



30 December 2019

AHOLDTECHPH CORPORATION
No. 47 Tiamson St. Brgy
Kalayaan Angono, Rizal
Rizal 1930
Philippines

Attention: Ms. Elisa Lee

Subject: AHOLDTECHPH CORPORATION, Armor Protection Ballistic Resistance and Ballistic Limit,
V₅₀ BL(P), Flame Resistance, Compression Resistance, Seawater, Resistance, High Temperature
Resistance, Cold Temperature Resistance, Blunt Impact, and Retention System Static Pull
Strength Test: Job No. 31375-015, Tested 26 November through 19 December 2019,
Purchase Order No. Elisa Abella Lee

Dear Ms. Lee:

Please find enclosed a report documenting the subject test series that was conducted by NTS-
Chesapeake Testing on 26 November through 19 December 2019. This report includes a summary of
the test as well as a detailed shot record for each armor sample tested.

If you have any questions related to this test, please call Mr. Craig Thomas at 410-297-8154 or contact
him via e-mail at craig.thomas@nts.com.

Sincerely,

Chris Schueler
General Manager, NTS-Chesapeake Testing

lmd

Enc. a/s

This report shall not be used to claim product certification, approval or endorsement. The results of the testing relate only
to the samples submitted for testing. This test report shall not be interpreted as an endorsement by NTS-Chesapeake
Testing as to the continued quality or performance of any items of the same or similar design.

The information contained in this report may be subject to the provisions of the Export Administration Act (50 USC 2401 et
seq.), the Export Administration Regulations (15 CFR 768-799), or the U.S. Arms Export Control Act (22 USC 2778 et seq.)
and the International Traffic in Arms Regulations (22 CFR 120-130). These statutes and regulations impose restrictions on
import, export and transfer to foreign entities and persons, whether within the U.S. or abroad, of certain data and articles
without approved licenses from the U.S. Department of State and/or the U.S. Department of Commerce.

NTS-Chesapeake Testing is an independent testing facility and has no affiliation
with AHOLDTECHPH CORPORATION.

AHOLDTECHPH CORPORATION PROPRIETARY INFORMATION

**AHOLDTECHPH CORPORATION,
Armor Protection Ballistic Resistance and Ballistic
Limit, V₅₀ BL(P), Flame Resistance , Compression
Resistance, Seawater, Resistance, High Temperature
Resistance, Cold Temperature Resistance,
Blunt Impact, and Retention System Static Pull
Strength Test**

Prepared by:

**Craig A. Thomas
Laura M. Deptol**

NTS-Chesapeake Testing

*4603B Compass Point Road
Belcamp, MD 21017*

30 December 2019

***Further dissemination only as directed by
AHOLDTECHPH CORPORATION, December 2019.***

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AHOLDTECHPH CORPORATION PROPRIETARY INFORMATION

1 Introduction

AHOLDTECHPH CORPORATION provided 37 armor samples to NTS-Chesapeake Testing for ballistic testing on 26 November through 19 December 2019. This is a two part report. Section 2 is the ballistic resistance test report; and Section 3 is the ballistic limit test, V_{50} BL(P) test report. The results for all non-ballistic testing are presented in Attachment A.

2 Ballistic Resistance Test

Eighteen samples were used for ballistic resistance testing.

2.1 Threats and Instrumentation

2.1.1 Threats*

- 9-mm, 124-grain full metal jacketed (FMJ) projectiles
- .357-cal., 125-grain SIG full metal jacketed flat nosed (FMJFN) projectiles
- .45-cal., AUTO, 230-grain full metal jacketed (FMJ) projectiles
- .44-mag., 240-grain semi jacketed hollow point (SJHP) projectiles
- 7.62 x 51-mm, 149-grain M80 full metal jacketed (FMJ) projectiles

*All projectiles were fired from a universal receiver which was fitted with the appropriate barrel and mounted on a NTS-Chesapeake Testing mount.

*The threat projectiles were required to have no greater than 3° total yaw. Projectile yaw was measured to ensure that the test impacts were within this constraint by placing a yaw card at the appropriate gun-to-target range during velocity verification shots.

2.1.2 Instrumentation

Projectile velocity measurements were obtained using Oehler Research model No. 57 infrared screens with Y.I.S. Cowden Group Chrono-USB chronographs. A digital caliper was used to measure the post impact deformations observed in the backing clay on select shots of each sample.

2.2 Details of Test

The objective of this test was to conduct a ballistic resistance test on the armor samples in accordance with NIJ-STD-0106.01 (Modified), AR/PD 10-02 Rev A, Change 6 (Modified), and the customer's request for Job No. 31375-015-1 through 12; in accordance with NIJ-STD-0101.06 Level IIIA (Modified) and the customer's request for Job No. 31375-015-13 through -16; and in accordance with NIJ-STD-0106.01 (Modified) and the customer's request for Job No. 31375-015-17 and -18. Shot spacing between multiple impacts against each sample was in accordance with the referenced performance standard and the customer's request as stated on each data sheet. Shots against the armor samples were performed at 0.0°, 30.0° or 45.0° obliquity and ambient range temperature (67 ± 3 °F).

Each sample was conditioned to specific parameters prior to testing as referenced on each data sheet. For 31375-015-1 through -6, the target was clamped to a NIJ-0106.01 head form fixture. A piece of 0.508 mm thick (0.020 in) type 2024 T3 aluminum was mounted along the shotline, approximately 76 mm $\pm$ 13 mm 3 in $\pm$ 0.5 in) behind the inside surface of the strike face, to verify complete penetrations. A complete penetration was scored only when the witness material was perforated (i.e., light was visible through the material). For Job No. 31375-015-7 through -12, the target was mounted on a clay-filled head form that was clamped to a rigid test fixture. For Job No. 31375-015-13 through 16, the target was strapped

to a 5.5-in clay/plywood backing that was clamped to a rigid test fixture. For Job No. 31375-015-17 and -18, the target was mounted on a clay-filled NIJ-0106.01 head form that was clamped to a rigid test fixture. All firings were conducted at a fixed distance (the .45-cal, .357-cal (Helmet), and 9-mm projectiles were fired at 16.400 ft, the .44-mag. and, .357-cal. (Soft Armor) projectiles were fired at 17.200 ft, and the 7.62-mm projectiles were fired at 26.250 ft) from the target. The projectile velocities used for the test were in accordance with the referenced performance standard.

2.3 Summary of Results

The results of the ballistic resistance test are shown in Table 1. The round-by-round data sheets for all testing performed are provided on the following pages. The following definition is used to describe penetration:

Bullet/Spall = Projectile completely penetrates both the hard and soft armor.

Table 1. Summary of Ballistic Resistance Test

Job No.	Sample No.	Size	Weight (lbs)	Threat	Target Obliq. (deg)	Shot No.	Penetration Data			
							Velocity (ft/s)	Result	Def. (mm)	Impact Location
31375-015-1	ACH-S04 (9mm, Wet)	Small	2.92	9-mm, 124-grain FMJ	0.0	1	1398	None	NA	Crown
						2	1409	None	NA	Front
						3	1377	None	NA	Back
						4	1381	None	NA	Right
						5	1376	None	NA	Left
31375-015-2	ACH-XL04 (9mm, Amb.)	X-Large	3.63	9-mm, 124-grain FMJ	0.0	1	1433	None	NA	Front
						2	1427	None	NA	Back
						3	1433	None	NA	Crown
						4	1440	None	NA	Right
						5	1422	None	NA	Left
31375-015-3	ACH-M04 (.357 SIG, Wet)	NA	3.06	.357-cal., 125-grain SIG FMJFN	0.0	1	1418	None	NA	Crown
						2	1399	None	NA	Front
						3	1404	None	NA	Back
						4	1396	None	NA	Right
						5	1406	None	NA	Left
31375-015-4	ACH-M05 (.357 SIG, Amb.)	Medium	3.02	.357-cal., 125-grain SIG FMJFN	0.0	1	1411	None	NA	Crown
						2	1388	None	NA	Front
						3	1392	None	NA	Back
						4	1378	None	NA	Right
						5	1385	None	NA	Left
31375-015-5	ACH-L04 (.45 ACP, Amb.)	Large	3.21	.45-cal., AUTO, 230-grain FMJ	0.0	1	946	None	NA	Front
						2	965	None	NA	Back
						3	945	None	NA	Crown
						4	951	None	NA	Right
						5	952	None	NA	Left

Table 1. Summary of Ballistic Resistance Test (Continued)

Job No.	Sample No.	Size	Weight (lbs)	Threat	Target Obliq. (deg)	Shot No.	Penetration Data			
							Velocity (ft/s)	Result	Def. (mm)	Impact Location
31375-015-6	ACH-L05 (.45 ACP, Wet)	Large	3.20	.45-cal., AUTO, 230-grain FMJ	0.0	1	924	None	NA	Front
						2	934	None	NA	Back
						3	906	None	NA	Crown
						4	959	None	NA	Right
						5	957	None	NA	Left
31375-015-7	ACH-S05 (9mm, Amb.)	Small	2.93	9-mm, 124-grain FMJ	0.0	1	1425	None	NA	Front
						2	1427	None	NA	Back
						3	1427	None	NA	Crown
						4	1430	None	NA	Right
						5	1433	None	NA	Left
31375-015-8	ACH-XL05 (9mm, Wet)	X-Large	3.60	9-mm, 124-grain FMJ	0.0	1	1390	None	11.6	Crown
						2	1388	None	14.3	Front
						3	1357	None	16.6	Back
						4	1386	None	5.1	Right
						5	1388	None	3.1	Left
31375-015-9	ACH-M06 (.357 SIG, Wet)	Medium	3.00	.357-cal., 125-grain SIG FMJFN	0.0	1	1384	None	26.3	Crown
						2	1401	None	23.2	Front
						3	1393	None	19.5	Back
						4	1395	None	19.7	Right
						5	1395	None	21.7	Left
31375-015-10	ACH-M07 (.357 SIG, Amb.)	Medium	3.04	.357-cal., 125-grain SIG FMJFN	0.0	1	1378	None	23.5	Front
						2	1393	None	32.0	Back
						3	1398	None	37.0	Crown
						4	1389	None	18.7	Right
						5	1395	None	12.7	Left

Table 1. Summary of Ballistic Resistance Test (Continued)

Job No.	Sample No.	Size	Weight (lbs)	Threat	Target Obliq. (deg)	Shot No.	Penetration Data			
							Velocity (ft/s)	Result	Def. (mm)	Impact Location
31375-015-11	ACH-L06 (.45 ACP, Wet)	Large	3.13	.45-cal., AUTO, 230-grain FMJ	0.0	1	931	None	1.9	Front
						2	912	None	15.9	Back
						3	921	None	2.5	Crown
						4	932	None	7.5	Right
						5	951	None	11.7	Left
31375-015-12	ACH-L07 (.45 ACP, Amb.)	Large	3.23	.45-cal., AUTO, 230-grain FMJ	0.0	1	940	None	9.3	Front
						2	932	None	16.6	Back
						3	930	None	3.2	Crown
						4	923	None	7.1	Right
						5	951	None	9.1	Left
31375-015-13	SAP01 (357 sig, Amb.)	C-3	2.34	.357-cal., 125-grain SIG FMJFN	0.0	1	1477	None	25.0	NA
						2	1471	None	23.1	NA
						3	1486	None	26.0	NA
					45.0	4	1483	None	NA	NA
					30.0	5	1483	None	NA	NA
					0.0	6	1499	None	NA	NA
31375-015-14	SAP01 (44 Mag, Amb.)	C-3	2.59	.44-mag., 240-grain SJHP	0.0	1	1655	None	37.5	NA
						2	1655	None	44.1	NA
						3	1655	None	39.4	NA
					45.0	4	1649	None	NA	NA
					30.0	5	1635	None	NA	NA
					0.0	6	1650	None	NA	NA

Table 1. Summary of Ballistic Resistance Test (Continued)

Job No.	Sample No.	Size	Weight (lbs)	Threat	Target Obliq. (deg)	Shot No.	Penetration Data			
							Velocity (ft/s)	Result	Def. (mm)	Impact Location
31375-015-15	SAP02 (357 sig, Wet)	C-3	2.80	.357-cal., 125-grain SIG FMJFN	0.0	1	1466	None	28.0	NA
						2	1454	None	25.5	NA
						3	1450	None	26.6	NA
					30.0	4	1463	None	NA	NA
					45.0	5	1463	None	NA	NA
					0.0	6	1451	None	NA	NA
31375-015-16	SAP02 (44 Mag, Wet)	C-3	2.57	.44-mag., 240-grain SJHP	0.0	1	1650	None	39.7	NA
						2	1651	None	33.0	NA
						3	1626	None	38.6	NA
					30.0	4	1632	None	NA	NA
					45.0	5	1643	None	NA	NA
					0.0	6	1659	None	NA	NA
31375-015-17	ECH01 (M80)	Medium	4.31	7.62 x 51-mm, 149-grain M80 FMJ	0.0	1	2242	Bullet/Spall	NA	Crown
						2	2199	Bullet/Spall	NA	Right
						3	2187	Bullet/Spall	NA	Left
31375-015-18	ECH02 (M80)	Medium	4.33	7.62 x 51-mm, 149-grain M80 FMJ	0.0	1	2169	None	35.18	Front
						2	2212	Bullet/Spall	NA	Back

BALLISTIC RESISTANCE TEST

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-1

Test Date: 12/6/2019

Test Panel

Description: Helmet.

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-S04 (9mm, Wet)

Size: Small
Avg. Thick: 0.439 in
Thickness: 0.445 in; 0.448 in;
0.436 in; 0.427 in

Weight: 2.92 lbs
Plies/Laminates: NA

Date Received: 12/2/2019
Via: DHL
Returned: DHL

Setup

Shot Spacing: NIJ-STD-0106.01(Modified)
Witness Panel: 0.02 in 2024-T3 Al
Backing Material: NIJ-0106.01 Head Form
Condition: Submerged in water for 2-4 hours

Primary Vel. Screens (ft): 6.500, 9.500
Primary Vel. Location (ft): 8.000
Range to Target (ft): 16.400
Target to Witness (in): 3.000

Range No.: 5
Temp: 67.1 °F
BP: 30.2 inHg
RH: 37.2%
Barrel/Gun: 2031
Gunner: Blake Ellis
Recorder: C. Peddicord

Ammunition

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

Applicable Standards or Procedures

- (1) NIJ-STD-0106.01 (Modified)
- (2) AR/PD 10-02 Rev A, Change 6 (Modified)
- (3) Customer request

Shot No.	Ammo	Weight (gr)	Time 1 (μs)	Vel. 1 (ft/s)	Time 2 (μs)	Vel. 2 (ft/s)	Avg. Vel. (ft/s)	Penetration	Deformation (mm)	Obliq. (°)	Footnotes
1	1	124.0	2146	1398	2146	1398	1398	None	NA	0.0	(a)
2	1	124.0	2129	1409	2129	1409	1409	None	NA	0.0	(b)
3	1	124.0	2178	1377	2178	1377	1377	None	NA	0.0	(c)
4	1	124.0	2172	1381	2172	1381	1381	None	NA	0.0	(d)
5	1	124.0	2178	1377	2181	1376	1376	None	NA	0.0	(e)

Remarks:

Required velocity: 1348 to 1448 ft/s
Projectile yaw check: 0° yaw on all impacts.

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: AHOLDTECHPH CORPORATION

Job No.: 31375-015-2

Test Date: 12/5/2019

Test Panel

Description: Helmet.

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-XL04 (9mm, Amb.)

Size: X-Large
Avg. Thick: 0.489 in
Thickness: 0.487 in; 0.490 in;
0.492 in; 0.487 in

Weight: 3.63 lbs
Plies/Laminates: NA

Date Received: 12/2/2019
Via: DHL
Returned: DHL

Setup

Shot Spacing: NIJ-STD-0106.01(Modified)
Witness Panel: 0.02 in 2024-T3 Al
Backing Material: NIJ-0106.01 Head Form
Condition: Ambient

Primary Vel. Screens (ft): 6.500, 9.500
Primary Vel. Location (ft): 8.000
Range to Target (ft): 16.400
Target to Witness (in): 3.000

Range No.: 5
Temp: 67.1 °F
BP: 30.2 inHg
RH: 37.2%
Barrel/Gun: Test Barrel
Gunner: Blake Ellis
Recorder: M. Contreras

Ammunition

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

Applicable Standards or Procedures

- (1) NIJ-STD-0106.01 (Modified)
- (2) AR/PD 10-02 Rev A, Change 6 (Modified)
- (3) Customer request

Shot No.	Ammo	Weight (gr)	Time 1 (μs)	Vel. 1 (ft/s)	Time 2 (μs)	Vel. 2 (ft/s)	Avg. Vel. (ft/s)	Penetration	Deformation (mm)	Obliq. (°)	Footnotes
1	1	124.7	2093	1433	2093	1433	1433	None	NA	0.0	(a)
2	1	124.7	2103	1427	2103	1427	1427	None	NA	0.0	(b)
3	1	124.7	2093	1433	2093	1433	1433	None	NA	0.0	(c)
4	1	124.7	2084	1440	2084	1440	1440	None	NA	0.0	(d)
5	1	124.7	2110	1422	2110	1422	1422	None	NA	0.0	(e)

Remarks:

Required velocity: 1348 to 1448 ft/s

Projectile yaw check: 0° yaw on all impacts.

Footnotes:

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

BALLISTIC RESISTANCE TEST

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-3

Test Date: 12/6/2019

Test Panel

Description: Helmet.

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-M04 (.357 SIG, Wet)

Size: NA
Avg. Thick: 0.447 in
Thickness: 0.416 in; 0.466 in;
0.464 in; 0.442 in

Weight: 3.06 lbs
Plies/Laminates: NA

Date Received: 12/2/2019
Via: DHL
Returned: DHL

Setup

Shot Spacing: NIJ-STD-0106.01(Modified)
Witness Panel: 0.02 in 2024-T3 Al
Backing Material: NIJ-0106.01 Head Form
Condition: Submerged in water for 2-4 hours

Primary Vel. Screens (ft): 6.500, 9.500
Primary Vel. Location (ft): 8.000
Range to Target (ft): 16.400
Target to Witness (in): 3.000

Range No.: 5
Temp: 67.1 °F
BP: 30.2 inHg
RH: 37.2%
Barrel/Gun: 2019
Gunner: Blake Ellis
Recorder: C. Peddicord

Ammunition

Projectile	Lot No.	Powder
(1) .357-cal., 125-grain SIG FMJ FN	Speer A27R	Accurate No. 2

Applicable Standards or Procedures

- (1) NIJ-STD-0106.01 (Modified)
- (2) AR/PD 10-02 Rev A, Change 6 (Modified)
- (3) Customer request

Shot No.	Ammo	Weight (gr)	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Avg. Vel. (ft/s)	Penetration	Deformation (mm)	Obliq. (°)	Footnotes
1	1	125.0	2116	1418	2116	1418	1418	None	NA	0.0	
2	1	125.0	2146	1398	2142	1401	1399	None	NA	0.0	
3	1	125.0	2136	1404	2136	1404	1404	None	NA	0.0	
4	1	125.0	2149	1396	2149	1396	1396	None	NA	0.0	
5	1	125.0	2133	1406	2133	1406	1406	None	NA	0.0	

Remarks:

Required velocity: 1360 to 1460 ft/s
Projectile yaw check: 0° yaw on all impacts.

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: AHOLDTECHPH CORPORATION

Job No.: 31375-015-4

Test Date: 12/6/2019

Test Panel

Description: Helmet.

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-M05 (.357 SIG, Amb.)

Size: Medium
Avg. Thick: 0.453 in
Thickness: 0.473 in; 0.430 in;
0.427 in; 0.481 in

Weight: 3.02 lbs
Plies/Laminates: NA

Date Received: 12/2/2019
Via: DHL
Returned: DHL

Setup

Shot Spacing: NIJ-STD-0106.01(Modified)
Witness Panel: 0.02 in 2024-T3 Al
Backing Material: NIJ-0106.01 Head Form
Condition: Ambient

Primary Vel. Screens (ft): 6.500, 9.500
Primary Vel. Location (ft): 8.000
Range to Target (ft): 16.400
Target to Witness (in): 3.000

Range No.: 5
Temp: 67.1 °F
BP: 30.2 inHg
RH: 37.2%
Barrel/Gun: 2019
Gunner: Blake Ellis
Recorder: C. Peddicord

Ammunition

Projectile	Lot No.	Powder
(1) .357-cal., 125-grain SIG FMJ FN	Speer A27R	Accurate No. 2

Applicable Standards or Procedures

- (1) NIJ-STD-0106.01 (Modified)
- (2) AR/PD 10-02 Rev A, Change 6 (Modified)
- (3) Customer request

Shot No.	Ammo	Weight (gr)	Time 1 (μs)	Vel. 1 (ft/s)	Time 2 (μs)	Vel. 2 (ft/s)	Avg. Vel. (ft/s)	Penetration	Deformation (mm)	Obliq. (°)	Footnotes
1	1	125.0	2126	1411	2126	1411	1411	None	NA	0.0	(a)
2	1	125.0	2162	1388	2162	1388	1388	None	NA	0.0	(b)
3	1	125.0	2155	1392	2155	1392	1392	None	NA	0.0	(c)
4	1	125.0	2178	1377	2175	1379	1378	None	NA	0.0	(d)
5	1	125.0	2168	1384	2165	1386	1385	None	NA	0.0	(e)

Remarks:

Required velocity: 1360 to 1460 ft/s
Projectile yaw check: 0° yaw on all impacts.

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: AHOLDTECHPH CORPORATION

Job No.: 31375-015-5

Test Date: 12/5/2019

Test Panel

Description: Helmet.

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-L04 (.45 ACP, Amb.)

Size: Large
Avg. Thick: 0.474 in
Thickness: 0.488 in; 0.485 in;
0.452 in; 0.469 in

Weight: 3.21 lbs
Plies/Laminates: NA

Date Received: 12/2/2019
Via: DHL
Returned: DHL

Setup

Shot Spacing: NIJ-STD-0106.01(Modified)
Witness Panel: 0.02 in 2024-T3 Al
Backing Material: NIJ-0106.01 Head Form
Condition: Ambient

Primary Vel. Screens (ft): 6.500, 9.500
Primary Vel. Location (ft): 8.000
Range to Target (ft): 16.400
Target to Witness (in): 3.000

Range No.: 5
Temp: 67.1 °F
BP: 30.2 inHg
RH: 37.2%
Barrel/Gun: Test Barrel
Gunner: Blake Ellis
Recorder: M. Contreras

Ammunition

Projectile	Lot No.	Powder
(1) .45-cal., AUTO, 230-grain FMJ	American Eagle	Accurate No. 2

Applicable Standards or Procedures

- (1) NIJ-STD-0106.01 (Modified)
- (2) AR/PD 10-02 Rev A, Change 6 (Modified)
- (3) Customer request

Shot No.	Ammo	Weight (gr)	Time 1 (μs)	Vel. 1 (ft/s)	Time 2 (μs)	Vel. 2 (ft/s)	Avg. Vel. (ft/s)	Penetration	Deformation (mm)	Obliq. (°)	Footnotes
1	1	230.3	3174	945	3171	946	946	None	NA	0.0	(a)
2	1	230.3	3109	965	3109	965	965	None	NA	0.0	(b)
3	1	230.4	3174	945	3174	945	945	None	NA	0.0	(c)
4	1	230.4	3155	951	3155	951	951	None	NA	0.0	(d)
5	1	230.5	3151	952	3151	952	952	None	NA	0.0	(e)

Remarks:

Required velocity: 875 to 975 ft/s
Projectile yaw check: 0° yaw on all impacts.

