properly sealed. They are not recommended for general use on floors and counters. Typically, products with these finishes will have potential size variations adding to the handmade and hand painted look. It is recommended that a grout release, or a sealer be applied to the crackled glaze prior to installation so the tile will not absorb any grout pigments, or installation related debris. After grouting, a penetrating sealer should be used to seal the surface of the tile. Abrasive cleaners should not be used with these types of products.

### *VOC's*

Certification is not needed to satisfy LEED® specifications with hard flooring surfaces. The test methodology specified in CA Department of Public Health Standard – Section 01350 is the same one used for the following certifications:

- SCS/RFI FloorScore
- SCS Indoor Advantage, Indoor Advantage Gold
- AQSI/GEI Greenguard, Greenguard -Children & Schools
- CRI Green Label, Green Label Plus

Due to the manufacturing process of all of our fired floor tiles, the temperatures that these tiles are produced at inherently eliminate the presence of any off-gassing and results in no detectable emissions of Volatile Organic Compounds (VOCs). As such, Emser’s floor tiles perform better than the requirements of the FloorScore certification. Hard surface flooring products can contribute to gaining 1 POINT for low-emitting materials in LEED® V4 rating systems. The credit definition is: “Mineral-based finish flooring products such as tile, masonry, terrazzo, and cut stone without integral organic-based coatings and sealants and unfinished/untreated solid wood flooring qualify for credit without any IAQ testing requirements”. For this reason, it is assumed that ceramic and porcelain floor tiles are negligible sources of VOCs and are available for credit without any testing requirements.

### *Transparency*

Emser tile practices raw ingredient transparency which can be seen in HPD2.1 and SDS documents. Additional information can be found in our sustainability initiative on [www.emser.com](http://www.emser.com) as well as in this catalog.

### *Flame Spread Characteristics*

Flame spread is measured using ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials, compliant to CBC Chapter 8 Section 803. This test will measure flame spread, fuel contributed, and smoke developed. It is intended for all building materials including everything from counters, fabrics and wall surfaces to cementitious substrates. However, the test method and the building codes do not apply to tiled surfaces. The test itself does not list tile as a required specimen for submission. The time temperature curve this test is conducted at will max out at around 1200 degrees Fahrenheit. Quarry tile, ceramic and porcelain products pass this test as far as fuel and flame spread go. Although, under actual use circumstances, smoke may be caused on the surface of the tile due to a number of outside factors i.e. sealers, cleaners, grease, surface debris etc., which are not a direct cause of the tile itself, but rather due to inherent presence of foreign materials on the surface. Because ASTM E84 is conducted in levels below 1200 degrees and our tiles are manufactured at temperatures greater than 2000 degrees Fahrenheit, the combustion and melting points of our tiles substantially exceed the testing threshold. ASTM E84 is a comparative test where the performance of the test specimen is compared with that of fiber-cement board and select grade red oak flooring, which have been established as 0 and 100, respectively. Testing of floor tiles is not required or a recommended industry practice as they will produce a result of Class A-0 due to their composition.



# *Best Practices - Natural Stone*

## *Natural Variation*

Variations in veining, fissures, pits, texture, color and shade are inherent characteristics of natural stones and will vary from tile to tile as well as from lot to lot, depending on the type of stone you select. There are various types of stones available on the market, the most popular being granite, marble, onyx, limestone, travertine and slate. Some species and colors are more consistent than others. Range samples can be provided by request prior to purchasing that represent the range of a product. A single showroom display may not accurately represent a stone's complete aesthetic qualities.

## *Hand Selection*

Hand selecting natural stone tiles and mosaics is impractical and is generally not accepted industry wide. However, where a specific aesthetic value is desired, range samples can be requested to represent the current lot prior to purchasing. Aesthetic appearance can be a very subjective selection process when looking at individual tiles, so the range of the product must be accepted "as is". If any adjustments need to be made to a specific range, waste factors must be accounted for during this selection process. The tiles provided are intended to represent the coloring and finish of the final shipment. Sometimes the range of a stone can be captured in 3 tiles, while other stones may require >10 samples.

