Material Specification Guide

LUMICLEAR™

Boasting superior clarity, low environmental impact, and compatibility with over 250 encapsulated décors, Lumiclear offers limitless design possibilities for a myriad of applications. Layer color, décors and textured finishes to create a stunning focal point or architectural accent. This proprietary acrylic resin is the perfect option for both interior and exterior applications.

PANEL THICKNESS

Lumiclear panels are available from 0.060" (1.5 mm) through 0.944" (24 mm) with a standard tolerance of ±10% of nominal. Tolerance varies by décor.

GAUGE EQUIVALENTS

NOMINAL DECIMAL (IN)	FRACTION EQUIVALENT	MILLIMETERS
.060"	1/16"	1.5 mm
.118"	1/8"	3.0 mm
.196"	3/16"	5 mm
.236"	1/4"	6 mm
.354"	3/8"	9 mm
.472"	1/2"	12 mm
.708"	3/4"	18 mm
.944"	1"	24 mm

Actual panel dimensions may vary by décor. Some décors are not compatible with all gauges or panel sizes.

PANEL DIMENSIONS

Lumiclear is offered in standard 4' × 8' and 4' x 10' sizes. Custom lengths and widths are also available. Panels may be cut to order upon request for an additional fee.

PANEL SIZE	FEET	INCHES	MILLIMETERS
Standard	4' x 8'	48" x 96"	1219 x 2438 mm
Oversize	4' x 10'	48" x 120"	1219 x 3048 mm

FINISHES

Lumiclear is available in a wide variety of surface finishes to provide different aesthetics. You can even specify different finishes for each side of the sheet. Heavier finishes (e.g. frost, sandstone and stucco) provide better protection against minor surface scratches.

STANDARD FINISHES

- Gloss
- Matte
- Brushed
- Frost
- Diffusion
- Galvanized
- Satin
- Sandstone
- Stucco
- Moiré
- Crisscross
- Weave

Not all finishes are available with all products.

RESIN FEATURES

HIGH PERFORMANCE RESIN

- Specially formulated acrylic resin (PMMA)
- Superior clarity, especially at thicker gauges
- Naturally resistant to UV rays
- 50% more rigid than PETG
- Approximately half the weight of glass
- Up to 7 times stronger than annealed glass of comparable thickness

LOW ENVIRONMENTAL IMPACT

- Contains up to 50% recycled content
- Renewable surface when specified with a Gloss or Matte finish
- Qualifies for LEED MR Credit 4 and IEQ Credit 8.1 & 8.2 (daylight and views)
- 100% recyclable

LIGHT TRANSMITTANCE & ENERGY

- Allows up to 92% of visible light transmittance
- Up to 4 times more energy efficient than glass

BUILDING CODES

- Meets criteria for approved interior finishes & light transmitting materials
- Class C fire rating
- Meets ANSI Z97.1-2004 (safety glazing materials)

CUSTOM DESIGN SOLUTIONS

- Available in a variety of finishes
- Optional add-ons including colors and opaque backers
- Layer multiple décors for a unique design
- Digital prints with your own artwork

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ADD-ONS

Enhance a panel's appearance or performance with optional add-ons that can be applied to the front or back side of the panel.

CHEMSHIELD

A high performance clear film that can be applied to one or both sides of Lumiclear products. With Chemshield applied, Lumicor products can be used in environments requiring superior stain and chemical resistance. This protective layer will not fade or streak even after heavy cleaning, but cannot be renewed if damaged.

ILLUME

A translucent light diffusing layer applied to the back of Lumicor panels. Illume helps to spread light evenly across the panel and conceal bulbs and fixtures to create a clean aesthetic.

MARKER BOARD

A high quality dry erase finish that can be added to any Lumicor panel.

OPAQUE

Opaque is a light-blocking layer available in a variety of neutral tones. Add Opaque to panels when there is a need for privacy or substrate concealment.

