

Aikon® AR 2021

high optical quality 2-sides coated abrasion-resistant polycarbonate sheet

Aikon® AR 2021 is a clear transparent hard coated polycarbonate, with improved optical quality of the polycarbonate base sheet.

The Silfort® AS4000 coating also offers a very good abrasion resistance with an extended lifetime against UV-radiation and protection against yellowing and loss of translucence.

The coated surfaces are also well protected against harmful chemicals and cleaning agents.

BENEFITS

very good abrasion resistance
superior impact resistance
good chemical resistance
extended UV resistance

APPLICATIONS

vehicle glazing
flat machine covers
yacht building

PHYSICAL	Test Conditions	Typical values(1)	Unit	Standard
Density		1,2	g/cm ³	ISO 1183-1
Water absorption saturation	water at 23 °C	0.30	%	ISO 62
Water absorption equilibrium	23 °C, 50% relative humidity	0.12	%	ISO 62

MECHANICAL

Tensile modulus	1 mm/min	2350	MPa	ISO 527-1,-2
Yield stress	50 mm/min	> 60	MPa	ISO 527-1,-2
Yield strain	50 mm/min	6	%	ISO 527-1,-2
Nominal strain at break	50 mm/min	≥100	%	ISO 527-1,-2
Flexural modulus	2 mm/min	2350	MPa	ISO 178
Flexural strength	2 mm/min	90	MPa	ISO 178
Taber abrasion resistance	Δ haze after 500 cycles (500 g CS 10F)	3-8	%	ASTM D1044

THERMAL

Vicat softening temperature	50 N, 50°C/h	148	°C	ISO 306
Thermal conductivity	23°C	0.20	W/(m.K)	ISO 8302
Coefficient of linear thermal expansion	23 to 55°C	0.65	10 ⁻⁴ /K	ISO 11359-1, -2
Temperature of deflection under load	1.80 Mpa	128	°C	ISO 75-1, -2
Temperature of deflection under load	0.45 Mpa	140	°C	ISO 75-1, -2

(1) These values are measured on injection moulded samples by the sheet manufacturer, and are not intended for specification purposes.

(2) Measured in-house according to ASTM D1044

OPTICAL	Test Conditions	Typical values(1)	Unit	Standard
Refractive index	Procedure A	1.587	–	ISO 489
Light Transmission	3mm transparent sheet	88	%	ASTM D1003

Light Transmission in %	3	4	5	6	8	10	12
Aikon® AR 2021	88	87	87	86	85	83	82

IMPACT RESISTANCE	Test Conditions	Typical values(1)	Unit	Standard
Charpy impact strength	23 °C, unnotched	non-break	kJ/m2	ISO 179-1eU
Charpy impact strength	23 °C, 3 mm, notched	80P	kJ/m2	ISO 179-1eU
Izod impact strength	23 °C, 3.2 mm, notched	70P	kJ/m2	ISO 180-A

Permanent Service Temperature:

The permanent service temperature without load is approx. -50°C - +120°C.

Fire Behaviour

Fire behaviour of polycarbonate sheets are considered to be good and fulfil several different fire ratings. Aikon® 2021 has not been tested for any standard. Please contact us if you need material with a fire rating standard.

Delivery formats

Aikon® AR 2021 is available in clear transparent colour and in thicknesses from between 3-15mm. Available in size 3000 x 2000mm. Other sizes, colours, and sheet thicknesses on request.

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