

PLEXIGLAS® Resist

Cast

Product

Cast PLEXIGLAS® Resist is a highly weather-resistant sheet material from impact-modified acrylic (polymethyl methacrylate, PMMA).

The sheets offer greater break resistance than standard acrylic during

- transport and handling,
- the entire fabrication process,
- installation and
- subsequent use.

Properties

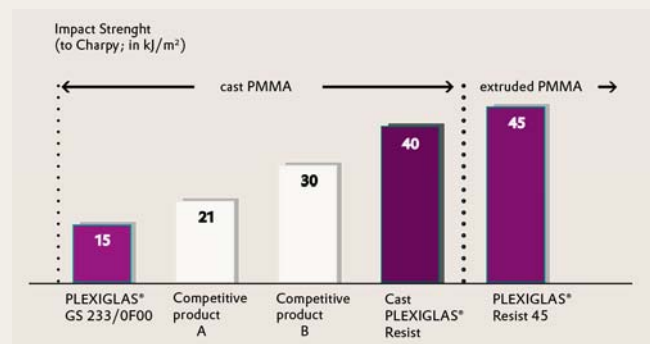
PLEXIGLAS® Resist combines the positive product properties of PMMA with the toughness of other plastics such as polycarbonate (PC). Besides the general properties of PLEXIGLAS® like

- Excellent light transmission and brilliance
- Outstanding weather resistance
- Easy to fabricate
- High surface hardness
- Light weight – half the weight of glass
- 11 times more break resistant than glass

PLEXIGLAS® Resist possesses the following properties:

- Impact resistance

The graph shows the impact resistance of cast PLEXIGLAS® Resist sheets as compared with the cast basic grade PLEXIGLAS® GS 0F00 and the extruded grade PLEXIGLAS® Resist 45, as well as cast acrylics from other manufacturers.



Applications

Due to these properties PLEXIGLAS® Resist is suitable for the following applications

- structural glazing outdoors, e.g. barrel vaults for bus stops, bicycle stands, walkways,
- protective glazing such as general access protection, housings for machines, equipment and workplaces,
- vehicle glazing, e.g. windshields for motorcycles and scooters, interior glazing in buses and trains,
- glazing of store fixtures, counters and fair booths,
- signage, e.g. illuminated signs, indicator panels, poster pillars,
- P.O.P. displays and sales racks, glazing of vending machines, drawing implements, etc.

Processing

PLEXIGLAS® Resist can be machined with the same parameters and equipment as standard PLEXIGLAS®.

The following fabricating guidelines are available:

- Machining of PLEXIGLAS® (No. 311-1)
- Forming of PLEXIGLAS® (No. 311-2)
- Joining of PLEXIGLAS® (No. 311-3)
- Surface treatment of PLEXIGLAS® (No. 311-4)
- Fabricating tips of PLEXIGLAS® solid sheets (No. 311-5)

Product range

For details please refer to the PLEXIGLAS® sales handbook.

Technical Data

Typical values (23°C / 50% R.H.)	PLEXIGLAS® GS Clear 0F00	Cast PLEXIGLAS® Resist Clear 0R01	PLEXIGLAS® Resist 45 Clear 0RA45	Unit	Test Method
Density	1,19	1,19	1,19	g/cm ³	ISO 1183
Impact strength (Charpy)	15	40	45	kJ/m ³	ISO 179/1 fu
Notched impact strength (Charpy)	1,6	3,2	3,5	kJ/m ³	ISO 179/1 eA
Tensile strength	80	70	60	MPa	ISO 527-2/1B/5
Nominal strain at break	-	9	10	%	ISO 527-2/1B/50
Elastic modulus (short-term value)	3300	3000	2700	MPa	ISO 527-2/1B/1
Flexural strength	115	105	95	MPa	ISO 178
Cold-curving radius, min.	330 x thickness	270 x thickness	270 x thickness	-	-
Coefficient of linear thermal expansion (0 to 50 °C)	7 · 10 ⁻⁵ (= 0,07)	7 · 10 ⁻⁵ (= 0,07)	7 · 10 ⁻⁵ (= 0,07)	1/K (mm/m °C)	DIN 53752-A
Permanent service temp., max.	80	80	70	°C	-
Reverse forming temperature	> 80	> 80	> 80	°C	-
Vicat softening temperature	115	113	101	°C	ISO 306, Method B50
Transmittance (380...780 nm)	92	92	91	%	DIN 5036, Part 3
UV transmission	no	no	no	-	-
Surface resistivity	5 · 10 ¹³	5 · 10 ¹³	5 · 10 ¹⁴	Ohm	DIN VDE 0303, Part 3
Building material class (according to Baustoffklasse DIN 4102)	B2	B2	B2	-	DIN 4102
Combustion behavior	Class E	Class E	Class E	-	DIN EN 13501
Water absorption (24 h, 23 °C) from dry state; specimen 60 x 60 x 2 mm ³	41	41	41	mg	ISO 62, Method 1

For further typical data of PLEXIGLAS® Optical hard coated please see the Technical Information of PLEXIGLAS® GS/XT (211-1).

® = registered trademark PLEXIGLAS is a registered trademark of Evonik Röhm GmbH, Darmstadt, Germany. Evonik Röhm GmbH is certified to DIN EN ISO 9001 (Quality) and DIN EN ISO 14001 (Environment).

Evonik is a worldwide manufacturer of PMMA products sold under the PLEXIGLAS® trademark on the European, Asian, African and Australian continents and under the ACRYLITE® trademark in the Americas.

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