## *Cross Veining in Linear Patterns*

Parallel lines that are desirable in vein cut stones may have occasional perpendicular cross veining that cut across the linear pattern. This veining is a natural occurrence just like the other colors, shades, and veining characteristics of the stone and may present itself at random. Cross veining is not a crack and does not compromise the stability of the stone. Veining is not considered a defect of the product.

## *Stone Grades*

Marbles and other natural stones are categorized by soundness classifications and are rated A-D by the Natural Stone Institute. This is not necessarily a quality, performance, or product usage scale, but rather a classification for character consistency and stability. This detailed grading system takes the stone's natural characteristics into consideration to set proper expectations. All travertine for example, regardless of manufacturer or country of origin, and many common colors of marble, like Crema Marfil and other commodity stones are always a Class C due to the natural presence of veins, pits and fissures. Within this grade, some quarries will separate their stones into sub-categories by identifying products as "Premium", "Plus", "Classic", "Select" etc. based on their own criteria to distinguish aesthetic consistency between lots. The "Premium" selection from one factory and supplier will be different than that of another and a Class C stone will always be a Class C regardless of the subcategory (batch aesthetic consistency) it is given. Some C and D stones are manufactured with resin reinforced mesh backing, holes are filled with cement or epoxy fillers, and rods are used for stability. Veining and coloring can be generally inconsistent and a desired feature between modules, and chipped edges may be engineered from epoxy. Some species of stone have more inconsistencies than others, however, this is not a defect of the stone. This soundness classification guide is not to be confused with seconds, or commercial grade stones that require a good deal of fabrication to be useable.

## *Stone Types*

Emser Tile's website and marketing literature may not represent the true geological nature of the stones commonly referred to in the industry as marble, granite, limestone, travertine, onyx, slate, sandstone, quartzite, etc. The true geological nature of any stone may be verified by conducting a test through an independent bona fide laboratory.

## *Travertine Fill Colors*

Filler colors in a prefilled travertine can vary from batch to batch as the coloring is changed to coordinate with every production run. However, it may not be an exact match to the base color of the stone due to natural stone variations.

## *Travertine Hole Formation*

Air pockets and voids are present in the stone during its formation and are a desired characteristic of the stone. Some of these holes and voids may be present under a razor thin layer of surface rock. It is not uncommon for a travertine floor to reveal new holes in the first year after installation from standard pedestrian loads, fillers dislodging, movement of fixtures and furniture. New hole formation is not considered a defect of this particular stone. If desired, these new voids can be filled quickly and easily with grout, epoxy or equivalent synthetic fillers.

### *Rust, Efflorescence, Discoloration and Transformation*

Presence of excessive moisture may affect the look of your stone. Efflorescence is a concentration of salt minerals trapped in the stone that become visible, similar in appearance to chalk or foam, in hot and humid climates and wet applications when water passes through the stone taking traces of salt to the surface. Rust may also appear in certain stones that have metal minerals like iron present in the body. When these minerals react with water, the water will pass through the stone bringing the oxidized metals to the surface. This is especially visible in slate, as well as lighter colored stones. It is imperative that the stones be properly sealed before and after installation and proper water proofing membranes are used to minimize and/or prevent these occurrences from happening. Six-sided sealing may be recommended to prevent discoloration in certain applications.

### *Using Light Stones on Shower Floors*

When using light colored stones on shower floors it is important to seal the product prior to installation, ensure all weep holes are kept open during installation and do not get clogged with mortar, and proper waterproofing measures are taken. Even when installing these products correctly, many light stones have a tendency to rust or darken over time when used as a shower floor. Sometimes these affects are immediate and other times they can take years to surface. Stone discoloration from a reaction to excessive moisture is not a defect but a natural occurrence of the product.

