

## PRODUCT DATA SHEET

# SikaWrap®-117 C Pre-saturated

### CARBON FIBER FABRIC FOR STRUCTURAL STRENGTHENING

#### PRODUCT DESCRIPTION

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

#### USES

##### 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

#### CHARACTERISTICS / 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

#### PRODUCT INFORMATION

##### Fiber Type

Primary Fiber Direction: 0° (unidirectional)

Color: Black

##### Packaging

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

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March 2020, Version 01.03

020206020050000005

<b>Shelf Life</b>	1 year in original packaging at recommended storage conditions
<b>Storage Conditions</b>	Store dry at 40°F - 95°F (4° - 35°C)
<b>Dry Fibre Density</b>	0.065 lbs./in <sup>3</sup> (1.8 g/cc)
<b>Mass per Unit Length</b>	9 oz. / sq. yd. (300 g/m <sup>2</sup> )

## TECHNICAL INFORMATION

<b>Nominal Ply Thickness</b>	<b>Cured Properties:</b>		
	<u>Avg. Ultimate Value</u>	<u>Design Value</u>	
	0.019 psi	0.018 psi	
	0.48 MPa	0.48 MPa	
<b>Tensile Strength</b>	5.5 x 10 <sup>5</sup> psi (3,793 MPa)		
	<b>Cured Properties:</b>		
	<u>Avg. Ultimate Value</u>	<u>Design Value</u>	(ASTM D-3039)
	119,770 psi	(f*fu) 93,662* psi	(ASTM D-7565)
	825 MPa	645* MPa	
	* Average ultimate value minus 3 standard deviations		
<b>Tensile Modulus</b>	34 x 10 <sup>6</sup> (234,500 MPa)		
	<b>Cured Properties:</b>		
	<u>Avg. Ultimate Value</u>	<u>Design Value</u>	(ASTM D-3039)
	-	(ET) 8,973,997 psi	(ASTM D-7565)
	-	61,873 MPa	
<b>Tensile % Elongation</b>	1.5%		
	<b>Cured Properties:</b>		
	<u>Avg. Ultimate Value</u>	<u>Design Value</u>	(ASTM D-3039)
	1.22 psi	(ε*fu) 1.04* psi	(ASTM D-7565)
	1.22 MPa	1.04* MPa	
	* Average ultimate value minus 3 standard deviations		
<b>Tensile Resistance</b>	<b>Cured Properties:</b>		
	<u>Avg. Ultimate Value</u>	<u>Design Value</u>	
	5.17 kips/in. width psi	1.78 kips/in. width* psi	
	-	-	
	* Average ultimate value minus 3 standard deviations		
<b>Tensile Stiffness</b>	<b>Cured Properties:</b>		
	<u>Avg. Ultimate Value</u>	<u>Design Value</u>	
	-	170.5 kips/in. width psi	
	-	-	

## APPLICATION INSTRUCTIONS

### SUBSTRATE 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 330/Sikadur 340/Sikadur 345 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, shot-blast 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 engineer's discretion, a thorough cleaning of the substrate using low pressure sand or water blasting may be sufficient.

## APPLICATION METHOD / TOOLS

Prior to placing the fabric, the concrete surface is primed and sealed using either Sikadur 330, Sikadur 340 or Sikadur 345. 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.

**Open Time:** 2 hrs. after foil is opened

## 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.

## BASIS OF PRODUCT 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.

## OTHER RESTRICTIONS

See Legal Disclaimer.

## ENVIRONMENTAL, HEALTH AND SAFETY

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

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## LEGAL DISCLAIMER

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

Prior to each use of any product of Sika Corporation, its subsidiaries or affiliates ("SIKA"), the user must always read and follow the warnings and instructions on the product's most current product label, Product Data Sheet and Safety Data Sheet which are available at [usa.sika.com](http://usa.sika.com) or by calling SIKA's Technical Service Department at 1-800-933-7452. Nothing contained in any SIKA literature or materials relieves the user of the obligation to read and follow the warnings and instructions for each SIKA product as set forth in the current product label, Product Data Sheet and Safety Data Sheet prior to use of the SIKA product.

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