



## LAMINATED GLASS

### Product Information

Laminated glass is composed of two pieces of glass and an intermediate layer of polyvinyl butyral (PVB).

Typical uses for laminated glass include locations where safety glazing material is required, or where retention of glass in the event of breakage is critical, such as skylight applications. Laminated glass blocks 99% of ultraviolet radiation in the UVA and B range of 280-380 nm. This range of UV waves is responsible for about 60% of material deterioration and color fading; the remaining 40% is due to visible light in wavelengths of 380-500 nm.

Laminated glass is also an effective barrier to noise and can provide various levels of security protection including protection from break-ins, bomb blast resistance and bullet resistance, as well as protection from windblown projectiles in hurricane prone regions.

Syracuse Glass Company inventories the following laminated glass make-ups, available as stock sheets, or cut to custom sizes in monolithic or insulating glass form.

#### STOCK LAMINATED PRODUCTS

#### MAXIMUM SIZE

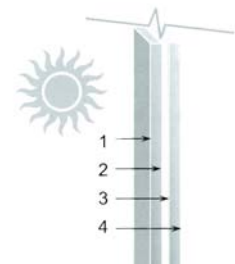
.030 Interlayer for Category II Safety Rating

1/4" Clear	80" x 120"
1/4" Bronze	48" x 84"
1/4" Gray	48" x 84"
1/4" Green	48" x 84"
1/4" White	48" x 84"
3/8" Clear	72" x 130"
1/2" Clear	72" x 130"

.015 Interlayer for Category I Safety Rating

5/32" Clear	36" x 72"
5/32" Green	36" x 72"

Laminated Glass with  
Numbered Surfaces



Custom laminated glass make-ups are also available, featuring thicker interlayers (i.e. .060, .090) or heat strengthened or tempered glass components, or reflective or low emissivity coatings.

## Technical Comments

- Laminated glass has approximately 75% of the strength of non-laminated glass of the same thickness.
- The edges of laminated glass must not be exposed to prolonged contact with water or moisture. The glazing cavity must have weep holes or other means to ensure a dry framing environment.
- Solvents and primers should not be applied to the edges of laminated glass.
- When silicone contacts the edge of laminated glass, a reaction occurs between the PVB, interlayer and the silicone that can create cloudiness in the interlayer along the edge of the glass about 1/2" into the glass. In a butt glazing application this will be visible on both sides of the glass. In a structural silicone glazing application the cloudiness will be visible from the exterior.
- Laminated insulating glass units for vertical glazing are limited to a 48" x 96" maximum size.
- Sloped glazing insulating glass using laminated glass is subject to the following maximum sizes:

<u>Laminated Glass Lite Nominal Thickness</u>	<u>Annealed Laminated (.030)</u>	<u>Heat Strengthened Or Tempered Laminated (.060)</u>
1/4" Glass	12 Sf	25 Sf
3/8" Glass	18 Sf	40 Sf
1/2" Glass	25 Sf	40 Sf

These limits do not consider design load which take precedence and may dictate thicker glass and/or smaller sizes.

- Stock sheets of laminated glass will have safety glazing labels in opposite corners. Cut-to-size laminated glass may have a safety glazing label depending on the orientation of the cut size piece or the stock sheet, or it may be unlabeled. Syracuse Glass can apply a sandblasted safety glazing label if requested at time of order.
- ASTM C 1172 Standard Specification for Laminated Architectural Flat Glass covers dimensional tolerances and inspection procedures.
- Laminated glass is warranted for five (5) years against de-lamination by a limited warranty available on request.

### Additional Resources:

- GANA G1B "Design Considerations for Laminated Glass Applications"
- GANA Laminated Glazing Reference Manual
- AAMA "Glass Design for Sloped Glazing"