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Vinyl Foam: 4 lb. Density



Balanced Weight and Strength

Due to its outstanding structural properties, closed cell vinyl foam is an excellent choice for sandwich core material in a composite part. We only distribute DIAB Divinycell® H vinyl foams due to their superior strength properties. When used as a structural sandwich core, 4lb vinyl foams strike a balance between strength and weight, and they offer insulative properties. 4lb foam is used extensively in marine and automotive applications.

The different thicknesses we offer are tailored to different applications. Commonly used for vertical supports and walls, 3/8" thick foam offers additional strength and impact resistance to a composite laminate without adding significant weight. 1/2" thick foam offers significant strength to a part with a limited impact on overall weight. Applications for 1/2" vinyl foam include boat hulls, exterior panels, and other structural components. Vinyl Foams are compatible with all of our resins and can be easily thermoformed with a heat gun or oven. 4 Lb. Density, 32" X 48" Sheets.

Applications

This foam has been widely used over many years in virtually every application area where sandwich composites are employed including the marine (leisure, military and commercial), land transportation, wind energy, civil engineering/infrastructure and general industrial markets. In its application range, this foam has the highest strength to density ratio. It exhibits at both ambient and elevated temperatures impressive compressive strength and shear properties. In addition, the ductile qualities of this foam make it ideal for applications subject to fatigue, slamming or impact loads. Other key features of this foam include consistent high quality, excellent adhesion/peel strength, excellent chemical resistance, low water absorption and good thermal/acoustic insulation. This foam is compatible with virtually all commonly used resin systems (polyester, vinyl ester and epoxy) including those with high styrene contents. Its good temperature performance with high residual strength and good dimensional stability, makes this foam ideal for hand laminating, vacuum bagging, resin transfer molding or vacuum infusion.

Design Considerations

Continuous operating temperature is -200°C to + 70°C (-325°F to + 160°F). The foam can be used in sandwich structures, for outdoor exposure, with external skin temperatures up to +85°C (+185°F). Normally this foam can be processed at up to -90°C (+194°F) with minor dimensional changes. Maximum processing temperature is dependent on time, pressure and process conditions. Coefficient of linear expansion: approx. 22.2 x 10⁻⁶/°F (40 x 10⁻⁶/°C)

Property	Method	Unit	
Nominal Density ¹⁾	ISO 845	Kg/m ³	60
		lb/ft ³	3.8
Compressive Strength ²⁾	ASTM D 1621	MPa	0.9
		psi	130
Compressive Modulus ²⁾	ASTM D 1621	MPa	70
		psi	10,150
Tensile Strength ²⁾	ASTM D 1623	MPa	1.8
		psi	261
Tensile Modulus ²⁾	ASTM D 1623	MPa	75
		psi	10,875
Shear Strength	ASTM C 273	MPa	0.76
		psi	110
Shear Modulus	ASTM C 273	MPa	20
		psi	2,900
Shear Strain	ASTM C 273	%	20
Thickness	1493	in	0.375 +/- .015
	1494		0.500 +/- .015

1) Typical density variation ± 10%

2) Perpendicular to the plane. All values measured at +23°C (73.4°F)