

Corecell™ K-Foam

Structural Foam Core

- Suitable for all PVC core applications
- Excellent mechanical properties
- Outstanding chemical resistance
- 140°C processing

Introduction

Corecell K-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

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

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 K-Foam is a development of Corecell T-Foam with higher temperature stability for processing under vacuum. It shares Corecell T-Foam's exceptional balance of toughness and stiffness. This makes it ideal for large-scale prepreg and SPRINT® manufacturing processes such as wind turbine blade manufacture. It also presents an interesting alternative to expensive PMI foams in applications where the very highest thermal stability is not required.

High mechanical toughness and thermal stability give Corecell K-Foam excellent fatigue characteristics. This is especially significant in applications such as wind turbines, which are exposed to extremes of temperature and require a 25 year guarantee of structural performance.

The formulation of Corecell K-Foam generates an exceptional 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 K retains almost 65%, surpassing even that of expensive 'high temperature (HT)' X-PVC's and approaching some PMI core materials.

The high temperature stability of Corecell T also means that it can be used in manufacturing processes to at least 140°C with short durations during a cure cycle to over 150°C. This makes it ideal for use with conventional prepreps and in some liquid infusion processes where high resin exotherms can often be seen.

Type	Test Method	Units	K500	K800
Nominal Density		kg/m ³	94	143
		lb/ft ³	5.9	8.9
Density Range		kg/m ³	87-100	130-155
		lb/ft ³	5.4-6.2	8.1-9.7
Compression Strength	ASTM D1621	MPa	1.4	2.9
		psi	203	421
Compressive Modulus	ASTM D1621b	MPa	90	182
		psi	13060	26410
Shear Strength	ISO 1922	MPa	1.0	1.7
		psi	145	247
Shear Modulus	ISO 1922	MPa	35	65
		psi	5080	9430
Shear Elongation	ISO 1922	%	36%	22%
Tensile Strength	ASTM C-297	MPa	-	2.4
		psi	-	348
Tensile Modulus	ASTM C-297	MPa	-	221
		psi	-	32070
Thermal Conductivity	ASTM C518	W/mK	0.04	0.04

* Peak change rate under static 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.

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