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# **CASE STUDY:** FLOWTITE® FRP USED FOR WASTEWATER PIPE APPLICATION



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Changing the world one pipe at a time.

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# **PROBLEM:** A 57 Million Gallon Health Issue

In 2012, according to Seattle Public Utilities, 57 million gallons of raw sewage was combined with polluted runoff from roofs, roads, and parking lots, and overflowed into Salmon Bay, an active shipping canal. The two 80-year-old wooden pipes, each three feet in diameter, had failed; they had been carrying wastewater under the bay to a treatment plant. Cleaning up the bay meant repairing the pipes, but first a bypass would have to be built.

# **SOLUTION:** Two-Pass Tunnel with 2,000 feet of FLOWTITE<sup>®</sup> FRP

The contractor selected for the repair work, JW Fowler, needed pipe that would be strong enough to handle the impact of the installation process, could withstand long-term exposure to chemically harsh wastewater conditions, and be cost-efficient. The project began with the construction of the bypass. JW Fowler installed a concrete tunnel 120 feet underground, and then inserted 2,000 feet of 84-inch diameter FLOWTITE® pipe using a forklift pushing a custom-designed pipe carrier. FLOWTITE® has a flexible manufacturing method, which allowed Thompson Pipe Group - Flowtite, the manufacturers of FLOW-TITE®, to provide joint lengths of 10, 14 and 24 feet. The lengths of pipe were chosen by the contractor based on the proposed curves in the concrete tunnel.



After the pipes were installed inside the tunnel, they were grouted into place using a lightweight cellular grout which exposed the FLOWTITE(R) pipe to heat of hydration temperatures greater than 135 degrees Fahrenheit. The grout was pumped through stainless steel ports that were installed at the pipe manufacturing facility prior to shipment.

At both ends of the tunnel, vertical siphon structures were installed. These shafts were also constructed with FLOWTITE®. This required stacking the pipe and fitting several segments together to create two structures, one 85-feet high and the other, 102-feet.





# WHY FLOWTITE®

FLOWTITE® filament-wound FRP and fittings are ideal solutions within wastewater and water treatment applications. The initial cost of FLOWTITE® pipe and fittings is comparable to the cost of traditional metal products, but the true benefit comes in the virtually maintenance-free corrosion resistance inherent in FLOWTITE®, including its 50-year minimum life expectancy in such corrosive applications. FLOWTITE® FRP does not require liners or coatings to protect against corrosion, which eliminates any future repair costs caused by corrosion. Additional considerations for using FLOW-TITE® for this project included:

Strength and durability – it is tough enough to withstand the installation process

- Ability to endure corrosive chemicals found in wastewater pipe
- No liners or corrosion protection needed
- Meets ASTM, AWWA, ISO and EN standards
- Affordable, with a minimum projected life of 50 years
- Manufactured in the U.S. by Thompson Pipe Group Flowtite, an industry leader in pipe construction

# RESULTS

The project went as anticipated and was completed on time. JW Fowler has subsequently used FLOW-TITE® in other projects. "Thompson Pipe Group provided a responsive team which provided excellent service. We knew their pipe was the right choice for this project, and were pleased that they were as focused as we were on making this project a success," said Mike McMillan of JW Fowler.