Composites
Reinforcements

CARBON RANGE SELECTOR GUIDE

CHOMARAT

C-WEAVE ™

C-WEAVE ™ is a bi-directional (0°/90°) warp and weft woven carbon fabric.
Fabric area weights range from 160 g/m² to 1200 g/m² in different weave patterns such as Plain, Twill, Harness Satin.
Available carbon fiber tows are 3,6,12 or 24K and HS (High Strength), IM (Intermediate Modulus), HM (High Modulus).

C-WEAVE ™ **SP** provides the highest visual quality with a unique spreading technology to ensure an optimised closure of the weave.

DESIGNATION	Total Weight (gsm)	Pattern	Construction		Width (cm)	Roll Length (lm)	Site
			Warp (ends/cm)	Weft (picks/cm)			
→ 3K FABRICS							
C-WEAVE 160P 3K HS	160	Plain	4,0	4,0	120 / 125	100	
C-WEAVE 198T 3K HS	198	Twill 2/2	4,9	4,9	127	100	US only
C-WEAVE 198P 3K HS	198	Plain	4,9	4,9	127	100	US only
C-WEAVE 200P 3K HS	200	Plain	4,9	4,9	125/127	100	
C-WEAVE 200T/3 3K HS	200	Twill 2/2	4,9	5,1	125	100	
C-WEAVE 205P 3K HS	205	Plain	5,1	5,1	127	100	US only
C-WEAVE 205T 3K HS	205	Twill 2/2	5,1	5,1	125/127	100	
C-WEAVE 245T 3K HS	245	Twill 2/2	6,1	6,0	125/127	100	
C-WEAVE 280T4 3K HS	280	Twill 4/4	7,0	7,0	125/127	100	
→ 6K FABRICS							
C-WEAVE 295T 6K HS	295	Twill 2/2	3,7	3,7	125	100	
C-WEAVE 295P 6K HS	295	Plain	3,7	3,7	125	100	
C-WEAVE 400T 6K HS	400	Twill 2/2	4,9	5,0	125	100	
C-WEAVE 416T 6K HS	416	Twill 2/2	5,2	5,2	125	100	
→ 6K IM/HM FABRICS							
C-WEAVE 200T T800HB 6K	200	Twill 2/2	4,4	4,4	125	100	
C-WEAVE 200T M46JB 6K	200	Twill 2/2	4,4	4,4	125	100	
C-WEAVE 280SA5 T800HB 6K	280	5 Harness satin	6,2	6,2	125	100	
C-WEAVE 280SA5 M46JB 6K	280	5 Harness satin	6,2	6,2	125	100	
→ 12K FABRICS							
C-WEAVE 380T 12K HS	380	Twill 2/2	2,4	2,3	125/127	100	
C-WEAVE 415T 12K HS	416	Twill 2/2	2,5	2,6	125	100	
C-WEAVE 600T 12K HS	600	Twill 2/2	3,7	3,7	125	80	
C-WEAVE 650T 12K HS	650	Twill 2/2	4,0	4,0	125	80	
C-WEAVE 670T 12K HS	670	Twill 2/2	4,1	4,1	127	100	US only
C-WEAVE 660T 12K 60E	660	Twill 2/2	4,1	4,1	127	100	
→ 24K FABRICS							
C-WEAVE 800T 24K 34-700WD	800	Twill 2/2	2,5	2,5	125	75	
C-WEAVE 1000T 24K 34-700WD	1000	Twill 2/2	3,1	3,1	125	50	

** Other widths are available upon request up to 165 cm (65 inches)*

C-WEAVE ™ DESIGN

C-WEAVE ™ DESIGN: Sports Equipment and Automotive Industries are looking for alternative carbon look with truly structural benefits. Relying on its industrial and creative expertise, CHOMARAT has developed a very selective new **C-WEAVE ™** product.

→ C-WEAVE DESIGN

DESIGNATION	Total Weight (gsm)	Pattern	Construction		Width (cm)	Roll Length (lm)	
			Warp (ends/cm)	Weft (picks/cm)			
C-WEAVE DESIGN 176D1054 3K HS/INNEGRA	176	Hexagonal	6,1	5,0	125	100	

C-TAPE ™

C-TAPE ™ is a range of carbon woven tapes.
Its particular weaving technology with a continuous weft prevents frayed edges.

