

CARBON FIBER FABRIC

A bidirectional, high-strength, non-corrosive carbon fiber fabric designed to be field laminated with SRS-1000 Epoxy adhesive to create a carbon fiber-reinforced polymer (CFRP) composite for structural reinforcement and strengthening of concrete and masonry structures.

TYPICAL FIBER PROPERTIES

Tensile Strength - 711 ksi (4900 MPa)

Tensile Modulus - 33.4 Msi (230 GPa)

Elongation - 2.10%

Density - .065 lbs/in³ (1.80 g/cm³)

APPLICATIONS

- External Reinforcement of Existing Structures
- Increasing Load Capacity
- Confinement
- Shear Strengthening
- Flexural Strengthening
- Construction Error Corrections
- Restoring Damaged/Deteriorated Structural Components
- Bowed Wall Stabilization
- Seismic Retrofit

ADVANTAGES

- High Strength to Weight Ratio
- High Modulus of Elasticity
- Conforms to Structure
- Easy Installation
- Ambient Cure
- Arrests Structure Movement
- Low Aesthetic Impact
- Non-Corrosive
- Compatible with Most Finish Coatings

TECHNICAL DATA

CURED LAMINATE PROPERTIES WITH SRS-1000 EPOXY ADHESIVE

PROPERTY	AVE ULTIMATE	DESIGN VALUE
Tensile Strength	196,000 psi (1,352 MPa)	164,300 psi (1,133 MPa)
Tensile Modulus	11 Msi (77 GPa)	
Tensile % Elongation	2 %	1%
Nominal Ply Thickness	0.018 in (.457 mm)	
Tensile Strength	3,528 lbs/in (0.62 kN/mm)	2,957 lbs/in (0.52 kN/mm)
Tensile Strength per 12" Strap	42,336 lbs (189 kN)	35,484 lbs (158 kN)

The information provided on this product data sheet represents average values which have been obtained through certified testing performed in a third-party laboratory. As part of the quality assurance program at SRS, these values are verified regularly to ensure that the products being sold are represented accurately by the values on this sheet. There may be some variation in test results due to epoxy mixing methods, degree of saturation, sample preparation, and curing conditions. Per the recommendations in ACI-440.2, the ultimate tensile strengths provided represent the average test values minus three times the standard deviation which creates a 99.87% probability that the actual ultimate tensile properties will exceed the statistical based design values.

TYPICAL DATA

Storage Conditions - Store in Dry Area at 40 deg - 95 deg F (4-35 C)
Shelf Life Carbon - 10 years/Epoxy - 2 Years in Unopened Container
Color Carbon - Black/Epoxy - Semi Transparent Yellowish resin
Primary Fiber Direction - 0°/90° Bidirectional
Areal Weight - 19.5 oz/SY 660 gsm

CARBON FIBER ROLL KIT SIZES

Roll Size (Width x Length)

- SRS-660BI 12" x 75 LF (75 SF)
- SRS-660BI 12" x 100 LF (100 SF)
- SRS-660BI 24" x 100 LF (200 SF)

DESIGN

All applications containing SRS products must be designed by a registered design professional. The number of layers, dimensions, and detailing of SRS-660UNI shall be designed in accordance with ACI 440.2R or another recognized design guideline/code in order to meet the design performance specified for the application. Contact Structural Reinforcement Solutions LLC for design and technical support.

SURFACE PREPERATION

The substrate in which the CFRP is being applied to must be clean and free of loose material or contaminants. In order to take advantage of the full bond strength properties of the epoxy, the substrate should be prepared per the requirements of the ICRI Technical Guideline No. 310-2R - 2013. The substrate should be prepared to a minimum concrete surface profile, CSP-3, as defined by ICRI 310-2R. Any voids, cracks, or variations in the surface of the concrete must be filled with an appropriate repair mortar or epoxy in order to provide a smooth surface to bond to. ACI 440.2R-08 provides additional details on the surface preparation requirements for CFRP systems

APPLICATION

Structural Reinforcement Solutions, LLC Carbon Fiber Strengthening Systems should only be installed by professional contractors who have been trained in the application of externally bonded carbon fiber reinforcement. Once the surface preparation has been completed and when cartridge epoxy is being used, the mixing nozzles provided will sufficiently mix the 2:1 epoxy components. If bulk epoxy is being used, follow the epoxy mixing instructions to sufficiently mix the epoxy components prior to the application. Once the epoxy has been mixed, a thin layer should be applied to the surface in which the CFRP is to be bonded. This epoxy should be worked into the substrate to ensure penetration into the pores of the substrate. The carbon fiber should then be laid into the epoxy and worked in to ensure a full saturation of the fabric. To aid in achieving a full saturation of the carbon fiber straps, they can be pre-saturated with epoxy and laid into the same initial layer of epoxy layer as described previously. No matter which way the straps are initially installed, a final layer of epoxy should be applied to the strap and worked in to ensure full saturation. Refer to the full set of installation instructions at www.structuralrs.com to ensure that the appropriate procedures are followed.



This product is covered by the Structural Reinforcement Solutions LLC LIMITED LIFETIME WARRANTY, which is available at structuralrs.com or by calling Structural Reinforcement Solutions LLC at 888 292-2952.

FIRST AID

EYES: Wash fibers off skin with water and soap. If fibers are embedded in the skin, remove with tweezers. Discard clothing that may contain embedded fibers. Seek medical advice if exposure results in adverse effects. **Eyes:** Immediately flush with a continuous water stream for at least 20 minutes. Washing immediately after exposure is expected to be effective in preventing damage to the eyes. Seek medical advice. **Inhalation:** If there is inhalation exposure to the fibers of this product, remove source of exposure and move victim to fresh air. If victim is not breathing, give artificial respiration. If there is breathing difficulty, give oxygen. Seek medical advice for any respiratory problems. **Ingestion:** Ingestion is not a likely means of exposure for this product. If ingestion does occur, DO NOT INDUCE VOMITING. Nothing by mouth if unconscious. Seek medical advice.

Spill/Release and Cleanup Procedures:

In case of spill, collect (e.g., sweep up, vacuum, etc.) spilled material and either reuse or dispose of properly. Chopped or milled carbon fibers may be slippery if spilled posing an accident risk. Wear personal protective equipment as described in the MSDS during cleanup activities.

CAUTION

Protective Measures: The use of safety glasses and chemically resistant gloves is recommended. Use appropriate clothing to minimize skin contact. The use of NIOSH-approved respirator is required to protect respiratory tract when ventilation is not adequate to limit exposure below the PEL. Refer to Safety Data Sheets (SDS) available at structuralrs.com/sds for detailed information.