

## ABET LAMINATI

## TECHNICAL DATA DIAFOS HIGH PRESSURE LAMINATE 1.2 MM SANDED, 1.6 MM TRANSLUCENT 1.2 MM COLORPACT (color through)

R110

### Manufacturer

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### Product Description

**Basic Uses:** DIAFOS by ABET LAMINATI is a high pressure decorative laminate (HPDL) used as a translucent product or as a laminate sanded for layup applications. DIAFOS is the first translucent laminate with a three-dimensional design. DIAFOS is created with translucent paper and melamine resins. When bonded to a core, the 1.2 mm product can be used for vertical and light horizontal applications. The 1.6 mm product can be used as decorative dividing panels or as facing for light surfaces, with the 3D designs adding texture and style to any space. The 1.2 mm (.048") product may be used as a top for light horizontal applications.

Colorpact is a 1.2mm color through HPDL with physical characteristics similar to 1.2mm Diafos.

**Composition:** DIAFOS by ABET LAMINATI high pressure decorative laminate is manufactured by pressing melamine impregnated surface print and solid color surface sheets over a melamine impregnated transparent paper core at pressures over 1000 psi and temperatures of approximately 300 degrees F (149 degrees C). The 1.2 mm product has a phenolic impregnated sheet on the back side that is sanded to facilitate bonding to a substrate.

**Limitations:** Because the specific composition of DIAFOS high pressure decorative laminates and its particular applications and uses are different from regular high pressure laminates, customers must be aware of the following limitations:

- Due to the particular manufacturing techniques used, the presence of longitudinal bands and possible variations in tone or color between panels should not be considered a defect in Diafos.
- Diafos and Colorpact expand and contract up to 1/8" per 3 ft longitudinally and 1/4" per 3 ft in the width direction with changes in relative humidity. See conditioning requirements.
- Diafos and Colorpact are not recommended for exterior applications or for bonding to gypsum wallboard, plaster, concrete, or plywood.
- Do not use these products in high humidity conditions or temperatures higher than 130 degrees F (54 degrees C) for extended periods of time.
- Avoid using these products close to lamps or sources of heat that can raise the temperature of the material in a limited area.
- This product is not to be exposed to continuous, direct sunlight.
- Contact adhesives are not recommended for bonding the 1.2 mm backed DIAFOS or Colorpact to a core.
- The 1.6 mm DIAFOS laminate must always be cut so the length direction is the longest side. Maximum distances between fixed points for the 1.6 mm DIAFOS is 36 inches in length and 1.2 inches in width.

### Colors and Patterns:

1.2 mm backed and 1.6 mm DIAFOS laminates are stocked in selected prints and solid colors. The 1.2 mm DIAFOS laminate is available on special order. Check an actual sample for color before specifying.

Finishes: Soft. A smooth textured finish with a moderate reflective value.

Sheet Size:	51" (130 cm) x 120" (305 cm)	
Thickness:	Translucent DIAFOS	1.6 +- 0.1 mm
	Backed DIAFOS	1.2 +- 0.1 mm
	Self-supporting DIAFOS	12 +- 1.0 mm
	DIAFOS 3190 Backer	1.2 +- 0.1 mm
	Colorpact	1.2 +- 0.1 mm

## FABRICATION AND ASSEMBLY

### Bonding:

1.2 mm DIAFOS and Colorpact by ABET LAMINATI should be bonded to suitable substrates such as particleboard and medium density fiberboard (MDF) with suitable semi-rigid (PVA), or rigid (urea, phenolic, or resorcinol) adhesives. The choice of adhesives is based upon the service for which the assembly is intended and upon bonding facilities available. The use of contact adhesives is not recommended. In all cases, the adhesive manufacturer's instructions for use should be followed closely. Substrates thinner than ¼" are not recommended. Thicker substrates give greater stability in the finished panel. Pressures in excess of 45 psi should not be used since this could cause a starved glue line or telegraphing of the core. It is advisable to use the same materials on both sides of the panel. DIAFOS and Colorpact backer sheets are available from ABET. Before using other materials to balance DIAFOS and Colorpact laminates, preliminary warpage tests must be performed with this balancing material.

### Inspection:

All laminates are to be inspected prior to lamination to ensure they are sound, clean, and free of surface defects. Protective peel coat should be removed prior to inspection.

### Conditioning:

Materials must be properly conditioned before they are used. High pressure decorative laminates and substrates should be allowed to acclimate for at least 48 hours at the same ambient conditions. Because of the expansion and shrinkage of DIAFOS and Colorpact laminates with relative humidity and temperature, it is advisable to condition the material at approximately 23 degrees C (73 degrees F) and a relative humidity of 45% to 55% for at least 48 hours before cutting and fabrication.

### Sawing:

It is important to cut the sheets using routers or table saws adjusting the blade height precisely to prevent chip out on the back side. Best results are achieved with a second groove blade. To avoid chipping it is important that the saw blade teeth cut into the decorative surface. Carbide tipped cutters and blades are recommended. The use of a jigsaw or bandsaw to cut the edges is not recommended.

