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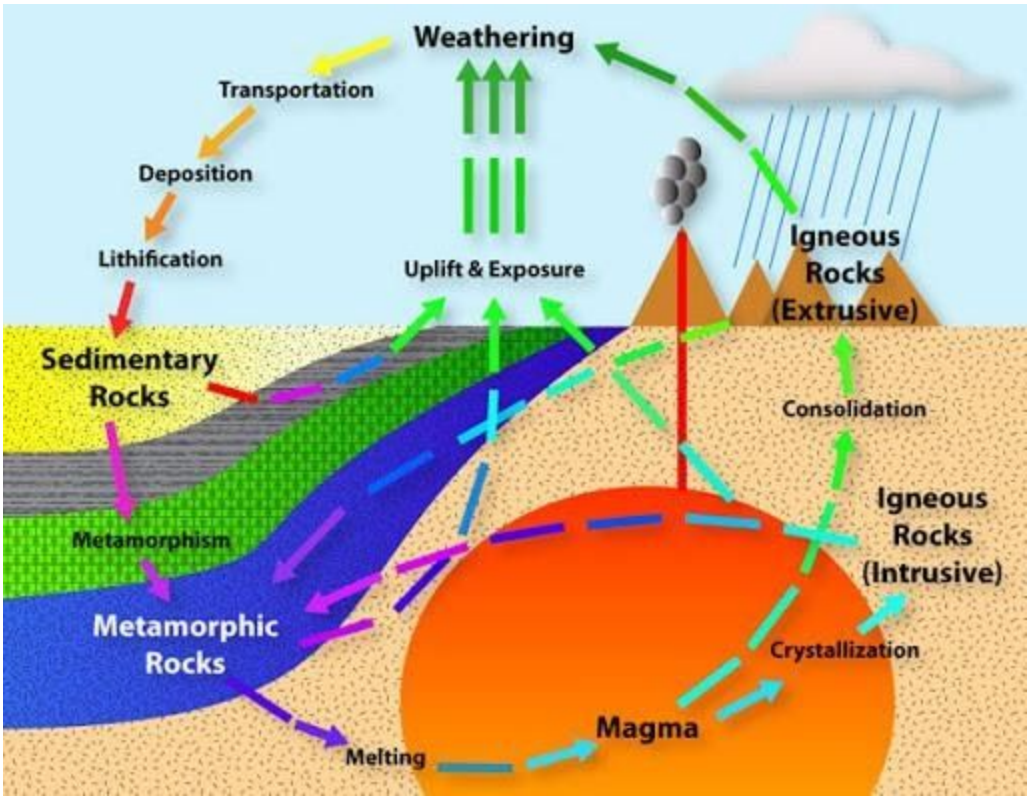
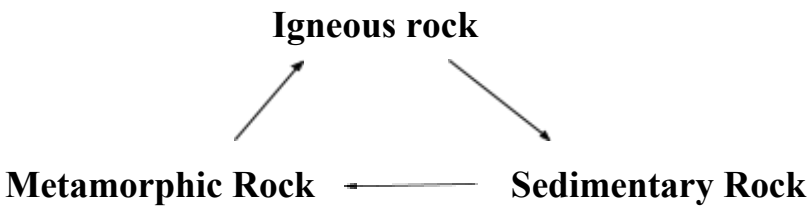
What is a natural stone?

"Natural Stone" refers to a number of stones that are quarried from the earth, used over many thousands of years as building materials and decorative enhancements. These products include: Granite, Marble, Limestone, Travertine, Slate, Quartzite, Sandstone, Adoquin, Onyx and others.

Geology of Stone



The Rock Cycle



There are very few rocks that go directly from igneous to metamorphic. Serpentine is one of them.

The Three Basic Rock Types

- *Igneous* – is formed from solidified molten matter or magmas.
- *Sedimentary* – is formed by the disintegration of other rocks, soil and organic matter such as sea organisms, shells, plants and animals deposited in seas and lakes in layers over thousands and millions of years.
- *Metamorphic* – is formed from igneous and/or sedimentary rock subjected to heat, pressure and chemical reactions, causing it to change into a more compact and crystalline form.

Rocks do not remain the same forever. They are broken down by:

- Wind
- Temperature changes
- Water and ice

Eventually they break up into pebbles, sand and mud, are washed into rivers where they flow to lakes and seas and settle into deposits.

Metamorphic rocks form from heat and pressure changing the original or parent rock into a completely new rock. The **parent rock can be either sedimentary**, **igneous, or even another metamorphic rock**. ... **Temperature** increases **can** be caused by layers of **sediments** being buried deeper and deeper under the surface of the Earth.

The action of water, by dissolving and re-depositing, can also result in the formation of new metamorphic minerals. Examples are:

- Limestone into Marble
- Sandstone into Quartzite
- Shale into Slate
- Coal into Anthracite

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Methods of Stone Identification

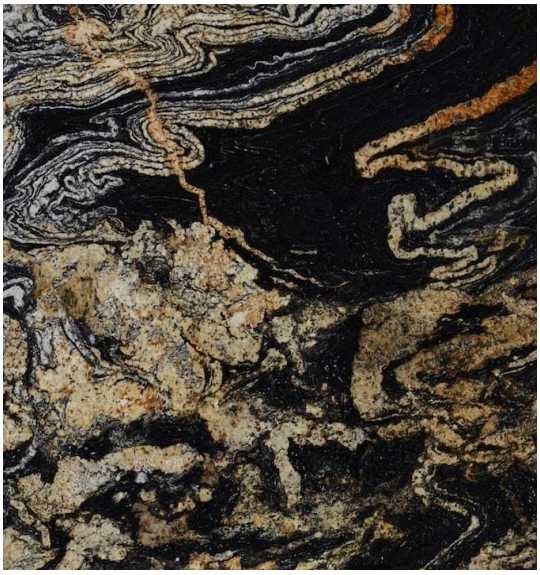
- ✔ Ask someone
- ✔ Visual identification
- ✔ Mechanical test
- ✔ Chemical test

Ask someone-

There is a good chance your customer knows what type of stone their flooring or countertops are made from but does not trust this to be certain. Therefore, it is best to do your own validation.

Visual identification-

Granite: Can have small and large shiny speckles of crystals present. Some granite will even have veining but that is less common. Varying colors.



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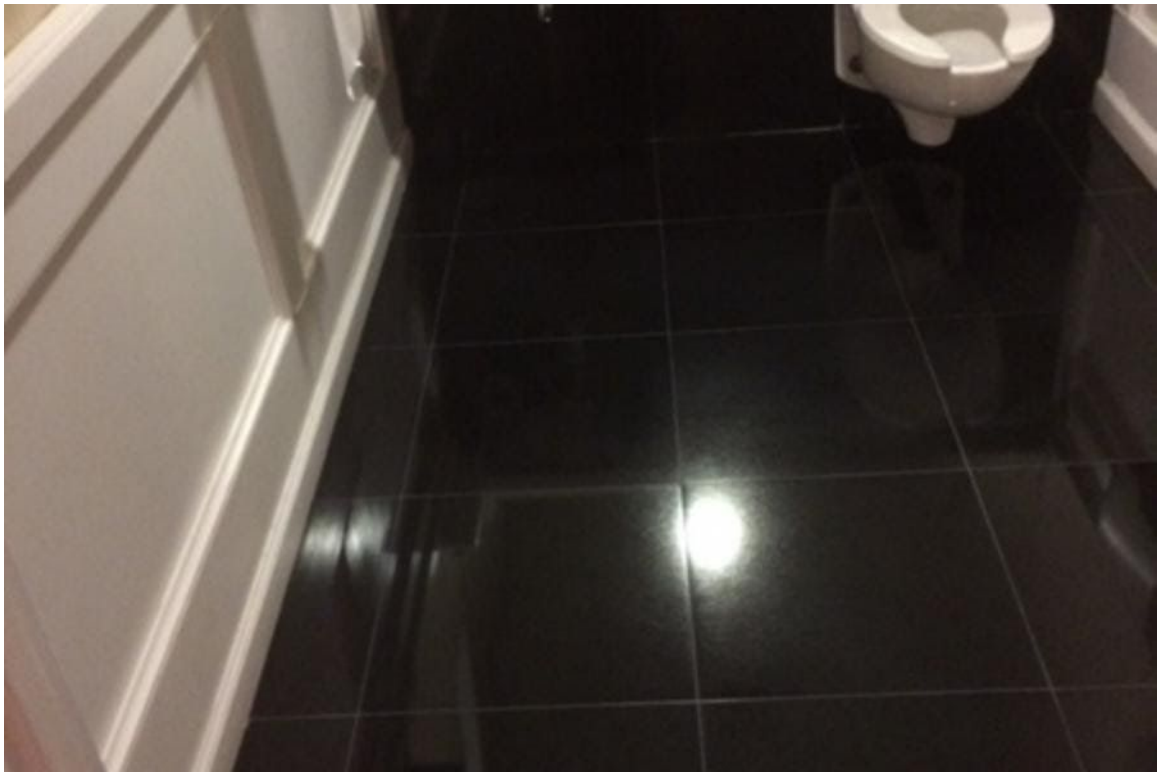
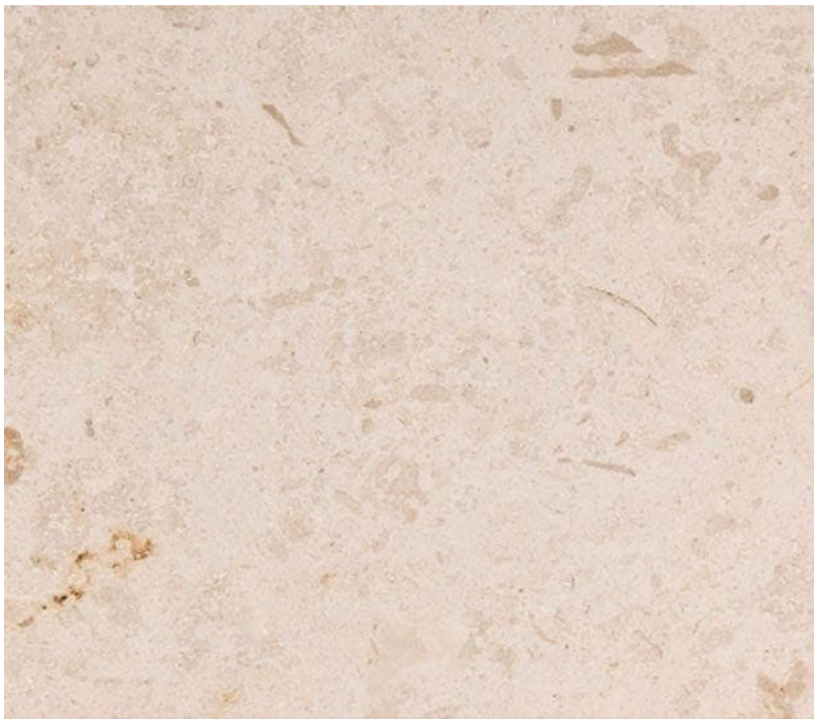
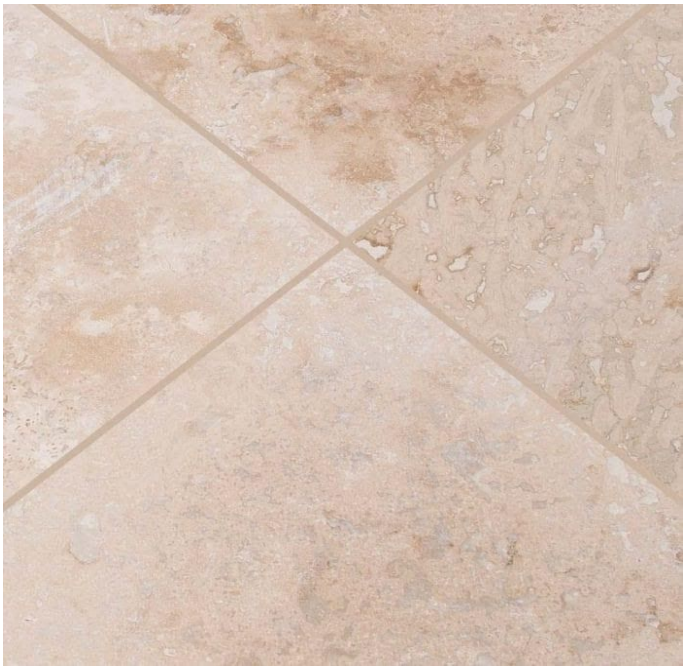
Absolute Black Granite: Very common in foyers, bathrooms, elevators and other areas with heavy foot traffic.



Limestone: Can contain traces of iron, magnesium and fossils or shell formations. Little to no veining. Most common in earth tone colors.



Travertine: Similar to limestone but more noticeable holes and epoxy fill



Marble: Usually there is a lot of veining present throughout the stone. Comes in a wide variety of colors.

