HORIZON
Redefine Materials Frontier

HXCELL®

TECHNICAL DATA



HXCELL®-FX

HIGH TOUGHNESS PVC FOAM CORE

HXCELL®-FX is a high-toughness cross-linked PVC rigid foam core specially developed for marine applications. Its flexible molecular structure delivers a high shear strain of 41 – 45%, enhancing impact resistance and dynamic load-bearing capacity.

Its excellent slamming load resistance, low water absorption, and inherent flame-retardant properties make it ideal for demanding marine applications. HXCELL®-FX can also be combined with HXCELL®-HX in hull design to balance weight reduction, safety, and cost efficiency.

MECHANICAL PROPERTIES

Property	Test Procedure	Unit	Statistical Value	FX60	FX80	FX100	FX130
Density	ISO 845	kg/m³	Max.	69	90	110	150
			Avg.	60	80	100	130
			Min.	54	72	90	117
Compressive Strength	ISO 844:2006	MPa	Avg.	1.03	1.45	1.96	2.9
			Min.	0.85	1.1	1.65	2.35
Compressive Modulus	ISO 844:2006	MPa	Avg.	90.8	119	155	175
			Min.	75	100	120	150
Shear Strength	ISO 1922:2012	MPa	Avg.	0.79	1.1	1.55	2.15
			Min.	0.7	0.95	1.35	1.85
Shear Modulus	ISO 1922:2012	MPa	Avg.	22	26	35	45
			Min.	20	22	28	38
Shear Strain	ISO 1922:2012	%	Avg.	35	41	41	41

*Note: The above values are average results obtained from routine production testing.

PRODUCT CHARACTERISTICS

- **SEMI-IPN STRUCTURE:** High strength-to-weight ratio, excellent stiffness, and high impact resistance for dynamic load applications.
- **EXCELLENT CHEMICAL RESISTANCE:** Compatible with a wide range of resin systems, including epoxy and unsaturated polyester resins.
- **CLOSED-CELL STRUCTURE:** Provides low resin absorption, low water absorption, thermal insulation, sound insulation, and dielectric transparency.
- **SELF-EXTINGUISHING PROPERTY:** Suitable for applications requiring enhanced fire safety and higher performance standards.
- **HIGH-STRAIN IMPACT RESISTANCE:** Withstands slamming and dynamic loads.

TECHNICAL CHARACTERISTICS

Characteristics	Test Procedure	Unit	FX60	FX80	FX100	FX130
Thermal Conductivity (20° C)	EN 12667	W/(m-K)	0.029	0.031	0.033	0.037
Coefficient of Linear Thermal Expansion	ISO 4897	x10^-6/°C	40	40	40	40
Heat Deflection Temperature	DIN 53424	°C	120	120	120	120
Maximum Continuous Service Temperature	/	°C	80	80	80	80
Dissipation Factor	ASTM D 2520	/	0.0003	0.0005	0.0006	0.0009
Dielectric Constant	ASTM D 2520	/	1.06	1.08	1.11	1.14
Poisson's Ratio	ASTM D638-22	/	0.4	0.4	0.4	0.4

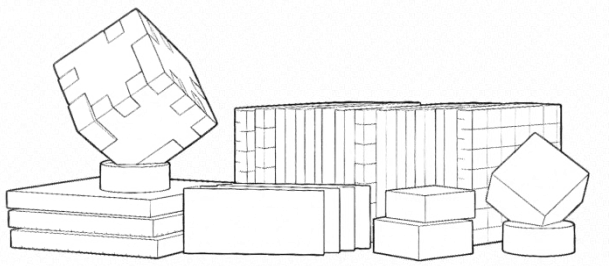
***Note:** The above data are average values from routine production testing.
Continuous service temperature: -200°C to +80°C. For high-temperature or sustained load applications, please contact us for design support.Maximum processing temperature depends on time, pressure and process conditions; recommended limit under normal conditions is 110°C.

HXCELL®-FX CERTIFICATIONS, APPROVALS & COMPLIANCE:

RoHS

ISO 9001:2015 COMPANY · ISO 14000 · ISO 45001 CERTIFIED

Disclaimer:
This data sheet may be subject to revision and changes due to development and changes of the material. The data is derived from tests and practical experience. If not stated as minimum values, the data is average data and should be treated as such. Relevant calculations should be verified by actual tests. The data is furnished without liability for the company and does not constitute any warranty or representation in respect of the material or its use. The company reserves the right to release new data sheets in replacement.



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