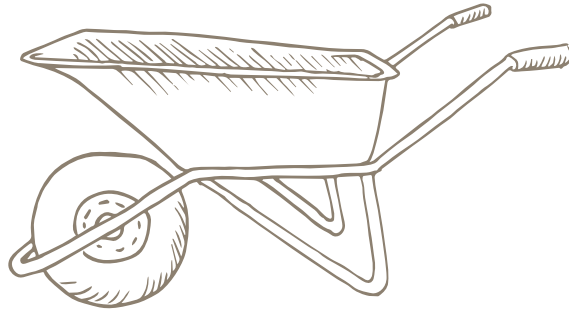


PANGAEA®

NATURAL STONE VENEER CARE & MAINTENANCE



*A care and maintenance guide for adhered Natural Stone Veneer specified
for Pangaea® Natural Stone and its distinctive characteristics.*

CARE & MAINTENANCE

All methods of cleaning should be in accordance with ASTM C1515-01 Standard Guide for Cleaning of Exterior Dimension Stone, Vertical & Horizontal Surfaces, New or Existing.

FINISHES

Many stone finishes are used throughout the world, however primary finishes for stone veneers are a split face or hewed surface. In both cases the object is to create an undulated surface finish.

MAINTENANCE

Perform inspections on an annual basis to keep the stone in proper condition.

NATURAL STONE GEOLOGY

Geology: GRANITE

- Chinook (3 Course Ashlar | 4 Course Ashlar | Atlas Strip | Fieldstone | LedgeStone | Metropolitan | Quarry LedgeStone® | Roman Castlestone | Terrain LedgeStone FormFit)
- Providence (3 Course Ashlar | 4 Course Ashlar | Atlas Strip | Castlestone | Fieldstone | Terrain LedgeStone FormFit)
- Broadway (4 Course Ashlar | Metropolitan | Terrain LedgeStone FormFit)

Geology: GRANITE/QUARTZITE

- Providence (3 Course Ashlar | 4 Course Ashlar | Atlas Strip | Castlestone | Fieldstone | LedgeStone | Quarry LedgeStone® | Terrain LedgeStone FormFit)

Geology: LIMESTONE

- Black Rundle (Castlestone | LedgeStone | Metropolitan | Terrain LedgeStone FormFit)
- Klondike (3 Course Ashlar)

Geology: MARBLE

- Yukon (4 Course Ashlar | Metropolitan | Terrain LedgeStone FormFit)

Geology: QUARTZITE

- Diamond River (3 Course Ashlar | 4 Course Ashlar)
- Lancaster (3 Course Ashlar | 4 Course Ashlar | Atlas Strip | Fieldstone | LedgeStone | Quarry LedgeStone® | Roman Castlestone | Terrain LedgeStone FormFit)
- WestCoast® (Atlas Strip | Castlestone | Fieldstone | LedgeStone | Metropolitan | Microledge | Terrain LedgeStone FormFit)
- Wolverine (Quarry LedgeStone®)

Geology: SANDSTONE

- Ash (3 Course Ashlar)
- Cambrian (Atlas Strip | Castlestone | Fieldstone | LedgeStone | Metropolitan | Terrain LedgeStone FormFit)
- Copper Canyon (Atlas Strip | Castlestone | Fieldstone | LedgeStone | Terrain LedgeStone FormFit)
- Coyote (Quarry LedgeStone®)
- Grigio (Atlas Strip | Fieldstone | LedgeStone | Terrain LedgeStone FormFit)
- Kings Point (3 Course Ashlar | 4 Course Ashlar | LedgeStone | Metropolitan | Quarry LedgeStone® | Roman Castlestone | Terrain LedgeStone FormFit)
- Oxford (3 Course Ashlar | 4 Course Ashlar)
- Saddleback (3 Course Ashlar | 4 Course Ashlar)
- Siena (3 Course Ashlar)
- Thunder Ridge (Quarry LedgeStone®)
- Tuscan (Atlas Strip | LedgeStone | Terrain LedgeStone FormFit)

Geology: SCHIST

- Sierra Ridge (Fieldstone)
- New England (Atlas Strip | LedgeStone | Quarry LedgeStone® | Terrain LedgeStone FormFit)
- Sierra Ridge (Roman Castlestone)

It is advisable to maintain careful records about the type and name of the stone existing on your project. You should explore the following options before determining a cleaning and maintenance schedule.

