porcherindustries®

WELCOME TO A NEW WORLD
OF MATERIALS

COMPOSITES ON DEMAND

porcherindustries®

AT THE HEART OF INNOVATION

Porcher industries develops and manufactures reinforcements for composite materials, thermoplastic prepregs and laminates.
Intended for state-of-the-art industries, requirements for these products are very high and necessitate close client proximity. Innovation, new technologies and research in new products and processes are on-going.

Aerospace, Defense, Automotive, Transportation, Electronics, Sports Equipment, Oil & Gas, Renewable Energies, Industrial Applications.

VARIOUS MARKETS FOR COMPOSITES BUT SIMILAR REQUIREMENTS

Porcher Industries is comprised of various sectors all with high technology applications and a very wide diversity of clients and needs. All of these sectors have one common characteristic: they all have high levels of expectations and requirements for product quality and service.

RESPONSE AND QUALITY

Porcher Industries enjoys being in the leadership position in the market, thanks to flexibility in production and close cooperation between their technical teams and those of their clients.

A PIONEER SERVING INNOVATION

This market requires an on-going capacity for innovation. Most importantly, it is necessary to have the resources to find and create technical solutions for high performance applications.

DEDICATED DEVELOPMENT

Our engineers and technicians are dedicated to the on-going development of new products and new solutions.

They strive to create more than just a simple response to identified needs. They use a pro-active, visionary approach which entails continuous research, monitoring and evaluating potential innovations.

SUMMARY

E Glass fabrics ▸ Balanced

Weight (g/sqm)	Std width (mm)	Weave	Warp/Weft (yarn/cm)	Weight ratio	Warp	Weft	Style
17	1270	Plain	29.6 x 29.6	50 / 50	EC5 2.8	EC5 2.8	101
25	1040/1220	Plain	22.2 x 22.2	50 / 50	EC5 5.5	EC5 5.5	**106 ***
48	975/1270	Plain	23.6 x 18.6	56 / 44	EC5 11	EC5 11	**1080 ***
69	975/1270	Plain	15.5 x 15.5	50 / 50	EC7 22	EC7 22	2112
81	1000	Plain	12.6 x 11.1	53 / 47	EC9 34	EC9 34	**1610 ***
105	1000/1270	4 H Satin	23.6 x 22.9	51 / 49	EC5 11 x 2	EC5 11 x 2	**120 ***
105	1270	4 H Satin	23.6 x 22.9	51 / 49	EC7 22	EC7 22	2120
105	965/1120	Plain	23.6 x 22.9	51 / 49	EC7 22	EC7 22	**2116 ***
105	1000	Plain	15.5 x 14.8	51 / 49	EC9 34	EC9 34	962
161	1000	Plain	6.0 x 5.8	51 / 49	EC9 136	EC9 136	3217
162	1000/1270	2 x 2 Twill	11.8 x 11.5	51 / 49	EC9 68	EC9 68	**917 ***
163	835/1250/1670	Plain	11.8 x 11.8	50 / 50	EC9 68	EC9 68	**7630 ***
193	1220	2 x 2 Twill	14.0 x 14.0	50 / 50	EC9 68	EC9 68	**3423***
200	1000	Plain	8.1 x 6.5	56 / 44	EC9 136	EC9 136	**3212 ***
202	965/1270	Plain	17.4 x 11.8	60 / 40	EC9 68	EC9 68	**7628 ***
231	1270	Plain	17.4 x 8.1	52 / 48	EC9 68	EC9 136	7637
235	1270	Plain	17.4 x 8.0	52 / 48	EC9 68	EC9 136	**7642 ***
278	1000	2 x 2 Twill	7.0 x 6.4	52 / 48	EC9 68 x 3 t0	EC9 204	**3063 ***
278	1000	Plain	7.0 x 6.4	52 / 48	EC9 68 x 3 t0	EC9 204	**3226 ***
290	1280	2 x 2 Twill	7.0 x 7.0	50 / 50	EC9 68 x 3 t0	EC9 204	**10055***
296	1000/1270/1450	8 H Satin	22.9 x 21.1	52 / 48	EC6 68	EC6 68	**7781 ***
302	1000/1270	8 H Satin	22.9 x 21.1	52 / 48	EC9 68	EC9 68	**7581 ***
305	1200	8 H Satin	23.2 x 21.4	52 / 48	EC9 34 x 2	EC9 34 x 2	**1581 ***
320	1000	Plain	13.1 x 10.1	56 / 44	EC9 136	EC9 136	3704
345	1240	Plain	6.0 x 5.3	60 / 40	EC9 68 x 5 t0	EC9 272	3263
360	1000	2 x 2 Twill	13.1 x 13.3	50 / 50	EC9 136	EC9 136	3801
391	1000/1250	2 x 2 Twill	6.0 x 6.7	53 / 47	EC9 68 x 5 t0	EC9 272	**1989 ***
391	1250	Plain	6.0 x 6.7	53 / 47	EC9 68 x 5 t0	EC9 272	3268
418	1000	3 x 1 Twill	19.0 x 11.8	62 / 38	EC9 136	EC9 136	3858
430	1230	2 x 2 Twill	19.2 x 11.8	62 / 38	EC9 136	EC9 136	4740
443	1000	Mock Leno	6.0 x 8.5	48 / 52	EC9 68 x 5 t0	EC9 272	3227
545	1270	8 H Satin	20.7 x 19.0	52 / 48	EC9 136	EC9 136	**3783 ***

* core range

E Glass fabrics ▸ Unidirectional

Weight (g/sqm)	Std width (mm)	Weave	Warp/Weft (yarn/cm)	Weight ratio	Warp	Weft	Style
19	965	Plain	23.6 x 20.7	70 / 30	EC5 5.5	EC5 2.8	104
23	1030	Plain	25.4 x 15.8	64 / 36	EC5 5.5	EC5 5.5	**792** *
32	1030	Plain	23.6 x 10.3	82 / 18	EC5 11	EC5 5.5	**771** *
33	1270	Plain	22.2 x 18.5	38 / 62	EC5 5.5	EC5 11	3364
35	1030	Plain	23.6 x 16.3	75 / 25	EC5 11	EC5 5.5	**778** *
187	1000	4 H Satin	22.3 x 10.4	81 / 19	EC9 68	EC9 34	886
220	1000	Plain	6.0 x 7.0	93 / 7	EC9 68 x 5 t0	EC7 22	2071
300	1000	4 H Satin	19.0 x 12.0	87 / 13	EC9 68 x 2	EC5 11 x 2	**1543** *
306	1000	4 H Satin	19.2 x 11.1	87 / 13	EC9 136	EC9 34	**892** *
355	1270	8 H Satin	46.0 x 9.5	90 / 10	EC9 68	EC9 34	7576
431	1200/1250	Plain	5.5 x 6.3	90 / 10	EC9 136 x 5 t0	EC9 68	**3025** *

High Modulus Glass fabrics ▸ Balanced

Weight (g/sqm)	Std width (mm)	Weave	Warp/Weft (yarn/cm)	Weight ratio	Warp	Weft	Style
119	1524/1560	Plain	9.2 x 8.4	52 / 48	SC9 33 x 2	SC9 33 x 2	6522
160	1000	2 x 2 Twill	11.8 x 11.5	51 / 49	SC9 66	SC9 66	6917
190	1270	8 H Satin	28.7 x 27.5	51 / 49	SC9 33	SC9 33	**6580** *
190	1000	Plain	7.1 x 7.1	50 / 50	SC9 66 x 2	SC9 66 x 2	6533
300	965	8 H Satin	22.8 x 21.3	52 / 48	SC9 33 x 2	SC9 33 x 2	6581
300	1270	8 H Satin	22.4 x 21.2	52 / 48	SC9 66	SC9 66	**6781** *
360	1270	8 H Satin	47.2 x 9.5	90 / 10	SC9 66	SC9 33	6576
830	1270	Plain	2.0 x 2.0	50 / 50	S2-463AA-250	S2-463AA-250	**3898** *

