

**Naples – Bridge Replacement and Highway Reconstruction, US Route 302, Project No. BH-A106(000)**

The concrete sidewalks on this project were constructed in 2011. After one winter, “blotchy” pitted areas began showing up on the surface. They did not appear everywhere, but in enough places to raise concern about future durability plus they were unsightly.

David Mastay from Sika Corporation met with the project team and representatives from MaineDOT in June 2013.

After a review of the sidewalks, it was determined that the surface contained a lot of fine material including cement paste, which de-bonded under freeze-thaw conditions.



It was recommended to scarify the surface with a “walk behind scarifier”, followed by thorough cleaning and an application of a silane sealer.

It was decided that the entire sidewalk surface should be treated, since sooner or later, the same blotchy conditions would likely be seen throughout the project.

The scarifying process was a slow and tedious one due to the high strength of the “LP Concrete.”

After scarifying, the loose dust was swept up, followed by a rinsing of the surface with low-pressure water.

Originally, the sidewalks had a light-broomed finish. The appearance now is more of an exposed aggregate look.





Prior to the application of the silane, the crew pressure washed the sidewalks using water only.

The crew began pressure washing near the high point on the bridge.

The surface dried very quickly as the surface temperature was high and there was a constant breeze.

Ample drying time was allowed prior to proceeding with the sealing.

“Sikagard 705 L”, a 100% silane product was selected for this application. Sikagard has a low VOC content and is used un-diluted, right out of the can.

705 L is relatively new to the US market, but is comparable to other prequalified 100% silanes on MaineDOT’s QPL.

Through special arrangement with Sika and A.H. Harris, special pricing was given for this project. The cost per gallon was quoted at \$36.50 per gallon in 5 gallon pails which is about a 15% reduction. The unit cost works out to be a little over 15¢ per square foot at the prescribed rate of application. These prices do not include freight.

The recommended application rate was 240 square feet per gallon. Only one coat was required.

The crew used rollers for the primary application, with brushes used for hard-to-reach areas.



An hour after application, the silane still had a somewhat wet appearance. The manufacturer recommends a minimum of 3 hours drying time (at 68 degrees) before being exposed to rain.

This should not be a problem as thunder storms were not predicted for this area until later in the evening.

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