POLYVANTIS

PRODUCT DATASHEET

LEXAN™ MARGARD™ MR5FR SHEET

DESCRIPTION

LEXAN™ MARGARD™ MR5FR sheet is a translucent UV, flame retardant and mar resistant glazing material for flat applications only. The intrinsic properties of LEXAN polycarbonate combined with its dual hard coated surface provide high impact strength and forced entry protection, graffiti resistance, excellent all-weather performance, excellent flame retardant, unique ten (10) year limited written warranty against breakage, and seven (7) year limited warranty against yellowing, loss of light transmission and coating failure (see limited written warranty).

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
Taber haze - 100 cycles, 500-gram, CS-10F	ASTM D1044	%	1 - 3
Taber haze - 500 cycles, 500-gram, CS-10F	ASTM D1044	%	3-8
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

*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.

PROPERTY	TEST METHOD	UNITS	VALUE
FIRE RATINGS			
Rail			
Europe	EN 45545-2 R1	-	3 - 9.5mm HL1
Europe	EN 45545-2 R4	-	3 - 9.5mm HL3
France	NF P 92-501	-	3-8 mm M2
France	DIN 5510-2	-	3-8 mm F2
Germany	DIN 5510-2	-	6-8mm S4/SR2/ST2 & FED < 1
UL File# E539252			

IMPACT STRENGTH

Virtually unbreakable, LEXAN™ MARGARD™ MR5FR sheet has up to 250 times the impact strength of glass and 30 times that of acrylic. LEXAN sheet offers outstanding impact strength and complies with the majority of international standards. With a thickness of 4 mm and upwards it complies with DIN 52290 part 4.

DIN 52290 PART 4

LEVEL OF RESISTANCE	DROP HEIGHT	STRIKING ENERGY PER DROP (J)	TOTAL ENERGY STRIKING ENERGY PER LEVEL (J)
A1	3500 mm	141	423
A2	6500 mm	262	786
A3	9500 mm	383	1149

FIRE TEST PERFORMANCE

LEXAN MARGARD MR5FR has good fire performance against many national fire codes dependent on thickness and color; please check with the local sales office for details.

CHEMICAL RESISTANCE

LEXAN MARGARD MR5FR sheet's unique coating provides immunity to many chemicals. Surface contact tests on LEXAN MARGARD MR5FR sheet with a wide range of chemicals have proven to have no effect on impact resistance during falling dart testing, proving the excellent fit for LEXAN MARGARD for industrial or aggressive environments. In applications where the product will come into contact with aggressive chemicals, specific testing of the material is always advised.

CLEANING

For cleaning instructions consult guidelines. Do not use abrasive or highly alkaline cleaners, never scrape the sheet with squeegees, razor blades or other sharp instruments. Do not clean LEXAN™ MARGARD™ sheet products in hot sun or at elevated temperatures. For removal of paints, marking pen, inks, lipstick etc. use Butyl Cellusolve. To remove labels, stickers etc. the use of kerosene, naphta, or white spirits is generally effective. Afterwards, a warm final wash should be made, using a mild soap solution, and ending with a thorough rinsing with cold water.

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™ MARGARD™ MR5FR**
Standard gauges: 3-9.5 mm
Standard size: 2000 x 3000mm
Color: Clear (code 112)
For MR5FR different colors and dimensions can be made available by prior arrangement. Such arrangements may affect prices, warranty terms and/or conditions of sale.

POLYVANTIS
Polycarbonate products are sold globally under the trademark LEXAN™ Film & Sheet, owned by SABIC or its subsidiaries or affiliates.
www.polyvantis.com
LEXAN™ POLYCARBONATE FILM & SHEET Tough, Virtually Unbreakable
LEXAN is a trademark of SABIC
© POLYVANTIS PV_DS_001_MR5FR-MGD_ENG_05-26