



PMT-F7

Description

PMT-F7 is a toughened, high-temperature epoxy resin system specifically engineered for demanding space and aerospace applications. It supports numerous reinforcement materials and offers adjustable tack levels, ensuring compatibility with diverse manufacturing processes, including Automated Fiber Placement (AFP).

Key Features

- **Designed for High-Performance Applications:** Engineered to meet stringent aerospace and space structural demands.
- **Out-of-Autoclave Curable:** Provides excellent consolidation without requiring autoclave processing, enabling cost-effective manufacturing.
- **Extended Out-Time:** Ideal for manufacturing large structural components due to extended handling life.
- **Low-Temperature Cure Capability:** Allows the use of lower-cost tooling options, reducing overall manufacturing costs.
- **Exceptional Thermal Performance:** Robust operational performance from cryogenic conditions to high-temperature environments.
- **Adjustable Tack Levels:** Customizable tack characteristics tailored to reinforcement and process requirements.
- **Minimal Exothermic Reaction:** Little to no exothermic potential, significantly reducing risks during curing.
- **Robust Supply Chain:** Stable and reliable sourcing of critical subcomponents ensures consistent product availability.
- **AFP Compatibility:** Optimized for Automated Fiber Placement, enhancing precision and manufacturing efficiency.
- **Proven Space Heritage:** Extensive validation through successful deployments in multiple space mission

Resin Properties

Property	Value
Density	1.24 g/cm ³
Outgassing (TML)	0.5%
Outgassing (VCM)	0.02%
*Water absorption	2.2%
Tg, low cure 275°F	302°F
Tg, standard cure 350°F	384°F

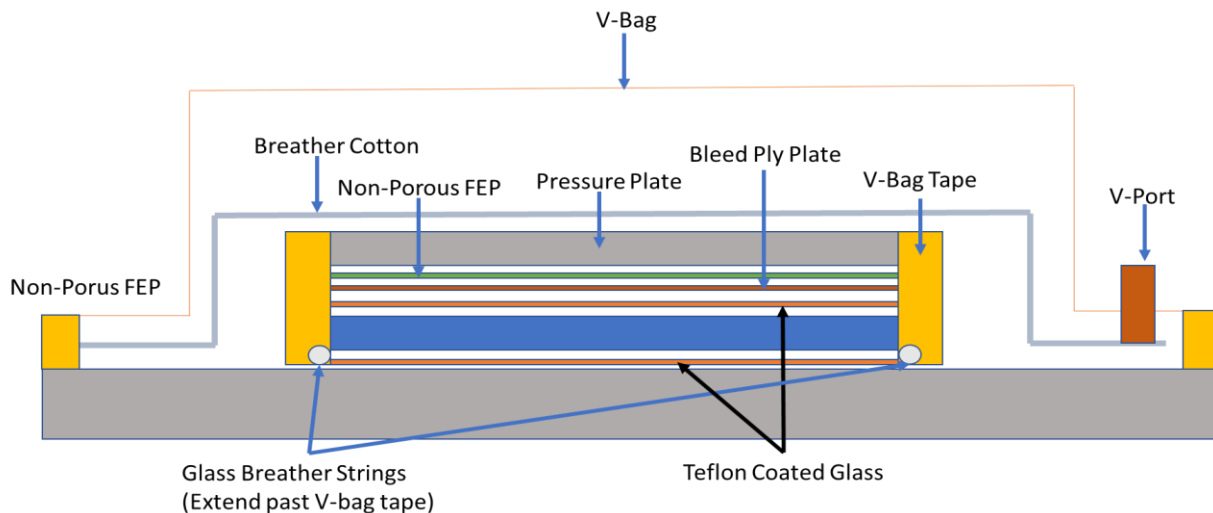
Property	Value
Tg, Post Cure 440°F	444°F
Tg, Wet*	351°F
Tension Strength	10.42 Ksi
Tension Modulus	0.43 Msi
Toughness KIc	0.87 in-lb/in ²
Maximum Strain	4.14%

*Wet properties based on 5-day water boil with standard cure



Storage

PMT-F7 should be stored in a desiccated sealed bag. PMT-F7 has a storage life of 1 year when stored at 10°F and a handling life of 30 days when stored at 70°F or below.



Recommended Bagging Procedure

PMT-F7 requires heat and pressure for optimal consolidation. Although, there are many different layups and cure procedures that will yield successful structures. As a base line, PMT recommends using the above bagging sequence.

