



TECHNICAL DATA

PVC Foam | Divinycell HP

High temperature performance PVC core material

Divinycell HP has been developed for use in low and medium temperature prepreg systems. Its unique PVC chemical structure yields impressive mechanical performance at a low weight. Divinycell HP's elevated temperature performance also extends to its 'in service' life, as it will retain a high percentage of its mechanical properties despite exposure to higher ambient temperatures.

It offers high properties in all significant areas including mechanical performance, elongation to break, ductility, adhesion/peel strength, fracture toughness and dimensional stability. Other key features of Divinycell HP include excellent chemical resistance, low water absorption and good thermal/acoustic insulation

Mechanical properties

Property	Test Procedure	Unit		HP60	HP80	HP100	HP130	HP160	HP200	HP250
Compressive Strength ¹	ASTM D 1621	psi	Nominal	138	217	290	435	493	783	1,044
			Minimum	123	174	239	348	406	653	885
Compressive Modulus ¹	ASTM D 1621-B-73	psi	Nominal	11,600	15,225	19,575	24,650	29,000	44,965	58,015
			Minimum	8,410	13,050	16,675	21,025	25,380	38,435	50,760
Tensile Strength ¹	ASTM D 1623	psi	Nominal	261	406	508	696	784	1,030	1,335
			Minimum	218	319	362	508	581	914	1,160
Tensile Modulus ¹	ASTM D 1623	psi	Nominal	10,875	14,500	18,850	25,375	29,750	36,250	46,400
			Minimum	8,265	11,600	15,225	19,575	23,210	30,450	37,710
Shear Strength	ASTM C 273	psi	Nominal	123	181	232	319	377	508	653
			Minimum	109	145	203	276	319	464	566
Shear Modulus	ASTM C 273	psi	Nominal	2,900	4,060	5,075	7,250	10,595	10,590	14,070
			Minimum	2,610	3,190	4,060	5,800	7,250	9,425	11,745
Shear Strain	ASTM C 273	%	Nominal	23	38	40	40	40	45	45
Density	ISO 845	lb/ft ³	Nominal	4.1	5.0	6.3	8.1	10.0	12.5	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 nominal density.

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

Product characteristics

- Excellent temperature resistance
- Low resin uptake
- High strength and stiffness to weight ratio
- Superior damage and durability tolerance
- Fast and easy to process
- Good chemical resistance
- Acoustic and thermal insulation
- Consistent and homogenous material

Typical application areas



Marine



Wind energy



Construction



Transportation



Other industries

Technical characteristics

Characteristics ¹	Unit	HP60	HP80	HP100	HP130	HP160	HP200	HP250	Test method
Density variation	lb/ft ³	3.9-4.7	4.5-5.8	5.6-7.3	7.3-9.3	9.1-11.3	11.3-14.4	14.4-18.1	-
Thermal conductivity ²	Btu x in/(ft ² x h x °F)	0.243	0.257	0.257	0.264	0.278	0.312	0.333	EN 12667
Coeff, linear heat expansion	x10 ⁻⁶ /°F	22.2	22.2	22.2	22.2	22.2	22.2	22.2	ISO 4897
Heat Distortion Temperature	°F	+257	+257	+257	+257	+257	+257	+257	DIN 53424
Continous temp range	°F	-325 to +176	-325 to +176	-325 to +176	-325 to +176	-325 to +176	-325 to +176	-325 to +176	-
Max process temp	°F	+293	+293	+293	+293	+293	+293	+293	-
Dissipation factor	-	0.0003	0.0005	0.0006	0.0009	0.0012	0.0015	0.0019	ASTM D 2520
Dielectric constant	-	1.07	1.09	1.11	1.15	1.18	1.23	1.29	ASTM D 2520
Poissons ratio ³	-	0.4	0.4	0.4	0.4	0.4	0.4	0.4	ASTM 638

1. Typical values
2. Thermal conductivity at +50°F
3. Standard deviation is 0.045

Normally Divinycell HP can be processed at up to +293°F with minor dimensional changes. Maximum processing temperature is dependent on time, pressure and process conditions. To confirm that Divinycell HP is compatible with users particular processing parameters, and for optimal design of applications used in high operating temperatures in combination with continuous load, please contact Diab Technical Services.

Dimensions

Format		Unit	HP60	HP80	HP100	HP130	HP160	HP200	HP250
Plain sheets	Length	inch	96.06	81.50	84.06	76.18	72.24	67.13	63.58
	Width	inch	48.03	40.16	41.14	37.20	35.04	32.48	30.51
GS sheet	Length	inch	48.03	48.03	40.55	42.01	38.07	36.10	-
	Width	inch	32.01	48.03	40.16	41.14	37.20	35.043	32.48

Tolerances	Unit	Length	Width	Thickness
Plain sheets	Inch	-0.39/+0.24	-0.2/+0.24	-/+ 0.02

Storage of product

The shelf life of Divinycell is unlimited when it is stored in its original package on ambient indoor storage conditions and protected against UV exposure.

Divinycell HP is type approved by:



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Datasheet Diab Divinycell HP rev 29 May 2026 IMP

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