### *Sealing Granite*

As a general rule, it is important to seal any product that has any percentage of water absorption to protect the surface. This applies to natural stones including granite, however, the only stones that typically go unsealed are black granites. When used as countertops or in wet applications, sealed black granites are known to show water marks and rings when exposed to moisture, or acids for extended periods of time. These watermarks or etchings can be caused by a number of factors, the most common is a reaction of the sealer being exposed to water for prolonged periods. The other reason may be a reaction of the mineral on the surface of the stone to acids. When using dark stones in wet applications, proper sealing and waterproofing methods must be observed based on the scope of work.

### *Stone for Exterior Use*

Certain stones, especially most slates and travertine, are not rated for exteriors or wet applications. Although some may do well in warm dry regions, they may be compromised when used in wet freeze/thaw environments. Although you may see photos of these types of products used successfully around pool sand patios, they may not be suitable in all climates. When used in inappropriate climates they can sometimes be maintained with additional maintenance, however, may ultimately fail if not installed or maintained correctly. Some stones can swell when they absorb water and as a result may rust, become muddy, brittle or flake excessively. Quartzite, although it looks like slate, is a completely different rock and is perfect for wet and exterior applications as well as freeze/thaw climates. It is not uncommon for stones that look similar to have completely opposite types of performance characteristics. For this reason, it is important to check manufacturer's recommendations prior to specification.

### *Epoxy Mortars- Onyx, Marble, Sandstone*

It is important to use epoxy based, solid setting adhesives and grouts when installing mesh, resin, epoxy or fiberglass backed stone to ensure proper adhesion. Stones requiring epoxy, even if they are not mesh backed include; green marbles, serpentine stone, black marbles and some sandstones. These stones will typically warp or discolor from exposure to moisture during the installation process when using a standard mortar.

### *Mortar Colors*

Many light stones such as marble and limestone may react negatively to the ingredients contained in gray mortars. It is highly recommended to use white mortar on light stones and gray mortar for darker ones.

### *Stone Lippage*

The presence of lippage can be exaggerated by a number of factors: uneven subfloors, laying stone in a 50% brick joint offset, not back buttering large format tiles, grout joint width being too narrow and the lighting source making standard variances more noticeable through shadowing. Industry standards allow for a certain amount of lippage to be present based on various factors. To eliminate lippage altogether, some stones may be altered by grinding and refinishing the surface after install. This procedure is to be conducted by skilled professionals and is only possible on select stones and finishes.



# Care & Maintenance

## *Cleaning Glazed Porcelain & Ceramic*

Glazed porcelain and ceramic tiles are among the easiest flooring materials to clean. Due to their impenetrable glazes, their surfaces are resistant to water, dirt, chemicals, oil, debris, and even germs and bacteria.

### **Always remember:**

- Do not clean porcelain tile flooring with ammonia or with cleaners that contain bleach and/or acid. Acid and ammonia based cleaners may modify grout color and product stability.
- Use a cleaner that is pH neutral. This ensures cleaning will not harm your grout or surrounding surfaces.
- Do not use wax or oil-based cleaners.
- Use rugs at entrances to prevent dirt and grit from being tracked onto the tile flooring from outdoors. Tiles are scratch resistant but not scratch proof.
- Do not use steel wool or other abrasive pads to remove tough debris or stains. Steel wool scratch your tiles and loose steel particles may eventually create rust stains in the grout over time.
- Although glazed surfaces are impervious, the use of a grout release will aid in post installation clean up, especially if the glazed surface has a texture to it where mortar, grout and other construction debris can get trapped inside grooves during and after installation.

### **Standard cleaning guidelines of glazed products:**

- Sweep or vacuum loose dirt and dust from the floor prior to washing with water to prevent the tile from becoming muddy or leaving a residue after cleaning. On textured surfaces sweep in multiple directions to ensure the removal of all foreign material that might be residing in the textured surface. For wall surfaces tile can be gently wiped down with a clean, dry cloth or rag.
- Mop the floor with a mild detergent, degreaser, or tile cleaning solution. For textured floors, the use of a medium bristle brush is recommended. A sponge or clean cloth can be used to apply the cleaning agent to wall surfaces.
- Rinse the tile thoroughly with clean water to remove any left-over detergents.
- Drying with a clean cloth or rag is recommended to increase the shine and to prevent water spots or streaks.

