

Ballistic Testing Services

Report Number: BTR-09-06-2023-Sample 4

Phone: 800-513-4291 Email: [techsupport@CloseFocusResearch.com](mailto:techsupport@CloseFocusResearch.com)

CloseFocusResearch.com

Name: Ballistiglass LLC  
 Address: 1001 W Newport Center Dr #112, Deerfield Beach, FL 33441  
 Phone: Phone: 954 518-1820

Report Date: September 6, 2023  
 Contact: John W. Mehew  
 Email: [john.mehew@ballistiglass.com](mailto:john.mehew@ballistiglass.com)

**Ballistic Results**

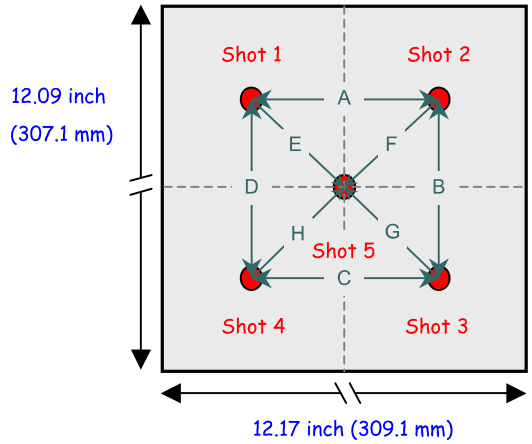
**Project Summary**  
 Type of Products to be tested: Bullet Resistant Glazing  
 Test Specimen Sample size(s): 12 x 12 inch  
 Number of test specimens: 4 Samples  
 Weight of all samples: 70.8 lbs  
 Are Materials a Health Hazard: No  
 Need the Tests performed by: within 5 to 7 days  
 Need products shipped back: No  
 Purchase Order Number: Not Applicable

**International Ballistic Standards / Specifications Testing**  
 ASTM  Canadian  FRA  NIJ  CFR Pass All  
 Australian  EN1063  Germ DIN  State Dept  CFR SYA  
 British  EN1522/23  MIL-SAMIT  UL 752  Other  
 Test Standard: Underwriters Laboratory UL752  
 Particular Test: UL Level 7 (.223 cal. 5.56 NATO FMJ)  
 Velocity Range: 3,080 to 3,388 ft/s  
 Shots: 5 shots  
 Shot Pattern: 4.5 inch ± 0.5 inch square

**Test Results**

Test Sample: Sample 4  
 Item: 4  
 Sample ID: AR-15  
 Description: Bullet Resistant Glazing  
 Sample Size: 12.09 x 12.17 inch (307.1 x 309.1 mm)  
 Thickness: 1.709 inch (43.4 mm)  
 Weight: 15.6 lbs (7.1 kg)  
 Weapon Type: .223 caliber / 5.56 NATO  
 Cartridge / Projectile Type: 5.56 NATO / M193 FMJ  
 Projectile Weight: 55 grains  
 Target Distance: 15 feet  
 Number of Shots: 5 shots

Shot Sequence:	Shot 1	Shot 2	Shot 3	Shot 4	Shot 5
Impact Velocity (ft/sec) *:	3,192	3,195	3,158	3,155	3,159
Impact Energy (ft-lbs):	1,244	1,246	1,218	1,215	1,219
Impact Momentum (lb-sec.):	0.78	0.78	0.77	0.77	0.77
Impact Angle (degrees):	0°	0°	0°	0°	0°
Sample Penetration:	NP	NP	NP	NP	NP
Witness Plate Penetration:	NP	NP	NP	NP	NP



Impact Spacing (inches)		
A	4.50	Average 4.43
B	4.50	
C	4.50	
D	4.20	
E	3.10	Average 3.18
F	3.40	
G	2.80	
H	3.40	

Witness Plate & Spall Result:

Witness plate material: 0.125 in. thick corrugated cardboard  
 Spall catch box: Not required  
 Witness / Box Distance: 18.0 inches  
 Spall Occurrence: No spall occurred  
 Test Temperature: 72 ° F  
 Test Date: September 06, 2023  
 Pass / Fail Results: Passed the Test  
 Comments:

NP = No Penetration  
 PP = Partial Penetration  
 CP = Complete Penetration  
 N/A = Not Applicable

**Footnotes**

\* Velocity measurements were taken at a distance of 6 feet from muzzle.

**Test and Report Engineers**

Tested and Reported by: Sam Raheb

Signature:

Date: September 6, 2023

Name: [Ballistiglass LLC](#)

Report Date: [September 6, 2023](#)

Ballistic Test Results and Photographs

**Ballistic Test Results:**

Test Sample 4 passed the Underwriters Laboratory UL752 UL Level 7 (.223 cal. 5.56 NATO FMJ) Ballistic test. There was no complete penetration of the test sample from any of the 5.56 NATO / M193 FMJ caliber projectiles.

**Witness Plate and Spall Effects:**

No spall occurred or damage to the 0.125 in. thick corrugated cardboard witness plate was observed.

Test and Report Engineers

Tested and Reported by: Sam Raheb

Signature: 

Date: [September 6, 2023](#)



# H.P. White Laboratory, Inc.

## BALLISTIC RESISTANCE TEST

Client : 7122: BALLISTIGLASS LLC.

Job No. : 000008857      Test Date : 10/29/18

### TEST PANEL

Manufacturer : BALLISTIGLASS LLC.

Size : 12 X 12 in.

Thicknesses : 1.620, 1.619, 1.625, 1.621 in.

Avg. Thick : 1.621 in.

