

## Challenge

### Issue

Abrasion-induced failure of welds used to attach carbide inserts which resulted in reduced efficiency of the centrifuge.

### Goals

To improve MTBF and maintain a higher level of dewatering over time.

### Root Cause

Erosive coal fines and acidic water attacked the welds which led to delamination of the carbide inserts.

## Solution

### Preparation

Remove all inserts and grit blast the surface to a 75  $\mu\text{m}$  (3+ mil) angular profile with a near-white surface cleanliness.

### Application

Chesterton® ARC MX1 was applied to the radial face of the flights at 5 – 6 mm (200 – 240 mil) thickness. Apply two coats of Chesterton ARC 855 (black over gray) to the drum and shroud at 600 – 900  $\mu$  (25 – 35 mil).

## Results

### Client Reported

The 12-month in-service initial inspection revealed that the ARC 855 topcoat applied over the ARC MX1 was missing, however 5+ mm of ARC MX1 remained, protecting the units' operation.

Minimal wear was found on the drum or shroud coated areas.

This was compared to <6 months of operation with the previously used carbide inserts.

The client has standardized repair procedures for decanting to use ARC MX1 and ARC 855.



Screw with tungsten carbide inserts being welded in place.



Scroll case and stay vanes coated with ARC SD4i.



The final coat of ARC SD4i on stay vanes.