

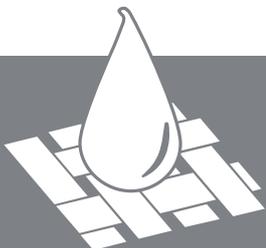


PRF
Composite Materials



PREPREG

New thinking on prepreg materials



Reinforcements



Resin



Aerospace
Adhesives



Shears



Tooling
Block



Mould
Release



Consumables

Fast becoming market leaders in quality and innovation

At PRF, we are passionate about product development, with an emphasis on helping customers reduce manufacturing time, and improve efficiency and cost-effectiveness.

Building on 35 years' experience developing and working with advanced reinforcements, our team brings this knowledge and understanding to our prepreg manufacturing; incorporating high quality fabrics in a variety of fibre types, constructions and fabric technologies. We combine this with in-house resin system development focussed on offering customers improved solutions for manufacturing.

Discuss your prepreg requirements with us today:

t: +44 (0) 1202 680022
e: enquiries@prfcomposites.com
www.prfcomposites.com

We would like to thank all companies concerned for the use of the acknowledged trademarks and registered names. Kevlar® is a registered trademark of DuPont, Dyneema® is a registered trademark of DSM Dyneema.

Our manufacturing capabilities include both solvent dip and hot melt processes with a range of materials, including fabrics such as woven carbon fibre, glass fibre, aramid fibre, hybrids, unidirectional carbon and glass fibres, as well as visual quality fabrics and prepregs with carbon nanotube additives. In addition, we supply resin films and adhesive films.

Our hot melt line, which has a capacity of over 1 million square metres p.a. at up to 1.5m wide, is supported by chemists, engineers and technicians with extensive lab facilities, and incorporates the latest film weight scanning technology, in-house resin system development and R&D. To support our manufacturing and product development, we have a process laboratory and a material testing laboratory, where we perform mechanical testing (bending, tensile, shear and peel off) to ISO and ASTM standards, as well as rheology, DMA and DSC.

As with our other products, we are able to work with speciality and bespoke materials, and can accommodate smaller runs of 50m for such applications. We also have experience of working with speciality materials such as Dyneema®, metal and metal-coated fibres, and Quartz.

Working from the original PRF philosophy, we believe that standard prepreg materials should be on stock, ready to suit our customers' manufacturing, not our own. As such, we stock large quantities of our standard lines in our purpose-built 360m³ freezer, ready for rapid delivery. Providing a full service, we are also able to cut a wide variety of prepreg at our kitting and preforming centre; supplying kits bagged and ready for use.



Standard epoxy prepreg systems

Product	Cure Temp. (°C)	Tg (°C)	Shelf life at 20°C	Reinforcement	Application
Tooling prepreg					
RP800	50–180	190 DSC	Tack life: 4–5 days Out life: 5–6 days	Woven fabrics	Tooling structures
RP801	60–180	190 DSC	Tack life: 5 days Out life: 7 days	Woven fabrics	Tooling structures
RP802	60–180	190 DSC	Tack life: 10 days Out life: 12 days	Woven fabrics	Tooling structures
RP803	60–180	190 DSC	Tack life: 7 days Out life: 9 days	Woven fabrics	Tooling structures
Component prepreg					
RP442	65–120	120 DSC	30 days	Woven fabrics	General and Industrial
RP507	90–160	121 DSC	30 days	Unidirectional carbon	General and Industrial Fire retardant version available
RP522	100–135	115 DSC	30 days	Woven fabrics	General and Industrial
RP542-1	80–120	125 DSC	40 days	Woven fabrics	General and Industrial
RP548	90–120	121 DSC	20 days	Woven fabrics	General and Industrial
RP549	80–150	160 DMA onset 195 DMA peak	30 days	Woven fabrics	General and Industrial
RP570	140	140 DSC 131 DMA onset 155 DMA peak	40 days	Woven fabrics	Press moulding
Product	Cure Temp. (°C)	Film weight (g/m ²)	Shelf life at 20°C	Reinforcement	Application
Epoxy Adhesive and Resin Films					
RF550	100–150	150–450	30 days	Can be supported with carrier	General industrial bonding and resin film infusion
RF552	90–120	125	30 days	Can be supported with carrier	General industrial bonding and resin film infusion

Tg figures assume full curing.

