

Product Data

Epobond™ UP Gelcoats



A tough UP gelcoat system formulated specifically for use in conjunction with our range of epoxy laminating systems.

Epobond™ RS-T30 and RS-T35

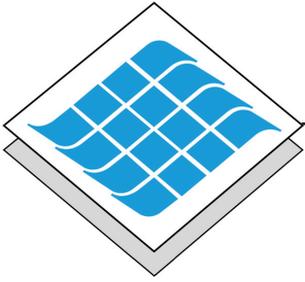
Applications

- Aircraft
- Automotive
- Model Making

Processing

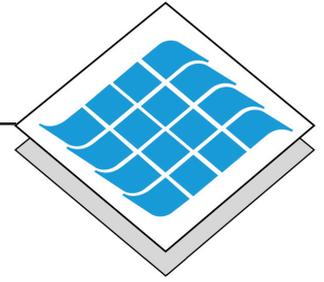
- Spraying
- Brushing
- Rolling
- Blade coating





Main Features

- The processing window is extremely large. Unlike epoxy gelcoats, which require the laminate to be laid down precisely when the epoxy has gelled, provided the gelcoat is kept clean, an epoxy resin laminate can be applied to Epobond™ gelcoat anytime up to several days after gelation.
- The use of an epoxy bonding agent is not required due to the excellent compatibility of the gelcoat with the epoxy laminate. Laminating may commence as soon as gelling is complete, without additional processes.
- Epobond™ gelcoats are tough with a high degree of scratch resistance.
- PRF RS-T30 clear gelcoat may be pigmented with commercially available UP colouring pastes to create decorative surfaces with ease.
- The gelcoats exhibit excellent UV light and weather resistance properties which are generally far superior to those of epoxy gelcoats.



Introduction

Epobond™ RS-T30 and RS-T35 have been formulated to be used as a gelcoat or as a top coat in conjunction with our epoxy laminating resin systems. They may also be used as a top coat on polyester laminates. Epobond™ gelcoats offer the ease of processing associated with polyester gelcoats, whilst giving excellent adhesion and compatibility with the epoxy laminate.

The gelcoat are formulated using unsaturated polyester resin. They are supplied pre-accelerated with cobalt as standard, and for hot climates they can be supplied stabilised (un-accelerated) to increase the storage life. The catalyst system is peroxide RS-SF2 or RS-SF10. The gelcoats are absolutely free of paraffin and will cure with a satin finish which is completely tack-free.

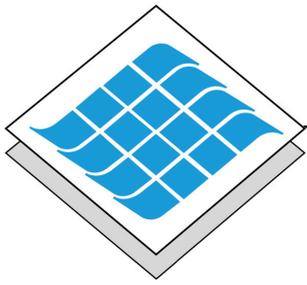
Product range

- **Epobond™ Gelcoat RS-T30.** Offers very good light and weather resistance together with a highly scratch resistant surface. Available clear (without pigment).
- **Epobond™ Gelcoat RS-T35.** Specially developed for the aircraft industry, it features excellent elongation and good working properties. Only available pigmented white.
- **Catalyst RS-SF10.** For standard application, spraying, brushing etc., the catalyst is mixed in a ratio of 10:100 part.
- **Catalyst RS-SF2.** Used in a ratio of 2:100 where a thick layer is required.
- **Thinner - RS-SF Thinner.** Used to reduce the gelcoat viscosity to the desired level for spraying and brush application.

Marine Applications

The problem of osmosis associated with gelcoat resins based on unsaturated polyester chemistry is well documented. For this reason we do not recommend, nor can we guarantee, the use of RS-T30 or RS-T35 gelcoat systems in marine environments. We are aware that these products are used successfully by companies for the manufacture of small boats such as canoes and kayaks, which are immersed in water for relatively short periods of time. If chosen for such applications we must emphasise the importance of drying after use and storing in a well ventilated environment. Do not cover as this may create a vapour barrier which will lead to blistering of the gel coat. The user must test the material for suitability in its particular application and assume all associated risks.

Note: Epobond™ gelcoats are not recommended for use as a gelcoat system to be laminated with unsaturated Polyester resins or Vinylester resins.



Processing

Epobond™ Gelcoats, RS-T30 and RS-T35, can be applied by brushing, rolling, blade coating or spraying. The preferred method of application is by means of spraying, using an air spray gun with nozzle size 2 - 3mm and pressure of 3 - 5 bar, or alternatively, an airless system in which nozzle and pressure are selected according to the component.

The optimum processing temperature lies between 20 - 25°C. Lower temperatures will increase the viscosity, making processing more difficult, whilst higher temperatures will shorten pot life, (e.g. at 30°C, the pot life will be halved).

The thixotropic properties of the gelcoat enable a total wet film thickness of approximately 500µm (0.5mm) to be applied. To achieve this thickness on vertical surfaces, we recommend working **wet on wet**, each layer being no more than 100µm (0.1mm) in thickness. Between spray operations a resting time of 5 - 10 min should be allowed to enable the solvents to flash off from the wet layer. If the lower layer starts to gel it will be dissolved by the styrene contained in the new layer. As a result, the lower layer will wrinkle and be damaged beyond repair.

