

TECHNICAL DATA SHEET

Rhino Carbon Fiber 200 GSM Unidirectional | Revision Date 5/13/2023

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

01

01: PRODUCT IDENTIFICATION

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

Product Name: Rhino Carbon Fiber 200 GSM Unidirectional

02: DESCRIPTION

Rhino Carbon Fiber 200 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) 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: DATA

Results may differ based upon statistical variations depending on 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	200 g/m ² (5.9 oz/yd ²)



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DRY FIBER PROPERTIES

Property	Imperial	Metric
Tensile Strength	~ 711 ksi	~ 4900 Mpa
Tensile Modulus	~ 36259 ksi	~ 250 GPa
Elongation at Break %	1.9%	

TECHNICAL INFORMATION & COMPOSITE PROPERTIES

Property	Tested/Experimental Average Value	
	Imperial	Metric
Thickness	0.0087 in	0.22 mm
Tensile Strength	493 ksi	3400 MPa
Tensile Modulus	33359 ksi	230 GPa
Elongation at Break %	1.6%	

06: LAYOUT: SURFACE PREP

Surface must be clean and sound. It may be dry or damp, but free of standing water and frost. Remove a light layer of concrete from the surface work areas. Consult the current product data sheets for Rhino Carbon Fiber 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 r testing (ASTM D-4541) at the discretion of the engineer. Minimum tensile strength, 200 psi (1.4 MPa) with concrete substrate failure.

Preparation Work: Concrete - Blast clean, shot-blast or use other approved mechanical means to provide a roughened, open-textured surface.

Round all corners to ½" 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

Scarify the concrete surface using a dustless grinding system prior to placing the fabric. The fabric may be manually saturated using a plastic putty knife. Installation of this system should be performed only by a trained contractor. If overlapping the fabric, it must be overlapped 6" (15 cm).

08: TOOLING & FINISHING

Fabric can be cut to appropriate lengths by using scissors. Since 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.



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