OPTIX RECYCLED - DUST SHEETS

DESCRIPTION

PLASKOLITE EXTRUDED XTEND DUST ACRYLIC (PMMA) SHEETS are produced from own recycled PMMA saw dust according to the ISO 7823-2:2003 standard. The sheets can be used for a wide variety of domestic and industrial applications.

Xtend Dust is available in wide range of thicknesses in opaque silver, grey, white, and black colors.

TYPICAL PROPERTY VALUES

Properties	Method	Units	Xtend Dust
General			
Density	ISO 1183	gr/cm^3	TBD
Water Absorption	ISO 62 (1)	%	TBD
Mechanical			
Tensile Strength	ISO 527-2	MPa	80
Elongation at break	ISO 527-2	%	6
Tensile Modulus	ISO 527-2	MPa	3100
Flexural Strength	ISO 178	MPa	95
Flexural Modulus	ISO 178	MPa	3100
Compressive Strength	ISO 604	MPa	TBD
Rockwell Hardness	M scale		TBD
Impact Resistance (Charpy unnotched)	ISO 179/1fu	kJ/m^2	TBD
Impact Resistance (Charpy notched)	ISO 179/1eA	kJ/m^2	TBD
Impact Resistance (Izod notched)	ISO 180/1A	kJ/m^2	2
Optical			
Refractive Index	ISO 489		TBD
Light Transmission (thickness dependent)	ASTM D1003	%	0 (Opaque)
Haze (3 mm transparent sheet)	ASTM D1003	%	100 (Opaque)
Thermal			
Vicat Softening Temp.(50N)	ISO 306	°C	99
Heat Deflection Temp. (1.82 MPa)	ISO 75-1	°C	94
Coeff. of Linear Thermal Expansion (0-50°C)	ISO 11359	µm/m°C	TBD
Thermal Conductivity	ASTM C177	W/mK	TBD
Maximum Continuous Service Temp.		°C	70
Maximum Short Time Service Temp.		°C	90
Minimum Temp.		°C	-40
Electrical			
Dielectric Strength	DIN 53481	kV/mm	TBD
Dielectric Constant (50Hz)	DIN 53483		TBD
Dissipation Factor tanδ (50Hz)	DIN 53483		TBD
Surface Resistivity	IEC 60093	Ohm	TBD
Volume Resistivity	IEC 60093	Ohm.cm	TBD

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DIMENSIONS

Thickness, mm	Width, mm	Length, mm
2.0 – 6.0	1000, 1220 and 2050	600 – 6000

Sheets are also available cut to size, according to customer requirements.

TOLERANCES FOR DIMENSIONS

Sheet Thickness, mm	Thickness, %	Width Tolerances, mm	Length Tolerances, mm	Diagonals Tolerances, mm	Flatness Tolerances
≥ 2.0, < 6.0	± 3	Sheets cut in production: -0.0 /+3.0 Sheets cut to size: ± 0.50	Sheets cut in production: -0.0 /+3.0 Sheets cut to size: ± 0.50	Sheets cut in production: Length ≤ 4000 mm - ≤ 2 Length ≤ 4000 mm - ≤ 4 Sheets cut to size: ≤ 0.5	Max. allowed bowing - 0.5% from linear dimensions. Max. allowed bowing across the width of the sheet - ≤ 5 mm per meter of width. Max. allowed bowing along the length of the sheet - ≤ 5 mm per meter of length.

OPTICAL QUALITY

COLORS

Xtend Dust sheets are provided in opaque silver, white and black colors.

For more information, please contact PLASKOLITE Technical Support.

DEFINITIONS

SHRINKAGE

After heating acrylic extruded sheets will shrink during the cooling process, the shrinkage is higher in the extrusion direction.

This characteristic of Xtend Dust should be taken into account when planning the final sheet's dimensions.

	Shrinkage	
Sheet Thickness, mm	Shrinkage M.D*, %	Shrinkage T.D**, %
≥ 2.0, < 2.30	6 – 7	0.5
≥ 2.30, < 3.50	5 – 6	0.5
≥ 3.50, < 4.00	3 – 4	0.5
≥ 4.00, < 6.00	2 – 3	0.5

* M.D. – Machine (extrusion) direction

** T.D. – Transverse (perpendicular to extrusion) direction

FIRE TEST PERFORMANCE

PMMA is a combustible material and will burn if ignited, however, unlike other polymers, does not produce toxic or corrosive gases and produces very little smoke which is an important safety benefit.

