

SikaWrap® Pre-saturated 117C

Carbon fiber fabric for structural strengthening

Description SikaWrap® Pre-saturated 117C is a unidirectional carbon fiber fabric pre-saturated to form a carbon fiber reinforced polymer (CFRP) used to strengthen structural concrete elements.

Where to Use

- Load Increases**
 - Increased live loads
 - Increased traffic volumes on bridges
 - Installation of heavy machinery in industrial buildings
 - Vibrating structures
 - Changes of building utilization
- Seismic Strengthening**
 - Column wrapping
 - Masonry walls
- Damage to Structural Parts**
 - Aging of construction materials
 - Vehicle impact
 - Fire
 - Blast resistance
- Change in Structural System**
 - Removal of walls or columns
 - Removal of slab sections for openings
- Design or Construction Defects**
 - Insufficient reinforcements
 - Insufficient structural depth

Advantages

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

Packaging Rolls: 24 in. x 30 ft.; Box of 2 rolls

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:	Store dry at 40°F - 95°F (4° - 35°C)
Shelf Life:	1 year in original packaging at recommended storage conditions
Color:	Black
Primary Fiber Direction:	0°F (unidirectional)
Areal Weight:	9 oz. / sq. yd. (300 g/m ²)
Open Time:	2 hrs. after foil is opened

Typical Fiber Properties

Property	Typical Test Value
Tensile Strength	5.5 x 10⁵ psi (3,793 MPa)
Tensile Modulus	34 x 10⁶ (234,500 MPa)
Elongation	1.5%
Density	0.065 lbs./in³ (1.8 g/cc)

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Construction

Sika®

Cured Laminate Properties					
Property	Avg. Ultimate Value		Design Value		ASTM Test Method
	US Units	SI Units	US Units	SI Units	
	psi	MPa	psi	MPa	
Tensile Strength	119,770	825	(f_{tu}^*) 93,662*	645*	D3039/D7565
Tensile Modulus	-	-	(E_t) 8,973,997	61,873	D3039/D7565
Tensile % Elongation	1.22	1.22	(ϵ_{tu}^*) 1.04*	1.04*	D3039/D7565
Nominal Ply Thickness (in./mm)	0.019	0.48	0.019	0.48	-
Tensile Strength per in. width	5.17 kips/in. width	-	1.78 kips/in. width*	-	-
Stiffness (E *A) per in. width	-	-	170.5 kips/in. width	-	-

* Average ultimate value minus 3 standard deviations

How to Use

Surface Preparation

Surface must be clean and sound. It may be dry or damp, but free of standing water and frost. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles, disintegrated materials and other bond inhibiting materials from the surface. Consult the current product data sheets for Sikadur 340 for additional information on surface preparation.

Existing uneven surfaces must be filled with an appropriate repair mortar. 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.

Application

Prior to placing the fabric, the concrete surface is primed and sealed using Sikadur 340. In either case, installation of this system should be performed only by a specially trained contractor.

Tooling & Finishing

Fabric can be cut to appropriate lengths by using a commercial quality heavy duty scissor. Since the dull or worn cutting implements can damage, weaken or fray the fabric, their use should be avoided.

Limitations

- System is a vapor barrier. Concrete should not be fully encapsulated in areas of freeze/thaw.
- Design calculations must be made and certified by an independent licensed professional engineer.
- Do not place carbon fiber in direct contact with steel. Must be isolated (e.g. glass fabric) to protect against corrosion.
- Minimum substrate and ambient temperature 40°F (4°C). Maximum substrate and ambient temperature 95°F (35°C)

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KEEP CONTAINER TIGHTLY CLOSED. KEEP OUT OF REACH OF CHILDREN. NOT FOR INTERNAL CONSUMPTION. FOR INDUSTRIAL USE ONLY. FOR PROFESSIONAL USE ONLY.

For further information and advice regarding transportation, handling, storage and disposal of chemical products, users should refer to the actual Safety Data Sheets containing physical, ecological, toxicological and other safety related data. Read the current actual Safety Data Sheet before using the product. In case of emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's most current Product Data Sheet, product label and Safety Data Sheet which are available online at <http://usa.sika.com/> or by calling Sika's Technical Service Department at 800-933-7452. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instruction for each Sika product as set forth in the current Product Data Sheet, product label and Safety Data Sheet prior to product use.

Sika warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS. SALE OF SIKA PRODUCTS ARE SUBJECT SIKA'S TERMS AND CONDITIONS OF SALE AVAILABLE AT [HTTP://USA.SIKA.COM/](http://usa.sika.com/) OR BY CALLING 201-933-8800.

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