TECHTALK DESIGN ADVICE SERIES

3 WAYS TO AVOID CORKSCREWED CABLES

There is a big difference between cables made specifically for continuous-flexing applications and regular flexible cables.

Understanding the distinction is extremely important when you're choosing cables for use inside a cable carrier - or for any automated environment.

A competitor's corkscrewed cable in comparison with a Chainflex® continuous flex cable

If you've ever seen corkscrew damage on a cable, you've probably also asked yourself, “How the heck did that happen?”

It's important to understand the factors behind these kinds of failures and what characteristics a cable should have to prevent this corkscrew effect in the first place.

Check out these three design attributes which will ensure you avoid cables corkscrewing in your continuously flexing application:

1. **Bundle Design**

The majority of flexible cables are constructed in layers. While this type of cable is inexpensive to produce, tensile forces pulling the conductors in the outer radius and compressing conductors within the inner radius cause the cable to begin to corkscrew.

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Chainflex® continuous flex cables are constructed in bundles with short pitch lengths. This design provides inner stability because the tensile forces operating inside balance one another out. The cable will not corkscrew even under maximum bending stress.

2. Cable Core

The cable core of a regular flexible cable is comprised of inexpensive filler, which does not protect the stranded structure or prevent the conductors from falling into the center.

In comparison, properly designed continuous-flex cables have a tension-proof, rope-like center element. This is extremely strong and prevents the type of damage that can lead to corkscrewing.

3. Cable Jacket

To the naked eye, the jacket of a flexing cable may look the same as that of a cable designed for continuous flexing. However, this cable will not last because its conductors are twisted in layers. As seen in the photograph, the jacket can be pulled off the cable's conductors using your bare hands.

The Chainflex® continuous-flex cables on the other hand have a high-pressure extruded, gusset-filled outer jacket, which is resistant to abrasion, oils and chemicals. While the jacket construction allows it to be flexible, you can see from the photo that it is virtually impossible to remove the jacket from the body of the cable.

Useful Links and Tools:

Chainflex® continuous flex cables

TechTalk Design Advice Series: overview