Mechanical test-

The Scratch test. Stones also have varying degrees of hardness. Since granite is difficult to scratch, if a knife or razor blade edge is run across the surface it will not scratch while marble and limestone will. Please note that since both tests may damage the surface, the scratch test should be done in an inconspicuous area.

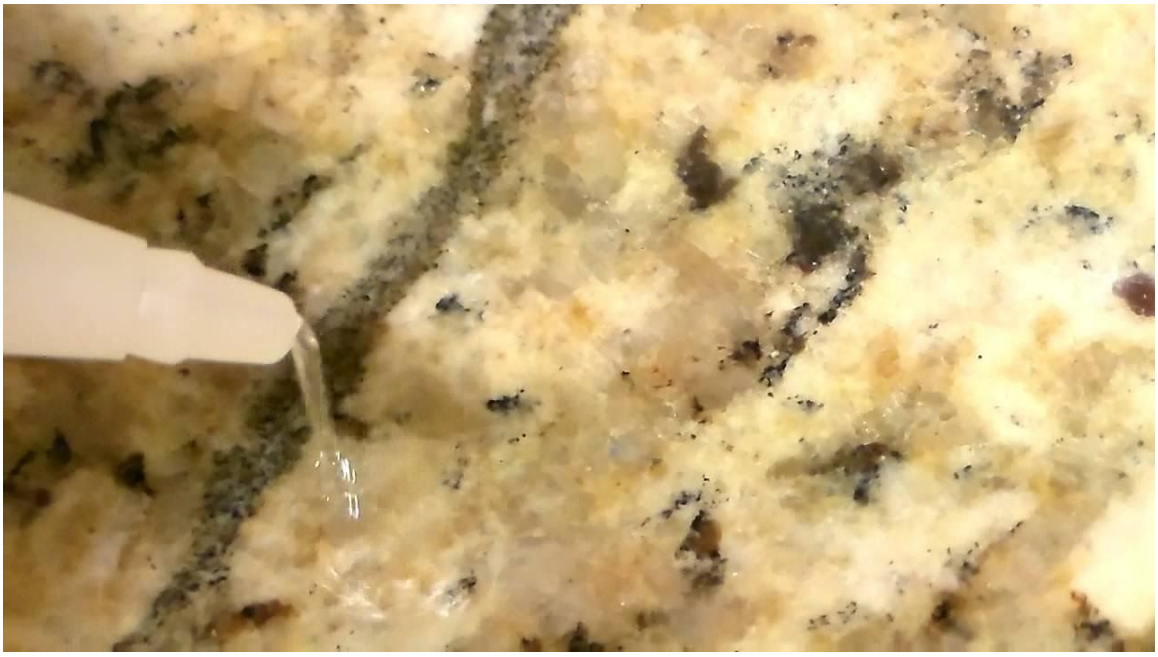
The Mohs Scale of Mineral Hardness

In 1812 the Mohs scale of mineral hardness was devised by the German mineralogist Frederich Mohs who selected the ten minerals below because they were common or readily available. The scale is not a linear scale but somewhat arbitrary. A mineral with a higher Mohs value can scratch an item with a lower Mohs value but not the other way around. 1 - softest to 10 - hardest

1. Talc (soapstone)
2. Gypsum
3. Calcite (most marbles)
4. Fluorite
5. Apatite
6. Feldspar
7. Quartz (granite)
8. Topaz
9. Corundum
10. Diamond

Chemical test-

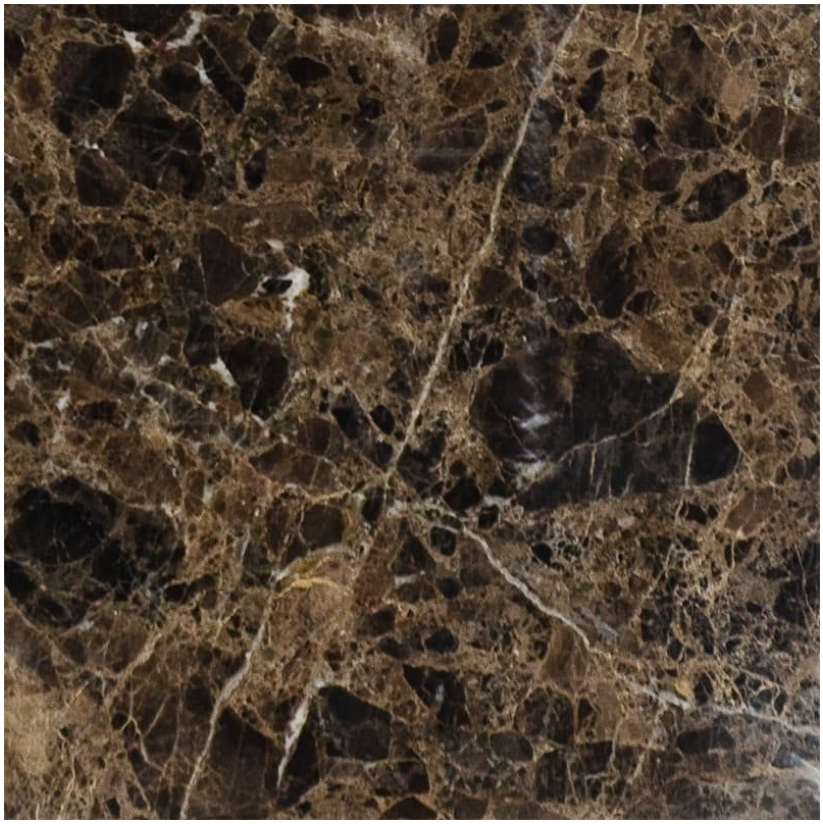
The Acid test. Place a small amount of an acid (white vinegar is fine or an acid tile and grout cleaner) on the stone and observe. If the stone is acid sensitive, a reaction will take place after a minute or two. Carbon dioxide gas will be given off - noticed by a fizzing action on the stone. If the tile was polished, an “etch” or dull spot will be left in its place. Make sure that the stone is free of topical coatings before doing the test. A quick scratch test should indicate a topical coating or not. Also, perform this test in an inconspicuous area like under a rug or towards a wall away from main traffic areas.



Types of natural stone-

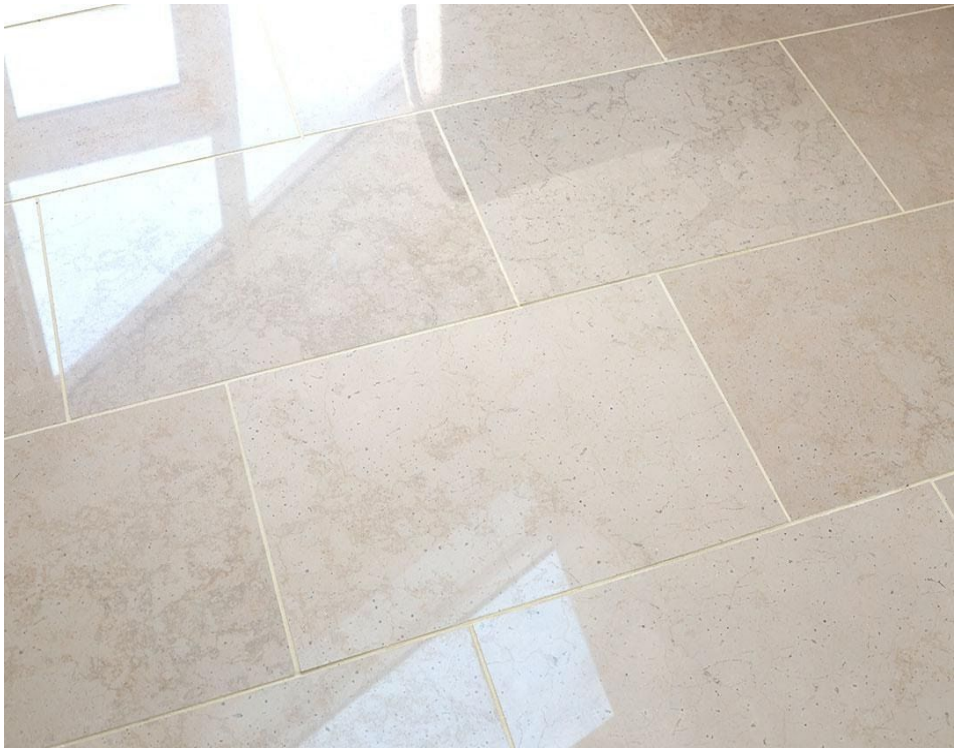
Marble

Marble is metamorphic – meaning it is formed by heat and pressure. Its characteristics include a wide variety and mixture of colors. The veins found in marble are created by the interaction of mineral deposits with the geological activity. Marble can take a high polish due to its hard surface.



Limestone

Limestone is sedimentary – meaning it is formed by the action of water and great pressure. Its characteristic colors include neutrals, off-white, beige, tan, taupe, light blue and gray. The look of limestone is created by the interaction of sediment deposits and shells with geological activity. Limestone finishes are usually honed and typically do not hold a high polish.



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Travertine

Travertine is sedimentary – meaning it is formed by the action of water, pressure and heat. Its characteristic colors include neutrals, off-white, beige, tan and yellow. The look of travertine is created by the interaction of gas, shells and water with geological activity. Travertine finishes are both honed and un-honed. The un-honed finished travertine will mostly be used on walls and easily identified by the natural holes within the stone. Travertine on floors will typically have those same holes filled with an epoxy to smooth the surface. Travertine finishes will hold a polish but not as long as marble.

Unfilled

Filled & Polished

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Granite

Granite is igneous – meaning it is formed by extreme heat and volcanic action. Its characteristic colors include a wide variety and mixes of color. Granite can take a high polish and typically holds that polish for a longer time vs. other natural stones.

Slate

Slate is metamorphic – meaning it is formed under great pressure from sediment. It has a wide variety of characteristic colors that often vary widely. Slate has a natural cleft finish. We do not polish slate. We can only clean it and seal it.

Serpentine or “green marble”

Serpentinite is metamorphic that is mostly composed of serpentine group minerals. Serpentine group minerals antigorite, lizardite, brucite, chrysotile and asbestos are produced by the hydrous alteration of ultramafic rocks. These are igneous rocks that are composed of olivine and pyroxene (peridotite, pyroxenite). Serpentines are quarried all over the world with various amounts and types of minerals some of which are acid resistant which can make polishing difficult.

Onyx

Onyx is a unique natural stone that originates from dripstone deposits of limestone caves. When water drips from stalactites and stalagmites within these caves and evaporates a compound called calcium carbonate is left behind. This causes the stone's colorful veins, swirls and patterns that are unique to onyx. Onyx is crystalline stone and often translucent – which means it allows for light to pass through. The degree of translucency varies among onyx slabs and is dependent on the color, thickness and surface finish. A unique feat, onyx will recrystallize in time, often enhancing translucency as a result. Onyx typically comes in a wide array of yellow hues due to the presence of iron deposits, but other common colors are green, white, orange, gold, pink and brown.

Soapstone

Soapstone (also known as steatite or soaprock) is a talc-schist, a type of metamorphic rock. It is composed largely of the magnesium rich mineral talc. Soapstone is an excellent choice for wet spaces such as bathrooms and sauna rooms because it does not absorb water and is not slippery, even when wet. Greyish green in color. Not typically polished but can be cleaned using normal methods.

Terrazzo

Terrazzo is a manmade resin-based tile. Terrazzo floors can be cement-based or epoxy based. Very common in airports, hospitals and schools. Can be polished similar to marbles.

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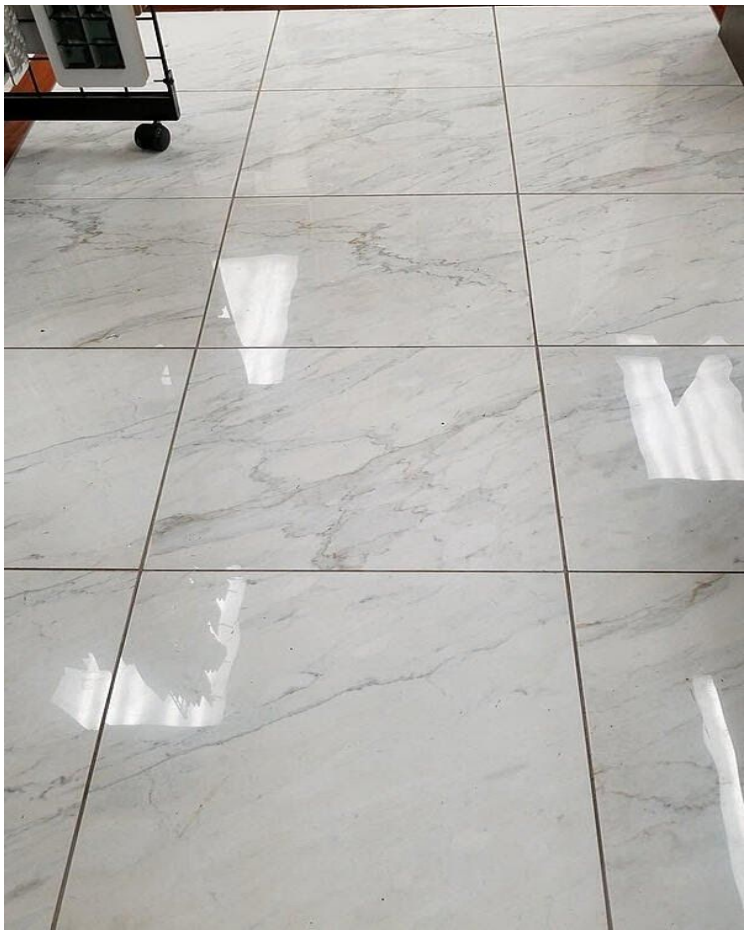
Be on the lookout for me!

