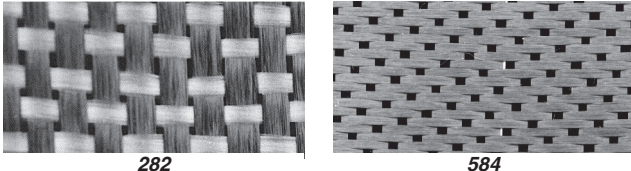


CARBON GRAPHITE

CM

BIDIRECTIONAL WOVEN CARBON GRAPHITE



Woven graphite is a fabric introduced in recent years which has become an excellent alternative to fiberglass and Kevlar - only mils thick with great strength. In addition to its great strength, graphite fabric also has very low density and is very stiff. Although it is quite costly, the material saving is appreciable since only one course of graphite is required for 3 or 4 of fiberglass. It cuts considerably easier than Kevlar. Graphite The excellent qualities of the graphite fabric itself give it an immediate waiting market in the aircraft building field.

Graphite fabric is stocked in the three different styles shown below. Other weights and weaves of graphite are available on a special order basis. Be sure to specify the graphite style when ordering. These carbon graphite cloths are not pre-preg fabrics.

* Warning folding for shipment can damage the filaments in the fabric. Folding will be done at customers risk and request only.

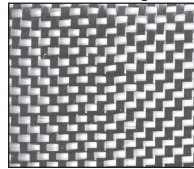
CARBON FIBER									
Style	Part No.	Weight Oz./Sq Yd.	Width	Thick-ness	W x F	Weave	Breaking Strength	Price /yd.	
282	01-00970	5.8	39"	.007"	12.5x12.5	Plain	300/300	\$45.50	
282	01-00971	5.8	50"	.007"	12.5x12.5	Plain	300/300	\$58.85	
282	01-28260	5.8	60"	.007"	12.5x12.5	Plain	300/300	\$38.50	

TWILL 2 X 2 WEAVE									
Style	Part No.	Weight Oz./Sq Yd.	Width	Thick-ness	W x F	Weave	Breaking Strength	Price /yd.	
284	01-00972	5.8	50"	.007"	12 x 12	2x2 Twill	n/a	\$56.75	
284	01-00602	5.7	50"	.007"	12x12	2/2 Twill	n/a	\$37.95	

8HS WEAVE									
Style	Part No.	Weight Oz./Sq Yd.	Width	Thick-ness	W x F	Weave	Break- ing Strength	Price /yd.	
584	01-00626	11	42"	.013"	24x24	8HS	650/650	\$66.85	

UNIDIRECTIONAL CARBON GRAPHITE

Construction is such that the fibers are oriented in a straight or linear manner with no twist and are able to be maintained in that condition while being impregnated by hand. The fabric is formed from rovings or "tows" of fibers similar to that used in making woven fabric. These fibers are locked into position by very fine fill (or cross machine direction) fibers which are encapsulated with an adhesive which is compatible with common impregnating resins. These fill fibers and the encapsulating adhesive will be visible in any clear resin. The resulting "pattern" is normal and should not be interpreted as poor wet-out of the reinforcing fibers. For hand lay-ups, resin may be applied by spray, brush or by pouring action. A short napped paint roller is recommended for spreading the resin. Excess resin should always be rolled out in a direction parallel to the graphite fibers. The final or external layer should be applied with the fill yarns facing down (unexposed). Satisfactory for use with epoxies, polyesters, vinyl esters and other resins. The fabric is rolled with a polyethylene interliner to maintain cleanliness. Care and cleanliness should be practiced when working with Graphite materials. Unattached graphite fibers are easily airborne. A filter mask should be worn when cutting and fabricating. Itching & irritation caused by broken filaments becoming imbedded in the skin can result from filament breakage during handling. This graphite fabric is similar to the bidirectional woven graphite described above but is a unidirectional weave using standard 3000 tow graphite warp and 75-1/0 fiberglass fill .

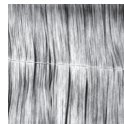


UNIDIRECTIONAL GRAPHITE FULL WIDTH ROLLS

Sold by the yard.

