Element U.S. Space & Defense Test Report for Ballistic Resistance Testing

Project No.: PH00019139B Tested: 18 June 2026 P.O. No.: Signed Quote OH32084

Prepared For
Optima Ballistic Glass Colombia S.A.S | Zona Franca La Cayena Mz K Lote In 45 A. | Barranquilla, Colombia
Attention: Julio Rodriguez

Prepared By
Element U.S. Space & Defense | 4603B Compass Point Road | Belcamp, MD 21017 | 410.297.8154 | www.elementdefense.com

Kate Zurner
Technical Writer

Jennifer Long
Project Manager

Further dissemination only as directed by Optima Ballistic Glass Colombia S.A.S, June 2026.

This report and the information contained herein represent the results of testing articles/products identified and selected by the client. The tests were performed to specifications and/or procedures approved by the client. Element U.S. Space & Defense makes no representations expressed or implied that such testing fully demonstrates efficiency, performance, reliability, or any other characteristic of the articles being tested, or similar products. This report should not be relied upon as an endorsement or certification by Element U.S. Space & Defense of the equipment tested, nor does it represent any statement whatsoever as to its merchantability or fitness of the test article or similar products for a particular purpose. This document shall not be reproduced except in full without written approval from Element U.S. Space & Defense.

WARNING - This document contains technical data whose export is restricted by the Arms Export Control Act (Title 22, U.S.C., Sec 2751, et q.) or the Export Administration Act of 1979, as amended, Title 50, U.S.C., App. 2401 et seq. Violations of these export laws are subject to severe criminal penalties. Disseminate in accordance with provisions of DoD Directive 5230.25.

This information may be subject to the International Traffic in Arms Regulations (ITAR) pursuant to 22 C.F.R. Part 120-130. Transfer of this data by any means to a non-U.S. Person, whether in the United States or abroad without the proper U.S. government authorization is strictly prohibited. A violation of the ITAR may be subject to both criminal and administrative penalties under the Arms Export Control Act of 1976 (as amended).

Element U.S. Space & Defense is an independent testing facility and has no affiliation with Optima Ballistic Glass Colombia S.A.S.

OPTIMA BALLISTIC GLASS S.A.S. PROPRIETARY INFORMATION

Revision History

Rev.	Description	Issue Date
0	Initial Release	22 June 2026

OPTIMA BALLISTIC GLASS S.A.S. PROPRIETARY INFORMATION

BALLISTIC RESISTANCE TEST

Element U.S. Space & Defense
4603B Compass Point Road
Belcamp, MD 21017

Client: Optima Ballistic Glass Colombia S.A.S.
Project No.: PH00019139-4
Test Date: 06/18/2026
Page 1 of 1

Test Panel

Description: Transparent sample.

Manufacturer: Optima Ballistic Glass Colombia S.A.S.

Sample No.: (.44 Mag, V0) 28101-101

Size: 495.30 x 495.30 mm
Avg. Thickness: 22.206 mm
Thicknesses: 22.225 mm, 22.174 mm, 22.200 mm, 22.225 mm

Weight: 11.340 kg
Plies/Laminates: N/A

Date Received: 05/05/2026

Setup

Shot Spacing: 3 shots on 120 mm triangle
Witness Panel: .001 in Aluminum foil
Backing Material: N/A
Condition: Ambient

Primary Vel. Screens (m): 1.980, 2.080, 3.400, 3.510
Primary Vel. Location (m): 2.743
Range to Target (m): 4.999
Target to Witness (mm): 499.872

Range No.: Range 1
Temp: 20.2 °C
BP: 30.2 inHg
RH: 43.7 %
Barrel/Gun: EL00000170
Gunner: Jacob Arisman
Recorder: Isaiah Lookingbill

Ammunition

Projectile	Lot No.	Manufacturer	Powder
(1) .44 Mag., 240-grain FMC-FN	NA	Magtech	Accurate No. 5

Applicable Standards or Procedures

(1) EN 1063 BR4
(2) Customer Request

Shot No.	Ammo	Powder/ Seating	Weight (gr)	Time 1 (µs)	Vel. 1 (m/s)	Time 2 (µs)	Vel.2 (m/s)	Avg. Vel. (m/s)	Striking Vel. (m/s)	Penetration	Obliq. (°)	Footnotes
1	1	15.0	239.8	3441.0	442.9	2977.0	443.5	443.18	443.18	None	0	
2	1	15.0	239.9	3407.0	447.4	2948.0	448.1	447.75	447.75	None	0	
3	1	15.0	240.0	3431.0	444.1	2970.0	444.7	444.40	444.40	None	0	

Remarks:
Required Velocity: 430 - 449.6 m/s.
Projectile Yaw Check: 0° Yaw on All Impacts.

Footnotes:
N/A

OPTIMA BALLISTIC GLASS S.A.S. PROPRIETARY INFORMATION

BALLISTIC RESISTANCE TEST

Element U.S. Space & Defense
4603B Compass Point Road
Belcamp, MD 21017

Client: Optima Ballistic Glass Colombia S.A.S.
Project No.: PH00019139-5
Test Date: 06/18/2026
Page 1 of 1

Test Panel

Description: Transparent sample.

Manufacturer: Optima Ballistic Glass Colombia S.A.S.

