

Clean Like a Pro Natural Stone





Clean Like a Pro

How to Clean Stone

Over the past few years, stone floors, counters, showers and decorative tile have seen a huge



increase in popularity. Stone floors are natural, beautiful, and always stylish. The naturally cool, hard surface is ideal for warm climates and does not harbor dust or allergens.

This ancient and recently popular building material represents a new opportunity for retail stores with cleaning departments, or for those positioning themselves as professional cleaning centers.

The U.S. stone product market has benefited from lower prices, new construction and a trend for homeowners to invest in their homes by upgrading to stone countertops and flooring.

And the U.S. demand for decorative tile will increase annually to 3.1 billion square feet in 2020, with a total \$6.1 billion value, according to an industry research firm.

When cleaning stone, it's important to realize that not all stones are created equal; each type represents a unique challenge in maintaining the beautiful appearance of this ancient material. First and foremost, a stone's geological classification and composition must be known. This information will help you to identify what cleaning products to use and what cleaning methods to employ.

Natural stone is categorized into three basic geological classifications by their respective formation processes: **sedimentary**, **metamorphic** and **igneous**. Additionally, stones in each category can be either **calcareous** or **siliceous**.

Sedimentary rocks are formed by the deposition and subsequent cementation of materials that are commonly found in natural bodies of water. Sedimentation is a physical process by which



suspended solids such as sand, sea shells and organic material drift down to the bottom of lakes and oceans, and are glued together by dissolved minerals. Limestone and travertine are sedimentary stones.

Metamorphic rocks arise from the transformation of existing rock types. Existing rocks, including sedimentary, igneous or older metamorphic types, are subjected to heat and pressure and undergo physical and chemical changes. Marble is a metamorphic rock, being transformed limestone.

Igneous rocks are formed through the cooling and solidification of magma or lava. Solidification into rock occurs either below the surface, producing intrusive rock, or on the surface, producing extrusive rock. Igneous rock may form with crystallization, producing granular, crystalline rock, or without crystallization, producing natural glasses. Granite is an intrusive igneous rock.

The three basis types of stone can be further divided into calcareous or siliceous.

Calcareous stone is composed mainly of calcium carbonate, a chemical compound commonly found in natural stone, shells and pearls. Calcium carbonate is sensitive to acidic solutions, so mild, non-acidic cleaners are recommended.

Siliceous stones, as the term implies, are composed primarily of silicates, such as quartz, feldspar, or mica. A siliceous stone is generally resistant to most acids found in the kitchen. Even so, acidic cleaners should be avoided here too, as these stones may contain trace levels of minerals that are acid sensitive.

Materials that contain calcium or magnesium carbonate (marble, limestone, travertine, onyx) will react to acidic foods (i.e. lemons and tomatoes) and acidic liquids like soda, vinegar, lemon juice, and many common household cleaners. This reaction will dull the surface and roughen the texture, a process known as **acid etching**.

Stone	Formation	Type	Acid Sensitivity	Abrasion Resistance
Granite	Igneous	Siliceous	Resistant (Most Acids)	High
Limestone	Sedimentary	Calcareous	Sensitive	Medium
Marble	Metamorphic	Calcareous	Sensitive	Medium
Onyx	Metamorphic	Calcareous	Sensitive	Low
Quartzite	Metamorphic	Siliceous	Resistant (Most Acids)	High
Sandstone	Sedimentary	Siliceous	Resistant (Most Acids)	High
Serpentine	Metamorphic	Calcareous	Sensitive	Medium
Slate	Metamorphic	Siliceous	Resistant (Most Acids)	Medium
Soapstone	Metamorphic	Siliceous	Resistant	Low
Travertine	Sedimentary	Calcareous	Sensitive	Medium

The above information should always be consulted when finding the right cleaner for a particular stone. For example, acid based cleaners, such as Kleenco's Shower-Kleen, must not be used to clean certain surfaces, such as marble showers. As noted above, marble is sensitive to acids. So it must be cleaned with a non-acid cleaner, such as Kleenco's PK-200, which will eliminate soap scum and body oils. Additionally, due to marble's medium abrasion resistance, a specialty cleaner like Kleenco's Nu-Glass can be used afterwards to remove any water spots (surface deposits of calcium).

However, if the shower was constructed using soap stone an abrasive cleaner must not be used. As noted above, soapstone has an extremely low resistance to abrasion. But, it is also acid resistant. So in this case, Shower-Kleen can be used.

