

Case Study – K-Cleanguard Belt Pre-Cleaner

Kinder Australia Product:	<u>K-Cleanguard Belt Pre-Cleaner</u>
Product Category:	Conveyor Belt Cleaning
Location:	Antofagasta, Chile
Conveyed Materials:	Leached copper ore
Conveyor Belt Width:	1829mm
Production Capacity:	6.2 m/s, 9.000 tonnes per hour

CHALLENGE:

- *Low wear life of Primary Belt Cleaners to be improved.*
- *Work with high moisture conditions on site; a leading contributor to carryback issues.*
- *Resolve major carryback and material spillage issues.*
- *Minimise production downtime due to cleaning up carryback and spillage.*

Antofagasta Minerals Antucoya operation had been experiencing low wear life of their primary belt cleaner blades installed within their reclaiming conveyor system, which has a throughput of 9.000 tph, mostly using conveyors with 1829mm wide belts at 6.2 m/s.

The accelerated wear of these blades was a consequence of the main ore flow hitting the blade, instead of flying it off at the discharge pulley. This unexpected condition was a consequence of high moisture content in the ore, which turned it into a highly cohesive slurry that stuck firmly to the belt.

This condition was so demanding on the primary belt cleaner that the blades were completely worn in one day, and resulted in major carryback issues, having to force downtimes only for cleaning carryback spillage in critical locations.



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SOLUTION:

K-Cleanguard Belt Pre-Cleaner



We recommended installing **K-Cleanguard Belt Pre-Cleaners** at the discharge of every conveyor, focused on separating the main ore flow of the conveyor belt and extending the wear life of the primary belt cleaner's blade. A special pre-cleaner wear plate had to be designed for Antucoya's operation, since their condition was even more severe than others experienced before, using the most resilient materials available.

After installing the **K-Cleanguard Belt Pre-Cleaners** the client was able to extend the wear life of the primary cleaner's blade by a factor of 14. This allowed for two weeks between blade replacements (improving over a job that was done on a daily basis), drastically reducing man-hours and worn blades, and furthermore allowing replacements to take place during normal scheduled maintenance downtimes.

The **K-Cleanguard Belt Pre-Cleaner's** specially designed wear plates also showed an exceptional wear life of 45 days in these conditions, where regular pre-cleaner wear plates would barely have lasted a week.

RESULTS:

- *Extended wear life by a factor of 14.*
- *Fortnightly blade replacements.*
- *Reduced hours and maintenance.*
- *Reduced production down time.*
- *Product performance expectations exceeded.*
- *Cost savings realised with reduced belt cleaner blade replacements.*



The belt cleaning arrangement shows better performance and is now much more consistent and predictable, which also reduced the cleaning downtimes.

Although the customer had to go through the extra expense of buying specialty pre-cleaner wear plates, the total cost in cleaner blades was reduced due to the decrease in primary cleaner blade demand, which had an overcompensating effect. Additionally, the plant's availability went up significantly as did the mean throughput of the area, demonstrating the importance of working with a top-tier custom built belt cleaner arrangement.

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