

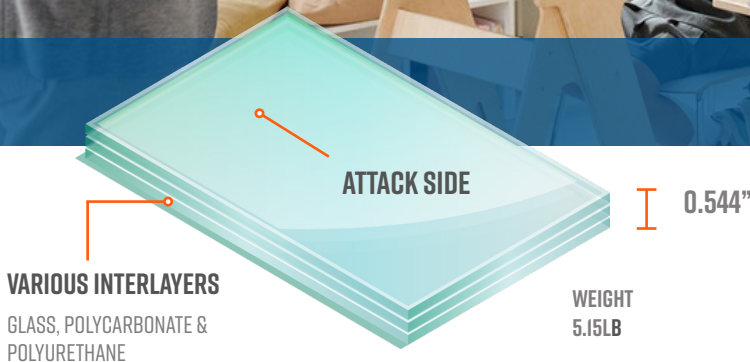
# SCHOOL SAFE PREMIUM™



SCHOOL SAFE PREMIUM™

## LEVEL 1 LOW SPALL GLAZING

1-FE20-SSP-2004-LS



### SPECIFICATIONS

#### BALLISTIC AND FORCED ENTRY RATING: MEETS OR EXCEEDS THE FOLLOWING

- UL752 LEVEL I BALLISTIC STANDARD
- NIJ 0108.1 LEVEL IIA
- EN 1062 LEVEL BR2
- ASTM F1233-08 (2013)

#### TECHNICAL DATA

THIS BALLISTIC GLAZING WILL WITHSTAND 3 ROUNDS OF 9MM IN A ONE SQUARE FOOT SAMPLE, UTILIZING A FMJ PROJECTILE WITH A MASS OF 124 GRAIN (8 GRAM) TRAVELING AT 1293 FEET / SECOND (394.1 METERS / SECOND) WITH EACH ROUND DELIVERING AN IMPACT OF 625 JOULES OF ENERGY AND A MOMENTUM OF 3.17 KG M/S. THIS BALLISTIC GLAZING MAY ALSO PROVIDE UP TO 20 MINUTES OF FORCED ENTRY PROTECTION.

- NOMINAL THICKNESS: 9/16"; 0.544"; 13.817MM
- WEIGHT PER SQUARE FOOT: 5.15LB; 2.33KG

#### GLAZING OPTIONS

- CLEAR
- LOW IRON

*CONTACT US FOR ADDITIONAL  
GLASS TYPES & GLAZING OPTIONS*

#### FRAMING OPTIONS

- ALUMINUM STORE FRONT
- ALUMINUM CURTAIN WALL

#### SIZING INFORMATION

- UP TO 70" X 130"

#### TESTING CERTIFICATIONS

- NTS 21219-001
- NTS BGA19004-1



TESTED TO  
**3 ROUNDS  
OF 9MM**



# NATIONAL TECHNICAL SYSTEMS

## BALLISTIC RESISTANCE TEST

Date Received: 08/13/19  
 Via: FedEx  
 Returned Via: FedEx

Record No.: BGA19004-1  
 Test Date: 08/15/19  
 Customer: Ballistic Glass & Armor Solutions, LLC.

**Test Conditions**

Temperature: 70.2 °F  
 Humidity: 51 %  
 Test Spec.: Modified / Abbreviated UL 752, 11th Edition: December 21, 2006  
 Test Reference: Table 3.1 ICW Paragraph 17.2.1  
 Material Type: (Glass) Bullet Resisting Material  
 Threat Level: Level 1  
 Shots Required: 3

**Range 2**

Muzzle to Screen 1: 5.00 ft.  
 Screen 1 - 2: 5.00 ft.  
 Screen 2 - Target: 5.00 ft.  
 Midpoint to Target: 7.50 ft.  
 Target to Witness: 1.50 ft.  
 Witness: 1/8" Corrugated Cardboard  
 Barrel Length: 4 in.

Sample Description	Test / Ammunition Description					Chronograph		Test Result
Manufacturer: Ballistic Glass & Armor Solutions, LLC Model No.: #1 Sample No.: 1 Size (in.): 12 x 12 Thickness (in.): 0.543 Weight (lbs.): 5.150	Shot No.	Shot Location	Degree Obliquity	Caliber	Bullet Weight (gr.) / Type	TIME sx-5	VELOCITY ft/s	Penetration
	1	TC				416.8	1200	No Penetration
	2	BL	0°	9mm	124 / FMJ	411.2	1216	No Penetration
	3	BR				417.6	1197	No Penetration

**This test report may not be used to claim product certification, approval, or endorsement. This test was performed in accordance with the specification or standard requirements listed in addition to any customer specified modifications or requests and the test results properly reflect the ballistic performance of the listed sample. This test report shall not be reproduced except in full without the written approval from National Technical Systems.**

