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DECEMBER 2014

NATIONAL INSTITUTE OF JUSTICE

# GUIDE

## BODY ARMOR

Selection &  
Application Guide  
0101.06  
to Ballistic-Resistant  
Body Armor

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# **Selection and Application Guide to Ballistic-Resistant Body Armor**

**For Law Enforcement, Corrections and Public Safety**

NIJ Selection and Application Guide-0101.06

December 2014

NCJ 247281



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# Foreword



The U.S. Department of Justice, Office of Justice Programs, National Institute of Justice (NIJ), has developed this document, NIJ Guide-0101.06, *Selection and Application Guide to Ballistic-Resistant Body Armor for Law Enforcement, Corrections and Public Safety*, to provide guidance concerning the selection, procurement, use, care and maintenance, and other considerations related to ballistic-resistant body armor.

NIJ Guide-0101.06 is a companion document to NIJ Standard-0101.06, *Ballistic Resistance of Body Armor*. The text of NIJ Standard-0101.06 is the authority in the event of any discrepancy with this guide.

Nothing in this document should be understood to be a legal mandate or policy directive, or to represent the only course of action. This guide is not all-inclusive. Any actions that may be informed by this guide should be taken, after careful consideration, in accordance with applicable federal, state and local laws, rules, policies and regulations, as well as local conditions and circumstances. Jurisdictional, logistical or legal conditions may preclude the implementation of particular recommendations contained herein.

NIJ standards are subject to continued research, development and testing, review and modification as appropriate on an ongoing basis. Users of this guide are advised to consult the NIJ Standards and Testing Program webpage, accessed from <http://www.nij.gov/standards>, on a regular basis to determine whether this guide has been revised or superseded.

Technical comments and recommended revisions are welcome. Please send all written comments and suggestions to: Director, National Institute of Justice, Office of Justice Programs, U.S. Department of Justice, Washington, DC, 20531, ATTN: NIJ Standards and Testing Program or via email to [NIJStandards@usdoj.gov](mailto:NIJStandards@usdoj.gov).

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# Contents



<b>Acronyms</b> .....	viii
<b>Overview</b> .....	1
<b>Chapter 1.</b> Why Wear Body Armor?.....	3
<b>Chapter 2.</b> What Is Body Armor? .....	5
<b>Chapter 3.</b> NIJ Ballistic-Resistant Body Armor Standards and Testing Program .....	9
<b>Chapter 4.</b> Selection Considerations .....	21
<b>Chapter 5.</b> Measurement, Fit and Coverage.....	23
<b>Chapter 6.</b> Purchasing and Procurement Considerations .....	27
<b>Chapter 7.</b> Development of Procurement Specifications.....	29
<b>Chapter 8.</b> Inspection and Care .....	33
<b>Chapter 9.</b> Training and Administration .....	37
<b>Chapter 10.</b> What To Do When an Officer Wearing Body Armor Is Shot.....	39
<b>Definitions</b> .....	41
<b>References</b> .....	45
<b>Appendix A.</b> Contributors .....	47
<b>Appendix B.</b> Resources .....	49
<b>Appendix C.</b> Armor Sizing Templates .....	51
<b>Appendix D.</b> Body Armor Compliance Testing Program Body Armor Applicant Package.....	59
<b>Appendix E.</b> Example Procurement Specifications .....	89

# Acronyms



<b>ACP</b>	Automatic Colt pistol
<b>AP</b>	Armor piercing
<b>BFS</b>	Backface signature
<b>BJA</b>	Bureau of Justice Assistance
<b>BVP</b>	Bulletproof Vest Partnership
<b>CPL</b>	Compliant Products List
<b>CTP</b>	Compliance Testing Program
<b>DHS</b>	U.S. Department of Homeland Security
<b>DOJ</b>	U.S. Department of Justice
<b>FBI</b>	Federal Bureau of Investigation
<b>IC</b>	In Conjunction
<b>JAG</b>	Edward J. Byrne Justice Assistance Grant Program
<b>LEOKA</b>	Law Enforcement Officers Killed and Assaulted

<b>LR</b>	Long rifle
<b>NATO</b>	North Atlantic Treaty Organization
<b>NIJ</b>	National Institute of Justice
<b>NILECJ</b>	National Institute of Law Enforcement and Criminal Justice
<b>NIST</b>	National Institute of Standards and Technology
<b>NLECTC</b>	National Law Enforcement and Corrections Technology Center
<b>OLES</b>	Law Enforcement Standards Office
<b>TSWG</b>	Technical Support Working Group
<b>TWG</b>	Technology Working Group
<b>UCR</b>	Uniform Crime Reporting Program
<b>U.S.</b>	United States

# Overview



The National Institute of Justice (NIJ) is pleased to release NIJ Guide-0101.06, *Selection and Application Guide to Ballistic-Resistant Body Armor for Law Enforcement, Corrections and Public Safety*. The previous guide published by NIJ on body armor, NIJ Guide 100-01, *Selection and Application Guide to Personal Body Armor*, was released in 2001. NIJ Guide-0101.06 incorporates new knowledge about ballistic-resistant armor that has been gained in the intervening 13 years as the result of both NIJ-funded research and research funded by others.

Whereas NIJ Guide 100-01 deals with both ballistic- and stab-resistant armor, this guide deals only with ballistic-resistant armor. It supersedes those portions of NIJ Guide 100-01 that deal with ballistic-resistant armor. It does not supersede those portions that deal with stab-resistant armor. A separate guide on stab-resistant armor will be published when NIJ Standard-0115.00, *Stab Resistance of Personal Body Armor*, is updated.

This guide has two principal purposes. The first is to inform law enforcement, corrections and other public safety agencies in the development of sound policies and procedures concerning body armor from its procurement to its disposal. The second is to provide officers a better understanding of the importance of wearing body armor, wearing it correctly and caring for it properly.

This guide is also intended to provide its readers a better understanding of body armor and how it works, explain NIJ Standard-0101.06 in nontechnical terms and provide an overview of the voluntary equipment compliance testing program established by NIJ to ensure the effectiveness of body armor sold to law enforcement, corrections and other public safety agencies.

The heart of the guide – how to proceed to select and purchase body armor – begins with chapter 4 and includes chapters explaining how to assess the level of protection needed, things to think about when selecting armor and ways to keep it in proper working order. An extensive collection of appendixes is available for reference.

A team of active-duty law enforcement and corrections officers, technical experts and others with relevant knowledge and experience related to ballistic-resistant body armor, compliance testing and conformity assessment developed this guide. Appendix A provides a list of contributors and their organizations.



# Why Wear Body Armor?

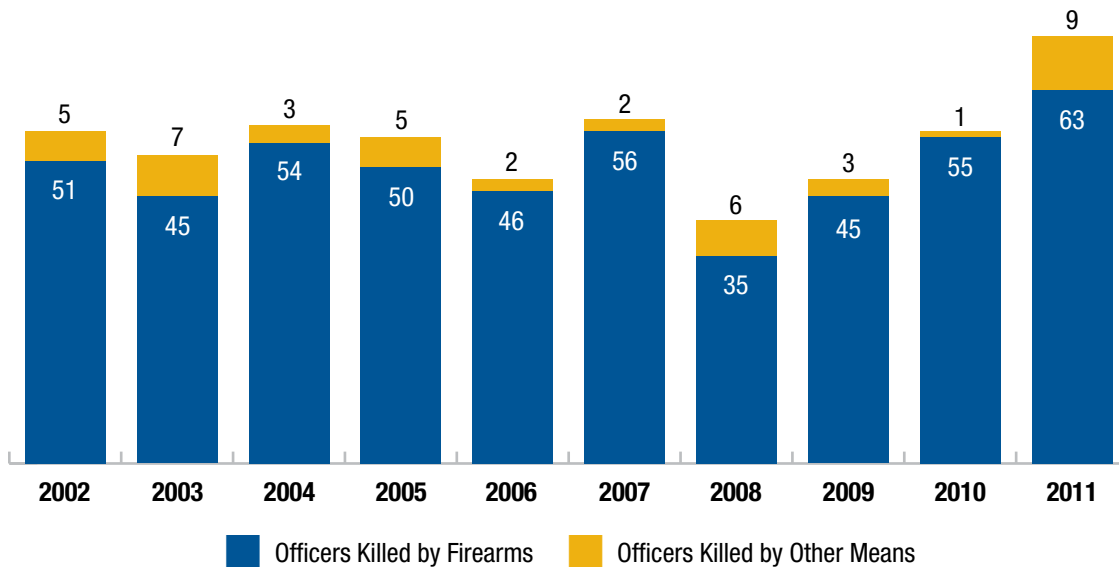
## Wearing Body Armor Saves Lives

Body armor is one of the most important pieces of safety equipment used by officers. Between 2002 and 2011, the FBI reports that between 1,800 and 2,300 officers were assaulted with firearms annually.<sup>1</sup> Of the 543 officers feloniously killed during the same period, 498 were killed with firearms.<sup>2</sup> In 2011 alone, 72 officers were feloniously killed; of those 63 were killed with firearms.<sup>3</sup>

Modern police body armor was introduced into practice in the 1970s as a result of NIJ-funded research. The International Association of Chiefs of Police (IACP)/DuPont Kevlar Survivors Club® records more than 3,100 instances of officers being saved since then because they wore body armor.<sup>4</sup>

These include instances where wearing armor saved officers from assaults with and without weapons, and even in vehicular accidents. Here are two examples from the IACP/DuPont Kevlar Survivors Club. In September 2001, Deputy Dewitt Carrithers with the Starkville (Miss.) Sheriff’s Department was

**EXHIBIT 1: OFFICERS FELONIOUSLY KILLED 2002 – 2011**



<sup>1</sup> FBI Uniform Crime Reports. 2011. *Law Enforcement Officers Killed and Assaulted (LEOKA), 2011*, Table 70. Available on the web at <http://www.fbi.gov/about-us/cjis/ucr/leoka/2011/>.

<sup>2</sup> *LEOKA* 2011, Tables 1 and 38.

<sup>3</sup> *LEOKA* 2011, Table 38.

<sup>4</sup> These citations are used with the approval of the IACP/DuPont Kevlar Survivors Club® <http://www2.dupont.com/personal-protection/en-us/dpt/article/kevlar-survivors-club.html>.

assaulted with a roofer's hammer. Because he was wearing body armor, he survived and, despite suffering multiple wounds, was able to stop the assailant. In July 2004, Deputy Larry Zydek with the Maple Valley (Wash.) Sheriff's Department survived a violent car crash because the armor he was wearing protected his torso. Officer Zydek's vehicle was so badly damaged that it took emergency personnel longer than an hour to extract him from it.<sup>5</sup>

Armors only save lives when they are worn. Research published by RAND in 2010 indicates that an officer who is not wearing body armor is 3.4 times more likely to suffer a fatal injury if shot in the torso than an officer who is wearing body armor.<sup>6</sup>

<sup>5</sup> These citations are used with the approval of the IACP/DuPont Kevlar Survivors Club® <http://www2.dupont.com/personal-protection/en-us/dpt/article/kevlar-survivors-club.html>.

<sup>6</sup> LaTourrette, T. 2010. "The Life-Saving Effectiveness of Body Armor for Police Officers," *Journal of Occupational and Environmental Hygiene* 7:10, 557-562. Available on the web at <http://oeh.tandfonline.com/doi/abs/10.1080/15459624.2010.489798>.

## What Is Body Armor?

The term *body armor* is usually associated with vests designed to provide ballistic protection to the vital organs in the torso. Usually, a vest contains two armor panels held in place by a carrier. One panel protects the front of the torso, the other protects the rear. To protect the sides of the torso, the vest is worn with the front panel overlapping the rear panel. These panels can typically, but not always, be removed from the carrier.

### EXHIBIT 2: BODY ARMOR WITH CARRIER



The armor panels themselves consist of a ballistic panel with an integral cover that protects the ballistic materials in the panel from the environment. Panels come in multiple sizes and can be flat or curved to accommodate the different shapes and sizes of potential wearers. Typically, neither the panel cover nor the carrier is intended to provide ballistic protection. The principal purpose of the carrier is to support and secure the panels to the wearer's body.

The term body armor may also refer to items of clothing such as jackets and coats that have armor panels inserted. In such a configuration, normal-seeming items of clothing take on the role of armor

carriers. It may also refer to accessory panels that are intended to provide ballistic protection to the groin, coccyx (aka tailbone), neck, sides and shoulders (see Exhibit 3.)

### EXHIBIT 3: VEST, SHOULDER PROTECTION, GROIN PROTECTION



There are two basic kinds of body armor: soft armor and hard armor. *Soft body armor* consists of flexible panels of ballistic materials. Soft armor is designed to offer protection against assaults with handguns. It is intended to be used for extended daily wear. It is the type of body armor that officers would typically wear while executing their daily duties. It can be worn under an officer's uniform or other clothing. It can also be worn over a uniform or clothing in an external carrier. If it is worn under a uniform, it is called *concealable armor*.

*Hard armor* consists of rigid panels, or *plates*, of ballistic-resistant materials. Hard armor is designed to offer greater protection against higher threats than soft armor. Hard armor plates are used in *tactical armor*. Tactical armor is typically a combination of a hard armor plate and soft armor panels, making it thicker and heavier than soft armor alone (see the discussion of in-conjunction armors later in this chapter). Tactical armor is not typically worn for



extended periods. It is donned for wear by officers entering high-risk situations.

It is important to note that different armor models are designed to protect against different specific types of ammunition. No body armor will stop every threat. No body armor is “bullet proof.” Agencies should purchase armor designed to protect against the threats most likely to be faced by their officers. At a minimum, agencies should consider purchasing armor that will protect their officers from assaults with their own handguns should the weapons be taken from them during a struggle.

Because the performance of an armor is so closely tied to its design, the orientation in which the panel is worn in the carrier may affect its performance. NIJ-compliant armor panels are clearly marked so that the wearer knows which way they should be inserted into the carrier. The side of the panel that faces away from the body is referred to as the *strike face* because it is the side that is intended to be struck by the bullet. The side of the panel that is worn against the body is referred to as the *wear face* or *body side*.

## Soft Armor

Soft armor panels are typically constructed of multiple layers of ballistic-resistant materials (see Exhibit 4). The number of layers within the panel and the order in which these layers are placed influence its overall performance. Additional energy is absorbed by each successive layer of material.

### EXHIBIT 4: BALLISTIC MATERIAL AND COVER



### EXHIBIT 5: HARD ARMOR PLATES



A soft armor panel works much like a baseball catcher’s mitt. When a handgun bullet strikes the panel, it is caught in a “web” of strong fibers. These fibers absorb and disperse the impact energy that is transmitted to the panel from the bullet. This process causes the bullet to deform or “mushroom.”

How well a panel absorbs and disperses the energy of the bullet is key to its ability to reduce blunt force injury to the body resulting from bullets that do not perforate an armor. As the fibers in a panel “catch” a bullet, they deform in the direction that the bullet was traveling into the body. That pushes panel material into the body of the wearer, resulting in injury to the torso. This type of nonpenetrating injury can cause severe contusions (bruises) and can cause damage to the internal structures of the body (musculature, bones, ligaments, organs, vascular system) that may result in death.

## Hard Armor

Hard armor plates (see Exhibit 5) may be constructed from ceramics, compressed laminate sheets, metallic plates or composites that incorporate more than one material.

Generally speaking, hard armor plates work in one of two ways: They can capture and deform the bullet, or they can break up the bullet. In both instances, the armor then absorbs and distributes the force of the impact.

Although some hard armor plates are designed to be used by themselves in a carrier, in most instances they are designed to be used *in conjunction (IC)* with a soft armor panel as described in the next section.

## In-Conjunction (IC) Armors

Many hard armor plates are designed to be used with a specific soft armor panel to achieve a desired level of ballistic protection. They are not designed to be used alone. Such armors are called IC armors. They are constructed by adding pockets to the front and rear of a soft armor's carrier (see Exhibit 6). The hard armor plates are inserted into these pockets over a portion of the underlying soft armor panel. Less common, but still occasionally available, is the combination of two soft armor panels as an IC armor designed to increase the level of ballistic protection.

Plates that are part of an IC armor must be used only with the designated soft armor panel. If not, the desired level of ballistic protection may not be achieved. Consequently, the hard armor plate component of the IC armor is labeled to identify the corresponding model of soft armor panel with which it is to be used.

### EXHIBIT 6: IC ARMOR



## Stab-resistant Armors

There are also armors designed to protect against edged (knives) or stabbing weapons. These are

referred to as stab-resistant armor and are typically worn by correctional officers. Such armors are addressed in NIJ Standard-0115.00, *Stab Resistance of Personal Body Armor* (<https://www.ncjrs.gov/pdffiles1/nij/183652.pdf>).

An armor designed to protect the wearer against firearms is not designed or tested to protect against edged or stabbing weapons. An armor designed to protect only against edged or stabbing weapons will not protect the wearer against firearms.

## Combination Armors

*Combination armors* are those designed to protect against both firearms and edged or stabbing weapons. In these armors, the panels contain layers of materials that are stab resistant as well as layers of materials that are ballistic resistant. Such armors may also be called *dual threat* or *multiple threat* armors. NIJ provides a list of those combination armors that have been tested and found to be compliant with both NIJ Standard-0101.06 and NIJ Standard-0115.00 on both its ballistic- and stab-resistant Compliant Products Lists (CPLs). (For more information on the CPLs, see Chapter 3.)

- Ballistic Armor Compliant Products List: [https://www.justnet.org/other/ballistic\\_cpl.html](https://www.justnet.org/other/ballistic_cpl.html)
- Stab Armor Compliant Products List: [https://www.justnet.org/other/stab\\_cpl.html](https://www.justnet.org/other/stab_cpl.html)

## Accessory Panels

*Accessory panels*, which are sometimes referred to as *ballistic accessory panels*, are typically worn with tactical armor. By convention, they are not called armor panels to differentiate them from the panels that are an integral component of a body armor.

NIJ Standard-0101.06 provides performance requirements and methods for their testing; however, accessory panels are not assessed as part of the NIJ Body Armor Compliance Test Program (CTP).

(For more information on the NIJ CTP, see Chapter 3.) Their manufacturers may have them tested at an NIJ-approved laboratory, but the test results stand on their own.

## Trauma Packs or Trauma Plates

It is important not to confuse trauma packs or plates with soft armor panels or hard armor plates (see Exhibit 7). As with armor panels and plates, these items may be either flexible or rigid. Likewise, they may be constructed from layers of ballistic-resistant fabrics, metals, laminate sheets or other materials. They are referred to as *trauma packs* or *plates* because they are intended to reduce blunt force trauma injury to the torso resulting from a bullet's striking an armor. Although using them may provide some additional ballistic protection, this is not their principal purpose. They can be distinguished from hard armor plates because they are typically smaller and thinner.

### EXHIBIT 7: TRAUMA PLATE

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Trauma plates or packs are most commonly positioned in the center of the chest in pockets in front of (or, less commonly, behind) the front soft armor panel. As is the case with armor panels, the orientation of trauma plates and packs matters. They are marked using the same convention as is used for armor panels. Some armors incorporate multiple trauma packs.

Because they are not primarily intended to provide ballistic protection, trauma packs and plates are not addressed in NIJ Standard-0101.06 and are not part of the NIJ CTP.

# NIJ Ballistic-Resistant Body Armor Standards and Testing

There are two components to the National Institute of Justice (NIJ) Ballistic-Resistant Body Armor Standards and Testing Program. The first is the performance standard. The second is the accompanying Compliance Testing Program (CTP).

NIJ published the first version of the standard in 1972. It has been updated five times since then to address the evolution of body armor and test methods. In 2008, NIJ published the current version of the standard, NIJ Standard-0101.06, *Ballistic Resistance of Body Armor*.

The standard sets minimum performance requirements for body armor. It also prescribes test methods for determining if those requirements are met. The standard does not dictate how armor must be **designed**; rather, it prescribes what it must be able to **do**. This ensures that body armor meets officers' needs, yet leaves manufacturers free to innovate.

**NIJ Standard-0101.06 supersedes all prior versions.** However, its publication does not invalidate or render unsuitable any armor models previously determined to be compliant with a superseded version of the standard **and** that were purchased, or contracted for, while that standard was in effect. Body armor purchased under those conditions need not be discarded solely because a more current version of the standard is now in effect. However, armors tested to previous iterations of the NIJ standard are not compliant with NIJ Standard-0101.06 unless they have been submitted to the NIJ CTP and found to meet the 0101.06 requirements. Such armors would be listed on the current ballistic-resistant body armor Compliant Products List (CPL).

