

## Challenge

### Background

At a large wood-based panel plant, the customer experienced excessive leakage of hydraulic oil from the main press cylinders of a single-daylight laminating press. The leak rate caused press operational problems, product quality issues, and safety/environmental concerns.

### Root Cause

The existing top and bottom bronze bushings of the rams were worn out by excessive lateral load on the cylinders and by the high cycle numbers of press cycles. Further heavy scoring of the rams and bushings was observed as well. The radial movement caused extrusion and excessive deformations of the rod seal that led to continuous leakage.



*Worn, scored ram bushings (with spiral oil grooves).*

## Solution

### Service

The Chesterton sales specialist recommended refurbishment based on failure analysis of the seals and equipment inspection. The technical proposal was accepted by the customer and the re-machining of the bronze bushings was made according to technical drawings.

### Product

The Chesterton 16K Non-Metallic Wear Rings have exceptional physical properties with high bearing capacity, supporting heavy lateral loads. The built-in lubricants help reduce friction between mating surfaces. This extends equipment and seal life, and provides smooth, parallel motion of the press cylinders. (Ram diameter 430 mm (16.93')



*Bearing groove being machined in the old bushing.*

## Results

The Chesterton 16K Wear Rings were installed in the spring of 2011. The main press cylinders have been in operation without disruption for over 6 years, providing reliable and smooth operation for the laminating press line.

### Benefits of 16K Wear Rings:

- Prevents metal-to-metal scoring
- Ease of installation
- Significant cost savings on repair budget of the large diameter press cylinders (12 pcs)
- Faster repair time
- Reduced friction between mating surfaces, prolonging equipment life



*16K cut wear rings are installed in the groove.*