



EPOXYTEC™

Aeration Chamber Rehabilitation

THE PROBLEM

Badly deteriorated concrete in this 12,000 sq. ft. aeration chamber located in Arizona required rehabilitation and protection. The condition of the concrete ranged from an ICRI CSP 2 to CSP 8. Additionally, the concrete required structural patchwork prior to the application of a protective coating. The hot Arizona climate was an additional factor to contend with and made the application more difficult.

Degan Construction, LLC was the awarded contractor for this project. Their expertise with utilities and masonry, coupled with their specialty knowledge in concrete work, perfectly suited them for this job.

PRODUCTS THAT OUT-PERFORM

Degan Construction is an Epoxytec Certified Applicator. Epoxytec manufactures protective coatings, specializing in water and wastewater environments. Epoxytec's Mortartec Ceramico and CPP Sprayliner were specified for the job.

Mortartec Ceramico is a balance of Portland cement cured with epoxy; and also incorporates hardened ceramics, graded silica aggregate, synthetic fibers and silica fume that produces one of the most coveted mortars in the industrial market today. Mortartec Ceramico was used for the structural patchwork.

CPP Sprayliner served as the protective coating system, which is a structural protective liner that was spray-applied over the entire surface of the concrete. Epoxytec CPP Sprayliner is a two-component, moisture-insensitive, highly adhesive, chemical-resistant FRP coating. This 100% solids, high-strength and reinforced epoxy was an ideal choice for the severely deteriorated concrete.

THE APPLICATION

To begin, a thorough abrasive blast to meet SSPC-SP13/NACE 6 surface preparation with an ICRI CSP-5 was completed achieving the minimum acceptable profile prior to any coating

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Featured Products

CPP Sprayliner

Mortartec Ceramico



Project Information

Location

Arizona

Completion Date

Fall 2019

Structure

Aeration Chamber

Owner

EPCOR Water

Applicator

Degan Construction, LLC



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Aeration Chamber Rehabilitation (cont.)

application involving concrete surfaces. The top of the structure was then covered to contain the dust and provide shade for the eventual coating application.

A structural inspection was then performed by a licensed structural engineer. At that time, all the concrete defects were identified, and a detailed plan was presented for the required repairs.

The surfaces were approved with acceptance of cleanliness and profile. Installation could proceed, but first with repair methods. To patch and address repairs, Mortartec Ceramico was applied by hand.

CPP Sprayliner was then applied using a high-pressure, heated plural component spraying at 125 mils min. as a high build, fiber-reinforced protective (FRP) liner.

FINAL LOOK

The installed coating system was completed in each area prior to moving to the next section to be treated. The final inspection by the owner and/or their designated third-party representative included high-voltage holiday detection, adhesion testing, and visual inspection for surface defects (runs/drips/sags/voids).

This project was completed in 4 weeks, a time crunch that was met in order to have the aeration chambers back in service prior to the arrival of the "snowbirds" in Arizona and high flow season. A particular challenge in this concrete rehabilitation project was dealing with extreme weather conditions. The average daily temperature on site was 105+ degrees (including several 115-degree days) and heavy rain. Other weather factors that impacted this application included humidity, barometric pressure, direct sunlight on coating while curing, etc.

Epoxytec's CPP Sprayliner, a high build, applied and bonded FRP liner will protect this infrastructure for decades to come. The expertise of the Degan Construction's crew, coupled with Epoxytec's proven products, allowed for smooth navigation through the application process and successful completion of the job.

