



**SAFARILAND™**

**BODY ARMOR**

**NIJ STANDARD - 0101.06,  
BALLISTIC RESISTANCE OF BODY ARMOR:**

**What It Is. What It Means To You.**



There is a new standard in body armor. In July 2008, the National Institute of Justice (NIJ) released a new standard for body armor, the NIJ Standard - 0101.06, Ballistic Resistance of Body Armor. At Safariland, we welcome and support the new standard, and have long been following its development. We also thank the NIJ for its diligent work on behalf of law enforcement officers everywhere.

We believe the new standard will provide the law-enforcement community with a higher level of performance against a wider range of threats. The Safariland team of ballistic engineers have engineered innovative and technologically advanced body-armor designs to meet or exceed this new testing and performance standard. These designs will offer our customers a complete family of armor solutions to meet their needs.

## THE NEW STANDARD: WHAT IT IS

The NIJ Standard - 0101.06 is a performance standard that specifies the minimum performance requirements that body armor must meet to satisfy the requirements of criminal justice agencies and the methods that shall be used to test this performance.

It supersedes the following:

- NIJ Standard - 0101.04 Rev. A, Ballistic Resistance of Personal Body Armor (June 2001)
- NIJ 2005 Interim Requirements for Bullet-Resistant Body Armor (September 2005)

**NOTE:** The NIJ Standard 0101.06 does not make previous body armor standards obsolete.

## WHAT IT MEANS TO YOU

In short, the new NIJ Standard means added safety, which has always been the name of the game for the brands of Safariland. The new standard increases safety in three ways:

- Increased performance against today's emerging threats
- Better reliability across a full range of sizes
- Improved durability for armor that will stand the rigors of daily wear

## 10 MAJOR POINTS OF DIFFERENCE

The new NIJ standard features ten basic changes to the previous standards:

### 1. Five Classification Types

- Type IIA
- Type II
- Type IIIA
- Type III
- Type IV
- In addition, there is a special test class that allows armor to be validated against threats that may not be covered by the five standard types.

### 2. Higher Velocities

- The new standard increases the test velocities for new armor testing of Types IIA, II and IIIA.
- Test velocities have been established for conditioned armor testing.
- Special-threat rounds have been modified to be tested at elevated velocities within the special test class.

### 3. Type IIIA Round Changes

- Type IIIA lighter weight threat round changed from a 9mm FMJ RN to a .357 SIG FMJ FN.

### 4. Shot Placement

- The new standard modifies "shot-to-edge" spacing to allow shots within two inches of the edge of the vest for the 9mm FMJ RN and .357 SIG FMJ FN threats.
- The new standard maintains a shot-to-shot spacing of two inches; however, it changes the pattern of the fourth, fifth and sixth shot to be within a maximum of a 3.94" diameter circle.

### 5. Size of Test Samples

- There are now five standardized armor samples that will be accepted for testing to NIJ Standard - 0101.06: smallest, small, medium, large and largest.
- Two different sizes must be submitted for testing by a manufacturer and the sizes selected determine the range of sizes that can be produced for that particular model.

### 6. Immersion Testing

- The new standard requires test panels to be fully immersed vertically in a water bath at 70° F for 30 minutes.
- The prior standards only required a water spray test for six minutes.

### 7. Environmental Conditioning (Tumbling) Test

- The new standard requires panels to be tumbled for approximately 72,000 cycles over a 10-day period at 149° F at 80% relative humidity prior to ballistic testing.
- The conditioned armor portion of the test protocol uses lower velocities than the reference velocities used with the new armor portion of the test protocol.
- The prior standard did not include an environmental condition test.

### 8. Number of Samples Required

- The new standard requires 28 complete test samples (front and back panel).
- The prior standard required six complete test samples.

### 9. Angle of Incidence

- The new standard requires that, for P-BFS testing, each test panel must be shot with one hit at 30° and another hit at 45° angles.

### 10. Hard Armor Plate Testing (III – IV)

- The new standard requires hard armor to be tested with uniformed thermal exposure, thermal cycling and mechanical durability testing (drop testing).
- Each hard armor plate must be submerged in water and tested wet.
- The prior standard did not require conditioning prior to testing.

