

# Product Data

## Prepreg Systems



### Highly Toughened Epoxy Prepreg System

## RP549

80 - 180°C Cure

Tg 214°C (DMA)

#### Applications

- Automotive
- Motorsport
- Marine
- Defence
- Sports and Leisure

#### Processing Methods

- Vacuum bag
- Autoclave
- Press moulding
- Tube rolling
- Pressure bag

TDS0003





## Description

RP549 highly toughened modified epoxy prepreg has been specially formulated for the production of components requiring high mechanical properties and good impact resistance, particularly those exposed to elevated temperatures. This new system has an  $>200^{\circ}\text{C}$  Tg following the  $180^{\circ}\text{C}$  cure cycle, and provides excellent mechanical properties in tensile, ILS and flexural strength.

RP549 is now in manufacture on a range of our high quality woven fabrics.

## Cure Cycle

Standard Cure cycle:

- 1½ hrs at  $120^{\circ}\text{C}$  in autoclave, 6 bar pressure plus full vacuum
- Post cure  $150^{\circ}\text{C}$  for 2 hours is required after initial cure
- Ramp up rate:  $2^{\circ}\text{C}$  per min up to temperature
- Tg DMA onset:  $160^{\circ}\text{C}$ ; DMA tan delta peak:  $195^{\circ}\text{C}$

Alternative cure cycle:

- $2^{\circ}\text{C}$  per min to  $180^{\circ}\text{C}$ , dwell 2 hours
- Tg DMA tan $\delta$ :  $214^{\circ}\text{C}$ ; Tg DMA E' Onset:  $195^{\circ}\text{C}$

Alternative temperatures for initial cure:

TEMPERATURE	DURATION
$70^{\circ}\text{C}$	24 hours
$80^{\circ}\text{C}$	16 hours
$90^{\circ}\text{C}$	8 hours
$100^{\circ}\text{C}$	4 hours
$110^{\circ}\text{C}$	2 hours

## Storage Conditions

Estimated results:

- Shelf life: 12 months at  $-18^{\circ}\text{C}$
- Out life: 21 days at  $20^{\circ}\text{C}$

### Note:

Health and Safety: Refer to the full Material Safety Datasheet before use.  
Export information: Contact our team for export-related information.



## Mechanical Properties

Mechanical Properties below are based on initial cure of 120°C for 90 minutes with 6.2 bar pressure, then post cure for 2 hours at 150°C.

PRODUCT: RP549C0887T27M401000		
Fibre	Carbon	
Fabric weave style	Twill 2/2	
Fibre type	M40J-6K	
Fabric weight (g/m <sup>2</sup> )	200	
Resin content (%)	40	
Tensile Strength (MPa)	ASTM D3039	546.3
Tensile Modulus (GPa)	ASTM D3039	98.5
Interlaminar shear strength (ILSS) (MPa)	ASTM D2344	52
Flexural Strength (MPa)	ASTM D790	684

PRODUCT: RP549C0452M01M401000		
Fibre	Carbon	
Fabric weave style	Twill 2/2	
Fibre type	TR30S	
Fabric weight (g/m <sup>2</sup> )	204	
Resin content (%)	40	
Tensile Strength (MPa)	ASTM D3039	696.7
Tensile Modulus (GPa)	ASTM D3039	61.9
Interlaminar shear strength (ILSS) (MPa)	ASTM D2344	66.4
Flexural Strength (MPa)	ASTM D790	797

All values are nominal.

# Find out what PRF can do for your business

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### Important Notice

All statements, technical information and recommendations offered are only for consideration and evaluation. Whilst they are believed to be accurate they are not guaranteed and are provided without warranty of any kind. No undertaking is given that the goods/products supplied are fit for its particular purpose. The buyer/user shall assume all risks and liabilities in connection therewith.

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Prepreg



Reinforcements



Resin



Aerospace  
Adhesives



Shears



Tooling Block



Mould Release



Consumables