Thinking Globally, Acting Locally.

Success Story

KordFlex®

FENNER DUNLOP

ENGINEERED CONVEYOR SOLUTIONS

The right conveyor belt for the job

KordFlex®

Client	Conveyed Material(s)	Product Category(s)
Iron Ore producer, WA	Iron Ore	Conveyor Belt
Client Industry	**Client Contact**	**Service Category(s)**
Mining	Available on request	Manufacturing + Project Management + On-site Service

Reducing belt downtime was high on the priority list for an iron ore mining company in the Pilbara. It had recently extended the shut frequency, however its 28/7 covered steel cord belt construction fell short of its historical two shut rotation changeout target.

The company's lifecycle had been previously improved by increasing cover thickness on traditional steel cord construction, but an ever increasing need to reduce shut frequency, eventually the belt reached a point where the machine had reached the original equipment manufacturer's design capacity.

To find a solution, the company reached out to Fenner Dunlop, which embedded its Engineered Conveyor Solutions (ECS) team to meet the client's key productivity indicators.

This team began implementing a trial of compound changes, however the thickness of the belt was restricted, meaning no additional weight could be added or the belt would become unbalanced.

To solve this problem, a low stretch, high tensile aramid fabric carcass called KordFlex® was installed. This material's significant reduction in weight which meant additional weight could be used for the top cover compound to improve its wear resistance.

By changing the material, Fenner Dunlop was able to increase the belt from a standard 28-millimetre top cover and seven-millimetre bottom cover to 32 millimetres and eight millimetres respectively.

This additional four millimetres on the top cover significantly improved the lifespan of the belt by around 15% to meet the shutdown requirements.

Jimmy Lindgren, Fenner Dunlop ECS Manager, says utilising a lightweight, high strength carcass design permitted the advantage of additional cover gauge that was required to extend belt life.

"Additionally, this belt was locally made in our manufacturing plant in Kwinana, so it gave the client assurance that the quality was going to be according to Australian Standards and we could guarantee quick delivery not to mention allowed the opportunity for the WA client to visit the factory and see their belt being made," Lindgren said.

"KordFlex® has the highest strength-to-weight ratio of all our conveyor belt reinforcements, with more than double synthetic fabrics such as polyester and nylon and five times that of steel," he adds.

As part of the trial, the ECS team also used Fenner Dunlop's abrasion resistant conveyor belt compound Ultra Tuff™ as the top cover. With a typical abrasion resistance of 20 cubic millimetres, Ultra Tuff™ has been specifically designed for systems handling high abrasion materials.

"One of the key drivers to the Kordflex® success was the innovative highly specialised method of joining the conveyor belt together. Kordflex® adopts a single ply construction and hence traditional methods of joining were not applicable," Lindgren said.

"KordFlex® uses a High Integrity Splice (HIS) design, allowing for single ply constructed belting to be joined using a vulcanised platen. This is the first of its kind to be successfully installed in the Pilbara on a high-tension balance machine and was conducted by Fenner Dunlop's elite service team that have years of experience in such HIS methods of joining belt."

KordFlex® can be used on systems with a smaller pulley diameter, creating a lighter weight belt that can result in greater energy savings per tonne conveyed.

Fenner Dunlop handled the installation and commissioning of the belt, ongoing inspection and monitoring, performance optimisation and data collection.

The trial has helped showcase Fenner Dunlop's ability to successfully install an aramid fabric belt on a high-tension balance machine, one of the first of its kind with the ability to extend belt life in the right application.

Mr Lindgren says the success of the install was predominately contributed to Fenner Dunlop's complete conveyor solutions offering that incorporates a collaborative approach between all of Fenner Dunlop's teams.

"As a company, we work closely with our clients to ensure they get the solutions they need. Our teams have a toolbox full of products and solutions available to ensure each project is fit for purpose," he explains.

"Depending on the situation, our teams adopt a cradle to grave approach by working alongside our clients from a project's beginning until the very end."

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