

# PLEXIGLAS® Resist S4P 32/1230-32

## Clear 00721 C

### Multi-skin sheets

Valid from: 02/2009

#### Guarantee Statements

We guarantee the following properties for the above product according to the conditions of this guarantee statement:

#### Yellowness

Yellowness index	Climate zone: temperate	Climate zone: hot and dry	Climate zone: hot and humid
on delivery	max. 1	max. 1	max. 1
after 10 years	max. 2	max. 3	max. 4
after 30 years	max. 4	max. 5	max. 7

#### Light transmission

Transmittance ( $\tau_{D65}$ )	Climate zone: temperate	Climate zone: hot and dry	Climate zone: hot and humid
on delivery	min. 72%	min. 72%	min. 72%
after 10 years	min. 69%	min. 68%	min. 64%
after 30 years	min. 66%	min. 60%	min. 57%

#### Rigidity

Modulus of elasticity ( $E_t$ )	Climate zone: temperate
on delivery	min. 1,800 MPa
after 10 years	min. 1,800 MPa

#### Strength

Tensile strength value ( $\sigma_M$ )	Climate zone: temperate
on delivery	min. 40 MPa
after 10 years	min. 35 MPa

#### Hail resistance

	Climate zone: temperate
after 10 years	no break

#### Combustion behaviour

Colourless PLEXIGLAS® burns nearly smoke-free and produces no acutely toxic flue gases. PLEXIGLAS® is considered harmless in this respect. All product types and designs do not change their combustion behaviour within a 30-year period.

## Explanations

### Yellowness

Colourless, transparent PLEXIGLAS® has a yellowing value of 0–1 when new. Depending on product type and design, the yellowing value is only 4–7 delta higher after 30 years. The yellowing value is measured as per DIN 5036 on cleaned and polished specimens conditioned in a standardized climate at 23 °C/50 % RH until equilibrium is reached. (Note: Measurements of PLEXIGLAS® multi-skin sheets are made on the upper skin.)

### Light transmission

Colourless PLEXIGLAS® has a light transmission when new of up to 92 % depending on product type and design. Depending on product type and design, light transmission is only 2–15 % lower after 30 years. The transmission factor  $t_{D65}$  is measured as per DIN 5036 on cleaned and polished specimens with thickness of 1 mm, conditioned in a standardized climate at 23 °C/50 % RH until equilibrium is reached. The values guaranteed for PLEXIGLAS® grades other than Clear only apply to the temperate climate zone.

### Rigidity

The modulus of elasticity  $E_t$  is determined in the tensile test according to ISO 527-2/1B/1 at 23 °C as the average value measured on five specimens with parallel faces, which have been conditioned to the equilibrium state in the standard climate of 23 °C/50 % RH. The values guaranteed for PLEXIGLAS® only apply to the temperate climate zone.

### Strength

The tensile strength  $\sigma_M$  is determined in the tensile test according to ISO 527-2/1B/50 at 23 °C as the average value measured on 5 specimens with parallel faces, which have been conditioned to the equilibrium state in the standard climate of 23 °C/50 % RH. The values guaranteed for PLEXIGLAS® only apply to the temperate climate zone.

### Hail resistance

Breakage by hail within the meaning of this guarantee is defined as at least 5 holes at different points in the surfaces of multi-skin or corrugated sheets produced by 10 shots during the hail simulation test described below. Hail simulation test: Pellets of polyamide PA 66 with a diameter of 20 mm (weight approx. 4.5 g) are propelled against the weathered surface at a speed of 21 m/s, corresponding to a kinetic energy of 1 joule, at room temperature. The guarantee statement for PLEXIGLAS® only applies to the temperate climate zone.

### Combustion behaviour

Light absorption by smoke is measured acc. to DIN 4101-1 Annex B. PLEXIGLAS® burns nearly smoke-free, i.e. light absorption by the smoke is < 15 %. The acute toxicity of flue gases is measured as per DIN 53436. The properties guaranteed for PLEXIGLAS® apply to all climate zones.

### Climate zones



### Terms of guarantee

#### Terms of guarantee, exclusions

All guarantee values shall be determined using cleaned specimens. In case of complex profiles, the measured values shall be determined on flat and plane-parallel specimen, since otherwise the material values cannot be determined with sufficient accuracy. Textured semi-finished goods – only on the more roughly textured side if both sides are textured – must be measured with the textured side facing the light source, at the original thicknesses. The products must have been stored, transported, processed, installed and used in accordance with the requirements of the subject materials. They must not have been thermally moulded or exposed to detrimental effects of harmful chemicals. For information on proper use, care and deployment of our products go to <http://www.plexiglas.net> on the internet and see the relevant print publications.

#### Duration of guarantee

This guarantee begins with the day of delivery to the end-user and expires upon deinstallation of the first application, intentional or wilful destruction, or 10 or 30 years from date of purchase. The shortest of the stated time spans applies in each case. Any guarantee claims shall exclusively be determined and governed by the version of this guarantee statement valid on the date of purchase of the material in question. The applicable version in each case is found at <http://www.plexiglas.net>.

#### In case of a guarantee claim

Any rights or claims raised hereunder shall be subject to the following,

- The user must present us a bill from the seller showing the name and address of the user, date of purchase, full product type/name and the product quantity so purchased.
- The guarantee claim must be submitted to us, during the term of this guarantee, in writing within 30 days.
- We ourselves must without delay be permitted to inspect the defect and its potential causes on site, or to have another party do so on our behalf.

#### Claims exclusively available hereunder

In case all terms and other conditions hereof are fulfilled such that the user has a valid claim hereunder we will replace the defective PLEXIGLAS® product ex works. If equivalent replacement material is no longer manufactured by us or can no longer be supplied, the user will receive a refund of the original purchase price. No other or further rights or claims of any kind shall be available hereunder.

#### Consumer rights, applicable law & jurisdiction

This guarantee does not affect or restrict any rights or claims specifically available to consumers under applicable law. This guarantee shall exclusively be governed by and construed under the laws of Germany, as applicable on the date of purchase of the goods in question, without giving effect to conflict of laws principles. The exclusive place of jurisdiction for any rights or claims from this guarantee shall be Darmstadt, Germany.

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\* = registered trademark PLEXIGLAS is a registered trademark of Evonik Röhm GmbH, Darmstadt, Germany.

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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