

PF 700

PHENOLIC PREPREG RESIN SYSTEM

- Available with heavy-weight woven S and R glass
- Long shelf and shop life
- Excellent FST behaviour
- Ideal for press moulding large flat components
- 10 – 30 minute cure times at 160°C
- AGY HJ1 Approved
- Meets MIL-DTL-64154

INTRODUCTION

PF 700 is a phenolic resin system, designed for defence and industrial applications with excellent FST behaviour, high temperature resistance and ballistic performance

PF 700 can be used to manufacture monolithic and sandwich structures with cure temperatures between 120 and 160°C (250 and 320°F).

PF 700 offers flexible processing methods by press or autoclave.



PRODUCT INFORMATION

PF 700 phenolic resin system is available in a range of product formats to enhance the ballistic performance of the prepreg. Please consult your local sales contact for further information. Full contact details can be found at www.gurit.com.

PROPERTY	PF700-855g/m ² R-Glass	PF700-815g/m ² S-Glass	TEST STANDARD
Resin	Phenolic	Phenolic	-
Prepreg Weight	1012 ± 50 g/m ²	994 ± 50 g/m ²	EN 2329
Volatile	< 2.7 %	< 6.0 %	-
Resin Flow	7-15 %	7-15 %	-
Tackiness	T0 / None	T0 / None	-
Fibre Material	R-Glass	S-Glass	-
Fabric Weight	830 g/m ² ± 5 %	815 g/m ² ± 5 %	EN 2331
Weave Style	Plain Weave	Plain Weave	-
Resin Content	18 ± 1 %	18 ± 1 %	EN 2331
Typical Roll Width	1.27 m / 50 in	1.27 m / 50 in	-

PREPREG PROPERTIES

TRANSPORT & STORAGE

When stored sealed & out of direct sunlight.

STORAGE TEMP.	UNIT	VALUE
-18°C	months	12
+21°C	weeks	4

HEALTH AND SAFETY

Please refer to product SDS for up to date information specific to this product.

PREPREG PROCESSING

PRESS MOULDING

Recommended press moulding cure is 30 minutes at 160°C using a 2-5°C/min ramp-rate and 1 – 6.4bar (0.1 – 0.4 MPa) of pressure. When press moulding low resin content prepreg pressures between 7 to 16 bar are required. Alternative times and temperatures are included in the table below. Panels should be pressed to stops to gain the cured thickness required.

CURE TEMPERATURE	UNIT	VALUE
160°C / 320°C	minutes	30

AUTOCLAVE MOULDING

Recommended autoclave cure using a vacuum pressure of -1bar and autoclave pressure of 5bar, using 27 plies** of material (approximately 20mm thick cured laminate).

CURE STEP	TIME	TEMP.	PRESSURE	VACUUM
1 – Start	0 mins	30°C	0bar	-1bar
2 – Pressurise	40 mins	40°C	5bar	-1bar
3 – Ramp	30 mins	140°C	5bar	-1bar
4 – Dwell	90 mins	140°C	5bar	-1bar
5 – Ramp	30 mins	25°C	0bar	-1bar
6 – Stop	0 mins	25°C	0bar	-1bar

**for thicker laminates it will be necessary to extend step 4 (dwell) time

For further information regarding vacuum bag / oven and autoclave curing please contact the Gurit Technical Support Department

LAMINATE PROPERTIES

RESIN PROPERTIES

All data presented in this datasheet is based on the testing of a single batch of material, tested at room temperature (21°C + 71°F)

PROPERTY	UNIT	VALUE
Density	g/cm ³	1.05 – 1.15
Viscosity at 25°C	P	1.9 ±0.1
Solids at 135°C	%	62±2
Acidity at 25°C	pH	1.08±0.02

LAMINATE PROPERTIES

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PROPERTY	SYMBOL	PF700-855g/m ² R-Glass		PF700-815g/m ² S-Glass		TEST STANDARD
Number of Plies	-	4		4		-
Panel Manufacture Method	-	Autoclave				-
0° Tensile Strength	X _T	532 MPa	77 ksi	823 MPa	119 ksi	ISO 527-4
0° Tensile Modulus	E _{T11}	27 GPa	4 msi	30 GPa	4 msi	ISO 527-4
0° Compressive Strength	X _C	159 MPa	23 ksi	195 MPa	28 ksi	SACMA SRM1-94
0° Compressive Modulus	E _{C11}	28 GPa	4 msi	33 GPa	5 msi	SACMA SRM1-94
0° Flexural Strength	X _F	217 MPa	32 ksi	260 MPa	38 ksi	ISO 14125
0° Flexural Modulus	E _{F11}	14 GPa	2 msi	12 GPa	2 msi	ISO 14125
0° Interlaminar Shear Strength	X _{ILSS}	18 MPa	3 ksi	24 MPa	4 ksi	ISO 14129

BALLISTIC PROPERTIES

PRODUCT FORMAT	LAMINATE LAYERS	LAMINATE THICKNESS (mm)	LAMINATE WEIGHT (Kg/m ²)	PROJECTILE / V50 STOPPING SPEED (M/S)
PF700, S2 Glass 815g/msq	25	12.5	25-26	7.62mm, FSP / 772 m/s**
PF700, R Glass 830g/msq	25	12.5	25-26	7.62mm, FSP / 709**

** Third party testing completed on request of GURIT

NOTICE

All advice, instruction or recommendation is given in good faith but the Company only warrants that advice in writing is given with reasonable skill and care. No further duty or responsibility is accepted by the Company. All advice is given subject to the terms and conditions of sale (the Conditions) which are available on request from the Company or may be viewed at the Company's Website: www.gurit.com/terms-and-conditions.aspx.

The Company strongly recommends that Customers make test panels and conduct appropriate testing of any goods or materials supplied by the Company to ensure that they are suitable for the Customer's planned application. Such testing should include testing under conditions as close as possible to those to which the final component may be subjected. The Company specifically excludes any warranty of fitness for purpose of the goods other than as set out in writing by the Company. The Company reserves the right to change specifications and prices without notice and Customers should satisfy themselves that information relied on by the Customer is that which is currently published by the Company on its website. Any queries may be addressed to the Technical Services Department.

Gurit are continuously reviewing and updating literature. Please ensure that you have the current version, by contacting Gurit Marketing Communications or your sales contact and quoting the revision number in the bottom right-hand corner of this page.

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