Footnotes:

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

BALLISTIC RESISTANCE TEST

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-6

Test Date: 12/5/2019

Test Panel

Description: Helmet.

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-L05 (.45 ACP, Wet)

Size: Large
Avg. Thick: 0.450 in
Thickness: 0.440 in; 0.447 in;
0.455 in; 0.460 in

Weight: 3.20 lbs
Plies/Laminates: NA

Date Received: 12/2/2019
Via: DHL
Returned: DHL

Setup

Shot Spacing: NIJ-STD-0106.01(Modified)
Witness Panel: 0.02 in 2024-T3 Al
Backing Material: NIJ-0106.01 Head Form
Condition: Submerged in water for 2-4 hours

Primary Vel. Screens (ft): 6.500, 9.500
Primary Vel. Location (ft): 8.000
Range to Target (ft): 16.400
Target to Witness (in): 3.000

Range No.: 5
Temp: 67.1 °F
BP: 30.2 inHg
RH: 37.2%
Barrel/Gun: Test Barrel
Gunner: Blake Ellis
Recorder: M. Contreras

Ammunition

Projectile	Lot No.	Powder
(1) .45-cal., AUTO, 230-grain FMJ	American Eagle	Accurate No. 2

Applicable Standards or Procedures

- (1) NIJ-STD-0106.01 (Modified)
- (2) AR/PD 10-02 Rev A, Change 6 (Modified)
- (3) Customer request

Shot No.	Ammo	Weight (gr)	Time 1 (μs)	Vel. 1 (ft/s)	Time 2 (μs)	Vel. 2 (ft/s)	Avg. Vel. (ft/s)	Penetration	Deformation (mm)	Obliq. (°)	Footnotes
1	1	230.0	3246	924	3246	924	924	None	NA	0.0	(a)
2	1	230.0	3213	934	3213	934	934	None	NA	0.0	(b)
3	1	230.0	3311	906	3311	906	906	None	NA	0.0	(c)
4	1	230.1	3129	959	3125	960	959	None	NA	0.0	(d)
5	1	230.1	3135	957	3135	957	957	None	NA	0.0	(e)

Remarks:

Required velocity: 875 to 975 ft/s
Projectile yaw check: 0° yaw on all impacts.

Footnotes:

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

BALLISTIC RESISTANCE TEST

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-7

Test Date: 12/5/2019

Test Panel

Description: Helmet.

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-S05 (9mm, Amb.)

Size: Small
Avg. Thick: 0.445 in
Thickness: 0.456 in; 0.469 in;
0.411 in; 0.445 in

Weight: 2.93 lbs
Plies/Laminates: NA

Date Received: 12/2/2019
Via: DHL
Returned: DHL

Setup

Shot Spacing: NIJ-STD-0106.01(Modified)
Witness Panel: Clay
Backing Material: Clay-filled head form
Condition: Ambient

Primary Vel. Screens (ft): 6.500, 9.500
Primary Vel. Location (ft): 8.000
Range to Target (ft): 16.400
Target to Witness (in): 0.000

Range No.: 5
Temp: 67.1 °F
BP: 30.2 inHg
RH: 37.2%
Barrel/Gun: Test Barrel
Gunner: Blake Ellis
Recorder: M. Contreras

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: 11:14 AM; Block No. HB-1; Temp: 96.6 °F , 96.2 °F; Drop Depths: 24.8mm,24.8mm,25.3mm

- (1) NIJ-STD-0106.01 (Modified)
- (2) AR/PD 10-02 Rev A, Change 6 (Modified)
- (3) Customer request

Shot No.	Ammo	Weight (gr)	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Avg. Vel. (ft/s)	Penetration	Deformation (mm)	Obliq. (°)	Footnotes
1	1	124.7	2106	1425	2106	1425	1425	None	19.4	0.0	(a)
2	1	124.7	2103	1427	2103	1427	1427	None	14.7	0.0	(b)
3	1	124.7	2103	1427	2103	1427	1427	None	7.4	0.0	(c)
4	1	124.5	2097	1431	2100	1429	1430	None	10.3	0.0	(d)
5	1	124.7	2093	1433	2093	1433	1433	None	12.2	0.0	(e)

Remarks:

Required velocity: 1348 to 1448 ft/s
Projectile yaw check: 0° yaw on all impacts.
Headform: HB1-3; Headform temp: 95.5 °F

Footnotes:

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

BALLISTIC RESISTANCE TEST

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-8

Test Date: 12/6/2019

Test Panel

Description: Helmet.

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-XL05 (9mm, Wet)

Size: X-Large
Avg. Thick: 0.526 in
Thickness: 0.496 in; 0.480 in;
0.569 in; 0.558 in

Weight: 3.60 lbs
Plies/Laminates: NA

Date Received: 12/2/2019
Via: DHL
Returned: DHL

Setup

Shot Spacing: NIJ-STD-0106.01(Modified)
Witness Panel: Clay
Backing Material: Clay-filled head form
Condition: Submerged in water for 2-4 hours

Primary Vel. Screens (ft): 6.500, 9.500
Primary Vel. Location (ft): 8.000
Range to Target (ft): 16.400
Target to Witness (in): 0.000

Range No.: 5
Temp: 67.1 °F
BP: 30.2 inHg
RH: 37.2%
Barrel/Gun: 2031
Gunner: Blake Ellis
Recorder: C. Peddicord

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: 7:30 AM; Block No. HB-4; Temp: 93.3°F , 94.1°F; Drop Depths: 24.4mm,24.9mm,26.4mm

- (1) NIJ-STD-0106.01 (Modified)
- (2) AR/PD 10-02 Rev A, Change 6 (Modified)
- (3) Customer request

Shot No.	Ammo	Weight (gr)	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Avg. Vel. (ft/s)	Penetration	Deformation (mm)	Obliq. (°)	Footnotes
1	1	124.0	2159	1390	2159	1390	1390	None	11.6	0.0	
2	1	124.0	2162	1388	2162	1388	1388	None	14.3	0.0	
3	1	124.0	2211	1357	2211	1357	1357	None	16.6	0.0	
4	1	124.0	2165	1386	2165	1386	1386	None	5.1	0.0	
5	1	124.0	2162	1388	2162	1388	1388	None	3.1	0.0	

Remarks:

Required velocity: 1348 to 1448 ft/s
Projectile yaw check: 0° yaw on all impacts.
Headform: HB4-2; Headform temp: 95.0 °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: AHOLDTECHPH CORPORATION

Job No.: 31375-015-9

Test Date: 12/6/2019

Test Panel

Description: Helmet.

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-M06 (.357 SIG, Wet)

Size: Medium
Avg. Thick: 0.446 in
Thickness: 0.464 in; 0.417 in;
0.440 in; 0.462 in

Weight: 3.00 lbs
Plies/Laminates: NA

Date Received: 12/2/2019
Via: DHL
Returned: DHL

Setup

Shot Spacing: NIJ-STD-0106.01(Modified)
Witness Panel: Clay
Backing Material: Clay-filled head form
Condition: Submerged in water for 2-4 hours

Primary Vel. Screens (ft): 6.500, 9.500
Primary Vel. Location (ft): 8.000
Range to Target (ft): 16.400
Target to Witness (in): NA

Range No.: 5
Temp: 67.1 °F
BP: 30.2 inHg
RH: 37.2%
Barrel/Gun: 2019
Gunner: Blake Ellis
Recorder: C. Peddicord

Ammunition

Projectile	Lot No.	Powder
(1) .357-cal., 125-grain SIG FMJ FN	Speer A27R	Accurate No. 2

Applicable Standards or Procedures

Clay Drop 1 - Drop Time: 7:30 AM; Block No. HB-4; Temp: 93.3°F , 94.1°F; Drop Depths: 24.4mm,24.9mm,26.4mm

- (1) NIJ-STD-0106.01 (Modified)
- (2) AR/PD 10-02 Rev A, Change 6 (Modified)
- (3) Customer request

Shot No.	Ammo	Weight (gr)	Time 1 (μs)	Vel. 1 (ft/s)	Time 2 (μs)	Vel. 2 (ft/s)	Avg. Vel. (ft/s)	Penetration	Deformation (mm)	Obliq. (°)	Footnotes
1	1	125.0	2168	1384	2168	1384	1384	None	26.3	0.0	(a)
2	1	125.0	2142	1401	2142	1401	1401	None	23.2	0.0	(b)
3	1	125.0	2155	1392	2152	1394	1393	None	19.5	0.0	(c)
4	1	125.0	2149	1396	2152	1394	1395	None	19.7	0.0	(d)
5	1	125.0	2149	1396	2152	1394	1395	None	21.7	0.0	(e)

Remarks:

Required velocity: 1360 to 1460 ft/s
Projectile yaw check: 0° yaw on all impacts.
Headform: HB4-3; Headform temp: 94.6 °F

Footnotes:

- Crown
- Front
- Back
- Right
- Left

BALLISTIC RESISTANCE TEST

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-10

Test Date: 12/6/2019

Test Panel

Description: Helmet.

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-M07 (.357 SIG, Amb.)

Size: Medium
Avg. Thick: 0.463 in
Thickness: 0.495 in; 0.479 in;
0.430 in; 0.449 in

Weight: 3.04 lbs
Plies/Laminates: NA

Date Received: 12/2/2019
Via: DHL
Returned: DHL

Setup

Shot Spacing: NIJ-STD-0106.01(Modified)
Witness Panel: Clay
Backing Material: Clay-filled head form
Condition: Ambient

Primary Vel. Screens (ft): 6.500, 9.500
Primary Vel. Location (ft): 8.000
Range to Target (ft): 16.400
Target to Witness (in): 3.000

Range No.: 5
Temp: 67.1 °F
BP: 30.2 inHg
RH: 37.2%
Barrel/Gun: 2019
Gunner: Blake Ellis
Recorder: C. Peddicord

Ammunition

Projectile	Lot No.	Powder
(1) .357-cal., 125-grain SIG FMJ FN	Speer A27R	Accurate No. 2

Applicable Standards or Procedures

Clay Drop 1 - Drop Time: 7:30 AM; Block No. HB-4; Temp: 93.3 °F , 94.1 °F; Drop Depths: 24.4mm,24.9mm,26.4mm

- (1) NIJ-STD-0106.01 (Modified)
- (2) AR/PD 10-02 Rev A, Change 6 (Modified)
- (3) Customer request

Shot No.	Ammo	Weight (gr)	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Avg. Vel. (ft/s)	Penetration	Deformation (mm)	Obliq. (°)	Footnotes
1	1	125.0	2178	1377	2175	1379	1378	None	23.5	0.0	(a)
2	1	125.0	2155	1392	2152	1394	1393	None	32.0	0.0	(b)
3	1	125.0	2146	1398	2146	1398	1398	None	37.0	0.0	(c)
4	1	125.0	2162	1388	2159	1390	1389	None	18.7	0.0	(d)
5	1	125.0	2152	1394	2149	1396	1395	None	12.7	0.0	(e)

Remarks:

Required velocity: 1360 to 1460 ft/s
Projectile yaw check: 0° yaw on all impacts.
Headform: HB4-4; Headform temp: 94.2 °F

Footnotes:

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

BALLISTIC RESISTANCE TEST

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-11

Test Date: 12/5/2019

Test Panel

Description: Helmet.

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-L06 (.45 ACP, Wet)

Size: Large
Avg. Thick: 0.435 in
Thickness: 0.442 in; 0.442 in;
0.428 in; 0.428 in

Weight: 3.13 lbs
Plies/Laminates: NA

Date Received: 12/2/2019
Via: DHL
Returned: DHL

Setup

Shot Spacing: NIJ-STD-0106.01(Modified)
Witness Panel: Clay
Backing Material: Clay-filled head form
Condition: Submerged in water for 2-4 hours

Primary Vel. Screens (ft): 6.500, 9.500
Primary Vel. Location (ft): 8.000
Range to Target (ft): 16.400
Target to Witness (in): 0.000

Range No.: 5
Temp: 67.1 °F
BP: 30.2 inHg
RH: 37.2%
Barrel/Gun: Test Barrel
Gunner: Blake Ellis
Recorder: M. Contreras

Ammunition

Projectile	Lot No.	Powder
(1) .45-cal., AUTO, 230-grain FMJ	American Eagle	Accurate No. 2

Applicable Standards or Procedures

Clay Drop 1 - Drop Time: 11:14 AM; Block No. HB-1; Temp: 96.6 °F , 96.2 °F; Drop Depths: 24.8mm,24.8mm,25.3mm

- (1) NIJ-STD-0106.01 (Modified)
- (2) AR/PD 10-02 Rev A, Change 6 (Modified)
- (3) Customer request

Shot No.	Ammo	Weight (gr)	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Avg. Vel. (ft/s)	Penetration	Deformation (mm)	Obliq. (°)	Footnotes
1	1	229.8	3223	931	3223	931	931	None	1.9	0.0	(a)
2	1	229.8	3291	912	3288	912	912	None	15.9	0.0	(b)
3	1	229.9	3259	921	3259	921	921	None	2.5	0.0	(c)
4	1	229.9	3220	932	3220	932	932	None	7.5	0.0	(d)
5	1	230.0	3155	951	3151	952	951	None	11.7	0.0	(e)

Remarks:

Required velocity: 875 to 975 ft/s
Projectile yaw check: 0° yaw on all impacts.
Headform: HB1-2; Headform temp: 94.4 °F

Footnotes:

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

BALLISTIC RESISTANCE TEST

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-12

Test Date: 12/5/2019

Test Panel

Description: Helmet.

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-L07 (.45 ACP, Amb.)

Size: Large
Avg. Thick: 0.449 in
Thickness: 0.440 in; 0.469 in;
0.437 in; 0.450 in

Weight: 3.23 lbs
Plies/Laminates: NA

Date Received: 12/2/2019
Via: DHL
Returned: DHL

Setup

Shot Spacing: NIJ-STD-0106.01(Modified)
Witness Panel: Clay
Backing Material: Clay-filled head form
Condition: Ambient

Primary Vel. Screens (ft): 6.500, 9.500
Primary Vel. Location (ft): 8.000
Range to Target (ft): 16.400
Target to Witness (in): 0.000

Range No.: 5
Temp: 67.1 °F
BP: 30.2 inHg
RH: 37.2%
Barrel/Gun: Test Barrel
Gunner: Blake Ellis
Recorder: M. Contreras

Ammunition

Projectile	Lot No.	Powder
(1) .45-cal., AUTO, 230-grain FMJ	American Eagle	Accurate No. 2

Applicable Standards or Procedures

Clay Drop 1 - Drop Time: 11:14 AM; Block No. HB-1; Temp: 96.6 °F , 96.2 °F; Drop Depths: 24.8mm,24.8mm,25.3mm

- (1) NIJ-STD-0106.01 (Modified)
- (2) AR/PD 10-02 Rev A, Change 6 (Modified)
- (3) Customer request

Shot No.	Ammo	Weight (gr)	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Avg. Vel. (ft/s)	Penetration	Deformation (mm)	Obliq. (°)	Footnotes
1	1	229.8	3190	940	3190	940	940	None	9.3	0.0	(a)
2	1	229.9	3220	932	3216	933	932	None	16.6	0.0	(b)
3	1	230.2	3229	929	3226	930	930	None	3.2	0.0	(c)
4	1	230.2	3249	923	3249	923	923	None	7.1	0.0	(d)
5	1	230.3	3155	951	3155	951	951	None	9.1	0.0	(e)

Remarks:

Required velocity: 875 to 975 ft/s
Projectile yaw check: 0° yaw on all impacts.
Headform: HB1-1; Headform temp: 96.4 °F

Footnotes:

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

BALLISTIC RESISTANCE TEST

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-13

Test Date: 12/5/2019

Test Panel

Description: Proprietary. Soft armor. Sample No.: 1 PCS.

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: SAP01 (357 sig, Amb.)

Size: C-3
Avg. Thick: NA
Thickness: NA

Weight: 2.34 lbs
Plies/Laminates: NA

Date Received: 12/5/2019
Via: DHL
Returned: DHL

Setup

Shot Spacing: NIJ-STD-0101.06 Level IIIA
Witness Panel: Clay
Backing Material: 5.5-in clay/plywood
Condition: Ambient

Primary Vel. Screens (ft): 6.500, 6.833,
11.166, 11.500
Primary Vel. Location (ft): 9.000
Range to Target (ft): 17.200
Target to Witness (in): 0.000

Range No.: 3
Temp: 65.6 °F
BP: 29.7 inHg
RH: 41.9%
Barrel/Gun: CT-3105
Gunner: G. Bonilla
Recorder: Ramon Chavez

Ammunition

Projectile	Lot No.	Powder
(1) .357-cal., 125-grain SIG FMJ FN	Speer A27R	Accurate No. 2

Applicable Standards or Procedures

Clay Drop 1 - Drop Time: 10:50 AM; Block No. 28; Temp: 90.8° F; Drop Depths: 17.8mm,18.9mm,20.2mm,18.9mm,19.7mm

(1) NIJ-STD-0101.06 Level IIIA (Modified)

(2) Customer request

Shot No.	Ammo	Weight (gr)	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Avg. Vel. (ft/s)	Penetration	Deformation (mm)	Obliq. (°)	Footnotes
1	1	125.0	3387	1476	2933	1477	1477	None	25.0	0.0	
2	1	125.0	3400	1471	2945	1471	1471	None	23.1	0.0	
3	1	125.0	3365	1486	2914	1487	1486	None	26.0	0.0	
4	1	125.0	3373	1482	2921	1483	1483	None	NA	45.0	
5	1	125.0	3373	1482	2921	1483	1483	None	NA	30.0	
6	1	125.0	3336	1499	2889	1500	1499	None	NA	0.0	

Remarks:

Required velocity: 1470 ±30 ft/s

Footnotes:

BALLISTIC RESISTANCE TEST

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-14

Test Date: 12/5/2019

Test Panel

Description: Proprietary. Soft armor. Sample No.: 1 PCS.

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: SAP01 (44 Mag, Amb.)

Size: C-3
Avg. Thick: NA
Thickness: NA

Weight: 2.59 lbs
Plies/Laminates: NA

Date Received: 12/5/2019
Via: DHL
Returned: DHL

Setup

Shot Spacing: NIJ-STD-0101.06 Level IIIA
Witness Panel: Clay
Backing Material: 5.5-in clay/plywood
Condition: Ambient

Primary Vel. Screens (ft): 6.500, 6.833,
11.166, 11.500
Primary Vel. Location (ft): 9.000
Range to Target (ft): 17.200
Target to Witness (in): 0.000

Range No.: 3
Temp: 65.6 °F
BP: 29.7 inHg
RH: 41.2%
Barrel/Gun: CT-3108
Gunner: G. Bonilla
Recorder: Ramon Chavez

Ammunition

Projectile	Lot No.	Powder
(1) .44-mag., 240-grain SJHP	Speer B02X	Accurate No. 5

Applicable Standards or Procedures

Clay Drop 1 - Drop Time: 9:45 PM; Block No. 22; Temp: 90.1 °F; Drop Depths: 18.2mm,17.8mm,20.4mm,16.9mm,17.3mm

(1) NIJ-STD-0101.06 Level IIIA (Modified)

(2) Customer request

Shot No.	Ammo	Weight (gr)	Time 1 (μs)	Vel. 1 (ft/s)	Time 2 (μs)	Vel. 2 (ft/s)	Avg. Vel. (ft/s)	Penetration	Deformation (mm)	Obliq. (°)	Footnotes
1	1	240.0	3026	1652	2613	1658	1655	None	37.5	0.0	
2	1	240.0	3028	1651	2613	1658	1655	None	44.1	0.0	
3	1	240.0	3028	1651	2613	1658	1655	None	39.4	0.0	
4	1	240.0	3036	1647	2623	1652	1649	None	NA	45.0	
5	1	240.0	3065	1631	2645	1638	1635	None	NA	30.0	
6	1	240.0	3036	1647	2621	1653	1650	None	NA	0.0	

Remarks:

Required velocity: 1650 ±30 ft/s

Footnotes:

BALLISTIC RESISTANCE TEST

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-15

Test Date: 12/5/2019

Test Panel

Description: Proprietary. Soft armor. Sample No.: 1 PCS.

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: SAP02 (357 sig, Wet)

Size: C-3
Avg. Thick: NA
Thickness: NA

Weight: 2.80 lbs
Plies/Laminates: NA

Date Received: 12/5/2019
Via: DHL
Returned: DHL

Setup

Shot Spacing: NIJ-STD-0101.06 Level IIIA
Witness Panel: Clay
Backing Material: 5.5-in clay/plywood
Condition: Wet per NIJ-STD-0101.06

Primary Vel. Screens (ft): 6.500, 6.833,
11.166, 11.500
Primary Vel. Location (ft): 9.000
Range to Target (ft): 17.200
Target to Witness (in): 0.000

Range No.: 3
Temp: 65.6 °F
BP: 29.7 inHg
RH: 43.8%
Barrel/Gun: CT-3105
Gunner: G. Bonilla
Recorder: Ramon Chavez

Ammunition

Projectile	Lot No.	Powder
(1) .357-cal., 125-grain SIG FMJ FN	Speer A27R	Accurate No. 2

Applicable Standards or Procedures

Clay Drop 1 - Drop Time: 10:36 AM; Block No. 28; Temp: 92.6° F; Drop Depths: 17.5mm,19.8mm,20.7mm,19.4mm,18.1mm

(1) NIJ-STD-0101.06 Level IIIA (Modified)

(2) Customer request

Shot No.	Ammo	Weight (gr)	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Avg. Vel. (ft/s)	Penetration	Deformation (mm)	Obliq. (°)	Footnotes
1	1	125.0	3412	1465	2953	1467	1466	None	28.0	0.0	
2	1	125.0	3441	1453	2980	1454	1454	None	25.5	0.0	
3	1	125.0	3451	1449	2987	1451	1450	None	26.6	0.0	
4	1	125.0	3419	1462	2960	1464	1463	None	NA	30.0	
5	1	125.0	3419	1462	2960	1464	1463	None	NA	45.0	
6	1	125.0	3448	1450	2985	1452	1451	None	NA	0.0	

Remarks:

Required velocity: 1470 ±30 ft/s

Footnotes:

BALLISTIC RESISTANCE TEST

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-16

Test Date: 12/5/2019

Test Panel

Description: Proprietary. Soft armor. Sample No.: 1 PCS.

