

StatiCon® Glazing (Bending Grade) PC-350™ Polycarbonate for Cleanroom Construction

Description

StatiCon® Glazing is a family of transparent plastic sheet products designed to control static electricity in cleanroom construction applications. **PC-350™ Polycarbonate**, a member of this family, is a premium quality polycarbonate sheet which has been coated with SciCron Technologies proprietary, clear C-350™ static dissipative coating. This unique technology prevents charge generation on the sheet surfaces, thereby controlling particulate attraction and preventing electrostatic discharge (ESD) events. This performance is permanent and totally independent of humidity. **PC-350 Polycarbonate** offers the cleanroom builder exceptional design versatility since it fabricates simply with field tools, has 250 times greater impact resistance than tempered glass, is less than half the weight of glass for the same thickness sheet, and is available in large sheet sizes. It also exhibits superior flame spread properties plus excellent clarity, chemical resistance, fabrication properties, and bending characteristics.

Applications

PC-350 Polycarbonate resists tribocharging under all circumstances and cannot generate a charge when properly grounded. This makes it ideal for use in manufacturing and assembly operations for charge sensitive electronic components where it can help prevent both immediate and latent ESD caused defects. Since it resists charge build-up it does not attract contaminants, so it can also help prevent contamination-related rejects in ultra-clean manufacturing operations. Consequently, it is suitable for use in cleanrooms for the semi-conductor, electronic, micro-manufacturing, pharmaceutical, and bio-medical industries. Applications include contoured panels and fabricated items which require heat forming or bending, such as; equipment enclosures & covers, laminar flow air containment screens, mini-environment glazing panels, transparent room partition panels, and fluorescent lamp covers.

Fabrication

PC-350 Polycarbonate is easily fabricated into flat and bent configurations using the same equipment and fabrication techniques generally employed with uncoated polycarbonate sheet products. This product is designed to accommodate heat bending, however, care must be taken to avoid applying too much heat to prevent damage to the C-350 surface. For more information on fabrication, refer to SciCron Technologies Technical Information Bulletin No. SP-02.

Features and Benefits

- *Cannot be tribocharged when properly grounded*
Prevents build-up of static charge and accumulation of harmful contamination.
- *Electrostatic decay in less than 0.05 second per Federal Test Standard 101C, Method 4046.1*
Results in rapid static dissipation without arcing.
- *Surface resistivity of $10^6 - 10^8$ ohms per square*
Provides for ESD control without the need for ionization.
- *Permanence in static dissipation performance*
Avoids cost of application of temporary topical anti-stats.
- *Humidity independent static charge control*
Avoids inconvenience of maintaining high levels of humidity and damage caused by such humidity.
- *Advanced technology, uniform surface treatment*
Avoids charged "hot spots" often found with non-uniform, temporary topical anti-stats.
- *Superior Impact resistance*
Provides exceptional shatter resistance for safety.
- *Superior flame spread properties*
Provides additional protection for equipment in a fire.
- *Inherently light weight material with large sheet sizes*
Allows much greater design and installation flexibility than heavy, fragile, conventional glazing.
- *Hard, mar resistant, durable surface*
C-300 surface, harder than the base plastic, reduces risk of damage to the sheet surfaces.
- *Superior chemical resistance*
Reduces risk of solvent or chemical surface damage.
- *Excellent clarity*
Premium optical quality polycarbonate with clear C-300 surface minimizes visible distortion. .
- *PC-350™ Polycarbonate is not designed for exposure to direct sun light and is not warranted for external applications.*

Availability

PC-350 Polycarbonate is available in clear and transparent gray and bronze tints. Other colors are available by special order.

Standard Dimensions

Thickness: 3mm (1/8"), 4.5mm (3/16"), 6mm (1/4"), 9mm (3/8"), 12mm (1/2") – plus films 10-90 mils

Standard Sheet Size: 48" x 96" - Other sizes and thicknesses, available upon request.

