

PRODUCT NOTES

2700 Prepreg system is specifically formulated for heat resistance and low water absorption which makes it suited for applications where it is exposed to high heat and high humidity environments. Customers using Toray's 2510 and 2511 resin system may easily adopt 2700 with minimal impact on their production environment.

- Cure temperatures at 250°F to 350°F / 121°C to 177°C
- Process flexibility: Vacuum bag, out of autoclave, autoclave, compression molding, AFP/ATL, and hand layup
- Low void content and optimized tack
- Excellent all-around structural properties
- Applications: Aerospace primary or secondary structure components, industrial and recreational applications.

PRODUCT SPECIFICATIONS

2700 has been tested using the following product forms, however final configurations are possible with numerous types of Torayca® unidirectional carbon fibers and other woven carbon or glass fabrics with Fiber Areal Weight (FAW) ranging from 70 g/m² to 300 g/m² and Resin Content, (Rc %) by weight percent, ranging from 24% to 46%.

Prepreg Description	Resin Content (wt%)	FAW (g/m ²)	Available Widths	Cured Ply Thickness
Carbon UD Tape (T700G-12K-31E/2700)	35	150	1/8 to 60in (3 – 1524mm)	0.0060in (0.152mm)
Carbon Plain Weave Fabric (T700S-12K-50C/2700)	42	190	38 (965 mm)	0.0083in (0.210mm)

HANDLING AND STORAGE LIFE

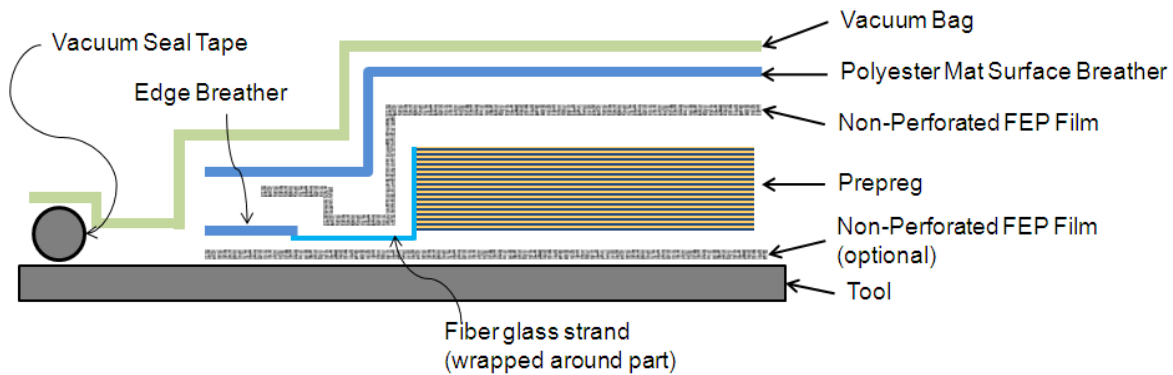
Storage Condition	Time from DOM*	Notes
< 10°F (-12°C)	24 Months	Keep in sealed container until thawed
10 – 85°F (-12 – 30°C)	28 Days	Optimal Tack/Drape is achieved at 72°F/50%RH

*Date of Manufacture

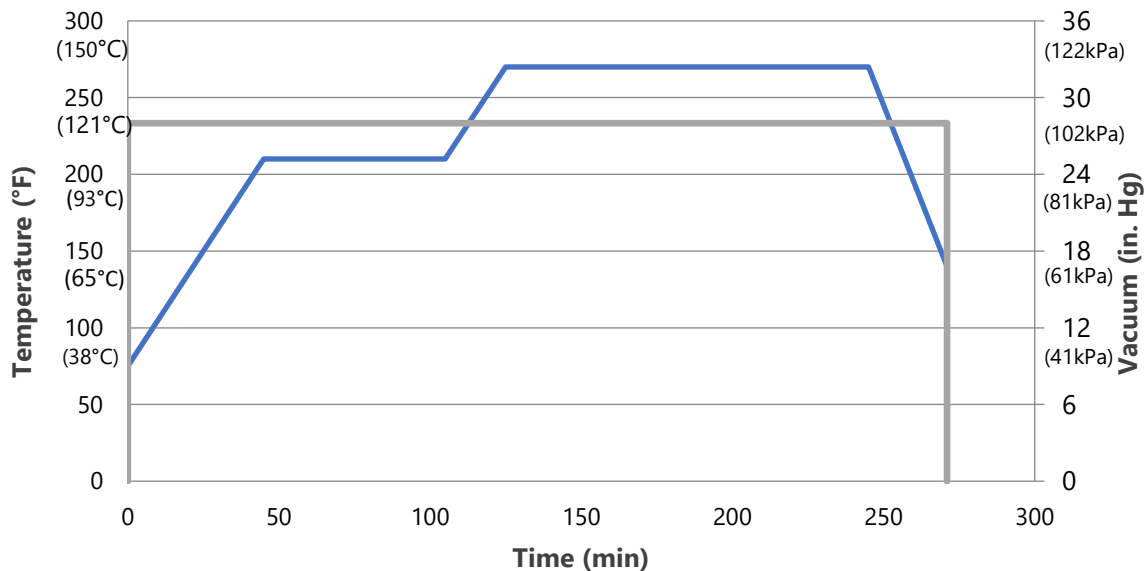
NEAT RESIN DATA

Test Type	Method	Value	Notes
Density	ASTM D595	1.273 g/cm ³	
Gel Time	ALPHA	54 minutes	Ramp from 72 to 270°F at 3.0°F/min
Cured Tg	ASTM D7028	Dry: 326°F/163°C	