LUMINOUS

Our proprietary color technology can be added to any standard Lumicor product, its versatility making it easy to add a splash of color to any décor. Specify up to three layers to build a custom color.

REFLECTIVE FINISHES

Reflective Finishes are proprietary silvery surfaces that can be applied to Lumiclear panels to create more dimension within the panel and add a sophisticated sparkle. For additional metallic colors such as gold or copper, pair Reflective Finishes with Luminous décors.

CREDITS & CERTIFICATIONS

Lumiclear panels can help your project earn recycled content LEED credits, as well as qualify for certifications related to health and wellness, aesthetics, and biophila when specified with some décors.

RECYCLED CONTENT

- LEED MR 4.1: Recycled content: 10% (1 point)
- LEED MR 4.2: Recycled content: 20% (2 points)
- LEED MR Building Product Disclosure and Optimization – Sourcing of Raw Materials

HEALTH & AESTHETICS

- WELL Feature 62: Daylight Modeling
- WELL Feature 04: VOC Reduction
- LEED Low-Emitting Materials
- LEED MR 4: Daylight & Views

WEIGHT

Lumiclear is a lightweight material at approximately half the weight of glass, with poundage varying depending on gauge and size. The following numbers are estimates, and actual weights may differ based on your décor selection. For Recycled Glass, add 50 lbs for standard panels (48" x 96") or 65 lbs for oversize panels (48" x 120").

Panel Thickness	fraction	1/16"	1/8"	3/16"	1/4"	3/8"	1/2"	3/4"	1"
	in	0.060"	0.118"	0.196"	0.236"	0.354"	0.472"	0.708"	0.944"
	mm	1.5 mm	3.0 mm	5.0 mm	6.0 mm	9.0 mm	12.0 mm	18.0 mm	24.0 mm
Standard Weight 48" × 96" | 1219 × 2438mm	lbs	11.9 lbs	23.4 lbs	38.8 lbs	46.8 lbs	70.1 lbs	93.5 lbs	140.3 lbs	187.0 lbs
	kg	5.4 kg	10.6 kg	17.6 kg	21.2 kg	31.8 kg	42.4 kg	63.6 kg	84.8 kg
Oversize Weight 48" × 120" | 1219 × 3048mm	lbs	14.8 lbs	29.2 lbs	48.5 lbs	58.4 lbs	87.7 lbs	116.9 lbs	175.3 lbs	233.8 lbs
	kg	6.7 kg	13.3 kg	22.0 kg	26.5 kg	39.8 kg	53.0 kg	79.5 kg	106.0 kg

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MATERIAL PROPERTIES

	PROPERTY	RESULT	ASTM
Physical	Type	Acrylic (PMMA)	
	Specific Gravity Density compared to water	1.19	D-792
	Water Absorption	0.20%	D-570
	Sound Transmission At 1/8" (3 mm)	28 db	E-90
Optical	Optical Refractive Index	1.49	D-542
	Regular Light Transmittance	92%	D-1003
	Haze Light Transmittance	2%	D-1003
	UV - Resin Degradation	No	
	UV - Blocking	81%	
Mechanical	Tensile Strength Max	10,000 psi (68.9 MPa)	D-638
	Tensile Elongation Max	4.5%	D-638
	Tensile Modulus	400,000 psi (2,758 MPa)	D-638
	Flexural Strength Max	17,000 psi (117.2 MPa)	D-790
	Flexural Modulus	480,000 psi (3,309 MPa)	D-790
	Izod Impact Strength	0.4 ft-lb/in (21.3 J/m)	D-256
	Rockwell Hardness	M-93	D-785
	Abrasion Resistance Haze percentage	24.9% at 200 cycles	D-1044
Thermal	Max Continuous Service Temperature	160°F (71°C)	
	Softening Temperature	210-220°F (99-104°C)	
	Deflection Temperature At 264 psi (1.8 MPa)	195°F (91°C)	D-648
	Coefficient of Thermal Expansion	4.0 x 10e^{-5}in/(in–°F) 5.4 x 10e^{-5}m/(m–°C)	D-696
	Thermal Conductivity	0.90 BTU in/(hr ft^2 °F) .0013 W/(cm °C)	C-177

Material properties apply to the resin itself. Results may vary for finished panels with encapsulated materials.

