



ULLMAN SAILS UK

Dedicated to building the finest racing and cruising sails

With FiberPath technology, Ullman Sails can build true load-path sails with proven fast shapes and the right combination of fibers and films for each application.



How FiberPath Works

Why have we developed FiberPath sails? FiberPath technology allows us to align fibers along the primary loads in a sail and build in multiple fiber patterns to address secondary loads.

The trouble with a traditional tri-radial sail is that it only covers primary loads. With FiberPath technology, fibers can be designed to run on top of each other in different directions to address specific load areas anywhere on the sail.

Basically, you get a sail that is reinforced in the exact places it needs to be. As a result, a FiberPath sail has a wider wind range and is stronger for its weight than a tri-radial sail.

Cost of a FiberPath Sail Compared to a Tri-Radial Sail

The average cost of a FiberPath sail can be the same as a paneled sail or up to 5% more. Eventually, Ullman Sails hopes to be able to deliver FiberPath sails at a lower price than tri-radial sails – that's the goal: to make higher quality and less expensive sails! And this is possible because we are buying raw product by the pound rather than buying finished sailcloth by the year – raw materials are amazingly inexpensive.

FiberPath Speed & Sail Shape

Perhaps the best advantage of FiberPath technology is that the sails are crosscut – FiberPath panels. Therefore, we can transfer our existing sail designs and broadseam shaping directly to FiberPath, producing sail shapes that are already proven to be fast. Ullman Sails uses a special design software program to do its 'fiber stringing' – essentially, mapping out the exact fiber layout of each sail.

FiberPath panels are joined together using Dimesion-Polyant's UltraBond system, so "seam creap" is eliminated. In fact, the seams are actually the strongest part of a FiberPath sail (and you can hardly see them!). Compared to panel sails, FiberPath sails are very smooth – a result of minimal panels, sections and patching.



FiberPath Performance & Longevity

A FiberPath sail will hold its performance shape 1 ½ to 2 times longer than a tri-radial sail. A traditional tri-radial paneled sail loses its shape because of secondary loads. FiberPath technology is designed to address secondary loads, which automatically translates into longer performance life.



FiberPath Wind Range

FiberPath sails have a better wind range than radial sails and also require less sheet adjustment through different conditions. Because FiberPath technology handles secondary loads, the sail holds its design shape throughout the wind range.

Plus, a FiberPath sail is lighter than a tri-radial sail built for the same application. For example, to make a Melges 24 FiberPath jib heavy enough to meet class minimum weight, we would have to pack a redundant amount of fiber into the sail – that's how weight-efficient FiberPath is compared to a panelled sail.

FiberPath Fiber Choices

FiberPath sails can be built with any combination of Carbon, Technora or Kevlar fibers. When choosing between Technora and Kevlar, Ullman Sails recommends Technora for longevity because it has proven to stay stronger, longer. If you compare two new fibers the same size, Technora is about 10% stronger than Kevlar. However, after six months of use, Technora is probably 2 ½ times stronger than Kevlar! The secret is while Kevlar suffers from UV degradation Technora does not.

Ullman Sails can also vary the fiber deniers (size), choosing to use a combination of deniers or keep the threads uniform. Either way, the fibers are laid down in groups of eight. FiberPath technology allows us to make multiple passes with the fibers in any direction at any angle. But we are very careful to avoid placing too many fibers in one area (such as making a clew too thick) as this can lead to delamination problems.

Carbon FiberPath sails are very different from the current carbon laminate sailcloths on the market. Laminate sailcloths require large bundles of carbon to avoid brittleness in a sail. FiberPath sails face the same issue, but the fiber bundles used in a carbon FiberPath sail are roughly one-tenth the size of sailcloth bundles. As a result, Ullman Sails can build a FiberPath sail with the same amount of strength, but with less bulk and weight.



FiberPath Film & Taffeta Choices

FiberPath sails use either a clear Mylar (polyester) film or a tinted UV film – recommended with Kevlar fibers to increase longevity. The scrim in FiberPath is Technora laid in both directions serving as a 'rip-stop.' Technora is used because of its toughness and superior UV properties. Ullman Sails also builds FiberPath cruising sails with taffeta to increase durability.