



Your Formula for Success
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CASE HISTORY



Copper Mining

Market Segments: Chemical Processing
Scrubber

Composite Applications: Pump Barge
Deck
Hull
Sides
Legs
Vertical Standoffs

Resin: Vipel® F010 Bisphenol A
Epoxy Vinyl Ester

Manufacturing Process: Hand Lay-up

Dimensions: 18-foot (548.6-centimeter)
square deck and hull

33-inch (83-centimeter) high sides

Four “legs” extending 52 inches (132 centimeters)
below the hull

Composites Weight: 6,000 pounds (2.7 metric tons)

Service Conditions: 75% Sulfuric
acid liquid solution

Installed: 2001

Location: Chile



Coplin Manufacturing Inc., Phoenix, AZ, uses hand lay-up to mold barge pump components of fiberglass mat and woven roving in Vipel F010 bisphenol A epoxy vinyl ester. The pump is installed in a rectangular opening designed into the middle of the composite barge.

Polyurethane foam between the deck and hull improve flotation. A series of connected barges float in ponds that are part of the liquid loop used in the solvent extraction of copper. The pond’s acidic liquid is conveyed to heaps

Copper Mining, continued

of crushed ore. Leaching the liquid through an ore heap creates a copper sulphite solution that is further processed into cathode copper metal. Spent leachate is recirculated back to the pond, where pumping from the barges starts the process over again.

“The barge continuously floats in a liquid where sulphuric acid concentrations are as high as 75% and the pH is 1.5,” says Dennis Horn, president of Coplin Manufacturing. “Molded with Vipel F010 vinyl ester, the composite provides the required chemical resistance at a much lower cost than titanium, the only other alternative for the application.”

“The Vipel vinyl ester also has good resistance to the full-strength kerosene used to periodically clean the barge,” Horn continues. “As a bonus, our workers say the Vipel resin is easier to process than a previous resin while impregnating fiberglass and laying up laminates.”

About AOC

AOC is a leading global supplier of resins, gelcoats, colorants, additives and synergistic systems for composites and cast polymers. AOC knows technology, lives quality and delivers service better than any other resin supplier. For more information, e-mail corrosionresins@aoc-resins.com, phone 1-866-319-8827 or go to AOC-RESINS.com.



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