

TECHNICAL SHEET Setacryl[®] and Polarlite[®] Cast acrylic sheets

Technical-commercial information

Setacryl[®] is the basic range of sheets cast in Polimethyl Methacrylate with in a glossy surface on both sides.

Polarlite[®] is the range of sheets cast in Polymethyl methacrylate (PMMA), produced and marketed by Madreperla SpA . The sheets have one glossy and one matt surface.

Setacryl[®] and Polarlite[®] have the following characteristics:

- Resistance to impacts 8-10 times higher than glass
- Very high resistance to external agents and to UV rays (10 year guarantee)
- Higher light transmission than glass (transparent type)
- Yellowing and haze (turbidity) index very low even on significant thicknesses (different cm)
- Resistance to chemical aggression by saturated hydrocarbons, acids and diluted alkali, mineral oils and greases of natural and vegetable origin
- Excellent workability (thermoforming, bending, gluing, milling) higher than extruded acrylic sheets
- Cold curvability (minimum radius 270/330 times the thickness)
- Very wide range of colours



The Madreperla production range is completed by the following specialities (see the specific documentation for details) :

<i>Food Contact[®]</i>	Sheets certified for applications in contact with food stuffs
<i>Setaparfum[®]</i>	Sheets with improved resistance to chemical aggression
<i>Seta-LED[◊]</i>	Sheets for LED backlighting
<i>Seta-LETTER[◊]</i>	Opaque coloured sheets with mono-matt-finished surfaces
<i>Setashield[®]</i>	Sheets with high UV and/or IR filter
<i>Satinglas[◊]</i>	Sheets with both surfaces with matt finish
<i>Setasand[®]</i>	Sheets with both surfaces sanded
<i>Metallic[◊]</i>	Sheets with metalized effect
<i>Iridis[®]</i>	Sheets with iridescent/pearly effect
<i>Stone[◊]</i>	Sheets with natural stone effect
<i>Setapan[®]</i>	Solid surface in opaque colours



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.

The production schedule for the various types of sheets is summarised in the following tables and contains only the standard manufacturing products. Other thicknesses, sizes or colours can be produced by request and with a minimum quantity indicated in the specific technical sheet (" Minimum quantity of productions by request").

Standard protection

The film printed with the logo indicates the side to be used. The film is thermo-mouldable 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-mouldable.

Cuts to measure, square cuts and dimensional tolerances

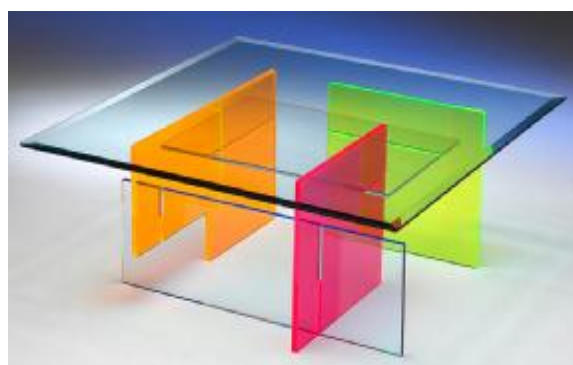
By request shapes can be supplied cut to measure: minimum surface 400 cm².

The sheets are supplied with the following tolerances: standard sheet 0/+10 mm – formats cut to measure +/-1mm/ml. Square cuts can be supplied by request.

Untrimmed sheets can be supplied by 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 by request")



TECHNICAL SHEET Setacryl[®] and Polarlite[®]

Physical-chemical properties.

The following table reports the characteristic properties of standard Setacryl[®] and Polarlite[®] sheets; coloured opaline sheets have different physical-chemical properties (in addition to optic ones, obviously) depending on the type.

