



**OREGON BALLISTIC LABORATORIES**  
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 www.oregonbl.com

May 22, 2012

**[REDACTED]**  
 Attn: **[REDACTED]**

Dear Mr. **[REDACTED]**:

In accordance with your instructions, Oregon Ballistic Laboratories conducted Ballistic Limit ( $V_{50}$ ) testing on one steel plate.

The plate was tested to **[REDACTED]** in an indoor range with the muzzle of the test barrel mounted 15 feet away from the target and positioned to produce 0 degree obliquity impacts. Four infrared velocity light screens, in conjunction with time-based frequency counters, were positioned such that projectile velocity was measured 8.25 feet from the target. Penetrations were determined by examination of a piece of 0.020 inch thick 2024 T-3 aluminum mounted 6 inches behind and parallel to the test sample. Results for all testing performed for this purpose are summarized in the following table.

Test Sample			Threat	Results				
S/N	Weight (lbs)	Average Thickness (in.)	Projectile	High Partial	Low Complete	Range of Results	Mixed Results	$V_{50}$
<b>[REDACTED]</b>	7.06	0.508	.30 cal FSP	2129	2187	73	—	2159

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

# BALLISTIC LIMIT TEST V<sub>50</sub> BL(P)



Customer: ██████████	
OBL ID#: 5403	Start: 1000
Test Date: 5/17/12	Stop: 1025
Purchase Order: ██████████	

TEST SAMPLE	1	2	3	4
Sample No.: ██████████	Thickness: 0.508	0.508	0.507	0.507
Size (in.): 12 x 12	Avg. Thk. (in): 0.508			
Weight (lb.): 7.06	Hardness: N/A			
Description: ██████████				

RANGE SET-UP	Range #:
Range to Target: 15 ft.	2
Screen Dist. Vel. 1: 5 ft.	Temp.: 70.1 °F
Screen Dist. Vel. 2: 5 ft.	Pb: 30.06 in. Hg
Primary Vel. Location: 8.25 ft. from target	RH: 42.8 %
Witness Panel: 0.020" 2024-T3 Alum.	Recorder: Brandon Bertsch
Target to Witness: 6 in.	Gunner: Paul Frampton
Obliquity: 0 Degrees	
Barrel: 7.62x39mm/1:9.45/24"	

AMMUNITION	Powder:
Projectile: .30 cal FSP	IMR 4227

STANDARDS AND PROCEDURES	Required V <sub>50</sub> (ft/s):	V <sub>50</sub> Size:
██████████	2110	3P + 3C

SHOT NO.	PROJECTILE WT. (gr.)	POWDER WT. (gr.)	Time 1 µs (10 <sup>-6</sup> )	VELOCITY 1 ft/s	Time 2 µs (10 <sup>-6</sup> )	VELOCITY 2 ft/s	STRIKING VEL.	PENETRATION		INCLUDE Y/N	FOOTNOTES
								P	C		
1	44.0	16.5	2350	2128	2358	2120	2124	P		Y	See photo
2	44.1	17.5	2280	2193	2288	2185	2189		C	Y	
3	44.2	16.5	2342	2135	2355	2123	2129	P		Y	See photo
4	44.1	17.5	2281	2192	2292	2182	2187		C	Y	
5	44.0	16.5	2270	2203	2283	2190	2197		C	Y	
6	44.0	17.0	2344	2133	2353	2125	2129	P		Y	See photo

REMARKS:	RESULTS:
	V <sub>50</sub> : 2159
	No. of Points: 6
	High Partial: 2129
	Low Complete: 2187
	Range of Results: 73
	Range of Mixed Results: 49
	Margin: 49

