

EUROPLEX® SDX / SDX-F

Static dissipative ESD glazing made of polycarbonate

Product

EUROPLEX® ESD (Electrostatic Discharge) glazings dissipate electric charges to ground in a controlled manner. Transparent dissipative EUROPLEX® ESD glazing materials made of high-grade polycarbonate are manufactured using Evonik's advanced XENIOS technology. Functional nanoparticles are distributed homogeneously in a thin coating matrix, which gives both sides of the polycarbonate sheet a surface resistivity of $10^{5-7} \Omega/\text{sq}$.

EUROPLEX® SDX for planar installations has a highly cross-linked abrasion resistant and chemical resistant surface.

EUROPLEX® SDX-F sheets are particularly suitable for thermoforming to obtain curved machine housings and angled conveyor belt covers.

Properties

EUROPLEX® ESD glazing materials meet the requirements of DIN EN 61340-5-1 for the protection of electronic components against electrostatic phenomena (ESD protection).

In the field of explosion protection, the use of EUROPLEX® ESD glazing materials ensures compliance with the "ATEX" Directive 94/9/EC, II 2 GD.

EUROPLEX® ESD glazing provides:

- Protection of electronic components against electrostatic discharge
- Protection against explosions
- Protection against dust adhesion and particle contamination

Application

Due to these properties EUROPLEX® SDX and SDX-F are particularly recommended for

- Semi-conductor and electronic industries
- Cleanroom industry
- Chemical, pharmaceutical /medical and food industries
- Printing and paper industries

Processing

EUROPLEX® SDX for planar installations can be machined, e.g. by sawing, drilling and routing, in the same way as standard polycarbonate. Commonly available factory tools are suitable for this purpose. The minimum bending radius corresponds to 300 times the sheet thickness. The protective film should be kept on the sheet until machining or fabrication is completed.

EUROPLEX® SDX-F is suitable for thermoforming and hot line bending. Thermoforming and hot line bending of the EUROPLEX® SDX-F polycarbonate sheets provides uniaxially formed parts. The machining and fabrication process – also after forming – is performed in the same way as with solid polycarbonate sheets.

Product range

EUROPLEX® ESD glazing materials are available from stock with the following dimensions and thickness:

EUROPLEX® SDX: size 3000 x 1980 mm in

2 / 3 / 4 / 5 / 6 / 8 / 10 mm

EUROPLEX® SDX-F: size 3000 x 1980 mm in

3 / 4 / 5 / 6 / 8 / 10 mm

Technical data

Chemical resistance¹

| | EUROPLEX® SDX | EUROPLEX® SDX-F |
|--|---------------|-----------------|
| Acetone | < 24 hrs | < 24 hrs |
| Disinfectant (Chloramin-T. 2,5% m/m) | > 24 hrs | > 24 hrs |
| Acetic acid (10% m/m) | > 24 hrs | > 24 hrs |
| Ethyl alcohol, not denatured (96% V/V) | > 24 hrs | < 24 hrs |
| Ethyl alcohol, not denatured (48% V/V) | > 24 hrs | < 24 hrs |
| Ethyl acetate and butyl acetate (1:1) | > 24 hrs | < 24 hrs |
| Isopropyl alcohol | > 24 hrs | < 24 hrs |
| Kerosine | > 24 hrs | > 24 hrs |
| Methyl alcohol | > 24 hrs | < 24 hrs |
| Sodium carbonate (10% m/m) | > 24 hrs | > 24 hrs |
| Sodium hydroxide (30%) | < 24 hrs | < 24 hrs |
| Cleaning agents | > 24 hrs | > 24 hrs |

¹ The chemical resistance test is performed in accordance with DIN EN 12720. The sheet surface is visually examined after 24 hours. The surface shows no change after the stated time. The test surface cannot be distinguished from the surrounding area.

Technical data

| Physical properties (clear, 3 mm thickness) | Test standard | Unit | EUROPLEX® SDX | EUROPLEX® SDX-F |
|--|---------------------|---------------------|-------------------|-------------------|
| Electrical properties | | | | |
| Surface resistivity | DIN IEC 60093 | Ohm/sq | 10 ⁵⁻⁷ | 10 ⁵⁻⁷ |
| Mechanical properties | | | | |
| Tensile strength | DIN EN ISO 527 | MPa | 60 | 60 |
| Modulus of elasticity | DIN EN ISO 527 | MPa | 2300 | 2300 |
| Nominal elongation at break ϵ_B | DIN EN ISO 527 | % | 90 | 110 |
| Impact strength (Charpy) | DIN EN ISO 179 | kJ / m ² | No break | No break |
| Notched impact strength (Charpy) | DIN EN ISO 179 | kJ / m ² | 10 | 13 |
| Optical properties | | | | |
| Transmission | DIN 5036 | % | 82 | 85 |
| Haze | ASTM D 1003 | % | 1,2 | 1 |
| Thermal properties | | | | |
| Vicat softening point | ISO 306, Method B50 | °C | 145 | 145 |
| Abrasion resistance of coating | | | | |
| Taber abrasion (100 Zyklen, 5,4 N, CS-10F) | ISO 9352 | % Haze | < 4 | - |
| Pencil hardness | DIN EN 13523-4 | | B | - |

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Evonik Röhm GmbH is certified to DIN EN ISO 9001 (Quality) and DIN EN ISO 14001 (Environment).

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