



Results That Sell

Integral Water Repellent Study

The purpose of the study is to explore and describe the issues that can occur with integral water repellents. After collecting and analyzing the data, we have concluded the following:

Admixtures incorporated into concrete masonry units are intended to limit water penetration through both the units and mortar. Although some manufacturers find this true, admixtures can have little to no impact on moisture that enters through large cracks and voids in the wall. Integral water repellents are meant to be the answer to limiting efflorescence. However, we have seen that efflorescence can still occur (causing a general haze) after manufacturing and prior to installation.

The retaining wall block pictured below was photographed immediately after it was manufactured, already showing haze from the integral water repellent. We applied NMD 80 diluted (4:1) on part of the block to remove the haze. Where the NMD 80 was applied, a uniform color-enhanced appearance is present. We thus encourage cleaning after every installation.



Pictured below is another situation with obvious haze and run marks. The issues are associated with a reaction between internal moisture and the integral water repellent. NMD 80 (4:1) removed the water repellent film that had trapped calcium and allowed internal moisture to freely flow out. The source of the moisture was internal (possibly rain filling the block or wicking from the ground) and with the removal of the film, the wall began to dry out through the vented area.

In the picture, not only is there an apparent haze but water migration has been trapped in the wall due to the integral water repellent. After cleaning, the wall is then able to breathe, allowing moisture that has been trapped to flow freely. It sometimes takes weeks at a time for the wall to completely dry out.



White Scum Study

Efflorescence (Calcium Chloride) usually comes from free chlorine reacting with calcium in the substrate after cleaning or from exposure to deicing materials. The issue is easily handled by EF-Fortless. If the initial clean is done with NMD 80, there will not be cleanup efflorescence. Many manufacturers find prevention to be an attractive benefit. Calcite (Calcium Carbonate) often occurs as water migrates through the substrate, evaporating and leaving behind a hard mineral deposit, typically along the mortar joints. Calcite Presoak followed by NMD 80 has proven to be very successful at dealing with the problem on virtually all brick, block, or concrete.

White Scum (Calcium Silicate) can generally form in a similar manner as efflorescence or calcite, only the water migration picks up silicates and brings them to the surface leaving a stain that can look a lot like efflorescence. In the case of dry stack retaining wall systems White Scum Presoak followed by NMD 80 has been used by many contractors throughout the US. Generally the issues on these types of walls are either Efflorescence or Calcite.

The problem on the block pictured below, while logically assumed to be calcite, is in fact white scum. We almost always see this problem on brick, but not block. Therefore, it was very surprising when our White Scum Presoak cleaner began to dissolve this problem immediately. It was then followed with a double undiluted application of White Scum Presoak, a double application of NMD 80 (cut (4:1) with water), then rinsed with water poured from a gallon jug. This treatment removed 90% of the problem. The procedure was repeated several times just in the areas still showing white and removed 99% of the problem.

The issue on this particular job is how the white scum was created. We are not privy to the manufacturing process or the block's components, so we can only speculate about the more obvious possibilities.

1. A cleaner was used that reacted with the block, creating white scum.
2. The concrete pad behind the wall may have been poured after the wall was constructed; the cement leached calcium through sand which migrated through the block, leaving the deposit.
3. The colorant used may contain clay. If the aggregate in the block has sand in it, an internal reaction can create white scum as moisture travels through the wall.

On jobs where our competitors' products created white scum, NMD 80 has proven that it does not cause a similar problem.

Pictures taken a week later reveal that there has been no change in color after the initial clean.