Serviceable armor should never be removed from service until and unless a replacement armor is available for immediate wear. Agencies are urged to purchase armor that is compliant with the most current version of the standard because each subsequent version incorporates new understanding of body armor performance.

Body armor is tested to the NIJ body armor standard at approved, accredited test laboratories through the NIJ CTP. The NIJ CTP was established in 1978 to facilitate the testing of body armor to the NIJ standard. The NIJ CTP covers body armor systems designed to protect against firearms as well as those designed to protect against edged (knives) or stabbing (spike) weapons. Body armor tested and found to meet the requirements of NIJ Standard-0101.06 or NIJ Standard-0115.00, and whose suppliers agree to participate in the NIJ CTP, is listed on the Ballistic-resistant Body Armor CPL or the Stab-resistant Body Armor CPL, as appropriate.

- Ballistic Armor Compliant Products List: [https://www.justnet.org/other/ballistic\\_cpl.html](https://www.justnet.org/other/ballistic_cpl.html)
- Stab Armor Compliant Products List: [https://www.justnet.org/other/stab\\_cpl.html](https://www.justnet.org/other/stab_cpl.html)

The NIJ CTP includes additional measures beyond testing that are intended to increase confidence in the armor models listed on the CPLs. One of those measures is participation in the Follow-up Inspection and Testing (FIT) program, which is discussed in detail later in this guide. If an armor supplier does not agree to these additional measures, its armor will not be listed, even if it was tested and found to meet the requirements of the standard.

The use of NIJ Standard-0101.06 or any other NIJ standard is voluntary. Public safety agencies can choose whether to purchase body armor that is found to be compliant with the standard. Similarly, participation in the NIJ CTP on the part of body armor manufacturers is also voluntary.

Participation offers advantages to both public safety agencies and body armor manufacturers. Because the standard was developed with input from law enforcement and correctional officers, it informs manufacturers of their requirements – of what their customers need. Purchasing armor listed on the CPL provides agencies confidence that an armor will meet their needs. It also provides them a resource to allow them to see a full list of compliant models that may meet their needs. In turn, the knowledge that agencies are likely to buy armor listed on the CPL provides suppliers with an incentive to have their armors listed.

## Overview of Standard-0101.06

NIJ Standard-0101.06 not only specifies test methods to determine if the armor panels in a body armor model will stop the threats they are designed to stop, but also to measure how well they protect the wearer from blunt force injury resulting from a bullet's striking a panel.

NIJ Standard-0101.06 uses two types of ballistic tests:

1. Perforation and BackFace Signature (P-BFS).
2. Ballistic Limit (BL).

The combined results from these two tests are intended to determine if the armor model is suitable for use.

*Perforation* refers to an instance where a projectile passes through an armor. *Backface signature* refers to the indentation made by the test sample in the clay backing material that is used during testing when a projectile penetrates (enters the armor)

but does not perforate the sample. The depth of the indentation is used as a reasonable analog of the potential for the wearer to sustain significant, potentially lethal, blunt force injury. The P-BFS test is used to determine if the armor stops the test round and the deformation in the clay backing material is within the specified parameters.

NIJ Standard-0101.01, published in 1978, was the first version of the standard to incorporate a 44 mm (1.73 inch) BFS limit as the minimum performance threshold for blunt force injury. It was derived from NIJ-funded research conducted by U.S. Army researchers in the 1970s that investigated the upper tolerable limits of blunt force injury.

The *ballistic limit* is the velocity at which there is an equal chance of an armor's stopping a given bullet or of being perforated. The test method that is used to determine the BL is typically known as the "V50" test method. BL test data are used to develop a profile of the probability of an armor's being perforated over a range of velocities. Exhibit 8 presents a representative BL graph.

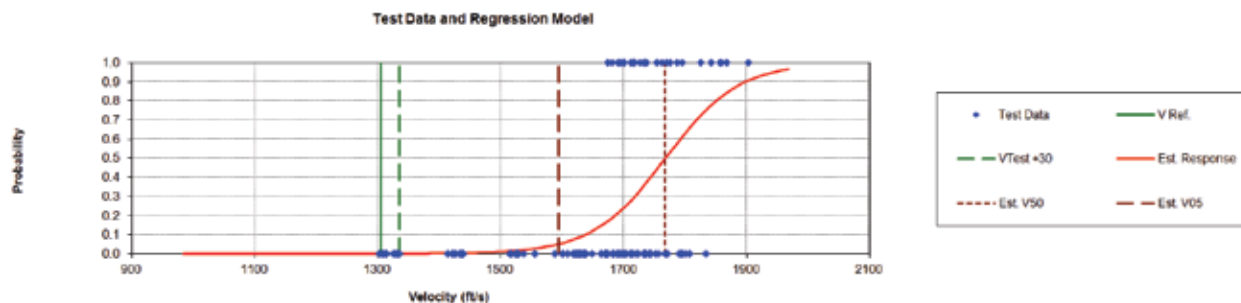
BL testing provides an additional level of confidence in the performance of the armor. Appendix E of the NIJ 0101.06 standard provides a detailed explanation of BL data and its meaning.

**How NIJ Standard-0101.06 Differs From Previous Versions of the Standard.** NIJ Standard-0101.06 incorporates major changes from previous versions that are intended to accomplish three major goals:

- To improve the level of protection afforded by body armor.
- To provide greater confidence in its continuing performance while in service.
- To ensure that the requirements contained in the standard are relevant to the needs of officers in the field.

Both the threats (i.e., the ammunition used to test armor samples) and test methodologies were updated. The ammunition selected was identified

## EXHIBIT 8: REPRESENTATIVE BALLISTIC LIMIT GRAPH



by the officers who were members of the technical committee that assisted in the development of the standard, and reflects the changing threats officers face.

The standard increases the number of test samples significantly for both P-BFS and BL testing. The increase in sample testing improves statistical confidence in the test results.

In part, this increase in test samples results from a second round of P-BFS and BL testing, wherein additional armor samples are tested after they are first subjected to controlled levels of heat, moisture and mechanical wear for a specified number of days. This is intended to provide some indication of the armor's ability to maintain ballistic performance in the field. This protocol will not predict the service life of the vest nor does it simulate an exact period of time in the field.

BL testing now incorporates a pass/fail criterion. Previous versions of the standard did not. The number of shots taken to generate the BL curve have been increased. This results in a more refined BL profile that is used to calculate a probability of perforation at the relevant test velocity. The armor passes if the probability of perforation is less than 5% at that velocity.

For P-BFS testing, the standard changed the shot pattern for some test samples. This includes decreasing the distance from the edge of a sample to the point where a bullet strike can be considered

a *fair hit* for testing purposes. Prior versions of the standard set 3 inches (76mm) as the minimum distance from the edge for all test samples. NIJ Standard-0101.06 has decreased that to 2 inches (51mm) for armor panels designed to defeat rifle threats and some, but not all, handgun threats. For the affected armors, this change effectively increases the area over which a body armor model is expected to protect its wearer. The new shot pattern also includes a requirement for more closely spaced shot grouping to ensure that the armor continues to perform as intended in the event of multiple rounds striking the armor.

A *fair hit* indicates that the shot hit the intended area of the armor and the velocity of the bullet was within the specified limits for that threat. The angle at which the bullet strikes the armor is also important. It is checked to ensure that the bullet did not skew during flight. To be considered a fair hit, the angle of incidence at which the bullet strikes the sample cannot be greater than  $\pm 5^\circ$  from the intended angle of incidence.

**Threats.** The degree to which a firearm poses a threat depends in large measure on the nature of the ammunition it fires. The performance of a given round depends on the velocity of the bullet and on the bullet's design characteristics. These include the size and weight of the bullet. It is typically measured in millimeters (mm) or caliber (cal). The weight of a bullet is usually measured in grains (gr) or grams (g).

Even bullets of the same caliber and weight can vary in how they penetrate a given body armor because of differences in their other design characteristics, such as the materials from which they are constructed. Bullets are usually constructed from lead, copper, brass, steel, tungsten or alloys of these materials. The harder and denser a bullet is, the less deformation is likely when striking a soft armor panel, but it would be more likely to break up on impact when striking a hard armor plate that incorporates ceramic, ceramic composite or metallic elements.

The tip of the bullet may be *round nose (RN)*, have a *hollow point (HP)* or be pointed. RN bullets tend to expand on impact. HP bullets also expand to a greater extent and “mushroom” on impact. Rifle caliber bullets with pointed tips tend to punch through soft armor panels. Hard armor plates are required to defeat them.

Bullets may be unjacketed, have a full metal jacket (FMJ) or be semi-jacketed (SMJ). Jacketing usually involves wrapping a harder metal shell, such as copper, around a softer metal core, such as lead, allowing the bullet to be launched at a faster velocity.

### EXHIBIT 9: ARMOR LEVEL AND THREAT COMPARISON

	0101.04	0101.06	0101.04	0101.06	0101.04	0101.06	0101.06 (Conditioned)
Armor Type	Test Bullet	Test Bullet	Bullet Weight (grains)	Bullet Weight (grains)	Reference Velocity (ft/s)	Reference Velocity (ft/s)	Reference Velocity (ft/s)
I	.22 caliber LR LRN	N/A	30	N/A	1080	N/A	N/A
	.380 ACP FMJ RN	N/A	95	N/A	1055	N/A	N/A
IIA	9 mm FMJ RN	9 mm FMJ RN	124	124	1120	1225	1165
	40 S&W FMJ	40 S&W FMJ	180	180	1055	1155	1065
II	9mm FMJ RN	9mm FMJ RN	124	124	1205	1305	1245
	.357 Mag JSP	.357 Mag JSP	158	158	1430	–	1340
IIIA	9 mm FMJ RN	.357 SIG FMJ FN	127	125	1430	1470	1410
	.44 Mag JHP	.44 Mag SJHP	240	240	1430	1430	1340
III	7.62 mm NATO FMJ (M80)	7.62mm NATO FMJ (M80)	148	147	2780	–	2780
IV	.30 Caliber M2 AP	.30 Caliber M2 AP	166	166	2880	–	2880
Acronyms / Abbreviations							
	AP	Armor Piercing			LR	Long Rifle	
	FMJ	Full Metal Jacket			LRN	Lead Round Nose	
	FN	Flat Nose			NATO	North Atlantic Treaty Organization	
	JHP	Jacketed Hollow Point			RN	Round Nose	
	JSP	Jacketed Soft Point			SIG	Sig Sauer	

It also inhibits deformation of the bullet on impact. A lead, round nose, semi-jacketed bullet is referred to as a *jacketed soft-point (JSP)* bullet. Modern bullets that are designed to pierce armor (AP) are usually jacketed and have dense, tough metal cores, typically constructed from tungsten or a hardened steel. Whether a bullet's core is bonded to its shell also matters. Bonding prevents – or at least retards – core and jacket separation.

NIJ Standard-0101.06 specifies five levels of ballistic performance for body armor. The first three levels – IIA, II and IIIA – are typically soft armors. The two remaining levels, III and IV, are typically hard armor designed to protect officers against rifle threats. The standard threat bullets associated with these five levels are listed below:

- Type IIA. 9mm FMJ RN; .40 Smith and Wesson (S&W) FMJ.
- Type II. 9mm FMJ RN; .357Magnum JSP.
- Type IIIA. .357 SIGFMJ FN; .44 Magnum SJHP.
- Type III. 7.62mm FMJ (M80) (Rifle).
- Type IV. .30 Cal AP (M2 AP) (Rifle).

The superseded NIJ Standard-0101.04 included a sixth protection level, Type I. The threats associated with that level were .22 Cal LR (Long Rifle) and .380 Cal ACP (Automatic Colt Pistol). The addition of the .357 SIG and the elimination of the .380 ACP reflect changes in the handguns used by law enforcement officers between when NIJ Standard-0101.04 and NIJ Standard-0101.06 were published. Exhibit 9 compares the five levels and the threats against which they are tested between NIJ Standard-0101.04 and NIJ Standard-0101.06. In most instances, the reference velocities at which they are tested in NIJ Standard-0101.06 exceed those specified in NIJ Standard-0101.04 for the same round for testing conditioned (as well as nonconditioned or new) armor.

Testing, or *reference*, velocities in NIJ Standard-0101.06, both for conditioned and

unconditioned armor, are both greater than what is expected on the street. Armor is tested at these higher velocities to account for variations in bore type, barrel length, propellant loads, bullet construction and other variables seen in commercial firearms and ammunition. Testing at higher velocities is also meant to instill greater confidence levels in the ability of the armor to continue performing while in service. The standard allows a tolerance of plus or minus 9.1 meters/second (30 feet/second) from the reference velocity during ballistic testing.

The threats used in NIJ Standard-0101.06 (see Exhibit 10) are not all inclusive. The standard enables agencies to further test the performance of a body armor model against additional nonstandard threats. The same test protocols are used, only the threat is changed. Appendix B of the standard provides a table with some of the more common nonstandard threats such as the .45 ACP with recommended reference velocities for testing.

#### EXHIBIT 10: THREAT ROUNDS IN NIJ 0101.06



**Number of Samples.** The number of test samples varies. For soft armor panels, NIJ Standard-0101.06 requires 28 samples, 14 for each threat. Six of these samples will represent the smallest size the supplier proposes to produce and 22, the largest. Exhibit 11 shows how those test samples will be apportioned between P-BFS and BL testing, and how many will be tested after being subjected to environmental conditioning. Two of the larger test samples are kept as spares.



## EXHIBIT 11: ARMOR SAMPLES REQUIRED FOR EACH THREAT TEST

A Armor Template Size	Number Required	Armor Condition			Ballistic Tests		
		New	Conditioned		P-BFS	BL	Spare
Larger	11	8		New	2	5	1
			3	Cond.	1	1	1
Smaller	3	2		New	2		
			1	Cond.	1		
Total	14	10	4		6	6	2

For hard armor plates intended to provide Type III protection, nine test samples are required, four each for P-BFS testing and BL testing, with one spare sample.

The number of test samples of hard armor plates intended to provide Type IV protection depends on the construction of the panel. The supplier must provide sufficient test samples to allow a 24-shot P-BFS test and a 12-shot BL test, with at least one spare. For plates capable of withstanding only a single ballistic impact, the supplier provides 37 samples. Armors designed to stop an AP bullet tend to incorporate very hard materials that can be brittle and shatter after the first hit. For plates capable of withstanding multiple impacts, the supplier is asked to specify the number of shots to be fired at each panel. The number of test samples may be reduced accordingly, but must include one spare.

**Sample Size.** The standard requires that a supplier submit test samples that represent the smallest and largest sizes of the armor that will to be produced. To provide for uniformity in testing, the standard provides five template sizes for soft armor panel samples (C1, C2, C3, C4 and C5). These templates are designed to represent 95% of officers, although they are not indicative of service armor design and are required for testing purposes only. Appendix C provides more information on these five templates.

The specified size templates are for testing purposes only and do not represent the actual shapes and sizes of production armor models. The templates that are used for testing are dependent on the range of sizes over which the armor model will be

commercially produced. For a compliant model, the minimum and maximum allowable sizes that can be produced are defined in NIJ Standard-0101.06.

Hard armor plates may be no larger than 254 mm x 305 mm (10.0 inches x 12.0 inches).

**Test Configuration.** Test samples include the armor panel and a carrier. For purposes of consistency, removable armor panels are tested with generic lightweight cotton or poly-cotton carriers to ensure the performance of the armor is not enhanced by carriers that may not always be used. The test is designed to assess the performance of the armor panel in its minimum protective configuration.

For the same reasons, test carriers do not generally have strapping, strapping attachment points, pockets for accessory ballistic panels or trauma packs/plates, or any accessory mounting points. There are three exceptions to this rule.

1. IC armor carriers will have the pockets necessary to mount the hard armor plates with which they will be tested.
2. Some armors require their own strapping for mounting and support during the tests.
3. An armor model may be tested in a carrier that is intended to provide additional ballistic protection. The carrier is then considered a component of the armor system.

**Environmental Conditioning.** Carriers for test samples that will undergo the conditioning protocol will not have strapping, strapping attachment points

or any accessory mounting points. Separate specific carriers are provided by the applicant for use in the conditioning protocol. Additional carriers with strapping are supplied for the ballistic testing of armor samples, as these require their own strapping for mounting and support during testing.

Test samples of soft armor panels are first stored at a temperature of 25°C (77° F) with a relative humidity of 20% to 50% for at least 24 hours prior to starting the armor conditioning protocol. This is done to bring all test samples to the same starting point prior to conditioning. They are then tumbled at 65°C (149°F) at 80% relative humidity for 10 days prior to testing. The conditioning chamber resembles a clothes dryer, as Exhibit 12 illustrates.

Hard armor test samples are stored at a temperature of 25°C (77° F) and relative humidity of 20% to 50% for at least 24 hours prior to starting the conditioning protocol. Then, as with soft armor panel test samples, they are stored at 65°C (149°F) at 80% relative humidity for 10 days. They then undergo a 24-hour conditioning protocol during which they are subjected to temperatures varying between -15°C (5°F) and 90°C (194°F).

Finally, they are subjected to a drop test designed to ensure that the plate can withstand low-level impacts. Some armor plates are by their very nature brittle and susceptible to fracture if dropped or mistreated.

## Ballistic Testing Requirements

Before testing, armor samples — including the carrier, cover and ballistic panel — are inspected for consistency of manufacture and various defects. In addition, after every test, each sample's ballistic components are inspected immediately to verify their construction details (layers, weave, stitching, material, etc.).

**Perforation and Backface Signature Testing Requirements.** Except for some accessory ballistic

## EXHIBIT 12: CONDITIONING CHAMBER



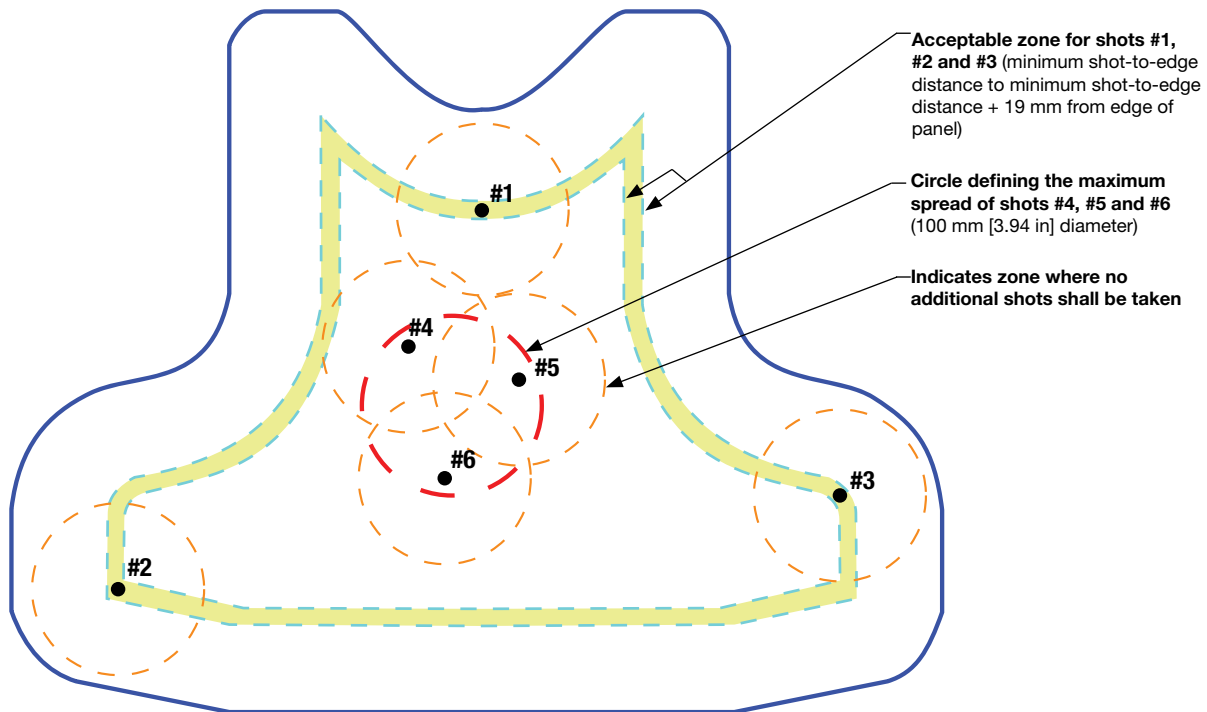
panels and panels intended to provide level IV protection, each sample will be shot six times with the first three being near the edges and the second three close together, unless the armor does not have uniform thickness. In that case, the latter three shots will be aimed at the weakest spots in the armor (see Exhibit 13).

