

Case Study – The Essential Seal, AirScrape®, TailScrape, K-Sure® Belt Support, K-Containment® Seal

Kinder Australia Product:

Product Category:

Location:

Conveyed Materials:

Conveyor Belt Width / Speed:

Rate:

Installation Date:

The Essential Seal Solution

Conveyor Skirting & Transfer

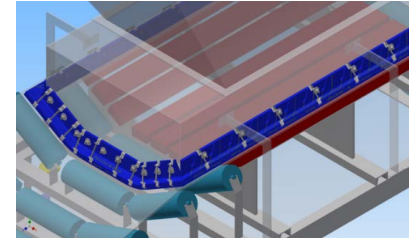
Rockhampton, QLD

Fire retardant powder

600mm Belt Width / 1m/sec

50 TPH

July 2021



CHALLENGE:

- Address belt support insufficiencies and belt sagging at the load zone point.
- Eliminate material spillage/dust and the associated OHS hazards.
- Eliminate labour time and resources often allocated toward cleaning up spillage.

Our Quarry operator is a world leader in minerals processing, specialists in the field of mining and powder production for underground coal mines, specifically fire prevention applications.

Following a comprehensive site inspection, our Area Field Technical Representative identified a 4m drop from the chute to transfer point, followed by thorough screening at 15mm, 5mm and then 4mm intervals.

No wear liner was used inside the chute and surprisingly ordinary 150mm rubber strips served as the chutes only form of sealing. The screening process resulted in unpleasant, disruptive, and costly material spillage, precisely 10 tonnes per week.

Material spillage would pile up on a daily basis and due to safety concerns required fencing off to prevent any OHS hazards (trips and falls). One full-time permanent maintenance staff member was recruited to shovel the spillage away, this was labour intensive, time consuming and costly for the operator.

Other major observations noted for site rectification was insufficient belt support at the critical impact zone and further down belt sagging between the rollers was evident.



Left Photo:

Essential Seal Installation, consisting of **AirScrape®, TailScrape, K-Sure® Belt Support System and K-Containment® Seal.**

Site maintenance now report maintenance time and resources devoted to removing 10 tonnes of spillage is no longer required, labour and product loss reductions targets will soon be achieved.

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SOLUTION:



Kinder's essential transfer optimisation solution is comprised of **AirScrape®, TailScape, K-Sure® Belt Support System** and **K-Containment® Seal**. This industry benchmark and first of its kind solution was devised and installed to provide optimal skirting and sealing at the site's high impact zone and more specifically to eliminate the costly and hazardous material spillage problem identified during site inspection.

Historically, **K-Sure® Belt Support System** originally installed by Kinder had outperformed and outlasted over 10 years of service life. Familiar with the performance and credibility of Kinder's dust and spillage range of solutions, the quarry again turned to Kinder for their guidance and expertise in this area. The most recent installation entailed extending K-Sure® Belt Support from 2m to 4m, to better align with the chute profile length, this support system was projected to also eliminate belt sagging between the rollers.

K-Sure® Belt Support has proven over many countless Kinder installations to increase the effectiveness of **K-Containment® Seal**. This hard-inner skirt was also installed as a first line of defence against spillage/dust emissions and technically designed to enhance the effectiveness of the outer skirting.

Airscrape®, contact-free side skirting seal, suspends over the belt. Its unique design allows air from the outside into the middle of the belt, creating powerful air suction. The material movement together with the moving belt support increases the suction effect enabling fine dust particles to remain in the conveyor section.

To complete the solution, **TailScape** fully integrated with AirScrape® to deliver outstanding sealing at the rear area. This synergy delivers a highly effective barrier against dust generation, material spillage reduction and environmental protection.

RESULTS:

- *Zero material spillage.*
- *Product performance expectations exceeded.*
- *Ongoing maintenance free operation.*
- *Less wear resulting in extended wear life of skirting and conveyor components.*



Spillage was a major challenge faced by the processing plant; this was successfully resolved through the installation of Kinder's essential transfer point solution.

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The unique contactless feature of AirScrape® and TailScape combination translates to complete elimination of sealing wear, which can extend the service life of the conveyor belt and skirting components. With the targeted transfer point truly optimised through a highly effective skirting and sealing solution, the plant sees ongoing maintenance-free operation. The maintenance team is also very confident the plant will realise significant cost savings now and well into the future.