

Lexan* F1000 Sheet

Product Datasheet

Description

The Lexan F1000 series sheet are impact resistant polycarbonate materials that have been specifically developed for the air cargo container market. Lexan F1000 sheet offers increased durability that outperforms aluminum and fiberglass for lower maintenance and operating costs. Lexan F1000 series sheet complies with all current FAA flammability requirements for air cargo container material. Every lot of Lexan F1000 series sheet is certified to meet federal aviation regulation 25.853, Paragraph (a), 1, (iv) (required for all air cargo container materials). Lexan F1000 sheets provide: Good impact performance, increased tear strength and flame retardancy.

Typical Property Values ♦ (Metric)

Property	Test Method	Unit	Value
Physical			
Specific Gravity	ASTM D792	g/cm ³	1.20
Refractive Index, 25°C	ASTM D542A		1.586
Water Absorption, 24hrs, equilibrium	ASTM D570	%	0.15
Mechanical			
Tensile Strength	ASTM D638		
Yield		MPa	62
Break		MPa	65
Tensile Modulus	ASTM D638	MPa	2370
Flexural Strength	ASTM D790	MPa	93
Flexural Modulus	ASTM D790	MPa	2370
Flexural Endurance, 23°C, 50%RH, 1800 cycles/min		ASTM D671 MPa	6.9
Compressive Strength	ASTM D695	MPa	86
Compressive Modulus	ASTM D695	MPa	2370
Elongation	ASTM D638	%	110
Izod Impact Strength	ASTM D256A		
Notched, 3mm		J/m	640-850
Unnotched, 3mm		J/m	3200
Shear Strength	ASTM D732		
Yield		MPa	41
Break		MPa	68
Shear Modulus	ASTM D732	MPa	780
Deformation Under Load, 28MPa 23°C	ASTM D621	%	0.2
70°C		%	0.3
Taber Abrasion, CS 17 1000 cycles	ASTM D1044	mg	10
Thermal			
Thermal Expansion	ASTM D696	m/m°C	7x10 ⁻⁵
Heat Deflection Temperature 1.82 MPa	ASTM D648	°C	130
0.45 MPa		°C	140
Brittle Temperature	ASTM D746	°C	-100
Flammability			
FAR 25.853, (a), 1, (iv)			Pass
Horizontal Burn (Flame Spread) AEB	ASTM D635		<25mm

♦ These property values have been derived from Lexan* resin data for the material used to produce this sheet product.

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Typical Property Values ♦ (Imperial)

Property	Test Method	Unit	Value
Physical			
Specific Gravity	ASTM D792	-	1.20
Refractive Index, 77°F	ASTM D542A		1.586
Water Absorption, 24hrs, equilibrium	ASTM D570	%	0.15
Mechanical			
Tensile Strength	ASTM D638		
Yield		psi	9,000
Break		psi	9,500
Tensile Modulus	ASTM D638	psi	345,000
Flexural Strength	ASTM D790	psi	13,500
Flexural Modulus	ASTM D790	psi	345,000
Flexural Endurance, 73°F, 50%RH, 1800 cycles/min	ASTM D671	psi	1,000
Compressive Strength	ASTM D695	psi	12,500
Compressive Modulus	ASTM D695	psi	345,000
Elongation	ASTM D638	%	110
Izod Impact Strength	ASTM D256A		
Notched, 3mm		ft-lbs/in	12-16
Unnotched, 3mm		ft-lbs/in	60 (no failure)
Shear Strength	ASTM D732		
Yield		psi	6,000
Break		psi	10,000
Shear Modulus	ASTM D732	psi	114,000
Deformation Under Load, 4,000psi	ASTM D621		
73°F		%	0.2
158°C		%	0.3
Taber Abrasion, CS 17 1000 cycles	ASTM D1044	mg	10
Thermal			
Thermal Expansion	ASTM D696	in/in°F	3.75 x 10 ⁻⁵
Heat Deflection Temperature	ASTM D648		
264 psi		°F	270
66 psi		°F	280
Brittle Temperature	ASTM D746	°F	-211
Flammability			
FAR 25.853, (a), 1, (iv)			
Horizontal Burn (Flame Spread)	ASTM D635		Pass
AEB			<25mm

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Assembling

Parts made from Lexan F1000 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 this materials can cause environmental stress cracking, please consult your SABIC Innovative Plastics Specialty Film & Sheet representative for advice on specific applications.

Chemical resistance

Lexan F1000 sheet has sufficient resistance to most mineral oils, greases, aliphatic hydrocarbons and acids under low or moderate stress levels. In applications where the Lexan F1000 sheet will come into contact with aggressive chemicals, specific (application related) testing is always advised. Effective painting systems can improve chemical resistance.

Product Availability

General product family is Lexan F1000 sheet

For ordering, use product codes:

Lexan F1400 for 4 foot width
Lexan F1500 for 5 foot width

Standard size: 48x96 inches / 1219mm x 2438mm
60x96 inches / 1524mm x 2438mm

Gauges: .080 inches / 2.0mm
.093 inches / 2.36mm
.0125 inches / 3.175mm

Textures: Polished/Polished

Colors: Clear 112 Translucent 82603

Other sizes are available by special request.



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