



PLATES – BALLISTIC TESTS
TACTICSHOP LLC PROPRIETARY INFORMATION



TEST REPORT

2024CO1098

DATE OF RECEPTION
Date Format: dd/MM/yyyy 21/02/2024

APPLICANT
C.P.E. PRODUCTION OY
Asentajankuja 3
FI-30300 Forssa
Finland
Att. Tuomas Turkki

DATE TESTS
Starting: 21/02/2024
Ending: 22/02/2024

Asociación de Investigación de la Industria Textil – C.I.F.: G03182870

IDENTIFICATION AND DESCRIPTION OF SAMPLES

| Reference by AITEX | Reference by customer | AITEX sample description |
|--------------------|-----------------------|--------------------------|
| 2024CO1098-S01 | PLATE BHP18N3+SA | Plate |

TESTS CARRIED OUT

- BALLISTIC TEST.

Tests marked with * are not included within the scope of the ENAC accreditation.





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2024CO1098



DESCRIPTION OF SAMPLES



Reference by AITEX: 2024CO1098-S01
Reference by customer:
PLATE BHP18N3+SA
AITEX sample description:
Plate

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PLATES – BALLISTIC TESTS

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2024CO1098



RESULTS

BALLISTIC TEST

Standard

Ballistic Penetration and Backface Signature Test (P-BFS) according to point 5 from NIJ 0101.04

Standard deviation

On request of the client the complete test for classification is not carried out. Only two plates to be tested with six shots 7.62 x 51 mm M80 at velocity according to level III. All the BFS are recorded.

Classification level

Apparatus

Shooting range

Reference

2024CO1098-S01

Sample description

Hard plates 250 x 300 mm, with cover in black colour. They are tested stand alone. AITEX does not know the composition of samples. The first plate with Serial N° 001 is 1760 g weight and 26.1 mm thick. And the second plate with Serial N° 003 is 1780 g weight and 26.5 mm thick.

Sample conditioned

24 h in test conditions according to point 5.9.1. from the standard

Pretreatment

Wet Conditioning according to point 5.9.3 from the standard NIJ 0101.04

Handload velocity test

OK

Test date

21/02/2024 - 22/02/2024

Velocity measurement

The velocity measurement is made using optical barriers and radar. In the tables of results it is shown the speed at the impact point measured by the optical barriers.

Test shot distance

15 m

Strapping arrangement

According to the standard

Requirements

There should be no perforation of the sample and the traumas must not be higher than 44 mm.

Test conditions

21.3°C / (43.4 - 43.5)% R.H.

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Roma #1 Plastiline Calibration

AVERAGE: 20.8 mm (before the test) and temperature 36°C
 AVERAGE: 19.4 mm (after the test) and temperature 34°C

Results by panel

Caliber 1

7.62 x 51 mm M80 9.6 g at (848 ± 9.1) m/s / Plate serial N°: 001

| POSITION | ANGLE | VELOCITY | FAIR HIT (Yes/No) | PERFORATION | TRAUMA (mm) |
|----------|-------|----------|-------------------|-------------|-------------|
| 1 | 0° | 848,7 | Yes | No | 35,9 |
| 2 | 0° | 850,1 | Yes | No | 30,8 |
| 3 | 0° | 849,2 | Yes | No | 35,1 |
| 4 | 0° | 854,7 | Yes | No | 39,0 |
| 5 | 0° | 852,8 | Yes | No | 42,3 |
| 6 | 0° | 843,8 | Yes | No | 37,1 |

Caliber 1

7.62 x 51 mm M80 9.6 g at (848 ± 9.1) m/s / Plate serial N°: 003

| POSITION | ANGLE | VELOCITY | FAIR HIT (Yes/No) | PERFORATION | TRAUMA (mm) |
|----------|-------|----------|-------------------|-------------|-------------|
| 1 | 0° | 857,9 | Yes | No | 35,4 |
| 2 | 0° | 855,5 | Yes | No | 37,2 |
| 3 | 0° | 858,3 | Yes | No | 39,1 |
| 4 | 0° | 847,6 | Yes | No | 40,3 |
| 5 | 0° | 842,0 | Yes | No | 42,3 |
| 6 | 0° | 845,9 | Yes | No | 36,7 |

Test uncertainty

± 1.0 m/s in the velocity measurement and ± 0.3 mm in the trauma measurement.

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PLATES – BALLISTIC TESTS

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RESULTS

BALLISTIC TEST

Standard

Ballistic Penetration and Backface Signature Test (P-BFS) according to point 5 from NIJ 0101.04

Standard deviation

On request of the client the complete test for classification is not carried out. Only two plates to be tested with six shots with ammunition 5.56 x 45 mm M855 at velocity 950 m/s. All the BFS are recorded.

Classification level

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Apparatus

Shooting range

Reference

2024CO1098-S01

Sample description

Hard plates 250 x 300 mm, with cover in black colour. They are tested stand alone. AITEX does not know the composition of samples. The first plate with Serial N° 002 is 1781 g weight and 26.1 mm thick. And the second plate with Serial N° 004 is 1773 g weight and 26.5 mm thick.

