

Our Collection, Created for Your Collection

Now Tru Vue has more glazing options than ever before for framing and display applications. Our collection of high-performance acrylic glazing has expanded to meet your challenging aesthetic and conservation needs and provides alternatives to conventional glazing materials used for protecting and displaying works of art.

Range of acrylic glazing options for:

- **Anti-reflective** display requirements for optimal viewing.
- **Anti-static** applications including friable media (charcoals and pastels), fragile surfaces, lightweight papers, textiles.
- **Abrasion resistance** from minor scratches associated with frequent cleaning, high traffic areas, and or traveling.
- **UV protection** for the display of light-sensitive objects where light is not filtered at the source.
- **Crystal clear** transmitted color when typical yellow color cast from existing UV-filtering acrylics is objectionable.
- Structurally sensitive frames, large works, and/or when glass is too heavy – **Half the weight of glass.**

Size Availability

Product	Thickness	Size	Sq Ft/ sheet	Approx wt/sheet	Max Sheets	Approx empty crate wt
Optium Museum Acrylic® (Blocks up to 99% UV radiation)	6.0mm (1/4 in)	72" x 120" (3048mm x 1829mm)	60 (5.57 sqm)	89 lbs/40.37kg 1.5 lbs per ft ² 6.8kg per m ²	1 to 20 (crate)	500 lbs (226.79kg)
	4.5mm (3/16 in)	72" x 96" (2438mm x 1829mm)	48 (4.46 sqm)	54 lbs/24.5kg 1.13 lbs per ft ² 5.1kg per m ²	1 to 26 (crate)	478 lbs (216.82kg)
	3.0mm (1/8 in)	48" x 96" (2438mm x 1219mm)	32 (2.97 sqm)	22 lbs/9.98kg 0.7 lbs per ft ² 3.2kg per m ²	1 (box) or 1 to 40 (crate) or 25 (box/pallet)	329 lbs (149.23kg)
Optium Acrylic® (Blocks up to 93% UV radiation)	3.0mm (1/8 in)	48" x 96" (2438mm x 1219mm)	32 (2.97 sqm)	22 lbs/9.98kg 0.7 lbs per ft ² 3.2kg per m ²	1 (box) or 1 to 40 (crate) or 25 (box/pallet)	329 lbs (149.23kg)
StaticShield™ Acrylic (Blocks up to 99% UV radiation)	4.5mm (3/16 in)	72" x 96" (2438mm x 1829mm)	48 (4.46 sqm)	54 lbs/24.5kg 1.13 lbs per ft ² 5.1kg per m ²	1 to 26 (crate)	478 lbs (216.82kg)
	3.0mm (1/8 in)	48" x 96" (2438mm x 1219mm)	32 (2.97 sqm)	22 lbs/9.98kg 0.7 lbs per ft ² 3.2kg per m ²	1 (box) or 1 to 40 (crate) or 25 (box/pallet)	329 lbs (149.23kg)
Conservation Clear® Acrylic (Blocks up to 99% UV radiation) OR Conservation Reflection Control® Acrylic (Blocks up to 99% UV radiation)	3.0mm (1/8 in)	48" x 96" (2438mm x 1219mm)	32 (2.97 sqm)	22 lbs/9.98kg 0.7 lbs per ft ² 3.2kg per m ²	5 (box) or 50 (pallet)	--

