



INTERPLASTIC

C A S E

history



For more than 50 years, Lametti & Sons has developed and prospered as experts in open cut and trenchless technology. Whether it's dredging for the U.S. Army Corps of Engineers or repairing a sanitary sewer line in a midwestern municipality, this is a company to have on speed dial.

50
years

In the Trenches with Lametti & Sons

Successful CIPP

Cured-in-place pipe (CIPP) sanitary sewer line repair is a complex process that requires a clear understanding of chemistry and physics. The Lametti team is very experienced with CIPP, but as Dan Banken, Lametti Project Manager says, "There are always surprises." That's why their firm is staffed with Professional Engineers and their job foremen have the experience to plan for the actual and conquer the unplanned.

A solid relationship with Interplastic Corporation's Thermoset Resins Division (TRD) has led to the exclusive use of their CoREZYN® COR72-AT-475 isophthalic resin. It was especially developed for CIPP use and meets the physical property requirements of ASTM D790 and ASTM D638. These standards describe the flexural modulus (measurement of stiffness) and tensile strength (resistance to breaking) of the liner once it's cured.

"The liner is designed to be a stand alone structure, even if the host pipe totally deteriorates," explains Kaleel Rahaim, TRD Manager, Pipeline Remediation Polymers and CIPP expert. "The project is engineered so the cured liner alone can hold all the load of the soil and the hydraulic forces that are present. The quality of the resin is what will enable a liner to withstand the hydrogen sulfide environment and the physical pressures."

Predictable Performance

"The keys to CIPP success," relates Banken, "are a predictable gel and cure and then long-term performance of the cured liner. Banken says they usually catalyze and impregnate the felt liner with resin in their factory, then chill it and truck it to the job site. "We need a resin that will remain stable after it's catalyzed for 24 - 48 hours from wet-out until we put the bag in the line. If we keep the resin and liner chilled, we've had it go as long as week, even though that's the exception." The chance of unpredictable problems at the job site or a drastic change in the weather can throw off the repair schedule. "By using the CoREZYN resin, we have give and take in our window. We don't have to worry about scrapping a liner and going broke on a job because of a delay."

Once a sewage bypass has been established, there are generally two ways to approach repairs. One is to build a hydrostatic head and invert the impregnated liner in the host pipe by using a pressurized column of water. Another way is to pull the liner through the pipe and then run a small calibration hose through the liner. The hose inflates the liner using pressurized cold water until it fits snugly against the host pipe.



The felt liner is prepared for a job.



Robots re-establish the service connections.



The rehabilitated pipe.

Once the bag is inflated, the water is re-circulated by pumping the water out of the liner and through a boiler. Pressure is maintained to ensure the liner stays "inflated" against the walls of the damaged pipe while the water temperature rises to begin curing the resin. Once the recommended curing temperature is reached, it is held for two hours or longer and then a controlled cool down is accomplished. The cool down time is generally three hours or longer.

Robotic cutters are used for re-establishing the service connections, which have been pre-measured. A video camera attached to the robot provides the aboveground camera operator with the visual cues.

Vic Lametti, President, stands behind their work. "We don't expect to do maintenance on the lines we've repaired. We design the liner for a 50 year lifespan."

The CoREZYN COR72-AT-475 isophthalic resin has passed the ASTM D2990 flexural creep test standards to help provide this confidence. ASTM D2990 measures the flexural modulus at the start and at the end of a 10,000-hour test and then is extrapolated out 50 years. The COR72-AT-475 retains at least 50% of its original flexural modulus, which means it will survive in the rigorous environment.

Lametti & Sons



INTERPLASTIC CORPORATION
Thermoset Resins Division

1225 Willow Lake Blvd
St. Paul MN 55110-5145

Ph 651.481.6860 • Fx 651.481.9836
www.interplastic.com