

BALLISTIC RESISTANCE TEST

NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: Hardwire LLC
Job No.: 2084-232-1
Test Date: 10/15/2020

Test Panel

Description: Torso Plate. Model: HW-RF2SA-2020, Lot: CMO2001032

Manufacturer: Hardwire, LLC

Sample No.: SR20-074380

Size: Large
Avg. Thick: NA
Thickness: NA

Weight: 4.45 lbs
Plies/Laminates: NA

Date Received: 10/13/2020
Via: Hand Carried
Returned: Hand Carried

Setup

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

Primary Vel. Screens (ft): 37.000, 37.333,
46.667, 47.000
Primary Vel. Location (ft): 42.000
Range to Target (ft): 50.200
Target to Witness (in): 0.000

Range No.: 2
Temp: 66.6 °F
BP: 29.5 inHg
RH: 53.0%
Barrel/Gun: Test Barrel
Gunner: M. Skrocki
Recorder: Bret DeMond

Ammunition

| Projectile | Lot No. | Powder |
|---------------------------------|---------|--------|
| (1) 7.62 x 39-mm, 123-grain MSC | Chinese | N133 |

Applicable Standards or Procedures

Clay Drop 1 - Drop Time: 1:50 PM; Block No. 1; Temp: 94.7°F; Drop Depths: 20.9mm, 19.2mm, 20.1mm, 20.3mm, 18.0mm
(1) NIJ-STD-0101.06 Level III (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 | 122.4 | 4161 | 2403 | 3880 | 2405 | 2404 | None | 32.0 | 0.0 | |
| 2 | 1 | 122.4 | 4190 | 2387 | 3907 | 2389 | 2388 | None | 29.4 | 0.0 | |
| 3 | 1 | 122.4 | 4205 | 2378 | 3924 | 2379 | 2378 | None | NA | 0.0 | |
| 4 | 1 | 122.5 | 4164 | 2402 | 3883 | 2404 | 2403 | None | NA | 0.0 | |
| 5 | 1 | 122.6 | 4198 | 2382 | 3912 | 2386 | 2384 | None | NA | 0.0 | |
| 6 | 1 | 122.6 | 4125 | 2424 | 3846 | 2427 | 2426 | None | NA | 0.0 | |

Remarks:

Required Velocity: 2380 + 50 ft/s.

Footnotes:

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NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: Hardwire LLC
Job No.: 2084-232-2
Test Date: 10/13/2020

Test Panel

Description: Torso Plate. Model: HW-RF2SA-2020, Lot: CMO2001032

Manufacturer: Hardwire, LLC

Sample No.: SR20-074381

Size: Large
Avg. Thick: NA
Thickness: NA

Weight: 4.45 lbs
Plies/Laminates: NA

Date Received: 10/13/2020
Via: Hand Carried
Returned: Hand Carried

Setup

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

Primary Vel. Screens (ft): 37.000, 37.333,
46.667, 47.000
Primary Vel. Location (ft): 42.000
Range to Target (ft): 50.200
Target to Witness (in): 0.000

Range No.: 4
Temp: 67.0 °F
BP: 30.3 inHg
RH: 51.0%
Barrel/Gun: Test Barrel
Gunner: I. Lookingbill
Recorder: Matt Rixham

Ammunition

| Projectile | Lot No. | Powder |
|--------------------------------------|----------|--------|
| (1) 5.56 x 45-mm, 62-grain M855 ball | Military | N 110 |

Applicable Standards or Procedures

Clay Drop 1 - Drop Time: 2:00 PM; Block No. 18; Temp: 91.5°F; Drop Depths: 17.2mm, 18.1mm, 17.7mm, 16.9mm, 17.5mm

- (1) NIJ-STD-0101.06 Level III (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 | 62.0 | 3047 | 3282 | 2843 | 3283 | 3282 | None | 23.4 | 0.0 | |
| 2 | 1 | 62.0 | 3030 | 3300 | 2830 | 3298 | 3299 | None | 25.2 | 0.0 | |
| 3 | 1 | 62.0 | 3021 | 3310 | 2821 | 3309 | 3309 | None | NA | 0.0 | |
| 4 | 1 | 62.0 | 3047 | 3282 | 2848 | 3277 | 3280 | None | NA | 0.0 | |
| 5 | 1 | 62.0 | 3038 | 3292 | 2839 | 3288 | 3290 | None | NA | 0.0 | |
| 6 | 1 | 62.0 | 3073 | 3254 | 2861 | 3262 | 3258 | None | NA | 0.0 | |

Remarks:

Required Velocity: 3250 + 50 ft/s.

Footnotes:

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NTS-Chesapeake Testing

4603B Compass Point Road
Belcamp, MD 21017

Client: Hardwire LLC
Job No.: 2084-232-3
Test Date: 10/13/2020

Test Panel

Description: Torso Plate. Model: HW-RF2SA-2020, Lot: CMO2001032

Manufacturer: Hardwire, LLC

Sample No.: SR20-074386

Size: Large
Avg. Thick: NA
Thickness: NA

Weight: 4.44 lbs
Plies/Laminates: NA

Date Received: 10/13/2020
Via: Hand Carried
Returned: Hand Carried

Setup

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

Primary Vel. Screens (ft): 37.000, 37.333,
46.667, 47.000
Primary Vel. Location (ft): 42.000
Range to Target (ft): 50.200
Target to Witness (in): 0.000

Range No.: 4
Temp: 66.2 °F
BP: 30.3 inHg
RH: 53.0%
Barrel/Gun: Test Barrel
Gunner: I. Lookingbill
Recorder: Matt Rixham

Ammunition

| Projectile | Lot No. | Powder |
|--------------------------------------|----------|--------|
| (1) 5.56 x 45-mm, 55-grain M193 Ball | Military | N 110 |

Applicable Standards or Procedures

Clay Drop 1 - Drop Time: 2:00 PM; Block No. 18; Temp: 91.5°F; Drop Depths: 17.2mm, 18.1mm, 17.7mm, 16.9mm, 17.5mm

- (1) NIJ-STD-0101.06 Level III (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 | 55.0 | NR | NR | 2839 | 3288 | 3288 | None | 19.5 | 0.0 | (a) |
| 2 | 1 | 55.0 | NR | NR | 2865 | 3258 | 3258 | None | 16.9 | 0.0 | (a) |
| 3 | 1 | 55.0 | 3060 | 3268 | 2861 | 3262 | 3265 | None | NA | 0.0 | |
| 4 | 1 | 55.0 | 3047 | 3282 | 2843 | 3283 | 3282 | None | NA | 0.0 | |
| 5 | 1 | 55.0 | 3034 | 3296 | 2830 | 3298 | 3297 | None | NA | 0.0 | |
| 6 | 1 | 55.0 | 3030 | 3300 | 2826 | 3303 | 3301 | None | NA | 0.0 | |

Remarks:

Required Velocity: 3250 + 50 ft/s.

Footnotes:

(a) No velocity reading was obtained on Time 1.