

*'A guide to dealing with
some of the industry's most
difficult problems'*



Efflorescence



White Scum



Vanadium



Manganese



Calcite

Complete Cure for New Construction Issues

**And
Equipment
to use!**

- **NMD 80**
- **EF-Fortless**
- **Calcite Presoak**
- **White Scum Presoak**
- **OneRestore**
- **OneRestore GEL**



NMD 80 is a buffered detergent-based solution designed for the cleaning of new masonry structures. NMD 80 can be used on virtually any type of brick, block, stone, cast stone and pre-cast. Although NMD 80 is an acid, it will not harm glass or anodized aluminum when used as directed. There is no scrubbing necessary.

NMD 80 is best applied through an EC Jet, which will dilute the product 4 parts water to 1 part solution (4:1). When following the EaCo Chem process, NMD 80 will allow the user to increase square foot production and reduce labor.

What is the "Complete Cure"?

The "Complete Cure for New Construction Issues" is a series of products and test designed to resolve virtually any staining issue that may arise due to the new construction process: efflorescence, calcite, white scum, haze, vanadium, manganese, etc.

While we cannot specifically identify the cause of these stains, we have compiled enough information and history to confidently show where the stains are more commonly found. We are also able to identify the chemical make-up of most of the stains.

Prevention

The most important point to make about the "Complete Cure" is to prevent the problems from the start. Many of the issues that arise from new construction cleaning are a result of:

- Improper cleaning method
- Leaving the un-capped wall exposed to the elements
- Using unbuffered acids for your cleaning chemical
- Not allowing the wall to thoroughly dry

While we offer solutions to many issues associated with new construction cleaning, we offer the best system for prevention. The system includes our buffered new masonry cleaner, NMD 80, along with our application process that is safe for almost all substrates.

The process - beginning at the top of the wall:

- 1 - We do not recommend introducing additional water to the wall, with the exception of cooling the surface.
- 2 - Using the EC Jet applicator, apply NMD 80 (4:1) to the whole drop being cleaned.
- 3 - After the first application, scrape the large chunks from the first 8 ft section.
- 4 - Check the smears and tags to see if they crumble easily. N type mortar generally only requires one application. Harder mortars and extensive residue will benefit from repeated applications.
- 5 - If needed, repeat application to melt remaining residue and extend dwell time.
- 6 - With NMD80, the longer it stays wet on the wall, the better the results and the least amount of rinsing is needed.
- 7 - Begin rinsing from top to bottom. Rinse style and pressure will vary depending on substrate. Use long, even strokes that overlap each other.

Efflorescence

Efflorescence is often described as a white or ivory chalk-like deposit on masonry walls. Efflorescence will generally disappear when wet and re-appear when dry (see the water test on pg. 8).

Efflorescence will most commonly form on brick, block, retaining wall blocks, pavers and manufactured stone. While normal rain fall should not create issues, extreme conditions may contribute to the problem. Prior to removal of efflorescence, precautions should be taken to prevent future occurrences. Some preventative measures include:

- Check for cracks in the cap-stones or mortar. If there are, make necessary repairs prior to cleaning.
- Check to see if the weep holes allow proper drainage from the wall.
- Allow the wall to thoroughly dry so all of the chlorine ions are able to migrate to the surface.

Once you have taken preventative measures to keep the water out and the surface is dry, removing the efflorescence should be simple. EF-Fortless applied to the surface undiluted or NMD 80 diluted (4:1) will dissolve powdery efflorescence and help prevent its return.

Clean-up Efflorescence

Clean-up efflorescence is caused by chlorine ions left on the masonry surface by unbuffered acids used in the cleaning process. As the ions react with moisture, a calcium chloride substance rises to the surface and efflorescence is created.

In the case of clean-up efflorescence, it will most likely disappear in time, however most building owners will not accept the property until it is removed. If NMD 80 was not used for the initial clean, it may be used to remove the efflorescence.

Please note that not everything white on the wall is efflorescence. There are many other stains that can resemble efflorescence, but are chemically different. Please refer to our "Complete Cure Testing Procedures" on pg. 7 for more details.

*** Always refer to product data sheets prior to using any chemical. Always clean a test area and allow to dry before determining suitability of any cleaning product.*



EF-FORTLESS

EF-Fortless is a soap solution that counteracts efflorescence. The product is mildly acidic and safe for virtually all surfaces. When EF-Fortless stops foaming, the efflorescence is gone. This product does not need to be rinsed from vertical surfaces.



Calcite & Lime Run

Calcite

Calcite, or calcium carbonate, will appear as a thick whitish deposit which usually builds over time. Calcite most commonly forms on brick and block, when excess moisture evaporates and leaves behind a heavy calcium residue.

