



Key Features

- 100% Diolen Based Fibre
- Good Impact and Abrasion Resistance
- Ideal for use in kayak and water craft construction
- Excellent surface finish alternative to Carbon Fibre

Description

Diolen is a polyester based fibre, along similar lines to Kevlar which although not quite as strong in tensile strength as Kevlar, is reasonably close in performance and considerably cheaper.

Diolen's excellent elongation to break properties, excellent abrasion resistance and low price make it a very popular choice for kayaks, canoes, jet-skis, lifeboats and many other water going craft where impact and abrasion resistance are important but where material cost is also a consideration.

This special black Diolen is ideal for combining with carbon fibre where its black appearance will not show through the carbon fibre. It can also be used on its own and will have a black, 2/2 twill appearance very similar to carbon fibre but for a fraction of the price.

Processing

When used in boat construction Diolen is typically combined with glass fibre (either chopped strand mat or woven glass rovings) to add considerable impact strength to an otherwise brittle and vulnerable all glass fibre construction. In this construction, tensile strength, providing stiffness, comes from the glass fibre with the high elongation to break coming from the Diolen. A hull using a combination of glass and Diolen will be far less likely to suffer major damage following a serious rock/ vessel impact than an all glass reinforced boat.

Like glass, Kevlar or carbon fibre, Diolen can be used with most resin systems including polyester, vinylester and epoxy.

Although to get the best performance from the fibre epoxy resin would always be the first choice.

Diolen will wet-out and laminated in a very similar way to Kevlar and is totally compatible with any laminating process including wet-lay, vacuum bagging, resin infusion and RTM.

Trimming Parts Made From Diolen

Diolen's very high elongation to break properties and abrasion resistance mean that it is very difficult (and frustrating!) to trim parts made from this material. Traditional cutting tools will tend to leave a 'furry' edge which subsequently can be removed using a fine grit abrasive sanding pad.

After initial trimming (using something like a Perma-Grit wheel in a Dremel) the loose Diolen fibres can often be cut away using a very sharp Stanley knife.

Properties

The general properties of the Diolen are listed in the following table:

Property	Unit	Value
Warp/Weft Fibre	-	Diolen 164S
Areal Weight	gsm	200
Colour	-	Black
Width	mm	1200
Ends/Picks	Per cm	5.99
Linear Density	Dtex	1670
Breaking Force	N	127
Breaking Tenacity	mN/Tex	755
Elongation at Break	%	14

Disclaimer

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