Cure Cycle**

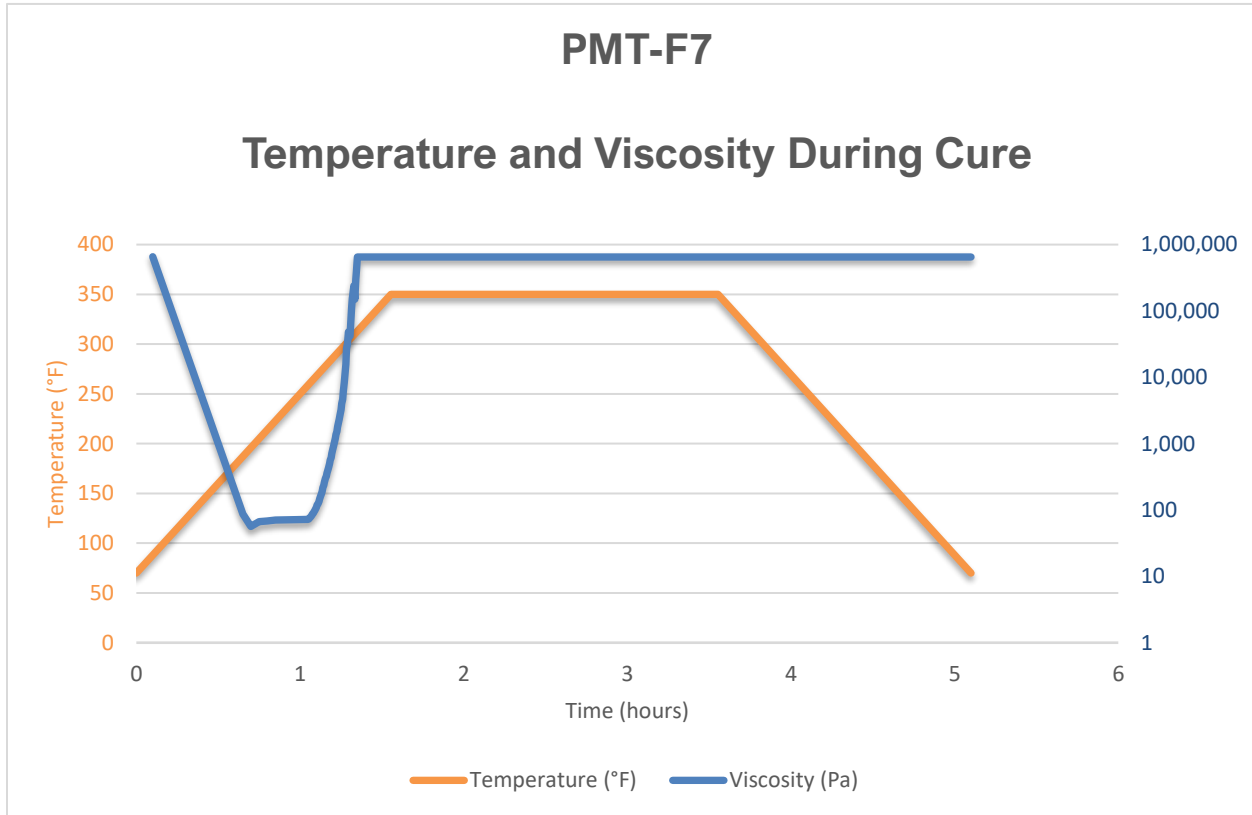
Standard Vacuum Bag Cure

Stage 1 – Ramp 3°F/min to 350°F under vacuum bag and 80 psi autoclave pressure.

Stage 2 – Dwell at 350°F for a minimum of 2 hours

Stage 3 – Ramp 3°F/ min down to cool

**Multiple temperatures and cure cycles are possible. Contact us for more information



Lamina Mechanical Properties

Property*	ASTM Test Method	PMT-F7/M55J UDP	PMT-F7/HM63 UDP	PMT-F7/IM7 UDP
0° Tensile Strength, Ksi	D3039	313	386	390
0° Tensile Modulus, Msi	D3039	51.8	42.6	28.2
90° Tensile Strength, Ksi	D3039	4.8	4.9	6.4
90° Tensile Modulus, Msi	D3039	3.2	3.1	3.0
0° Compression Strength, Ksi	D6641	126	140	286
0° Compression Modulus, Msi	D6641	52.6	40.1	22.0
Short Beam Shear Strength, Ksi	D2344	11.8	11.9	16.8

*Properties may vary dependent on manufacturing process.