PRF
Composite Materials

PREPREG
Product Data

Medium Temperature Cure Resin System

RP542-3

90 - 120°C Cure

Provisional Data

Applications
- Aerospace
- Automotive
- Motorsport Components
- Marine
- Defence

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

TDS008

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Description

**RP542-3 is a winter version of our popular RP542-1 component prepreg, providing a controlled flow,
toughened epoxy prepreg system formulated for the manufacture of high performance structural
composite parts requiring very good impact strength properties. The system has been formulated
for a medium temperature cure of 90 - 120°C under vacuum or autoclave pressure and is also suitable
for press moulding. Fully cured, this system has a dry service temperature capability up to 120°C. The
component surface finish with this system is excellent.**

**The high tack level of this system is ideal for use in cold weather conditions, where temperatures in
workshops drop below 15°C. The out life of the system is up to 40 days at 20°C, making this system
suitable for the manufacture of large composite components.
RP542-3 can be supplied on most of the vast range of PRF reinforcement materials in widths up to
1350 mm wide.**

Main features

- Toughened system
- Excellent surface finish
- Core bondable
- Standard Cure 90°C - 120°C
- Service Temperature up to 120°C
- Controlled flow system
- Out life 40 days at room temperature
- Available on most of PRF's reinforcement fabrics

Storage Conditions

This product should be stored in refrigerated conditions.
Out life: 40 days at 20°C.
Shelf life is 6 months at below -5°C or 12 months at below -18°C.

Note:
Health and Safety: Refer to the full Material Safety Datasheet before use.

Processing

RP542-3 prepreg resin system may be processed at room temperature using established prepreg moulding techniques on properly prepared moulds. The cure cycle depends on the construction of the component and processing method. If honeycomb core is used in the part, the temperature ramp should be increased at a slower rate to enable a controlled flow of the resin to form a fillet between the core and skin.

Recommended cure cycle is to ramp from ambient to 110°C at 1-2°C/minute and then dwell for 2 hours. Part should then be allowed to cool naturally before demoulding.

Cure cycles

Laminates with honeycomb core

Elevate temperatures at 2 - 5°C per minute up to 110°C. Hold the final temperature for 2 hours then allow the component to cool naturally inside the oven/autoclave before demoulding.

Vacuum bagged monolythic laminates

Elevate temperature at 3 - 5°C per minute up to 110°C, hold for 2 hours then allow the component to cool naturally inside the oven/autoclave before demoulding.

Press moulded monolythic laminates

RP-542-3 system may be applied directly to hot press moulds at temperatures up to 130°C. The cure time at the highest temperature will be approximately 45 minutes. The mould and component temperatures should be cooled to below 80°C before demouding. It is important, when manufacturing honeycomb sandwich panels without the use of adhesive films, to increase the resin content on the fabric plies being used as the first layers against the honeycomb. This ensures enough resin is available for the formation of the resin fillet between the honeycomb and the skins.

Post cure cycle

Temperature (°C)	120
Time (hours)	1

A post cure can be carried out if the maximum Tg is required. The recommended post cure cycle is to ramp the temperature to 120°C at 1-2°C/minute and hold for 1 hour.

Mechanical Properties

To be confirmed once testing has been completed.

Find out what PRF can do for your business

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RP542-3 ed. 1.1 Oct 2019 TDS008