

## GC-70-ULS: Product Specifications

### **GC-70-ULS: UNIDIRECTIONAL FIBERGLASS WITH 50/50 WOVEN INLAY**

A continuous unidirectional "E" fiberglass combined with a 50/50 woven fiberglass inlay that has high strength and stiffness along the longitudinal (0) axis and provides cross strength (90 degrees to the longitudinal axis). GC-70-ULS is manufactured with a proprietary pulforming process in which all glass fibers are pretensioned and aligned during the impregnation and curing process.

#### **Applications**

- Structural Components
- Infrastructure Reinforcement
- Archery Bow Limbs
- Industrial Springs

#### **Sizing**

Width: .150" to 18.00"

Thickness: .040" to .080"

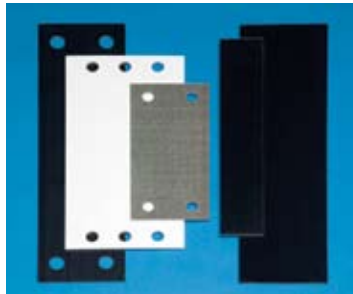
Length: 6" to 120"

#### **Color**

Clear, White, Black, Gray, Brown, Red, Blue

#### **Finish**

The material is normally supplied with one surface prepared for bonding but can also be supplied with a bonding surface on both sides.



[Physical and Mechanical Properties \(other side\)](#)

**Contact us, or visit [www.gordoncomposites.com](http://www.gordoncomposites.com) for additional product information.**

#### **Gordon Composites, Inc.**

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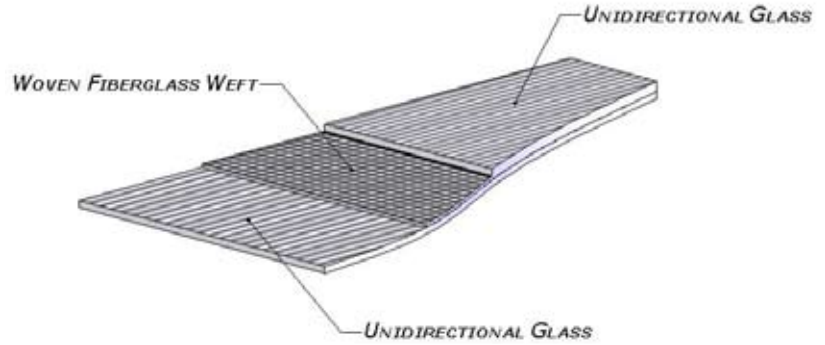
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# GC-70-ULS: Physical and Mechanical Properties

## GC-70-ULS: UNIDIRECTIONAL FIBERGLASS WITH A 50/50 WOVEN INLAY



### Physical and Mechanical Properties

PROPERTY DESCRIPTION (ORIENTATION and MATERIAL CONSTANT)	UNITS	TEST METHOD	MIN VALUE	AVG. VALUE
PRODUCT TYPE **		ASTM D3647	UNI-WOVEN	UNI-WOVEN
GLASS CONTENT BY WEIGHT	%	ASTM D2584	68	70
DENSITY	lbs./c.i.	ASTM D1505	.067	.068
FIBER ORIENTATION	0°/ 90°	ASTM D3647		0/90
FLEX STRENGTH, 0° ***	KSI	ASTM D790	184	210
FLEX MODULUS, 0° ***	MSI	ASTM D790	5.1	6
TENSILE STRENGTH, 0°, ( $\tau S_{11}$ )	KSI	ASTM D3039	130	152
TENSILE MODULUS of ELASTICITY, 0°, ( $\tau E_{11}$ )	MSI	ASTM D3039	5.6	6.0
ULTIMATE TENSILE STRAIN, 0°, ( $\tau_{11}$ )	%	ASTM D3039	2.3	2.5
TENSILE STRENGTH, 90°, ( $\tau S_{22}$ )	KSI	ASTM D3039		
TENSILE MODULUS of ELASTICITY, 90°, ( $\tau E_{22}$ )	MSI	ASTM D3039		
POISSON'S RATIO, 0°/ 90°, ( $\nu_{12}$ ) tension		ASTM D3039		
COMPRESSION STRENGTH, 0°, ( $\tau S_{11}$ )	KSI	ASTM D3410	77.7	111
COMPRESSION MODULUS OF ELASTICITY, 0°, ( $\tau E_{11}$ )	MSI	ASTM D3410	5.46	6.0
ULTIMATE COMPRESSION STRAIN, 0°, ( $\tau E_{11}$ )	%	ASTM D3410	1.4	1.9
COMPRESSION STRENGTH, 90°, ( $\tau S_{22}$ )	KSI	ASTM D3410		
COMPRESSION MODULUS OF ELASTICITY, 90°, ( $\tau E_{22}$ )	MSI	ASTM D3410		
POISSON'S RATIO, 0°/ 90°, ( $\nu_{12}$ ) compression		ASTM D3410		
IN PLANE SHEAR SHEAR STRENGTH, ( $S_{12}$ )	KSI	ASTM D5379		
IN PLANE SHEAR SHEAR MODULUS, ( $G_{12}$ )	MSI	ASTM D5379		
INTER-LAMINAR SHEAR STRENGTH, ( $S_{23}$ )	KSI	ASTM D5379		
INTER-LAMINAR SHEAR MODULUS, ( $G_{23}$ )	MSI	ASTM D5379		
GLASS TRANSITION TEMP.	(°F)	ASTM D3418	240	250
WATER ABSORPTION	%	ASTM D570		.04

E is Elastic Modulus

G is Shear Modulus

S is strength

$\nu$  is Poisson's ratio

$\tau$  is tension

C is compression

$\epsilon$  is strain

"1" is parallel to fiber direction (length)

"2" is transverse to fiber direction (width)

"3" is vertical to fiber direction (thickness)

\*\*50/50 Scrim Fiberglass Cloth Inlay, 1.45 oz. per square yd.

\*\*\*Note: Strength Values developed from ASTM D790 are dependent on thickness.

As thickness increased flex strength decreased. The test data above is based on a test thickness of .060"

Origination Date 1-3-02 Revised 4-1-08

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Engineered Structural Materials

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