

PLEXIGLAS® XT, UV transmitting Clear 0A770

Product Description

Product and benefit

PLEXIGLAS® XT Clear 0A770, an extruded clear and highly UV-permeable acrylic (polymethyl methacrylate, PMMA), was specially developed as a **cover material for sun bed canopies**.

This means that elements made from this material are used to cover lamps in the roof section of solariums, sun beds etc.; PLEXIGLAS® XT 0A770 is **not** designed for rests/supports or parts entering into contact with sun bed users.

The UV transmission of this material even increases noticeably after a few hours' exposure to UV radiation. PLEXIGLAS® XT 0A770 can be machined with ease, thermoformed, cold-curved and bonded, as well as screen-printed or coated.

The strength values are the same as for the basic grades of PLEXIGLAS® XT. PLEXIGLAS® XT 0A770 does not become brittle or yellow even after prolonged exposure to UV radiation.

UV transmission and UV resistance

The diagram shows the spectral transmittance between 250 and 400 nm upon delivery of the material (Curve 1). The UV transmission increases after a few hours' exposure to a Philips UVA solarium lamp to the values shown in Curve 2. This curve remains unchanged even after 4,000 hours' exposure to the lamp.

Availability

PLEXIGLAS® XT 0A770 solid sheets are available from our Special Range

- in sizes with the fabrication width of 2050 mm,
- in **thicknesses up to 3 mm**.

Information on cut - to - size sheets, delivery times, prices, and other conditions upon request.

For **sun bed** rests/supports, that means UV-permeable parts entering into contact with sun bed users, cast solid sheets of **PLEXIGLAS® GS Clear 2458 / 2458 SC / 2890** are used.

Fabrication

Given the correct conditions, PLEXIGLAS® XT 0A770 can be sawn, drilled, milled, ground and polished with excellent results. However, as with all extruded acrylics, special care must be taken during machining to avoid excessive heat generation (use sharp tools and possibly a coolant). Twist drills must have the "acrylic grinding". When polishing, only slight pressure may be applied.

PLEXIGLAS® XT 0A770 lends itself just as readily to bonding as the PLEXIGLAS® XT basic grades. Suitable solvent-type adhesives are ACRIFIX® 1S 0116 and 1S 0117; ACRIFIX® 2R 0190 and 1R 0192 are suitable reaction adhesives with a filling effect.

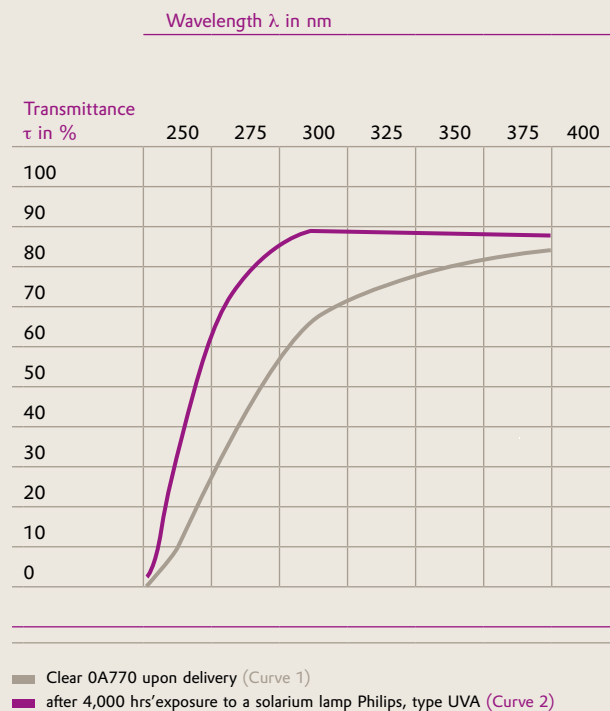
The forming conditions are the same as for basic grades of PLEXIGLAS® XT. The forming temperature should be between 150 and 160°C, since the material is thermoelastic in that range.

Predrying is not required, provided the sheets are correctly stored with the protective PE masking left on. PLEXIGLAS® XT 0A770 may be installed cold-curved, if the bending radius does not fall below the minimum radius of 330 times the thickness.

Annealing is to improve acrylic parts. Annealing of the finished part is advisable in order to relieve stress produced during fabrication and to reduce crazing risk, particularly if the material was locally heated, e.g. during line-bending.

Annealing should be performed in a ventilated oven for about 2 to 4 hours at 70°C, followed by a slow cooling.

UV-transmission of PLEXIGLAS® XT 0A770



Physical properties (23 °C/50% RH.)

Properties	Typical value	Unit	Test standard
Density	1,19	g/cm ³	ISO 1183
Impact strength (Charpy)	12	kJ/m ²	ISO 179/1 fu
Notched impact strength (Izod)	2	kJ/m ²	ISO 180/1 A
Tensile strength (23 °C)	72	MPa	ISO 527-2/1B/5
Elongation at break	4,5	%	ISO 527-2/1B/5
Modulus of elasticity	3300	MPa	ISO 527-2/1B/1
Flexural strength	105	MPa	ISO 178
Coefficient of linear thermal expansion (0 to 50 °C)	7·10 ⁻⁵ (= 0.07)	1/K (mm/m·°C)	DIN 53752-A
Max. permanent service temperature	70	°C	–
Reverse forming temperature	> 80	°C	–
Vicat softening temperature	102	°C	ISO 306, Method B50
Transmittance, 3 mm thickness	92	%	DIN 5036, Part 3
UV transmission	UV permeable as of 250 nm	–	–
Surface resistivity	5·10 ¹³	ohm	DIN VDE 0303, Part 3
Fire rates	B2	–	DIN 4102
	Class 3	–	BS 476, Part 7
	M4	–	NF P 92501/-5
	HB	–	UL 94
Water absorption (24 h, 23 °C)	30	mg	ISO 62, Method 1

Hints for application

PLEXIGLAS® XT 0A770 is easy to clean. Do not rub dry surfaces. Dusty surfaces can be wiped over with warm water to which some dishwashing liquid has been added, and a soft cloth or sponge.

“Burnus antistatic cleaning agent” (from Burnus GmbH, Darmstadt), is particularly suitable for cleaning PLEXIGLAS®.

However, care should be taken to employ only cleaning agents that do not damage acrylic, and to follow closely the relevant manufacturer’s instructions for use.

Under no circumstances should concentrated disinfectants or solvents, e.g. Sagrotan, Lysoform, ethyl alcohol or other liquids containing alcohol, be used. The sheet manufacturer cannot be held responsible for damage caused by chemicals such as unsuitable cleaning agents and similar products.

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* = registered trademark PLEXIGLAS is a registered trademark of Evonik Röhm GmbH, Darmstadt, Germany.

Certified to DIN EN ISO 9001 (Quality) and DIN EN ISO 14001 (Environment)

Evonik Industries is a worldwide manufacturer of PMMA products sold under the PLEXIGLAS® trademark on the European, Asian, African and Australian continents and under the ACRYLITE® trademark in the Americas.

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