



An Underground Coal Mine's Mechanical Splice Saved with Flexco® Rivet Hinged Fastening System

An underground longwall mine located in the Bowen Basin in Central Queensland has been producing premium hard coking coal since 1998. On average they produce 5-6 million tonnes of coal per annum. With such high demands for both quality and quantity, it is imperative that the mine runs at the highest possible level of productivity at all times. This means eliminating unscheduled downtime at every opportunity.

The mine was unhappy with a mechanical fastening system they were sourcing from a staple fastener supplier. The product was installed on a 1050mm wide solid woven belt, which runs year-round, non-stop. Unfortunately, the fasteners were wearing out extremely quickly, with the Belt Crew having to

replace 3-4 splices a week. With a belt 8km long, that meant a total of 40 splices held the belt together, with each having to be replaced at least twice in the belt's lifetime. The fastener material was prone to high wear in the harsh mining conditions. The hinge pins were migrating, leading to potential safety issues, if not regularly inspected and replaced.

Along with the failing product, the site received little support from the supplier when they voiced their concerns about the product's performance. The Development Mechanical Coordinator (DMC) at the mine, expressed discontent with the lack of support and training the company provided.



Partners in Productivity

SEARCHING FOR BETTER PRODUCT AND SUPPORT

On the hunt for a simpler and more reliable fastener with better product support, they looked to their main supplier of mechanical belt fastening systems on site: Flexco. The site had been using Flexco® R8 Scalloped Edge® mechanical fasteners on their 1800 and 2000mm wide maingate belts throughout the longwall mine.

"We knew the [Flexco] equipment was more reliable," the DMC stated.

The mechanical team also knew that locally-based Flexco Territory Manager Barry Stonebridge frequented the site often, so support and supply would always be just a couple of hours away.

The site decided to install Flexco® SR™ R5 ½ Rivet Hinged Fasteners onto the belt, as the low-profile Scalloped Edge design is compatible with belt cleaners. With the addition of the pneumatic installation tool, it is perfect for older, worn belts.



Flexco® SR™ Rivet Hinged Fastening System.

RESULTS

The DMC had a goal in mind; the fasteners to last until the development panel was complete. By installing Flexco SR Fasteners, the goal was realised with minimal effort, as they saw a huge improvement in fastener wear and overall life.



Installed Flexco® SR™ R5 ½ Rivet Hinged Fasteners.

The longer life of the SR Rivet Hinged Fastener has led to increased reliability of the belt as well as reduced maintenance hours and costs.

The only fasteners that had to be replaced were those that were continuously hitting the structure, and where the edge of the belt was being damaged due to a tracking issue.

LOOKING TO THE FUTURE

Flexco also conducted on-site training for the belt crew to ensure that the fasteners were properly installed and working at an optimum level.

"Our blokes were very happy to receive onsite training by a locally supported product, and we intend to have Barry come to site to run another group of training again shortly," says the DMC.



Stonebridge teaches the belt crew how to safely install fasteners with the Pneumatic Single Rivet Driver from Flexco.

Training is an essential part of the Flexco business, Stonebridge explains. "We know that our customers need support and training for our products to work at an optimum level, which is why we're more than happy to provide that support for our customers."

Customer commitment is one of our core values at Flexco. If your team is looking to further their skills in belt conveyor maintenance, please send an email to salesau@flexco.com about on-site equipment training.