

Case Study: P/S®-II Cartridge Seal Asphalt Pumping & Mixing



INDUSTRY

Chemical

CUSTOMER

Asphalt Manufacturing Company

BACKGROUND

Asphalt or bitumen is a highly viscous and sticky petroleum product commonly used as a binder in road pavement and as a waterproofing material for roof shingles. Equipment, such as pumps to mixers, is required to apply asphalt.

CHALLENGES FACED

Pumping asphalt requires high temperatures to allow the asphalt to flow. The combination of high temperatures, sticky and high viscosity consistency means traditional mechanical seals only perform for short periods of time before failure. Therefore, compression packing is commonly used. However, packing will wear and leak asphalt. Leaking asphalt creates housekeeping issues, literally creating a sticky situation. It also costs money in the form of lost product.

OPERATING CONDITIONS

Size: Typical shaft 1.375" to 4.500"

Temperature: 250°F - 525°F (121°C – 274°C)

Application: Mixers, agitators & pumps (occasional dry running conditions)

Media: Asphalt with steam or standpipe with heat transfer oil

Pressure: 0 – 70 psi (0 – 4.8 bar)

Speed: 60 – 700 fpm (0.3 – 3.6 m/s)

SOLUTION AND BENEFITS

P/S®-II cartridge mechanical seal with a 2 psi steam purge keeps asphalt liquid so it does not harden next to the sealing elements. A standpipe of heat transfer fluid can also be used if steam is not available. It is common for a P/S®-II seal to last years in asphalt service without a required rebuild.

For more information, please visit:
<http://www.garlock.com>

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