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: SAP02 (44 Mag, Wet)

Size: C-3
Avg. Thick: NA
Thickness: NA

Weight: 2.57 lbs
Plies/Laminates: NA

Date Received: 12/5/2019
Via: DHL
Returned: DHL

Setup

Shot Spacing: NIJ-STD-0101.06 Level IIIA
Witness Panel: Clay
Backing Material: 5.5-in clay/plywood
Condition: Wet per NIJ-STD-0101.06

Primary Vel. Screens (ft): 6.500, 6.833,
11.166, 11.500
Primary Vel. Location (ft): 9.000
Range to Target (ft): 17.200
Target to Witness (in): 0.000

Range No.: 3
Temp: 65.6 °F
BP: 29.7 inHg
RH: 42.0%
Barrel/Gun: CT-3108
Gunner: G. Bonilla
Recorder: Ramon Chavez

Ammunition

Projectile	Lot No.	Powder
(1) .44-mag., 240-grain SJHP	Speer B02X	Accurate No. 5

Applicable Standards or Procedures

Clay Drop 1 - Drop Time: 9:15 AM; Block No. 22; Temp: 91 °F; Drop Depths: 17.6mm,18.1mm,16.9mm,18.6mm,17.9mm

(1) NIJ-STD-0101.06 Level IIIA (Modified)

(2) Customer request

Shot No.	Ammo	Weight (gr)	Time 1 (μs)	Vel. 1 (ft/s)	Time 2 (μs)	Vel. 2 (ft/s)	Avg. Vel. (ft/s)	Penetration	Deformation (mm)	Obliq. (°)	Footnotes
1	1	240.0	3036	1647	2621	1653	1650	None	39.7	0.0	
2	1	240.0	3033	1649	2621	1653	1651	None	33.0	0.0	
3	1	240.0	3080	1623	2660	1629	1626	None	38.6	0.0	
4	1	240.0	3063	1632	2655	1632	1632	None	NA	30.0	
5	1	240.0	3048	1640	2633	1646	1643	None	NA	45.0	
6	1	240.0	3019	1656	2606	1663	1659	None	NA	0.0	

Remarks:

Required velocity: 1650 ±30 ft/s

Footnotes:

BALLISTIC RESISTANCE TEST

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-17

Test Date: 11/26/2019

Test Panel

Description: Helmet.

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ECH01 (M80)

Size: Medium
Avg. Thick: 0.697 in
Thickness: 0.694 in; 0.681 in;
0.699 in; 0.715 in

Weight: 4.31 lbs
Plies/Laminates: NA

Date Received: 11/14/2019
Via: DHL
Returned: DHL

Setup

Shot Spacing: Customer request
Witness Panel: Clay
Backing Material: Clay-filled NIJ-0106.01
head form
Condition: Ambient

Primary Vel. Screens (ft): 6.500, 9.500
Primary Vel. Location (ft): 8.000
Range to Target (ft): 26.250
Target to Witness (in): 0.000

Range No.: 1
Temp: 70.1 °F
BP: 29.9 inHg
RH: 42.0%
Barrel/Gun: Test Barrel
Gunner: Blake Ellis
Recorder: Lance Eveland

Ammunition

Projectile	Lot No.	Powder
(1) 7.62 x 51-mm, 149-grain M80 FMJ	Military	N133

Applicable Standards or Procedures

Clay Drop 1 - Drop Time: 11:00 AM; Block No. HB-1; Temp: 96.2 °F , 96.6 °F; Drop Depths: 24.4mm,24.2mm,26.2mm

(1) NIJ-STD-0106.01 (Modified)

(2) Customer request

Shot No.	Ammo	Weight (gr)	Time 1 (μs)	Vel. 1 (ft/s)	Time 2 (μs)	Vel. 2 (ft/s)	Avg. Vel. (ft/s)	Penetration	Deformation (mm)	Obliq. (°)	Footnotes
1	1	148.3	1339	2240	1337	2244	2242	Bullet/Spall	NA	0.0	(a)
2	1	148.8	1364	2199	1364	2199	2199	Bullet/Spall	NA	0.0	(b)
3	1	147.7	1373	2185	1371	2188	2187	Bullet/Spall	NA	0.0	(c)

Remarks:

Required velocity: 2150 to 2250 ft/s

Projectile yaw check: 0° yaw on all impacts.

Head form: HB1-1

Head form temp: 96.8 °F

Footnotes:

(a) Crown

(b) Right

(c) Left

BALLISTIC RESISTANCE TEST

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-18

Test Date: 11/26/2019

Test Panel

Description: Helmet.

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ECH02 (M80)

Size: Medium
Avg. Thick: 0.703 in
Thickness: 0.722 in; 0.722 in;
0.688 in; 0.679 in

Weight: 4.33 lbs
Plies/Laminates: NA

Date Received: 11/14/2019
Via: DHL
Returned: DHL

Setup

Shot Spacing: Customer request
Witness Panel: Clay
Backing Material: Clay-filled NIJ-0106.01
head form
Condition: Ambient

Primary Vel. Screens (ft): 6.500, 9.500
Primary Vel. Location (ft): 8.000
Range to Target (ft): 26.250
Target to Witness (in): 0.000

Range No.: 1
Temp: 70.1 °F
BP: 29.9 inHg
RH: 42.0%
Barrel/Gun: Test Barrel
Gunner: Blake Ellis
Recorder: Lance Eveland

Ammunition

Projectile	Lot No.	Powder
(1) 7.62 x 51-mm, 149-grain M80 FMJ	Military	N133

Applicable Standards or Procedures

Clay Drop 1 - Drop Time: 11:00 AM; Block No. HB-1; Temp: 96.2 °F , 96.6 °F; Drop Depths: 24.4mm,24.2mm,26.2mm

(1) NIJ-STD-0106.01 (Modified)

(2) Customer request

Shot No.	Ammo	Weight (gr)	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Avg. Vel. (ft/s)	Penetration	Deformation (mm)	Obliq. (°)	Footnotes
1	1	147.9	1383	2169	1383	2169	2169	None	35.18	0.0	(a)
2	1	148.2	1359	2208	1354	2216	2212	Bullet/Spall	NA	0.0	(b)

Remarks:

Required velocity: 2150 to 2250 ft/s

Projectile yaw check: 0° yaw on all impacts.

Head form: HB1-1

Head form temp: 96.8 °F

Footnotes:

(a) Front

(b) Back

3 Protection Ballistic Limit Test, V₅₀ BL(P)

Twelve samples were used for V₅₀ testing.

3.1 Threats and Instrumentation

3.1.1 Threats*

- .22-cal., 17-grain fragment simulating projectile (FSP) V2

*All projectiles were fired from a universal receiver which was fitted with the appropriate barrel and mounted on a NTS-Chesapeake Testing mount.

*The threat projectiles were required to have no greater than 5° total yaw. Projectile yaw was measured to ensure that the test impacts were within this constraint by placing a yaw card at the appropriate gun-to-target range during velocity verification shots.

3.1.2 Instrumentation

Projectile velocity measurements were obtained using Oehler Research model No. 57 infrared screens with Y.I.S. Cowden Group Chrono-USB chronographs.

3.2 Details of Test

The objective of this test was to conduct a ballistic limit, V₅₀ performance test on the samples in accordance with MIL-STD-662F, dated 18 December 1997, STANAG 2920 Edition 3, dated 15 June 2015, and the customer's request. Shot spacing between multiple impacts against the samples were in accordance with the customer's request. Shots against the samples were performed at 0.0° obliquity and ambient range temperature (70.1 °F).

Each sample was conditioned to specific parameters prior to testing as referenced on each data sheet. For each shot, the target was clamped to a rigid test fixture. A piece of 0.508 mm thick (0.020 in) type 2024 T3 aluminum was mounted along the shotline, approximately 76 mm ±13 mm (3 in ±0.5 in) behind the inside surface of the strike face, to verify complete penetrations. A complete penetration was scored only when the witness material was perforated (i.e., light was visible through the material). All firings were conducted at 15.000 ft from the target. The projectile velocity for the initial shot against each sample was in accordance with the customer's request. Velocities for subsequent shots were based on the result of the previous shot.

3.3 Summary of Results

The results of the V₅₀ ballistic limit testing are summarized in Table 2. The round-by-round ballistic data sheets and scatter plots for all testing performed are provided on the following pages. The following is a list of abbreviations used in the data sheets:

- C = Complete penetration (same as CP).
- Gap = For V₅₀ data, the difference in velocities between the highest partial penetration and the lowest complete penetration when the complete penetration occurs at a higher velocity than the partial penetration.
- HP = For V₅₀ data, the highest velocity at which a partial penetration occurred.
- LC = For V₅₀ data, the lowest velocity at which a complete penetration occurred.

P = Partial penetration (same as PP).
ROR = Range of results; for V_{50} data, the difference between the highest and lowest velocities.
 V_{50} = Statistical velocity at which the threat defeats the armor 50% of the time.
RMR = Range of mixed results; for V_{50} data, the difference in velocities between the highest partial penetration and the lowest complete penetration when the partial penetration occurs at a higher velocity than the complete penetration.
Yes = Round was used in calculating a V_{50} or an approximate V_{50} .
No = Round was not used in calculating a V_{50} or an approximate V_{50} .
BH = Bad hit.

Table 2. Summary of V₅₀ Ballistic Limit Test Results

Job No.	Sample No.	Size	Weight (lbs)	Threat	Target Obliq. (deg)	Ballistic Limit Data				
						V ₅₀ (ft/s)	No. of Points	RMR (ft/s)	GAP (ft/s)	ROR (ft/s)
31375-015-A	ACH-L01 (17gr, Amb.)	Large	2.67	.22-cal., 17-grain FSP V2	0.0	2367 ^{a,b}	2	147	NA	147
31375-015-B	ACH-L02 (17gr, Hot)	Large	2.76	.22-cal., 17-grain FSP V2	0.0	2486	6	9	NA	113
31375-015-C	ACH-L03 (17gr, Cold)	Large	2.76	.22-cal., 17-grain FSP V2	0.0	2537	6	NA	8	108
31375-015-D	ACH-M01 (17gr, Amb.)	Medium	2.74	.22-cal., 17-grain FSP V2	0.0	2640 ^{a,b}	4	151	NA	151
31375-015-E	ACH-M02 (17gr, Hot)	Medium	2.81	.22-cal., 17-grain FSP V2	0.0	2639 ^{a,b}	4	184	NA	187
31375-015-F	ACH-M03 (17gr, Cold)	Medium	2.69	.22-cal., 17-grain FSP V2	0.0	2506	6	4	NA	111
31375-015-G	ACH-S01 (17gr, Amb.)	Small	2.62	.22-cal., 17-grain FSP V2	0.0	2511	6	54	NA	103
31375-015-H	ACH-S02 (17gr, Hot)	Small	2.61	.22-cal., 17-grain FSP V2	0.0	2639	6	40	NA	121
31375-015-I	ACH-S03 (17gr, Cold)	Small	2.66	.22-cal., 17-grain FSP V2	0.0	2558	6	90	NA	93
31375-015-J	ACH-XL01 (17gr, Amb.)	X-Large	3.29	.22-cal., 17-grain FSP V2	0.0	2741 ^{a,b}	4	152	NA	155
31375-015-K	ACH-XL02 (17gr, Hot)	X-Large	3.24	.22-cal., 17-grain FSP V2	0.0	2582	6	NA	15	57
31375-015-L	ACH-XL03 (17gr, Cold)	X-Large	3.32	.22-cal., 17-grain FSP V2	0.0	2668	6	NA	33	117

^a Approximate V₅₀

^b The testing was terminated due to excessive range of mix.

PROTECTION BALLISTIC LIMIT TEST, V₅₀ BL(P)

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-A

Test Date: 12/6/2019

Page 1 of 2

Test Panel

Description: Helmet.

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-L01 (17gr, Amb.)

Size: Large
Avg. Thick: 0.469 in
Thickness: 0.472 in; 0.484 in;
0.469 in; 0.451 in

Weight: 2.67 lbs
Plies/Laminates: NA
Required BL(P): NA

Date Received: 12/3/2019
Via: FedEx
Returned: FedEx

Setup

Shot Spacing: Customer request
Witness Panel: 0.02 in 2024-T3 Al
Backing Material: NA
Condition: Ambient

Primary Vel. Screens (ft): 5.000, 5.333,
9.667, 10.000
Primary Vel. Location (ft): 7.500
Range to Target (ft): 15.000
Target to Witness (in): 3.000

Range No.: 1
Temp: 70.1 °F
BP: 29.9 inHg
RH: 42.0%
Barrel/Gun: Test Barrel
Gunner: G. Bonilla
Recorder: Lance Eveland

Ammunition

Projectile	Lot No.	Powder
(1) .22-cal., 17-grain FSP V2	178819	Bullseye

Applicable Standards or Procedures

- (1) MIL-STD-662F, dated 17 December 1997
- (2) Stanag 2920 Edition 3, dated 15 June 2015
- (3) Customer request

Shot No.	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)	Result	Include in V ₅₀	Obliq. (°)	Footnotes
1	10.4	17.0	1957	2555	1696	2555	2555	2446	BH	No	0.0	(a,f)
2	10.4	17.0	1920	2604	1664	2604	2604	2493	C	No	0.0	(b)
3	10.0	17.0	1962	2548	1700	2549	2549	2440	P	Yes	0.0	(c)
4	10.4	17.0	1918	2607	1661	2609	2608	2497	C	No	0.0	(d)
5	10.0	17.0	1964	2546	1703	2545	2545	2437	C	No	0.0	(e)
6	9.6	17.0	2001	2499	1732	2502	2500	2394	C	No	0.0	(a)
7	9.2	17.0	2050	2439	1774	2443	2441	2337	C	No	0.0	(b)
8	8.8	17.0	2137	2340	1852	2340	2340	2240	P	No	0.0	(c)
9	9.2	17.0	2045	2445	1771	2447	2446	2341	C	No	0.0	(d)
10	9.0	17.0	2089	2393	1808	2397	2395	2293	C	Yes	0.0	(e,g)

Remarks:

Starting velocity: 2500 ft/s
Projectile yaw check: 0° yaw on all impacts
BH= Bad hit.

Footnotes:

- (a) Crown
- (b) Front
- (c) Left
- (d) Back
- (e) Right
- (f) Projectile yawed
- (g) The testing was terminated due to excessive range of mix.

V₅₀ Summary:

No. Points: 1 and 1
V₅₀: 2367 ft/s
High Partial: 2440 ft/s
Low Complete: 2293 ft/s
Range of Results (ROR): 147 ft/s
Range of Mix Results (RMR): 147 ft/s
Gap: NA

PROTECTION BALLISTIC LIMIT TEST, V₅₀ BL(P)

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-A

Test Date: 12/6/2019

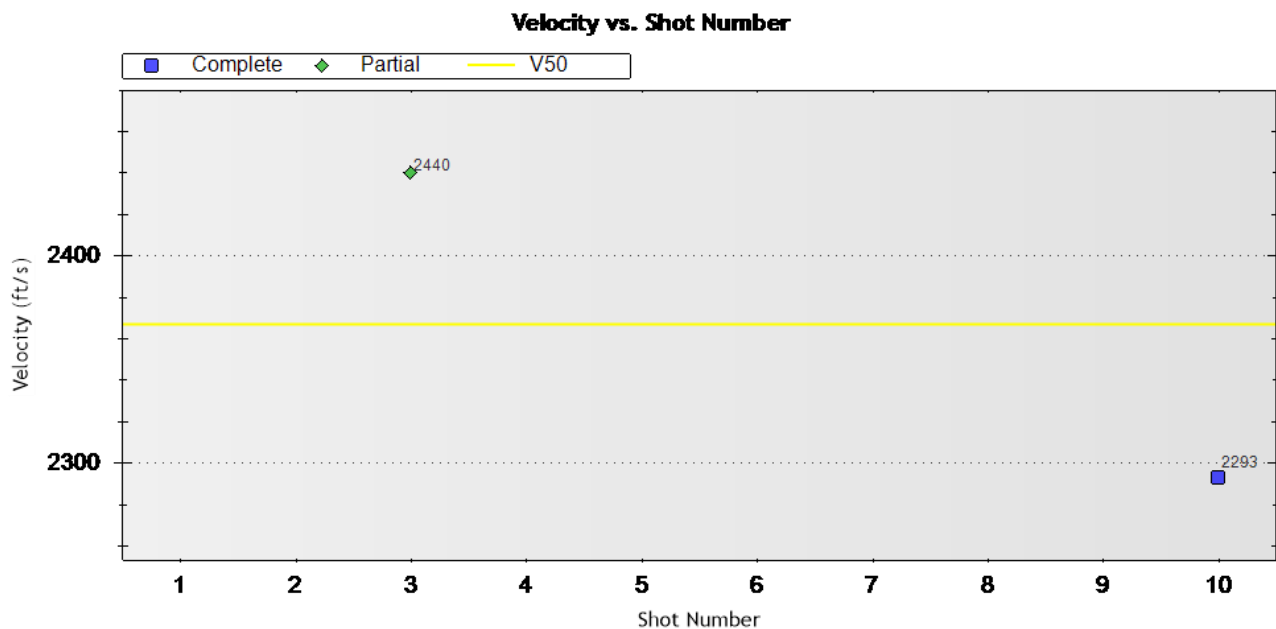
Page 2 of 2

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-L01 (17gr, Amb.)

V₅₀ Summary:

No. Points: 1 and 1
V₅₀: 2367 ft/s
High Partial: 2440 ft/s
Low Complete: 2293 ft/s
Range of Results (ROR): 147 ft/s
Range of Mix Results (RMR): 147 ft/s
Gap: NA



PROTECTION BALLISTIC LIMIT TEST, V₅₀ BL(P)

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-B

Test Date: 12/5/2019

Page 1 of 2

Test Panel

Description: Helmet.

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-L02 (17gr, Hot)

Size: Large
Avg. Thick: NA
Thickness: NA

Weight: 2.76 lbs
Plies/Laminates: NA
Required BL(P): NA

Date Received: 12/3/2019
Via: FedEx
Returned: FedEx

Setup

Shot Spacing: Customer request
Witness Panel: 0.02 in 2024-T3 Al
Backing Material: NA
Condition: +70 °C for minimum 6 hours

Primary Vel. Screens (ft): 5.000, 5.333, 9.667, 10.000
Primary Vel. Location (ft): 7.500
Range to Target (ft): 15.000
Target to Witness (in): 3.000

Range No.: 1
Temp: 70.1 °F
BP: 29.9 inHg
RH: 42.0%
Barrel/Gun: Test Barrel
Gunner: Glenn Snyder
Recorder: Lance Eveland

Ammunition

Projectile	Lot No.	Powder
(1) .22-cal., 17-grain FSP V2	178819	Bullseye

Applicable Standards or Procedures

- (1) MIL-STD-662F, dated 17 December 1997
- (2) Stanag 2920 Edition 3, dated 15 June 2015
- (3) Customer request

Shot No.	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)	Result	Include in V ₅₀	Obliq. (°)	Footnotes
1	10.0	17.0	1940	2577	1681	2578	2578	2468	P	Yes	0.0	(a)
2	12.0	17.0	1761	2839	1525	2842	2840	2721	C	No	0.0	(b)
3	11.0	17.0	1871	2672	1620	2675	2674	2560	C	No	0.0	(c)
4	10.5	17.0	1920	2604	1664	2604	2604	2493	P	Yes	0.0	(d)
5	10.8	17.0	1881	2658	1630	2658	2658	2545	C	Yes	0.0	(e)
6	10.4	17.0	1920	2604	1661	2609	2607	2496	C	Yes	0.0	(a)
7	10.0	17.0	1927	2595	1671	2593	2594	2484	C	Yes	0.0	(b)
8	9.7	17.0	1969	2539	1705	2542	2540	2432	P	Yes	0.0	(c)

Remarks:

Starting velocity: 2500 ft/s

Projectile yaw check: 0° yaw on all impacts

Footnotes:

- Crown
- Front
- Left
- Back
- Right

V₅₀ Summary:

No. Points: 3 and 3
V₅₀: 2486 ft/s
High Partial: 2493 ft/s
Low Complete: 2484 ft/s
Range of Results (ROR): 113 ft/s
Range of Mix Results (RMR): 9 ft/s
Gap: NA

PROTECTION BALLISTIC LIMIT TEST, V₅₀ BL(P)

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-B

Test Date: 12/5/2019

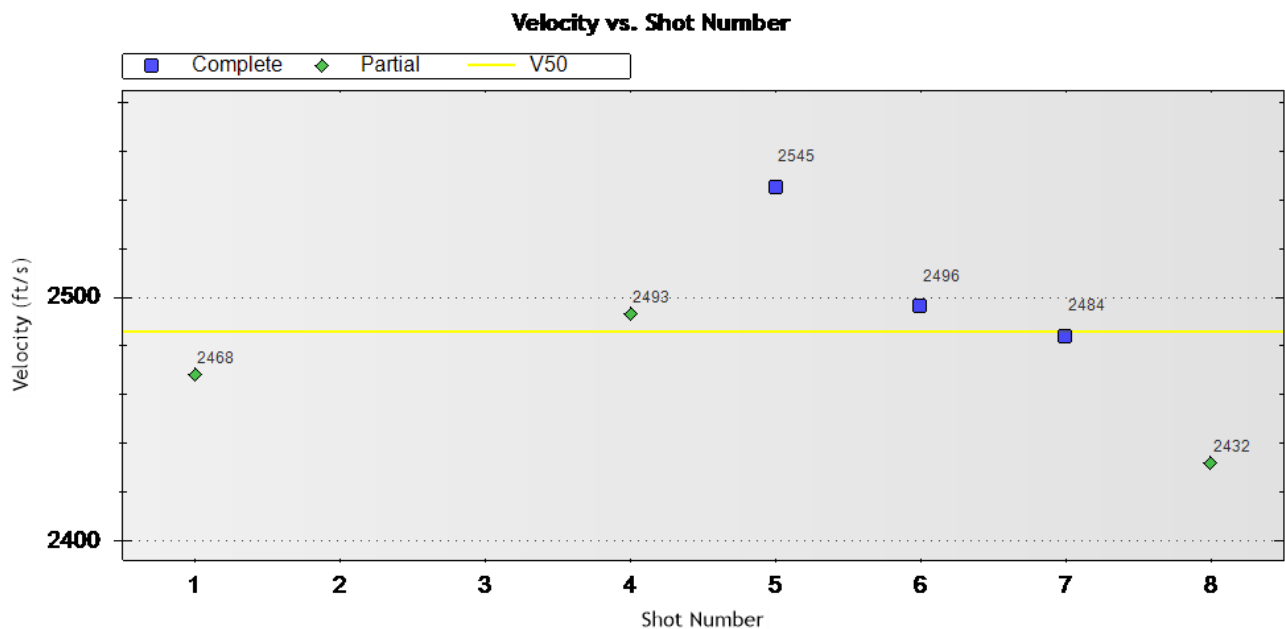
Page 2 of 2

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-L02 (17gr, Hot)

V₅₀ Summary:

No. Points: 3 and 3
V₅₀: 2486 ft/s
High Partial: 2493 ft/s
Low Complete: 2484 ft/s
Range of Results (ROR): 113 ft/s
Range of Mix Results (RMR): 9 ft/s
Gap: NA



PROTECTION BALLISTIC LIMIT TEST, V₅₀ BL(P)

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-C

Test Date: 12/6/2019

Page 1 of 2

Test Panel

Description: Helmet.