	Method	Unit Of measurement	Values
Physical Properties			
Density	ISO 1183	g/cm ³	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/m ²	1.4
Charpy impact resistance without notch	ISO 179/ 1	kJ/m ²	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

This information is given as a guide and does not represent the technical specifications of the materials and therefore does not imply any responsibility on the part of MADREPERLA SpA

GAMMA Setacryl® - Production schedule

Setacryl® : Transparent colourless - code 1000

Thickness (mm)	Formats (mm x mm)
1	600 x 1200
1,5	1500 x 2100
2	1220 x 2020
2,5	1525 x 2030
3 - 4 - 5	1525 x 2030
6 - 8 - 10 - 12 - 15	1510 x 2020
18 - 20 - 25	2030 x 3050 2020 x 3020 2000 x 3000

Setacryl® : Opaline and White

Code	Light transmittance %	Format thickness 2030 x3050	Format thickness 2020 x3020
2005	84	3	
2009	70	3 - 4 - 5	
2002	48	3 - 4 - 5	
2008	40	3 - 4 - 5	6 - 8 - 10
2007	34	3 - 4 - 5	
2006	32	3 - 4 - 5	6 - 8 - 10
2000	29	3 - 4 - 5	
2001	25	3 - 4 - 5	6 - 8 - 10
4000	10	3 - 4 - 5	6 - 8 - 10
4013	4	3 - 4 - 5	6 - 8 - 10 - 12
4002	0	by request	by request

Setacryl® : Coloured Opaline

Code	Colour	Format thickness 2030 x3050
2218	champagne	3
2011	gold	3
2210	yellow	3
2211	sunflower yellow	3
2013	sunshine yellow	3
2016	orangey yellow	3
2012	orange	3
2033	bright red	3
2034	blood red	3
2036	strong red	3
2038	cherry	3
2232	brilliant red	3
2231	cardinal red	3
2237	claret	3
2049	fuchsia	3
2239	violet	3
2054	medium green	3
2056	mint green	3
2057	apple green	3
2058	brilliant green	3
2059	bottle green	3
2251	bright green	3
2065	turquoise	3
2063	bright blue	3
2067	sea blue	3
2060	medium blue	3
2061	navy blue	3
2261	gentian blue	3
2360	midnight blue	3

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GAMMA Setacryl[®] - Production schedule

Setacryl[®] : Transparent, smoky, covering colours, high thickness and furnishing range

Code	Colour	Format thickness x3050	2030 Format thickness 2020 x3020	Format thickness 2000 x3000
Transparent coloured				
1014	yellow	3		
1013	orange	3		
1232	fuchsia	3		
1039	red	3	8 - 15	
1041	vermillion red	3 - 5		
1231	lavender	3		
1050	herb green	3		
1056	grey green	3		
1059	green	3		
1061	blue	3		
1062	turquoise	3 - 5		
1072	blue	3 - 5		
Covered colours				
4074	grey	3		
4007	ivory	3		
4027	brown	3		
4881	black	3 - 4 - 5	6 - 8 - 10 - 15	20
Smokey colours				
1021	might brown	3 - 4 - 5	6 - 8 - 10 - 15	
1025	medium brown	3 - 5		
1029	brown	3	6 - 8	
1040	dark brown	3 - 5	6 - 8	
1046	violet grey	3	8	
1075	light grey	3 - 5	8	
1084	medium grey	3 - 5		
1087	green grey	3 - 5	8	
High thicknesses smoky colours				
1060	transparent green		8	
1363	transparent Light blue		8	
1278	transparent grey		8 - 10 - 12 - 15	
1257	transparent green		8 - 10 - 12 - 15	
1270	transparent grey		8 - 15	
furniture range colours				
290	liza fluorescent orange		15	
391	liza fluorescent red		15	
1150	liza fluorescent green		15	
1110	light blue		15	
1006	sky blue		15	
1014	sun yellow		15	
1276	smoky grey		15	
1241	smoky brown		15	
1331	light lilac		15	
1338	Parma lilac		15	
1232	fuchsia		15	
1013	orange		15	
1332	pinky orange		15	

code	colour	Format thickness 2030x3050	Format thickness 2020x3020
Setaglas®			
1005	crystal green	3 - 4 - 5	6 - 8 - 10 - 15

Liza - fluorescent colours

1112	yellow	3	
1131	red	3	
1134	red	3	
1150	green	3	
1161	blue	3	

GAMMA Polarlite® - Production schedule

		Format thickness 2030x3050	Format thickness 2020 x3020
Polarlite - anti-reflection surface			
5000	colourless	3 - 4 - 5	6 - 8 - 10
6002	opal	3 - 5	
8881	black	3 - 5	8

Polarlite - Night & Day

6080	black/white	3 - 5	
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Polarlite - Setaglas

5005	Mono-matt-finished crystal green	3 - 4 - 5	6 - 8 - 10
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