Before the start of the ballistic portion of the test, soft armor panels that have not been conditioned are submerged in a water bath to check the integrity of the ballistic panel covers. This is done because ballistic performance may be degraded if the panel is exposed to moisture.

Removable inserts such as trauma packs and plates or armor plates are not included as part of the armor sample used for P-BFS testing of soft armor panels. For armor models containing integral inserts, manufacturers must submit a detailed diagram of the location of each insert. During the P-BFS test, the shot locations will be adjusted so that areas other than those containing these inserts are tested to ensure that the whole armor offers suitable protection in all areas, not just those reinforced by inserts.

For IC armor, the specified soft armor panel is first tested in accordance with NIJ Standard-0101.06 and found compliant as a stand-alone armor at its specified threat level. The soft armor panel and hard armor plate are then tested together as a system.

## EXHIBIT 13: SHOT PATTERN



No armor test sample — conditioned or unconditioned — can be perforated by a fair hit during testing.

Testing must provide a high degree of confidence that the armor will protect its wearer from potentially lethal blunt force injury. Testing of unconditioned test samples must provide at least 95% confidence that the depth of the indentations in the clay backing from fair hits that do not perforate the armor will be no more than 44 mm (1.73 inches). In no case may the depth of deformation exceed 50 mm (1.97 inches).

Although BFS measurements are taken for conditioned armors, there is no pass/fail criterion associated with these values. The only requirement for a conditioned armor sample is that it cannot be perforated.

**Ballistic Limit Determination.** For the armor to meet the requirements of the standard, no perforations can occur at or below the corresponding maximum P-BFS reference velocity. If there is no perforation, the BL test data must demonstrate that the probability of a perforation is less than 5% for new, unconditioned armors at the acceptable reference velocity. BL testing is performed on the largest size armor template panel that the applicant selects to submit. Research has shown that the size of the armor has only a small impact on the penetrability of the armor and that the larger armors tend to be slightly easier to perforate. Therefore, the larger armors are expected to perform slightly worse than the smaller armors.

As with P-BFS testing, removable inserts are not included as part of the armor sample used for BL determination. During the BL testing, shot locations

will be adjusted so that areas other than those with integral inserts are tested.

## NIJ Compliance Testing Program

There are four elements to the NIJ CTP. These are:

- **Type testing.** This is the initial testing of an armor model by an accredited, NIJ-approved test laboratory in accordance with the requirements of either NIJ Standard-0101.06 or NIJ Standard-0115.00.
- **Compliance decision.** Determination by NIJ that a body armor model meets the requirements of the NIJ CTP based on test data and other requirements.
- **Attestation of conformity.** Listing of the armor on the NIJ CTP.
- **Follow-up conformity assessment inspection and testing (FIT).** Periodic testing of samples of listed armor models taken from the production line.

The process of listing a body armor model on the NIJ CTP begins with the supplier's submitting an application package for that armor. That package includes its agreement to measures intended to strengthen confidence in the armors listed on the CPL. A copy of the *Body Armor Compliance Testing Program Body Armor Application Package* is provided in Appendix D.

There are three confidence-building measures of particular note:

- Applicants must establish a warranty period for the ballistic performance of listed models.
- Applicants must also agree to follow-up inspection and testing of listed models.
- Finally, applicants must agree to a specific way of labeling listed models.

On review of the application, the NIJ CTP assigns a test identification number. The applicant then submits armor for testing to an approved test laboratory. NIJ CTP laboratories are accredited through the National Voluntary Laboratory Accreditation Program (NVLAP). A list of NIJ-approved laboratories can be found at [https://www.justnet.org/body\\_armor/ballistic\\_lab.html](https://www.justnet.org/body_armor/ballistic_lab.html).

The test laboratory provides the test data to the NIJ CTP along with the test samples. NIJ evaluates the test data and examines the test samples to ensure that they meet the design specifications provided by the applicant. If a determination is made to list a model, NIJ issues a Compliance Statement Letter to that effect to the successful applicant. Both the test sample and the design specifications are retained by the NIJ CTP.

FIT is conducted for NIJ by independent inspectors. Its purpose is to ensure that recently produced examples of listed armors continue to meet the requirements of NIJ Standard-0101.06. FIT involves ballistic testing of production samples of the listed armor model as well as a physical examination to ensure that there are no significant deviations in its construction from the original design specifications. Through June 2014, inspectors had completed 180 inspections of locations in 10 countries, and FIT testing of 444 different body armor models had taken place. At present, stab-resistant armors are not included in the FIT process; the upcoming revision of the stab-resistant armor standard will address FIT testing of those armors.

Each CPL listing includes:

- **Listed Company.** The Listed Company is the name that appears above the table and is also found on the label of the ballistic panels. It is the entity listed on the CPL associated with specific listed body armor models. The Listed Company is just a brand name on the label and could be completely independent of the Applicant/Manufacturer except through an agreement to brand label armors.

- **Contact Information.** The information shown below the Listed Company name is provided by the company. It generally refers to the headquarters or sales office. The address is not necessarily the location of manufacture of the armor.
- **Threat Level.** Prior to testing, applicants specify the threat level for which the armor is designed. All models listed on the CPL are tested to one or more of the five defined threat types.
- **Model Designation.** The Model Designation is the name or alphanumeric code that an Applicant uses to uniquely identify a particular model. An Applicant may sometimes also use more recognizable product or marketing names to sell the armor after testing. The label should also state the NIJ Model Designation so that a user can reference back to the CPL. Ensuring the correct model designation is especially important when purchasing IC armors.
- **Gender.** The standard does not specifically address male, female or gender-neutral armor. Instead, the standard addresses flat vs. curved panels. Male armor panels are typically considered to be flat and female armors are typically considered to be curved due to shaping to conform to the female physique. Gender-neutral armor panels are typically tested as flat armor. All hard armor plates are typically considered to be gender neutral.
- **Opening.** Armors that are designed to be front opening, with an overlap in the center of the chest area of the armor (as opposed to the more common style two-piece armors that are designed to overlap at the sides only) must be tested separately to ensure this area fully meets the requirements of the standard.
- **Size Range.** The sizes of the armor samples will depend on the range of the sizes over which the armor model will be produced. Sizes

are determined by the total surface area of the panel. After testing, the minimum and maximum allowable sizes that can be produced are defined in NIJ Standard-0101.06, Appendix C, Tables 13 and 14. For example, a model that is tested through the NIJ CTP using C-2 as the smaller template size and C-4 as the larger one must not produce an armor below 152 square inches (Table 13) or greater than 381 square inches (Table 14). Armor tested as C-1 and C-5 is not bounded on either end by a production size limit.

- **Warranty.** As specified by the manufacturer, this is a period of time the NIJ CTP requires a manufacturer to self-declare for the ballistic performance of its armor, which is specified on the armor label. As a minimum, the NIJ CTP requires the warranty period stated on the label to represent the length of the manufacturer's warranty period for ballistic performance of the model for the originally declared threat level. The warranty should also include workmanship and nonballistic materials. The warranty is declared and determined by the Body Armor Manufacturer (not by the Listed Company) as described above.
- **CPL Comment.** In certain situations, the NIJ CTP may need to provide additional information regarding a model's status, such as "Active, Inactive, Withdrawn, Suspended, Under Review or Pending."

The NIJ CTP publishes notices regarding any potential or confirmed issues regarding the performance of models listed on the CPL. These include safety notices and notification of the removal of an armor model from the CPL.

Suppliers must label units of compliant models per specific NIJ CTP requirements. Stand-alone soft armor panels and stand-alone hard armor plates will have the NIJ Compliance Statement. Hard armor plates intended to be part of an IC armor system will include a warning label stating that the plate does

not provide protection unless used as part of the IC armor system. As an example, an IC label statement may say, “This hard armor panel only provides level III protection when used with IC body armor model XYZ123.” Chapter 7 contains more information about body armor labels and the information they are required to contain.

Suppliers, officers, testing laboratories and other stakeholders may raise questions, issues or

concerns regarding the testing process. When warranted, the NIJ CTP issues administrative clarifications informing stakeholders of any changes to the requirements of the program or the standard. NIJ will consider these clarifications for inclusion in future revisions of the standard. Administrative clarifications are posted on: [https://www.justnet.org/body\\_armor/CTPAdminClarifications.html](https://www.justnet.org/body_armor/CTPAdminClarifications.html)



# Selection Considerations

There are a number of different considerations that come into play in deciding which model of body armor best fits an agency's or an officer's needs. The anticipated threats that officers are expected to face, their body shapes and their (or their agency's) preferences with regard to specific design features of a body armor are all considerations that should be taken into account. So are the services that a supplier offers as well as cost and the availability of grant funds to offset agency costs.

## Selecting the Appropriate Level of Protection

The threats that the officer is most likely to face are the most important consideration in selecting body armor. No body armor will stop every threat. Protection of 100% in all circumstances is not possible.

Body armor selection is to some extent a tradeoff between ballistic protection and wearability. The weight and bulk of body armor are generally proportional to the level of ballistic protection it provides; therefore, comfort generally decreases as the protection level increases. All agencies should strive to select body armor that their officers will wear and that is consistent with their ballistic protection requirements. Agencies should ensure that each officer knows and understands the protection that the armor affords as well as its limitations.

NIJ urges proper attention to those factors that affect the wearability of armor in order to encourage routine, full-time use by all on-duty officers. The temptation to order armor that provides more protection than realistically needed should be

resisted, because doing so may increase the likelihood that the armor will not be worn routinely.

**Law Enforcement Officers.** The operational scenario will dictate the threat(s) that an officer is most likely to encounter. For armor intended for everyday wear, agencies should, at a minimum, consider purchasing soft body armor that will protect their officers from assaults with their own handguns should they be taken from them during a struggle; Level IIA, II or IIIA as appropriate.

Hard armor – level III or IV – is more suitable for officers who are anticipated to operate in a heightened threat environment. It should be kept in mind that hard armor is typically not easily concealable. It therefore may not be suitable for all heightened threat scenarios.

**Correctional Officers.** Typically, for correctional officers wearing armor inside the secure perimeter of a correctional facility, the primary expected threat comes from improvised edged and stabbing weapons, making stab resistance a higher priority than ballistic resistance. For an officer wearing armor outside the correctional facility perimeter, the higher threat potential may come from firearms, and ballistic resistance may become the higher priority.

Combination armor is another option to consider. Such ballistic/stab-resistant armor must be tested under both NIJ standards 0101.06 and 0115.00 to be considered dual purpose. Keep in mind that by opting for dual-purpose protection, the combination armor will, with currently available materials, tend to be heavier and bulkier than a soft armor offering only ballistic or stab protection.



Note that ballistic-resistant armor is not necessarily stab-resistant and vice versa. Ballistic-resistant armor is not intended to protect the wearer from sharp-edged or pointed instruments.

## Male, Female or Gender Neutral?

The body shape of the wearer, regardless of gender, must be considered when selecting armors. There are three types of body armor models: male, female and gender-neutral. They are available in multiple sizes. There is no obvious difference in form between male and gender-neutral armors. Hard armors are typically gender neutral in design. Female soft body armors differ in that they can incorporate curved ballistic panels to accommodate the female bust. Male or gender-neutral models may be suitable for female officers with smaller busts. Depending on design and materials, they may not be suitable for those with larger busts because their busts tend to push the front armor panel forward, enlarging the underarm gap and therefore lessening the ballistic protection between the front and rear panels.

## Other Design Features

Officers or agencies may have preferences regarding design features offered with a body armor model. These include:

- **Weight.** Heavier body armor will increase the amount of fatigue an officer experiences during his/her shift.
- **Thickness.** Thickness is closely tied to the weight of a body armor. Thicker armors may trap more heat against the body and may be stiffer.
- **Covert carrier vs. overt carrier.** Some agencies prefer body armor to be worn under the duty uniform; others, over their duty uniform. The choice is a matter of agency policy.

- **Fastener type.** Determine whether zipper or hook and loop closures are preferred. There is no performance difference; however, operating environment (dust/sand can impact hook and loop), personal preference, ease of fastening and noise may all be considerations.
- **Other features.** Pockets, cargo loops, etc., that may assist an officer in the execution of his/her duties.

## Supplier Services

Differences in the services that suppliers offer to support a particular model should also be considered. These may include fitting and measurement, training, adjustments, repairs and warranties. Warranties for ballistic performance and workmanship are required of armor models listed on the NIJ Compliant Products List (CPL) for ballistic-resistant body armor. Some body armor suppliers offer a “take-back” disposal option for used body armor that may involve a nominal fee.

If the body armor is listed on the current NIJ CPL, the manufacturer is required to offer and specify the warranty for ballistic performance.

## Availability of Grant Funds

Agencies can apply for federal grant funds to purchase ballistic- and stab-resistant body armor through the Bulletproof Vest Partnership (BVP) Grant and Justice Assistance Grant programs, which are administered by the U.S. Department of Justice’s Bureau of Justice Assistance (BJA). Since 1999, the BVP program has reimbursed more than 13,000 jurisdictions a total of \$277 million in federal funds for the purchase of more than one million vests (1,084,081 as of Oct. 17, 2012). Both programs require that armor purchased with grant funds be on the most current NIJ CPL. FEMA-related grant programs require that ballistic-resistant armor purchased with grant funds meet the requirements of NIJ Standard-0101.06.

# Measurement, Fit and Coverage

## Importance of Proper Measurement and Fit

The goal for any ballistic-resistant armor is to maximize ballistic protection while minimizing its impact on an officer's ability to perform normal duties. As with other protective equipment, body armor can afford an officer only a certain level of protection before it impairs mobility and physical performance. The selection process should try to achieve a balance that will maximize the armor's ballistic protection and coverage while minimizing its impact on duty performance. Proper measurement and fit are also keys to ensuring a reasonable degree of comfort.

### Proper Fit and Coverage

Ballistic-resistant armors (when worn) are key life-saving equipment. With proper fit, an armor should ensure maximum coverage without hindering an officer's mobility or ability to perform required job functions. Although comfort is a subjective term, increased comfort through proper fit is an important objective. NIJ-funded research suggests that armors that have been fitted by the manufacturer, working with agency representatives, are the ones that officers find most comfortable.

## Measurement Guidelines

Having body armor that fits well and is comfortable begins with obtaining appropriate and accurate measurements. Some, but not all, armor suppliers have trained representatives who conduct proper measurement and fitting. Officers can benefit from understanding measurement and fitting techniques as well as the area of coverage the body armor should provide.

At NIJ's request, an ASTM International committee that included law enforcement and correctional officers, developed and published ASTM E2902-12, *Standard Practice for Measurement of Body Armor Wearers*. The purpose of this document is to increase consistency in how measurements are made by specifying the process for measuring officers being fitted for new armor.

NIJ has a contract with ASTM to provide access to LE-specific standards at no cost to any verified public safety agency. For further details about access to this service, please send an email to [asknlctc@justnet.org](mailto:asknlctc@justnet.org) from a valid email address demonstrating that you are a current/active member of a federal, state or local law enforcement, corrections or forensics agency. Personal email addresses (e.g., Gmail, Yahoo, etc.) are not allowed. Once your agency email address has been confirmed, you will be given login credentials that will give you access to the ASTM site. This agreement will be good for one year, and can be renewed annually using your official agency email address.

## Fit and Coverage

**Soft armor (daily wear).** The following guidelines have been developed to help agencies determine if a soft armor fits appropriately and provides appropriate coverage. These guidelines apply both to armors worn over and under the duty uniform (additional guidance on the fit of tactical armor is addressed later in this chapter) For a pictorial representation of proper fit, see Exhibits 14a and 14b; for a graphic breakdown, see Exhibit 15.

- Prior to donning the armor, open the carrier and examine the label on each ballistic panel. Verify the label faces the correct direction. The label may say “Wear face,” “Strike face,” “This side toward body” or something similar. Many body armors are designed to work in one direction only; inserting the panels in the incorrect direction can result in the armor’s failing to perform as intended. The materials used may differ from strike face to body side and have different effects on the bullet or knife and may not work if the armor is worn backwards.
- Place the panels into the carrier and don the armor such that the front panel is over the front of the body and the back panel is over the back. The front panel can generally be identified by its having a scoop at the neckline.
- After the armor is donned, do not over tighten the straps. It is human nature to cinch the straps down as tightly as possible, and this is a common mistake. The armor should fit snugly, but not so tightly that it may affect breathing (including deep breathing, such as may occur during a foot chase). The armor should slide slightly on the body as the torso is rotated back and forth. If the armor moves with the body, it is probably too tight.
- To ensure appropriate side coverage for both over-the-uniform and under-the-uniform armors, the sides of the torso armor should always overlap by approximately two inches front to back (i.e., the front panel should lie on top of the back panel). This may prevent a bullet from a frontal shot from entering between the panels, traveling inside the back panel and entering your body. This provides additional protection against near-edge shots and also allows for expansion if an officer gains weight over time without creating a dangerous gap.
- Ballistic coverage under the arms should be as high as possible without compromising the ability to obtain a shooting position. Over-the-uniform armor may afford slightly greater protection in this area.

- The length of the panels relative to the body is very important. For concealable (under-the-uniform) soft armor, the front panel should extend from just below the jugular notch to two to three finger-widths above the top of the belt when standing. For over-the-uniform armor, the armor can be slightly longer without impeding movement or comfort. This gap may vary slightly from person to person but is normal and necessary, and prevents the panel from being pushed up into the throat when the officer is seated. Proper fit can be confirmed by sitting down with the armor on. When seated, the front panel should ride just on top of the belt but should not shift up into the throat. If it does, contact the supplier for a fit adjustment. The rear panel should extend from approximately two inches below the collar to approximately one inch above the belt.

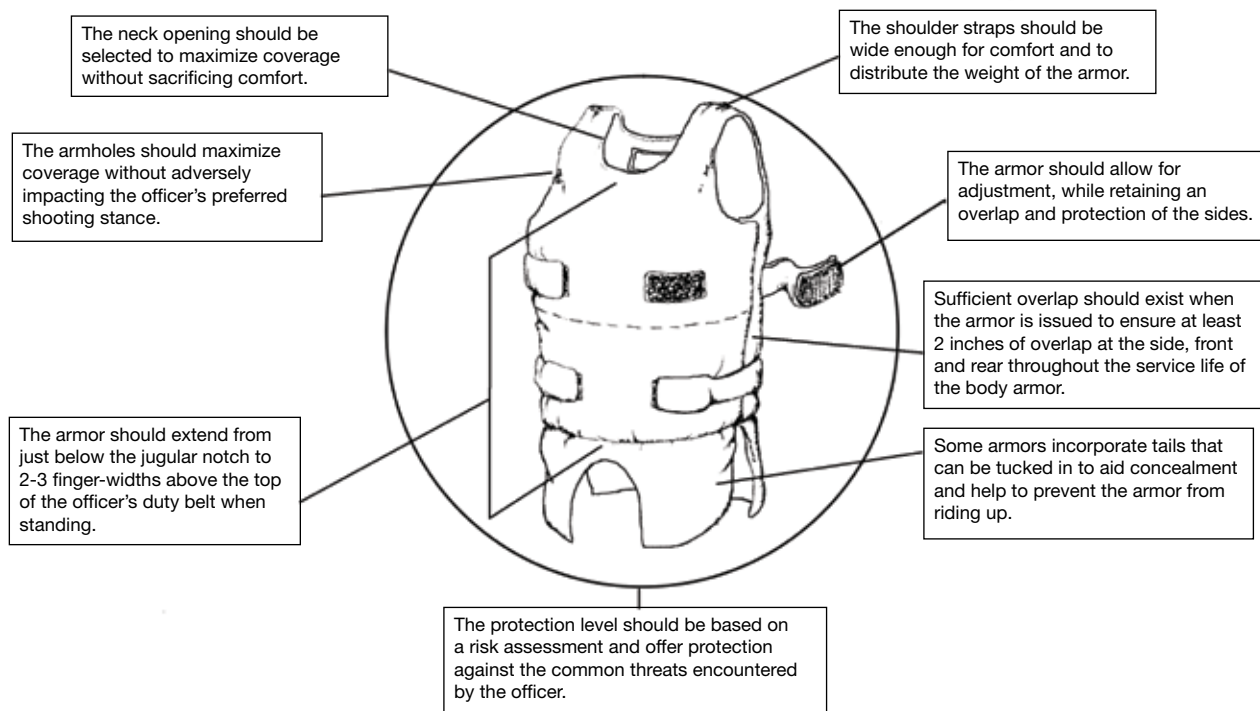
#### EXHIBIT 14A: SOFT BODY ARMOR FIT AT NECK



#### EXHIBIT 14B: SOFT BODY ARMOR FIT AT DUTY BELT



## EXHIBIT 15: SOFT BODY ARMOR FIT



At the time of purchase, check to confirm that the armor panel (not just the carrier) has at least the minimum 2-inch overlap as recommended.

