

Aikon® AR 1020

2-sides coated abrasion-resistant polycarbonate sheet

Aikon® AR 1020 is a clear transparent hard coated polycarbonate, which offers superior impact resistance combined with increased abrasion-resistance from the hard coating.

Hard coated polycarbonate also offers very high UV-radiation resistance and protection against yellowing and loss of translucence.

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

BENEFITS

superior impact resistance
high abrasion resistance
good chemical resistance
improved UV resistance

APPLICATIONS

flat machine covers
non-break glazing for buildings
spectator protection in ice hockey arenas
Noise barrier walls

PHYSICAL	Test Conditions	Typical values(1)	Unit	Standard
Density		1,2	g/cm³	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
Refractive index	Procedure A	1.587	–	ISO 489

MECHANICAL	Test Conditions	Typical values(1)	Unit	Standard
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 (2)	Δ haze after 500 cycles (500 g CS 10F)	5-10	%	ASTM D1003

THERMAL	Test Conditions	Typical values(1)	Unit	Standard
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) Test data of Momentive SilFORT™ PHC587C Hard Coat

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 % per thickness	3	4	5	6	8	10	12	15
Aikon® AR 1020	88	87	87	86	85	83	82	80

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® 1020 has not been tested for any standard. Please contact us if you need material with a fire rating standard.

Delivery formats

Aikon® AR 1020 is available in clear transparent colour and in thicknesses from between 2-15mm. Available in size 3000 x 2000mm. Other sizes, colours, and sheet thicknesses on request.

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