SCP Products and Concrete Coatings

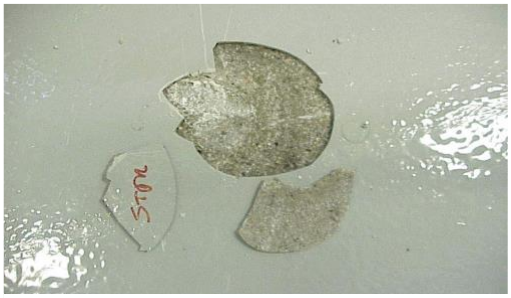

Figure 1: Debonded Epoxy (Lawrence)

Most coatings that are placed on concrete (epoxies, cementitious, urethanes, acrylics, and polyureas) depend on mechanical bond to perform well. Because SCP products penetrate the substrate concrete's capillary void space, the mechanical key present at the concrete/coating interface is undamaged and, in some cases, improved. Once coatings are bonded to concrete, contractors and owners depend on the longevity of that bond to dictate the life cycle of the coating. Two common mechanisms that affect the coating's life cycle are water vapor transmission and liquid water movement, both of which can deteriorate the bond between coatings and substrate concrete[1].

Spray-Lock Concrete Protection (SCP) products fill capillary voids by reacting with calcium hydroxide found in concrete to form Calcium Silicate Hydrate (C-S-H). By filling voids, SCP products stop liquid water transport and reduce water vapor transmission. By stopping liquid water movement and significantly reducing water vapor transmission, SCP products can significantly improve the performance and life expectancy of coatings. Several coating manufacturers have specified SCP products in the past to act as a moisture barrier to ensure proper performance of their coatings. Independent laboratory testing has demonstrated SCP products' performance improvements on coatings, as well as years of successful projects.

Laboratory Testing of SCP-Treated Concrete and Un-treated Concrete

SCP-Treated Concrete Performance over Untreated Concrete (% Increase)	
ASTM E96- Water Vapor Transmission	Up to 81%
ASTM C1583- Pull Off Testing	Up to 54%

The testing information presented above demonstrates that SCP Treatments may improve the bond strength of coatings. Additionally, SCP products can help extend the life of most coatings by restricting water vapor and liquid water transmission.

[1] Lawrence, B. Lee (2004) "Concrete Floor Covering Failures" Wiss, Janney, Elstner Associates, Inc. Retrieved 10/17/17 from: http://www.foundationperformance.org/pastpresentations/LawrencePres_18Aug04.pdf

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