Divinycell HT

Technical Data

The high performance sandwich core

Divinycell HT is an aerospace core available with comprehensive quality documentation and traceability. Diviniycell 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/ft³	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	Specifications
Bell Helicopter Textron	299-947-304
Boeing	DMS2265
Boeing Rotorcraft	HMS-17-1205
Cessna Aircraft Company	CMNP060
Cirrus Design	GEK0501
Gulfstream	GAC101B
MD Helicopter	MDM17-1205
United Launch Alliance	5-06172

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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 -325ºF to +176ºF. The foam can be used in sandwich structures, for outdoor exposure, with external skin temperatures up to +212ºF. 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

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