Technical Information

PLEXIGLAS® Resist

Extruded -45, -65, -75, -100

Product

Extruded PLEXIGLAS® Resist is a highly weather-resistant sheet material from impact-modified acrylic (polymethyl methacrylate, PMMA). The grades PLEXIGLAS® Resist 45, -65, -75, -100 show increasing impact strength in that order. The sheets therefore offer greater break resistance than standard acrylic during

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

Properties

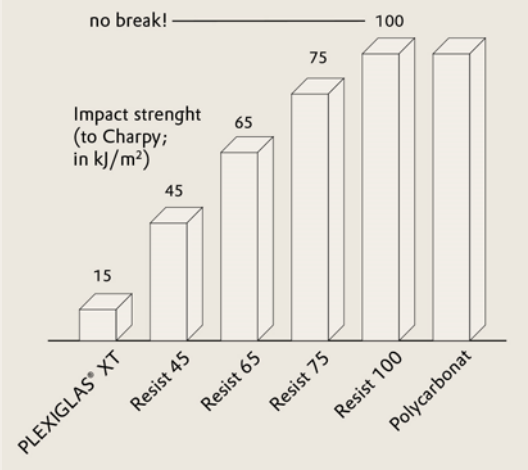
PLEXIGLAS® Resist combines the positive properties of PMMA with the toughness of other plastics such as polycarbonate (PC).
Besides the general properties of PLEXIGLAS® like

- 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 below shows the impact resistance of PLEXIGLAS® Resist sheets as compared with PC and the basic grade PLEXIGLAS® XT 20070. Very often, extreme break resistance is uneconomical. In this case, the individual, custom-tailored solutions offered by PLEXIGLAS® Resist are particularly advantageous.



Applications

Due to these properties PLEXIGLAS® Optical hard coated is suitable for the following applications

- structural glazing outdoors, e. g. barrel vaults for busstops, 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 shop fittings and counters,

- signage, e. g. illuminated signs, indicator panels, advertising pillars,
- P.O.P. displays and sales stands, glazing of vending machines, drawing equipment etc.

In the field of vehicle glazing, PLEXIGLAS® Resist 75 is suitable for use in classes E to F according to the German regulation ABG No. 2326 (e. g. trailers, caravans, building site vehicles, forklift trucks, motorcycle windshields etc.). Moreover, it is approved to DOT-112, AS-6, M-34 to M-84.

All clear-transparent PLEXIGLAS® Resist sheets are approved for food-contact applications.

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

Sheets of PLEXIGLAS® Resist are supplied with a smooth surface and protective PE masking on both sides. The standard size is 3050 x 2050 mm. Standard grades (Clear, White) and thicknesses are available from stock.

For details please refer to the PLEXIGLAS® sales handbook.

Technical Data

Typical values (23 °C/50 % R.H)	PLEXIGLAS® Resist 45 Clear 0RA45	PLEXIGLAS® Resist 65 Clear 0RA65	PLEXIGLAS® Resist 75 Clear 0RA75	PLEXIGLAS® Resist 100 Clear 0RA00	Unit	Test Method
Density	1,19	1,19	1,19	1,19	g/cm³	ISO 1183
Impact strength (Charpy)	45	65	75	100	kJ/m²	ISO 179/1 fu
Notched impact strength (Charpy)	3,5	6,5	7,5	8,0	kJ/m²	ISO 179/1 eA
Tensile strength	60	50	45	40	MPa	ISO 527-2/1B/5
Nominal elongation at break	10	15	20	25	%	ISO 527-2/1B/50
Elastic modulus (short-term value)	2700	2200	2000	1800	MPa	ISO 527-2/1B/1
Flexural strength	95	85	77	69	MPa	ISO 178
Cold-curving radius, min.	270 x thickness	210 x thickness	180 x thickness	150 x thickness	-	-
Coefficient of linear thermal expansion (0 to 50 °C)	$7 \cdot 10^{-5}$ (= 0,07)	$8 \cdot 10^{-5}$ (= 0,08)	$9 \cdot 10^{-5}$ (= 0,09)	$11 \cdot 10^{-5}$ (= 0,11)	1/K (mm/m °C)	DIN 53752-A
Permanent service temperature, max.	70	70	70	65	°C	-
Reverse forming temperature	> 80	> 80	> 75	> 70	°C	-
Vicat softening temperature	101	100	100	97	°C	ISO 306, method B50
Transmittance (380-780 nm)	91	91	91	91	%	DIN 5036, part 3
UV transmission	no	no	no	no	-	-
Surface resistivity	$>10^{14}$	$>10^{14}$	$>10^{14}$	$>10^{14}$	Ohm	DIN VDE 0303, part 3
Building material class (according to Baustoffklasse DIN 4102)	B2	B2	B2	B2	-	DIN 4102
Combustion Behavior	Class E	Class E	Class E	Class E	-	DIN EN 13501
Water absorption (24 h, 23 °C) from dry state; specimen 60 x 60 x 2 mm³	41	45	46	49	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).

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