

LEXAN™ F2000 SHEET

PRODUCT DATASHEET

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/cm ³	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/m ²	12
Izod impact, unnotched 23°C, 3.0 mm	ISO 180/1U	kJ/m ²	NB
Izod impact, notched 23°C, 3.0 mm	ISO 180/1A	kJ/m ²	10
THERMAL			
Vicat softening temperature, rate B/120	ISO 306	°C	145
Temperature of deflection under load (type A), 1.8 MPa, flat	ISO 75	°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
OPTICAL			
Light transmission 3 mm	ASTM-D1003	%	89

PROPERTY	TEST METHOD	UNITS	VALUE
FIRE RATINGS			
Aircraft			
Vertical burn, 60 s	FAR 25.583(a)+App.F	-	Pass (2-3mm)
Smoke density	ABD0031	-	Pass, Ds(4min)<150 (2-3mm)
Smoke toxicity	ABD0031,BSS 7239	-	Pass (2-3mm)
Rail			
Europe	EN 45545	-	Pass R4, Ligthing (2-4mm)
France	NF P 92-501	-	M2 (2-8mm)
France	NF F 16-101	-	F1 (2mm), F2 (2-8mm)
Poland	PN-K-02512	-	R1 (3 mm)
Germany	DIN 5510-2	-	S4/SR2/ST2 (3-6mm)
Italy	UNI CEI 11170-3	-	Class 1A (2 & 4mm)
Electrical			
Vertical burn (50W)	UL94V	-	V0 (3-6mm)
Limited Oxygen Index	ISO 4589-2	%	34
Glow Wire Flammability Index	IEC-60695-2-12	°C	Pass 960°C (> 1 mm)

◆ These Typical values only. Variations within normal tolerances are possible for the various textures.
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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% taken into account.

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 SABIC 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.

PRODUCT AVAILABILITY

Product code: LEXAN F2000 Sheet
Standard size: 1250 x 2050mm, 2050 x 3000mm
Gauges: 1.5 to 8.0 mm
Textures: Polished/Polished, polished/ Matt F2005
Colors: Clear 112 Bronze 5109, Opal WH6D060X
 Other colors/sizes are available by special request.

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