

MATERIAL SPECIFICATION GUIDE ›

LUMICLEAR™

DESCRIPTION

A proprietary resin, Lumiclear combines a vast collection of encapsulated décors and superior clarity to create a myriad of design possibilities. Layer color, décors and textures to create a stunning focal point or architectural accent. Lumiclear boasts a low environmental impact and is up to 50% recycled content. It is the perfect option for interior and exterior* applications.

*EX add-on recommended for exterior use.

FEATURES AND BENEFITS

High Performance Resin

- Specially formulated acrylic resin (PMMA)
- Superior clarity
- Naturally resistant to UV rays
- 50% more rigid than PETG
- Half the weight of glass
- Renewable surface
- Up to 7 times stronger than annealed glass of similar thickness
- Class C fire rating

Low Environmental Impact

- Contains up to 50% recycled content
- Qualifies for LEED MR Credit 4 and IEQ Credit 8.1 & 8.2 (daylight and views)
- 100% Recyclable

Light Transmittance and Energy Efficiency

- Allows up to 92% of visible light transmittance
- Up to 8 times more energy efficient than glass

Building Codes

- Meets the criteria for approved interior finishes & light transmitting materials

Custom Design Solutions

- Variety of finishes available
- Decor combinations
- Digital Hi-Res prints
- Add-ons

SHEET DIMENSIONS

Lumiclear is offered in standard 4' x 8' sheet sizes. Custom lengths and widths are available.

	feet	inches	millimeters
Standard	4 x 8	48 x 96	1219 x 2438
Oversize	4 x 10	48 x 120	1219 x 3048

Actual dimensions may vary by décor, and some décors are not available in oversize sheets.

SHEET THICKNESS

Lumiclear is available from 0.060" (1.5mm) through .944" (24mm) with a standard tolerance of +/- 10% of nominal.

Tolerance varies by décor.

GAUGE EQUIVALENTS

Nominal Decimal (in)	Fraction Equivalent	Metric (mm)
.060	1/16"	1.5
.118	1/8"	3
.160	5/32"	4
.196	3/16"	5
.236	1/4"	6
.354	3/8"	9
.472	1/2"	12
.708	3/4"	18
.944	1"	24

Actual dimensions may vary by décor, and some décors are not available in oversize sheets.

FINISHES

Lumicor products are available in a variety of surface finishes to provide different aesthetics. You can specify different finishes on each side of the sheet. Lumicor's heavier finishes such as frost, sandstone and satin provide better protection against minor surface scratches.

See the fabrication guide on www.lumicor.com for more details.

STANDARD FINISHES

Matte	Gloss	Sandstone	Frost	Satin
Moiré	Diffusion	Brushed	Stucco	

Not all finishes are available with all products.

FLATNESS TOLERANCE

Extending across the sheet, 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.

WEIGHT

Lumiclear		1/16"	1/8"	5/32"	3/16"	1/4"
Thickness	in	0.060	0.118	0.160	0.196	0.236
	mm	1.5	3.0	4.1	5.0	6.0
48" x 96"	lbs	11.9	23.4	31.7	38.8	46.8
1219 x 2438mm	kg	5.4	10.6	14.4	17.6	21.2
48" x 120"	lbs	14.8	29.2	39.6	48.5	58.4
1219 x 3048mm	kg	6.7	13.3	18.0	22.0	26.5
Lumiclear		3/8"	1/2"	3/4"	1"	
Thickness	in	0.354	0.472	0.708	0.944	
	mm	9.0	12.0	18.0	24.0	
48" x 96"	lbs	70.1	93.5	140.3	187.0	
1219 x 2438mm	kg	31.8	42.4	63.6	84.8	
48" x 120"	lbs	87.7	116.9	175.3	233.8	
1219 x 3048mm	kg	39.8	53.0	79.5	106.0	

All weights are estimated; actual weights will vary depending on décor.
For Recycled Glass or Seaside add 50 lbs (48" x 96") or 65 lbs (48" x 120").