* core range

E Glass fabrics

Black finish (carbon appearance) - Balanced

Weight (g/sqm)	Std width (mm)	Weave	Warp/Weft (yarn/cm)	Weight ratio	Warp	Weft	Style
278 / 287	1000	2 x 2 Twill	7.0 x 6.4	52 / 48	EC9 68 x 3 t0	EC9 204	3063
391 / 406	1000/1250	2 x 2 Twill	6.0 x 6.7	53 / 47	EC9 68 x 5 t0	EC9 272	1989

Aluminium finish - Balanced

Weight (g/sqm)	Std width (mm)	Weave	Warp/Weft (yarn/cm)	Weight ratio	Warp	Weft	Style
162	1000	2 x 2 Twill	11.8 x 11.5	51 / 49	EC9 68	EC9 68	917
278	1000	Plain	7.0 x 6.4	52 / 48	EC9 68 x 3 t0	EC9 204	3226
278	1000	2 x 2 Twill	7.0 x 6.4	52 / 48	EC9 68 x 3 t0	EC9 204	3063
391	1000/1250	2 x 2 Twill	6.0 x 6.7	53 / 47	EC9 68 x 5 t0	EC9 272	1989

Finish

Finish	Applications & compatibility
731	For epoxy resins, compatible with polyester & vinylester resins.
K506	Chrome-free finish to replace Volan-A based finishes. Finish dedicated for aeronautical applications.
35 / 135	Black finish
786	Aluminium finish

Weave set

Powdering for preforming and stabilization *

Compatibility	Softening temperature (°C)
Polyester	95 - 105
Epoxy	80 - 130

Benefits

- Preformable fabrics
- Easier handling
- Easier cutting
- Stabilization of light fabrics

* on one face or both faces

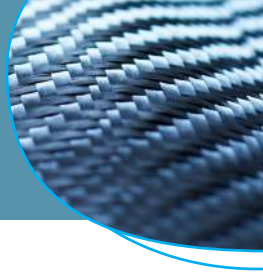
High clear E Glass fabrics

Weight (g/sqm)	Std width (mm)	Weave	Warp/Weft (yarn/cm)	Weight ratio	Warp	Weft	Style
124	685/762	Plain	9.4 x 8.7	52 / 48	EC9 34 x 2	EC9 34 x 2	1522
124	685/762	Plain	9.4 x 8.7	52 / 48	EC9 68	EC9 34 x 2	S125
145	685/762	Plain	11.8 x 7.1	62 / 38	EC9 34 x 2	EC9 68	1521
145	685/762	Plain	7.1 x 8.6	62 / 38	EC9 68 x 2	EC9 68	7537
200	685/762	Plain	7.4 x 7.4	50 / 50	EC9 68 x 2	EC9 68 x 2	7533
200	685/762	Plain	9.4 x 5.5	63 / 37	EC9 68 x 2	EC9 68 x 2	7534
200	762/965	Plain	6.3 x 5.5	53 / 47	EC9 68 x 3	EC9 68 x 3	7532

High clear S Glass fabrics

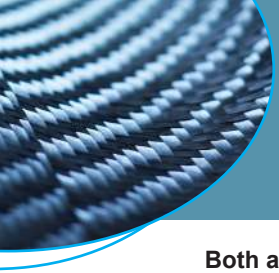
Weight (g/sqm)	Std width (mm)	Weave	Warp/Weft (yarn/cm)	Weight ratio	Warp	Weft	Style
114	685/762	Plain	9.4 x 8.7	52 / 48	SC9 33 x 2	SC9 33 x 2	6522
190	685/762	Plain	7.1 x 7.1	50 / 50	SC9 66 x 2	SC9 66 x 2	6533

Carbon fabrics ▸ Balanced



Both available in aeronautical and industrial grade

Weight (g/sqm)	Std width (mm)	Weave	Warp/Weft (yarn/cm)	Weight ratio	Warp	Weft	Style
1K HS yarn							
95	1000	Plain	7.0 x 7.0	50 / 50	1K HS	1K HS	3607
120	1000	Plain	9.0 x 9.0	50 / 50	1K HS	1K HS	3623
120	1000	2 x 2 Twill	9.0 x 9.0	50 / 50	1K HS	1K HS	3913
135	1000	Plain	10.0 x 10.0	50 / 50	1K HS	1K HS	13624
150	1250	2 x 2 Twill	11.0 x 11.0	50 / 50	1K HS	1K HS	3971
160	1000	2 x 2 Twill	11.9 x 11.9	50 / 50	1K HS	1K HS	13961
3K HS yarn							
160	1000	Plain	4.0 x 4.0	50 / 50	3K HS	3K HS	3750
160	1000	2 x 2 Twill	4.0 x 4.0	50 / 50	3K HS	3K HS	4750
185	1000	4 H Satin	4.7 x 4.7	50 / 50	3K HS	3K HS	3198
196	1000/1270	Plain	4.9 x 4.9	50 / 50	3K HS	3K HS	3085
196	1000/1270	2 x 2 Twill	4.9 x 4.9	50 / 50	3K HS	3K HS	3257
200	1000/1250	Plain	5.0 x 5.0	50 / 50	3K HS	3K HS	3679
200	1000/1250	2 x 2 Twill	5.0 x 5.0	50 / 50	3K HS	3K HS	3692
220	1000	Plain	5.5 x 5.5	50 / 50	3K HS	3K HS	4563
220	1000	4 H Satin	5.5 x 5.5	50 / 50	3K HS	3K HS	3419
225	1000	2 x 2 Twill	5.5 x 5.7	49 / 51	3K HS	3K HS	4555
245	1000	Plain	6.0 x 6.0	50 / 50	3K HS	3K HS	3752
245	1000/1250	2 x 2 Twill	6.0 x 6.0	50 / 50	3K HS	3K HS	3105
285	1000	Plain	7.0 x 7.0	50 / 50	3K HS	3K HS	4544
285	1000	2 x 2 Twill	7.0 x 7.0	50 / 50	3K HS	3K HS	3101
285	1000	4 x 4 Twill	7.0 x 7.0	50 / 50	3K HS	3K HS	3309
285	1000/1250	5 H Satin	7.0 x 7.0	50 / 50	3K HS	3K HS	3106
370	1000	8 H Satin	9.3 x 9.1	50 / 50	3K HS	3K HS	3186
6K HS yarn							
280	1200	Plain	3.5 x 3.5	50 / 50	6K HS	6K HS	3656
280	1200	2 x 2 Twill	3.5 x 3.5	50 / 50	6K HS	6K HS	3658
280	1200	5 H Satin	3.5 x 3.5	50 / 50	6K HS	6K HS	4552
300	1000/1250	Plain	3.7 x 3.7	50 / 50	6K HS	6K HS	3548
375	1200	5 H satin	4.6 x 4.6	50 / 50	6K HS	6K HS	4540
410	1000	2 x 2 Twill	5.0 x 5.0	50 / 50	6K HS	6K HS	3766

