

Rogers Road Over I-95 Bridge Deck Overlay

Wilmington, DE



Project Profile (2015)



Project Summary

The Rogers Road bridge over I-95 was built around 40 years ago. In 2014, the bridge deck was scheduled for maintenance in order to preserve the bridge's structural integrity. After evaluating the different bridge deck rehabilitation options, a mill-and-overlay repair was chosen.

Overlays are an economical option compared to a full-depth replacement. However, overlays typically have a very high occurrence of shrinkage cracks due to the highly restrained condition of the underlying roughened surface combined with the thin 2" top section. The shrinkage cracks can quickly lead to freeze-thaw deterioration and eventually delamination of the new surface, requiring additional maintenance as soon as the first couple of years after rehabilitation.

In order to reduce the required future maintenance and try to preserve the original structure as much as possible with the overlay, PREvent-C500 shrinkage-reducing/compensating admixture was chosen to provide a dual-mechanism mitigation technology. A sister bridge deck was rehabbed using the same method but without PREvent-C and a side-by-side comparison of cracking was performed to evaluate the effectiveness of PREvent-C. It was determined that the use of PREvent-C reduced shrinkage cracking by 85-90%. This significant reduction in cracking will lead to a longer life-cycle of the repair and the original structure, as well as reduced maintenance cost.

Owner: Delaware Department of Transportation

Engineer: Delaware Department of Transportation

Concrete Contractor: Eastern Highway Specialists

General Contractor: Eastern Highway Specialists

Ready-Mix Producer: Heritage Concrete/Oldcastle

Products: PREvent-C®500 Shrinkage-Reducing/Compensating Admixture



75 Giles Place | Waynesville NC 28786
www.premiercpg.com | T. 800-227-4287

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