

The implementation of Magnefast wear panels delivered significant efficiency gains and cost savings for the site.

Liner replacement time was reduced from 12 hours to just 3 hours, wear life increased by 600%, and crane hire was eliminated altogether - dramatically reducing downtime and maintenance costs.

- Maintenance Supervisor

CASE STUDY: MAGNEFAST TRAIN LOAD OUT DEFLECTOR RELINE

A major quarry in New South Wales sought to improve the efficiency and durability of its train load out deflector system. The key objectives were to reduce change-out and relining time, minimise reliance on crane hire, and extend the service life of existing rubber wear panels - which were currently lasting only 10 months.

This case study explores how Magnefast wear panel technology successfully helped achieve these goals, leading to substantial reductions in downtime and maintenance costs.



LOCATION: Marulan, NSW

YEAR: 2021

APPLIC.: Deflector Reline

SOLUTION: Magnefast Wear Panels

ISSUES ON SITE:

A major quarry in New South Wales faced ongoing issues with its train load out deflector system, including frequent wear panel replacements, extended downtime during relining and a high reliance on crane hire during maintenance. The existing rubber wear panels had a limited-service life of just 10 months, leading to recurring disruptions and increased operational costs, with more than 12 hours of work required for installation and/or repair.



THE SOLUTION:

To address the client's challenges, the Elastotec's engineers focused on optimising the installation and wear management process using Magnefast technology.

The first step involved cleaning and preparing the existing backing plate to ensure a strong and reliable foundation for the new installation. With Magnefast's streamlined system, the deflector was efficiently relined and replaced with wear panels specifically engineered for enhanced durability. This approach minimised downtime and eliminated the need for complex, time-consuming installation methods, ultimately eliminating reliance on crane hire and improving overall maintenance efficiency.

The results demonstrated the effectiveness of this solution in real-world conditions.



75% reduction in liner replacement time

100% removal of crane hire

600% increased service life



THE RESULTS:

After three months in operation, the deflector system remained in excellent condition, showing no significant signs of wear. At the six-month inspection, wear was measured at just 5mm significantly outperforming the previous rubber lining. Continued monitoring over time confirmed consistent, predictable wear, with the Magnefast™ liners achieving up to 60-months of service life (photos on next page).

This substantial improvement extended liner life by up to 600%, while reducing the frequency of maintenance interventions, lowering overall costs, and improving operational reliability.

The implementation of Magnefast™ technology also delivered significant efficiency gains. Liner replacement time was reduced from 12-hours to just 3-hours, dramatically minimising downtime and maintenance disruption. Crane hire was completely eliminated, as Magnefast™ panels could be rotated and replaced in situ, enhancing both safety and operational flexibility.

During a planned shut a work platform was set up between the head pulley and the swing wall and the panel rotation and/or swapping was typically completed in less than 30 minutes.

Through strategic panel rotation and repositioning, the full wear profile of each liner was utilised, allowing high-wear zones to be managed without premature replacement. This approach not only enabled the 60-month achieved service life, but also delivered a more sustainable, long-term solution for the train load-out deflector system.



MAGNEFAST PERFORMANCE RESULTS



ADVANTAGE OF MAGNEFAST ON DEFLECTORS: OPTIMISED WEAR MANAGEMENT THROUGH PANEL ROTATION:

Deflector applications are subject to highly localised wear due to directional material flow and impact angles. Magnefast™ wear liners provide a significant advantage in these environments by enabling targeted wear management without full liner replacement.

Because each panel can be quickly & easily removed and reinstalled in situ, maintenance teams can:

- Rotate panels to bring unworn sections into high-wear zones
- Swap panels between high- and low-wear areas to balance overall liner consumption
- Extend service life without crane hire or complex relining procedures

For this site the Magnefast™ panel rotation/swapping was typically less than 30 minutes. This flexibility allows operators to fully utilise the entire wear profile of each panel, rather than prematurely replacing liners due to localised damage.

