

Diolen Cloth



Product Description

Diolen is a polyester based fibre, along similar lines to Kevlar which although not as strong in tensile strength as Kevlar, is reasonably close in performance (especially with regards to impact strength and abrasion resistance) 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.

When used in boat construction Diolen is typically combined with glass fibre (either chopped strand mat or woven glass rovings) to add considerably 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 is 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.

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.

Specification

The Table below shows typical properties for the the raw fibre:

Property	Units	Value
Material	-	Diolen 164S
Colour	-	White
Format	-	Woven Fabric
Weave Type	-	1x1 Plain
Width	mm	960
Areal Weight	g/cm ²	300
Thickness	mm	0.40
Consolidated Thickness	mm	0.40
Ends	/cm	3.4
Picks	/cm	3.4
Breaking Force	N	251
Breaking Tenacity	mN/Tex	739
Elongation at Break	%	14.0
Maximum Service Temperature In Air	°C	150
Linear Density	DTex	3395

Disclaimer

This data is not to be used for specifications. Values listed are for typical properties and should not be considered minimum or maximum.

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