

Poly methyl methacrylate (PMMA) is a transparent thermoplastic.

PMMA is an alternative to polycarbonate (PC) when extreme strength and high thermal resistance is not necessary. It is often preferred because of its moderate properties, easy handling and processing. PMMA has better scratch resistance properties than other conventional transparent plastic sheets like polycarbonate and pet-g.

There are also modified PMMA resins which have higher scratch resistance, improved impact resistance, and better thermal resistance.

PMMA transmits up to 92% of visible light (3 mm thickness), and gives a reflection of about 4% from each of its surfaces on account of its refractive index (1.4905 at 589.3 nm). Haze value is less than 1 % which offers excellent clarity. PMMA swells and dissolves in many organic solvents so it could be glued easily by using organic solvent based adhesives. Being transparent and durable, PMMA is a versatile material and has been used in a wide range of fields and applications such as PMMA in the form of sheets affords shatter resistant panels for building windows, skylights, bullet proof security barriers, signs & displays, sanitary ware (bathtubs), LCD screens, furniture, POP, lightings, roofing and many other applications. PMMA is the most preferred and well known plastic sheet in the market.



### Properties of Acrylic (PMMA) Sheets

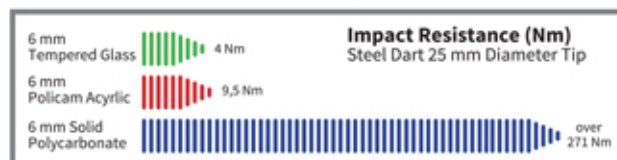
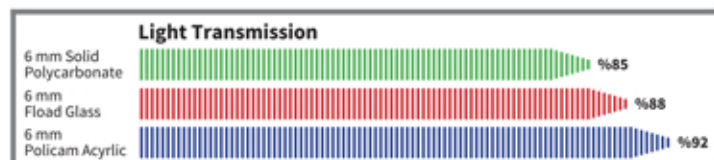
- Excellent thermoforming capabilities
- B2 / Class 4 / UL 94 HB fire rated
- 92% light transmission
- Outstanding weatherability
- High impact resistance
- Easily fabricated
- Resistant to inorganic acids
- Suitable for food contact
- Max continuous operating temperature 70 °C
- Max intermittent operating temperature 90 °C

### Possible Applications of POLICAM Acrylic (PMMA) Sheets:

POLICAM manufactures high gloss acrylic sheets for sign and display industry. They are suitable to thermoform for vacuuming, blowing, forming and bending. Their uniform thickness make them the most suitable acrylic sheets for printing applications and laser cutting. POLICAM acrylic sheets have a very good UV resistance and weathering thus making them perfect material to use for outdoor applications. Acrylic is half of the density of glass and yet 17 times stronger. Moreover it can easily be cold bended onsite. Mostly used in construction as light domes, partition walls, glazing, roofing.

POLICAM specifically develops acrylic sheets for lighting fixtures and solutions. These opal sheets with different light transmission values, are enhanced with high efficient

diffuser particles to provide the best performance to smooth and homogenize the hot spots and uneven light distribution. Policam SoundBlock is the trademark for specifically developed acrylic sheets for noise barriers. Generally demanded in thicknesses 12 and 15mm, these sheets are CE certified and supplied to highway and railway projects. ISIK PLASTIK offers mirror coated Acrylic sheet. Acrylic mirror sheets are lighter, safer than glass and easier to machine, to cut and to mount. Therefore they are ideal to use in automotive, yacht decoration, furnitures, child's toys, sign making and displays. Our acrylic mirrors are protected by the industry's toughest protective back-coating. It is offered in silver and gold mirror. Policam Extruded Solid Clear Acrylic (PMMA) sheets have 10 years limited warranty.



