

CARLSBAD DESALINATION PLANT

Located 35-miles north of San Diego, California, the Claude “Bud” Lewis Carlsbad Desalination Plant represents a “sea change” in technology that turns saltwater into freshwater using infrastructure protected by advanced coating and lining systems from Tnemec.

“The Carlsbad plant is the largest desalination plant in the Western Hemisphere,” explained Denis Amyot of TPC Consultants, Inc. “The plant’s painting schedule included concrete channels, tanks, secondary containment, and basins, as well as structural steel and piping.”

The project’s concrete channels received one or two coats of Series 22 Epoxoline, a 100 percent solids polyamine epoxy, which was also used for interior sections of piping exposed to continuous temperatures up to 250 degrees. Concrete channels for drinking water received a primer coat of Series V140 Pota-Pox Plus, a polyamidoamine epoxy, and a topcoat of Series 406 Elasta-Shield, a fast-setting polyurethane lining.

“All of the project’s coating systems met San Diego Air Pollution Control District limits for volatile organic compounds (VOCs), which is 250 grams per liter or less,” Amyot observed. “Coating systems for drinking water environments also complied with NSF/ANSI Standard 61 requirements for materials that come in contact with potable water.”

Concrete for secondary containment was primed with Series 201 Epoxoprime, a moisture-tolerant epoxy, followed by a basecoat of Series 239SC ChemBloc, a novolac polyamine epoxy. While the basecoat was still wet, Series 211-215 Fiberglass Mat was laid into the surface and saturated with Series 239SC until the mat was wet out and translucent. Two coats of Series 282 Tneme-Glaze, a novolac epoxy glaze, and a finish coat of Series 290 CRU, were then applied. A similar secondary containment system for fluorosilicic acid used Series 252SC ChemBloc, a mat-reinforced novolac vinyl ester mortar system.

Interior and exterior structural steel, pipes and valves were primed with Series V69 Hi-Build Epoxoline II, an advanced generation polyamidoamine epoxy, which was also used as a topcoat on interior structural steel and piping. Exterior structural steel, pipes and valves were topcoated with Series 1075 and 1095 Endura-Shield, an aliphatic acrylic polyurethane coating.

Non-submerged, exterior polyvinyl chloride (PVC) and chlorinated polyvinyl chloride (CPVC) piping were primed with Series 115 Uni-Bond DF, a hydrophobic acrylic, followed by two finish coats of Series 1029 Enduratone, a low-VOC, High Dispersion Pure (HDP) acrylic polymer.

The \$1 billion Carlsbad plant uses a seawater reverse osmosis (SWRO) technology to produce approximately 50 million gallons of drinking water daily for San Diego County, regardless of weather conditions.

FEATURED PRODUCTS

- Series 22 Epoxoline
- Series V69 Hi-Build Epoxoline II
- Series 115 Uni-Bond DF
- Series V140 Pota-Pox Plus
- Series 201 Epoxoprime
- Series 211-215 Fiberglass Mat
- Series 218 MortarClad
- Series 239SC ChemBloc
- Series 252SC ChemBloc
- Series 282 Tneme-Glaze
- Series 290 CRU
- Series 406 Elasta-Shield
- Series 1029 Enduratone
- Series 1075 Endura-Shield II
- Series 1095 Endura-Shield



PROJECT INFORMATION

Project Location

Carlsbad, California

Project Completion Date

December 2015

Owner

Poseidon Water - San Diego, California

Engineer

Arcadis - San Diego, California

Contractor / Applicator

Parada Painting - Poway, California

Various areas in the Carlsbad Desalination Plant, including concrete for secondary containment, were coated using high-performance, low VOC coating systems from Tnemec.

