Prepreg 3K, 2x2 Twill Weave Carbon 6-Month

Part # - 2211

50" Wide. Our most popular carbon in prepreg form.
Identical to part# 1069, this prepreg offers the advantages of pre-impregnation of an epoxy resin system. The material can be stored, shipped and handled at room temperatures and is cured using ramp up schedule requiring at most 310°F. Resin content 37.00% +/- 3%.

Prepreg Overview:

Prepreg fabrics are pre-impregnated with an epoxy resin system. As a result, nearly perfect resin content and maximum, repeatable strength properties are attainable. When properly fabricated, parts made with Fibre Glast prepregs will have a clear shine and be free of air bubbles. Although prepreg material addresses many of the nagging challenges of composite fabrication, the user's fabrication techniques will directly affect the finished properties and cosmetics.

Fibre Glast prepregs are easy to handle and are able to be stored, shipped and handled at room temperatures. These prepregs have a shelf life of 6 months.

There are 3 recommended cure cycles for Fibre Glast prepregs. All 3 will produce similar properties. Proper fabrication requires vacuum bagging and oven curing or vacuum bagging and curing in an autoclave.

All curing cycles begin with a temperature ramp up and end with a ramp down. The difference is the target temperature and the amount of time required for a complete cure. Always ramp up at a rate of no more than 5°F per minute until the target temperature is attained. Maintain the target temperature throughout the cure cycle and then ramp down at a rate of less than 5° F per minute to at least 150ºF (66ºC) before removing from the oven. Resin content 37.00% +/- 3%.

Fibre Glast prepregs are also environmentally friendly as they are solvent and MDS free. However, safety precautions are still necessary for handling, including eye and skin protection as well as excellent ventilation.

Carbon Fiber Overview:

Graphite fibers contain up to 95% carbon and yield the highest tensile strength in the FRP industry. These fibers woven together form graphite fabric. These fabrics offer higher strength and stiffness-to-weight ratios than any other commonly available reinforcements. While there are hundreds of types to choose from, we have selected three styles of standard modulus carbon fiber which are suitable for use in racing, aircraft, competition marine, and light industrial applications. To maximize the fiber properties we recommend using only epoxy or vinyl ester resin, although polyesters will bond to the fabrics. This 2x2 twill weave fabric offers the cosmetic appearance so desirable on modern composite parts. But don't just use it for looks, this fabric is highly formable and slightly stronger than the plain.

Carbon Fiber Properties

Warp Raw Material	3K –Multifilament Continuous Tow
Filling Raw Material	3K –Multifilament Continuous Tow
Weave Pattern	2 x 2 Twill
Fabric Areal Weight	5.7 oz/ yd^2 (200 gsm approx.)
Warp Ends/ Inch	13.0 ± 1.0
Pick / Inch	13.0 ± 1.0
Nominal Thickness	.012 inches
Fabric Width	50 ± .25/-0 inches

Neat Resin Properties

Density (g/cc)	1.21
Tg (°F/°C) (from G" DMA curve)	255 /124
Tensile Modulus (ksi/GPa)	410 / 2.8
Tensile Strength (ksi/MPa)	11.5 / 79.0
Elongation at Break (%)	4.5
Tg after 24-Hr Water-Boil (°F/°C)	169 / 76*
Water Absorpotion %	3.9*

Cure

Target Temperature	**Hold For**
310°F (154°C)	1 Hour
290°F (143°C)	2 Hours
270°F (132°C)	4 Hours

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