

## Introduction

The long-term appearance of any exterior wall depends primarily on the attention given to periodic cleaning. Dryvit's DPR and other textured acrylic finishes offer many advantages for ease of cleaning and maintenance compared to other types of exterior wall claddings. Brick, for example, requires the use of strong acidic cleaners to remove even the accumulation of routine dirt that works its way into the pores of the brick. Use of such acidic cleaners can cause many problems. It is strongly recommended that you contact the manufacturer of any cladding material for proper cleaning instructions.

Testing has verified that Dryvit DPR 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 Dryvit finishes. The only condition that MAY warrant use of acidic cleaners is efflorescence, which is discussed later.

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

Company	General Purpose Cleaner
Prosoco 3741 Greenway Cir. Lawrenceville, KS 60046 (800) 255-4255	Enviro Klean® EIFS Clean 'N Prep
Shore Corporation 2917 Spruce Way Pittsburgh, PA 15210 (800) 860-4978	2600 EIFScrub
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

## 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 many buildings coated with Dryvit finishes. However, some environments may present unique circumstances and require more specialized cleaning agents. In these cases, Dryvit recommends consulting the cleaning product manufacturer for suggestions specific to the job at hand. Testing the cleaning compound on a small and isolated area of the actual finish surface is always advised prior to commencing on a large scale.

Usage instructions from manufacturers of cleaning solutions for general cleaning of Dryvit finishes 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 textured finish. Mix cleaning solution in accordance with those manufacturers' instruction. Test the prepared mixture on all surfaces that may come into contact with it 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 cleanser used.

## Surface and Air Temperatures

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

## Protection

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

Leaning a ladder against any wall coated with Dryvit finishes can cause damage. 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 residential 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 30.5 m (100 ft) 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 Dryvit finish 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 30.5 m (100 ft) above the nozzle, but not when the surface being cleaned is .61-1.5 m (2-5 ft) 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 may result in damage to or removal of finish. The pressurized water rinse must not be harsh enough

to erode the finish. Such degradation will 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 as well. Misdirected, high-pressure spray can damage most materials and surfaces! Caution should be taken regarding high pressure rinsing with specialty applications such as Custom Brick™.

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 suggested, 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.

**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 finish 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 of time 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.**

Wear protective goggles, rubber gloves, and NIOSH-approved dust-mist respirator as needed to avoid breathing mists. Read MSDS on all cleaning products for specific protection information.

**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 finish. 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 finish. 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. Finish damaged by such "power washing" techniques alone can void product performance warranties.

**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. **If recoating is planned, such cleaning MUST be performed. Caution: Never add ammonia to a bleach solution.** Read manufacturer's MSDS prior to use.

Company	Mildew & Algae Cleaner
Prosoco, Inc. (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

### 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, efflorescence, oil, grease, and smoke/soot. Dryvit recommends contacting a manufacturer of cleaning products for their suggestions on cleaners appropriate for Dryvit finishes with these less common stains.

### 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.

### Removal of Efflorescence

Efflorescence can occur whenever the substrate beneath the Dryvit finish contains 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 finish 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 serious problem exists elsewhere. It can be unsightly. It is preferable to use general cleaning compounds and pressurized water to remove light efflorescence deposits. In rare instances, an

**extremely** dilute

(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.

### NEVER APPLY ACID SOLUTIONS BY HIGH PRESSURE SPRAY APPLICATION.

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.

### Summary

All buildings need to be cleaned and the exterior inspected periodically for damage and deterioration. This is an expected part of the life cycle cost of any structure. Buildings coated with Dryvit acrylic finishes are no exception. An advantage to Dryvit products is that they can generally be cleaned from the ground, and with non-caustic cleaning compounds, thereby resulting in less exposure to harsh or potentially harmful cleaners for other building components, occupants and landscaping.

### Refinishing

- A. If for any reason these finishes must be refinished, the proper way to do it is:
1. Be sure the area to be recoated is thoroughly cleaned as outlined in the general cleaning section.
  2. Trowel on a tight coat of Freestyle® finish or NCB™.

Ensure the surface is smooth and level.

3. Allow the skim coat to completely dry (usually 24 – 48 hours). Apply the new finish and float to desired texture.

### Recoating

Many of Dryvit's finishes may be refreshed or the color may be changed by applying either Revyvit® or Demandit® coatings in accordance with their application instructions. Ensure that the area to be coated has been thoroughly cleaned as outlined in the cleaning section and follow the application instructions for the respective coating.