BAGGING SCHEME



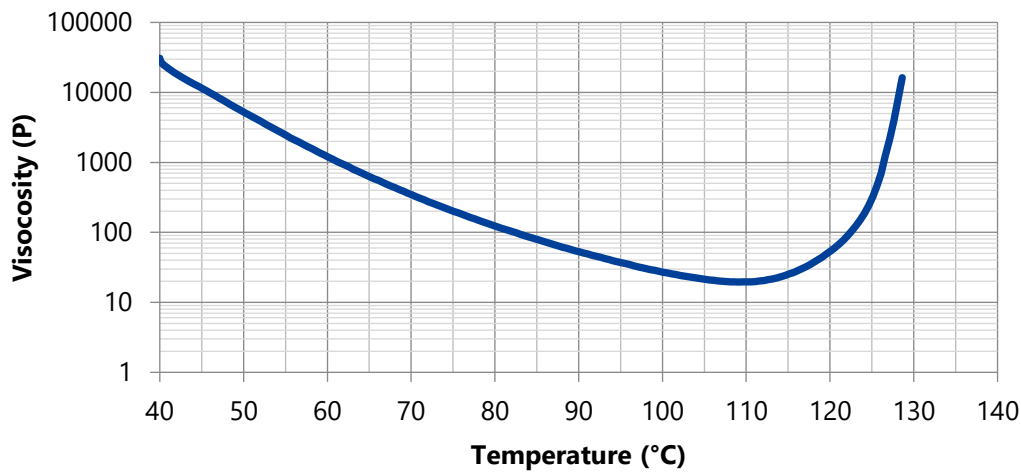
CURE CYCLE (VACUUM BAG ONLY)



1. The vacuum should be within 2" of Hg (7 kPa) for an absolute vacuum for a given altitude. For example, at sea level, the vacuum should be at a minimum of 28" Hg (95 kPa).
2. De-bulk every four plies, or as needed, when laying up material for a minimum of 60 seconds.
3. The vacuum should be checked for leaks before beginning the cure cycle. The leak rate shall be less than 2.0 inches of Hg (7 kPa) over 5 minutes.
4. Pre-cure vacuum time is recommended, contact us for specific recommendations based on part geometry.
5. Ramp to 210 ± 10°F at 1-5°F/min (100 ± 5°C at 0.6-2.8°C/min) and hold for 60 minutes.
6. Ramp to 270 ± 10°F at 1-5°F/min (132 ± 5°C at 0.6-2.8°C/min) and hold for 120 minutes.
7. Cool temperature down to 140°F (60°C) at max rate of 5°F/min (2.8°C/min).

**2700 can be cured using a press mold in under 5 minutes.
 Contact us for recommendations specific to the tooling and press capability.**

VISCOSITY CURVE (2°C/MIN RAMP RATE)



TYPICAL THERMAL PROPERTIES

Test Type		Test Method	Test Condition	T700S PW (VBO)	T700S PW (Press)
Tension*	Strength: σ_1^T Ksi (MPa)	ASTM D3039	RTA	149 (1029)	146 (1003)
	Modulus: E_1^T Msi (GPa)		CTA	134 (925)	140 (963)
Compression*	Strength: σ_1^C Ksi (MPa)	ASTM D6641	RTA	110 (756)	118 (813)
	Modulus: E_1^C Msi (GPa)		ETW	91.3 (629)	94.6 (652)
$\pm 45^\circ$ In-Plane Shear**	Strength: τ_{12} Ksi (MPa)	ASTM D3518	RTA	12.1 (83.1)	11.2 (77.1)
	Modulus: G_{12} Msi (GPa)		ETW	7.86 (54.2)	7.67 (52.9)
Short Beam Strength	Strength: σ_{31} Ksi (MPa)	ASTM D2344	RTA	8.95 (61.7)	11.5 (79.4)
			ETW	7.18 (49.5)	7.59 (52.3)
Open Hole Compression*	Strength: σ^{OHC} Ksi (MPa)	ASTM D6484	RTA	45.4 (313)	45.7 (315)
			ETW	36.4 (251)	37.5 (258)

*Normalized to 50% Vf, tested in 90° (fill/weft) for fabric

**Strength values reported at 5% differential strain, Modulus reported at 0.2-0.6% differential strain.

RTA: Testing performed at 72°F (23°C), as-received moisture content

CTA: Testing performed at -65°F (-54°C), as-received moisture content

ETW: Testing performed at 180°F (82°C), conditioned by H₂O soak at 160°F (71°C) for 2 weeks

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