**Additional Fit and Coverage Guidance for Tactical Armors.** Because tactical armors are worn externally (outside/over the uniform), fit is slightly more forgiving and coverage should be greater than that of a soft armor worn for general duty. This, along with the fact that tactical armors are not typically worn for extended duty periods, but rather in response to heightened threats, allows for slightly more coverage than over-/under-the-uniform duty armor.

Specifically, tactical body armor is longer and should end roughly at the top of the duty belt when standing. See Exhibit 16. It should not, however, overly restrict access to items on the duty belt and should never prevent drawing of a weapon. Tactical armors may have additional integral coverage extending over the shoulders. Although this provides

additional coverage and ballistic protection, officers should trial the armor prior to use to ensure that it does not inhibit necessary movements or range of motion, such as shouldering a weapon or restraining a suspect. Tactical armors may also have available accessory ballistic panels (i.e., extremity protection). Such accessories should be tried on immediately on receipt to ensure compatibility.

## EXHIBIT 16: TACTICAL ARMOR FIT AT DUTY BELT



Hard armor plates are available in multiple sizes. The most common sizes are 10-inch x 12-inch and 8-inch x 10-inch. In addition to various available sizes, hard armor is also available in various curvatures and various shapes. The front and rear plates should be positioned to provide additional protection to the aortic region. However, the coverage will not be as extensive as that of the underlying soft armor panel. Some hard armor plates are curved in only one direction while others are

curved in multiple directions, and the curvature may directly relate to the plate's ballistic performance. Some plates have rectangular perimeters whereas others are angled at the shoulders to facilitate arm movement (e.g., to allow taking a shooting stance). These shapes can vary from model to model. The purchasing agency or officer should take mobility and coverage into consideration when evaluating hard armor to purchase.

# Purchasing and Procurement Considerations

## General Guidelines

Generally, armor purchases fall into one of four categories:

- Individual purchases from a distributor or retail outlet.
- Small-quantity departmental purchases.
- Large-quantity departmental purchases (e.g., several hundred units or more).
- As-needed purchases procured through an open-ended agreement (also called a *term contract*).

Purchases made through a competitive process involving several bids from different suppliers with armor models meeting an agency's requirements will tend to provide the best value. This is particularly the case in large-quantity purchases.

Obtaining objective information on body armor performance on which to base purchasing decisions can be challenging. Suppliers will naturally tend to present their models in the best possible light, which makes comparison between competing models difficult. The NIJ CPL provides a ready solution to this problem. It identifies armors that agencies can be confident will provide the appropriate level of protection, allowing comparison based on cost and other less critical considerations.

Procurement documents for equipment should always ensure that the purchase specifications are clear and not ambiguous in any way. At the same time, over-specification should be avoided; for example, identifying a specific product instead of

a level of protection. That may tend to eliminate competition and drive cost up.

Rather, agencies should consider requesting bids for armor models listed on the NIJ CPL. A typical purchase specification might include the following wording to ensure that bids involve only such armors:

*"The body armor model shall be listed on the NIJ Standard-0101.06 Compliant Products List. It shall be of Type (specify appropriate threat level and test ammunitions) as defined in NIJ Standard-0101.06 and shall afford full protection to the torso front, torso back and sides."*

Agencies should specify in their purchase agreements any additional features they have determined to be required. If soliciting bids for body armor with special ballistic protection that would require additional testing, specify the exact test rounds to be used, listing such ballistic threat characteristics as caliber (bullet size), construction (bonded, nonbonded), composition (lead, copper, brass, steel, tungsten), type (round nose, pointed, hollow-point, jacket hollow-point, full metal jacket, armor piercing), weight and impact velocity. State that NIJ Standard-0101.06 will govern in other respects if the standard is being used. When additional testing is needed, allow time for this testing to be performed and use an independent NIJ-approved test laboratory.

Rather than lowest price, agencies should consider best value purchasing. This will provide the agency the ability to buy from the supplier offering the armor that best meets its needs.

When developing a purchase specification, avoid two potential pitfalls that may complicate the procurement process.

#### Pitfall 1

**DO:** Request bids for armors that comply with the most current NIJ standard. For Example: “Body armor models must be listed on the NIJ Compliant Products List.”

**DO NOT:** Describe a particular model in the product specification. For example, “Model XYZ produced by the ABC Body Armor Company.”

#### Pitfall 2

**DO:** Use a best value clause to specify that the contract will be awarded to the supplier whose armor best meets the agency’s needs and that the officers find to be the most comfortable. For example: “The agency shall be the sole judge in determining the armor that is most advantageous and suitable to its needs.”

**DO NOT:** Require that the agency accept the lowest bid.

## Ensuring Compliance Status

If you plan to purchase NIJ-compliant armor, do not accept statements, written in the bid or verbally made by a salesperson, that the model shown is “just like” or “identical to” a model from the NIJ CPL or “meets the NIJ Standard.” **Only armor that is listed on the current CPL is NIJ compliant. Armor that is not listed on the CPL does not qualify for BJA funding through either the BVP or JAG programs.**

Ensure that the specific designation of the armor model chosen is listed on the CPL.

Request a copy of the compliance letter issued by the NIJ CTP to the supplier for that model. If the supplier or bidder cannot provide this letter, use a different supplier and contact the NIJ CTP at (800) 248-2742 or email [bactp@justnet.org](mailto:bactp@justnet.org). Additionally, agencies should also consider requesting from the manufacturer their test data and information from the NIJ Compliance Test Reports. These reports provide

## EXHIBIT 17: IC HARD ARMOR PLATE SAMPLE LABEL

(Listed Company's) Name  
(Listed Company's) Address

Model: \_\_\_\_\_  
Size: \_\_\_\_\_  
Serial Number: \_\_\_\_\_  
Lot Number: \_\_\_\_\_  
Location of Manufacturer: \_\_\_\_\_  
Date of Manufacture: \_\_\_\_\_  
Date of Issue: \_\_\_\_\_  
Threat Level (NIJ 0101.06): \_\_\_\_\_  
Ballistic Performance Warranty Period: \_\_\_\_\_  
For Warranty Information Contact: \_\_\_\_\_

\_\_\_\_\_

This model of armor has been determined to comply with NIJ Standard-0101.06 by the NIJ Compliance Testing Program and is listed on the NIJ Compliant Products List.

**WARNING!**

This armor provides the rated protection stated above **ONLY** when used in conjunction with soft armor model XYZ123.

Care Instructions for Ballistic Panel:  
(Sample Instructions Shown)

1. Do not wash or dry clean
2. Wipe with a damp cloth

**\*\*Wear Face\*\***

This side to be worn against the body.

information relating to the performance of the armor at the time of initial NIJ CTP testing.

In conjunction with (IC) armor is a special category of armor that requires clarification. A question frequently raised is, “How do you determine if an armor model is an IC model?” NIJ requires that IC armor plates be labeled as such (see Exhibit 17).

The use of any other stand-alone soft armor panel invalidates the compliance status since those combinations have never been tested or evaluated by the NIJ CTP.

# Development of Procurement Specifications

The following provides general guidelines for development of procurement specifications. An example procurement specifications section of a purchase agreement solicitation is provided in Appendix E for further clarification.

What follows assumes that a specific type of armor has been selected from a single supplier. Negotiating an open-ended agreement (term contract) for multiple models, styles and armor types from a single supplier involves a separate set of issues not addressed in this guide.

**Terms of agreement.** Whether an agency purchases armor in a single quantity (buying one unit at a time or a number of units at one time), through a blanket purchase agreement or under a term contract, the bidder should know approximately how many units will be purchased, including the number and basic sizes for officers. Under a blanket purchase agreement, an agency can purchase units “as needed” during the life of the contract. No matter which approach an agency uses, it may want to include a clause for ordering additional units, which would make future purchases simpler because new bids would not be required.

**Bidding and award process.** The procurement specifications should be self-explanatory and broad enough to encourage competition and give the agency adequate flexibility in purchasing the armor considered most appropriate for agency needs. Again, the NIJ CPL should be a starting point. In their bids, suppliers should identify the specific model(s) they propose to provide. Moreover, the final purchase agreement must specifically state the exact NIJ Compliant model that has been selected,

as alternative models may not provide the level of performance required.

When purchasing large quantities or considering a blanket purchase agreement, agencies may want to arrange a pre-bid conference with prospective bidders. Bidders and the agency can then review the solicitation together as well as the agency’s specifications so that all parties clearly understand the agency’s needs. Also, a pre-bid conference may reveal ambiguous or contradictory terms in the solicitation. If the solicitation needs to be modified, the agency can issue a modification or an addendum.

**Invoicing and delivery.** This portion of the bid package should propose a detailed delivery schedule and should specify departmental invoicing and payment requirements and procedures. Invoices should, at minimum, include for each armor: CPL model designation, serial number, catalog number, size and date of manufacture. If possible, always document the name of the officer to whom it will be issued.

**Warranty and insurance.** Consider the warranty on the body armor system, including terms (e.g., length of warranty and what is or is not covered by that warranty). All models on the NIJ CPL must have warranty for ballistic performance. The supplier should provide a warranty explanation specific to the carriers as well as the panels. The agency should also determine the amount of general and excess product liability insurance required based on its needs and compare standard limits offered by each supplier. Product excess liability insurance can be expensive and the agency should consult with legal counsel about the benefits of requiring additional



liability insurance before specifying insurance minimums.

**Armor specifications.** This section is the focal point of a procurement document. Here, the agency specifies the design and/or performance requirements expected, as well as agency preferences about configuration features. The following items should be included:

■ **Compliance With NIJ Standard-0101.06.**

The specification should require that the armor model be listed on the CPL and cite the ballistic performance required by specifying the appropriate armor type as defined by the standard. This information ensures that the armor ordered provides a known performance level.

■ **Labeling.** State that the NIJ CTP requirements for production armor panel labels must be met. A sample label is included in Exhibit 18. This will ensure that the following information is included on the label:

- Supplier or listed company name.
- Model designation as named in the NIJ Notice of Compliance.
- Size (if custom fitted, provision must be made for the name of the individual for whom it is made).
- Serial number.
- Lot number.
- Location of manufacture.
- Date of manufacture.
- Date of issue (to be filled in when issued to the end user).
- Declared warranty period for ballistic performance of the model.

## EXHIBIT 18: ARMOR PANEL LABEL

(Listed Company's) Name  
(Listed Company's) Address

Model: \_\_\_\_\_

Size: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Lot Number: \_\_\_\_\_

Location of Manufacturer: \_\_\_\_\_

Date of Manufacture: \_\_\_\_\_

Date of Issue: \_\_\_\_\_

Threat Level (NIJ 0101.06): \_\_\_\_\_

Ballistic Performance Warranty Period: \_\_\_\_\_

For Warranty Information Contact: \_\_\_\_\_

This model of armor has been determined to comply with NIJ Standard-0101.06 by the NIJ Compliance Testing Program and is listed on the NIJ Compliant Products List.

**WARNING!**

This garment is rated **ONLY** for the ballistic threat level stated above. It is **NOT** intended to protect against rifle fire or sharp-edged or pointed instruments.

Care Instructions for Ballistic Panel:  
(Sample Instructions Shown)

1. Do not wash or dry clean
2. Wipe with a damp cloth

\*\*Wear Face\*\*

This side to be worn against the body.

- Rated level of protection and reference to this edition of the standard (e.g., Type II in accordance with NIJ Standard-0101.06).
- Proper orientation of the ballistic panel in the carrier clearly identified to indicate strike face or body side/wear face.
- Recommended care instructions for ballistic panel(s) or plate(s).
- For Levels IIA, II and IIIA armor, a warning in type at least twice the size of the rest of the type on the label, exclusive of the font size of the listed company name, stating that the armor is not intended to protect the wearer from rifle fire and, if applicable, that the armor is not intended to protect the wearer from sharp-edged or pointed instruments. (Note: Printing color changes are acceptable but cannot be substituted for the type size requirement).

In addition to the model designation listed on the CPL, a supplier or distributor may use catalog numbers or similar designations to further identify the product. The catalog number must be separately identifiable from the model designation.

- **Adjustment options.** This clause identifies design features such as adjustable fasteners or straps that will make the armor more comfortable for the wearer.
- **Color.** The carrier color for concealable armor should be chosen such that it will not be easily visible through the wearer’s uniform.
- **Quality and workmanship.** This clause specifies the expectation that a supplier will produce armor using suitable materials and high workmanship quality, ensuring that the armor is fit for purpose over the entire period of the specified warranty.
- **Custom fitting.** The specifications section should include a clause related to custom fitting, stating how and where fittings will take place and who will perform the measuring. Measurements should be performed as per ASTM-E2902-12.

**Termination of agreement.** The agency should include a clause that specifies the conditions under which the agency can terminate the agreement in any procurement documents. If the agency is purchasing through a blanket agreement or term agreement, it may want to include a “Termination for cause” or “Termination for the convenience of the agency” 30-day written notice clause allowing the agency to cancel the agreement if officers find the armor received to be unacceptable, or if the supplier is noncompliant with agreement terms, even though the armor itself may be fully compliant with the procurement specifications. Additionally, include revocation of an armor’s compliance status (i.e., removal of the model from the CPL) as justifiable cause for termination of agreement.

If the armor is not delivered in a reasonable timeframe according to a predetermined shipping schedule, this is another justifiable reason for terminating an agreement. Receiving a substandard product should also justify canceling an agreement. When posting product specifications, an agency must be sure to define potential reasons why a product may be rejected or an agreement may be terminated. For instance, poor workmanship or chronic delivery delays are legitimate causes for termination, but may be difficult to support unless previously noted.



## Inspection and Care

One of the most frequently asked questions about body armor is: “How long does body armor last?” This question has no easy or definitive answer. All body armor models on the NIJ CPL are warranted for their ballistic performance. However, the actual performance of an individual body armor may vary based on how it has been stored and maintained, environmental exposure and differences in use. Every piece of armor will eventually have to be replaced for one or more of several potential reasons, such as change in officer weight and shape, change in service weapons or ammunition threat, being struck by a bullet or edged weapon, or simply from normal wear and tear over time.

Frequent inspections and proper care of body armor help maintain the integrity of the ballistic panels and the carrier. Every model of body armor that complies with NIJ Standard-0101.06 is required to have supplier-recommended care instructions on the label. An example of this can be seen on the sample panel label at Exhibit 18. Follow the supplier-recommended care instructions, making certain that anyone else who cares for the armor is also aware of these instructions.

### Inspection

Visually inspect ballistic panel covers frequently. Check for cuts, tears, stitching separation, sealing problems and excessive wear, all of which could expose the ballistic materials to moisture and other potentially degrading factors. Carriers that rub the panel covers as a result of normal flexing can wear through the cover and expose the armor to moisture penetration. Visually inspect hard armor plates before each use to ensure that no surface cracks or other signs of damage are present that

could degrade ballistic performance. Although an appearance of good condition does not necessarily imply good performance, damage is a clear indicator that the armor panel or plate should be replaced.

Periodically, also inspect the condition of the label on the armor panel. Once the label becomes illegible or shows signs of excessive wear, it should be replaced. It is important to be able to identify the model and protection level of an armor. The model identification is important in the event of a safety recall.

When checking the label, note the issue date and compare it to the manufacturer’s ballistic warranty also found on the label. If the armor has been in service beyond its declared warranty period, report that to the agency representative. The agency’s representative may be the quartermaster, body armor procurement officer or any other person who is directly responsible for interacting with body armor suppliers. Serviceable armor should never be removed from service until a replacement armor is available for immediate wear. An officer with no armor is at greater risk than an officer wearing older or worn/damaged armor.

**Note that the covers of the armor panels should not be opened for any reason.** If the integrity of the panel cover is compromised in any way, contact the agency representative immediately for referral back to the armor supplier.

Consider replacing, or returning to the manufacturer for repair, any armor panel or label showing damage or excessive wear as soon as possible. Never attempt to repair armor panels under any circumstances; rather, report these findings to the agency representative. The representative

should contact the supplier for guidance on how to proceed.

Agencies should consider supervisory involvement in the inspection of body armor.

## Handling

Ensure that armor panels fit properly into carriers with the strike face and wear face correctly oriented. Confirm the correct orientation by referring to the panel label, which will indicate whether the labeled side is the strike face or wear face.

Do not needlessly flex, bend, compress or crease soft armor panels when handling them, as this may contribute to degradation of the ballistic materials over time.

Handle hard armor plates, particularly those incorporating ceramic materials, carefully because they may be fragile. Ceramic materials are extremely brittle and such armor should not be dropped on hard surfaces, as this can cause breaks or cracks that can have an adverse effect on performance.

## Cleaning

Improper cleaning can damage an armor panel or a carrier. Damaged panels can cause the body armor to fail when struck by a projectile. Armor panels are not to be dry-cleaned, machine-washed or machine-dried, either in the home or commercially. Detergents, dry-cleaning solvents and laundry equipment can damage or degrade panels.

The general industry procedure for cleaning armor panels is as follows:

- Remove the panels from the carrier.

- Wipe the outer panel cover using a damp sponge or soft cloth and cold water.
- Air-dry the panels flat, avoiding folding or creasing the armor while it dries.
- Insert the dry panels back into the carrier with each panel strike or wear face correctly oriented.
- No chemicals, other than those specified by the manufacturer, should be used when cleaning the panels. Bleach or starch, even when highly diluted, may reduce the protection level.
- Refrain from rinsing, soaking, submerging or spraying the armor panels. Any superficial smudges, marks or soiling remaining on the outer covering should not harm the armor panel integrity.
- Never dry soft armor panels outside, even in the shade, as exposure to ultraviolet light is known to cause degradation of certain types of ballistic materials.

The general industry procedure for cleaning carriers is as follows:

- Remove detachable straps and fasteners from the carrier. If straps and fasteners are not detachable, place them in their secured position.
- Unless the supplier specifically advocates machine washing, hand wash the carrier in cold water with a mild detergent for delicate fabrics.
- Rinse the carrier thoroughly and hang up indoors to air dry.
- Some suppliers preshrink carriers and advocate machine drying, but unless specifically stated by the supplier, do not use a dryer. Air drying will have less impact on the integrity of the carrier.

## Storage

Body armor should be stored as recommended by the supplier. General guidelines include the following:

- Armor should be stored flat at room temperature in a dry, shaded place that minimizes exposure to direct light.
- Armor may be hung from a specially designed robust hanger made for body armor (see Exhibit 19). Wire or some wooden hangers will break or buckle under the weight of the armor. Do not hang armor by the carrier straps, as this may cause the straps to stretch and lose their original shape and fit.
- Turn the body armor inside out or open and lay flat to allow moisture to evaporate.
- Air dry damp armor prior to storage.

- Armor should not be stored in a low airflow environment, such as the bottom of a locker, nor in a potentially extreme hot/cold environment, such as the trunk of a vehicle.

### EXHIBIT 19: BODY ARMOR HANGER

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Maintaining and storing body armor in accordance with the manufacturer's instructions is key to its continued performance.



# Training and Administration

## Training

Officers should be trained in the proper use and care of their armors and educated on the benefits of routine wear. To assist agencies in educating officers on the importance of wearing body armor, NIJ has produced an educational video titled “Body Armor: Survive in the Line of Fire” that is publicly available through the following link: <http://youtu.be/R85mWoCBR50>

When an agency issues an armor, the administrator should ensure that each officer knows the level of protection provided by the armor relative to various threats. Officers also must know that ballistic-resistant body armor may not be effective against attack by a knife or other sharp instrument, such as an ice pick. The level of protection offered by an armor should be clearly explained to each officer.