Some systems in development at time of printing. Please check www.prfcomposites.com/prepreg for updates.

We also work with phenolic and bio resin systems. Discuss your requirements with our technical department today.

RP542-1

Our medium cure component prepreg with excellent surface finish

80–120°C cure

Our popular, mid-temperature RP542-1 is a controllable flow, toughened epoxy prepreg system formulated for the manufacture of high performance structural composite parts requiring very good impact strength properties.

The system also has excellent surface finish and provides consistent visual quality results in high-end aesthetic applications.

Designed for a medium temperature cure of 80–120°C under vacuum or autoclave pressure, RP542-1 is also suitable for press moulding. Fully cured, this system has a dry service temperature capability up to 120°C.

RP542-3 *Winter version*

Retaining similar properties to RP542-1, this winter system has increased tack levels, making it ideal for use in colder workshops.

Technical data:

Cure Temp. (°C)		80–120
Tg (°C)		125 (DSC)
Shelf life at 20 °C		40 days
Tensile Strength (MPa) ISO 527-2	σT	84
Tensile Modulus (GPa) ISO 527-2	ET	2.9
Poisson ratio ISO 527-2	v	0.36
Flexural Strength (MPa) ISO 178	σF	127
Flexural Modulus (GPa) ISO 178	EF	3.0

Oven cured at 120°C for 1 hour

“ When evaluating manufacturers to support our materials requirements, we were impressed with PRF's innovative attitude and selected RP542-1 from their range to give us all the properties we require in this type of material. The material is very easy to use in terms of handling and has good tack levels on both composite and metal tooling.

Del Quigley, Managing Director, DJ Racecars

DJ
RACECARS



RP549

Our highly toughened epoxy prepreg system with superior mechanical properties

80–150°C cure

Specially formulated for the production of parts requiring superior mechanical and thermal properties, and good impact resistance, RP549 has a Tg of 195°C (DMA) and excellent mechanical properties in tensile, ILS and flexural strength.

Feedback from our customers confirms that the material also has particularly good laminating characteristics, with good tack and grab, and can be used to achieve a visual quality finish in the component.

Technical data:

Cure Temp. (°C)		80–150
Tg (°C) tan delta peak		195 (DMA)
Shelf life		30 days
Tensile Strength (MPa)	ASTM D3039	696.7
Tensile Modulus (GPa)	ASTM D3039	61.9
Interlaminar Shear Strength (MPa)	ASTM D2344	66.4
Flexural Strength (MPa)	ASTM D790	797

Based on initial cure of 120°C for 90 minutes with 6.2 bar pressure, then post cure for 2 hours at 150°C



“ The main feedback from the shop floor was on the material’s excellent quality. It drapes really nicely and the tack level is perfect – it stays on the mould surface and doesn’t fall back up. Combined with the mechanical properties, this material is a really interesting option for future production.

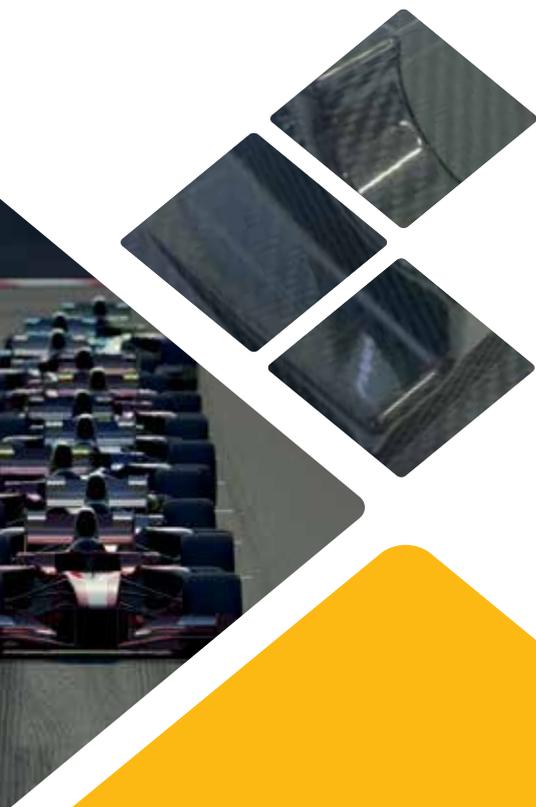
**Kevin Emmett, Technical Director,
URT Group Ltd**



Tooling systems

Developed in-house, these high quality systems offer flexibility for customers looking for a more suitable tooling solution.

