



## LINCOLN TUNNEL HELIX GETS MAKEOVER WITH MINIMAL TRAFFIC DISRUPTION

**Project Type:**

Bridge

**Application:**

Bridge deck repair

**Location:**

Weehawken, N.J to Manhattan, N.Y.

**Project Dates:**

2014

**Project Owner:**

Port Authority of New York & New Jersey

**Contractor:**

El Sol Contracting & Construction Corp.

**Project Size:**

40,000 sq. ft.

**Product:**

Rapid Set® DOT Cement and Low-P™ Cement

Every year, 40 million vehicles use the Lincoln Tunnel to travel between New Jersey and New York City, using a singly entry point called the Lincoln Tunnel Helix. Constructed in 1937, the seven-lane sloping roadway loop connects New Jersey's major highways to the tunnel entrance, making it one of the busiest crossings in the world. In 2014, The Port Authority of New York & New Jersey launched a rehab project to repair and extend the life of the aging and deteriorating structure. Called the "Helix Fix," the project included performing concrete structural work in addition to repaving the road and installing new median barriers.

As part of the project, El Sol Contracting & Construction Corp. of Maspeth, N.Y., self-performed 40,000 square feet of bridge deck repairs. The work had to be performed overnight to avoid disrupting the high-volume commuter and bus traffic, and the general contractor needed to complete as much work as possible within those time constraints. These project parameters necessitated the use of fast-acting repair materials including Rapid Set® DOT Cement and Rapid Set® Low-P™ Cement.

DOT Cement was chosen not only for its fast-setting capabilities (it's ready for traffic and loading in one hour), but also because it contains an air-entraining agent and a plasticizer so no other admixtures were needed. The industrial-grade cement is qualified as ultra rapid

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hardening (URH) per ASTM C1600 (Standard Specification for Hydraulic Cement). It is a blend of Rapid Set Cement and high-performance additives to be blended onsite with local sand and aggregates for structural concrete repairs.

Additionally, Low-P Cement was selected for use in all repair areas that would not be paved over, due to a Port Authority requirement for low-permeability concrete in such areas. The material's low permeability and corrosion resistance provides exceptional long-life durability even when exposed to the harsh freeze-thaw cycles often experienced in the Mid-Atlantic region. It also qualifies as very rapid hardening (VRH) per ASTM C1600 and reaches high compressive strengths quickly—4500 psi within three hours and 6000 psi within six hours.

Concrete supplier Anflo Construction Corp., also of Maspeth, provided the materials, which were mixed and poured via volumetric mixer. After placement, the El Sol crew hand-finished repaired areas and covered them with wet burlap for curing. After about two hours of curing, the repaired areas were ready for traffic.

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](http://www.CTScement.com).

## ABOUT CTS CEMENT