

CRUDE OIL STORAGE TANK

After top to bottom repairs were made to a 210-foot by 64-foot floating roof tank used to store crude oil at a pipeline terminal in Sherwood Park, Alberta, Canada, the project received top-notch corrosion protection from a thick-film internal lining system from Tnemec. "They were looking to protect the bottom of the tank from corrosion," coating consultant Norm Walline of HDIM Protective Coatings explained. "The project's coating contractor, ShawCor CSI Services, applied the lining system to the floor and about five feet up the interior shell."

During inspection of the tank, it was discovered that the annular ring had dropped nearly 10 inches, resulting in extensive damage that required a major renovation of the floor and annular ring area, which were corroded from moisture seepage under the chime area. "When this occurred, the bottom plates of the tank became susceptible to corrosion attack," Walline noted. "Replacement of the annular ring and repairs to the floor lasted more than six months."

After repair work on the floor was completed, interior steel was prepared by ShawCor CSI, in accordance with SSPC-SP5/NACE No. 1 White Metal Blast Cleaning. An airless spray pump was used to apply a coat of Series 61 Tneme-Liner, a cycloaliphatic amine epoxy used for immersion service, including fuel storage. The tightly cross-linked epoxy offers excellent corrosion and chemical protection.

Next, the bottom of the tank was relined with Series 330 Tank Armor, a 100 percent solids-by-volume reinforced epoxy lining for protection against corrosion and restoration of petroleum storage tanks. The coating is flexible, which reduces coating stress resulting from mechanical and physical forces exerted on the tank bottom. An Xtreme Mix plural-component sprayer was used to apply the liner at an average of 34 mils dry film thickness (DFT) and the environment was controlled using a 3.2 million BTU heater. An estimated 270 gallons of Series 61 and 840 gallons of Series 330 were required to complete the project.

Series 330 has been tested in accordance with the MIL-PRF-23236C Edge Retention Test and has passed its edge wrap requirements by maintaining at least 70 percent of the film thickness compared to the substrate's flat surface. Sharp protrusions and edges are often the first areas to experience corrosion and coating failure. Coating films that provide good coverage in these areas, as demonstrated by this test, maintain barrier protection and help prevent costly repairs due to substrate corrosion.

FEATURED PRODUCTS

Series 61 Tneme-Liner
Series 330 Tank Armor



PROJECT INFORMATION

Project Location

Sherwood Park, Alberta, Canada

Project Completion Date

May 2013

Owner

City of Midland

Architect / Engineer

Parkhill, Smith & Cooper - Midland, Texas

Fabricator / Applicator

Landmark Structures - Fort Worth, Texas

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