

ALKALINE HYDROLYSIS

Concrete, concrete-unit masonry and other cementitious substrates, such as brick and stucco, are alkaline by nature. This natural alkalinity is especially important to protect and preserve when reinforcing rod, metal lath or metal corner beads containing iron are present within, since rusting of iron is greatly retarded in an alkaline environment.

When the substrate is damp to any appreciable degree, moisture and alkalinity can combine to attack many kinds of coatings with often disastrous results. The process, known as alkaline hydrolysis, attacks any portion of a coating which is not alkali resistant. It can destroy the film integrity, leading to a loss of adhesion to the substrate. Subsequently, any future coatings applied can lose adhesion due to the failure of the underlying coating from alkaline hydrolysis. Premature chalking and color fade are often other signs of paint being attacked by alkaline hydrolysis. It is for these reasons that most paint companies approach new cementitious substrates with caution, prescribing extended periods of weathering or "cure time" of between 30 and 60 days.

Flex Bon "Epoxy Bond" Surface Conditioners are formulated to be highly alkali resistant, substantially reducing cure time requirements. While a pH level of 10 is widely regarded as "too hot to paint" by many in the coatings industry, Flex Bon "Epoxy Bond" conditioners will provide a sound, stable anchor coating when applied to dry surfaces having a pH of 10 or less. Cure time for stucco to a level of 10 or less varies somewhat with prevalent weather conditions, but experience has shown that typically a cure time of 20-30 days will produce a substrate with an alkalinity reading of 10 or less.

Accelerating the cure time by repeating cycles of clean-water rinsing and drying of the substrate is the only known method for effectively lowering the pH level of a cementitious substrate.