POLYCASA XT Acrylic sheet

1. PRODUCT IDENTIFICATION

POLYCASA XT is the brand name for extruded Polymethyl methacrylate sheets from POLYCASA, standard or high impact.
The POLYCASA XT and High Impact programme offers solutions to both indoor and outdoor applications.
As a result of the extrusion process, POLYCASA can offer a variety of colours and designs.

2. CHARACTERISTICS

- Good optical properties
- Brilliant surface
- Easy to fabricate, to vacuum form
- Show an exceptional high light transmission
- Good scratch resistance for the standard grade
- High surface hardness for the standard grade
- Good recyclability
- XT and XT High Impact meet all current European food contact legislation and can be used in contact with foodstuffs
- Excellent transparency

3. APPLICATIONS

Constructional components

- Light domes
- Partition walls
- Door glazing
- Roofing
- Roof hoods for caravans

Lighting

- Covers for lighting
- Coffered lighting
- Kitchen lighting
- Illuminated plates

Engineering components

- Housing
- Machine covers

Advertising and decoration materials

- Letters
- Decorations
- Displays
- Advertising fittings
- Advertising panels

Other applications

- Containers
- Lettering templates
- Sign equipment etc.
- Solariums UVT (UV-translucent grade)

4. FABRICATION AND FINISHING TECHNIQUES

POLYCASA XT and POLYCASA XT High Impact sheets are easy to handle. They can be machined using all the usual methods, such as sawing, milling, drilling, turning, grinding and polishing, and are most suitable for thermoforming.

More detailed information on these items can be found in the “USER GUIDE”, available on request.

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5. TECHNICAL DATA

Property	Method	Units	POLYCASA XT	POLYCASA XT 630	POLYCASA XT 620	POLYCASA XT 610
GENERAL						
Density	ISO 1183	g/cm^3	1.19	1.17	1.16	1.15
Water absorption 24h/23°C – 50x50x4mm^3	DIN EN ISO 62 Method 1	%	0.2	0.25	0.3	0.3
Ball indentation hardness	ISO 2039-1	MPa	235	155	135	100
Forming temperature air pressure		°C	140-160	130-150	130-150	130-150
Forming temperature vacuum		°C	160-190	140-170	140-170	140-170
Moulding shrinkage		%	0.5-0.8	0.6-0.9	0.6-0.9	0.6-0.9
MECHANICAL						
Tensile strength	ISO 527-2	MPa	70	55	50	40
Elongation at break	ISO 527-2	%	4	15	25	35
Tensile modulus	ISO 527-2	MPa	3200	2400	2100	1800
Flexural strength	ISO 178	MPa	115	90	85	65
Flexural modulus	ISO 178	MPa	3300	2400	2100	1800
Impact strength Charpy unnotched	ISO 179-1	kJ/m^2	17	25	35	60
Impact strength Charpy notched	ISO 179-1	kJ/m^2	2	3	4	5
THERMAL						
Vicat temperature (B 50)*	ISO 306	°C	105	104	102	98
Specific heat capacity	ISO 11357-4	J/gK	1.47	1.5	1.5	1.5
Linear thermal expansion	DIN 53752	K^{-1}*x10^{-5}	7	9	10	11
Thermal conductivity	DIN 52612	W/mK	0.18	0.18	0.18	0.18
Service temperature continuous use		°C	70	65	65	65
Max. temperature short term use		°C	90	85	80	75
Degradation temperature		°C	>280	>280	>280	>280
OPTICAL						
Light transmission (3mm)	DIN 5036-3 / EN ISO 13468-2	%	92	91	91	90
Refractive index	ISO 489	n_D^{20}	1.492	1.492	1.492	1.492
ELECTRICAL						
Surface resistivity	IEC 60093	Ω	3x10^{15} - 3x10^{16}	-	-	-
Volume resistivity	IEC 60093	Ω x m	1x10^{13} - 5x10^{13}	-	-	-
Electrical strength	IEC 60243-1	kV/mm	10	-	-	-
Dielectric strength	IEC 60243-1	kV/mm	30	30	30	30
Dielectrical dissipation factor 50 Hz	DIN 53483-2		0.06	-	-	-
Dielectrical dissipation factor 1 KHz	DIN 53483-2		0.04	-	-	-
Dielectrical dissipation factor 1 MHz	DIN 53483-2		0.02	0.03	0.03	0.03
Relative permittivity 50 Hz	DIN 53483-2		2.7	-	-	-
Relative permittivity 1 KHz	DIN 53483-2		3.1	-	-	-
Relative permittivity 1MHz	DIN 53483-2		2.7	2.9	2.9	2.9

*Pre-treatment 16h at 80°C

Note: These technical data of our products are typical ones; the actually measured values are subject to production variations.

The particulars given herein are based on our actual knowledge and experience. They do not release the user from the obligation of carrying out own tests and trials due to the abundant factors which may affect processing and application of our products, and they do neither imply any legally binding assurance of certain properties or suitability for specific purposes. It is the user's responsibility to ensure that any protective rights and existing laws and regulations are observed.