Make an effort to inform officers of the importance of wearing an armor system in its entirety, which includes, at a minimum, the front and back ballistic panels. Officers should be required to read the FBI’s annual reports on *Law Enforcement Officers Killed and Assaulted*; the incidents described each year reinforce the importance of routine use of armors to protect against unexpected assaults. The report encourages officers to recognize that seemingly routine assignments can sometimes end in armed confrontation.

Some agencies have found that they can increase acceptance of the routine use of body armor by taking advantage of the controlled setting of the police academy. These agencies issue armors to all recruits when they report to the academy and require their wear throughout the training period.

Another approach is to obtain an officer’s commitment to wear the armor routinely for a period of at least one month. Generally, the officer realizes that the body armor is not as uncomfortable as expected and continues to wear it thereafter.

## Administrative Considerations

**Issuance.** When issuing a body armor, the agency’s first obligation is to ensure that the vest properly fits the officer to whom it is issued. Fit influences whether the armor will be comfortable and therefore, whether the officer will consistently wear it.

When an armor is issued, **enter the issue date on the label with a permanent marking pen or stamp.** This will facilitate determining whether a particular in-service armor is within its ballistic warranty period.

Maintain accurate property records for all armor in inventory. At any time, an agency should be able to determine which armor was issued to a given officer and the issue date, supplier name, model designation, armor type and production lot number. The NIJ CTP requires that body armor suppliers maintain records for tracking lot numbers, serial numbers and purchasing agencies. The NIJ CTP also requires that body armor panel/plate labels include a blank line for the date of issue.

Proper records are invaluable if a production lot is found to be defective after issuance. If one body armor is found to be flawed, immediately inspect all armor from the same supplier and production lot. Agencies can record officer and armor information to track replacements and to plan purchases of new armor.



**Wear.** Some agencies enforce a mandatory wear policy. When these policies are properly enforced, wear rates are higher. Both the BVP and JAG grant programs require that such policies be in place in order for an agency to receive funds.

**Disposal.** When body armor is no longer serviceable, the agency must dispose of it in a responsible manner that should also prevent illicit use. If armor is disposed of in a landfill, unauthorized parties may obtain the armors; also, materials may not be biodegradable. Many materials used in manufacturing body armor are either fire retardant or inherently fireproof, so they cannot be incinerated.

Certain material suppliers have ongoing recycling programs for out-of-service armor. Some body armor companies offer a “take-back” disposal. The agency should contact its armor supplier/manufacturer to see if quotes are provided for such services.

You may also contact the NIJ CTP regarding possibly donating the armor for research purposes. Refer to the resource list in Appendix B for NIJ CTP contact information.

When an agency disposes of unserviceable armors, it should require and obtain a record of disposition from the organization used to dispose of the armor. At a minimum, the disposition should list the armor by serial number, disposal method and disposal date. This chain of custody document should be retained by both the agency and the disposing company as a formal record of disposition.

**Replacement.** Evaluate any armor that has been damaged for replacement. This damage can be from events such as shooting, stabbing, slashing or impact from a vehicle accident. Any damage to the ballistic panel cover may compromise the armor’s integrity and may void the supplier warranty. Armors that show damage should be replaced.

# What To Do When an Officer Wearing Body Armor Is Shot

An officer shot when wearing body armor should always receive medical attention.

Any officer shot while wearing body armor should receive a prompt medical evaluation. Even though the officer may only exhibit soreness and bruising, there may be more serious internal injuries that have not yet manifested themselves.

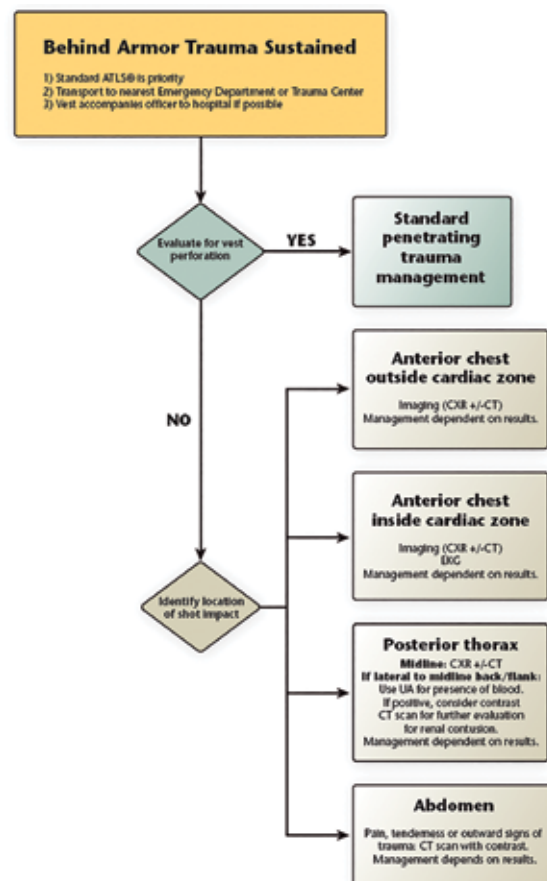
NIJ provides a suggested course for the initial medical evaluation of an officer who has been shot. See Exhibit 20. When an officer is wounded in the line of duty, there are practical and psychological issues that must be dealt with in the immediate term and in the long term. The International Association of Chiefs of Police (IACP) has published a set of guidelines for agencies to follow to prepare for this possibility and to address if it occurs in their agency. See *Officer Involved-Shooting Guidelines* (<http://www.theiacp.org/portals/0/documents/pdfs/Psych-OfficerInvolvedShooting.pdf>.)

Before the officer returns to duty, the damaged armor that saved a life needs to be replaced with a new one.

Agencies are encouraged to contact the NIJ CTP and the IACP/DuPont Kevlar Survivors' Club® in the event of an incident involving body armor. Agencies are also encouraged to submit a report to the FBI's Uniform Crime Reports (UCR) Program, which records instances of *Law Enforcement Officers Killed and Assaulted* in an annual publication that provides data on feloniously or accidentally killed officers and

officers who were assaulted while performing their duties. By sharing this information, other officers will be made aware of the benefits of wearing body armor on a routine basis and further lives may be saved.

## EXHIBIT 20: MEDICAL EVALUATION FLOW CHART



Source: <http://nij.gov/topics/technology/body-armor/pages/medical-management-guidelines.aspx>



# Definitions



The definitions provided in this section are specific to this guide. Some of the terms were previously defined in NIJ Standard-0101.06, and other terms are new to this guide and added for the reader's increased understanding.

**Accessory ballistic panels:** Armor components that are detachable or removable from the body armor and intended to provide comparable ballistic protection. NIJ Standard-0101.06 states that examples of accessory panels include shoulders, neck, groin, coccyx and side protection panels, which are attached to, or inserted into, the external armor carrier but are not integral to the armor panels or armor sample.

**Ammunition:** A bullet encased together with its propellant and a primer.

**Armor** (see Body armor).

**Armor carrier or carrier:** A component of the body armor system with a primary purpose of retaining the ballistic panel(s) and providing a means of supporting and securing the armor to the wearer. The carrier alone is not intended to provide any ballistic protection.

**Armor conditioning:** Environmental and mechanical conditioning of a body armor model prior to ballistic testing, which consists of exposure to specified conditions of temperature, humidity and bending/folding.

**Armor panel:** The protective component of a body armor system. An armor panel typically consists of a ballistic panel enclosed in a nonremovable environmental cover. The cover offers no ballistic protection. It is solely intended to prevent the ballistic panel from being exposed to the environment.

**Backface Signature (BFS):** The greatest depth of indentation in the backing material caused by a nonpenetrating bullet impact on the armor panel or plate during testing.

**Ballistic limit:** A material characteristic of an armor model that is tested by the laboratory to help determine its protective capability. For a given bullet type, the velocity at which the bullet is expected to perforate the armor 50% of the time. The ballistic limit is typically denoted as the  $V_{50}$  or  $V_{50}$  value.

**Ballistic panel:** (see Armor panel) The protective component of an armor panel. It typically consists of flexible or rigid ballistic-resistant materials. The word *panel*, if not preceded by the word *ballistic*, refers to an *armor panel* in this guide.

**Ballistic performance:** (see Defeat).

**Blunt trauma injury:** Injury caused to the wearer when a bullet is stopped by the armor panel, but the armor materials are driven into the body as a result of the impact.

**Body armor:** An item of personal protective equipment that provides protection against specific ballistic or stab threats within its coverage area.

**Body armor system or armor system:** Consists of the carrier and soft armor panels and/or hard armor plates.

**Body side:** The side of the armor that is worn against the body.

**Bullet:** The projectile fired from a firearm.

**Combination armor:** Designed to be both stab resistant and ballistic resistant, it is intended to provide simultaneous protection against stab and

ballistic threats. Combination armor may also be referred to as dual-threat or multiple-threat armor.

**Complete penetration:** See Perforation.

**Compliance Testing Program (CTP):** Designed to identify items that meet a defined set of standards. In the context of this guide, CTP refers to the program NIJ established in 1978 to identify body armor models that meet the requirements of the most current version of NIJ's ballistic-resistant body armor standard.

**Compliant Product List (CPL):** A list of product models that have been found to be compliant with an applicable standard.

**Component:** Any material, part or subassembly used in construction of the armor system or armor system element.

**Concealable armor:** Body armor intended to be worn under clothing such as a duty uniform.

**Defeat:** When an armor panel stops the threat it was designed to protect against, with acceptable backface deformation.

**Follow-up Inspection and Testing (FIT):** Testing that is administered by the Compliance Testing Program after armor models have completed initial type testing. FIT testing is principally intended to ensure quality control to make sure that there are no significant design deviations from the model that was tested and found to be compliant with the NIJ ballistic-resistant body armor standard.

**Hard armor:** (see Exhibit 5) Rigid plates or inserts that may be constructed from ceramics, compressed laminate sheets, metallic plates or composites that incorporate more than one material.

**In-conjunction (IC) armor:** A combination of either two soft armor panels or a soft panel with a hard armor insert, designed to provide increased ballistic protection.

**Insert:** A removable or integral armor panel (flexible or rigid) or trauma pack/plate that can enhance the ballistic performance of the armor panel in a localized area.

**Label:** Permanently attached piece of cloth or similar material affixed to an armor panel displaying, among other information: the manufacturer, a unique model designator, the level of protection and the date of manufacture.

**Manufacturer:** A commercial entity engaged in the fabrication of a product.

**Model:** One of a class of things, such as body armor, with a unique, specific design.

**Partial penetration:** A threat bullet that enters a body armor panel or test sample but does not completely pass through it.

**Perforation:** A threat bullet passing completely through a body armor panel or test sample.

**Round (ballistic):** A single unit of ammunition.

**Sample:** A single item with design specifications representative of a class of things; in the case of this guide, of a model of body armor.

**Service life:** An armor's anticipated period of ballistic performance as specified by the manufacturer.

**Soft armor:** (see Exhibit 4) Constructed of pliable/flexible ballistic-resistant materials.

**Strike face:** Surface of an armor sample or panel designated by the manufacturer as the surface that must be worn away from the wearer's body. (See Wear face) The strike face is designed to be the surface that the bullet strikes when the armor is protecting an officer.

**Supplier:** The party responsible for ensuring that products meet and, if applicable, continue to meet, the requirements on which the certification is based, as per ISO/IEC Guide 65.3.1.

**Tactical armor:** Tactical armor is typically a combination of hard armor plate and soft armor panels, making it thicker and heavier than soft armor alone (see discussion of in-conjunction armors on page 7.). Tactical armor is not typically worn for extended periods. It is donned for wear by officers entering high-risk situations.

**Threat/Threat round:** The ammunition that is used to assess the ballistic performance of a body armor.

**Trauma pack:** Also referred to as a *trauma plate*, this type of body armor insert is primarily intended to provide increased protection against blunt force injury.

**Vest:** Synonymous with body armor.

**Warranty:** A manufacturer-specified period of time that identifies the length of time the manufacturer supports the ballistic performance of a specific body armor model against a specified threat level. This information is identified on the ballistic panel label. Often ballistic performance warranties are confused with workmanship warranties, which do not address ballistic performance.

**Wear face:** The side of the armor worn against the body.



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APPENDIX A.

# Contributors



Contributor	Organization
John Abraham	Seattle Police Department
David Bak	U.S. Department of Homeland Security, Customs and Border Protection
Steven Berens	Orange County (Fla.) Sheriff's Office
Daniel Callahan	Arlington County (Va.) Sheriff's Office
Heath Clevenger	York County (S.C.) Sheriff's Office
John Ely	U.S. Department of Justice, Federal Bureau of Prisons
Debra Farrar	San Diego Police Department
Brian Fenley	U.S. Department of Homeland Security, Customs and Border Protection
Cindy Fredriksen	Colorado Department of Public Safety
Deborah Garde	Illinois State Police
Gordon Gillerman	U.S. Department of Commerce, National Institute of Standards and Technology
Wayne Hemphill	Florida Department of Corrections
Jeffrey Horlick	U.S. Department of Commerce, National Institute of Standards and Technology
Jason Jacobson	Austin (Texas) Police Department
Richard Kehr	Los Angeles Police Department
Rob Kinsler	U.S. Army Research Laboratory
Trae Lewis	Baltimore City Police Department
Daniel Longhurst	National Law Enforcement and Corrections Technology Center-National
Michael O'Shea	U.S. Department of Justice, National Institute of Justice
Vito Perilli	New York City Police Department
Michael Riley	U.S. Department of Commerce, National Institute of Standards and Technology
Nicholas Roberts	Unified Police Department of Greater Salt Lake
Casandra Robinson	U.S. Department of Commerce, National Institute of Standards and Technology
Patrick Ryan	Tennessee Department of Correction
John Seto	Ann Arbor (Mich.) Police Department
Debra Stoe	U.S. Department of Justice, National Institute of Justice
Alex Sundstrom	National Law Enforcement and Corrections Technology Center-National
Michael Thompson	U.S. Department of Justice, Federal Bureau of Investigation
Amanda Toman	Technical Support Working Group
Janet Ward	U.S. Army Natick Soldier Research, Development and Engineering Center
Jeffrey Wylde	Colorado Department of Personnel and Administration



## APPENDIX B.

# Resources



### *Individual Resources*

#### **National Institute of Justice**

Michael O'Shea, Senior Law Enforcement Program Manager

Office: (202) 305-7954

Email: michael.oshea@usdoj.gov

#### **NIJ Compliance Testing Program**

Alex Sundstrom, NLECTC-National, Compliance Testing Program Manager

Office: (301) 240-6749

Email: rsundstrom@justnet.org

Daniel Longhurst, NLECTC-National, Senior Engineer

Office: (202) 616-3857

Email: daniel.a.longhurst@usdoj.gov

### *Online Resources*

NIJ: <http://www.nij.gov>

NLECTC and NIJ CTP Resources: <http://www.justnet.org>

ASTM: <http://www.astm.org>

FBI Uniform Crime Reports: <http://www.fbi.gov/ucr/ucr.htm>

International Association of Chiefs of Police/DuPont Kevlar Survivors' Club®: [http://www2.dupont.com/Kevlar/en\\_US/uses\\_apps/law\\_enforcement/survivors\\_club.html](http://www2.dupont.com/Kevlar/en_US/uses_apps/law_enforcement/survivors_club.html)

### *Procurement Resources*

Bureau of Justice Administration (BJA): <https://www.bja.gov>

BJA Byrne Justice Assistance Grants (JAG): [https://www.bja.gov/ProgramDetails.aspx?Program\\_ID=59](https://www.bja.gov/ProgramDetails.aspx?Program_ID=59)

BJA Bulletproof Vest Partnership: <http://www.ojp.usdoj.gov/bvpbasi/>

U.S. Department of Homeland Security: <http://www.dhs.gov/dhs-financial-assistance>

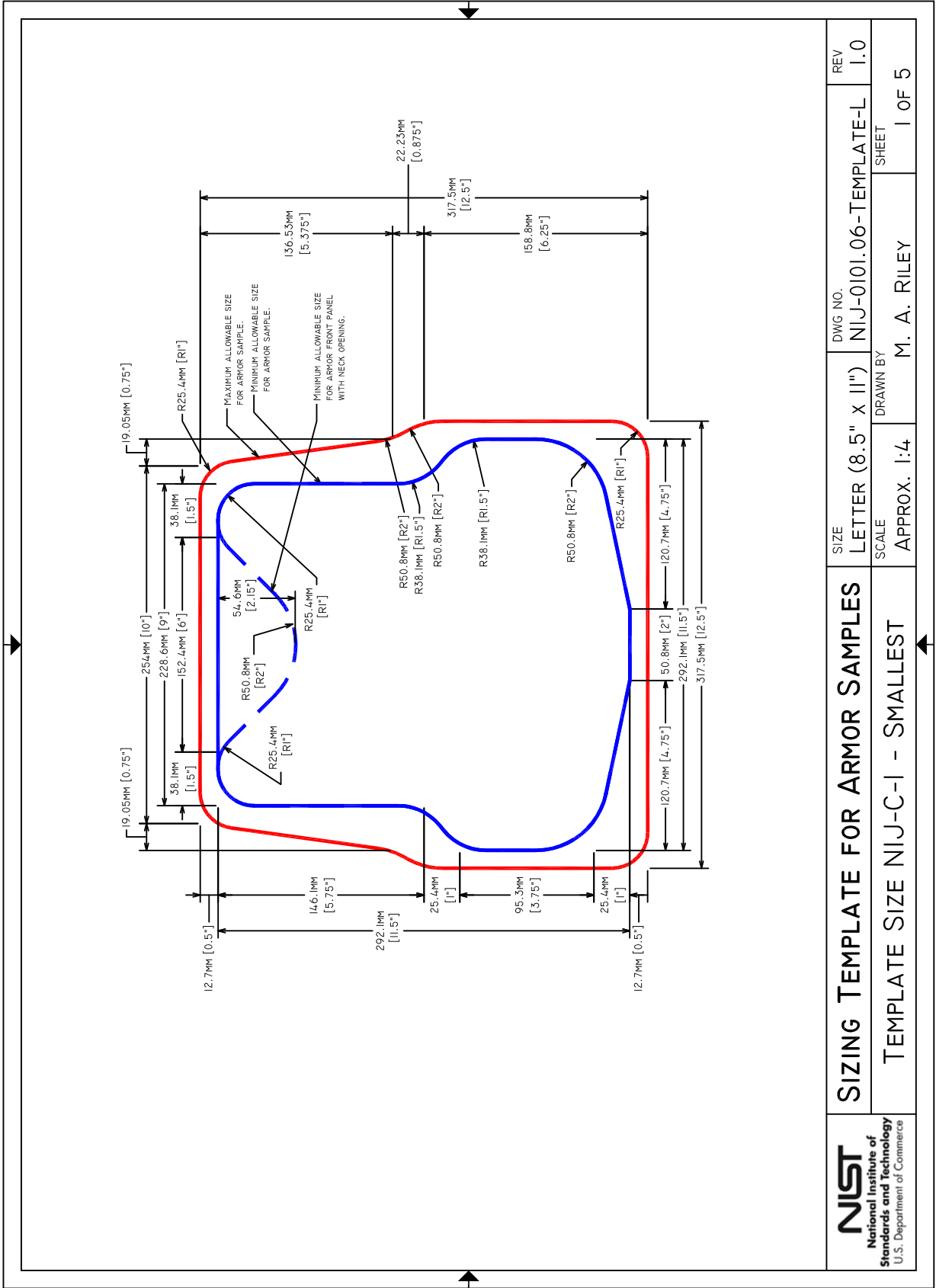
Responder Knowledge Base (RKB): <https://www.llis.dhs.gov/knowledgebase>



APPENDIX C.

