

Ballistic Testing Services

Report Number: BTR-03-13-2008-TBD-Sample 5

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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 3 Part 2 (.44 Magnum SWC)  
 Velocity Range: 1,350 to 1,485 ft/s  
 Number of Shots: 2 shots  
 Spacing / Pattern: 1.25 to 1.75 in.

**Test Results**

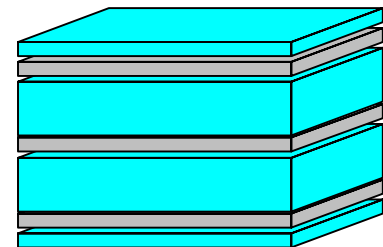
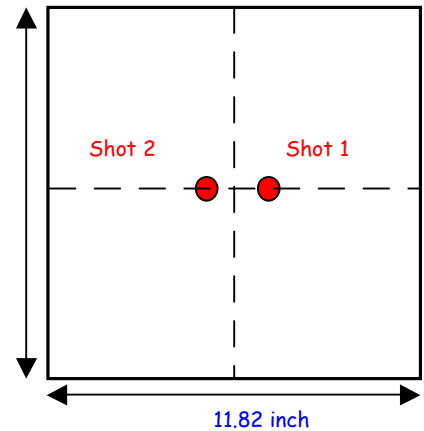
Product Number: Sample 5  
 Sample Type: Laminated Polycarbonate  
 Sample Size: 11.85 x 11.82 inch  
 Thickness: 1.275 inch  
 Weight: 7.61 lbs  
 Weapon Type: .44 Magnum  
 Cartridge / Projectile Type: .44 Magnum SWC  
 Projectile Weight: 240 gr  
 Target Distance: 15 ft  
 Number of Shots: 2 shots  
 Shot Sequence:

	Shot 1	Shot 2
Impact Velocity (ft/sec) *:	<u>1,425</u>	<u>1,477</u>
Impact Energy (ft-lbs):	<u>1,082</u>	<u>1,162</u>
Impact Momentum (lb-sec):	<u>1.52</u>	<u>1.57</u>
Impact Spacing (inches) **:	<u>N/A</u>	<u>1.65</u>
Impact Angle (degrees):	<u>0 °</u>	<u>0 °</u>
Penetration Effect:	<u>NP</u>	<u>NP</u>
Bulge Height (inches) ***:	<u>0.195</u>	<u>0.235</u>

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: Passed the Test

NP = No Penetration  
 CP = Complete Penetration

11.85 inch



**Comments and Test Descriptions**

- \* Velocity measurements were taken at a distance of 6.6 ft from muzzle
- \*\* Impact Spacing is the distance between shots. ( shot 1= 2 to 1, shot 2 = 1 to 2 )
- \*\*\* 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 passed the UL 752 Level 3 Part 2 (.44 Magnum SWC) Ballistic test. Shot #2 caused the sample to delaminate.

**Projectile Penetration Effects:**

There was no partial or complete projectile penetration of the Transparent Laminated Polycarbonate sample for both shots.

**Witness Plate and Spall Effects:**

No spall was observed. The 0.125 in. thick corrugated cardboard witness plate remained undamaged

**Photographs**

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

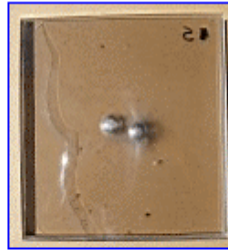
**Sample 5 - UL 752 Level 3 Part 2 (44 Magnum SWC) - 11.85 x 11.82 x 1.275 inch**



Post Test Impact Side



Post Test Impact Side



Post Test Rear Side



Post Test Rear Side



Post Test Top Side



Post Test Top Side

**Test and Report Engineers**

Tested and Reported by: Sam Raheb

Signature: *Sam Raheb*

Date: [March 13, 2008](#)