

LUMAsite®

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Structural Sheets and Diffusers...

LUMAsite® is American Acrylic Corporation's trademark for fiberglass-reinforced acrylic panels and for fiberglass-reinforced, acrylic-modified polyester panels.

These shatterproof panels combine the beauty and long-term weatherability of cast acrylic with the strength and elegance of diffusing glass fibers. Graceful rice-paper and frosted effects, translucent and opaque white varieties, delicate tints, bright colors, and fabric or mesh embedments offer architects and designers many choices for lighting and glazing designs.

By the mid-1980's, architects and design professionals understood that **LUMAsite®** panels impart elegance to architectural lighting, glazing and partitions never before visualized. **LUMAsite®** reinforced acrylic panels, including the popular Frost-SOS, Parchment-SOS, Rice SOS and White 1000-SOS varieties, soon became popular throughout North America and beyond, including exotic locales such as Singapore.

Frost-SOS is unpigmented, emphasizing the glass fibers as a subtle silken cobweb. Delicate tints, identified as Sky-SOS and Jade-SOS, offer further variety.

The introduction of new varieties has extended the choices for the design professional. The spectacular beauty of the new translucent "Whisper" and "Mist" series gives a soft, elegant touch of color for any application.

In contrast to their acrylic counterparts, **LUMAsite®** reinforced acrylic-modified polyester panels exhibit a near-clear appearance and light transmission approaching that of glass. **Crystal II** and the **SOS** (satin-one-side) and **POS** (pebbled one side) variants offer high light transmission, but with gentle diffusion to delight the eye.

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Fiberglass-Reinforced Acrylic Sheets

LUMAsite® reinforced acrylic sheets and diffusers combine the beauty and weatherability of acrylic with the strength of glass fibers. Casting glass fibers and acrylic together yields sheets with an incomparable combination of desirable properties, including shatterproof toughness, rigidity, weatherability, and low thermal expansion.

Frost-SOS is a light-diffusing panel with an exotic "silken cobweb" appearance. The random glass fibers contribute remarkable beauty. As a lighting diffuser or light-transmitting architectural panel, Frost-SOS combines striking aesthetics and high light transmission. This effect is also available in delicate tints (Sky-SOS, Jade-SOS).



Courtesy of Soup Restaurant Singapore Photographer: Rodney Tan

Parchment-SOS is a light-diffusing panel with a subtle "Shoji" effect. As a lighting diffuser or translucent architectural panel, Parchment-SOS combines a clean white appearance and high light transmission (slightly lower than Frost-SOS).

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Linen-SOS is a light-diffusing panel that combines the “silken cobweb” effect with a subtle fabric weave pattern. The weave pattern, upon close inspection, is of flax that is translucent and slightly off-white.

Rice-SOS is a light-diffusing panel with a stronger “Shoji” effect. Often used in oriental decor, fixtures, and interior treatments, Rice-SOS panels combine an off-white rice paper appearance (particularly in thinner gauges) and medium-high light transmission.

Many colored varieties are available, including the “Whisper” mesh tints, the bolder tints (Sky, Jade and Tangerine), and bright sign colors including both translucent and opaque varieties.

Diffusers for **EXIT** fixtures have very high light transmission, and at the same time, sufficient diffusion to mask the light source and minimize “hot spots”. **Hi-Lite Red** is a translucent red diffusing panel. **Lite Emerald** is a translucent green diffusing panel.

Physical properties

| | |
|-------------------------------------|-------------------|
| Flexural Strength | 20,000 psi |
| Flexural modulus | 1,000,000 psi |
| Tensile Strength | 14,000 psi |
| Compressive Strength | 25,000 psi |
| Impact Str. Izod, notched | 6 ft. -lbs/in |
| Coeff. of Expansion | .00002 in./in. °F |

| Thickness | Minimum radius* |
|-----------|-----------------|
| .060* | 5 feet |
| .090* | 8 feet |
| .125* | 12 feet |

*Not applicable to Crystal II varieties. Only gentle simple curvature should be imparted to the Crystal II variety in any thickness.

White 1000-SOS is an opalescent, translucent white panel. Used as a lighting diffuser or translucent architectural panel, White 1000-SOS casts diffused, glare-free light.

White varieties for sign and display applications include:

White 1020, a translucent sign white commonly used as a sign background for signs illuminated with high-output fluorescent lamps.

White 2020, offering similar diffusion in thinner gauge (.045” and .060”) for smaller signs, displays and illuminated advertising panels.

White 1040, a bright white opaque panel suitable for sign and architectural applications. White 1040 panels are available smooth both sides or pebbled on one side (refer to White 1040-POS).

Flammability

LUMAsite® sheets and diffusers are combustible. Fire precautions similar to those appropriate for wood-based products should be observed.