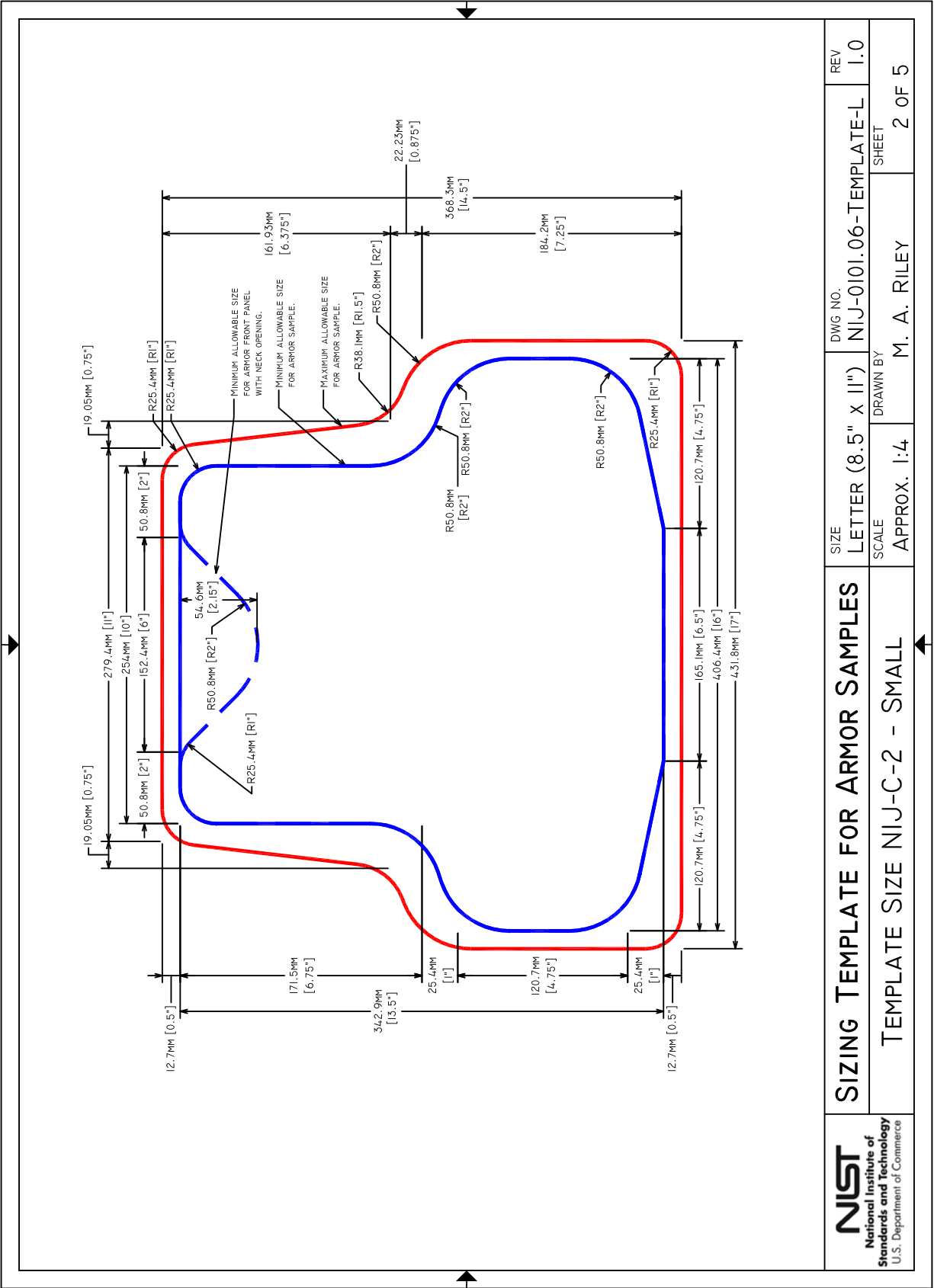
# Armor Sizing Templates



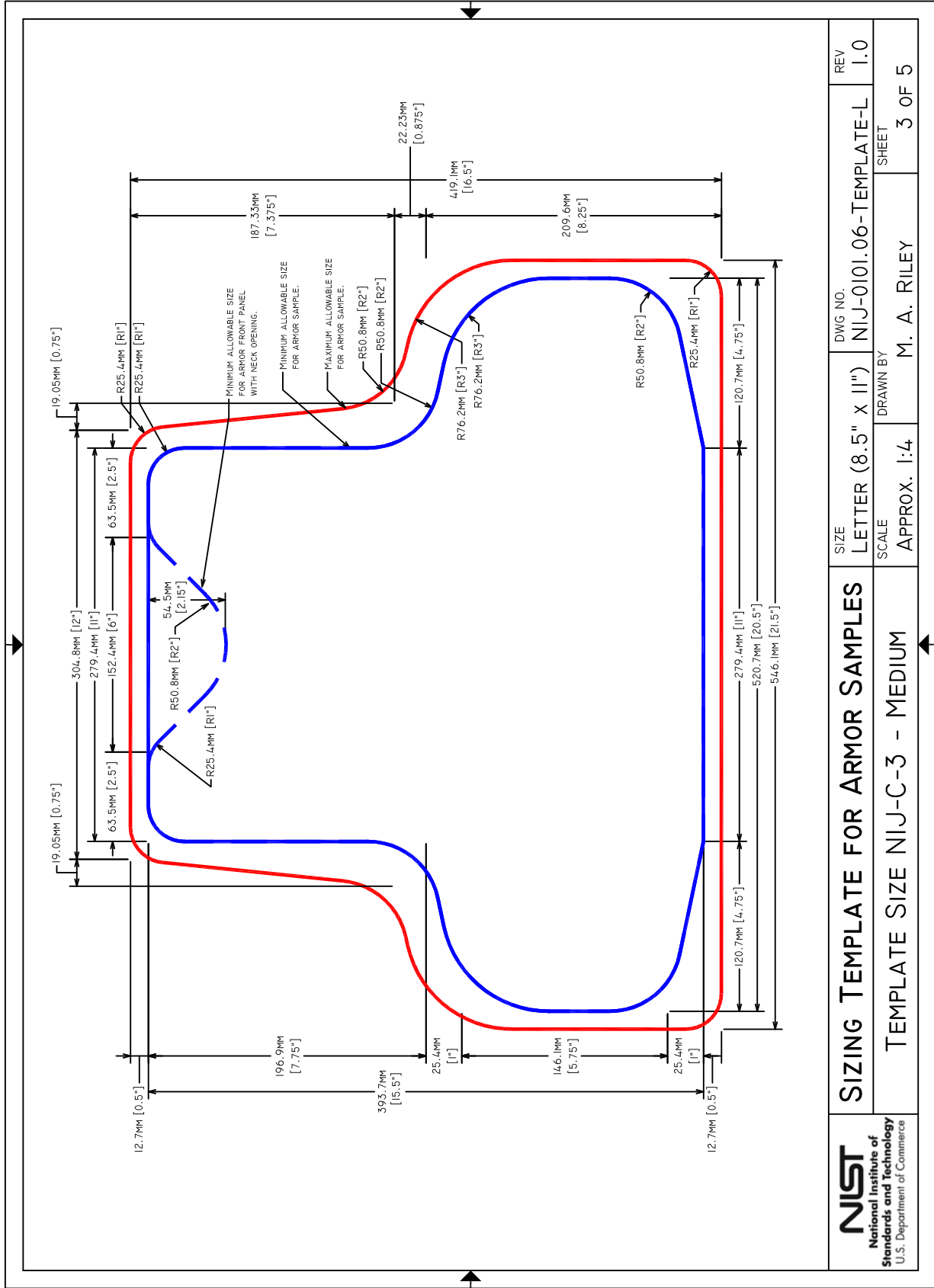


	<b>SIZING TEMPLATE FOR ARMOR SAMPLES</b>		SIZE LETTER (8.5" x 11")	DWG NO. NIJ-0101.06-TEMPLATE-L	REV 1.0
	<b>TEMPLATE SIZE NIJ-C-1 - SMALLEST</b>		SCALE APPROX. 1:4	DRAWN BY M. A. RILEY	SHEET 1 OF 5

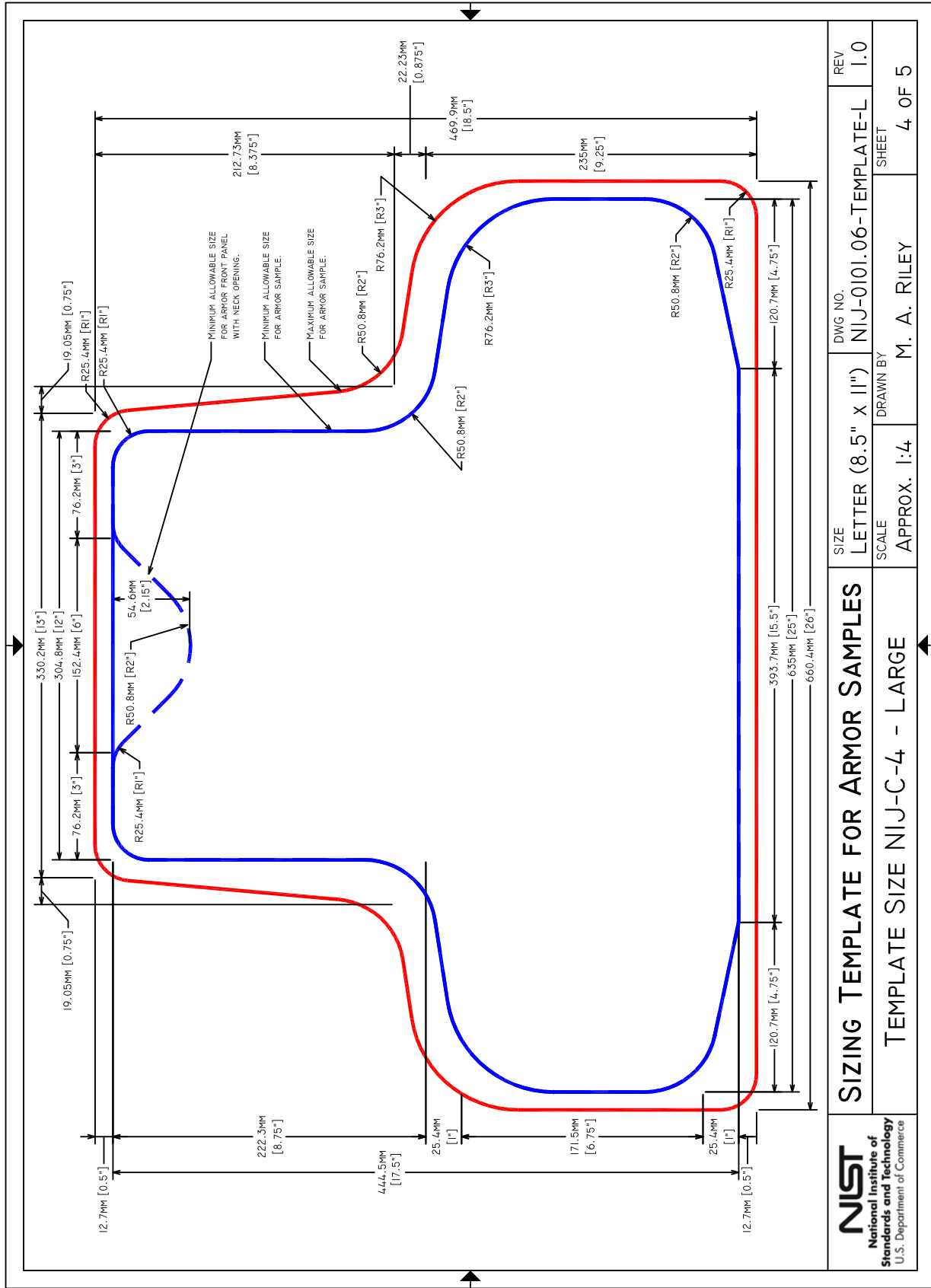


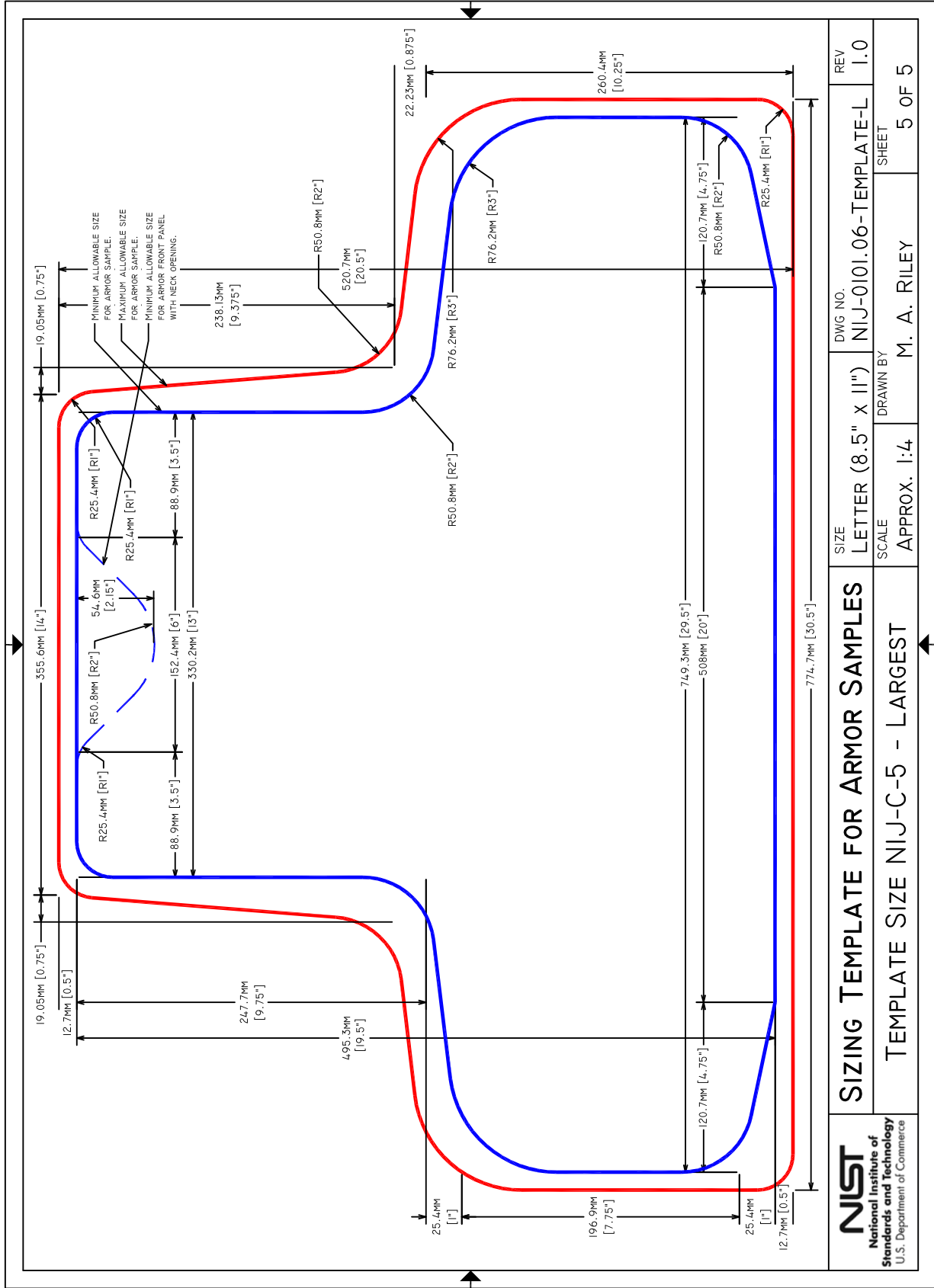


	<b>SIZING TEMPLATE FOR ARMOR SAMPLES</b> TEMPLATE SIZE NIJ-C-2 - SMALL	SIZE LETTER (8.5" X 11") SCALE APPROX. 1:4	DWG NO. NIJ-0101.06-TEMPLATE-L SHEET M. A. RILEY	REV 1.0 2 OF 5



<b>NIST</b> National Institute of Standards and Technology U.S. Department of Commerce	<b>SIZING TEMPLATE FOR ARMOR SAMPLES</b>		SIZE LETTER (8.5" X 11")	DWG NO. NIJ-0101.06-TEMPLATE-L	REV 1.0
	TEMPLATE SIZE NIJ-C-3 - MEDIUM		SCALE APPROX. 1:4	DRAWN BY M. A. RILEY	SHEET 3 OF 5





	<b>SIZING TEMPLATE FOR ARMOR SAMPLES</b>		DWG NO. NIJ-0101.06-TEMPLATE-L	REV 1.0
	SIZE LETTER (8.5" X 11")	SCALE APPROX. 1:4	DRAWN BY M. A. RILEY	SHEET 5 OF 5
	TEMPLATE SIZE NIJ-C-5 - LARGEST			



APPENDIX D.

# Body Armor Compliance Testing Program Body Armor Applicant Package





Document Name: NIJ CTP Applicant Agreement	Approval Date: 31 Mar 2013
Revision: 14 Jun 2013	Implementation Date: 14 Jun 2013
OMB Number: 1121-0321	Expires: 31 Mar 2016

## National Institute of Justice Compliance Testing Program Applicant Agreement

In accordance with the Paperwork Reduction Act of 1995, no person is required to respond to a collection of information unless it displays a valid OMB control number. The OMB number for this collection is 1121-0321. Public reporting burden for this collection of information is estimated to average one hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information.

This information is being requested pursuant to 6 U.S.C. 162(b)(4) and 6 U.S.C. 162(b)(6)(B). The disclosure is voluntary. The information provided on this form will be used by the National Institute of Justice to administer a product conformity assessment program for products used by law enforcement and correctional officers. This information and the associated products are voluntarily submitted under the Compliance Testing Program.

**PRIVACY ACT NOTICE:** See Clause 6 of this document for nature and extent of confidentiality.

This National Institute of Justice Compliance Testing Program Applicant Agreement pertains to all applicants seeking to voluntarily participate in the National Institute of Justice Compliance Testing Program (hereafter, the NIJ CTP). Any reference to the NIJ CTP as an organization includes elements of both National Institute of Justice (NIJ) and the National Law Enforcement and Corrections Technology Center - National (NLECTC-National).

This NIJ CTP Applicant Agreement shall constitute the entire agreement that governs the NIJ CTP's actions pertaining to the Applicant and shall supersede all other agreements between the NIJ CTP and the Applicant.

Please provide business headquarters information below.

Applicant Name: \_\_\_\_\_

Applicant Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Telephone: \_\_\_\_\_

The Applicant hereby expressly acknowledges and agrees as follows:



Document Name: NIJ CTP Applicant Agreement	Approval Date: 31 Mar 2013
Revision: 14 Jun 2013	Implementation Date: 14 Jun 2013
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## **Part I Application and Evaluation**

### **1. Scope of NIJ CTP Actions**

Participation in the NIJ CTP is voluntary. The NIJ CTP is an organization whose primary function is, on Applicant request, to perform conformity assessment on a product.

The Applicant acknowledges and agrees that the NIJ CTP is not a designer, manufacturer, marketer, supplier, endorser, guarantor or insurer of any product. The NIJ CTP is not assuming any obligation toward the Applicant or toward any third party in any way related to this agreement. The Applicant acknowledges and agrees that the Applicant is solely responsible for research, development testing, manufacture, marketing and sale of any product(s) submitted to the NIJ CTP for conformity assessment. Furthermore, the Applicant expressly acknowledges and agrees that (a) NIJ CTP activities are not intended to supplant the Applicant's examination and testing of such product(s), (b) by its performance of NIJ CTP activities, the NIJ CTP is not assuming any duty that the Applicant might otherwise have to examine and/or test the design of such product(s) or system(s), either before or after manufacture or sale, (c) the NIJ CTP is not in any way endorsing or warranting the safety or performance of such product(s) or system(s) and (d) the NIJ CTP does not intend to supply, and is not supplying, information for the guidance of the Applicant in the conduct of its business.

### **2. Terms and Conditions**

The NIJ CTP performs conformity assessment at the request of Applicants. Conformity assessment entails determining that specified requirements relating to a product are fulfilled; these may include testing, inspection and certification. The Terms and Conditions pertaining to a specific product are supplemented in a separate NIJ CTP Manufacturing Locations and Model Application document. The Applicant acknowledges and agrees that the supplemental terms and conditions are expressly incorporated by reference herein and are an integral part hereof.

### **3. Payment Terms**

#### **a. Conformity Assessment**

There shall be no fees paid by the Applicant to the NIJ CTP. This is not to imply that participation in the NIJ CTP is without cost. For each product submitted to the NIJ CTP, the Applicant is responsible for all expenses related to shipping, testing and inspections required to demonstrate initial and continued compliance with the NIJ CTP.