DESIGNATION	Total Weight (gsm)	Pattern	Construction		Width (cm)	Roll Length (lm)	Remarks
			Warp (ends/cm)	Weft (picks/cm)			
C-TAPE U88P/F	91	Plain	Carbon 6K & glass silionne 34 tex 1,6 for the carbon	Fixed PES 1,8	6	100	Fixed Thread
C-TAPE U300P 12K HS FT	310	Plain	Carbon 12K 3,7	Fixed glass 70tex 1	30 / 20 / 10 / 5	100	Fixed in weft
C-TAPE U300P 12K HS	318	Plain	Carbon 12K 3,7	glass 34tex 2,6	30 / 20 / 10 / 5	100	Non fixed
C-TAPE U600P 24K HS FT	606	Plain	Carbon 24K 3,7	Fixed glass 70tex 1	30 / 20 / 10 / 5	100	Fixed in weft
C-TAPE U600P 24K HS	651	Plain	Carbon 24K 3,7	Glass 136tex 2	30 / 20 / 10 / 5	100	Non fixed
C-TAPE U1000P 24K HS FT	1006	Plain	Carbon 24K 3,1 **x** 2	Fixed glass 70tex 1	30 / 20 / 10 / 5	100	Fixed in weft
C-TAPE U1000P 24K HS	1064	Plain	Carbon 24K 3,3 **x** 2	Glass 68tex 1	30 / 20 / 10 / 5	100	Non fixed
C-TAPE U1000P 50K HS FT	1040	Plain	Carbon 50K 2,7	Fixed glass 70tex 1	30 / 20 / 10 / 5	100	Fixed in weft

** FOE fiber available upon request*
Other widths upon request - max 50 cm (19.6 inches)

DIAGOTEX ™

DIAGOTEX ™ is a diagonally woven reinforcement with a fixed angle of 30° to 60°.
Fiber orientation is optimized to improve bending and torsional strength.

DESIGNATION	Weight (g/ml)	Angle (°)	Width (mm)
DIAGOTEX D988	45,4	44	150
DIAGOTEX D960	122	45	350

** Other tapes and braided reinforcements are available upon request*

C-PLY ™ is a range of carbon multiaxial or non-crimp (NCF) reinforcements developed using the most advanced technology and tow spreading processes.

C-PLY ™ products are uni-directional or multi-directional stitched plies from 50-600 gsm/ply. Carbon tows used are 12,18,24,50,60 K in HS (High Strength), IM (Intermediate Modulus) or HM (High Modulus) grades.

C-PLY ™ **HEXAGONAL** is a premium quality appearance product with toughening and visual stitching yarn.

STYLE	Fiber Designation	Total Weight (gsm)	Ply Orientation	Weight/Ply (gsm)	Width (cm)	Roll Length (lm)
→ CONVENTIONAL ANGLES, HS FIBER						
C-PLY SP BX 100 BC3,4 12K HS	T700 SC 12K 50C	100	+45°/-45°	50	127	100
C-PLY SP BX 150 C3,4 12K HS	T700 SC 12K 50C	150	+45°/-45°	75	127	200
C-PLY SP BX 200 C3,4 12K HS	T700 SC 12K 50C	200	+45°/-45°	100	127	150
C-PLY SP BX 300 T3,3 24K HS	T700 SC 24K 50C	300	+45°/-45°	150	127	100
C-PLY SP BX 240 T3,3 50K HS	50K HS	240	+45°/-45°	120	127	100
C-PLY SP BX 300 T3,3 50K HS	50K HS	300	+45°/-45°	150	127	100
C-PLY SP BT 300 CT3 50K HS	50K HS	300	0°/90°	150	125	100
C-PLY SP BX 400 BC3,4 24K HS	24K HS	400	+45°/-45°	200	127	100
C-PLY SP BX 400 C3,4 50K HS	50K HS	400	+45°/-45°	200	127	100
C-PLY SP BT 400 CT3,4 50K HS	50K HS	400	0°/90°	200	125	100
C-PLY SP BX 600 BC3,4 24K HS	24K HS	600	+45°/-45°	300	127	100
C-PLY SP BX 600 BC3,4 48K HS	48K HS	600	+45°/-45°	300	127	100
C-PLY SP BX 600 C3,4 50K HS	50K HS	600	+45°/-45°	300	127	100
C-PLY SP BT 600 CT4,5 50K HS	50K HS	600	0°/90°	300	125	100
C-PLY SP Q 600 CT3,4 50K HS	50K HS	600	0°/+45°/90°/-45°	150	125	100
C-PLY SP QX 785 BCT3,2 24K HS	24K HS	785	0°/+45°/90°/-45°	195	125	50
C-PLY SP TL 225 BCT3,2 12K HS	12K HS	225	0°/+45°/-45°	75	125	100
C-PLY BT600 T2,5 50K TRW40	50K TRW40	600	0°/90°	300	125	100
C-PLY BT400 T2,5 50K TRW40	50K TRW40	400	0°/90°	200	125	100
C-PLY BX600 C2,5 50K TRW40	50K TRW40	600	+45°/-45°	300	127	100
C-PLY BX400 C2,5 50K TRW40	50K TRW40	400	+45°/-45°	200	127	100
C-PLY Q800 T2,5 50K TRW40	50K TRW40	800	0°/+45°/90°/-45	200	125	100
→ SHALLOW ANGLES, HS FIBER						
C-PLY SP BX30 100 BC3,4 12K HS	T700SC 12K 50C	100	+30°/-30°	50	127	100
C-PLY SP BX30 150 C3,4 12K HS	T700SC 12K 50C	150	+30°/-30°	75	127	200
C-PLY SP BX60 150 C3,4 12K HS	T700SC 12K 50C	150	+60°/-60°	75	127	200
C-PLY SP TL60 580 BCT3,2 24K HS	24K HS	580	0°/+60°/-60°	195	125	100
** Other angles are possible upon request down to 22,5°*						
→ UNBALANCED ANGLES, HS FIBER						
C-PLY SP 0/45 75/75 CT3,4 12K HS	T700SC 12K 50C	150	0°/+45°	75	125	100
C-PLY SP 0/-45 75/75 CT3,4 12K HS	T700SC 12K 50C	150	0°/-45°	75	125	100
** Other angles are possible upon request down to 22,5°*						
→ STITCHED UNIDIRECTIONAL, HS FIBER						
C-PLY SP U100S5 CT3,4 12K HS	T700SC 12K 50C	100	0° UD	100	125	200
C-PLY SP U150S5 CT3,4 24K HS	T700SC 24K 50C	150	0° UD	150	125	200
C-PLY SP U150S5 CT3,4 50K HS	50 K HS	150	0° UD	150	125	100
C-PLY U300S7 CT3,4 24K HS	T700SC 24K 50C	300	0° UD	300	125	100
C-PLY U300S7 CT3,4 50K HS	50 K HS	300	0° UD	300	125	100
C-PLY U600S7 CT3,4 50K HS	50 K HS	600	0° UD	600	125	100
→ C-PLY™ DESIGN STITCHING						
C-PLY SP BX150 X1 12K HS	T700SC 12K 50C	150	+45°/-45°	75	127	200

