

CASE STUDY



Vortex Parsonpoxy SEL-80 Prevents Corrosion, Replaced Failed T-Lock Liner at Critical Wastewater Treatment Facility

PROVEN EPOXY MATERIAL DELIVERS LONG-LASTING DURABILITY IN HIGH H_2S , HUMID ENVIRONMENTS.



Before/After: Applied SEL-80 100% solids epoxy to exposed concrete above wastewater emitting H_2S gas.



SOLUTION APPROACH

After environmental assessment, consulted with contractor to recommended correct solution to provide protection against high hydrogen sulfide gas (H_2S), humid environment.



ELIMINATED ESCALATING COSTS

Ended a year of delays and cost overruns with quick-application, epoxy coating solution.



LONG-TERM PROTECTION

Successfully protected new clarifiers and wet wells while replacing failed T-Lock application.

PROJECT SNAPSHOT

Project

Guam Waterworks Authority

Contractor

Black Construction with Isla Coatings & Roofing Supply

Problem

- Newly constructed clarifiers and wet wells at risk due to highly corrosive sewer gas
- Initial multi-layer epoxy coating system solution not suited for environment and failed to correct problem
- Removed failed T-Lock liner that affected the majority of clarifiers, spanning 92,000 square feet of vertical structures

Dimensions

- 92,000 square feet of vertical structures that included several clarifiers and wet wells
- 2 ½ truckloads of SEL-80, or about 6400 gallons to be applied

Overview

Water authority achieves more progress in one week than in the previous year with consultative approach and epoxy best suited for the environment.

Vortex Products Used

- Parsonpoxy SEL-80

THE CHALLENGE

Guam Waterworks Authority (GWA) provides potable water service to 43,000 customers, which represents most of the island's civilian population. Its water treatment facility is unique in that it is pipeless and comprised of 92,000 square feet of vertical structures with several clarifiers and wet wells.

The caustic gases emitted by the sewer's water are highly corrosive and known to damage the top five to six feet of clarifiers and wet wells. With newly constructed clarifiers and wet wells, GWA wished to protect its investment and maximize the life of the new structures. A previous contractor specified the use of a multi-layer epoxy material to provide corrosion resistance, however the material and application method proved incompatible with the facility's high H₂S environment and daily rainfall. This proved challenging when applying the multi-layer epoxy and forced crews to constantly start over which prevented meaningful progress. A year later, the project remained incomplete.

Additionally, an inspection of older clarifiers revealed the presence of failed T-Lock liner, a high-density polyethylene (HDPE) protective lining system that anchors into cast-in-place concrete. The material's failure indicated the concrete behind those clarifiers was failing.

THE SOLUTION

Based on strong performance of its broad product portfolio, Vortex Companies was contacted to provide a comprehensive, consultative assessment of the project's requirements. Vortex recommended Parsonpoxy SEL-80, a material that not only provides structural integrity but cures quickly and eliminates the need for multi-layer applications. Working with General Contractor Black Construction and coating supplier Isla Coatings & Roofing Supply, the T-Lock Liner was removed and Vortex's Parsonpoxy SEL-80 was applied.

Due to the fast-curing hydrophobic properties of Parsonpoxy SEL-80, the region's wet weather didn't hinder the project's progress and the contractor was able to resume application following each rain event quickly and easily. In fact, the contractor made more progress in one week than the previous contractor made in a year.

THE RESULTS

Three coats of Parsonpoxy SEL-80, totaling 250 mils, were only needed, compared to 11 coats of the previous material. This quick spray application led to faster completion and lower costs, while delivering vital corrosion protection and long-term protection.

THE INNOVATION

Parsonpoxy SEL-80 is a 100% solids, high-build epoxy coating formulated to provide long-term corrosion protection for concrete, brick or metal structures subject to high levels of H₂S. It provides excellent protection and abrasion resistance for concrete and steel sewage structures such as manholes, wet wells, digesters and clarifiers, along with mixer blades, shafts and other steel machinery components in contact with aggressive liquids. It sets fast for a quick return-to-service even in the most aggressive and turbulent environments, minimizing community disruptions and costs.

Vortex's deep knowledge and consultative approach enables it to customize the optimal solution for each project, faster than competitive custom options.

Parsonpoxy SEL-80 Performance

- **Parsonpoxy SEL-80 100% solids epoxy used for the project provides extreme corrosion protection against H₂S and aggressive liquids**
- **Epoxy coating provides years of corrosion and maintenance free operations.**
- **SEL-80's versatility allowed roller or spray application, and its quick-curing properties were specifically developed for this type of project.**
- **The facility made more progress in one week than in the previous year, generating substantial time and cost savings.**



Several Tanks with failed T-Lock were stripped and then coated with Parsonpoxy SEL-80 100% solids epoxy



Newly constructed clarifiers were coated with SEL-80 as preventative maintenance measure