

# SAUEREISEN

## Success Stories From the Field

### Rehabilitation Option with Polymer Lining Produces Long-Term Benefits

#### A Long History of Proven Performance

Sauereisen, Inc. of Pittsburgh, PA has been developing novel solutions to problems in industry since 1899. From initial High Temperature Bonding Cement to a complete line of corrosion-resistant engineered materials for various industries, Sauereisen has remained the leader in providing high-quality products.

#### An On-Going Concern

Communities across the country continue to encounter challenging problems within their wastewater collection and treatment facilities. The process of Microbiologically Induced Corrosion (MIC) has been studied and documented for years. Of equal concern is the process of Inflow and Infiltration, (I&I) where water not intended for treatment enters the system. Each gallon must be treated, costing communities millions of dollars in additional expense. Sauereisen has engineered products and systems designed to address these problems.

#### A Case History

When faced with the decision to "repair or replace" degraded concrete structures in wastewater systems, several factors must be considered. Life expectancy versus cost is obviously a major factor. Does it make financial sense to rehabilitate a weakened, chemically attacked structure, or should it simply be replaced?

In 1988, Jefferson Parish, Louisiana chose to rehabilitate a concrete lift station, which was on the verge of disrepair. This particular structure, Lift Station I-10-1, sees a significant amount of turbulent flow, abrasion and hydrogen sulfide gas. The concrete prior to restoration was in extremely poor condition, with exposed reinforcement in much of the area. Meyer Engineering of Metairie, LA was awarded the contract to engineer the project. With the cooperation of Sauereisen's technical sales staff, a specification was prepared, which included the "SewerGard" Epoxy Lining System to restore the structure and to protect it from further chemical attack.



The SewerGard product is ideally suited for the demanding conditions existing in wastewater systems in the Gulf Coast area. In addition to highly corrosive conditions, water infiltration is ever present in southern Louisiana.

Python Corporation, of Slidell, LA was the installing contractor, who did an excellent job in properly preparing the structure prior to applying repair materials. This process entailed the removal of all loose, weak, chemically attacked concrete, followed by a thorough cleaning to remove all oils and contaminants. A fast-setting, cement-based Underlayment was then applied to restore the integrity of the concrete and to provide a uniform surface for application of the protective lining. The selection of the proper underlayment is critical, as many will tend to soften and re-emulsify in immersion conditions. The underlayment must also be compatible with the epoxy lining in order to provide a strong, firmly bonded monolithic structure.

The SewerGard No. 210T – Trowelable Epoxy Lining was then applied to a thickness of 125 mils. SewerGard is a strong, chemically resistant product designed specifically for difficult, corrosive, wastewater environments. As a Quality Assurance measure, the lining was then spark tested. High Voltage Spark Testing reveals any type of breach in the lining, many of which are not visible with the naked eye. Left un-repaired, these defects would allow water and sewerage to undercut the lining, leading to a premature failure. The contractor marked all identified areas, made the necessary repairs and then re-tested the repairs. This process ensures a pinhole-free lining, which means optimum performance of the lining.

In 2001, the lift station was inspected and found to be in excellent condition. The SewerGard Epoxy Lining is still firmly bonded and providing



protection to the concrete after more than 13 years service. This structure presented a challenge to all involved parties. By choosing the appropriate materials and rehabilitation methods, the community saved considerable money, avoiding the additional expense and inconvenience required for full replacement.

There are instances where concrete in wastewater systems may be beyond repair, with replacement as the only option. In most cases, however, the proper materials, application methods, and quality assurance measures make rehabilitation not only feasible, but also practical.

## An Expanded Product Line

Over the years, Sauereisen has continued to introduce new products and application methods for wastewater applications, including:

1. SewerGard No. 210S - The same reliable resin system as the original product, but with fiber reinforcement added for reduced permeability and enhanced physical properties. No. 210S is spray-applied using standard airless equipment, for fast application rates.
2. SewerGard No. 210RS - Still the same resin system, for use as part of Sauereisen's "60-Minute Solution" manhole restoration system. This product is applied with a rotor/stator pump and a unique spinning nozzle, which allows for the application of materials from street level. The result is a safer, faster, and more cost-effective rehab method.
3. Concrete Repair Materials and Waterproofing Systems

### CONCRETE REPAIR MATERIALS

- Underlayment No. F-120. A fast setting, Portland-cement based repair material available in trowel, cast and gunite grades.
- SubstrateResurfacer No. F-121. Concrete resurfacer applied with a spinning nozzle, permitting application from street level. Part of Sauereisen's 60-Minute Solution manhole restoration system.
- Filler Compound No. 209. Epoxy filler compound used for filling defects in concrete. Has excellent adhesion and develops high strengths.

## WATERPROOFING SYSTEMS

- InstaPlug No. F-180. A rapid setting, hydraulic water plug for sealing active water leaks, filling small voids and special anchoring applications.
- H<sub>2</sub>OProf No. F-190. A two-component material for use on concrete or masonry structures to prevent water seepage through the substrate. Used to seal sumps, trenches, tanks, manholes and below grade walls in wastewater treatments, power, pulp & paper, and steel industries.
- Hydroactive Polyurethane Grout No. F-370. A catalyzed hydrophobic polyurethane liquid. This material expands when it meets any source of water or moisture. No. F-370 adheres tenaciously to practically any substrate wet or dry.

*Contact Sauereisen for additional product information, recommendations, or qualified applicators.*

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