

THORPLAS® ELIMINATES GREASE AND EXTENDS MTBF IN EXTREME INDUSTRIAL APPLICATIONS

Like most managing professionals involved in an industrial process, Peter Krufehinski is dedicated to improving productivity while reducing costs. As VP of Operations for Berman Brothers Scrap Metal, "I'm willing to experiment," says Krufehinski "In fact, I'll try just about anything to boost efficiency."

A third-generation family business, Berman Brothers is a leading steel distributor as well as an experienced scrap steel processor. At their 16



Thordon ThorPlas® Bearings Installed on Berman Brothers Grapple

hectare (40 acre) facility in Florida, the company sustains a production level of over 4500 metric tonnes (5000 tons) of scrap iron per month.

One of the main workhorses of the yard is a massive 4-Tine Scrap Metal Grapple with a wide 1.4 m (1.5 yard) bite. Working under high shock and impact load conditions, the pressures average more than 27 MPa (4000 psi).

"We've tried just about every bearing material imaginable," says Krufehinski. "Steel, brass, nylon, you name it." The problem was that these bearings needed to be greased on a regular basis, or they would rapidly fail. Even with diligent maintenance, the nylon bearings that Berman Brothers were currently using required replacement every 2-3

weeks. "Having to replace the bearing itself wasn't our major concern," Krufehinski points out. The real issue was that a worn bearing would eventually cause the grapple tines (the fingers) to misalign, adding severe stress to the hydraulic cylinders. "We've had to replace cylinders for this reason more than a few times. At a cost of thousands of dollars each."

Fortunately, Thordon had the solution.

Thordon bearings have a proven track record in rugged, wet and dirty industrial applications. The low coefficient of friction and self-lubrication properties dramatically reduce or

eliminate the need to grease. In addition, these thermoplastic bearings outperform their metallic cousins under shock loading conditions.

ThorPlas® is the newest addition to the line. A proprietary engineered thermoplastic, ThorPlas® offers:

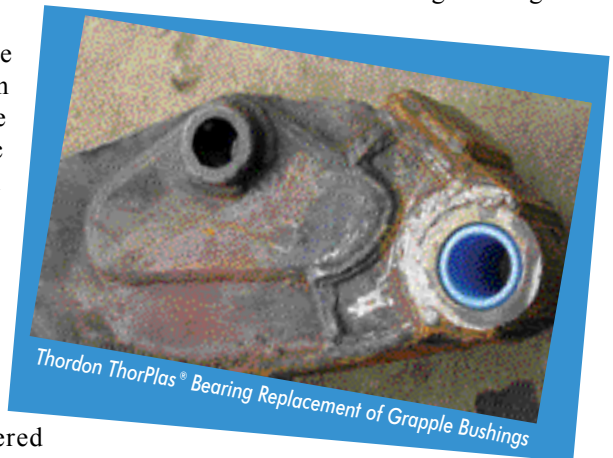
- Increased strength and rigidity to a maximum working pressure of 31 MPa (4500 psi) in an interference fit bearing.
- Improved operating temperatures to a maximum continuous service temperature of 80°C (175°F) in water and 110°C (230°F) dry.

- Improved chemical resistance in all major chemical product categories.

Thordon's distributor in Florida, Coppedge Marine & Industrial, assisted in the ThorPlas® installation in the Berman Brothers grapple in December 2003. The installation process was virtually effortless," says Krufehinski. "We just froze them and put them in place as Coppedge directed us."

Since that time, the grapple has been operating on a very busy schedule with the ThorPlas® bearings. "We're already beyond 3000 hours on this unit," Krufehinski says, "and there is no sign of bearing wear."

Berman Brothers expects to save money with ThorPlas® in three ways: extended MTBF (Mean Time Between Failure); reduced labor costs because the bearings no longer have



Thordon ThorPlas® Bearing Replacement of Grapple Bushings

to be greased; and lower risk of having to replace expensive hydraulic cylinders.

This is our first experiment with this product and we're very, very pleased," says Krufehinski. "We're already planning to use ThorPlas® on another, bigger grapple unit." 