

NTS-Chesapeake Testing

4603 Compass Point Road
Belcamp, MD 21017

Preliminary Data

BALLISTIC RESISTANCE TEST

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: Hardhead Veterans

Project No.: PR146641

Test Date: 10/12/2021

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Test Panel Description: Helmet.

Manufacturer: Hard Head Veterans LLC

Sample No.: (9-mm, V0, Cold) 01-132-12OCT18

Size: L/XL
Avg. Thickness: 0.320 in
Thicknesses: 0.317 in, 0.333 in,
0.318 in, 0.313 in

Weight: 3.190 lbs
Plies/Laminates: N/A

Date Received: 09/22/2021
Received Via: UPS Ground
Returned Via: UPS Ground

Setup

Shot Spacing: AR/PD 10-02 REV A
Change 7 Oct. 16 2014
Witness Panel: Clay
Backing Material: Clay-filled NIJ-0106.01
head form
Condition: -60 °F for 24 hours

Primary Vel. Screens (ft): 5.000, 5.333,
9.666, 10.000
Primary Vel. Location (ft): 7.500
Range to Target (ft): 15.000
Target to Witness (in): 0.000

Range No.: Range 3
Temp: 66.7 °F
BP: 30 inHg
RH: 59.3 %
Barrel/Gun: WC020651
Gunner: Gregory Bonilla
Recorder: Ramon Chavez

Ammunition

Projectile	Lot No.	Powder
(1) 9-mm, 124-grain FMJ	Remington 23558	Accurate No. 2

Applicable Standards or Procedures

Clay Drop 1 - Drop Time: 2:40 PM; Block No. WC074957; Temp: 97.1 °F, 96.9 °F; Drop Depths: 25.2 mm, 24.6 mm, 24.5 mm

(1) AR/PD 10-02 REV A Change 7 Oct. 16 2014

(2) Customer Request

Shot No.	Ammo	Powder/Seating	Weight (gr)	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Avg. Vel. (ft/s)	Striking Vel. (ft/s)	Penetration	Deformation (mm)	Obliq. (°)	Footnotes
1	1	6.0	124	3490	1433	3016	1437	1435	1424	None	11.8	0	(a)
2	1	6.0	124	3517	1422	3038	1426	1424	1414	None	9.9	0	(b)
3	1	6.0	124	3497	1430	3021	1434	1432	1422	None	3.9	0	(c)
4	1	6.0	124	3465	1443	2994	1447	1445	1435	None	11.1	0	(d)
5	1	6.0	124	3487	1434	3011	1439	1436	1426	None	11.6	0	(e)

Remarks:

Required Velocity: 1400 - 1450 ft/s

Projectile yaw check: 0° yaw on all impacts.

Shots 1-5: HB1-1.

Head form Temp: 96.5 °F.

Footnotes:

- (a) Crown
- (b) Front
- (c) Back
- (d) Right
- (e) Left

BALLISTIC RESISTANCE TEST

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: Hardhead Veterans

Project No.: PR146641

Test Date: 10/12/2021

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Test Panel Description: Helmet.

Manufacturer: Hard Head Veterans LLC

Sample No.: (9-mm, V0, Hot) 01-132-01MAY19

Size: L/XL
Avg. Thickness: 0.319 in
Thicknesses: 0.317 in, 0.313 in,
0.323 in, 0.323 in

Weight: 3.170 lbs
Plies/Laminates: N/A

Date Received: 09/22/2021
Received Via: UPS Ground
Returned Via: UPS Ground

Setup

Shot Spacing: AR/PD 10-02 REV A
Change 7 Oct. 16 2014
Witness Panel: Clay
Backing Material: Clay-filled NIJ-0106.01
head form
Condition: 160 °F for 24 hours

Primary Vel. Screens (ft): 5.000, 5.333,
9.666, 10.000
Primary Vel. Location (ft): 7.500
Range to Target (ft): 15.000
Target to Witness (in): 0.000

Range No.: Range 3
Temp: 66.6 °F
BP: 30 inHg
RH: 59.4 %
Barrel/Gun: WC020651
Gunner: Gregory Bonilla
Recorder: Ramon Chavez

