SF 95PF

Sandable Surfacing Film

- **Easy to sand**
- **Significant reduction in print-through**
- **Reduction in surface film-laminate interfacial voids**
- **Improved opacity**
- **Improved resistance to water ingress**
- **Stable surface up to 125°C (depending on cure)**

Introduction

The SF 95PF surfacing material is a grey filled epoxy film designed to enhance the surface finish of moulded composite components. It allows a good surface finish to be obtained by vacuum-bag moulding processes. It can be used directly against a suitably release treated mould surface, with prepreg or SPRINT® plies laid up behind it. When fully cured with SPRINT® or prepreg, SF 95PF forms a stable sandable surface which, once lightly sanded to provide a key for painting, provides a pin-hole free laminate. The epoxy system is supplied ready impregnated into a supporting medium and ready catalysed, requiring only a moderate temperature cure.

Availability

SF95PF surfacing material is currently available as a grey 300g resin weight film. It is supplied on rolls of 50lm.

Working Properties

Table 1. Working Properties	
SPRINT® life @ 21˚C	8 days
Resin out life @ 21˚C	12 weeks
Storage time at -18˚C	2 years
Colour	Dark Grey

Use

a) Ensure SF 95PF surfacing material has attained ambient temperature (circa 18-23˚C) before it is removed from its packaging to avoid condensation of water on the surface film whilst defrosting.

b) Apply a single layer of SF 95PF surfacing material to a suitably release treated mould surface. When applying directly to a mould, release agents suitable for epoxy resins should be used and tests should be performed by the user to ensure that satisfactory release is obtained.

The use of peel ply between the release treated mould surface and the surfacing material has not yet been tested.

The material can be placed into the mould in any size/shape however it is important to include a minimum 5mm overlap at any join interface.

d) Once the mould surface has been covered and before the backing laminate has been added, air paths need to be introduced around the circumference of the part. This is usually achieved by placing glass tows at a 0.5m interval around the perimeter of the part in contact with finer weave surface scrim through to the vacuum stack.

e) Apply SPRINT® or prepreg layers behind the surface film (NOTE: significant improvements in surface stability due to voiding and component quality are obtained if SPRINT® layers are used behind the surfacing film rather than prepreg).

f) Apply release film and breather suitable for the reinforcing laminate over the laminate stack. Cut and fit as necessary. Overlaps are acceptable. Consult SPRINT® or prepreg datasheet for optimum bagging procedure.

g) Apply vacuum bag with minimum 90% vacuum.

h) Heat to 70 ±5˚C (ramp between 0.5˚C and 2˚C per minute) whilst under >90% vacuum.

i) Continue to ramp to the final cure temperature required by the resin system and hold for the correct period (see datasheet). Temperature ramp rates should be between 0.5˚C and 2˚C per minute, as before. If ramp rates are in excess of $^{1}/_{2}$°C per minute a dwell of up to 30 minutes will be required at 70°C. Contact Technical Services for further information.

j) Allow to cool to ambient temperature before removing consumables and demoulding.

Before attempting to use surface film on large parts, consult Technical Services for most up to date information.

Cure Cycle Parameters

Table 2. Cure Cycle Parameters	
Minimum cure temperature	85°C
Minimum cure time (at minimum cure temperature)	12 hours
Minimum cure time @ 90°C	8 hours
Minimum cure time @ 100°C	4 hours
Minimum cure time @ 110°C	2 hours
Minimum cure time @ 120°C	1 hour

Typical Cure Cycle

Table 3. Typical Cure Cycle

	Slow Cure	Standard Cure	Fast Cure
Ramp from Ambient to:	70°C @ 2°C per minute	70°C @ 2°C per minute	71°C @ 2°C per minute
Ramp from 70°C to:	85 @ $^1/_2$°C per minute	100 @ $^1/_2$°C per minute	120 @ $^1/_2$°C per minute
	Hold for 10 hours at 85°C	Hold for 4 hours at 100°C	Hold for 1 hour at 120°C
	Cool and demould	Cool and demould	Cool and demould

Health and Safety

Although SPRINT® Materials have improved health and safety characteristics when compared to wet lay-up epoxy systems and conventional prepregs, the following points must still be considered:-

1. Avoid skin contact - wear disposable nitrile gloves.

2. Avoid eye contact. If this occurs, flush with water for 15 minutes and seek medical advice.

3. Ensure good ventilation of vacuum pump exhaust during laminate cure.

4. Avoid inhalation and eye contact with sanding dust. After any sanding operation of reasonable size a shower or bath should be taken and should include hair washing.

5. Wear overalls or other protective clothing. Thoroughly clean or discard soiled garments.

6. Use only resin removing creams/soap and water on exposed skin. Do not use solvents.

Washing should be part of routine practice:

- before eating or drinking
- before smoking
- before using the lavatory
- after finishing work

In the pre-cured state SPRINT® materials contain 'dry' fibres which can be released when the material is being cut or processed. Care should be taken while handling the material to prevent contact with the skin and to control the egress of fibres into the workplace. Products that contain carbon fibres should be treated with particular care as carbon fibre is electrically conductive. Electrical equipment should be protected from carbon dust and fibres.

SP-High Modulus produces a separate full Material Safety Data Sheet for all hazardous products. Please ensure that you have the correct MSDS to hand for the materials you are using before commencing work. A more detailed guide for the safe use of SP-High Modulus resin systems is also available from SP-High Modulus, and can be found on our website at www.gurit.com

Applicable Risk & Safety Phrases

R 36/38, 40, 43, 51/53
S 26, 28, 36/37/39, 57, 60

Transport & Storage

When not in use SF 95PF products should be maintained at -18°C. Shelf life for SF 95PF is two years at -18°C and 5 days at 18-22°C.

Notice

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