

# OUR COLLECTION, CREATED FOR YOUR COLLECTION.

Our collection of high-performance acrylic glazing meets 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.
- **CRYSTAL CLEAR** Transmitted color when typical yellow color cast from existing UV-filtering acrylics is objectionable.
- **HALF THE WEIGHT OF GLASS** Great for structurally sensitive frames, large works, and/or when glass is too heavy.

## SIZE AVAILABILITY:

PRODUCT	THICKNESS	SIZE	SQ FT/SHEET	APPROX WT/SHEET
Optium Museum Acrylic® (Blocks up to 99% UV radiation)	6.0mm (1/4")	72" x 120" (3048mm x 1829mm)	60 (5.57 sqm)	89 lbs/40.37kg 1.5 lbs per ft <sup>2</sup> 7.2kg per m <sup>2</sup>
	4.5mm (3/16")	72" x 96" (2438mm x 1829mm)	48 (4.46 sqm)	54 lbs/24.5kg 1.13 lbs per ft <sup>2</sup> 5.5kg per m <sup>2</sup>
	3.0mm (1/8")	48" x 96" (2438mm x 1219mm)	32 (2.97 sqm)	22 lbs/9.98kg 0.7 lbs per ft <sup>2</sup> 3.2kg per m <sup>2</sup>
Optium Acrylic® (Blocks up to 93% UV radiation)	3.0mm (1/8")	48" x 96" (2438mm x 1219mm)	32 (2.97 sqm)	22 lbs/9.98kg 0.7 lbs per ft <sup>2</sup> 3.4kg per m <sup>2</sup>
Conservation Clear® Acrylic (Blocks up to 99% UV radiation)	3.0mm (1/8")	48" x 96" (2438mm x 1219mm)	32 (2.97 sqm)	22 lbs/9.98kg 0.7 lbs per ft <sup>2</sup> 3.2kg per m <sup>2</sup>

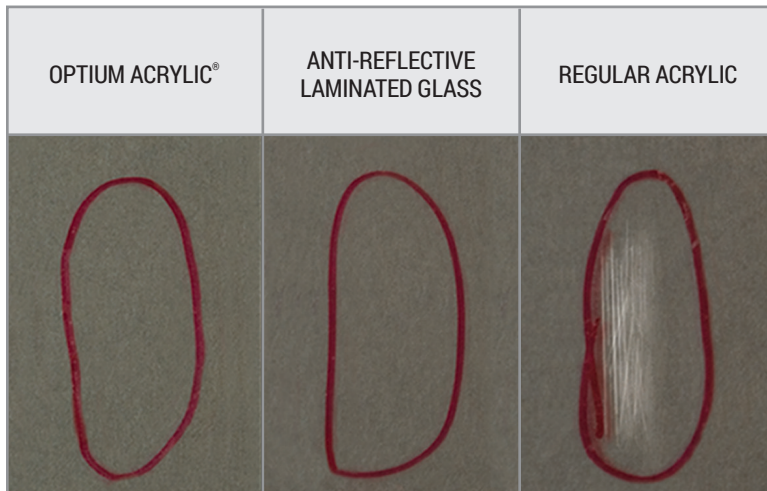
## COATING & VISUAL COLOR IMPRESSION (TRANSMITTED & REFLECTED COLOR):

- 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 over time.
- 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, 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 a normal and inherent characteristic of any anti-reflective product.



## ABRASION RESISTANT

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  $10^{12}$  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 2,000 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:

		Optium <sup>®</sup> Museum Acrylic	Optium <sup>®</sup> Acrylic	Conservation Clear <sup>®</sup> Acrylic
PHYSICAL CHARACTERISTICS	Substrate*	Clear, hard coat abrasion-resistant, UV filtering extruded acrylic	Clear, hard coat abrasion-resistant extruded acrylic	Crystal Clear UV filtering extruded acrylic
	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 <a href="mailto:info@tru-vue.com">info@tru-vue.com</a> with questions regarding product identification)		
PERFORMANCE DATA	UV Protection 300–380nm	99%	≤93%	99%
	Light transmission, total ASTM D-1003	>98%	>98%	>92%
	Light Reflection/Double-sided Anti-Reflection Haze	<1.5%	<1.5%	8%
	Oddy Test	Passed		
	Living Building Challenge (LBC)	Coatings and/or substrate do not contain any ingredients listed on the LBC Red List.		
	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 exposure in indoor environment) 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 (122°F), 95% RH		NA
	Corrosion Resistance (Salt Fog) ASTM B117 & B-368-03 & B368-97	48 hr. No Deterioration 50°C (122°F), 95% RH After exposure for 7 – 24 hr cycles (168 hours), the coating shows no damage – Passed		NA
	RoHS compliance testing	(Dangerous substance testing: presence of Lead (Pb), Cadmium (Cd), Mercury (Hg), Hexavalent chromium (Hex-Cr)) – Passed		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
	Solubility MIL-C-48497A	After a 24-hour immersion or exposure at room temperature (60°-90°F; 16°-32°C), 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

## PRODUCT COMPARISON CHART:

	Optium <sup>®</sup> Museum Acrylic	Optium <sup>®</sup> Acrylic	Conservation Clear <sup>®</sup> Acrylic
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 in2 x 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.		
APPLICATION RECOMMENDATIONS	Space Expansion and 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.	
	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	Any number of mats can be used with our high-performance acrylic glazing products.	
	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	
	Large Framing Practices 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.	

PLEASE VISIT [TRU-VUE.COM/MUSEUMS](http://TRU-VUE.COM/MUSEUMS) FOR GUIDELINES FOR CASE FABRICATION, HANDLING, AND STORAGE.

\*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 in indoor applications. It has been found to experience no significant loss of light transmittance or any appreciable increase in yellowing after accelerated aging. This should help ensure many years of trouble free performance.