



PHOENIX
ARCHITECTURAL
GLASS + METAL

www.phx.glass

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S-GUARD - BALLISTIC SECURITY GLAZING

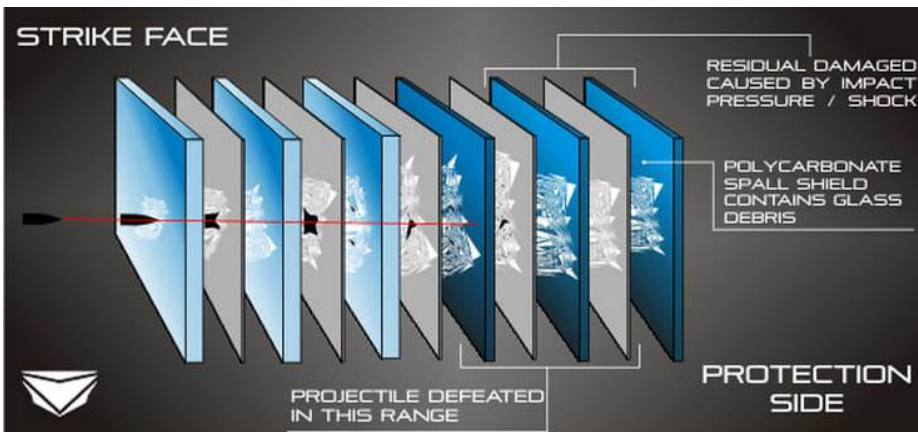
S-Guard security laminates are multi-ply composites designed for attack resistance, ballistic resistance containment, forced-entry protection & protection against blasts while functioning as transparent glazing. These composites can also provide signal deterrents against infrared(IR) or radio-wave frequencies (RF), utilizing special films inside the composite.

- Attack Resistant
- Bullet Resistant
- Forced-Entry
- Blast Resistant
- Anti-Eavesdropping
- Detention & Containment

There are a few concerns one should consider when purchasing or implementing ballistic glass as a protective barrier.

Projectile Penetration - If the laminate should fail or allow infiltration of the projectile/bullet to the safe side, serious injury and/or death can occur. Ballistic rating levels determine resistance to projectile penetrations.

Spall - Spalling is when shards of glass break away from the safe 'protection side' of the glass laminate when under attack by bullets or projectiles from the other 'strike side'. Since significant injuries such as loss of vision, or even death can occur from glass spalling, it must be a consideration when specifying or researching the type of ballistic glass needed.



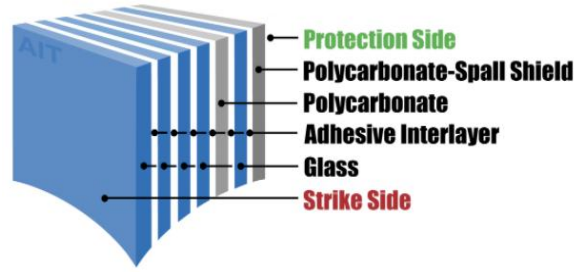
S-GUARD bullet-resistant glazing is tested in accordance with UL-752 and NIJ-0108 Ballistic Standards & S-GUARD is tested under ASTM F1915 standards. S-GUARD products are made and tested in the United States of America.

QUALITY ▫ SERVICE ▫ VALUE = PHOENIX AG+M



BR SERIES

A bullet resistant **non-spalling** laminated composite which incorporates a layer of polycarbonate on the inner protection side of the laminate. This layer is known as the *spall shield* and is there to protect against flying glass fragments on the protection side of the composite.



BULLET RESISTANT GLAZING (NO-SPALL)

