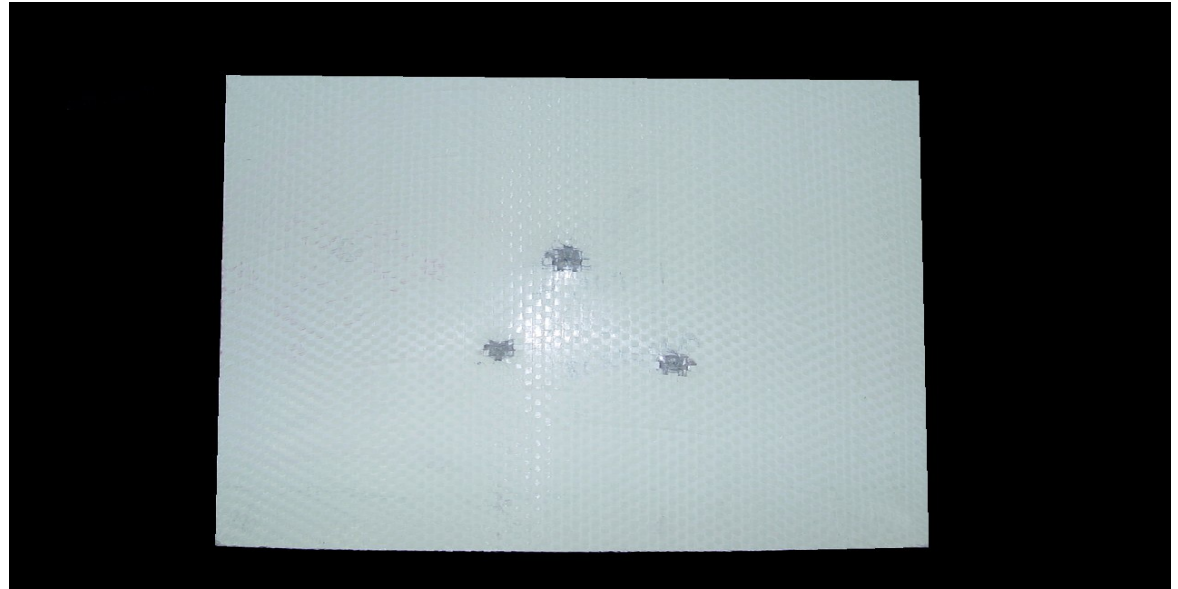


GlasArmor™

Ballistic Resistant FRP Composite Panels

Utilizing
Military
Technology
to Provide
a Safer
Environment



GlasArmor™ Ballistic Resistant Panels manufactured by Glasforms, Inc. are constructed to provide any facility with the latest in military grade protection from armed attackers. Originally developed for use by the Department of Defense for protection from mortar fire, our FRP Composite panels offer superior ballistic resistance at a weight less than 25% that of a comparable steel panel. These same panels are now available for commercial security applications for your business, home, or governmental facility.

GlasArmor™ Panels are constructed from multiple layers of woven fiberglass encapsulated with a proprietary resin system by the pultrusion process that produces a rigid panel with exceptional ballistic resistance. The unique composite matrix of the panels allow for retention of the projectile to avoid potentially hazardous ricochet. These FRP panels offer ballistic resistant security with the additional performance advantages of durability, corrosion resistance, electrical non-conductivity, low thermal conductivity and light weight.

Utilized for both indoor and outdoor applications, panels can be easily incorporated into standard building design to provide undetectable ballistic protection. Panels can be field fabricated utilizing simple installation methods and common carpentry tools. Surface finish is smooth in a white color with custom colors available in production quantities. Panels can be primed and painted or covered by gypsum board or other materials to match specific requirements.

Panels are available with a nominal thickness of 1/4", 3/8" and 1/2" for protection to UL752 levels 1, 2 & 3 and NIJ Levels I, II & IIIA test standards for ballistic resistance. Additional protection against higher power ammunitions to UL 752 Level 4 for .30 caliber rifles and Level 8 for 7.62mm rifles are achieved by layering multiple GlasArmor panels. This also permits offsetting of panel joints and easier handling for installation over the use of thicker, heavier panels where greater protection is required.

