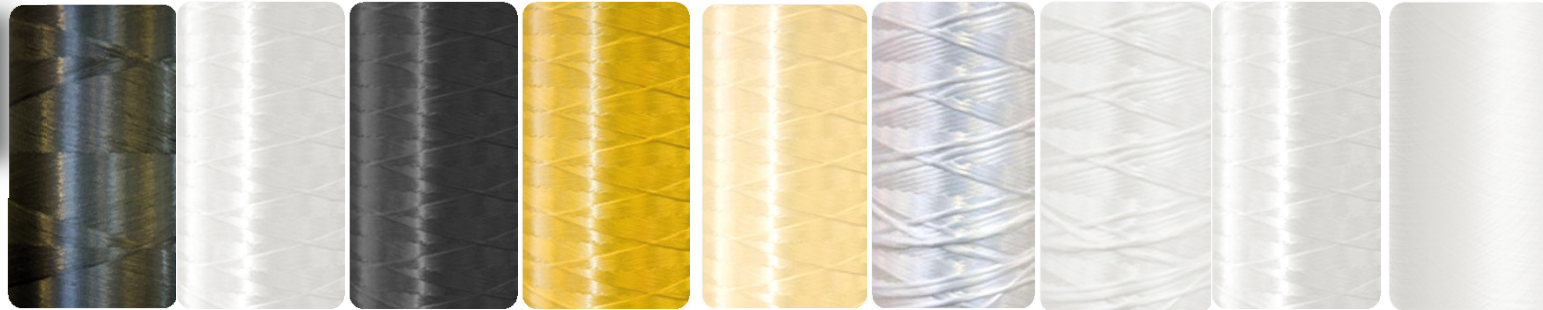


Comparison of commonly used fibres in sails



UK Sailmakers
fibre comparison



comercial name	Carbon fiber	Dyneema Spectra	Technora	Kevlar, Twaron	Vectran	S-Glass	Pentex	Dacron	Nylon
fibre	grafite	UHMW-polyethylene	aramid variety	aramid	aromatic polyester	glass fibre	polyester variety	polyester	polyamid
description	Consists of long chains of carbon molecules. It is the strongest lightest material currently in use. Able to take extremely high loads with a minimum of stretch. Mostly used in racing sails but also in high performance cruising sails.	Very strong and durable fibre with high resistance to chafing and chemicals. Often stated as the optimal fibre in cruising sails. Most commonly used in laminated sailcloth but also in woven cloth like HydraNet.	Technora has similar properties to Kevlar and Twaron. Due to it's better UV- and flex resistance, Technora is frequently used as a more durable alternative to Kevlar and Twaron.	Aramids are stronger than steel and very light weight. Two commonly used varieties are Kevlar 29 and 49. Aramids used to be the " High-Tech" fibre in sails but are now mostly replaced by Carbon and Technora fibres.	A fibre extracted from a liquid crystal aromatic polyester. Has similar properties to the aramids but with better resistance to flex. Used mostly in cruising laminates and cruising string sails.	Fibre glass are in principle thin threads of molten glass. S-glass is the strongest form and very well suited for string sails like Tape-Drive sails although it is rarely used in traditional sailcloth production.	A molecular modified polyester slightly stronger than regular polyester. Mostly used in laminated sailcloth. Pentex can get a bit yellowish in colour with age and have poorer resistance to UV.	Strong and versatile fiber that has been used for over 60 years in the sailmaking industry. The most commonly used fibre in woven and laminated sailcloth.	Light, strong and very elastic fibre. Nylon stretches far to much to be used in other than spinnakers and downwind sails. Sail fabrics can be supplied in many colours.
pros	Very low stretch. Extremely high breaking load. Unaffected by UV.	Very strong and durable. High resistance against UV and flex.	Low stretch and durable with fairly good UV and flex properties.	Tough fibre. Low stretch with high breaking strength.	Strong and durable. Less sensitive to flex and UV than the aramids.	Strong, durable and less expensive alternative to the aramids.	30-40 % less stretch than polyester.	Rugged and durable with good UV properties.	Light weight and elastic with very high breaking strength.
cons	Can be brittle in hard laminated forms.	is known to have a tendency to "creep" under continuous high loads. New developed versions	Not so durable in the long run.	Poor resistance to flex and UV. Degrades relatively fast with age.	Not as low stretch as the aramids.	Not as low stretch as the aramids	Not as durable and more affected by UV than Dacron / Polyester.	Stretch properties to low for high performance sails.	UV sensitive and to stretchy to be used in other than downwind sails.
optimal use in	Grand Prix Racing Performance Cruising	Performance cruising	Performance cruising Club Race	Club Race	Performance cruising	Performance cruising Club Race	Cruising / Club Race	Cruising	Cruising / Racing downwind sails
low stretch	★★★★★	★★★★★	★★★★★	★★★★★	★★★★☆	★★★★☆	★★	★★	★
tenacity	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★	★★	★★	★★★
durability	★★★	★★★★★	★★★★	★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
UV-resistance	★★★★★	★★★★★	★★★★	★★★	★★★★★	★★★★★	★★★★	★★★★★	★★
price	€€€€€	€€€€€	€€€€	€€€€	€€€€	€€€	€€	€	€

low ★
★★
★★★
★★★★
high ★★★★★