



INTERPLASTIC

CASE

history

One Resin Handles Three Corrosive Environments in One Process, Outperforming 316 SST and Providing Huge Savings.

PROBLEM

AngloGold Ashanti (AGA), one of the largest gold mining concerns in South Africa, felt like it was spinning its wheels at times, having to replace their huge 316 stainless steel elution columns every 9-15 months.

Sequential elution is a process for purifying gold ore, which when mined is complexed with silver, mercury and other impurities. The ore must be eluted sequentially with various eluants in order to separate it into its component parts. The process subjects the columns (pictured) to chemical environments ranging from basic (NaClO-sodium hypochlorite and NaOH-sodium hydroxide) to chloride rich (NaCl-sodium chloride) to highly acidic (20% H₂SO₄ -sulfuric acid).

It's the kind of application that would put any material of construction to the ultimate test! And 316 SST was failing that test badly, as far as AGA was concerned. They were shutting the process down every 10 months or so to replace one or more of the SST columns. Management was unhappy and wanted answers, and they wanted them fast.

SOLUTION

At first, AGA thought that lining the SST columns would solve the problem; and so they tried a variety of lining materials, from epoxy to urethane; nothing seemed to work with any sustained success. To the rescue came Fibre-Wound SA (Pty) Ltd, one of South Africa's biggest corrosion fabricators.



AngloGold Ashanti

Using both case histories and technical data, they convinced AGA to replace 316 SST as the material of construction with vinyl ester based FRP. More specifically, FRP fabricated with a CoREZYN vinyl ester from Interplastic Corporation, CORVE 8300.

It was agreed the first elution column would serve as the pilot test case. It was fabricated and put into service October of 2008. By February of 2009, only four (4) months later, AGA was so pleased with how the initial column was holding up, they ordered four (4) more to immediately replace all five (5) 316 SST elution columns with FRP columns fabricated with Interplastic vinyl ester resin CORVE 8300.

BENEFIT

The most obvious benefit was recognized immediately, when AGA got the bill. The FRP columns cost only $\frac{1}{3}$ what the SST columns cost. The price for all 5 FRP columns was less than that for two SST columns!

The other significant benefit was derived from the performance of the columns. As of this writing (June 2010), over 18 months since the first column and 13 months since the remaining four columns were put into service, all columns are still in service and performing well. Management at AGA is not even sure when these columns will need to be replaced, as there is still no sign of deterioration in the corrosion barrier. The gold elution process now runs trouble free for longer, with less disruption in production due to equipment failure. The additional days in service without having to shut down for repair have resulted in increased productivity and profits!



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