

Close Focus Research

Ballistic Testing and Design Services
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Ballistic Test Report

Report Number: BTR-01-23-2006-TBD-Sample 1
 CloseFocusResearch.com

Name: Shooting Ranges International
 Address: 3885 Rockbottom St., North Las Vegas, NV. 89030
 Phone: Phone: 702-362-3623

Report Date: January 23, 2006
 Contact: Jake Cook
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Ballistic Results

Project Summary

Type of Products to be tested: **Metal Plate**
 Test Specimen Sample size(s): **12 x 12 inch**
 Number of test specimens: **1 sample**
 Weight of all samples: **15.35 lbs**
 Are Materials a Health Hazard: **No**
 Need the Tests performed by: **January 30, 2006**
 Need products shipped back: **Yes**
 Purchase Order Number: **TBD**

International Ballistic Standards / Specifications Testing

ASTM Brunswick FRA NIJ CFR Pass All
 Australian Canadian Germ DIN State Dept CFR SYA
 British EN 1063 MIL-SAMIT UL 752 Other
 Test Standard: **CFR Pass All**
 Particular Test: **CFR-PA-08 (7.62 NATO M80)**
 Velocity Range: **2,750 to 3,025 ft/s**
 Number of Shots: **5 shots**
 Spacing / Pattern: **4.3 inch square**

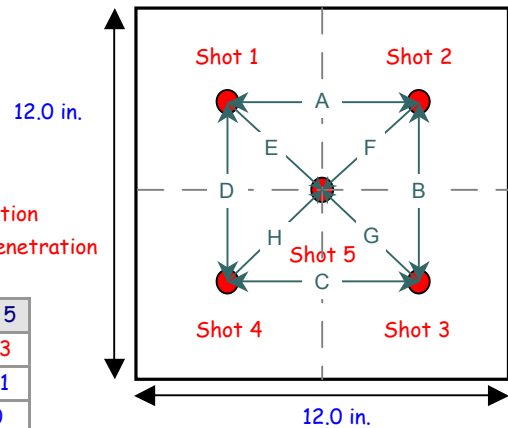
Test Results

Product Number: **Sample 1**
 Sample Type: **Metal Plate**
 Sample Size: **12.0 x 12.0 inch**
 Thickness: **0.375 in.**
 Weight: **15.35 lbs**
 Weapon Type: **7.62 Rifle**
 Cartridge / Projectile Type: **7.62 x 51 NATO M80**
 Projectile Weight: **147 gr**
 Target Distance: **15 ft**
 Number of Shots: **5 shots**

NP = No Penetration
 CP = Complete Penetration

Shot Sequence:	Shot 1	Shot 2	Shot 3	Shot 4	Shot 5
Impact Velocity (ft/sec) *:	2,772	2,770	2,773	2,759	2,763
Impact Energy (ft-lbs):	2,508	2,504	2,509	2,484	2,491
Impact Momentum (lb-sec.):	1.81	1.81	1.81	1.80	1.80
Impact Angle (degrees):	0°	0°	0°	0°	0°
Penetration Effect:	NP	NP	NP	NP	NP
Bulge Height (inches) **:	~0.02	~0.02	~0.02	~0.02	~0.02

Witness plate material: **0.001 in. thick Aluminum foil**
 Witness Plate Distance: **6 inches**
 Spall Occurrence: **None**
 Test Temperature: **70 °F**
 Test Date: **January 23, 2006**
 Comments: **Passed the Test**



Impact Spacing (inches)		
A	4.50	Average 4.48
B	4.28	
C	4.35	
D	4.80	
E	3.23	Average 3.20
F	2.95	
G	3.03	
H	3.57	

Comments and Test Descriptions

- * Velocity measurements were taken at a distance of 6.6 ft from muzzle
- ** The post impact Bulge Height is the distance between the apex of the extruded deformation bulge to the tangent plane of the flat surface. This measurement is taken from the side opposite to the impacts.

This Ballistic Report is made available with the permission of Shooting Ranges International. <http://www.shootingrangesintl.com>

Test and Report Engineers

Tested and Reported by: **Sam Wilson**

Signature: *Sam Wilson*

Date: **January 23, 2006**