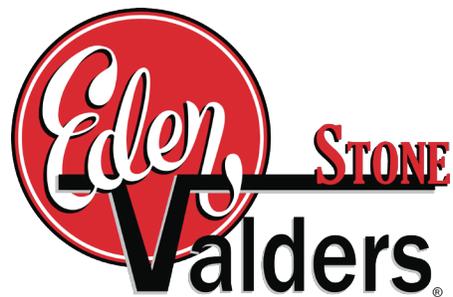


# CARE AND MAINTENANCE OF NATURAL LIMESTONE



*How to Keep Your Natural Stone Surface Looking its Best*



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## *How to Keep Your Natural Stone Surface Looking its Best*

Adding natural stone to a home, office or commercial building increases its value and aesthetic beauty. Just as it has endured millions of years of exposure to the elements in nature, natural stone will last generations when used in architectural applications. Proper care and maintenance are an important part of preserving its reliability and keeping it looking its best.

This guide provides tips and techniques designed to help you optimize the beauty of your natural limestone.

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## WHAT IS LIMESTONE?

Natural limestone is among the most beautiful stone products available for architectural uses. When compared to most other types of stone, limestone has a uniform texture and when used externally, weathers nicely and achieves a beautiful patina over time.

Depending where the stone is harvested, it will vary in color, often with multiple colors from a single quarry. Hues of white, cream, beige and gray are common backgrounds. Other colors can include light pinks, blues, greens, reds and purples. Limestone often includes shell and fossil impressions making each piece as unique as the sediment left behind.

The quality and density of stone can also differ greatly from one quarry to another. Limestone classified as Type III, such as the dolomitic limestone harvested from the Niagara Escarpment, is superior to the less dense weather and stain-prone Type II limestone.



## ADDITIONAL BENEFITS OF NATURAL LIMESTONE INCLUDE:

- Durability and outstanding wear resistance
- Ability to withstand water penetration
- Superior strength
- Freeze/thaw resistance
- Naturally harvested with no hazardous waste
- Minimal maintenance

# GENERAL CLEANING GUIDELINES

As is true of all natural stone, some maintenance of your limestone will be required to keep it looking its best. Each surface finish varies in its susceptibility to soiling and staining—a highly polished surface will naturally resist the accumulation of dirt and grime while a honed finish may need more regular maintenance.

Typically, the type of cleaning product used will be the same whether the surface is exposed to the elements outside or used in the interior of a building, but the frequency of cleaning will be different.



## INTERIOR SURFACES

Your interior natural stone should receive the same care and consideration that's given a fine wood finish. Cleaning methods are similar, but vary slightly depending on the type of stone finish.

### 1. Polished Finish

Normal maintenance requires only periodic washing with clean water and neutral (pH-7) cleaners. Such "soapless" cleansers are preferred because they minimize streaking and the build up of film.

First, wet the surface with water, then apply the cleaner. Wipe with a soft cloth and small overlapping sweeps, and rinse thoroughly after washing. Dry with a soft cloth.

To remove soap scum in tub and shower surrounds, use a non-acidic soap scum remover. You may also use a solution of ammonia and water (½ cup ammonia to 1 gallon water), however, frequent use of products containing ammonia may dull the surface. To help prevent soap scum buildup, wipe down or use a squeegee after each use and, when cleaning vertical stone surfaces, always work from the bottom to the top.

## LIMESTONE SURFACE FINISHES



Various finishes can be applied to achieve a desired look — from formal to rustic:

- **Polished** – Glossy surface that brings out the stone's full color and character
- **Honed** – Satin finish with little or no gloss. Generally preferred for floors, stair treads and other heavy-traffic applications
- **Sandblast** – Slightly abraded finish, most commonly used in exterior applications where extra traction is desired
- **Flamed (Thermal)** – Natural-looking cleft, bringing out warmer tones such as corals and pinks (often with wide variation and unpredictable results)
- **Bush Hammered** – Heavily abraded surface, often used as an accent texture

