

Lining for Concrete Acid Vats

DERAKANE Epoxy Vinyl Ester Resins – Case History



Location / Year

The linings were applied in 1983 at the Companhia Paraibuna de Metais (CPM), Juiz de Fora, Brazil.

Fabricator

Fibra Engenharia Anticorrosao, Brazil.

Fabrication

The interior fiber-reinforced plastic (FRP) linings consist of **DERAKANE 411** resin and fiberglass mat. On the exterior, the vats were lined with **DERAKANE 411** resin and flaked glass.

Technical Data

Linings for 182 concrete acid vats used in zinc deposition service. Interior linings covered a total of 1070 m² (37 800 ft²) and exterior linings covered 370 m² (12 960 ft²).

Service Conditions

The vats contain a solution of 150 g/l of acid at a temperature range of 50-66°C (122-151°F).

Design / Comment

The vats, which were previously lined with lead, had experienced weak points at the weld. "These points allowed the solution to reach the concrete and cause corrosion," noted Ivan Alencastro Graca, a member of CPM's development department. He added, "As far as the external protection from spills, we tried an anti-acid coating that didn't perform well. In order to maintain the quality of the final product, we must observe parameters such as corrosion," said Graca. "The FRP lining with DERAKANE resin resists corrosive attack very well."

Maintenance

The linings were reported in good condition after last inspection in March 1988.

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