Description : LIGHTWEIGHT TRANSPARENT ARMOR, FRAMED

Sample No. : BALLISTIMAX-AR-15

Weight : 14.33 lbs.

Hardness : NA

Plies/Laminates : NA

Date Rec'd. : 10/24/18

Via :

Returned :

### SET-UP

Shot Spacing : 3 ON A 120mm TRIANGLE

Witness Panel : 0.020", 2024-T3 ALUMINUM

Obliquity : 0 deg.

Backing Material : NA

Conditioning : AMBIENT

Primary Vel. Screens : 5.0 ft., 10.0 ft.

Primary Vel. Location : 7.5 ft. From Muzzle

Residual Vel. Screens : NA

Residual Vel. Location : NA

Range to Target : 15.0 ft.

Target to Wit. : 6.0 in.

Range No. : 3

Temp. : 62 F

BP : 29.80 in. Hg

RH : 60%

Barrel No./Gun : R3/ .223

Gunner : LINKOUS

Recorder : BONSALL

### AMMUNITION

(1) : 5.56 x 45mm, M193, 55 gr.

(2) :

(3) :

(4) :

Lot No. : HPW-0078

Lot No. :

Lot No. :

Lot No. :

### APPLICABLE STANDARDS OR PROCEDURES

(1) : PER CUSTOMER REQUEST

(2) :

(3) :

Shot No.	Ammo.	Time 1 (usec)	Velocity 1 (ft/s)	Time 2 (usec)	Velocity 2 (ft/s)	Avg. Vel. (ft/s)	Penetration	Footnotes
1	1	1641	3047	1641	3047	3047	None	
2	1	1655	3021	1655	3021	3021	None	
3	1	1637	3054	1637	3054	3054	None	

<u>REMARKS :</u>	<u>FOOTNOTES :</u>



# H.P. White Laboratory, Inc.

## BALLISTIC RESISTANCE TEST

Client : 7122: BALLISTIGLASS LLC.

Job No. : 000008792      Test Date : 10/10/18

### TEST PANEL

Manufacturer : BALLISTIGLASS LLC.

Size : 12 X 12 in.

Thicknesses : 1.319, 1.320, 1.314, 1.319 in.

Avg. Thick : 1.318 in.

Description : LIGHTWEIGHT TRANSPARENT ARMOR, FRAMED

Sample No. : BALLISTAMAX-AK-47

Weight : 11.47 lbs.

Hardness : NA

Plies/Laminates : NA

Date Rec'd. : 10/5/18

Via :

Returned :

### SET-UP

Shot Spacing : 3 ON A 120mm TRIANGLE

Witness Panel : 0.020", 2024-T3 ALUMINUM

Obliquity : 0 deg.

Backing Material : NA

Conditioning : AMBIENT

Primary Vel. Screens : 10.0 ft., 20.0 ft.

Primary Vel. Location : 15.0 ft. From Muzzle

Residual Vel. Screens : NA

Residual Vel. Location : NA

Range to Target : 25.0 ft.

Target to Wit. : 6.0 in.

Range No. : 3

Temp. : 70 F

BP : 30.10 in. Hg

RH : 68%

Barrel No./Gun : R3/ 7.62 x 39

Gunner : LINKOUS

Recorder : BONSALL

### AMMUNITION

(1) : 7.62 x 39mm, FMJ,LC, 123 gr.

(2) :

(3) :

(4) :

Lot No. : HPW- 0062

Lot No. :

Lot No. :

Lot No. :

### APPLICABLE STANDARDS OR PROCEDURES

(1) : PER CUSTOMER REQUEST

(2) : Required Velocity: 2300-2400 fps.

(3) :

Shot No.	Ammo.	Time 1 (usec)	Velocity 1 (ft/s)	Time 2 (usec)	Velocity 2 (ft/s)	Avg. Vel. (ft/s)	Penetration	Footnotes
1	1	4400	2273	4409	2268	2270	None	
2	1	4382	2282	4386	2280	2281	None	
3	1	4391	2277	4395	2275	2276	None	

<u>REMARKS :</u>	<u>FOOTNOTES :</u>

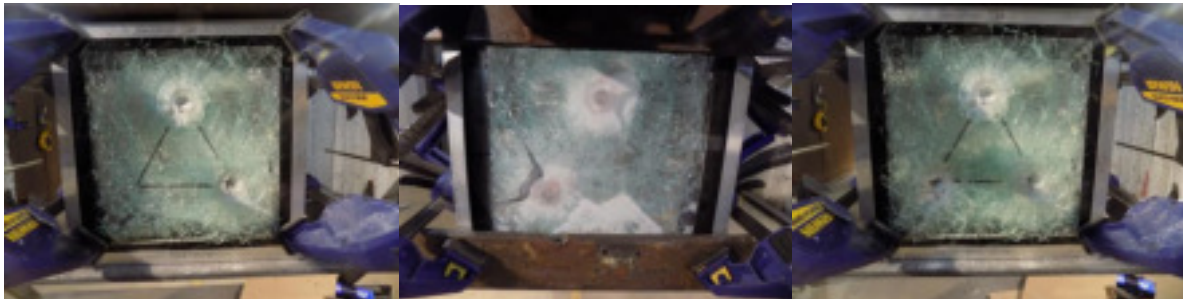
BALLISTIGLASS – BALLISTIMAX – AR-15 TEST WITH 3 ROUNDS (5.56 X 45 MM, M193, 55 GRAIN)



FRONT BEFORE

FRONT – SHOT #1

BACK – SHOT #1



FRONT – SHOT #2

BACK – SHOT #2

FRONT – SHOT #3



BACK – SHOT #3 (NO PENETRATIONS)