Sample conditioned

24 h in test conditions according to point 5.9.1. from the standard

Pretreatment

Wet Conditioning according to point 5.9.3 from the standard NIJ 0101.04

Handload velocity test

OK

Test date

21/02/2024 - 22/02/2024

Velocity measurement

The velocity measurement is made using optical barriers and radar. In the tables of results it is shown the speed at the impact point measured by the optical barriers.

Test shot distance

15 m

Strapping arrangement

According to the standard

Requirements

There should be no perforation of the sample and the traumas must not be higher than 44 mm.

Test conditions

21.3°C / (43.5 - 43.6)% R.H.

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2024CO1098



Roma #1 Plastiline Calibration
 AVERAGE: 19.5 mm (before the test) and temperature 36°C
 AVERAGE: 18.4 mm (after the test) and temperature 34°C

Results by panel

Caliber 1
 5.56 x 45 mm M855 4.0 g at velocity (950±9.1) m/s / Plate serial N° 002

| POSITION | ANGLE | VELOCITY | FAIR HIT (Yes/No) | PERFORATION | TRAUMA (mm) |
|----------|-------|----------|-------------------|-------------|-------------|
| 1 | 0° | 951,3 | Yes | No | 25,7 |
| 2 | 0° | 948,1 | Yes | No | 26,7 |
| 3 | 0° | 942,5 | Yes | No | 14,0 |
| 4 | 0° | 947,2 | Yes | No | 25,7 |
| 5 | 0° | 947,9 | Yes | No | 24,3 |
| 6 | 0° | 947,9 | Yes | No | 21,2 |

Caliber 1
 5.56 x 45 mm M855 4.0 g at velocity (950±9.1) m/s / Plate serial N° 004

| POSITION | ANGLE | VELOCITY | FAIR HIT (Yes/No) | PERFORATION | TRAUMA (mm) |
|----------|-------|----------|-------------------|-------------|-------------|
| 1 | 0° | 957,7 | Yes | No | 18,4 |
| 2 | 0° | 949,9 | Yes | No | 17,7 |
| 3 | 0° | 955,1 | Yes | No | 26,3 |
| 4 | 0° | 956,1 | Yes | No | 25,5 |
| 5 | 0° | 950,9 | Yes | No | 28,0 |
| 6 | 0° | 948,3 | Yes | No | 24,8 |

Test uncertainty
 ± 1.0 m/s in the velocity measurement and ± 0.3 mm in the trauma measurement.

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PLATES – BALLISTIC TESTS
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TEST REPORT

2024CO1264

DATE OF RECEPTION
Date Format: dd/MM/yyyy 29/02/2024

APPLICANT
C.P.E. PRODUCTION OY
Asentajankuja 3
FI-30300 Forssa
Finland

Att. Tuomas Turkki

DATE TESTS
Starting: 05/03/2024
Ending: 06/03/2024

Asociación de Investigación de la Industria Textil – C.I.F. : G03182870

IDENTIFICATION AND DESCRIPTION OF SAMPLES

| Reference by AITEX | Reference by customer | AITEX sample description |
|--------------------|-----------------------|--------------------------|
| 2024CO1264-S01 | PLATE BHP18N3+SA | Plate |

TESTS CARRIED OUT
- BALLISTIC TEST.

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PLATES – BALLISTIC TESTS
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2024CO1264



DESCRIPTION OF SAMPLES



Reference by AITEX: 2024CO1264-S01

Reference by customer:

PLATE BHP18N3+SA

AITEX sample description:

Plate

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2024CO1264



RESULTS

BALLISTIC TEST

Standard

Ballistic Penetration and Backface Signature Test (P-BFS) according to point 5 from NIJ 0101.04

Standard deviation

On request of the client the complete test for classification is not carried out. Only two plates to be tested with six shots with ammunition 7.62 x 39 mm MSC at velocity 730 m/s. All the BFS are recorded.

Classification level

Apparatus

Shooting range

Reference

2024CO1264-S01

Sample description

Hard plates 250 x 300 mm, with cover in black colour. They are tested stand alone. AITEX does not know the composition of samples. The first plate with Serial N° 005 is 1790 g weight and 24.7 mm thick. And the second plate with Serial N° 008 is 1792 g weight and 25.5 mm thick.

Sample conditioned

24 h in test conditions according to point 5.9.1. from the standard

Pretreatment

Wet Conditioning according to point 5.9.3 from the standard NIJ 0101.04

Handload velocity test

OK

Test date

05/03/2024 - 06/03/2024

Velocity measurement

The velocity measurement is made using optical barriers and radar. In the tables of results it is shown the speed at the impact point measured by the optical barriers.

Test shot distance

15 m

Strapping arrangement

According to the standard

Requirements

There should be no perforation of the sample and the traumas must not be higher than 44 mm.

Test conditions

19.4°C / (42.5- 43.5)% R.H.