Test Requirements (Paragraph 17.1.1):	Test Result:	Shot No.	PASS / FAIL
1) Penetration of projectile through test sample?	No = Acceptable	1, 2, 3	PASS
*2) Spalling of material from protected side?	N/A	N/A	N/A
*3) Damage to cardboard witness due to spalling?	N/A	N/A	N/A
4) Opening permits weapon muzzle to fit through sample?	No = Acceptable	1, 2, 3	PASS
*Shot No. 1:	Bullet stopped in sample;		
*Shot No. 2:	Bullet stopped in sample;		
*Shot No. 3:	Bullet stopped in sample;		

**Test Notes:**  
 \*Sample secured to test fixture using frame and clamps  
 \*Spalling from protected side and spalling damage to witness was not evaluated for the purpose of this testing IAW customer request

Test Round Used:	Shot Locations / Spacing (17.2.1):
Test Round: Remington 9mm, 124 gr. (8.0g) FMJ RN (23558) Test Velocity: 1175 - 1293 ft/s	Mounting: Sample secured using frame and clamps Shot Location: Center of Panel Shot Spacing: 4.0 +/- 0.50" (102 +/- 12.7mm) Triangle Shot No. 1: TC - Top Center Shot No. 2: BL - Bottom Left Shot No. 3: BR - Bottom Right

**Sample Description:**  
 Layer 1: Glass (0.543" thick)

Wilson / Crawford

# NATIONAL TECHNICAL SYSTEMS

## BALLISTIC RESISTANCE TEST

Date Received: 08/13/19  
 Via: FedEx  
 Returned Via: FedEx

Record No.: BGA19004-2  
 Test Date: 08/15/19  
 Customer: Ballistic Glass & Armor Solutions, LLC.

**Test Conditions**

Temperature: 70.2 °F  
 Humidity: 51 %  
 Test Spec.: Modified / Abbreviated UL 752, 11th Edition: December 21, 2006  
 Test Reference: Table 3.1 ICW Paragraph 17.2.1  
 Material Type: (Glass) Bullet Resisting Material  
 Threat Level: Level 1  
 Shots Required: 3

**Range 2**

Muzzle to Screen 1: 5.00 ft.  
 Screen 1 - 2: 5.00 ft.  
 Screen 2 - Target: 5.00 ft.  
 Midpoint to Target: 7.50 ft.  
 Target to Witness: 1.50 ft.  
 Witness: 1/8" Corrugated Cardboard  
 Barrel Length: 4 in.

Sample Description	Test / Ammunition Description					Chronograph		Test Result
Manufacturer: Ballistic Glass & Armor Solutions, LLC Model No.: #1 Sample No.: 2 Size (in.): 12 x 12 Thickness (in.): 0.545 Weight (lbs.): 5.160	Shot No.	Shot Location	Degree Obliquity	Caliber	Bullet Weight (gr.) / Type	TIME sx-5	VELOCITY ft/s	Penetration
	1	TC				420.2	1190	No Penetration
	2	BL	0°	9mm	124 / FMJ	408.2	1225	No Penetration
	3	BR				406.0	1232	No Penetration

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Test Requirements (Paragraph 17.1.1):	Test Result:	Shot No.	PASS / FAIL
1) Penetration of projectile through test sample?	No = Acceptable	1, 2, 3	PASS
*2) Spalling of material from protected side?	N/A	N/A	N/A
*3) Damage to cardboard witness due to spalling?	N/A	N/A	N/A
4) Opening permits weapon muzzle to fit through sample?	No = Acceptable	1, 2, 3	PASS
*Shot No. 1:	Bullet stopped in sample;		
*Shot No. 2:	Bullet stopped in sample;		
*Shot No. 3:	Bullet stopped in sample;		

**Test Notes:**  
 \*Sample secured to test fixture using frame and clamps  
 \*Spalling from protected side and spalling damage to witness wanot evaluated for the purpose of this testing IAW customer reque:

Test Round Used:	Shot Locations / Spacing (17.2.1):
Test Round: Remington 9mm, 124 gr. (8.0g) FMJ RN (23558) Test Velocity: 1175 - 1293 ft/s	Mounting: Sample secured using frame and clamps Shot Location: Center of Panel Shot Spacing: 4.0 +/- 0.50" (102 +/- 12.7mm) Triangle Shot No. 1: TC - Top Center Shot No. 2: BL - Bottom Left Shot No. 3: BR - Bottom Right

**Sample Description:**  
 Layer 1: Glass (0.545" thick)

Wilson / Crawford

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## ASTM F1233 Forced Entry Testing

### Ballistic Glass & Armor Solutions

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Prepared by:

**Kyle C. North**

### ***NTS Chesapeake Testing***

*4603B Compass Point Road  
Belcamp, MD 21017*

**1 April 2020**

*Further dissemination only as directed by  
Ballistic Glass & Armor Solutions, April 2020*

This report shall not be used to claim product certification, approval or endorsement. The results of the testing relate only to the samples submitted for testing and are not representative of a complete model or lot. This test report shall not be interpreted as an endorsement by NTS - Chesapeake Testing as to the continued quality or performance of any items of the same or similar design.

