

CF-500 BD

Heavy-Duty, Bi-Directional Carbon Fiber

Description

Advanced FRP Systems' **CF-500 BD** is a 12K, 2 x 2 twill weave, 19.5 oz/yd², bi-directional carbon fiber woven fabric. **CF-500 BD** is made in the USA and meets the most stringent quality requirements for aerospace applications. This material is engineered to provide extremely strong, durable and lightweight composites for long term structural reinforcement. **CF 500-BD** is easy to apply, corrosion resistant and can be applied at any thickness required to provide adequate structural reinforcement.

Product Advantages

- Bi-Directional weave provides outstanding strength in all directions
- ASME PCC-2 Compliant reinforcement
- Lightweight, pliable fabric easily conforms to any shape
- Stable twill weave orientation
- Only 37.5 mils (0.0375 inch) per layer
- Single or multi-layer systems available
- Coefficient of Thermal Expansion close to carbon steel

Suggested Application

CF-500 BD is part of an ASME PCC-2 compliant pipe, tank and vessel repair system in conjunction with the appropriate saturating resin, adhesive, and filler. It is commonly used for the reinforcement of steel pipes, concrete pipes, steel, and fiberglass tanks as well as heat exchangers and pressure vessels.

Performance Data

Cured with FRP Saturant 200

	Test Method	Results
Coefficient of Linear Thermal Exp.	ASTM E831	3.78 x 10 ⁻⁶ in/in °F
Tensile Strength	ASTM D3039	Actual Value: 102,000 psi Design Value: 77,000 psi
Young's Modulus	ASTM D3039	Actual Value: 5,667 ksi Design Value: 4.038 ksi
Poisson's Ratio	ASTM D3039	0.091
Lap Shear	ASTM D3165	3,450 psi
Sheer Modulus	ASTM D5379	362,650 psi
Flexural Strength	ASTM D790	Actual Value: 100,200 psi Design Value: 75,150 psi
Compressive Strength	ASTM D695	Actual Value: 111,750 psi Design Value: 88,125 psi
Elongation at Break	ASTM D3039	1.5%
Effective Fabric Thickness		0.0375 in

Product Characteristics

Finish: Gloss

Color: Black

Density: 1.75 g/mL

CF-500 BD is sold by the yard. Available in 12", 25", and 50" widths.

Sold FOB Weymouth, MA

Consult Saturating resin and tack coat data sheets for cure data and application information. CF-500 BD is designed to be used exclusively with Advanced FRP Systems epoxy saturating resins. FRP Saturant 200 is recommended for general applications, FRP Saturant 210 HT for elevated temperature applications, and FRP Saturant 220 C for chemically resistant applications.

Storage and Shelf Life

CF-500 BD must be stored between 0 – 140 °F, out of direct sunlight. If stored in these conditions, the product will have a 5-year shelf life.

Safety Precautions

Please consult up-to-date Safety Data Sheets (SDS's) prior to use. An SDS should be available on site whenever Advanced FRP products are being used.

Warranty Information

Advanced FRP Systems, Inc. warrants that our products are free of manufacturing defects in accordance with applicable Advanced FRP quality control parameters. Liability for products proven defective, if any, is limited to replacement of defective product or refund of purchase price as determined by Advanced FRP Systems. Additional warranties and protection are available. Contact Advanced FRP for more information.

Disclaimer

The information and recommendations set forth upon this data sheet are based on years of laboratory and field analysis. This information is intended to be used as guidance only as many factors affect the performance of polymeric systems. Actual exposure conditions are the best test of suitability and Advanced FRP Systems will generally provide complimentary samples for field testing.

Revision Date: 03/2018