ErgonArmor™ | PROJECT PROFILE

World's Largest Hydrocarbon Cracker Plant Seals Stormwater Basins

LOCATION
Port Arthur, Texas

COMPLETION
1998

OPERATION
Hydrocarbon cracker

PRODUCTS
ACROLINE™ Systems

Challenge: To meet the need for long-term containment and concrete protection from chemical attack

Solution: Use of ACROLINE Systems for lining concrete collection and conveyance structures

In 1998, BASF and FINA formed a joint venture to build one of the world's largest hydrocarbon cracker plants in Port Arthur, TX. The facility would produce 2.06B pounds of ethylene and 1.28B pounds of propylene each year, once going commercial.

A production facility of this size has some pretty significant collection and containment requirements. To meet the need for long-term containment and concrete protection in the process contact water trenches and sumps, ABB Lummus Global specified ACROLINE Systems anchored thermoplastic liners in 5mm high-density polyethylene.

ACROLINE Systems anchored thermoplastic liners are an excellent choice for lining concrete collection and conveyance structures such as sumps, trenches, and tanks. These liners feature 39 anchors per square foot, which are simultaneously extruded with the sheet for unsurpassed shear strength. Unlike traditional corrosion resistant linings, ACROLINE Systems liners are cast right into the concrete.

By combining the chemical resistance and crack-bridging properties of thermoplastics with the strength of concrete, structures lined with ACROLINE Systems offer low-maintenance, long-term protection. HB Zachry subcontracted the plastic fabrication work to a factory-authorized ACROLINE Systems fabricator, who worked closely with HB Zachry and ABB Lummus Global to optimize the design and constructability of the

ACROLINE sumps and trenches. The sumps ranged in size from 3' x 3' x 1.5' to 40' x 30' x 12'. Shop-fabricated liners of this size are too large to easily handle and field-cast in one piece, but the benefits of shop fabrication were not sacrificed entirely. To take advantage of high-production fabrication equipment, the plastic fabricator butt-fused the 2m x 4m ACROLINE sheets together to form the wall panels in its fabrication shop. HB Zachry attached the liner wall panels to the concrete forms and cast them in as the sump walls were poured. Afterwards, the floor lining was cast into a 2-inch grout bed on top of the foundation slab. The floor was cross-sloped to drain to a small pit in the deep end of the sump.

Once the concrete cured sufficiently, the forms were stripped. The plastic fabricator then extrusion welded the seams and patched the form tie penetrations. Before the sumps are put into service, all of the welds are tested for leak-tightness using high-voltage spark testing.

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