

Lexan* SLX 12A20 Film Product Datasheet

Description

Lexan SLX 12A20 Film is a weatherable, high gloss film with good scratch and chemical resistance. It is available in black, grey, red and yellow standard colors at 20 and 30 mil thicknesses. The top surface is a high gloss weatherable material, while the reverse side is standard Lexan* polycarbonate in our normal matte configuration. First surface printing is possible. It may be an excellent candidate for applications such as outdoor vehicles, including automotive, lawn and garden, recreational, agricultural, and marine, among others. In most cases, this film will be formed and used in an In Mold Decoration process, where the back molded material is selected for good adhesion to the film.

Typical property Values¹

Property	ASTM Test Method	Units	Value	ISO Test Method	Units	Value
Mechanical						
Tensile Strength						
@ Yield	ASTM D882	PSI	10,000	ISO 527	Mpa	-
Ultimate	ASTM D882	PSI	10,900	ISO 527	Mpa	-
Tensile Modulus	ASTM D882	PSI	300,000	ISO 527	Mpa	-
Tensile Elongation at Break	ASTM D882	%	100	ISO 527	%	-
Gardner Impact Strength @ 0.030 in. (0.75 mm)	ASTM D3029	in-lbf	-	ISO 6603-1	-	-
Tear Strength						
Initiation	ASTM D1004	lb/mil	2.0-2.2	ISO 34	N	-
Propagation	ASTM D1922	g/mil	45	ISO	N	-
Puncture Resistance	ASTM D3763	ft-lbf	-	ISO	-	-
Fold Endurance (MIT)						
0.010 inch (0.25 mm)	ASTM D2176-69	double folds	-	ISO		
0.020 inch (0.50 mm)	ASTM D2176-69	double folds	-	ISO		
Thermal						
Coefficient of Thermal Conductivity	ASTM C177	-	-	DIN 52612	-	-
Coefficient of Thermal Expansion	ASTM E831	in/in/°F	3.6 x 10E-5	ISO 11359	-	-
Specific Heat	ASTM E1269	-	-	ISO	-	-
Vicat Softening Temperature, Rate B, 10 N load	ASTM D1525	-	305-315	ISO 306	-	-
Heat Deflection Temperature @ 264 psi	ASTM E831	°F	-	ISO 11359	°C	-
Shrinkage at 150oC						
0.010 inch (0.250 mm)	ASTM D955	%	-	ISO	%	-
0.020 inch (0.500 mm)	ASTM D955	%	-	ISO	%	-

Manufacturing Specifications

Gauges Available	.020", .030"
Gauge Variation (%)	+/- 10%
Inclusions (black specks)	
Small (100-300 mu)	<75/sq ft
Medium (300-2000 mu)	<10/ sq ft
Large (>2000 mu)	<1/ 16 sq ft

¹ These are typical properties and are not intended for specification purposes. If minimum certifiable properties are required, please contact your local GE Structured Products representative or the GE Structured Products Quality Services Department.

** Reported Values are Based on 0.250" Thickness unless otherwise noted.

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GE Advanced Materials Specialty Film & Sheet

Property	ASTM Test Method	Units	Value	ISO Test Method	Units	Value
Physical						
Specific Gravity	ASTM D792	-	1.22	ISO 1183	kg/m3	-
Water Absorption, 24 hrs.	ASTM D570	%	0.35	ISO 62	%	-
Surface Roughness (RMS)	ASME B46-1	-	-	ISO	-	-
Surface Energy	ASTM D5946	-	-	-	-	-
Surface Tension	ASTM	Dyne	-	ISO	-	-
Pencil Hardness	ASTM D3363	-	HB	ISO	-	-
		-	-	ISO	-	-
Miscellaneous						
Scratch Resistance	Artec Kistler	-	-	DIN 55668	-	-
20 Gloss	(Mini Car wash)		45	ISO	-	-
60 Gloss			70	ISO	-	-
Gloss over Flat Black @ 60°	ASTM D523-60		107	ISO	-	-
Gloss retention post weathering	J1960, 10000 Kj	Loss of gloss	<10	ISO 2813	-	-
Color shift post weathering	J1960, 10000 Kj	CIE Delta E	<3 std colors		-	-
			-		-	-

Lexan SLX film should be dried prior to thermoforming to a moisture content of <.02% to maximize surface quality. If not dry, moisture can cause steam during processing, resulting in bubbles or pits on the surface. Dry the film in a vented, hot air circulating oven at 180 to 230F for one hour (30 mil film). A desiccant type of closed loop drying oven may also be used, providing that the make up air is dried to a dewpoint of -20F or less. The films should be hung vertically or racked horizontally (unmasked side on the rack) with a minimum of 1" between the sheets. The masking may be left on during drying, but care should be taken to keep the sheets from touching one another. If the film is in roll form, and has not been unrolled since manufacture, it may be possible to run it successfully in an inline thermoformer, using the first zone as a preheat stage.

Note than colors (especially black) may affect the properties set forth in this data sheet. Accordingly, customers are advised to conduct their own testing to satisfy themselves about the suitability of the color for their own particular end uses.

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