

**Industry:** Mining  
**End User:** Grupo México  
**Application:** Vertical Pump  
**Thordon Grade:** ThorPlas-Blue  
**Date of Original Installation:** 2014

### About:

Grupo México is the fourth largest copper producer in the world. They operate 14 underground and open pit mines for copper, silver, molybdenum, zinc, sulfuric acid, gold, and selenium.

### Challenge:

The pumps that operate in Grupo México's copper and ore mines Sonora, Cananea, and Nacozari were originally fitted with Ultra-High Molecular Weight Polyethylene (UHMPE) bearings. The UHMPE bearings required regular greasing and also absorbed a lot of heat which would increase the bearing ID and choke the shaft. As a result, these bearings only lasted 4-6 weeks and were costly and difficult to replace. Grupo México had to keep spare built pumps on-site to avoid downtime when the pumps suffered failures.

### Solution:

These pumps process a mix of water and traces of sulfuric acid, which is more demanding than other applications dealing only with water and sand, so Grupo México needed a tougher, longer-lasting, more robust solution. The company contacted Thordon's authorized distributor in Mexico, TZ Industrias, who recommended Thordon's ThorPlas-Blue material as it possesses unique properties capable of withstanding the corrosive effects of sulfuric acid and requires no grease. ThorPlas-Blue's mild abrasion resistance was also a plus in this application.

### Result:

In 2014, the first ThorPlas-Blue bearing was retrofitted to one of Grupo México's vertical pumps. TZ Industrias' initial scope of supply was for approximately two metres (6.6 feet) of ThorPlas-Blue bearings machined to fit pumps with outside diameters of 90mm (3.54in) and 50mm (1.97in).

ThorPlas-Blue lasted significantly longer than the UHMPE bearings they replaced leading to a number of new bearing orders. Grupo México now replaces the bearings every 9-12 months as preventative maintenance on the pumps and as a result saves approximately US\$6000 per year on bearing costs alone.

As of January 2023, a total of 54 pumps operating at the Buena Vista del Cobre and Operadora De Minas De Nacozari mines were replaced.

TZ Industrias expects to retrofit an additional 189 pumps over the next 2 years.



*Grupo México's  
Buena Vista del Cobre mine*



*One of the 54 Grupo México pumps  
that is now fitted with Thordon's  
ThorPlas-Blue bearings*