



CASE STUDY: SLURRY TRANSFER CHUTE IMPROVEMENT AT MULTI-MINERAL MINE

A multi-mineral ore body mine in South Australia producing copper, gold, silver, and uranium suffered significant wear and tear on one of their a high-velocity underflow transfer chutes. In March 2024 the site trialled Magnefast zirconia toughened, alumina ceramic wear liners in place of their existing studded iron wear liners - delivering outstanding results.



LOCATION: South Australia

YEAR: 2024

APPLIC.: Transfer Chute

SOLUTION: Magnefast

ISSUES ON SITE:

The site conditions presented several operational challenges. The ore being processed is a multimineral type, with a flow rate of 757 m³/hr and a top particle size of 8 mm. The transfer chute handles a substantial throughput of 2,200 tonnes per hour, accumulating to 9.6 million tonnes over a six-month period! A crane was required for the removal and maintenance of the chute, indicating the scale and complexity of equipment involved.

A key issue observed was the significant wear on the existing white iron liners installed, as evidenced in the photo taken during a 13 week shutdown (right photo).

These liners were found to be heavily worn, necessitating the use of ceramic filler as a temporary measure during a forced shutdown. This raised concerns regarding liner durability and the need for improved wear management to reduce unplanned downtime.



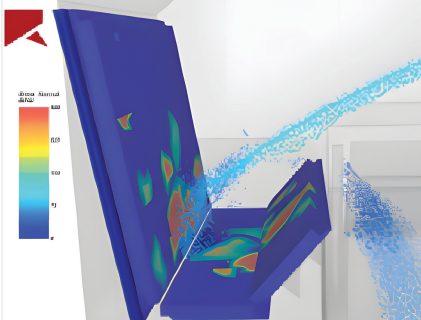
IMPLEMENTATION:

In March 2024 a trial installation of the Elastotec Magnefast wear panels was put in place on a high velocity underflow transfer chute. The existing studded white iron wear liners were replaced with Magnefast zirconia toughened alumina ceramic wear liners.

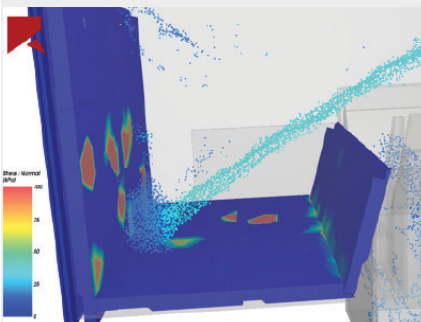
The main objectives in making the change to the Magnefast wear liners were:

- Ⓢ Longer service life from ceramic liners
- Ⓢ Quicker wear liner changeouts
- Ⓢ Reduced maintenance labour

IMPROVEMENT PROCESS:



Dem Simulation – White Iron Liners – Hot spot consistent with impact wear



Dem Simulation – Above before trial of Magnefast Liners - Hot spots less consistent in impact due to slurry pool depth increase

500% Increase
in Service Life

80% Decrease
in Shutdown Time

80% Reduction
in Required Labor

RESULTS:

The Magnefast trial successfully passed a routine six-month service life check, easily surpassing the mine's existing wear liner benchmark, and is projected to last a minimum of 12 months before replacement is required - delivering a 500%+ increase in service life.

In light of this, the original Magnefast liners were not replaced at the 6-month mark, instead continuing in service to align with the mine's updated project parameters - saving on both product costs and labour hours.

Additional standout results include:

- Ⓢ Shutdown time reduced by 80%, thanks to quicker, tool-free liner changeouts.
- Ⓢ Labour requirements (and costs) cut by 80%, also reducing both manual handling and safety risks
- Ⓢ Consistent wear performance, with only 5–10mm of wear in high-impact zones over 6 months.

These results demonstrate the long-term efficiency, durability, and cost-effectiveness of the Magnefast system. For more information, visit www.elastotec.com.au

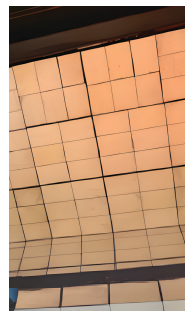
Magnefast install
March 2024

Inspection
June 2024

Inspection
September 2024

Inspection
December 2024

Inspection
March 2025



2023

Initial
Magnefast
Ceramic trial
review

Existing white
iron liner
service life 10
weeks

MAR 2023

Initial
Magnefast
Ceramic
full chute
installation

Put in service

JUN 2024

First inspection
at 13-weeks
with no forced
shutdown

**Worn 5mm,
put back into
service**

SEP 2024

Second
inspection at
September
2024 26-week
shutdown

**Worn another
5mm, put
back into
service**

DEC 2023

Third
Inspection
at 39 weeks
with no forced
shutdown

**Dismantle & reinstall
panels
reviewing
parent metal
and back face
of panels.**

MAR 2025

Final Inspection
at 52 weeks
with no forced
shutdown

**Reviewed
panels, 17mm
was the
highest wear
area, replaced
panels and
put back into
service**