Product Comparison Chart

Optium®
Museum Acrylic

Optium®
Acrylic

StaticShield™
Acrylic

Conservation Clear®
Acrylic **Crystal Clear**

Conservation Reflection
Control® Acrylic **Crystal Clear**

Physical Characteristics	Substrate	Clear, hard coat abrasion-resistant, UV filtering extruded acrylic	Clear, hard coat abrasion-resistant extruded acrylic	Clear, hard coat abrasion-resistant, UV filtering extruded acrylic	Crystal Clear UV filtering extruded acrylic	Crystal Clear UV filtering extruded acrylic with etched, matte-like finish
	Thickness Consistency	+/- 5% (i.e., 6mm +/- 0.3mm) Most uniform consistency of acrylic substrates.				
	Product Identification	Protective film with product identification label. (please e-mail info@tru-vue.com with questions regarding product identification)				
Performance Data	UV Protection 300–380nm	99%	93%	99%	99%	99%
	Light transmission, total ASTM D-1003	>98%	>98%	>92%	>92%	>92%
	Light Reflection/ Double-sided Anti-Reflection Haze	<1.5%	<1.5%	8%	8%	8% etched, matte-like finish scatters light
	Outgassing Oddy Test	None – Passed				
	Accelerated Aging Q-sun Xenon Arc test	Anti-reflective, anti-static, UV protection and light transmission remain unchanged after 2000 hours (estimated to be approximately 100 years) of Q-sun Xenon arc testing at exposure intensity of 100,000 Lux.				
Specifications	Tensile Strength Modulus of Elasticity ASTM D-638	10,000 – 11,030 psi 400,000 – 490,000 psi				
	Flexural Strength Modulus of Elasticity ASTM D-790	17,000 psi 480,000 – 490,000 psi				
	Impact Strength – Izod Milled Notch ASTM D-256	0.28 – 0.4 ft. lbs./in of notch				
	Impact Strength – Gardner – falling weight ASTM 5420-04	18.1 ft-lbs (6.0mm) Acrylic glazing products are significantly more impact-resistant than annealed glass and similar to that of tempered glass. If subject to impact beyond the limit of resistance, it does not shatter into small slivers, but breaks into larger pieces.				
	Humidity Resistance MIL-C-48497A, para 4.5.3.2	No deterioration of coating after 48 hours @ 50°C, 95% RH	NA		NA	



Magnetron Sputtered Process

Coating and Visual Color Impression (Transmitted and Reflected Color)

- Magnetron sputtered coating helps ensure maximum durability and strength.
- Utilizes hard-coated, abrasion resistant acrylic sheet.
- Patented Tru Vue® Optium Technology.
- Thin film coatings bonded to substrate at an atomic level.
- Long-lasting anti-static protection.
- Won't oxidize and degrade overtime.
- Transmitted color appears color neutral.

Optium® Acrylic Glazing

Light reflection is reduced to less than 1.5% at 90 degrees. The anti-reflective coating is designed to perform in a museum gallery setting. On works hung vertically, and it is optimized when viewed at a 90 degree angle. However, if the angle of view changes so does the amount and color of the reflection. Beyond that, reflections become visible in a subtle greenish/blue color and certain lighting conditions may make this more noticeable.

Some variation in the color and or intensity of the color of the reflection is considered acceptable as a normal and inherent characteristic of any anti-reflective product. The color and intensity of the reflection can vary within a sheet and from sheet to sheet. The amount of reflection however is significantly lower than the reflection of regular uncoated glass or acrylic and is considered normal and inherent characteristic of an anti-reflective product. (ASTM D-1929)