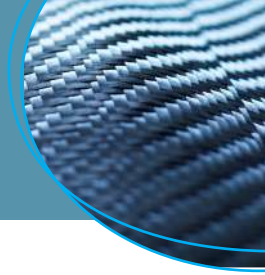


Carbon fabrics ▸ Balanced

Both available in aeronautical and industrial grade

Weight (g/sqm)	Std width (mm)	Weave	Warp/Weft (yarn/cm)	Weight ratio	Warp	Weft	Style
12K HS yarn							
410	1000	Plain	2.5 x 2.5	50 / 50	12K HS	12K HS	4501
420	1250	Plain	2.6 x 2.6	50 / 50	12K HS	12K HS	3931
420	1250	2 x 2 Twill	2.6 x 2.6	50 / 50	12K HS	12K HS	3855
470	1250	Plain	2.9 x 2.9	50 / 50	12K HS	12K HS	13757
470	1250	2 x 2 Twill	2.9 x 2.9	50 / 50	12K HS	12K HS	3758
540	1000	5 H Satin	3.3 x 3.3	50 / 50	12K HS	12K HS	3938
600	1250	Plain	3.7 x 3.7	50 / 50	12K HS	12K HS	3356
600	1250	2 x 2 Twill	3.7 x 3.7	50 / 50	12K HS	12K HS	3343
650	1250	2 x 2 Twill	4.0 x 4.0	50 / 50	12K HS	12K HS	3305
680	1270	2 x 2 Twill	4.2 x 4.2	50 / 50	12K HS	12K HS	3702
24K HS yarn							
420	1000	2 x 2 Twill	1.2 x 1.2	50 / 50	24K HS	24K HS	4532
650	1000	2 x 2 Twill	1.9 x 1.9	50 / 50	24K HS	24K HS	3988
830	1250	2 x 2 Twill	2.5 x 2.5	50 / 50	24K HS	24K HS	4533
1000	1250	2 x 2 Twill	2.9 x 2.9	50 / 50	24K HS	24K HS	4527
48K HS yarn							
1350	1250	2 x 2 Twill	2.1 x 2.1	50 / 50	48K HS	48K HS	3872

Carbon Flat Tow fabrics ▸ Balanced



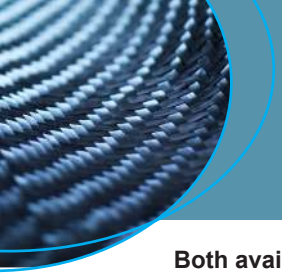
Both available in aeronautical and industrial grade

Weight (g/sqm)	Std width (mm)	Weave	Warp/Weft (yarn/cm)	Weight ratio	Warp	Weft	Style
193	1000/1270	Plain	1.2 x 1.2	50 / 50	12K HS	12K HS	2005 (1)
193	1000/1270	2 x 2 Twill	1.2 x 1.2	50 / 50	12K HS	12K HS	2015 (1)
220	1000	Plain	1.35 x 1.35	50 / 50	12K HS	12K HS	2001
220	1000	2 x 2 Twill	1.35 x 1.35	50 / 50	12K HS	12K HS	2031
240	1200	Plain	1.5 x 1.5	50 / 50	12K HS	12K HS	4545
240	1000	2 x 2 Twill	1.5 x 1.5	50 / 50	12K HS	12K HS	4516
290	1000/1270	Plain	1.8 x 1.8	50 / 50	12K HS	12K HS	2010
290	1000	2 x 2 Twill	1.8 x 1.8	50 / 50	12K HS	12K HS	2009
300	1000	Plain	1.85 x 1.85	50 / 50	12K HS	12K HS	4635
300	1000	2 x 2 Twill	1.85 x 1.85	50 / 50	12K HS	12K HS	3975
370	1500	Plain	2.3 x 2.3	50 / 50	12K HS	12K HS	3336
370	1000	2 x 2 Twill	2.3 x 2.3	50 / 50	12K HS	12K HS	4504
385	1250	Plain	2.4 x 2.4	50 / 50	12K HS	12K HS	2013
385	1250	2 x 2 Twill	2.4 x 2.4	50 / 50	12K HS	12K HS	2011

(1) Powder coated on one face for stabilization

IM Carbon fabrics ▸ Balanced

Weight (g/sqm)	Std width (mm)	Weave	Warp/Weft (yarn/cm)	Weight ratio	Warp	Weft	Style
200	1000	Plain	4.3 x 4.3	50 / 50	T800H 6K	T800H 6K	3979
200	1000	2 x 2 Twill	4.3 x 4.3	50 / 50	T800H 6K	T800H 6K	3651
205	700	Plain	1.2 x 1.2	50 / 50	IMS65 24K	IMS65 24K	14517
285	1000	5 H Satin	6.3 x 6.3	50 / 50	T800H 6K	T800H 6K	3978
300	1000	2 x 2 Twill	3.3 x 3.3	50 / 50	T800H 12K	T800H 12K	3989



Carbon fabrics ▸ Unidirectional

Both available in aeronautical and industrial grade

Weight (g/sqm)	Std width (mm)	Weave	Warp/Weft (yarn/cm)	Weight ratio	Warp	Weft	Style
3K HS							
130	1000	Plain	4.9 x 5.0	75 / 25	3K HS	1K HS	3606
160	1000	Plain	4.9 x 3.1	61 / 39	3K HS	3K HS	3199
165	1000	Plain	8.0 x 4.0	97 / 3	3K HS	EC5 11	3338
170	1000	Plain	7.0 x 4.4	85 / 15	3K HS	EC9 68 TP	3421
6K HS							
200	1000	Plain	4.9 x 2.0	97 / 3	6K HS	EC9 34 TP	3673
270	1200	Plain	6.6 x 2.5	97 / 3	6K HS	EC9 34 TP	4732
12K HS							
305	1000	Plain	3.5 x 4.5	95 / 5	12K HS	EC9 34 TP	13796
320	1000	Plain	3.5 x 4.5	90 / 10	12K HS	1K HS	13795
470	1250	2 x 2 Twill	4.6 x 4.6	80 / 20	12K HS	3K HS	14548
530	1000	4 H Satin	6.2 x 4.4	94 / 6	12K HS	EC9 68 TP	3922
600	1000	4 H Satin	7.5 x 2.0	99 / 1	12K HS	EC9 34 TP	3674
810	500	4 H Satin	10.0 x 2.0	99 / 1	12K HS	EC9 34 TP	3346
24K HS							
560	1000	Plain	3.25 x 1.3	98 / 2	24K HS	Hot Melt glass yarn	15521
650	1200	4 H Satin	3.7 x 2.0	97 / 3	24K HS	EC9 68 TP	3999

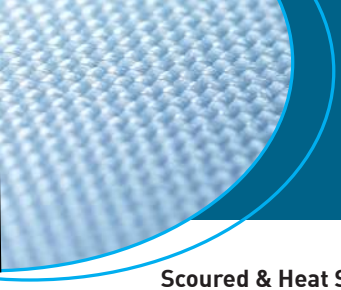
Carbon Flat Tow fabrics ▸ Unidirectional

Weight (g/sqm)	Std width (mm)	Weave	Warp/Weft (yarn/cm)	Weight ratio	Warp	Weft	Style
180	1000	2 x 2 Twill	2.0 x 2.5	91 / 9	12K HS	Hot Melt glass yarn	4509
205	1000	Plain	2.4 x 1.0	96 / 4	12K HS		4510
240	1000	Plain	2.85 x 1.0	96 / 4	12K HS		15520
300	1000	Plain	3.7 x 1.0	97 / 3	12K HS		4500
460	1000	Plain	5.5 x 1.0	98 / 2	12K HS		4557
300	1000	Plain	3.7 x 2.0	97 / 3	12K HS	EC9 34 TP	4508
300	1000	Plain	3.0 x 3.0	80 / 20	12K HS	3K HS	3774

Para-aramid fabrics ▸ Balanced

Weight (g/sqm)	Std width (mm)	Weave	Warp/Weft (yarn/cm)	Weight ratio	Warp	Weft	Style (1)
62	1270	Plain	13.4 x 13.4	50 / 50	Kevlar® 49 215 dtex	Kevlar® 49 215 dtex	5120
170	1000/1270	Plain	6.7 x 6.7	50 / 50	Kevlar® 49 1270 dtex	Kevlar® 49 1270 dtex	5281
170	1270	2 x 2 Twill	6.7 x 6.7	50 / 50	Kevlar® 49 1270 dtex	Kevlar® 49 1270 dtex	5284
170	1270	4 H Satin	6.7 x 6.7	50 / 50	Kevlar® 49 1270 dtex	Kevlar® 49 1270 dtex	5285
220	1270	Plain	6.6 x 6.6	50 / 50	Kevlar® 49 1580 dtex	Kevlar® 49 1580 dtex	5328
460	1320	Plain	6.7 x 6.7	50 / 50	Kevlar® 29 3300 dtex	Kevlar® 29 3300 dtex	5770