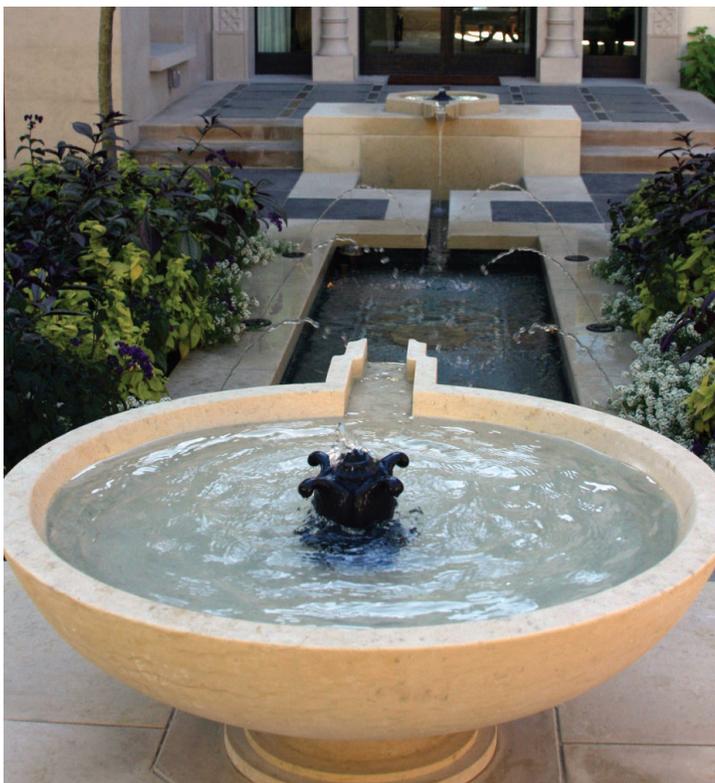
### ***Avoid using strong cleaning products***

They may do more harm than good and etch the surface of limestone. Bleach should never be used on any limestone surface.

## **2. Honed Finish**

As with a polished finish, normal maintenance of honed surfaces requires washing with clean water and neutral (pH-7) cleaners as needed. Because of its satin finish, scratching is of less concern than with a polished surface and, therefore, the use of a mildly abrasive cleaner, such as commercially available Soft-Scrub® or other thick liquid scouring cleaner, is ideal. Simply mix in clean water according to manufacturer's directions and use an overlapping gentle scrubbing motion with a medium bristle brush. Avoid using products containing bleach as they can discolor the stone.

For honed flooring, first wet the area, then apply cleaner over the wet stone and clean using a scrubbing motion. Rinse thoroughly with clean, hot water and dry with a clean mop or cloth.



## **EXTERIOR SURFACES**

Natural limestone used outdoors is exposed to environmental abuses—temperature extremes, moisture, airborne contaminants, etc.—and may require additional measures for keeping its finish looking its best.

### **1. Polished Finish**

The use of polished finishes is discouraged for exterior use because of its susceptibility to damage from airborne acids and dust. If it is used, however, follow the same instructions as for interior use.



### **2. Honed Finish**

Easily accessible stone surfaces, including steps, walkways, fountains, walls, etc., should be kept free of debris, leaves and dirt. Sweep then wash areas with a low-pressure power washer (less than 1600 PSI) periodically to prevent staining and remove mold and accumulated grime. When using cleaning agents, follow the same product guidelines as outlined for interior use.

### ***Multi-story Buildings and Large Expanses***

The large expanses typically found in exterior applications of natural limestone often make it impractical and expensive to perform frequent maintenance. Seek qualified contractors who have the equipment and technical expertise to clean, inspect and make any necessary repairs.

## QUICK REFERENCE — DOs AND DON'Ts

### DO:

- Blot up spills immediately
- Thoroughly rinse surfaces with clean water
- Dust mop floors frequently to reduce dirt and grit that can scratch the surface
- Protect floors with non-slip mats
- Protect countertops with coasters, trivets or placemats
- Use cleaners recommended for natural stone surfaces
- Use a soft cloth for wiping and drying

### DON'T:

- Allow spills to sit, especially those containing liquors or fruit juices
- Use acidic cleaners such as vinegar, lemon juice, etc.
- Use cleaners intended for bathrooms, grout or tub and tile
- Use scouring cleansers that contain abrasives on polished surfaces
- Use soap-based products not intended for stone surfaces
- Use vacuum cleaners with hard plastic or metal wheels that can scratch surfaces

## STAIN REMOVAL

Even with the most meticulous care and maintenance, accidents can happen. Removing stains first requires identifying the type of stain, then treating appropriately.