What am I you ask? I am a porcelain tile floor that looks just like a marble floor. One way you can tell that I am an imposter is that my gloss looks too perfectly even in high traffic areas but do not trust just your eyes. Test me! Try scratching the tile. Porcelain is almost scratch resistant. Try the acid test. Porcelain is acid resistant. See any staining? No staining on porcelain tile and that is why we make our toilets out of porcelain.



Types of Finishes on natural stone

Polished

Very smooth with medium to high light reflection. Lowest exposed surface area resulting in low stain risk.

Honed

Smooth with medium to no light reflection. Higher area of exposed surface with increased risk of staining.

Textured

Uneven surface with no light reflection. Greatest amount of exposed surface area with very high risk of staining.

Methods of Polishing Stone Floors

There are four basic methods used today to create a shine on natural stone floors:

1) Buffing with polishing powders and compounds,
2) Grinding and honing with diamond abrasives,
3) Crystallization (or recrystallizing) and
4) Applying sacrificial coatings like waxes.

Each method may not be effective on every stone type, and the use of more than one may be necessary.

Polishing Powders and Compounds are made from fine grains of aluminum, cerium or tin oxide abrasive powders that are buffed into the surface of the stone to create the shine. This process is similar to honing with diamonds except that the powder is a much finer abrasive. These chemicals include oxalic acid or oxalate to create a reaction similar to crystallization. The powder is put on the surface and wet with water to make a paste or slurry that is buffed into the stone with a 175 rpm weighted floor machine, often referred to as a swing or rotary machine, and a hogs hair or white pad.

Grinding with diamond abrasives is done by mechanically grinding the surface of the stone with various grits of industrial grade diamonds that are usually in three to four inch diameter pads or discs. Six to nine discs are placed on the bottom of a floor machine drive plate with pad and held on with Velcro. A low speed (175 rpm) floor machine is used to drive the plate and refine and hone the stone surface with the diamonds to remove scratches. The process is repeated with finer and finer grits of diamonds until a mechanical shine is achieved.

Sacrificial coatings are referred to as “waxing” or “coating” the surface to create an artificial shine. A liquid form of wax, acrylic, urethane or other polymer is applied or “coated” onto the surface with a mop, roller or sprayer. Some are left as applied and others must be “buffed out” to achieve the shine. This is generally done with a high speed burnishing floor machine and fiber pads. This process is not recommended for porous stone like a natural stone floor. It is also not recommended for some non-porous floors like ceramic and porcelain floors.

Crystallization is a process in which a chemical called fluorosilicate is sprayed onto the stone and buffed in with steel wool pads creating new, glassy like, crystals that form on the surface. A standard 175 rpm floor machine creates the heat and friction needed to form and polish the crystals.

Advantages and Disadvantages of Polishing Methods

The following pros and cons are presented from the viewpoint that polished marble, granite and limestone are chosen for use on floors because of their “natural” appearance and beauty. Careful consideration is also given to their slip resistance as well. When cost is shown as an advantage or disadvantage, it is only to compare one method vs. others. Most often the owner expects the cost of maintaining natural stone floors to be higher than that of other resilient floors.

Polishing Powders and Compounds

Advantages:
1. Gives a natural appearance with a high gloss and clarity.
2. Produces a relatively durable finish.
3. Never requires stripping.
4. Can be applied with a standard low speed weighted floor machine.
5. Can remove fine scratches.
6. Only done periodically, not daily or weekly.

Disadvantages:
1. A messy process, requiring additional work to protect areas and clean up.
2. Requires a higher skillset.
3. Requires equipment (i.e., a floor machine, chemicals, wet/dry vac, mop, mop bucket, etc.).

Grinding with Diamonds

Advantages:
1. The most natural method.
2. Very durable, long lasting finish.
3. Never requires stripping.

4. Removes all scratches.
5. Works well on marble and granite.

Disadvantages:
1. Is time consuming and requires the highest level of skill.
2. Highest cost method in both material and labor.
3. The final polish and clarity vary depending on the stone and generally have to be polished as a final step by using powder, polish or compound.

Coatings

Advantages:
1. Most janitorial maintenance personnel are familiar with this method.
2. Can be lowest cost method if not concerned about the appearance.
3. Generally provides good slip resistance.

Disadvantages:
1. Does not provide a natural appearance.
2. Most coatings do not adhere well to polished stone or non-porous stones like ceramic or porcelain.
3. Scuffs easily and dulls rapidly.
4. Requires daily buffing or burnishing. High maintenance floors.
5. Requires periodic stripping that is messy and can damage the stone.
6. Blocks the pores of the stone which, coupled with stripping, can cause spalling.
7. Is a high cost method if done properly to maintain the best possible shine.

Crystallization

Advantages:
1. Gives a natural appearance with a high gloss and sheen.
2. Very durable, long lasting finish.
3. Easy to use and does not require any special skills.
4. Very clean with little to no mess.
5. Removes fine scratches and polishes heavy scratches.
6. Do not have to polish the entire floor. Can “touch-up” high traffic areas.
7. Can be applied with a standard low speed floor machine.
8. Cost effective.

Disadvantages:
1. Can discolor or darken some light colored grout.
2. Can cause a slight yellowing in some stones if moisture is present.
3. Has limited effect on some granites.
4. Requires periodic stripping.
5. Scuffs are caused by wax.
6. Overuse produces a non-responsive floor.

7. Quick fix surface shine only.

Selecting the Right Method

After you complete your Job Site Survey, you can move forward with a specific restoration program. In the case of a calcium based stone such as limestone, marble, travertine, terrazzo or other when diamond grinding is not needed (there are no deep scratches), Polishing Powder (with Potassium Oxalate) is an excellent choice but can be difficult to work with due to the unstable conditions caused by airborne and surface acids in the product. The product of choice is Renue Polishing Compound / Majestic Stone Polishing Compound / Stone Medic all containing Aluminum Oxide. Using just one of these polishing compounds is equivalent to a 1500-3000 grit diamond that is easy to maintain.

The only sure method of polishing all colors of granite floors is by refining with diamond abrasives and/or polishing powders. A chemical “spray and buff” method is available for maintaining the shine on dark colored granite. Fortunately, because granite is a hard stone on Mohs scale and acid resistant, and if the factory shine was done correctly, the need to polish it is very rare. A daily dust and damp mopping is all that is needed to maintain the finish. We strongly suggest only crystallizing or using polishing compounds when maintaining granite due to the hardness of the stone and how time consuming it is to diamond hone granite. Only if severely scratched granite do we recommend diamond honing. The use of heavy weights and weighted pad drivers is also recommended when diamond honing granite floors.

Marble crystallization is a quick fix process that gives immediate results. However, it cannot be left to sit on the floor or etching will occur. Also, due to its wax content every so often the crystallized cap must be stripped off with a chemical or grinding process. No matter which method is used, it is highly recommended that the process be done on a regular frequency that does not allow the finish to go dull. Once the shine is gone, it takes three to four times longer to bring it back. The frequency will be determined by how well daily maintenance is performed and adhered to and how much the floor is walked on.

Keep in mind when diamond honing floors, not all the flooring will need the same level of diamond honing. High traffic areas tend to have more scratching and deeper scratching than lower trafficked areas located near the walls or not walked on frequently. Use the 2x4 method when polishing at the base of the walls.

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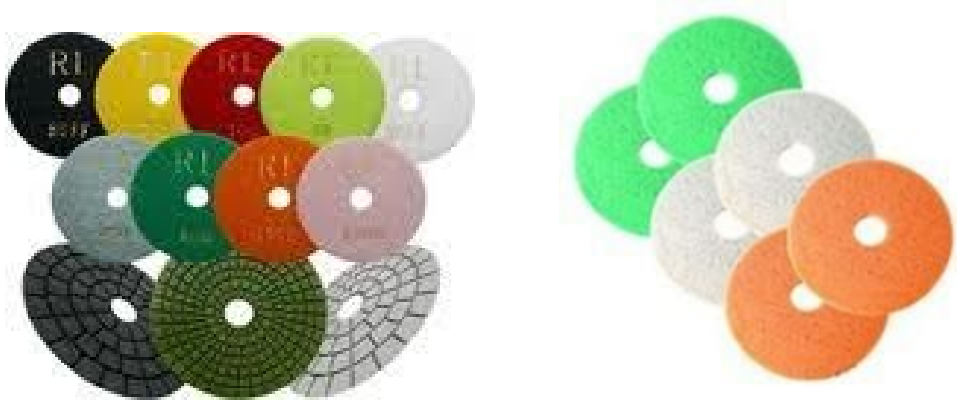
Diamonds and Grits

Common natural stones include the following material: marble, granite, travertine, limestone and sandstone.

Believe it or not, natural stones are relatively soft stones. Over time, the surface of these stones on floors can become scratched and abraded from foot traffic causing them to lose their original shine. The scratches on the surface of the stones also cause light rays to refract in all directions adding to the dull appearance of the floor. Countertops become dirty, scratch and sometimes etch due to spills that have a high acid content. Walls and showers also become dirty, build up hard water stains and soap scum and collect pollutants within the air. All of these issues are correctable through our professional restoration services.

The level of service the natural stone requires depends greatly on the type of stone and its condition. Our approach is a very traditional one that includes the use of diamond infused pads and discs.



Diamond disks on the left and diamond pads on the right

Since a diamond is the hardest stone known, we use pads and discs to remove a microscopic surface layer of the stone to eliminate the underlying scratches. And yes, they are real diamonds! Natural stone tiles are different than man-made tiles in that they are completely the same design and composition from the surface of stone to the bottom. That is why scratches can be removed without changing the appearance of the stone. The diamonds discs and pads used are constructed of very small diamond particles that are suspended within the plastic disc or pad. These pads are placed on the bottom of a rotary machine which then moves them across the surface of the stone, removing the scratches. The key to the entire process is choosing the right grit to hone the surface. It is a multistep process starting at a lower grit and ending with a higher one. A grit is a measure

of abrasiveness. A 50 grit diamond is a very aggressive grit, whereas a 1500 grit is a very fine grit. The depth of the scratch on the surface of the stone determines the right grit needed to start the restoration process and the one needed to finish. Some stones do not require a diamond honing at all. They may simply require a polishing compound.

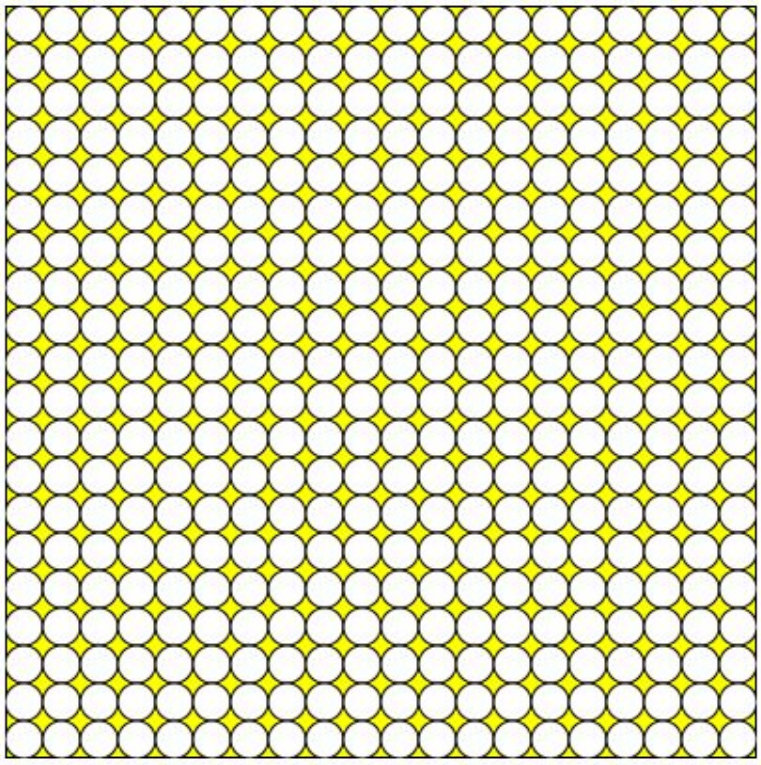
How Is Grit Measured? Grit size is the number of holes present in a square inch of mesh. For example:

60 grit has 60 holes in a square inch mesh

400 grit has 400 holes per square inch.

