

Sealing Leaking Sewer Main Joints

Technical consultation and on-site training make the difference

Contractor:S.J. Louis Construction, Inc.

Client:City of Des Moines, Iowa

PROBLEM:The City of Des Moines, Iowa, was installing more than four miles of 60” diameter reinforced concrete pipe with Ameron Lining, bell and spigot in 8’ sections for a sewer main. After a large portion of the pipe had been installed and backfilled, the project engineer inspected the pipes and found groundwater leaking at the connection joints. Many of the gasket seals between the pipe sections were not sealing properly and hydrostatic pressures were significant enough to produce leaks. The Ameron Lining System that had been welded at the joint connections had formed “blisters” at the leaking joints. The city contracted S.J. Louis Construction, Inc. to repair the problem joints.



S.J. Louis superintendent Ray Hawkinson’s initial attempts to repair the leaks were unsuccessful.

“We weren’t having any luck with the outfit we were using,” said Hawkinson. The need to rework many joints multiple times made progress slow, so he searched for a product that would perform better and be more cost-effective.

“The chemicals we were using would set up right away and didn’t allow us to get spots that were leaking, so we’d have to go back and go back and go back,” said Hawkinson. Through the advice of another contractor, he contacted Prime Resins technical consultant Adam Goldstone to discuss the repair options for this project.

SOLUTION:The repair plan designed for this project involved a combination of simple but specialized equipment and installation techniques to use hydrophilic and hydrophobic water-activated polyurethane injection resins designed specifically for sealing leaks in concrete structures.

The products used included: **Prime Flex 900 XLV**, a water-activated polyurethane resin, injected with a dual-component **M2 Air Pump** assembled by Prime Resins, and **Prime Flex 920**, a water-activated hydrophobic polyurethane resin, injected by a Titanelectric airless single-component pump.

Prime Resins' material is engineered to maintain a flowable consistency, which enhances the resin's ability to completely fill the joint and seal out infiltration.

"It was excellent. Many times it would seal the next joint downstream," said Hawkinson.

To facilitate a successful job, Goldstone and an associate traveled to the job site to train S.J. Louis's field personnel on proper injection techniques. They worked alongside the field personnel for two days, sharing their combined 30+ years of chemical grouting experience.

"The hands-on training helped greatly, and to me, it's one of Prime Resins' best selling features," Hawkinson said.

BENEFIT:After completing the training, the S.J. Louis crew was able to successfully seal an average of 15 joints per day, significantly reducing the cost of repairs versus previous methods and the use of subcontractors. This project is 100% complete and S.J. Louis has not had a callback.