



## CASE STUDY: SCREEN CHUTE UNDERPAN BOTTLENECK RESOLUTION

At one of the largest iron ore fixed plant operations in the Pilbara, Western Australia, the client was facing persistent bottlenecks in three screen chute underpans. The issue stemmed from sticky feed ore building up and caking onto both sides of the bisalloy parent metal, leading to major productivity losses and increased maintenance. To resolve the problem, the site partnered with TSG Global to implement a long-term solution using Elastotec's next generation Magnefast wear panel technology.



**LOCATION:** Western Australia

**YEAR:** 2024

**APPLIC.:** Screen Chute Underpan

**SOLUTION:** Magnefast

### ISSUES ON SITE:

Our client, one of the largest fixed plant iron or mines in the Pilbara, was experiencing extreme bottlenecks on three screen chute underpans due to material hang up from sticky feed ore. The ore was caking onto both sides of the bisalloy parent metal.

This resulted in productivity loss and increased maintenance on all three underpans due to extensive build-up. From a reliability perspective this directly affected the feed presentation between the screen above and the conveyor below causing a host of conveyor related issues from spillage, to uneven wear.



**SOLUTION:**

The client engaged TSG to permanently resolve the ongoing bottleneck by introducing Elastotec's Magnefast magnetic wear panels - a next generation technology for lining transfer chutes and other bulk material inlets.

The implementation process was quick, safe and reliable, resulting in vastly improved ROI for the client.

**1. Site Assessment & Planning**

TSG scoped out the chute to understand the client's unique requirements and developed a wear panel map that outlined the quantity of Magnefast panels required, along with stop bar positioning.

**2. Surface Preparation**

A subcontractor on site erected internal scaffolding and then sand blasted each wall back to parent metal to ensure optimal adhesion.

**3. Priming & Protection**

The TSG service team primed the wall using an anticorrosion paint with a paint roller. This can also be done using a spray gun machine if available.

**4. Panel Installation**

The TSG service team marked out the chute and laid the Magnefast panel system from left to right ensuring all panels were level and sealed against each other.

**5. Final Welding & Completion**

The TSG service team tacked and then welded into place all stop bars required.

*This process was completed safely, efficiently and on time.*

**RESULTS:**

The upgraded chute system has transformed performance at the site. With Magnefast in place, the underpans now operate as a true "set and forget" solution – no longer requiring regular cleaning or maintenance.

Material build-up and hang-up have been completely eliminated, significantly improving feed flow and conveyor reliability. Maintenance demands have dropped sharply, productivity has increased, and the plant now benefits from more consistent feed presentation and reduced downtime.



Eliminated material buildup and hang-up issues

Significantly reduced maintenance requirements

Improved productivity and reliability

Enhanced feed presentation to conveyors

Safe, efficient installation completed on time and within scope.

