



PLEXIGLAS®  
Solid Sheet

**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.

The graph below shows the impact resistance of PLEXIGLAS® Resist sheets as compared with PC and the basic grade PLEXIGLAS® XT OA000.

**Properties**

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

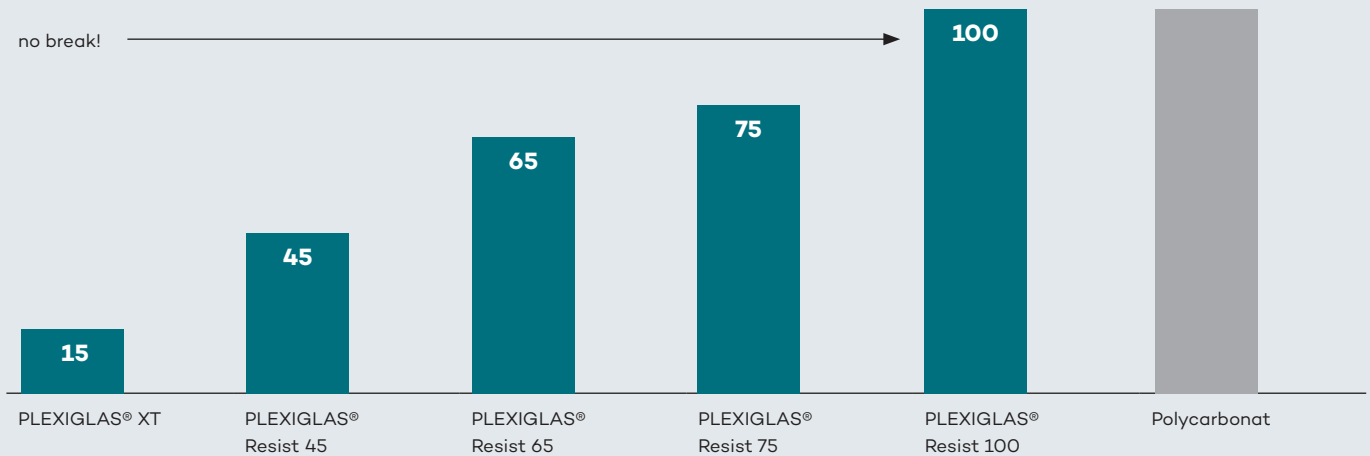
Besides the general properties of PLEXIGLAS® like

- 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

**Impact Strength (to Charpy; in kJ/m²)**





Technical Data						
Typical values (23 °C/50 % R.H.) (3 mm thickness)	PLEXIGLAS® Resist 45	PLEXIGLAS® Resist 65	PLEXIGLAS® Resist 75	PLEXIGLAS® Resist 100	Unit	Test Method
Variant	<b>Clear ORA45</b>	<b>Clear ORA65</b>	<b>Clear ORA75</b>	<b>Clear ORA00</b>		
Density	1.19	1.19	1.19	1.19	g/cm <sup>3</sup>	ISO 1183
Impact strength (Charpy)	45	65	75	100	kJ/m <sup>3</sup>	ISO 179/1 fu
Notched impact strength (Charpy)	3.5	6.5	7.5	8.0	kJ/m <sup>3</sup>	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 <sup>2</sup> K)	DIN 53752-A
Permanent service temperature, max.	70	70	70	65	°C	-
Reverse forming temperature	> 80	> 80	> 75	> 70	°C	-
Vicat softening tempera- ture	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 <sup>14</sup>	> 10 <sup>14</sup>	> 10 <sup>14</sup>	> 10 <sup>14</sup>	Ohm	DIN VDE 0303, Part 3
Building material class (ac- cording 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 mm <sup>3</sup>	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).



## Applications

Due to these properties PLEXIGLAS® Resist 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.

Selected PLEXIGLAS® Resist variants have been tested for applications in/on vehicles in accordance with the specifications of automotive authorities (DOT, KBA).

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)

Temperatures greatly above or below room temperature may cause the material to become cloudy. The effect reverses as the material starts to return to room temperature. This is due to the nature of the impact modified raw material and does not constitute grounds for a complaint.

## 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® product range.

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® = registered trademark

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