SABIC Innovative Plastics™

Lexan* Exell* D Sheet

Product Datasheet

Description

Lexan* Exell* D sheet is a transparent polycarbonate sheet with proprietary UV protection on both sides offering excellent weathering properties. With its excellent impact resistance it is an excellent candidate for a wide variety of building and construction applications. Lexan Exell D sheet can be easily cold formed into gentle curves which makes it a good material choice for skylights, covered walkways, barrel vaults etc. Lexan Exell D sheet is thermoformable and can be thermoformed into the desired geometry whilst retaining the UV resistant coating specially developed for weather resistant applications.

Typical Property Values ◆

Property	Test Method	Unit	Value
Physical			
Density	ISO 1183	g/cm³	1.20
Water absorption, 50% RH / 23 °C	ISO 62	%	0.15
Water absorption, saturation /23°C	ISO 62	%	0.35
Mould shrinkage	Sabic-Method	%	0.6-0.8
Poison's ratio	ASTM-D638	-	0.38
Mechanical			
Tensile stress at yield 50 mm/min	ISO 527	MPa	60
Tensile stress at break 50 mm/min	ISO 527	MPa	70
Tensile strain at yield 50 mm/min	ISO 527	%	6
Tensile strain at break 50 mm/min	ISO 527	%	120
Tensile modulus 1 mm/min	ISO 527	MPa	2300
Flexural stress at yield 2 mm/min	ISO 178	MPa	90
Flexural modulus 2 mm/min	ISO 178	MPa	2300
Hardness H358/30 95	ISO 2039/1	MPa	95
Impact			
Charpy impact, notched	ISO 179/1C	kJ/m²	35
Izod impact, unnotched 23°C	ISO 180/4U	kJ/m²	NB
Izod impact, unnotched -30°C	ISO 180/4U	kJ/m²	NB
Izod impact, notched 23°C	ISO 180/4A	kJ/m²	65
Izod impact, notched -30°C	ISO 180/4A	kJ/m²	10
Thermal			
Vicat Softening Temperature, rate B/120	ISO 306	°C	145
HDT/Ae, 1.8 MPa edgew. 120*1*04/sp=100	ISO 75	°C	127
Thermal conductivity	ISO 8302	W/m.°C	0.2
Coeff.of Lin.Therm.Exp.extr. 23-80°C	ISO 11359-2	1/°C	7.00 E-05
Ball pressure test 125 ±2°C	IEC 60695-10-2	-	Passes
Relative Thermal Index. Electri. prop.	UL746B	°C	130
Relative Thermal Index. Mech. prop. with impact	UL746B	°C	125
Relative Thermal Index. Mech.prop. w/o impact	UL746B	°C	125

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◆ These property values have been derived from Lexan*resin data for the material used to produce this sheet product. Variation within normal tolerances are possible for various colors. These typical values are not intended for specification purposes. If minimum certifiable properties are required please contact your local SABIC Innovative Plastics, Specialty Film & Sheet representative. All values are measured at least after 48 hours storage at 23°C/50% relative humidity. All properties are measured on injection molded samples. All samples are prepared according ISO 294.

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Typical Property Values ◆ (continued)

Property	Test Method	Unit	Value
Electrical			
Volume Resistivity	IEC 60093	Ohm.cm	10 E15
Relative Permittivity 50/60Hz	IEC 60250	-	2.7
Relative Permittivity 1Mhz	IEC 60250	-	2.7
Dissipation Factor 50/60 Hz	IEC 60250	-	0.001
Dissipation Factor 1 Mhz	IEC 60250	-	0.01
Arc Resistance Tungsten	ASTM-D495	sec.	119
Optical			
Light transmission[1]) 3 mm	ASTM-D1003	%	89

Light Transmission

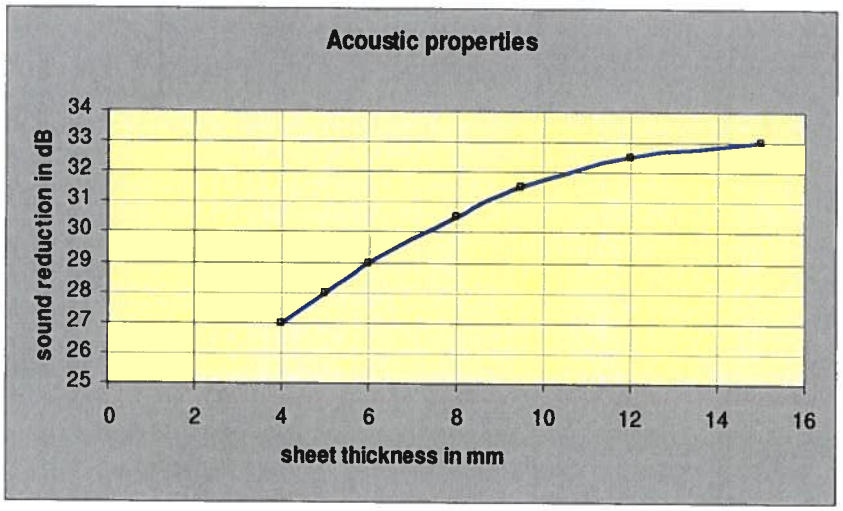
Transparent Lexan Exell D sheet have excellent light transmission, between 84 and 87%. However for buildings in hot climates or with south facing aspects, Lexan Exell D sheet is available in translucent bronze, grey and opal white. Lexan Exell D is essential opaque to all wave lengths below 385 nanometers. This useful shielding property can help prevent discoloration of sensitive materials placed under or behind Lexan Exell D sheet.

UV Protection

Lexan Exell D sheet has proprietary UV protected surfaces, giving excellent durability to outdoor weathering. This superior UV resistance and toughness of Lexan Exell D sheet is backed by a 10 years limited written warranty against yellowing, loss of light transmission and breakage.

Sound Reduction

Below graph shows the acoustic properties for different thicknesses of the sheet:



Performance

Lexan Exell D sheet has a good fire performance against many national fire codes dependant on thickness and color; please check with the local sales office for details.

Product Availability

Lexan Exell D sheet is normally manufactured in the standard sizes listed below. Deliveries from stock or cut to size can be ordered via our customer service organisation.

Standard gauge in mm:	2 - 3 - 4 - 5 - 6 - 8 - 9.5 - 12- 15
Standard sizes:	2050 x 3050 mm (is max. size for 15mm), 2050 x 6050 mm
Masking:	Top side: Coex. opal white PE/purple print, Bottom side: Coex. transparent PE
Standard colors:	clear code 112, solar bronze code 5109, solar grey code 713, opal white code WH7D287O, opal white code 82943.

[1] Light transmission value may vary by + or – 5%