

# NTS Technical Systems Test Report for Ballistic Resistance Testing

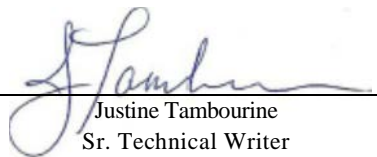
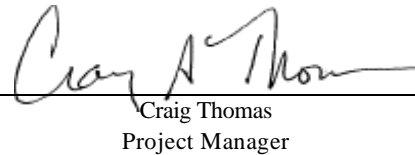
Project No.: PH00008018    Tested: 1 September 2023    P.O. No.: Signed Quote OH12054

**Prepared For**

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**Prepared By**

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

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### Revision History

Rev.	Description	Issue Date
0	Initial Release	20 September 2023

## BALLISTIC RESISTANCE TEST

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

Client: Optima Ballistic Glass Colombia S.A.S.  
Project No.: PH00008018-1  
Test Date: 09/01/2023  
Page 1 of 1

**Test Panel** Description: Transparent armor

Manufacturer: Optima Ballistic Glass Colombia S.A. Sample No.: (M193, V0) 16805-107 A1

Size: 12.00 x 12.00 in  
Avg. Thickness: 1.716 in  
Thicknesses: 1.719 in, 1.715 in,  
1.715 in, 1.715 in

Weight: 20.980 lbs  
Plies/Laminates: N/A

Date Received: 08/18/2023  
Received Via: FEDEX, Express  
Saver  
Returned Via: FEDEX, Express  
Saver

### Setup

Shot Spacing: UL 752 Level 7  
Witness Panel: .125 in Cardboard  
Backing Material: N/A  
Condition: Ambient

Primary Vel. Screens (ft): 5.000, 5.333,  
9.666, 10.000  
Primary Vel. Location (ft): 7.500  
Range to Target (ft): 15.000  
Target to Witness (in): 18.000

Range No.: Range 4  
Temp: 67.5 °F  
BP: 29.9 inHg  
RH: 45 %  
Barrel/Gun: WC024521  
Gunner: Keivin Guzman  
Recorder: Joshua Petty

### Ammunition

Projectile	Lot No.	Manufacturer	Powder
(1) 5.56 x 45-mm, 55-grain M193	NA	Military	N 110

### Applicable Standards or Procedures

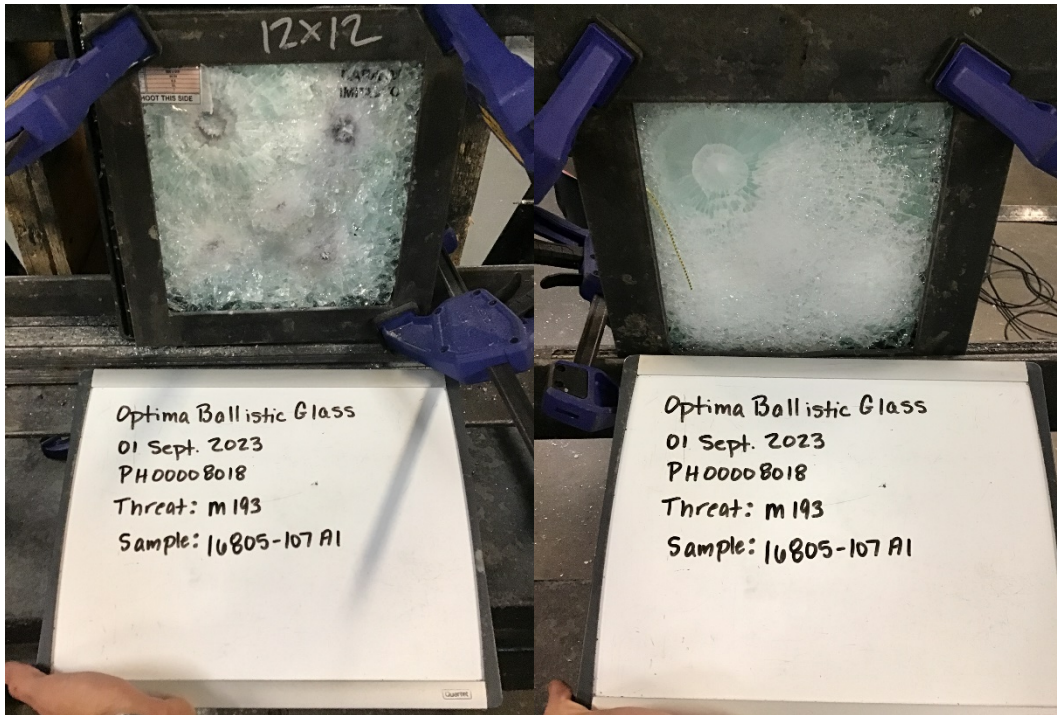
- (1) UL 752 Level 7
- (2) Customer Request

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	18.3	55	1574	3177	1364	3177	3177	None	0	
2	1	18.3	55	1576	3173	1364	3177	3175	None	0	
3	1	18.3	55	1569	3187	1356	3195	3191	None	0	
4	1	18.3	55	1578	3169	1368	3167	3168	None	0	
5	1	18.3	55	1564	3197	1351	3207	3202	None	0	

Remarks:  
Required Velocity: 3088-3388 ft/s  
Projectile yaw check: 0° yaw on all impacts  
Sample Tested in Rigid Frame

Footnotes:  
N/A

## ATTACHMENT A PHOTOGRAPHS



**END OF REPORT**