Ballistic Testing and Design Services
Phone: 800-513-4291 Email: technicalsupport@CloseFocusResearch.com

Report Number: BTR-02-01-2006-TBD-Sample 2
CloseFocusResearch.com

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

Report Date:	February 1, 2006
Contact:	Jake Cook
Email:	Jakec@shootingrangesintl.com

Ballistic Results

Project Summary

Type of Products to be tested:	Ballistic Material
Test Specimen Sample size(s):	12 x 12 and 24 x 24 inch
Number of test specimens:	4 Samples
Weight of all samples:	115 lbs
Are Materials a Health Hazard:	No
Need the Tests performed by:	February 10, 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

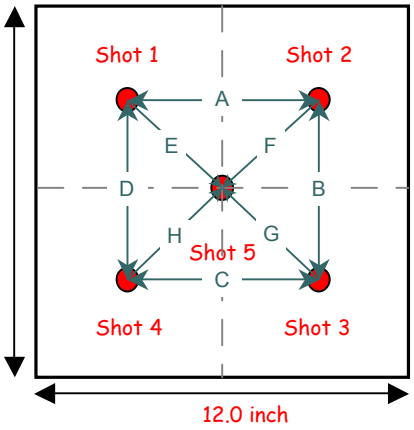
Test Standard:	CFR Pass All
Particular Test:	CFR-PA-08 (7.62 NATO M80) modified
Velocity Range:	2,750 to 3,025 ft/s
Number of Shots:	5 shots - shot at 30° angle
Spacing / Pattern:	4.3 inch square

Test Results

Product Number:	Sample 2 12 x 12 x 2.85 inch Composite
Sample Type:	Ballistic Material
Sample Size:	12.0 x 12.0 inch
Thickness:	2.85 inch
Weight:	23.5 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 - shot at 30° angle

NP = No Penetration
CP = Complete Penetration

Shot Sequence:	Shot 1	Shot 2	Shot 3	Shot 4	Shot 5
Impact Velocity (ft/sec) *:	2,927	2,936	2,929	2,934	2,921
Impact Energy (ft-lbs):	2,796	2,813	2,800	2,809	2,785
Impact Momentum (lb-sec.)	1.91	1.92	1.91	1.92	1.91
Impact Angle (degrees):	30 °	30 °	30 °	30 °	30 °
Penetration Effect:	NP	NP	NP	NP	NP
Bulge Height (inches) **:	0.00	0.00	0.00	0.00	0.00



Witness plate material:	0.001 in. thick Aluminum foil
Witness Plate Distance:	6 inches
Spall Occurrence:	None
Test Temperature:	74 °F
Test Date:	February 1, 2006
Comments:	Passed the Test

Impact Spacing (inches)		
A	4.48	
B	5.14	Average
C	4.32	4.57
D	4.35	
E	2.94	
F	3.58	Average
G	3.55	3.27
H	3.00	

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.

Test and Report Engineers

Tested and Reported by: Sam Wilson Signature: Sam Wilson Date: February 1, 2006

Ballistic Testing and Design Services
Phone: 800-513-4291 Email: technicalsupport@CloseFocusResearch.com

Name: Shooting Ranges International Report Date: February 1, 2006

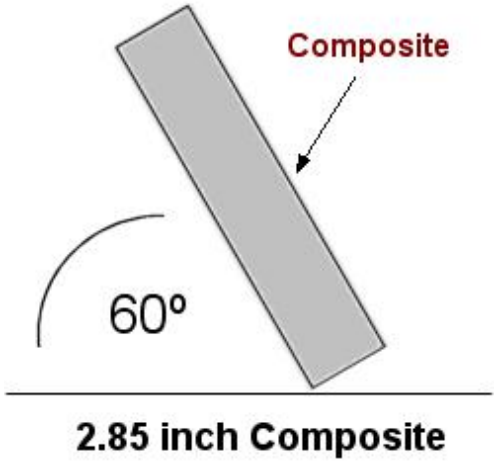
Ballistic Test Results and Photographs

Ballistic Test Results:

All five shots penetrated the impact surface but did not completely penetrate through sample. This Ballistic Material test sample passed the modified CFR Pass All - CFR-PA-08 (7.62 NATO M80) Ballistic test.

Witness Plate Spall Effects:

No Spall was observed.



2.85 inch Composite

Test and Report Engineers

Tested and Reported by: Sam Wilson Signature: Sam Wilson Date: February 1, 2006