In addition to the general-purpose formulation, some reinforced acrylic varieties of **LUMAsite®** sheets (including the Frost-SOS, Parchment-SOS and White 1000-SOS varieties) are available in a type FR (fire-retardant) formulation. The type FR formulation exhibits reduced flame spread by commonly-used test methods. Note that the type FR formulation is not ordinarily recommended for outdoor use.

Additional Information regarding the burning characteristics of **LUMAsite®** sheets and diffusers requested by fax to 631-422-2811 or by e-mail to lumasite@aol.com will receive a prompt reply.

Note that no fire-retardant version of the Crystal II or embedment varieties is available.

| LIGHT TRANSMISSIONS for lighting/architectural varieties: | | | | | | | |
|--------------------------------------------------------------|------|------|------|------|------|------|------|
| THICKNESS COLOR | .045 | .060 | .090 | .125 | .150 | .180 | .250 |
| Frost-SOS | 82 | 80 | 76 | 72 | 69 | 64 | 59 |
| Parchment-SOS | | | 70 | 66 | | 55 | 50 |
| Linen-SOS | | 74 | 68 | 64 | | | |
| Rice-SOS | | 72 | 66 | 62 | 59 | 52 | 44 |
| White 1000-SOS | 71 | 70 | 62 | 58 | 55 | 49 | 42 |
| Jade-SOS | | 62 | 55 | 48 | | 38 | 30 |
| Sky-SOS | | 52 | 46 | 41 | | 29 | 20 |

| LIGHT TRANSMISSIONS for sign background, lightbox and EXIT varieties: | | | | | |
|--------------------------------------------------------------------------|------|------|------|------|------|
| THICKNESS COLOR | .040 | .060 | .100 | .125 | .150 |
| White 1020 | | 46 | 35 | 30 | 24 |
| White 2020 | 42 | 39 | | | |
| Ivory 02146 | | 50 | 42 | 39 | |
| Yellow 02037 | | 40 | 32 | 26 | |
| Red 315 | | 12 | 8 | 7 | |
| Hi-Lite Red | 19 | 18 | | | |
| Lite Emerald | 26 | | | | |

All Light transmissions are determined using an incandescent light source, and are relative to air (air=100%)

LUMAsite® fiberglass-reinforced acrylic sheets:

| COLOR | DESCRIPTION | THICKNESSES | | | | | | |
|--------------------------|-------------------------------------------------|-------------|-------|-------|-------|-------|-------|-------|
| Frost-SOS | "Silken cobweb" effect, high trans. | .045" | .060" | .090" | .125" | .150" | .187" | .250" |
| Parchment-SOS | Gentle "Shoji" effect, high trans. white | | | .090" | .125" | | .187" | .250" |
| Linen-SOS | Subtle weave effect, high trans. off-white | | | .090" | .125" | | .187" | .250" |
| Rice-SOS | Gentle "Shoji" effect, med-high trans off-white | .060" | .090" | .125" | | | .187" | .250" |
| Sky-SOS | Pale blue "Shoji" effect | .060" | .090" | .125" | | | .187" | .250" |
| Jade-SOS | Pale green "Shoji" effect | .060" | .090" | .125" | | | .187" | .250" |
| Tangerine-SOS | Orange "Shoji" effect | .060" | .090" | .125" | | | | |
| Charcoal-SOS | Smoke "Shoji" effect | | | .090" | .125" | | .187" | .250" |
| Whisper 402 River-SOS | Blue mesh tint, "Shoji" effect | | | | .125" | | | |
| Whisper 655 Hunter-SOS | Green mesh tint, "Shoji" effect | | | | .125" | | | |
| Whisper 161 Eggplant-SOS | Purple mesh tint, "Shoji" effect | | | | .125" | | | |
| Whisper 394 Copper-SOS | Peach mesh tint, "Shoji" effect | | | | .125" | | | |
| White 1000-SOS | High diffusion, opalescent | .045" | .060" | .090" | .125" | .150" | .187" | .250" |
| White 1020 | Sign white, translucent | | | .090" | .125" | .150" | | |
| White 2020 | Display white, translucent | .045" | .060" | | | | | |
| White 1040 | Porcelain white, opaque | .060" | .090" | .125" | | | .187" | .250" |
| White 1040-POS | Opaque white, pebbled | | | .090" | .125" | | | |
| Ivory 02146-SOS | Creamy white, translucent | .060" | .090" | .125" | | | | |
| Yellow 02037 | Bright yellow, translucent | .060" | .090" | .125" | | | | |
| Orange 02119 | Bright orange, translucent | | | .090" | .125" | | | |
| Red 315 | Fire-engine red, translucent | .060" | .090" | .125" | | | | |
| Blue 02051 | Medium blue, translucent | | | .090" | .125" | | | |
| Blue 02114 | Dark blue, translucent | | | .090" | .125" | | | |
| Green 02030 | Medium green, translucent | | | .090" | .125" | | | |
| Black 02025 | Black, opaque | | | .090" | .125" | | .187" | .250" |
| Brown 240-SOS | Chocolate brown, opaque | | | .090" | .125" | | | |
| Brown 239-SOS | Dark brown, opaque | | | .090" | .125" | | | |
| Hi-Lite Red | Efficient diffuser (for EXIT) | .040" | .060" | | | | | |
| Lite Emerald | Efficient diffuser (for EXIT) | .040" | .060" | | | | | |

