



CASE STUDY: 80% REDUCTION IN SHUTDOWN TIME AND 500% INCREASE IN WEAR LINER LIFE, WITH MAGNEFAST

At Port Hedland, the world's largest bulk export port, trialled Elastotec's Magnefast Ceramic Wear Panels seeking to address the need for faster maintenance and longer-lasting wear protection in their high throughput iron ore transfer chutes - operating 24/7. What began as a trial in 2019 has evolved into a permanent solution, delivering vastly extended service life, as well as reduced shutdown durations and costs.



LOCATION: Port Hedland, WA

YEAR: 2019 - Present

APPLIC.: Transfer Chutes

SOLUTION: Magnefast

ISSUES ON SITE:

Port Hedland is the world's largest bulk export port located in approximately 1,650km north of Perth, handling shipments of iron ore, lithium concentrate and salt.

One of the key challenges faced by the operations team was the frequent need for maintenance shutdowns due to the short service life (just 10 months) of the studded steel wear liners previously in use.

These shutdowns were not only disruptive but also costly for a facility that operates continuously, 24 hours a day, seven days a week.

There was a clear need for a wear lining solution that could offer both a longer lifespan and a faster, more efficient installation process to minimise downtime and improve reliability in high-demand conditions.

The initial target was to substantially reduce the time required for a wear liner change and at the same time increase the wear liner service life from 10 months with the existing Bisalloy wear liners.



SOLUTION:

Implementation of the Magnefast Ceramic Wear Panels began in October 2019 with a trial installation at Port Hedland, on one of their transfer chutes.

Incidentally, this initial trial has remained in continuous service to this day, providing strong evidence of the durability and long-term performance of the system under demanding operational conditions.

Following the success of the trial, a full chute that had previously been lined with studded steel liners was converted to Magnefast ceramic liners in December 2020. The panels were individually numbered and supplied as a complete, ready-to-install kit, which streamlined the installation process and enhanced efficiency and accuracy during scheduled shutdowns.

Since 2021 a further five chutes at Port Hedland have now been converted to Magnefast Ceramic Liners.



Magnefast Ceramic Install 2020

**500%
increase**
in service life

**80%
reduction**
in shutdown time

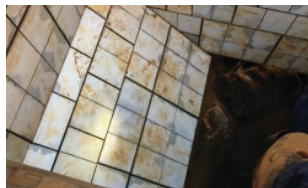


RESULTS:

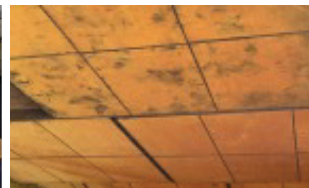
The transition to Magnefast Ceramic Wear Panels delivered significant improvements across multiple aspects of chute maintenance and performance at Port Hedland. The most notable benefit was a substantial increase in liner service life.

The initial target - to double the current 10 months replacement interval - turned out to be modest with the new Magnefast ceramic liners delivering a 500% increase in liner service life!

Faster installation using the Magnefast magnetic system also reduced the duration of shutdowns, a critical factor in a continuously operating facility - reducing the average total shutdown duration by 80%. Additionally, the modular, clearly labeled panel system improved maintenance planning and contributed to a safer and more efficient work environment.



Magnefast install in 2020



Magnefast 12 months in service



Panels after five years - now (finally) due for replacement

Magnefast Installation Timeline

2019

Installation panel put in place, trial successful

2020

Replacement of studded steel liners replaced with Magnefast

2021/22

A further 5 chutes installed

80%

Reduction in
Shutdown Time

500%

Increase in
Liner Service Life

Studded Liners		Magnefast Liners	
Chute surface area	15m ²	Chute surface area	15m ²
LABOUR		LABOUR	
Removal time (steel)	20 hours	Removal time (Magnefast)	2 hours
Install time (steel)	15 Hours	Install time (Magnefast)	5 hours
Number of operators	3	Number of operators	3
TOTAL SHUTDOWN DURATION	35 Hours	TOTAL SHUTDOWN DURATION (80% DOWN)	7 HOURS