Specifications (continued)	Corrosion Resistance (Salt Fog) ASTM B117 & B-368-03 & B368-97	48 hr. No Deterioration 50°C, 95% RH After exposure for 7 – 24 hr cycles (168 hours), the coating shows no damage – Passed	NA	NA
	RoHS compliance testing	(Dangerous substance testing: presence of Lead (Pb), Cadmium (Cd), Mercury (Hg), Hexavalent chromium (Hex-Cr)) – Passed	NA	NA
	Photographic Activity Test ISO 18916 & ISO 18902	ISO 18916 Silver Image Interaction • Gelatin Staining • Mottling of Image • Interaction Detector Overall performance – Passed ISO 18902 Overall performance – Meet; “Photo-safe” per ISO 18902 section 3.9		
	Coating Adhesion (Snap Tape) MIL-C-48497A, para 4.5.3.1	The coating shows no damage after snap removal of tape.	NA	NA
	Solubility MIL-C-48497A	After a 24-hour immersion or exposure at room temperature (60°-90°F), the anti-reflection coating shows no deterioration in the following solutions: • Distilled Water • Saline Solution (170gm of NaCl per 3.8 liters of water) • Acetone • Ethyl Alcohol • Isopropyl Alcohol • Coffee • Coke	NA	NA
Temperature and Flammability	Flammability Self-Extinguish UV945VA & 5VB	No acrylic will self-extinguish, and therefore our high-performance acrylic glazing products do not meet this requirement. Our high-performance acrylic glazing products are combustible and usually burn to completion if not extinguished. Precautions should be taken to protect this material from flames and high heat sources.		
	Flammability Self-Ignition Temp. ASTM-D-1929	830 – 833°F / 443 – 445°C		
	Horizontal Burning Test Avg. Burn Rate ASTM D-635	1.0 – 1.019 in./min / 2.5 cm/min (3mm)		
	Smoke Density ASTM D-2843	3.4 – 6.4% (3mm)		
	UL 94 Rating	94HB		
	Deflection Temp. (264 psi load) ASTM D-648	203 – 210°F / 95 – 99°C		
	Vicat Softening Point ASTM D-1525	210 – 220°F / 99 – 105°C		
	Max. Continuous Service Temp.	170 – 190°F / 77 – 88°C		
	Coefficient of Thermal Expansion ASTM D-696	0.00003 – 0.00004 in/in °F / 0.000054 – 0.000072 m/m °C		
	Water Vapor Transmission Rate (@ 50% R.H.)	0.014 gm/100 in ² × day Optium Acrylic Glazing performs like regular uncoated acrylic in response to changes in relative humidity. The vapor transmission rate is low enough that reasonable levels of humidity can be maintained inside an acrylic enclosure by using appropriate desiccants. Optium Acrylic Glazing should not be used for applications that must be hermetically sealed.		



Abrasion Resistance MIL-C-14806A, para 4.4.7 & MIL-M13508C, para 4.4.5

The coating shows no signs of deterioration, other than discoloration, after being subjected to 20-alcohol soaked cheesecloth test at 2-2.5 lbs. The coating shows no damage after 600 dry cloth rubs at 2.5 lbs.

- Our coated high-performance glazing products perform like anti-reflective glass and offer up to 20 times the protection against minor scratches compared to uncoated acrylic.
- Our coated high-performance glazing products stand up to frequent cleaning and re-use from traveling/temporary exhibits.

Electrical Surface Resistivity (Anti-Static) ASTM D257

The surface resistivity is less than 10¹² ohm/sq at 50% Relative Humidity.

- Our anti-static protection actually exceeds that of glass and is engineered to immediately dissipate static charges.

- Independent tests show that our coated high-performance glazing products are up to 2000 times more anti-static than regular acrylic.
- Safe for friable materials.
- Does not attract dust – minimizes cleaning.

Long-lasting anti-static protection

23 C and 50% r.h.	Surface Resistivity (Ohms/square)	Static Decay (seconds)
Our coated high-performance glazing products	<1.0E+12	0.01
Uncoated acrylic	1.0E+14	Infinite

