

# WT93

## LOW TACK GLASS SPRINT™

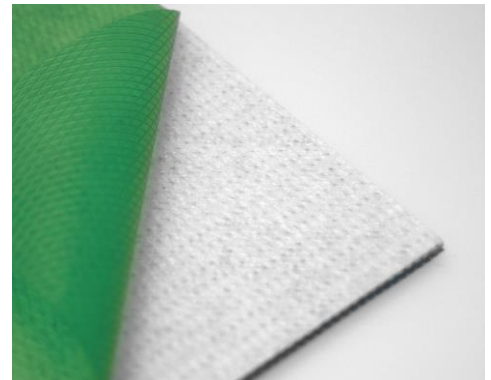
- WT93 low tack SPRINT™ resin matrix
- Dry Fabric enables efficient air evacuation
- Good out-life at 21°C
- High flow matrix
- Cure from 85°C to 120°C
- Excellent laminate quality with low void content
- Suitable for automated lay-up
- DNV-GL Certified Formats Available

### INTRODUCTION

**WT 93 is part of Gurit's comprehensive offering of structural composite product solutions comprising of 3 main product groups; Prepreg, SPRINT™ and SparPreg™. This unique product range provides technically and commercially competitive engineering materials, ideal for use either solely, or in conjunction with other Gurit products from within the range.**

WT 93 can be cured at temperatures as low as 85°C / 185°F, but can also be used for the rapid manufacture of components through its 45-minute cure at 120°C / 248°F. All of this can be achieved together with an out-life of 21 days at 21°C / 70°F. WT 93 is designed for vacuum bag processing and offers excellent mechanical performance on glass and carbon fibre reinforcements.

Gurit's innovative WT 93 SPRINT™ product range uses a high flow, low tack epoxy prepreg and is ideally suited to the manufacture of thick sections such as turbine blade roots or spars.



## PRODUCT INFORMATION

WT93 SPRINT™ can be used with both prepreg and SparPreg™ products. It is supplied with a poly backer and can be applied to the substrate with either side against the tool. The product formats listed to the right also benefit from 3<sup>rd</sup> Party Certification.

PRODUCT DESCRIPTION	STATUS	CERTIFICATION
WT 93 E-Glass Biaxial SPRINT™ 600 g/m <sup>2</sup> 35% Resin Content	Approved	DNV-GL TAK00001B4

Property	Unit	1200g/m <sup>2</sup> Fleece Triax	600g/m <sup>2</sup> ±45° Biax	
Format		Single Sided	Double Sided	Single Sided
Nominal Resin Content (by weight)	%	43	35	35
Nominal Fibre Weight	g/m <sup>2</sup>	1200	2 x 305	610
Nominal Fleece Weight	g/m <sup>2</sup>	50	-	-
Nominal Aerial Weight	g/m <sup>2</sup>	2193	938	938
Stitching Type	-	Polyester	Polyester	Polyester
Sizing Type	-	Epoxy Compatible		
Backer	-	2 x MDPE Embossed		
Available Roll Width	mm	Up to 1270		

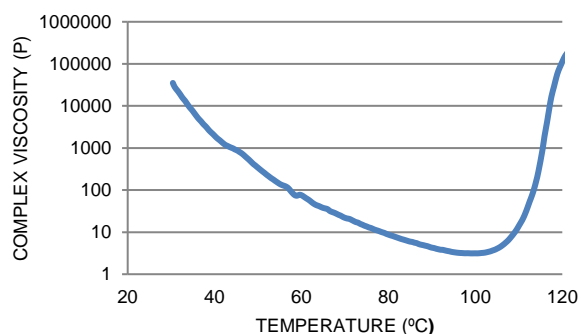
In order to maximise the potential of the prepreg product range please contact the Gurit Technical Support. Contact details are on the back of this Product Data Sheet. General prepreg / SPRINT™ working practices apply to these products, details of which can be obtained from the Gurit Guide to Composites or by contacting the above department.

## PREPREG PROPERTIES

### RHEOLOGY DATA

WT93 resin viscosity profile conducted at 1°C (1.8°F) per minute.

PROPERTY	VALUE	
Minimum Viscosity	3.1 Pa.s	31 P
Temperature at Minimum Viscosity	99 °C	210 °F



### TRANSPORT & STORAGE

When stored sealed & out of direct sunlight.

STORAGE TEMP		UNIT	VALUE
-18°C	0°F	months	24
+21°C	+70°F	days	21

All prepreg 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.

### HEALTH AND SAFETY

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

## RECOMMENDED CURE TIME & TEMPERATURE

WT 93 offers flexible curing options. The recommended minimum cure is 600 minutes at 85°C (185°F).

PROPERTY	OVEN / VAC BAG		TEST STANDARD
Typical Laminate	4 plies of WT93 XE600 (biax) prepreg with 35% resin content		-
Typical Ramp Rate	1 – 2°C (2 – 4°F) per minute		-
Cure Temperature	85°C (185°F)	120°C (248°F)	-
Cure Dwell Time	600 (min)	45 (min)	-
Cure Pressure	-1bar (14.5Psi)		-
De-mould Temperature	< 60°C (140°F)		-
Dry Tg <sub>1</sub> (DMA)	110-125°C / 230 – 257°F		ASTM D2078

## LAMINATE PROPERTIES

All data presented in this datasheet is based on the mechanical testing of a single batch of material.