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-L03 (17gr, Cold)

Size: Large
Avg. Thick: 0.481 in
Thickness: 0.482 in; 0.484 in;
0.457 in; 0.499 in

Weight: 2.76 lbs
Plies/Laminates: NA
Required BL(P): NA

Date Received: 12/3/2019
Via: FedEx
Returned: FedEx

Setup

Shot Spacing: Customer request
Witness Panel: 0.02 in 2024-T3 Al
Backing Material: NA
Condition: -40 °C for minimum 6
hours

Primary Vel. Screens (ft): 5.000, 5.333,
9.667, 10.000
Primary Vel. Location (ft): 7.500
Range to Target (ft): 15.000
Target to Witness (in): 3.000

Range No.: 1
Temp: 70.1 °F
BP: 29.9 inHg
RH: 42.0%
Barrel/Gun: Test Barrel
Gunner: G. Bonilla
Recorder: Lance Eveland

Ammunition

Projectile	Lot No.	Powder
(1) .22-cal., 17-grain FSP V2	178819	Bullseye

Applicable Standards or Procedures

- (1) MIL-STD-662F, dated 17 December 1997
- (2) Stanag 2920 Edition 3, dated 15 June 2015
- (3) Customer request

Shot No.	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)	Result	Include in V ₅₀	Obliq. (°)	Footnotes
1	10.4	17.0	1898	2634	1642	2639	2637	2525	P	Yes	0.0	(a)
2	10.8	17.0	1891	2644	1637	2647	2646	2533	C	Yes	0.0	(b)
3	10.4	17.0	1927	2595	1669	2596	2596	2485	P	Yes	0.0	(c)
4	10.8	17.0	1847	2707	1600	2708	2708	2593	C	Yes	0.0	(d)
5	10.4	17.0	1898	2634	1642	2639	2637	2525	P	Yes	0.0	(e)
6	10.8	17.0	1866	2680	1620	2675	2677	2563	C	Yes	0.0	(a)

Remarks:

Starting velocity: 2500 ft/s

Projectile yaw check: 0° yaw on all impacts

Footnotes:

- Crown
- Front
- Left
- Back
- Right

V₅₀ Summary:

No. Points: 3 and 3
V₅₀: 2537 ft/s
High Partial: 2525 ft/s
Low Complete: 2533 ft/s
Range of Results (ROR): 108 ft/s
Range of Mix Results (RMR): NA
Gap: 8 ft/s

PROTECTION BALLISTIC LIMIT TEST, V₅₀ BL(P)

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-C

Test Date: 12/6/2019

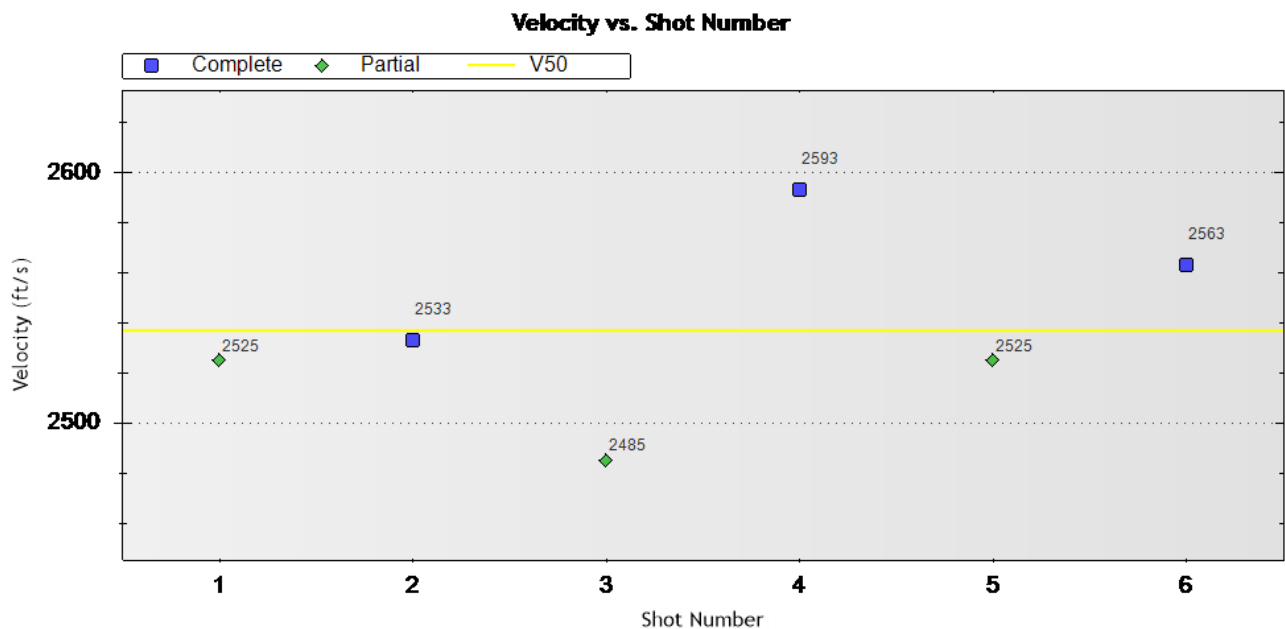
Page 2 of 2

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-L03 (17gr, Cold)

V₅₀ Summary:

No. Points: 3 and 3
V₅₀: 2537 ft/s
High Partial: 2525 ft/s
Low Complete: 2533 ft/s
Range of Results (ROR): 108 ft/s
Range of Mix Results (RMR): NA
Gap: 8 ft/s



PROTECTION BALLISTIC LIMIT TEST, V₅₀ BL(P)

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-D

Test Date: 12/6/2019

Page 1 of 2

Test Panel

Description: Helmet.

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-M01 (17gr, Amb.)

Size: Medium
Avg. Thick: 0.475 in
Thickness: 0.481 in; 0.482 in;
0.454 in; 0.481 in

Weight: 2.74 lbs
Plies/Laminates: NA
Required BL(P): NA

Date Received: 12/3/2019
Via: FedEx
Returned: FedEx

Setup

Shot Spacing: Customer request
Witness Panel: 0.02 in 2024-T3 Al
Backing Material: NA
Condition: Ambient

Primary Vel. Screens (ft): 5.000, 5.333,
9.667, 10.000
Primary Vel. Location (ft): 7.500
Range to Target (ft): 15.000
Target to Witness (in): 3.000

Range No.: 1
Temp: 70.1 °F
BP: 29.9 inHg
RH: 42.0%
Barrel/Gun: Test Barrel
Gunner: G. Bonilla
Recorder: Lance Eveland

Ammunition

Projectile	Lot No.	Powder
(1) .22-cal., 17-grain FSP V2	178819	Bullseye

Applicable Standards or Procedures

- (1) MIL-STD-662F, dated 17 December 1997
- (2) Stanag 2920 Edition 3, dated 15 June 2015
- (3) Customer request

Shot No.	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)	Result	Include in V ₅₀	Obliq. (°)	Footnotes
1	10.4	17.0	1903	2627	1647	2631	2629	2517	P	No	0.0	(a)
2	10.8	17.0	1864	2682	1613	2687	2684	2570	P	No	0.0	(b)
3	11.2	17.0	1835	2725	1588	2729	2727	2611	C	Yes	0.0	(c)
4	10.8	17.0	1869	2675	1617	2680	2678	2564	C	Yes	0.0	(d)
5	10.4	17.0	1959	2552	1698	2552	2552	2443	P	No	0.0	(e)
6	10.5	17.0	1913	2614	1657	2615	2614	2503	P	No	0.0	(a)
7	10.8	17.0	1869	2675	1620	2675	2675	2561	P	No	0.0	(b)
8	11.2	17.0	1827	2737	1583	2737	2737	2621	P	No	0.0	(c)
9	11.6	17.0	1796	2784	1554	2789	2786	2668	P	Yes	0.0	(d)
10	12.0	17.0	1766	2831	1527	2838	2835	2715	P	Yes	0.0	(e,f)

Remarks:

Starting velocity: 2500 ft/s

Projectile yaw check: 0° yaw on all impacts

V₅₀ Summary:

No. Points: 2 and 2
V₅₀: 2640 ft/s
High Partial: 2715 ft/s
Low Complete: 2564 ft/s
Range of Results (ROR): 151 ft/s
Range of Mix Results (RMR): 151 ft/s
Gap: NA

Footnotes:

- Crown
- Front
- Left
- Back
- Right
- The testing was terminated due to excessive range of mix.

PROTECTION BALLISTIC LIMIT TEST, V₅₀ BL(P)

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-D

Test Date: 12/6/2019

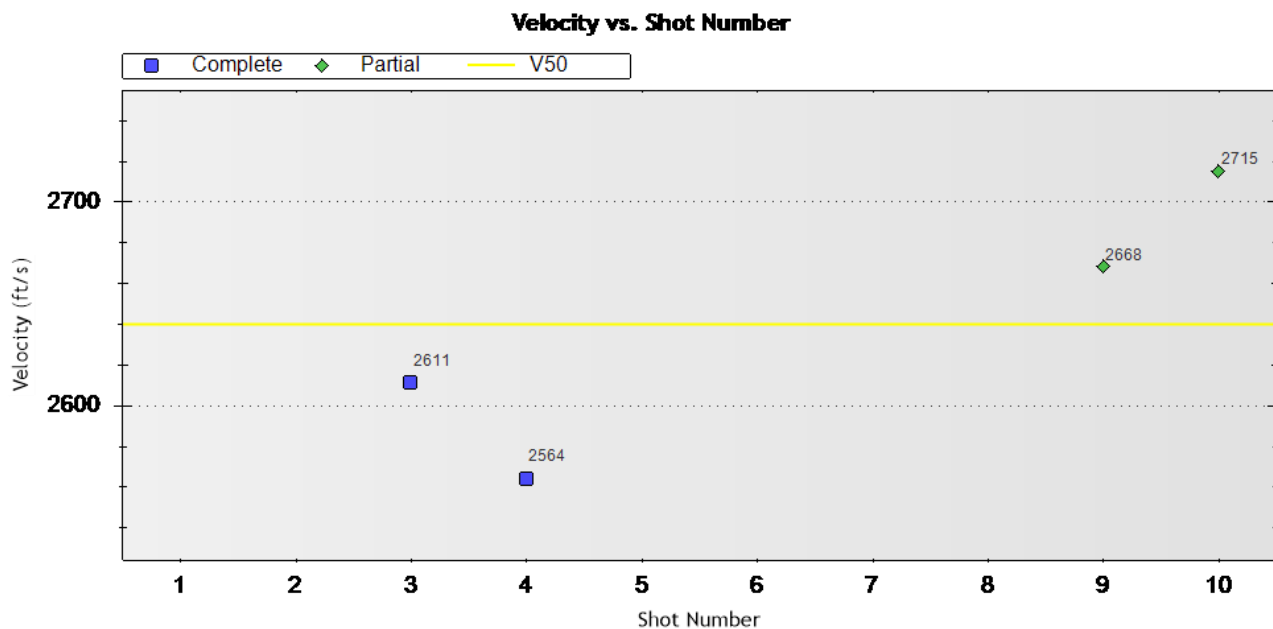
Page 2 of 2

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-M01 (17gr, Amb.)

V₅₀ Summary:

No. Points: 2 and 2
V₅₀: 2640 ft/s
High Partial: 2715 ft/s
Low Complete: 2564 ft/s
Range of Results (ROR): 151 ft/s
Range of Mix Results (RMR): 151 ft/s
Gap: NA



PROTECTION BALLISTIC LIMIT TEST, V₅₀ BL(P)

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-E

Test Date: 12/5/2019

Page 1 of 2

Test Panel

Description: Helmet.

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-M02 (17gr, Hot)

Size: Medium
Avg. Thick: 0.494 in
Thickness: 0.506 in; 0.493 in;
0.479 in; 0.499 in

Weight: 2.81 lbs
Plies/Laminates: NA
Required BL(P): NA

Date Received: 12/3/2019
Via: FedEx
Returned: FedEx

Setup

Shot Spacing: Customer request
Witness Panel: 0.02 in 2024-T3 Al
Backing Material: NA
Condition: +70 °C for minimum 6 hours

Primary Vel. Screens (ft): 5.000, 5.333, 9.667, 10.000
Primary Vel. Location (ft): 7.500
Range to Target (ft): 15.000
Target to Witness (in): 3.000

Range No.: 1
Temp: 70.1 °F
BP: 29.9 inHg
RH: 42.0%
Barrel/Gun: Test Barrel
Gunner: Glenn Snyder
Recorder: Lance Eveland

Ammunition

Projectile	Lot No.	Powder
(1) .22-cal., 17-grain FSP V2	178819	Bullseye

Applicable Standards or Procedures

- (1) MIL-STD-662F, dated 17 December 1997
- (2) Stanag 2920 Edition 3, dated 15 June 2015
- (3) Customer request

Shot No.	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)	Result	Include in V ₅₀	Obliq. (°)	Footnotes
1	10.0	17.0	1959	2552	1698	2552	2552	2443	P	No	0.0	(a)
2	10.4	17.0	1913	2614	1657	2615	2614	2503	C	Yes	0.0	(b)
3	10.0	17.0	1949	2565	1688	2567	2566	2457	P	No	0.0	(c)
4	10.4	17.0	1906	2623	1652	2623	2623	2512	P	No	0.0	(d)
5	10.8	17.0	1874	2668	1622	2672	2670	2556	P	No	0.0	(e)
6	11.2	17.0	1857	2693	1608	2695	2694	2579	P	No	0.0	(a)
7	11.8	17.0	1781	2807	1542	2810	2809	2690	C	Yes	0.0	(b)
8	11.6	17.0	1791	2792	1549	2798	2795	2676	P	Yes	0.0	(c)
9	11.8	17.0	1783	2804	1544	2807	2805	2687	P	Yes	0.0	(d,f)

Remarks:

Starting velocity: 2500 ft/s
Projectile yaw check: 0° yaw on all impacts

Footnotes:

- Crown
- Front
- Left
- Back
- Right
- The testing was terminated due to excessive range of mix.

V₅₀ Summary:

No. Points: 2 and 2
V₅₀: 2639 ft/s
High Partial: 2687 ft/s
Low Complete: 2503 ft/s
Range of Results (ROR): 187 ft/s
Range of Mix Results (RMR): 184 ft/s
Gap: NA

PROTECTION BALLISTIC LIMIT TEST, V₅₀ BL(P)

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-E

Test Date: 12/5/2019

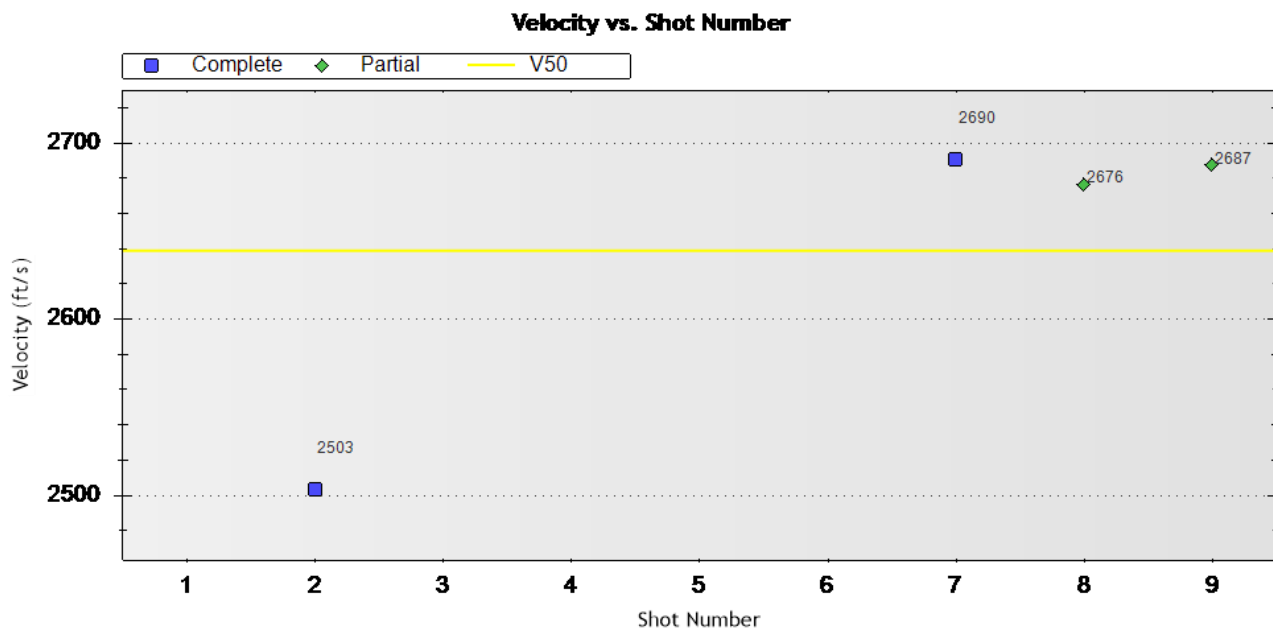
Page 2 of 2

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-M02 (17gr, Hot)

V₅₀ Summary:

No. Points: 2 and 2
V₅₀: 2639 ft/s
High Partial: 2687 ft/s
Low Complete: 2503 ft/s
Range of Results (ROR): 187 ft/s
Range of Mix Results (RMR): 184 ft/s
Gap: NA



PROTECTION BALLISTIC LIMIT TEST, V₅₀ BL(P)

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-F

Test Date: 12/6/2019

Page 1 of 2

Test Panel

Description: Helmet.

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-M03 (17gr, Cold)

Size: Medium
Avg. Thick: 0.437 in
Thickness: 0.408 in; 0.427 in;
0.464 in; 0.450 in

Weight: 2.69 lbs
Plies/Laminates: NA
Required BL(P): NA

Date Received: 12/3/2019
Via: FedEx
Returned: FedEx

Setup

Shot Spacing: Customer request
Witness Panel: 0.02 in 2024-T3 Al
Backing Material: NA
Condition: -40 °C for minimum 6 hours

Primary Vel. Screens (ft): 5.000, 5.333,
9.667, 10.000
Primary Vel. Location (ft): 7.500
Range to Target (ft): 15.000
Target to Witness (in): 3.000

Range No.: 1
Temp: 70.1 °F
BP: 29.9 inHg
RH: 42.0%
Barrel/Gun: Test Barrel
Gunner: G. Bonilla
Recorder: Lance Eveland

Ammunition

Projectile	Lot No.	Powder
(1) .22-cal., 17-grain FSP V2	178819	Bullseye

Applicable Standards or Procedures

- (1) MIL-STD-662F, dated 17 December 1997
- (2) Stanag 2920 Edition 3, dated 15 June 2015
- (3) Customer request

Shot No.	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)	Result	Include in V ₅₀	Obliq. (°)	Footnotes
1	10.4	17.0	1927	2595	1669	2596	2596	2485	C	Yes	0.0	(a)
2	9.8	17.0	1798	2781	1556	2785	2783	2665	C	No	0.0	(b)
3	9.6	17.0	1993	2509	1727	2509	2509	2402	P	No	0.0	(c)
4	10.2	17.0	1932	2588	1674	2589	2588	2478	P	Yes	0.0	(d)
5	10.6	17.0	1925	2597	1666	2601	2599	2489	P	Yes	0.0	(e)
6	11.0	17.0	1849	2704	1603	2703	2704	2589	C	Yes	0.0	(a)
7	10.6	17.0	1791	2792	1552	2792	2792	2674	C	No	0.0	(b)
8	10.6	17.0	1908	2621	1652	2623	2622	2510	C	Yes	0.0	(c)
9	10.2	17.0	1927	2595	1669	2596	2596	2485	P	Yes	0.0	(d)

Remarks:

Starting velocity: 2500 ft/s
Projectile yaw check: 0° yaw on all impacts

Footnotes:

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

V₅₀ Summary:

No. Points: 3 and 3
V₅₀: 2506 ft/s
High Partial: 2489 ft/s
Low Complete: 2485 ft/s
Range of Results (ROR): 111 ft/s
Range of Mix Results (RMR): 4 ft/s
Gap: NA

PROTECTION BALLISTIC LIMIT TEST, V₅₀ BL(P)

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-F

Test Date: 12/6/2019

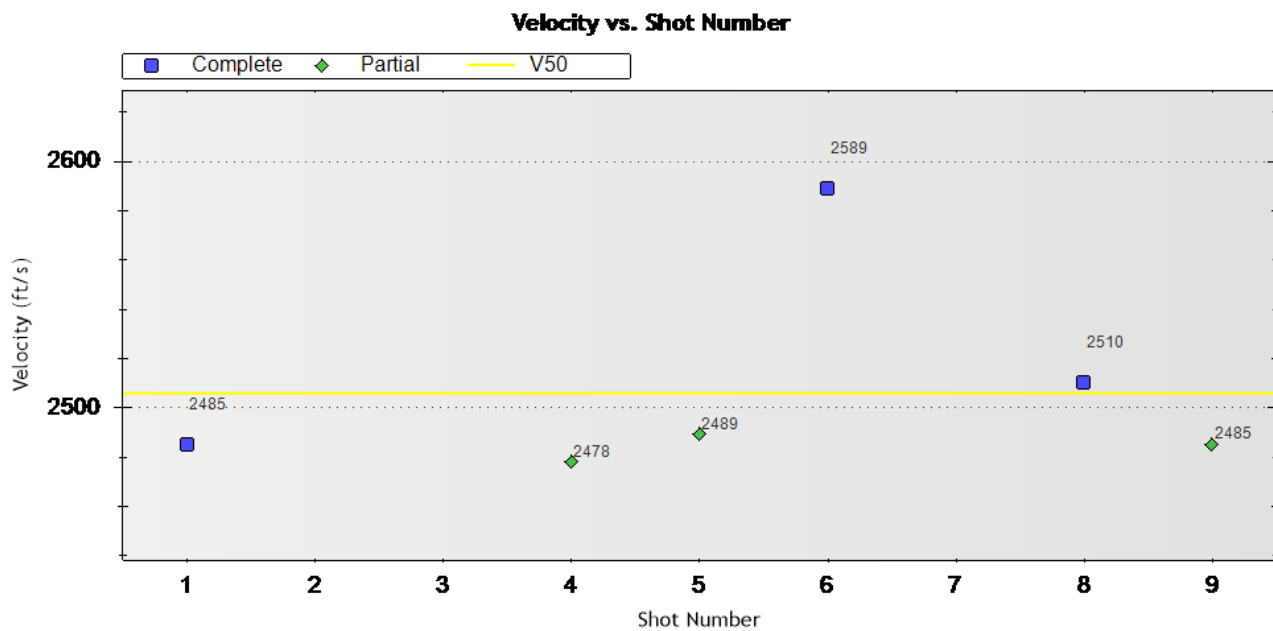
Page 2 of 2

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-M03 (17gr, Cold)

V₅₀ Summary:

No. Points: 3 and 3
V₅₀: 2506 ft/s
High Partial: 2489 ft/s
Low Complete: 2485 ft/s
Range of Results (ROR): 111 ft/s
Range of Mix Results (RMR): 4 ft/s
Gap: NA



PROTECTION BALLISTIC LIMIT TEST, V₅₀ BL(P)

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-G

Test Date: 12/6/2019

Page 1 of 2

Test Panel

Description: Helmet.