FLAMMABILITY

PROPERTY	RESULT	ASTM
Flammability Burning Rate	CC2, PASS	D-635
Smoke Density Rating 75% maximum	4.8%, PASS	D-2843
Self Ignition Temperature 650°F (343°C) minimum	850°F (454°C), PASS	D-1929

FLATNESS TOLERANCE

Extending across the panel, bowing is permitted to a maximum of 1/4" (6 mm) for each 48" (1.2 m) or fraction thereof. Panel is to be measured when laying horizontally under its own weight on a flat continuous surface.

EXPANSION & CONTRACTION

Resin will expand and contract nominally with changes in temperature. Please allow for expansion and contraction when installing fasteners, hardware, frame systems, or when edge butting sheets. The formula below can be used to calculate the appropriate allowance for Lumiclear panels.

Length, Width, or Thickness	x	Temperature Change	x	Coefficient of Thermal Expansion	=	Expansion Allowance
in	x	°F	x	.00004	=	in
mm	x	°C	x	.000072	=	mm

Example:

A 48" × 96" Lumiclear panel will be installed in an office building near the entrance. The coldest temperature of the panel in that location over the entire year is expected to be 50°F, and the warmest is expected to be 90°F. The temperature change will then be 40°F. The height would then change 0.154" from the coldest to the warmest temperature exposure, and the width would change 0.077".

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CHEMICAL RESISTANCE

Common Substances

	CHEMICAL	RESISTANCE LEVEL
Paint	Acrylic paints and lacquers	Limited Resistance
	Aromatic-free hydrocarbons	Resistant
	Nitrocellulose	Not Resistant
	Oil paints, pure	Resistant
	Thinners, general	Not Resistant
Building & Protective Materials	Bituminous emulsion	Not Resistant
	Cement	Resistant
	Hot bitumen	Limited Resistance
	Mortar	Resistant
	Plaster of paris	Resistant
	Red lead	Resistant
Plastics	Foams	Resistant
	Foams, containing plasticizer	Not Resistant
	Polyamide	Resistant
	Polyethylene	Resistant
	PVC	Resistant
	PVC, plasticized	Not Resistant
	Rubber	Resistant
	Rubber, containing plasticizer	Resistant
Foodstuffs & Spices	Aniseed, bay, nutmeg	Resistant
	Cloves	Not Resistant
	Coffee beans, unflavored	Resistant
	Coffee beans, flavored	Limited Resistance
	Honey, pure	Resistant
	Ice cream	Resistant
	Marinades	Resistant
	Meat and fish	Resistant
	Pepper, cinnamon, onions	Resistant
	Salt	Resistant
Beverages, etc.	Beer, wine	Resistant
	Chamomile extract	Resistant
	Chocolate	Resistant
	Coffee, tea	Resistant
	Fruit juice, milk, coffee	Resistant
	Spirits, to 30%	Resistant
	Vinegar	Resistant
	Water, mineral	Resistant
Chemical Process Baths	Electroplating baths	Resistant
	Photographic baths	Resistant

