

TECHNICAL DATA SHEET

BARRICADE™ Concrete Repair Unidirectional Carbon Fiber | Revision Date 03/8/2022

2311 Royal Windsor Drive
Mississauga, ON L5J 1K5
P: 1-855-872-3996
E: help@barricadesubfloor.com

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01: PRODUCT IDENTIFICATION

Product Name: BARRICADE™ Concrete Repair Unidirectional Carbon Fiber	Product Code:	(Type-Width-Weight)	Weave Weight
2311 Royal Windsor Drive		UD-12H-200	0.369 lb/SY (200 g/m2)
Mississauga, Ontario, Canada L5J 1K5		UD-12V-200	0.369 lb/SY (200 g/m2)
P: 1-855-872-3996		UD-24V-200	0.369 lb/SY (200 g/m2)
E: help@barricadesubfloor.com		UD-24V-300	0.553 lb/SY (300 g/m2)
		UD-24V-400	0.737 lb/SY (400 g/m2)
		UD-24V-600	1.106 lb/SY (600 g/m2)

02: DESCRIPTION

BARRICADE™ Concrete Repair Unidirectional Carbon Fiber is a high strength, unidirectional carbon fiber fabric. Equipped with weft fibers that keep the fabric stable. The material is field laminated using BARRICADE™ Concrete Repair Adhesive Epoxy to form a carbon fiber reinforced polymer (CFRP) which is 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

<ul style="list-style-type: none">•Used for shear, confinement or structural strengthening•Flexible, can be wrapped around complex geometries•High Strength•Light Weight	<ul style="list-style-type: none">•Non-corrosive•Alkali Resistant•Low aesthetic impact•Fiber orientation tailor-made
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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	2 years from date of production
Color	Black
Primary Fiber Direction	Unidirectional

FIBER PROPERTIES		
Property	English	Metric
Tensile Strength	710 ksi	4,900 MPa
Tensile Modulus	36.3 Msi	250 GPa
Elongation	2%	
Density	.065 lbs/in3	1.79 g/cm3
Nominal Thickness	.0175 in	0.4445 mm



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06: HOW TO USE: 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 BARRICADE™ Concrete Repair Unidirectional 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 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.

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

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 a 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. In fiber direction, overlapping of the fabric must be at least 10mm or as per the project specifications. Overlapping sections of additional layers should be distributed over the column circumference.

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.

TECHNICAL DATA SHEET

BARRICADE™ Concrete Repair Adhesive Epoxy | Revision Date 03/8/2022

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1. DESCRIPTION

BARRICADE™ Concrete Repair Adhesive Epoxy two-component, 100% solids, moisture-tolerant, low to medium viscosity, high strength low modulus, multi-purpose liquid epoxy adhesive. It meets the current ASTM C881 and AASHTO M235 Types I, II, IV, & V Grade 3, Classes B & C specifications.

2. WHERE TO USE

BARRICADE™ Concrete Repair Adhesive Epoxy can be used for wet lay-up structural repairs with carbon fiber reinforced polymer (CFRP), fiberglass reinforced polymer (GFRP) and injections. Use to bond freshly mixed concrete to hardened concrete, to fill voids and cracks in concrete, masonry and other substrates. It can also be injected, used as a binder in epoxy mortar, as an anchoring adhesive, or as a binder for high friction surface treatments (HFST) on concrete, asphalt or other substrates.

3. ADVANTAGES

- High strength/low modulus structural adhesive
- Made in America
- Provides a vapor barrier after curing
- Rapid cure formula
- Convenient 1:1 mix ratio by volume

4. SHELF LIFE / STORAGE

24 month shelf life when stored in unopened containers in dry conditions and stored at 40°F-95°F (4°C-35°C)

