



Bérkel Cast Acrylic Sheets

Bérkel produces Cast Acrylic Sheets on the most varied patterns, colors, sizes and thicknesses, with high quality raw material and incorporating UV (ultra-violet) protection additives, what strongly extends its shelf life and properties. Bérkel guarantees its acrylic cast sheets against yellowing, cracks, crazing, and attack by the external weather, being ideal to external uses and any other uses where quality, resistance and durability are required.

Technical Information

Sheets Protection

The surface of Acrylic Sheets must be protected by adequate material, such as masking paper or adhesive polyethylene, that are easy to remove, without causing any damage or contamination to the surface.

Surface Defects

Surface defects – Sheets surface should be smooth, without scratches, marks or any superficial flaws that exceeds 3 mm² each, at any position on the sheets surface.

Internal Defects

The sheets should have no bubbles, contamination or any other defect that may harm the material during its application. The defects cannot exceed 3mm² in any area of the sheet.

Classification of Defects

According to the area a defect occupies, it will have the below classification, when considered individually:

Negligible = smaller than 1mm²

Acceptable = from 1mm² up to 3mm²

Color

The color distribution should be homogeneous, according to the sheet standards. Buyer and seller should agree upon variations tolerance.

Length and Width

Length or width - tolerances

Length or width - mm:	Up to 1.000	De 1.001 a 2.000	De 2.001 a 3.000	Above de 3.001
Tolerance - mm:	+3;0	+6;0	+9;0	+0.3%;0

Thickness

The thickness tolerances for sheets ranging from 2 mm to 25 mm and with a total area of up to 6 m² , varies according to the following equation:

$\pm(0.4+0.1e)$, where e is the nominal thickness in mm.

Properties	Unity	Method	Value	Subsection
Tensile strength	Mpa	ISO 527 - 2/1B/5	min. 70	6.5.2
Deformation at Tensile stress	%	ISO 527 - 2/1B/5	min. 4	6.5.2
Elasticity modulus (tensile)	Mpa	ISO 527 - 2/1B/1	min. 3,000	6.5.2
Charpy impact resistance (not notched)	KJ/m ²	ISO 179/1fU	min. 13	6.5.3
Vicat softening temperature	°C	ISO 306, method B50	min. 105	6.6.1
Dimensional variation at high temperature (contraction)	%	Attachment A	max. 2.5	6.6.3
Total light transmittance ⁽¹⁾	%	ISO 13468-1	min. 90	6.8.1
Light transmission at 420nm (3mm thickness) ⁽¹⁾				
- before exposing to xenon lamp (ISO 4892-2)	%	Attachment A	min. 90	6.8.3
After 1,000h of exposition to xenon light (ISO 4892-2)	%	Attachment A	min. 88	6.8.3

Properties	Unity	Method	Value	Subsection
Flexural strength	Mpa	ISO 178	110	6.5.1
Rockwell hardness		ISO 2039-2	100	6.5.4
Coefficient of linear expansion	°C ⁻¹	ISO 10350, table 2	7x10 ⁻⁵	6.6.4
Deflection temperature under load	°C	ISO 75-2, método A	98	6.6.2
Turbidity	%	EM 2155-9	1	6.8.2
Refraction index, nD ²⁰ (1)		ISO 489, method A	1.49	6.8.4
Sheet density ⁽²⁾	g/cm ³	ISO 1183,method A, C ou D	1.19	6.9.1
Water absorption	%	ISO 62, method 1 (24h, 23°C)	0.5	6.9.2

- (1) To crystal material.
- (2) Color sheets can present a higher value.
- (3) Value obtained using a 3mm thickness 50 mm long square sample.