

## Challenge

### Issue

An unlined exhaust fan was exposed to corrosive flue gases with suspended erosive particulates. The fan sustained severe corrosion and erosion damage impacting balance and performance. Operating temperatures were <math><120^{\circ}\text{C}</math> (<math>250^{\circ}\text{F}</math>) with up to 4% suspended particulates in the form of fly ash. Client was required to shut down fan and hydro-wash fans every 8 – 10 weeks at a cost of \$10K per shutdown.

### Goal

Reduce shutdown time for hydrowash maintenance.



ID Fan in paint shop.

## Solution

### Preparation

ARC S7 AR was recommended due to its ability to resist high-temperatures and erosion.

### Application

Three coats of ARC S7 AR were applied to the fan vane tips to a total dry film thickness of 0.75 – 0.9 mm (30 – 35 mils). The balance of the fan received two coats to a total dry film thickness of 0.6 – 0.75 mm (25 – 30 mils).

After coating cured, the fans were dynamically rebalanced.



ARC S7 AR with CHP Catalyst.

## Results

### Client Reported

A fan that was coated in 2018 has shown <math><5\%</math> film thickness loss. Due to finish quality improvements, dust attachment was reduced so that shut down for hydro-wash have been cut to once every 24 weeks, saving >\$30K per year.

Based on results, client coated second fan with ARC S7 AR in 2019.

\$=USD



Dynamically balanced ARC S7 AR coated fan.