

SHALING AND POPPING ON BROOM FINISH CONCRETE

Pressures on the Concrete Industry

With the concrete industry being under siege from government regulations over the last 10 years and especially over the last 5 years from the green house and global warming lobby, concrete mix designs have been going through some big changes. The days of pouring and placing concrete and putting a curing aid or cure and seal on and thinking that was all you had to do, if you even had to do that for your concrete, are over. There may have been the odd concrete pop after a year or two, which was pretty acceptable and normal. Can we still say that today? The problem is not the pouring and placing practices, the problem is the government regulation pressures that have been put on the Portland cement industry.

Where is the Problem Showing Up?

Overall concrete compression strengths are just fine. Where the problem is showing up is in the finished concrete surface in the form of concrete shaling on broom finish concrete. This is more specifically showing up in climates that are exposed to cold weather in winter and freeze thaw cycles. In the worst case scenarios, even with the use of curing aids and acrylic cure and seals, the benefits of using these products is starting to be minimal and sometimes no benefit at all. These government regulations are resulting in a weak concrete surface resulting in concrete popping and surface shaling and delaminations. Even with cure and seals, these problems are showing up in the spring.

Protec III Replacing Cure and Seals

Using Protec III Chem-Rx or Protec III Restore will greatly strengthen the surface of the concrete. Protec III works as a curing agent, but where it excels is in the ability to penetrate the concrete surface easily and chemically react with the weak bonds in the concrete paste. Once this reaction has completed the concrete surface is now highly resistant to concrete popping and surface shaling. Applications typically for broom finish concrete is to pour and place the concrete, if this occurs in the morning, come back in the afternoon and apply two

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coats of Protec III. If you pour and place the concrete in the afternoon, return the next morning and apply two coats of Protec III. Making the concrete surface strong using Protec III gives peace of mind from call-backs.

Conclusion

Protec III is an inexpensive solution to a huge problem for the concrete industry. When pouring and placing concrete with a water curing method, concrete will still leave up to 25% weak bonds in the concrete, called calcium hydroxide. Today's concrete has considerably more weak bonds because of the changing regulations put on the concrete industry, fortunately this is where Protec III can help. Protec III is an inexpensive solution. In areas where climate does not include freezing and thawing, this is not much of an issue, but if you are in Canada and the Northern US states this is a problem. The freeze thaw cycles place all kinds of pressure on the concrete surface and if the concrete is not treated correctly with Protec III, the results will show up after only one winter.