

## Introduction

The long-term appearance of any exterior wall depends primarily on the attention given to periodic cleaning.

Testing has verified that NewBrick finishes are most effectively and safely cleaned with the use of general cleaning compounds, followed by a mildly pressurized water rinse. Acidic cleaners are not recommended for routine cleaning of NewBrick. The only condition that may warrant use of acidic cleaners is efflorescence or mortar stains (contact Dryvit Systems Inc.).

## 1. Mortar Clean Up

The following products are general-purpose cleaners the manufacturers of which indicate are suitable for cleaning of NewBrick mortar stains:

Company	General Purpose Cleaner
Prosoco 3741 Greenway Cir. Lawrence, KS 66046 (800) 255-4255	<ul style="list-style-type: none"> <li>• Sure Klean 600 (Recommended Dilution 10:1)</li> <li>• Sure Klean Vana Trol (Recommended Dilution 10:1)</li> </ul>

## Choice of Cleaning Compounds

The above list should be considered a starting point in selection of the appropriate cleaning compound. Every building will have its own set of specific challenges and requirements. These general-purpose cleaners will be satisfactory for most buildings clad with NewBrick. However, some environments may present unique circumstances and require more specialized cleaning agents. In these cases, the cleaning product manufacturer should be consulted for recommendations specific to the job at hand. Testing the cleaning compound on a small, isolated area of the actual NewBrick is always advisable prior to commencing on a large scale.

Usage instructions from manufacturers of cleaning solutions for the mortar and general cleaning of NewBrick typically include the following information:

## Preparation

Protect people, vehicles, property and all surfaces not intended for cleaning, from splash, residue, fumes, rinse and wind drift. Read the cleaning solution manufacturer's instructions for the proper dilution appropriate for the surface cleanliness/condition of the wall. Mix the cleaning solution in accordance with the manufacturer's instruction. To avoid any detrimental effects, test the prepared mixture on all surfaces that may come into contact with the solution during application and rinsing. Contact the manufacturer of the cleaning solution for more information and cautions for use. Check all equipment for compatibility with the type of cleaner used.

## Surface and Air Temperatures

Cleaning effectiveness is diminished when surface and air temperature falls below 50 °F (10 °C). For best results, allow wall surface to warm to a temperature above 50 °F (10 °C), prior to initiating cleaning.

## Protection

Wear protective goggles, rubber gloves, and NIOSH-approved dust-mist respirator as needed to avoid breathing mists. Read SDS sheets on all cleaning products for specific protection and safety information. Protect grass and plantings by covering or with spray from sprinklers. Adjacent surfaces may need additional protection as well. Always contact the cleaning product manufacturer for more information about protection precautions they recommend.

## Garden Hoses and Pressurized Water Cleaning Equipment – General Information

It is normally most economical and efficient to use pressurized water for the cleaning/rinsing operation. The simplest method of delivering pressurized water is to use a garden hose. This is sufficient on most applications to both prewet the wall surface and rinse away applied cleaning solutions. Some commercially available pressurized water delivery systems feature a pressure gun and nozzle equipped with a control switch.

This setup permits the operator to apply cleaning solutions to a wall over 100 ft. (30.5 m) from the base unit. Other systems have two separate hoses - one with plain water and the other with a cleaning solution. Portable equipment has many advantages for cleaning building exteriors. Units may be on wheels, skids, trailers, or pick-up truck beds. More elaborate systems include pumps, engines, and water storage tanks fixed on truck beds. Whatever method you select, it is safest and least potentially damaging to the NewBrick and the wall surface if both equipment and personnel are kept on the ground. The tip angle of the nozzle should be appropriate for the distance between the area being cleaned and the nozzle tip. A 10° angle tip may be appropriate when the surface being cleaned is 100 ft (30.5 m) above the nozzle, but not when the surface being cleaned is 2-5 ft (.61-1.5 m) away from the tip of the nozzle. For close proximity cleaning, tip angles of 45° or greater must be used to prevent damage to the finish. Water used for rinsing must be cold. Hot or even warm water will cause softening of the finish, and the pressure may result in damage to the finished surface. The pressurized water rinse must not be harsh enough to erode the finish (see Pressurized Water Rinsing). This may reduce the long-term performance of the finish. Seek the equipment manufacturer's advice and use care when using this type of pressure near sealant joints and wood trim. Misdirected, high-pressure spray can damage most materials and surfaces. Caution should be taken regarding high pressure rinsing. Cleaning solutions used with this method should be compatible with the equipment. Some equipment manufacturers are careful to recommend that only specific cleaning compounds be pumped through their equipment. Many proprietary cleaning solutions may be subject to periodic change in formulation. It is good practice, therefore, that each product being considered be **sample tested** on a

