Extruded Acrylic

Sheets

Quality, Beauty and Durability

Bérkel Extruded Acrylic Sheets have unique quality, uniting high optical characteristics, low level of stress that are normally characteristics of only cell casting sheets.

With a perfect finished surface, excellent flatness (same thickness in any area of the sheet) and, thanks to the addition of an UV protector in the whole sheet, it assures no yellowing, cracks or flaws even when submitted to the external weather, what an accelerated aging test can demonstrate. The use of Extruded Acrylic Sheets is mandatory on the most varied projects, especially when thickness precision and quality of finishing are required.

Technical Information

Surface Imperfections

The extruded sheets should present a smooth flat surface, without scratches, marks or any surface imperfections that exceed, each one, 5 mm^2 in any area of the sheet.

Internal imperfections

Sheets should not present bubbles, or any other imperfections that may affect the performance of the material on its application. Internal imperfections cannot exceed 4 mm^2 in any area of the sheet.

Color

Color distribution should be homogeneous, according to its standards. Buyer and seller should agree upon variations tolerance.

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

Tolerances for sheets with thickness between 1.5 and 2.5 mm is of ± 10%. For thicknesses from de 3mm a 12mm, tolerance is de ± 5%. This should be the same on all the sheets of one lot.

Properties	Unity	Method	Value	Subsection
Tensile strength	Mpa	ISO 527 - 2/1B/5	min. 60	6.5.2
Deformation at Tensile stress	%	ISO 527 - 2/1B/5	min. 2	6.5.2
Elasticity modulus (tensile)	Mpa	ISO 527 - 2/1B/1	min. 2,900	6.5.2
Charpy impact resistance (not notched)	KJ/m²	ISO 179/1fU	min. 8	6.5.3
Vicat softening temperature	°C	ISO 306, method B50	min. 88	6.6.1
Dimensional variation at high temperature (contraction)				
Thickness e(mm) 1.5 ≤ e < 2.0	%	Attachment B	max. 20	6.6.3
2.0 ≤ e < 2.5	%	Attachment B	max. 18	6.6.3
2.5 ≤ e < 3.0	%	Attachment B	max. 12	6.6.3
3.0 ≤ e ≤ 6.0	%	Attachment B	max. 10	6.6.3
6.0 < e	%	Attachment B	max. 10	6.6.3
Melt Index	g/10min	ISO 1133, cod.13	0.5 a 0.3	6.9.5
Viscosity number	ml/g	ISO 1628-6	55 a 88	6.9.4
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 a 115	6.5.1
Rockwell hardness		ISO 2039-2	90 a 95	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	80 a 101	6.6.2
Turbidity	%	EM 2155-9	0.5 a 2.0	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	mg	ISO 62, method 1 (24h, 23°C)	50(3)	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.