

# PLAZCAST-LED

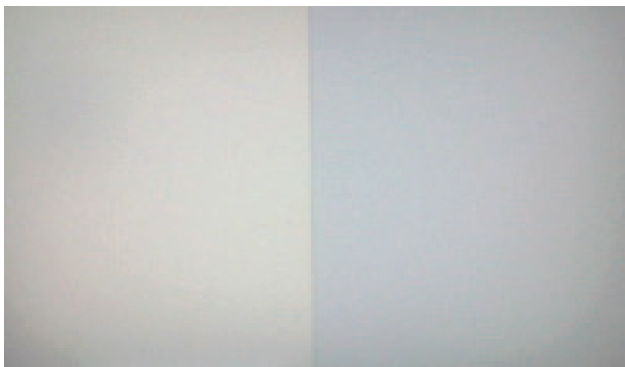
## CAST ACRYLIC (PMMA) SHEETS FOR LED LIGHTING

Based on 30 years of experience in Acrylic (PMMA) cast sheets for lighting applications, the Plazit-Polygal group R&D team has developed a new range of products specially designed for LED lighting.

LEDs are gaining popularity and are gradually replacing older illumination technologies. Unlike fluorescent or neon tubes, which have an 360° dispersion angle, LEDs have a much narrower angle (from 40°-140° for example) and under traditional lighting covers (opals and diffusers) they appear as tiny spots of light. This undesirable phenomenon is referred as "hot spots".

PLAZCAST-LED sheets from Plazit-Polygal feature high light transmission, uniform light diffusion and high "hot spot" hiding power. PLAZCAST-LED sheets allow sign makers and designers to enjoy the benefits of LED and create elegant solutions that are cost-effective and eco-efficient, while enhancing intensity and colour. PLAZCAST-LED sheets are free of plasticiser, heavy metals, halogens and fire retardants. They can be machined and heat processed like standard acrylic sheets and comply with standard ISO 7823-1.

PLAZCAST-LED sheets from Plazit-Polygal are supplied in two standard white shades "warm" and "cold" feel and in a wide range of special colors: blue, red, green, yellow, etc.



PLAZCAST-LED  
Warm Feel (1695N)

PLAZCAST-LED  
Cold Feel (1693N)



PLAZCAST-LED  
Colors

## QUALITIES

PLAZCAST-LED sheets feature the same advantageous qualities that standard Plazit-Polygal PLAZCAST sheets:

- Beautiful glossy surface
- Matte surface available
- Excellent color stability
- Lightweight - Less than half weight of glass
- Excellent weathering and ageing resistance
- High hardness, stiffness and strength
- Excellent dimensional stability
- Easily machined and thermoformed by standard techniques
- Cold-curving capability
- Easy glue bonded
- Easily polished and reshaped
- Good chemical resistance to a wide range of substances
- Easy to clean
- Fully recyclable polyethylene protective film
- Environment friendly. Does not contain any toxic materials or heavy metals
- REACH and RoSH declarations available
- Does not produce toxic or corrosive gases upon burning

## APPLICATIONS



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Interior Design



Architecture



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# PLAZCAST-LED TYPICAL PROPERTIES

PROPERTIES	Unit	Method	Value
Density	g/cm <sup>3</sup>	ISO 1183	1.2
Water Absorption	%	ISO 62 (1)	0.3
Flammability	Class	EN13501	E
<b>MECHANICAL</b>			
Tensile Strength	MPa	ISO 527-2	70
Elongation at Break	%	ISO 527-2	4
Tensile Modulus	MPa	ISO 527-2	3,300
Flexural Strength	MPa	ISO 178	104
Flexural Modulus	MPa	ISO 178	3,000
Rockwell Hardness	M – scale		100
Impact Resistant- Izod notched	kJ/m <sup>2</sup>	ISO 180/1A	1.5
Residual Shrinkage (Internal Stress)	%		< 2
<b>THERMAL</b>			
Vicat Softening Point	°C	ISO 306	105 -112
Heat Deflection Temp. under Load 1.8 MPa	°C	ISO 75-1	105
Coefficient of Linear Thermal Expansion	K <sup>-1</sup>	ISO 11359	6.5 x 10 <sup>-5</sup>
Recommended Continuous Service Temperature	°C		82
<b>ELECTRICAL</b>			
Surface Resistivity	Ohm	DIN 53458	>10 <sup>15</sup>
Volume Resistivity	Ohm.cm	DIN 53458	>10 <sup>15</sup>
Dielectric Constant 50 Hz		DIN 53458	3.6
Dissipation Factor 50 Hz		DIN 53458	0.06

DISCLAIMER: The data in this advertisement are provided in good faith and constitute general information without commitment and no warranty is given or implied. Our plastics products are a combustible thermoplastic that complies with various international standards, as customary in each country. Avoid exposure to excessive heat or aromatic cleaning solvent. Normal fire precautions should be taken to protect against combustion.

## Optical Properties of Plazcast LED:

Plazcast LED	Code #	Haze ASTM D1003	Clarity ASTM D1003	Light Transmission (%) (LED box test**)
Cold Feel	1693N	104	2.4	>60
Warm Feel	1695N	104	1.8	>65
White	1845N	104	1.2	>55
Orange	2139N	104	0	>10
Yellow	2471N	104	0	>22
Red	3496N	104	0	>2
Pink	4486N	104	0	>3
Blue	5569N	104	0	>3
Green	6409N	104	2.3	>30

\* Optical properties were measured on 3-4 mm sheets.

\*\* LED box Test: box size 29x19.5 cm, distance of LED grid to measured sheet 5 cm, LED grid: 11X7 LED type LH-DM-25 12V, measured using a Lux light meter.

## Other special Acryled products:

MC1710N is the newest development, specially designed for machining and LED inserting.

Light transmission in this product changes with thickness in order to achieve a perfect light diffusion and a clear white light when the thickness is reduced.



## Optical Properties of Acryled MC1710N:

Thickness (mm)	Haze ASTM D1003	Clarity ASTM D1003	Light Transmission (%) (LED box Test**)
10	104	0	45-50
15	104	0	40-45
20	104	0	35-45
25	104	0	25-35
30	104	0	25-35

\*\* LED box Test: box size 29x19.5 cm, distance of LED grid to sheet 5 cm, LED grid 11X7, LED type LH-DM-25 12V, measured using a Lux light meter.

