



## CASE STUDY: OYU TOLGOI HIGH TENSION BEND PULLEYS

Oyu Tolgoi is a large copper mine that has both open cut and underground operations that has been operating since 2013. The mine is jointly owned by the Mongolian government and Rio Tinto and is located in the South Gobi Desert. Once fully operational the mine is expected to produce 450,000 tonnes of copper annually.



**LOCATION:** Gobi Desert

**YEAR:** 2025

**APPLIC.:** Gold Mineral Process  
Leach Hoppers

**SOLUTION:** Magnefast™  
Ceramic Liners

### ISSUES ON SITE:

The location of the mine in the Gobi Desert means operating temperatures can be extreme, ranging from +45°C in summer to -35°C in winter. These conditions require careful selection of conveyor materials to ensure robust and reliable performance.

Oyu Tolgoi has been working to further optimise the performance of its conveyor pulleys and has focused on addressing several key areas:

#### Maintaining the integrity of the hot vulcanised bonding system.

Elastotec's documented HV bonding process has been relied upon at Oyu Tolgoi since 2018 to ensure consistent, high-integrity adhesion

between the lagging and pulley shell. Maintaining this established standard during refurbishment and replacement work is critical to ensuring long-term lagging performance, particularly in low-temperature conditions where increased lagging stiffness can place higher loads on the bonding system.

#### Improving lagging service life.

Increasing the durability of lagging on both drive and non-drive pulleys to better withstand abrasive operating conditions and extend maintenance intervals.

#### Reducing carryback build-up.

Minimising material build-up on drive and non-drive pulleys to improve belt tracking and overall conveyor reliability.

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Elastotec has been working to address these lagging problems and provide increased lagging service life.

In October 2017, Elastotec applied a Hot Vulcanised Ceramic Lagging (HVCL) to two drive pulleys for Oyu Tolgoi. Both pulleys were installed in early December 2017 and were operational throughout the winter months with temperatures reaching -35 C.

Pulley performance/Lagging performance was unaffected by the low temperatures and maintenance personnel at Oyu Tolgoi indicated they were very happy with this outcome.



Following on from this success, our Mongolia partner recommended the use of the Elastotec Hot Vulcanised Polyurethane Lagging (HVPU) for a number of high tension non drive pulleys.

These pulleys had suffered from problems with localized debonding of lagging and material build up due to carry back problems.

The Elastotec Hot Vulcanised (HV) Bonding was a well proven way to eliminate the debonding of the lagging and the use of Polyurethane greatly increased the abrasion resistance of the lagging compared to rubber, while at the same time providing resistance to buildup as a result of the much lower co-efficient of friction.

When the recommendation was approved, Elastotec assisted with the training and supervision of the application of the HVPU Lagging at their pulley manufacturing facility. In addition to developing the high performance Hot Vulcanised Polyurethane Lagging, Elastotec have a detailed application procedure to ensure that the lagging performs exactly as designed.

This installation has established a state of the art pulley manufacturing plant in Oyu Tolgoi and have invested in a PLC operated autoclave for applying hot vulcanised lagging. This state of the art equipment allows our partner to control both the quality of the lagging application and the lead time.



The two high tension bend pulleys with Elastotec HVPU were supplied to Oyu Tolgoi and put into service in early 2018.

Greg Fogo has visited Oyu Tolgoi to see the pulleys in operation and obtain feedback from the site maintenance personnel. Current operation is as expected with no sign of the buildup or excessive wear problems experienced previously.

For additional information on the use of HVPU lagging in critical conveyor pulley applications please go to the link below:

<http://www.elastotec.com.au/blog/new-technology-extends-service-life/>

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