

The high performance sandwich core

Divinycell HT is an aerospace core available with comprehensive quality documentation and traceability. Divinycell HT foam is suitable for pre-preg processing (typical +250°F) as well as wet resin systems and infusion. Furthermore Divinycell HT is also self-extinguishing according to FAR 25.853. Divinycell HT eliminates edge potting and sweep and sand.

Mechanical properties Divinycell® HT - Imperial units

| Property | Test Procedure | Unit | | HT61 | HT81 | HT101 | HT131 | HT251 |
|-----------------------------------|------------------|--------------------|---------|--------|--------|--------|--------|--------|
| Compressive Strength ¹ | ASTM D 1621 | psi | Nominal | 145 | 217 | 290 | 435 | 1,044 |
| | | | Minimum | 123 | 174 | 239 | 348 | 885 |
| Compressive Modulus ¹ | ASTM D 1621-B-73 | psi | Nominal | 11,600 | 15,225 | 19,575 | 24,650 | 58,015 |
| | | | Minimum | 8,412 | 13,050 | 16,675 | 21,025 | 50,763 |
| Tensile Strength ¹ | ASTM D 1623 | psi | Nominal | 261 | 406 | 508 | 696 | 1,334 |
| | | | Minimum | 218 | 319 | 362 | 508 | 1,160 |
| Shear Strength | ASTM C 273 | psi | Nominal | 131 | 181 | 232 | 319 | 653 |
| | | | Minimum | 109 | 145 | 203 | 276 | 566 |
| Shear Modulus | ASTM C273 | psi | Nominal | 2,900 | 4,060 | 5,075 | 7,250 | 14,069 |
| | | | Minimum | 2,611 | 3,190 | 4,060 | 5,800 | 11,748 |
| Shear Strain | ASTM C273 | % | Nominal | 25 | 38 | 40 | 40 | 45 |
| | | | Minimum | 20 | 25 | 25 | 30 | 30 |
| Density | ASTM D 1622 | lb/ft ³ | Nominal | 4.1 | 5.0 | 6.2 | 8.1 | 15.6 |

All values measured at +73.4°F

1. Properties measured perpendicular to the plane

Nominal value is an average value of a mechanical property at a nominal density

Minimum value is a minimum guaranteed mechanical property a material has independently of density

Product Characteristics

- High dimensional stability
- Good temperature resistance
- Non biodegradable
- Excellent chemical resistance
- Low resin uptake
- High strength and stiffness to weight ratio
- Low water absorption
- Easily machined and processed
- Acoustic and thermal insulation
- Consistant and homogenous

Application areas

Primary structures, radomes, control surfaces and interior components.

Customers

Bell Helicopter Textron
Boeing
Boeing Rotorcraft
Cessna Aircraft Company
Cirrus Design
Gulfstream
MD Helicopter
United Launch Alliance

Specifications

299-947-304
DMS2265
HMS-17-1205
CMNP060
GEK0501
GAC101B
MDM17-1205
5-06172

Technical Characteristics

Fire, Smoke & Toxicity characteristics

| Characteristic | Unit | Test method | HT61 | HT81 | HT101 | HT131 | HT251 |
|-----------------------|------|-------------|------|------|-------|-------|-------|
| Vertical Burn, 60 sec | - | FAR 25.853 | Pass | Pass | Pass | Pass | Pass |

Electrical and Thermal characteristics

| Characteristic ¹ | Unit | Test method | HT61 | HT81 | HT101 | HT131 | HT251 |
|-----------------------------------|---------------------------------------|-------------|--------|--------|--------|--------|--------|
| Dissipation Factor | - | ASTM D 2520 | 0.0003 | 0.0005 | 0.0006 | 0.0009 | 0.0019 |
| Dielectric Constant | - | ASTM D 2520 | 1.07 | 1.09 | 1.11 | 1.15 | 1.29 |
| Thermal Conductivity ² | Btu x in / (ft ² x h x °F) | ASTM C 518 | 0.243 | 0.257 | 0.257 | 0.264 | 0.333 |

1. Typical values
2. Thermal conductivity at +50°F

Technical characteristics

| Characteristics ¹ | Unit | Test method | HT61 | HT81 | HT101 | HT131 | HT251 |
|------------------------------|-----------------------|-------------|--------------|--------------|--------------|--------------|--------------|
| Coeff, linear heat expansion | x10 ⁻⁶ /°F | ISO 4897 | 22.2 | 22.2 | 22.2 | 22.2 | 22.2 |
| Heat Distortion Temperature | °F | DIN 53424 | +257 | +257 | +257 | +257 | +257 |
| Continuous temp range | °F | - | -325 to +176 | -325 to +176 | -325 to +176 | -325 to +176 | -325 to +176 |
| Max process temp | °F | - | +293 | +293 | +293 | +293 | +293 |
| Poissons ratio average (X,Y) | - | ASTM 638 | - | 0.35 | - | - | - |

1. Typical values

Continuous operating temperature is typically -325°F to +176°F. The foam can be used in sandwich structures, for outdoor exposure, with external skin temperatures up to +212°F. For optimal design of applications used in high operating temperatures in combination with continuous load, please contact Diab Technical Services for detailed design instructions. Normally Divinycell HT can be processed at up to +293°F with minor dimensional changes.

Maximum processing temperature is dependent on time, pressure and process conditions. Therefore users are advised to contact Diab Technical Services to confirm that Divinycell HT is compatible with their particular processing parameters.

Physical characteristics

| Format | | Unit | HT61 | HT81 | HT101 | HT131 | HT251 |
|--------------|--------|------|-------|-------|-------|-------|-------|
| Plain sheets | Length | inch | 96.06 | 81.50 | 84.06 | 76.18 | 63.58 |
| | Width | inch | 48.03 | 40.16 | 41.14 | 37.20 | 30.51 |

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 experience. If not stated as minimum values, the data is average data and should be treated as such. Calculations should be verified by actual tests. The data is furnished without liability for the company and does not constitute a 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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