

## **Epoxy Rehabilitations of WW Lift Stations and Drinking Water Pipes in the Houston Area**

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This presentation will describe some recent Houston area projects involving a high build epoxy coating for protecting and rehabilitating critical infrastructure assets. High build epoxy is ideally suited to provide structural renewal for deteriorated structures. The product is typically specified in thickness between 125 mils and 250 mils. The product exhibits tremendous adhesion to various substrates including concrete, brick, and steel. Additional features of the product include proven resistance to H<sub>2</sub>S induced corrosion found in aggressive sewer environments and resistance to treatment chemicals like chlorine and ozone. Learn how high build epoxy excels in protecting and rebuilding concrete, brick, steel, and iron found in today's collection, conveyance, and treatment systems. The high build epoxy's properties include structural enhancement, superior adhesion results, and high chemical resistance.

Spray-In-Place Pipe (SIPP) using 100% solids epoxy to reline existing pipelines is gaining popularity in the water industry. SIPP combines computer-controlled spin cast application with 100% solids, structurally enhancing epoxies to provide a state-of-the-art rehabilitation technique. A host pipe is thoroughly prepped (scraped and cleaned with high pressure water blasting) and then relined with an epoxy certified for potable water. SIPP brings several benefits to rehabilitation projects, including cost and time savings, and a minimal construction footprint.

An excellent case study featuring SIPP rehabilitation was the recent repair of 400 linear feet (LF) of 24-inch cast iron water pipe in the City of Houston, Texas' congested downtown area. The highly corroded and tuberculated pipe with cavitations was cleaned, patched, and restored with 100% solids epoxy by an experienced SIPP contractor. Despite challenges, water service was restored within four days. The result was a plasticized, non-porous interior that prevents further tuberculation or encrustation.

The following case studies will be highlighted as examples of common problems that can be solved with high build epoxy coating systems. The project examples include the following:

1. City of League City State Hwy 3 Lift Station & Force Main Replacement - 30 ft deep x 10 ft diameter wet well rehabilitated using 250 mils of a 100% epoxy lining system. ASTM D7234 Pull-Off Testing showed excellent adhesion to the existing concrete wet well.
2. Epoxy Spin Cast of 400' LF of a 24" cast iron water main SE of downtown Houston, Texas for COH – Cleaned and lined with NSF 61 approved 100% solids epoxy using a

computerized spin-cast rig. The epoxy was uniformly applied to the interior pipe wall at approximately 150 mils. Tests showed excellent adhesion of the new lining.

**What were the complications, challenges, outcomes?**

For the Houston, Texas case study, we will focus on how the experienced contractor used the SIPP application method and 100% solids epoxy in extreme heat, as the project was completed in July during a hot spell, making the internal pipe temperature reach 97° F regardless of being underground.

**How will attendees benefit from attending your presentation?**

This session will discuss the latest application technology, focusing on SIPP with 100% solids epoxy. It will include projects that validate the effectiveness of 100% solids epoxy for SIPP rehabilitation of potable water pipelines and 100% solids epoxy for rehabilitating Wastewater structures.