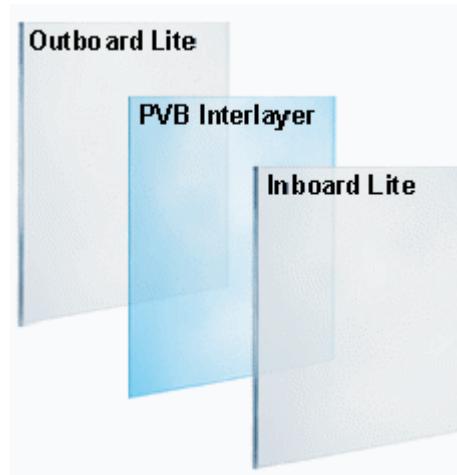## Laminated Glass and Security Glazing

When the going gets tough, our glass gets tougher.

Laminated Glass

Guardian produces Architectural Laminated Glass in a full array of thicknesses and sizes. It consists of two or more panes bonded together by a tough, durable plastic (polyvinyl butyral - PVB) interlayer (or interlayers).

If broken by impact, laminated architectural glass tends to remain integral in its frame, minimizing the risk of injury from sharp edges and flying or falling glass particles. It also strongly resists penetration by the impacting object.

Guardian laminated glass meets the current requirements of the ASTM E-1172 "Standard Specification for Laminated Architectural Float Glass," and is ideal for use in areas where building codes require hurricane resistant glazing.

Characteristics

*   Displays the visual appearance of monolithic float glass
*   Doesn't shatter into dangerous shards and particles like other glass
*   Suitable for safety glazing in select thicknesses
*   Provides additional security over other glass types
*   PVB interlayer deadens exterior sounds
*   Reduces harmful UV light transmission to less than 1 percent in most commercial applications

Applications

*   Aquariums
*   Display cases
*   Privacy
*   Banking facilities
*   Solar control requirements
*   Glass floors
*   Sound control
*   Entrance doors
*   Commercial and residential glazing
    Safety glazing (selected thicknesses)
*   Sloped security glazing and skylights; reduces the likelihood of fallout
*

Availability

*   Sizes up to 2.4 m (96") x 3.3 m (144"). Larger sizes may be available on request
*   A full range of shapes and thicknesses
*   Clear and standard PVB colors of bronze, gray, green and white interlayers
*   Diverse glass combinations available in single and double glazing

Security Glazing

Guardian's security glazing products are ideal for detention facilities or in any application where resistance against forced entry or ballistic penetration is required.

We manufacture two basic types of laminated security glazing: multiple plies of glass and glass-clad polycarbonates. Each type can be altered to meet specific project requirements.

These products comply with the Consumer Product Safety Commission 16 CFR 1201 and the Safety Glass requirements of ANSI Z-97.1 (current editions).

All Glass Laminates

Characteristics

*   Designed and tested (UL and HP White) to resist specified ballistic threats
*   Cleans like normal glass

Applications

*   Cash teller protection and armored cars
*   Security towers (not subject to prolonged physical attack)
*   Security partitions and windows subject to ballistic attacks

Availability

*   Clear, Green, Bronze, Gray, Polished Wire and Pyrolytic coatings
*   Standard thicknesses of 30 mm (1-3/16") to 51 mm (2")
*   Available in sizes up to 2.0 m (80") x 3.1 m (120")

Glass-Clad Polycarbonate

Glass-Clad Polycarbonate Laminates combine the surface durability of flat glass with the intrusion resistance characteristics of the polycarbonate component. The individual layers are fused together with a urethane interlayer specially formulated for adhesion to glass and polycarbonate sheets.

Characteristics

*   Designed and tested (HP White) to resist specified ballistic penetrations and forced entry threats
*   Cleans like normal glass

Applications

*   Designed and tested to resist specified ballistic penetrations and forced entry threats
*   Medium to high security installations (prisons and detention centers)

Availability

*   Clear, Green, Bronze, Gray, Polished Wire and Pyrolytic coatings
*   Standard thicknesses of 11 mm (7/16") to 24 mm (15/16")
*   Available in sizes up to 1.5 m (60") x 2.4 m (96")
*   Certified to maximum installed size of 1.5 m (60") x 2.1 m (84")

For more specific information regarding the manufacture of laminated or security glazing products contact one of the following Guardian facilities:

Galax
110 Jack Guynn Dr.
Galax, VA 24333
Tel: (276) 236-5196
Fax: (276) 236-0570

Reedley
1485 East Curtis Avenue
Reedley, CA 93654
Tel: (559) 638-3588
Fax: (559) 638-9758