

# NATIONAL TECHNICAL SYSTEMS

## BLUNT IMPACT TEST

Date Received: 08/26/19  
 Via: USPS  
 Returned Via: FedEx

Report No.: HHV19003-1  
 Test Date: 08/29/19  
 Customer: Hard Head Veterans

**PO No.:** N/A  
**Test Spec.:** AR/PD 10-02 Rev A with Change 6, 16 December 2013  
**Test Type:** Blunt Impact Test  
**Requirements:** 3.11  
**Procedure:** 4.9.13  
**Equipment:** Cadex Uni-Axial Monorail Impact Machine  
 Model: 1000\_00\_MIMA  
 Anvil Type: Hemispherical  
**DAQ Software:** Version 6.9b, Last Updated Nov. 3, 2011

<p><b>Sample Information:</b>                  Manufacturer: Hard Head Veterans                  Configuration: Finished Helmet                  Color: Black                  Size: N/A                  Model: N/A                  Lot No.: N/A                  Weight (lbs.): 1.24</p>	<p><b>Test Procedure:</b>                  Conditioning: Ambient                  Pre-Conditioning: 24 hours @ 20 +/- 5 degrees C and 50 +/- 20% RH                  Duration: N/A                  Re-Conditioning: N/A                  Impacts (14): 2 impacts at each of 7 locations ≥ 1 min. but ≤ 2 min. apart                  HPI: 2.30" (Large)                  Velocity: 10.0 ft./sec (+/- 0.3 ft./sec)</p> <p><b>Test Conditions:</b>                  Range Temperature: 70 °F                  Range Humidity: 48 %</p>
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**Test Results:**

Impact #	Meets Time Req. (Y/N)	Impact Location	Headform Orientation	Velocity (ft./s)	Velocity (m/sec)	Peak Acceleration (G)	PASS / FAIL
1	Y	Front	35° off vertical	10.024	3.0552	64.7	PASS
2	Y	Front	35° off vertical	9.901	3.0178	78.9	PASS
3	Y	Back	20° off vertical	9.956	3.0346	81.2	PASS
4	Y	Back	20° off vertical	9.951	3.0331	105.7	PASS
5	Y	Left	30° off vertical	10.061	3.0666	59.3	PASS
6	Y	Left	30° off vertical	10.030	3.0571	64.2	PASS
7	Y	Right	30° off vertical	10.078	3.0717	53.5	PASS
8	Y	Right	30° off vertical	10.017	3.0532	64.7	PASS
9	Y	Crown	90° off horizontal	10.027	3.0561	89.2	PASS
10	Y	Crown	90° off horizontal	10.037	3.0592	124.0	PASS
11	Y	Left Nape	0° off vertical, rolled 25° left	9.929	3.0263	90.1	PASS
12	Y	Left Nape	0° off vertical, rolled 25° left	10.031	3.0573	115.0	PASS
13	Y	Right Nape	0° off vertical, rolled 25° right	9.961	3.0361	78.0	PASS
14	Y	Right Nape	0° off vertical, rolled 25° right	10.021	3.0544	133.3	PASS

This test was performed in accordance with the specification requirements listed above. Test results properly reflect the performance of the listed sample.

<b>Observations:</b>	<u>YES</u>	<u>NO</u>
Physical Damage (i.e. paint chipping, cracking):	X	
•A 3.00" crack formed over the rear right ventilation cut out.		

**Notes:**  
 •Anvil positioned in-line with the lowest point of the ball-arm/accelerometer.  
 •Helmet tested with pads, suspension / retention system, and chinstrap.