This residue bonds to the masonry surface and the joints and can be very difficult to remove. More commonly found on brick, scrapping alone may remove some from the surface, however the residue that has bonded to the surface can only be removed chemically.

Calcite Presoak, applied undiluted to the affected areas, will start to soften the calcium carbonate. In a severe situation like the one pictured to the left, multiple applications of Calcite Presoak may be needed. Allow each application to sit on the surface for approximately five minutes. When small "pinholes" appear in the deposit, Calcite Presoak has penetrated.

After the presoak has penetrated and the deposit has been softened, apply NMD 80 (undiluted to 4:1 depending on the degree of the deposit) without rinsing in between. Pressure wash the area and the residue will be removed, leaving the original surface and mortar.

Lime Run

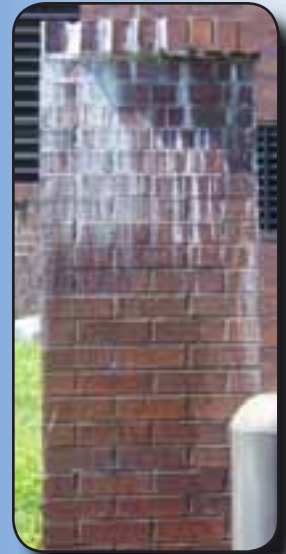
Lime Run occurs as a steady release of calcium soaked water that creates a streak. Generally, lime run is treated just like calcite. When it is caught early enough, it can be dealt with using the normal washing process of NMD 80 diluted 4:1.

Photo 1 shows lime run formed under a weep hole in a retaining wall. Photo 2 shows Calcite Presoak bubbling while it softens the hard mineral layer. After the foam collapses, repeat the application.

Photo 3 shows the remaining hard deposits being sprayed with NMD 80 at 4:1 with a five minute dwell time. Once a scratch test indicates the lime is crumbly, rinse using high or low pressure. Repeat with NMD 80 as necessary.

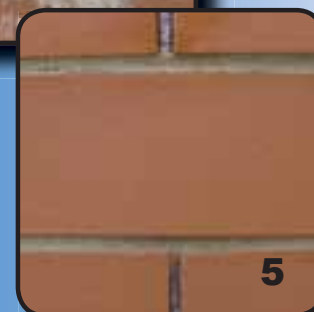
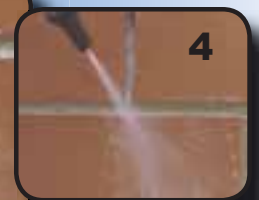
Photo 5 shows the lime run completely removed after a clear water rinse!

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**CALCITE
PRESOAK**

Calcite Presoak is a first step presoak to allow quick removal of calcium carbonate (to be followed with NMD 80). Calcite Presoak will also remove lime run, as well as water stains on calcium based substrates, such as limestone.



White Scum

White scum, or calcium silicate, has traditionally come as the result from improper use of a new masonry cleaner, reacting with brick and forming insoluble salts. This is created by un-buffered hydrochloric acid combining with silicates and clay.

White scum is generally found on brick, block or concrete and can come from the center of the masonry unit. The appearance of white scum can be very similar to efflorescence. The water test, describe on pg. 7 will be necessary to determine the appropriate approach to removing these stains.

Once it is determined that the stains are actually white scum, removing them is relatively simple. Apply White Scum Presoak to the stained areas and allow a five minute dwell time. You will see heavy white foam that will soon disappear. The chemical is still working within the surface.

Multiple applications of presoak may be necessary depending on the degree of staining (properly test prior to full scale cleaning). When the presoak is no longer needed, apply NMD 80 (4:1) without rinsing the presoak off. Allow a five minute dwell time and then pressure rinse off. Repeat the process on any remaining stains.

Hardscapes

White scum can also appear on dry-stack retaining walls and pavers. These stains can arise from the shrink wrapping process that leaves behind water stains in some regions. These stains are considered light and easily removable. White Scum Presoak can be diluted for this purpose.

When heavy white scum appears on pavers or retaining walls, use the White Scum Presoak undiluted to remove the heavy deposits. NMD 80 can also be used undiluted on the remaining deposits.

*** Always refer to product data sheets prior to using any chemical. Always clean a test area and allow to dry before determining suitability of any cleaning product.*



WHITE Scum
PRESOAK

White Scum Presoak is a first step presoak to allow quick removal of calcium silicate (to be followed with NMD 80). White Scum Presoak is also one of the components to clean hardscape products as well.



Vanadium and Manganese

Vanadium and manganese are naturally occurring minerals in certain seams of clay. Like soluble salts, they are released when an abundance of water migrates through a masonry surface. The stains left behind appear either green or brown in most cases.

These stains are commonly found on clay brick and are relatively simple to remove. One application of OneRestore® should remove them instantly depending on the severity of the stains. Generally a five to ten minute dwell time, followed by a pressure wash rinse will remove these stains.

