

TECHNICAL DATA SHEET

Rhino Carbon Fiber 400 GSM Unidirectional | Revision Date 6/30/2022

8383 Riley Street,
Zeeland, MI USA 49464
P: +1 888 684 3889
E: info@rhinocarbonfiber.com

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01: PRODUCT IDENTIFICATION

RHINO PRODUCTS USA, INC.
8383 Riley Street,
Zeeland, MI USA 49464

Product Name: Rhino Carbon Fiber 400 GSM Unidirectional

02: DESCRIPTION

Rhino Carbon Fiber 400 GSM Unidirectional is a high-strength, unidirectional carbon fiber fabric equipped with weft fibers that keep the fabric stable. The material is field laminated using RCF Saturant-Adhesive Epoxy to form a carbon fiber reinforced polymer (CFRP) system used to strengthen structural concrete elements.

03: WHERE TO USE

- Increase load capacity of structural elements (Beams, Slabs, Columns, Walls, Etc.)
- Restore structural integrity of damaged or deteriorated structural elements
- Repair for damaged or missing reinforcing steel/post tensioning
- Improved blast resistance of concrete, masonry, or stone in mining operations
- Additional Reinforcement to repair/withstand seismic events

04: ADVANTAGES

- Used for shear, confinement or flexural strengthening
- Flexible, can be wrapped around complex geometries
- High-Strength
- Lightweight
- Non-corrosive
- Alkali Resistant
- Low aesthetic impact
- Economical

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	Unlimited, if stored properly in original, unopened, undamaged packaging
Color	Black
Primary Fiber Direction	0° (Unidirectional) - Carbon
Areal Density / Weight	400g/m ² (11.80 oz/yd ²)

DRY FIBER PROPERTIES

	Imperial	Metric
Thickness	-0.00866 in	-0.22 mm
Tensile Strength	≥493 ksi	≥ 3400 MPa
Tensile Modulus	≥33358 ksi	≥230 GPa
Elongation at Break %	1.6%	1.6%

TECHNICAL INFORMATION & COMPOSITE PROPERTIES

	Tested/Experimental Average Value ¹		Design Value ²		Testing Method
	Imperial	Metric	Imperial	Metric	
Thickness	0.027 in.	0.68 mm	0.027 in.	0.68 mm	ASTM D3039
Tensile Strength	150 ksi	1033.5 MPa	129 ksi	887.8 MPa	ASTM D3039
Tensile Modulus	10620 ksi	73.2 GPa	8790 ksi	60.6 GPa	ASTM D3039
Elongation at Break %	1.40%	1.40%	1.17%	1.17%	ASTM D3039
Tensile Strength per Unit Width	4047 lbs/in.	0.709 kN/mm	3477 lbs/in.	0.609 kN/mm	ASTM D3039

¹Load and Chord Stiffness per Unit are computed based on CFRP laminate specimen width

²20 sample coupons per test series

³Average value of test series

⁴Average value minus 3 standard deviations per ACI440



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06: HOW TO USE – SURFACE PREP

Refer to Rhino Carbon Fiber Application Instructions.

07: APPLICATION

Refer to Rhino Carbon Fiber Application Instructions.

08: TOOLING & FINISHING

Fabric can be cut to appropriate lengths by using sharp heavy duty shears. Dull or worn cutting implements can damage, weaken or fray the fabric and 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.



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