#### **b. Type Testing**

The Applicant shall use an NIJ Approved test laboratory and shall be responsible for all expenses related to shipping and testing.

Document Name: NIJ CTP Applicant Agreement	Approval Date: 31 Mar 2013
Revision: 14 Jun 2013	Implementation Date: 14 Jun 2013
OMB Number: 1121-0321	Expires: 31 Mar 2016

c. Surveillance

The Applicant is responsible for all costs associated with surveillance including onsite inspection, testing, shipping and any associated administrative fees.

**4. Applicant Information**

The Applicant represents and warrants that all information and/or data provided to the NIJ CTP by the Applicant, or on the Applicant's behalf, are complete and accurate and that the NIJ CTP may rely thereon when performing conformity assessment of a related product. If any information and/or data provided to the NIJ CTP by the Applicant or on the Applicant's behalf are either incomplete or inaccurate, the NIJ CTP shall not be liable in any manner for any performance or alleged non-performance of conformity assessment under this Agreement. The Applicant agrees and consents to the NIJ CTP's sharing the information and data provided by the Applicant with technical experts and staff in order for the NIJ CTP to: (i) perform the conformity assessment or (ii) act in the interest of officer safety. The Applicant further represents and warrants that all information and data provided to the NIJ CTP by the Applicant are properly owned or licensed by the Applicant and do not infringe on the intellectual property rights of any third party, and that the Applicant is allowed to provide such information to the NIJ CTP without restriction.

**5. Ownership of Work Product**

The NIJ CTP shall retain all rights, title and interest in, and to, the evaluation package and any other documents in any form whatsoever conceived, prepared or used by the NIJ CTP in the performance of its conformity assessment.

**6. Confidentiality**

The NIJ CTP shall use reasonable efforts to maintain confidential all information identified as "Confidential Commercial Information" that it obtains from the Applicant. Confidential Commercial Information shall not include information that is (a) publicly available; (b) subsequently acquired by the NIJ CTP from other sources in a manner that does not constitute a breach of this Agreement; (c) disclosed by the NIJ CTP when deemed, at its sole discretion, to be necessary to the NIJ CTP's performance of the requested conformity assessment; (d) required to be produced pursuant to an order or command of any judicial or regulatory authority; (e) required by any common law or statutory duty; or (f) disclosed in the interest of officer safety.

The NIJ CTP shall take reasonable steps to safeguard Applicant data within the NIJ CTP systems prior to external transmission and may transmit the Applicant's

Document Name: NIJ CTP Applicant Agreement	Approval Date: 31 Mar 2013
Revision: 14 Jun 2013	Implementation Date: 14 Jun 2013
OMB Number: 1121-0321	Expires: 31 Mar 2016

Confidential Commercial Information and data to the Applicant through the Internet or any public network, unless otherwise directed in writing by the Applicant.

**7. Samples**

At the applicant's expense, samples shall be provided for initial type testing as required by the specific product certification scheme.

The shipping of samples shall be at the Applicant's expense.

At the discretion of the NIJ CTP, samples may be returned to the Applicant at the Applicant's expense or held indefinitely.

**8. Export Control**

The Applicant represents and warrants that it: (a) will not cause the NIJ CTP to violate any export, trade or other economic sanction law; and (b) will promptly advise the NIJ CTP in writing if a project involves technology that is subject to any government controls, including U.S. export controls, and will promptly supply all information needed to comply with those controls.

**9. No Assignment**

The Applicant acknowledges and agrees that neither the Applicant nor the NIJ CTP may assign any of its rights or obligations under this agreement in whole or in part to any other person without the other party's express written consent.

**10. No Third Party Beneficiaries**

The Parties intend that no provisions of this Agreement shall in any way benefit any third party, and that no third party shall have any rights or cause of action under this Agreement. Neither Party is an agent for an undisclosed principal. The Parties acknowledge and agree that any such undisclosed principal would have no rights or causes of action against the NIJ CTP for any conformity assessment requested by, or provided to, the Applicant under this Agreement.

**11. Waiver**

Any failure by the NIJ CTP or the Applicant to insist on the performance of any provision of this Agreement shall not constitute a waiver of any rights under the Agreement or a waiver of any right to future performance of that provision. For any waiver of any provision of this Agreement to be effective, it must be set forth in writing and executed by authorized agents for both Parties.

Document Name: NIJ CTP Applicant Agreement	Approval Date: 31 Mar 2013
Revision: 14 Jun 2013	Implementation Date: 14 Jun 2013
OMB Number: 1121-0321	Expires: 31 Mar 2016

## **12. Limitation of Remedies Available to Applicant**

The NIJ CTP will perform conformity assessment hereunder in accordance with professional standards of conduct generally applicable to conformity assessment service organizations. The NIJ CTP makes no other representation or warranty of any kind whatsoever, whether express or implied, with respect to its provision of conformity assessment hereunder.

## **13. Release and Waiver**

In consideration of the NIJ CTP's agreement to perform conformity assessment for the Applicant hereunder, the applicant hereby expressly waives, releases and exempts the NIJ CTP and its managers, employees, technical experts and subcontractors from any and all liability, claims, demands, actions or causes of action whatsoever for any alleged loss, damage or injury. This express release and waiver is intended to, and does cover, all claims arising in tort (including, but not limited to, negligence, product liability, strict liability, negligent misrepresentation, intentional misrepresentation, tortious breach of contract, unfair competition, defamation, tortious interference with an actual or prospective contract, business relationship or economic advantage) as well as those arising under any state or federal statute, that in any way arise out of, or relate to, the NIJ CTP's conformity assessment or to the NIJ CTP's performance and/or alleged non-performance under this agreement.

## **14. Indemnification As to Third Party Claims**

The Applicant acknowledges and agrees to hold the NIJ CTP, NLECTC-National and its officers, directors, staff, technical experts and subcontractors harmless and indemnify them from any and all loss or expense (including reasonable attorney fees) arising from any and all claims with respect to the Applicant's listed products, to the NIJ CTP, to the NIJ compliance statement and/or violation of the terms and conditions of this agreement.

## **15. Representations and Modifications**

The Applicant acknowledges and agrees to name at least one authorized legal representative who is qualified and authorized to respond on the Applicant's behalf to questions from the NIJ CTP relating to product(s) submitted for conformity assessment. The Applicant agrees to notify the NIJ CTP in writing by executing a current Applicant Agreement with updated information.

This Agreement, its explicitly incorporated Terms and Conditions, and any and all related documents, constitute the entire, complete and fully integrated agreement between the parties. This Agreement may be modified only in writing and only if such writing is duly executed by authorized representatives for the NIJ CTP and the Applicant.

Document Name: NIJ CTP Applicant Agreement	Approval Date: 31 Mar 2013
Revision: 14 Jun 2013	Implementation Date: 14 Jun 2013
OMB Number: 1121-0321	Expires: 31 Mar 2016

## 16. Termination

This Agreement will continue in effect until terminated by either the NIJ CTP or the Applicant, with or without cause, on 30 days' prior written notice to the other ("Termination Notice"). In the event of any breach of this Agreement, either Party may terminate this Agreement, effective immediately on the other party's receipt of the Termination Notice.

The Applicant acknowledges and agrees that failure to comply with the provisions or terms of this agreement immediately on such request by the NIJ CTP, its agents and/or designees constitutes grounds for suspension or revocation of NIJ compliance status and/or removing the Applicant from the program.

## 17. Notice

Notice under this Agreement must be made by hand delivery, courier service, mail, facsimile or e-mail transmission at the Applicant's designated place of business. Notice shall be effective on confirmed receipt or five business days after the notice is deposited by certified mail.

The NIJ CTP's contact information is provided below:

E-mail: [bactp@justnet.org](mailto:bactp@justnet.org)  
Address: 700 N. Frederick Ave., Bldg. 181, Room 1L30  
Gaithersburg, MD 20879  
Phone: (800) 248-2742  
Website: [www.justnet.org/CTP](http://www.justnet.org/CTP)

## 18. Severability

If any provision of this Agreement is held invalid, void or unenforceable for any reason, all other provisions of this Agreement shall remain valid to the extent permissible under law.

## 19. Complaint Resolution and Appeals Process.

Any complaints expressed by the Applicant in writing to the NIJ CTP will be investigated, and action will be taken by the NIJ CTP to respond. If resolution to a complaint is not satisfactory to the Applicant, the Applicant may request an appeal. The request for appeal shall be in writing, signed and addressed to the NIJ CTP with any evidence the Applicant feels should be considered. The NIJ CTP will arrange for an independent Special Review Committee of technical experts and practitioners to be

Document Name: NIJ CTP Applicant Agreement	Approval Date: 31 Mar 2013
Revision: 14 Jun 2013	Implementation Date: 14 Jun 2013
OMB Number: 1121-0321	Expires: 31 Mar 2016

convened to evaluate the appeal. The committee will review the matter and make a recommendation for resolution to NIJ, and NIJ shall make a final decision.

## **20. Governing Law/Jurisdiction**

This Agreement shall be governed by the laws of the state of Maryland, United States of America, without reference to Maryland's choice of law principles. The Parties consent to the sole and exclusive jurisdiction in the state courts and federal courts that have jurisdiction over Maryland, for any claims.

## **21. English Language**

The Parties hereby acknowledge that they have mutually required that this Agreement, and all documentation, notices, judicial proceedings and dispute resolution and arbitration entered into, given, instituted pursuant to or relating to, this Agreement be drawn up in the English language. Any translations of documents provided to the Applicant are done solely for convenience, and, in all cases, the English language version of such documents shall govern.

## **22. Force Majeure**

Neither Party shall be liable for any failure or delay in the performance of its obligations due to elements of nature, acts of war, terrorism, riots, civil disorder, rebellions or other similar cause beyond the reasonable control of the Party affected, provided such default or delay could not have been prevented by reasonable precautions and cannot reasonably be circumvented and provided further that the Party hindered or delayed immediately notifies the other Party describing the circumstances causing delay.

## **23. Independence**

The Parties are, and intend to be, independent with respect to the conformity assessment described herein. Neither Party shall act as an agent of the other, nor shall it be entitled to enter into any agreements or incur any obligations on behalf of the other Party. No form of joint employer, joint venture, partnership or similar relationship between the Parties is intended or created hereby. As an independent organization, the NIJ CTP shall be solely responsible for determining the means and methods for performing the conformity assessment.

## **Part II Certification**

### **24. Attestation of Compliance and Compliant Product List**

The NIJ CTP may issue an attestation of compliance and post the model to the Compliant Product List (CPL) if:

Document Name: NIJ CTP Applicant Agreement	Approval Date: 31 Mar 2013
Revision: 14 Jun 2013	Implementation Date: 14 Jun 2013
OMB Number: 1121-0321	Expires: 31 Mar 2016

- The NIJ CTP’s evaluation determines that evidence demonstrates a product complies with the applicable requirements, and
- the product does not contain any features unanticipated by the applicable requirements such that the NIJ CTP determines that an unacceptable risk is present, and
- the applicant fully complies with and participates in the applicable Surveillance Program.

Compliance status of a model is granted and maintained at the discretion of NIJ. The decision as to whether or not to grant compliance status for a product shall be made by NIJ on the basis of the information gathered during the evaluation process and any other relevant information. No party has a legal right to compliance status. NIJ grants or suspends compliance status with the primary purpose of ensuring that law enforcement and corrections officers have the best information available about the performance of equipment tested by the CTP. NIJ reserves the right to decline to issue compliance status for any equipment model that successfully completes the compliance testing process when it is determined by NIJ to be in the best interests of the law enforcement and corrections communities. In these cases, NIJ notifies the applicant in writing that compliance status for the model is denied and provides the reason(s) for the denial. Appeals shall be made in accordance with the established procedures.

## **25. Revocation**

Revocation of the Attestation of Compliance may occur if at any time the NIJ CTP determines that any aspect required for the issuance of the Attestation of Compliance (including compliance with this document) is no longer true.

The Applicant agrees that in the event the NIJ CTP revokes an Attestation of Compliance, the Applicant shall immediately cease and desist any and all advertising or statements claiming the compliance status of the affected product(s).

## **Part III Surveillance**

### **26. Description**

Once the armor model is listed on the NIJ Compliant Products List, ongoing compliance will be monitored via a conformity assessment surveillance process that may involve any or all of the following: periodic sampling, testing and/or inspection of production products.

### **27. Participation**

Satisfactory participation in the Surveillance Program is required:

- To prevent revocation of the Attestation of Compliance.
- To continue listing on the CPL.

Document Name: NIJ CTP Applicant Agreement	Approval Date: 31 Mar 2013
Revision: 14 Jun 2013	Implementation Date: 14 Jun 2013
OMB Number: 1121-0321	Expires: 31 Mar 2016

- In order to include the NIJ statement of compliance on a product.

Failure to satisfactorily participate in the Surveillance Program is grounds for removal of any or all of the Applicant's products from the CPL and/or revocation of the associated Attestation of Compliance(s).

## **28. NIJ Compliance Status**

a. The Applicant acknowledges and agrees that the NIJ is the sole and exclusive owner of all rights, title and interest in and to the NIJ name and compliance statements referencing NIJ. Except for the Applicant's right to use NIJ compliance statements as specifically granted in this Agreement, the Applicant has no rights or interest in or to such statements.

b. The Applicant acknowledges and agrees to not use any product's compliance status in a way that, in the opinion of NIJ:

- Is inconsistent with the scope of the model's compliance status.
- Brings the credibility of NIJ, its agents or designees or the NIJ CTP into question.
- Is misleading or inaccurate.

c. The Applicant acknowledges and agrees on expiration, withdrawal, suspension or revocation of compliance status to immediately cease and desist any and all advertising or statements claiming the compliance status of the affected product(s).

d. The Applicant acknowledges and agrees to use the compliance status only in the manner for which it was issued and reference only the requirements of the specific standard to which the product was found to be compliant.

e. The Applicant acknowledges and agrees not to create or otherwise publish in any form (written, electronic or via the Internet) any document, advertisement, product literature or brochure that references the NIJ in a manner that is not consistent with this agreement.

h. The Applicant acknowledges and agrees to use the compliance status only in reference to the model identification provided to NIJ.

i. A list shall be maintained of products that NIJ has determined as having demonstrated compliance with the current applicable requirements of the conformity assessment program.

j. It is the responsibility of the Applicant to identify any possible errors on the CPL and notify the NIJ CTP that these errors exist.



Document Name: NIJ CTP Applicant Agreement	Approval Date: 31 Mar 2013
Revision: 14 Jun 2013	Implementation Date: 14 Jun 2013
OMB Number: 1121-0321	Expires: 31 Mar 2016

**Applicant Signatory**

(an officer or representative of the Applicant who has the authority to bind it)

(Name/Title): \_\_\_\_\_

Telephone Number: \_\_\_\_\_

E-mail: \_\_\_\_\_

The Applicant agrees to the terms of this agreement and warrants that it has made no alterations to its text. The undersigned represents and warrants that he/she is authorized to execute this agreement on behalf of the Applicant.

\_\_\_\_\_  
Applicant Signatory

\_\_\_\_\_  
Date

NLECTC-National Representative Acknowledgement:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name (Please print/type)

Document Name: NIJ CTP Authorized Representative	Approval Date: 31 Mar 2013
Revision: 16 Jan 2013	Implementation Date: 13 Jun 2013
OMB Number: 1121-0321	Expires: 31 Mar 2016

## National Institute of Justice Compliance Testing Program Authorized Representative Notification

In accordance with the Paperwork Reduction Act of 1995, no person is required to respond to a collection of information unless it displays a valid OMB control number. The OMB number for this collection is 1121-0321. Public reporting burden for this collection of information is estimated to average 20 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information.

This information is being requested pursuant to 6 U.S.C. 162(b)(4) and 6 U.S.C. 162(b)(6)(B). The disclosure is voluntary. The information provided on this form will be used by the National Institute of Justice to administer a product conformity assessment program for products used by law enforcement and correctional officers. This information and the associated products are voluntarily submitted under the Compliance Testing Program.

**PRIVACY ACT NOTICE:** The information provided in this document is not considered Confidential Commercial Information and may be released without limitations or restrictions.

This National Institute of Justice Compliance Testing Program Authorized Representatives Notification pertains to all applicants seeking to voluntarily participate in the National Institute of Justice Compliance Testing Program (hereafter, the NIJ CTP). Any reference to the NIJ CTP as an organization includes elements of both National Institute of Justice (NIJ) and the National Law Enforcement and Corrections Technology Center-National (NLECTC-National).

This agreement shall supersede all previous National Institute of Justice Compliance Testing Program Authorized Representative Notifications.

Please provide business headquarters information below.

Applicant Name: \_\_\_\_\_

Applicant Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Telephone: \_\_\_\_\_

Document Name: NIJ CTP Authorized Representative	Approval Date: 31 Mar 2013
Revision: 16 Jan 2013	Implementation Date: 13 Jun 2013
OMB Number: 1121-0321	Expires: 31 Mar 2016

The Applicant hereby expressly acknowledges and agrees that the following **Authorized Representatives** are authorized to supply information concerning product submittals and surveillance on which the NIJ CTP may act:

**Authorized Representatives**

#1 (Name/Title): \_\_\_\_\_

#1 Telephone Number: \_\_\_\_\_

#1 E-mail: \_\_\_\_\_

#2 (Name/Title): \_\_\_\_\_

#2 Telephone Number: \_\_\_\_\_

#2 E-mail: \_\_\_\_\_

#3 (Name/Title): \_\_\_\_\_

#3 Telephone Number: \_\_\_\_\_

#3 E-mail: \_\_\_\_\_

#4 (Name/Title): \_\_\_\_\_

#4 Telephone Number: \_\_\_\_\_

#4 E-mail: \_\_\_\_\_

Document Name: NIJ CTP Authorized Representative	Approval Date: 31 Mar 2013
Revision: 16 Jan 2013	Implementation Date: 13 Jun 2013
OMB Number: 1121-0321	Expires: 31 Mar 2016

**Applicant Signatory**

(an officer or representative of the Applicant who has the authority to bind it)

(Name/Title): \_\_\_\_\_

Telephone Number: \_\_\_\_\_

E-mail: \_\_\_\_\_

The Applicant agrees to the terms of this agreement and warrants that it has made no alterations to its text. The undersigned represents and warrants that he/she is authorized to execute this agreement on behalf of the Applicant.

\_\_\_\_\_  
Applicant Signatory

\_\_\_\_\_  
Date

NLECTC-National Representative Acknowledgement:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name (Please print/type)

Document Name: NIJ CTP Body Armor Build Sheet	Approval Date: 31 Mar 2013
Revision: 14 Jun 2013	Implementation Date: 14 Jun 2013
OMB Number: 1121-0321	Expires: 31 Mar 2016

## National Institute of Justice Compliance Testing Program Body Armor Build Sheet

In accordance with the Paperwork Reduction Act of 1995, no person is required to respond to a collection of information unless it displays a valid OMB control number. The OMB number for this collection is 1121-0321. Public reporting burden for this collection of information is estimated to average one hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information.

This information is being requested pursuant to 6 U.S.C. 162(b)(4) and 6 U.S.C. 162(b)(6)(B). The disclosure is voluntary. The information provided on this form will be used by the National Institute of Justice (NIJ) to administer a product conformity assessment program for products used by law enforcement and correctional officers. This information and the associated products are voluntarily submitted under the Compliance Testing Program.

### PRIVACY ACT NOTICE:

This document contains **Confidential Commercial Information**.

The National Institute of Justice Compliance Testing Program (hereafter, the NIJ CTP) shall use reasonable efforts to maintain confidential all information identified as "Confidential Commercial Information" that it obtains from the Applicant. Confidential Commercial Information shall not include information that is (a) publicly available; (b) subsequently acquired by the NIJ CTP from other sources in a manner that does not constitute a breach of this Agreement; (c) disclosed by the NIJ CTP when deemed, at its sole discretion, to be necessary to the NIJ CTP's performance of the requested conformity assessment; (d) required to be produced pursuant to an order or command of any judicial or regulatory authority; (e) required by any common law or statutory duty; or (f) disclosed in the interest of officer safety.

