

Ballistic Testing Services

Report Number: BTR-11-13-2008-N/A-Sample 3

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Report Date: November 13, 2008
 Contact: Bob Gray
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Ballistic Results

Project Summary
 Type of Products to be tested: Poly / Acrylic BR Material
 Test Specimen Sample size(s): 12 x 12 inch
 Number of test specimens: 6 Sample(s)
 Weight of all samples: 29 lbs
 Are Materials a Health Hazard: No
 Need the Tests performed by: November 19, 2008
 Need products shipped back: Yes
 Purchase Order Number: N/A

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 1 Part 3 (9 mm Parabellum FMJ)
 Velocity Range: 1,175 to 1,293 ft/s
 Number of Shots: 1 shot
 Spacing / Pattern: 1 to 1.50 in. unsupported edge shot

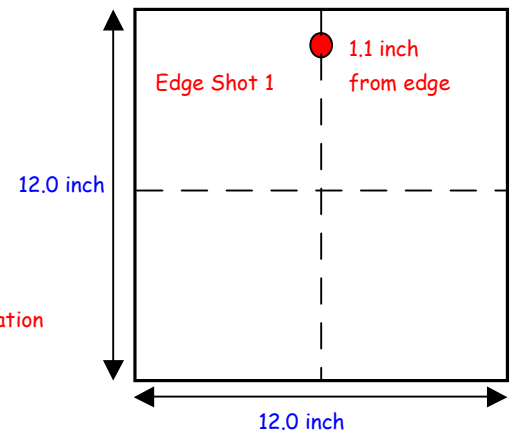
Test Results

Product Number: Sample 3
 Sample Type: Poly / Acrylic BR Material
 Sample Size: 12.0 x 12.0 inch
 Thickness: 0.798 inch
 Weight: 4.75 lbs
 Weapon Type: 9 mm Parabellum
 Cartridge / Projectile Type: 9 mm Parabellum FMJ
 Projectile Weight: 124 gr
 Target Distance: 15 ft
 Number of Shots: 1 shot
 Shot Sequence:

Shot 1

 Impact Velocity (ft/sec) *: 1,234
 Impact Energy (ft-lbs): 419
 Impact Momentum (lb-sec): 0.68
 Impact Angle (degrees): 0 °
 Penetration Effect: NP
 Bulge Height (inches) **: ~0.03
 Witness plate material: 0.125 in. thick corrugated cardboard
 Witness Plate Distance: 18 inches
 Spall Occurrence: None
 Test Temperature: 73 °F
 Test Date: November 13, 2008
 Comments: Passed the test

NP = No Penetration
 CP = Complete Penetration



Ballistic Test Results:
 The Poly / Acrylic BR Material test sample passed the UL Level 1 Part 3 (9 mm Parabellum FMJ) Ballistic test. However the sample partially delaminated upon removal from the test fixture.

Projectile Penetration Effects:
 There was no partial or complete projectile penetration of the Poly / Acrylic BR Material sample for the single shot test.

Witness Plate and Spall Effects:
 No spall was observed and no damage occurred to the

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 Raheb Signature: Sam Raheb Date: November 13, 2008