Un-Reacted Silicates In a Paragraph

This bulletin refers to sodium and potassium silicates that are introduced into (or onto) the concrete via a curing compound, densifier/hardener or as another brand of moisture vapor reduction system either introduced to the concrete as an additive to the mix design or topically sprayed on. These products are "reactive" in nature and are supposed to completely react with the constituents in the concrete matrix, which never seems to happen, and it is these "un-reacted" silicates that will give us trouble.

Alkaline silicates applied to the surface of concrete have the basic function of converting available calcium hydroxide into calcium aluminum silicate hydroxide (reaction). The active alkaline silicate content must contact a matching amount of calcium hydroxide to produce the calcium silicate hydrates. If there is not enough to react with there will be unreacted alkaline silicates present in the pores and capillaries as *water-soluble compounds*. Osmotic action will channel these compounds to the surface where they will act as bond breakers to surface applied systems. Surface applied coatings and water vapor reduction membranes such as the AC•Tech 2170™ systems will also fail and osmotic action will actually be enhanced.