

## StructureWrap™ V2 280 UG

E-Glass unidirectional fiber fabric for structural strengthening

### Product Description

StructureWrap V2 280 UG is a proprietary high tensile strength, stitch bonded, unidirectional E-Glass fiber fabric certified by ICC-ES as meeting building code requirements. The material is combined in the field utilizing StructureWrap V2 200 Epoxy to form a glass fiber reinforced polymer (GFRP) laminate used to strengthen and/or upgrade structural elements.

### Applications

#### Structural capacity changes

- Increased live or dead loads in structures
- Increased traffic volumes on bridges and viaducts
- Dampen vibrating structures or change the natural frequency
- Accommodate changes of building utilization or industrial machinery layout
- Allow for the removal of walls, columns or sections of floor slabs

#### Seismic retrofitting

- Upgrade of reinforced concrete columns
- Retrofit of unreinforced masonry walls
- Increase lateral shear resistance in reinforced masonry walls

#### Blast resistant upgrades

- Column protection
- Masonry wall protection

#### Structural damage and repair

- Repair of large diameter pipes to achieve strengthening and waterproofing
- Repair of aging or corroded members
- Repair or upgrade of inferior materials
- Repair of inadequate construction techniques
- Repair of members due to fire or natural disaster

### Advantages

- Certified by ICC-ES (ESR-3573)
- Meets ACI 440.2r-08 criteria
- May be utilized to enhance shear, confinement or flexural strength
- Can accommodate complex 3-D shapes
- High strength to weight ratio
- Light weight, adds negligible dead load to structure
- Non-corrosive, non-magnetic and nonconductive
- Acid resistant
- Finished application does not change the aesthetics of the structure

### Composite Gross Laminate Properties

	Ultimate Value		Design Value	
	US Units (psi)	SI Units (Mpa)	US Units (psi)	SI Units (Mpa)
Ultimate Tensile Strength				
Primary Fiber Direction	109,710	756	97,140	670
Tensile Modulus	7,304,000	50,360	7,304,000	50,360
Elongation at Break	1.48%	1.48%	1.33%	1.33%
Flexural Strength	95,000	660	81,000	587
Compressive Strength	74,000	513	63,000	436
Short Beam Shear	5,500	38	4,700	32
Tensile Strength per Inch Width	3.8 kips/in		3.4 kips.in	
Coefficient of Thermal Expansion	.000018in/in/°F	32.9µm/m/°C	.000018in/in/°F	32.9µm/m/°C
Glass Transition Temperature	155.1 °F	68.4 °C	155.1 °F	68.4 °C
Laminate Thickness	.35in	.85mm	.35in	.85mm



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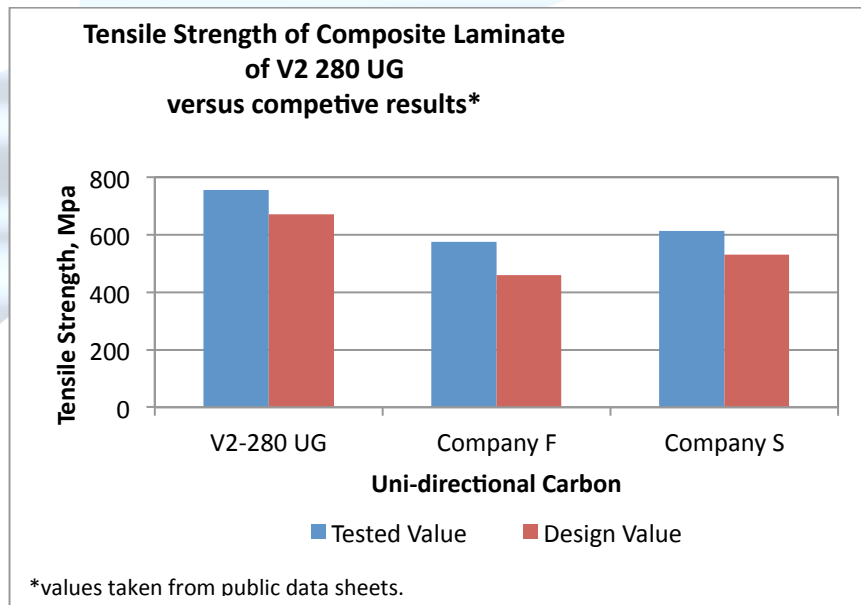
## StructureWrap V2 280 UG

### How to Use

Refer to StructureWrap design and installation manual for specific instructions on installation procedure.

### Competitive Testing and Additional Physical Testing

**Competitive Testing** - V2 Structural Systems takes its performance values very seriously and commits to its unique performance in each properly installed application. The following chart compares commercially available data with performance values (both typical and design) for StructureWrap V2 280 UG versus commonly available glass reinforcement systems. Note that the StructureWrap V2 280 UG Design and Typical values exceed the standard values of all competitive products in the industry.



### Packaging

**Rolls:** 25 in. x 50 ft. (104 ft.<sup>2</sup>); 25 in. x 300 ft. (625 ft.<sup>2</sup>); Custom widths of 6"-50" are available

**Kits:** Pre-measured kits containing a 25 in. x 50 ft. (104 ft.<sup>2</sup>) roll of fabric and 3 gallons of StructureWrap V2 200 Epoxy

### Limitations

- The installed system acts as a vapor barrier. Concrete should not be fully encapsulated in areas of freeze/thaw.

### Caution

StructureWrap V2 280 UG is non-reactive and non-toxic. However, caution must be used when handling since stray fibers and dust may be present on the surface. Gloves and the use of an appropriate properly fitted NIOSH approved respirator is recommended to prevent skin and lung irritation when handling, cutting and applying StructureWrap V2 280 UG.

Consult the StructureWrap V2 280 UG SDS for further safety information.



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