

Ballistic Testing Services

Report Number: BTR-05-24-2009-Sample 2

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Name: ISBI Armoring Inc.
 Address: Kr. 26 No. 23A00, Bogota, Colombia
 Phone: Phone: 954 495 4881

Report Date: May 24, 2009
 Contact: John Murphy
 Email: john@isbi.us

Ballistic Results

Project Summary

Type of Products to be tested: Armor Glass and Opaque Armor
 Test Specimen Sample size(s): 12 in. x 12 in.
 Number of test specimens: 2 Sample(s)
 Weight of all samples: 43.5 lbs
 Are Materials a Health Hazard: No
 Need the Tests performed by: End of May
 Need products shipped back: Yes
 Purchase Order Number: Paid in Advanced

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: UL 752
 Particular Test: UL Level 10 (.50 cal FMJ Military Ball)
 Velocity Range: 2,810 to 3,091 ft/s
 Number of Shots: 1 shot
 Spacing / Pattern: Not Applicable

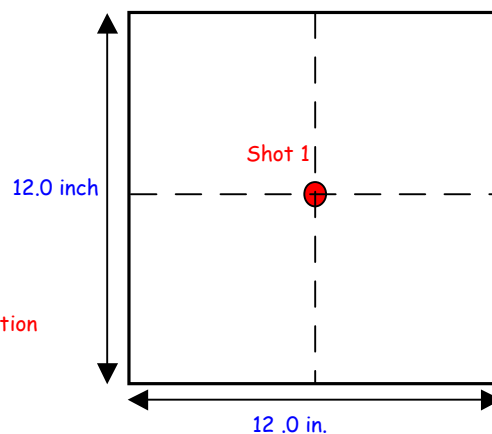
Test Results

Product Number: Sample 2
 Sample Type: Armored Glass
 Sample Size: 12.0 x 12 .0 in.
 Thickness: 3.280 inch
 Weight: 31.7 lbs
 Weapon Type: .50 Caliber Rifle
 Cartridge / Projectile Type: .50 cal. FMJ M2
 Projectile Weight: 700 gr
 Target Distance: 15 ft
 Number of Shots: 1 shot
 Shot Sequence:

Shot 1

 Impact Velocity (ft/sec) *: 2,831
 Impact Energy (ft-lbs): 12,455
 Impact Momentum (lb-sec): 8.80
 Impact Angle (degrees): 0 °
 Penetration Effect: NP
 Witness plate material: 0.125 in. thick corrugated cardboard
 Witness Plate Distance: 18 inches
 Spall Occurrence: None
 Test Temperature: 71 °F
 Test Date: May 24, 2009
 Comments: Passed the test

NP = No Penetration
 CP = Complete Penetration



Comments and Test Descriptions

* Velocity measurements were taken at a distance of 6.6 ft from muzzle

Test and Report Engineers

Tested and Reported by: Sam Raheb

Signature: Sam Raheb

Date: May 24, 2009

Name: **ISBI Armoring Inc.**

Report Date: **May 24, 2009**

Ballistic Test Results and Photographs

Ballistic Test Results:

The Armored Glass test sample passed the UL Level 10 (.50 cal FMJ Military Ball) Ballistic test.

Projectile Penetration Effects:

There was no partial or complete projectile penetration of the Armored Glass sample. The rear ply partially delaminated from the sample.

Witness Plate and Spall Effects:

No spall or damage to the 0.125 in. thick corrugated cardboard witness plate was observed.

Photographs

The following photographs show both the pre and post-test Armored Glass. Additional larger sized photographs are included with this report.

Sample 2 - UL 752 - Level 10 (.50 cal FMJ) - Armor Glass - 12 x 12 x 3.280 inch



Sample 2 Pre Test Impact Side



Sample 2 Pre Test Rear Side



Sample 2 Post Test Impact Side



Sample 2 Post Test Impact Side



Sample 2 Post Test Impact Side



Sample 2 Post Test Rear Side



Sample 2 Post Test Rear Side

Test and Report Engineers

Tested and Reported by: **Sam Raheb**

Signature: *Sam Raheb*

Date: **May 24, 2009**