INSIGHTS™
Belt Conveyor Maintenance
TECHNICAL SOLUTIONS FOR BELT CONVEYOR PRODUCTIVITY

Safe, effective fastening of grain belts

The conveyors used in grain processing applications have their own set of unique challenges. The belts are oftentimes covered and fitted with cleaners to keep particulate emissions low, and explosion risks are a real possibility throughout the process. So when a belt breaks or becomes worn to the point of needing to be replaced or repaired, there are two things on the mind of the operations manager: worker safety and limited downtime.

Vulcanizing belts – the pros and cons

Vulcanization is the first choice for many grain processors because it heats the rubber and bonds it together, eliminating the opportunity for sifting and damaging the thin belts. The problem with vulcanization, however, is two-fold. One, every minute spent waiting for a vulcanizing team to come on site and repair the belt adds to lost production time. And two, over time, the oils in most whole grains - like wheat, corn, soybeans, and more – prevent the components of the splice from bonding so that vulcanization isn't even a possibility.

So what can be done to get your belts back up and running as quickly as possible, regardless of how aged they are? Mechanical belt fastening – a quick, easy, and affordable repair that can be done on site by your own crew. But it's important to remember that not every mechanical belt fastener is created equal, especially when it comes to grain belts.

Minimizing explosion risks with mechanical fasteners

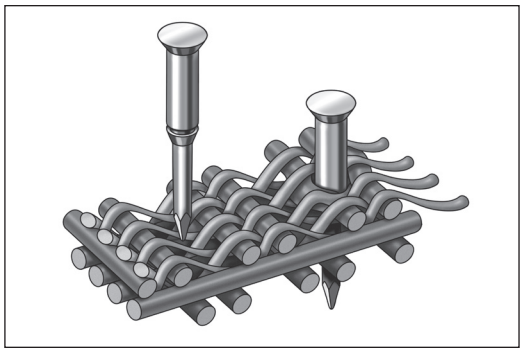
The ultimate goal of any grain processing operation is to get the materials moving on the conveyors without product loss and without increasing the potential for explosion.

The right material

The risk of explosion and the safety of your operation and your workers is your No. 1 priority. To minimize risk, a spark-free, Everdur® fastener is your best bet. Everdur fasteners are made from a tough copper and silicone alloy, so they are spark-free when compared to steel, non-magnetic, and abrasion resistant – the perfect choice for long wear life in dusty grain operations. The fastener should have Everdur hardware as well, whether they are attached with bolts or rivets.

Type of fastener

When choosing between a bolt- or rivet-attached splice, it's important to remember that thin grain belts have very little top cover. Because of this, rivet-attached fasteners are often recommended. Instead of compromising the belt carcass with a bolt hole, rivets pass between the belt's carcass fibers to ensure maximum grip without compromising the integrity of the belt.



A sift-free splice

To steer clear of sifting at the splice area, a solid plate fastener with heavy-gauge plates are recommended. They provide longer wear life, even in high-tension grain applications, and provide a sift-free splice to keep materials on the belt. Also, look for a plate with a smooth, low-profile that will stop your fasteners from damaging other conveyor components like cleaners and pulleys.

Increasing productivity

When choosing a fastening system, it's always good to keep an eye out for time-savers as well. While manual installation is good, the ability to speed up splice time and ensure splice consistency are solid reasons to search for a fastening system with power installation. Power installation not only reduces splice time dramatically, but it also discourages repetitive use injuries for workers.

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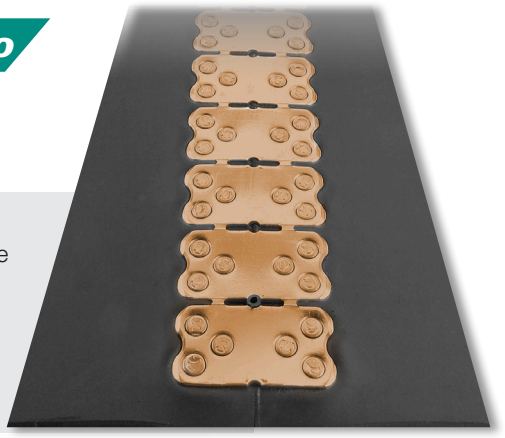
Everdur® Grain Splicing Solutions From Flexco

Flexco understands the challenges faced during grain processing. That's why we provide product solutions like Everdur® mechanical belt fasteners and power installation tools to keep you up and running.



Flexco® BR6 Everdur® Solid Plate Fastening System

The Flexco® BR6 Everdur® Solid Plate Fastening System provides a complete splice to the grain industry, utilizing Everdur plates and rivets for non-magnetic, spark-free splices. The staggered, multiple-point rivet attachment allows rivets to pass between carcass fibers without severing them, for maximum resistance to pull-out and extended belt life. The patented Scalloped Edge® provides for a lower fastener profile to extend belt splice life and reduce exposure to belt cleaner blades and other conveyor components.

Powered Installation Option

The Pneumatic Single Rivet Driver from Flexco provides faster, more consistent rivet driving. When combined with BR™ fasteners and applicator tools, the tool speeds installation time up to 33%. Collated rivets with washers, and specially-designed steel guide blocks, ensure consistent rivet driving, leading to a longer-lasting splice. A powerful single trigger pull also reduces worker fatigue.

Flexco® BR6 Fastener Selection Chart

Fastener Size	For Belts With Mechanical Fastener Ratings Up To:		Belt Thickness Range		Minimum Pulley Diameter Operating Tension 75%-100% of Belt Rating	
	P.I.W.	kN/m	in.	mm	in.	mm
BR6	400*	70*	1/4-21/32	6.5-17.0	14	350

* Contact Flexco Engineering for applications greater than 400 PIW (70kN/m)

Fasteners and Rivets Required for one BR6 Joint

Belt Width		Fastener Sets Required	Rivets Required
in.	mm		
24	600	18	108
30	750	22	132
36	900	27	162
42	1050	31	186
48	1200	36	216
60	1500	44	264
72	1800	54	324
84	2130	62	372
96	2430	72	432

Flexco® BR6 Rivet Solid Plate Fasteners

Everdur®			
Belt Width		Ordering Number	Item Code
in.	mm		
24	600	BR6E-SE-24	42152
30	750	BR6E-SE-30	42153
36	900	BR6E-SE-36	42154
42	1050	BR6E-SE-42	42155

Each box of BR6 fasteners contains 9-Plate strips and hold down assembly clips. Two splices per box.

Rivet Selection Chart

Fastener Size	Belt Thickness Range		Rivet Size
	in.	mm	
BR6	3/16 - 9/32	5 - 7.5	AA
	1/4 -11/32	6.5 - 9	A
	5/16 - 13/32	8 - 10.5	B

Rapid Loader™ Collated Rivet Strips

Everdur®			
Size	Color Code	Ordering Number	Item Code
AA	Gray	CBR6AA-E	40563
A	Red	CBR6A-E	40564
B	White	CBR6B-E	40565

Rapid Loader™ Collated Rivet Strips *with Washers*

Everdur®			
Size	Color Code	Ordering Number	Item Code
AA	Gray	CBR6AA-E-W	40566
A	Red	CBR6A-E-W	40567
B	White	CBR6B-E-W	40568

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