

# National Technical Systems Test Report for Ballistic Resistance Testing

**Project No.:** PH00005236B    **Tested:** 8 February 2023    **Purchase Order No.:** Signed quote


**Prepared For**

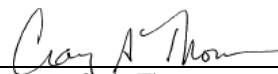
Optima Ballistic Glass Colombia S.A.S | Zona Franca La Cayena Mz K Lote In 45 A. | Barranquilla, Colombia

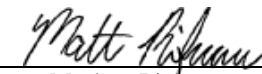
**Attention:** Mr. Julio Rodriguez

**Prepared By**

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Further dissemination only as directed by Optima Ballistic Glass Colombia S.A.S, February 2023.

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NTS-Belcamp is an independent testing facility and has no affiliation with Optima Ballistic Glass Colombia S.A.S.

### Revision History

Rev.	Description	Issue Date
0	Initial Release	February 2023

## BALLISTIC RESISTANCE TEST

**NTS-Belcamp**  
4603B Compass Point Road  
Belcamp, MD 21017

Client: Optima Ballistic Glass Colombia S.A.S.  
Project No.: PH000005236-1  
Test Date: 02/08/2023  
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**Test Panel** Description: Transparent Armor.

Manufacturer: Optima Ballistic Glass Colombia S.A.S. Sample No.: 15076-102-V

Size: 20.00 x 20.00 in  
Avg. Thickness: 2.182 in  
Thicknesses: 2.180 in, 2.184 in,  
2.184 in, 2.178 in

Weight: 69.770 lbs  
Plies/Laminates: N/A

Date Received: 02/01/2023  
Received Via: Freight, LTL  
Returned Via: Freight, LTL

### Setup

Shot Spacing: NIJ-STD-0108.01  
Level IV  
Witness Panel: 0.02 in 2024-T3 Al  
Backing Material: N/A  
Condition: Ambient

Primary Vel. Screens (ft): 6.500, 9.500  
Primary Vel. Location (ft): 8.000  
Range to Target (ft): 50.000  
Target to Witness (in): 6.000

Range No.: Range 2  
Temp: 68.2 °F  
BP: 30.1 inHg  
RH: 42.8 %  
Barrel/Gun: WC020650  
Gunner: Bernard Carr  
Recorder: Matt Skrocki

### Ammunition

Projectile	Lot No.	Manufacturer	Powder
(1) .30-06 cal, 166-grain APM2	TW45	Military	N133

### Applicable Standards or Procedures

(1) NIJ-STD-0108.01 Level IV

Shot No.	Ammo	Powder/ Seating	Weight (gr)	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Avg. Vel. (ft/s)	Penetration	Obliq. (°)	Footnotes
1	1	41.5	164.5	1041	2882	1044	2874	2878	None	0	

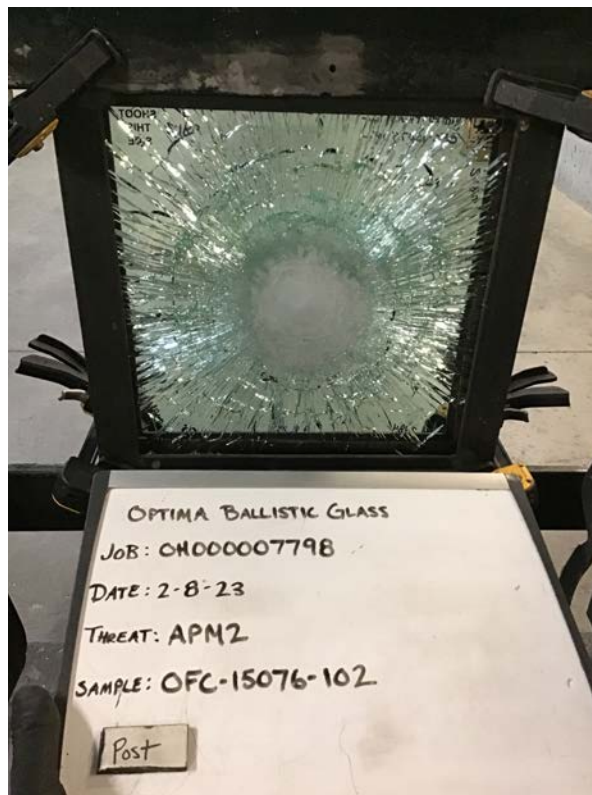
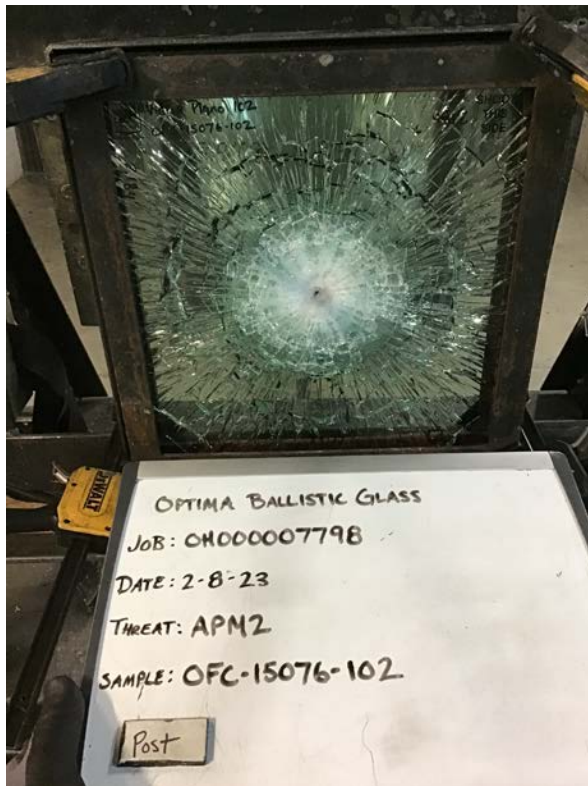
Remarks:

Required Velocity: 2800-2900 ft/s.  
Projectile Yaw Check: 0° Yaw on all Impacts.

Footnotes:

N/A

### ATTACHMENT A PHOTOGRAPHS



## ATTACHMENT B CALIBRATION DATA

Asset Number	Asset Type	Manufacturer	Model	Calibrated	Due
WC067008	Chronograph 1	YIS/Cowden Group, Inc	Chrono USB	11/11/2022	11/11/2023
WC027147	Chronograph 2	YIS/Cowden Group, Inc	Chrono USB	11/11/2022	11/11/2023
WC075105	Powder Scale	RCBS	1500	10/7/2022	10/7/2023
WC079303	Floor scale	Torbal Scales	BA153C	8/29/2022	2/28/2023
WC067391	Therm. Clock. Humidity Monitor	Control Company	4040	6/23/2022	6/23/2023
WC060412	100 ft Tape Measure	Starrett	530-100	7/26/2022	7/26/2024
WC078619	25 ft Tape Measure	Craftsman	CMHT37525	6/25/2021	6/25/2023
WC078617	25 ft Tape Measure	Craftsman	CMHT37525	6/25/2021	6/25/2023
WC075122	Thermometer	Control Company	4378	3/9/2021	3/9/2023
WC079363	Thermometer	Control Company	4378	11/4/2021	11/4/2023
WC075102	BFD Tool	Starrett	3753A-6/150	12/14/2022	12/14/2023
WC079394	BFD Bridge	Starrett	3753A-6/150	7/13/2022	7/13/2023
WC075116	Temp/ Humidity/BP Sensor	Omega Engineering	ZW-CM-BTH	3/18/2022	3/18/2023
WC060685	Angle Block	SPI	91-316-0	6/20/2022	6/20/2023

**END OF REPORT**