

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

# PLATES – BALLISTIC TESTS TACTICSHOP LLC PROPRIETARY INFORMATION

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TEST REPORT	research & innovatio	n bernter	2024CO109
DATE OF RECEPTION Date Format: dd/MM/yyyy 21 DATE TESTS Starting: 21/02/2024 Ending: 22/02/2024	/02/2024	APPLICANT C.P.E. PRODUCTION OY Asentajankuja 3 FI-30300 Forssa Finland Att. Tuomas Turkki	,
IDENTIFICATION AND DE Reference by AITEX 2024CO1098-S01	SCRIPTION OF SAMPLES Reference by custon PLATE BHP18N3+SA	ner A Plate	ITEX sample description
TESTS CARRIED OUT			

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







## DESCRIPTION OF SAMPLES



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





## 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.





### 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 Nº: 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

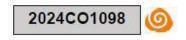
7.62 x 51 mm M80 9.6 g at (848 ± 9.1) m/s / Plate serial Nº: 003

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.





# 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

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.





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 Nº 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 Nº 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.





TESTS CARRIED OUT

- BALLISTIC TEST.

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







## DESCRIPTION OF SAMPLES



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





# 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** 

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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.





## 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 Nº 005

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

 $\pm$  1.0 m/s in the velocity measurement and  $\pm$  0.3 mm in the trauma measurement





### 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 Nº 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 Nº 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





## 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 Nº 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 № 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