

Case Study – K-Cleanguard Belt Pre-Cleaner

Kinder Australia Product:	<u>K-Cleanguard Belt Pre-Cleaner</u>
Product Category:	Conveyor Belt Cleaning
Location:	Calama, Chile
Conveyed Materials:	Leached copper ore
Conveyor Belt Width:	1067mm
Production Capacity:	4.2 m/s, 1.850 tonnes per hour

CHALLENGE:

- *Low wear life of Primary Belt Cleaners to be improved; approx. 2 days.*
- *Work with high moisture conditions on site; a leading contributor to carry back issues.*
- *Minimise production downtime due to cleaning up carryback and spillage.*

Mantos Copper's Mantoverde has always struggled with its unusually sticky ore. One of its conveyor belts, belt CV-05, which moves 1.850 tph at 4.2 m/s of leached copper ore, frequently experienced premature wear on its primary cleaner mine duty blade. This was a major concern for the customer:

The remaining belt cleaners were not able to compensate for the lost cleaning power of the primary belt cleaner, so the belt had to stop regularly for the ore underneath it to be removed. An excess of man-hours for primary blade replacement - Primary blades barely lasted 2 days.



The belt cleaner's blade premature wear was taking place because the blade was actually "cutting" through the main ore flow of the belt. This happened because of an increased moisture content in the transported ore, which turned it into a highly cohesive paste that wouldn't fly off the belt's surface at the discharge pulley.

Instead, it stuck to the belt surface, and went along with it as the belt turned with the pulley, ending up being projected almost in a reversing direction.

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SOLUTION:

K-Cleanguard Belt Pre-Cleaner



After analysing the problem we introduced the client to **K-Cleanguard Belt Pre-Cleaner**, a belt cleaner specifically designed to engage the main ore flow and separate it from the belt's surface. Thus, the **K-Cleanguard Belt Pre-Cleaner** restores (to the extent possible) the original design flow trajectory and, most importantly, allows the remaining belt cleaners to operate normally, restoring the whole conveyor system to a normal working condition.



Pre-Cleaner – No load



Pre-Cleaner – Under operation

RESULTS:

- Wear life of the primary belt cleaner is now over x7 longer (fortnightly)
- There is less than a seventh of maintenance time spent.
- Better cleaning performance of the entire cleaner arrangement.
- Less spillage; ore flow following a better trajectory.
- Savings in blade replacements.



After installing the **K-Cleanguard Belt Pre-Cleaner** the client saw immediate results: The wear life of the primary belt cleaner's blade is now over 7 times longer, extending the maintenance frequency from every two days to every two weeks. Effectively reducing the demand of man-hours to less than a seventh. The **K-Cleanguard Belt Pre-Cleaner** blade lasts 15 days as well.

The client reported better cleaning performance of the whole belt cleaner arrangement. The client also reported less spillage, with the ore flow following a better trajectory. As a side effect, the client achieved savings in belt cleaner blade replacements, since the increased wear life of the primary and secondary belt cleaner blades overcompensated the cost of the additional pre-cleaner blades.

After this experience the client was so satisfied with the results that 3 more pre-cleaners were requested for installation on other belts with similar problems, achieving the same results.

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