EXPANSION/CONTRACTION

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

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" x 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".

MATERIAL PROPERTIES

	Property	Result	ASTM
Physical	Type	Acrylic (PMMA)	
	Specific Gravity (density to water)	1.19	D-792
	Water Absorption	0.20%	D-570
	Sound Transmission 1/8" (3mm)	28 db	E-90
	Optical Refractive Index	1.49	D-542
Optical	Regular Light Transmittance	92%	D-1003
	Haze Light Transmittance	2%	D-1003
	UV - Resin Degradation	No	
Mechanical	UV - Blocking	81%	
	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)	24.9% @ 200 cycles	D-1044
	Thermal	Max Continuous Service Temperature	160 °F (71 °C)
Softening Temperature		210-220 °F (99-104 °C)	
Deflection Temperature @ 264 psi (1.8 MPa)		195 °F (91 °C)	D-648
Coefficient of Thermal Expansion		4.0 x 10 ⁻⁵ in/(in-°F) [5.4 x 10 ⁻⁵ m/(m-°C)]	D-696
Thermal Conductivity		0.90 BTU in/(hr ft ² °F) [.0013 W/(cm °C)]	C-177
R4		R4 Resin	50%
	R4 Recycled Glass	60% in gauges .472" and below	

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

CODE RATINGS

Meets ANSI Z97.1-2004: American National Standard for Safety Glazing Materials.

FLAMMABILITY

Property	Result	ASTM
Flammability (burning rate)	PASS, CC2	D-635
Smoke Density Rating (75% max)	4.8%, PASS	D-2843
Self Ignition Temperature	850 °F (454 °C) pass > 650 °F (343 °C)	D-1929

CHEMICAL RESISTANCE

	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
	Bituminous emulsion	Not Resistant
Building Materials and Protective	Cement	Resistant
	Hot bitumen	Limited Resistance
	Mortar	Resistant
	Plaster of paris	Resistant
	Red lead	Resistant
	Foams	Resistant
Plastics	Foams, containing plasticizer	Not Resistant
	Polyamide	Resistant
	Polyethylene	Resistant
	PVC	Resistant
	PVC, plasticized	Not Resistant
	Rubber	Resistant
	Rubber, containing plasticizer	Resistant
	Aniseed, bay, nutmeg	Resistant
	Cloves	Not Resistant
	Coffee beans, unflavored	Resistant
Foodstuffs, Spices	Coffee beans, flavored	Limited Resistance
	Honey, pure	Resistant
	Ice cream	Resistant
	Marinades	Resistant
	Meat and fish	Resistant
	Pepper, cinnamon, onions	Resistant
	Salt	Resistant
	Beer, wine	Resistant
	Camomile extract	Resistant
	Chocolate	Resistant
Beverages, etc.	Coffee, tea	Resistant
	Fruit juice, milk, coffee	Resistant
	Spirits, to 30%	Resistant
	Vinegar	Resistant
	Water, mineral	Resistant
	Electroplating baths	Resistant
Chem. Process Baths	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	
	Animal	Resistant	
	Mineral	Resistant	
Gases, Oils, Waxes	Silicone oil	Limited Resistance	
	Vegetable	Limited Resistance	
	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 sulphur	Resistant	
Gases and Vapors	Hydrogen sulphide	Resistant	
	Methane	Resistant	
	Nitric oxide	Resistant	
	Oxygen	Resistant	
	Ozone	Resistant	
	Sulphur dioxide (dry)	Resistant	
	Natural Gas (Butane)	Resistant	
	Pest Control Agents	Aqueous solutions of pesticides	Limited Resistance
		Urine	Resistant
	Misc.	Nail polish	Not Resistant
Nail polish remover		Not Resistant	
Peat water		Resistant	
Sea water		Resistant	
Soaps		Resistant	
Sprays		Limited Resistance	
Other	Acetic acid, glacial	Not Resistant	
	Acetic acid, to 25%	Limited Resistance	
	Acetic acid, 5% (vinegar)	Resistant	
	Acetone	Not Resistant	