## *Cleaning Unglazed Porcelain & Ceramic*

Unglazed products are highly desirable due to their double loaded and through-body characteristics. Polished finishes are typically protected by nano and/or wax coatings and are resistant to water, chemicals, and scratching. Matte and textured finishes are generally unprotected and although the surface is impervious, it may be more difficult to clean post install than a polished surface due to the inherent surface characteristics of these finishes on a micro pore level.

### **Always remember:**

- Do not clean porcelain tile flooring with ammonia or with cleaners that contain bleach and/or acid. Acid and ammonia based cleaners may modify grout color and product stability.
- Use a cleaner that is pH neutral. This ensures cleaning will not harm your grout or surrounding surfaces.
- Do not use wax or oil-based cleaners.
- Use rugs at entrances to prevent dirt and grit from being tracked onto the tile flooring from outdoors. Tiles are scratch resistant but not scratch proof.
- Do not use steel wool or other abrasive pads to remove tough debris or stains. Steel wool may scratch your tiles and loose steel particles may eventually create rust stains in the grout over time.
- Nano coatings should remain intact post install for added protection. However, if electing to remove nano coatings, a nano scrub or poultice type product may be used. Ask a sales associate for details.
- Although unglazed surfaces are impervious, the use of a grout release will aid in post install clean up, especially if the unglazed surface has a matte or textured finish to it where construction debris can get trapped during grouting. Sealing may also be recommended post install to aid in day to day maintenance of these surfaces.

It is suggested that a breathable penetrating sealer be applied to matte unglazed surfaces after grouting. This treatment provides an excellent defense against staining and may be desirable in high traffic areas. Follow the sealing manufacturer's guidelines for recommendations on how often a sealer should be reapplied.

### **Standard cleaning guidelines of unglazed products:**

- Sweep or vacuum loose dirt and dust from the floor prior to washing with water to prevent the tile from becoming muddy or leaving a residue after cleaning. On textured surfaces sweep in multiple directions to ensure the removal of all foreign material that might be residing in the textured surface. For wall surfaces tile can be gently wiped down with a clean, dry cloth or rag.
- Mop the floor with a mild detergent, degreaser or tile cleaning solution. For textured floors, the use of a medium bristle brush is recommended. A sponge or clean cloth can be used to apply the cleaning agent to wall surfaces.
- Rinse the tile thoroughly with clean water to remove any left-over detergents.
- Drying with a clean cloth or rag is recommended to increase the shine and to prevent water spots or streaks.



### *Cleaning Glass, Metal & Decorative Mosaics*

Many of the metal tiles you see on the market today are made from solid metal, coated in metal glazes, or cast from polymers that are fused with real metal particles. Due to the presence of actual metal in most cases, careful attention must be paid when cleaning these unique surfaces. Glass is one of the easiest surfaces to clean. Due to its impervious nature, all stains will remain on the surface and can be wiped away with no effort. When cleaning glass and/or resin based blends the least abrasive method should always be used first as not to damage, discolor, or scratch the surface.

#### **Always remember:**

- Stainless steel cleaners for appliances tend to work well on stainless steel tiles as they are typically made from similar grades of steel. However, it is important to note that not all metal tiles are made from stainless steel and as such a pH neutral cleaner or water with a mild soap solution can be used.
- It is not recommended that any abrasive cleaners or scouring pads be used to clean metal as it may scratch the surface and cause the tiles to oxidize.
- It is also important to keep the tiles dry and away from heat as much as possible.
- Be sure to follow grout manufacturer's instructions on cleaning and sealing grout properly.
- Grout cleaners containing bleach or ammonia may be harmful to the metal if not applied properly.
- Do not use any abrasive cleaners or scouring pads to clean glass as they may scratch the surface.
- There are many cleaning solutions on the market today suitable for cleaning glass tile. In most cases a standard glass or multi-surface cleaner applied with a cloth or paper towels will work well.