LUMAsite® acrylic-modified fiberglass sheets:

| COLOR | DESCRIPTION | THICKNESSES | | |
|------------------------|-----------------------------------------|-------------|-------|-------|
| Crystal II | Near-clear | .060" | .090" | .125" |
| Crystal II-SOS | Lightly frosted | .060" | .090" | .125" |
| Crystal II-POS | Diffused | .060" | .090" | .125" |
| Mist 573 Ivory-POS | Off-white mesh embedment | | | .125" |
| Mist 402 River-POS | Blue mesh embedment | | | .125" |
| Mist 655 Hunter-POS | Green mesh embedment | | | .125" |
| Mist 161 Eggplant-POS | Purple mesh embedment | | | .125" |
| Mist 394 Copper-POS | Peach mesh embedment | | | .125" |
| Mist 244 Chocolate-POS | Brown mesh embedment | | | .125" |
| Mist 065 Black-POS | Black mesh embedment | | | .125" |
| Mist 121 Black-POS | Black fishnet embedment | | | .125" |
| Coco Reed | Brown cane-like embedment | | | .125" |
| Jute | Earth-tone woven fabric embedment | | | .125" |
| Kane | Light-colored cane-like embedment | | | .125" |
| Rattan | Deep two-tone cane-like embedment | | | .125" |
| Diamond Design | Metal embedment (large diamond opening) | | | .125" |

SOS indicates matte finish on one side POS indicates lightly pebbled texture one side

Sheet Sizes

Standard varieties of LUMAsite® sheets, except the "Diamond Design" metal embedment, are manufactured in the following sheet sizes (minimum order quantities may apply): 3' x 8': 3' x 10': 4' x 6': 4' x 8': 4' x 10'

The Frost-SOS, White 1000-SOS, White 1020, White 1040, and Yellow 02037 varieties are also available in the following larger sheet sizes (note that larger sizes are priced at a premium): 4' x 12': 5' x 8': 5' x 10': 5' x 12'

Acrylic-Modified Fiberglass Sheets

LUMAsite® acrylic-modified fiberglass sheets include near-clear varieties and embedment varieties. They exhibit high stiffness, shatterproof toughness and excellent outdoor durability.

Crystal II panels are used in glazing and partition applications requiring high light transmission and superior impact strength. These near-clear panels are supplied with a micrograin gloss surface on both sides, or with a matte or pebbled surface on one side (refer to Crystal II-SOS and Crystal II-POS). The standard micrograin gloss is a medium-reflectivity surface with a very slight texture. The matte or pebbled surfaces are more diffusing than the micrograin gloss.



Photo courtesy of Urban Myth Construction Co.

Embedment Panels

By embedding various materials into the panel during manufacture, a wide range of beautiful effects become available to the specifier.

Woven cane-like embedments with a natural appearance include the Coco Reed, Jute, Rattan and Kane varieties.

Embedment of fine colored meshes into acrylic-modified, near-clear sheets imparts a striking tint effect demonstrated by the "Mist" varieties of LUMAsite® sheets. The "Mist" varieties are ordinarily supplied with a pebbled surface on one side (POS).

Diamond design (DD3448) is the designation given to an embedment panel incorporating 3/4"x 1-1/2" expanded aluminum mesh, resulting in a panel with toughness, rigidity and resistance to penetration. At the same time, the diamond-shaped openings form an attractive pattern that allows generous passage of light.

Embedment of special papers printed with graphics seals the graphics into the panel. Once cast into fiberglass, the sign, display or decorative panel exhibits superior toughness, durability and vandal-resistance. Common applications for graphic embedments include industrial and safety signage, transit sign panels, and interpretive panels for parks, zoos and museums.

Physical Properties for Crystal II Panels

| | |
|--------------------------------------|----------------|
| Flexural Strength | 20,000 psi |
| Flexural modulus | 1,200,000 psi |
| Tensile Strength | 15,000 psi |
| Compressive Strength | 22,000 psi |
| Impact Str. Izod, notched* | 10 ft. -lbs/in |
| Burning Rate* (ASTM D635) | 0.79 in./min. |

*Impact strength and burning rate are for 0.100" thickness

Standard Thicknesses for Crystal II Panels

| Thickness | Weight (per square foot) |
|-----------------|--------------------------|
| .060" | 7.5 ounces |
| .090" | 11.5 ounces |
| .125" | 15.0 ounces |

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