CHEMICAL RESISTANCE CONT'D

	Chemical	Resistance Level
	Alum	Resistant
	Aluminium chloride	Resistant
	Aluminium oxalate	Resistant
	Aluminium sulphate	Resistant
	Ammonia, aqueous solution	Resistant
	Ammonium sulphate	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 sulphate	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
	Ethyl acetate	Not Resistant
	Ethyl alcohol, to 15%	Resistant
	Ethyl alcohol, 15-30%	Limited Resistance
	Ethyl alcohol, absolute	Not Resistant
	Potassium carbonate	Resistant

Chemicals, Solvents, etc.

	Chemical	Resistance Level
	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 bisulphate	Resistant
	Sodium carbonate	Resistant
	Sodium chlorate	Resistant
	Sodium hydroxide	Resistant
	Sodium hypochlorite	Resistant
	Sodium sulphate	Resistant
	Sodium sulphide	Resistant
	Stearic acid	Resistant
	Sulphur	Resistant
	Sulphur dioxide, liquid	Not Resistant
	Sulphuric acid, to 30%	Resistant
	Sulphurous acid, conc.	Limited Resistance
	Sulphurous acid, to 5%	Resistant
	Sulphuryl 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 sulphate, aqueous	Limited Resistance
	Zinc sulphate, solid	Resistant
	Ethyl bromide	Not Resistant
	Ethyl butyrate	Not Resistant
	Ethylene bromide	Not Resistant
	Ferric chloride	Resistant
	Ferrous chloride	Resistant
	Ferrous sulphate	Resistant
	Formic acid, to 2%	Resistant
	Formic acid, to 40%	Limited Resistance
	Glycerol	Resistant

Chemicals, Solvents, etc.

Cleaning Agents

CHEMICAL RESISTANCE CONT'D

	Chemical	Resistance Level
Cleaning Agents	Clycol	Resistant
	Heptane	Resistant
	Hexane	Resistant
	Hydrochloric acid	Resistant
	Hydrofluoric acid	Resistant
	Hydrofluoric acid, to 20%	Resistant
	Hydrogen peroxide, over 40%	Limited Resistance
	Hydrogen peroxide, to 40%	Resistant
	Iodine	Resistant
	Isopropyl alcohol, to 50%	Limited Resistance
	Lactic acid, to 80%	Limited Resistance
	Magnesium chloride	Resistant
	Magnesium sulphate	Resistant
	Manganese sulphate	Resistant
	Mercury	Resistant
	Methanol, absolute	Not Resistant
	Methanol, to 15%	Limited Resistance
	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 sulphate	Resistant
	Nitric acid, to 20%	Resistant
	Nitric acid, 20-70%	Limited Resistance
	Nitric acid, over 70%	Not Resistant
	Oxalic acid	Resistant
	Paraffin	Limited Resistance
	Perchloroethylene	Not Resistant
	Petroleum ether	Resistant
	Phenols	Not Resistant
	Phosphoric acid, to 10%	Resistant
	Phosphorus trichloride	Not Resistant
	Phosphorus	Not Resistant
	Picric acid, 1% in water	Resistant
	Potassium dichromate	Resistant
	Acids, see under chemicals	-
	Alcohol, absolute	Resistant
	Alcohol, to 30%	Resistant
	Alkalis, see under chemicals	-

	Chemical	Resistance Level
Cleaning Agents	Ammonia	Resistant
	Carbon tetrachloride	Not Resistant
	Methylated spirits	Not Resistant
	Paraffin	Limited Resistance
	Perchloroethylene	Not Resistant
	Petrol, pure	Resistant
	Petrol mixture, containing benze	Not Resistant
	Petroleum ether	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. **Do not use alcohol, glass cleaners, acetone, lacquer thinner, solvents or abrasive compounds when cleaning Lumiclear.** 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.
4. Avoid the use of abrasive cleaners, squeegees, scrapers, synthetic rags and/or other cleaning implements that may scratch or gouge the panels.

DISCLAIMER

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