



# GRAYDAZE CONTRACTING

Nationwide Coatings  
&  
Sealant Installations

## ALKALI BURN AND SAPONIFICATION REPAIRS

**Why?** The last thing a paint contractor wants to discuss is a coatings failure, but, to avoid failures we need to know “why” coatings fail in the first place. Alkali burn and Saponification are terms which refer to the chemical reaction that occurs in concrete between Sodium, Potassium and moisture; causing the concrete to have a high Ph or become alkaline. In time, the Ph of the concrete will stabilize, however, if a coating which is not alkaline resistant is applied before the Ph lowers; the result is most often a coating failure.

**How?** When coatings are applied to a substrate that has a high Ph the moisture content of the concrete is inherently elevated, and in some cases the coating will actually trap the moisture on the substrate (see elastomerics v. acrylics). This accelerates the chemical reaction and can cause alkali burn on the coating’s film which is typically recognized as white spots or faded areas of the paint film. In extreme cases Saponification occurs which will actually lift the coating causing a bubble with water trapped beneath the coating film. As the water evaporates, the coating appears to “lie down”, but the adhesion has already been comprised and if left untreated the result will be a coating failure through loss of adhesion.

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**Existing Problem:** When it rains my building has what appear to be large water bubbles in the coating. If I puncture one; water runs out, after a few days the coating will “lie down”, but in some areas it is sagging and feels brittle to the touch.

**The Solution:** The building has high Ph, and Saponification has occurred beneath the coating. The reaction has been severe enough to cause the coating to lift and retain water behind the film. Even though the coating may “lie down” after the water evaporates, the adhesion is gone and the coating will not perform as it should. The coating will need to be removed, and Ph tests performed to determine the alkalinity of the concrete. If the Ph is still high, an alkaline resistant primer will be necessary. After cleaning the area and installing the alkaline resistant primer an acrylic topcoat is recommended to help retain the color fastness of the coating.



### Existing Problem

- Bubbles appear after a rain.
- White spots or folded “clouds” appear on the paint film.
- Coating delamination.



Contact the Concrete Coating Experts for Repair... Nationwide.