In order to fit 400 holes in a square inch the holes must be much smaller or “finer”

Grit Size-



400 Grit = 400 holes per square inch

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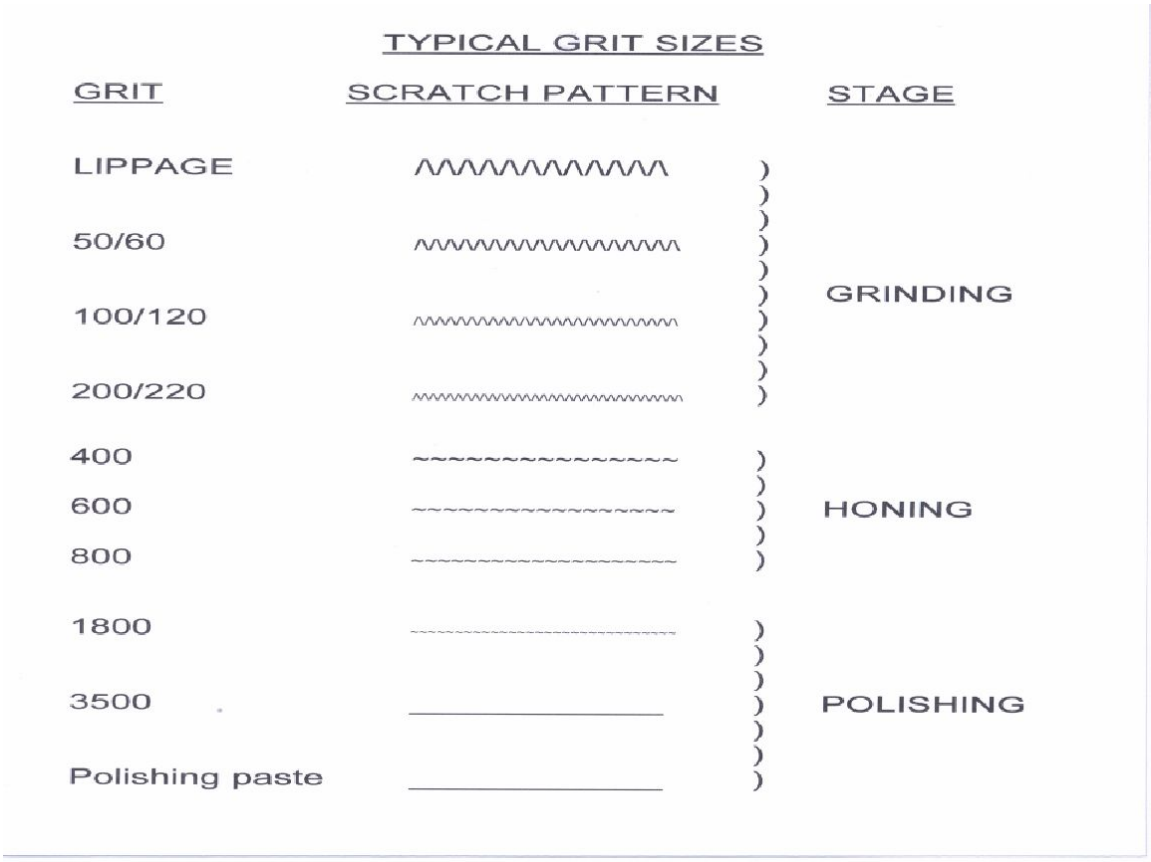
Typical Use Of The Usual Grits

●Lippage removal	Coarser than 50 grit
●50/60 grit	Stock Removal
●100/120 grit	Stock Removal
●200/220 grit	Transition
●400 grit	Hone
●800 grit	Start to Polish
●1500/1800 grit	Low Polish
●3000/3500 grit	Medium Polish



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Equipment

- 175 RPM floor machine. Also commonly referred to as buffer, swing or rotary machine
- Bucket and rags
- Trigger sprayer or pump-up sprayer
- Weighted pad driver
- Pad driver (regular)
- Polishing compounds
- Diamond discs
- White buffing pads or hogs hair pads
- Steel wool pads
- Extension cords
- Squeegee with long broom handle
- Wet floor sign or orange caution cones
- Tape & Drape, Easy Mask or plastic sheeting for masking of areas
- Wet/Dry vac., hoses and wands for wet/dry vac., mop, mop bucket, sponges, rags, etc.

Procedure for floor prep

- First, confirm there are no topical coatings on the floor like wax. If wax is present, strip the floor using the same process as for VCT (vinyl composite tile)
- Dust mop floors
- Apply tape and drape to protect the base of all walls, fixed furniture, exposed metals, glass and any other vertical surface that may be adversely affected by the chemicals

Procedure for floor restoration

Procedure for lippage on floors- Start at 30 or 50 grit diamonds. Grind floor at a rate of 30-50 sq. ft. per technician hour. Move the swing machine around the area of lippage so that you are grinding the floor from different directions. Continue until the section of floor is flat and lippage has been removed. Continue to refine the floors using a 100/200 grit all the way up to higher grits. Finally, polish.

Procedure for floors with medium to deep scratches- Same as above but start at 60 or 100 grit. Grind floor at a rate of 20-25 sq. ft. per technician hour. Continue to refine the floors at 200 grit all the way up to higher grits. Finally, polish.

Procedure for floors with light to medium scratches- Same as above but start at 400 grit. Grind floor at a rate of 30-40 sq. ft. per technician hour. Continue to refine the floors at 600 grit all the way up to higher grits. Finally, polish.

Procedure for floors with light scratches to dull spots- This can usually be achieved by simply putting a polishing compound or crystallizer on the floor and buffing with white or hogs hair pad. Sometimes you may need to use some diamonds on the floor first like 800/1500/3000 grit first. Production rate of 50-100 sq. ft. per technician hour.

Procedure for countertops and stairs- Most require a medium scratch grinding and honing going from 120 grit to 3500 grit. Production rates are 6-8 sq. ft. per technician hour.

Procedure for Crystallizing or Re-Crystallizing- Crystallizer is a wax/acid formulation. Do not let any chemical settle on the floor. BUFF IMMEDIATELY.

Procedure for Marble, Travertine and Terrazzo Floor Diamond Honing and Polishing

Step 1: Confirm there are no topical coatings like wax. Do all floor prep including Tape & Drape to protect walls, carpet, metal trim, glass and other areas you do not want slurry and polish to get onto. Set up caution cones and signs in the areas you will be working. Turn all lighting in the area to its maximum.

Step 2: Fill any holes with epoxy fill material. Make sure to clean and dry holes first to ensure proper bonding of material. Read instructions carefully and be sure to allow for suggested cure times. If no hole fill is needed, skip to step 3.

Step 3: Determine level of scratching so that you can select what grit of diamonds to begin with. Remember, it is best to try higher grits first (800, 1500 and 3000) to minimize the amount of time and labor needed for restoring the floor. If you are not sure what diamond grit to use try doing a test polishing from start to finish to best determine the course of action for that section of the floor. Also, you may need to use different levels of grits on different sections of the floor. An example is the level of restoration needed in high traffic areas is higher than the level of restoration needed on areas of the floor that have less foot traffic.

Step 4: Set up your 175 RPM rotary machine with pad driver, weights or weighted pad driver (if needed), white pad and first selection of diamond discs around the outside edge of your white pad. Fill the tank with water. Select a section of floor of approximately 40 square feet (4 square meters). Lightly wet the area of the floor by pulling and releasing the lever on the water tank. Begin the honing process by slowly making side to side passes. Change direction or position to make sure you are fully honing each section of the floor by putting a full scratch pattern into the stone. Clean excess slurry by vacuuming with your wet dry vacuum. Check the results by squeegeeing that section of the floor. If you are happy with the results move to the next level of diamond grits. Repeat this process until you have completed all levels of diamond honing. If you are not happy with the results, you may need to spend more time on that section of the floor or change to a lower grit of diamond discs if you can still see or feel any scratches. Clean that section of

the floor. Note that you can choose to refine that section of floor fully or move to another section of the floor to diamond hone, leaving your final polishing step as the last step of the process on the entire floor.

Step 5: Lightly wet the area of the floor and place a ¼ to ½ cup of your polishing compound on the floor. Place a hogs hair or (less preferably) white pad on the bottom of your 175 RPM rotary machine. Using a weighted machine or weighted pad driver will improve results. Place the machine over the polishing compound and release a small amount of water onto the area. Slowly move the machine from side-to-side 6-8 passes. The consistency of the slurry should be fluid enough to move around. If the slurry becomes too dry then just add some water. After you have worked the area sufficiently, check your results by squeegeeing back the slurry. Make sure you have a consistent shine throughout the area. If not, keep polishing. If so, clean the floor by vacuuming off the slurry and rinse with plenty of clean water paying close attention to removing any polishing compound built up within the grout lines.

If you have areas of the floor that have both a granite and marble mix, use granite diamonds. Using marble diamonds will damage the granite but conversely the granite diamonds will not damage the marble. Also, you may want to select a polishing compound that works for both marble and granite. Check with the manufacturer to confirm. Also, for marble floors that may have small areas of granite mixed in and where the granite is in relatively good shape, you can simply tape the granite areas off so you will not need to worry about what method or products to use. Below is a picture of marble flooring with black granite inlay.

Procedure for Granite Polishing

Pretty much the same process as marble above with the following caveats:

- Most granite can be polished simply by crystallizing. It is the fastest and most cost effective way to enhance the gloss on granite flooring.
- It is necessary to use weights and a weighted pad driver on a 175 RPM floor machine if diamond honing.
- Process of diamond honing is much slower vs. marble due to the hardness of granite vs. marble.

- It is necessary to use special diamonds for granite as well as polishing compounds made for safe use on granite. For black granite, there is a darkening enhancer that can be added to your crystallizer or polishing compound.
- You can also use a high speed buffer (2000+ RPM) with a white pad to improve the results of the polishing compound or crystallizer on granite flooring.

Procedure for Re-Crystallization on Granite and Marble

Crystallizer is a wax/acid formulation.
Do not let any chemical settle on the floor. BUFF IMMEDIATELY

Step 1: Make sure you do not have any topical coatings (wax) present. If you do, you must completely strip the floor first of any coating and allow it to dry. It is a similar process to stripping a VCT floor.
Step 2: Preparation- Clean floors by dust mopping and wet mopping. Mask off walls, floors, carpet and other areas that may be damaged by water and crystallizer.
Step 3: Use a 175 rpm weighted floor machine (140 lbs) and #00 or #0 steel wool pad. Fill a trigger bottle with the chosen Crystallizer, working a 3 x 3 area – spray a light coating of crystallizer and buff until dry. Keep the area moist while buffing with Crystallizer. Rotate in four sections. Blend until desired shine is achieved. Turn the steel wool pad over when it becomes too wet or loaded with product. (200-300 square feet or 20-30 square meters). One steel wool pad covers 500-600 square feet (50-60 square meters) before replacement.

Production rates expected by an experienced technician: Crystallizer (Marble) . . . . . 450-550 square feet (45-55 square meters)./hour

Maintain with neutral Stone Soap.

NOTE: Over time, a heavily crystalized floor forms a cap or coat on the surface requiring you to repeat step #1 to remove the wax build up. This is noticeable by a color change in the stone such as turning yellow or darkening.

Procedure for marble countertops, walls and staircases with a hand polisher/grinder

Step 1: Obtain a handheld variable speed hand grinder, Velcro backed diamond pad holder, flexible 5” diamond discs, spray bottle, rags, Tape & Drape, sponges, handheld squeegee and wet dry vacuum.
Step 2: Mask off all areas with Tape & Drape. Set up tarps on floors to protect areas from slurry spills.
Step 3: Perform usual assessment to determine what level of diamond grit to begin with.
Step 4: Wet the area. Place the diamond pad flat on the surface and turn the power switch on. Use initial speed of low-high or medium low.

Step 5: Begin honing. Keep a steady downward pressure atop of the hand grinder and move slowly in a circular pattern. Do NOT press too hard - allow the diamonds to do the work for you. Continue grinding and honing until scratches and defects are removed. Check results by using a squeegee to pull back the slurry.
Step 6: Continue with different levels of diamond grits until desired finish is achieved.
Step 7: Polish with polishing compound. You will need to cut a white pad or hogs hair pad to fit the pad holder.
Step 8: Clean the stone and then seal with an impregnator if requested.

For staircases, address the tread only and not the riser. The riser is never walked on so you can simply clean it. If it does have damage then you may need to treat with the process above in a vertical fashion.

For walls, the process is usually done by using a polishing compound. Because the walls are not scratched like a floor, no diamond honing should be necessary. A good cleaning is recommended first. Walls are time consuming and a lot messier than horizontal surfaces.

VENUE REVITALIZATION SPECIALISTS

Stain Removal Guide

- For instructions on how to apply a poultice see information at bottom of the guide
- To learn more about poultice see information at bottom of the guide
- For unknown stains see information at the bottom of guide
- Some of the stain removal processes below may also require diamond grinding and honing to remove.

ADHESIVES

Types:

Tape residue, cellophane, stickers, etc.

