CASE STUDY: K-Sure® Belt Support System

Product:	K-Sure® Belt Support System
Product category:	Conveyor Belt Support
Location:	Tauranga, New Zealand
Conveyed materials:	80mm Hard Rock
Installation date:	November 2014

Previous problem:

Above: Customer's quarry site, one of 40 different sites across New Zealand.

This New Zealand based customer's core business is based around their quarry activities. They are a major supplier of quarried products to the construction industry, with raw materials extracted and processed from over 40 different sites around the country.

This customer provides infrastructure materials for some of the country's major motorways, bridges, reservoirs, to water and waste water treatment plants, with their product range focusing on the supply of hard rock and alluvial products.

Our customer was experiencing problems under a cone crusher, with rocks of approximately 80mm diameter in size. They were having issues with rocks pouring out the side of the belt, once exiting the cone crusher and landing on the transfer belt below.

The conveyor belt was "bowing" between the trough frames due to the material weight, therefore not allowing an even area for the skirt. The result was **constant material spillage**.

The Cost of Material Spillage:

- **Loss of quarried material**
- **Premature skirting replacement costs**
- **Labour clean-up costs**
- **OHS injury costs**
- **Downtime loss of production costs**
- **Damage to surrounding conveyor structure**

"We recognise the need to make the very best use of our limited natural resources, by extracting them carefully, processing them efficiently and using them in the most appropriate ways within their various applications." *(quote source: customer's website)*

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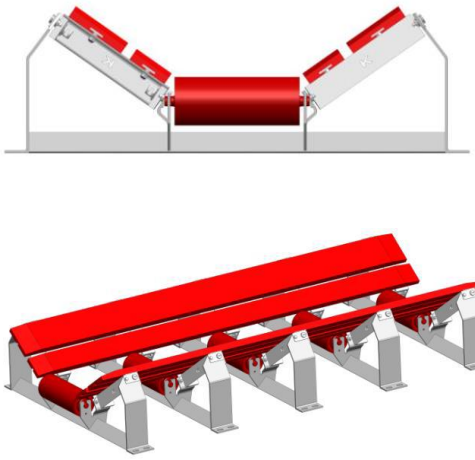
Resolution:



Above: Drawings of standard K-Sure® Belt Support System. Customised variations available to suit.

This problem is known as **Belt Edge Sag** and it is usually caused when there are too few idlers installed at the loading point.

The solution to this problem is to provide support under the chute using a slider bed. By doing this any belt edge sag will be eliminated and the effectiveness of the skirting seal will be increased, so reducing the spillage.

The first step was to remove the existing impact rollers. The **K-Sure Belt Support** was then positioned under the transfer point and installed. A design feature of the **K-Sure Belt Support System** is that it can be retro-fitted, so the customer did not need to drill any holes, modify or fabricate any special parts. All items supplied were "off the shelf items". The 2 man procedure took approximately **45 minutes** to complete. The belt now runs 100% flat, allowing the skirting to sit smoothly on the conveyor belt and **effectively contain the material load**.

Our customer is extremely satisfied with both the performance of the **K-Sure Belt Support** as well as the ease of its installation, and is impressed with how this has **improved the overall productivity of the conveyor system**.

Customer Benefits Received:

- **Eliminated spillage**
- **Eliminated moving parts**
- **Increased skirting and belt life**
- **Improved belt tracking**

Right: K-Sure® Belt Support System after installation at customer's quarry site.

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