panel or inconspicuous wall area and judged on a trial basis before being used more extensively.

**Caution: Allow the mortar to cure for a minimum of 48 hours before beginning mortar clean up.**

**Water Presoak**

It is necessary to thoroughly wet the area to be cleaned prior to the application of the cleaning solution itself. The wall surface to be cleaned must be wet when the cleaning solution is applied. Lower elevations should also be saturated with water in order to prevent absorption of run-off from above, which can cause “clean streaking”.

**Cleaning Solution Application**

Application of cleaning solutions can be accomplished using a low-pressure sprayer, 30 to 50 psi (200 to 350 kPa), or through a pressurized water cleaning unit. The pressure used must be adequate to coat the wall surface with the cleaning solution and not more.

**Chemicals in the cleaner provide the cleaning action, not the force of the water spray used to apply the cleaner.**

Light scrubbing with a soft bristle brush may be necessary. Follow the cleaning solution manufacturer’s instructions for application and scrubbing. Some solution manufacturers recommend application from the bottom, upward, to avoid “clean streaking”. Application in vertical sections is also typically recommended, because this allows re-rinsing clean sections below the vertical section being cleaned. Follow the solution manufacturer’s recommendations for dwell time on the wall surface prior to rinsing. (Dwell time is the period the cleaning solution is left on the wall prior to rinsing off.) Heat, direct sunlight and wind will affect the drying time and reaction rate of cleaning solutions. Ideally, the cleaning crew should be working on shaded areas to avoid rapid evaporation.

**Caution: Never use high pressure to apply cleaning solutions, as the solution may be driven through the finish and into the base coat, and become the source of future staining.**

**Pressurized Water Rinsing**

Rinse the wall with large amounts of clean, pressurized water from top to bottom before the cleaning solution can dry. All wall areas below the cleaned area must also be rinsed down thoroughly in a vertical section. Failure to completely flush the cleaned area and all wall areas below of the cleaning solution may leave residues that may emerge upon exposure to precipitation. Rinse all equipment thoroughly after each use. Higher pressures should be used for this pressurized water rinse, as long as it does not damage the wall surface. Pressure should normally be kept below 600 psi. The higher pressure is needed to remove surface contaminants that have been lifted by the chemical action of the cleaning solution, and also to remove any residue of the cleaning solution itself. This is why it is important not to use high pressure until the cleaning solution has been applied (by low pressure or mild scrubbing) and allowed to act for the appropriate dwell time. Use of pressurized clean water alone to clean a finish will require higher water pressures to remove the surface contaminants, which increases the likelihood of damaging the wall surface. Without application of a cleaning solution, the pressure required to clean the finish will usually require such force that the surface of the finish is abraded or removed. This must be avoided. Surfaces damaged by such “power washing” techniques alone can void product performance warranties.

If there is remaining undesirable mortar stains on the brick that cannot be removed by cleaning, the area can be touched up with matching finish after the mortar is fully cured.