** Other weights and stitching patterns available upon request*

OPTIONS

→ EPOXY BINDER POWDERING

POWDER CODE	Preforming Type	Powder Softening temperature (°C)	Comments
P09 - P23	Reactive	~ 90-100°	Low Temperature Preforming, High stiffness, Curing processing: from 120 sec at 140°C to 45 sec at 180°C (indicative values)
P13 - P18	Reversible	~ 90-100°	Low Temperature Preforming, Fine particles
P11	Reversible	~ 150°	High Temperature Preforming

Powdering an epoxy binder will enhance products stability during cutting and preforming operations.
The choice of a binder depends on the matrix compatibility and process conditions.

Powdering weight ranges from 5-30 g/m² and can be adapted to customer requirements (single side, double side) and product constructions.

→ VEIL AND WEB

Various Veil (PES, Glass,…) or thin Web (CoPa,…) can be heat set or stitched for **stability, aspect or preforming** purposes.

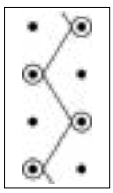
VEIL AND WEB CODE	Veil and web type	Areal weight range (gsm)	Purpose of use (according to weight and type of veil or web)
G	Glass	30 - 100	Stabilization, surface aspect improvement, anti-galvanic corrosion
C	Carbon	6 - 34	Stabilization or surface aspect improvement with black aspect
A	Polyamide	3 - 24	Stabilization, preforming, toughness improvement (CAI)
E	Polyester	4 - 37	Stabilization, preforming, surface aspect improvement

→ C-PLY ™ STITCHING PATTERNS

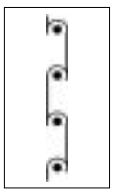
Standard Stitching for **C-PLY** ™: Chain stitching (**C**), Tricot (**T**) and hybrid Chain-Tricot (**CT**) depending on application.
For prepreg processing, a thin 0° glass yarn can be inserted during the stitching.

For a full «black» aspect, stitching is available also in black color.

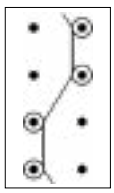
In the U.S., Black stitching is the standard. White stitching is available at an additional cost.



T = Tricot:
zig-zag pattern

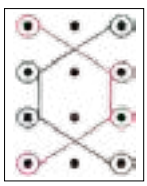


C = Chain:
straight pattern

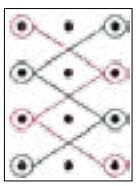


CT = Chain-Tricot:
a combination of both Chain and Tricot

Design stitching **X1** and **X2**: visual aspect inside the composites laminates.



X1 = Double
CT pattern



X2 = Double
Tricot pattern

→ SLITTING SERVICES

Online slitting capabilities as narrow as 14 cm (5.5'').

→ VISUAL INSPECTION (VQ)

Offline Visual Inspection can be proposed on our carbon fabric range for customer requiring high visual quality.

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