POLYVANTIS

PRODUCT DATASHEET

LEXAN™ F2000 SHEET

DESCRIPTION

LEXAN™ F2000 sheet is a flame-resistant transparent polycarbonate sheet. In addition to good flammability performance, it offers excellent impact resistance, high optical quality, good stiffness and strength and ease of processing, making it an excellent candidate for a wide variety of applications in the electrical, electronic, and transportation, building and construction industries.

TYPICAL PROPERTY VALUES*

PROPERTY	TEST METHOD	UNITS	VALUE
PHYSICAL			
Density	ISO 1183	g/cm³	1.23
Water absorption, 50% RH, 23 °C	ISO 62	%	0.15
Water absorption, saturation, 23°C	ISO 62	%	0.35
MECHANICAL			
Yield stress 50 mm/min	ISO 527	MPa	>60
Yield strain 50 mm/min	ISO 527	%	6
Nominal strain at break 50 mm/min	ISO 527	%	>100
Tensile modulus 1 mm/min	ISO 527	MPa	2300
Flexural strength 2 mm/min	ISO 178	MPa	90
Flexural modulus 2 mm/min	ISO 178	MPa	2300
IMPACT			
Charpy impact, notched 23°C, 3.0 mm	ISO 179/1eA	kJ/m²	55
Izod impact, unnotched 23°C, 3.0 mm	ISO 180/1U	kJ/m²	NB
Izod impact, notched 23°C, 3.0 mm	ISO 180/1A	kJ/m²	55
THERMAL			
Vicat softening temperature, B/120	ISO 306	°C	145
Temperature of deflection under load (type A), 1.8 MPa, flat	ISO 75-2	°C	127
Thermal conductivity	ISO 8302	W/m.°C	0.2
Coefficient of linear thermal expansion, 23-55°C	ISO 11359-2	1/°C	$7x10^{-5}$
Ball pressure test 125 ±2°C	IEC 60695-10-2	-	Pass
ELECTRICAL			
Volume resistivity	IEC 60093	Ohm.cm	$>10^{15}$
Dielectric strength, in oil, 3.2 mm	IEC 60243-1	kV/mm	18

PROPERTY	TEST METHOD	UNITS	VALUE
FIRE RATINGS			
Rail			
Europe	EN 45545-2 R4	-	Pass (2-4mm) Lighting
Europe	EN 45545-2 R22, R23	-	Pass R22, R23 (3-4mm) Electro technical parts
Electrical			
Limited Oxygen Index	ISO 4589-2	%	34
UL File# - E539252			

*These are typical properties and are not intended for specification purposes. If minimum certifiable properties are required, please contact your local POLYVANTIS representative or the POLYVANTIS Quality Services Department.

PROCESSING

LEXAN™ F2000 sheet is ideally suited to thermoforming. It offers high, deep draw ratios, equal wall thickness distribution, and it can be formed into complex shapes using standard thermoforming equipment. Sandwich type heating systems give the best results. LEXAN F2000 sheet has a forming temperature range of 180 - 220°C. When forming, a draft angle of at least 3° should be allowed, and post mold shrinkage of 0.5 – 0.9% should be considered.

PRE-DRYING

It is important to ensure that LEXAN F2000 sheets are free of moisture prior to thermoforming. A hot air circulating oven set at 120°C is recommended 2 hours per mm thickness.

ASSEMBLING

Parts made from LEXAN F2000 sheet can be assembled with plastics, metals, rubber, and other materials using many types of adhesive bonding, welding, and mechanical fastening techniques. Since some of these materials can cause environmental stress cracking, please consult POLYVANTIS for advice on specific applications.

PAINTING

For either functional or decorative reasons it may be necessary to apply finish to LEXAN F2000 sheets or vacuum formed parts. The product is ideally suited for use with a wide variety of modern decoration techniques. A list of approved paint systems and suppliers is available upon request.

CHEMICAL RESISTANCE

LEXAN F2000 sheet has sufficient resistance to most mineral oils, greases, aliphatic hydrocarbons, and acids under low or moderate stress levels. In applications where the LEXAN F2000 sheet will come into contact with aggressive chemicals, specific (application related) testing is always advised. Effective painting systems can improve chemical resistance.

SAFETY

The processing guidance given in this documentation is given in good faith and the trust that in all cases you wear the correct Personal Protective Equipment (PPE), e.g. helmet, proper gloves, safety goggles etc. to safely fabricate, e.g. (but not limited to) sawing, cutting, forming our sheets and films. In all cases you should follow local and national regulations around the wear of PPE's prescribed or mandatory to perform these tasks in a safely manor.

PRODUCT AVAILABILITY

Product code:	LEXAN™ F2000 Sheet
Standard size:	1250 x 2050mm, 2050 x 3000mm
Gauges:	2-8mm
Textures:	Polished/Polished (F2000), Polished/Matt (F2005)
Colors:	Clear 112, Bronze 5109, Opal WH6D060X

Other colors/sizes are available by special request.

© POLYVANTIS