

TECHNICAL DATA SHEET

Rhino Carbon Fiber™ Bidirectional | Revision Date 7/25/2019

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01: PRODUCT IDENTIFICATION

RHINO PRODUCTS USA
1633 THORNWOOD DRIVE
HEATH, OH 43056 USA

Product Code:	(Type-Width-Weight)	Weave Weight
	BD-5.5-560	1.03 lb/SY (560 g/m ²)
	BD-12-560	1.03 lb/SY (560 g/m ²)
	BD-24-560	1.03 lb/SY (560 g/m ²)

Product Name: Bidirectional Carbon Fiber

02: DESCRIPTION

Rhino Carbon Fiber® is a high strength, bidirectional carbon fiber fabric. Material is field laminated using RCF Saturant-Adhesive Epoxy to form a carbon fiber reinforced polymer (CFRP) used to strengthen structural concrete elements.

03: WHERE TO USE:

Load Increases	<ul style="list-style-type: none">•Increased loading capacity•Installation of heavy machinery in industrial buildings•Vibrating structures•Changes of building utilization•Meeting of changed standards or specifications
Seismic Strengthening	<ul style="list-style-type: none">•Column wrapping•Masonry walls
Damage to Structural Parts	<ul style="list-style-type: none">•Aging of construction material•Vehicle impact•Fire and blast resistance•Prevention of defects caused by earthquakes
Change in Structural System	<ul style="list-style-type: none">•Removal of walls or columns•Removal of slab sections for openings
Design or Construction Defects	<ul style="list-style-type: none">•Insufficient reinforcements•Insufficient structural depth

04: ADVANTAGES

- Used for shear, confinement or structural strengthening
- Flexible, can be wrapped around complex geometries
- High Strength
- Light Weight
- Non-corrosive
- Alkali Resistant
- Low aesthetic impact
- Fiber orientation tailor-made

05: TYPICAL DATA

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Storage Conditions	Store dry at 40° - 95°F (4° - 35°C)
Shelf Life	10 years
Color	Black (red string)
Primary Fiber Direction	Bidirectional

FIBER PROPERTIES			
Property	English	Metric	Test Method
Tensile Strength	710 ksi	4,900 MPa	ISO 10618
Tensile Modulus	36.3 Msi	250 GPa	ISO 10618
Strain	2%	2%	ISO 10618
Density	0.065 lbs / in ³	1.79 g/cm ³	ISO 10119
Nominal Fiber Thickness	0.0275 in.	0.70 mm	



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06: HOW TO USE: SURFACE PREP

Surface must be clean, sound, and dry. Remove a light layer of concrete from the surface to allow the epoxy to penetrate the substrate (Refer to ICRI 310-2R for additional information). Typical methods include shot blasting or grinding to achieve this open textured surface. Consult the epoxy adhesive data sheets for additional information on surface preparation.

Existing uneven surfaces must be filled with an appropriate repair mortar/hydraulic cement. The adhesive strength of the concrete must be verified after surface preparation by random pull-off testing (ASTM D-4541) at the discretion of the engineer. Minimum tensile strength, 200 psi (1.4 MPa) with concrete substrate failure.

Round all corners to 1/2" radius in certain "contact critical" applications and at the engineers discretion, a thorough cleaning of the substrate using low pressure sand or water blasting may be sufficient.

07: APPLICATION

Application prior to placing the fabric, scarify the concrete surface using dustless grinding system. The fabric may also be manually saturated using your hand, a roller prior or scraper to placement. In either case, installation of this system should be performed only by a trained contractor.

08: TOOLING & FINISHING

Fabric can be cut to appropriate lengths by using scissors. Since the dull or worn cutting implements can damage, weaken or fray the fabric, their use should be avoided.

09: LIMITATIONS

- Design calculations must be made and certified by an independent licensed professional engineer.
- System is a vapor barrier. Concrete should not be fully encapsulated in areas of freeze/thaw.