

Case Study – Kinder ‘Essential Seal’ Dust Containment Solution

Kinder Australia Product:	<u>K-Sure® Belt Support, K-Snap-Loc® Dust Seal, K-Containment® Seal</u>
Product Category:	Conveyor Skirting & Transfer
Location:	Mount Magnet, Western Australia
Conveyed Materials:	Gold
Conveyor Belt Width:	750mm
Production Capacity:	Approx. 1.5 m/s, 90 – 120 tonnes per hour
Installation Date:	September 2018

CHALLENGE:

- *Frequent roller replacements due to excessive dust and spillage entering roller bearings.*
- *Increasing maintenance resource, time associated with cleaning up dust/spillage.*
- *Minimise production shut down and improve staff morale.*

Our customer’s core business is a gold mining operation. From their purpose-built processing facility, the ore is crushed, screened, ground and refined into gold.

Our Field Applications Engineer was invited on site by Mill Foreman to conduct a thorough “walk the belt” inspection and audit of the conveyor operations. Recommendations were made to improve the life of conveyor rollers as well as resolve the material spillage and dust emission issues around transfer points.

Standard rubber skirting and impact idlers were used as the main line of defence against dust and spillage accumulating around the base of the structure and transfer point. To alleviate material spillage, frequent hosing was necessary. Dust emissions were also contributing to roller bearing contamination, causing roller seizure that led to frequent and necessary roller replacements.

The existing set up was ineffective and caused frustration for the operations and maintenance teams. Conveyor skirting was therefore installed around the transfer point areas to minimise dust and material spillage.

Although very costly in terms of maintenance time and resources, for productivity improvements to occur temporary shutdown was necessary to rectify the dust and spillage issues.



ABOVE
Kinder ‘Essential Seal’ Dust Containment Solution



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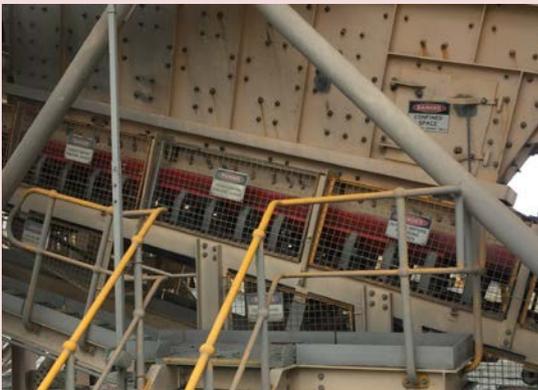
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SOLUTION: **Kinder Essential Seal**



BEFORE

Dust emission from transfer point (seized roller)



AFTER

Kinder ‘Essential Seal’ Dust Containment Installation

In May 2018, a comprehensive Conveyor Improvement Report outlined to the customer focussed on transfer points believed to be responsible for the dust and spillage issues on site.

Kinder’s ‘Essential Seal’, a highly effective conveyor belt support and conveyor skirting dust containment solution was proposed, accepted and installed by the customer in September 2018. Kinder ‘Essential Seal’ solution provides effective suppression of dust emissions around high impact transfer points.

The solution consists of **K-Sure® Belt Support System**, 2m long light duty retro-fitted impact bed, wing rollers were replaced with UHMWPE support rails, providing a supported belt, effective skirting seal and dust suppression. The other benefits of K-Sure® Belt Support Systems include roller failure reductions in transfer points, due to less moving components and the elimination of conveyor belt edge sag, leading to improved conveyor skirting profile and efficiency.

K-Snap-Loc® Dust Seal System, a high performance engineered, flexible polyurethane material was installed. This provided effective conformance to the conveyor belt profile, the self-adjusting benefits meant less maintenance time and resources than conventional skirting.

Lastly **K-Containment® Seal**, an internal hard skirt to contain the larger asset was installed due to the flexibility of the polyurethane, the higher durometer allows the polyurethane to handle larger material.

In February 2020, extremely positive feedback from the customer was received, **K-Sure® Belt Support System** has to date shown no visible signs of wear. Similarly, **K-Snap-Loc® Dust Seal System** and **K-Containment® Seal** are still both in top condition. The installation of Kinder ‘Essential Seal’ dust containment solution has been successful in minimising the dust and spillage issues at transfer points.

It wasn’t necessary for maintenance teams to perform any additional skirting adjustment work at the transfer point since the installation of Kinder ‘Essential Seal’. After installation of Kinder dust containment solution, production teams are hosing this area significantly less than they were prior to the installation. There are plans for future upgrades of 2 other transfer points in the crushing plant.

RESULTS:

- Excellent product performance feedback.
- Minimal signs of wear on the conveyor belt support and skirting solution.
- Reduction in dust emissions and spillage at transfer points.
- Elimination of maintenance work and cleaning up around the affected areas.



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