

GENERAL PROPERTIES: GRADES GPA, I-300 & S-300

Aristech Surfaces Acrylic Sheet products are continuous cast and derived from unique formulations. AcryClear™ Acrylic Sheet GPA is a general-purpose acrylic sheet. It is solvent cementable, and it can be ordered in many standard colors, thicknesses, and sizes. GPA is ideally suited for signs, fabricated products, and general distribution. AcryClear™ Acrylic Sheet I-300/S-300 is a cross-linked solvent resistant acrylic sheet with exceptional thermoforming characteristics making it ideally suited for applications such as sanitaryware. AcryClear™ Acrylic Sheet I-300/S-300 is available in standard colors and is produced to customers' orders in many thicknesses and sizes.

UNLIMITED LENGTH

Because AcryClear™ 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

AcryClear™ 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 $\pm .015$ in. (0.4 mm), whichever is greater, is maintained in AcryClear™ Acrylic Sheet, assuring uniformity. This uniformity reduces the rate of rejections

attributable to breakage, thinning out or variances in light transmission.

AVAILABILITY

AcryClear™ Acrylic Sheet can be supplied in widths from 24 in. to 108 in. (60 to 275 cm). Sheet thicknesses range from 0.080 in. to 0.236 in. (2 to 6mm). AcryClear™ Acrylic Sheet can be cut to fractional sizes to comply with close tolerances required by customer specifications.

DESIGN FREEDOM

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

FORMABILITY

AcryClear™ Acrylic Sheet can be cold formed at room temperatures to yield generous curved surfaces. If unusual shapes or smaller curvatures than those possible with cold forming are desired, Aristech Surfaces 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, AcryClear™ Acrylic Sheet can easily be sawed, drilled, routed, filed, cemented, and machined. It behaves similar to hard wood or brass.

RESISTANCE TO BREAKAGE

AcryClear™ Acrylic Sheet has 10 to 17 times greater breakage (impact) resistance than glass



in equivalent thicknesses. Unlike other plastics used in glazing, AcryClear™ Acrylic Sheet does not lose its outstanding break-age resistance because of degradation from weathering.

LIGHT WEIGHT

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

SAFETY

The resistance to breakage and lighter weight of AcryClear™ Acrylic Sheet make 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

AcryClear™ Acrylic Sheet has outstanding weathering resistance. Even in areas such as Florida and Arizona, acrylics are virtually unaffected after 15 or more years exposure. AcryClear™ 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 AcryClear™ Acrylic Sheet is about 93% compared to 88% for ordinary glass.

RESISTANCE TO TEMPERATURE EXTREMES

The continuous use temperature for Aristech Surfaces 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), AcryClear™ Acrylic Sheet remains very serviceable with only a slight reduction in breakage resistance occurring.

INSULATING VALUES

AcryClear™ 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 AcryClear™ Acrylic Sheet. The overall coefficient of heat transmission (U Factor) is 1.04 compared to 1.25 for glass. At these conditions, AcryClear™ Acrylic Sheet is still approximately 20% better insulator than ordinary glass.

STANDARDS

AcryClear™ 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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