

SikaWrap® 1200C

High Modulus Carbon Fiber Fabric for Structural Strengthening

Description SikaWrap® 1200C is a high strength, unidirectional carbon fiber fabric. Material is field laminated using either Sikadur® 300/Hex 300 epoxy as an impregnating resin to form a carbon fiber reinforced polymer (CFRP) used to strengthen structural elements. For applications to vertical and/or overhead surfaces, either Sikadur® 30 or Sikadur® 330 US is applied on the prepared concrete surface prior to placing the saturated fabric.

- Where to Use**
- Load Increases**
 - Increasing the live loads in warehouses
 - Increasing 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 reinforcement
 - Insufficient structural depths

Typical Data (Material and curing conditions @ 73°F and 50% R.H.)

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	10 years
Storage Conditions	Store dry at 40°-95°F (4°-35°C)
Color	Black
Primary Fiber Direction	0° (unidirectional)
Area Weight	36.50 oz/sq.yd (1238 g/m ²)
Typical Dry Fiber Properties	
Tensile Strength	580,000 psi (4.00 GPa)
Tensile Modulus	35.0 x 10 ⁶ psi (240 GPa)
Elongation	1.7%
Density	0.065 lb/in ³ (1.80 g/cm ³)
Normal Fiber Thickness	0.064 in. (1.63 mm)
Cured Laminate Properties with Sikadur 300/Sikadur Hex 300 Epoxy	

Property	Properties after standard cure (70°-75°F (21°-24°C) - 5 days and 48 hour post cure at 140°F (60°C))		Design Value		ASTM Test Method
	Avg. Ultimate Value		US Units	SI Units	
	US Units	SI Units	US Units	SI Units	
	psi	MPa	psi	MPa	
Tensile Strength	168,591.9	1,162.4	(f ^{*fu}) 132,650*	914.6	D3039/D7565
Tensile Modulus	-	-	(Ef) 10,098,776.6	7,575.8	D3039/D7565
Tensile % Elongation	1.4	1.4	(e ^{*fu}) 1.02*	1.02*	D3039/D7565
Nominal Ply Thickness (in./mm)	0.075	1.9	0.075	1.9	
Tensile Strength per in. width	12.6 kips/in. width	-	9.9 kips/in. width	-	-
Stiffness (E ^{*A}) per in. width	-	-	823.8 kips/in. width	-	-

* Average ultimate value minus 3 standard deviations.

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/](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 INSTRUCTIONS FOR EACH SIKA PRODUCT AS SET FORTH IN THE CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET PRIOR TO PRODUCT USE.



Advantages	<ul style="list-style-type: none"> ■ Used for shear, confinement or flexural strengthening ■ Flexible, can be wrapped around complex shapes ■ High Strength ■ Light Weight ■ Non-corrosive ■ Alkali Resistant ■ Low Aesthetic Impact
Packaging	50 in. x 135 ft. (127 cm x 41.2 m)
How to Use	
Surface Preparation	<p>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 (ACI 503R) at the discretion of the engineer. Minimum tensile strength, 200 psi (1.4 MPa) with concrete substrate failure.</p> <p>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.</p>
Mixing	Consult the current product data sheet(s) for recommendations on the specified Sikadur epoxy adhesive(s) needed.
Application	<p>Prior to placing the fabric, the concrete surface is primed and sealed using the appropriate Sikadur® epoxy adhesive (e.g. Sikadur® 30, Sikadur® 330 US or Sikadur® 300/Hex 300). Material may be applied by spray, brush or roller. SikaWrap® 1200C can be impregnated using Sikadur® Hex 300 epoxy. For best results on larger projects, the impregnation process should be accomplished using Sikadur® 300/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 ruller 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® 300/Hex 300. Coat the exposed surface of final fabric layer using Sikagard® 670W or Sikagard® 62.</p>
Tooling & Finishing	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	<ul style="list-style-type: none"> ■ 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.

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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.

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