

Mar-Con® 600 Polycarbonate Abrasion Resistant Plastic

Description

Mar-Con® 600 Polycarbonate is an advanced technology abrasion resistant highly cross-linked hard coating with excellent abrasion resistance, solvent resistance, and anti-graffiti properties. It is designed for a variety of high-performance end uses. This Mar-Con 600 hard coating provides enhanced resistance to abrasion of the sheet surfaces from cleaning, handling, and defacement efforts.

Mar-Con® 600 Polycarbonate plastic substrate is a high optic grade polycarbonate that exhibits excellent optical properties with superior impact resistance and flame spread properties. This product can be used in many more applications than would be practical for an uncoated polycarbonate sheet. Mar-Con 600 can also be applied to thin gauge materials without suffering from distortions caused by typical thermal curing coating processes.

Applications

Mar-Con® 600 Polycarbonate is designed to be used where there is concern about marring and abrasion of the surfaces of the plastic sheet from handling and other moderate abuse. It is designed for applications requiring improved splash and wipe down resistance to many common chemicals and solvents which would normally damage the polycarbonate sheet surfaces. The Mar-Con 600 surface helps prevent such damage from short term exposures to these materials. Mar-Con 600's hydrophobic surface is resistant to graffiti and can be immediately cleaned if defaced. Typical applications for **Mar-Con® 600 Polycarbonate** include interior and exterior applications such as: vertical shatter resistant windows, safety partitions, machine guards, security glazing, enclosures, doors, access panels, display cases, and inspection windows.

Fabrication

Mar-Con® 600 Polycarbonate is easily fabricated into flat surface configurations using the same equipment and fabrication techniques generally employed with uncoated polycarbonate sheet products. *For applications requiring heat formed or bent configurations, plastic substrates with SciCron Technologies Forming Grade Mar-Con® 551 coating are recommended.* Note: When solvent glue welding, it is necessary to remove the Mar-Con 600 coated surface mechanically to achieve a good bond.

Features and Benefits

- *Abrasion resistant, mar resistant, durable surface*
The Mar-Con 600 surface is significantly more abrasion resistant than the base plastic & reduces risk of damage to the sheet from frequent cleaning and handling.
- *Superior chemical and solvent resistance*
Reduces risk of solvent or chemical damage to the sheet surfaces.
- *Excellent optical properties*
High clarity, high gloss coating on a high optic substrate maintains optimum light transmission without distortion.
- *Advanced technology, uniform surface treatment*
Provides enhanced abrasion and chemical resistance without changing the appearance of the polycarbonate surfaces.
- *Graffiti resistance*
Easy to clean hydrophobic surface
- *Superior impact resistance*
Provides exceptional shatter resistance for safety.
- *Superior flame spread properties*
Provides additional protection in a fire.

Cleaning

The Mar-Con 600 surface can be cleaned with a variety of common cleaners (see reverse side for specific recommendations). Care should be taken to avoid the use of any cleaner or cleaning solution which contains an abrasive. In addition, all wipes, sponges, and drying towels should be clean and free of any grit which could damage the surface.

Availability

Mar-Con® 600 Polycarbonate is available in clear, black opaque, and transparent gray and bronze tints. Other colors may be available upon special request.

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

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Mar-Con® 600 Abrasion Resistant Polycarbonate

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

Property	Test Method	Units	Mar-Con 600 Polycarbonate
Physical			
Specific Gravity	ASTM D792	--	1.20
Taber Abrasion ¹ - Δ Haze	ASTM D1044	%	3
Weighted Steel Wool Rub Resistance ²	Internal	Visual Scratches	None
Mechanical			
Tensile Strength	ASTM D638	psi	9,500
Ultimate	ASTM D638	%	100
Elongation	ASTM D638	psi	340,000
Tensile Modulus	ASTM D790	psi	13,500
Flexural Strength	ASTM D790	psi	340,000
Flexural Modulus	ASTM D695	psi	12,500
Compressive Strength	ASTM D256	ft-lb/inch of notch	16
Izod Impact Strength (milled notch)	ASTM G154	8 hrs UV Exposure, 4 hrs Condensation	> 500 Hrs No Adhesion Loss ΔYI <3
UV Exposure			
Thermal			
Deflection Temperature (264 psi load)	ASTM D648	°F	270
Vicat Softening Point	ASTM D1525	°F	310
Maximum Continuous Service Temperature	--	°F	180
Coefficient of Thermal Expansion	ASTM D696	in/in/°F	3.8 x 10 ⁻⁵
Coefficient of Thermal Conductivity	Cenco-Fitch	BTU•in/hr•ft ² •°F	1.35
Flammability			
Horizontal Burn (Flame Spread)	ASTM D635	in/min	Less than 1.0
UL 94 Rating of Uncoated Substrate	UL 94	UL Classification	V-2 < 0.236 inch V-0 ≥ 0.236 inch
Optical			
Transmittance, 3mm Transparent Clear - Total	ASTM D1003	%	90
Haze	ASTM D1003	%	Less than 1.0

1. Test conditions - 500 gram load, 100 revolution exposure, CS-10F Calibrase Wheel
2. Test conditions - 25 double rubs of #0000 steel wool under a 2 pound (908 gram), 1/2" contact area

Chemical Resistance ASTM D-1308

Samples immersed in listed chemicals and then examined for visible attack at 15 minutes, 1 hour, and 24 hours

Chemical	Time for visible Attack
Acetone	> 1 hour
Methyl Alcohol	> 24 hours
Isopropyl Alcohol	> 24 hours
Kerosene	> 24 hours
Toluene	> 1 hour
Sodium Hydroxide (10%)	> 24 hours
Hydrochloric Acid (10%)	> 24 hours
Sulfuric Acid (10%)	> 24 hours
Nitric Acid (10%)	> 24 hours

Cleaning and Graffiti Removal

Solvents and Cleaning Liquids Found Effective Under Laboratory Conditions

Aqueous solutions of the following can be applied carefully with a soft cloth or sponge for ordinary dirt and grime.

Joy® Windex®
Formula 409® Sparkle™

Rinse with clean water before drying with a chamois or cellulose sponge.

Never use an abrasive cleaner or scouring pad.

The following solvents, in addition to the above cleaners, can be used to remove graffiti and other stubborn stains.

Isopropyl Alcohol Methanol
Naphtha (VM&P Grade) Kerosene
Butyl Cellosolve (for paints, inks, lipstick, etc.)

Always remove residual solvent with an aqueous cleaner and a final rinse with clean water.

Precautions:

1. Polycarbonate plastic is a combustible thermoplastic. Avoid exposure to flame and excessive heat. Observe fire precautions appropriate for comparable forms of wood and paper.
2. For building applications, comply with applicable code regulations.