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### Automotive and Transport

- Accessories, Coatings
- Interior and exterior trim
- Caravan windows
- Acrylic Ship Windows
- Light covers, Storage
- Windshields

### Advertising and Visual Communications

- Corporate identity
- Display POS/POP and Advertising
- Museum casings
- Exhibit and trade show displays
- Recognition awards, Signage

### Interiors and Household Goods

- Appliance parts, Furniture
- Gift and tableware, Kitchen sinks
- Lighting, Paints
- Worktops and surfaces
- Mirror Acrylic**
- Automotive, Yacht decoration
- Furniture, Child's toys
- Sign making and displays

### Architectural and Construction

- Aquaria/structural panels
- Cladding, Lighting
- Door canopies and balustrades
- Door and window profiles
- Windows for Swimming Pools
- Diving Pools
- Public Aquarium Windows
- Transparent Barriers
- Skylights, Flood Windows
- Solid surfaces, Sound barriers

## ACRYLIC PHYSICAL BENEFITS

**FORMABLE;** It's easy to shape and mold.

**DURABLE;** Impact resistance that stands the test of time.

**WEATHERABLE;** Stands up to the elements longer than many other plastics.

**LIGHT TRANSMISSION;** Highest light transmission rate for thermoplastics.

Acoustic Values (EN ISO 10140-4 & EN ISO 717-1)		
Product	Thickness (mm)	Sound Reduction Values (dB)
PMMA	15	30

\* Certified by accredited laboratory.

## Light Transmittance (ASTM D 1003)

Thickness in mm	Standard Colours						
	Clear	White	White Diffuser	Clear Diffuser	Bronze	Opal	Red
1,5	92	30	20	70		60	
2	92	30	20	70			4
3	92	30	20	65	4,5	60/76	3
4	92	30	20	65			
5	92	25	16	60	4,5		
6	92	25	16	60			
7		20		55			
8	92	20	12	55			
9		15		50			
10	92	15		50			
12	92						
15	92			48			

\* custom colours are available upon request subject to a minimum order.

## Size of Policam PMMA Sheets

Max. Width	*Standard Length	Width&Length Tolerance
2050mm	3050mm	- 0,1 % ; +0,3 %

\* Depends on customer request.  
\* Policam pmma sheets are produced according to EN 7823-1

## Thickness & Overall Thickness Tolerance of PMMA Sheets

Product	Thickness in mm	Tolerance for Thickness
PMMA	1,5	± 0,15
	2	± 0,2
	3	± 0,3
	4	± 0,2
	5	± 0,25
	6	± 0,3
	7	± 0,35
	8	± 0,4
	9	± 0,45
	10	± 0,5
	12	± 0,60
15	± 0,75	

## General Properties

	CONDITIONS	TEST METHOD	UNIT	VALUE
Density		ISO 1183	gr/cm3	1,19
Water Absorption (24h)	23°C / 50% RH (24h)	ISO 62	%	0,3
Moulding Shrinkage		ASTM D-955	%	0,2-0,6
<b>MECHANICAL PROPERTIES</b>				
Tensile Strength at Break	23°C	ISO 527-2	MPa	83
Elongation at break	23°C	ISO 527-2	%	7
Tensile Modulus	23°C	ISO 527-2	MPa	3200
Flexural Strength at Break	23°C	ISO 178	MPa	120
Flexural Modulus	23°C	ISO 178	MPa	3300
Charpy Impact Strength with Notched	23°C	ISO 179-1eA	kJ/m2	2
Izod impact strength		ISO 178	kJ/m22,1	
Rockwell Hardness M Scale		ISO 2039-2	M -scale92	
<b>THERMAL PROPERTIES</b>				
Vicat Temperature	50 N	ISO 306	°C	105
Deflection temperature under load	1,8 MPa	ISO 75	°C	100
Coefficient of linear expansion		ISO 11359-2	mm/m °C	0,07
<b>ELECTRICAL PROPERTIES</b>				
Dielectrical Strength		DIN53481	kV/mm	20
Dielectric Constantto	1 KHz	DIN 53483		3,1

For details on the chemical resistance of POLICAM PMMA SHEET to a range of chemicals please refer to ISIK PLASTIK.

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