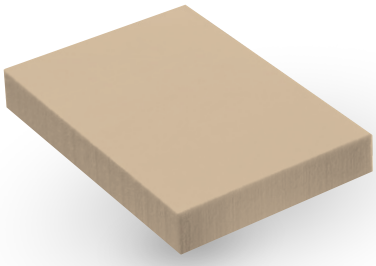

TECHNICAL DATA

PVC Foam | **Divinycell HCP**

High performance buoyancy PVC foam

Divinycell HCP is a high-performance, low-density buoyancy foam designed specifically for subsea applications. With outstanding hydraulic compressive properties and a closed cell structure, it provides high uplift capacity, minimal buoyancy loss and water absorption even under long-term loading conditions. Widely used in submarines, buoyancy modules (or units) in ROV:s, AUV:s and other autonomous vehicles, diving bells, and impact protection structures, Divinycell HCP is the reliable choice for critical subsea operations.

The design of subsea buoyancy applications is complex and consideration has to be given to the required buoyancy loss and updrift requirements over the expected lifetime and service conditions, with respect to long and short term hydraulic compressive creep, water absorption and hydraulic fatigue. Certified for subsea, each block pressure tested and documented for traceability. Please contact Diab Technical Services for design proposal.

Mechanical properties

Property	Test Procedure	Unit		HCP 30	HCP50	HCP70	HCP90	HCP100
Density	ISO 845	lb/ft³	Nominal	12.5	15.6	19.4	23.7	25.6
Hydraulic Crush Point	ASTM D-2736 proc. A	Bar	Minimum	30	50	70	90	100
Compressive Strength[1]	ASTM D 1621	psi	Nominal	785	1,045	1,175	1,480	1,680
			Minimum	653	885	1,015	1,305	1,450
Compression Modulus[1]	ASTM D1621-B-73	psi	Nominal	44,965	58,015	72,520	85,570	94,275
			Minimum	38,435	50,760	56,565	71,010	78,320
Tensile Strength[1]	ASTM D 1623	psi	Nominal	1,030	1,335	1,595	1,825	1,960
			Minimum	915	1,160	1,450	1,670	1,770
Shear Strength	ASTM C 273	psi	Nominal	508	653	754	943	1,059
			Minimum	464	566	609	870	943
Shear Modulus	ASTM C 273	psi	Nominal	10,590	14,070	16,680	21,320	24,655
			Minimum	9,425	11,750	13,055	18,275	21,175
Shear Strain	ASTM C 273	%	Nominal	45	45	35	35	35

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 characteristiscs

- Excellent buoyancy performance
- High impact and damage resistance
- Low water absorption
- Good insulation properties
- Thermoformable
- Superior damage tolerance
- Fast and easy to machine
- Good chemical and thermal resistance

Typical application areas

Subsea

Technical characteristiscs

Type	Buoyancy[1] (lb/ft³)	Operational depth[2] (ft)	Crush depth (ft)
HCP30	51.5	623	984
HCP50	48.4	984	1,640
HCP70	44.6	1,476	2,297
HCP90	40.3	1,804	2,953
HCP100	38.4	2,133	3,281

1. Buoyancy above is calculated at surface level and with nominal density. Please contact Diab for detailed analyse before selecting material.
2. Operational depth above is calculated with a max 5% buoyancy loss over 10 years operational time.
   Depth shown are for guidance only and can be optimized for individual conditions. Always contact Diab for advice before selecting material.
   Buoyancy calculated in sea water (density 63.99 lb/ft3).

Characteristics[1]	Unit	HCP30	HCP50	HCP70	HCP90	HCP100	Test method
Density range	lb/ft³	11.2-14.4	14.4-18.1	18.4-21.2	21.2-25.9	24.4-28.4	ISO 845
Closed cells	%	>99	>99	>99	>99	>99	-
Thermal conductivity[2]	Btu x in / (ft² x h x °F)	0.340	0.354	0.396	0.403	0.416	EN 12667
Coeff, linear heat expansion	x10⁻⁶/°F	20.6	20.6	20.6	20.6	20.6	ASTM D 696
Continuous temp range	°F	-325/+176	-325/+176	-325/+176	-325/+176	-325/+176	-
Max process temp	°F	+194	+194	+194	+194	+194	-
Dissipation factor	-	0.0015	0.0020	0.0024	0.0030	0.0034	ASTM D 2520
Dielectric constant	-	1.25	1.32	1.39	1.47	1.53	ASTM D 2520

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

Operating temperature is typically -325°F to +176°F. Normally Divinycell HCP can be processed up to +194°F without 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 HCP is compatible with their particular processing parameters.

Dimensions

Format		Unit	HCP30	HCP50	HCP70	HCP90	HCP100
Plain sheets	Length	inch	68.11	64.57	55.51	52.76	51.57
	Width	inch	33.46	31.50	27.56	25.98	25.20
	Thickness	inch	2.44	2.13	1.22	1.06	0.91

Can be bonded to larger dimensions upon request.

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.

For more info visit:
diabgroup.com/contact

Datasheet Diab Divinycell HCP rev23 IMP May 2026