MATERIAL SPECIFICATION GUIDE ›

LUMIFORM™

DESCRIPTION

A proprietary resin, Lumiform combines a vast collection of encapsulated décors and a Class A fire rating to create a myriad of design possibilities and outstanding performance. Layer color, décors and textures to create a stunning focal point or architectural accent. Lumiform boasts a low environmental impact and is up to 40% recycled content. It is the perfect option for interior applications.

FEATURES AND BENEFITS

High Performance Resin

- Specially formulated co-polyester resin (PETG)
- Class A fire rating
- Many times the impact strength of acrylic
- Lightweight, half the weight of glass
- Easy to fabricate and install
- Excellent chemical resistance
- GREENGUARD indoor air quality certified

Low Environmental Impact

- 40% pre-consumer 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 89% of visible light transmittance
- Up to four 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
- Add-ons

SHEET DIMENSIONS

Lumiform are offered in standard 4' × 8' sheet sizes. Custom lengths and widths are available.

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

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

SHEET THICKNESS

Lumiform is available from 0.050" (1.27mm) through .472" (12mm) with a standard tolerance of +/- 10% of nominal.

Tolerance varies by décor.

GAUGE EQUIVALENTS

Nominal Decimal (in)	Fraction Equivalent	Metric (mm)
.050	1/20"	1.27
.060	1/16"	1.5
.118	1/8"	3
.196	3/16"	5
.236	1/4"	6
.354	3/8"	9
.472	1/2"	12

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

Lumiform		3/64"	1/16"	1/8"	3/16"	1/4"
Thickness	in	0.045	0.060	0.118	0.196	0.236
	mm	1.1	1.5	3.0	5.0	6.0
48" × 96"	lbs	9.5	12.7	24.9	41.4	49.9
1219 × 2438mm	kg	4.3	5.8	11.3	18.8	22.6
48" × 120"	lbs	11.9	15.8	31.2	51.8	62.4
1219 × 3048mm	kg	5.4	7.2	14.1	23.5	28.3
Lumiform		**3/8"**	**1/2"**			
Thickness	in	0.354	0.472			
	mm	9.0	12.0			
48" × 96"	lbs	74.8	99.8			
1219 × 2438mm	kg	33.9	45.2			
48" × 120"	lbs	93.6	124.7			
1219 × 3048mm	kg	42.4	56.6			

All weights are estimated; actual weights will vary depending on décor.
For Recycled Glass 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 Lumiform panel:

Length, Width, or Thickness	x	Temperature Change	x	Coefficient of Thermal Expansion	=	Expansion Allowance
in	x	°F	x	.00005	=	in
mm	x	°C	x	.00009	=	mm

Example:
A 48" × 96" Lumiform 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 0.192" from the coldest to the warmest temperature exposure, and the width would change 0.096".

MATERIAL PROPERTIES

	Property	Result	ASTM
Physical	Type	Polyethylene (PETG)	
	Specific Gravity (density to water)	1.27	D-792
	Water Absorption	0.20%	D-570
	Sound Transmission 1/8" (3mm)	25 db	E-90
Optical	Optical Refractive Index	1.57	D-542
	Regular Light Transmittance	89%	D-1003
	Haze Light Transmittance	<1%	D-1003
	UV - Resin Degradation	Yes	
	UV - Blocking	Optional	
Mechanical	Tensile Strength Max	7,700 psi (53 MPa)	D-638
	Tensile Elongation Max	4.80%	D-638
	Tensile Modulus	320,000 psi (2,200 MPa)	D-638
	Flexural Strength Max	11,200 psi (77 MPa)	D-790
	Flexural Modulus	310,000 psi (2,100 MPa)	D-790
	Izod Impact Strength	1.7 ft-lb/in (88 J/m)	D-256
	Rockwell Hardness	R-115	D-785
	Abrasion Resistance (%Haze)	41% @ 200 cycles	D-1044
Thermal	Max Continuous Service Temperature	150 °F (66 °C)	
	Softening Temperature	181 °F (83 °C)	
	Deflection Temperature @ 264 psi (1.8 MPa)	164 °F (74 °C)	D-648
	Coefficient of Thermal Expansion	5.0 x $10e^{-5}$ in/(in-°F) [9.0 x $10e^{-5}$ m/(m-°C)]	D-696
	Thermal Conductivity	1.67 BTU in/(hr ft^2 °F) [.0019 W/(cm °C)]	C-177
Fungal & Bacterial	Fungal	No Growth	G-21
	Bacterial	No Growth	G-22
R4	R4 Resin	40%	
	R4 Recycled Glass	50% in gauges .708" and below	

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

FLAMMABILITY & SMOKE TEST SPECIFICATIONS

DATA

Property	Result	ASTM
Flammability (burning rate)	Pass CC1	D-635
Smoke Density Rating (75% max)	PASS 71.6%	D-2843
Self Ignition Temperature	932 °F (500 °C) pass > 650 °F (343 °C)	D-1929
UPITT toxicity	PASS	UPITT Mortality Test
UL Flammability Classification	V-2	UL-94

RATING

Gauges .354 and below have a Class A fire rating and the .472 gauge has a Class B rating.