Problem:

Sticky residue on surface of stone. Some tape residues, especially duct tape can penetrate below the surface of the stone and can be very difficult to remove.

Solution:

1. Peel off any remaining tape, use a very sharp razor blade and be careful not to scratch the surface of the stone.

2. The remaining sticky residue can usually be removed with a rag and acetone. Pour the acetone on a clean white rag and rub the area until all of the sticky residue is gone.

3. If the adhesive has left a stain, prepare a poultice of diatomaceous earth with mineral spirits, being careful to follow directions for user and label precautions.

BEER

Types

There are literally hundreds of beers. The beers that seem to be more of a problem with stains are the dark beers. Light colored countertops are very susceptible to dark beer staining.

Problem:

The sugars and proteins in the beer can cause a very dark stain on light colored stones.

Solution:

1. Clean the entire area thoroughly with water and a mild dish detergent. Allow the water and soap to soak into the stone for several minutes. Lightly agitate the area and remove excess water with a dry towel. Rinse the area with clear water.

2. If the above cleaning procedure does not remove the beer stain, then try a stronger cleaner such as ammonia and water.

3. If the stone is still stained prepare a poultice of diatomaceous earth with 30-50 % hydrogen peroxide.

Several poultices may need to be applied

ACNE CREAMS

Types:

Most acne creams on the market today contain Benzyl Peroxide which is a bleaching agent.

Problem:

Acne creams which contain dyes can cause staining. These dyes are usually beige to brown in color.

Solution:

1. Thoroughly clean the area with water and a mild detergent.

2. Once the area has dried, take some acetone on a clean white rag and rub the stained area, carefully following label directions and precautions.

3. If the acetone doesn't work, poultice the area with diatomaceous earth and 30-50% hydrogen peroxide.

BLEACH

Types:

Common household bleach

Problem:

Bleach contains sodium hypochlorite, which is an acid and can etch soft marbles. It may also lighten certain sedimentary type stones like shell stone and coquina.

Solution:

1. Flood the area with clean water to remove any excess bleach.

2. If the stone is etched then repolish the area with a polishing powder such as aluminum oxide and oxalic acid. I recommend using a pre-packaged powder. Apply a small amount of powder, add some water and rub the area into a slurry with a white buffing pad.

3. If the stone has lightened there is very little that can be done. A light application of linseed oil may cosmetically darken the area to help hide the discoloration.

BLOOD

Types:

Human and animal blood and raw meats prepared on a marble countertop can cause blood staining

Problem:

Blood contains salts and proteins; if it is cleaned while still fresh it will usually not stain. If allowed to dry, blood stains can be very difficult to remove.

Solution:

1. Clean area thoroughly with cold water and a mild dish detergent.

2. Prepare a solution of 50% household ammonia and water. Apply this solution and allow to sit for several minutes. Gently scrub the area and rinse with cold clear water.

3. If stain is still present, poultice with diatomaceous earth and ammonia.

CANDY-NON-CHOCOLATE

Types:

Hundreds of types of candies-All containing sugar and various dyes.

Problem:

Several candies contain dyes; red dye especially can be very difficult to remove.

Solution:

1. Scrape remaining candy from surface.

2. Clean area with acetone and a clean white cloth.

3. If acetone doesn't work, poultice with diatomaceous earth with mineral spirits

TOMATO SAUCE

Types:

Barbecue, steak, spaghetti and ketchup.

Problem:

These sauces contain tomato, tannin, oil and dyes. The dyes will leave a red to brown stain. The oil will penetrate the stone and darken it.

Solution:

1. Clean area thoroughly with cold water and a mild detergent.

2. If stain is still present, clean the area with an alkaline degreaser. Mix with water according to directions and let solution stand on stained area for several minutes. Agitate with a cloth and rinse with clean water.

3. If stain is still not removed then use diatomaceous earth and an alkaline degreaser. A second poultice may be required using diatomaceous earth and a solvent such as mineral spirits or commercial paint remover if there is dye present.

GUM

Types:

Chewing gum, tree gum (sap), etc.

Problem:

Gum rarely stains stone surfaces but can be very difficult to remove from honed and rough textures surfaces.

Solution:

1. Do not try to scrape gum off surface; this only makes more of a mess. Freeze the gum using an aerosol gum freeze, available at most janitorial supply houses. Spray the gum for several seconds then chip the gum with a scrapper or putty knife. This should remove most of the gum.

2. If there is any gum residue still remaining apply a solvent cleaner such as a dry spotter, also available at most janitorial supply houses.

HARD WATER STAINS

Types:

Water stains from irrigation systems, faucets, bathroom fixtures, shower walls, etc.

Problem:

The minerals in water will leave mineral deposits which can appear as a white haze or even large deposits of crust like minerals.

Solution:

1. If deposits are large try, scraping off excess deposits with a sharp razor blade.

2. Next apply a solution of weak phosphoric acid and agitate the area applying more acid as needed. NOTE: This will etch all marble surfaces, so plan on re-finishing the marble.

3.Re-hone and polish the stone if necessary.

Some mineral deposits will be embedded below the surface of the stone and may cause spalling. If this is the case, replacement of the damaged stone is the only alternative.

HEEL MARKS

Types:

Black rubber, neoprene

Problem:

Rubber can leave a black streak mark on surface of stone. These marks rarely stain but can be difficult to remove from rough textured stones and concrete.

Solution:

1. Clean with acetone and a clean white rag. On textured stone try using a green scrub pad with acetone.

2. If acetone doesn't work, then try another solvent such as dry spotter, available at janitorial supply.

CHOCOLATE

Types:

Candy, cocoa, ice cream

Problem:

Can leave brown stains in light color marbles.

Solution:

1. Clean area thoroughly with cold water and a mild detergent.

2. If stain is still present, clean with ammonia and water. Let solution sit on stained area for several minutes. Remove excess solution and rinse with clear cold water.

3. If above procedures fail, poultice with diatomaceous earth and ammonia. Difficult to remove chocolate stains may require poulticing with 20-50% hydrogen peroxide.

BURNS

Types: Cigarette, hot irons, propane etc.

Problem:

Cigarette and cigar burns will leave a yellow nicotine stain which can be difficult to remove. Cigarette burns can also melt the stone and in the case of granite may cause spalling.

Solution:

1. If stone is melted or spalled, re-honing and polishing will be necessary.

2. If a yellow nicotine stain is the problem, then poultice with diatomaceous earth with 35% hydrogen peroxide.

3. If several hydrogen peroxide poultices do not work, try poulticing with diatomaceous earth and mineral spirits.

COFFEE/TEA

Types:

Instant coffee, hot tea and iced tea

Problem:

Coffee and tea both contain tannin which can leave a yellow to brown stain. If left on stone long enough the stain can penetrate deeply and be nearly impossible to remove. If the concentration of coffee or tea is strong enough it can also etch the surface of polished marble.

Solution:

1. Pour 35% hydrogen peroxide directly on the stain and add a few drops of ammonia. Leave until bubbling stops.

Caution: Do not use ammonia only. Ammonia can permanently set the stain.

2. If above procedure does not remove stain then poultice with diatomaceous earth and 35% hydrogen peroxide.

3. If all else fails, try poulticing with diatomaceous earth and mineral spirits.

EGG

Types:

Chicken or duck

Problem:

Eggs contain a protein called albumin which can leave a yellow stain.

Solution:

1. Clean area thoroughly with cold water and a mild detergent of stone soap.

Caution: Do not use hot water, it can set the stain.

2. If stain still remains, poultice with diatomaceous earth and 20-50% hydrogen peroxide.

LIGHT-COLORED FRUIT JUICE

Types:

Apples, pears, oranges, lemon, lime, grapefruit and their juices

Problem:

The acids in some fruits, especially lemon will etch polished marble. The sugars in these fruits will turn yellow or brown if allowed to sit too long.

Solution:

1. If the surface is etched, re-polish using Stone Medic MPC Marble Polishing Compound. If the etching is very deep, re-honing may be necessary.

2. If the fruit has left a stain then clean the area with cold water and a mild detergent.

3. If stain still remains poultice with diatomaceous earth and 20-50% hydrogen peroxide.

RED FRUIT

Types:

Cherry, grape, blueberry, blackberry, cranberry, raspberry, strawberry and their juices

Problem:

All these fruits contain dyes which can be very difficult to remove.

Solution:

1. Clean area with cold water

Caution: Do not use soap; it can set the stain.

2. If stain still remains poultice with diatomaceous earth and 20% hydrogen peroxide.

3. If stain is still not removed, poultice with diatomaceous earth and mineral spirits.

FURNITURE POLISH

Types:

Spray and liquid furniture polishes

Problem:

Oils, dyes, waxes and silicones can cause staining. The darker polishes (e.g., walnut) can permanently stain the stone.

Solution:

1. Clean with acetone and a clean white rag. Allow acetone to sit on stain area a few minutes and blot remaining acetone with a clean rag.

2. If stain is still present, poultice with diatomaceous earth and mineral spirits or commercial paint remover.

GLUE - SYNTHETIC

Types:

Super glue, hot glue, epoxy resin, plastic model cement

Problem:

These types of glues will rarely stain. The glues are usually hard to remove from the surface.

Solution:

1. On smooth surface scrape glue with a sharp razor blade. Be careful not to scratch the surface.

2. Any remaining residue can be cleaned with acetone and a clean white rag.

3. If the glue is really stubborn, soak the area in acetone for several minutes and try scraping with a razor blade, followed by wiping with acetone.

GLUE - WATER SOLUBLE

Types:

Casein, mucilage, paste and hide glue.

Problem:

The white and clear glue rarely stain. However some of the darker glues can leave a stain that can be difficult to remove.

Solution:

1. Scrape excess glue with a sharp razor blade. Be careful not to scratch the surface.

2. Clean with cold water and a mild detergent. Try using a green scouring pad.

3. If glue is stubborn use acetone and a clean white rag.

4. If the glue has left a stain, then poultice with diatomaceous earth and mineral spirits.

GRASS

Problem:

Tannin and chlorophyll in the grass can leave a nasty green or yellow stain.

Solution:

1. Clean stained area with a clean white rag and denatured alcohol.

2. If stain still remains poultice with diatomaceous earth an 20-50% hydrogen peroxide.

Caution: DO NOT use ammonia, or any alkaline cleaners on grass stains - it can permanently set the stain.

GREASE

Types:

Petroleum type grease like wheel bearing grease, cooking grease and vegetable oils, etc.

Problem:

Can leave a nasty dark stain that can penetrate deeply into the stone. Can be very difficult to remove. Try to remove as soon as grease is spilled.

Solution:

1. Clean area thoroughly with cold water and a mild detergent.

2. Soak stained area with a commercial degreaser for several minutes. If degreaser solution dries, reapply and keeping it wet. Remove excess degreaser and rinse with clean water.

3. If stain is still present, poultice with diatomaceous earth and commercial degreaser.

4. For stubborn grease stains, poultice with diatomaceous earth and mineral spirits or commercial paint remover.

FATTY OILS

Types:

Butter, margarine, fried foods, mayonnaise, salad dressings, gravy, etc.

Problem:

Fats and oils can leave a dark stain which can be difficult to remove. Some salad dressings and foods contain dyes which can also cause staining.

Solution:

1. Thoroughly clean stained area with cold water and a mild detergent of stone soap.

2. Apply a commercial degreaser to the stained area and let sit for several minutes. Remove excess degreaser and rinse with clean, clear water.

3. If stain is still present, poultice with degreaser and diatomaceous earth.

4. For stubborn stains, poultice with a solvent such as mineral spirits and diatomaceous earth.

SYRUP

Types:

Honey, molasses, maple and corn

Problem:

The sugar and coloring added to these syrups can cause staining.

Solution:

1. Thoroughly clean stained area with cold water and a mild detergent of stone soap.

2. If stain still remains, clean with ammonia and water. Let solution sit for several minutes, then agitate and rinse with clean water.

3. If stain is still present, poultice with 20-50% hydrogen peroxide and diatomaceous earth.

ICE CREAM-NON CHOCOLATE

Types:

All flavors except chocolate (also see chocolate)

Problem:

Food coloring and fruits can cause staining.

Solution:

1. Clean area thoroughly with cold water and a mild detergent or stone soap.

2. If stain still remains poultice with 20-50% hydrogen peroxide and diatomaceous earth.

3. If the stain is very stubborn try a poultice with mineral spirits or similar solvent and diatomaceous earth.

INK

Types:

Ball Point pen, magic marker, carbon paper, newspaper print, etc

Problem:

Most inks penetrate deep into the stone and can be very difficult to nearly impossible to remove, depending on the age of the stain. It is very important to remove the stain as quickly as possible.

Solution:

1. Clean the area thoroughly with acetone and a clean white rag.

2. Poultice the stain with a solvent such as mineral spirits or commercial paint remover and diatomaceous earth.

Several attempts will be necessary to remove the stain. If no improvement is noticed after 5 attempts then stain is most likely permanent.

