TuffTex Materials
2209 Donley Drive
Austin, TX 78758
Office: (512) 617-7334

RepWrap 300 UD - Stitch-Bonded, Uni-Directional FRP Fabric

DESCRIPTION:
RepWrap 300 UD is a 300 gram lightweight, high-tensile strength, stitch bonded, uni-directional carbon fabric that is produced from our continuous, low-carbon fiber. It easily wets out with **RepWrap Bond** saturating resin and can be installed using either the "wet lay-up" or "dry lay-up" technique. The light weight of the fabric allows dry application to **RepWrap Bond** epoxy coated surfaces followed with a saturating coat of E-Tuff® Saturant, and finally by **RepCoat UV** anti-carbonization and UV resistant topcoat significantly simplifying field application. TuffTex Materials **RepWrap** System are used to obtain a bonded FRP (fiber reinforced polymer) field laminate reinforcement system that will strengthen and enhance the performance of structural elements once installed.

FEATURES:
- Easy Installation
- Flexibility To Conform to Shape Variances
- High Strength, Alkali Resistant, and Non-Corrosive
- Lightweight/ High Strength to Weight Ratio
- Low Impact Aesthetics

USES:
- Blast Mitigation
- Changes or Increases in Design Criteria
- Increase Load Bearing Properties in Columns, Walls, Beams and Slabs
- Increase Seismic Ductility and Axial Loads on Concrete Columns and Elements
- Rehabilitate Structural Integrity Due to Impact or Deterioration
- Repair of Structures Damaged by Fire
- Strengthen Concrete Bridges, Silos, Tunnels, Parking Garages and Warehouse

TECHNICAL DATA:
Complies with NSF/ANSI Std. 61 Requirements

COLOR:
Black

PACKAGING:
Roll Sizes:
12.5" x 100' Roll (104.15 sqft: 9.675 sqm)
25" x 300' Roll (625 sqft: 58 sqm)
50" x 300' Roll (1250 sqft: 116 sqm)

PREPARATION:
Surface may be dry or damp, but free of standing water and frost. Surface should be sound with no loose materials. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles, disintegrated materials and other bond inhibiting materials from the surface. Consult **RepWrap** System technical data sheets for additional information on surface preparation. Existing uneven surfaces must be filled with an appropriate repair mortar like **RepWrap Paste** Epoxy or **RepPatch VOH** concrete repair. The adhesive strength of the concrete should 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. Surface preparation may be completed by shotblast, or the use of TuffTex Materials profile and etch cleaner, **PrepEtch**. Some applications are at the engineer's discretion; the 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.

APPLICATION:
RepWrap 300 UD is only applied as a component of the **RepWrap** System and can be applied via wet or dry layup.
- The **RepWrap 300 UD** material should be cut to the proper dimensions specified using heavy duty shears or a utility knife.
- Cut sections of **RepWrap 300 UD** can be temporarily stored by carefully rolling fabric into a tight roll. Do not fold or crease the fabric. Fabric should be kept free of dust, oils, moisture and other contaminants at all times.
- Apply the **RepWrap 300 UD** fabric directly into uncured **RepWrap Bond** applied on the substrate. There is no need to "pre-wet" the **RepWrap 300 UD** fabric with **RepWrap Bond** prior to applying the fabric against the substrate.
- Using a rib roller or squeegee, and following the direction of the primary fibers in the fabric, press fabric against the substrate until visual signs of **RepWrap Bond** are observed bleeding through the fabric.
- Apply a layer of **RepWrap Bond** over the top of **RepWrap 300 UD** fabric to completely encapsulate the fabric. Consult with the **RepWrap Bond** data sheet on details for applying **RepWrap Bond**. If Required: Apply a second layer of fabric while the saturate is still tacky. When tack free, coat the exposed surface of final fabric layer using a protective layer of **RepCoat UV.**

**Please refer to RepWrap CFRP Installation Guide for more thorough dry and wet layup instructions.*

CURING/DRYING TIME:
Varies with temperature and humidity. Ambient temperature should be 50º F and rising for best installation results. Cooler temperatures will slow set time. At temperatures below 50º F, please consult tour TuffTex Representative.

STORAGE AND SHELF LIFE: Store in a dry facility between 40-95°F (5-35°C) away from direct sunlight and sources of heat. Shelf life of properly stored, unopened containers is 24 months. Clean tools and equipment with Xylene or TuffTex **RepSolve X**.

CERTIFICATION: Installation of **RepWrap** products should be performed only by TuffTex Materials specially trained & certified contractors. **RepWrap™** Fabrics are manufactured in accordance with TuffTex Materials written and published data. A Certificate of Conformance is provided with each shipment.

LIMITATIONS: TuffTex Materials recommends design calculations be made by a certified independent licensed PE. Encapsulation of Concrete with **RepWrap** is not recommended in freeze/thaw zones OR as the system is a vapor barrier.

CAUTION:
Obtain, read, and understand the Safety Data Sheet (SDS) before use of this or any other TuffTex Materials product. With **RepWrap 300 UD**, gloves are recommended to be worn to protect against skin irritation. When cutting **RepWrap 300 UD** fabric protect against airborne carbon dust generated by the cutting procedure by use of an appropriate, NIOSH approved respirator.

READ SDS PRIOR TO USING PRODUCT.
KEEP OUT OF REACH OF CHILDREN.

WARRANTY*:*
Due to the use of this product beyond our control, we assume no liability for damages of any kind, and the user accepts the product "as is" and without warranties, expressed or implied, from either **TuffTex Materials, Inc** or its agents. The suitability of the product for an intended use shall be solely up to the user. Our only obligation shall be to replace or pay for any material proved defective, with our liability limited to the purchase price of materials supplied by us.

DISCLAIMER:
Refer to the SDS sheet before use. The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of TuffTex Materials. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Published technical data and instructions are subject to change without notice. Contact your local TuffTex distributor or technical representative for additional technical data and instructions.

PHYSICALS:	
0° Carbon Fiber: **RepWrap 300 UD**	9.24 oz/sqy (313 g/sqm
A-Glass Veil: C-LA 0912	1.20 oz/sqy (41 g/sm)
Polyester Stitch 167dtex	0.50 oz/sqy (17 g/sqm)
Total Fabric Weight	10.94 oz/sqy (371 g/sqm)
Nominal Ply Thickness	0.04 in (1.0 mm)
Fabric Construction	
Stitch Length	0.13" (3.2 mm)
Stitch Pattern	Tricot
Dry Thickness	0.019" (0.48 mm)
Standard Roll Length	345 ft (105 m)
Dry Roll Width	50" (1270 mm)
Typical Fiber Properties (Dry)	
Tensile Strength (ASTM D4018)	735 ksi (5064 MPa)
Tensile Modulus (ASTM D4018)	35.3 Msi (243 GPa)
Ultimate Elongation at Break (ASTM D4018)	2.09%
Composite Average Properties*	
Tensile Strength (ASTM D3039)	211 ksi (1455 MPa)
Tensile Modulus (ASTM D3039)	15.0 Msi (104 GPa)
Elongation at Break (ASTM D3039)	1.4%
Composite Design Properties**	
Tensile Strength (ASTM D3039)	180 ksi (1237 MPa)
Tensile Modulus (ASTM D3039)	13.5 Msi (93 GPa)
Ultimate Elongation at Break (ASTM D3039)	1.3%

** Average values shown. Typical fiber Volume Fraction (FVF) is 40.5% values shown are **RepWrap 300 UD** without protective coating.*
*** Based on ACI 440.2R Document; Average - 3 Standard Deviations*