

Phosphate Flash Cooler Exhaust Elbows

Chemical Processing — Process Equipment ARC T7 AR Coating Case Study 139

Challenge

Issue

Rubber lined exhaust elbows clog up with gypsum and wear out in <6 months requiring unit shutdown to replace

Goal

Extend MTBF and reduce gypsum buildup

Root Cause

Carry over contains gypsum and highly corrosive phosphoric acid

Solution

Preparation

- Damaged rubber lining removed
- \blacksquare Grit blast to Sa 2.5 with 3 mil (75 $\mu m)$ angular profile

Application

- Apply ARC T7 AR to 240-360 mil (6-9 mm)
- Apply veil coat of ARC T7 AR

Results

Client Reported

- Gypsum buildup was reduced by 80%
- Elbows lasted 6 months and localized high wear region was repaired at nominal cost
- Additional product thickness to be applied in future elbows to extend MTBF to >12 months

Annual rubber lining	\$ 75,000
ARC lining	\$ 52,000
Savings	\$ 23.000

\$=USD



Flash cooler with exhauster



Exhaust elbow in shop laydown



Repaired unit ready for install