

# SUCCESS STORY

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# FCCU Cycle Oil Pumps



## THE CHALLENGE

Refineries process some of the world's most aggressive fluids and slurries. In these environments, pump life can be severely limited by extreme erosive and corrosive wear, leading to increased maintenance costs, reduced reliability, and increased downtime. Certain pumps within the refinery are exposed to particularly demanding conditions. These include bottoms pumps, residual oil pumps, coke drum charge pumps, coke pit pumps, slurry pumps and FCCU pumps.

A U.S. Gulf Coast refinery was experiencing accelerated internal wear of FCCU cycle oil pumps, often requiring entire case replacements. Pump life was limited to 8–12 months using a tungsten carbide HVOF coating.

## SOLUTIONS EVALUATED

- Thermal Spray Coatings
- Weld Overlays
- Boron Diffusion
- Conforma Clad™

Thermal spray coatings and weld overlays did not allow full protection of all pump surfaces and were limited to line-of-sight application. Thermal sprays were also limited in terms of bond strength. Boron diffusion coatings are, by nature, quite thin and prone to puncture by large abrasive particles.

The Conforma Clad infiltration-brazed tungsten carbide cladding solved many of these issues. It combines a true metallurgical bond with a dense, uniform distribution of tungsten carbide particles that can be applied to all wetted pump surfaces.

With this metallurgical bond, Conforma Clad grades offer 2 to 3 times the erosion and abrasion resistance of competitive overlays, resulting in significantly improved wear resistance and longer pump life.

## THE RESULT

After 13 months in service, the pump with Conforma Clad protection showed no significant signs of internal erosion. The life of the pump was projected to be 3–4 years and put back in service.

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Other Solutions

VS

Conforma Clad™

After 8 months of service (HVOF)



After 13 months of service



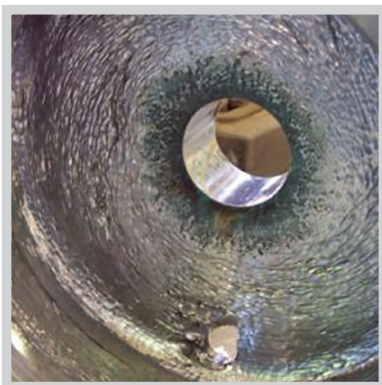
After 13 months of service (HVOF)



After 13 months of service



After 6 weeks of service



After 12 weeks of service



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