5. TECHNICAL DATA

BARRICADE™ Concrete Repair Adhesive Epoxy Technical Data	
Storage Conditions:	40 °F – 95 °F (5 °C – 35 °C).
Condition material to:	65 °F – 85 °F (18C – 29 °C) before using.
Mix Ratio	1:1 by volume
Viscosity	2,000 cps @77 °F (25 °C)
Gel Time (60 g mass)	25 minutes
Tack Free Time (73°F or 23°C)	3 to 5 hours
Tensile Properties (ASTM D638), 7 day cure	
Tensile Strength:	2,800 psi (19.3 MPa)
Tensile Elongation:	40%
Bond Strength (ASTM C882)	
2 day cure:	2,000 psi (13.8 MPa)
14 day cure:	2,800 psi (19.3 MPa)
Compressive Properties (ASTM D695), 7 day cure	
Compressive Strength:	5,000 psi (34.5 MPa)
Compressive Modulus:	110,000 psi (760 MPa)
Compressive Strength (ASTM C579)	
3 hour cure:	1,500 psi (10.3 MPa)
24 hour cure:	5,000 psi (34.5 MPa)
Bond Strength (ASTM C1583/ACI 503R)	300 psi (2.0 MPa)
Flexural Strength (ASTM D790)	3,000 psi (20.9 MPa)
Shrinkage on Cure (ASTM D2566)	0.2%
Thermal Compatibility (ASTM C884)	Pass
Heat Deflection Temperature (ASTM D648)	120°F (49°C)
Water Absorption (ASTM D570)	0.2% (24 hr)
Chloride Ion Permeability (AASHTO T277)	0.0 coulomb

*NOTE: Epoxy cure is affected by temperature. Low temperatures will increase cure time, higher temperatures with decrease cure time.

6. MINIMUM CURING TIME

TEMPURATURE	50 °F (10 °C)	60 °F (16 °C)	70 °F (21 °C)	80 °F (26 °C)	90 °F (32 °C)
MINIMUM CURE TIME	10HRS / H	6 HRS / H	4 HRS / H	3 HRS / H	2 HRS / H



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7. APPLICATION TEMPERATURE

Substrate and ambient air temperature between 50°F and 100°F (6°C and 38°C) to be maintained thru the curing period.

8. CONDITION PRODUCT

Condition cartridge and contents to a temperature of 65°F to 85°F (18°C to 29°C) for easier dispensing.

9. LIMITATIONS & WARNINGS

Do not thin. Solvents will prevent proper cure.

10. MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS

For complete installation instructions on various applications using BARRICADE™ Concrete Repair Adhesive Epoxy, visit www.barricadesubfloor.com or call Barricade for more information at 1-855-872-3996 .

11. SURFACE PREPARATION

BARRICADE™ Concrete Repair Adhesive Epoxy is specially formulated for use as a saturant epoxy for CFRP. New concrete must be a minimum of 28 days old. Surfaces must be clean of all dirt, oil, debris, wax, grease or dust must be removed. Prepare the surface mechanically using a scarifier, sand blast, shot blast, bush hammer or other equipment that will provide a minimum surface profile of CSP3, as defined by ICRI 310.2R. A roughened surface that exposes the aggregate and/or pores of the substrate is imperative for good adhesion.

12. CLEAN UP

Clean tools and equipment with Mighty Wipes by Barricade, a biodegradable formula that removes and neutralizes the epoxy. Do not allow epoxy to harden on equipment as cured material can only be removed mechanically.

13. SAFETY

Please refer to the SDS for BARRICADE™ Concrete Repair Adhesive Epoxy published on our website, www.barricadesubfloor.com or call Barricade for more information at 1-855-872-3996. This TDS sheet is not intended to list all Safety and Health Requirements necessary for the installation of these products. All Health and Safety Requirements required by OSHA shall be followed.

14. WARRANTY

Barricade warrants to the Buyer that this product is in good quality and conforms to the manufacturer's specifications in force on the date of manufacturer when used in accordance with the Installation Instructions and when stored as directed in the technical literature.

Manufacturer cannot warrant or guarantee any particular method of use, performance or application under any particular condition and Buyer is responsible for determining the suitability of intended purpose and assumes all risks therein. Dricore shall not be liable for any injury, loss, cost of labor or consequential damages either directly, indirectly or incidentally, arising out of the use or misuse of any product sold by Dricore or another distributor. If the product is proven to be in non-conformance, the Buyers sole remedy shall be a refund of the purchase price or replacement of product.