Product Comparison Chart

Application Recommendations	Space Expansion & Contraction	For indoor applications where temperature remains fairly constant, please allow approximately 1/16" (1.6mm) per 12" (305mm) of length for each 20 degrees F (11 degree C) temperature change. In conditions of extreme humidity or temperature, greater allowances may be necessary. In outdoor use where summer and winter temperatures differ as much as 100° F (38 degrees C), a 48" (1219mm) panel will expand/contract approximately 1/4" (6mm).
	Rabbit size	When estimating the rabbit size, allow for the applicable glazing thickness and add to it the thickness of each of the other components used. Insuring the proper rabbit size is essential in supporting the framing components and helps guard against bowing.
	Max. # of Mats	With the exception of Conservation Reflection Control® Acrylic, any number of mats can be used with our high-performance acrylic glazing products. Place Conservation Reflection Control Acrylic sheet 0.125" (3.2mm) from artwork for optimal viewing and protection.
	Application	Pastels • Charcoal • Static Sensitive Pieces • Custom display cases • Shadowboxes • B&W and Bright Colored Pictures • Posters • Vitrines • Large Pieces • Shipping • Earthquake Zones • Safety Areas • Pieces requiring Maximum UV protection • Can be fabricated and cemented for museum quality, bubble-free joints
	Framing Practices for 40 x 60 (1524mm x 1016mm) and larger acrylic sheets	To prevent bowing, twisting, and/or warping during framing, provide reinforcing support of the acrylic sheet. When working with a spacer to separate the object from the glazing, allow sufficient depth of the spacer at least 1" (25.4mm) of clearance for 60" x 60" (1524 x 1524) frames, and 2" to 2.5" (50mm x 60mm) for a full 6mm, 72" x 120" (3048mm x 1829mm) frames, to protect the object from flexing of the acrylic sheet. Surface deflection will vary by frame size and glazing thickness used. Please contact Tru Vue for additional estimates if needed.
	Silkscreen Printing	Yes; however, the acrylic requires a low temperature process, so the completed silkscreen is fairly soft.
Handling and Storage	Cutting	6mm and above, fabricate using a power saw with a blade specifically designed to cut acrylic. Contact Tru Vue for saw blade recommendations. 4.5mm and below, place acrylic on a clean, dust-free work area. Cover the work table with a soft, clean, lint-free felt. Use a cutter "scribe and break" method. Acrylic glazing and StaticShield™ acrylic should NOT be cut with a laser. The extreme heat can cause crazing, which may lead to delamination of the coating.
	Cleaning	Optium® & StaticShield™ – Materials: 2 Micro-fiber cloths – one for wet cleaning, one for drying. If micro-fiber cloths need to be laundered, do not use fabric softener. Isopropyl alcohol, distilled water and gloves (optional). Wet method cleaning: Mix water and isopropyl alcohol 1:1. Spray on micro-fiber cloth. Use cloth to clean glazing. Optional: dry off with second cloth. Dry method cleaning: Spot-clean any finger prints with the dry micro-fiber cloth by wiping in a soft, circular motion. Alternative method of cleaning: Non-ammonia glass cleaner may be used to clean Optium and StaticShield products. DO NOT use acrylic cleaners or polishing agents. Optional (for removal of all traces of P-tape residue): Mix a couple drops of dish detergent with distilled water. Use on micro-fiber cloth to clean surface of glazing. Rinse with distilled water to ensure removal of any detergent residue and dry off with second cloth. Conservation Clear® Acrylic – Cleaning: Should you need to clean the acrylic sheet, use a clean, damp cleaning cloth. Apply only light pressure, rinse with clean water, and dry by blotting with a damp cloth or chamois. Do NOT use window cleaning sprays, kitchen scouring compounds, or solvents such as acetone, gasoline, or lacquer thinner to clean acrylic materials. Removing Scratches: Fine scratches can be removed by hand polishing with a recommended acrylic polish or paste wax. Apply polish to a soft cloth and rub. When the scratches have disappeared, remove all residue and polish. Conservation Reflection Control® Acrylic – Cleaning: Do NOT use window cleaning sprays, kitchen scouring compounds, or solvents such as acetone, gasoline, or lacquer thinner to clean acrylic materials. Acrylic cleaners, or other polishing agents should not be used as they may damage the surface. Instead, it is recommended that a mild soap and water solution with a soft cloth be used for cleaning if dry cleaning is not effective. Removing Scratches: Do not hand polish or buff scratches in this product as it may cause damage to the sheet.
