

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 350°F (177°C) 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 350°F (177°C) 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® EP 2750 reinforced with T650-35 3K 8-Harness Satin Carbon

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 Solvay 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 μ strain 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 μ strain 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 Solvay for details

HEALTH & SAFETY

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

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