ErgonArmor™ | PROJECT PROFILE

Fort James Paper Uses Anchored Thermoplastic Liner for Concrete Protection in Wastewater Mix Tank

LOCATION
Camus, Oregon

OPERATION
Wastewater treatment

PRODUCTS
ACROLINE™ Systems

Challenge: Need for corrosion protection of wastewater neutralization tank

Solution: ACROLINE Systems anchored thermoplastic liner for tank wall

When Fort James Paper decided to upgrade its wastewater treatment system to include a neutralization/mixing step, it had to figure out how to protect its investment. The concrete mixing box required protection from the corrosive wastewater flow.

The new mixing box was added to the wastewater treatment system to neutralize and contain acidic wastewater prior to discharging the effluent to the local waterway. The mixing box was 42 feet long, 16 feet deep, and 23 feet wide with a 10 foot high baffle wall. The baffle wall was located 10 feet from the outlet pipe and was elevated 1 foot 6 inches above the floor of the tank.

The existing, open earthen trench, which previously discharged directly to the local waterway, was replaced with a high-density polyethylene sewer system. This HDPE pipe tied into the inlet and outlet of the mixing box.

Fort James Paper chose a 5mm thick, high-density polyethylene ACROLINE anchored thermoplastic liner system from ErgonArmor to protect the inside surface of the tank and baffle wall.

By selecting ACROLINE anchored thermoplastic liner for the tank liner, the owner was assured a uniform, high-density polyethylene barrier with homogeneous welded seams. This design eliminated the need for leaky, mechanical joints between the tank and the pipe, and enabled the seams to be tested for leaks using a spark tester.

ErgonArmor met with representatives of the general contractor, plastic fabricator, and owner at the job site to develop an installation strategy and provide detailed installation instructions.

The suspended baffle wall created unique challenges for Baugh Industrial, the general contractor out of Tulatin, Oregon in erecting the formwork. Forms for one side of the wall were erected vertically in place. The liner was then fixed to the inside of this wall form. The other side of the form was erected lying down. The liner was attached to this form then lifted into place. Finally, the form ties were installed and the concrete was poured.

The plastic fabricator, Familian Industrial Plastics, located in Washougal, Washington, was contracted by Baugh to provide ACROLINE liner materials, welding, and leak testing services. Familian field welded the liner after it was embedded in the tank and the formwork was stripped.

The project went off without a hitch. “I’m pleased with the final product,” said the plant project engineer, “particularly with [Baugh’s] performance on this job. It was [Baugh’s] first time working with [ACROLINE Systems], but they did a good job and learned a lot.”

1. Installers attach anchored thermoplastic liners to concrete formwork, then backfill the forms with concrete to lock in the liners.

2. Close-up of unique ACROLINE anchor

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