

# SF 95VH

## SPRINT™ ABRASION-RESISTANT SURFACING FILM

- Hard protective coating
- Increases surface longevity by up to 300%
- High opacity
- Resistant to moisture ingress

### INTRODUCTION

SF 95VH surfacing material is a very hard, abrasion-resistant, grey filled epoxy film. It is designed to protect vulnerable underbody components from damage caused by foreign objects. Typical applications include inner wings and front wheel diffusers.

SF 95VH can be used directly against a suitably release treated mould surface, with prepreg or SPRINT™ plies laid up behind it, or as a final layer in the mould. It can be cured with vacuum only processing. Due to abrasion-resistance of this material, it would not be usual to apply a paint finish.

The epoxy system is supplied ready impregnated into a supporting medium and ready catalysed, requiring only a moderate temperature cure.

## INSTRUCTIONS FOR USE

1. Ensure SF 95VH surfacing material has attained ambient temperature (circa 18-23°C/64-73°F) before it is removed from its packaging to avoid condensation of water on the surface film whilst defrosting.
2. Apply a single layer of SF 95VH 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.
3. The material can be placed into the mould in any size/shape however it is important to include a minimum 2mm overlap at any join interface, and a maximum overlap of no more than 5mm.
4. 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.
5. 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). The use of glass tows between layers of SPRINT® and the surface film is also recommended (as in 4. above) to aid air breathing.
6. 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.
7. Apply vacuum bag with minimum 90% vacuum.
8. Heat to 70 ±5°C (ramp between 0.5°C and 2°C per minute) whilst under >90% vacuum.
9. Continue to ramp to the final cure temperature required by the resin system and hold for the correct period (see section Typical Cure Cycle). 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 Gurit Technical Services for further information.
10. Allow to cool to ambient temperature before removing consumables and de-moulding. Before attempting to use surface film on large parts, consult Gurit Technical Services for most up to date information.

## PRODUCT INFORMATION

### AVAILABILITY

SF 95VH surfacing material is available in a 300g film weight supported with a 2 x 25g carrier or can be supplied without a carrier in a 100g film weight. Both formats are supplied in 50lm rolls and additional film at weights may be available from 100gsm to 800gsm.

PROPERTY	SUPPORTED		UNSUPPORTED	
Colour	Black			
Tack	High			
Carrier	Glass		None	
Carrier Weight	2 x 25 g	0.11 lb	N/A	N/A
Total Areal Weight	350* g	0.77 lb	100 g	0.22 lb

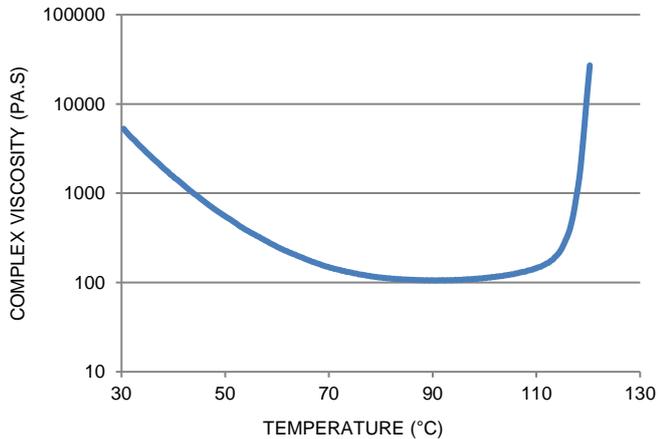
\*based on 300g film

## PREPREG PROPERTIES

### RHEOLOGY DATA

SF 95VH resin viscosity profile conducted at 1°C (1.8°F)/ minute.

PROPERTY	VALUE	
Minimum Viscosity	105 Pa.s	1052 P
Temperature at Minimum Viscosity	90.7°C	195°F



### TRANSPORT & STORAGE

When stored sealed & out of direct sunlight.

STORAGE TEMP		UNIT	VALUE
-18°C	0°F	months	24
+18-22°C	64-72°F	days	3

All SPRINT™ materials should be stored in a freezer when not in use to maximise their useable life, since the low temperature reduces the reaction of resin and catalyst to virtually zero. However, even at -18°C (0°F), the temperature of most freezers, some reaction will still occur. In most cases after some years, the material will become unworkable.

To avoid condensation on the rolls allow to reach room temperature before unwrapping.

### HEALTH AND SAFETY

Please refer to product SDS for up to date information specific to this product.

## CURING SCHEDULE

### TYPICAL CURE PROFILES

The successful use of these cure schedules will depend on part size and laminate construction. Heat up rate and dwell periods need to be tailored to take consideration of oven capacity, thermal mass of tool, laminate construction etc. Data in the table below is based on laminate temperatures, air temperatures may need to be higher. It is recommended that Gurit Technical Support is contacted for further advice before utilising any of the suggested cure cycles.

### TYPICAL CURE SCHEDULES

PROPERTY	SLOW CURE	STANDARD CURE	FAST CURE	TEST STANDARD
Processing Method	Vacuum Bag			
Typical Ramp Rate	2°C (3.6°F) per minute	2°C (3.6°F) per minute	2°C (3.6°F) per minute	-
Cure Temperature	70°C (172°F)	70°C (172°F)	70°C (172°F)	-
Cure Dwell Time	Ramp at 0.5°C / min (0.9°F / min)	Ramp at 0.5°C / min (0.9°F / min)	Ramp at 0.5°C / min (0.9°F / min)	-
Post-Cure Temperature	85°C (185°F)	100°C (185°F)	120°C (185°F)	-
Post-Cure Dwell Time	600 (min)	240 (min)	60 (min)	-
Cure Pressure	-1 bar			-
Dry T <sub>g1</sub> (DMA)	105 to 130°C (221 to 266°F)			ASTM D7028

## CURED RESIN PROPERTIES

Using vacuum pressure / oven only cure with standard processing techniques and using the 'Fast' cure schedule as defined above.

PROPERTY	SYMBOL	FAST CURE		TEST STANDARD
Taber Abrasion Resistance		1.0 mg	0.00004 oz	ASTM D4060 with test wheel CS10 @ 500 Cycles @ 90% Vacuum
Shore D Hardness		861		ASTM D2240
Dry T <sub>g1</sub> (DMA)	T <sub>g1</sub>	130°C	266°F	ASTM D7028

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## TECHNICAL CONTACT INFORMATION

For all other enquiries such as technical queries:

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## 24-HOUR CHEMICAL EMERGENCY NUMBER

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