

Helping you protect our future.



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**SGGG**<sup>TM</sup>  
School Guard Glass

## What is School Guard Glass?

School Guard Glass (SGG) is the clearest, thinnest, and strongest architectural flat glass available. In an event where someone wants to do harm towards people or property, SGG is engineered to provide adequate time for first responders to arrive while lockdown procedures are implemented.

School Guard Glass is designed, engineered, and tested to withstand forced entry from an attacker while installed in standard commercial doors, frames and windows.

## Science and Technology Re-Mastered.

School Guard Glass SG4 and SG5 are laminated glass products comprised of a proprietary fusion polymer core clad with annealed or tempered glass.



## Design and Installation Made Easy:

School Guard Glass is designed and tested per ASTM F1233, H.P. White 5-aa1, 5-aa5 & 5-aa10 against forced entry as a fully glazed system. This matches 95% of infrastructure commonly used or specified in commercial or educational facilities, including, but not limited to:

- All Glass Entrances
- Aluminum Curtainwall
- Aluminum Doors
- Aluminum Entrances and Storefronts
- Aluminum Windows
- Fiberglass Windows
- FRP Doors
- Full-Height Glass Walls
- Hollow Metal Doors
- Hollow Metal Framing
- Point Supported
- Steel Windows
- Wood Doors

## Design Glass as You Wish:

Whether you are designing for thermal performance or aesthetic appeal, School Guard Glass can meet your needs. With 98% optical clarity and no more than 1.8% optical haze, SGG looks identical to standard tempered or annealed flat glass. From here the options are endless in what you can do, such as:

- Fire Rated
- Insulated Glass Units (any tint and/or low-e coating)
- Low Iron
- 35% VLT Opaque Interlayer
- Acid Etched
- Grey/Bronze Tint
- Liquid Crystal Switchable Privacy
- Custom Ceramic Frit
- Digital Imagery Between Glass
- Radio Frequency Blocking



## Why Test to H.P. White 5-aa Protocols in Addition to ASTM?

- H.P. White (HPW) tests are executed using the doors, frames and windows that we see in 95% of commercial and educational infrastructure, while ASTM tests use steel z-bolt frames only found in correctional or other high security buildings.
- HPW tests require items be shot with an assault rifle prior to being physically attacked, ASTM does not.
- HPW protocols allow architects and owners to keep aesthetically pleasing door, frame, and window specifications the same throughout a building. ASTM tests require specific thick steel doors and framing able to accommodate the 1" glass bite products are tested with.
- HPW 5-aa testing constitutes failure as a 4" diameter hole to simulate an attacker reaching their arm through to unlock/open a door or window. ASTM requires a less stringent 8"x8"x5" block to pass through representing a "body passage."



## Was the glass tested in standard doors and frames commonly used in commercial buildings?

The answer should be “yes.” It is critical for security glass products to be tested in the real life applications they are installed in.

## What testing standards has your glass met?

School Guard Glass has been tested to:

- ASTM F1233 (tests only glass)
- H.P. White 5-aa1 (tests glass in doors, frames and windows)
- H.P. White 5-aa10 (full system test for interior doors, glass, frames and hardware)
- H.P. White 5-aa5 (full system test for exterior doors, glass, frames and hardware)

## Was there a ballistic component to the testing?

- The answer should be “yes.” School, workplace and retail violence often involves large caliber military-style assault weapons, as well as blunt objects. Testing should include both, since the majority of real-life scenarios involve both.
- UL752 bullet rated testing requires glass to stop one, three, or five bullets, but doesn’t require a forced entry component, making this an incomplete test for accurate evaluation.

