

Product Information

ROHACELL® HERO

Innovative **ROHACELL® HERO** delivers the latest in materials technology for composite aircraft structures that are lightweight, durable over their lifetime and less expensive to produce.

It's the new standard in aircraft structural core material!

KEEPING IT LIGHT

Sandwich technology is an excellent way to reduce weight and thanks to its outstanding mechanical properties and low density, **ROHACELL® HERO** sandwich cores offer the most weight saving potential of all structural foams.

Featuring a closed cell structure, **ROHACELL® HERO** minimizes added weight by taking up resin only in the cut surface cells – resulting in a lighter finished part weight compared with traditional honeycomb structures.

LONG HAUL DURABILITY

Offering excellent elongation at break properties, **ROHACELL® HERO** remains robust and durable for the lifetime of the aircraft.

Surface impact damage is easily visible during inspections and rework/repair is simple since the core damage does not extend beyond the initial impact location and there is no water ingress as can occur with honeycomb core structures.

IT CAN TAKE THE HEAT

With heat resistance of up to 210 °C (428 °F), processing or curing temperatures can be increased higher than other core materials allow (e.g., typical cure cycle at 180 °C/356 °F with maximum pressure dependent upon density). This results in significant reductions in total cycle time and faster part manufacturing.

No other core material offers such ease of processing in a wide variety of processes, including autoclave, resin infusion, RTM and VARTM.

WE CAN HELP YOU SHAPE THE FUTURE

Let our Shapes Department supply you with finished, ready-to-use net-shape **ROHACELL® HERO** parts. Your cores will be delivered ready for immediate use in your next processing step.

- Eliminate waste
- Reduce in-house production time
- Up to 30 % cost savings



ROHACELL® HERO IN FLIGHT

ROHACELL® HERO is a recommended grade for core material in sandwich structures for aircraft wings, landing gear doors, radomes, vertical and horizontal stabilizers, ailerons and other areas subject to surface impact damage.

| Property | Test Method* | Unit | ROHACELL® 51 HERO | ROHACELL® 71 HERO | ROHACELL® 110 HERO | ROHACELL® 200 HERO |
|----------------------------------|-------------------------|------------------------------------------|----------------------|----------------------|-----------------------|-----------------------|
| Density | ISO 845 ASTM D 1622 | kg/m ³ lbs/ft ³ | 52 3.25 | 75 4.68 | 110 6.87 | 205 12.80 |
| Compressive Strength | ISO 844 ASTM D 1621 | MPa psi | 0.6 87 | 1.1 160 | 2.5 363 | 7.1 1,030 |
| Compressive Modulus | ISO 844 ASTM D 1621 | MPa psi | 32 4,640 | 48 6,960 | 83 12,000 | 180 26,100 |
| Tensile Strength | ISO 527-2 ASTM D 638 | MPa psi | 2.6 377 | 4.1 595 | 6.3 914 | 12.3 1,780 |
| Tensile Modulus | ISO 527-2 ASTM D 638 | MPa psi | 82 11,900 | 123 17,800 | 189 27,400 | 389 56,400 |
| Elongation at Break | ISO 527-2 ASTM D 638 | % | 8 | 9.5 | 9.9 | 10.8 |
| Shear Strength | DIN 53294 ASTM C 273 | MPa psi | 0.7 102 | 1.3 189 | 2.3 334 | 5.2 754 |
| Shear Modulus | DIN 53294 ASTM C 273 | MPa psi | 22 3,190 | 28 4,060 | 50 7,250 | 109 15,800 |
| Maximum Shear Strain | DIN 53294 ASTM C 273 | % | 7.0 | 7.2 | 7.2 | 7.2 |
| Glass Transition Temperature | | °C °F | N/A | 207 405 | 203 397 | 200 392 |
| Coefficient of Thermal Expansion | | 1/K*10E-5 | 3.76 | 3.77 | 3.72 | 4.26 |

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.

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