## Together, We Save Lives.

At Safariland, we understand the needs of those who use our products. No one vest is right for every person. That is why Safariland has created an entire family of armor solutions that allows you to choose the armor model that balances your desired level of protection and comfort under the new NIJ Standard - 0101.06.

**NOTE:** All changes to the NIJ standard are referenced in red.

### Changes to Projectile and Rounds

NIJ 0101.04		NIJ 0101.06		Change
IIA	Ref. Velocity	IIA	Test Velocity	
9mm	1120 ±30	9mm	1225 ±30	<b>+105</b>
.40 cal.	1055 ±30	.40 Cal.	1155 ±30	<b>+100</b>
II		II		
9mm	1205 ±30	9mm	1305 ±30	<b>+100</b>
.357 mag.	1430 ±30	.357 Mag.	NC	NC
IIIA		IIIA		
9mm	1430 ±30	.357 SIG	1470 ±30	<b>Round</b>
.44 mag.	1430 ±30	.44 Mag.	NC	NC

**Note:** NIJ 0101.06 velocities referenced in the chart above apply to new armor only.

### Changes to Shots and Panels

	NIJ 0101.04	NIJ 0101.06
PANEL SAMPLES REQUIRED	6 (IIA-III A)	<b>28 (IIA-III A) 22 large &amp; 6 small</b>
PANEL SIZE	One size required	Two template sizes required
SHOTS PER PANEL	6	6
SHOT SPACING	2" min	<b>Shots 1-3, 2" min, new edge distance; Shots 4-6, 3.94" circle max spread</b>
ANGLES	30 deg (shot 4 & 5)	<b>30 &amp; 45 deg (shot 4 OR 5)</b>
EDGE	3" min	<b>2" min 9mm &amp; .357 SIG</b>
WET TESTING	6 min spray	<b>30 min full immersion</b>
BALLISTIC LIMIT TESTING	1st test round only 9mm (24 shots)	<b>1st and 2nd test rounds (per NIJ type) (120 shots each)</b>
BACKFACE REQUIREMENTS	2 measured <44mm	<b>3 measured &lt;44mm Second measurement for all &gt;40 mm One outlier permitted</b>
FAILURE MECHANISM	Complete penetration (bullet or fragment)	<b>Perforation of the armor by any portion of the projectile</b>

## Soft Armor Environmental Conditioning

Soft Armor Requirements
Rotary tumbler at 149°F and 80% relative humidity
One batch of 8 panels (6L and 2S)
Cycle for 72,000 (±1500) cycles at 5 (±1) RPM=>10 days
Tested against both threats at reduced velocity

Type	Round	Conditioned Armor Test Velocity (ft/s)
IIA	9mm (-60 ft/s)	1165
	.40 cal. (-90 ft/s)	1065
II	9mm (-90 ft/s)	1245
	.357 mag. (-90 ft/s)	1340
IIIA	.357 SIG (-60 ft/s)	1410
	.44 mag. (-90 ft/s)	1340

**Note:** Reference to conditioned armor test velocity (ft/s) is Table 4, P-BFS performance test summary of the NIJ Standard - 0101.06 "Ballistic Resistance of Body Armor" (July 2008).

## Changes to Hard Armor Plates

Type	NIJ 0101.04	NIJ 0101.06	Comment
III	4 samples, 6 shots per panel, one spare under the Type III of NIJ 0101.04	<b>9 samples, 6 shots per panel, one spare</b>	24 P-BFS shots & 24 BL shots
IV	9 samples, 1 shot per panel, one spare under the Type IV of NIJ 0101.04	<b>7-37 samples, 1-6 shots per panel, one spare</b>	24 P-BFS shots & 12 BL shots

## Hard Armor Conditioning

10 day of uniform thermal exposure at 149°F (65°C) and 80% relative humidity
1 day of thermal exposure cycling from 5°F (-15°C) to 194°F (90°C) from 0% to 50% relative humidity
Mechanical durability test (armor drop test)

**Note:** All armors conditioned PRIOR to ballistic testing.





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FOR MORE INFORMATION ON THE NEW NIJ STANDARD, PLEASE VISIT [WWW.BODYARMOR.COM](http://WWW.BODYARMOR.COM).