



TECHNICAL BRIEF | #2014-01

# Efflorescence on Roofing Tiles

Efflorescence is a temporary surface discoloration common to all concrete-based building materials including concrete roof tiles. It is superficial and in no way detrimental to the overall quality, structural integrity, or functional properties of the tile.

Efflorescence is caused by the chemical nature of the cement. Manufactured cement contains free lime, and when water is added, a series of chemical reactions takes place. These reactions are accompanied by the release of calcium hydroxide, which can form an overall white, chalky crystalline salt deposit on the tile surface when reacting with carbon dioxide. This reaction can appear as an overall bloom (overall softening of color) or in more concentrated patches.

It is difficult to predict how long the effects of efflorescence will last. It depends on the type and amount of deposit as well as the local weather conditions. In most cases, the action of carbon dioxide and rainwater will gradually remove the deposit, leaving the original color of the concrete roof tile intact without further efflorescence.

For more information on tile roofing, please visit our website at [tileroofing.org](http://tileroofing.org) or email [info@tileroofing.org](mailto:info@tileroofing.org) for specific inquiries.