Gauge	Result		Test
.118	FSI: 15 SDI: 165	Class A	ASTM E84
.118	FSI: 55 SDI: 450		CAN / ULC-S102.2
.236 and below (walls only or ceilings only)	PASS	Class A	NFPA 286
.236	FSI: 60 SDI: 450	Class B	ASTM E84
.236	FSI: 55 SDI: 410		CAN / ULC-S102.2
.354 (walls in stand-off configuration)	PASS	Class A	NFPA 286
.354	FSI: 35 SDI: 350	Class B	ASTM E84
.354	FSI: 45 SDI: 360		CAN / ULC-S102.2
.472	FSI: 50 SDI: 400	Class B	ASTM E84

CHEMICAL RESISTANCE

Reagent	% Change		Appearance after exposure
	Weight	Thickness	
Acetic acid (5%)	<1	<1	Very slight yellowing
Acetic Acid conc.	19	18	Discolored, swelling
Acetone	16	23	Discolored (brown), swollen, rubber-like
Ammonium Hydroxide conc.	229	220	Turned white, outside crumbling off
Ammonium Hydroxide, 10%	4	4	Discolored (pink), surface has blisters
Antifreeze, Automotive Ethylene Glycol Type	<1	<1	No change
Benzene	34	43	Discolored, rubber-like
Brake Fluid, DOT3	2	2	No change
Brake Fluid	6	6	Turned yellow, surface attacked, flaking off
Carbon Tetrachloride	27	18	Discolored, swollen
Chromic Acid, 40%	<1	<1	Slightly discolored
Citric Acid, 10%	<1	<1	Slight yellowing
Cottonseed Oil	<1	<1	Very slight yellowing
Deionized Water	<1	<1	Slight yellowing
Detergent, Alconox	<1	<1	Slight yellowing
Di (2Ethylhexyl) Phthalate	<1	<1	Very slight yellowing
Dibutyl Sebacate	<1	1	Slight yellowing
Diesel Fuel	<1	2	Discolored
Dimethyl Formamide	22	39	Badly discolored and distorted
Ethanol 50%	<1	<1	Slight yellowing
Ethanol 100%	<1	<1	Very slight yellowing
Ethyl Acetate	20	24	Badly discolored and swollen, softened
Ethylene Dichloride	-	-	Completely deteriorated after 1 week
Gasohol, 10% Ethonol	9	8	Cloudy, slight yellowing
Gasohol, 10% Methanol	11	10	Cloudy, yellowed
Gasoline, Base for Gasohol	6	6	Slight yellowing
Gasoline, Premium Unleaded	2	3	Discolored
Gasoline, Regular	<1	<1	Slight yellowing
Gasoline, Regular Unleaded	2	2	Discolored
Grease, Automotive	<1	<1	No change
Hand Cleaner, Waterless Jergens SBS30	<1	2	No change
Hexane	<1	<1	Slight yellowing
Hydrochloric Acid, conc.	1	<1	Badly discolored, blisters under surface
Hydrochloric Acid, 10%	<1	<1	Slight yellowing
Hydrogen Peroxide, 3%	<1	<1	Slight yellowing
Hydrogen Peroxide, 28%	<1	<1	Slight yellowing
Isooctane	<1	<1	Very Slight Yellowing
Kerosene	<1	<1	Very Slight Yellowing
Lacquer Thinner	7	6	Cloudy, white
Methyl Alcohol	<1	<1	Very slight yellowing, crazing

CHEMICAL RESISTANCE CONT'D

Mineral Oil	<1	<1	Very slight yellowing
Reagent	% Change		Appearance after exposure
	Weight	Thickness	
Motor Oil	<1	<1	No change
Nitric Acid, conc.	-	-	Completely deteriorated after 1 week
Nitric Acid, 10%	<1	<1	Slight yellowing
Nitric Acid, 40%	1	<1	Turned white
Oleic Acid, 83%	<1	<1	Very slight yellowing
Olive Oil	<1	<1	Very slight yellowing
Penetrating Oil, Liquid Wrench #1	10	11	Discolored
Phenol, 5%	13	14	Turned black
Silicone Spray Lubricant	67	34	White, swollen
Soap Solution, 1%	<1	<1	Slight yellowing
Sodium Carbonate, 2%	<1	<1	Slight yellowing
Sodium Carbonate, 20%	<1	<1	Slight yellowing
Sodium Hydroxide, 1%	<1	<1	Slight yellowing
Sodium Hydroxide, 10%	8	6	Slight yellowing
Sodium Hypochlorite, 3.5%	<1	<1	Slight yellowing
Sulfuric Acid, conc.	-	-	Completely deteriorated after 1 week
Sulfuric Acid, 3%	<1	<1	Slight yellowing
Sulfuric Acid, 30%	<1	<1	Slight Yellowing
Tapping Oil	<1	1	No change
Toluene	26	31	Turned white, softened
Transformer Oil	<1	<1	Very slight yellowing
Transmission Fluid, Auto	<1	<1	No change

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 Lumiform.** 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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