	CHEMICAL	RESISTANCE LEVEL
Disinfectants	Aqueous hypochlorite solution	Resistant
	Bleaching powder, to 5%	Resistant
	Carbolic acid	Not Resistant
	Hydrogen peroxide, to 40%	Resistant
	Hydrogen peroxide, over 40%	Limited Resistance
	Lugol solution	Resistant
	Mercuric chloride	Resistant
	Surgical spirit	Not Resistant
	Tincture of iodine, 5%	Not Resistant
Gases, Oils, & Waxes	Animal	Resistant
	Mineral	Resistant
	Silicone oil	Limited Resistance
	Vegetable	Limited Resistance
Gases & Vapors	Ammonia	Resistant
	Bromine vapor (dry)	Limited Resistance
	Carbon dioxide	Resistant
	Carbon monoxide	Resistant
	Chloride vapor (dry)	Limited Resistance
	Exhaust gases, containing HCl	Resistant
	Exhaust gases, containing HF	Resistant
	Exhaust gases, containing sulfur	Resistant
	Hydrogen sulfide	Resistant
	Methane	Resistant
	Nitric oxide	Resistant
	Oxygen	Resistant
	Ozone	Resistant
	Sulfur dioxide (dry)	Resistant
	Natural gas (butane)	Resistant
Pest Control Agents	Aqueous solutions of pesticides	Limited Resistance
Misc.	Urine	Resistant
Other	Nail polish	Not Resistant
	Nail polish remover	Not Resistant
	Peat water	Resistant
	Sea water	Resistant
	Soaps	Resistant
	Sprays	Limited Resistance

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CHEMICAL RESISTANCE

Chemicals & Solvents

	CHEMICAL	RESISTANCE LEVEL
Chemicals, Solvents, etc.	Acetic acid, glacial	Not Resistant
	Acetic acid, to 25%	Limited Resistance
	Acetic acid, 5% (vinegar)	Resistant
	Acetone	Not Resistant
	Alum	Resistant
	Aluminum chloride	Resistant
	Aluminum sulfate	Resistant
	Ammonia, aqueous solution	Resistant
	Ammonium sulfate	Resistant
	Amyl acetate	Not Resistant
	Aniline	Not Resistant
	Arsenic	Resistant
	Arsenic acid	Resistant
	Battery acid	Resistant
	Benzaldehyde	Not Resistant
	Benzene	Not Resistant
	Bromine	Not Resistant
	Butanol	Limited Resistance
	Butyl lactate	Not Resistant
	Butyric acid, to 5%	Resistant
	Calcium chloride	Resistant
	Calcium hypochlorite	Resistant
	Carbon disulfide	Not Resistant
	Carbon tetrachloride	Resistant
	Chlorinated hydrocarbons	Not Resistant
	Chlorine, liquid	Not Resistant
	Chlorine, water	Limited Resistance
	Chloroethyl acetate	Not Resistant
	Chlorophenol	Not Resistant
	Chromic acid	Limited Resistance
	Citric acid, to 20%	Resistant
	Copper sulfate	Resistant
	Cresol	Not Resistant
	Cyclohexane	Resistant
	Diacetone alcohol	Not Resistant
	Diamyl phthalate	Limited Resistance
	Dibutyl phthalate	Not Resistant
	Diethylene glycol	Resistant
	Dioxane	Not Resistant
	Ether	Not Resistant

	CHEMICAL	RESISTANCE LEVEL
Chemicals, Solvents, etc.	Ethyl acetate	Not Resistant
	Ethyl alcohol, to 15%	Resistant
	Ethyl alcohol, 15-30%	Limited Resistance
	Ethyl alcohol, absolute	Not Resistant
	Potassium carbonate	Resistant
	Potassium chloride	Resistant
	Potassium cyanide	Resistant
	Potassium hydroxide	Resistant
	Potassium nitrate	Resistant
	Potassium permanganate	Resistant
	Silicon tetrachloride	Resistant
	Silver nitrate	Resistant
	Soap solution	Resistant
	Soda	Resistant
	Sodium bisulfate	Resistant
	Sodium carbonate	Resistant
	Sodium chlorate	Resistant
	Sodium hydroxide	Resistant
	Sodium hypochlorite	Resistant
	Sodium sulfate	Resistant
	Sodium sulfide	Resistant
	Stearic acid	Resistant
	Sulfur	Resistant
	Sulfur dioxide, liquid	Not Resistant
	Sulfuric acid, to 30%	Resistant
	Sulfurous acid, conc.	Limited Resistance
	Sulfurous acid, to 5%	Resistant
	Sulfuryl chloride	Resistant
	Tartaric acid, to 50%	Resistant
	Thionyl chloride	Not Resistant
	Toluene	Not Resistant
	Triethylamine	Resistant
	Trichloroacetic acid	Not Resistant
	Tricresyl phosphate	Resistant
	Turpentine	Limited Resistance
	Turpentine substitute	Limited Resistance
	Urea, to 20%	Resistant
	Xylene	Not Resistant
	Zinc sulfate, aqueous	Limited Resistance
	Zinc sulfate, solid	Resistant

