

Challenge

Issue

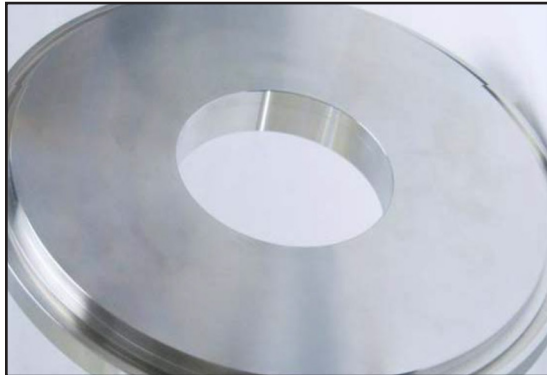
Seal adaptor plates have short life (<12 months) due to high abrasion and chemical exposure affecting pump reliability. Upgrade to Super Duplex stainless steel has high costs.

Goals

- Seek alternative to high cost metallurgy
- Increase pump reliability

Root Cause

Operating conditions of 8-12% CaOH₃ slurry with pH range of 3-6 and high concentration of Cl⁻ and 120°F (50°C) attacks adapter plate.



Mechanical seal adapter plate before protecting with ARC

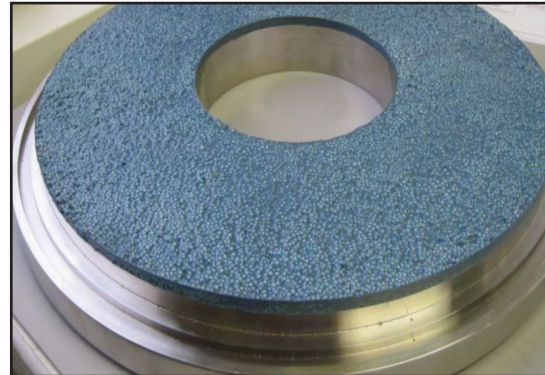
Solution

Preparation

- New wear plate is fabricated from 304SS with tolerances designed in for MXC
- Grit blast to Sa 2.5 with 3 mil (75 µm) angular profile

Application

1. Cast **ARC MX1** in place @ 240 mil (6 mm) thickness, to within +/- 20 mil (0.5 mm) tolerance



ARC MX1 cast on new plate

Results

Client Reported

- **ARC MX1** coated plates last >30 months
- Easy repair of **ARC MX1** reduces spare parts carrying costs of adapter plates

Chesterton Integrated Solutions

- Back plates treated with **ARC MX1**
- Pump shafts sealed with 442
- Seal flush water reduced with Spiraltrac®
- Total: 36 pumps were protected



ARC MX1 after 30 months service in slurry