

## Case Study: Centrifugal pump in an iron manufacturing plant

### Problem

High leakage rate and costs

Using the existing packing solution in aggressive contaminated water conditions with abrasive particles of iron dust coming from blast furnace, the customer experienced frequent packing failures (on a weekly basis) due to mechanical damage and chemical attack. This resulted in an unacceptable leakage rate and excessive maintenance and replacement costs.



### Results and benefits

The use of Lionpak® 2506 enables the customer to significantly increase packing service life, now reported as up to 3-4 months. As the product can withstand operation in a chemical and abrasive environment significantly longer than general service packing, the customer is able to realise improved efficiencies and reduced maintenance efforts.

Improved service life reduced costs and leakage rates

### Application

Centrifugal pumps pumping water contaminated with iron dust from blast furnace.

- Equipment: Mather & Platt, as well as Sulzer single-stage pumps (around 20 pumps)
- Media: contaminated water (iron dust)
- Temperature: 60°C (140°F)
- Speed: 1500 RPM
- Pressure: 20-25 bar (2-2.5 MPa)
- Water flush: yes
- Packing sizes: 8/10/12/16/20 mm square section

### Existing solution

General service packing manufactured from synthetic yarn.

### James Walker solution

To overcome the harsh environment, Lionpak® 2506 was supplied. A high performance packing made of ePTFE/graphite yarn at the face reinforced with carbon fibre at four corners, this solution is a very cost effective packing highly recommended for pumps handling chemical slurries, contaminated water, industrial water, effluent, bauxite slurries, bottom ash slurries and other slurries.



Improved operational efficiency due to extended service life



Significant reduction in maintenance costs



Reduced total cost of ownership



Reduced leakage to within acceptable rate