(1) Finish: available either in LS (Loom State) or S (Scoured)



Synthetic fabrics ▸ Peel Ply

Scoured & Heat Set polyamide fabrics

Weight (g/sqm)	Std width (mm)	Yarn	Warp/Weft (yarn/cm)	Colored Threads	Finish	Style
82	1630	PA 66 HT 235 dtex	19 x 15	Yes (red)	Greige	9280 POO
82	1640	PA 66 HT 235 dtex	19 x 15	No	Greige	9222 POO
90	1500	PA 66 HT 235 dtex	19 x 19	No	Greige	9202 POO
90	1500	PA 66 HT 235 dtex	19 x 19	No	Dyed*	9202 TOO
105	1640	PA 66 HT 235 dtex	22 x 21	No	Greige	9200 DPO
105	1640	PA 66 HT 235 dtex	22 x 21	No	Dyed*	9200 TOO

Scoured & Heat Set polyester fabrics

Weight (g/sqm)	Std width (mm)	Yarn	Warp/Weft (yarn/cm)	Colored Threads	Finish	Style
60	1600	PET 50 dtex	58 x 38	No	Greige	96044 DPO
90	1650	PET 140 dtex	28 x 28	No	Dyed*	8111 TOO
105	1640	PET 280 dtex	18 x 18	No	Greige	8231 POO

Synthetic fabrics ▸ Structural bonding

Scoured & Heat Set polyester fabrics

Weight (g/sqm)	Std width (mm)	Yarn	Warp/Weft (yarn/cm)	Colored Threads	Finish	Style
90	1000/1320	PET 140 dtex	28 x 28	No	Greige	8115 DPO

* Available in 3 colors

Dry Fibers

ONE-STEP-PROCESSING FOR VERSATILITY AND COST EFFICIENCY

Porcher Industries Dry Fiber technology uses a cost-effective one-step-process to impregnate the fiber.
Dry Fiber can be produced in flat calibrated width for AFP or rounder non-calibrated formats for winding, with a variety of different fiber areal weights, binder chemistries and binder rates available on request.

Binder chemistry	High speed AFP	T°C Resistance	Mechanical properties
Thermoset (TS)	★	★★★	★★
Thermoplastic (TP)	★★	★★	★★★
Thermoplastic high processability (TP HP)	★★★	★	★★★
Thermoplastic high T°C (TP HT)	★	★★★	★★

Available in 12K/24K carbon fiber (HS/IM - FAW 126 or 262 g/m2 - Width ¼")

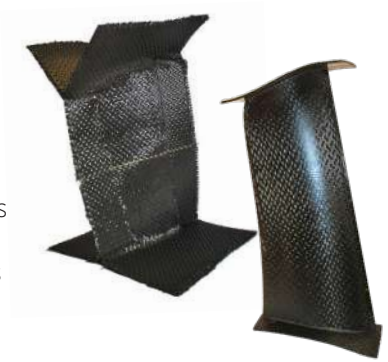
OUTSTANDING FEATURES FOR EXCLUSIVE BENEFITS:

- Excellent AFP processing
  Fast and without clogging machinery
- OOA processing
  Reduces cycle times and capex
- Good epoxy resin compatibility, even with TP binder
- Longer shelf life than thermoset prepregs 2-3 years
- Consistent binder application that reduces machine downtime due to fiber fuzz
- No cold storage required
- No paper or film interleave, reducing waste and fuzz in AFP processing
- Highly conformable tow with easy steering in high curvatures
- 100% continuous fiber
  No splice allowing optimized part design
- Optimized process
  Fibers and binders are tailored to your requirements
- High resin permeability
  for faster LRI and RTM processes

3D solutions

CREATING STRUCTURES IN THREE DIMENSIONS UNLIMITED SOLUTIONS

porcher d3sign®

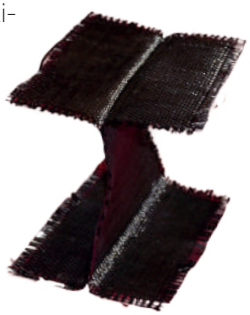


Porcher D3SIGN® fabrics offer:

- complex design patterns per customer requirements
- variable thicknesses in length and/or width,
- fabric density up to 200 yarns/cm on multiple layers (carbon, glass, ceramic fibers).

Porcher D3SIGN® fabrics advantages:

- easy handling,
- process optimization, thanks to its easy lay-up compared to multi-plied stacking,
- high mechanical performances of final part - initial cross linking between plies thanks to 3D weaving.



Composites on demand,
the innovation service by Porcher industries

THERMOPLASTIC COMPOSITES ON DEMAND

This innovative support service provides manufacturers and startups with the benefit of Porcher industries' wealth of expertise in the design of very-high-performance thermoplastic technical solutions - supporting them right from the early stages.

The Composites On Demand range is intended for manufacturers and startups looking to optimize the properties of some parts thanks to composite materials, not least in the automotive, aeronautical, construction and consumers goods sectors.

Through this service provision, Porcher industries' R&D teams offer to work collaboratively on the joint custom design of composite products. Based on the performance targets and various criteria defined by the manufacturer, Porcher industries' experts define the best interface between the fiber and the chemistry in order to optimize the technical performance of the thermoplastic composite material.

The Composites On Demand range can be adjusted in line with requirements. For example, it can include brainstorming workshops with Porcher industries' experts, assistance with drawing up specifications, adaptation of technical solutions and pilot production as well as, ultimately, industrial production of course.

The decision to switch from metal to composite is usually grounded in a search for weight savings and improved performances. But the current economic and geopolitical backdrop is proving game-changing: the strong pressure on several metals including titanium - for which Russia is the world's leading producer - is speeding up the transition to thermoplastic composite solutions, which now has major strategic implications.

Our process

Reinforcements

- **Carbon**
- **Glass**
- **Para-aramid**
- **Natural fiber (flax)**

+

TP matrices

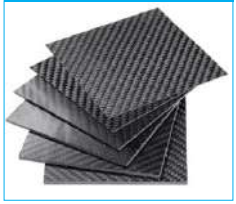
PEEK
PEKK
PEI
PPS
PC
TPU (HT)
TPU (LT)
PA12
PA6
PA66

Thermoplastic prepregs

pipreg®

PIPREG are thermoplastic pre-impregnated fabrics for direct part consolidation. Micronized powder is applied onto a dry treated fabric to produce a roll.

High performance thermoplastic laminates



pilam

PILAM are made of PIPREG plies stacked with precise fiber orientations, hot pressed under high pressure to form a high performances thermoplastic composites laminate.