Using NMD 80 on the initial clean can help prevent these stains from rising to the surface.

*** Note - if another chemical method was used to try and remove these stains, it may have set the stains further into the surface. Additional applications and longer dwell times may be needed.*



OneRestore® is a commercial grade restoration detergent designed to restore virtually every type of exterior surface, including limestone, terra cotta, concrete, EIFS, glass, anodized aluminum, brick, block and stone. The main focus of OneRestore® has always been to successfully clean any surface, regardless of the stain. OneRestore® also comes in a gel form, which allows longer dwell times. The gel is especially good on sills and eaves.



Integral Water Repellent and Admixtures

Recent testing has shown us that certain brick or block with integral water repellents or admixtures are getting a white deposit on the surface that looks similar to calcite or white scum. We recommend following our complete cure testing procedures on pg. 7.

Note that step 4 indicates that the stain may not be calcite or white scum. OneRestore® will be the best option to remove these stains.

In Oklahoma, a contractor faced a similar situation and had no answers. After speaking to us, he tried OneRestore® to remove his stains with 100% success.

*** Always refer to product data sheets prior to using any chemical. Always clean a test area and allow to dry before determining suitability of any cleaning product.*

Complete Cure Testing Procedure

STEP ONE:	EXPECTED REACTION	NEXT STEP
<p>Conduct the water test: Apply water to an affected area (see pg. 8).</p>	<p>Stain should either disappear or still be visible after water is applied.</p>	<p>If stain disappears, proceed to step two; if stain is still visible, proceed to step four.</p>
<p>STEP TWO: Apply EF-Fortless over an affected area.</p>	<p>Heavy white foam.</p>	<p>Proceed to step three.</p>
<p>STEP THREE: Re-apply EF-Fortless to the same area as the initial test, but covering a slightly larger area.</p>	<p>No foam where EF-Fortless was initially applied.</p>	<p>If no foam on initial area, continue to clean the entire wall with EF-Fortless.</p>
	<p>More foaming where EF-Fortless was initially applied.</p>	<p>If initially treated area foams again, proceed to step four.</p>
<p>STEP FOUR: Apply Calcite and White Scum Presoak to two different deposits. Rinse any rundown with a garden hose or sprayer. Allow to dwell for 5 minutes. Re-apply presoak, following the same instructions without rinsing the first application.</p>	<p>Heavy white foam on first application, but not the second application.</p>	<p>If there is no foaming on second application of the presoak, proceed to testing OneRestore.</p>
	<p>Heavy white foam on both applications.</p>	<p>For heavy deposits, step five. For lighter deposits, step six.</p>
<p>STEP FIVE: Apply NMD 80 (undiluted) without rinsing the presoak. Allow to dwell for 5 minutes.</p>	<p>Heavy white foam and deposit reduction. (If you see green foam, rinse just those spots immediately).</p>	<p>Which ever area has been removed the most, repeat process of presoak and NMD 80 again with the appropriate presoak.</p> <p>**multiple applications of presoak may be necessary prior to NMD 80.</p>
	<p>When there is no foaming, it is time to rinse. Pressure rinse according to surface allowance.</p>	
<p>STEP SIX: Apply NMD 80 diluted 4 parts water to 1 part solution (4:1) without rinsing the presoak. Allow to dwell for 5 minutes.</p>	<p>Check for foaming. Any additional foaming indicates additional residue.</p>	<p>Repeat steps four and six with appropriate presoak until no foaming indicates complete removal.</p>
	<p>When there is no foaming, it is time to rinse. Pressure rinse according to surface allowance.</p>	

NOTE:

This testing process often takes more time for a single spot removal than it takes to clean a large area. The reason is the wait time during the testing period. When actually cleaning, you would just apply chemical to as much area as you can without the product drying (at least five minutes) and then follow with NMD 80. This process does not entail any standing around and waiting, and in the right conditions (no quick drying) you may constantly apply in an up to 20 minute cycle of presoaking and cleaning, followed by a pressure rinse.



The Water Test

The water test is a simple way to determine if you are dealing with efflorescence or something else. For this test, all you need is a spray bottle with water. If the area is sprayed with water and the stains disappear, your first step will be EF-Fortless (see step 1 on reverse side). If the stains are still visible after wet, EF-Fortless will not be your first step (skip step 1 and go directly to step 3).

These pictures below demonstrate when to skip step 1. As you will see in the picture to the right, water was applied to an area and the stains are still very visible. This would tell you it is not efflorescence and you should move directly to the presoaks.



Equipment to Use

EC JET:



- Easy rinse down
- Over spray is minimized
- Saves time & money
- Resists corrosion from aggressive chemicals

EC SPRAY:



- Light weight
- Low cost
- Portable
- Low pressure application
- Less chemical bounce back