



INTERPLASTIC

# HISTORY

# CASE



The critical pipe line rehabilitation at Westwood Lakes

Extraordinary  
Properties make  
CoREZYN®  
Vinyl Ester  
*“Resin of Choice”*

Cured-in-Place Pipe (CIPP) applications with aggressive environments and/or very stringent structural requirements, should only be designed with vinyl ester resins according to Fred Tingberg, vice president, Lanzo Lining Services, Inc. That’s why Lanzo buys Interplastic’s CoREZYN VE8190 resin.

Lanzo Lining Services specializes in trenchless technology, especially CIPP, and has installed over 850,000 lineal feet since 1993 without a single failure. They attribute their success to not only their installation expertise but also to the resin they select. “CIPP is 85% resin, 15% tube,” says Tingberg. “When you are working on a sanitary lift station, sewer line or forced sewer main rehabilitation, you encounter many adverse conditions. They present the most challenging CIPP applications and have a powerful impact on the resin performance. That’s why we use CoREZYN vinyl ester.”

A recent example of Lanzo’s success in planning, design and installation, is the Westwood Lakes sewer line rehabilitation in Dade County, Florida. A severely deteriorated, 280-foot-long pipe, buried 16 feet underground was failing. It conveyed two million gallons of flow per day into a major pump station. Metro Dade County authorities were worried about high levels of infiltration and inflow as well as the imminent possibility of collapse. In order to expedite the necessary rehabilitation, Dade County elected to piggyback Lanzo’s existing contract, S-657, with the critical line being added at the same price units.

Work began by installing a hard pipe continuous bypass with redundancy for additional safety. Diaphragm pumps were selected for their unique ability to pass large amounts of sewage without clogging. Any downtime would be a

Lanzo Lining

# excellent results

disaster. Lanzo's crew was assisted by Metro Dade's own forces in the around-the-clock operation and manning of the site.

With the bypass in place, the existing line was cleaned while Lanzo's crew conducted a closed-circuit video inspection to reveal the nature and location of the pipeline defects. The video data identified several major leaks. Hydrogen sulfide attack on the crown of the pipe was compounded by the scouring action of high velocity flows.

"The cast iron pipe also had major scaling and oxidation byproduct deposits which needed to be removed, giving us a smooth, symmetrical surface for the new liner," said Tingberg. The cleaned pipe's effective diameter was 32-inches instead of the 30-inch standard that Lanzo anticipated. "We had a 30-day window to complete the job, so we rush-ordered a special tube to be air-freighted to our Pompano Beach (FL) plant. There it was fitted with turn ropes and further customized to meet the host pipe's geometry."

Prior to the tube's arrival at the job site, an inversion column was set up. Due to the tube's large diameter, a thrust block was used in the sending manhole to counter inversion forces during early installation stages. A day before the installation, CoREZYN vinyl ester resin was catalyzed and pumped into the tube, which was carried along on a conveyor and carefully monitored to ensure uniform wall thickness. Because of the number and size of the defects plus the aggressive influent water into the pipe, an additional 5% sacrificial resin was used to prevent washout or contamination of the 19.5 mm finished design thickness. The project consumed 10,670 pounds of vinyl ester resin.

The wetted-out tube was loaded into a refrigerated vehicle and transported to the job site during the night to avoid possible traffic delays and the heat of the Miami sun. When the 11,000-pound tube arrived, an on-site water source was used to inflate the tube during the inversion process. Once inflated, the tube's internal water temperature was ramped slowly to 140oF (the curing threshold) and maintained for an hour, allowing the line to stabilize. This also allowed the resin to saturate the existing



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defects in the host pipe. Then the temperature was increased to 180°F and maintained for the balance of the cure cycle. After that, Lanzo's crew reinstated pipe ends and laterals and post-televised the line. Samples were drawn and sent to an independent testing laboratory to document the flexural strength and modulus achieved in the field. Additionally, this information proves the quality of the wet-out and completeness of the cure. It also validates the design basis for the selection of the wall thickness. The rehabilitated pipe has a 50-year life expectancy.

"CoREZYN vinyl ester has superior adhesion, lower creep and less shrinkage than typical iso-polyesters," concludes Tingberg. "It is easy to use, stable when catalyzed, has predictable cure times, isn't blended or filled, and has adequate safety margins to deliver excellent results. Vinyl esters are the resin of choice for us."

Interplastic Corporation is a specialty chemical company with its headquarters in St. Paul, Minnesota. It is focused on the production and distribution of unsaturated polyester resins, vinyl ester resins and gel coats for the composites and cast polymer industries.



Pipe Before



Pipe After



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