

TECHNICAL DATA

VITROFLEX PMMA MIRROR

VITROFLEX PMMA MIRROR is a highly reflection mirror that offers the lightness and breaking strength of methacrylate (10 times greater than glass). VITROFLEX MIRROR PMMA offers an accurate reflection in small components, slightly decreasing the accuracy in larger surfaces. VITROFLEX MIRROR PMMA is mainly recommended for relatively small applications, such as interior decoration accessories, nurseries, nursing homes, visual merchandising or store design. It is also recommended when safety considerations require a good resistance to breakage of the methacrylate sheet.

VITROFLEX MIRROR PMMA can also be used outdoors, as well as for milling, drilling, sawing or laser cutting, just like common methacrylate.

PHYSICAL PROPERTIES

Weather resistance

The methacrylate has excellent weather resistance, and we recommend the protection of the back side for greater durability. The rear mirror layer can develop pores and/or oxidation points in outdoor applications exposed to severe weather conditions. The shelf life is not really definable and will vary widely with the severity of exposure to weather conditions.

Rigidity

VITROFLEX MIRROR PMMA is a material 20 times more flexible than glass of the same thickness. It is recommended to evaluate the thickness of the material depending on the size of the area to be applied to avoid unwanted optical distortions. The distortion can be minimized but not completely eliminated (except in relatively small panels) by increasing the thickness of the mirror and installing properly on a rigid and flat substrate.

Temperature and humidity

We recommend installing VITROFLEX MIRROR PMMA at room temperature to minimize dimensional change. Avoid installation near heat or humidity generators that could deform the panels.

ADVANTAGES OF VITROFLEX PMMA MIRROR

- Light weight.
- Resistance to breakage: it can be 10 times more resistant to breakage than glass.
- Cold curve: simple curves of 1150mm minimum radius for a thickness of 3mm and 2300mm radius for a thickness of 6mm.
- Thermoformable: limited to straight bent lines with application of local heat by incandescent wire.
- Easy to manipulate, scratch, cut with an electric saw or metal sheets and drill with bits of soft metal or special bits.
- It can be glued on the edge like standard methacrylate.
- Cleaning: VITROFLEX MIRROR PMMA should be cleaned by applying a damp soft cloth on the front, preferably with NETACRIL or equivalent to reduce the attraction of dust.

APPLICATION AREAS

Interior decoration accessories, nurseries, nursing homes, visual merchandising, store design, and/or where safety considerations require high resistance to rupture of the methacrylate sheet.

TYPES AND FORMATS

Standard sizes: 1220x2440mm - 2050x3050mm.

Standard thickness: from 1.5 to 6mm.

On request, it is possible to supply mirror polycarbonate with better fire classification and greater vandal resistance.

Available in the following colours: gold (20), yellow (25), amber (28), bronze (31), grey (40), anthracite (45), dark red (50), red (51), pink (52), light red (53), orange (55), copper (56), violet (58), blue (60), sky blue (62), night blue (65), green (90) and silver (10).

APPLICATION AND TIPS FOR USE

- To obtain the best results, VITROFLEX PMMA MIRROR must be mounted on a smooth, rigid, resistant and flat support, such as plywood, MDF, plasterboard, etc.
- The surface of the support must be covered with a good paint or sealer to prevent moisture transmission irregularities.
- The entire surface should be covered with putty or other type of adhesive or pressure-sensitive adhesive tape.
- Another option is to drill oversized holes in the mirror and fasten it to the wall with screws. Do not squeeze too much to avoid generating marks and distortions.
- The visual distortion depends on the viewing distance and the thickness of the material. A thicker piece of material will be less flexible and, therefore, maintain better optical qualities. Proper installation and sufficient material thickness can reduce visual distortion but may not eliminate it completely.
- Ceiling installations are not recommended unless the mirror methacrylate is mounted in frames attached to the edge and suspended from the ceiling.
- Some adhesives contain strong solvent contents that could attack the bottom layer. Putty and adhesive tapes must first be tested on pieces of consumables. All tests must be applied at least 84 hours in advance to determine compatibility with the back, the reflective coating and the acrylic itself.
- It is essential to select an appropriate thickness before cutting.
- The material should be stored in a cool, dry place, in a horizontal position and completely flat.
- The protective film should not be removed until manufacturing is complete. Handle both sides of the mirror blade carefully during assembly.

TECHNICAL SPECIFICATIONS - VITROFLEX PMMA MIRROR

Properties	Value	Units	Standard
General properties			
Density	1,2	g/cm ³	ISO 1183
Rockwell hardness	101	R-scale	ISO 2039-2
Ball hardness		MPa	ISO 2039-1
Water absorption	0.2	%	ISO 62
Inflammability	B2	%	DIN4102
Inflammability	HB	%	UL94
Inflammability	4	Class	BS 476, Pt 7
Mechanical properties			
Tensile strength	70	MPa	ISO 527
Elongation at break	4	%	ISO 527
Flexural strength	107	MPa	ISO 178
Impact strength at 23°C	120	MPa	DIN53452
Flexural modulus	3030	MPa	ISO 178
Impact strength. Charpy method	10	kJ/m ⁻²	ISO 179
Elasticity coefficient	3000	MPa	DIN53452
Izod impact strength		kJ/m ²	ISO 180/1A
Notched impact strength	1.3	kJ/m ²	ASTMD256A
Shore D hardness scale	80	k1/m ²	ISO 3868
Thermal properties			
VICAT softening temperature	>103	°C	DIN51306
Thermal conductivity	0.19	W/m/°C	DIN52612
Specific heat	1.32	l/g/°C	ASTMC351
K value of thermal insulation	5.3	W/m ² /°C	DIN4701
Thermal expansion coefficient	7.8	×10 ⁻⁵ K ⁻¹	ASTM D696
Electrical properties			
Surface resistance	>10 ¹⁴	Ω m ⁻²	IEC 93
Electric strength		kV mm ⁻¹	IEC243
Dielectric constant to 50Hz	3.7		DIN53483
Dielectric constant to 1MHz	2.6		DIN53483
Physical properties			
Specific weight	1.20	G/ cm ²	DIN43479
Fire properties			
Construction (EU)	E		ISO11925-2
American normative	HB		UL94

The properties described here are typical values of the material. Polimer Tecnic is not responsible for the materials of a specific consignment to exactly match the given values, being able to carry out tests of that heading. The above information is based on our experience and is given in good faith. Due to some installation and processing factors that are beyond our knowledge and control, no guarantee is given regarding such information.