



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).

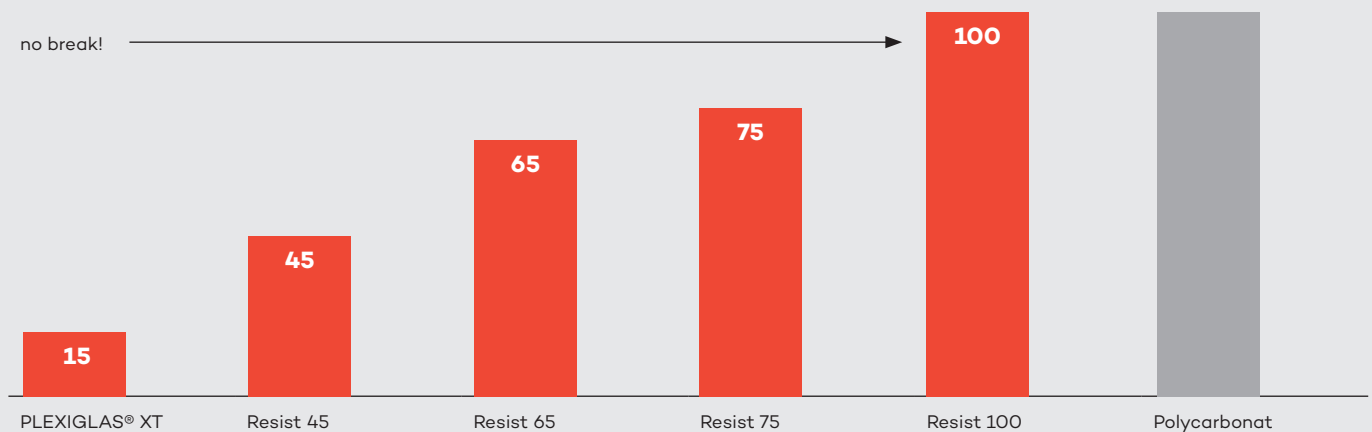
Besides the general properties of PLEXIGLAS® like

- 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 Clear ORA45 | PLEXIGLAS® Resist 65 Clear ORA65 | PLEXIGLAS® Resist 75 Clear ORA75 | PLEXIGLAS® Resist 100 Clear ORA00 | Unit | Test Method |
| Density | 1.19 | 1.19 | 1.19 | 1.19 | g/cm ³ | ISO 1183 |
| Impact strength (Charpy) | 45 | 65 | 75 | 100 | kJ/m ³ | ISO 179/1 fu |
| Notched impact strength (Charpy) | 3.5 | 6.5 | 7.5 | 8.0 | kJ/m ³ | 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 · 10 ⁻⁵ (= 0,07) | 8 · 10 ⁻⁵ (= 0,08) | 9 · 10 ⁻⁵ (= 0,09) | 11 · 10 ⁻⁵ (= 0,11) | 1/K (mm/m ² 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 ¹⁴ | > 10 ¹⁴ | > 10 ¹⁴ | > 10 ¹⁴ | 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 ³ | 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.

PLEXIGLAS® Resist 75 is certified 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)

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® sales handbook.

Röhm GmbH
Acrylic Products

Riedbahnstraße 70
64331 Weiterstadt
Germany

www.plexiglas.de
www.roehm.com

® = registered trademark

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