

## 549 Kevlar® Fabric



**Overview:** This was one of the first high strength synthetic fibers to gain acceptance in the reinforced plastic industry. Unlike the previous synthetic reinforcing fibers, Kevlar® has a considerably higher tensile strength and modulus than fiberglass. Kevlar® is usually used for structures requiring good stiffness, high abrasion resistance, and light weight.

Current applications include lightweight boat hulls such as kayaks and canoes, aircraft fuselage panels and pressure vessels. Kevlar® may be used with epoxy or vinyl ester resins.

Available in 1, 3, and 5 yard packages, custom cuts starting at 10 yards, and full rolls.

### General Properties for Kevlar®/Carbon Hybrid:

- Excellent thermal & dimensional stability
- Performs with no strength loss up to temperatures of 320° F for extended periods.
- Lighter in weight than E-Glass with higher specific strengths.
- Sensitive to direct exposure from UV light; however, demonstrates little or no change in a composite when it is indirectly exposed to UV light.
- Will not melt or support combustion, however, it will begin to caramelize at approximately 800° F

### Specific Product Properties:

Weave Pattern	Plain
Yarn Description	Warp: 1140 Denier Kevlar®49
	Fill: 1140 Denier Kevlar®49
Count (ends x picks) inches	17 x 17
Weight	5.0 oz/yard <sup>2</sup>
Thickness	0.0100 inches
Breaking Strength (lb/in)	Warp: 650
	Fill: 650
Roll Width	50 inches
Roll Length	25 yards

### Weave Pattern Rankings:

	Thickness	Weight	Strength	Porosity
Plain	3	1	3	1
Twill	2	1	4	2
4-Harness Satin	3	1	4	2
8-Harness Satin	1	1	7	4
Leno	7	7	1	7
Mock Leno	6	1	2	4

This was a scale from 1 to 7, with 1 being the lowest and 7 being the highest

**Resin Compatibility:**

<b>Part Number</b>	<b>Polyester Resin</b>	<b>Vinyl Ester Resin</b>	<b>System 2000 Epoxy</b>
549		X	P
1063		X	P
531		X	P
532		X	P
533		X	P

An "X" means the fabric is compatible with the resin.

A "P" is for the primary resin for the fabric.

The compatibility is based on Fibre Glast Development's resins only.