1. If proper records are not maintained, consult with a professional stone supplier, installer, or a restoration specialist to help identify whether your stone is siliceous or calcareous.
2. Conduct a visual identification of the stone for characteristics which are typical for Granite, Limestone, Marble, Sandstone.
3. Conduct a simple acid sensitivity test to determine if your stone is siliceous or calcareous. You will require 4 ounces of a 10% solution of muriatic acid or household vinegar; Eyedropper for application as the test may permanently etch the stones surface, select an out-of-the-way area (a corner) and several inches away from any mortar joint. Apply a few drops of the acid solution to the stone surface on an area about the size of a quarter. Two possible reactions will occur:
 - A) Acid drops will bubble or fizz vigorously – a sign that the stone is calcareous.
 - B) Little or no reaction occurs – stone can be considered siliceous.

Rinse the area thoroughly with clean water and wipe dry. NOTE: This test may not be effective if surface sealers have been applied. If an old sealer is present, chip a small piece of the stone away and apply the acid solution to the fractured surface.

CAUTION: Muriatic acid is corrosive and is considered to be a hazardous substance. Proper protection is necessary when acid is used.

RECOMMENDED CLEANING & MAINTENANCE PROCEDURES

1. Pre-rinse entire surface before any cleaning to remove excessive debris. A light application of household vinegar mixed with water is recommended. For mortar that has been allowed to dry for a prolonged period of time, highly diluted muriatic acid is acceptable. A SAMPLE TEST MUST BE PERFORMED PRIOR TO CLEANING TO ENSURE PROPER MIXTURE AND NO SURFACE ETCH. Always pre-test cleaning agents and methods on the job-site mock-up panel or a small inconspicuous area of the wall. The Consultant and/or Owner should approve the test area prior to the start of full-scale cleaning operations.
2. Ensure to mask all windows, exposed metal, any surface you are not intending to Muriatic Acid will etch any surface it comes into contact with.

Large installations should be given periodic overall cleaning as necessary to remove accumulated pollutants. Easily accessible stone surfaces such as steps, walkways, fountains, etc., should be kept free of debris and soiling by periodically sweeping and washing with water. Normal maintenance should include periodic inspection of stone surfaces for structural defects, movement, deterioration, or staining.

CLEANING DO'S AND DON'TS

- Do clean surfaces with mild detergent or stone soap on an annual basis if required.
- Do thoroughly rinse the surface with clean water after washing.
- Don't use vinegar or other cleaners containing acids on marble, limestone, travertine, or onyx surfaces.
- Don't use cleaners that contain acid.
- Don't use abrasive cleaners such as dry cleansers or soft cleansers.
- Don't mix bleach and ammonia; this combination creates a toxic and lethal gas.
- Don't ever mix chemicals together unless directions specifically instruct you to do so.
- Don't apply direct power washer pressure as it may affect the grout verses the stone.

SEALING

Sealing natural stone veneers are not recommended. Stone veneers will perform much better on exterior applications if stone veneers remain unsealed. It may be necessary to seal grout to prevent moisture penetration between the stone and the substrate in some circumstances. Please consult with the installation contractor.

Sealers are used primarily for enhancing the stone's appearance. Sealing Pangaea® Natural Stone Veneer may prevent the stone from naturally weathering and may also reduce the stones breathability and therefore affect wall and stone performance.

Several factors must be considered prior to determining if the stone should be sealed:

- What is the hardness, density, and durability of the stone?
- How porous is the stone and how fast will it absorb the sealer. Depending upon the porosity of the stone and its vertical application, sealers may not absorb and may remain on the surface of the stone without impregnating.
- Will the sealant affect the color or other aesthetics of the stone?
- Where is the stone located (e.g. indoors or outdoors)? Residential or commercial?
- What type of maintenance program has the stone been subjected to?

Generally, topical sealers are not recommended in exterior applications because they can trap moisture within the top layer of the stone, which may lead to surface deterioration during freeze/thaw cycles and affect overall wall performance. Pangaea® Natural Stone Inc. recommends that care be exercised in the application of any chemical to a stone's surface. Although normally innocent in and of themselves, some sealers have reportedly reacted with some cleaning/maintenance chemicals and/or with components within the stone surface, potentially causing altering reactions. If a sealer is to be used, please consult the manufacturers recommendations for acceptability and follow manufacturers provided installation instructions.

WARRANTY

Pangaea® Natural Stone Inc warrants its products against deterioration for the life of the building, provided the products have been erected and used according to accepted masonry standards, within the guidelines of local building codes and as recommended by the manufacturer have been adhered to. Stones with pits, fissures, veins, etc. are inherent characteristics in natural stone and are not considered product defects.