

PAINTING NEW CEMENTITIOUS SURFACES

Concrete, concrete-unit masonry and other cementitious substrates, such as brick and stucco, differ from other surfaces for a number of reasons. In general, they may be highly alkaline and subject to efflorescence.

The current trend in new construction is to paint at the time of construction. Due to competitive realities of mass production, it is predictable that painting would be performed as quickly as possible. Painting contractors and paint manufacturers may be plagued with problems when this is done.

When masonry is fresh, moisture and alkalinity may combine to attack many types of coatings by a process known as hydrolysis. This process eventually leads to subsequent film deterioration. Film integrity and possible loss of adhesion may occur. Hydrolysis presents itself with signs of premature chalking and/or color fade. Due to these possible conditions, most coating manufacturers approach fresh cementitious substrates with caution. In general, it is recommended that these substrates cure for 30 to 60 days or until a surface pH of 10 is realized. During this curing process, alkaline components generally are neutralized or leached out.

In addition to hydrolysis, another failure encountered with premature painting is efflorescence. Efflorescence is a white deposit of calcium and magnesium salts which migrate from the substrate. It is often interpreted as an alkali-induced color fade. The salts have a very low water solubility, and a 10% solution of muriatic acid is required for removal. As always, care should be taken when working with acid.

As a general rule, fresh masonry substrates should be permitted to cure to a pH of 10 or lower. pH may be checked utilizing pH paper or pencil, which come in kits. pH is measured by comparing color change to a dry standard. The surface must be wetted with water prior to testing.

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.

Subsequent to sealing, topcoating with a hydrolytically stable latex system is recommended. Typically, 100% acrylic systems are desirable due to their inherent chemistry. Protecting the surface is also important when ferrous metal reinforcing rod, metal lath or metal corner beads are used in construction. A quality topcoat will give maximum overall long-term durability.

In addition to proper products, choice of colorants in topcoats is a factor. Colorants vary in alkali sensitivity. The latest update of our color merchandising system includes ratings of color pigments used in our system.