Ammunition

Projectile	Lot No.	Powder
(1) 9-mm, 124-grain FMJ	Remington 23558	Accurate No. 2

Applicable Standards or Procedures

Clay Drop 1 - Drop Time: 2:40 PM; Block No. WC074957; Temp: 97.1 °F, 96.9 °F; Drop Depths: 25.2 mm, 24.6 mm, 24.5 mm

(1) AR/PD 10-02 REV A Change 7 Oct. 16 2014

(2) Customer Request

Shot No.	Ammo	Powder/Seating	Weight (gr)	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Avg. Vel. (ft/s)	Striking Vel. (ft/s)	Penetration	Deformation (mm)	Obliq. (°)	Footnotes
1	1	6.0	124	3453	1448	2985	1452	1450	1439	None	6.3	0	(a)
2	1	6.0	124	3465	1443	2997	1446	1444	1434	None	9.7	0	(b)
3	1	6.0	124	3458	1446	2989	1450	1448	1437	None	3.9	0	(c)
4	1	6.0	124	3468	1442	2997	1446	1444	1433	None	9.1	0	(d)
5	1	6.0	124	3463	1444	2994	1447	1446	1435	None	12.7	0	(e)

Remarks:

Required Velocity: 1400 - 1450 ft/s

Projectile yaw check: 0° yaw on all impacts.

Shots 1-5: HB1-2.

Head form Temp: 96.9 °F.

Footnotes:

- (a) Crown
- (b) Front
- (c) Back
- (d) Right
- (e) Left

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Client: Hardhead Veterans

Project No.: PR146641

Test Date: 10/12/2021

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Test Panel Description: Helmet.

Manufacturer: Hard Head Veterans LLC

Sample No.: (9-mm, V0, Ambient) 01-132-03MAY21

Size: L/XL
Avg. Thickness: 0.313 in
Thicknesses: 0.302 in, 0.313 in,
0.323 in, 0.314 in

Weight: 3.120 lbs
Plies/Laminates: N/A

Date Received: 09/22/2021
Received Via: UPS Ground
Returned Via: UPS Ground

Setup

Shot Spacing: AR/PD 10-02 REV A
Change 7 Oct. 16 2014
Witness Panel: Clay
Backing Material: Clay-filled NIJ-0106.01
head form
Condition: Ambient

Primary Vel. Screens (ft): 5.000, 5.333,
9.666, 10.000
Primary Vel. Location (ft): 7.500
Range to Target (ft): 15.000
Target to Witness (in): 0.000

Range No.: Range 3
Temp: 66.7 °F
BP: 30 inHg
RH: 55.5 %
Barrel/Gun: WC020651
Gunner: Gregory Bonilla
Recorder: Ramon Chavez

Ammunition

Projectile	Lot No.	Powder
(1) 9-mm, 124-grain FMJ	Remington 23558	Accurate No. 2

Applicable Standards or Procedures

Clay Drop 1 - Drop Time: 2:40 PM; Block No. WC074957; Temp: 97.1 °F, 96.9 °F; Drop Depths: 25.2 mm, 24.6 mm, 24.5 mm

(1) AR/PD 10-02 REV A Change 7 Oct. 16 2014

(2) Customer Request

Shot No.	Ammo	Powder/ Seating	Weight (gr)	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel.2 (ft/s)	Avg. Vel. (ft/s)	Striking Vel. (ft/s)	Penetration	Deformation (mm)	Obliq. (°)	Footnotes
1	1	6.0	124	3468	1442	2997	1446	1444	1433	None	6.8	0	(a)
2	1	6.0	124	3463	1444	2994	1447	1446	1435	None	11.8	0	(b)
3	1	6.0	124	3458	1446	2989	1450	1448	1437	None	1.7	0	(c)
4	1	6.0	124	3463	1444	2994	1447	1446	1435	None	9.2	0	(d)
5	1	6.0	124	3441	1453	2975	1456	1455	1444	None	9.4	0	(e)

Remarks:

Required Velocity: 1400 - 1450 ft/s

Projectile yaw check: 0° yaw on all impacts.

Shots 1-5: HB1-3.

Head form Temp: 97.2 °F.

Footnotes:

- (a) Crown
- (b) Front
- (c) Back
- (d) Right
- (e) Left