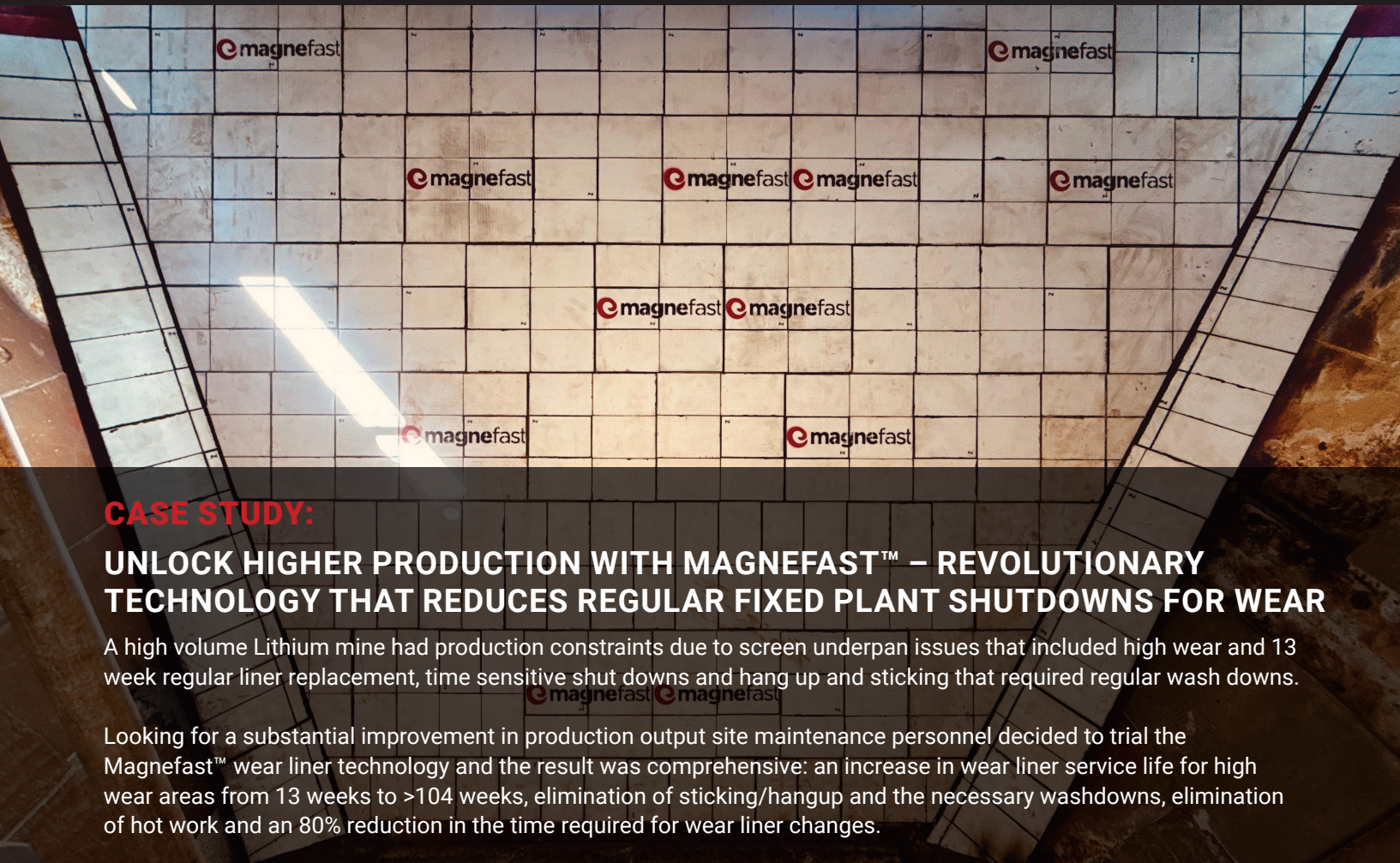




CASE STUDY:

UNLOCK HIGHER PRODUCTION WITH MAGNEFAST™ – REVOLUTIONARY TECHNOLOGY THAT REDUCES REGULAR FIXED PLANT SHUTDOWNS FOR WEAR

A high volume Lithium mine had production constraints due to screen underpan issues that included high wear and 13 week regular liner replacement, time sensitive shut downs and hang up and sticking that required regular wash downs.

Looking for a substantial improvement in production output site maintenance personnel decided to trial the Magnefast™ wear liner technology and the result was comprehensive: an increase in wear liner service life for high wear areas from 13 weeks to >104 weeks, elimination of sticking/hangup and the necessary washdowns, elimination of hot work and an 80% reduction in the time required for wear liner changes.



LOCATION: Western Australia

YEAR: 2025

APPLIC.: Screen Underpan Chutes

SOLUTION: Magnefast™ Ceramic Liners

ISSUES ON SITE:

The site encountered several critical operational and maintenance constraints:

- Frequent material hang-up and build-up, requiring regular washdowns
- Short liner service life (~13 weeks) leading to high replacement frequency
- Restricted shutdown windows (48 hours) limiting maintenance scope
- Labour-intensive liner replacement, involving gas axe cutting of corroded studs and manual punching and removal
- Dependence on scaffolding and hot work, increasing safety risks and complexity

These factors combined create high maintenance costs, operational inefficiencies and safety exposure.



