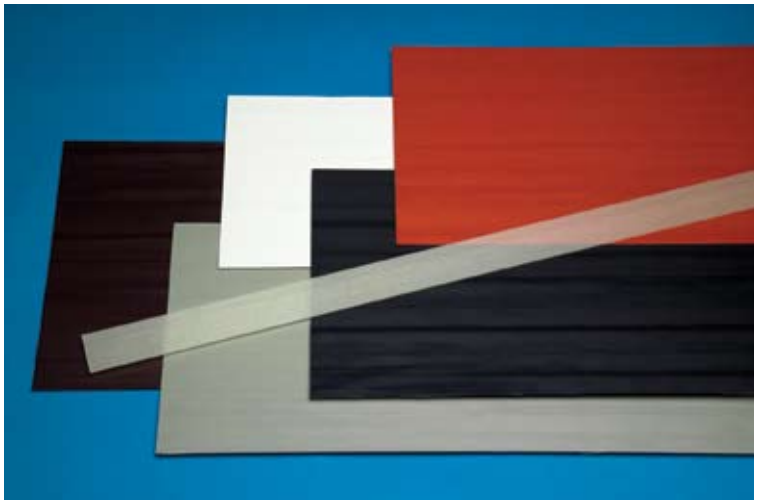
Gordon Composites

Engineered Structural Materials

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.

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GC-70-ULZ: Physical and Mechanical Properties

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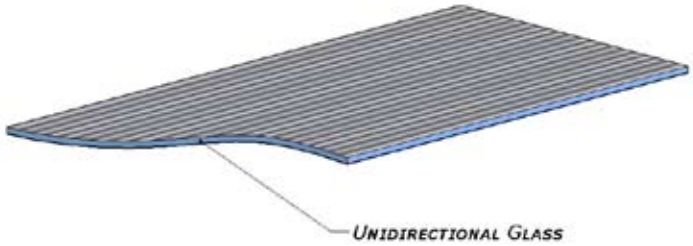

Physical and Mechanical Properties

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°, ($_{T}S_{11}$)	KSI	ASTM D3039	214	243
TENSILE MODULUS of ELASTICITY, 0°, ($_{T}E_{11}$)	MSI	ASTM D3039	6.7	7.4
ULTIMATE TENSILE STRAIN, 0°, ($_{T}\varepsilon_{11}$)	%	ASTM D3039	3.2	3.3
TENSILE STRENGTH, 90°, ($_{T}S_{22}$)	KSI	ASTM D3039	5.7	6.7
TENSILE MODULUS of ELASTICITY, 90°, ($_{T}E_{22}$)	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 SHEAR STRENGTH, (S_{12})	KSI	ASTM D5379	6.3	8
IN PLANE SHEAR 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
T 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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