Near net shape 2D TP laminates preforms

PREFORMS are cut-out laminates with tapered thickness and welded patches, ready to be stamped and over molded. Preforms are also available from Pipreg rolls.

pilam are available:

in thickness:
from 0,3 mm to 40 mm

in size:
length: **from 120 cm to 240 cm**
width: **from 80 cm to 150 cm**

in 2D near net shape preforms:
Tapered thickness
Nesting to limit waste
Welding

Thermoplastic composites

A wide range of matrices

Polymer	Impact resistance	Chemical resistance	Flame retardant	Thermal resistance
PEEK	★★★★	★★★★	★★★	★★★★
PEKK	★★★★	★★★★	★★★	★★★
PEI	★★★	★★	★★★★	★★★
PPS	★★	★★★★	★★★	★★★
PC	★★★★	★★	★★	★★
PA66	★★★	★★	★	★★
PA6	★★★	★★	★	★★
TPU HT	★★★	★★	★	★
PA 12	★★★	★★	★	★
TPU LT	★★	★★	★	★

Technical specificity	Micro structure	Process T° (°C)	Max service T° (°C)
Excellent tribological properties Hydrolysis resistance	Semi-crystalline	400	120-260
Lower temperature processability than PEEK Hydrolysis resistance	Semi-crystalline	370	120-250
Recommended for finishing operations Not recommanded for use in hot hydraulic fluids	Amorphous	360	170
Inert to agressive chemicals (engine, hydraulic oils, fuels, solvents..)	Semi-crystalline	310	80-240
Exceptionnal impact resistance Transparency. Flame retardant grade	Amorphous	275	120
E-coat treatment compatible Outstanding crash resistance. Black colored	Semi-crystalline	280	125
E-coat treatment compatible Outstanding crash resistance. Black colored	Semi-crystalline	250	100
Good abrasion and wear resistance. Transparency. High modulus and high hardness	Amorphous	235	80
Good bonding and painting Washing and cleaning ability	Semi-crystalline	230	70
Processable at lower temperatures (<150°C) Thermoformable from 85°C (custom fit...)	Semi-crystalline	145	60

Thermoplastic composites

Why choosing Pilam ?

Cost effective solution

Short processing cycle allowing production series and optimization (thermoforming, over-molding)

Long shelf life at room temperature storage. Reduced surface finishing.

Easy recycling

Can be hot **formed** and **reprocessed** for recycling.

Biobased material options available.

High mechanical performances

High impact toughness and **fatigue strength** for durability.

Weight saving

2x to 3x lighter than steel, titanium and aluminum.

Chemical resistance in highly demanding environment

Resist to solvents, oils and other demanding environments without surface treatment.

Fully customizable solutions (on demand)

From rectangular format to complex 2D outline preforms with tapered thickness and welded patches.

Wide choice of fiber and hybridization : carbon, glass, aramid or natural fibers such as flax...

Selected choice of thermoplastics polymers.

Dedicated Engineering Team to support customer projects.

Secured sourcing and high-quality raw material

Strong partnerships with fiber and polymer suppliers for more than 20 years yet remaining independent to select the best solution for each project.

Highly integrated process from weaving stage to consolidated near net shape preform

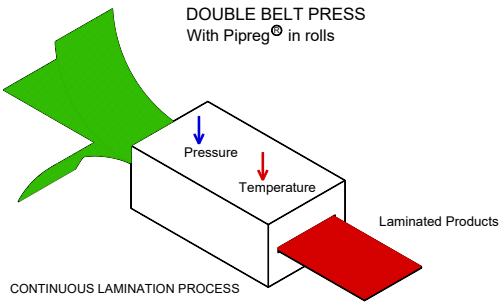
Agility & cost competitiveness

Aerospace qualified supplier for A350 Carbon/ PEEK clips and Airbus Helicopters

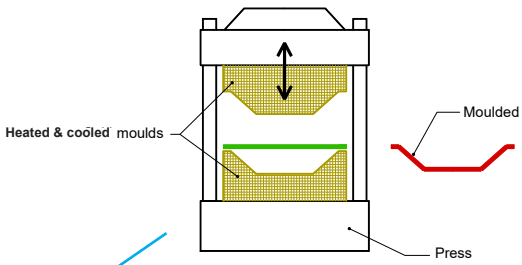
THERMOPLASTIC COMPOSITES ON DEMAND

HOW TO HANDLE OUR THERMOPLASTIC COMPOSITES

DOUBLE BELT PRESS
With Pipreg® in rolls

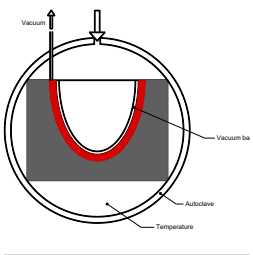


COMPRESSION MOLDING PROCESS
With Pipreg® layers

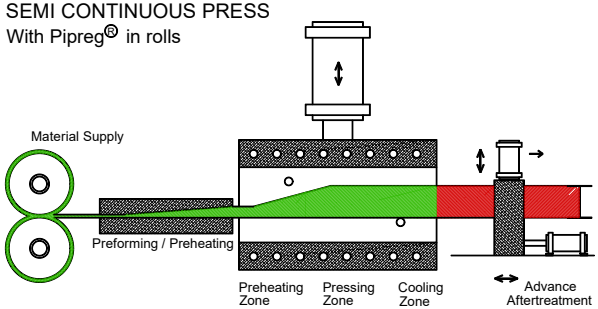


pipreg®

VACCUM BAG OR
AUTOCLAVE MOLDING :
with Pipreg® layers

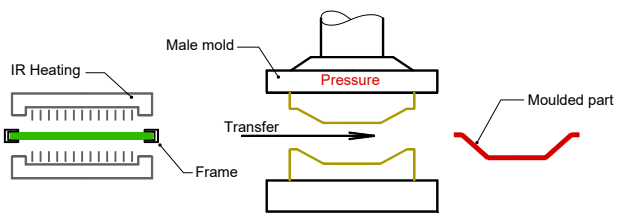


SEMI CONTINUOUS PRESS
With Pipreg® in rolls



pilam

THERMOFORMING : with Pilam® flat laminates



THERMOPLASTIC COMPOSITES

Polymer Data Sheet

PEEK

(Poly-Ether-Ether-Ketone)

Semi-crystalline polymer

Properties	
Melting temperature Tm	343°C
Density	1.30 g/cm3
Processing temperature Tp	390 +/- 10°C
Processing pressure	10 bars
Glass transition temperature Tg	143°C
Service temperature	120°C (Aerospace) 260°C (Low stress applications)

Performances

- Good mechanical properties from cryogenic to high temperatures
- Excellent tribologic properties
- High toughness
- Good resistance to creep and fatigue
- Excellent impact resistance
- Excellent environmental resistance
- Excellent hydrolysis resistance
- Very low smoke & toxic gas emission
- Good bonding & painting
- Unlimited shelf life at ambient conditions

Carbon Pipreg® rolls

Pipreg® areal weight (g/sqm)	Width (mm)	Weave	Warp/Weft (yarn/cm)	Warp/ Weft	Polymer content in volume (in weight)	Style
294	1100	Plain	4.9 x 4.9	3K HS	40 (33)	3085-P51
326	1000	Plain	4.9 x 4.9	3K HS	47 (40)	3085-P55
344	1000	Plain	4.9 x 4.9	3K HS	50 (43)	3085-P17
344	1000	2 x 2 Twill	4.9 x 4.9	3K HS	50 (43)	3257-P17
350	1000	4 H Satin	5.5 x 5.5	3K HS	44 (37)	3419-P03 [1]
427	1250	5 H Satin	7.0 x 7.0	3K HS	40 (33)	3106-P51
439	1250	5 H Satin	7.0 x 7.0	3K HS	42 (35)	3106-P52
456	1250	5 H Satin	7.0 x 7.0	3K HS	45 (38)	3106-P03 [1]
485	1250	5 H Satin	7.0 x 7.0	3K HS	49 (41)	3106-P57 [1]
479	1250	5 H Satin	7.0 x 7.0	3K HS	48 (40)	3106-P55
495	1250	5 H Satin	7.0 x 7.0	3K HS	50 (43)	3106-P17
497	1000/1250	2 x 2 Twill	1.8 x 1.8	12K HS	50 (43)	2009-P17

