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CASE HISTORY



Mexico Installs Steam-Cured CIPP System

Market Segment:	Sewer Rehabilitation
Composite Application:	Culvert rehabilitation
Resin:	Vipel® L704-AAP
Manufacturing Process:	Cured-in-place pipe
Pipe Diameter:	60 inches (1,500 mm)
Pipe Length:	147 Feet (45 meters)
Installed:	2015
Location:	Puebla, Mexico

In early 2015, a culvert under the surface of the Mexico-Tuxpan Highway near Puebla, Mexico, was nearing collapse. Corrosion from frequent storms led to exposed steel and falling pieces, which posed a risk to the 10,500 vehicles that travel on the highway daily. The federal organization that oversees transportation, the Caminos y Puentes Federales de Ingresos Servicios Conexos (CAPUFE), turned to Tubepol for an immediate solution.

Tubepol, a cured-in-place pipe (CIPP) provider based in Mexico City, designed a trenchless solution using AOC's Vipel® resin to rehabilitate the pipe. Mexico typically relies on traditional methods, such as open-cut trench excavation. Open-cut pipe replacement wasn't an option for this project because it would disrupt traffic on the busy 310-kilometer stretch of highway between the capital, Mexico City, and one of the country's most important harbors, Tuxpan on the Gulf of Mexico.

Cured-in-place pipe rehabilitation was ideal for the Mexico-Tuxpan Highway project. The seamless pipe-within-a-pipe system relied on quality materials, including Vipel® L704-AAP, an isophthalic-based resin that provides the corrosion resistance, durability and toughness required for CIPP applications.



CIPP installation under the Mexico-Tuxpan Highway helped ensure no disruption on the busy superhighway between the country's capital city and a major harbor.



Adrian Cordero, an engineer with Tubepol, inspects a rehabilitated pipe under the Mexico-Tuxpan Highway.

Mexico Installs First Steam-cured CIPP System, continued

Tubeopol and AOC worked hand-in-hand on the CIPP project, the first of its kind in Mexico. “The process was not simple,” says Adrian Cordero, an engineer and head representative of Tubeopol. “It took us weeks to plan the perfect and fastest execution without compromising the security of the highway.”

Designing the CIPP lining presented one of the primary challenges. “We needed a functional tube capable of handling ground loads and settles,” says Engineer Jorge Pérez-Gavilán, Tubeopol’s field foreman. The design team opted for a 25 mm liner.

Because of the ground’s pronounced 12.4° slope, Tubeopol opted to install the liner cure using compressed air and cure it with steam. Using hot water as the curing mechanism would have been nearly impossible as it would have required a large volume of water, which would have created excessive pressure on the nose of the inverting liner. Steam curing also provided an enormous time advantage: It took only three hours to cure the liner.

Tough conditions prevailed during the installation, including fog, rain and even a flood. But thanks to its excellent wet-out and cure properties, the Vipel® resin behaved as expected. The liner was cured at a temperature of 212° F/100°C resulting in new pipe with improved structural and hydraulic performance.

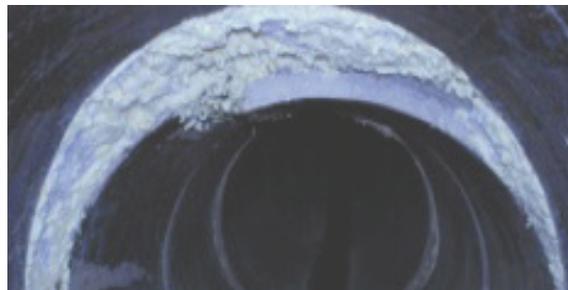
The success of this project has gained visibility for Tubeopol and spread the word throughout Mexico about the benefits of no-dig rehabilitation technologies, such as CIPP.

About Tubeopol

Tubeopol is a full-service CIPP provider located in Mexico City. It solves customers’ pipeline issues, offering video inspection, pipe fabrication, installation, curing, and final inspection. Tubeopol also provides free educational seminars on CIPP to maintenance chiefs at government organizations and private companies. For more information, contact Rodrigo Zavala, at (+52) 1209-0152 or email ingenieria@tubeopol.com

About AOC

AOC is a leading global supplier of resins, gelcoats, colorants, additives and synergistic systems for composites and cast polymers. AOC knows technology, lives quality and delivers service better than any other supplier. For more information, e-mail CIPP@aoc-resins.com, phone (901) 854-2800 or go to AOC-RESINS.com.



Corrosion led to exposed steel and deterioration of the original culvert.

