

Challenge

Issue

The exhaust fan required unscheduled weld repairs every 2 months and complete replacement after only 6 months. Cost and service life were unacceptable.

Goals

- Extend MTBR of fan to a minimum of 3X previous cycle time
- Reduce maintenance cost

Root Cause

Attack of the fan by the corrosive exhaust gases from smelting operation at 120°C.



Condition of fan rotor after sandblasting

Solution

Preparation

- Dynamically balance fan and adjust as required
- Grit blast to Sa 2.5 with 3 mil (75 µm) angular profile

Application

1. Use **ARC 858** build eroded volute and parts
2. Apply 2 coats **ARC HT-T** to total DFT of 40 mils (1 mm)
3. Statically balance fan



Fan being coated

Results

Client Reported

MTBR has increased from 2 months to 6 months with inspection and minimal repairs done in field without fan disassembly.

Fan life extended from 6 months to 3 years

Annual cost of previous method: €47,000

Annual ARC Solution Cost: -€26,000

Client savings over 3 year life: €63,000



Completed application to 1600 mm fan