Liedtke Kunststofftechnik
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Technical Data Sheet

Exolon® AR

PC AR (abrasion-resistant) – polycarbonate solid sheet with two-sided scratch-resistant coating

Typical Properties

- Solid PC sheet with two-sided scratch-resistant coating
- High abrasion resistance (Taber test)
- Glass-like surface hardness combined with high impact strength
- High light transmission (up to 88%)
- Chemical resistant
- Not suitable for thermoforming (coating)
- Thicknesses 3–15 mm, standard size 3000 × 2000 mm, colours clear (099) and bronze (8850)

Typical Industries

- Noise barriers / sound protection walls
- Glazing in educational facilities
- Glazing in healthcare facilities
- Correctional and psychiatric facilities
- Machine guards (chemical-resistant)

	Test Method	Unit	Value
Mechanical Properties (3 mm / 4 mm)			
Yield stress	ISO 527-2/1B/50	MPa	≥60
Yield elongation	ISO 527-2/1B/50	%	6
Elongation at break	ISO 527-2/1B/50	%	≥70
Tensile modulus	ISO 527-2/1B/1	MPa	2400
Flexural strength	ISO 178	MPa	~90
Impact strength (Charpy, unnotched)	ISO 179/1fU		no break
Notched impact strength (Charpy)	ISO 179/1eA	kJ / m²	~11
Notched impact strength (Izod)	ISO 180/1A	kJ / m²	~10
Notched impact strength (Izod, thick section)	ISO 180/4A	kJ / m²	~70
Abrasion Resistance (Taber Test)			
Haze increase after 100 cycles (500 g, CS 10F wheel)	ASTM D1044	%	1 … 4
Haze increase after 500 cycles	ANSI Z26.1	%	4 … 9
General Properties			
Density	ISO 1183-1	g / cm³	1.20
Water absorption (23 °C / 50% RH)	ISO 62-4	%	0.15
Water absorption (saturation)	ISO 62-1	%	0.35

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	Test Method	Unit	Value
Refractive index (20 °C)	ISO 489		1.586
Thermal Properties			
Vicat softening temperature (B50)	ISO 306	°C	148
Thermal conductivity	DIN 52612	W / (m·K)	0.20
Coefficient of linear expansion	DIN 53752-A	mm / (m·°C)	0.065 (= 65 · 10^{-6} / K)
Heat deflection temperature (1.80 MPa)	ISO 75-2	°C	127
Heat deflection temperature (0.45 MPa)	ISO 75-2	°C	139
Continuous use temperature	Guide value	°C	~120
Light Transmission (DIN 5036)			
Clear (099), by thickness	DIN 5036	%	3 mm: 88 4 mm: 87 5 mm: 87 6 mm: 86 8 mm: 85 10 mm: 83 12 mm: 82 15 mm: 80
Bronze (8850), all thicknesses	DIN 5036	%	~50
Fire Behaviour			
Building material class (thickness 3–12 mm, clear)	DIN 4102		B2
Rail vehicle fire behaviour (thickness 8–12 mm, clear)	DIN 5510		S3 SR2 ST2

The values stated are typical average values, determined on 3 mm / 4 mm thick material; they are subject to normal production tolerances and serve as an aid to material selection. They are not a legally binding assurance of specific properties. The abrasion-resistant surface coating is not suitable for thermoforming – hot forming may cause cracking or delamination of the coating. The surface coating is not verified for food contact suitability.

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