E Glass Pipreg® rolls

Pipreg® areal weight (g/sqm)	Width (mm)	Weave	Warp/Weft (yarn/cm)	Warp/Weft	Polymer content in volume (in weight)	Style
161	1270	4 H Satin	23.6 x 22.9	EC5 11x2	51 (35)	120-P17 [1]
450	1270	8 H Satin	22.9 x 21.1	EC6 68	50 (34)	7781-P17
456	1270	8 H Satin	22.9 x 21.1	EC9 68	50 (34)	7581-P17

S2® Glass Pipreg® rolls

Pipreg® areal weight (g/sqm)	Width (mm)	Weave	Warp/Weft (yarn/cm)	Warp/Weft	Polymer content in volume (in weight)	Style
460	1270	8 H Satin	22.4 x 21.2	SC9 66	50 (35)	6781-P17

[1] **aeronautical qualified**

Standard laminates

Reference	Nominal thickness (mm)	No. of plies	Stacking sequence
L03106-57100602	1.86	6	[(0,90)/(+45,-45)/(0,90)]s
L03106-57100702	2.17	7	$[(0,90)/(+45,-45)]_3/(0,90)$
L03106-57100802	2.48	8	$[[(0,90)/(+45,-45)]_2]s$
L03106-57100902	2.79	9	$[(0,90)/(+45,-45)]_4/(0,90)$
L03106-57101002	3.10	10	$[[(0,90)/(+45,-45)]_2/(0,90)]s$
L03106-57101102	3.41	11	$[(0,90)/(+45,-45)]_5/(0,90)$
L03106-57101202	3.72	12	$[[(0,90)/(+45,-45)]_3]s$
L03106-57101402	4.34	14	$[[(0,90)/(+45,-45)]_3/(0,90)]s$
L03106-57101502	4.65	15	$[(0,90)/(+45,-45)]_7/(0,90)$

Available dimensions: 800 x 1200 mm
Possibility to add surface ply like PEEK / Glass Pipreg or wire bronze mesh

Thick laminates

Reference	Minimum thickness (mm)	No. of plies	Stacking sequence
L03106-17103401	10	34	(0,90)
L03106-17104001	12	40	(0,90)
L03106-17105001	15	50	(0,90)
L03106-17106602	20	66	(0,90)
L03106-17108201	25	82	(0,90)
L03106-17109801	30	98	(0,90)
L03106-17111402	35	114	(0,90)
L03106-17113001	40	130	(0,90)

Available dimensions: 800 x 1200 mm

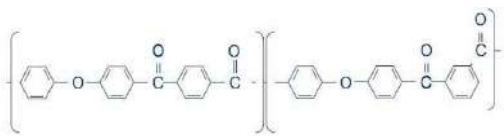
THERMOPLASTIC COMPOSITES ON DEMAND

THERMOPLASTIC COMPOSITES

Polymer Data Sheet

PEKK

(Poly-Ether-Ketone-Ketone)



Semi-crystalline polymer

Properties	
Melting temperature Tm	332°C
Density	1.29 g/cm3
Processing temperature Tp	370 +/- 10°C
Processing pressure	10 bars
Glass transition temperature Tg	162°C
Service temperature	120°C (Aerospace) & 250°C (low stress applications)

Performances

- Good mechanical properties from cryogenic to high temperatures
- High fracture toughness
- Good resistance to creep and fatigue
- Excellent impact resistance
- Excellent environmental resistance
- Excellent hydrolysis resistance
- Very low smoke & toxic gas emission
- Unlimited shelf life at ambient conditions

Carbon Pipreg® rolls

Pipreg® areal weight (g/sqm)	Width (mm)	Weave	Warp/Weft (yarn/cm)	Warp/Weft	Polymer content in volume (in weight)	Style
336	1000	Plain	4.9 x 4.9	3K HS	50 (42)	3085-PA1
336	1000	2 x 2 Twill	4.9 x 4.9	3K HS	50 (42)	3257-PA1
486	1250	5 H Satin	7.0 x 7.0	3K HS	50 (42)	3106-PA1
495	1000	2 x 2 Twill	1.8 x 1.8	12K HS	50 (42)	2009-PA1

E Glass Pipreg® rolls

Pipreg® areal weight (g/sqm)	Width (mm)	Weave	Warp/Weft (yarn/cm)	Warp/Weft	Polymer content in volume (in weight)	Style
157	1270	4 H Satin	23.6 x 22.9	EC5 11x2	50 (33)	120-PA7
444	1270	8 H Satin	22.9 x 21.1	EC6 68	50 (33)	7781-PA7
452	1270	8 H Satin	22.9 x 21.1	EC9 68	50 (33)	7581-PA7

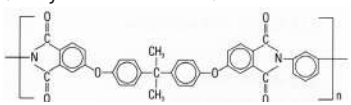
THERMOPLASTIC COMPOSITES ON DEMAND

Thermoplastic Composites

Polymer Data Sheet

PEI

(Poly-Ether-Imide)



Amorphous polymer

Properties	
Density	1.27 g/cm3
Processing temperature Tp	370 +/- 10°C
Processing pressure	10 bars
Glass transition temperature Tg	217°C
Service temperature	170°C (Low stress applications)

Performances

- Inherent flame resistance, LOI 47%
- Low smoke evolution
- Strength and modulus at elevated temperatures
- Good chemical resistance
- Unlimited shelf life at ambient conditions

PIPREG® ▸ PEI - Prepregs

Carbon Pipreg® rolls

Pipreg® areal weight (g/sqm)	Width (mm)	Weave	Warp/Weft (yarn/cm)	Warp/Weft	Polymer content in volume (in weight)	Style
340	1000	2 x 2 Twill	4.9 x 4.9	3K HS	50 (42)	3257-P44
489	1250	5 H Satin	7.0 x 7.0	3K HS	50 (42)	3106-P44
495	1000/1250	2 x 2 Twill	1.8 x 1.8	12K HS	50 (42)	2009-P44
521	1000	Plain	3.5 x 4.5	12K HS/ EC9 34 TP	50 (41)	13796-P44

E Glass Pipreg® rolls

Pipreg® areal weight (g/sqm)	Width (mm)	Weave	Warp/Weft (yarn/cm)	Warp/Weft	Polymer content in volume (in weight)	Style
157	1000/1270	4 H Satin	23.6 x 22.9	EC5 11x2	50 (33)	120-P44
432	1280	2 x 2 Twill	7.0 x 7.0	EC9 68x3 / EC9 204	50 (33)	10055-P24
440	1000/1270	8 H Satin	22.9 x 21.1	EC6 68	50 (33)	7781-P44
450	1270	8 H Satin	22.9 x 21.1	EC9 68	50 (33)	7581-P44

S2® Glass Pipreg® rolls

Pipreg® areal weight (g/sqm)	Width (mm)	Weave	Warp/Weft (yarn/cm)	Warp/Weft	Polymer content in volume (in weight)	Style
438	1270	8 H Satin	22.4 x 21.2	SC9 66	47 (32)	6781-P44

THERMOPLASTIC COMPOSITES ON DEMAND

THERMOPLASTIC COMPOSITES

Polymer Data Sheet

PPS

(Poly-Phenylene-Sulfide)

Semi-crystalline polymer

Properties	
Melting temperature Tm	280°C
Density	1.35 g/cm3
Processing temperature Tp	310 +/- 10°C
Processing pressure	10 bars
Glass transition temperature Tg	90°C
Service temperature	240°C (Low stress applications)

Performances

- Good impact resistance
- Inert to aggressive chemicals (engine & hydraulic oils, fuels, solvents, ...)
- Very good hydrolysis resistance
- Inherently flame retardant
- High hardness and rigidity
- Very low water absorption
- Excellent creep resistance (even at elevated temperatures)
- Excellent dimensional stability
- Unlimited shelf life at ambient conditions

