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ROHACELL®

Product Information

ROHACELL® HF

STRUCTURAL FOAM FOR ANTENNA APPLICATIONS

ROHACELL® HF is a closed-cell rigid foam based on polymethacrylimide (PMI) chemistry that is completely free of CFC's. With its extremely low dielectric constants and particularly favorable transmission properties at high frequencies, **ROHACELL® HF** is ideal for use in antenna applications.

PROCESSING BENEFITS

Featuring an extremely fine closed-cell structure, the foam ensures minimal resin uptake and problem-free compatibility with metallic facing materials due to the absence of corrosive effects.

ROHACELL® HF foam is suitable for hand lay-up, prepreg processing and vacuum infusion at temperatures up to 130 °C (266 °F) and pressures up to 0.3 MPa (44 psi).

APPLICATIONS

From miniature antennas in cell phones to large fixed ship-based and stationary antenna structures, **ROHACELL® HF** is used worldwide. Other typical applications include usage as structural core for radomes and mammography plates.

THERMOFORMING AND SHAPING

ROHACELL® HF can be easily thermoformed or CNC machined to meet application requirements.

High precision, pre-shaped and ready-to-use foam cores in complex or simple geometries can be supplied by the ROHACELL® Shapes Department.

Property	Test Method*	Unit	ROHACELL® 31 HF	ROHACELL® 51 HF	ROHACELL® 71 HF
Density**	ISO 845 ASTM D 1622	kg/m³ lbs/ft³	32 ± 7 2.00 ± 0.44	52 ± 12 3.25 ± 0.75	75 ± 15 4.68 ± 0.94
Compressive Strength	ISO 844 ASTM D 1621	MPa psi	0.4 58	0.9 130	1.5 217
Tensile Strength	ISO 527-2 ASTM D 638	MPa psi	1.0 145	1.9 275	2.8 406
Tensile Modulus	ISO 527-2 ASTM D 638	MPa psi	36 5,220	70 10,150	92 13,340
Elongation at Break	ISO 527-2 ASTM D 638	%	3.5	4.0	4.5
Shear Strength	DIN 53294 ASTM C 273	MPa psi	0.4 58	0.8 116	1.3 188
Shear Modulus	DIN 53294 ASTM C 273	MPa psi	13 1,885	19 2,755	29 4,205
Coefficient of Thermal Expansion		1/K*10E-5	N/A	3.34	3.23

Technical data values presented above are typical for nominal density, subject to normal manufacturing variations. *Data values are based on ISO & DIN standard test methods, however ASTM values can be confirmed upon request. All ROHACELL® products are closed-cell rigid foams based on polymethacrylimide (PMI) chemistry and contain no CFC's. ** Density values are valid for full-size sheets with a minimum thickness of 10 mm (0.39 inch) only. Other density ranges are available upon request.

ELECTRICAL PROPERTIES OF ROHACELL® HF

Property	Frequency [GHz]	31 HF	51 HF	71 HF
Dielectric constants	2.5	1.050	1.057	1.075
	5.0	1.043	1.065	1.106
	10.0	1.046	1.067	1.093
	26.5	1.041	1.048	1.093
Loss tangent	2.5	<0.0002	<0.0002	<0.0002
	5.0	0.0016	0.0008	0.0016
	10.0	0.0017	0.0041	0.0038
	26.5	0.0106	0.0135	0.0155

FOR MORE INFORMATION

If you have questions or would like to discuss using **ROHACELL® HF** in your application, we encourage you to talk with your local ROHACELL® representative.

Visit www.rohacell.com to locate and directly connect with the contact in your region, by phone or email.

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