

Product Information

ROHACELL® HF

STRUCTURAL FOAM FOR ANTENNA APPLICATIONS

ROHACELL® HF is a closed-cell rigid foam based on polymethacrylimide (PMI) chemistry 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

Used worldwide in miniature antennas in cell phones to large fixed ship-based and stationary antenna structures, the foam is also used as structural core in 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/m ³ lbs/ft ³ | 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 | 0.3 58 | 0.7 130 | 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 |
| Dielectric constant | | | 1.04 | 1.06 | 1.09 |

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.

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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