

GURIT[®] CORECELL[™] S

STRUCTURAL FOAM CORE

- High hydrostatic crush strength and water resistance
- Outstanding mechanical properties
- Ultra-fine cell size
- Lower density than resin-based syntactics

INTRODUCTION

Gurit[®] Corecell[™] S shares the benefits of SAN chemistry common to all Gurit[®] Corecell[™] products.

Built in toughness – High ductility and damage tolerance

Fine cell size – Resin absorption is very low, saving both weight and cost

Superior uniformity – More consistent density than resin-based syntactics

Eliminating outgassing – Gurit[®] Corecell[™] eliminates the problems of foam outgassing

Compatibility – Suitable for use with all polyester, vinylester and epoxy resins

No inhibition - Gurit[®] Corecell[™] does not inhibit any epoxy resin curing mechanisms

Handling – Robust for easy machining and use

Gurit[®] Corecell[™] S has been designed specifically for use in sub-sea buoyancy applications. Its resistance to crushing means that it can withstand depths of over 900m, and its closed-cell structure gives it a high water resistance that ensures buoyancy is maintained over time. With its very high compressive strength, Gurit[®] Corecell[™] S can also replace other materials, such as plywood, when creating high strength inserts for through-bolting in composite laminates.

Having the smallest cell size of all the Gurit[®] Corecell[™] products, Gurit[®] Corecell[™] S absorbs very little resin in lamination processes, thus minimising weight gain. The small cell size and the product's inherent toughness also contribute to the excellent machineability of Gurit[®] Corecell[™] S. Complex shapes can be created in Gurit[®] Corecell[™] S using a variety of milling, routing, sawing and drilling techniques.

Gurit[®] Corecell[™] S is available at lower densities that can be achieved with a syntactic, with standard products ranging from 200 to just over 300kg/m³.

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).

MECHANICAL PERFORMANCE

Type	Test Method	Units	S1200		S1800	
Short Edge Marking	-	-	Red	Brown	Red	Mauve
Nominal Sheet Size	-	mm	890 x 1830		785 x 1600	
		inches	35 x 72		31 x 63	
Nominal Density	ASTM D1622	kg/m ³	210		315	
		lb/ft ³	13.1		19.7	
Density Range	ASTM D1622	kg/m ³	200-220		300-330	
		lb/ft ³	12.5-13.7		18.7-20.5	
Hydrostatic Crush Pressure (HCP)*	ASTM D-2736	Bar	>45		>90	
		Mean MPa	6.19		10.97	
		Mean psi	898		1,591	
		M of Water	632		1119	
Compressive Strength	ASTM D1621 or DIN 53421	Mean MPa	4.71		9.17	
		Mean psi	683		1,330	
Compressive Modulus	ASTM D1621b or DIN 53421 (1973)	Mean MPa	293		515	
		Mean psi	42,496		74,694	
	ASTM D1621 - 2004	Mean MPa	213		379	
		Mean psi	30893		54969	
Shear Strength	ISO 1922	Mean MPa	2.91		5.21	
		Mean psi	422		756	
Shear Modulus	ISO 1922	Mean MPa	98		157	
		Mean psi	14,214		22,771	
Shear Elongation at break	ISO 1922	Mean %	13%		7%	
HDT**	DIN 53424	°C	100		110	
		°F	212		230	
Thermal Conductivity	ASTM C518	W/mK	0.05		0.06	

* HCP is defined as the point of pressure in Bar, where the material when subjected to an increasing pressure of 1-2 Bar/sec has lost 5% of its initial volume.

** at elevated temperature with flexural load

Please Note:

Data quoted is average data at each product's nominal density, and is derived from our regular testing of production materials. Statistically derived minimum value data, satisfying the design requirements of various classification societies, is available on request.



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.

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Corecell is a registered trademark in the EU and in other countries.