

## Challenge

### Background

At an aluminum production mill, the back-up roll bearing protection seals of a five-stage hot rolling stand were leaking. This issue led to equipment performance issues, and severe bearing lub oil leakage and growing environmental concerns.

### Root Cause

The existing bearing protection seals had a very short lifetime (2-3 months) due to chemical compatibility issues between the seal material and rolling emulsion. The rolling emulsion attacked the seal material, causing softening and cracking of the seals.



Lip of the failed seal

## Solution

### Service

The Chesterton engineering team developed a retrofit custom sealing solution based on failure analysis of the existing seals and application inspection. The seals were tested by the customer, inspected after three months of operation.

### Product

The **50KWS Mill Rotary Face Seal** has an integrated finger spring and clamping band in combination with a high-performance FKM compound. The seal is designed to provide long-lasting sealing and superior protection against ingress of solid particles and emulsion.



Chesterton 50KWS with clamping band

## Results

The Chesterton 50K seals far exceeded the customer's expectation during the evaluation period. The sealing solution was specified as the standard offering for all future rebuilds of the rolling chocks based on performance.

### Benefits

- Ease of installation
- Increased MTBF: 4x
- Reduced bearing lubrication oil leakage/loss



Installation of 50KWS seal