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-S01 (17gr, Amb.)

Size: Small
Avg. Thick: 0.442 in
Thickness: 0.455 in; 0.456 in;
0.433 in; 0.426 in

Weight: 2.62 lbs
Plies/Laminates: NA
Required BL(P): NA

Date Received: 12/3/2019
Via: FedEx
Returned: FedEx

Setup

Shot Spacing: Customer request
Witness Panel: 0.02 in 2024-T3 Al
Backing Material: NA
Condition: Ambient

Primary Vel. Screens (ft): 5.000, 5.333,
9.667, 10.000
Primary Vel. Location (ft): 7.500
Range to Target (ft): 15.000
Target to Witness (in): 3.000

Range No.: 1
Temp: 70.1 °F
BP: 29.9 inHg
RH: 42.0%
Barrel/Gun: Test Barrel
Gunner: G. Bonilla
Recorder: Lance Eveland

Ammunition

Projectile	Lot No.	Powder
(1) .22-cal., 17-grain FSP V2	178819	Bullseye

Applicable Standards or Procedures

- (1) MIL-STD-662F, dated 17 December 1997
- (2) Stanag 2920 Edition 3, dated 15 June 2015
- (3) Customer request

Shot No.	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)	Result	Include in V ₅₀	Obliq. (°)	Footnotes
1	10.4	17.0	1913	2614	1654	2620	2617	2505	C	Yes	0.0	(a)
2	10.0	17.0	1957	2555	1693	2560	2557	2448	P	No	0.0	(b)
3	10.4	17.0	1913	2614	1659	2612	2613	2502	C	Yes	0.0	(c)
4	10.0	17.0	1952	2561	1691	2563	2562	2453	P	Yes	0.0	(d)
5	10.4	17.0	1910	2618	1657	2615	2616	2505	P	Yes	0.0	(e)
6	10.8	17.0	1874	2668	1622	2672	2670	2556	P	Yes	0.0	(a)
7	11.2	17.0	1881	2658	1630	2658	2658	2545	C	Yes	0.0	(b)

Remarks:

Starting velocity: 2500 ft/s

Projectile yaw check: 0° yaw on all impacts

Footnotes:

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

V₅₀ Summary:

No. Points: 3 and 3
V₅₀: 2511 ft/s
High Partial: 2556 ft/s
Low Complete: 2502 ft/s
Range of Results (ROR): 103 ft/s
Range of Mix Results (RMR): 54 ft/s
Gap: NA

PROTECTION BALLISTIC LIMIT TEST, V₅₀ BL(P)

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-G

Test Date: 12/6/2019

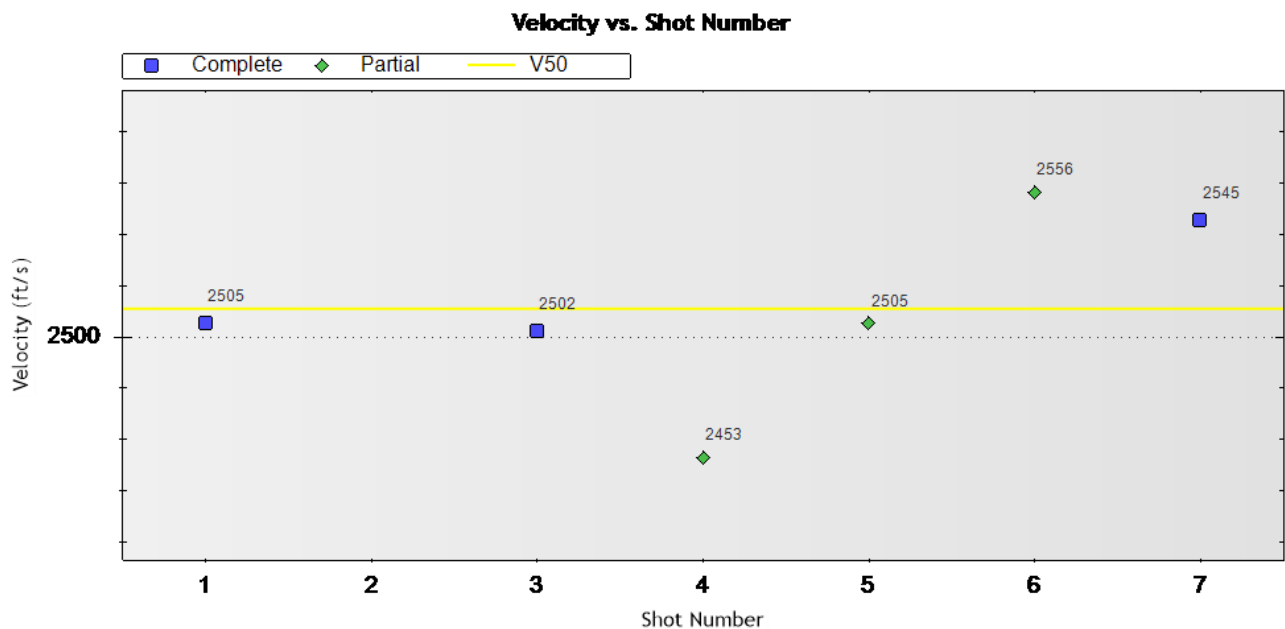
Page 2 of 2

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-S01 (17gr, Amb.)

V₅₀ Summary:

No. Points: 3 and 3
V₅₀: 2511 ft/s
High Partial: 2556 ft/s
Low Complete: 2502 ft/s
Range of Results (ROR): 103 ft/s
Range of Mix Results (RMR): 54 ft/s
Gap: NA



PROTECTION BALLISTIC LIMIT TEST, V₅₀ BL(P)

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-H

Test Date: 12/6/2019

Page 1 of 2

Test Panel

Description: Helmet.

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-S02 (17gr, Hot)

Size: Small
Avg. Thick: 0.484 in
Thickness: 0.483 in; 0.482 in;
0.475 in; 0.495 in

Weight: 2.61 lbs
Plies/Laminates: NA
Required BL(P): NA

Date Received: 12/3/2019
Via: FedEx
Returned: FedEx

Setup

Shot Spacing: Customer request
Witness Panel: 0.02 in 2024-T3 Al
Backing Material: NA
Condition: +70 °C for minimum 6
hours

Primary Vel. Screens (ft): 5.000, 5.333,
9.667, 10.000
Primary Vel. Location (ft): 7.500
Range to Target (ft): 15.000
Target to Witness (in): 3.000

Range No.: 1
Temp: 70.1 °F
BP: 29.9 inHg
RH: 42.0%
Barrel/Gun: Test Barrel
Gunner: G. Bonilla
Recorder: Lance Eveland

Ammunition

Projectile	Lot No.	Powder
(1) .22-cal., 17-grain FSP V2	178819	Bullseye

Applicable Standards or Procedures

- (1) MIL-STD-662F, dated 17 December 1997
- (2) Stanag 2920 Edition 3, dated 15 June 2015
- (3) Customer request

Shot No.	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)	Result	Include in V ₅₀	Obliq. (°)	Footnotes
1	10.4	17.0	1940	2577	1678	2582	2580	2470	P	No	0.0	(a)
2	11.0	17.0	1837	2722	1591	2724	2723	2607	P	Yes	0.0	(b)
3	11.6	17.0	1852	2700	1603	2703	2702	2587	P	Yes	0.0	(c)
4	11.8	17.0	1779	2811	1539	2816	2813	2694	C	Yes	0.0	(d)
5	11.4	17.0	1815	2755	1571	2758	2757	2640	P	Yes	0.0	(e)
6	11.8	17.0	1769	2826	1532	2829	2828	2708	C	Yes	0.0	(a)
7	11.4	17.0	1842	2714	1595	2717	2716	2600	C	Yes	0.0	(b)

Remarks:

Starting velocity: 2500 ft/s

Projectile yaw check: 0° yaw on all impacts

Footnotes:

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

V₅₀ Summary:

No. Points: 3 and 3
V₅₀: 2639 ft/s
High Partial: 2640 ft/s
Low Complete: 2600 ft/s
Range of Results (ROR): 121 ft/s
Range of Mix Results (RMR): 40 ft/s
Gap: NA

PROTECTION BALLISTIC LIMIT TEST, V₅₀ BL(P)

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-H

Test Date: 12/6/2019

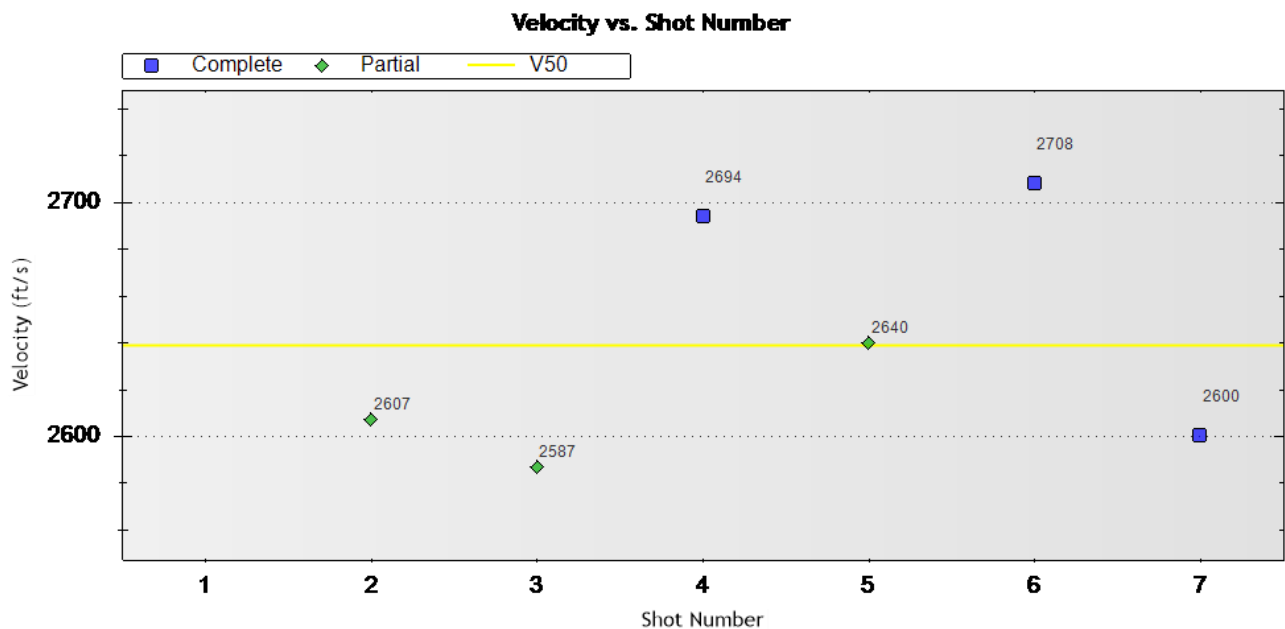
Page 2 of 2

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-S02 (17gr, Hot)

V₅₀ Summary:

No. Points: 3 and 3
V₅₀: 2639 ft/s
High Partial: 2640 ft/s
Low Complete: 2600 ft/s
Range of Results (ROR): 121 ft/s
Range of Mix Results (RMR): 40 ft/s
Gap: NA



PROTECTION BALLISTIC LIMIT TEST, V₅₀ BL(P)

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-I

Test Date: 12/6/2019

Page 1 of 2

Test Panel

Description: Helmet.

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-S03 (17gr, Cold)

Size: Small
Avg. Thick: 0.484 in
Thickness: 0.498 in; 0.499 in;
0.467 in; 0.473 in

Weight: 2.66 lbs
Plies/Laminates: NA
Required BL(P): NA

Date Received: 12/3/2019
Via: FedEx
Returned: FedEx

Setup

Shot Spacing: Customer request
Witness Panel: 0.02 in 2024-T3 Al
Backing Material: NA
Condition: -40 °C for minimum 6 hours

Primary Vel. Screens (ft): 5.000, 5.333,
9.667, 10.000
Primary Vel. Location (ft): 7.500
Range to Target (ft): 15.000
Target to Witness (in): 3.000

Range No.: 1
Temp: 70.1 °F
BP: 29.9 inHg
RH: 42.0%
Barrel/Gun: Test Barrel
Gunner: G. Bonilla
Recorder: Lance Eveland

Ammunition

Projectile	Lot No.	Powder
(1) .22-cal., 17-grain FSP V2	178819	Bullseye

Applicable Standards or Procedures

- (1) MIL-STD-662F, dated 17 December 1997
- (2) Stanag 2920 Edition 3, dated 15 June 2015
- (3) Customer request

Shot No.	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)	Result	Include in V ₅₀	Obliq. (°)	Footnotes
1	10.4	17.0	1901	2630	1649	2628	2629	2517	C	Yes	0.0	(a)
2	10.0	17.0	1949	2565	1688	2567	2566	2457	P	No	0.0	(b)
3	10.4	17.0	1903	2627	1649	2628	2628	2516	P	Yes	0.0	(c)
4	10.8	17.0	1884	2654	1630	2658	2656	2543	P	Yes	0.0	(d)
5	11.2	17.0	1837	2722	1591	2724	2723	2607	P	Yes	0.0	(e)
6	11.6	17.0	1801	2776	1559	2780	2778	2660	C	No	0.0	(a)
7	11.2	17.0	1835	2725	1591	2724	2724	2609	C	Yes	0.0	(b)
8	10.8	17.0	1876	2665	1625	2667	2666	2553	C	Yes	0.0	(c)

Remarks:

Starting velocity: 2500 ft/s
Projectile yaw check: 0° yaw on all impacts

Footnotes:

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

V₅₀ Summary:

No. Points: 3 and 3
V₅₀: 2558 ft/s
High Partial: 2607 ft/s
Low Complete: 2517 ft/s
Range of Results (ROR): 93 ft/s
Range of Mix Results (RMR): 90 ft/s
Gap: NA

PROTECTION BALLISTIC LIMIT TEST, V₅₀ BL(P)

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-I

Test Date: 12/6/2019

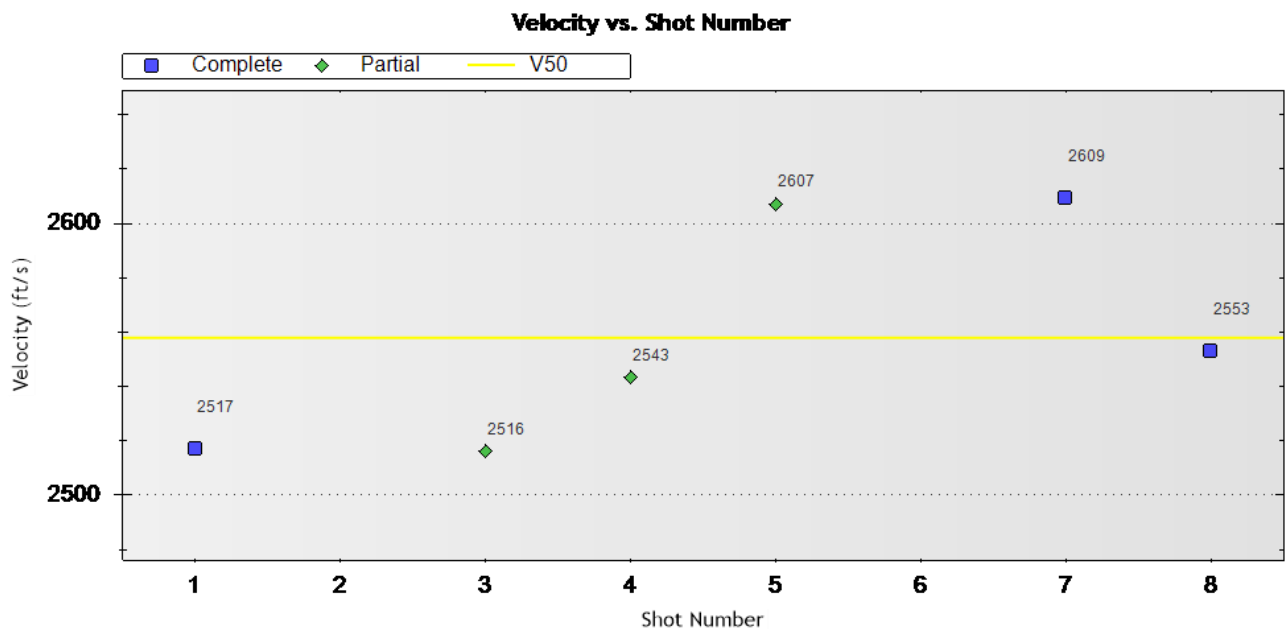
Page 2 of 2

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-S03 (17gr, Cold)

V₅₀ Summary:

No. Points: 3 and 3
V₅₀: 2558 ft/s
High Partial: 2607 ft/s
Low Complete: 2517 ft/s
Range of Results (ROR): 93 ft/s
Range of Mix Results (RMR): 90 ft/s
Gap: NA



PROTECTION BALLISTIC LIMIT TEST, V₅₀ BL(P)

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-J

Test Date: 12/6/2019

Page 1 of 2

Test Panel

Description: Helmet.

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-XL01 (17gr, Amb.)

Size: X-Large
Avg. Thick: 0.538 in
Thickness: 0.546 in; 0.546 in;
0.526 in; 0.536 in

Weight: 3.29 lbs
Plies/Laminates: NA
Required BL(P): NA

Date Received: 12/3/2019
Via: FedEx
Returned: FedEx

Setup

Shot Spacing: Customer request
Witness Panel: 0.02 in 2024-T3 Al
Backing Material: NA
Condition: Ambient

Primary Vel. Screens (ft): 5.000, 5.333,
9.667, 10.000
Primary Vel. Location (ft): 7.500
Range to Target (ft): 15.000
Target to Witness (in): 3.000

Range No.: 1
Temp: 70.1 °F
BP: 29.9 inHg
RH: 42.0%
Barrel/Gun: Test Barrel
Gunner: G. Bonilla
Recorder: Lance Eveland

Ammunition

Projectile	Lot No.	Powder
(1) .22-cal., 17-grain FSP V2	178819	Bullseye

Applicable Standards or Procedures

- (1) MIL-STD-662F, dated 17 December 1997
- (2) Stanag 2920 Edition 3, dated 15 June 2015
- (3) Customer request

Shot No.	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)	Result	Include in V ₅₀	Obliq. (°)	Footnotes
1	10.4	17.0	1913	2614	1657	2615	2614	2503	P	No	0.0	(a)
2	11.0	17.0	1854	2697	1605	2700	2698	2584	P	No	0.0	(b)
3	11.6	17.0	1820	2747	1576	2750	2748	2632	C	Yes	0.0	(c)
4	11.2	17.0	1835	2725	1588	2729	2727	2611	P	No	0.0	(d)
5	11.6	17.0	1796	2784	1556	2785	2784	2667	P	No	0.0	(e)
6	12.0	17.0	1761	2839	1527	2838	2839	2719	P	No	0.0	(a)
7	12.4	17.0	1735	2882	1503	2883	2882	2761	P	Yes	0.0	(b)
8	12.8	17.0	1749	2859	1512	2866	2862	2742	BH	No	0.0	(a,f)
9	12.8	17.0	1720	2907	1488	2912	2910	2787	C	Yes	0.0	(c)
10	12.4	17.0	1744	2867	1510	2870	2868	2747	P	No	0.0	(d)
11	12.8	17.0	1720	2907	1491	2906	2907	2784	P	Yes	0.0	(e,g)

Remarks:

Starting velocity: 2500 ft/s
Projectile yaw check: 0° yaw on all impacts
BH= Bad Hit.

Footnotes:

- Crown
- Front
- Left
- Back
- Right
- Projectile yawed and impacted on crown of helmet
- The testing was terminated due to excessive range of mix.

V₅₀ Summary:

No. Points: 2 and 2
V₅₀: 2741 ft/s
High Partial: 2784 ft/s
Low Complete: 2632 ft/s
Range of Results (ROR): 155 ft/s
Range of Mix Results (RMR): 152 ft/s
Gap: NA

PROTECTION BALLISTIC LIMIT TEST, V₅₀ BL(P)

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-J

Test Date: 12/6/2019

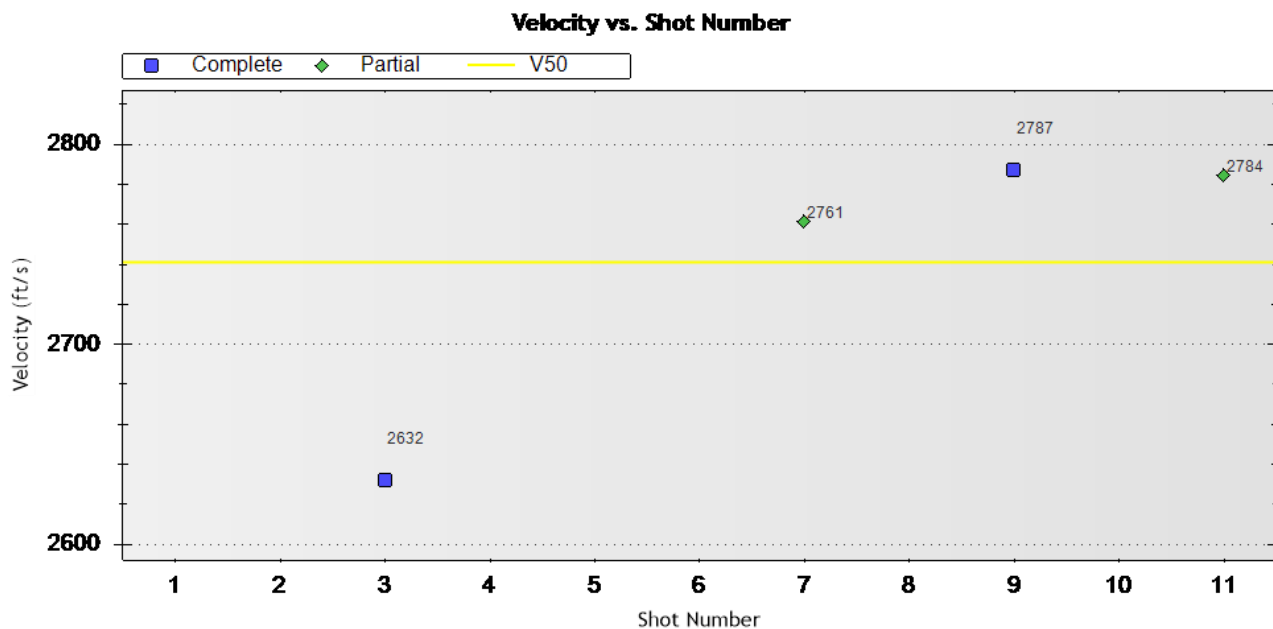
Page 2 of 2

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-XL01 (17gr, Amb.)

