POLYVANTIS

PRODUCT DATASHEET

LEXAN™ MARGARD™ FMR5 XT SHEET

DESCRIPTION

LEXAN™ MARGARD™ FMR5 XT (formable) sheet is a transparent UV and abrasion resistant glazing material. Extremely high impact strength, with the capacity to be cold curved or drape formed. Two side formable coated, offers resistance against wear and tear.

TYPICAL PROPERTY VALUES*

PROPERTY	TEST METHOD	UNITS	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
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	%	4 - 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
OPTICAL - SHEET			
Light transmission 3 mm	ASTM D 1003	%	90
Light transmission 4 mm	ASTM D 1003	%	90
Light transmission 5 mm	ASTM D 1003	%	89
Light transmission 6 mm	ASTM D 1003	%	89
Light transmission 8 mm	ASTM D 1003	%	88
Light transmission 9.5 mm	ASTM D 1003	%	87
Light transmission 12 mm	ASTM D 1003	%	85

*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.

PROCESSING

LEXAN™ MARGARD™ FMR5 XT sheet can be cold curved into radii of > 300 times the thickness. It can also be drape-formed at a maximum temperature of 155°C, normally without pre-drying.
Masking must be removed from the sheet within 6 months after delivery.

CURVED APPLICATIONS

Design freedom, light weight and optical clarity combined with its superior mechanical properties makes LEXAN MARGARD FMR5 XT sheet an excellent candidate for shaped applications like motor-bike windshields, curved windows (e.g. revolving doors), partitions, skylights, barrel vaults, balcony glazing, stair-glazing, shelters, machine - safety guards.

OPTICAL PERFORMANCE

Clear LEXAN MARGARD FMR5 XT sheet can offer excellent clarity and transmission in the visible light and near infrared region of the spectrum. As it is essentially opaque to all wavelengths below 385 nanometers, it is an excellent candidate for protecting art, antiques, retail displays and fabrics from damaging effects of UV rays. LEXAN MARGARD FMR5 XT sheet is based on high optical LEXAN sheet measured according to the DIN 52305 A AZ. LEXAN MARGARD FMR5 XT sheet is ANSI/SAE Z26.1 certified (3.00mm – 6.00mm).

UV PROTECTION

LEXAN MARGARD FMR5 XT sheet has a proprietary UV protected surface, giving excellent durability to outdoor weathering and comes with a 5-year limited written warranty against yellowing (see warranty for details).

FIRE TEST PERFORMANCE

LEXAN MARGARD FMR5 XT sheet has good fire performance against many national fire codes dependent on thickness and color; please check with the local sales office for details.

IMPACT STRENGTH

LEXAN sheet offers outstanding impact strength and complies with most of the international standards. With a thickness of 4 mm and upwards it complies with DIN 52290 part 4.

CHEMICAL RESISTANCE

The mar-resistant coating of LEXAN MARGARD FMR5 XT sheet has sufficient resistance to common chemicals encountered in everyday use. Considering the complexity of chemical compatibility, we strongly recommend that you liaise with POLYVANTIS for testing of chemicals which come into contact with LEXAN sheet products.

RIPPLE ORIENTATION

Ripple direction may play an important role in the optical performance of the sheet. This direction is indicated on the sheet masking.

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™ FMR5 XT**
Standard gauges:	3-12mm
Standard size:	2000 x 3000mm
Color:	Clear 112
Masking Top Side:	Co-ex opal white PE (matrix dot-printed grade- name)
Masking Bottom Side:	Co-ex opal white PE
Storage:	Do not store LEXAN MARGARD FMR5 XT sheet outside or at elevated temperatures.

POLYVANTIS

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LEXAN™ POLYCARBONATE FILM & SHEET Tough, Virtually Unbreakable

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