

General Properties: AcrySan™ I-300

AcrySan™ Acrylic Sheet products are continuous cast and derived from unique formulations. AcrySan™ Acrylic Sheet I-300 is a cross-linked solvent resistant acrylic sheet with exceptional thermoforming characteristics making it ideally suited for applications such as sanitaryware. AcrySan™ Acrylic Sheet I-300 is available in standard colors and is produced to customers' orders in many thicknesses and sizes.

Unlimited length

Because AcrySan™ Acrylic Sheet is continuously cast, it can be produced in either reels or sheets of lengths limited only by the practicality of shipping and handling weights and sizes. This eliminates unsightly and costly seams and joints in finished products.

Reel concept

AcrySan™ Acrylic Sheet is available in reels, providing additional savings, a variety of efficient handling and fabricating techniques, and allowing reduced inventories—permitting the use of storage space for production.

Closer thickness tolerance

A thickness tolerance of $\pm 10\%$ or $\pm .015"$ (0.4 mm), whichever is greater, is maintained in AcrySan™ Acrylic Sheet, assuring uniformity. This uniformity reduces the rate of rejections attributable to breakage, thinning out or variances in light transmission.

Availability

AcrySan™ Acrylic Sheet can be supplied in widths from 24" to 110" (60 to 280 cm). Sheet thicknesses range from 0.080" to 0.500" (2 to 13 mm). AcrySan™ Acrylic Sheet can be cut to fractional sizes to comply with close tolerances required by Mill specs or customer specifications.

Design freedom

With larger sizes, better uniformity and superior properties, AcrySan™ Acrylic Sheet opens new horizons for product designs never possible with conventional cell-cast acrylic sheet. AcrySan™ Acrylic Sheet gives designers freedom in colors, too. AcrySan™ Acrylic Sheet is supplied in a variety of standard and marbled colors, and, by request, the AcrySan™ color laboratory can develop other colors that may be required.

Formability

AcrySan™ Acrylic Sheet can be thermoformed. This involves heating the material to approximately 380° F (195° C) and forming the desired shape with vacuum or air pressure.

Fabrication

Unlike glass and other materials, AcrySan™ Acrylic Sheet can easily be sawed, drilled, routed, filed, cemented, and machined. It behaves similar to hardwood or brass.

Resistance to breakage

AcrySan™ Acrylic Sheet has 10 to 17 times greater breakage (impact) resistance than glass in equivalent thicknesses. Unlike other plastics used in glazing, AcrySan™ Acrylic Sheet does not lose its outstanding breakage resistance because of degradation from weathering.



Light weight

AcrySan™ Acrylic Sheet is about 46% as heavy as ordinary glass.

Safety

The resistance to breakage and lighter weight of AcrySan™ Acrylic Sheet makes it a safer material to handle and work with. If breakage should occur, the material does not shatter and splinter. Usually the break is local (a hole) or a clean single break. The broken edges are dull compared to glass fragments. Several state and local building code agencies specify acrylics over ordinary glass for storm door and other glazing applications where safety is the main criterion.

Weather resistance

AcrySan™ Acrylic Sheet has outstanding weathering resistance. Even in areas such as Florida and Arizona, acrylics are virtually unaffected after 15 or more years exposure. Acrylics have been used successfully in aircraft glazing since before World War II and for more than 40 years in outdoor sign applications.

Optical clarity

Light transmittance for clear AcrySan™ Acrylic Sheet is about 93% compared to 88% for ordinary glass.

Resistance To Temperature Extremes

The continuous use temperature for AcrySan™ Acrylic Sheet is up to 180° F (82° C). Higher temperatures can be tolerated for short periods of time without permanent damage occurring. At extremely low temperatures (-30° F) (-34.4° C), AcrySan™ Acrylic Sheet remains very serviceable with only a slight reduction in breakage resistance occurring.

Insulating values

AcrySan™ Acrylic Sheet is a better insulator than glass. Its heat transfer characteristics are similar to those of rubber. The coefficient of thermal conductivity (K Factor) or ability to conduct heat is 1.4 compared to 5 to 6 for ordinary glass. This means with zero wind velocity on both sides of the windowpane, ordinary glass conducts heat more than 4 times as fast as AcrySan™ Acrylic Sheet. The overall coefficient of heat transmission (U Factor) is 1.04 compared to 1.25 for glass. At these conditions, AcrySan™ Acrylic Sheet is still approximately 20% better insulator than ordinary glass.

Standards

AcrySan™ Acrylic Sheet will meet and/or exceed the following specifications:

- ASTM D 4802-02 Category A-2, Finish 1 and 2, Type UVF. Exception: Thickness tolerance shall be as listed on front page of this bulletin.
- American National Standards Institute Specifications
ANSI-Z-124.1—Plastic bathtub units.
ANSI-Z-124.2—Plastic shower units.
ANSI-Z-124.3—Plastic lavatories

International Association of Plumbing & Mechanical Officials (IAPMO) Material and Property Standards for Acrylic-Faced Bathtubs, Tub-showers and Lavatories. Material and Property Standard for Acrylic-Faced Spas.



Note: for cautions and information on exposure to any Aristech Surfaces' product, please see the applicable material safety data sheet.

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