cast acrylic sheets

TECHNICAL SHEET Metallic®, Metallic IRO®, Metallic Polarlite®, Iridis®, Stone® and Nacré®

Technical-commercial information

The range of sheets in the **Metallic®** , **Stone®** **et Nacré®** family by Madreperla have been developed over the years to meet the needs of designers who do not want to forfeit the characteristics typical of methacrylate and thermoplastic materials in general and need finishes and innovative effects inspired by traditional materials which are more difficult to work with. In many cases the equipment needed for post-machining methacrylate is cheaper and more easy to produce.

Just like all Madreperla sheets, these also are thermoformable. This characteristic allows a freedom of design often not possible with the materials whose appearance these products duplicate. Methacrylate is extremely easy to work (cut, drill, mill) and its highly aesthetic qualities are associated to lightness and impact resistance, with the advantage of making the panels or products made from them easy to transport and install. With the exception of **Metallic IRO®**, the sheets have been mainly developed for use in-doors or out-doors limited to moderate climatic conditions and exposure to the sun.

For further details please contact our technical-commercial office.

Metallic	acrylic sheets with a high molecular weight with metal effect with glossy surface
Metallic Polarlite	acrylic sheets with a high molecular weight with metal effect with one glossy surface and one matt surface
Metallic IRO	acrylic sheets with a high molecular weight with metal effect with glossy surface for external use (severe conditions))
Iridis	acrylic sheet with a high molecular weight with iridescent/pearly effect
Stone	acrylic sheets with a high molecular weight with stone effect with one glossy surface and one matt surface
Nacré	Acrylic sheets with a high molecular weight with nacre look

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The sheets we supply are produced in observance of the requirements of standard UNI EN ISO 7823-1
(Polymethyl methacrylate sheets – types, dimensions and characteristics – cast sheets) where this is applicable. By request sheets with stricter requirements than the above-mentioned standard are produced. For details, contact our technical-commercial offices.
Standard colours and thicknesses are reported in our delivery program. Other thicknesses and colours can be produced on request and with a minimum quantity.

Standard protection

The film printed with the logo indicates the side to be used. The film is thermo-formable onto the products with a glossy surface, even if it is the responsibility of the user to check that the film is compatible with its usage. All the P.E. films used are suitable for laser cutting.
*Warning : for sheets with matt surface (**Polarlite**® and **Satinglas**®) the protection film **is not thermo-formable**.*

Cuts to measure, square cuts and dimensional tolerances

On request shapes can be supplied cut to measure: minimum surface 400 cm^2.
The sheets are supplied with the following tolerances: standard sheet 0/+10 mm – formats cut to measure +/-1mm/ml. Square cuts can be supplied on request.
Untrimmed sheets can be supplied on request. The sheets are supplied with invoicing net of surplus allowance. Small surface defects can be found in the allowance. The size of the untrimmed sheet is, approximately, 4 cm more than the trimmed size.

Colour formulation

Our laboratories are available to develop new colours or personalised duplicating with a minimum quantity as indicated in the specific technical sheet (“Minimum quantity of productions on request”)

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Physical-chemical properties

	Method	Unit Of measurement	Values
Physical Properties			
Density	ISO 1183	g/cm3	1.19
Water absorption after 24 h	ISO R 62/DIN53495	%	0.3
Optic Properties			
Transmittance (on colourless material)	ISO 4892-1 DIN 5036	%	92
Haze (on colourless material)	ASTM D 1003	%	< 0.5
Refraction index (on colourless material)	ISO 4892/DIN 53491	°C	1.49
Mechanical Properties			
Coefficient of elasticity due to pulling stress 23°C	ISO 527-2/1 B/1	MPa	3300
Ultimate elongation 23°C	ISO 527-2/1 B/5	%	5
Tensile strength 23°C	ISO 527-2/1 B/5	MPa	76
Flexing resistance	ISO 178	MPa	110
Compression resistance	ISO 604	MPa	110
IZOD impact resistance with notch	ISO 180/ 1 A	kJ/m2	1.4
Charpy impact resistance without notch	ISO 179/ 1	kJ/m2	13
Abrasion resistance	ISO 14782	%	0.5 to 1
Maximum allowed tension		MPa	5-7
Minimum cold curvature radius		mm	330 x thickness.
Thermal Properties			
Softening time (Vicat)	ISO R 306 Method A 50	°C	>108
Deflection time (HDT)	ISO 75/A	°C	>102
Maximum running time		°C	80
Linear Expansion Coefficient	VDE 0304/1		7
Thermal conductivity	DIN 52612	W/m/°C	0.17
Fire behaviour			
Self-ignition temperature	DIN 51794	°C	430 c.a.
Fire behaviour	NF P 9250		M4
Other Properties			
Poisson coefficient	ISO 527 -1		0.39
Thermoforming Parameters			
Thermoforming interval		°C	140-190
Heating furnace temperature		°C	130-180
Maximum heating temperature		°C	200
Shrinkage after heating		%	2.5 max

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