Made In USA

The information and statements contained herein are believed to be accurate, however, users should perform their own testing and verification to determine the durability, applicability and suitability of the products for their own purposes. NOTHING CONTAINED HEREIN SHALL BE CONSTRUED AS A REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY EXCLUDED. While SciCron Technologies' surface is more mar resistant than the original substrate, the term "Permanent" or "Permanence" is not intended as a guarantee of durability in any particular application. It is used to distinguish SciCron Technologies' surface from topical anti-stats which must be reapplied on a regular basis. All sales are subject to SciCron's standard terms and conditions of sale, which can be found at: <http://www.sctech.com/termscon>

StatiCon® Glazing - PC-350™ Polycarbonate

Typical Physical Properties (Typical but not guaranteed values for 0.25 inch material)

Property	Test Method	Units	PC-350 Polycarbonate
Physical Specific Gravity	ASTM D792	--	1.20
Mechanical Tensile Strength Ultimate Elongation Tensile Modulus Flexural Strength Flexural Modulus Compressive Strength Izod Impact Strength (milled notch)	ASTM D638 ASTM D638 ASTM D638 ASTM D790 ASTM D790 ASTM D695 ASTM D256	psi % psi psi psi psi ft-lb/inch of notch	9,500 100 340,000 13,500 340,000 12,500 16
Thermal Deflection Temperature (264 psi load) Vicat Softening Point Maximum Continuous Service Temperature Coefficient of Thermal Expansion Coefficient of Thermal Conductivity	ASTM D648 ASTM D1525 -- ASTM D696 Cenco-Fitch	°F °F °F in/in/°F BTU•in/hr•ft ² •°F	270 310 180 3.5 x 10 ⁻⁵ 1.35
Flammability Horizontal Burn (Flame Spread) UL 94 Rating of the Uncoated Substrate	ASTM D635 UL 94	in/min UL Classification	Less than 1.0 V-2 0.118 - 0.236 in V-0 ≥0.236 in
Optical 3mm Transparent Clear Transmittance - Total Haze	ASTM D1003 ASTM D1003	% %	75 Less than 5.0
Electrical Surface Resistivity Surface Resistance Electrostatic Decay	ASTM D257 EOS/ESD S11.11 FTS 101C, Method 4046.1*	ohms/sq ohms sec	10 ⁶ - 10 ⁸ 10 ⁵ - 10 ⁷ Less than 0.05

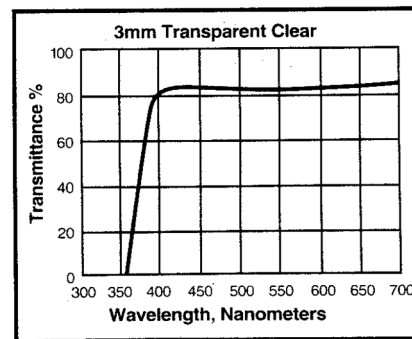
* Federal Test Standard 101C, Method 4046.1 as described in EIA-541, Appendix F, Measurement of Electrostatic Decay Properties of Dissipative Planar Materials

Chemical Resistance ASTM D543

Samples immersed in the specified chemicals for 24 hours at room temperature and visually examined.

Chemical	Surface Attack	Visual Evaluation
Deionized Water	None	Clear
30% Sodium Hydroxide	None	Cloudy
30% Sulfuric Acid	None	Clear
30% Nitric Acid	Slight Pitting	Cloudy
48% Hydrofluoric Acid	Pitted Coating	Clear
Methanol	Slight Pitting	Clear
Ethanol	None	Clear
Isopropyl Alcohol	None	Clear
Acetone	Severe Pitting	Opaque

Light Transmission Spectral Analysis



Precautions:

- Polycarbonate plastic is a combustible thermoplastic. Avoid exposure to flame and excessive heat. Observe fire precautions appropriate for comparable forms of wood and paper.
- For building applications, comply with applicable code regulations.
- Clean with soap and water. Do not use abrasives. Avoid inappropriate contact with solvents.