CHEMICAL RESISTANCE

For information regarding the chemical resistance of Xtend DUST, please contact PLASKOLITE.

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ENVIRONMENTAL STRESS CRACKING

Environmental Stress Cracking (ESC) is a result of the combination of stress and chemical exposure. The level of stress needed for ESC is lower than the normal failure mechanical stress of PMMA in a chemical-free environment. Stresses can be created during fabrication and forming and can be controlled by an annealing process. Stresses can also be created by improper installation. Cold bended sheets under permanent induced stress or sheets under periodic stress (fatigue) are also susceptible to ESC.

GENERAL GUIDELINES

STORAGE

Xtend Dust is a rigid sheet, incorrect handling can cause breakage, leaving sharp edges.

Xtend Dust sheets must be stored with their original protective masking in a cool, dry, and well-ventilated room, away from direct sunlight, excessive humidity, rain or solvent vapors.

Xtend Dust sheets are best stored horizontally on their delivery pallets. Pay attention to avoiding pressure on the unsupported areas. Never leave sheets or pallets uncovered.

PROTECTIVE FILM

Both surfaces of Xtend PETG sheet are protected by a fully recyclable polyethylene (PE) film. Keep this film in position as long as possible and remove immediately after installation. Sharp objects, sharp particles or even small chips can penetrate the protective PE masking and damage the surface, therefore always lay the sheets on a clean smooth surface.

PROTECTIVE FILM

Both surfaces of Xtend Dust sheet are protected by a fully recyclable polyethylene (PE) film. Keep this film in position as long as possible and remove only and immediately after installation.

There are two kinds of protective film for the sheets:

- Universal film that is suitable for machining
- Easy-removal film that is suitable for sheets where the film will be removed before processing. This type of film is not suitable if machining of the sheet is required to be done with the protective film on the sheet.

Both of the above types of film are suitable for thermoforming and laser cutting.

Printed film must be removed before thermoforming in order to avoid transfer of the printing ink to the sheet's surface.

CLEANING & MAINTENANCE

Xtend Dust sheets are produced in clean-room environment and do not need to be cleaned before use. However, cleaning may be needed after fabrication, before sensitive processes such as vacuum metallization or printing or for maintenance during use.

If Xtend Dust sheets need to be cleaned, wash the sheet surface with clean fresh water with a mild soap. In order to verify that the soap you are using is compatible with PMMA test a hidden area before cleaning. Use a clean soft cloth or sponge and rinse well. Do not scrub or use brushes. Dry with a soft cloth. The use of window cleaning fluids or solvents such as alcohols, turpentine, acetone, etc., can cause damage to the sheet.

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ENVIRONMENTAL ADVANTAGES

Xtend Dust sheets are environmentally friendly. LCA (Life Cycle Assessment) and Eco profiles of PMMA sheet production show a low impact on the environment.

The long-time resistance to aging and weathering of Xtend Dust sheets often ensures a long service time. The sheets and their polyethylene protective layers are fully recyclable. They do not contain any toxic materials, halogens, or heavy metals, which may cause environmental damage or health risks. Xtend Dust sheets do not contain Bisphenol-A. Ozone Depleting Substances (ODP) are not used in the manufacture of Xtend Dust sheets and they do not release pollutant substances into the environment during manufacture. They do not produce toxic or corrosive gases when burning, fires can be extinguished with water.

Xtend Dust CLED scrap is not classified as hazardous waste small amounts can be disposed as household refuse. Large quantities should be disposed by recycling.

RE-WORKING

- **Handling:**
  Machining, Assembling, Forming, Glazing and Signage Installation recommendations can be found in the PLAZCRYL Guidebook.
- **Cold bending:**
  Unlike thermoforming, cold-bended Xtend Dust will not keep its form unless installed into a frame. The sheet must be with perfect edges to avoid breakage during bending. The radius of the bend should not be below the minimum value in order to avoid high permanent stress, which can eventually cause small cracks or even break the sheet.
  Minimum recommended bend radius is 300 times the thickness of the sheet.

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