

# Technical Notes on Efflorescence



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## What is it and why does it happen?

Efflorescence is a white powdery substance that forms on the surface of a piece. It occurs when free salts are present in one or more of the raw materials and when these salts are dissolved and carried to the surface by water as drying occurs. This happens most frequently when there are low temperatures and high humidity. In the North this happens most commonly in the early spring when there are intermittent rains, but the temperatures are still only in the 40's and 50's. In the South, there are places that never experience these conditions and therefore rarely if ever have any problems with efflorescence.

Efflorescence can come from any ingredients, but the most common contributors are cement, sand, aggregate, and clay brick. To help reduce the chance of efflorescence, it is best to use low alkali cement which, by definition, is .6% or less. Washed sand and aggregate can also be a great help. Water is sometimes also a contributor, but if it is potable, that is normally not the cause.

## What can I do about it?

The addition of efflorescence control admixtures should be considered, particularly with mix designs that historically have effloresced, or with brick that has a history of efflorescing. Pigment itself does not cause efflorescence. When working with colored products or colored mortar, however, any efflorescence problems that do exist tend to be accentuated. All pigments used to color concrete and mortar are virtually 100% inert and water insoluble. Therefore, there is nothing in any of the pigment that could possibly dissolve and be deposited on the surface. This means that pigment may aggravate any efflorescence problems by making it more visible, but it does not actually cause any problem on its own.

Even with all precautions, efflorescence can still occur. If it does, the best thing to do is nothing. In time almost all efflorescence will disappear. If waiting is not an option, the best thing to use is a detergent based cleaner and follow the manufacturers directions exactly. Usually prewetting the building is necessary as well as thoroughly rinsing after applying the cleaner. Never use high-pressure water in the cleaning as this can leave stains of its own.

You, as the manufacturer of all colored products must bear in mind that the pigment addition will increase the likelihood of seeing efflorescence if it exists. Therefore, it is extremely important to take all precautions to prevent efflorescence forming.

For more information, call (800) 657-0737 or visit our website at [www.dynamiccolorsolutions.com](http://www.dynamiccolorsolutions.com)

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