

GC-66-UW: Product Specifications

GC-66-UW: UNIDIRECTIONAL FIBERGLASS WITH A 90° WOVEN INLAY

GC-66-UW combines continuous unidirectional “E” glass fiber with a 90 degree fiberglass inlay. This combination not only gives high strength and stiffness along the longitudinal (0) axis but also provides cross strength and stiffness 90 degrees to the longitudinal axis.

GC-66-UW 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
- Snow and Water ski Reinforcements
- Snowboard Skins
- Prosthetics

Sizing

Width: .150” to 18”

Thickness: .030” - .075”

Length: 6” to 120” (Also available in roll form with lengths up to 250 ft.)

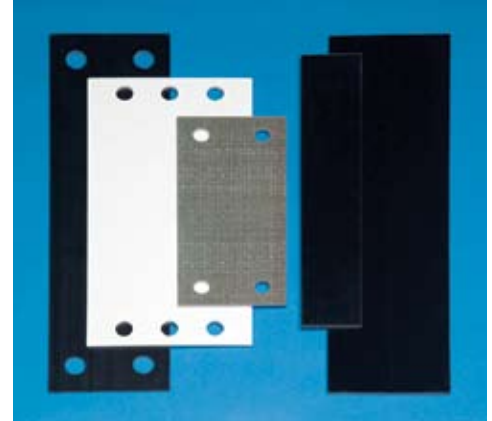
Color

Natural, Black

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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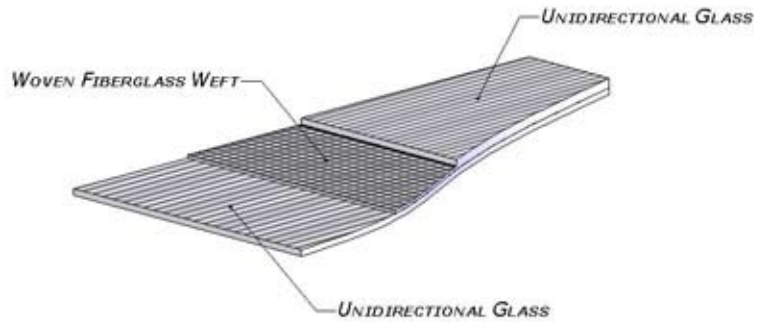
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GC-66-UW: Physical and Mechanical Properties

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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/WEFT	UNIDIRECTIONAL/WEFT
GLASS CONTENT BY WEIGHT	%	ASTM D2584	64	66
DENSITY	lbs./c.i.	ASTM D1505	.067	.068
FIBER ORIENTATION	0°/ 90°	ASTM D3647		0/90
FLEX STRENGTH, 0° ***	KSI	ASTM D790	110	130
FLEX MODULUS, 0° ***	MSI	ASTM D790	4.0	4.5
TENSILE STRENGTH, 0°, (τS_{11})	KSI	ASTM D3039	130	152
TENSILE MODULUS of ELASTICITY, 0°, (τE_{11})	MSI	ASTM D3039	N/A	N/A
ULTIMATE TENSILE STRAIN, 0°, ($\tau 11$)	%	ASTM D3039		
TENSILE STRENGTH, 90°, (τS_{22})	KSI	ASTM D3039		
TENSILE MODULUS of ELASTICITY, 90°, (τE_{22})	MSI	ASTM D3039		
POISSON'S RATIO, 0°/ 90°, (ν_{12}) tension		ASTM D3039		
COMPRESSION STRENGTH, 0°, (S_{11})	KSI	ASTM D3410		
COMPRESSION MODULUS OF ELASTICITY, 0°, (E_{11})	MSI	ASTM D3410		
ULTIMATE COMPRESSION STRAIN, 0°, (E_{11})	%	ASTM D3410		
COMPRESSION STRENGTH, 90°, (S_{22})	KSI	ASTM D3410		
COMPRESSION MODULUS OF ELASTICITY, 90°, (E_{22})	MSI	ASTM D3410		
POISSON'S RATIO, 0°/ 90°, (ν_{12}) compression		ASTM D3410		
IN PLANE SHEAR STRENGTH, (S_{12})	KSI	ASTM D5379		
IN PLANE 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	230	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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