When cleaning a stone, never use product that contains hydrofluoric acid (not to be confused with hydrochloric acid). The fluoride ions present will attack even the most acid-resistant stone. Kleenco's Lightning-Kleen is a product that should never be used on any type of stone.

Avoid using harsh, concentrated alkaline cleaners and degreasers on stone. The application of these products may cause efflorescence (the appearance of whitish deposits locally or uniformly over the surface of the stone). Efflorescence is caused by soluble salts, which can originate from many sources, including mortar, improper cleaning agents, rising damp, de-icing salts, chemical landscaping treatments or air pollution.

Spalling is the separation and breaking away of layers or small pieces of stone and can be caused by the use of improper cleaning agents that leave a residue that is capable of growing crystals that increase the internal pressure in the stone. Susceptible stones cannot resist the internal pressure and small pieces of stone will break off causing microscopic pits that will detract from the stone's luster.

Cleaning Tips for your Customers

- Coasters under all beverages. A practical idea, and especially important for acid-containing beverages such as citrus drinks and sodas.
- Trivets will protect heat sensitive stones from damage caused by hot pans.
- All polished stone, including those resistant to abrasion, can lose luster if subjected to excessive, repeated or prolonged exposure to sand and grit. Frequent mopping with an untreated dust mop is recommended.
- Use mats or area rugs inside and outside of entrances. This will help to minimize the sand, dirt and grit that may scratch stone floors. Be sure that the underside of the mat or rug is slip-resistant.
- Vacuum cleaners should be of the straight suction type (never use a vacuum with a beater bar or brush roll). Always use natural hair soft bristle brushes and avoid metal tools. Vacuums should have rubber (not plastic) wheels that are in good operating condition.
- To avoid stains and etching, immediately blot spills with a paper towel or soft cloth. Don't wipe the area, as that will spread the spill. Flush the area with water and mild soap and rinse several times. Dry the area thoroughly. Repeat if needed.

Cleaning

Never use vinegar or products containing lemon or phosphoric acid. These may dull or etch calcareous stones. On certain soft stones (soapstone) do not use abrasive cleaners. Clean stone surfaces with a diluted solution of Renaissance Stone Floor Cleaner. Use a clean mop on floors and a soft cloth for other surfaces.

Do not use acidic cleaners to remove soap scum in shower areas. All calcareous stones will be damaged. Instead use Kleenco's PK-200 All-Purpose Cleaner and if necessary follow with non-acid Nu-Glass to remove hard water deposits

Many commercially available rust removers (laundry rust stain removers, toilet bowl cleaners) contain trace levels of hydrofluoric acid (HF). This acid will damage all stones including acid resistant siliceous stones by attacking the silicates and other minerals.

Sealing

Sealing is a common step taken on some stones as an extra precaution against staining. In fact, the sealing products used in the stone industry are "impregnators" such as Kleenco's Renaissance Stone Saver, which do not actually seal the stone, but more accurately act as a repellent against oil and water borne soils. Sealing does not make the stone stain proof, rather it makes the stone more stain resistant. When consulting with your stone supplier, you may find that many stones do not require sealing. However, applying an impregnating sealer is a common practice.

When considering sealing, remember that sealing the stone does not make it stain proof, but makes it more stain-resistant.

Stain Removal Steps

Surface stains can often be removed by cleaning with the appropriate Kleenco solution. In some cases, first cleaning the stone then oxidizing the stain with Hydrogen Peroxide (12% solution) will remove deeply set stains.

What Type of Stain is It?

The following section describe the types of stains you may have to deal with, the appropriate household chemicals to use, and how to prepare and apply a poultice to remove the stain. *Always test an inconspicuous area of the stone to be cleaned before proceeding with any of these steps.*