JAM OR JELLY

Types:

All types and flavors, artificial and natural preserves, etc.

Problem:

Dyes and fruits can cause staining, especially grape and berry jams and jellies.

Solution:

1. Clean area thoroughly with cold water and a good mild detergent.

2. If stain still remains poultice with a mineral spirits and diatomaceous earth.

KOOLAID

Types:

Kool-aid-type drinks and popsicles, etc.

Problem:

Dyes can be extremely difficult to remove, especially the red and orange colors.

Solution:

1. Clean with a solution of ammonia and water. This will help neutralize the dye.

2. Poultice with commercial Kool-aid remover (available at janitorial supply) and diatomaceous earth.

LIPSTICK

Types:

All colors and types

Problem:

Oil waxes and dyes can be difficult to remove.

Solution:

1. Scrape excess lipstick with a sharp razor blade. Lipstick is very concentrated; attempting to clean without scraping excess will only spread the lipstick around.

2. Once all excess is removed, clean with acetone and a clean white rag.

3. If stain is still present, poultice with a solvent such as mineral spirits and diatomaceous earth.

LIQUOR

Types:

Mixed drinks and white wine (for red wine, see wine; for beer, see beer)

Problem:

Alcohols can melt agglomerate-type stones. Dyes can cause staining.

Solution:

1. Agglomerate stones that are damaged can sometimes be filled with a polyester resin. Seek professional help if this is the case or replace the stone.

2. Stains will need to be poulticed with a solvent such as mineral spirits and diatomaceous earth.

LOTION

Types:

Baby lotion, body, suntan and hair oil, etc.

Problem:

Lotions contain various oils which can cause dark staining. Can be difficult to remove if left on too long.

Solution:

1. Thoroughly clean area with water and a mild detergent.

2. Prepare a solution of a degreaser and water. Apply solution to the stained area and let sit for several minutes. Agitate and remove excess solution and rinse with cold clear water. Repeat several times.

3. If stain is deep, apply a poultice of degreaser and diatomaceous earth.

MAKE-UP

Types:

Mascara, blush, eye shadow, liquid foundation, etc.

Problem:

Dyes, waxes and oils can stain stone. Many types of makeup have a high concentration of dye, which can be tricky to remove.

Solution:

1. Remove any excess makeup by blotting with a clean white rag. DO NOT wipe; this will only spread the stain.

2. Clean the stained area with denatured alcohol and a clean white cloth. Blot; DO NOT wipe.

3. If stain still remains, poultice with 20-50% hydrogen peroxide and diatomaceous earth.

4. If stain still remains, poultice with a solvent like mineral spirits and diatomaceous earth.

IODINE

Types:

Iodine, mercurochrome and similar dyes found in medicines

Problem: Can leave a stain that can be nearly impossible to remove.

Solution:

1. Blot any wet iodine with a clean white rag.

2. Clean the area with denatured alcohol and a clean white rag. Be sure to blot the area. DO NOT wipe; this will only make the stain larger. Blot until you see no more dye on the white rag.

3. If stain still remains poultice with denatured alcohol and diatomaceous earth.

MILDEW STAINS

Types:

Mildew, fungus, algae and other living plant stains

Problem: Can leave a black, green, blue, orange or white blotchy type stain on stone surfaces. Since this is a living fungus it can grow and spread at a rapid rate. Usually requires a moist environment to grow, such as showers, etc.

Solution:

1. Clean area thoroughly with a mild detergent.

2. If there is any soap film on a shower wall, be sure to remove the soap film by scrapping and then wiping with a clean rag and acetone.

3. To remove the mildew stains, spray the area with a solution of 3 parts household bleach to one part water, with several drops of dish detergent. Continue to mist the area until all the mildew stains disappear.

4. Rinse the entire area with clean water and dry it.

MILK

Types:

Milk, cream and other milk products

Problem:

The animal fat contained in milk can sour and leave a yellow stain and it also can smell very badly.

Solution:

1. Clean area thoroughly with a mild detergent.

2. Apply a solution of 3 parts bleach to one part water. Let stand for several minutes than rinse with clean water.

3. If stain is still present poultice with 20% hydrogen peroxide and diatomaceous earth.

MUD

Types: Mud, dirt, red clay, etc.

Problem:

Most dirt is not a big problem, however red clay can leave some nasty stains that can be difficult to remove

Solution:

1. Clean area thoroughly with a mild detergent of stone soap and plenty of cold water to remove all surface dirt.

2. If dirt has left any stains then poultice with household ammonia and StoneMedic SPP Stone Poultice Powder.

3. If the stain was caused by red clay and the ammonia does not remove it, then poultice with a mixture of one part laundry detergent and 2 parts diatomaceous earth.

MUSTARD

Types:

All types

Problem:

Mustard contains turmeric, which is a yellow spice that causes the yellow staining. Mustard stains can be very difficult to remove, especially if the stain is old.

Solution:

1. Thoroughly clean the stained area with cold water and a mild detergent (blot only).

2. Pour 20-50% hydrogen peroxide directly on the stain and add a few drops of ammonia. Leave until bubbling stops.

3. If the stain is still present poultice with 20-50% hydrogen peroxide and diatomaceous earth.

CAUTION: Do not use ammonia or alkaline type cleaners on mustard stains as this may permanently stain the stone.

NAIL POLISH

Type:

Enamel or lacquer types

Problem:

Nail polishes will dry very quickly. For this reason the dyes they contains will rarely penetrate into polished stone. Rough texture stone is another problem. The nail polish will penetrate immediately causing a difficult to remove stain.

Solution:

1. Immediately blot with a clean white cloth.

2. Apply acetone to the stain and blot with a clean white cloth. Continue to apply acetone and blot until stain disappears.

3. If stain is old, poultice with a solvent (Mineral spirits, alcohol, etc) and diatomaceous earth.

OIL

Type:

Automotive, cooking and lubricating, etc

Problem:

Oil can be very difficult to remove on most stone. Oils will penetrate deep into the stone and will spread out throughout the stone. Try to clean up the oil spill as soon as it happens.

Solution:

1. Blot up any excess oil with a clean white cloth. If oil has dried on the surface scrape with a sharp razor.

2. If oil is still fresh and has penetrated into the stone, sprinkle a generous portion of StoneMedic SPP Stone Poultice Powder on the spill and let stand for 12-24 hours.

3. Remove the dry poultice and prepare a solution of degreaser and water. Apply this solution to the spill and keep it wet for 30 minutes. Vacuum the solution up and blot the remainder with a clean white cloth.

4. If stain is still present poultice with a solvent (commercial paint remover works well) and diatomaceous earth.

PAINT-OIL BASED

Type:

All oil based paints and alkyd resins and solvents

Problem:

Oil based paints are the most difficult paints to remove. The oils and solvents contained in these paints will carry the dyes deep into the stone.

Solution:

1. Immediately blot any excess paint from the surface with a clean white cloth.

2. Apply liberal amounts of mineral spirits (paint thinner) to the spill and blot. Continue to blot until no color is observed on the cloth.

3. Apply a poultice of commercial paint remover and diatomaceous earth.

PAINT-WATER BASED

Type:

All water based paints and polymer resins

Problem:

Very difficult to remove.

Solution:

1. If the spill is fresh, blot immediately with a clean white cloth.

2. Clean area with water and a mild detergent.

3. If stain is dry, scrape paint with a sharp razor blade. If scraping is difficult apply a solution of soap and water to the spill and scrape while wet.

4. If stain has penetrated the stone, poultice with a commercial water rinseable paint remover and diatomaceous earth.

PENCIL

Type:

Graphite and indelible pencil

Problem:

Pencil can be tricky to remove as the graphite may penetrate into the stone. Most commonly the graphite is only on the surface of the stone.

Solution:

1. Try using a pencil eraser to erase the graphite. This procedure will work most of the time.

2. If graphite has penetrated the stone, poultice with denatured alcohol and diatomaceous earth.

PERFUME

Type:

Oils, alcohol and fragrances

Problem:

Oils can penetrate the stone and cause a light oil spot. Alcohols can also react with certain stones and turn a brown color.

Solution:

1. Clean area thoroughly with de-natured alcohol and a clean white cloth.

2. If stain is deep, poultice with denatured alcohol and diatomaceous earth.

PERSPIRATION

Type:

Body oils, salts and enzymes

Problem:

Oils from perspiration are a big problem on walls, countertops etc where hands are constantly touching the surface of the stone.

Solution:

1. Blot the area with denatured alcohol and a clean white cloth.

2. If stain is still present, poultice with denatured alcohol and diatomaceous earth.

BODY FLUIDS

Type:

Urine and vomit

Problem:

Urine and vomit contain acids which can etch polished marble. The proteins contained can also stain the stone and have a terrible odor.

Solution:

1. Try to clean up the accident as quickly as possible. Blot the area with a clean white cloth.

2. Apply a solution of 1 part vinegar, 1 part 35% hydrogen peroxide and 6 parts water. Let the solution soak into stain for several minutes and pick up with a wet vacuum.

3. After treatment above apply a solution of a commercial bacteria/enzyme digester (available at janitorial supply). Cover with a paper towel soaked with digester. Allow to sit overnight. This should remove the odor. It may require several applications of digester to remove the odor.

RUST

Type:

Iron oxide

Problem:

Rust is one of the most difficult stains to remove. It can cause a reddish-brown to yellow stain that can permanently set into the stone.

Solution:

1. If the rust stain is new, try applying a solution of rust remover and water. Mix into a slurry and lightly agitate the area with a soft bristle brush. Rinse with clean water.

Caution: Rust removers may cause etching; be prepared to re-polish the stone.

2. If stain is old and has penetrated into the stone, poultice with rust remover and . diatomaceous earth

Caution: Do not use clay powders; use diatomaceous earth .

3. If #2 above does not work poultice, with hydrofluoric acid and diatomaceous earth.
Caution: Never use bleach; it will only make stain worse.

SHOE POLISH

Type:

All liquid polishes including white

Problem:

Dyes in shoe polish can penetrate the stone leaving a nasty stain.

Solution:

1. If dry, scrape excess polish with a clean sharp razor. Apply a solution of Apeiron's Stone Cleaner/Conditioner to help lubricate the blade and prevent scratching.

2. Clean the area thoroughly with acetone and a clean white cloth.

3. If stain still appears, poultice with a solvent (mineral spirits, etc) and diatomaceous earth.

SMOKE/SOOT

Type:

Smoke and soot from fireplaces and fire damage. Does not include tobacco smoke.

Problem:

Smoke and soot contain particles of oil and carbon which can leave a black ugly stain.

Solution:

1.Wipe excess soot with a clean, dry white cloth.

2.Clean area thoroughly with a solution of stone soap or dishwashing soap in warm water. Use a stiff brittle brush for rough textured stone or concrete.

3. If smoke damage is heavy clean with a solution of degreaser and warm water.

4. If smoke damage is still present, poultice with the degreaser and diatomaceous earth.

SOFT DRINKS

Type: Coke, Pepsi and all other carbonated sodas

Problem:

The coloring and sugars in sodas can cause severe staining.

Solution:

1. If the spill is fresh blot with a clean white cloth.

2. Clean the area thoroughly with a mild detergent and warm water. Flood the stained area thoroughly.

3. If stain is still present, poultice with 20-50% hydrogen peroxide and diatomaceous earth.

SOUP

Type:

All soups and stew containing meat and vegetables

Problem:

Can leave some greasy looking stains that can be difficult to remove, especially if the stain is old.

Solution:

1.Clean the area thoroughly with a solution of ammonia and water.

2. If stained after clean-up poultice with ammonia and diatomaceous earth.

3. If the stain is present, poultice with 20-50% hydrogen peroxide and diatomaceous earth

SOY/WORCESTERSHIRE SAUCE

Type:

All brands of soy and Worcestershire sauces.

Problem:

Coloring and proteins in these sauces can be extremely difficult to remove.

Solution:

1. Clean the area thoroughly with acetone and a clean white cloth. Be sure to blot only.

2. Poultice with a solvent such as mineral spirits and diatomaceous earth.

TAR

Type:

Asphalt, roofing tar, beach tar, etc.

Problem:

Dyes in tar can cause deep staining in stone and concrete.

Solution:

1. Scrape away any excess tar with a clean dry razor blade.

2. Clean the remaining tar with acetone and a clean white cloth.

3. If stain still remains poultice with mineral spirits and diatomaceous earth.

4. If stain is stubborn, poultice with De-Solv-it (available at hardware stores) and diatomaceous earth.

Caution: DO NOT use water with tar. It will harden the tar and set the stain.

TOBACCO

Type:

Smoke stains from cigarettes and cigars

Problem:

Nicotine can cause a light yellow stain that can be difficult to remove.

Solution:

1. Clean area thoroughly with a mild detergent or stone soap and cold water.

2. For heavy tobacco stains clean with a degreaser and cold water.

3. If stain still remains, poultice with degreaser and diatomaceous earth.

TOMATO

Type:

Canned, fresh tomatoes, tomato pastes, juice, etc.