BALLISTIC RESISTANT
REINFORCEMENT

GlasArmor™ Panels Specifications

SECURITY



LISTED
CNLW

Model	Nominal Thickness	Nominal Weight	Ammunition Type	Ballistic Rating
GA256-A5L1	.256" (1/4")	2.7 lbs/sq ft	9 mm	UL 752 Level 1 NIJ Level I
GA384-A5L2	.384" (3/8")	4.0 lbs/sq ft	.357 Mag	UL 752 Level 2 NIJ Level II
GA500-A5L3	.512" (1/2")	5.4 lbs/sq ft	.44 Mag	UL 752 Level 3 NIJ Level IIIA

GlasArmor™ panels are constructed from layers of 0-90° woven E-glass fiber reinforcements with a proprietary resin system in several sizes from 36" x 84" to 48" x 120" with other panel lengths available. In addition, Level 2 and Level 3 panels are rated for Listing by Underwriters Laboratory for Ballistic Resistance to UL752, authorizing Glasforms' use of UL's Mark. GlasArmor panels are fire rated for 1-hour per ASTM E-119-09c Fire Tests of Building Construction & Materials, modified to a smaller scale gypsum board wall assembly. Panels also meet a Flame Spread Rating of 45 and a Smoke Developed Rating of 165 per ASTM E-84-08a, "Standard Method of Test for Surface Burning Characteristics of Building Materials" achieving a NFPA & IBC Class B Fire rating. Class A panels are also available in production quantities.

APPLICATIONS

Commercial

- Banks
- Check Cashing
- Pawn Shops
- Loan Offices

Governmental

- Courtrooms
- Judges Chambers
- Police Stations
- Detention Facilities

Industrial

- Bonded Warehousing
- Security Buildings
- Shielding of equipment

Residential

- Safe Rooms
- Storm Shelters
- Door Systems



The Atlanta Police Academy chose a GlasArmor perimeter wall for their Academy firing range to prevent injury from misfired weapons and ricochet on both their sidearm and rifle ranges.

GlasArmor™

Ballistic Resistant FRP Composite Panels

- BALLISTIC RATING:** UL 752 Level 1-3, NIJ Level I - IIIA
- SIZES:** 36" & 48" widths in lengths below
- THICKNESS:** 1/4", 3/8" & 1/2" per below
- FIRE RESISTANCE:** Fire rated for 1 hour per ASTM E-119-09c modified to a smaller scale. Flame Spread Rating of 45 and a Smoke Developed Rating of 165 per ASTM E-84-08a. NFPA & IBC Class B Fire rating.
- PROCESS:** Resin Injection Pultrusion
- COLOR:** White (custom colors available)
- MATERIALS:** 0 - 90° Woven E-Glass Fiber

<u>Ballistic Rating</u>	<u>Thickness</u>	<u>Panel Size</u>	<u>Nominal Weight (lbs)</u>
MODEL # GA256-A5L1			
UL 752 - LEVEL 1	.256" (1/4")	36" x 84"	57
- 9mm full metal copper jacket with lead core		36" x 96"	65
- 124 grain		36" x 108"	73
- 8.0 (g)		36" x 120"	81
- 1,175 fps velocity		48" x 96"	85
		48" x 108"	97
		48" x 120"	108
MODEL # GA384-A5L2			
UL 752 - LEVEL 2	.384" (3/8")	36" x 84"	84
- .357 Magnum jacketed lead soft point		36" x 96"	96
- 158 grain		36" x 108"	108
- 10.2 (g)		36" x 120"	120
- 1,250 fps velocity		48" x 96"	128
		48" x 108"	144
		48" x 120"	160
MODEL # GA500-A5L3			
UL 752 - LEVEL 3	.512" (1/2")	36" x 96"	130
- .44 Magnum lead semi-wadcutter gas checked		36" x 108"	146
- 240 grain		36" x 120"	165
- 15.6 (g)		48" x 96"	173
- 1,350 fps velocity		48" x 108"	194
		48" x 120"	216