- **Oil-based** (grease, plumbers' putty, tar, cooking oil, milk, cosmetics) An oil-based stain will darken the stone and normally must be chemically dissolved so that the source of the stain can be flushed or rinsed away. Clean gently with a diluted solution of Kleenco's PK-200. Rinse with water and buff with a soft clean cloth.
- **Organic** (coffee, tea, wine, fruit, tobacco, paper, food, urine, leaves, bark, bird droppings) May cause a pinkish-brown stain and may disappear after the source of the stain has been removed. Outdoors, with the sources removed, sun and rain action will generally bleach out the stains. Indoors, first clean with a diluted Renaissance Stone Cleaner followed with an oxidizing rinse of 12% hydrogen peroxide (hair bleaching strength) and a few drops of ammonia.
- **Metal** (iron, rust, copper, bronze) Iron or rust stains are orange to brown in color and follow the shape of the staining object such as nails, bolts, screws, cans, flower pots, or metal furniture. Copper and bronze stains appear as green or muddy-brown and result from the action of moisture on nearby or embedded bronze, copper or brass items. Metal stains must be removed with a poultice. (See www.marbleinstitute.com/consumers/poultices/ on using a poultice). Deep-seated, rusty stains are extremely difficult to remove and the stone may be permanently stained.
- **Biological** (algae, mildew, lichens, moss, fungi) First clean with a diluted solution of Renaissance Stone Cleaner followed with an oxidizing rinse of 12% hydrogen peroxide (hair bleaching strength) and a few drops of ammonia.
- **Ink** (magic marker, pen, ink) First clean with a diluted solution of Renaissance Stone Cleaner followed with Kleenco's X-Out Graffiti Remover.
- **Paint** Small amounts can be removed with Kleenco's X-Out Graffiti Remover, or scraped off carefully with a razor blade. Heavy paint coverage should be removed only with a commercial "heavy liquid" paint stripper available from hardware stores and paint centers. These strippers normally contain caustic soda or lye. Do not use acids or flame tools to strip paint from stone. Paint strippers can etch the surface of the stone; repolishing may be necessary. Follow the manufacturer's directions for use of these products, and flush the area thoroughly with clean water. Protect yourself with rubber gloves and eye protection, and work in a well-ventilated area. Use only wood or plastic scrapers for removing the sludge and curdled paint. Normally, latex and acrylic paints will not cause staining. Oil-based paints, linseed oil, putty, caulks and sealants may cause oily stains. Refer to the section on oil-based stains.

- **Water Spots and Rings** (surface accumulation of hard water). First clean with a diluted solution of Renaissance Stone Cleaner followed by Kleenco's Nu-Glass. Not recommended for soft stones such as soap stone.
- **Fire and Smoke Damage** Older stones and smoke or fire stained fireplaces may require a thorough cleaning. When the smoke is removed, there may also be some etching (due to carbonic and other acids in smoke). Kleenco's Go Smokey may save time and effort.
- **Etch Marks** (caused by acids left on the surface of the stone) Some materials will etch the finish but not leave a stain. Others will both etch and stain. Contact your stone dealer or call a professional stone restorer for refinishing or re-polishing etched areas.
- **Efflorescence** (a white powder that may appear on the surface of the stone) Efflorescence is caused by the deposition of mineral salts carried by water from below the surface of the stone. When the water evaporates, it leaves behind a powdery substance. If the installation is new, dust mop or vacuum the powder. You may have to do this several times as the stone dries out. Do not use water to remove the powder; it will only temporarily disappear. If the problem persists, contact your installer to help identify and remove the cause of the moisture.
- **Scratches and Nicks** Slight surface scratches may be buffed with dry 0000 steel wool. Deeper scratches and nicks in the surface of the stone should be repaired and repolished by a professional.
- **Using a Poultice** Go to www.marble-institute.com/consumers/poultices/ for more information, or call a stone professional (recommended).

Call your professional stone supplier, installer or a restoration specialist for problems that appear too difficult to handle.



Renaissance Stone Floor Cleaner

Formulated to maintain the natural beauty of stone.

Renaissance Stone Floor Cleaner is a neutral, non-abrasive cleaner designed for daily cleaning of all types of natural stone surfaces, including marble, granite, onyx, slate, terrazzo and limestone.

- Specially formulated to wipe away everyday soils
- Neutral pH is safe for all types of stone and grout
- Streak-free
- No rinsing required
- Concentrated for peak economy

Renaissance Stone Floor Cleaner is a daily use, pH-balanced stone cleaner designed to safely clean all stone surfaces without harming the stone's natural crystalline structure. No rinsing required! For use on all marble, limestone, granite, slate, terra cotta, terrazzo and agglomerate floor surfaces.

Because it contains no harsh alkalis or damaging acids it's safe enough for use on historic preservation and restoration projects, yet strong enough for new construction. Will not etch the most sensitive calcareous stone surfaces or causing spalling or efflorescence. Renaissance Stone Floor Cleaner is easy to use. Simply dilute with water and apply with a terry mop. Rinse mop frequently and replenish cleaning solution as it becomes visibly soiled.