THE SOLUTION

The site chose to trial Magnefast™ in the top section of one of the screen underpan chutes. The existing NiHard steel liners were removed from this section and were replaced with a new steel skin. Then the Magnefast™ ZTA liners were installed onto this surface.

The actions taken to improve chute performance and maintenance efficiency include:

1. Introduction of Magnefast™ System

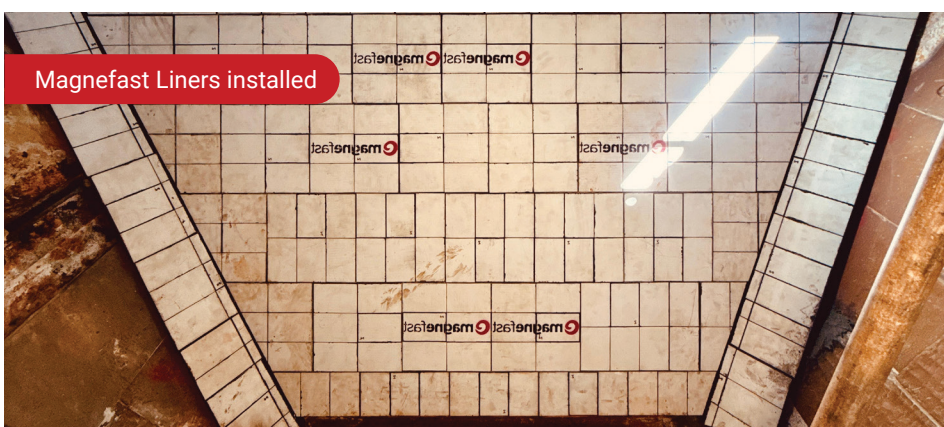
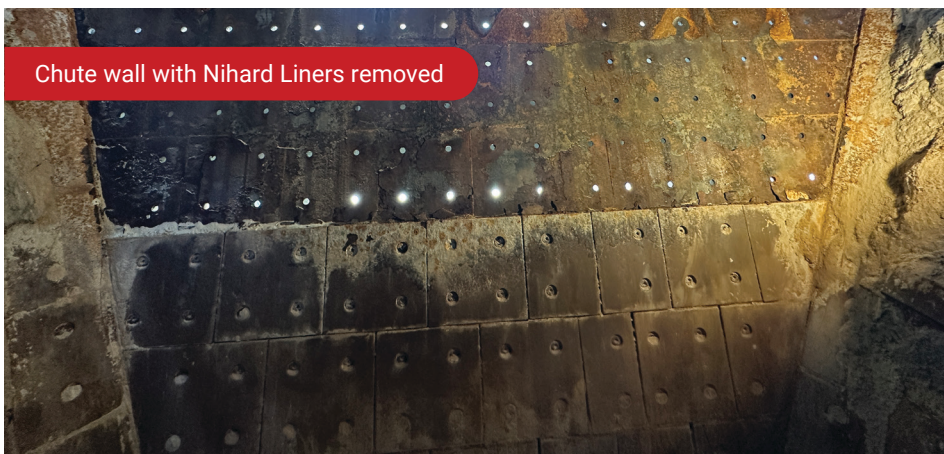
- Magnetic fastening system enabling rapid liner installation and removal
- Eliminated need for studs, welding, or hot work
- Removed requirement for external scaffolding

2. Wear Liner Material Optimisation

- 95% Aluminium Oxide – general wear areas
- ZTA (Zirconia Toughened Alumina) – initially used in high wear zones
- Silicon Carbide (SiC) – deployed in the highest flow and wear areas for superior durability and low friction

3. Trial Deployment

- Initial trial conducted in the top section of a screen underpan chute
- Existing NiHard liners removed and replaced with a new mild steel skin
- Magnefast™ ZTA ceramic liners installed




RESULTS & NEXT STEPS

The implementation delivered a major improvement in chute performance, maintenance efficiency and operational reliability. Following the installation of the Magnefast™ ceramic liner system, liner service life increased from approximately 13 weeks to >104 weeks based on measured wear rates, an improvement of more than 8x over the previous NiHard liner system.

Inspections also showed original mould markings still visible on many ceramic panels, highlighting the durability of the liner system under demanding operating conditions.

Following the success of the initial trial, the site expanded the application into the high-wear lower chute section using a combination of ZTA and Silicon Carbide (SiC) Magnefast™ liners to further optimise wear life and material flow performance.

Based on the strong results achieved across both chute sections, the site has now implemented a broader rollout program to upgrade all four screen underpan chutes with Magnefast™ ceramic liner systems — supporting a long-term strategy focused on improved reliability, safer maintenance, and reduced downtime.

Magnefast Panels in Top Chute Section After 26 weeks



Magnefast™ ZTA & SiC at Installation



Magnefast™ ZTA & SiC After 13 weeks



✓ **>104+ Weeks Service Life**

✓ **80% Reduction in Liner Change Time**

✓ **No Material Hang-up**

✓ **No Hot Work or Scaffolding**

✓ **No Regular Wash Downs**