

REPORT NUMBER: A1111012-017

Test Performed For:
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Test Performed By:
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TEST AND TEST MATERIAL IDENTIFICATION

Contract: Contract Number Purchase Order

Material Identification: Panel Description	Optima Ballistic Glass		Lot Number	N/A
	Model Number	N/A	Piece Number	9424-109
		Serial Number	N/A	Panel Weight Dry (lbs.)
	Size	40.76mm x 500mm x 500mm	Panel Weight Wet (lbs.)	N/A
			Measured Thickness	1.601"
			Date of Manufacture	N/A
		Date Tested	15-Apr-21	

Laboratory Conditions: Temperature (°C)	20	Clay Calibration (mm)	N/A
	Relative Humidity (%)		33

Velocity Measurement 3 Oehler Model 57 Infrared Photoelectric Screens with Oehler Chronograph Model 30 (V1) and Hewlett Packard **Instrumentation:** Model 5315A (V2) Universal Counter reading the bullet time of flight on a 2 and 1 metre distance.

Firing Range: Distance between the front face of the Test material and the muzzle of the test barrel

Test Barrel: **Calibre:** .308 Winchester **Length:** 32 inch **Twist rate:** 1-10 inch **Manufacturer:** Shilen Inc.

Loading Components:	Case	Winchester .308 R-P	Primer	CCI BR-2
	Powder	IMR 4227	Bullet Manufacturer	N/A

Test Specification: V_{proof} Ballistic Bullet-Resistant Glazing Test in a dry condition in accordance with EN 1063:2000 Level BR-6. Using NATO Ball 7.62 x 51 mm full steel jacket, soft core, 150 grain bullets (M80) with a velocity range between 820m/s and 840m/s, and a 120 mm equilateral triangle shot pattern located at the centre of the test article. An aluminum witness foil is placed 19.75 inches behind the target to determine penetration.

BALLISTIC RESULTS

Shot Number	Shot Load (grains)	Shot Angle (degrees)	Instrumentation Velocity (m/s) [(V ₁ +V ₂)/2]	Penetration: Partial or Complete	Deformation Depth (mm)	Fair or Unfair Impact	Shot Counted (m/s)	Splinters or No Splinters
1	33.4	0	824	Partial	N/A	Fair	824	NS
2	33.4	0	823	Partial	N/A	Fair	823	NS
3	33.4	0	847	Partial	N/A	Fair	847	NS
Average velocity:							831	

Does this armour meet or exceed the specified requirements?

Test Performed By:
 Daniel Lavallee

Test Results Checked By:
 Hailom Gebremeskel, B.Eng.