



Test Report T6289-01-2 Issue 1  
MIL-PRF-31013 (Ballistic Resistance)  
Bolle Safety  
8233 Ranger Spectacles  
27 April 2011



Certificate 1722.01

Approved by:

Prepared by:

A handwritten signature in blue ink that reads "Keith E. Whitten".

Keith E. Whitten  
Laboratory Manager

A handwritten signature in blue ink that reads "Cathy Woloszyn".

Cathy Woloszyn  
Laboratory Assistant

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Issued to: Bolle Safety  
9200 Cody  
Overland Park, KS 66214  
USA

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**Objective:**

Contract testing to MIL-PRF-31013 (25 April 1996) "Performance Specification-Spectacles, Special Protective Eyewear Cylindrical Systems (SPECS)".

Clause 3.5.1.1 Ballistics resistance

**Samples:**

8233 Ranger Spectacles

Lens Color	Frame Color	Quantity	Sample ID
Smoke	Black	30	9A
Red Mirror	Black	30	9B
Polarized	Black	30	9C

Date submitted: 04 April 2011

**Equipment:**

1. Pneumatic Air Gun.
2. Propellant, Nitrogen.
3. Fragment Simulating Projectiles (FSP), 0.15 caliber, 5.8 grain, 4340 steel, Hardness 30 +/- 2 Rockwell C.
4. Oehler Research Precision Ballistic Chronographs, two sets of screens with 1' spacing between start and stop. (Set 1: stop screen ~16.0" from sample, Set 2: stop screen ~ 12.5" from sample)
5. Ballistic Alderson 50<sup>th</sup> percentile headform with 0.002 inch witness sheet, nominally 2" behind sample.

**Procedures:**

Testing protocols in accord with good laboratory practice were employed for all tests.

All tests were conducted in a standard laboratory atmosphere unless otherwise specified.

Ten samples were selected at random from the quantity provided.

Samples were mounted on headform and impacted with a 0.15 caliber projectile a velocity of 640 to 660 ft/s. One impact per sample, normal to the front curve, coincident with either the right or left eye. Left and right impact locations were to the visual centers (a point centered on the horizontal center line and 32mm from the vertical center line).

Any velocity loss of the projectile is considered to be negligible with respect to the geometries of the test bench.

The result was considered to be a failure if the aluminum foil witness sheet was punctured or if the lens cracked through its entire thickness.

**Summary:**

Date tested: 20 April 2011

The samples as assessed met the ballistic resistance requirements for spectacles.

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**Results:**

Sample ID	Location	Velocity (ft/s)		Pass	Fail
		Set 1	Set 2		
<b><i>Smoke</i></b>					
9A-21	Right	656	654	X	
9A-22	Right	656	654	X	
9A-23	Right	654	652	X	
9A-24	Right	656	654	X	
9A-25	Right	657	655	X	
9A-26	Left	654	652	X	
9A-27	Left	656	655	X	
9A-28	Left	654	653	X	
9A-29	Left	657	*	X	
9A-30	Left	657	655	X	
<b><i>Polarized</i></b>					
9B-21	Right	657	654	X	
9B-22	Right	656	653	X	
9B-23	Right	656	654	X	
9B-24	Right	650	648	X	
9B-25	Right	655	653	X	
9B-26	Left	657	655	X	
9B-27	Left	655	654	X	
9B-28	Left	656	654	X	
9B-29	Left	655	654	X	
9B-30	Left	657	657	X	
<b><i>Red Mirror</i></b>					
9C-21	Right	655	654	X	
9C-22	Right	655	653	X	
9C-23	Right	657	655	X	
9C-24	Right	650	647	X	
9C-25	Right	654	651	X	
9C-26	Left	655	653	X	
9C-27	Left	655	*	X	
9C-28	Left	656	654	X	
9C-29	Left	653	649	X	
9C-30	Left	657	*	X	

(\*) Velocity not recorded.

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**Sample Photographs:**



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17. Client agrees to pay any and all additional costs associated with unexpected or above standard communications and/or consultations with client or third parties as designated by client.
18. Client agrees to pay any and all additional costs for work additional to the original scope of work as agreed to by client.
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22. In the event that payment is not received within 15 days of invoice date, Client agrees to pay a late payment charge on the unpaid balance equal to 1-1/2% per month or the maximum charge allowed by law, whichever is less, and all costs and expenses, including attorney's fees where recovery of the same is not prohibited by law, incurred by ICS in collecting such invoices.
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