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CHEMICAL RESISTANCE

Cleaning Agents

	CHEMICAL	RESISTANCE LEVEL
Cleaning Agents	Acids *(see under Chemicals & Solvents)*	–
	Alcohol, absolute	Resistant
	Alcohol, to 30%	Resistant
	Alkalis *(see under Chemicals & Solvents)*	–
	Ammonia	Resistant
	Carbon tetrachloride	Not Resistant
	Clycol	Resistant
	Ethyl bromide	Not Resistant
	Ethyl butyrate	Not Resistant
	Ethylene bromide	Not Resistant
	Ferric chloride	Resistant
	Ferrous chloride	Resistant
	Ferrous sulfate	Resistant
	Formic acid, to 2%	Resistant
	Formic acid, to 40%	Limited Resistance
	Glycerol	Resistant
	Heptane	Resistant
	Hexane	Resistant
	Hydrochloric acid	Resistant
	Hydrofluoric acid, to 20%	Resistant
	Hydrofluoric acid	Resistant
	Hydrogen peroxide, to 20%	Resistant
	Hydrogen peroxide, to 40%	Resistant
	Hydrogen peroxide, over 40%	Limited Resistance
	Iodine	Resistant
	Isopropyl alcohol, to 50%	Limited Resistance
	Lactic acid, to 80%	Limited Resistance
	Magnesium chloride	Resistant
	Magnesium sulfate	Resistant
	Manganese sulfate	Resistant
	Mercury	Resistant
	Methanol, to 15%	Limited Resistance
	Methanol, absolute	Not Resistant
	Methyl ethyl ketone	Not Resistant
	Methylated spirits	Not Resistant
	Milk of lime	Resistant
	Monobromonaphthalene	Resistant
	Motor fuel, benzene-free	Resistant
	Motor fuel, with benzene	Not Resistant
	Nickel sulfate	Resistant

	CHEMICAL	RESISTANCE LEVEL
Cleaning Agents	Nitric acid, to 20%	Resistant
	Nitric acid, 20-70%	Limited Resistance
	Nitric acid, over 70%	Not Resistant
	Paraffin	Limited Resistance
	Perchloroethylene	Not Resistant
	Petrol, pure	Resistant
	Petrol mixture, containing benzene	Not Resistant
	Petroleum ether	Resistant
	Phenols	Not Resistant
	Phosphoric acid, to 10%	Resistant
	Phosphorus	Not Resistant
	Phosphorus trichloride	Not Resistant
	Picric acid, 1% in water	Resistant
	Potassium dichromate	Resistant
	Soap solution	Resistant
	Soda solution	Resistant
	Solvent stain removers	Not Resistant
	Trichloroethylene	Not Resistant
	Turpentine	Limited Resistance
	Turpentine substitute	Limited Resistance

CLEANING PROCEDURES

1. Wash with a mild solution of soap or detergent and lukewarm water. Any acrylic cleaner may also be used. Novus cleaner and polish is an approved product for a clean shine that also protects from static build up.
2. Using a soft cloth or sponge, gently wash the sheet to loosen dirt and grime and rinse well with clean water.
3. To prevent water spotting, thoroughly dry with chamois or cellulose sponge.

Do not use alcohol, glass cleaners, acetone, lacquer thinner, solvents, or abrasive compounds when cleaning Lumiclear. Avoid the use of abrasive cleaners, squeegees, scrapers, synthetic rags, and other cleaning implements that may scratch or gouge the panels.

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