



Corecell™ T-Foam

Structural Foam Core

Product Data Sheet

Corecell T-Foam – The stable foam

- Suitable for all PVC core applications
- Excellent mechanical properties
- Outstanding chemical resistance
- 120°C processing
- Ideal for resin infusion

Introduction

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

Environmental stability – High tolerance for heat and chemical exposure

Built in toughness – High ductility and damage tolerance compared to cross-linked PVC and Balsa

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

Superior uniformity – Half the density variation of PVC and Balsa

Eliminating outgassing – Corecell eliminates the problems of foam outgassing

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

No inhibition - Corecell does not inhibit any epoxy resin curing mechanisms

Handling – Tough and easy to machine

Corecell T-Foam has been developed as a technological step-change from traditional PVC and Balsa structural core. It has slightly higher stiffness properties and even greater styrene resistance than the more ductile Corecell A-Foam. This makes it ideal for applications where loads are less dynamic in nature. Conceived for use above the waterline on yachts, on wind turbines and in mass transport, Corecell T-Foam is an outstanding core material in every application where balsa or X-PVC is commonly used.

High mechanical toughness and thermal stability give Corecell T-Foam excellent fatigue characteristics. This reliability makes Corecell T-Foam a natural replacement for cross-linked PVC or balsa in applications where a significant service life is required.

The formulation of Corecell T-Foam generates a remarkable thermal stability for a polymer foam. At 100°C, conventional cross-linked PVC foams retain less than 20% of their room temperature compressive properties, whereas Corecell T-Foam retains almost 60%, surpassing even that of expensive 'high temperature (HT)' X-PVC's. This stability means that Corecell T-Foam structures exposed to temperature variation will maintain their properties and cause very little core print-through.

The high temperature stability of Corecell T-Foam also means that it can be used in manufacturing processes to at least 120°C with short durations during a cure cycle to over 150°C. This makes it ideal for use with conventional prepregs and in some liquid infusion processes where high resin exotherms can often be seen.

Corecell T-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. SP's global technical team have 10 years experience in resin infusion and offer on-site support for Corecell customers. This combination makes Corecell a key part of the most reliable resin infusion package available.

Corecell T-Foam is approved by Germanischer Lloyds and is in the process of approval by Det Norske Veritas.

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Corecell T-Foam							
Type	Test Method	Units	T400	T500	T550	T600	T800
Nominal Density		kg/m ³	71	94	104	115	143
		lb/ft ³	4.4	5.9	6.5	7.2	8.9
Density Range		kg/m ³	66-76	89-99	100-107	108-122	133-153
		lb/ft ³	4.1-4.7	5.5-6.2	6.2-6.7	6.7-7.6	8.3-9.5
Compression Strength	ASTM D1621	MPa	0.8	1.2	1.4	1.7	2.3
		psi	115	177	209	245	338
Compressive Modulus	ASTM D1621b	MPa	55	80	93	108	148
		psi	7980	11610	13500	15670	21480
Shear Strength	ISO 1922	MPa	0.7	1.0	1.1	1.3	1.7
		psi	94	138	158	183	239
Shear Modulus	ISO 1922	MPa	24	31	35	39	55
		psi	3480	4500	5080	5660	7980
Shear Elongation	ISO 1922	%	34%	25%	23%	21%	27%
Tensile Strength	ASTM C-297	MPa	1.2	1.6	1.8	2.0	2.5
		psi	180	237	261	286	358
Tensile Modulus	ASTM C-297	MPa	94	130	147	164	216
		psi	13640	18860	21330	23800	31340
Thermal Conductivity	ASTM C518	W/mK	0.03	0.04	0.04	0.04	0.04
Dimensional Stability	DIN 53424	°C	100	100	100	100	100
		°F	212	212	212	212	212
Compression Stability*	TMA	°C	127	127	127	127	127
		°F	261	261	261	261	261

* 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.

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