TenCate E745
Mid temperature curing toughened epoxy component prepreg

PRODUCT DESCRIPTION
TenCate E745 is a toughened epoxy resin system developed for impact structures and other mechanically demanding structural applications. The resin system cures at 135°C (275°F) and can be impregnated into a range of fibre and fabric types.

TENCATE E745 PREPREG BENEFITS/FEATURES
- Excellent tack and drape
- 1 hour at 135°C (275°F) cure
- High toughness and impact properties
- 60 days shelf life at ambient temperature
- Excellent surface finish
- Low volatile content - no solvents used during processing

TYPICAL NEAT RESIN PROPERTIES
Density ................................................................. 1.24 g/cm³ (77.4 lbs/ft³) at 23°C (73°F)
Tg (DMTA) after 1 hr at 135°C (275°F)............... Onset: 118°C (244.4°F); Peak tan δ: 131°C (267.8°F)

TYPICAL LAMINATE PROPERTIES
GIC (J/m²) ............................................................... 1,137 J/m²
SEA (Dynamic crush test)(J/g) .............................. 84.0 J/g

IM0223 - CARBON 200 GSM 2x2 TWILL IM7 GP 6K 42% R.W. CURED 1 HR AT 135°C (275°F)

<table>
<thead>
<tr>
<th>Property</th>
<th>Condition</th>
<th>Method</th>
<th>Results</th>
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<td>1072 MPa</td>
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<td>ILSS Weft</td>
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*Results normalized to 55% Vf, otherwise results are at actual 49.3% Vf
TenCate E745
Mid temperature curing
modified epoxy resin
component prepreg

RECOMMENDED CURE CYCLE

- TenCate E745 can be successfully moulded by vacuum bag, autoclave, or matched die moulding techniques.
- Increase autoclave pressure to 1.4 bar (20 psi) with vacuum applied.
- Vent to atmosphere and raise pressure to 6.2 bar (90 psi) (or max allowed by the core material).
- Increase air temperature at 2°C (3.6°F)/min and hold for 1 hour at 135°C (275°F).
- Allow to cool to 60°C (140°F) before removal of pressure.
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Mid temperature curing modified epoxy resin component prepreg

PROCESSING
Following removal from refrigerated storage, allow the prepreg to reach room temperature before opening the polythene bag, to avoid moisture condensation. Typically the thaw time for a full roll of material will be 4 to 6 hours.

Cut patterns to size and lay up the laminate in line with design instructions taking care not to distort the prepreg. If necessary, the tack of the prepreg may be increased by gentle warming with hot air. The lay-up should be vacuum debulked at regular intervals using a P3 (pin pricked) release film on the prepreg surface, vacuum of 980 mbar (29 in Hg) is applied for 20 minutes.

For autoclave cures, use of a non-perforated release film on the prepreg surface trimmed to within 25-30mm of prepreg edge is recommended for the cure cycle, a vacuum bag should be installed using standard techniques.

EXOTHERM
In certain circumstances, such as the production of thick section laminates rapid heat up rates or highly insulating masters. TenCate E745 can undergo exothermic heating leading to rapid temperature rise and component degradation in extreme cases.

Where this is likely, a cure incorporating an intermediate dwell is recommended in order to minimize the risk.