Carbon Pipreg® rolls

Pipreg® areal weight (g/sqm)	Width (mm)	Weave	Warp/Weft (yarn/cm)	Warp/Weft	Polymer content in volume (in weight)	Style
357	750	Plain	5.0 x 5.0	3K HS	50 (43)	3679-P23
501	1250	5 H Satin	7.0 x 7.0	3K HS	50 (43)	3106-P23
510	1000/1250	2 x 2 Twill	1.8 x 1.8	12K HS	50 (43)	2009-P23
533	1000	Plain	3.5 x 4.5	12K HS/ EC9 34 TP	50 (43)	13796-P23
559	1000	Plain	3.5 x 4.5	12K HS/ 1K HS	50 (43)	13795-P31

E Glass Pipreg® rolls

Pipreg® areal weight (g/sqm)	Width (mm)	Weave	Warp/Weft (yarn/cm)	Warp/Weft	Polymer content in volume (in weight)	Style
159	1000/1270	4 H Satin	23.6 x 22.9	EC5 11x2	50 (34)	120-P23
450	1270	8 H Satin	22.9 x 21.1	EC6 68	50 (34)	7781-P23
462	1270	8 H Satin	22.9 x 21.1	EC9 68	50 (34)	7581-P23
827	1270	8 H Satin	20.7 x 19.0	EC9 136	50 (34)	3783-P23

S2® Glass Pipreg® rolls

Pipreg® areal weight (g/sqm)	Width (mm)	Weave	Warp/Weft (yarn/cm)	Warp/Weft	Polymer content in volume (in weight)	Style
460	1270	8 H Satin	22.4 x 21.2	SC9 66	50 (35)	6781-P23

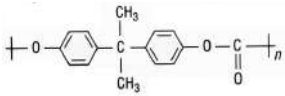
THERMOPLASTIC COMPOSITES ON DEMAND

Thermoplastic Composites

Polymer Data Sheet

PC

(Polycarbonate)



Amorphous polymer

Properties	
Density	1.20 g/cm3
Processing temperature Tp	275 +/- 10°C
Processing pressure	10 bars
Glass transition temperature Tg	143°C
Service temperature	120°C (Low stress applications)

Performances

- High transparency
- Flame retardant (UL94 V-0 rated)
- Exceptional impact resistance
- High ductility and toughness over a wide temperature range
- Low water absorption
- Good dimensional stability
- Unlimited shelf life at ambient conditions
- Halogen free
- UV stabilized

Carbon Pipreg® rolls

Pipreg® areal weight (g/sqm)	Width (mm)	Weave	Warp/Weft (yarn/cm)	Warp/Weft	Polymer content in volume (in weight)	Style
328	1250	2 x 2 Twill	4.9 x 4.9	3K HS	50 (40)	3257-P48
328	1000	Plain	4.9 x 4.9	3K HS	50 (40)	3085-P48
343	1250	2 x 2 Twill	5.0 x 5.0	3K HS	50 (40)	3692-P48
358	1000	2 x 2 Twill	4.9 x 4.9	3K HS	55 (45)	3257-P53
358	1000	Plain	4.9 x 4.9	3K HS	55 (45)	3085-P53
479	1250	5 H Satin	7.0 x 7.0	3K HS	50 (40)	3106-P48
479	1000/1250	2 x 2 Twill	1.8 x 1.8	12K HS	50 (40)	2009-P48
521	1000/1250	2 x 2 Twill	7.0 x 7.0	3K HS	55 (45)	3101-P53
521	1000	2 x 2 Twill	1.8 x 1.8	12K HS	55 (45)	2009-P53

E Glass Pipreg® rolls

Pipreg® areal weight (g/sqm)	Width (mm)	Weave	Warp/Weft (yarn/cm)	Warp/Weft	Polymer content in volume (in weight)	Style
444	1270	8 H Satin	22.9 x 21.1	EC9 68	50 (32)	7581-P48
571	1000	2 x 2 Twill	6.0 x 6.7	EC9 68x5 / EC9 272	50 (32)	1989-P48
612	1000	2 x 2 Twill	6.0 x 6.7	EC9 68x5 / EC9 272	55 (36)	1989-PX4 [1]

[1]: Black finish (carbon appearance)

THERMOPLASTIC COMPOSITES ON DEMAND

Thermoplastic Composites

Polymer Data Sheet

TPU

(Thermoplastic PolyUrethane, polyester based)

Properties	
Density	1.21 g/cm3
Processing temperature Tp	235 +/- 10°C
Processing pressure	10 bars
Glass transition temperature Tg	90°C
Service temperature	80°C (Low stress applications)

Performances

- High modulus
- High transparency
- Good toughness
- Good abrasion & wear resistance
- Good chemical resistance
- Low water absorption
- Unlimited shelf life at ambient conditions

Carbon Pipreg® rolls

Pipreg® areal weight (g/sqm)	Width (mm)	Weave	Warp/Weft (yarn/cm)	Warp/Weft	Polymer content in volume (in weight)	Style
334	1000	Plain	4.9 x 4.9	3K HS	50 (41)	3085-P29
334	1000	2 x 2 Twill	4.9 x 4.9	3K HS	50 (41)	3257-P29
362	1000	Plain	4.9 x 4.9	3K HS	55 (46)	3085-P54
362	1070	2 x 2 Twill	4.9 x 4.9	3K HS	55 (46)	3257-P54
377	1250	2 x 2 Twill	5.0 x 5.0	3K HS	55 (46)	3692-P54
449	1250	2 x 2 Twill	6.0 x 6.0	3K HS	55 (46)	3105-P54
481	1250	5 H Satin	7.0 x 7.0	3K HS	50 (41)	3106-P29
481	1000/1250	2 x 2 Twill	1.8 x 1.8	12K HS	50 (41)	2009-P29

E Glass Pipreg® rolls

Pipreg® areal weight (g/sqm)	Width (mm)	Weave	Warp/Weft (yarn/cm)	Warp/Weft	Polymer content in volume (in weight)	Style
283	1220	2 x 2 Twill	14.0 x 14.0	EC9 68	50 (32)	3423-P29
416	1000	2 x 2 Twill	7.0 x 6.4	EC9 68x3 / EC9 204	50 (32)	3063-P29
416	1000	2 x 2 Twill	7.0 x 6.4	EC9 68x3 / EC9 204	50 (32)	3063-P38 [1]
440	1000	2 x 2 Twill	7.0 x 6.4	EC9 68x3 / EC9 204	55 (36)	3063-P54
454	1280	2 x 2 Twill	7.0 x 7.0	EC9 68x3 / EC9 204	55 (36)	10055-P54
575	1000	2 x 2 Twill	6.0 x 6.7	EC9 68x5 / EC9 272	50 (32)	1989-P29
576	1000	2 x 2 Twill	6.0 x 6.7	EC9 68x5 / EC9 272	50 (32)	1989-P45 [2]

[1] Aluminium finish
[2] Black finish (carbon appearance)

THERMOPLASTIC COMPOSITES ON DEMAND

THERMOPLASTIC COMPOSITES

Polymer Data Sheet

TPU Low Temperature

(Thermoplastic PolyUrethane, polycaprolactone based)

Properties	
Density	1.19 g/cm3
Processing temperature Tp	145 +/- 10°C
Processing pressure	6 bars
Glass transition temperature Tg	-40°C
Service temperature	60°C (Low stress applications)

Performances

- Not transparent (white)
- Medium hardness (55D)
- Very high thermoplasticity level
- Good bonding
- Low melting point thermoplastic
- Processable at low temperature (< 150°C)
- Thermoformable from 85°C under low pressure (custom fit)

Carbon Pipreg® rolls

Pipreg® areal weight (g/sqm)	Width (mm)	Weave	Warp/Weft (yarn/cm)	Warp/Weft	Polymer content in volume (in weight)	Style
373	1250	2 x 2 Twill	5.0 x 5.0	3K HS	55 (45)	3692-PD2

