

Corecell™ A-Foam

Structural Core Material

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

Introduction

Corecell A-Foam shares the benefits of SAN chemistry common to all Corecell products.

Built in toughness – Very high ductility and damage tolerance

Environmental stability – High tolerance for heat and chemical exposure

Fine cell size – Resin absorption 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 - Corecell does not inhibit epoxy curing mechanisms

Corecell A-Foam is the original Corecell material, developed because of frustrations with inadequate PVC core technology in marine sandwich structures. Corecell A-Foam is well known for its incredible toughness and resistance to cracking, which comes from its high ductility. Corecell A-Foam can elongate up to 65% in shear before failure, making core shear failure in a laminate almost impossible. Tests and experience show that Corecell A-Foam 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 Corecell A-Foam the preferred choice amongst offshore yachtsmen for twenty years.

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

Corecell A-Foam 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 its unique knife cut formats allow for higher performing infusions, lower resin cost and lower weight than any other structural core material. Gurit's global technical team have 10 years experience in resin infusion and offer on-site support for Corecell customers. This combination makes Corecell the most reliable resin infusion package available.

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, Lloyd's Register of Shipping, Germanischer Lloyd, Det Norske Veritas



Type	Test Method	Units	A400	A450	A500	A550	A600	A800	A1200
Nominal Density		kg/m ³	69	81	92	103	116.5	150	210
		lb/ft ³	4.3	5.0	5.7	6.4	7.3	9.3	13.1
Density Range		kg/m ³	64-74	75-86	87-97	98-108	109-124	140-160	200-220
		lb/ft ³	4.0-4.6	4.7-5.4	5.4-6.0	6.1-6.7	6.8-7.7	8.7-10.0	12.5-13.7
Compression Strength	ASTM D1621	MPa	0.6	0.8	0.9	1.1	1.4	2.1	3.9
		psi	90	112	135	161	197	308	564
Compressive Modulus	ASTM D1621b	MPa	41	53	64	72	83	117	217
		psi	5950	7620	9290	10450	12040	16980	31490
Shear Strength	ISO 1922	MPa	0.7	0.8	1.0	1.1	1.2	1.6	2.6
		psi	102	123	144	157	176	229	373
Shear Modulus	ISO 1922	MPa	22	24	26	30	34	47	76
		psi	3190	3480	3770	4350	4930	6820	11030
Shear Elongation	ISO 1922	%	63%	63%	69%	66%	64%	50%	46%
Tensile Strength	ASTM C-297	MPa	0.9	1.1	1.3	1.6	1.8	2.5	3.9
		psi	135	165	194	225	264	364	560
Tensile Modulus	ASTM C-297	MPa	50	65	81	97	120	183	321
		psi	7260	9430	11750	14080	17410	26560	46580
Thermal Conductivity	ASTM C518	W/mK	0.03	0.03	0.04	0.04	0.04	0.04	0.05
Dimensional Stability	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

SP is a technology brand of Gurit AG (the company). All advice, instruction or recommendation is given in good faith but 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/termsandconditions_en.html.

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 left-hand corner of this page.

Gurit (UK) Ltd

St Cross Business Park
Newport, Isle of Wight
United Kingdom PO30 5WU

T +44 (0) 1983 828 000
F +44 (0) 1983 828 100
E marine@gurit.com
W www.gurit.com

Gurit (Australia) Pty Ltd

Unit 1A / 81 Bassett Street,
Mona Vale, 2103 NSW,
Australia

T +61 (0) 2 9979 7248
F +61 (0) 2 9979 6378
E sales-au@gurit.com
W www.gurit.com

Gurit (Canada) Inc

175 rue Péladeau,
Magog, (Québec)
J1X 5G9, Canada

T +1 819 847 2182
F +1 819 847 2572
E info-na@gurit.com
W www.gurit.com