### POULTICE CLEANING METHOD

Most stains should be treated using a poultice method, a special stain removal procedure for deep-seated dirt and grime. It may be applied to various finishes and is particularly useful on intricate carvings, moldings and other difficult-to-scrub areas.

#### *What is a Poultice?*

A poultice is a thick, paste-like material that “draws out” or absorbs stains when applied to porous materials such as natural limestone.

### Steps for Poultice Cleaning

1. **Prepare** poultice to a thick paste similar to the consistency of frosting or peanut butter
2. **Wet** the stain area with distilled water (or same liquid mixed with poultice)
3. **Apply** poultice about ¼” thick with wooden or plastic spatula, extending about one inch beyond stain
4. **Cover** the poultice with plastic sheeting or food wrap and tape edges to seal it
5. **Dry** thoroughly for 48 hours, then remove the plastic sheeting
6. **Remove** poultice with wooden or plastic spatula and rinse with distilled water; buff with a dry, soft cloth
7. **Allow** to completely dry before inspection
8. **Repeat** the above steps if the stain remains

Some stubborn stains may never completely be removed, or etching may occur from some chemical applications. If you encounter these issues, consult with a stone professional to determine additional steps.

## TARGETED STAIN REMOVAL TECHNIQUES

Identifying the type of stain will help you determine the best removal technique.

### 1. Organic Stains

- Most organic stains require an oxidizing agent treatment and usually respond well to applications of a 6% hydrogen peroxide solution or poultices
- Some outdoor stains generally fade from normal environmental elements such as sun and rain after removing the source of the stain
- Urine stains may require a chlorine bleach poultice
- Fire and smoke stains typically can be removed with a commercially available “fireplace cleaner”

### 2. Oil-Based Stains

- Oil-based stains normally must be dissolved chemically so the source of the stain can be flushed or rinsed away.
- Acetone is a widely available solvent that produces good results on most oil stains. Mineral spirits and white gasoline can be used as acetone substitutes, but only with an abundance of caution
- Do not use solvents containing color agents or oils, and do not use turpentine, leaded gasoline or kerosene as solvents
- After removing as much of the stain as possible, apply a poultice

### *Identifying Metallic Stains*

- **Iron** – red or brown stains that resemble rust
- **Copper or Bronze** – green or muddy-brown colorations
- **Lead** – yellow or orange colorations

### 3. Metallic Stains

- Prior to any cleaning attempts, remove the source of metallic stains (when possible), seal the metal and/or remove sources of moisture to prevent further staining.
- Use a reduction agent—these types of agents attach to the metallic salts and reduce them to soluble, colorless salts that can be rinsed away or drawn out by a poultice
- Fresh stains will usually come off with a normal stone cleaning solution and vigorous scrubbing
- Seated stains may require application of “naval jelly” or commercial rust remover following the manufacturer’s usage directions
- If these remedies fail, abrasion with scouring powder followed by a second application of commercial rust remover may be required
- Deep-seated stains as a result of prolonged neglect may not be removable

## TYPES OF STAINS

While there are many types of stains, these are the five most common categories:

1. **Organic** – coffee, tea, tobacco, food, urine, leaves, bird droppings, smoke, etc.
2. **Oil-based** – grease, tar, cosmetics, cooking oil, crayons, etc.
3. **Metallic** – iron, rust, copper, bronze, etc.
4. **Biological** – algae, mildew, lichens, etc.
5. **Ink** – magic marker, pen, etc.

## 4. Biological Stains

- An oxidizing agent such as a hydrogen peroxide poultice is recommended.
- Commercially available algae and mildew removers made especially for stone surfaces can help kill the source of the stain



## 5. Ink Stains

- Many inks have a metallic base and can be treated as such
- A poultice of powder mixed with mineral spirits or methylene chloride can be effective

Properly maintaining and cleaning your natural limestone can preserve its beautiful finish, rich hues and the characteristics that nature provided. While this guide offers basic care instructions, always check with your stone professional to seek recommendations for your specific finish and application.

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