Quality Manager:   
 \_\_\_\_\_  
 Mike DeWilde

Test Director:   
 \_\_\_\_\_  
 Brandon Bertsch

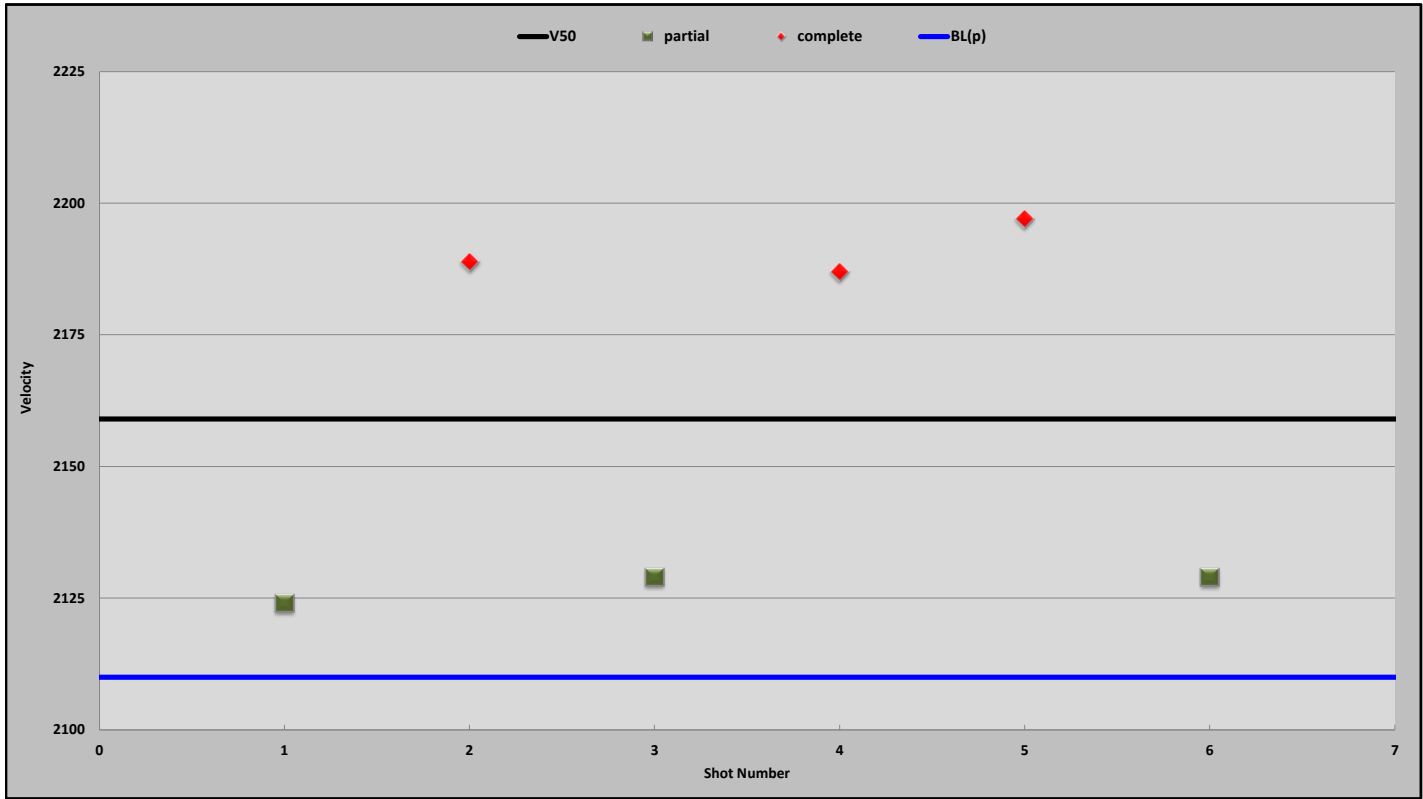
# BALLISTIC LIMIT TEST V<sub>50</sub> BL(P)



Customer:	[REDACTED]		
OBL ID#:	5403	Start:	1000
Test Date:	5/17/12	Stop:	1025
Purchase Order:			

TEST SAMPLE	1	2	3	4
Sample No.:	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Size (in.):	12 x 12			
Weight (lb.):	7.06			
Description:	[REDACTED]			
Thickness:	0.508	0.508	0.507	0.507
Avg. Thk. (in):	0.508			
Hardness:	N/A			

## Velocity vs. Shot Number



REMARKS:

RESULTS:	
V <sub>50</sub> :	2159
No. of Points:	6
High Partial:	2129
Low Complete:	2187
Range of Results:	73
Range of Mixed Results:	
Margin:	49

## Pre Test



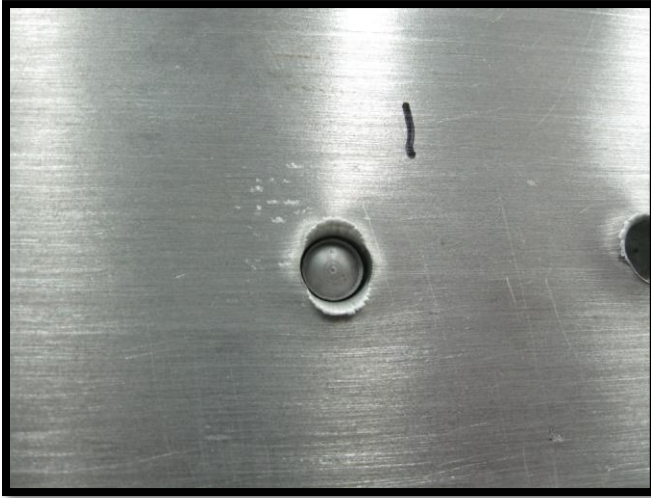
## Sample mounted in fixture



## Post Test – V50 = 2159 fps



## Shot #1



## Shot #3



## Shot #6

