

### 3100 Style 7781 Prepreg E-Glass Fiberglass Fabric



**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 12 months when the maximum storage temperature does not exceed 75°F and 6 months when it does not exceed 90°F.

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 150°F (66°C) before removing from the oven. Resin content 27.0% - 33.0%.

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

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.

**Fiberglass Fabric Overview:**

Woven fabrics are strong reinforcements because the fibers are bundled into yarns oriented in just two directions. The warp and fill yarns run at 0 and 90 degrees respectively. Thus, fabrics are anisotropic, or strong in only two directions.

Fabrics need to be oriented so the fiber yarns run parallel to the expected loads. If extra strength is needed in a different direction, another ply must be added at an angle to the first. The most common angles are +/- 45 degrees.

Available in 1, 3, and 5 yard packages; custom cuts of 10 yards or more; and full rolls.

**Specific Fabric Properties:**

Style	7781
Finish	627
Weave Pattern	8-Harness Satin
Yarn Description	Warp: ECDE 75 1/0
	Fill: ECDE 75 1/0
Count (Ends x Picks) inches	57 x 54
Weight	8.71 oz/yard <sup>2</sup>
Breaking Strength (lb/in)	Warp: 242
	Fill: 231
Thickness	0.0089 inches

**Neat Resin Properties:**

Density	Tg (°F/°C) (from G" DMA Curve)	Tensile Modulus (ksi/GPa)	Tensile Strength (ksi/MPa)	Elongation at Break (%)	Tg after 24-Hr Water-Boil (°F/°C)	Water Absorption (%)
1.229	270/132	440/3.03	10.7/73.77	4.0	169/76	3.9