Style	Part No.	Weight Oz. Sq. Yd.	Width	Thick-ness	W x F	Weave	Tensile Strength Lbs./Inch	Price per Lin. Yd.
716	716-38	4.7	38"	.006"	16 x 24	Plain	550 125	\$23.75

Qty. Discount: 10% on 25-50 Yds.; 15% on 50-100 Yds. 15%; 20% over 100 Yds



GRAPHITE FIBER TAPES

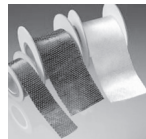
- Tensile Strength - 54,000 PSI/in. width
- Weight - 0.033 Lb./Sq.Ft.
- Thickness - 0.012" Laminated

5" Wide P/N 01-06200..... \$1.71 /Foot

25% Discount on full roll of 250 ft.

12" Wide P/N 01-06300..... \$3.85 /Foot

15% Discount on 12"W x 50' Roll & 25% Discount on 12"W x 300' Roll



UNIDIRECTIONAL CARBON TAPES

These carbon fiber tapes are used to add stiffness and tensile strength in one direction without adding significant thickness or weight. These West System tapes have 12 carbon fiber bundles per inch of tape width. The bundles are held together with a polyester fill thread making the tape easy to handle. These tapes are compatible with epoxies but not with vinyl ester or polyester resins. #702 tape is 1.5" wide and #703 tape is 3" wide.

Style No.	Width (in.)	Length	Part No.	Price/roll
702	1.5"	12 ft.roll	01-00238	\$41.65
702	1.5"	50 ft.roll	01-00239	\$126.95
703	3"	12 ft.roll	01-00240	\$44.70
703	3"	50 ft.roll	01-00241	\$148.95

CARBON FIBER TUBING

Aircraft Spruce offers structural tubing and structural torsion tubing, engineered and built to meet your exact specifications and tolerances. Structural Torsion Tubing, in continuous lengths up to 40', is manufactured with the computer-controlled, fully-automated Helical Winding Process. We offer a broad array of Fiber Options and tubing wall thickness and diameter is determined on a case-by-case basis to suit your application. **Special Order Sold in 10 ft. lengths only (can cut for UPS shipment).**

D of Tube	Wall Thickness	Length	Part No.	Price
0.5"	.100	10'	03-00171	\$428.95
0.75"	.100	10'	03-00172	\$428.95
1.00"	.120"	10'	03-00173	\$357.95
1.25"	.120"	10'	03-00174	\$515.00
1.5"	.120"	10'	03-00175	\$414.95
1.75"	.120"	10'	03-00176	\$565.00
2"	.120"	10'	03-00177	\$464.95
2.5"	.120"	10'	03-00178	\$572.00
3"	.120"	10'	03-00179	\$689.99

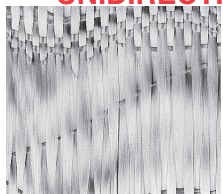


STANDARD E-GLASS & FIBERGLASS TAPES

Tapes are woven from 8.7 oz./sq. yd. fiberglass cloth, .012" thick, into narrow widths with non-raveling selvage. Perfect for glassing seams, corners, edges fan for repair jobs. Sold in 50 yd. rolls.

1" Width 26 Warp, 17 Fill	P/N 01-06610	Roll	\$12.85
1-1/2" Width 32 Warp, 17 Fill	P/N 01-06615	Roll	\$14.50
2" Width 40 Warp, 17 Fill	P/N 01-06600	Roll	\$21.75
3" Width 58 Warp, 17 Fill	P/N 01-06700	Roll	\$27.50
4" Width 76 Warp, 17 Fill	P/N 01-06705	Roll	\$30.50
6" Width 106 Warp, 17 Fill	P/N 01-06710	Roll	\$51.25
12" Width 218 Warp, 17 Fill	P/N 01-06720	Roll	\$105.95

UNIDIRECTIONAL FIBERGLASS TAPE



This is a fibrous glass reinforcement designed to furnish exceptionally high directional strength. Manufactured from parallel strands of glass roving which are held together by a fine woven cross thread. The placement of the cross thread is such that the parallel rovings do not wander or have a tendency to cross over each other. This 100% unidirectional tape can be used instead of unidirectional fabric for spar caps, wings and elevators. Contours well and cuts building time considerably. Wt. 22 oz./sq. yd., .025" thick. May be used with either polyester or epoxy systems. Used on Polliwagen. Long-EZ, Cozy. Adventure and applicable to all composites.

3" Wide P/N 01-06800.....\$1.75 Yd.

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823