

**We guarantee****PLEXIGLAS HEATSTOP® Transparent S4P 32****NO DROP****multi-skin sheets****for 10 years****with regard to their light transmission, energy transmission, rigidity and strength.****Product Definition**

PLEXIGLAS HEATSTOP® SP are multi-skin sheets made from acrylic (polymethyl methacrylate, PMMA) specially equipped to act as a heat shield in summer. The sheets are greyish-blue and transparent.

The guarantee applies to PLEXIGLAS HEATSTOP® Transparent S4P 32 NO DROP quadruple-skin sheet in grade

Grey 7Z001.

**Guarantee Statements****1. PLEXIGLAS HEATSTOP® Transparent SP sheets retain their light transmission.**

This means that the sheets will have a transmittance  $\tau_{D65}$  after 10 years that is no more than 4 percent lower than at the time of delivery.

The transmittance is measured on clean, unscratched specimens according to DIN 5036 (see note).

**2. PLEXIGLAS HEATSTOP® Transparent SP sheets will not be broken by hail during the guarantee period.**

Breakage by hail within the meaning of this guarantee is defined as at least 5 holes at different points in the surfaces of the multi-skin 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 room temperature at a speed of 21 m/s, corresponding to a kinetic energy of 1 joule.

**Information:**

According to an expert report, a natural hailstone of 23 mm in diameter has an average impact velocity of 17 m/s, corresponding to a kinetic energy of 1 joule. Furthermore, a hailstone study has established that the average frequency of hailstones of more than 10 mm in diameter, e.g. in the Stuttgart area, is only 2.9%. Hailstones of a greater diameter are even less frequent.

**3. PLEXIGLAS HEATSTOP® Transparent SP sheets retain their energy transmission.**

This means that the sheets will have an energy transmission  $g$  after 10 years that is no more than 2 percent higher than at the time of delivery.

The energy transmittance is measured on clean, unscratched specimens according to DIN 67507 / EN 410 (see note).

**4. PLEXIGLAS HEATSTOP® Transparent SP sheets retain their rigidity.**

This means that the sheets will have a modulus of elasticity of  $E_t \geq 1,800$  MPa after 10 years.

The modulus of elasticity is measured in the tensile test according to ISO 527-2/1B/50, at 23 °C, as the average value established for 5 specimens with parallel faces that have been conditioned to the equilibrium state in the standard climate of 23°C / 50% RH (see note).

## 5. PLEXIGLAS HEATSTOP® Transparent SP sheets retain their strength.

This means that the sheets will have a tensile strength of  $\sigma_M \geq 35$  MPa after 10 years.

The tensile strength is measured in the tensile test according to ISO 527-2/1B/50, at 23 °C, as the average value established for 5 specimens with parallel faces that have been conditioned to the equilibrium state in the standard climate of 23°C / 50% RH (see note).

### Note

For reasons of testing technique it is impossible to establish characteristic material values on complicated profiles like multi-skin sheets with sufficient accuracy. Therefore, specimens with parallel faces are cut from the outer skin (HEATSTOP side) in the direction of the webs to measure the transmittance, modulus of elasticity and tensile strength, and to establish the energy transmittance.

### Conditions of guarantee

The sheets

- have to be stored, transported, fabricated and installed (or used) in a manner that suits the material;
- must not be thermoformed;
- must not be (adversely) affected by connecting, fastening and sealing elements;
- and must be protected against adverse chemical influences.

This guarantee applies throughout Europe. For guarantee questions concerning applications outside Europe, please contact us.

### Applicability

A complaint under this guarantee will be considered

- (a) if caused within the guarantee period despite demonstrable observance of the conditions of guarantee;
- (b) if made in writing without delay during the guarantee period and
- (c) if an invoice issued by the salesperson is presented, showing the name and address of the buyer, the purchase date, complete product description and number of sheets purchased.

**If the complaint is justified, we will replace the material free of charge ex works.**

If suitable replacement material cannot be supplied, the customer will be refunded with the original purchase price. Further claims are excluded.

### Guarantee Period

This guarantee commences with the date of delivery to the user and ends ten years later.

#### Degussa Plexiglas Business Unit

#### Röhm GmbH & Co. KG

Certified to DIN EN ISO 9001 (quality)  
and DIN EN ISO 14001 (environment)

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