V₅₀ Summary:

No. Points: 2 and 2
V₅₀: 2741 ft/s
High Partial: 2784 ft/s
Low Complete: 2632 ft/s
Range of Results (ROR): 155 ft/s
Range of Mix Results (RMR): 152 ft/s
Gap: NA



PROTECTION BALLISTIC LIMIT TEST, V₅₀ BL(P)

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-K

Test Date: 12/5/2019

Page 1 of 2

Test Panel

Description: Helmet.

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-XL02 (17gr, Hot)

Size: X-Large
Avg. Thick: 0.530 in
Thickness: 0.551 in; 0.567 in;
0.449 in; 0.552 in

Weight: 3.24 lbs
Plies/Laminates: NA
Required BL(P): NA

Date Received: 12/3/2019
Via: FedEx
Returned: FedEx

Setup

Shot Spacing: Customer request
Witness Panel: 0.02 in 2024-T3 Al
Backing Material: NA
Condition: +70 °C for minimum 6
hours

Primary Vel. Screens (ft): 5.000, 5.333,
9.667, 10.000
Primary Vel. Location (ft): 7.500
Range to Target (ft): 15.000
Target to Witness (in): 3.000

Range No.: 1
Temp: 70.1 °F
BP: 29.9 inHg
RH: 42.0%
Barrel/Gun: Test Barrel
Gunner: Glenn Snyder
Recorder: Lance Eveland

Ammunition

Projectile	Lot No.	Powder
(1) .22-cal., 17-grain FSP V2	178819	Bullseye

Applicable Standards or Procedures

- (1) MIL-STD-662F, dated 17 December 1997
- (2) Stanag 2920 Edition 3, dated 15 June 2015
- (3) Customer request

Shot No.	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)	Result	Include in V ₅₀	Obliq. (°)	Footnotes
1	10.4	17.0	1940	2577	1681	2578	2578	2468	P	No	0.0	(a)
2	10.8	17.0	1864	2682	1613	2687	2684	2570	P	Yes	0.0	(b)
3	11.2	17.0	1832	2729	1588	2729	2729	2613	C	Yes	0.0	(c)
4	10.8	17.0	1874	2668	1622	2672	2670	2556	P	Yes	0.0	(d)
5	11.2	17.0	1842	2714	1595	2717	2716	2600	C	Yes	0.0	(e)
6	10.8	17.0	1864	2682	1615	2683	2683	2569	P	Yes	0.0	(a)
7	11.2	17.0	1852	2700	1605	2700	2700	2585	C	Yes	0.0	(b)

Remarks:

Starting velocity: 2500 ft/s
Projectile yaw check: 0° yaw on all impacts

Footnotes:

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

V₅₀ Summary:

No. Points: 3 and 3
V₅₀: 2582 ft/s
High Partial: 2570 ft/s
Low Complete: 2585 ft/s
Range of Results (ROR): 57 ft/s
Range of Mix Results (RMR): NA
Gap: 15 ft/s

PROTECTION BALLISTIC LIMIT TEST, V₅₀ BL(P)

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-K

Test Date: 12/5/2019

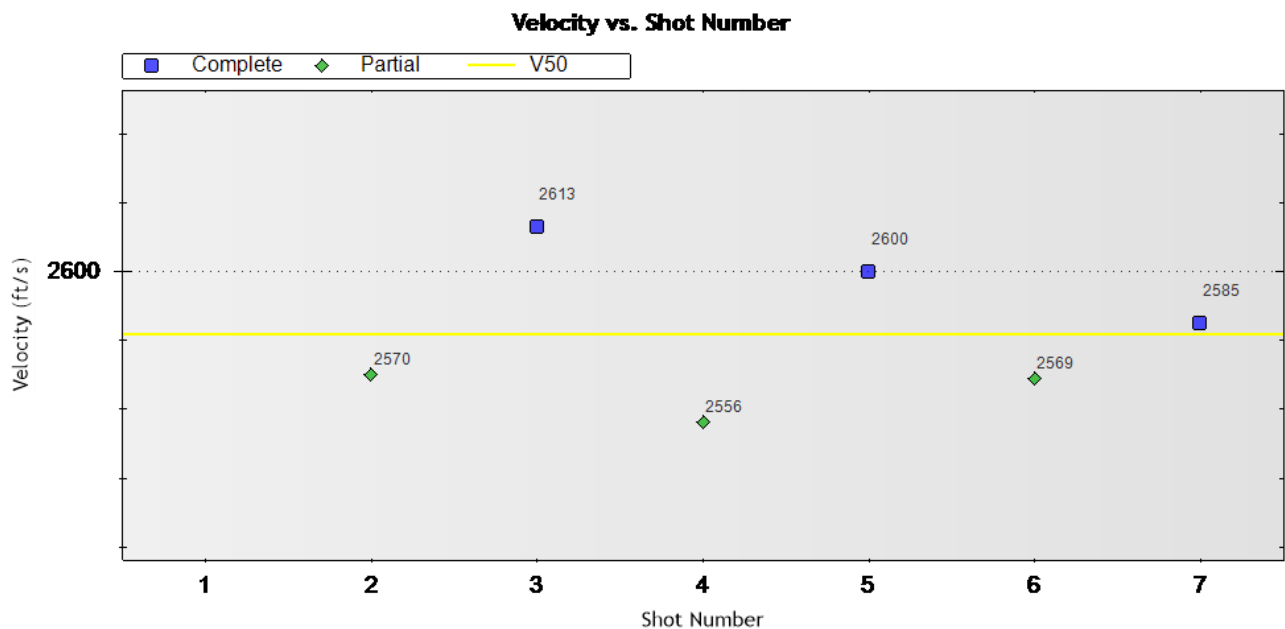
Page 2 of 2

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-XL02 (17gr, Hot)

V₅₀ Summary:

No. Points: 3 and 3
V₅₀: 2582 ft/s
High Partial: 2570 ft/s
Low Complete: 2585 ft/s
Range of Results (ROR): 57 ft/s
Range of Mix Results (RMR): NA
Gap: 15 ft/s



PROTECTION BALLISTIC LIMIT TEST, V₅₀ BL(P)

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-L

Test Date: 12/6/2019

Page 1 of 2

Test Panel

Description: Helmet.

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-XL03 (17gr, Cold)

Size: X-Large
Avg. Thick: 0.563 in
Thickness: 0.566 in; 0.567 in;
0.570 in; 0.550 in

Weight: 3.32 lbs
Plies/Laminates: NA
Required BL(P): NA

Date Received: 12/3/2019
Via: FedEx
Returned: FedEx

Setup

Shot Spacing: Customer request
Witness Panel: 0.02 in 2024-T3 Al
Backing Material: NA
Condition: -40 °C for minimum 6
hours

Primary Vel. Screens (ft): 5.000, 5.333,
9.667, 10.000
Primary Vel. Location (ft): 7.500
Range to Target (ft): 15.000
Target to Witness (in): 3.000

Range No.: 1
Temp: 70.1 °F
BP: 29.9 inHg
RH: 42.0%
Barrel/Gun: Test Barrel
Gunner: G. Bonilla
Recorder: Lance Eveland

Ammunition

Projectile	Lot No.	Powder
(1) .22-cal., 17-grain FSP V2	178819	Bullseye

Applicable Standards or Procedures

- (1) MIL-STD-662F, dated 17 December 1997
- (2) Stanag 2920 Edition 3, dated 15 June 2015
- (3) Customer request

Shot No.	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)	Result	Include in V ₅₀	Obliq. (°)	Footnotes
1	10.4	17.0	1942	2575	1683	2575	2575	2465	P	No	0.0	(a)
2	10.8	17.0	1893	2641	1642	2639	2640	2528	P	No	0.0	(b)
3	11.2	17.0	1847	2707	1600	2708	2708	2593	P	Yes	0.0	(c)
4	11.6	17.0	1808	2765	1564	2771	2768	2651	P	Yes	0.0	(d)
5	12.0	17.0	1781	2807	1542	2810	2809	2690	C	Yes	0.0	(e)
6	11.6	17.0	1803	2773	1561	2776	2775	2657	P	Yes	0.0	(a)
7	12.0	17.0	1769	2826	1532	2829	2828	2708	C	Yes	0.0	(b)
8	11.6	17.0	1769	2826	1530	2832	2829	2710	C	Yes	0.0	(c)

Remarks:

Starting velocity: 2500 ft/s
Projectile yaw check: 0° yaw on all impacts

Footnotes:

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

V₅₀ Summary:

No. Points: 3 and 3
V₅₀: 2668 ft/s
High Partial: 2657 ft/s
Low Complete: 2690 ft/s
Range of Results (ROR): 117 ft/s
Range of Mix Results (RMR): NA
Gap: 33 ft/s

PROTECTION BALLISTIC LIMIT TEST, V₅₀ BL(P)

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION

Job No.: 31375-015-L

Test Date: 12/6/2019

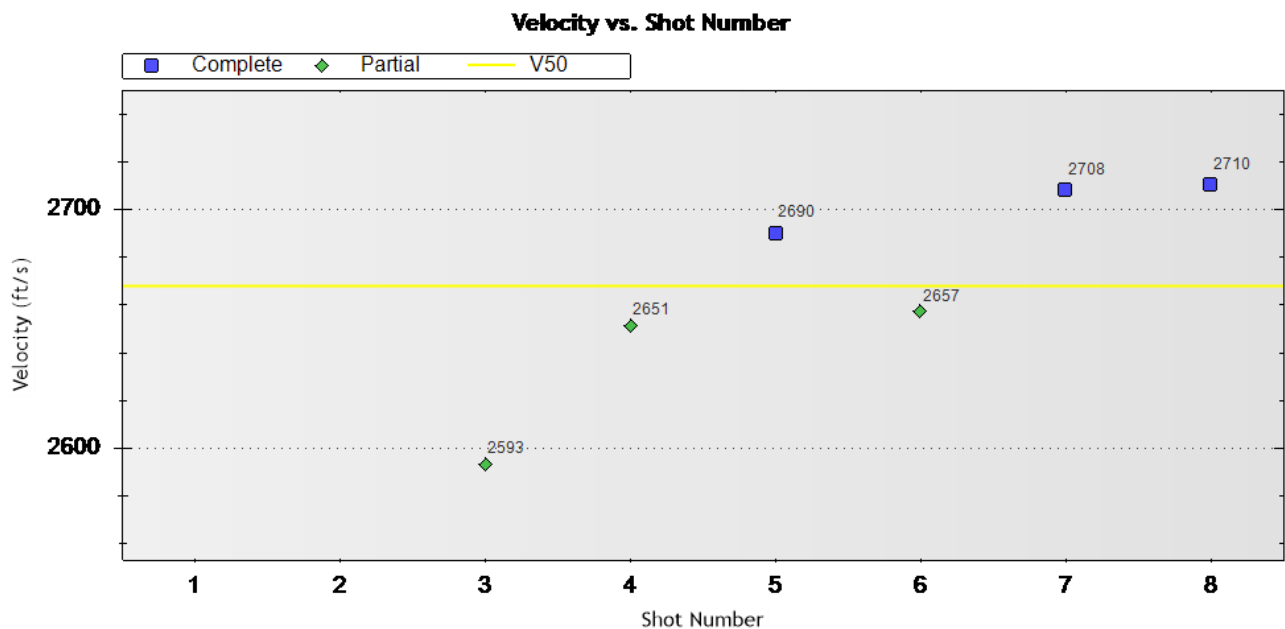
Page 2 of 2

Manufacturer: AHOLDTECHPH CORPORATION

Sample No.: ACH-XL03 (17gr, Cold)

V₅₀ Summary:

No. Points: 3 and 3
V₅₀: 2668 ft/s
High Partial: 2657 ft/s
Low Complete: 2690 ft/s
Range of Results (ROR): 117 ft/s
Range of Mix Results (RMR): NA
Gap: 33 ft/s



ATTACHMENT A
NON-BALLISTIC TESTING

FLAME RESISTANCE

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH Corporation
Job No.: 31375-015
Test Date: 12/2019
Page No.: 1 of 2

Manufacturer: AHOLDTECHPH Corporation

Sample ID: ACH-L08

Sample

Size: Large
Weight (lbs.): See results
Color: Green

Model: ACH
Mfg. Date: NA
Lot No.: NA

Date Received: 11/14/2019
Via: DHL
Returned: DHL

Setup

Temperature (°F): -
Humidity (%): -

Tester: US ARMY ATC
Test Location: US ARMY ATC

Applicable Standards or Procedures

- (1) BS EN 397
- (2) ASTM D6413

Requirement Number	Visual Inspection Pass/Fail	Visual Inspection Requirement
1	Fail	There shall be no dripping.
2	Fail	The finished shell shall be self-extinguishing with no after-flame greater than 5.0 seconds

Results

FLAME RESISTANCE

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH Corporation
Job No.: 31375-015
Test Date: 12/2019
Page No.: 2 of 2

Manufacturer: AHOLDTECHPH Corporation

Sample ID: ACH-L08

Pre Test Visual Inspection



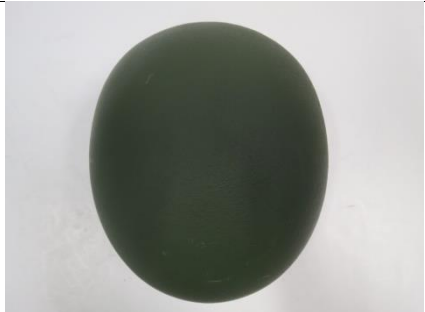
Overall



Front



Left



Crown



Back



Right

Remarks:

Post Test Visual Inspection



Overall



Front



Left



Crown



Back



Right

Remarks:

COMPRESSION RESISTANCE (TOP TO BOTTOM)

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION
Job No.: 31375-015
Test Date: 12/3/2019
Page No.: 1 of 2

Manufacturer: AHOLDTECHPH CORPORATION

Sample ID: ACH-L10

Sample

Size: Large
Weight: 3.150 lbs
Color: Green

Model: NA
Mfg. Date: NA
Lot No.: NA

Date Received: 11/14/2019
Via: DHL
Returned: DHL

Setup

Temperature: 70 °F
Humidity: 53 %
Conditioning: Ambient

System Load Cell: 138497
Load Cell Cal Due: 4/11/2020
Scale Serial: 56663-104
Scale Cal Due: 12/19/2019

Test System: Instron 3366
System Cal Due: 4/12/2020
Tester: Kent Jordan
Test Location: Mechanical Lab

Applicable Standards or Procedures

- (1) AR/PD 10-02 Rev A with Change 6
- (2) BS EN 397

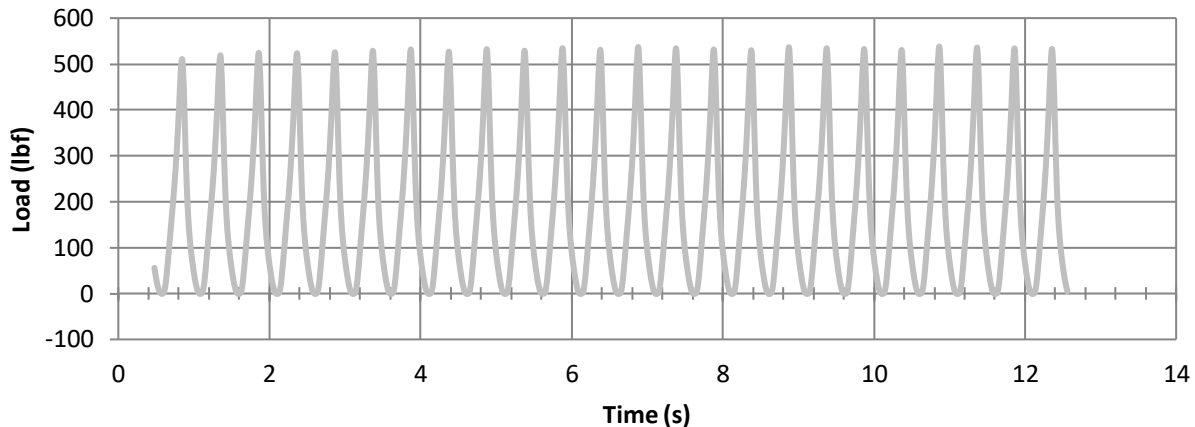
Requirement Number	Inspection Pass/Fail	Inspection Requirement
1	Pass	There shall be no dimensional change in excess of 0.020-inch immediately (within 5 minutes) following compressions.
2	Pass	There shall be no dimensional change in excess of 0.010-inch immediately (within 24 ± 1 hour) following compressions.
3	Pass	The shell shall exhibit no visible delamination, ply separation, distortion after the compressions.

Results

Maximum Load (lbf.)		Maximum Compression (in.)			Mode of Failure (If Applicable)	
537.78		0.071			NA	
Pre Test Measurement (in.)	Date / Time	Post Test (<5 minute) (in.)	Post Test Delta (<5 minute) (inches)	Date / Time	Post Test (24 ± 1 hour) (in.)	Post Test Delta (24 ± 1 hour) (in.)
2.702	12/3/2019 1:56 PM	2.710	0.008	12/4/2019 12:52 PM	2.708	0.006

Remarks:

Using a 2.50-inch diameter flat anvil, the test specimen was positioned so that the highest width dimension is aligned with the center of the top anvil. The sample was compressed at a rate of 12-inches per minute until a force of 400-pounds was reached followed by unloading the force to 5.0-pound and repeat testing for a total of 25 cycles.



COMPRESSION RESISTANCE (TOP TO BOTTOM)

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION
Job No.: 31375-015
Test Date: 12/3/2019
Page No.: 2 of 2

Manufacturer: AHOLDTECHPH CORPORATION

Sample ID: ACH-L10

Test Visual Inspection - Pre Test



Outside of Sample



Inside of Sample

Pre Test Remarks:

Test Visual Inspection - Post Test



Outside of Sample



Inside of Sample

Post Test Remarks:

COMPRESSION RESISTANCE (SIDE TO SIDE)

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION
Job No.: 31375-015
Test Date: 12/3/2019
Page No.: 1 of 2

Manufacturer: AHOLDTECHPH CORPORATION

Sample ID: ACH-L09

Sample

Size: Large
Weight: 3.20 lbs
Color: Green

Model: NA
Mfg. Date: NA
Lot No.: NA

Date Received: 11/14/2019
Via: DHL
Returned: DHL

Setup

Temperature: 70 °F
Humidity: 53 %
Conditioning: Ambient

System Load Cell: 138497
Load Cell Cal Due: 4/11/2020
Scale Serial: 56663-104
Scale Cal Due: 12/19/2019

Test System: Instron 3366
System Cal Due: 4/12/2020
Tester: Kent Jordan
Test Location: Mechanical Lab

Applicable Standards or Procedures

- (1) AR/PD 10-02 Rev A with Change 6
- (2) BS EN 397

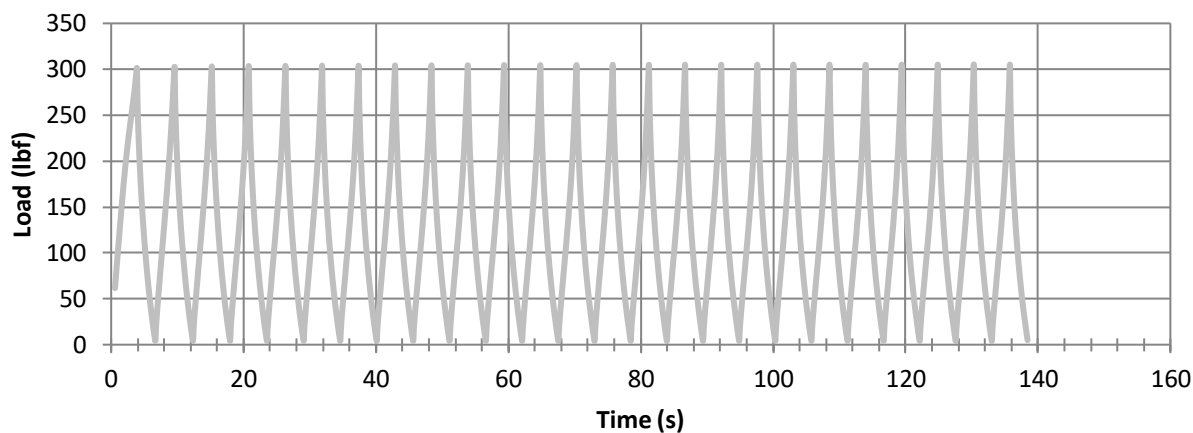
Requirement Number	Inspection Pass/Fail	Inspection Requirement
1	Pass	There shall be no dimensional change in excess of 0.200 inches immediately (within 5 minutes) following compressions.
2	Pass	There shall be no dimensional change in excess of 0.125 inches immediately (within 24 ± 1 hour) following compressions.
3	Pass	The shell shall exhibit no visible delamination, ply separation, distortion after the compressions.

Results

Maximum Load (lb.)		Maximum Compression (in.)			Mode of Failure (If Applicable)	
305.31		0.902			NA	
Pre Test Measurement (in.)	Date / Time	Post Test (<5 minute) (in.)	Post Test Delta (<5 minute) (in.)	Date / Time	Post Test (24 ±1 hour) (in.)	Post Test Delta (24 ±1 hour) (in.)
0.757	12/3/2019 1:36 PM	0.938	0.181	12/4/2019 12:54 PM	0.858	0.101

Remarks:

Using a 2.50-inch diameter flat anvil, the test specimen was positioned so that the highest width dimension is aligned with the center of the top anvil. The sample was compressed at a rate of 12-inches per minute until a force of 300-pounds was reached followed by unloading the force to 5.0-pound and repeat testing for a total of 25 cycles.



