Colligo Marine™

Dynex Dux FAQ's

Isn't Dynex Dux too stretchy for standing rigging applications?

Dynex Dux is factory stretched at elevated temperatures, this does 2 things:

1. **It work hardens (opposite of annealing) the line making it stronger and much more chafe resistant.**
2. **It virtually eliminates the constructional stretch that we would see with the loads generated on a sailboat. Leaving only the material stretch of Dyneema SK-75 to deal with.**

The material stretch of Dyneema line is similar to 1x19 304 wire rope, for a given diameter. That is, 7 mm Dynex Dux stretches slightly less than ¼" (6.4mm) 1x19 304 stainless wire rope. 9 mm Dynex Dux stretches slightly less than 5/16" (8mm) 1x19, 304 stainless wire rope. Dynex Dux will stretch considerably less than 316 stainless 1x19 wire rope, in similar diameters. There are stretch tables on our website that we use for sizing Dynex Dux.

I have used Dux on my boat and have seen considerable creep which seemed to settle down after some sailing time. Doesn't Dynex Dux creep too much for use on a boat?

Invariably, what we have seen here is that people will splice the line and then put it directly into use. As the line is loaded the upset braid in the splice will continue to stretch out and reset. This results in elongation of the line which can be mislabeled as Creep or even stretch. Once the line has been stretched to its peak load, the elongation will stop. This is why we pre-stretch all of our standing rigging systems, to reset the braid after splicing.

Dynex Dux will creep but the loads need to be substantial and <u>constant</u>. We size the line for creep based on the experimentally determined creep tables that we have and the constant loads the line will see, not the dynamic loads. Some of this data can be seen on our website. It is very easy to size the line such that you will see a minimum of creep. 9 mm dux with a constant load of 1200 lbs on it (substantially higher than the pretension on most sailboats) will creep about 0.1 inches (2.5 mm) per <u>year.</u>

Why do I need to use 7 mm Dynex Dux that breaks at over 15,000 lbs-f to replace ¼ inch wire that breaks at 8,000 lbs? Isn't that overly strong?

Dynex Dux UHMWPE line is a different material than steel and needs to be treated as such. It needs to be sized for stretch and creep. If this is done correctly it will

perform the same or better than steel systems with much less weight. In addition, the extra breaking strength offers a better factor of safety. In most cases the line can chafe ½ way thru and still be stronger than the steel it replaces.

I am worried about using a soft rope to replace my steel rigging. Can't Dynex Dux be easily cut and my mast come tumbling down?

Dyneema SK-75 fiber is the base fiber for Dynex Dux. SK-75 is used for butchers protective gloves, loggers are dragging logs thru the woods with it instead of chain. Dynex Dux is even tougher. It certainly is not steel but it is the toughest synethetic line available. The hardest part about splicing this line is cutting it. Many sailors are using Dynex Dux for forestays with Bronze Hanks.

The lashing tensioning system really does not look safe or easy to use to me. Can I use turnbuckles for tensioning?

Yes, you can use conventional turnbuckles for tensioning. We can now splice and pre-stretch any length to within 5/16 of an inch. If a more precise method of tensioning is needed, than turnbuckles are the way to go. In addition, we have designed the line terminators to fit certain production turnbuckles.

Lashings do have their place though. Literally, all of the sailors that have purchased from us that were skeptical about using lashings have become comfortable with them after using them. The weight advantages over turnbuckles, along with the cost of replacing turnbuckles, make lashings more attractive.

I have heard that Dynex Dux will deteriorate in the sun very quickly due to UV degradation. How often will I have to change my standing rigging due to UV exposure?

The base fiber for Dynex Dux is Dyneema SK-75. It is widely known as the best synthetic fiber for UV resistance. Having said that, we like to work with real numbers, so we are doing an ongoing UV study on our boat in Western Mexico (where it rains about 3 days a year).

In addition, a study was completed by the University of Aukland several years ago that showed some initial UV damage occurrs externally, causing the outer layers to become relatively opaque to UV, and then the rate of damage decreased.

With the data we have today, we can easily predict a life of 5 years or more for UV exposure. This compares to an 8 year recommended replacement interval for steel. We also believe, as new data comes in, that the life expectancy will go up.