

Ballistic Testing Services

Report Number: BTR-03-13-2008-TBD-Sample 3

Phone: 800-513-4291 Email: techsupport@CloseFocusResearch.com

CloseFocusResearch.com

Name: Regal Plastic Supply Company
 Address: 2356 Merrell Road, Dallas, TX , 75229
 Phone: Phone: 800-441-1553

Report Date: March 13, 2008
 Contact: Bob Gray
 Email: rgray@regal-plastics.com

Ballistic Results

Project Summary

Type of Products to be tested: Laminated Polycarbonate
 Test Specimen Sample size(s): 12 x 12 inch
 Number of test specimens: 6 Sample(s)
 Weight of all samples: 37 lbs
 Are Materials a Health Hazard: No
 Need the Tests performed by: March 15, 2008
 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: 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 1.5 inch unsupported edge shot

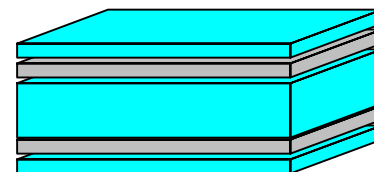
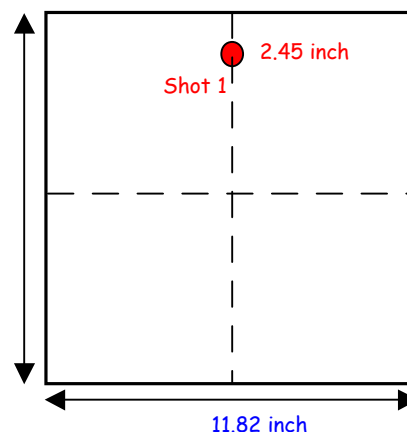
Test Results

Product Number: Sample 3
 Sample Type: Laminated Polycarbonate
 Sample Size: 11.82 x 11.82 inch
 Thickness: 0.794 inch
 Weight: 4.65 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) *: 1,223
 Impact Energy (ft-lbs): 412
 Impact Momentum (lb-sec): 0.67
 Impact Angle (degrees): 0 °
 Penetration Effect: CP
 Bulge Height (inches) **: N/A
 Witness plate material: 0.125 in. thick corrugated cardboard
 Witness Plate Distance: 18 inches
 Spall Occurrence: None
 Test Temperature: 73 °F
 Test Date: March 13, 2008
 Comments: Failed 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
- ** 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: March 13, 2008

Name: [Regal Plastic Supply Company](#)

Report Date: [March 13, 2008](#)

Ballistic Test Results and Photographs

Ballistic Test Results:

The Transparent Laminated Polycarbonate test sample failed the UL 752 Level 1 Part 3 (9 mm Parabellum FMJ) Ballistic test.

Projectile Penetration Effects:

There was complete projectile penetration of the Transparent Laminated Polycarbonate sample for the single shot.

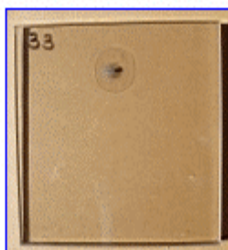
Witness Plate and Spall Effects:

No spall was observed. The projectile completely penetrated the 0.125 in. thick corrugated cardboard witness plate.

Photographs

The following photographs show the post-test Transparent Laminated Polycarbonate sample. Additional larger sized photographs are included with this report.

Sample 3 - UL 752 Level 1 Part 3 (9 mm Parabellum FMJ) - 11.82 x 11.82 x 0.794 inch



Post Test Impact Side



Post Test Impact Side



Post Test Rear Side



Post Test Rear Side

Test and Report Engineers

Tested and Reported by: Sam Raheb

Signature: *Sam Raheb*

Date: [March 13, 2008](#)