

GURIT[®] G-PET[™] FR

FIRE RETARDANT STRUCTURAL CORE



- Up to 1.3kg reduction in panel resin uptake per square metre
- Excellent FST performance, evaluated against
 - DIN 5510
 - ASTM E1354
 - ASTM E662
 - BSS7239
 - FAR 25.853
- Withstands high process temperatures
- Excellent chemical resistance
- Good adhesion & mechanical properties
- Recyclable
- Compatible with all composite processes
- Available with Gurit[®] G-PET[™]LITE technology

INTRODUCTION

Gurit[®] G-PET[™]FR has been developed in order to meet the growing need for structural core materials with good Fire, Smoke and Toxicity (FST) properties used in Marine, Civil and Transportation markets. It offers a much lower cost FST material compared to high cost / high performance materials such as PMI, PEI or PES foams, addressing lower requirements and needs.

Starting with Gurit[®] G-PET[™], Gurit's extruded structural PET core, flame retardants are then added to improve FST properties. The manufacturing process remains the same as Gurit[®] G-PET[™], with slight variation in process settings. The material is available in all standard knife cut finishes as well as the new surface heat treatment technology Gurit[®] G-PET[™] LITE. Gurit[®] G-PET[™] FR is produced in Gurit Tianjin, China.

Gurit[®] G-PET[™] can be processed at high temperatures, withstanding exotherms up to 150°C / 300°F and offers outstanding fatigue properties, chemical resistance, good adhesion, is a highly consistent extruded foam, it is ideal for wind energy, marine, industrial, and transportation applications. Applicable processing techniques include vacuum infusion, bonding, prepreg, and thermoforming.

INSTRUCTIONS FOR USE

General working practices apply to these products, details of which can be obtained from the Gurit Guide to Composites or by contacting a Gurit representative (contact details provided at the end of this datasheet).

TYPICAL MECHANICAL PROPERTIES

PROPERTY	UNIT	GURIT® G-PET™ FR 75		GURIT® G-PET™ FR 100		GURIT® G-PET™ FR 200		STANDARD
Short Edge Marking	-	Blue	Yellow	Blue	Green	Blue	Black	-
Nominal Sheet Size	mm	1005/1220 x 2440		1005/1220 x 2440		1005/1220 x 2440		-
	inches	39.5/48 x96		39.5/48 x96		39.5/48 x96		-
Nominal Density	kg/m ³	75		100		200		ISO 845
	lb/ft ³	4.7		6.2		12.5		
Typical Density range	kg/m ³	70-80		95-105		195-205		ISO 845
	lb/ft ³	4.4-5.0		5.9-6.6		12.2-12.8		
Compression Strength	MPa	0.82		1.36		3.05		ASTM D-1621
	Psi	119		197		442		
Compression Modulus	MPa	32		56		134		ASTM D-1621 (2010)
	Psi	4641		8122		19435		
	MPa	48		85		169		ASTM D-1621 (1973b)
	Psi	6962		12328		24511		
Shear Strength	MPa	0.60		0.96		1.87		ASTM C-273
	Psi	87		139		271		
Shear Modulus	MPa	14		21		45		ASTM C-273
	Psi	2031		3046		6527		

FIRE RETARDANCE TESTING SUMMARY

FIRE PERFORMANCE / STANDARD	UNIT	GURIT® G-PET™ FR 75		GURIT® G-PET™ FR 100		GURIT® G-PET™ FR 200		TYPICAL REQUIREMENTS
DIN 5510-2	S (flammability)	S4		S4		TBD		S4
	SR (smoke density)	SR2		SR2		TBD		SR2
	ST (dripping)	ST2		ST2		TBD		ST2
	FED (toxicity)	<0.2		<0.2		TBD		≤0.2
ASTM E1354 (heat of combustion)	kW/m ² (average)	115		118				<120
ASTM E662 (smoke density)	Mode	Flaming	Non-flaming	Flaming	Non-flaming	Flaming	Non-flaming	-
	Ds (1.5 min)	13	0	34	2	TBD	TBD	≤100 ^a
	Ds (4min)	48	2	140	8	TBD	TBD	≤200 ^a
	Dm (corr)	58	5	239	18	TBD	TBD	-
	Time to max D	605	1215	-	-	TBD	TBD	-
BSS 7239 (toxicity)	Mode	Flaming	Non-flaming	Flaming	Non-flaming	Flaming	Non-flaming	-
	CO (1.5 min)	16	<1	20	<1	TBD	TBD	-
	CO (4 min)	111	30	232	24	TBD	TBD	-
	CO at max	610	87	714	85	TBD	TBD	3500 ^b
	NO ₂	<1	<1	<1	<1	TBD	TBD	100 ^b
	SO ₂	<1	<1	<1	<1	TBD	TBD	100 ^b
	HCl	<2	<2	<2	<2	TBD	TBD	500 ^b
	HF	4	5	<2	6	TBD	TBD	100 ^b
	HCN	<1	<1	<1	<1	TBD	TBD	100 ^b
CEN TS 45545-2	-	Certification depends on sandwich design						
FAR 25.853 (a) App. F part I (a)(i)(ii)	Vertical Bunsen burner Test 12s & 60s flame Exposure time	Pass		Pass		TBD		-
FAR 25.853 (d) Amendment No. 25-83, App. F part V	Smoke Density	Pass		Pass		TBD		-

^aUS Federal railroad administration

^btypical transportation industry criteria (aviation)

NOTICE

All advice, instruction or recommendation is given in good faith but Gurit AG (the company) only warrants that advice in writing is given with reasonable skill and care. No further duty or responsibility is accepted by the Company. All advice is given subject to the terms and conditions of sale (the Conditions) which are available on request from the Company or may be viewed at the Company's Website: www.gurit.com/terms-and-conditions.aspx

The Company strongly recommends that Customers make test panels and conduct appropriate testing of any goods or materials supplied by the Company 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. 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 are continuously reviewing and updating literature. Please ensure that you have the current version, by contacting Gurit Marketing Communications or your sales contact and quoting the revision number in the bottom right-hand corner of this page.

G-PET is a registered trademark in the EU and in other countries.

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