



EPOXYTEC™

PRETREATMENT GRIT CHAMBER REHABILITATION AND LINING

Epoxytec developed a clever method that avoided the need to bypass a pretreatment structure in Cape Coral, FL. This gave an opportunity for certified coating contractors to repair and line an influent distribution box and channels to complete a critical grit chamber rehabilitation project. With a 4-hour shutdown window and a very unique epoxy coating, all blasting, resurfacing, and lining work was completed before the four hours expired, allowing the city to save tons of money.

In the middle of the night, 1 am to be exact, city operators shut down all pumping and lift station flow. This was a prearranged agreement between Service Painting of Florida and the city to give a 4-hour window for blasting all interior walls and the ceiling of a pretreatment structure, plus its grit chambers, flow channels, and sluice areas. To avoid the need for a bypass, the city evaluated the Structural Epoxy System utilizing Epoxytec CPP for this creative grit chamber rehabilitation.

To achieve proper rehabilitation, the crews went in immediately. They did not have time for an abrasive blast. Rather, they utilized ultra-high pressure water jetting (40,000 psi) which keeps any tightly adhered existing coating intact.

After 45 minutes of hydro-blasting, the remaining sound concrete and tightly adhered coating were allowed to air dry for 15 minutes. Unfortunately, because it was nighttime and because of the time limitations, there was not enough time to allow the substrate to dry fully. Instead, a certain amount of moisture saturation in the concrete was inevitable. This was the reason for the selection of the Epoxytec CPP which tolerates moisture-saturated concrete; in fact, this moisture-insensitive epoxy can, if necessary, cure underwater. Therefore, soon after hydro-prep, Epoxytec CPP (a high build, structural epoxy) was applied to the moisture-saturated concrete.

To bridge the time constraints, the properties of CPP allowed for a

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Featured Products

CPP Trowel-Liner



Project Information

Location

Cape Coral, FL

Completion Date

February 2009

Structure

Grit Chamber

Owner

City of Cape Coral, Wastewater Treatment Plant

Applicator

Service Painting of Florida





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PRETREATMENT GRIT CHAMBER REHABILITATION AND LINING (cont.).

speedy water jet blast and a forgiving material lining application at variable thicknesses.

Another advantage of the CPP, is its ability to be applied in thicknesses of between 1/16" and 1/2" per pass, allowing the material to bridge all surface conditions and avoid a critical step, where usually mortar resurfacing would have been required.

The latter was not possible; there was simply not enough time. CPP allowed the applicator to use it as thinly or thickly as needed; therefore, it acted as the resurfacers and sealing epoxy liner – all in one shot.

Filling in spalls was simple. The epoxy lining material provides for ultra-high build lifts for filling large repair areas. The epoxy is structural, highly filled for added flexural strength and compressive strength. The material is thixotropic containing a variety of proprietary fillers. Epoxytec CPP is 100% solid epoxy though, so when cured, it does provide a barrier coating to all I&I and it acts as a chemical resistant shield against H₂S.

Because the material acts as an all-in-one resurfacers and liner, it was applied straight to the water edge on the ground (which, for logistical reasons, could not be removed), since – CPP cures in the presence of water). Because of its unique properties, CPP provided a solution for lining moisture-saturated concrete while restoring its 16,000psi compressive strength. As evident in the photos, the material was applied against a water line that could not be shut off. Rather than the 1 inch of running water being a problem, the crew simply applied the water-tolerant epoxy to the edge of the stream, and the material cured right in place without any vulnerability to the edge.

Afterwards, a two-man crew force-cured the CPP with 400°F heat guns for one hour, and then allowed the material to set for an additional hour before returning the structure to service.

Although this technique is not normally required, in this case, with a 4-hour window to complete all work and cure the material, the heat assisted in giving a rapid cure for a speedy return to service.

With 30 minutes to spare for the 4-hour citywide lift station shutdown for the grit chamber rehabilitation project, the coating crew hydro-blasted, resurfaced and lined everything with high build epoxy, and force-cured it before the time expired.

At 3:30am, the city returned the flow to all sewer collection systems, where it flowed into the influent pretreatment systems that had been freshly coated, lined, and restored with Epoxytec CPP. erat, sed diam voluptua.