	Handling	Due to anti-reflective coating, fingerprints or dirt are more visible but are easily removed. Cotton or nitrile rubber gloves should be worn to minimize fingerprints and other particles. Acrylic glazing products are covered with a protective film masking on each surface that prevents scratching during handling and cutting and should be left in place as long as possible. To remove the masking, start at one corner and pull towards the opposite side of the sheet slowly and evenly without stopping. The masking should never be exposed to excessive sunlight or outdoor conditions for extended periods of time. Use of glass-skin during transportation is not recommended.
	Storing	Avoid storing in areas where condensation might occur. Use 2-ply rag board or pH neutral paper for interleaf during storage. Proper interleaving during storage enables reuse. When storing vertically, lean acrylic sheets at an angle of approximately 10 degrees to prevent bowing. The masking should never be exposed to excessive sunlight or outdoor conditions for extended periods of time. If storing sheets horizontally, stack the larger sheets at the bottom to prevent bowing. Acrylic sheet is protected with paper or polyethylene masking on both sides. Sheets should be stored vertically, preferably in a rack where the sheet can be fully supported and can lean at approximately a 10-degree angle. Acrylic sheet should not be stored near radiators, steam pipes, in direct sunlight, or near other heat sources as excessive heat tends to soften and deform the sheet. If acrylic sheet is stored horizontally, it must not be allowed to sag. Take care to prevent debris or dirt from becoming lodged between the sheets as the weight of the material can force debris through the protective masking and damage the sheet. If various sizes are stacked horizontally, the larger sheet should be at the bottom to avoid an unsupported overhang. Acrylic expands and contracts, so allow for size variation in frame systems. If shipping framed pieces horizontally, be sure to accommodate for flexing of the sheet to avoid vibration or rubbing against the surface of the artwork. Works glazed with acrylic do not need film/glass skin when shipping.
Case Fabrication <small>(case fabrication guidelines available upon request)</small>	Coating Removal	Cementing on or to Optium and StaticShield Acrylic cannot be attained without first removing the coating due to the chemical resistance. All Optium and StaticShield Acrylic products have a hard-coat and a sputter coating on both surfaces which are approximately 0.005 in. thick and must be removed from the joint area before attempting to cement the pieces together. When removing, ensure that the bonding surface is flat, clean, and free of stress. The hard-coat can be removed by scraping, wet sanding the joint area with 500 grit or finer sandpaper mounted on a sanding block or by machining with a router or milling machine. To set the width, painters masking tape with electrical tape on top or a table saw fence can be used. A vacuum hose connection to remove & collect small particles produced by scraping is also recommended.
	Joint Type	Miter joints have an advantage because the coating removal step is accomplished when the miter is cut and the anti-reflective properties of the Optium and StaticShield Acrylic are maintained to the edge of the completed joint. The disadvantages are: material thickness variations can prevent the joints from mating together cleanly and each piece must be cut very precisely. Butt joints can also be used with Optium and StaticShield Acrylic so long as the hard-coat is removed from the joint area. The adhesive is introduced into the open side of this joint by using a suitable syringe. Avoid bubbles.
	Joining	Polymerizing adhesives fill better and, therefore, impose fewer demands on the accuracy of fit between the parts. They are recommended where high strength and good resistance to environmental conditions are required. Crazing in the joints of extruded substrate material may occur during the joining process and is more apparent when using a two part glue or if the case is subject to unusual physical and or environmental stress. If properly done, solvent cements also yield strong, transparent joints, but do not have filling properties, so you may see bubbles when it dries. Other two-component adhesives like epoxy resins, isocyanates (polyurethane), phenolics and aminoplastics are not suitable for bonding Optium Acrylic Glazing and StaticShield Acrylic sheets to itself or other materials because their adhesion is very low.

Our high-performance acrylic glazing utilizes an inherently UV stable, non-yellowing, abrasion-resistant sheet that maintains its original appearance and color despite heat, cold, sunlight and humidity. It withstands the adverse effects of outdoor weathering and has been found to experience no significant loss of light transmittance or any appreciable increase in yellowing after accelerated weathering. This should help ensure many years of trouble free performance.