Problem:

Acids in tomato products can etch the surface of polished marble. Can also leave a red stain in porous stones.

Solution:

1. Clean area thoroughly with cold water and a mild detergent or stone soap. Rinse with clear water.

2. If stone is stained, poultice with 20-50% hydrogen peroxide and diatomaceous earth.

3. If stone is etched, re-polish with polishing powder.

INK-TONER

Type:

Copy machine toner and similar inks

Problem:

This is one of the most difficult ink stains to remove. If the stain is allowed to sit it may become permanent.

Solution:

1. Thoroughly clean the area with acetone and a clean white cloth. Continue to clean until no ink is transferred to the cloth.

2. If dye has penetrated the stone,poultice with commercial paint remover and diatomaceous earth.

VEGETABLE

Type:

Green and yellow vegetables

Problem:

Will leave a green yellow stain.

Solution:

1. Clean area thoroughly with a mild detergent of stone soap and cold water.

2. If stain is still present, poultice with 20-50% hydrogen peroxide and diatomaceous earth.

VOMIT

Type:

Human or animal vomit

Problem:

The acids in the stomach have a very low acidic Ph and can severely etch the surface of polished marble. Can also leave a stain depending on what was eaten.

Solution:

1. Clean area through with a mild detergent of stone soap and cold water.

2. Clean are with a solution of household ammonia and cold water. Continue to clean until all stain is gone.

3. If stain is still present, apply a poultice of ammonia and diatomaceous earth

4. If odor is still present apply a solution of enzyme digester (available at janitorial supply). Keep wet for several hours. Covering with a wet paper towel will help keep enzyme solution wet.

5. If stone is etched, re-polish as necessary.

WATER RINGS/SPOTS

Type:

Rings from drinking glasses and hard water spots from drips.

Problem:

Water will not usually stain but will leave a white ring or spot. This ring or spot is deposits of minerals from the water. If the drink contains acid (e.g., lemon in ice tea) it will etch polished marble in the shape of a ring or spot.

Solution;

1. Try buffing ring or spot with dry #000 steel wool.

2. If ring or spot still remains, re-polish as necessary.

3. If ring or spot is very deep, re-honing may be necessary.

Caution: If the stone has been waxed or colored with dyes the ring may have removed the wax or dyes from the surface. To test for waxes or dyes take some acetone and clean an inconspicuous area. If the stone lightens there is a wax or dye on the stone. If this is the case you will need to re-wax or re-dye.

WAX COATINGS

Type:

Waxes, acrylics, urethane, epoxy, etc.

Problem:

Waxes can yellow and give a plastic like appearance. They will also attract dirt.

Solution:

1. If the coating is water based (e.g., acrylics), strip the stone with a commercial wax stripper. Be sure to rinse thoroughly.

2. If the coating is solvent based (waxes, urethane, epoxy), strip with a commercial paint stripper.

3. Once all coatings have been stripped, re-honing and re-polishing may be necessary.

WINES

Type:

All red wines

Problem:

The tannin contained in red wine can severely stain stone.

Solution:

1. Clean the area thoroughly with acetone and a clean white cloth.

Caution: DO NOT use detergent and water; this may set the stain.

2. If stain is still present, poultice with 20-50% hydrogen peroxide and diatomaceous earth .

3. If stain is stubborn, try poulticing with a solvent such as mineral spirits and diatomaceous earth.

WOOD STAIN

Type:

All solvent based stains and dyes.

Problem:

The dyes contained in these stain can be nearly impossible to remove, as they are designed to stain wood. The older the stain gets the harder it is to remove.

Solution:

1. Clean area thoroughly with acetone and a clean white cloth. Continue to clean until no stain is visible on the cloth.

2. Prepare a poultice with commercial paint remover and diatomaceous earth. It may take several attempts to pull these difficult stains out.

YELLOWING

Type:

General yellowing across the surface of most stones, especially white marbles.

Problem:

There are many causes for yellowing of stone. UV light can cause yellowing over time. Iron contained naturally in stone can oxidize and cause yellowing. Inexpensive coatings can cause yellowing. Mastic used to set stone can yellow.

Solution:

1. If the yellowing is caused by iron contained naturally in the stone or if the stone is aging, you will likely never get the yellowing out.

2. If the yellowing is caused by waxes or coating, strip them off according to stripping directions (see waxes).

Yellowing of white marble, particularly the carra types, is very common and cannot be reversed at this time.

EFFLORESCENCE

Type:

A dry white powder on the surface of the stone. True efflorescence is loose and will wipe off easily.

Problem:

Most conditions that cause efflorescence are water related. Efflorescence will continue to be a problem unless the moisture is eliminated.

Solution:

1. DO NOT use any water, cleaners etc in an attempt to remove effloresce. This will only cause more efflorescence.

2. Remove the efflorescence with a dry white cloth or buff using 0000# steel wool. Wait to see if efflorescence returns. If it does, repeat dry buffing.

3. If the efflorescence condition is indoors it may help to install de-humidifiers or turn the air conditioner down to about 72 degrees Fahrenheit.

It can take several months for the stone to dry and completely eliminate the problem.

COPPER

Type:

Copper piping, sculptures, etc.

Problem:

Copper can cause a green stain that can sometimes penetrate deep into stone if allowed to age.

Solution:

1. Remove any excess crust by scraping with a sharp razor blade. If the surface is polished wet the surface with soap and water to prevent scratching the stone.

2. Prepare a solution of one part ammonium and 3 parts warm water. Apply this solution to the surface and agitate with a soft bristle brush. Rinse with clean water.

3. If stain is still present, poultice with ammonium chloride and StoneMedic SPP Stone Poultice Powder.

ALUMINUM

Type:

All aluminum, usually from windows, awnings, etc.

Problem:

Can leave a crusty, whitish residue.

Solution:

1. On polished surfaces, scrape any crusty residue from the surface with a sharp razor blade. On textured surfaces use a hard brush.

2. On textured surfaces, mix one part hydrochloric acid in 20 parts water, apply solution and agitate with a soft nylon brush.

3. On polished surfaces, dilute one part hydrochloric acid in 40 parts water, apply solution and agitate with a soft nylon brush. Re-hone and re-polish the surface to return the luster.

Caution: Be extremely careful with hydrochloric acids near marbles; they will severely etch the surface.

CRYSTALLIZATION

Type:

Crystallization is a process used to polish marble. Includes all brands

Problem:

If this process is overused in can build up and turn yellow on light colored stones. It also may give the stone a plastic-like look.

Solution:

1. Crystallization can be stripped chemically using a solution of oxalic acid and water. Start by using one cup of oxalic acid to one gallon of water. Apply this solution to the stone and agitate with a hog hair pad.

2. Once coating is removed chemically, re-honing and re-polishing will be necessary.

3. An alterative method to chemical stripping is to simply diamond-grind the crystallized cap off, then re-hone and re-polish.

MORTAR

Type:

Concrete, thin set, mud sets, grout films and other concrete based residues.

Problem:

Can leave a film on surface of stone that can be hard to remove. Concrete will very rarely stain unless it is colored.

Solution:

1. If the film is light, clean the surface of the stone with a heavy duty stone cleaner and water.

2. If film is stubborn, clean the surface with a solution of one part hydrochloric acid to 20 parts water on textured stone and one part hydrochloric acid to 40 parts water on polished stone. Agitate until mortar is removed.

3.Re-hone and re-polish marble surfaces.

Caution: Hydrochloric acid can severely etch polished marble, use extreme caution.

RUBBER

Type:

All types of tire marks created by cars, trucks, carts, etc.

Problem:

Can leave a rubber track on surface. Tire marks will rarely but they can be difficult to remove on porous surfaces like concrete, brick and rough stone.

Solution:

1. Clean thoroughly with a degreaser and warm water. Scrub with stiff bristle brush.

2. If marks are stubborn, clean with a solvent such as mineral spirits. Use a stiff bristle brush.

STREAKING

Type:

All types of streaking, appearing as a cloudy uneven pattern on the surface.

Problem:

Streaking can be caused from the following:

- Dirty mops used to mop floor.

- Improper application of waxes or coatings.

- Improper cleaners.

- Using too much cleaner.

Solution:

1. Determine what is causing the streaking and eliminate the cause.

2. If streaking is caused by wax build-up, strip the surface with a commercial wax stripper.

3. If streaking is caused by using too much cleaner, dirty mop or improper cleaner, re-mop the floor with stone soap and buff with a white nylon pad.

ALKALINE BURNS

Type:

Burns from alkaline strippers, ammonia and heavy duty stone cleaners

Problem:

Alkaline burns are caused by salts contained in cleaners that are deposited below the surface of the stone. The etch marks appear similar to an acid etch mark.

Solution:

1. Attempt to remove burns with a mild acid. If the stone is a polished marble, do not use acid.

2. If dealing with a polished marble, re-hone and re-polish the burn marks.

3. If the burns appear light, try re-polishing only.

STUNS

Type:

Stun marks caused by heavy objects dropped on a marble floor, also high heel marks

Problem:

Stun marks are very common on some marbles. They are usually caused by walking across the floor with high heels, and they leave a white spot on the marble. Stun marks can be telegraphed to the bottom of the stone. They are caused by the individual crystals in the stone exploding.

Solution:

Try grinding, honing and polishing the floor. This may eliminate some light stuns but many times they cannot be removed.

SWIRLS

Type:

Circular pattern swirls.

Problem:

Swirls marks appear as circular patterns on the surface of the stone. This is usually caused by a floor machine using abrasive pads like steel wool or pads that have trapped sand and grit under them.

Solution:

1. Light swirls can be removed by re-polishing. Heavy swirls will require re-honing and re-polishing.

Caution: When using any type of rotating machine (floor buffer, automatic scrubber, hand machine, etc.) never hold the machine stationary while operating. Keep it moving. Keeping machine stationary may cause severe swirling.

LEATHER

Type:

Shoe and clothing leather

Problem:

Leather contains oils and dyes which can penetrate into stone and cause staining.

Solution:

1. Clean the area thoroughly with acetone and a clean white cloth.

2. If stain is deep, poultice with a solvent such as mineral spirits and diatomaceous earth.

CARPET PADDING

Type:

Carpet padding made of jute.

Problem:

Carpets that have jute backing can leave a difficult to remove brown to yellow stain on stone surfaces. The jute is made of a burlap type material. Jute backing can cause some very deep stains that can penetrate throughout the stone.

Solution:

1. Scrape any excess carpet padding from the surface.

2. Clean area thoroughly with a mild detergent and clean cold water.

3. Poultice with 20-50% hydrogen peroxide and diatomaceous earth.

PAPER

Type:

Brown paper bags and construction paper

Problem:

It is very common for contractors to cover a new stone floor with brown construction paper. If this paper gets wet or slightly wet it will bleed into to stone leaving an ugly brown stain.

Solution:

1. Clean area with acetone and a clean white cloth.

2. Poultice area with a solvent such as mineral Spirits and diatomaceous earth.

SILICON

Type:

Silicon caulking used for grouting and anchoring stone

Problem:

This can be a serious problem when caulking is used to help hold anchors in place on stone wall panels. The silicone will start to bleed through the stone in the area were the anchors are. It may take several months before the silicon becomes visible.

Solution:

The only known technique that will remove this silicon staining is the following:

Prepare a poultice with commercial paint remover and diatomaceous earth. May require a dozen applications.

If the silicon has not completely cured, the staining may return again.

SOAP FILM

Type:

Soap film on shower walls and vanity tops

Problem:

Soap from showers can build up on shower walls leaving a film that will not wash off with regular cleaning.

Solution:

1. If soap film is thick, scrape with a razor blade. Wet the surface to avoid scratching.

2. Once all heavy build-up is removed, clean with acetone and a green scrub pad.

3. There are also commercial soap film removers on the market which work well, but make sure that they do not contain acids which can etch polished marble.

Several poultices may need to be applied to completely remove all staining.

APPLYING THE POULTICE

Once the stain is identified, the following steps can be followed:

1. Identify the stain.

2. Clean the stained area to remove excess from the surface.

3. Wet the stained area with distilled water. Pre-wetting fills the pores of the stone with water, isolating the stain and accelerating the removal by the chemical.

4. Prepare the poultice. If a powder is to be used, pre-mix the powder and the chemical of choice into a thick paste with the consistency of peanut butter. Wet it enough so that it does not run. If a paper poultice is to be used, soak the paper in the chemical. Lift the paper out of the chemical until it stops dripping.

5. Apply the poultice to the stain, being careful not to spill any on the un-stained areas. Apply poultice approximately one-quarter-inch thick, overlapping the stain area by approximately one inch (2-½ centimeters).

6. Cover the poultice with plastic (food wrap works very well). Tape the plastic down to seal the edges. Allow the poultice to dry thoroughly. This is a very important step. The drying of the poultice is what pulls the stain from the stone into the poultice material. If the poultice is not

allowed to dry, the stain may not be removed. Drying usually takes from 24 to 48 hours.

