

GMS EP-285 PREPREG

Product

GMS Composites EP-285 is a toughened epoxy resin matrix prepreg with long shelf life. The product has a versatile curing cycle from as low as 80°C or as high as 150°C, thus enabling the product to be used to produce a wide range of composite items, from large structures to numerous small components. EP-285 is available in a range of substrates such as carbon, glass or aramid. This toughened system has outstanding fracture properties and resistance to microcracking. The prepreg has good flow and the tack of EP-285 can be varied.

Applications

EP-285 can be used to produce structural components with carbon, glass or aramid fibres. It can also be used in the construction of sandwich structures. The versatility of EP-285 means that large complex structures as well as small basic components can be produced. It is possible to utilise EP-285 in a number of industries and applications such as marine, sports and leisure, industrial components, automotive and wind turbine blades.

Features

- ◆ **Variable cure cycle 80°C – 150°C**
- ◆ **Good surface finish**
- ◆ **Suitable for a range of structures and processes**
- ◆ **Toughened**
- ◆ **Excellent shelf life**
- ◆ **Wide range of fibre substrates available**
- ◆ **Made in Australia**

Curing

The versatility of GMS Composites EP-285 means a range of cure cycles, pressures and ramp up rates can be adopted all of which will depend greatly on the part being produced. Below is a guide to cure cycles.

Temperature (°C)	Time
80	12 hours
90	8 hrs
100	4 hrs
110	2 hr 30 min
120	1 hr
130	30 min
140	25 min
150	20 min

Heat ramp up rate – 2°C / min
Pressure – 1 bar

Gel Time

Hot plate

Temperature (°C)	Time (min)
80	210 – 240
90	100 – 160
100	40 – 60
110	17 – 25
120	6 – 10
130	2 - 5

Values are indicative of small samples of neat resin formulation. Gel times may vary significantly in composites depending on fibre content and laminate thickness.

Properties

Properties of cured, neat formulation. Cure cycle 10hrs at 90oC	Unit	Value
Flexural Strength	MPa	135 - 143
Elongation at flexural strength	%	6.0 – 6.6
Ultimate Strength	MPa	132 - 140
Ultimate Elongation	%	7.2 – 8.0
Flexural Modulus	MPa	3000 - 3300
Tg (DSC, 10 K/min)	°C	100 - 110
Fracture Toughness K _{1C}	MPa√m	1.25 – 1.35
Fracture Energy G _{1C}	J/m ²	430 - 470
Water Absorption (10 days H ₂ O, 23°C)	%	0.46 – 0.52

Shelf Life

Room temperature (23°C)	> 4 weeks
Refrigerated (-18°C)	12 months

Handling

Customers should ensure appropriate workplace OH&S guidelines are followed when working with this product. Appropriate measures should be taken to avoid contact with skin and eyes. Avoid inhalation of dust or fumes that may be released or created when machining, cutting or curing.

IMPORTANT

All information in this publication is considered accurate and to the best of knowledge of GMS Composites. GMS Composites reserves the right to implement changes and alterations to our products from time to time without giving prior notice. All specifications, weights and capacities in this brochure are approximate only and are included as measure of past performance and do not constitute a condition, warranty or guarantee of future performance. Customers should make their own assessment as to the suitability of this product for their own condition of use. No liability can be accepted in respect to the use of GMS Composites products in conjunction with other materials. Any advice and/or recommendations given by GMS Composites and its employees is given in good faith and is acted upon or followed by the customer entirely at their own risk.