



EF12

Highly Toughened Epoxy / Excellent Mechanical Properties / Elevated Temperature Performance

Product

EF12 is a high performance toughened epoxy resin system with excellent mechanical properties and elevated temperature performance. It also exhibits high damage tolerance and good impact resistance. As a result of its properties, it is used in various applications requiring high Tg. Product tack level is optimized for these applications. EF12 is available in unidirectional or woven prepreg forms and with different reinforcements.

Typical

- » Primary aircraft structures
- » Secondary aircraft structures
- » Engines
- » Helicopters



Resin Matrix Properties

Figure 1 Rheology and Gel Time of EF12

Our products are flexible by design: Additional weights, roll sizes, and reinforcements are available.

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Recommended Cure Cycles

Autoclave Molding

Recommended Curing Cycle at 180°C (356°F)

A typical autoclave cure cycle for a thin laminate is 60 minutes at 120°C (248°F).

- 1) Apply full vacuum (1 bar).
- 2) Apply 7 bar gauge autoclave pressure.
- 3) Reduce the vacuum to a safety value of 0.2 bar when the autoclave pressure reaches approximately 1 bar gauge.
- 4) Heat-up at 1 3 °C/minute to 120°C (248°F).
- 5) Hold at 120°C for 60 minutes \pm 5 minutes.
- 6) Heat-up at 1 3 °C/minute to 180°C (356°F).
- 7) Hold at 180°C (248°F) for 120 minutes \pm 5 minutes.
- 8) Cool at 2 5 °C per minute.
- 9) Vent autoclave pressure when the component reaches 60°C (140°F) or below.



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Physical and Mechanical Properties (Examples only. For the wider prepreg range, please contact Kordsa)

Autoclave Curing Cycle at 180°C (356°F), 2h.

Mechanical Properties for Carbon Fiber Reinforcement

Property	Standard	Test Temp.	Property	Test Results
Tensile (0°)	ASTM D3039	25 °C	Tensile Stress MPa (ksi)	844 (122.4)
			Poisson's Ratio	0.05
			Modulus GPa (msi)	62 (9)
Tensile (90°)	ASTM D3039	25 °C	Tensile Stress MPa (ksi)	723 (104.9)
			Modulus GPa (msi)	60 (8.7)
ILSS	EN 2563	25 °C	ILSS MPa (ksi)	75 (10.9)
4 Point Bending	ASTM D790	25 °C	Strength MPa (ksi)	1000 (145)
			Modulus GPa (msi)	85 (12.3)
V-notch shear	ASTM D5379	25 °C	Strength MPa (ksi)	100 (14.5)
DMA	EN 6032	25 °C	E' (°C) (°F)	220 (428)

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Storage Requirements

Shelf life is from date of manufacturing according to storage temperature below. Working life is the cumulation of time outside of storage temperature.

Storage Condition	EF12
Shelf Life at -18 °C	6 months
Work Life at 24 °C	14 days
Tack Life at 24 °C	5 days

Handling & Safety Instructions

» Store prepreg suspended horizontally to avoid flat spots and thinning under the weight of the roll.

» Allow product sufficient time (at least 24 hours) to reach ambient temperatures after removal from cold storage to prevent condensation on the adhesive surface.

» Use the appropriate safety equipment for this product.

» Refer to the EF12 Material Safety Data Sheet for specific safety instructions.

Technical Assistance

In a bind? Call us anytime. We provide fast and knowledgeable technical support:

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