

Stains on Glass

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This article examines what causes water stains, the harm stains do to windows, and what you as a building manager should or should not do about these stains. In addition, it discusses some solutions.

Window cleaning companies across the country are finding this is a problem with no easy solutions. To quote PPG, one of the leading glass manufacturers of our time, "When water reaches a building it is either reflected, absorbed into the building materials, or allowed to run down the facade. When this water is allowed to run down over masonry, sealants, etc., and onto the glass, the water can carry with it contaminants that may react with and adhere to the glass surface. These contaminants could lead to a residue which is difficult to remove, a stain that cannot be removed, or a permanently damaged etched glass surface." PPG also tells us "If the residue is permitted to have a long residence time, very costly cleaning techniques may be involved." It is further stated, "When inspection reveals dirt, scum, alkali deposits or staining, glass should be immediately washed. Complete replacement is usually the only practical remedy for damaged glass." How can they make such definite statements? It is because they know the facts.

Most stains on the ground floors of buildings are usually caused by sprinkler systems spraying on to the windows. These can often be prevented with simple measures. Adjust the sprinklers so that they do not spray directly on the glass. But be aware that wind often causes the water to hit the windows anyway. Increasing the frequency of ground floor window cleaning may help prevent the stains from adhering to the glass as readily. Although this will increase maintenance costs, it can preclude the need for expensive chemical cleanings or replacement of the glass. You could also consider a change of landscaping or installing a bubbler type system to eliminate the spray on the glass.

Stains above the ground floor are also a problem on many buildings. The primary cause of these stains is lime or petroleum materials leeching out of the precast areas near the glass as PPG tells us. When it rains, or when early morning moisture occurs, these precast areas become wet causing the water to run onto the windows. These mineral deposits dry on the windows day after day and begin to bond to the glass if not removed. The hot sun intensifies this process. This is a serious problem that will not go away but will only get worse with time.

Another cause of window staining is the bleeding of sealants on to the glass. As a building ages the material in the joints on the facade break down and are deposited on the glass. This circumstance is often exacerbated by an infrequent cleaning schedule that allows dirt to mix with the sealant material and form a film or haze. As with other stains, this condition only gets worse with time, especially in areas of heavy pollution or intense sun.

The steps that can be taken to correct stains above ground floor are few. Here are some suggestions:

1. Seal and paint the raw precast surfaces with good quality paint. This **will** solve the problem by completely sealing the pores of the precast surfaces thereby eliminating the leeching of mineral deposits.

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2. Seal the precast surfaces with a good quality clear penetrating sealer such as [CHEM-TRETE® BSM 40 VOC](#). This **will not** solve the problem, but will slow the leeching process.
3. Increase the frequency of the window cleaning. Again, this will not stop the problem but will help prevent the mineral deposits or sealant bleed from bonding to the glass so quickly.

Water stains are a problem requiring special attention. It is not part of the normal window cleaning process; it is much more involved. There are a few products and methods that are quite effective in removing stains but some of these products can also cause damage to the glass and frames if not used properly. **Liability insurance may not cover these types of claims because it is not accidental.** Obtain the services of a professional who has the experience and knowledge to handle this unique problem. It is recommended that a few large test areas on different parts of the building be attempted before making a final decision.