Conveyor skirting explained

Thomas Greaves from DYNA Engineering explains the ins and outs of conveyor skirting: how it works, how it is designed and how it lifts productivity and safety.

WHEN MATERIAL BEING conveyed enters the top of a chute, some of it is converted into dust and small particles as it falls. If dust escapes from the chute, it can lead to costly product wastage and create a health and safety issue for nearby staff and the environment.

Conveyor skirting creates and maintains a seal between a chute structure and a conveyor belt, stopping dust and small particles from being able to escape the conveyor system.

Conveyor skirting is usually made out of rubber strips and mechanical grips to keep it in place. It also prevents stray materials from becoming lodged between the belt and conveyor structure, which can cause abrasive wear and grooving on the belt.

Skirting helps reduce dust emissions and wastage, from bulkier materials such as unrefined mineral ores, to finer materials such as sand, grain, sugar, salt and wood chips.

DYNA Engineering's General Manager Thomas Greaves.

Key conveyor skirting benefits

1. Dust suppression

The primary reason to install conveyor skirting is to suppress dust. Dust poses a significant health issue as it can lead to respiratory issues and disease. Fine dust can also cause irritation, burning and damage if it gets into the eyes.

In areas where dust is poorly contained, lower visibility due to dust pollution can pose a serious safety hazard for employees. Dust particles can be reduced through dust suppression systems, such as a spray bar, however a conveyor skirting seal is an effective preventative measure at the initial point.

2. Minimised material loss

In a perfect world, 100 per cent of materials conveyed would arrive at their destination point. However, due to a range of factors such as conveyor speed, incline angle, roller/idler type (flat or troughed), material consistency, or environmental factors, materials are often spilled or blown off the belt. Effective conveyor skirting can reduce the amount of material lost by preventing spillage and airborne material wastage.

3. Reduced conveyor belt damage

Without a conveyor skirting system, material can spill out and become lodged underneath the belt. Material caught between the belt and rollers will cause the belt to mistrack and become damaged. Having a conveyor skirting system in place will reduce the risk of preventable belt damage caused by material build up.

4. Lowered cleaning costs

Dust pollution, material spillage and buildup require ongoing cleaning and maintenance to ensure conveyor systems run safely and smoothly. Without conveyor skirting, a system will require more maintenance which can be expensive due to cleaning labour costs and downtime from system shutdowns.

5. Increased overall productivity

Conveyor skirting can increase a conveyor's overall productivity. With health and safety incidents minimised and material loss prevented, a higher product yield can be achieved. Reduced conveyor belt damage, belt tracking issues and material build up means less time is spent on repairs.

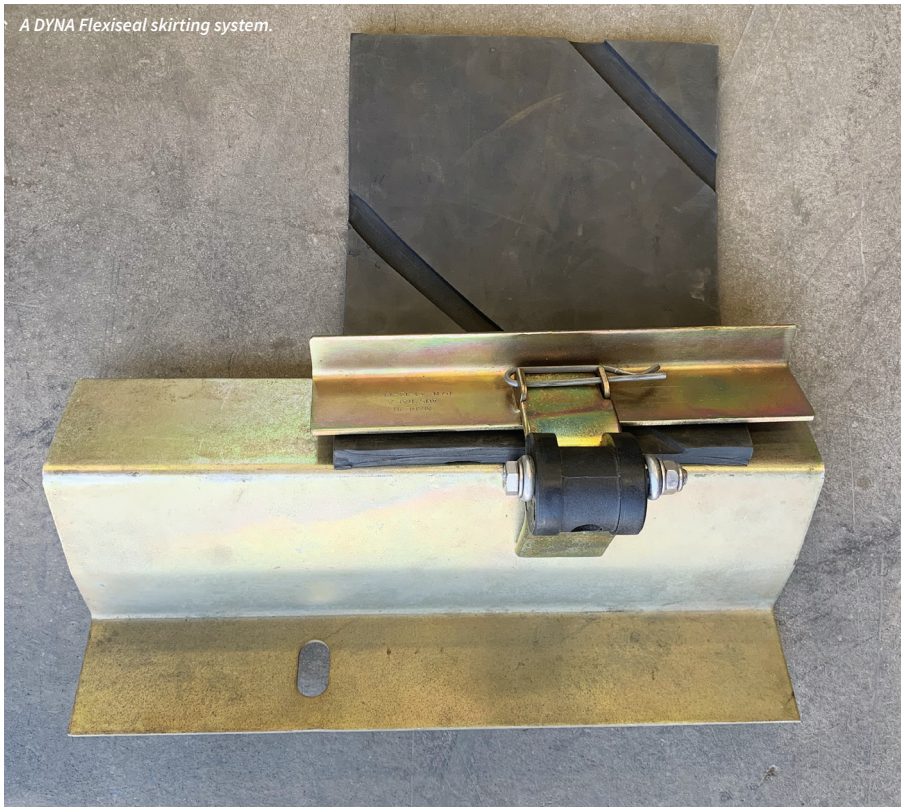
Dynamic sealing

DYNA Engineering has developed a conveyor skirting product called

Flexiseal. It automatically compensates for varying belt movements, maintains the correct pressure of the skirting rubbers on the belt, and reduces further belt wear.

Flexiseal is a dynamic system that aims to maintain an effective seal where a conventional skirting seal wouldn't. It automatically compensates for loaded and unloaded belt profiles, horizontal or vertical belt movements, and belt mistracking, keeping it in consistent contact with the conveyor belt.

A unique Cam Loc clamping system uses tempered steel spring clamps to eliminate direct threaded fixings. The Cam Loc system makes replacing the seal easy while keeping the sealing element securely clamped. A low maintenance design uses a patented quick-release clamping mechanism to hold the rubber seal in place.


A DYNA Flexiseal skirting system.

Other benefits include:
Automatic pressure control mechanism
Conveyor belt wear is a common issue that plagues conventional skirting systems. It is easy to overtighten conventional systems, which puts undue pressure on the conveyor belt and results in an increase in wear. Flexiseal uses an automatic pressure control mechanism which maintains the correct pressure of the skirting rubber on the conveyor belt, making it impossible to overtighten.

Consistently maintaining the correct pressure, combined with its high surface area and evenly distributed contact area, greatly reduces conveyor belt wear within the sealing area.

Diagonal grooving channels

A specially designed diagonal grooving channel helps Flexiseal to reduce stray material which can become trapped under the skirting system, and transports it back to the conveyor belt.

This helps reduce damage to the conveyor belt, as entrapped material can cause abrasive wear and grooving – a particular issue when conveying hard and abrasive material.


DYNA Flexiseal installed on a conveyor

Quick release system

Flexiseal has been designed to be as low maintenance and simple as possible. On conventional skirting systems, fasteners are required to keep the skirting in place. Fasteners can seize, cause material buildup, or rip and tear off.

DYNA's design uses a quick release clamping mechanism to securely hold the rubber seal in place. When the seal eventually wears out, the quick release clamping system allows the new rubber strip to be inserted and clamped in position without adjustments.

No adjustments required

On traditional skirting systems, frequent adjustments may be required to keep the skirting rubber in proximity of the conveyor belt to maintain the seal. As the skirting rubber and conveyor belt rub together, a groove begins to wear into the belt.

Flexiseal does not require any adjustments, due to its dynamic design. The curved rubber sections maintain contact with the conveyor belt regardless of seal wear, belt sag, belt condition or belt mistracking. B