COMPRESSION RESISTANCE (SIDE TO SIDE)

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION
Job No.: 31375-015
Test Date: 12/3/2019
Page No.: 2 of 2

Manufacturer: AHOLDTECHPH CORPORATION

Sample ID: ACH-L09

Test Visual Inspection - Pre Test



Outside of Sample



Inside of Sample

Pre Test Remarks:

Test Visual Inspection - Post Test



Outside of Sample



Inside of Sample

Post Test Remarks

SEAWATER RESISTANCE

NTS-Chesapeake Testing						Client: AHOLDTECHPH Corporation					
4603B Compass Point Road Belcamp, MD 21017						Job No.: 31375-015					
						Test Date: 12/10/2019					
Manufacturer: AHOLDTECHPH Corporation						Page No.: 1 of 2					
						Sample ID: ACH-L11					
Sample											
Size: Large				Model: ACH				Date Received: 11/14/2019			
Weight (lbs.): See results				Mfg. Date: NA				Via: DHL			
Color: Green				Lot No.: NA				Returned: DHL			
Setup											
Temperature (°F): -								Tester: Kent Jordan			
Humidity (%): -								Test Location: Mechanical Lab			
Applicable Standards or Procedures											
(1) AR/PD 10-02 4.9.14.1											
Requirement Number		Visual Inspection Pass/Fail		Visual Inspection Requirement							
1		Pass		The finished shell shall exhibit no evidence of cracking, blistering, delamination, and ply separation, separation of edging and finish defects.							
2		Pass		The finished shell shall exhibit no increase in thickness greater than 2.5 percent.							
3		Fail		The finished shell shall not increase in weight greater than 3 percent							
Results											
Pre Test Sample Information						Post Test Sample Information					
Sample Thickness (in.)					Weight (lbs.)	Sample Thickness (in.)					Weight (lbs.)
Crown (1)	Front (2)	Back (3)	Left (4)	Right (5)		Crown (1)	Front (2)	Back (3)	Left (4)	Right (5)	
0.5373	0.4508	0.4410	0.4610	0.4455	3.195	0.5372	0.4508	0.4453	0.4613	0.4435	3.440
Percent Change:						0.01 %	0.00 %	0.97 %	0.06%	0.44%	7.66%
Remarks:											

WEATHEROMETER RESISTANCE

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH Corporation

Job No.: 31375-015

Test Date: 12/10/2019

Page No.: 2 of 2

Manufacturer: AHOLDTECHPH Corporation

Sample ID: ACH-L11

Pre Test Visual Inspection



Overall



Front



Left



Crown



Back



Right

Remarks:

Post Test Visual Inspection



Overall



Front



Left



Crown



Back



Right

Remarks:

HIGH TEMP RESISTANCE

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH Corporation
Job No.: 31375-015
Test Date: 12/3/2019
Page No.: 1 of 2

Manufacturer: AHOLDTECHPH Corporation

Sample ID: ACH-L12

Sample

Size: Large
Weight (lbs.): See results
Color: Green

Model: ACH
Mfg. Date: NA
Lot No.: NA

Date Received: 11/14/2019
Via: DHL
Returned: DHL

Setup

Temperature (°F): 160
Humidity (%): -

Tester: Kent Jordan
Test Location: Mechanical Lab

Applicable Standards or Procedures

(1) AR/PD 10-02 4.9.14.5

Requirement Number	Visual Inspection Pass/Fail	Visual Inspection Requirement
1	Pass	The finished shell shall exhibit no evidence of cracking, blistering, delamination, and ply separation, separation of edging and finish defects.
2	Pass	The finished shell shall exhibit no increase in thickness greater than 2.5 percent.

Results

Pre Test Sample Information						Post Test Sample Information					
Sample Thickness (in.)					Weight (lbs.)	Sample Thickness (in.)					Weight (lbs.)
Crown (1)	Front (2)	Back (3)	Left (4)	Right (5)		Crown (1)	Front (2)	Back (3)	Left (4)	Right (5)	
0.5213	0.4563	0.4305	0.4542	0.4563	3.22	0.5213	0.4563	0.4312	0.4548	0.4563	3.21
Percent Change:						0.00 %	0.00 %	0.16 %	0.13 %	0.00 %	0.31 %

Remarks:

HIGH TEMP RESISTANCE

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH Corporation
Job No.: 31375-015
Test Date: 12/3/2019
Page No.: 2 of 2

Manufacturer: AHOLDTECHPH Corporation

Sample ID: ACH-L12

Pre Test Visual Inspection



Overall



Front



Left



Crown



Back



Right

Remarks:

Post Test Visual Inspection



Overall



Front



Left



Crown



Back



Right

Remarks:

COLD TEMP RESISTANCE

NTS-Chesapeake Testing					Client: AHOLDTECHPH Corporation						
4603B Compass Point Road Belcamp, MD 21017					Job No.: 31375-015						
					Test Date: 12/3/2019						
Manufacturer: AHOLDTECHPH Corporation					Page No.: 1 of 2						
					Sample ID: ACH-L13						
Sample											
Size: Large			Model: ACH			Date Received: 11/14/2019					
Weight (lbs.): See Results			Mfg. Date: NA			Via: DHL					
Color: Green			Lot No.: NA			Returned: DHL					
Setup											
Temperature (°F): - 60						Tester: Kent Jordan					
Humidity (%): -						Test Location: Mechanical Lab					
Applicable Standards or Procedures											
(1) AR/PD 10-02 4.9.14.5											
Requirement Number		Visual Inspection Pass/Fail		Visual Inspection Requirement							
1		Pass		The finished shell shall exhibit no evidence of cracking, blistering, delamination, and ply separation, separation of edging and finish defects.							
2		Pass		The finished shell shall exhibit no increase in thickness greater than 2.5 percent.							
Results											
Pre Test Sample Information						Post Test Sample Information					
Sample Thickness (in.)					Weight (lbs.)	Sample Thickness (in.)					Weight (lbs.)
Crown (1)	Front (2)	Back (3)	Left (4)	Right (5)		Crown (1)	Front (2)	Back (3)	Left (4)	Right (5)	
0.5243	0.4408	0.4362	0.4288	0.4650	3.205	0.5245	0.4433	0.4338	0.4362	0.4658	3.205
Percent Change:						0.03 %	0.56 %	0.55 %	1.72 %	0.17 %	0.00 %
Remarks:											

COLD TEMP RESISTANCE

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH Corporation
Job No.: 31375-015
Test Date: 12/3/2019
Page No.: 2 of 2

Manufacturer: AHOLDTECHPH Corporation

Sample ID: ACH-L13

Pre Test Visual Inspection



Overall



Front



Left



Crown



Back



Right

Remarks:

Post Test Visual Inspection



Overall



Front



Left



Crown



Back



Right

Remarks:

BLUNT IMPACT PROTECTION

NTS-Chesapeake Testing			Client: AHOLDTECHPH Corporation Job No.: 31375-015 Test Date: 12/3/2019 Page No.: 1 of 8						
4603B Compass Point Road Belcamp, MD 21017			Sample ID: ACH-L14						
Manufacturer: AHOLDTECHPH Coropration									
Sample									
Size: Large Weight: 3.22 lbs Color: Green			Model: Customer R&D Mfg. Date: NA Lot No.: NA			Date Received: 11/14/2019 Via: UPS Returned: UPS			
Setup									
Impact Type: Impact Uni-Axial Drop Mass: 6.424 kg Mount Size: C D.O.T Mount Type: FMVSS218			Time Gate Flag : 25.32 mm Temperature: 69.4 °F Humidity: 53.4 % Conditioning: Ambient			Tester: Johnathan Harris Recorder: Johnathan Harris Filtering: CFC 1000 1650Hz Sensitivity: 10.83 mV/G			
Applicable Standards or Procedures									
(1) AR-PD 10-02 (2) Customer request									
Requirement Number		Inspection Pass/Fail		Inspection Requirement					
1		Fail		There shall be no physical damage to the helmet shell such as shell fracture, defined as a separation/split of the ballistic material through the entire thickness of the helmet shell, or indentation depth in excess of 0.15 inches present after impact testing (delamination and ply separation are permitted).					
2		Fail		There should be no damage to any part of the retention system or pad system.					
Impact Number	Impact Location	Pass/Fail Criteria <150 G	Peak Acc. (G)	Impact Velocity (ft/s)	Drop Height (in)	Strike Energy (J)	Head Injury Criteria (HIC)	Severity Index (SI)	Impact Deformation (in)
1	Crown	Pass	46.0	10.0	19.5	30.1	62.0	75.0	0.004
2	Crown	Pass	52.8	10.0	19.5	30.0	70.0	88.0	
3	Front	Pass	73.0	10.1	19.5	30.3	99.0	132.0	
4	Front	Pass	76.2	10.1	19.5	30.4	106.0	143.0	0.016
5	Back	Pass	132.1	10.1	19.5	30.4	199.0	281.0	0.006
6	Back	Fail	211.9	10.1	19.5	30.3	265.0	543.0	
7	Left	Pass	35.6	10.0	19.5	30.0	53.0	59.0	0.007
8	Left	Pass	52.8	10.1	19.5	30.5	92.0	107.0	
9	Right	Pass	38.8	10.1	19.5	30.4	62.0	69.0	0.018
10	Right	Pass	44.6	10.1	19.5	30.4	66.0	76.0	
11	Left Nape	Fail	176.3	10.1	19.5	30.2	243.0	459.0	0.013
12	Left Nape	Fail	240.8	10.1	19.5	30.3	513.0	758.0	
13	Right Nape	Pass	127.6	10.0	19.5	30.0	202.0	288.0	0.014
14	Right Nape	Fail	184.4	10.1	19.5	30.2	240.0	475.0	
Remarks: The Head Positioning Index (HPI) was defined at 2.30 in and measured from the brim of the helmet to the basic plane on the headform for all impacts.									

BLUNT IMPACT PROTECTION

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH Corporation

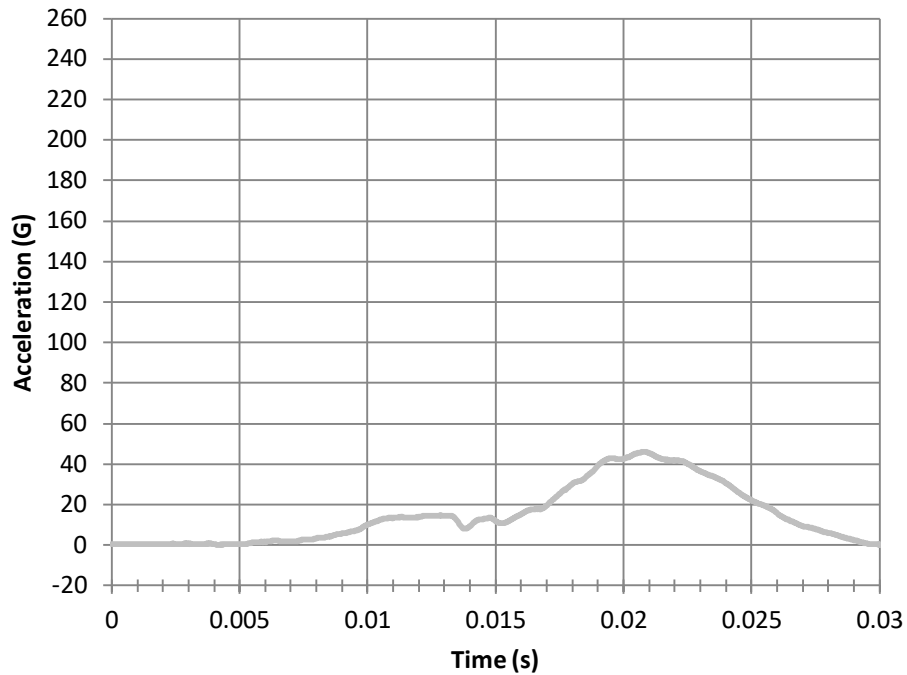
Job No.: 31375-015

Test Date: 12/3/2019

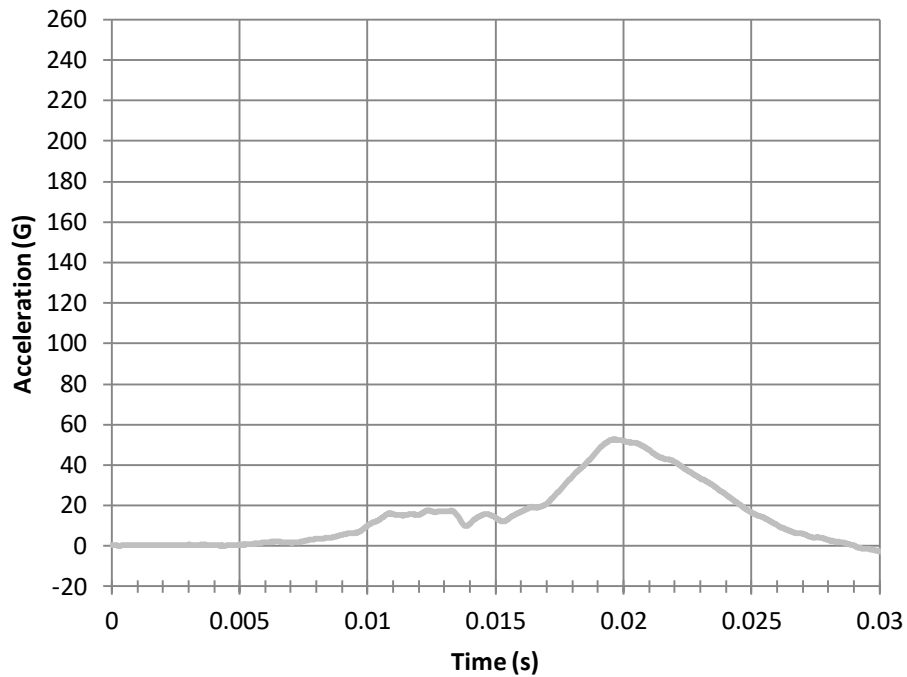
Page No.: 2 of 8

Manufacturer: AHOLDTECHPH Coropration

Sample ID: ACH-L14



Impact Number:	1
Impact Time:	02:43 PM
Impact Date:	12/3/2019
Conditioning:	Ambient
Impact Location:	Crown
Anvil Type:	Hemi
Impact Velocity (ft/s):	10.0
Peak Acc. (G):	46.0
Dwell Time over 150 G (ms):	0
Dwell Time over 200 G(ms):	0
Comments:	



Impact Number:	2
Time:	02:44 PM
Date:	12/3/2019
Conditioning:	Ambient
Impact Location:	Crown
Anvil Type:	Hemi
Impact Velocity (ft/s):	10.0
Peak Acc. (G):	52.8
Dwell Time over 150 G (ms):	0
Dwell Time over 200 G(ms):	0
Comments:	

BLUNT IMPACT PROTECTION

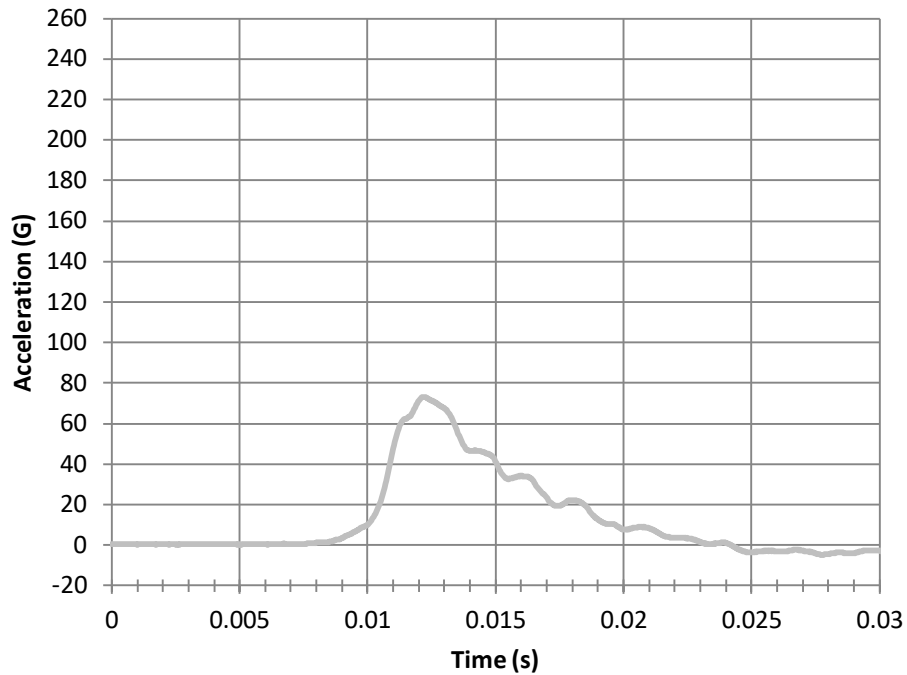
NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

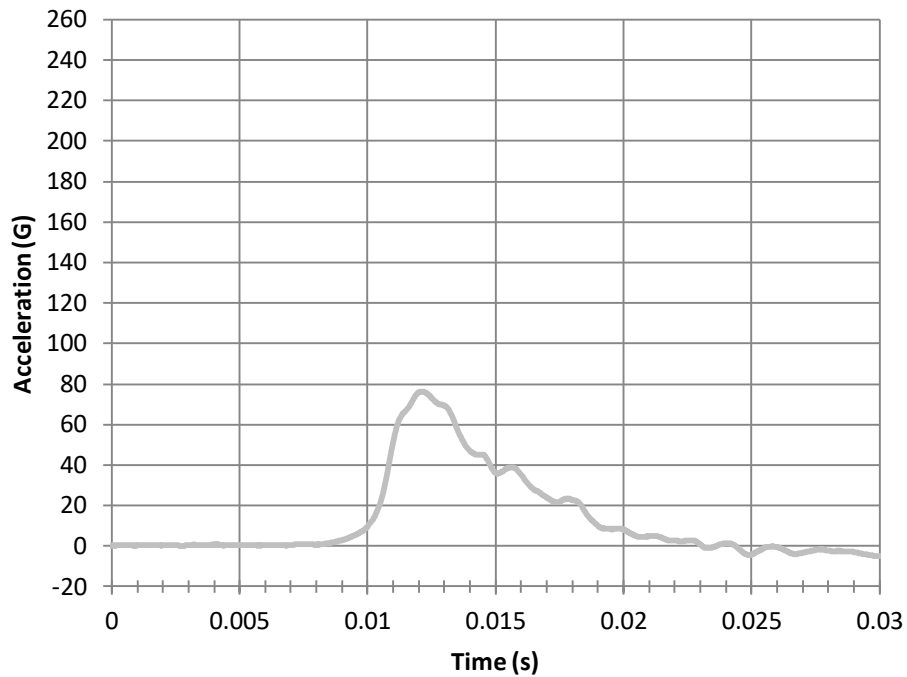
Client: AHOLDTECHPH Corporation
Job No.: 31375-015
Test Date: 12/3/2019
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Manufacturer: AHOLDTECHPH Coropration

Sample ID: ACH-L14



Impact Number:	3
Impact Time:	08:52 AM
Impact Date:	12/6/2019
Conditioning:	Ambient
Impact Location:	Front
Anvil Type:	Hemi
Impact Velocity (ft/s):	10.1
Peak Acc. (G):	73.0
Dwell Time over 150 G (ms):	0
Dwell Time over 200 G(ms):	0
Comments:	



Impact Number:	4
Time:	08:53 AM
Date:	12/6/2019
Conditioning:	Ambient
Impact Location:	Front
Anvil Type:	Hemi
Impact Velocity (ft/s):	10.1
Peak Acc. (G):	76.2
Dwell Time over 150 G (ms):	0
Dwell Time over 200 G(ms):	0
Comments:	

BLUNT IMPACT PROTECTION

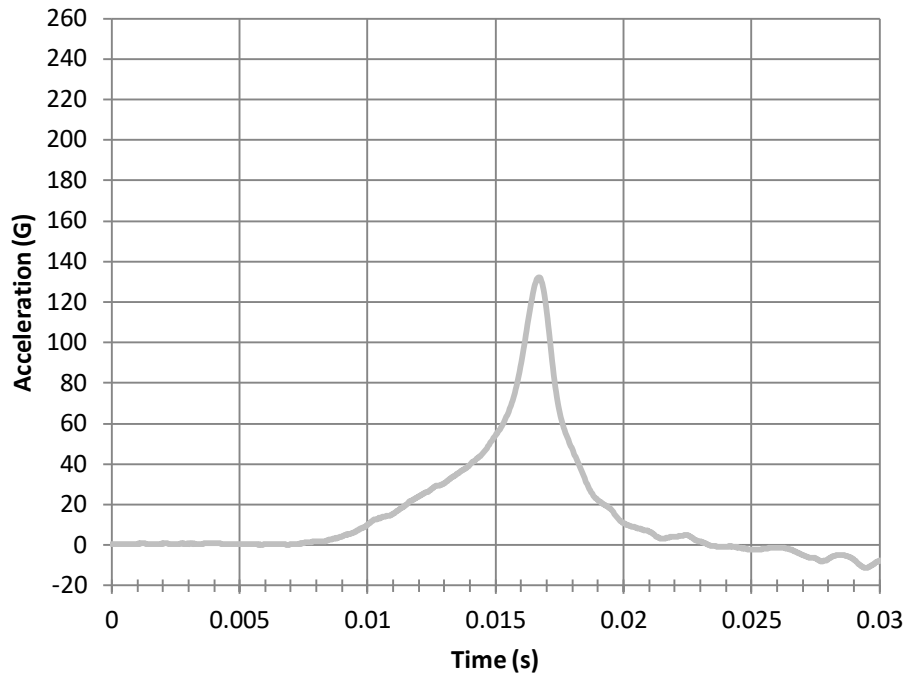
NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

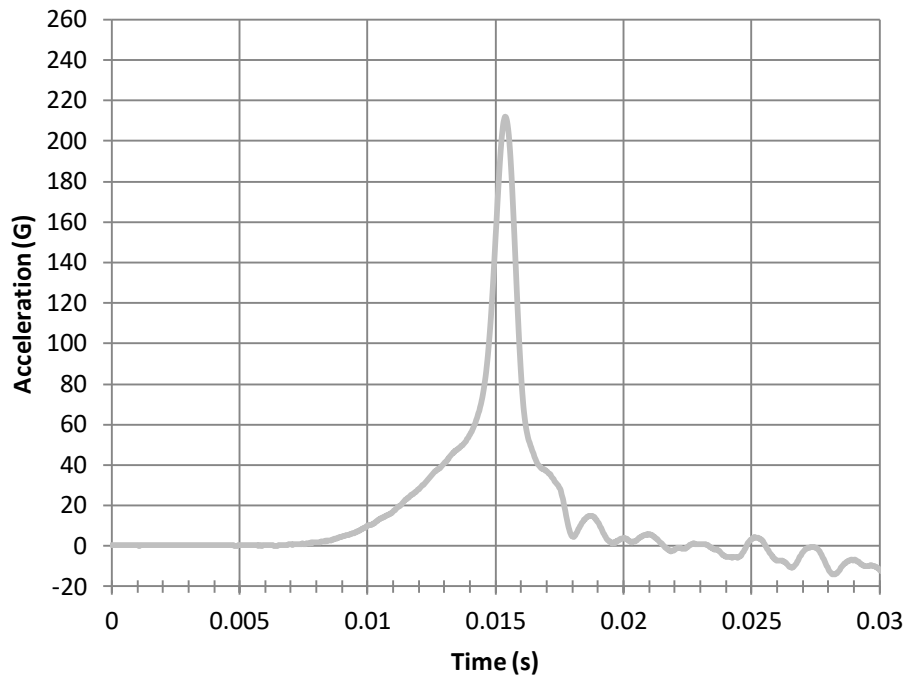
Client: AHOLDTECHPH Corporation
Job No.: 31375-015
Test Date: 12/3/2019
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Manufacturer: AHOLDTECHPH Coropration

