


**Product Data Sheet**

Edition 6.16.2017

Identification no.

SikaWrap 600C

	✓	ICC	ESR-3288
	✓	IBC	2015 Compliance

# SikaWrap® 600C ± 45

## Double Bias Carbon Fiber Fabric for Structural Strengthening

<b>Description</b>	SikaWrap 600C ± 45 is a high strength, bi-directional ± 45 carbon fiber fabric. Material is field laminated using Sikadur Hex 300 or Sikadur 330 epoxy to form a carbon fiber reinforced polymer (CFRP) used to strengthen structural elements.
<b>Where to Use</b>	<p>Loading Increases</p> <ul style="list-style-type: none"> <li>■ Increasing the live loads</li> <li>■ Increasing traffic volumes on bridges</li> <li>■ Installation of heavy machinery in industrial buildings</li> <li>■ Vibrating structures</li> <li>■ Changes of building utilization</li> </ul> <p>Seismic Strengthening</p> <ul style="list-style-type: none"> <li>■ Column wrapping</li> <li>■ Masonry walls</li> </ul> <p>Damage to Structural Parts</p> <ul style="list-style-type: none"> <li>■ Aging of construction materials</li> <li>■ Vehicle impact</li> <li>■ Fire</li> <li>■ Blast Resistance</li> </ul> <p>Change in Structural System</p> <ul style="list-style-type: none"> <li>■ Removal of walls or columns</li> <li>■ removal of slab sections for openings</li> </ul> <p>Design or Construction Defects</p> <ul style="list-style-type: none"> <li>■ Insufficient reinforcements</li> <li>■ Insufficient structural depths</li> </ul>
<b>Advantages</b>	<ul style="list-style-type: none"> <li>■ Approved by ICC ESR-3288.</li> <li>■ Provides high strength in multiple directions</li> <li>■ Used for shear, confinement or flexural strengthening</li> <li>■ Flexible, can be wrapped around complex shapes</li> <li>■ High Strength</li> <li>■ Light Weight</li> <li>■ Non-corrosive</li> <li>■ Alkali Resistant</li> <li>■ Low Aesthetic Impact</li> </ul>
<b>Packaging</b>	<b>Rolls:</b> 50" x 225 ft

### 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.

<b>Storage Conditions</b>	Store dry at 40°-95°F (4°-35°C)
<b>Shelf Life</b>	10 years
<b>Product Conditioning</b>	Condition fabric to same temperature as recommended for conditioning the specified Sikadur epoxy adhesive(s)
<b>Color</b>	Black
<b>Primary Fiber Direction</b>	+45/-45° (bidirectional)
<b>Areal Weight</b>	17.11 osy (580 gsm) Total

### Typical Dry Fiber Properties

Property	Typical Test Value
Tensile Strength	711 ksi (4,900 MPa)
Tensile Modulus	33.4 msi (230 GPa)
Elongation at Break	2.1%
Areal Weight	17.11 osy (580 gsm) total
Density	0.065 lb./in. <sup>3</sup> (1.80 g/cm <sup>3</sup> )
Nominal Fiber Thickness	0.0063 in. (0.161 mm) each fiber direction
Fiber Direction	bidirectional (+/-45)



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## Cured Laminate Properties

Property, each fiber direction (+45, -45)	Average Ultimate Value	Design Value	ASTM Method
Tensile Strength	173.2 ksi (1,194 MPa)	144.4 ksi (996 MPa)*	D3039
Tensile Modulus ( $E_T$ )		12.52 msi (86.3 GPa)	D3039
Tensile % Elongation	1.39%	1.09%*	D3039
Nominal laminate thickness		0.0195 in. (0.50 mm) each fiber direction	
Tensile strength per unit width		2.8 kips/in./ply	D7565
Stiffness ( $E_T \cdot A$ ) per unit width		244 kips/in./ply	D7565

\*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. 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 D4541) at the discretion of the engineer. Minimum tensile strength, 200 psi (1.4 MPa) with concrete substrate failure.

Concrete - Blast clean, shotblast or use other approved mechanical means to provide a roughened, open-textured surface. In certain applications and at the engineer's discretion, the intimate contact between the substrate and the fabric may be determined to be non-critical. In these cases, a thorough cleaning of the substrate using low pressure sand blasting or water blasting is sufficient.

#### Mixing

Consult the current product data sheet(s) for recommendations on the specified Sikadur epoxy adhesive(s) needed.

#### Application

Prior to placing the fabric, the concrete surface is primed and sealed using the appropriate Sikadur epoxy adhesive (e.g. Sikadur Hex 300 or Sikadur 330 US). Material may be applied by spray, brush or roller.

SikaWrap 600C ±45 can be impregnated using Sikadur Hex 300 epoxy. For best results on larger projects, the impregnation process should be accomplished using Sikadur Hex 300 and a mechanically driven saturator or similar device. In special cases where the size of the project does not justify the use of a saturator, the fabric may be saturated by hand using a ruler prior to placement. In either case, installation of this system should be performed only by a specially trained contractor.

For overhead and vertical applications, prime concrete with Sikadur 30 or Sikadur 330 US to improve tack. Saturate fabric with Sikadur Hex 300. Coat the exposed surface of final fabric layer using Sikagard 670W or Sikagard 62.

#### Tooling & Finishing

Cutting SikaWrap

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

#### Limitations

- DESIGN CALCULATIONS MUST BE MADE AND CERTIFIED BY AN INDEPENDENT LICENSED PROFESSIONAL ENGINEER
- SYSTEM IS A VAPOR BARRIER. CONCRETE SHOULD NOT BE ENCAPSULATED IN AREAS OF FREEZE/THAW
- Sika cannot and will not determine the location, spacing, and orientation of the SikaWrap system installation on actual projects.
- Do not place carbon fiber in direct contact with steel. Must be isolated (e.g. glass fabric) to protect against corrosion.

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