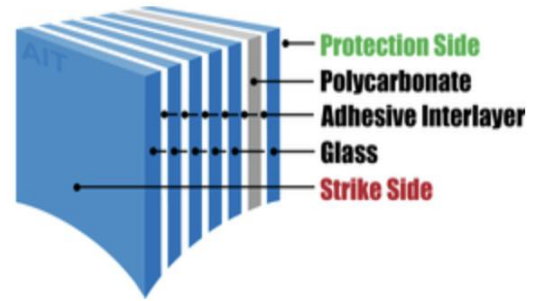
SMARTGARD Product #	Nominal Thickness/ Gauge	Testing Standard	Firearm	Test Result	VLT.	Weight (LB/Sq. Ft)	Max Sizes
BR1-SP	0.762"	UL752 Level 1	9mm - 3 Shots	No Penetration / No Spall	81%	9.03	60" x 120"
BR2-CJ	0.943"	UL752 Level 2	0.357 Magnum - 3 Shots	No Penetration / No Spall	77%	11	60" x 120"
BR3	1.288"	UL752 Level 3	.44 Magnum - 3 Shots	No Penetration / No Spall	74%	14.27	72" x 120"
BR3CL	1.002"	UL752 Level 3	.44 Magnum - 3 Shots	No Penetration / No Spall	80%	11.37	72" x 120"
BR3CL-SP	1.034"	UL752 Level 3	.44 Magnum - 3 Shots	No Penetration / No Spall	74%	11.57	72" x 120"
BR4	1.313"	UL752 Level 4	.30 Cal - 1 Shot	No Penetration / No Spall	74%	14.45	72" x 120"
BR5TH	1.504"	UL752 Level 5	7.62mm - 1 Shot	No Penetration / No Spall	74%	16.1	72" x 120"
BR6	1.313"	UL752 Level 6	9mm Cal - 5 Shots	No Penetration / No Spall	74%	14.45	72" x 120"
BR7-MOD	1.904"	UL752 Level 7	5.56 (M193) - 5 Shots	No Penetration / *Low Spall	65%	21.2	72" x 120"
BR8	2.349"	UL752 Level 8	7.62mm - 5 Shots	No Penetration / No Spall	58%	25.98	72" x 120"
BR8-SP	2.381"	UL752 Level 8	7.662mm - 5 Shots	No Penetration / No Spall	58%	26.29	60" x 120"
BR10	4.254"	UL752 Level 10	.50 Caliber - Shot	No Penetration / No Spall	46%	51	72" x 120"

**Larger sizes available
 subject to review**



GLASS CLAD POLY SERIES

A bullet resistant **low spall** laminated composite. The protection side of this laminate is a glass layer bonded with a clear adhesive inter-layer to a polycarbonate. Since glass is on the protection side, low-spalling can and will occur. This configuration is known as a glass-clad polycarbonate laminate. This configuration offers a much more durable surface on the protection side to guard against abrasion/scratching and chemical resistance from cleaners or other agents.



BULLET RESISTANT GLASS CLAD POLYCARBONATE GLAZING (LOW-SPALL)

SMARTGARD Product #	Nominal Thickness/ Gauge	Testing Standard	Firearm	Test Result	VLT	Weight (LB/Sq. Ft)	Max Sizes
GCP2-CJ	1.17"	UL752 Level 2	0.357 Magnum - 3 Shots	No Penetration / Low Spall	77%	13.56	72" x 120"
GCP3-CL	1.229"	UL752 Level 3	0.44 Magnum - 3 Shots	No Penetration / Low Spall	74%	13.93	72" x 120"
GCP4	1.540"	UL752 Level 4	0.30 Cal - 1 Shot	No Penetration / Low Spall	71%	17.06	72" x 120"
GCP5-TH	1.731"	UL752 Level 5	7.62mm - 1 Shot	No Penetration / Low Spall	66%	18.75	72" x 120"
GCP6	1.540"	UL752 Level 6	9mm - 5 Shots	No Penetration / Low Spall	71%	17.06	72" x 120"
GCP7-MOD	2.131"	UL752 Level 7	5.56mm - 5 Shots	No Penetration / Low Spall	61%	23.77	72" x 120"
GCP8	2.576"	UL752 Level 8	7.62mm - 5 Shots	No Penetration / Low Spall	57%	28.59	72" x 120"

Larger sizes available subject to review

SMARTGARD Product #	Nominal Thickness/ Gauge	Testing Standard	Firearm	Test Result	VLT	Weight (LB/Sq. Ft)	Max Sizes
BP750-MOD	0.866"	UL752 Level 1	9mm - 3 Shots	No Penetration	80%	5.6	72" x 120"
BP1256	1.364"	UL752 Level 6	9mm - 5 Shots	No Penetration	54%	8.51	72" x 120"
BP1000	1.061"	UL752 Level 2	.357mm - 3 Shots	No Penetration	58%	6.62	72" x 120"
BP1250	1.311"	UL752 Level 3	.44 Magnum - 3 Shots	No Penetration	54%	8.19	72" x 120"

Larger sizes available subject to review



A FEW MORE DETAILS...

Our ballistic glass products have world-wide recognition in performance and optical quality. We mastered the production of these glass composites through decades of research and experience. Our unique approach to customer needs and optical quality control make us the number one choice as a manufacturer/provider for your next project that requires ballistic or blast resistant glass.

Customization options are available for all our security glazing products, which include, tinted glass, one-way viewing, shapes, and decorative laminate, etc.

S-Guard products are currently used in applications including:

- Correctional Facilities
- Courthouses
- Government Buildings
- Transit Facilities
- Pharmacies
- Banks
- Border Patrol
- Hospitals
- Cashier Areas
- Armored Vehicles
- Shooting ranges
- Power Plants



Need more information or samples? Ready to order? We are here to serve you!



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