Competitively priced, PRF's tooling systems provide outstanding surface finish in the tool, even after repeated mouldings, and have received excellent reviews from our customers.



“ After intensive research, we decided on PRF's tooling material which, in our eyes, is currently the best on the market. We performed some initial tests and the results were outstanding. We now use PRF for all our tooling and we will continue to do so.

Marcus Trofimov, Managing Director
Silverstone Composites

> RP800

This latest system provides the exceptional quality of our RP802 Overnight cure system, but with a **12 hour cure at 50°C** and an out life in excess of 5 days at 20°C.

> RP801

Our high quality, industry-standard tooling system, with a cure cycle of **8 hours at 60°C** and a tack life of 5 days at 20°C.

> RP802 Overnight cure

This system **doubles the tack life (10 days at 20°C)** of RP800 or RP801, and has a **16 hours cure at 60°C or 8 hours at 70°C**. The extended tack life and out life provides significant opportunities and cost savings over conventional tooling systems during manufacturing.

> RP803

Providing a mid-range solution between our RP801 and RP802, RP803 has a cure cycle of **12 hours at 60°C or 6 hours at 70°C** with a **tack life of 7 days at 20°C**.

All systems have a Tg 190°C (DSC) after post cure.

Available on PRF's high quality carbon and glass tooling fabrics.

Innovation at PRF

RP570 Snap Cure 140°C 4 minute cure

Developed for high volume production of parts produced by heated press process, RP570 Snap Cure enables the constructor to create aesthetic quality parts in a processing time of just 4 minutes, with no need to cycle the mould tool or to cool the hot mould tool before demoulding at 140°C.

This is achieved by a rapid rise in the Tg of the system, enabling it to rise above the temperature of the mould tool in the 4 minute cycle time, allowing parts to be made faster and back-to-back.

Watch our snap cure video at:
www.prfcomposites.com/snapcurevideo

comform

An exciting new development, comform is a formable epoxy prepreg veil which is able to drape over complex surfaces as the fibres are free to move and drape in a tacky form.

comform increases the scope of veils used in composite moulding applications and allows the special properties provided by these materials to be optimised in a far more efficient manner, such as in surfacing plies, resin film carriers and with specialist veils for RF and EMI shielding interlayers as well as many more applications in complex component shapes. These materials are available in a large range of weights, thicknesses and fibre types, including metal and metal-coated fibres. Some fibre types are, at time of printing, in development.

Talk to our technical team for an update on our capabilities today.

Kitting

Our well-established and highly efficient kit cutting service provides consistently cut, high quality parts in both prepreg and dry fabrics; we have 5m conveyerised CNC cutters, which cut fabrics of up to 1.5m in width.

Our machines are supported by our CAD office, where we can receive two-dimensional CAD drawings for cutting via email and our qualified CAD draughtsmen are also able to digitise shapes for our customers without CAD facilities.

We use static, rotary and oscillating blades and have a great deal of experience achieving high quality results with the more difficult technical textiles; we can cut Dyneema® and Kevlar®, including ballistics grade Kevlar® up to 25mm thick. We nest for optimum material usage and can supply materials in kits, assembled to our customers' requirements; saving your time and labour costs. We can include out life sheets, lot traceability, labelling and more as required. Prepreg kits can be stored in our 360m³ freezer facility, ready for immediate despatch and 'just-in-time' delivery service.





Doing things differently

Find out what PRF can do for your business.

Make an enquiry today at:

t: +44 (0) 1202 680022

e: enquiries@prfcomposites.com

www.prfcomposites.com

For more information about PRF's extensive range of wet systems and reinforcements visit:
www.prfcomposites.com



All values are nominal.

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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Aerospace



Motorsport



Marine



Renewable Energy



Sports and Leisure



Defence and Ballistics



Medical



Kit Cutting