

Coronavirus Update

We are prioritising protection screens and guards please let us know if your order is a guard and we will fast track your order, this means other orders are likely to be delayed.



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Technical Specifications of Acrylic Sheet

Acrycast is a premium quality cast acrylic sheet manufactured with the most modern casting equipment in the world. Established for over 20 years the Acrycast brand represents high quality product at a competitive price – offering you the best value for money.

Light Transmission 92%
Rate:

Clear Product Code: AA00

Available from 2mm to 50mm in thicknesses

Overview. Tests conducted at 23°C and a RH of 55%

Mechanical Properties

Mechanical Properties	Acrycast ®	Unit	Test Standard
Density ρ	1.19	g/cm ²	ISO R1183
Impact strength α_U (Charpy)	15	kl/m ²	ISO 179/1 fu

Notched impact strength aIN (Izod)	1.4	kl/m ²	ISO R180/1A
Tensile strength a) -40°C b) 23°C c) 70°C	109 70 41	MPa	ISO R527-2/1B/5 DIN 53 455
Elongation at break eB	4	%	ISO R527-2/1B/5
Nominal elongation at break e1B	4	%	ISO R52702/1B/50 DIN 53 455
Flexural strength obB, Standard test specimen (80 x 10 x 4mm ³)	120	N/mm ²	DIN 53 452
Modulus of elasticity E _t (short-term value)	3300	MPa	ISO R527-2/1B/1
Min. cold bending radius	330 x thickness	-	-
Dynamic shear modulus G at approx. 10Hz	1700	MPa	ISO 537
Indentation hardness H961/30	175	N/MM ²	ISO 2039-1 DIN 53 456
Abrasion resistance in Taber abrader test (100 ref; 5 4N; CS-10F)	20...30	% Haze	ISO 9352
Coefficient of friction u a) plastic/plastic b) plastic/steel c) steel/plastic	0.8 0.5 0.45	-	-
Optical Properties (of clear grades, at 3mm thickness)			
Transmittance tD65	92	%	DIN 5036Part 3
UV Transmission	No	-	-
Total energy transmittance g	85	%	DIN EN 410
Absorption in the visible range	< 0.05	%	-
Refractive index n20	1.491	-	ISO 489

Electrical Properties

Electrical Properties	Acrycast®	Unit	Test Standard
Volume resistivity r_D	$>10^{15}$	ohm – cm	DIN VDE 0303, Part 3
Surface resistivity R_{OA}	$4 \cdot 10^{13}$	ohm	DIN VDE 0303, Part 3
Dielectric strength e_d (1mm specimen thickness)	~30	kV/mm	DIN VDE 0303, Part 2
Dielectric constant e At 50 Hz At 0.1 Mhz	3.6 2.7	- -	DIN VDE 0303, Part 4
Tracking CTI-Value	600	-	DIN VDE 0303, Part 1
Behaviour towards water			
Water absorption (24 hrs, 23°C) from dry state; specimen 60 x 60 x 2mm ³	41	mg	ISO 62, Method 1
Max. weight gain during immersion	2.1	%	ISO 62, Method 1
Permeability to: Water vapour N ₂ O ₂ CO ₂ air	$2.3 \cdot 10^{-10}$ $4.5 \cdot 10^{-15}$ $2.0 \cdot 10^{-14}$ $1.1 \cdot 10^{-13}$ $8.3 \cdot 10^{-15}$	g cm cm ² h Pa	-

Thermal Properties

Electrical Properties	Acrycast®	Unit	Test Standard
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Coefficient of linear thermal expansion α for 0 ... 50°C	$7 \cdot 10^{-5}$ (=0.07)	14.K (mm/m°C)	DIN 53752-A
Possible expansion due to heat and moisture	5	Mm/m	-
Thermal conductivity λ	0.19	W/mK	-
U - Value for thickness 1mm 3mm 5mm 10mm	5.8 5.6 5.3 4.4	W/m²K	DIN 4701
Specific heat c	1.47	J/g K	-
Forming temperature	160...175	1°C	-
Max surface temperature (IR radiator)	200	°C	-
Max permanent surface temperature	80	°C	-
Reverse forming temperature	>80;>80;>90	°C	-
Ignition temperature	425	°C	DIN 51794
Smoke gas volume	Very little	-	DIN 4102
Smoke gas toxicity	non	-	DIN 53436
Class	B2, normally Flammable Class 3	-	DIN 4102 BS 476 Part 7 + 6
	TP (b)	-	BS 2785 Method 508A
	M4	-	NF P 92 501 +92 505
Vicat softening temperature	115	°C	ISO 306 Method B 50

Heat deflection under Loads (HTD) a) deflection 1.8 MPa b) deflection 0.45 MPa	105;105;108 113;113;115	°C	ISO 75
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Chemical Resistance

Acrycast generally has a good resistance to water, alkaline agents, aqueous solutions of inorganic matter and even some diluted acids. Acrycast will absorb small amounts of water – this is not an issue unless you are then heating and forming the product as the quick release of the moisture can cause blistering. It is important that you store Acrycast according to the specified conditions (see general information section).

Please find below a table showing a list of chemicals that Acrycast has been tested against – clearly these tests have been done in the laboratory in controlled conditions and any minor variation can cause a change in the results. Therefore to ensure compatibility please test the products prior to production.

Chemical	Performance
Acetone	0
Acetic Acid 10%	10
Acetic Acid 100%	0
Water	10
Hydrogen peroxide 10%	10
Aluminium Sulphate	10
Chloroform	0
Chromic Acid 10%	5
Citric Acid 10%	10
Hydrochloric Acid	10
Sodium Hydroxide	10
Formaldehyde – 40% in water	10
Ethyl Alcohol 10%	10
Ethyl Alcohol 100%	0
Cellulose diluted	0
Formic Acid	5
Glycerol	10
Petroleum Ether	10
Lactic Acid 10%	10

Chemical	Performance
Ammonia Liquid	0
Ammonia Solution	5
Ammonia Chloride	10
Benzene	0
Diesel	10
Nitric Acid 10%	10
Nitric Acid 100%	0
Lubricating Oil	5
Liquid Paraffin	10
Ozone	10
Phosphoric Acid 10%	10
Chlorine in water 2%	5
Sodium Hypochlorite 10%	10
Pottasium Chlorate (saturated)	10
Sulphuric Acid 10%	10
Sulphuric Acid 100%	0
Methanol	0
Isopropanol	5
Xylene	0

Key

0 = Not resistant – it dissolves, attacks, damaged the Acrycast so it loses its strength, clarity etc.

5 = Partial Resistance – there might be some slight staining, crazing or some swelling of the Acrycast. It will however retain its integral strength.

10 = Resistant – after sustained contact there may be a minimal amount of staining on the surface of the Acrycast.

We're Here to Help

Our Customer Service Team is available Monday to Friday 9am - 5pm.



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Rated **4.8/5** on **feefo** 



19-Oct-2019

Excellent

Anonymous



19-Oct-2019

The whole process was easy

Anonymous



18-Oct-2019

Great quality birch ply wood

Amelia Coward



18-Oct-2019

Good quality...delivered on time

Anonymous

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