**SikaWrap® Hex 115C**

Bi-directional carbon fiber fabric for structural strengthening

**Description**
SikaWrap Hex 115C is a bi-directional, high strength, carbon fiber fabric. Material is field laminated using Sikadur Hex 300/Hex 300 or Sikadur 301 epoxy to form a carbon fiber reinforced polymer (CFRP) used to strengthen structural elements.

**Where to Use**
- Load increases
  - Increased live loads in warehouses
  - 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 shapes.
- High strength.
- Light weight.
- Non-corrosive.
- Alkali resistant.
- Low aesthetic impact.

**Packaging**
Rolls: 50 in. x 300 ft.

**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 Sikadur 300, Sikadur 301, Sikadur Hex 300 and Sikadur 330 technical data sheets for additional information on surface preparation.

**Typical Data**

<table>
<thead>
<tr>
<th>Storage Conditions</th>
<th>Store dry at 40°-95°F (4°-35°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Black</td>
</tr>
<tr>
<td>Primary Fiber Direction</td>
<td>0°/90° (bi-directional)</td>
</tr>
<tr>
<td>Weight Per Square Yard</td>
<td>19.8 oz. (675 g/m²)</td>
</tr>
</tbody>
</table>

**Fiber Properties**

<table>
<thead>
<tr>
<th>Tensile Strength</th>
<th>5.5 x 10⁵ psi (3,793 MPa)</th>
</tr>
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<tr>
<td>Tensile Modulus</td>
<td>33 x 10⁶ psi (234,500 MPa)</td>
</tr>
<tr>
<td>Elongation</td>
<td>4%</td>
</tr>
<tr>
<td>Density</td>
<td>0.065 lbs./in.³ (1.8 g/cc)</td>
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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 instructions for each Sika product as set forth in the current product data sheet, product label and safety data sheet prior to product use.
Cured Laminate Properties with Sikadur Hex 306 Epoxy
Properties after standard cure followed by standard post cure.
[70°-75°F (21°-24°C) - 5 days and 48 hour post cure at 140°F (60°C)]

<table>
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<tr>
<th>Property</th>
<th>US Units</th>
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<tbody>
<tr>
<td>Average Value1</td>
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<tr>
<td>Tensile Strength</td>
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<td>Tensile Modulus</td>
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<td>140°F - Tensile Strength</td>
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<td>72.444</td>
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<tr>
<td>Shear Strength-+/-45 In Plane</td>
<td>12.160</td>
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<tr>
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1 Average value of test series - based on year 2000 testing program
2 Average value minus 3 standard deviations calculated from the year 2000 testing program

Cured Laminate Properties with Sikadur Hex 300 Epoxy
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[70°-75°F (21°-24°C) - 5 days and 48 hour post cure at 140°F (60°C)]

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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 failures.

Preparation Work: Concrete - Blast clean, shotblast or use other approved mechanical means to provide an open roughened texture. 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 or water blasting is sufficient.

Mixing
Consult Sikadur 300/Hex or Sikadur 301 data sheets for information on epoxy resins.

Application
Prior to placing the fabric, the concrete surface is primed and sealed using Sikadur Hex 300 epoxy. Material may be applied by spray, brush or roller. Sikawrap Hex 115C can be impregnated using Sikadur Hex 300/Hex or Sikadur 301 epoxy. For best results on larger projects, the impregnation process should be accomplished using a mechanically driven fabric saturator or similar device. In special cases where the size of the project does not justify the use of a saturator, the fabric may saturate by hand using a roller prior to placement. In either case, installation of this system should be performed only by a specially trained, approved contractor.

For overhead or vertical applications, prime concrete with Sikadur 30 or Sikadur 330 to improve tack. Saturate fabric with Sikadur 300/Hex or Sikadur 301 and the fabric may be determined to be non-critical. In these cases, a thorough cleaning of the substrate using low pressure sand or water blasting is sufficient.

Cutting Sikawrap
Fabric may be cut to fabric 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. Consult MSDS for proper handling procedures.

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.

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