### CURED RESIN PROPERTIES

4mm resin cast oven cured using standard processing techniques and cured at 120°C (248°F) for 90 minutes.

PROPERTY	SYMBOL	90 MINUTES @ 120°C (175°F)		TEST STANDARD
Tensile Strength	$\sigma_T$	57 MPa	8.3 Ksi	ISO 527-2
Tensile Modulus	$E_T$	3.0 GPa	0.44 Msi	ISO 527-2
Compressive Strength	$\sigma_C$	125 MPa	18 Ksi	ISO 604
Compressive Modulus	$E_C$	4.0 GPa	0.58 Msi	ISO 604

### CURED LAMINATE

Cured using standard processing techniques and a cure time of 90 minutes at 120°C (248°F).

PROPERTY	SYMBOL	YE1200 / TEA50		XE600		TEST STANDARD
SPRINT™ Format	-	Single Sided		Single Sided		-
Fabric / Fibre Description	-	1200g/m <sup>2</sup> Stitched Triaxial using E-glass with a 50g/m <sup>2</sup> glass fleece		600g/m <sup>2</sup> Stitched Biaxial using E-glass		-
Resin Content	-	43 %		35 %		-
Cure Method	-	Vacuum bag cured at -1 bar				-
Cure Schedule	-	90 minutes at 120°C (248°F)				-
Glass Transition Temperature	$T_{g1}$	110-125°C	230 – 257°F	110-125°C	230 – 257°F	ISO 6721 (DMA)
Cured Ply Thickness	$t_{ply}$	1.27 mm	0.050 in	0.49 mm	0.019 in	ASTM D 3171 Method II
0° Tensile Cured Fibre Volume*	$V_f$	35.6 %		45.3 %		ASTM D 3171 Method II
0° Tensile Strength (Normalised to 60%)	$X_T$	668 MPa	97 Ksi	668 MPa	97 Ksi	ISO 527-4
0° Tensile Modulus (Normalised to 60%)	$E_{T11}$	32 GPa	4.6 Msi	32 GPa	4.6 Msi	ISO 527-4
0° Compressive Str. Fibre Volume*	$V_f$	37.2 %		46.7 %		ASTM D 3171 Method II
0° Compressive Strength (Normalised to 60%)	$X_{C11}$	729 MPa	106 Ksi	547 MPa	79 Ksi	SACMA SRM1-94
0° Compressive Mod. Fibre Volume*	$V_f$	36.1 %		46.9 %		ASTM D 3171 Method II
0° Compressive Modulus (Normalised to 60%)	$E_{C11}$	33 GPa	4.8 Msi	15 GPa	2.2 Msi	SACMA SRM1-94
±45° Tensile Cured Fibre Volume*	$V_f$	35.8 %		46.2 %		ASTM D 3171 Method II
±45° Tensile Strength	$Y_{T12}$	173 MPa	25 Ksi	179 MPa-	26 Ksi	ISO 527-4
±45° Tensile Modulus	$E_{T12}$	14 GPa	2.0 Msi	12.9 GPa	1.87 Msi	ISO 527-4
±45° IPS Fibre Volume*	$V_f$	-		47.2 %		ASTM D 3171 Method II
±45° In-Plane Shear Strength	$\tau_{12}$	-	-	231 MPa	34 Ksi	ISO 14129
±45° In-Plane Shear Modulus	$G_{12}$	-	-	10 GPa	1.5 Msi	ISO 14129
±45° In-Plane Shear Poisson's Ratio	$\nu_{12}$	-	-	0.16		ISO 14129
0° ILSS Fibre Volume*	$V_f$	-		46.5 %		ASTM D 3171 Method II
0° ILSS	$X_{ILSS}$	-	-	51 MPa	7.4 Ksi	ISO 14130
±45° ILSS Fibre Volume*	$V_f$	37.8 %		-		ASTM D 3171 Method II
±45° ILSS	$X_{ILSS12}$	34 MPa	4.9 Ksi	-	-	ISO 14130

\* original laminate fibre volume fraction

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The Company strongly recommends that Customers make test panels in the final process conditions and conduct appropriate testing of any goods or materials supplied by the Company prior to final use to ensure that they are suitable for the Customer's planned application. Such testing should include testing under conditions as close as possible to those to which the final component may be subjected. The Company specifically excludes any warranty of fitness for purpose of the goods other than as set out in writing by the Company. Due to the varied nature of end-use applications, the Company does, in particular, not warrant that the test panels in the final process conditions and/or the final component pass any fire standards.

The Company reserves the right to change specifications and prices without notice and Customers should satisfy themselves that information relied on by the Customer is that which is currently published by the Company on its website. Any queries may be addressed to the Technical Services Department.

Gurit is continuously reviewing and updating literature. Please ensure that you have the current version by contacting your sales contact and quoting the revision number in the bottom left-hand corner of this page.

## TECHNICAL CONTACT INFORMATION

For all other enquiries such as technical queries:

Telephone + 44 1983 828000 (08:30 – 17:00 GMT)  
Email [technical.support@gurit.com](mailto:technical.support@gurit.com)

## 24-HOUR CHEMICAL EMERGENCY NUMBER

For advice on chemical emergencies, spillages, fires or exposures:

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