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Roma #1 Plastiline Calibration
 AVERAGE: 20.6 mm (before the test) and temperature 37°C
 AVERAGE: 19.3 mm (after the test) and temperature 35°C

Results by panel

Caliber 1
 7.62 x 39 mm MSC M43 7.9 g at velocity (730±10) m/s / Plate serial N° 005

| POSITION | ANGLE | VELOCITY | FAIR HIT (Yes/No) | PERFORATION | TRAUMA (mm) |
|----------|-------|----------|-------------------|-------------|-------------|
| 1 | 0° | 739,4 | Yes | No | 36,0 |
| 2 | 0° | 733,8 | Yes | No | 31,0 |
| 3 | 0° | 725,4 | Yes | No | 27,5 |
| 4 | 0° | 740,7 | Yes | No | 36,8 |
| 5 | 0° | 739,3 | Yes | No | 18,4 |
| 6 | 0° | 727,3 | Yes | No | 19,3 |

Caliber 1
 7.62 x 39 mm MSC M43 7.9 g at velocity (730±10) m/s / Plate serial N° 008

| POSITION | ANGLE | VELOCITY | FAIR HIT (Yes/No) | PERFORATION | TRAUMA (mm) |
|----------|-------|----------|-------------------|-------------|-------------|
| 1 | 0° | 737,8 | Yes | No | 27,2 |
| 2 | 0° | 738,1 | Yes | No | 27,3 |
| 3 | 0° | 733,2 | Yes | No | 26,4 |
| 4 | 0° | 733,8 | Yes | No | 34,3 |
| 5 | 0° | 727,4 | Yes | No | 31,5 |
| 6 | 0° | 729,0 | Yes | No | 30,2 |

Test uncertainty
 ± 1.0 m/s in the velocity measurement and ± 0.3 mm in the trauma measurement

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Roma #1 Plastiline Calibration

AVERAGE: 20.6 mm (before the test) and temperature 37°C
AVERAGE: 19.3 mm (after the test) and temperature 35°C

Results by panel

Caliber 1

7.62 x 39 mm MSC M43 7.9 g at velocity (730±10) m/s / Plate serial N° 005

| POSITION | ANGLE | VELOCITY | FAIR HIT (Yes/No) | PERFORATION | TRAUMA (mm) |
|----------|-------|----------|-------------------|-------------|-------------|
| 1 | 0° | 739,4 | Yes | No | 36,0 |
| 2 | 0° | 733,8 | Yes | No | 31,0 |
| 3 | 0° | 725,4 | Yes | No | 27,5 |
| 4 | 0° | 740,7 | Yes | No | 36,8 |
| 5 | 0° | 739,3 | Yes | No | 18,4 |
| 6 | 0° | 727,3 | Yes | No | 19,3 |

Caliber 1

7.62 x 39 mm MSC M43 7.9 g at velocity (730±10) m/s / Plate serial N° 008

| POSITION | ANGLE | VELOCITY | FAIR HIT (Yes/No) | PERFORATION | TRAUMA (mm) |
|----------|-------|----------|-------------------|-------------|-------------|
| 1 | 0° | 737,8 | Yes | No | 27,2 |
| 2 | 0° | 738,1 | Yes | No | 27,3 |
| 3 | 0° | 733,2 | Yes | No | 26,4 |
| 4 | 0° | 733,8 | Yes | No | 34,3 |
| 5 | 0° | 727,4 | Yes | No | 31,5 |
| 6 | 0° | 729,0 | Yes | No | 30,2 |

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2024CO1264



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Results by panel

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| POSITION | ANGLE | VELOCITY | FAIR HIT (Yes/No) | PERFORATION | TRAUMA (mm) |
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| 1 | 0° | 739,4 | Yes | No | 36,0 |
| 2 | 0° | 733,8 | Yes | No | 31,0 |
| 3 | 0° | 725,4 | Yes | No | 27,5 |
| 4 | 0° | 740,7 | Yes | No | 36,8 |
| 5 | 0° | 739,3 | Yes | No | 18,4 |
| 6 | 0° | 727,3 | Yes | No | 19,3 |

Caliber 1

7.62 x 39 mm MSC M43 7.9 g at velocity (730±10) m/s / Plate serial N° 008

| POSITION | ANGLE | VELOCITY | FAIR HIT (Yes/No) | PERFORATION | TRAUMA (mm) |
|----------|-------|----------|-------------------|-------------|-------------|
| 1 | 0° | 737,8 | Yes | No | 27,2 |
| 2 | 0° | 738,1 | Yes | No | 27,3 |
| 3 | 0° | 733,2 | Yes | No | 26,4 |
| 4 | 0° | 733,8 | Yes | No | 34,3 |
| 5 | 0° | 727,4 | Yes | No | 31,5 |
| 6 | 0° | 729,0 | Yes | No | 30,2 |

Test uncertainty

± 1.0 m/s in the velocity measurement and ± 0.3 mm in the trauma measurement

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