The information contained in this report may be subject to the provisions of the Export Administration Act (50 USC 2401 et seq.), the Export Administration Regulations (15 CFR 768-799), the U.S. Arms Export Control Act (22 USC 2778 et seq.) and the International Traffic in Arms Regulations (22 CFR 120-130). These statutes and regulations impose restrictions on import, export and transfer to foreign entities and persons, whether within the U.S. or abroad, of certain data and articles without approved licenses from the U.S. Department of State and/or the U.S. Department of Commerce.

NTS - Chesapeake Testing is an independent testing facility and has no affiliation with Ballistic Glass & Armor Solutions

**BALLISTIC GLASS & ARMOR SOLUTIONS, PROPRIETARY INFORMATION**

## 1 Introduction

Ballistic Glass & Armor Solutions provided one (1) sample to NTS – Chesapeake Testing for Forced Entry (FE) testing which was conducted on 31 March 2020. All testing conducted was in accordance with (IAW) ASTM F1233-08 (2013) and customer request.

The following sample was submitted for testing:

**Table 1. Summary of Test Articles**

Sample ID	Weight (lbs)	Dimensions (L x W) (in)	Avg. Thickness (in)
1	31.31	29.75 x 29.75	0.551

## 2 Forced Entry Testing

FE testing was conducted IAW ASTM F1233-08 (2013) and customer request.

The sample was mounted in CTS’s FE Test Fixture, and the fixture was IAW ASTM F1233-08 (2013) Section 8.

### 3.1 Resources and Instrumentation

All personnel that participated in testing were IAW ASTM F1233-08 (2013) Section 8.8.

The following tools and instruments were utilized during this test and were all IAW ASTM F1233-08 Section 8.3, 8.4, 8.5, and 8.6.

#### **Blunt Impacting Tools (Section 8.3):**

- Sledge Hammer, 12-lb, double-faced, drop-forged steel head with 36-in handle.
- Ball Peen Hammer, 32-oz, drop-forged, steel head, with 16-in handle.

#### **Sharp Impacting Tools (Section 8.4):**

- Pipe, Steel, 1 ½-in outside diameter, Schedule 80, in accordance with Specification A53/A53M, 90-degree cut-off.

#### **Thermal Stress Tools (Section 8.5):**

- Fire Extinguisher CO2, Steel cylinder, 20-lb, conforming to UL 10BC, or equivalent.

The following pass through materials were utilized during this test and were IAW ASTM F1233-09 (2013) Section 8.7, 10.2.4.1.

#### **Pass Through Materials:**

- Contraband – 1/8-in steel rod.
- Body Passage – steel rectangular object, 8” x 8” x 5”

### 3.1.2 Instrumentation

A digital still camera and a real-time video camera were used to document the test. Photographs and videos of the testing were provided to the customer separately from this report.

### 3.2 Summary of Results

Table 2 overviews the concentrated assault conducted on this sample.

**Table 2. Test Results**

Test Sequence	Test Implements	Impacts	Sequence Time (s)	Class Achieved	Notes
1	Ball Peen Hammer	10	19-s	1.0	Sample impacted at center. Significant damage to front of sample. Glass material separated from front and back face of sample.
2	Ball Peen Hammer	10	18-s	1.1	Sample impacted at center. Significant damage to front of sample. Glass material separated from front and back face of sample.
3	1 1/2-in Diameter Pipe/ 12-lb Sledge	25	1-min 36-s	1.2	One technician held pipe while one technician swung a 12-lb sledge hammer. The pipe was held at different angles to evaluate the resistance of the sample to both puncture and gouging. No penetration of the sample occurred.
4	Extinguisher, C02	-	60-s	1.3	1 extinguisher was fully discharged for 60-seconds.
5	Sledge Hammer	25	49-s	1.4	Immediately after discharging the extinguisher in Test Sequence 4, 25 impacts were delivered to the sample utilizing a Sledge Hammer. The sample was not penetrated, and did not allow passage of the contraband or body shape.

The sample successfully achieved a class 1.4 rating for both the contraband and body passage failure objects. The sample did not allow passage of the contraband and body passage failure objects after completing test sequence 5.