#### **Standard cleaning guidelines of glass, metal and decorative products:**

- Wipe loose dirt or grease from the surface. An untreated paper towel or cloth is recommended.
- Wash the surface with a mild detergent, degreaser, or glass cleaning solution (do not use abrasive cleaners or abrasive applicators).
- Rinse the tile thoroughly with clean water if a detergent is used.
- Drying with a clean cloth or paper towel is recommended to increase the shine and to prevent water spots or streaks.

### *Cleaning Natural & Engineered Stone*

Natural stone is a very durable surface when protected and maintained properly and is widely used in residential and commercial applications.

#### **Always remember:**

- Sweep or vacuum your floors regularly.
- Protect your stone from sand and grit as floors may scratch from dirt and debris.
- Be careful with acidic foods and drinks (lemonade, orange juice, etc.) as they may etch certain stones.
- Never use any cleaners that contain ammonia, acids, or bleach.
- Never apply wax or acrylics to the surface as they may damage the stone.
- Tend to spills quickly. Sealers do not prevent 100% of damages caused by spills.
- Sealing all natural stone is highly recommended.

It is suggested that a breathable penetrating sealer be applied before and after grouting. This treatment provides an excellent defense against staining and may be desirable in high traffic areas. Follow the sealing manufacturer's guidelines for recommendations on how often a sealer should be reapplied.

#### **Standard cleaning guidelines for natural stone:**

- Sweep or vacuum loose dirt and dust from the floor. For wall surfaces, tile can be gently wiped down with a clean, dry cloth or rag.
- Mop the floor with a mild detergent, degreaser, or tile cleaning solution. A sponge or clean cloth can be used to apply the cleaning agent to wall surfaces.
- Rinse the tile thoroughly with clean water to remove any left-over detergents.
- Drying with a clean cloth or rag is recommended to increase the shine and to prevent water spots or streaks.

## *Commercial Deep Cleaning*

Commercial cleaning can present its own challenges due to the high traffic nature of most applications and exposure to foreign debris that a standard residential application may not be subject to. Commercial floors must be maintained properly to ensure the longevity of an application.

### **Always remember:**

In addition to following standard cleaning protocol for your product type, also consider the following:

- Floors need to be kept as dry as possible after cleaning to prevent slip accidents
- When mopping, the water should be changed frequently so you are not pushing around muddy water
- Scrubbing the floors too often with a buffer may cause irregular wear patterns
- Always be sure to protect furniture legs and stanchions with felt pads to protect the floors from scratching
- Chewing gum, grease and other debris difficult to remove may require use of a plastic putty knife
- Prior to removing graffiti and other difficult stains, test a small area to make sure the chemical agents will not damage the surface.
- For embedded stains, the use of a poultice mix may be required
- When electing to remove nano coatings, a nano scrub or poultice type product may be used

### **Standard deep cleaning guidelines:**

- Sweep or vacuum loose dirt and dust from the floor. For wall surfaces, tile can be gently wiped down with a clean, dry cloth or rag.
- Mix a high concentration cleaner, degreaser, or stripper as needed based on manufacturer's guidelines for periodic deep cleaning.
- Agitate with scrub brush or floor scrub machine.
- Mop up dirty solution. A wet/dry vac may be used in large areas.
- Rinse thoroughly with clean water, changing water every 500 sq. ft. or as needed.
- Drying with a clean cloth or rag as well as a final dry vac extraction is recommended to increase the shine, prevent water spots and streaks, and to prevent slip accidents in a commercial setting.

## *Cleaning Grout*

There are many grouts on the market today that are stain resistant and do not require a sealer. However, not all grouts will have these characteristics and special care must be taken to ensure product performance is not compromised due to exposure to harsh cleaners.

