



EPOXYTEC™

Structural Epoxy Systems for Manhole Rehabilitation - Collaboration Yields Success

Topeka, Kansas has approximately 760 miles of sanitary sewers.¹ Although the city is constantly taking proactive measures to maintain their infrastructure, the inevitable deterioration of manholes still plagues this capital city. Like other cities throughout the nation, it perennially faces the common problem of damage to its manholes caused by H₂S corrosion.

Today's market offers an unprecedented range of solutions for utility asset protection. For manhole rehabilitation in particular, solutions can range from quick fixes that are "hold me overs" during emergency situations, to a plethora of sound rehabilitation options that provide long-term solutions. When considering solutions, numerous factors come into play. A "quick fix" in the form of a cement repair can sometimes serve the purpose and be cost effective, however depending on the severity of deterioration of the structure, that is not always optimal. Investing in a long-term solution, while sometimes more costly upfront, ends up saving cities in the long run due to its long-standing effectiveness. Long-term asset protection was the City of Topeka's goal, ultimately leading them to explore structural epoxy lining solutions for their manholes.

Topeka city engineers first met with Epoxytec, one of the country's leading manhole rehabilitation specialists, during the spring of 2020. "Topeka's engineering meeting was one of the first COVID-19 virtual meeting sessions for Epoxytec that took place during the initial lock-down. What had previously been in person meetings, this new virtual platform gave me the opportunity to easily educate and inform engineers from the City of Topeka and throughout the nation about the growing field of structural liners," said John Thompson, Epoxytec's National Sales Manager. "Structural liners have a unique place in the world of manhole rehabilitation. They provide long-term asset protection from environmental elements in greatly deteriorated structures where traditional liners have failed."

Epoxytec has manufactured performance coatings designed for lining water and wastewater systems for over 30 years. Recently acquired by Tnemec Company, Inc., Epoxytec continues to grow its innovative product lines with specific attention to structural liners, specifically Epoxytec's CPP products. Unlike traditional thin film coatings, where outgassing and I&I can wreak havoc, these structural coatings are designed for low-pressure resistance, to hold back I&I, and seal against hydrostatic pressure, all properties designed with manhole rehabilitation in mind. In addition to its structural properties,

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Featured Products

CPP Sprayliner



Project Information

Project Location

Topeka, Kansas

Completion Date

Fall 2021

Applicator

Hill Services, Inc.



PART OF THE TNEMEC FAMILY OF COATINGS

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Structural Epoxy Systems for Manhole Rehabilitation - Collaboration Yields Success (cont.)

one of the product's most desirable features is that it can be spray-applied up to 3/8" thick (375 mils) using a heated rig. This method of application expedites the turnaround time for projects and supports a much faster return to service for assets. "These products have been highly engineered to be easy to use," notes Thompson.

A spray-on system that would provide structural strength was exactly what the city was looking for. And the final determining factor to Topeka's decision to move forward with this system was the fact that Epoxytec conducts stringent training to certify contractors in the proper use of their structural product line. To become a certified contractor of Epoxytec's CPP Sprayliner, contractors must attend training sessions to ensure that they understand industry standards, specifically AMPP (formerly NACE and SSPC), for surface preparation and application in the water and wastewater industry.

Having completed training and met Epoxytec's standards, Hill Services, Inc. was well qualified for this project. Hill Services has been providing industrial maintenance, services, and repairs nationwide for municipalities as well as industrial facilities, and powerplants for close to a century. As one of Epoxytec's certified contractors, Hill Services is an expert in manhole rehabilitation with focused emphasis on structural liners.

The Topeka project began in the fall of 2021 and lasted roughly three weeks from start to finish. The structures included several significantly corroded brick manholes and concrete junction boxes. Surface preparation started with hydro blasting to meet SSPC-SP13/NACE No. 6 standards, and a surface profile of ICRI-CSP 5 with a minimum pH of 9, a preparation standard required for proper application of Epoxytec's CPP Sprayliner. Any leaks were sealed, and then concrete repairs were made using Epoxytec's Mortartec Ceramico, a hybrid cementitious epoxy mortar. "This [surface preparation] is one of the most vital aspects of successful manhole rehabilitation," commented Ed Ward, Manager of Hill Services, who oversaw the project. "Without a sound substrate, the entire project is jeopardized."

Once the surface was prepared, CPP Sprayliner was applied, using Hill Service's plural component heated spray rig to reach 125-200 mils. The completion time for each manhole was approximately two days, including one day for surface preparation and one day for coating.

Rehabilitation projects like these are not particularly glamorous, but what makes them special is the ease of application produced by pairing experienced applicators with products that perform. There was solid teamwork among all parties involved, from the engineers who recognized the value of specifying a structural liner that is designed to last, to the qualified applicator, Hill Services, who emphasized quality and detail. Officials in the City of Topeka were highly involved in all aspects of the quality and execution of this project as well and had the foresight to know that choosing a structural rehabilitation system would ultimately save the city money by not having to revisit these manholes and rehabilitate them again for an estimated ten years or more.

Even the product manufacturer had hands-on involvement, coming on-site during various stages of the job. This collaboration yielded the results envisioned at the onset of this project: rehabilitation that would return these structures to service and provide long-term asset protection.

¹ <https://www.topeka.org/utilities/sewer-backups/>

