PTEROFLAT XT PMMA Acrylic Sheets TDS

PTEROFLAT XT PMMA Acrylic Sheets must not prolonged exposure to temperatures above 80oC in order to protect dimensional stability to heat.
PTEROFLAT XT PMMA Acrylic Sheets are highly stable under outdoor weather conditions. Relying on UV radiation persistence, PTEROFLAT XT PMMA Acrylic Sheets do not show any substantial variations in their properties even after years of exposure to sunlight.
The protective film must be removed immediately after an outdoor application in order to avoid the risk of permanent adhesion of the film caused by sunlight.

Cleaning

A solution of water and neutral detergent can be used. PTEROFLAT XT PMMA Acrylic Sheets should always be cleaned and dried with a soft cloth with very little pressure.

Cutting

*WARNING:
Do not remove the protective film from the sheets before cutting, and once this has been accomplished, blowing or suction should be employed to eliminate any chips.

Manual cutting
A fine-blade saw must be used to cut PTEROFLAT XT PMMA Acrylic Sheets. Please make sure that the sheet is firmly held in place to prevent vibration. The teeth should be well-sharpened.

Cutting with a blade
The blade must be applied with a uniform pressure and should be passed several times to achieve the desired depth. After cutting, the sheet should be placed on a flat surface and gentle pressure applied until it breaks. Sandpaper may be applied on the edge to eliminate any possible burrs.

Sawing
Sawing recommendations for PTEROFLAT XT PMMA Acrylic Sheets
- Disc diameter: 350 - 400 mm
- Number of teeth: 84 - 106
- Rotation speed: 2,800 - 4,500 rpm
- Advance speed: 12 - 18 m/min

Type of teeth
Alternate teeth or combined straight and trapezoid must be used. The sheet must be firmly secured to prevent them rising up and causing cracks when the disc passes. The translation speed should be uniform. The disc must be sharpened.

Polishing

PTEROFLAT XT PMMA Acrylic Sheets can be polished using a mechanical buffer at a speed of 1,500 rpm and avoiding surface over-heating. Polishing requires a balance between rotation speed and applied pressure. A soft cloth or flannel discs at high speed (4000 rpm) with buffing paste must be used for final polishing. Edges may be polished using a high temperature air jet (200 to 300oC)

Drilling

Metal and wood drill bits may can be used.
The larger the diameter, the lower the speed. Water or air can be used for cooling.
Recommended drill speeds:

Diameter (mm)	**rpm**
1.6	7000
6.4	1800
12.7	900

Gluing

PTEROFLAT XT PMMA Acrylic Sheets can be glued together to form a transparent joint. Depending on the application and surfaces to be glued together, various types of glue available on the market and suitable for methacrylate sheets can be employed, such as those containing dichloromethane.
The following should be taken into consideration when selecting an adhesive:
- Chemical compatibility with the sheets
- Aesthetics of the finished joint
- Dilation and contraction with temperature changes
- Fragility, rigidity and flexibility
- Alterability with respect to outside weather conditions, where applicable
- Duration and useful lifetime
- Adhesive strength (adherence to the plastic)
- Final usage requirements

*WARNING:
The glue should be allowed to stand for a while before application to prevent air bubbles.
The surfaces to be glued must be clean and degreased. The glued parts must be allowed to dry for 24hours to achieve the maximum hardness.

Thermofaoming

PTEROFLAT XT PMMA Acrylic Sheets are easily thermoformable in any oven with air circulation. The sheet temperature must exceed 140oC. The sheets must be dried for a few hours at an approximate temperature of 80oC in order to avoid thermoforming problems. The mold employed should be heated up to 50 – 60oC to achieve a good finish. On the other hand, an excessive mold temperature could harm the sheets.

Bending

The area to be bent on PTEROFLAT XT PMMA Acrylic Sheets must be completely and uniformly heated. POLITEM Dynamic Plastic recommends that the smallest radius should be twice the sheet thickness. The part of the sheet that is close to the bending line can be cooled to obtain a better performance.

Decoration

Silk-screening
PTEROFLAT XT PMMA Acrylic Sheets can be silk-screened. Acrylic-based and two-compoent inks are recommended: Epoxy or polyurethane.

Painting

Normal spray methods can be applied on PTEROFLAT XT PMMA Acrylic Sheets. No prior surface treatment is necessary, apart from cleaning. The paint that is employed must be specially indicated by the manufacturer as suitable for use on PMMA. In general, it is recommended that they contain an acrylic resin base with low with low-aggressivity solvents. The print film should be removed just prior to printing to prevent the surface from damage.

Transportation

Dirt and sharp angles may damage the surface in the case of friction. Sheets must be secured to prevent sliding and stable, flat pallets must be used during transportation. The sheets must not be allowed to slide on each other during loading and unloading operations.
Sheets must be lifted without any dragging.

Storage

- The sheets must be stored in closed places with normal environmental conditions.
- The sheets must be stored one on top of the other on flat horizontal surfaces and fully supported over their total area.

The topmost panel should be covered with a sheet of polyethylene or cardboard and etc. PTEROFLAT XT PMMA Acrylic Sheets must not be stored in direct sunlight or under conditions of high humidity and/or temperature as this can have a negative effect of protective film adhesion.

Density	1.19 g/cm3	**Method**ISO 1183
Water absorption	0.3%	**Method**ISO 62 (1)
Flammability	HB	**Method**UL-94 class
Light Transmission	92%	**Method**ASTM D1003
Refractive Index	1.49	**Method**ISO 489 A
Haze	<1%	**Method**ASTM D1002
Tensile Strength	72 MPa	**Method**ISO 527-2
Elongation at Break	4%	**Method**ISO 527-2
Tensile Modulus	3300 MPa	**Method**ISO 527-2
Flexural Strength	106 MPa	**Method**ISO 178
Flexural Modulus	3350 MPa	**Method**ISO 178
Rockwell Hardness	95 M-scale	
Charpy Impact Resistance	15	**Method**ISO 179/1fu
Izod Notched Impact Strength	1.5 kJ/m3	**Method**ISO 180
Charpy Notched Impact Strength	6.0 kJ/m2 (+,- 0.5)	**Method**ISO 179/1eA
Temp. of Deflection Under Load	95 oC (ISO 75-1)	
Coefficient of Linear Thermal Expansion	0.065 mm/(mx1/ oC) (ISO 11359)	
Vicat Softening Temperature (50N)	103 oC (ISO 306)	
Recommended Continuous Service Temperature	70 oC	
Recommended Maximum Temperature / Short Time	91 oC	
Dielectric Constant (50Hz)	20-25 kV/mm	**Method**DIN 53483
Dissipation Factor tanδ (100Hz)	3.7	**Method**DIN 53483
Dissipation Factor tanδ (1MHz)	0.04	**Method**DIN 53483
Surface Resistivity	>1014 Ohm	**Method**IEC 60093
Volume Resistivity	>1015 Ohm.cm	**Method**IEC 60093

Manufacturing Certificate

Manufacturing Company	**: POLITEM PLASTİK VE TEKSTİL PAZ. SAN. DIŞ TİC. A.Ş.**
Country of Origin	: TURKEY
Address	: Veliköy O.S.B Sanayi Bulvarı No: 31 Kapı: 3/A Çerkezköy – TEKİRDAĞ
Product name	: Solid Polycarbonate Sheets
Production method	: Extrusion
Protection of the sheets	: Both sides covered with polyethylene film