

GC-70-ULZ: Product Specifications

GC-70-ULZ: UNIDIRECTIONAL HIGH STRENGTH FIBERGLASS LAMINATE

Made with high strength glass fiber commonly called “S” glass, this unidirectional glass laminate provides strength and fatigue resistance superior to laminates made with standard “E” glass. GC-70-ULZ 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
- Archery Bow Limbs
- Prosthetics
- Research and Development Projects

Sizing

Width: .1.50” to 8.75”

Thickness: .020” to .040”

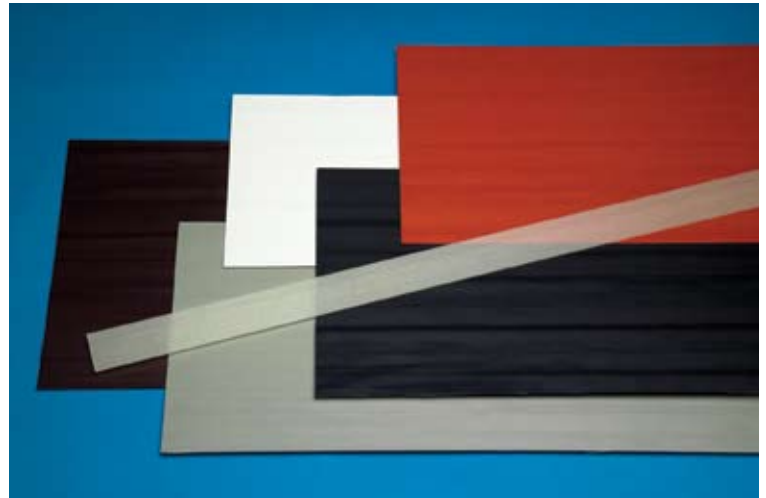
Length: 6” to 120”

Color

Black, Natural

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 for additional product information.

Gordon Composites, Inc.

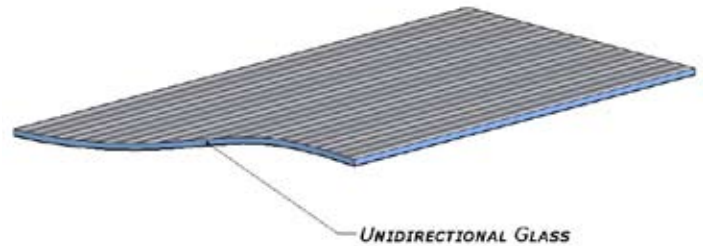
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FIBERGLASS LAMINATE**



Physical and Mechanical Properties

| PROPERTY DESCRIPTION (ORIENTATION and MATERIAL CONSTANT) | UNITS | TEST METHOD | MIN VALUE | AVG. VALUE |
|---|-----------|-------------|----------------|----------------|
| PRODUCT TYPE | | ASTM D3647 | UNIDIRECTIONAL | UNIDIRECTIONAL |
| GLASS CONTENT BY WEIGHT | % | ASTM D2584 | 68 | 70 |
| DENSITY | lbs./c.i. | ASTM D1505 | | .068 |
| FIBER ORIENTATION | 0°/ 90° | ASTM D3647 | | 0 |
| FLEX STRENGTH, 0° *** | KSI | ASTM D790 | 218 | 245 |
| FLEX MODULUS, 0° *** | MSI | ASTM D790 | 6.2 | 6.8 |
| TENSILE STRENGTH, 0°, ($\tau_{S_{11}}$) | KSI | ASTM D3039 | 214 | 243 |
| TENSILE MODULUS of ELASTICITY, 0°, (τE_{11}) | MSI | ASTM D3039 | 6.7 | 7.4 |
| ULTIMATE TENSILE STRAIN, 0°, (τ_{11}) | % | ASTM D3039 | 3.2 | 3.3 |
| TENSILE STRENGTH, 90°, (τS_{22}) | KSI | ASTM D3039 | 5.7 | 6.7 |
| TENSILE MODULUS of ELASTICITY, 90°, (τE_{22}) | MSI | ASTM D3039 | 1.36 | 1.6 |
| POISSON'S RATIO, 0°/ 90°, (ν_{12}) tension | | ASTM D3039 | | .28 |
| COMPRESSION STRENGTH, 0°, (S_{11}) | KSI | ASTM D3410 | 87 | 119 |
| COMPRESSION MODULUS OF ELASTICITY, 0°, (E_{11}) | MSI | ASTM D3410 | 5.8 | 7.3 |
| ULTIMATE COMPRESSION STRAIN, 0°, (E_{11}) | % | ASTM D3410 | 1.5 | 1.6 |
| COMPRESSION STRENGTH, 90°, (S_{22}) | KSI | ASTM D3410 | 19.7 | 20.9 |
| COMPRESSION MODULUS OF ELASTICITY, 90°, (E_{22}) | MSI | ASTM D3410 | 1.6 | 1.9 |
| POISSON'S RATIO, 0°/ 90°, (ν_{12}) compression | | ASTM D3410 | | .29 |
| IN PLANE SHEAR STRENGTH, (S_{12}) | KSI | ASTM D5379 | 6.3 | 8 |
| IN PLANE SHEAR MODULUS, (G_{12}) | MSI | ASTM D5379 | .53 | .91 |
| INTER-LAMINAR SHEAR STRENGTH, (S_{23}) | KSI | ASTM D5379 | 4.2 | 5.3 |
| INTER-LAMINAR SHEAR MODULUS, (G_{23}) | MSI | ASTM D5379 | .39 | .54 |
| GLASS TRANSITION TEMP. | (°F) | ASTM D3418 | 235 | 245 |
| WATER ABSORPTION | % | ASTM D570 | | .04 |

E is Elastic Modulus
G is Shear Modulus
S is strength
 ν is Poisson's ratio
 τ is tension
C is compression
 ϵ 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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