

# Vulcabrix® Ceramic Liners

<b>Location</b>	Arizona, USA
<b>Platform</b>	Tripper Transfer Chute
<b>Conditions</b>	Coarse Ore/ Sliding Abrasion / Impact
<b>Solution</b>	Redesigned Tripper Transfer Chute lined with Vulcabrix Ceramic Liners, Duablock and Duacast Billets

## Situation

A large mine site in Arizona had production goals for their Coarse Ore Tripper of 68,000stpd. Downtime required for regular maintenance and safe manual handling of existing liners were contributing factors preventing this goal from being met.

Due to excessive wear from high material velocity and the unnecessary impact of ore discharge on the bin walls below the tripper, transfer chute liners were requiring change-out every 6 weeks. The ore discharge location required multiple levels of scaffolding to access.

The mass of the oversize liner panels in combination with the confined space for installation in the existing tripper created hazards for manual handling.

Excessive dust generation had also attracted the attention of OSHA and the mine was advised to implement controls.

## Solution

Bradken analysed the existing transfer chute using DEM (Discrete Element Modelling) and a new design with modular sections for rapid rotation (rotatable) was validated and implemented. This allowed for maintenance of the liners in a controlled workshop environment, eliminating the requirement for confined space entry. This was combined with a redesigned liner package to reduce maintenance downtime while improving safety in liner change-outs.

The discharge was modified so that direct impact on the bin walls below the tripper was eliminated, resulting in significant long-term savings, and novel sealing belt system was added to seal the bin openings to reduce dust generation. The solution was installed in June 2019 including strategically placed Vulcabrix, Duracast and Duaplate liners.

## Results

The liner package redesign resulted in lower costs, with a 1600% (6 weeks to 104 weeks) improvement in liner life and 24 months plus potential operational life continual service.

The rapid rotation design improved access for maintenance and eliminated the need to enter confined spaces. A 40% reduction in mass increased safety by reducing manual handling.

The package processed 26 million tons of screened primary crushed ore for the sites six Ball Mills mills during its campaign.

## Results Summary

- 26 million tons of screened primary crushed ore processed
- 40% reduction in mass reducing manual handling
- Improved maintenance access eliminating the need to enter confined spaces
- 1600% increase in liner life reduced costs and downtime
- 24 months plus potential operational life continual service
- Elimination of ore discharge on bin chute walls below tripper reducing downtime and costs
- Improved dust suppression



Vulcabrix liners, Duracast and Duablock Billet liners in the tripper pant legs



Duablock Liners used in higher wear areas

*“Bradken wear liners are barely worn after a year in the Tripper chute. They have shown a significant improvement from what was in there before!”*

## Customer Testimonial



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BK-Sales & Marketing-Global-Record-Case Study-MP-Vulcabrix AZ-Coarse Ore Tripper -English

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