Sample ID: ACH-L14



Impact Number:	5
Impact Time:	09:02 AM
Impact Date:	12/6/2019
Conditioning:	Ambient
Impact Location:	Back
Anvil Type:	Hemi
Impact Velocity (ft/s):	10.1
Peak Acc. (G):	132.1
Dwell Time over 150 G (ms):	0
Dwell Time over 200 G(ms):	0
Comments:	



Impact Number:	6
Time:	09:03 AM
Date:	12/6/2019
Conditioning:	Ambient
Impact Location:	Back
Anvil Type:	Hemi
Impact Velocity (ft/s):	10.1
Peak Acc. (G):	211.9
Dwell Time over 150 G (ms):	0.76
Dwell Time over 200 G(ms):	0.31
Comments:	

BLUNT IMPACT PROTECTION

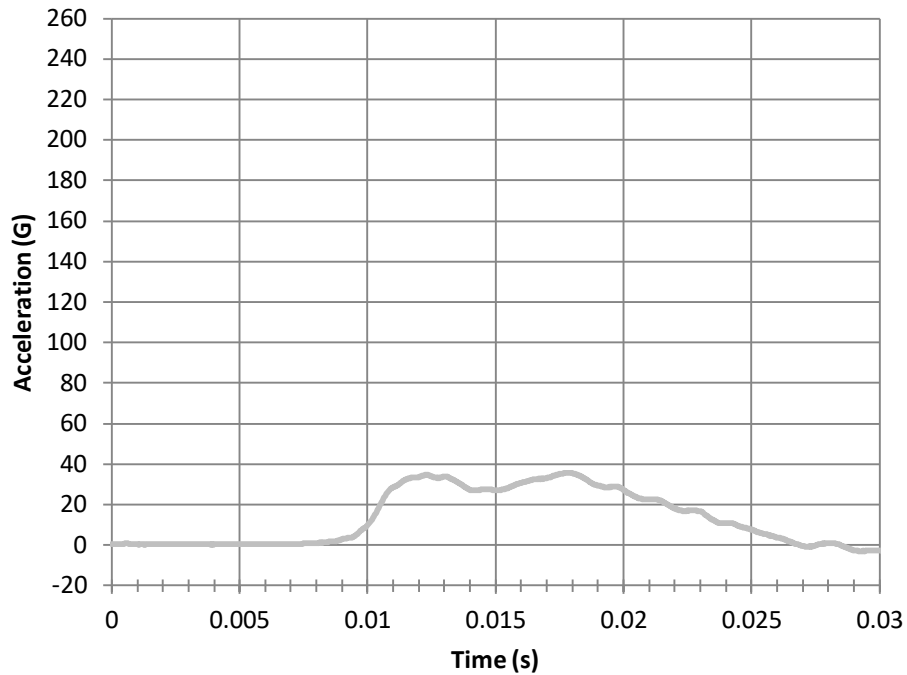
NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

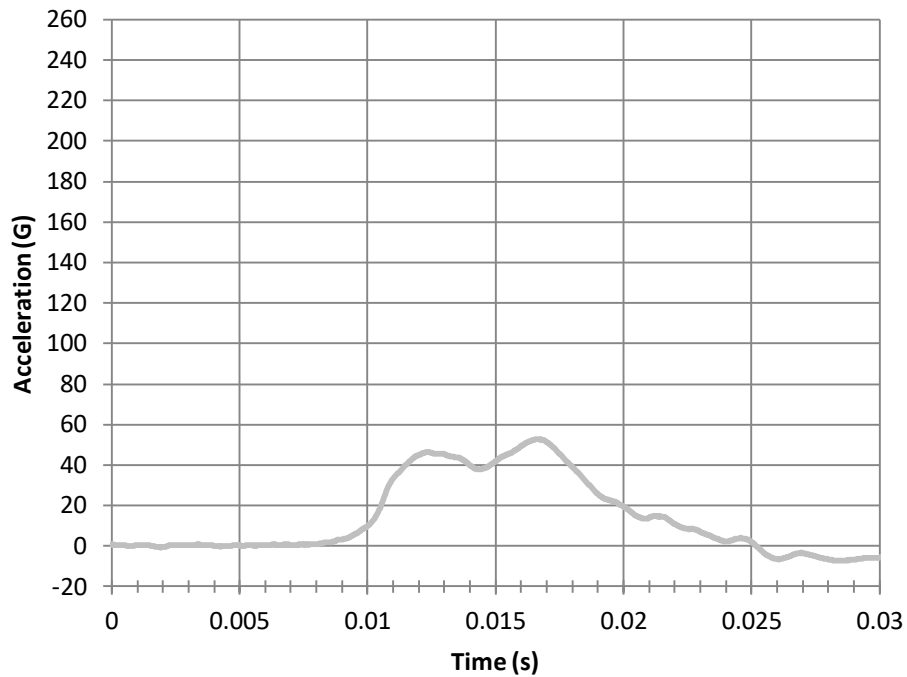
Client: AHOLDTECHPH Corporation
Job No.: 31375-015
Test Date: 12/3/2019
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Manufacturer: AHOLDTECHPH Coropration

Sample ID: ACH-L14



Impact Number:	7
Impact Time:	09:15 AM
Impact Date:	12/6/2019
Conditioning:	Ambient
Impact Location:	Left
Anvil Type:	Hemi
Impact Velocity (ft/s):	10.0
Peak Acc. (G):	35.6
Dwell Time over 150 G (ms):	0
Dwell Time over 200 G(ms):	0
Comments:	



Impact Number:	8
Time:	09:16 AM
Date:	12/6/2019
Conditioning:	Ambient
Impact Location:	Left
Anvil Type:	Hemi
Impact Velocity (ft/s):	10.1
Peak Acc. (G):	52.8
Dwell Time over 150 G (ms):	0
Dwell Time over 200 G(ms):	0
Comments:	

BLUNT IMPACT PROTECTION

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH Corporation

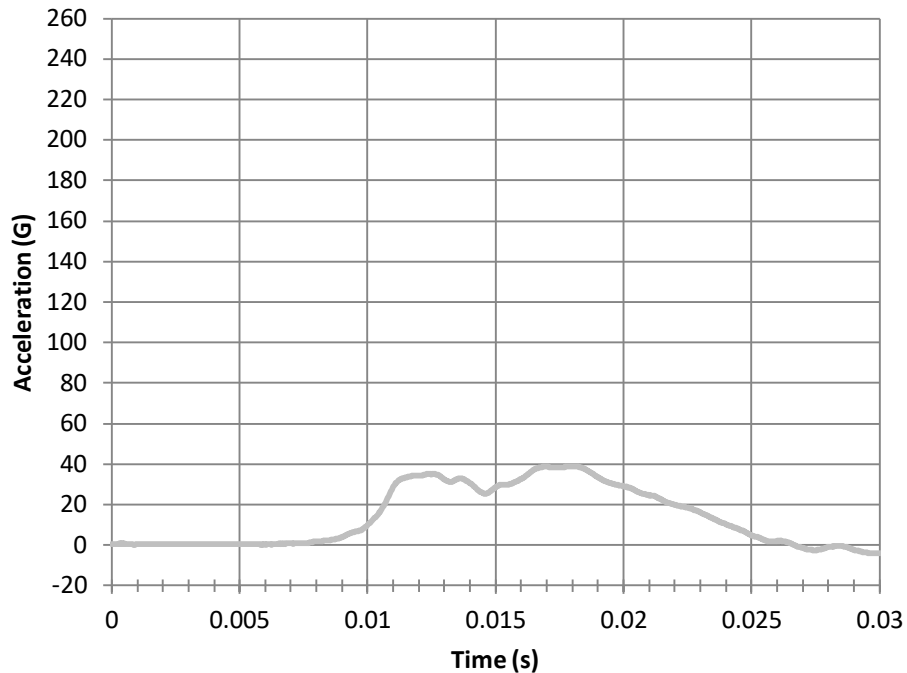
Job No.: 31375-015

Test Date: 12/3/2019

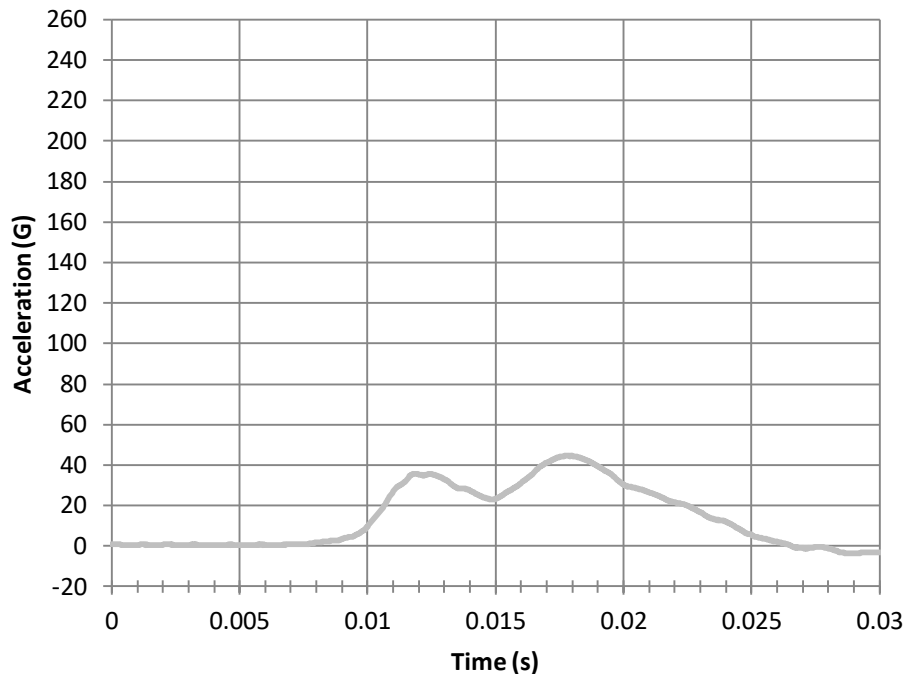
Page No.: 6 of 8

Manufacturer: AHOLDTECHPH Corporation

Sample ID: ACH-L14



Impact Number:	9
Impact Time:	09:34 AM
Impact Date:	12/6/2019
Conditioning:	Ambient
Impact Location:	Right
Anvil Type:	Hemi
Impact Velocity (ft/s):	10.1
Peak Acc. (G):	38.8
Dwell Time over 150 G (ms):	0
Dwell Time over 200 G(ms):	0
Comments:	



Impact Number:	10
Time:	09:35 AM
Date:	12/6/2019
Conditioning:	Ambient
Impact Location:	Right
Anvil Type:	Hemi
Impact Velocity (ft/s):	10.1
Peak Acc. (G):	44.6
Dwell Time over 150 G (ms):	0
Dwell Time over 200 G(ms):	0
Comments:	

BLUNT IMPACT PROTECTION

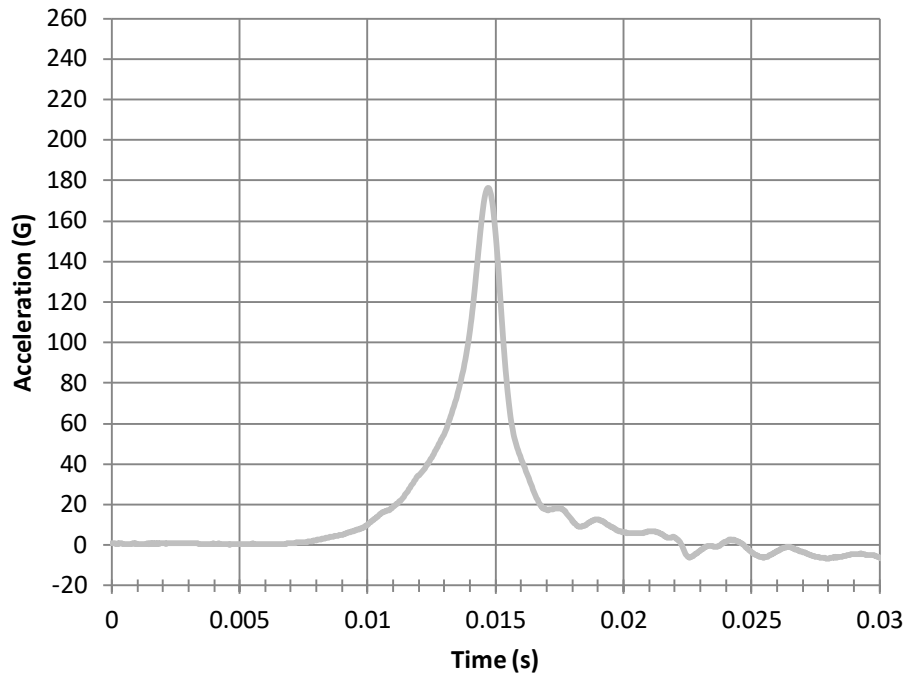
NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

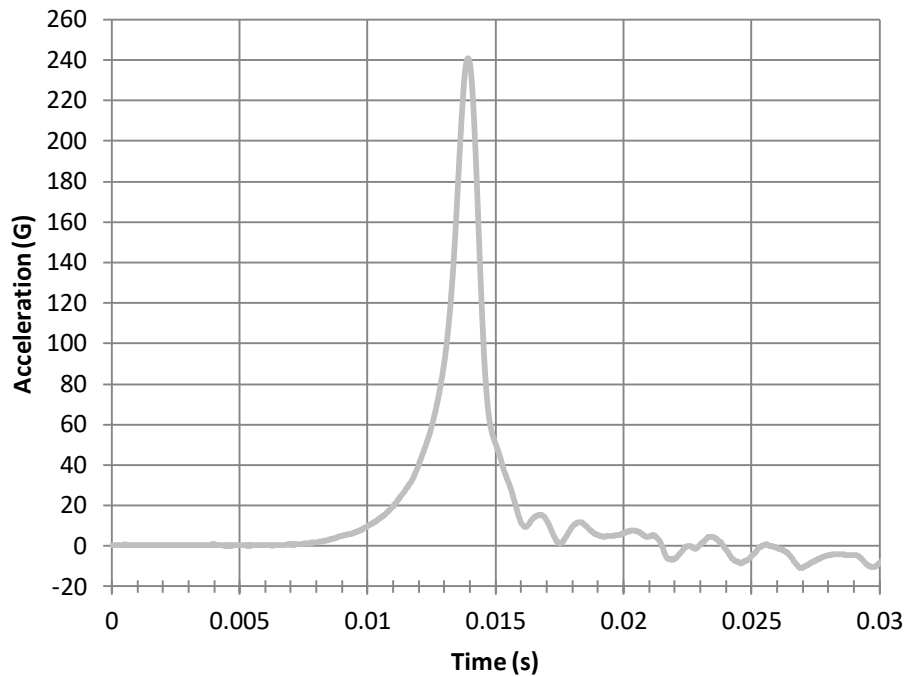
Client: AHOLDTECHPH Corporation
Job No.: 31375-015
Test Date: 12/3/2019
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Manufacturer: AHOLDTECHPH Coropration

Sample ID: ACH-L14



Impact Number:	11
Impact Time:	09:45 AM
Impact Date:	12/6/2019
Conditioning:	Ambient
Impact Location:	Left Nape
Anvil Type:	Hemi
Impact Velocity (ft/s):	10.1
Peak Acc. (G):	176.3
Dwell Time over 150 G (ms):	0.66
Dwell Time over 200 G(ms):	0
Comments:	



Impact Number:	12
Time:	09:46 AM
Date:	12/6/2019
Conditioning:	Ambient
Impact Location:	Left Nape
Anvil Type:	Hemi
Impact Velocity (ft/s):	10.1
Peak Acc. (G):	240.8
Dwell Time over 150 G (ms):	0.95
Dwell Time over 200 G(ms):	0.58
Comments:	

BLUNT IMPACT PROTECTION

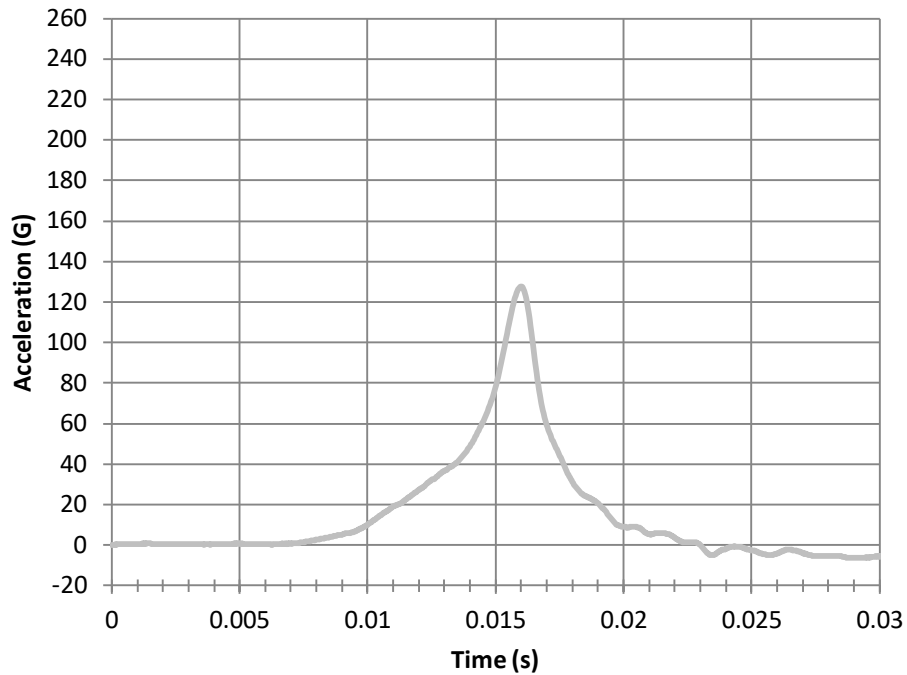
NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

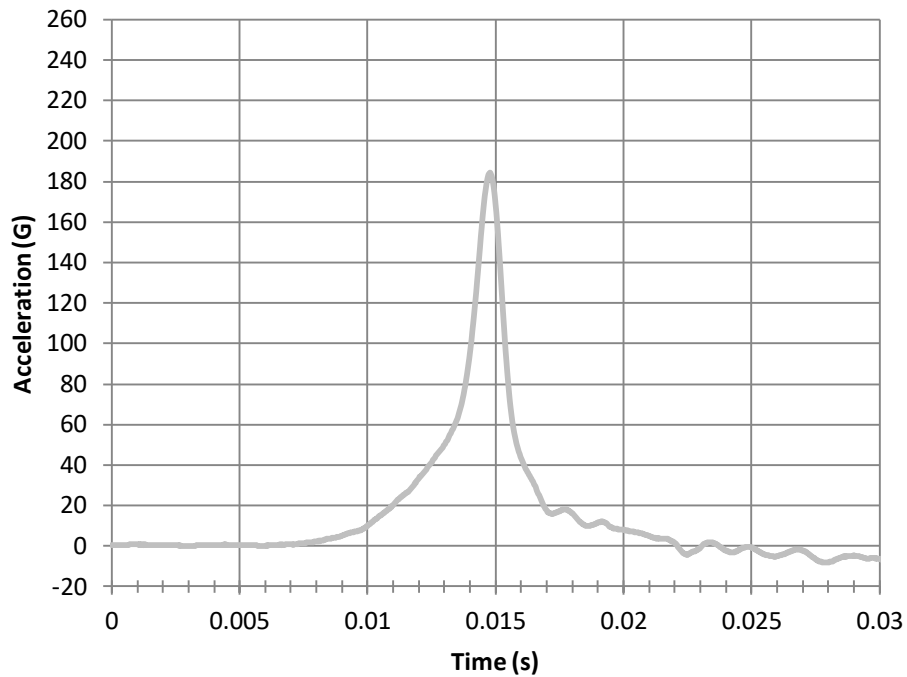
Client: AHOLDTECHPH Corporation
Job No.: 31375-015
Test Date: 12/3/2019
Page No.: 8 of 8

Manufacturer: AHOLDTECHPH Coropration

Sample ID: ACH-L14



Impact Number:	13
Impact Time:	09:52 AM
Impact Date:	12/6/2019
Conditioning:	Ambient
Impact Location:	Right Nape
Anvil Type:	Hemi
Impact Velocity (ft/s):	10.0
Peak Acc. (G):	127.6
Dwell Time over 150 G (ms):	0
Dwell Time over 200 G(ms):	0
Comments:	



Impact Number:	14
Time:	09:53 AM
Date:	12/6/2019
Conditioning:	Ambient
Impact Location:	Right Nape
Anvil Type:	Hemi
Impact Velocity (ft/s):	10.1
Peak Acc. (G):	184.4
Dwell Time over 150 G (ms):	0.71
Dwell Time over 200 G(ms):	0
Comments:	

RETENTION SYSTEM STATIC PULL STRENGTH

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: AHOLDTECHPH CORPORATION
Job No.: 31375-015
Test Date: 12/19/2019
Page No.: 1 of 1

Manufacturer: AHOLDTECHPH CORPORATION

Sample ID: ACH-L15

Sample

Size: Large
Weight: 3.195 Lbs
Color: Green

Model: ACH
Mfg. Date: NA
Lot No.: NA

Date Received: 11/14/2019
Via: UPS
Returned: UPS

Setup

Temperature: 70 °F
Humidity: 51 %
Conditioning: Ambient

Test System: Instron 3366
System Cal Due: 4/12/2020
System Load Cell: 10kN
Load Cell Cal Due: 4/11/2020

Tester: Mike Hinder
Test Location: Mechanical Lab
Mount Type: Clamps

Applicable Standards or Procedures

- (1) BS EN 397
- (2) Customer request

Requirement Number	Inspection Pass/Fail	Inspection Requirement
1	Fail	When tested in accordance with 6.9, the artificial jaw shall be released at a force no less than 150 N and no more than 250 N, due to the failure only of the anchorage(s)

Results

Maximum Pull Strength (N)	Maximum Extension (mm)	Mode of Failure
422.55	29.53	Buckle Release

Remarks:

The sample was attached to the base of the test machine using clamps and connected to the simulated jaw using the chin strap.

A tensile force of 150 N shall be applied to the artificial jaw. This force shall then be increased at a rate of 20 N/min $\pm$ 2 N/min until the artificial jaw is released, due to failure only of the anchorage(s).

