

Mar-Con® 600 Acrylic Abrasion Resistant Plastic

Description

Mar-Con® 600 Acrylic 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. Mar-Con 600 hard coating provides enhanced resistance to abrasion of the sheet surfaces from cleaning, handling, and defacement efforts. **Mar-Con® 600 Acrylic** plastic substrate is a cell cast acrylic that exhibits excellent optical properties with superior weathering characteristics and solvent welding capabilities. This product can be used in many more applications than would be practical for an uncoated acrylic 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 Acrylic 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 also designed for applications requiring improved splash and wipe down resistance to many common chemicals and solvents which would normally damage the acrylic sheet surfaces. Mar-Con 600's hydrophobic surface is resistant to graffiti and can be immediately cleaned if defaced. Typical applications for **Mar-Con® 600 Acrylic** include applications such as: boxes, displays, display cases, and protective screens. It can also be used for exterior glazing, partitions, enclosures, doors, access panels, and inspection windows when exterior longevity is critical.

Fabrication

Mar-Con® 600 Acrylic is easily fabricated into flat surface configurations using the same equipment and fabrication techniques generally employed with uncoated acrylic 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 welding, it is necessary to remove the coated surfaces 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 surfaces 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 maintains optimum light transmission without distortion.
- **Graffiti Resistance**
Easy to clean hydrophobic surface
- **Superior fabrication characteristics**
Results in optimum workability during part fabrication.

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 Acrylic, in cell cast type, is available in clear and a variety of standard transparent colors. White translucent and colored opaque grades are also available. Continuously cast and extruded types are available in some sizes and thicknesses upon request.

Note: Cell cast is a premium form of acrylic plastic, but it has a wider thickness variation than other acrylic types. *Therefore, continuously cast or extruded material should be specified if a narrow thickness tolerance range is required.*

Standard Dimensions (Nominal)

Thickness: 3mm (1/8"), 4.5mm (3/16"), 6mm (1/4"), 9mm (3/8"), 12mm (1/2") - Note: 9mm and 12mm - cell cast only.

Standard Sheet Size: 48" x 96"

Other sizes and thicknesses, including oversize sheets, available upon request.

Made in USA

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Mar-Con® 600 Abrasion Resistant Acrylic

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

Property	Test Method	Units	Mar-Con 600 Acrylic
Physical			
Specific Gravity	ASTM D792	--	1.19
Taber Abrasion ¹ Δ Haze	ASTM D1044	%	3
Weighted Steel Wool Rub Resistance ²	Internal	Visual Scratches	None
Mechanical			
Tensile Strength			
Ultimate	ASTM D638	psi	10,000
Elongation	ASTM D638	%	4.2
Tensile Modulus	ASTM D638	psi	400,000
Flexural Strength	ASTM D790	psi	16,500
Flexural Modulus	ASTM D790	psi	475,000
Compressive Strength	ASTM D695	psi	18,000
Izod Impact Strength (milled notch)	ASTM D256	ft-lb/inch of notch	0.4
Thermal			
Deflection Temperature (264 psi load)	ASTM D648	°F	210
Vicat Softening Point	ASTM D1525	°F	239
Maximum Continuous Service Temperature	--	°F	180
Coefficient of Thermal Expansion	ASTM D696	in/in/°F	3.5 x 10 ⁻⁵
Coefficient of Thermal Conductivity	Cenco-Fitch	BTU•in/hr•ft ² •°F	1.3
Flammability			
Horizontal Burn (Flame Spread)	ASTM D635	in/min	1.1
UL 94 Rating of the Uncoated Substrate	UL 94	UL Classification	HB
Optical			
Transmittance, 3mm Transparent Clear - Total	ASTM D1003	%	92
Haze	ASTM D1003	%	Less than 1.0

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

Chemical Resistance ASTM D-1308

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

Chemical	Time for visible Attack
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®
Formula 409®

Windex®
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. Acrylic 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.