

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 +120°C) 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

Property	Test Procedure	Unit		HT61	HT81	HT101	HT131	HT251
Compressive Strength ¹	ASTM D 1621	MPa	Nominal	1.0	1.5	2.0	3.0	7.2
			Minimum	0.85	1.2	1.65	2.4	6.1
Compressive Modulus ¹	ASTM D 1621-B-73	MPa	Nominal	80	105	135	170	400
			Minimum	58	90	115	145	350
Tensile Strength ¹	ASTM D 1623	MPa	Nominal	1.8	2.8	3.5	4.8	9.2
			Minimum	1.5	2.2	2.5	3.5	8.0
Shear Strength	ASTM C 273	MPa	Nominal	0.9	1.25	1.6	2.2	4.5
			Minimum	0.75	1.0	1.4	1.9	3.9
Shear Modulus	ASTM C273	MPa	Nominal	20	28	35	50	97
			Minimum	18	22	28	40	81
Shear Strain	ASTM C273	%	Nominal	25	38	40	40	45
			Minimum	20	25	25	30	30
Density	ASTM D 1622	kg/m ³	Nominal	65	80	100	130	250

All values measured at +23°C

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	W/(m-K)	ASTM C 518	0.035	0.037	0.037	0.038	0.048

1. Typical values
2. Thermal conductivity at +10°C

Technical characteristics

Characteristics ¹	Unit	Test method	HT61	HT81	HT101	HT131	HT251
Coeff, linear heat expansion	$\times 10^{-6}/^{\circ}\text{C}$	ISO 4897	40	40	40	40	40
Heat Distortion Temperature	$^{\circ}\text{C}$	DIN 53424	+125	+125	+125	+125	+125
Continuous temp range	$^{\circ}\text{C}$	-	-200 to +80	-200 to +80	-200 to +80	-200 to +80	-200 to +80
Max process temp	$^{\circ}\text{C}$	-	+145	+145	+145	+145	+145
Poissons ratio average (X,Y)	-	ASTM 638	-	0.35	-	-	-

1. Typical values

Continuous operating temperature is typically -200°C to +80°C. The foam can be used in sandwich structures, for outdoor exposure, with external skin temperatures up to +100°C. 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 +145°C 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	mm	2440	2070	2135	1935	1615
	Width	mm	1220	1020	1045	945	775

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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