**2. General Cleaning**

The following products are general-purpose cleaners the manufacturers of which indicate are suitable for general cleaning of NewBrick:

Company	General Purpose Cleaner
Prosoco 3741 Greenway Cir. Lawrence, KS 66046 (800) 255-4255	Enviro Klean® EIFS Clean 'N Prep
Shore Corporation 2917 Spruce Way Pittsburgh, PA 15210 (800) 860-4978	2600 EIFS Scrub
ABR Products, Inc. 9720 S. 60 <sup>th</sup> Street Franklin, WI 53132 (414) 421-4125	Building Wash 3
The Clean-Up Group 3000 Gulf Shore Blvd. N Naples, FL 34103 (239) 455-2225	CitraShield BioCide

For General New Brick cleaning follow the Water Presoak, Cleaning Solution Application, and Pressurized Water Rinsing procedures outlined in the Mortar Clean Up section.

**3. Cleaning of Mildew and Algae Growth**

Mildew and algae are commonly found on dirty, exterior wall surfaces that receive little sunlight. These organisms can grow wherever food (dirt) and favorable temperatures and humidity are found. Some cleaners work on mildew only. Others can also be effective on algae. Still others can effectively clean both organisms, while also being effective for general purpose cleaning. It is safe to assume that if there is mildew and algae, there is also dirt. In such cases, the more comprehensive cleaner is necessary to effectively clean the wall surface.

**Caution: Never add ammonia to a bleach solution.**

Read manufacturers' SDS prior to use.

Company	Mildew & Algae Cleaner
Prosoco 3741 Greenway Cir. Lawrence, KS 66046 (800) 255-4255	Contact Prosoco for best choice; several products available
The Clean-Up Group 3000 Gulf Shore Blvd. N Naples, FL 34103 (239) 455-2225	CitraShield BioCide

**4. Other Common Stains**

Many manufacturers of cleaning products offer compounds that are specifically formulated for removal of other common sources of staining. This includes mud, various metals, egg, oil, grease, and smoke/soot. We recommend contacting a manufacturer of cleaning products for their suggestions on cleaners appropriate for NewBrick with these less common stains.

**5. Unknown Stains**

Unknown stains present unique challenges. As discussed, effective cleaning products and techniques are specific to the type of stain being cleaned. Laboratory tests of unknown stains may be necessary to determine their composition. Experimental cleaning without laboratory analysis in such cases may aggravate the initial stain, or result in other stains that are also difficult to remove. Bottom line is that if you do not know the nature of a stain, it is best to consult a qualified expert who can determine what it is, prior to proceeding further.

**6. Removal of Efflorescence**

Efflorescence can occur whenever the wall materials contain cement. It is caused by the migration of water through the cementitious material and interaction with salts present in it. The water containing the salts works its way to the surface of the finish where the water evaporates and leaves the salts – efflorescence – behind. It is more easily noticed on darker surfaces. Efflorescence on the NewBrick surface is more an aesthetic than a performance issue for the finish. However, the source of the water migration should be determined since it can mean a more severe problem exists elsewhere. If removal is necessary, it is preferable to use general cleaning compounds and pressurized water to remove light efflorescence deposits. In rare instances, an **extremely** diluted (1 part in 20) acidic cleaning solution may be required to remove heavy efflorescence. Consult a manufacturer for their recommendations under such circumstances. As with all cleaning solutions, prewet the finish with water prior to application of the diluted acid cleaner. Light scrubbing with a soft bristle brush may be necessary as well, to remove heaviest accumulation. Rinse cleaned areas as quickly as possible with pressurized clean water, as described previously under Pressurized Water Rinsing. All acid residue must be completely rinsed away to avoid the possibility of adhesion problems of primers, paints/finishes, or sealants. Read cleaning solution manufacturer's MSDS prior to use.

**7. Summary**

To maintain the building's aesthetics looking new as long as possible, it is best to establish a regular cleaning schedule appropriate for the building's environment and use. Instead of less frequent deep cleanings, it is always best to perform periodic general cleaning. This will extend the life of the cladding and keep it looking newer longer.

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