E Glass Pipreg® rolls

Pipreg® areal weight (g/sqm)	Width (mm)	Weave	Warp/Weft (yarn/cm)	Warp/Weft	Polymer content in volume (in weight)	Style
452	1280	2 x 2 Twill	7.0 x 7.0	EC9 68x3 EC9 204	55 (36)	10055-PD2
609	1250	2 x 2 Twill	6.0 x 6.7	EC9 68x5 EC9 272	55 (36)	1989-PD2
609	1250	2 x 2 Twill	6.0 x 6.7	EC9 68x5 EC9 272	55 (36)	1989-PD4 [1]
610	1250	2 x 2 Twill	6.0 x 6.7	EC9 68x5 EC9 272	55 (36)	1989-PD5 [2]
795	1270	8 H Satin	20.7 x 19.0	EC9 136	50 (31)	3783-PD7

[1] Aluminium finish
[2] Black finish (carbon appearance)

Thermoplastic Composites

Polymer Data Sheet

PA12

(Polyamide 12)

H - [NH - (CH2)11 - CO]n - OH

Semi-crystalline polymer

Properties	
Melting temperature Tm	176°C
Density	1.02 g/cm3
Processing temperature Tp	230 +/- 10°C
Processing pressure	10 bars
Glass transition temperature Tg	45°C
Service temperature	70°C (Low stress applications)

Performances

- Medium toughness
- Very good impact resistance
- Good chemical resistance
- Good abrasion resistance
- Lowest humidity absorption vs. all available polyamides
- Unlimited shelf life at ambient conditions

Carbon Pipreg® rolls

Pipreg® areal weight (g/sqm)	Width (mm)	Weave	Warp/Weft (yarn/cm)	Warp/Weft	Polymer content in volume (in weight)	Style
310	1000	Plain	4.9 x 4.9	3K HS	50 (37)	3085-P19
310	1250	2 x 2 Twill	4.9 x 4.9	3K HS	50 (37)	3257-P19
316	1250	2 x 2 Twill	5.0 x 5.0	3K HS	50 (37)	3692-P19
451	1250	5 H Satin	7.0 x 7.0	3K HS	50 (37)	3106-P19
451	1000/1250	2 x 2 Twill	1.8 x 1.8	12K HS	50 (37)	2009-P19

E Glass Pipreg® rolls

Pipreg® areal weight (g/sqm)	Width (mm)	Weave	Warp/Weft (yarn/cm)	Warp/Weft	Polymer content in volume (in weight)	Style
412	1270	8 H Satin	22.9 x 21.1	EC6 68	50 (28)	7781-P19
422	1270	8 H Satin	22.9 x 21.1	EC9 68	50 (28)	7581-P19
545	1000	2 x 2 Twill	6.0 x 6.7	EC9 68x5 EC9 272	50 (28)	1989-P19

THERMOPLASTIC COMPOSITES

Polymer Data Sheet

PA6

(Polyamide 6)

H - [NH - (CH2)5 - CO]n - OH

Semi-crystalline polymer

Properties	
Melting temperature Tm	220°C
Density	1.14 g/cm3
Processing temperature Tp	250 +/- 10°C
Processing pressure	5 bars
Glass transition temperature Tg	50°C
Service temperature	100°C

Performances

- Colored grade (black)
- Cost efficiency
- Outstanding crash resistance
- Medium water absorption
- Unlimited shelf life at ambient conditions

Thermoplastic Composites

Polymer Data Sheet

PA66

(Polyamide 66)

H - [NH - (CH2)6 - NH - CO - (CH2)4 - CO]n - OH

Semi-crystalline polymer

Properties	
Melting temperature Tm	262°C
Density	1.14 g/cm3
Processing temperature Tp	280 +/- 10°C
Processing pressure	5 bars
Glass transition temperature Tg	69°C
Service temperature	125°C

Performances

- Colored grade (black)
- Cost efficiency
- Outstanding crash resistance
- Medium water absorption
- Unlimited shelf life at ambient conditions

PIPREG® ▸ PA6

Carbon Pipreg® rolls

Pipreg® areal weight (g/sqm)	Width (mm)	Weave	Warp/Weft (yarn/cm)	Warp/Weft	Polymer content in volume (in weight)	Style
318	1000/1250	2 x 2 Twill	4.9 x 4.9	3K HS	50 (39)	3257-P56
469	1250	2 x 2 Twill	1.8 x 1.8	12K HS	50 (39)	2009-P56
761	1250	2 x 2 Twill	2.9 x 2.9	12K HS	50 (39)	3758-P56
761	1250	2 x 2 Twill	4.6 x 4.6	12K HS / 3K HS	50 (39)	14548-P56

E Glass Pipreg® rolls

Pipreg® areal weight (g/sqm)	Width (mm)	Weave	Warp/Weft (yarn/cm)	Warp/Weft	Polymer content in volume (in weight)	Style
404	1000	2 x 2 Twill	7.0 x 6.4	EC9 68 x 3 / EC9 204	50 (30)	3063-P56
424	1270	8 H Satin	22.9 x 21.1	EC6 68	50 (30)	7781-P56
432	1270	8 H Satin	22.9 x 21.1	EC9 68	50 (30)	7581-P56

PIPREG® ▸ PA 66

Carbon Pipreg® rolls

Pipreg® areal weight (g/sqm)	Width (mm)	Weave	Warp/Weft (yarn/cm)	Warp/Weft	Polymer content in volume (in weight)	Style
318	1000/1250	2 x 2 Twill	4.9 x 4.9	3K HS	50 (39)	3257-P99
469	1250	2 x 2 Twill	1.8 x 1.8	12K HS	50 (39)	2009-P99
761	1250	2 x 2 Twill	2.9 x 2.9	12K HS	50 (39)	3758-P99
761	1250	2 x 2 Twill	4.6 x 4.6	12K HS / 3K HS	50 (39)	14548-P99

E Glass Pipreg® rolls

Pipreg® areal weight (g/sqm)	Width (mm)	Weave	Warp/Weft (yarn/cm)	Warp/Weft	Polymer content in volume (in weight)	Style
404	1000	2 x 2 Twill	7.0 x 6.4	EC9 68 x 3 / EC9 204	50 (30)	3063-P72
424	1270	8 H Satin	22.9 x 21.1	EC6 68	50 (30)	7781-P72
432	1270	8 H Satin	22.9 x 21.1	EC9 68	50 (30)	7581-P72

Polypreg™ Flax/PP

NEW

Porcher industries offers **Polypreg Flax/PP fabrics made from commingled rovings of flax/PP yarns.** Other thermoplastics can be considered such as PA11 or PLA biopolymers. It is primarily designed for automotive decorative interior trims, such as dashboards, central console, door panels ...

The ability to combine various parameters, such as **flax thread thickness, commingled thermoplastic thread ratio, fabric weaving style, fabric color dying and mold surface finish, enables numerous visual design possibilities** and On Demand development. These Polypreg® can be **thermo-compressed with very short cycle time** and **over molded for backing structure and attachment clips.**

- Multiple natural visual effects
- Reduced environmental impact
- 100% recyclability
- Lightweight
- Quick processing time
- UV, Scratch, Impact & Fire resistant interior parts
- Acoustical absorption

THERMOPLASTIC COMPOSITES ON DEMAND

Armures	Weave patterns	Bindungen	Construccion
Toile	Plain	Leinwand	Tafetan
Sergé 2/2	2 x 2 Twill	Köper 2/2	Sarga 2/2
Sergé 4/4	4 x 4 Twill	Köper 4/4	Sarga 4/4
Satin de 4	4 H Satin	Satin 1/3	Satin 4
Satin de 5	5 H Satin	Satin 1/4	Satin 5
Satin de 8	8 H satin	Satin 1/7	Satin 8
Fausse gaze	Mock Leno	Scheindreher	Gasa de vuelta

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