



IMPROVING TRAFFIC AT WASHINGTON STATE'S I-405/SR 167 INTERCHANGE

Project Type:

Highway

Application:

Pavement rehabilitation

Location:

Renton, WA

Project Date:

2019

Project Owner:

WSDOT

Contractors:

Atkinson Construction and Penhall Co.

Project Size:

12,000 spall repairs and dowel bar retrofits

Product:

Rapid Set® DOT Repair Mix

The Interstate 405/State Route 167 interchange in Renton is one of Washington State's most congested corridors. To decrease traffic congestion and reduce the likelihood of collisions from weaving cars, the state's transportation department (WSDOT) awarded a design-build contract to Atkinson Construction, Northwest Division (Renton), in 2015 to construct a flyover bridge. The 1,500-foot-long direct connector bridge joins SR 167 high-occupancy toll lanes with I-405 high-occupancy vehicle lanes.

Work also included reconstructing portions of the interchange and rehabilitating pavement to extend performance and life. Subcontractor Penhall Co. (Seattle office) performed spall repairs to chipped areas and blown-out joints and dowel bar retrofits to restore load transfer across joints and cracks. Penhall was also the grinder for the project, performing diamond grinding to restore pavement smoothness.

For the patching material, Penhall used Rapid Set® DOT Repair Mix. The high-performance and fast-setting concrete structural repair material is one of the products approved by WSDOT for this type of work—and for a good reason.

The transportation department typically requires work to be performed overnight and lanes to be reopened to traffic by morning to limit disruptions to traffic. For this project, the DOT specified that repaired

PROJECT PROFILE

pavement panels reach a compressive strength of 2,500 psi to open. Within an hour of placement, DOT Repair Mix reaches a minimum of 2,500 psi and higher, depending on aggregate extension used and jobsite conditions.

QUICK REPAIRS KEPT THE PROJECT MOVING

Over the course of a month, the Penhall crew rehabbed as much pavement as possible between the hours of 10 p.m. and 6 a.m. To streamline the repair material's mix-to-pour process and make equipment more portable, the subcontractor custom-built a batching and distribution trolley and placed mortar mixers on forklifts. The repaired panels were hand-finished, and a curing compound was applied to prevent moisture loss during curing.

In all, the crew completed around 12,000 spall repairs and dowel bar retrofits.

The flyover ramp was opened to traffic in February 2019, four months ahead of schedule. The project was the first phase of a broader project to widen I-405 and add express toll lanes. The next phase of the construction will begin in early 2020.

CTS Cement Manufacturing Corporation manufactures Rapid Set professional-grade cement products for concrete repairs and new construction projects. Contractors, owners, engineers and architects choose Rapid Set to eliminate problems they have with other concrete repair materials, to save time and money, when superior durability is required and results need to be aesthetically pleasing. For more information about CTS Cement and Rapid Set, please visit www.CTScement.com.

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