CYCOM® EP2750

CYCOM® EP2750 is a 350˚F (177˚C) toughened epoxy resin system designed for high-volume cost-effective composite manufacturing – applicable to aerospace platforms, drones, and air mobility markets. CYCOM® EP2750 makes composites a cost-effective alternative to machined aluminium for small to medium size parts.

CYCOM® EP2750 handles like standard prepreg, yet can be press cured to produce autoclave quality parts with very low porosity. It offers mechanical properties equivalent to other 350ºF (177ºC) autoclave-cured toughened epoxy prepreg systems.

CYCOM® EP2750 is designed to accommodate flexible press cure cycles and can also be cured in an autoclave if desired.

Features and Benefits

- Formulated for high-rate composite manufacturing
- On-tool time of 30 minutes or less (short takt times)
- 2D blank to 3D shape in one step
- Cost effective alternative to machined aluminum for small to medium size parts
- Enables a fully automated process chain
- Aerospace performance and quality
- Low void content for press cure
- Mechanical properties equivalent to those of autoclave- cured 350ºF (177ºC) toughened epoxy systems
- High wet Tg of 334˚F (168˚C)
- Excellent hot/wet and notched properties
- Suitable for producing complex monolithic parts
- Formulated for press cure but autoclave capable

CHARACTERISTICS

Table 1 | Physical Properties

Property	Value	Test Method
Resin Content, wt%	37 - 41	ASTM D 3529
Volatiles, wt%	1.5 max.	ASTM D 3530
Tg(1), ˚F (˚C)	Dry: 377 (192) Wet: 334 (168)	ASTM D 7028
Tg, ˚F (˚C)	Dry: 392 (200)	ASTM E 1356
Shelf Life	12 months when stored at or below 10˚F (-12˚C)	

(1) Wet = 14 days water soak at 160˚F (71˚C)
Property values listed are for CYCOM® EP2750 reinforced with T650-35 3K 8-Harness Satin Carbon Fabric

Table 2 | Product Availability

Property	Description
Carrier	T650-35 3K 8HS Carbon Fabric
Fiber Areal Weight	0.077 psf (376 gsm)
Roll Width	60 in (152 cm)
Roll Length	50 yd (46 m)

Other product forms are available. Please contact Syensqo for details.

PROPERTIES

Table 3 | CYCOM® EP2750 Mechanical Properties: T650-35 3K 8-Harness Satin Carbon Fabric Reinforced

Property	Test Condition	Lay-Up	Value	Test Method
Warp Tensile Strength, ksi (MPa)	75°F (24°C)	[0]8	116 (800)	ASTM D 3039
Warp Tensile Modulus, msi (GPa)	75°F (24°C)	[0]8	9.9 (68)	ASTM D 3039
Warp Compressive Strength, ksi (MPa)	75°F (24°C) 180°F (82°C), Wet	[0]8	116 (800) 85.3 (588)	ASTM D 6641
Warp Compressive Modulus, msi (GPa)	75°F (24°C) 180°F (82°C), Wet	[0]8	9.4 (65) 9.4 (65)	ASTM D 6641
Open Hole Compression Strength, ksi (MPa)	75°F (24°C) 180°F (82°C), Wet	[45/0]3S	50.5 (348) 40.5 (279)	ASTM D 6484
Open Hole Tension Strength, ksi (MPa)	75°F (24°C)	[45/0]3S	42.6 (294)	ASTM D 5766
In-Plane Shear Strength, ksi (MPa) 500 – 3000 µstrain chord, 0.2% offset	75°F (24°C) 180°F (82°C), Wet	[+45/-45]2S	7.4 (51) 4.0 (28)	ASTM D 3518
In-Plane Shear Modulus, msi (GPa) 500 – 3000 µstrain chord, 0.2% offset	75°F (24°C) 180°F (82°C), Wet	[+45/-45]2S	0.79 (5.4) 0.62 (4.3)	ASTM D 3518
Short Beam Shear Strength, ksi (MPa)	75°F (24°C) 180°F (82°C), Wet	[0]18	11.7 (81) 8.4 (58)	ASTM D 2344

Wet conditioning: 14 days water soak at 160°F (71°C)
Property values listed are for CYCOM® EP2750 T650-35 3K 8HS with a normalized cured ply thickness of 0.0145 in (0.37 mm)
Properties with press cure plus freestanding post cure

PROCESSING

Guidelines for Thawing Out

On removal of sealed prepreg from 0°F (-18°C) storage, ensure that the material is allowed to thaw fully to room temperature prior to unsealing. This avoids condensation. Typically a 60 yd (55m) roll of prepreg requires about 8-12 hours to thaw.

Recommended Cure Cycles

Contact Syensqo for details.

HEALTH & SAFETY

Please refer to the product SDS for safe handling, personal protective equipment recommendations and considerations.