Gurit® Corecell™ A

STRUCTURAL FOAM CORE

- Exceptional impact tolerance
- Suitable for dynamically-loaded structures
- Superior styrene and temperature resistance to linear PVC foam
- Highly thermoformable
- Ideal for resin infusion

INTRODUCTION

Gurit® Corecell™ A shares the benefits of SAN chemistry common to all Gurit® Corecell™ products.

Built in toughness – Very high ductility and damage tolerance

Environmental stability – High tolerance for heat and chemical exposure

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

Superior uniformity – Low density variation

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

Handling – Tough and easy to machine

No inhibition - Gurit® Corecell™ does not inhibit epoxy curing mechanisms

Gurit® Corecell™ A is the original Gurit® Corecell™ material, developed because of frustrations with inadequate PVC core technology in marine sandwich structures. Gurit® Corecell™ A is well known for it's incredible toughness and resistance to cracking, which comes from its high ductility. Gurit® Corecell™ A can elongate up to 65% in shear before failure, making core shear failure in a laminate almost impossible. Tests and experience show that Gurit® Corecell™ A is the most reliable core material for dynamic loading situations where PVC and balsa may fail due to poor shear elongation properties. This reliability has made Gurit® Corecell™ A the preferred choice amongst offshore yachtsmen for twenty years.

For the manufacturer, Gurit® Corecell™ A offers the benefit of high resistance to styrene and other chemicals and better thermal stability than linear-PVC foam. Gurit® Corecell™ A is also highly thermoformable, which is useful in many applications where cutting the core material is undesirable.

Gurit® Corecell™ A is available in every resin infusion format and is compatible with polyester, vinylester and epoxy resin systems. The low resin absorption characteristics of Corecell and it's unique knife-cut formats deliver higher performing infusions, low resin cost and low weight. Gurit's global technical team have 10 years experience in resin infusion and offer on-site support for Gurit® Corecell™ customers. This combination makes Gurit® Corecell™ a key part of a reliable package.

Approvals

- Accepted for DNV Slamming and Fatigue Applications
- Approved by the US Coast Guard for use as buoyancy foam
- Approved by the US Coast Guard for use as sandwich core material in the structures of integral diesel fuel tanks
- Type approved by: The American Bureau of Shipping, Germanischer Lloyd, Det Norske Veritas

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	A400	A450	A500	A550	A600	A800	A1200
Short Edge Marking	-	-	Green	Orange	Blue	Yellow	Black	Pale Brown	Brown
Nominal Sheet Size	-	mm	1220 x 2440	1220 x 2440	1220 x 2440	1180 x 2375	1130 x 2250	1015 x 2045	915 x 1830
		inches	48 x 96	48 x 96	48 x 96	46.5 x 93.5	44.5 x 88.5	40 x 80.5	36 x 72
Nominal Density	ISO 845	kg/m³	69	81	92	103	116.5	150	210
		lb/ft³	4.3	5.0	5.7	6.4	7.3	9.3	13.1
Density Range	ISO 845	kg/m³	64-74	75-86	87-97	98-108	109-124	140-160	200-220
		lb/ft³	4.0-4.6	4.7-5.3	5.4-6.0	6.1-6.7	6.8-7.7	8.7-9.9	12.4-13.6
Compressive Strength	ASTM D1621	MPa	0.62	0.80	1.01	1.23	1.52	2.36	4.23
		psi	90	116	146	178	220	342	614
Compressive Modulus	ASTM D1621 – 1973	MPa	37	48	61	74	91	141	251
		psi	4061	5366	6672	7977	9718	14794	25817
	ASTM D1621 - 2010	MPa	28	37	46	55	67	102	178
		psi	5366	6962	8847	10733	13198	20450	36404
Shear Strength	ASTM C273	MPa	0.83	0.99	1.14	1.29	1.48	1.95	2.82
		psi	120	144	165	187	215	283	409
Shear Modulus	ASTM C273	MPa	22	27	32	37	43	60	93
		psi	3191	3916	4641	5366	6237	8702	13489
Shear Elongation at break	ASTM C273	%	71%	69%	67%	66%	64%	58%	49%
Tensile strength	ASTM D1623	MPa	1.18	1.38	1.58	1.77	2.01	2.60	3.67
		psi	171	200	229	257	292	377	532
Tensile modulus	ASTM D1623	MPa	56	70	84	98	117	166	265
		psi	8122	10153	12183	14214	16969	24076	38435
Thermal Conductivity	ASTM C518	W/mK	0.03	0.03	0.04	0.04	0.04	0.04	0.05
HDT	DIN 53424	°C	63	63	63	63	63	63	63
		°F	145	145	145	145	145	145	145

* Peak change rate under static load

Intermediate densities may be available on request subject to minimum order quantities.

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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