## Is it glass or a plastic film?

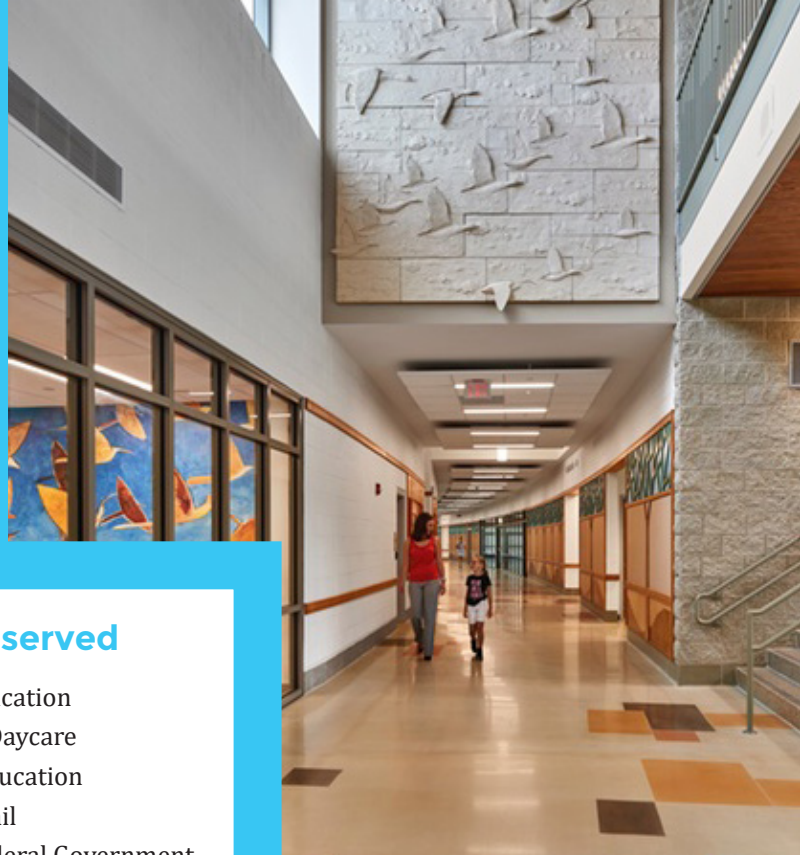
- School Guard Glass products are cladded with glass to provide optically clear vision and durability
- Aftermarket plastic films provide inferior security to laminated glass products
- Plastic films are exposed and prone to scratching and delaminating
- Plastic films often yellow over time when exposed to UV rays
- Plastic films are often replaced every 5-7 years due to degradation, scratching and delaminating



Product	Ballistic Impact 5 shots with a .762 round	Concentrated Assault		Forced Entry (sequentially tested)			Total Time to Failure
		Brick	Steel Toed Boots	Tools <sup>1</sup> 2 min. test	3lb. Hammer & Bat 3½ min. test	Sledge hammer 6 min. test	
1/4" Tempered	Fail - 1 shot	Fail	Fail	Fail	Fail	Fail	0 seconds
1/4" Tempered w/12 mil. Blast Film	Pass <sup>2</sup>	Fail - 4 impacts	Pass	Fail - 8 seconds	Fail - 2 impacts/2 seconds	N/A	4 seconds
5/16" Annealed Laminated Glass w/ 0.060 SGP® Interlayer by DuPont®	Pass <sup>2</sup>	Fail - 20 impacts	Fail	Fail	Fail	N/A	16 seconds
5/16" Annealed Laminated Glass w/ 0.090 PVB Interlayer	Pass <sup>2</sup>	Pass	Pass	Fail - 40 seconds	Fail	N/A	40 seconds
3/8" Glass Clad Polycarbonate	Pass <sup>2</sup>	Pass	Pass	Fail - 1 min. 12 sec.	Fail	N/A	1 min. 12 sec.
SG4™	Pass <sup>2</sup>	Pass	Pass	Pass	Pass	N/A	6 mins. 10 sec.
SG5™	Pass <sup>2</sup>	Pass	Pass	Pass	Pass	Pass-6 mins.	12 mins. 10 sec.

Test failure occurs when a 4" object can pass through the glass or frame material.

<sup>1</sup> See testing methods for tools list. <sup>2</sup>Bullets penetrate but glass stays in place.



### Markets served

- K-12 Education
- Pre-K & Daycare
- Higher Education
- Retail
- Local, State, and Federal Government
- Military
- Correctional / Institutional
- Corporate
- Banking/Financial
- Worship
- Healthcare
- Residential



School Guard Glass is a Division of

Contact us at +1 (844) 744-5277 for questions and cost estimates



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