### Cutouts:

To avoid stress cracking, do not use square-cut inside corners. All cutouts should be routed or filed to ensure smooth edges. A radius of 6.35 mm (1/4") or larger in the corners is recommended to minimize stress cracking for an inner side of 10" or less. This radius must gradually be increased for openings with a longer inner side.

### Drilling:

Drill oversize holes (at least 0.05 mm or 0.002" larger diameter) for screws and bolts. Holes must be cut cleanly to prevent cracks commencing from any rough ID edges that may occur as temperature and relative humidity changes.

When drilling to create fastening points, always create a sleeve between the screw/bolt and the DIAFOS laminate. Sometimes a rubber grommet can fill this role. The specific application will govern the type of sleeve to use. Failure to buffer the fastener and the DIAFOS laminate will almost certainly result in cracking of the sheet.

### Support and Fastening of 1.6 mm DIAFOS:

The sheet must always be cut so that the length direction is the long side of the piece. The maximum distance between fixed points are:

Length: 35 inches

Width: 12 inches

Fastening 1.6 mm DIAFOS laminate is done in two ways: framing the sheet (for example, an extruded aluminum frame) or creating fixed fastening points. When fastening with bolts to fixed points always use a soft washer. Failure to use the washers will cause the material to crack from the pressure of the bolt. It is important to have good air circulation on both sides of the laminate to prevent warpage.

**Industry Practices:**

Material, equipment, and workmanship should conform to industry standard practices, conditions, procedures and recommendations as specified by ANSI/NEMA LD-3-2005, Standard for High-Pressure Decorative Laminates, Annex A, Application, Fabrication, and Installation; or Architectural Woodworking Institute (AWI) "Architectural Woodwork Quality Standards, Guide Specifications and Quality Certification Program".

**TECHNICAL DATA**

DIAFOS by ABET LAMINATI has been tested according to ANSI/NEMA Standard LD-3-2005 Standard for High-Pressure Decorative Laminates, ISO 4586, High Pressure Decorative Laminates, and EN-438.

**PHYSICAL PROPERTIES OF 1.2 MM DIAFOS AND COLORPACT LAMINATES**

NEMA TEST		TYPICAL ABET
		1.2 mm DIAFOS
		LAMINATE
Thickness		0.048" +- 0.004" (1.2 mm +- 0.1 mm)
Light Resistance		Moderate effect
Cleanability (cycle)		11
Stain Resistance		
Reagents 1 – 10		No effect
Reagents 11 – 15		No effect
Boiling Water Resistance		No effect
High Temperature Resistance		No effect
Linear Glass Scratch Resistance		<200 grams
Ball Impact Resistance		1100 mm
Dart Impact Resistance		600 mm
Radiant Heat Resistance		148 seconds
Dimensional Change	MD	0.53%
	CD	0.71%
Room Temperature	MD	0.17%
	CD	0.33%
Dimensional Stability		
Wear Resistance		5600 cycles
Formability		N/A
Blister Resistance		63 seconds

## DIAFOS COLLECTION TECHNICAL INFORMATION

Property	Test Method	Unit of Measurement	Results		
			Facing DIAFOS 1.2 MM Sanded	Translucent DIAFOS 1.6 MM	Self-supporting DIAFOS 12 MM
Thickness	EN 438/2.4	mm	1.2 ± 0.1	1.6 ± 0.1	12 ± 1
Density	DIN 53 479	Kg/m <sup>3</sup>	1.500	1.500	1.500
Abrasion resistance	EN 438/2.6	revs	> 400	> 400	> 400
Dimensional Stability at 20° C	EN 438/2.10	% long. % transv.	<0.3 <0.6	<0.3 <0.6	<0.08 <0.15
Scratch resistance	EN 438/2.14	N	> 2.5	> 2.5	> 2.5
Stain resistance	EN 438/2.15	degree degree	Groups 1-2=5 Groups 3-4 > 4	Groups 1-2=5 Groups 3-4 > 4	Groups 1-2=5 Groups 3-4 > 4
Solidity of colours in xenon light	EN 438/2.16	blue wool scale	≥ 6	≥ 6	≥ 6
Resistance to cigarette burns	EN 438/2.18	degree	≥ 3	≥ 3	≥ 3
Rockwell hardness	ASTM D 785	HRE	-	110	-
Diffuse transmission factor	-	%	-	42.5	-
Fire resistance	CSE RF2/75/A RF3/77	-	Class 1 Interior Min. homologstion No. CN 267B11CD100010	Class 1 Interior Min. homologstion No. CN 267A10CD100016	Class 1 Interior Min. homologstion No. CN 267A10CD100016

### TRANSPORTATION AND STORAGE

DIAFOS and Colorpact sheets must be stored in a horizontal position, supported for their whole length and not positioned on edge, even after cutting.

### TECHNICAL SERVICE

For samples, literature and technical assistance, call our toll-free line 800-228-2238 from 8:30AM to 5 PM, Monday thru Friday, or visit our web site [www.abetlaminati.com](http://www.abetlaminati.com).