



October 12, 2018

Boydd Products, Inc.
19510 Van Buren Blvd. F3-259
Riverside, CA 92508
ATTN: James Boydd

Dear Mr. Boydd:

In accordance with your instructions, Oregon Ballistic Laboratories conducted Ballistic Resistance (V_0) testing on two samples.

The samples were tested in accordance with NIJ-STD-0101.06 Level III (abbreviated) (modified) in an indoor range with the muzzle of the test barrel mounted 50 feet away from the target and positioned to produce 0-degree obliquity impacts. Four infrared light screens, in conjunction with time-based frequency counters, were positioned such that bullet velocity was measured 8.25 feet from the target. Penetrations were determined by examination of a 5.5-inch clay block mounted behind the test sample. Results for all testing performed for this purpose are summarized in the following table.

Test Sample			Ballistic Threat				Results			
OBL No.:	S/N.:	Weight (lbs.)	Projectile	Shots	Velocity (fps)		Penetrations	BFD (mm)		Pass/Fail
					Min.	Max.		Min.	Max.	
19973	N/A	4.90	M80 Steel	6	2757	27997	0	38.12	40.61	<u>PASS</u>
19974	N/A	4.90	SS109/M855	6	3106	3130	0	12.34	18.05	<u>PASS</u>

Samples will be maintained at Oregon Ballistic Laboratories for 30 days and then discarded, unless other instructions are received. If you have any further questions or concerns, please contact us.

Sincerely,

Brandon Bertsch
Oregon Ballistic Laboratories



OREGON BALLISTIC LABORATORIES

BALLISTIC RESISTANCE TEST - V₀

Customer: Boydd Products
OBL ID#: 19973
Test Date: 10/8/2018
Purchase Order:

TEST SAMPLE

Serial No.: N/A
Model No.: N/A
Lot No.: N/A
Plies: N/A
Description: Level III HA Plate

Size (in.): 10 x 12
Weight (lb.): 4.90
Thickness:
Avg. Thk. (in):

RANGE SET-UP

Range to Target: 50 ft.
Screen Dist. Vel. 1 (ft.): 5
Screen Dist. Vel. 2 (ft.): 5
Screen 4 to target (ft): N/A
Primary Vel. Location: 8.25 ft. from target
Striking Velocity: No
Target to Witness: N/A
Witness Panel: N/A
Backing Material: 5.5" clay block w/ 3/4" plywood backing
Obliquity: 0 Degrees
Barrel: .308/1:9/24"

Range #: 2
Temperature: 65.8 °F
Bar. Pressure: 30.10 in. Hg
Rel. Humidity: 63.3 %
Sample Temp. Amb. °F
Recorder: Jesse Crisanti
Gunner: Joe Cowan

Pre Test:
Clay Drops (mm): 17.22 19.55 18.48 18.81 19.13
Drop Avg (mm): 18.64
Clay Temp °F: 99.5
Clay Box #: 1
Post Test:
Clay Drops (mm): 17.32 17.63 19.22 16.87 17.57
Drop Avg (mm): 17.72
Clay Temp °F: 97.0

AMMUNITION

Projectile: 7.62x51mm 147gr. M80 Ball Steel Jacket

Powder: IMR 3031

STANDARDS / PROCEDURES

NIJ-STD-0101.06 Level III (abbrev) (mod)

Required Velocity: 2780 fps ± 30 fps

SHOT NO.	PROJECTILE WT. (gr.)	POWDER WT. (gr.)	TIME 1 μ s (10^{-6})	TIME 2 μ s (10^{-6})	VELOCITY 1 ft/s	VELOCITY 2 ft/s	AVERAGE VELOCITY	PENET. P/C	OBLIQUITY	CALIPER BFD	NOTES
1	148.7	39.9	1815	1810	2755	2762	2759	P	0°	38.12	
2	148.0	39.9	1792	1784	2790	2803	2797	P	0°	40.61	
3	148.5	39.9	1818	1819	2750	2749	2750	P	0°		
4	148.4	39.9	1791	1787	2792	2798	2795	P	0°		
5	148.3	39.9	1793	1792	2789	2790	2790	P	0°		
6	148.5	39.9	1814	1813	2756	2758	2757	P	0°		

REMARKS:

P=Partial Penetration
C=Complete Penetration
UH=Unfair Hit

TEST RESULTS:

Test sample satisfied the ballistic requirements given.

FOOTNOTES:

Sample was subjected to Armor Drop Test per section 6.2.3.4
Sample was subjected to Armor Submersion per section 7.8.2



OREGON BALLISTIC LABORATORIES

BALLISTIC RESISTANCE TEST - V₀

Customer: Boydd Products
OBL ID#: 19974
Test Date: 10/8/2018
Purchase Order:

TEST SAMPLE

Serial No.: N/A
Model No.: N/A
Lot No.: N/A
Plies: N/A
Description: Level III HA Plate

Size (in.): 10 x 12
Weight (lb.): 4.90
Thickness:
Avg. Thk. (in):

RANGE SET-UP

Range to Target: 50 ft.
Screen Dist. Vel. 1 (ft.): 5
Screen Dist. Vel. 2 (ft.): 5
Screen 4 to target (ft): N/A
Primary Vel. Location: 8.25 ft. from target
Striking Velocity: No
Target to Witness: N/A
Witness Panel: N/A
Backing Material: 5.5" clay block w/ 3/4" plywood backing
Obliquity: 0 Degrees
Barrel: 5.56mm NATO/1:7/30"

Range #: 2
Temperature: 65.8 °F
Bar. Pressure: 30.10 in. Hg
Rel. Humidity: 63.3 %
Sample Temp. Amb. °F
Recorder: Jesse Crisanti
Gunner: Joe Cowan

Pre Test:
Clay Drops (mm): 17.22 19.55 18.48 18.81 19.13
Drop Avg (mm): 18.64
Clay Temp °F: 99.5
Clay Box #: 1
Post Test:
Clay Drops (mm): 17.32 17.63 19.22 16.87 17.57
Drop Avg (mm): 17.72
Clay Temp °F: 97.0

AMMUNITION

Projectile: 5.56mm SS109/M855 Ball

Powder: IMR 4227

STANDARDS / PROCEDURES

NIJ-STD-0101.06 Level III (abbrev) - Special Threat

Required Velocity: 3115 fps ± 30 fps

SHOT NO.	PROJECTILE WT. (gr.)	POWDER WT. (gr.)	TIME 1 μ s (10 ⁻⁶)	TIME 2 μ s (10 ⁻⁶)	VELOCITY 1 ft/s	VELOCITY 2 ft/s	AVERAGE VELOCITY	PENET. P/C	OBLIQUITY	CALIPER BFD	NOTES
1	62.1	20.6	1600	1601	3125	3123	3124	P	0°	12.34	
2	62.4	20.6	1609	1606	3108	3113	3111	P	0°	18.05	
3	62.4	20.6	1603	1599	3119	3127	3123	P	0°		
4	62.3	20.6	1598	1597	3129	3131	3130	P	0°		
5	62.2	20.6	1608	1609	3109	3108	3109	P	0°		
6	62.3	20.6	1611	1609	3104	3108	3106	P	0°		

REMARKS:

P=Partial Penetration
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TEST RESULTS:

Test sample satisfied the ballistic requirements given.

FOOTNOTES:

Sample was subjected to Armor Drop Test per section 6.2.3.4
Sample was subjected to Armor Submersion per section 7.8.2