Curing Data

Pot life	: approx. 30 - 45 min. (100g of mixture at 20°C without thinner)
Gel time	: approx. 100 - 150 min. (depending on temperature and layer thickness)
Non-tacky	: after approx. 2 - 4 hours
Curing time	: approx. 5 - 6 hours

Application Thickness

Minimum Thickness	: 50µm (75gsm)
Usual Thickness	: 150µm - 300µm (150 - 450gsm)

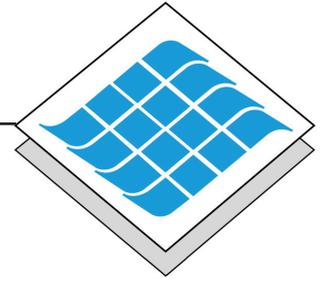
Mixing Ratios

Standard applications (brushing, spraying)

100	parts by weight	Epobond™ Gelcoat, RS-T30 or RS-T35
10	parts by weight	Catalyst RS-SF10
up to 10	parts by weight	Thinner SFT

Thicker layers (e.g. filling in a gap)

100	parts by weight	Epobond™ Gelcoat, RS-T30, RS-T35
1.5 - 2	parts by weight	Catalyst RS-SF2
up to 5	parts by weight	Thinner SFT



Gel coating

The gelcoat is applied in the usual manner to the prepared mould surface which must have a temperature of at least 20°C. It is important to ensure that the gelcoat is completely gelled before epoxy resin is applied. Visually, the surface becomes uniformly matt. Test by drawing a finger across the gelcoat layer; it should be dry to touch, the finger not becoming coloured by the gelcoat. If the epoxy resin is applied too soon, there is a danger that components of the amine hardener will delay or stop it from curing completely. Since the gelcoats are paraffin free, the bonding to epoxy resin is satisfactory even after several days of curing. Therefore, provided the gelcoat surface is kept clean, the epoxy resin laminate can be applied any time after gelling, be it one day or several days.

We recommend the use of our own brand epoxy laminating resin systems with this range of gelcoats. If other brands of epoxy resin are selected, then tests must be made for adhesion and compatibility. Unsuitable combinations may cause discolouring, brittleness, cracking or bubbles, destroying the gelcoat.

Top coating

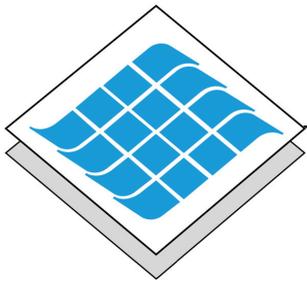
Our gelcoats RS-T30 and RS-T35 are suitable as a top coat on polyester laminates, epoxy laminates and a variety of other surfaces. If applied on epoxy resin, the epoxy resin must be well cured, otherwise there is a danger that free amine groups may be present, which will delay or prevent curing. A clean, roughly sanded surface or stripped peelply finish is necessary to achieve good adhesion.

To prevent differing colour shades during painting, use wet or dry paper 240 grit or less. The same gelcoat batch should always be used for finishing to prevent colour mismatches.

If a top layer of gelcoat is applied to a previous layer of gelcoat which has completely cured, (e.g. by heat treatment), a different colour shade will be visible after the initial curing. This disappears after complete curing of the new layer (2 - 4 days at room temperature, 1 - 2 h at 50°C).

Colouring

Use commercially available UP colouring pastes. Normally, add approx. 5 - 15% of pigment paste, depending on the desired tint or covering. (Observe pigment paste manufacturer's instructions). Thoroughly mix the pigment paste into the gelcoat before adding hardener. Transparent gelcoat RS-T30 is best suited for colouring, especially if dark colours are desired.



Additives

With the addition of accelerator (cobalt, e.g., COB 1) it is generally possible to increase reactivity. Processing time can be extended with the usual retardants (e.g., TC501, hydroquinone, etc).

Caution

Additives must always be thoroughly mixed into the gelcoat before adding hardener.

Important: Adding accelerators, retarders or other thinners may cause discoloration and decrease resistance. Adequate testing is mandatory.

Explosive Hazard!

Never mix cobalt accelerators and peroxide hardeners together directly!

Repairs

To repair small areas, the following procedure can be used:

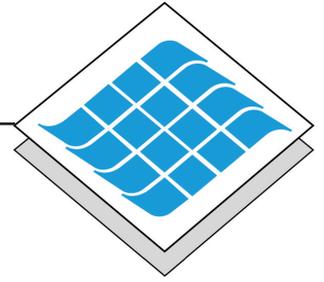
Add 10% Thinner SF to the gelcoat, mix thoroughly with 10% Hardener RS-SF10. Add additional 10 - 30% of acetone or ethylacetate (solvents must be of pure quality). Spray this mixture with a 0.5 - 0.8mm nozzle.

Important: The additional solvents must disappear from the wet layer before gelling starts. Therefore only thin layers (max. 50 - 60µm, corresponding to approx. 70 - 90gsm) can be laid up in one operation. Drying times before application of the next layer should be approx. 5 - 10 min. Adding 10 - 30% of solvent will increase the pot life to approx. 45 - 60 min.

Cut back with wet or dry paper, 1000 or preferably 1400 grit, before polishing with high quality cutting and polishing compounds applied with buffer wheel.

Storage

Epobond™ Gelcoats RS-T30 and RS-T35 are supplied pre-accelerated. They can be stored for approx. 6 months at temperatures below + 10°C. Storage life at 10 - 20°C is 3 - 4 months. These gelcoats are also available stabilised for the tropics (without accelerator), in which case storage life at 20 - 30°C is approx. 6 months. Add cobalt accelerator before using tropic stabilised gelcoats.



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

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

PRF Composite Materials

3 Upton Road

Poole

Dorset BH17 7AA

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.

RS-T30 & RS-T35 ed. 3.1 Jun 2013



Prepreg



Reinforcements



Resin



Aerospace
Adhesives



Shears



Tooling Block



Mould Release



Consumables