7. After 24 to 48 hours, remove the plastic.

8. Remove the poultice from the stain. Rinse with distilled water and buff dry with a soft cloth. If the stain is not removed, apply the poultice again. It may take five applications or more for difficult stains.

9. Some chemicals may etch or burn the marble surface. If this occurs, apply a polishing powder and buff to restore the shine.

UNKNOWN STAIN REMOVAL PROCEDURE

The following procedure is to be used only if you have no indication of the stain type. Be sure to test this procedure before applying it to the entire area.

1. Remove excess stain material from the surface by scraping with a very sharp razor blade.

2. Blot the stain with acetone and a clean white cloth. If the staining material transfers to the white cloth, continue blotting until no additional stain is transferred. Proceed to step # 6. If no stain is transferred to the white cloth proceed to step #3.

3. Clean the area thoroughly with cool water and stone soap or neutral cleaner. Use a white cloth to remove excess solution. If stain is transferred to the white cloth, proceed to Step #7. If stain is not transferred proceed to Step #4.

4. Blot the area with 20% hydrogen peroxide and a clean white cloth. If the stain material transfers to the white cloth, continue blotting until no stain is transferred. Proceed to Step # 8. If no stain is transferred proceed to step # 5.

5. Clean the area thoroughly with an iron-removing cleaner. Agitate with a soft brush or cloth and remove excess with a white cloth. Use caution; most iron-removing chemicals contain acids and may etch the stone. If stain is lightened, proceed to step # 9. If stain is not changed by this method proceed to step #10.

6. Apply a poultice using Diatomaceous earth and either mineral spirits or commercial paint remover. Several poultices may be needed. Use only one solvent type. Do not mix solvents. Continue to poultice until stain is removed. If stain is not removed or lightened after five attempts proceed to step #10.

7. Apply a poultice of diatomaceous earth and an alkaline stone cleaner or heavy duty neutral cleaner. Several poultices may need to be applied. Continue to poultice until stain is removed. If stain is not removed or lightened after five attempts proceed to step #10.

8. Apply a poultice of diatomaceous earth and 20% hydrogen peroxide. Do not use clay or fuller earth powders that contain hydrogen peroxide. If stain is difficult to remove, re-poultice using 50% hydrogen peroxide. Several poultices may need to be applied. Continue poulticing until stain is removed. If stain is not removed or lightened after five attempts, proceed to step #10.

9. Apply a poultice with diatomaceous earth and an iron-removing chemical. Continue poulticing until stain is completely removed. Re-honing and/or re-polishing may be necessary on marble. If stain is not removed or lightened after five attempts proceed to step # 10.

10. If stain is not removed, it is likely that it has become permanently set or it is part of the stone. Replacing the stone or using a rug to cover the stain may be the only options.

WHAT IS A POULTICE?

A poultice is an absorbent material applied to a surface to draw out a stain. It can be a powder, paper or a gel. The most common poultices in use today are powders. A number of powders are very absorbent and are ideal for stain removal. Some typical powders used in poultices are listed below:

- Clays and fullers earth
- Talc
- Chalk (whiting)
- Sepiolite (hydrous magnesium silicate)
- Diatomaceous earth
- Methyl cellulose
- Flour

Clays and diatomaceous earth are usually the best. Do not use whiting or clays containing iron. When using acidic chemicals the acids will react with the iron and may cause yellowing of certain stone surfaces. It is best to purchase poultice powder materials from a reputable supplier of products for this purpose.

Paper poultices can be quite effective on mild stains. They are easier to apply than powder poultices and are also easier to remove. Some typical paper poultices listed below:

- Cotton balls
- Paper towels

- Gauze pads

Gel poultices are usually thick chemical gels that are designed to be applied to a stain with the use of powders or papers. They work effectively with certain stains. When purchasing poultice materials, ask if they contain stain removing chemicals or if they need chemicals added. Some powder and gel poultices contain chemicals, and all you need to do is add water. Never mix additional chemicals with a poultice that contains its own chemical formulation.

VENUE REVITALIZATION SPECIALISTS

Daily stone care maintenance by Renue Systems

(You can distribute this to your customers after your restoration)

The easiest and least expensive way to maintain a marble floor is through daily housekeeping. First, catch dirt, water and ice-melting salts at the door by placing large mats with waterproof backings at all entrances (salt dissolves and pits marble). Second, keep the floor clean of superficial dirt by using a minimum amount of warm water and a neutral floor cleaner, and a cotton string mop. Frequent mopping will help prevent soil from penetrating the surface. Whenever possible, quickly blot spills, especially acid based, oil and grease, to minimize their absorption into the stone.

1. Dust mop all floors using microfiber dust mop.

2. Set out Wet Floor Signs. Mop floors using the following items and sequence:

a. Dual container mop bucket. Fill with warm water.

b. Chemical- Renue Stone Soap made specifically for the care of marble floors. DO NOT USE high alkaline, acidic or ammoniated abrasive cleaners. Follow the label instructions.
c. Mop floors with a large cotton mop head in a figure eight pattern. Do approximately 60 square feet (6 square meters) and then change the water in the bucket.

d. Dry mop that same section of floor with another large cotton mop head. This is done to avoid streaking.

Replace this mop when it no longer dries the floor.

e. Speed dry the floors using an air mover.

Always clean up any spills promptly. The faster the response time to spills the less likely for any slip and fall accidents or damage to the marble.

VENUE REVITALIZATION SPECIALISTS

Job Site Evaluation (no particular order):

Questions to ask the customer-

- Do you currently have money budgeted for the care of your floors? If so, what is that budget?
- Do you maintain these floors in house or do you outsource?
- Do you currently have a maintenance program for your floors outsourced to a professional company? If so, how often do they come? Do you know how many people they send to work on your floors?
- Do you think that is enough service for your floor or too much?
- Do you know the different types of stones on your floor?
- How have they been maintained in the past? Polishing, crystallizing, grinding and or diamond honing? What method is the current vendor or in house team using on the floors?
- What do you like and dislike about the service you receive now and the overall condition of your floors?
- Is this work done 1st, 2nd or 3rd shift?
- Are you interested in monthly or quarterly service for your floors?
- What other areas do you have with natural stone that may need work such as countertops, bathrooms and elevators?
- How do you want your flooring to look; High gloss-Semi gloss, Satin or Matte?

To do list for evaluation-

- What is the size in square feet (or square meters)?
- What is the condition of the installation? Is there lippage? Is there missing grout?
- Do the grout lines need cleaning also?
- What is the size of the tiles? Are they small mosaics or larger 12”x24” tiles?
- What type(s) of stone?
- Did you confirm with a scratch and acid test?
- Is there a coating on the floor? This is very important and one of the biggest mistakes made by novice restorers.
- What is the current floor finish (polished, honed or textured)?
- Make sure to take good photos of the floor.
- It is suggested to provide a free demonstration to show your quality and to determine the appropriate procedure and length of time needed.
- Are there any repairs needed such as filling holes or fixing grout?

Conditions with the flooring to be on the lookout for:

Lippage

This is where the surface of the tiles are not all even or flush with one another. An industry trick is to put a quarter on the floor and slide it from side to side over the surface of two tiles to see if they are level with each other. If not, the coil may stop or make a click noise as it transitions from tile to tile.

“Pitting & Spalling” is observed by the presence of small chips and holes on the surface of the stone. Pictures are as shown below.

Pressure from trapped moisture and salt melt will cause the pores inside the stone to expand resulting in small pieces of stone breaking-off. We called this condition “pitting”.

Moisture when trapped inside the stone brings salts up towards the surface.The salt crystals get trapped just below the stone’s surface causing crystal growth (recrystallization) in the pores that then causes stress on the stone. This eventually results in holes on the surface. We called this condition “spalling”.

If the conditions contributing to the phenomenon above continue, the stone will further deteriorate.

VENUE REVITALIZATION SPECIALISTS

Efflorescence

Efflorescence appears as a white powdery residue on the surface of the stone. It is a common condition on new stone installations or when the stone is exposed to a large quantity of water, such as flooding. This powder is a mineral salt from the setting bed. To remove efflorescence do not use water. Instead, buff the stone with a clean polishing pad or #0000 steel wool pad. The stone will continue to effloresce until it is completely dry. This drying process can take several days to as long as one year. Do not seal the stone until any efflorescence is gone.

VENUE REVITALIZATION SPECIALISTS

How to fill holes in travertine floors

1) Ensure the surface is clean, dry and free of debris, waxes and/or coatings.

2) Mix Traverfill powder from Stone Pro in a bucket with clean water. For smaller holes, mix into a thinner consistency. For larger holes, mix into a slightly thicker consistency. (Only mix as much as can be used in 10-15 minutes).

3) Apply Traverfill onto the surface with a small putty knife or grout float.

4) Allow Traverfill to completely dry on the surface. This may require 10-15 minutes depending on area temperature and moisture.

5) After Traverfill is completely dry, clean the excess Traverfill using a moist sponge.

NOTE: If the Traverfill is not completely dry when cleaning (step #5), the moist sponge may remove some Traverfill from the holes repaired.

For marble and other tiles we suggest using Akemi Marmorkitt Polyester Marble Filler knife grade with Akemi polyester color kit to match the floor. Read the instructions carefully and then buff and polish the area as you would normally for that floor.

Production rates for natural stone

Production rates below calculated for common or average conditions

Refinishing marble with diamonds……40-50 square feet / hour

Refinishing granite with diamonds……10-20 square feet / hour

Polishing powders and compounds (marble)…….300-500 square feet / hour

Crystallizing (marble)……450-550 square feet / hour

Countertop and stairs…….6-8 square feet / hour

Lippage removal……..…..10-15 square feet / hour

Note to convert square feet to square meters simply divide by ten.

VENUE REVITALIZATION SPECIALISTS

Other commonly used products

VMC Crystallizer “The Pink Stuff”

Uniblack 1 Treatment is a very strong, concentrated black color enhancer designed specifically to eliminate the defects of black granite. Its application darkens the surface of the material and makes it more unified in color and consistency.

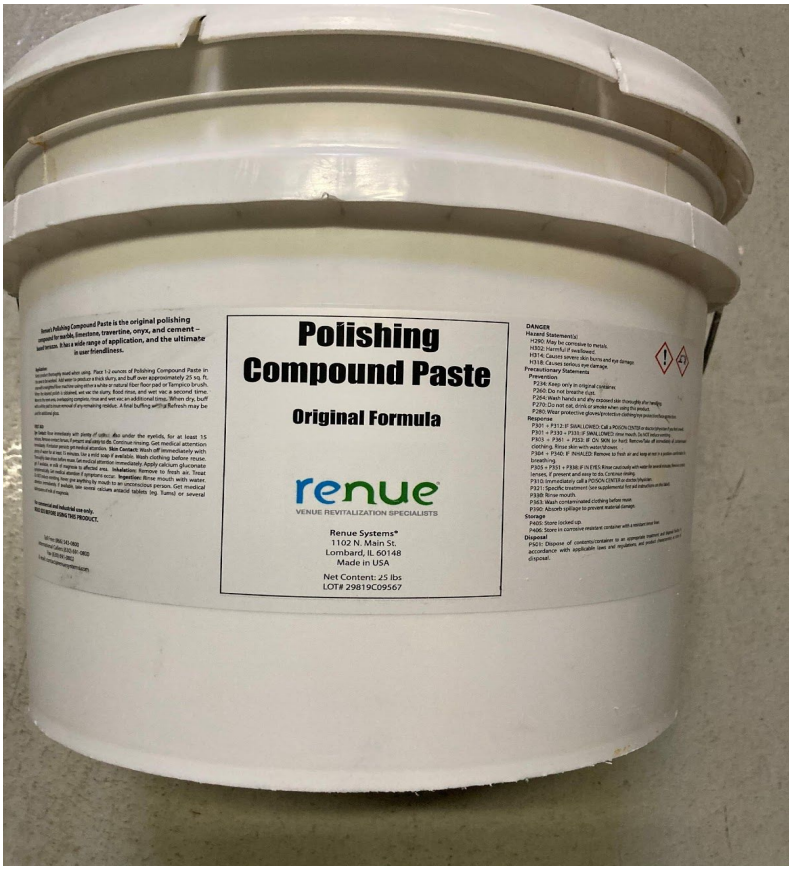
VENUE REVITALIZATION SPECIALISTS

Stone Medic marble polishing compound- User friendly paste is used to polish, restore and maintain worn marble, travertine, limestone, agglomerates and other calcium-containing materials. It helps enhance water and stain resistance.

VENUE REVITALIZATION SPECIALISTS

Renue Polishing Compound

Similar to Stone Medic



VENUE REVITALIZATION SPECIALISTS

Renue OCP (One Cut Polish) Diamonds

Unique abrasive formulation allows for scratch removal on marble, limestone, travertine and cement based terrazzo in one step resulting in significant labor savings!

- Special shape to increase scratch removal up to 26% and floor contact surface by 50%
- Carefully calculated surface area for maximum performance under stand floor machines
- Lone life- 5mm segment height
- Velcro backed. Large water path for greater flushing and cooling increasing the life of the segments.