

# PLEXIGLAS® XT, UV transmitting

## Clear 0A770

### Product

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.

### Properties

Besides the general properties of PLEXIGLAS® like

- Excellent light transmission and brilliance
- Outstanding weather resistance
- Easy to fabricate
- High surface hardness
- Light weight – half the weight of glass
- 11 times more break resistant than glass

PLEXIGLAS® XT UV transmitting possesses the following properties:

- UV transmitting

### Applications

Due to these properties PLEXIGLAS® XT UV transmitting is suitable for the following application

- sun bed canopies

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

### 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.



### Product range

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 are used.

### 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.

### Sales and Technical Service:

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## Technical Data

Typical values (23 °C/50 % r. F.) (3 mm thickness)	PLEXIGLAS® XT 0A770	Unit	Test Method
Density	1,19	g/cm <sup>3</sup>	ISO 1183
Impact strength (Charpy)	12	kJ/m <sup>3</sup>	ISO 179/1 fu
Notched impact strength (Izod)	2	kJ/m <sup>3</sup>	ISO 179/1 eA
Tensile strength	72	MPa	ISO 527-2/1B/5
Elongation at break	4,5	%	ISO 527-2/1B/50
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 <sup>-5</sup> (= 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	92	%	DIN 5036, part 3
UV transmission	UV-transmitting from 250 nm	-	-
Surface resistivity	5 · 10 <sup>13</sup>	Ohm	DIN VDE 0303, part 3
Building material class (according to Baustoffklasse DIN 4102)	B2	-	DIN 4102
Combustion behavior	Class E	-	DIN EN 13501
Water absorption (24 h, 23 °C) sample 60 x 60 x 2 mm <sup>3</sup>	30	mg	ISO 62, method 1

For further typical data please see the Technical Information of PLEXIGLAS® GS/XT (211-1).

® = registered trademark PLEXIGLAS is a registered trademark of Evonik Röhm GmbH, Darmstadt, Germany.  
Evonik Röhm GmbH is certified to DIN EN ISO 9001 (Quality) and DIN EN ISO 14001 (Environment).

Evonik 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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