01: PRODUCT IDENTIFICATION

Product Code: [Type-Width-Weight] Weave Weight
- BD-5.5-560 1.03 lb/SY (560 g/m²)
- BD-12-560 1.03 lb/SY (560 g/m²)
- BD-24-560 1.03 lb/SY (560 g/m²)

02: DESCRIPTION

Rhino Carbon Fiber® is a high strength, bidirectional carbon fiber fabric. Material is field laminated using RCF Saturant-Adhesive Epoxy to form a carbon fiber reinforced polymer (CFRP) used to strengthen structural concrete elements.

03: WHERE TO USE:

- **Load Increases**
  - Increased loading capacity
  - Installation of heavy machinery in industrial buildings
  - Vibrating structures
  - Changes of building utilization
  - Meeting of changed standards or specifications

- **Seismic Strengthening**
  - Column wrapping
  - Masonry walls

- **Damage to Structural Parts**
  - Aging of construction material
  - Vehicle impact
  - Fire and blast resistance
  - Prevention of defects caused by earthquakes

- **Change in Structural System**
  - Removal of walls or columns
  - Removal of slab sections for openings

- **Design or Construction Defects**
  - Insufficient reinforcements
  - Insufficient structural depth

04: ADVANTAGES

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

05: 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 Conditions**
  - Store dry at 40° - 95°F (4° - 35°C)
- **Shelf Life**
  - 10 years
- **Color**
  - Black (red string)
- **Primary Fiber Direction**
  - Bidirectional

FIBER PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>English</th>
<th>Metric</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile Strength</td>
<td>710 ksi</td>
<td>4,900 MPa</td>
<td>ISO 10618</td>
</tr>
<tr>
<td>Tensile Modulus</td>
<td>36.3 Msi</td>
<td>250 GPa</td>
<td>ISO 10618</td>
</tr>
<tr>
<td>Strain</td>
<td>2%</td>
<td>2%</td>
<td>ISO 10618</td>
</tr>
<tr>
<td>Density</td>
<td>0.065 lbs / in³</td>
<td>1.79 g/cm³</td>
<td>ISO 10119</td>
</tr>
<tr>
<td>Nominal Fiber Thickness</td>
<td>0.0275 in.</td>
<td>0.70 mm</td>
<td></td>
</tr>
</tbody>
</table>
**06: HOW TO USE: SURFACE PREP**

Surface must be clean, sound, and dry. Remove a light layer of concrete from the surface to allow the epoxy to penetrate the substrate (Refer to ICRI 310-2R for additional information). Typical methods include shot blasting or grinding to achieve this open textured surface. Consult the epoxy adhesive data sheets for additional information on surface preparation.

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

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.

**07: APPLICATION**

Application prior to placing the fabric, scarify the concrete surface using dustless grinding system. The fabric may also be manually saturated using your hand, a roller prior or scraper to placement. In either case, installation of this system should be performed only by a trained contractor.

**08: TOOLING & FINISHING**

Fabric can be cut to appropriate lengths by using scissors. Since the dull or worn cutting implements can damage, weaken or fray the fabric, their use should be avoided.

**09: LIMITATIONS**

- Design calculations must be made and certified by an independent licensed professional engineer.
- System is a vapor barrier. Concrete should not be fully encapsulated in areas of freeze/thaw.