

BYFabric-200DC CF3 XS

Carbon fiber twill weave fabric

Product Description

BYFabric-200DC CF3 XS is a high-strength, high-modulus bidirectional carbon fiber fabric. It is laminated with epoxy resin adhesive to form a carbon fiber-reinforced polymer laminate plate (CFRP) used for structural reinforcement.

Carbon fiber not only possesses high strength and high elastic modulus but also features lightweight and durability.

Initially utilized in aerospace and automotive industries, it has subsequently been adopted by sports equipment and mechanical industries.

In recent years, as an alternative material for reinforcing concrete structures, it has been widely used in seismic retrofitting of highway structures, railway and bridge piers, tunnels, and buildings.

Currently, exploration is underway to utilize it in modifying the structures of highway bridges to increase traffic capacity.

Application Range

■ Aerospace

In the field of aerospace, carbon fiber fabric is commonly used to manufacture aircraft structural components, spacecraft parts, etc., in order to enhance strength, reduce weight, and improve overall performance.

■ Automotive Industry

In automobile manufacturing, carbon fiber fabric is widely used to produce car bodies and components, to reduce vehicle weight, improve fuel efficiency, and performance.

■ Sporting Equipment

Carbon fiber fabric is often used to manufacture sports equipment such as bicycle frames, golf clubs, tennis rackets, etc., to enhance durability and performance.

■ Shipbuilding Industry

In shipbuilding, carbon fiber fabric can be used to manufacture ship hull structures and components, to enhance the strength and durability of vessels.

■ Wind Power and Maritime

Used in manufacturing wind turbine blades, maritime equipment, etc., to improve durability and performance.

■ Sporting Goods

Carbon fiber fabric is also commonly used to produce high-end sporting goods, such as tennis rackets, golf clubs, bicycle frames, etc., to enhance product performance and durability.

Product

Characteristic

■ Light self-weight:

Allows operation in a narrow and tight spaces;

Minimal impact on the normal use of the structure during construction;

Adds almost no additional weight to the existing structure.

■ High strength, high modulus:

Very effective in flexural strengthening in the form of straight sheets, shear strengthening in the form of closed loop wrapping, U-shaped and side bonding;

Increase ductility and strength of circular columns in the form of transverse wrapping;

Restoration of various complex shape structural elements.

■ Wide application range:

Suitable for surface of various structural components:

Beams, columns, ventilation tubes, pipes, walls, etc.;

It could be used on various types of structural components and systems, e.g. concrete structures, masonry structures, wood structures, steel structures, and many other structural elements and systems.

■ Anticorrosion:

Anti-acid, alkali and other chemical corrosion and resistance to severe environments.

■ Long storage life:

Allows for long operation projects and extended deadlines.

■ High temperature resistance, limited creep resistance

under high permanent loads, high corrosion resistance and excellent seismic strengthening system.

Boyue Advantage

■ Aviation Grade Yarn

Produced from high-quality international aviation grade yarn, every carbon fiber yarn length kept over 5000 meters to ensure the continuity of the carbon fiber fabrics without damage raw fiber.

■ World Leading Production Line

Germany imported intelligent production line. Point to point active wefting insertion. No damage or break of filament during the whole production process.

■ Less Epoxy Adhesive Usage

The carbon fiber fabric is woven evenly and smooth, moderate soft, good suitability with the impregnated adhesive, which are easy to impregnate.

The total adhesive usage is just 15%, less than products by other manufacturers, and the hollow issues maintained at 80% less than other products.

■ Large Output and Timely Delivery

Annual production capacity of quality carbon fiber fabric is 5 million square meters, while maintaining a daily stock of over 100,000 square meter to meet any project's demands, around the world.

Technical Specifications

Model	Specifications	Pattern organization	Thickness
BYFabric-200DC CF3 PS	8.44 oz/sq.yd. (200g/m ²)	Plain weave	3K
BYFabric-200DC CF3 XS	8.44 oz/sq.yd. (200g/m ²)	Twill	3K
BYFabric-240DC CF3 PS	10.13 oz/sq.yd. (240g/m ²)	Plain weave	3K
BYFabric-240DC CF3 XS	10.13 oz/sq.yd. (240g/m ²)	Twill	3K

Model	BYFabric-200DC CF3 PS
Appreance	Black fabric
Length	100m
Width	Regular width is 500mm, 1000mm, and other widths can be customized.
Shelf Life	10 years
Storage Conditions	Store in dry conditions at 40°F to 95°F (4°C to 35°C)
Braiding	0°, 90° (Two-way)
Areal Weight	8.44 oz/sq.yd. (200g/m ²)
Package	This product uses carton package. When the width is 500mm, the total area per box of carbon fiber is 50 m²; When the width is 1000mm, the total area per box of carbon fiber is 100 m².

PRODUCT SPECIFICATIONS	UNIT OF MEASURE	SPECIFIED RANGE	TEST METHOD
Carbon Fiber Model: 3K High-Strength Carbon Fiber			
The following displays the performance of carbon fiber.			
Sizing Agent Content	%	0.40~0.79	GB/T 29761-2013
Density	g/m ³	1.77~1.83	GB/T 30039-2013
Number of Filament		3K	
Linear Density	g/km	192~204	GB/T 3362-2017
Tensile Strength	MPa	≥4000	GB/T 3362-2017
Discrete Coefficient (C.V.) of Tensile Strength	%	≤6	GB/T 3362-2017
Tensile Modulus	GPa	220~260	GB/T 3362-2017
Elongation at Break	%	≥1.5	GB/T 3362-2017

Transportation and Storage

This product should be stored in a dry, cool and well ventilated environment. It should not be exposed to rain, or subjected to impact by sharp objects.

During transportation and storage, carbon fiber materials shall not be squeezed or compressed, so as to avoid carbon fiber damage, and shall not be exposed to direct sunlight and/or rain.

Safety Measures

The product should be stored in a dry, cool, and well-ventilated environment. It should not be exposed to rain or impacted by sharp objects.

During transportation and storage, carbon fiber materials should not be squeezed or compressed. The product should be placed flat, not upright, to prevent damage to the carbon fiber, and should not be exposed to direct sunlight and/or rain.

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