Sample No.: (.44 Mag, V0) 28101-102

Size: 495.30 x 495.30 mm
Avg. Thickness: 22.212 mm
Thicknesses: 22.200 mm, 22.174 mm, 22.174 mm, 22.301 mm

Weight: 11.340 kg
Plies/Laminates: N/A

Date Received: 05/05/2026

Setup

Shot Spacing: 3 shots on 120 mm triangle
Witness Panel: .001 in Aluminum foil
Backing Material: N/A
Condition: Ambient

Primary Vel. Screens (m): 1.980, 2.080, 3.400, 3.510
Primary Vel. Location (m): 2.743
Range to Target (m): 4.999
Target to Witness (mm): 499.872

Range No.: Range 1
Temp: 20.3 °C
BP: 30.2 inHg
RH: 45.4 %
Barrel/Gun: EL00000170
Gunner: Jacob Arisman
Recorder: Isaiah Lookingbill

Ammunition

Projectile	Lot No.	Manufacturer	Powder
(1) .44 Mag., 240-grain FMC-FN	NA	Magtech	Accurate No. 5

Applicable Standards or Procedures

(1) EN 1063 BR4
(2) Customer Request

Shot No.	Ammo	Powder/ Seating	Weight (gr)	Time 1 (µs)	Vel. 1 (m/s)	Time 2 (µs)	Vel.2 (m/s)	Avg. Vel. (m/s)	Striking Vel. (m/s)	Penetration	Obliq. (°)	Footnotes
1	1	15.0	240	3448.0	442.0	2982.0	442.9	442.57	442.57	None	0	
2	1	15.0	240	3458.0	440.7	2992.0	441.4	441.05	441.05	None	0	
3	1	15.0	240	3421.0	445.6	2960.0	446.2	445.92	445.92	None	0	

Remarks:
Required Velocity: 430 - 449.6 m/s.
Projectile Yaw Check: 0° Yaw on All Impacts.

Footnotes:
N/A

OPTIMA BALLISTIC GLASS S.A.S. PROPRIETARY INFORMATION

BALLISTIC RESISTANCE TEST

Element U.S. Space & Defense
4603B Compass Point Road
Belcamp, MD 21017

Client: Optima Ballistic Glass Colombia S.A.S.
Project No.: PH00019139-6
Test Date: 06/18/2026
Page 1 of 1

Test Panel

Description: Transparent sample.

Manufacturer: Optima Ballistic Glass Colombia S.A.S.

Sample No.: (.44 Mag, V0) 28101-103

Size: 495.30 x 495.30 mm
Avg. Thickness: 22.358 mm
Thicknesses: 22.377 mm, 22.352 mm, 22.327 mm, 22.377 mm

Weight: 11.460 kg
Plies/Laminates: N/A

Date Received: 05/05/2026

Setup

Shot Spacing: 3 shots on 120 mm triangle
Witness Panel: .001 in Aluminum foil
Backing Material: N/A
Condition: Ambient

Primary Vel. Screens (m): 1.980, 2.080, 3.400, 3.510
Primary Vel. Location (m): 2.743
Range to Target (m): 4.999
Target to Witness (mm): 499.872

Range No.: Range 1
Temp: 20.3 °C
BP: 30.2 inHg
RH: 44.7 %
Barrel/Gun: EL00000170
Gunner: Jacob Arisman
Recorder: Isaiah Lookingbill

Ammunition

Projectile	Lot No.	Manufacturer	Powder
(1) .44 Mag., 240-grain FMC-FN	NA	Magtech	Accurate No. 5

Applicable Standards or Procedures

(1) EN 1063 BR4
(2) Customer Request

Shot No.	Ammo	Powder/ Seating	Weight (gr)	Time 1 (µs)	Vel. 1 (m/s)	Time 2 (µs)	Vel.2 (m/s)	Avg. Vel. (m/s)	Striking Vel. (m/s)	Penetration	Obliq. (°)	Footnotes
1	1	15.0	240.1	3463.0	440.1	2994.0	441.0	440.74	440.74	None	0	
2	1	15.0	240.1	3385.0	450.2	2928.0	451.1	450.49	450.49	None	0	
3	1	15.0	240.2	3412.0	446.5	2955.0	446.8	446.84	446.84	None	0	

Remarks:
Required Velocity: 430 - 449.6 m/s.
Projectile Yaw Check: 0° Yaw on All Impacts.

Footnotes:
N/A

OPTIMA BALLISTIC GLASS S.A.S. PROPRIETARY INFORMATION

ATTACHMENT A
CALIBRATION DATA

Asset Number	Asset Type	Manufacturer	Model	Calibrated	Due
WC027072	Measurement Tools (Angle Gauge)	SPI	91-316-0	02/24/2026	02/24/2027
WC027147	Meter (Chronograph)	YIS/Cowden Group, Inc	Chrono USB	09/22/2025	09/22/2026
WC067021	Meter (Chronograph)	YIS/Cowden Group, Inc	Chrono-USB (17025)	09/22/2025	09/22/2026
WC075083	Scale (Digital)	RCBS	Charge Master 1500	11/19/2025	11/19/2026
WC078618	Measurement Tools (Tape Measure)	Craftsman	CMHT37525	09/26/2025	09/26/2026
WC079302	Scale (Floor)	Torbal Scales	BA153C	12/18/2025	12/18/2026
WC079394	Gauge (Depth)	Starrett	3753A-6/150	01/19/2026	01/19/2027
EL00003996	Measurement Tools (Tape Measure)	Craftsman	CMHT37525	12/29/2025	12/29/2026
EL00000256	Sensor (Temperature/Humidity)	Onset	MX1101	09/30/2025	09/30/2026
WC079418	Tower (Drop, Penetration)	Chesapeake Testing	NIJ Drop Sphere	09/04/2025	09/04/2026

OPTIMA BALLISTIC GLASS S.A.S. PROPRIETARY INFORMATION

END OF REPORT

OPTIMA BALLISTIC GLASS S.A.S. PROPRIETARY INFORMATION