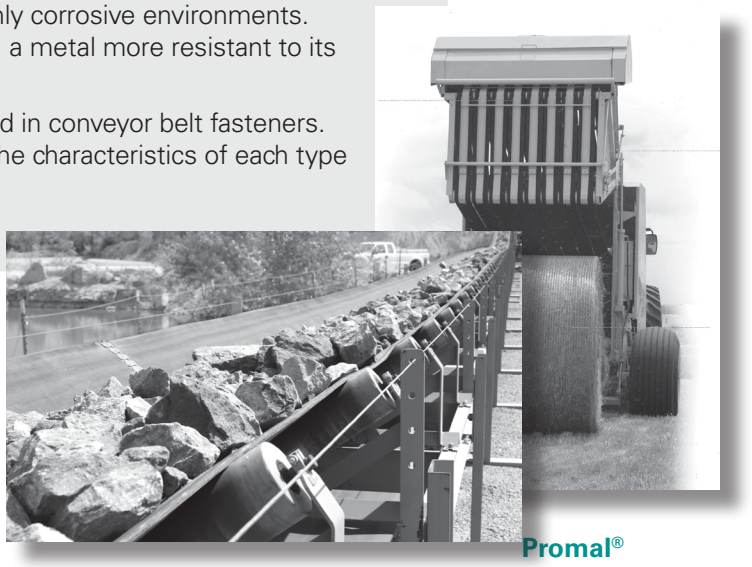
Selecting special metals for longer fastener life

To maximize fastener service life, fastener material must be matched to the application. The appropriate metal selection will deliver maximum performance in a variety of conditions – from wet and abrasive applications to highly corrosive environments. But when adverse conditions may affect the fasteners, a metal more resistant to its environment should be used.

The following special metals are the ones typically used in conveyor belt fasteners. A table on the reverse side of this sheet summarizes the characteristics of each type of metal.

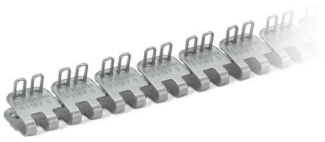


Description of Metals

Steel
Standard fastener metal that is not recommended for environments where corrosion can occur from acids and chemicals.

Galvanized Steel
For basic light duty applications requiring hooks, galvanized steel is recommended. It is magnetic, offers good abrasion and rust resistance but not recommended for corrosive environments.

High Tensile Steel
Offers added abrasion resistance and fastener retention strength.

Stainless Steel

Stainless steel provides extra resistance to abrasion, magnetic attraction, and corrosion from acids and chemicals.

Everdur®
A corrosion resistant copper and silicon alloy. Fully non-magnetic and spark free, low in resistance to abrasion.

MegAlloy®
Features superior resistance to wear and abrasion. Provides several times the service life of steel. Not recommended where impact or corrosion is a problem.

RustAlloy®
Low chrome stainless steel. Resists corrosion from mine water and other types of chemical attack.

Promal®
A high-grade, heat treated, malleable iron casting. This metal is exceptionally hard and abrasion resistant and also resistant to some corrosion and chemical attack.

Monel®
A non-magnetic nickel and copper alloy. This metal is more resistant to corrosion and abrasion than stainless steel. Particularly appropriate for contact with certain acids, it has exceptional corrosive resistance in environments that quickly deteriorate carbon and stainless steel, such as brine, hydrogen fluoride, or dry chlorine.

Inconel®
This metal offers superior corrosion and chemical resistance at elevated temperatures, including sulphur and chloride ions.

Phosphor Bronze
Provides extra resistance to sparking and is fully non-magnetic. This metal is low in resistance to abrasion and not recommended where corrosion is a problem.

Hastelloy C-22
Offers outstanding resistance to both chemical and environmental corrosions.

Black Oxide
Manufactured black in color to match/blend in with the belt.

Fastener Material Characteristics

Metal	Magnetic	Abrasion Resistance	Chemical Resistance	Rust Resistance	Sparking/ Non-Sparking	Flexco® Bolt Solid Plate	Flexco® Rivet Solid Plate	Flexco® Bolt Hinged	Flexco® Rivet Hinged	Alligator® Staple	Alligator® Lacing	Alligator® Rivet	Clipper® Wire Hook
Steel	Yes	Good	Poor	Poor	Sparking	X				X	X	X	X
Galvanized Steel	Yes	Good	Poor	Fair	Sparking		X	X	X				X
High Tensile Steel	Yes	Good to Excellent	Fair	Good	Sparking								X
400 Series Stainless Steel	Yes	Good	Fair to Good	Good	Sparking		X			X			X
300 Stainless Steel	Slightly	Good	Good to Excellent	Excellent	Sparking	X	X	X	X	X	X	X	X
Everdur®	No	Poor	Poor	Poor	Non-Sparking	X	X	X					
MegAlloy®	Yes	Excellent	Poor	Poor	Sparking	X	X	X	X	X			
RustAlloy®	Yes	Good	Good	Good	Sparking				X				
Promal®	Yes	Excellent	Good	Good	Sparking	X							
Monel® 400	Slightly	Fair	Excellent	Excellent	Sparking								X
Inconel® 600	No	Fair	Excellent	Excellent even at elevated temps.	Sparking								X
Phosphor Bronze	No	Good	Poor	Good	Non-Sparking								X
Hastelloy C-22	No	Good	Excellent	Excellent	Sparking								X
Black Oxide	Yes	Good	Poor	Fair	Sparking								X

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