### **Always remember:**

- Clean tile and stone regularly according to standard cleaning guidelines. Anything safe for the tile will typically be safe for your grout. PH neutral cleaners are highly recommended. Mopping dirty tiles will cause muddy water to get stuck in the grout joints, so keeping tiles cleaned regularly will improve the look of the grout.
- Be careful with acidic foods, drinks and dyes as they may stain certain types of grout.
- Never use cleaners that contain ammonia, acids, or bleach. Some stains may be set so deep in the grout that bleach may be the only thing to get your grout clean. Bleaching causes the pores of the grout to open and hold dirt even more. As such, sealing after bleaching is highly recommended.
- Prolonged use of bleach and ammonia based products may cause the grout to become brittle over time and in wet applications may result in water damage due to cracking and deterioration.
- Sealing grout prevents staining. Sealers are not chemical proof and may break down from continued exposure to harsh household chemical cleaners.
- It is suggested that a breathable penetrating sealer be applied before and after grouting. This treatment provides an excellent defense against staining, mold and mildew. Follow the sealing manufacturer's guidelines for recommendations on how often a sealer should be reapplied.
- Tend to spills quickly. Sealers do not prevent 100% of damages caused by spills.
- A medium bristle brush can be used to scrub the grout joints

### **Standard cleaning guidelines for grout:**

- Sweep, brush, or vacuum loose dirt and dust from the surface. For wall surfaces, grout can be gently wiped down with a clean, dry cloth or rag.
- Mop, brush, or sponge the surface with a mild detergent, degreaser, or tile cleaning solution.
- Rinse the grout thoroughly with clean water to remove any left-over detergents.
- Drying with a clean cloth or rag is recommended to prevent water spots or streaks on the tile.
- Reseal grout periodically as needed.

### **Pre and post grout install tips:**

Using a grout release or sealer prior to installation is recommended especially for product that is porous or has a textured surface. Often times grout particles may become trapped and difficult to clean during the standard grouting process and the use of a rag or sponge may not pull up all the grout haze. Using a grout release and/or sealer will help prevent this from happening. Also important to note is that grout haze left on the surface of a tile will become difficult to remove and the chemicals needed to remove it at a later time may damage the tile or alter its looks. Heavy duty grout haze removers should be used according to the grout manufacturer's recommendations before trying more concentrated acid solutions.

# *Warranties Information*

## *One Year Limited Warranty and Limitations on Liability*

Emser Tile™ offers a limited warranty on its products to the original purchaser, for one year from the date of purchase, to be free of manufacturing defects. Emser warrants only to its immediate customers and to no other person that its products will, on the date of ship, meet the foregoing terms of Emser's bid confirmation, order acknowledgement or sales order pursuant to which such products were sold. Tile and natural stone are subject to standard variances resulting from the manufacturing process or origin. Emser Tile™ does not provide warranty on products that are within the industry standard variance levels.

## *Defects & Claims*

In the event of a defect within any product distributed to the customer by Emser Tile™, the customer agrees to notify Emser immediately upon becoming aware of such defect. If a defect in manufacturing or coloring is identified in advance of installation, the customer agrees to not install any defective product without the written agreement of Emser Tile™.

Emser Tile™ reserves the right to inspect any and all defects prior to any repair, remediation or settlement of such defect. In the event that Emser Tile™ is required to participate in the repair, remediation or settlement of any defect, Emser must be included in all discussions and decisions related to such repair, remediation and/or settlement. In the event that the customer fails to notify Emser on a timely basis, or fails to allow Emser the right of inspection, discussion or decision making in advance of repair, remediation or settlement of any defect, the customer agrees to release Emser Tile™ from any liability for the defect or claim. Customer misuse including negligence, physical or chemical abuse is not covered by this warranty. Improper installation, installation defects or errors are not covered by this warranty. Warranty claims must be submitted in within 30 days upon discovery of the proposed defect.

## *Natural Stones*

Emser Tile™'s website and marketing literature may not represent the true geological nature of the stones commonly referred to in the industry as marble, granite, limestone, travertine, onyx, slate, sandstone, quartzite, etc. The true geological nature of any stone may be verified by conducting a test through an independent bona fide laboratory.