<b>TEST ID:</b>	Test ID is issued after the NIJ CTP has reviewed this documentation for completeness. An additional review, for accuracy, shall be performed after testing is completed and samples are received by the NIJ CTP.
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APPLICANT (COMPANY) NAME AS SHOWN ON THE PREVIOUSLY SUBMITTED APPLICANT AGREEMENT:

SECTION 1: TESTING INFORMATION			
Proposed Model Designation:	Declared Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Neutral	Structure Tested: <input type="checkbox"/> Planar <input type="checkbox"/> Non-Planar <input type="checkbox"/> Flexible <input type="checkbox"/> Hard <input type="checkbox"/> ICW <input type="checkbox"/> Front Opening	
<input type="checkbox"/> Ballistic Resistance of Body Armor, <b>NIJ Standard-0101.06</b> <b>Type:</b> <input type="checkbox"/> IIA <input type="checkbox"/> II <input type="checkbox"/> IIIA <input type="checkbox"/> III <input type="checkbox"/> IV <b>Shot to Edge Distance:</b> Threat 1: <input type="checkbox"/> 1" <input type="checkbox"/> 2" <input type="checkbox"/> Other _____ Threat 2: <input type="checkbox"/> N/A <input type="checkbox"/> 1" <input type="checkbox"/> 2" <input type="checkbox"/> 3" <input type="checkbox"/> Other _____ <b>Size Tested:</b> <input type="checkbox"/> C1 <input type="checkbox"/> C2 <input type="checkbox"/> C3 <input type="checkbox"/> C4 <input type="checkbox"/> C5 <input type="checkbox"/> Other (Hard) _____		<input type="checkbox"/> Stab Resistance of Personal Body Armor, <b>NIJ Standard-0115.00</b> <b>Protection Level:</b> <input type="checkbox"/> Edge Blade <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Spike <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <b>Size Tested:</b> <input type="checkbox"/> Male <input type="checkbox"/> Female	
<b>Hard Ballistic Armor:</b>		P-BFS Test	Ballistic Limit Test
Curve: _____	Shots per panel: _____	Shots per panel: _____	Shots per panel: _____
	Number of panels: _____	Number of panels: _____	Number of panels: _____

<b>SECTION 2: EXTERNAL CARRIER</b>	<small>NOTE: For soft armor ballistic models, test carriers shall meet the requirements of NIJ STD 0101.06, Section 4.1.6. Hard armor ballistic models are not required to have carriers. Stab models shall have a carrier but do not need to meet the same ballistic requirements.</small>
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- Ballistic carriers are cotton or polycotton with an areal density of not more than 250 g/m<sup>2</sup> (7.37 oz/yzd)  N/A (Hard Armor Plates and Stab models)
- Ballistic carriers meet an exception noted in Section 4.1.6. The material information is noted here:

SECTION 3: PANEL COVERING			
<small>NOTE: The panel covering (also known as a pad cover) refers to the cover immediately surrounding the completed assembly. This is not the removable exterior cover.</small>			
MATERIAL TYPE	FINAL SUPPLIER	PRODUCT NAME OR CODE	METHOD OF CLOSURE

Document Name: NIJ CTP Body Armor Build Sheet	Approval Date: 31 Mar 2013
Revision: 14 Jun 2013	Implementation Date: 14 Jun 2013
OMB Number: 1121-0321	Expires: 31 Mar 2016

**TEST ID:**

**SECTION 4: MATERIAL INFORMATION** NOTE: List all materials as they appear from the strike (impact) side of the vest. A specification sheet from the material supplier should also be provided and attached to this application when available.

THE INFORMATION SHOWN ON THIS PAGE REPRESENTS THE CONSTRUCTION FOR WHICH PANEL:     Front     Back     Both

MATERIAL TYPE	FINAL SUPPLIER	PRODUCT NAME OR CODE	PRODUCT CHARACTERISTICS	LAYER ROTATION OR ORIENTATION	LAYERS IN GROUP
<b>TOTAL:</b>					

**SECTION 5: ASSEMBLY INFORMATION** NOTE: List all stitching, taping or other techniques used to hold the layers together. A separate drawing is also recommended to be attached to the application. Stitch types and seam types from ISO 4915 and ISO 4916 may be referenced.

ASSEMBLY DESCRIPTION	LOCATION ON PANEL	SPECIFIC TYPE OF THREAD, TAPE, ETC.	STITCHES-PER-INCH (WHERE NECESSARY)	RANGE OF LAYERS

**SECTION 6: ADDITIONAL INFORMATION** NOTE: Please provide any other information about this model in the space below.

All key features, discontinuities and range of variations (to adjust for end user fit) intended for this model must be identified in this document or in attached documents (listed in Section 6 of this document). Key features include but are not limited to: materials of construction (and source), slits, slots, cuts, notches, seams, darts, stitching, overlaps, folds, additional panels or similar features.

Any inaccuracies in this document may require additional testing up to a complete repeat of initial type testing.

This design has not previously been submitted to the NIJ CTP for evaluation to the current standard by the applicant named above.

All body armor samples provided for initial type testing (in association with the Test ID above) are identically constructed.

APPLICANT AUTHORIZED SIGNATORY OR REPRESENTATIVE (PRINTED NAME AND SIGNATURE):	DATE:
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Document Name: NIJ CTP Ballistic BA Agreement	Approval Date: 31 Mar 2013
Revision: 14 Jun 2013	Implementation Date: 14 Jun 2013
OMB Number: 1121-0321	Expires: 31 Mar 2016

## National Institute of Justice Compliance Testing Program Ballistic Body Armor Agreement

In accordance with the Paperwork Reduction Act of 1995, no person is required to respond to a collection of information unless it displays a valid OMB control number. The OMB number for this collection is 1121-0321. Public reporting burden for this collection of information is estimated to average 20 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information.

This information is being requested pursuant to 6 U.S.C. 162(b)(4) and 6 U.S.C. 162(b)(6)(B). The disclosure is voluntary. The information provided on this form will be used by the National Institute of Justice to administer a product conformity assessment program for products used by law enforcement and correctional officers. This information and the associated products are voluntarily submitted under the Compliance Testing Program.

### PRIVACY ACT NOTICE:

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The NIJ CTP shall take reasonable steps to safeguard Applicant data within the NIJ CTP systems prior to external transmission and may transmit Applicant's Confidential Information and data to Applicant through the Internet or any public network, unless otherwise directed in writing by Applicant.

Test ID: \_\_\_\_\_

Final Model Designation: \_\_\_\_\_

Applicant Name: \_\_\_\_\_

Applicant Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Telephone: \_\_\_\_\_

Document Name: NIJ CTP Ballistic BA Agreement	Approval Date: 31 Mar 2013
Revision: 14 Jun 2013	Implementation Date: 14 Jun 2013
OMB Number: 1121-0321	Expires: 31 Mar 2016

**The Applicant hereby expressly acknowledges and agrees as follows:**

1. Failure to comply with all provisions of this agreement constitutes grounds for suspension or revocation of NIJ compliance status of both the model in question and any other models the applicant also has listed.
2. **Materials of Construction and Evidence of Acceptable Ongoing Ballistic Performance:** The Applicant shall initial one of the following options as applicable to the model identified above:
 

\_\_\_\_ Option 1 - The model described herein contains no material named in any NIJ Advisory Notice in effect at the time of submission of this model for NIJ Compliance testing.

\_\_\_\_ Option 2 – The model described herein contains material named in any NIJ Advisory Notice in effect at the time of submission of this model for NIJ Compliance testing. Applicant has included with this application evidence (e.g., design drawings and specifications, lists of materials of construction of each component of the model, research, ballistic testing, descriptions of performance characteristics of critical components or materials) that demonstrates to the satisfaction of NIJ that the model will maintain ballistic performance (consistent with its originally declared threat level) over its declared warranty period (Note: Manufacturers should anticipate that NIJ's review of the evidence may take a substantial amount of time to complete).
3. Effective the date that the model is listed on the NIJ Compliant Products List, the applicant hereby agrees to label all subsequent production units of the model listed in this document in accordance with the labeling requirements of Ballistic Armor Labeling Guidance of the *CTP Applicant Package*.
4. The manufacture of all production units marked with the Model Designation provided above shall be identical in all respects to the samples previously supplied and tested under the Test ID provided above. This includes the ballistic materials (i.e., material type, style, weave, water-repellant treatment, ballistic panel covers), number and sequence of layers, stitching and permanent or non-removable covering (to include waterproofing). Any changes or modifications to the previously approved construction details may constitute a design change and therefore must be submitted to the NIJ CTP for evaluation prior to implementing any changes.
5. A system of traceability shall be maintained between each listed armor produced (based on a unique model designation/serial number/lot number combination) and both the materials used to construct the armor and the purchaser.
6. All records associated with this model shall be preserved for at least one year beyond the service life of this model i.e., one year beyond the last date of production plus the length of warranty.



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Revision: 14 Jun 2013	Implementation Date: 14 Jun 2013
OMB Number: 1121-0321	Expires: 31 Mar 2016

7. Satisfactory participation in the NIJ Ballistic Body Armor Compliance Testing Program requires satisfactory participation in the associated surveillance (Follow-up Inspection and Testing, or FIT) program at each manufacturing facility where the model is produced.
8. Surveillance consists of an onsite inspection of manufacturing records and the selection of samples for destructive testing and inspection. Additional details concerning the surveillance process is available on request and may be periodically revised as NIJ sees fit.
9. Prior to beginning production at a new manufacturing location, the applicant shall notify NLECTC-National by completing an NIJ CTP Manufacturing Location Notification. The notification shall be made sufficiently in advance of production in order to schedule an inspection.
10. Following NIJ's issuance of a letter of attestation, each manufacturing location at which a model is produced shall have a surveillance inspection prior to shipping any production from that facility. The first surveillance inspection for a new model/location is referred to as an Initial Product Inspection (IPI).
11. Following the IPI, models will typically be inspected at least once every 10 months.
12. The applicant is responsible for all fees and costs incurred during the surveillance (Follow-up Inspection and Testing, or FIT) program process.
13. If the ballistic body armor model is manufactured under an NIJ CTP approved body armor quality management system (BA-QMS), the frequency of that model/location may be reduced to once every 20 months.
14. The inspection frequency may be increased based on poor performance during any of the previous inspections of that facility.

**Applicant Signatory or Representative**

(an officer or representative of the Applicant who has the authority to bind it)

(Name/Title): \_\_\_\_\_

Telephone Number: \_\_\_\_\_

E-mail: \_\_\_\_\_

The Applicant agrees to the terms of this agreement and warrants that it has made no alterations to its text. The undersigned represents and warrants that he/she is authorized to execute this agreement on behalf of the Applicant.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

Document Name: NIJ CTP Manufacturing Location	Approval Date: 31 Mar 2013
Revision: 10 Jun 2013	Implementation Date: 13 Jun 2013
OMB Number: 1121-0321	Expires: 31 Mar 2016

## National Institute of Justice Compliance Testing Program Manufacturing Location Notification

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This information is being requested pursuant to 6 U.S.C. 162(b)(4) and 6 U.S.C. 162(b)(6)(B). The disclosure is voluntary. The information provided on this form will be used by the National Institute of Justice to administer a product conformity assessment program for products used by law enforcement and correctional officers. This information and the associated products are voluntarily submitted under the Compliance Testing Program.

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This National Institute of Justice Compliance Testing Program Manufacturing Location Notification pertains to all applicants seeking to voluntarily participate in the National Institute of Justice Compliance Testing Program (hereafter, the NIJ CTP). Any reference to the NIJ CTP as an organization includes elements of both National Institute of Justice (NIJ) and the National Law Enforcement and Corrections Technology Center-National (NLECTC-National).

This agreement shall supersede all previous National Institute of Justice Compliance Testing Program Manufacturing Location Notifications for this model.

Model Designation: \_\_\_\_\_

Test ID: \_\_\_\_\_

Date of Notification: \_\_\_\_\_

Please provide business headquarters information below.

Applicant Name: \_\_\_\_\_

Applicant Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Telephone: \_\_\_\_\_

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Model Designation: \_\_\_\_\_

Test ID: \_\_\_\_\_

The Applicant hereby expressly acknowledges and agrees as follows:

**1. General**

This document must be completed and received by the NIJ CTP at least five business days prior to beginning production at any location. Notifications shorter than two weeks may incur additional costs for the mandatory initial product inspections.

Any other changes to manufacturing locations (Production Stop) shall be communicated to the NIJ CTP as soon as possible.

Notification that production at a specific location has stopped may take up to 30 days for the NIJ CTP to process and stop surveillance activities.

The body armor model identified above shall be manufactured only at the locations identified here.

This agreement does not authorize any changes except the manufacturing location and the associated information appearing on the label.

Failure of the Applicant to provide current and accurate information concerning manufacturing locations could result in unnecessary costs to the applicant in the form of unnecessary surveillance (Follow-up Inspection and Testing, or FIT) charges.

Failure of the Applicant, additional Listee(s) or locations to abide by the requirements of the NIJ CTP could have a negative impact on the Applicant's continued participation in the NIJ CTP, up to and including the removal of all Applicant models from the compliant product list under any brand or trademark.

The point of contact (or alternate) for each location should be available on site and prepared to escort the inspection representative.

**2. Manufacturing (Including Subcontracted Manufacturing)**

The NIJ CTP shall hold the applicant fully responsible for production of all products identified by this model or Test ID at all locations. This includes responsibility for all locations':

- a. adherence to the applicable construction and assembly described in current documents provided to the NIJ CTP by the Applicant; and
- b. the compliance of this model with program requirements; and
- c. following the manufacturing processes used for samples provided for initial determination testing (this includes quality assurance and applicable verification of purchased materials); and
- d. maintaining records associated with quality and tracking of individual armors; and
- e. notifications of end users; and
- f. recalls when necessary.

Document Name: NIJ CTP Manufacturing Location	Approval Date: 31 Mar 2013
Revision: 10 Jun 2013	Implementation Date: 13 Jun 2013
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**3. Access to Manufacturing Locations for Surveillance Activities (Follow-up Inspection and Testing)**

The Applicant expressly acknowledges and agrees that full, safe and secure access shall be provided to NIJ CTP staff, representatives, their agents or designees, either announced or unannounced, for all manufacturing facilities and/or storage facilities, records and personnel used in the manufacture of models of equipment identified in this document. This includes the selection and removal of production samples from manufacturing facilities at the Applicant's expense for the purposes of surveillance (FIT).

Applicant is free to verify NIJ CTP staff, representatives, their agents or designees meet any U.S. Persons requirements (citizenship, Green Card Status) applied to its own employees prior to their entry. It is the applicant's responsibility to communicate the manufacturing locations requirements to the NIJ CTP prior to the first inspection in order to avoid unnecessary costs to the applicant in the form of an incomplete or canceled inspection

**4. Subcontracting Surveillance Activities**

The Applicant agrees that the NIJ CTP may subcontract surveillance activities to third parties. The Applicant authorizes the NIJ CTP to disclose to the subcontractor any information necessary for such performance of the inspection by the subcontractor. The NIJ CTP shall provide as a term of any such subcontract that the subcontractor shall meet the NIJ CTP's current qualification requirements for accreditation, conflicts of interest and ethical standards.

The relationship between an NIJ CTP designated subcontractor and the Applicant may be governed by a separate agreement. Failure to execute an agreement required by an NIJ CTP-designated subcontractor shall be viewed as a failure of the Applicant to satisfactorily participate in the NIJ CTP and could result in the removal of the Applicant from the program.

It is the applicant's responsibility to ensure that any direct interaction with subcontractors is addressed with acceptable agreements.

Document Name: NIJ CTP Manufacturing Location	Approval Date: 31 Mar 2013
Revision: 10 Jun 2013	Implementation Date: 13 Jun 2013
OMB Number: 1121-0321	Expires: 31 Mar 2016

Model Designation: \_\_\_\_\_

Test ID: \_\_\_\_\_

**Manufacturing Location # 1:**

Address: \_\_\_\_\_

\_\_\_\_\_

Point of Contact:

Alternate Point of Contact:

Name	_____	_____
Title	_____	_____
Phone	_____	_____
E-mail	_____	_____

Current                       New (Beginning)                       Production Stop (Last)

Beginning/Last Date: \_\_\_\_\_

Beginning/Last Serial Number: \_\_\_\_\_

Beginning/Last Lot Number: \_\_\_\_\_

**Manufacturing Location # 2:**

Address: \_\_\_\_\_

\_\_\_\_\_

Point of Contact:

Alternate Point of Contact:

Name	_____	_____
Title	_____	_____
Phone	_____	_____
E-mail	_____	_____

Current                       New (Beginning)                       Production Stop (Last)

Beginning/Last Date: \_\_\_\_\_

Beginning/Last Serial Number: \_\_\_\_\_

Beginning/Last Lot Number: \_\_\_\_\_

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Revision: 10 Jun 2013	Implementation Date: 13 Jun 2013
OMB Number: 1121-0321	Expires: 31 Mar 2016

Model Designation: \_\_\_\_\_

Test ID: \_\_\_\_\_

**Applicant Signatory**

(an officer or representative of the Applicant who has the authority to bind it)

(Name/Title): \_\_\_\_\_

Telephone Number: \_\_\_\_\_

E-mail: \_\_\_\_\_

\_\_\_ additional pages have been attached (each page initialed and dated) to indicate additional manufacturing locations.

The Applicant agrees to the terms of this agreement and warrants that it has made no alterations to its text. The undersigned represents and warrants that he/she is authorized to execute this agreement on behalf of the Applicant.

\_\_\_\_\_  
Applicant Signatory

\_\_\_\_\_  
Date

NLECTC-National Representative Acknowledgement:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name (Please print/type)

Document Name: NIJ CTP Listee Notification	Approval Date: 31 Mar 2013
Revision: 14 Jun 2013	Implementation Date: 14 Jun 2013
OMB Number: 1121-0321	Expires: 31 Mar 2016

## National Institute of Justice Compliance Testing Program Listee Notification

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This information is being requested pursuant to 6 U.S.C. 162(b)(4) and 6 U.S.C. 162(b)(6)(B). The disclosure is voluntary. The information provided on this form will be used by the National Institute of Justice to administer a product conformity assessment program for products used by law enforcement and correctional officers. This information and the associated products are voluntarily submitted under the Compliance Testing Program.

**PRIVACY ACT NOTICE:** The information provided in this document is not considered Confidential Commercial Information and may be released without limitations or restrictions.

This National Institute of Justice Compliance Testing Program Authorized Representatives Notification pertains to all applicants seeking to voluntarily participate in the National Institute of Justice Compliance Testing Program (hereafter, the NIJ CTP). Any reference to the NIJ CTP as an organization includes elements of both National Institute of Justice (NIJ) and the National Law Enforcement and Corrections Technology Center-National (NLECTC-National).

This agreement shall supersede all previous National Institute of Justice Compliance Testing Program Listee Notifications for this model.

Test ID: \_\_\_\_\_

Model Designation: \_\_\_\_\_

Date of Notification: \_\_\_\_\_

Please provide business headquarters information below.

Applicant Name: \_\_\_\_\_

Applicant Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Telephone: \_\_\_\_\_

Document Name: NIJ CTP Listee Notification	Approval Date: 31 Mar 2013
Revision: 14 Jun 2013	Implementation Date: 14 Jun 2013
OMB Number: 1121-0321	Expires: 31 Mar 2016

Test ID: \_\_\_\_\_

Model Designation: \_\_\_\_\_

The Applicant hereby expressly acknowledges and agrees as follows:

Although it is not required that the Applicant has ownership of all brands or trademarks identified here, the Applicant warrants that it has permission from the owner (Listee) to engage in brand labeling of the product model identified above.

The NIJ CTP maintains a Compliant Products List (CPL) identifying models compliant with program requirements. Product listing includes model designation and Listee/Brand.

Other than the Listee information provided here and included on the label, no other changes are permitted by this agreement.

Use of this form to identify multiple Listee status does not authorize additional or alternative manufacturing locations.

The NIJ CTP shall hold the applicant responsible for actions they or the Multiple Listee(s) may take in regards to this model. Failure of the Applicant or additional Listee(s) to abide by the requirements of the NIJ CTP could have a negative impact on the Applicant's continued participation in the NIJ CTP, up to and including the removal of all Applicant models from the CPL under any brand or trademark.

Final labeling shall be both controlled by and the responsibility of the Applicant.

**Listee # 1:**

Company:

Name \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Point of Contact:

Name \_\_\_\_\_

Title \_\_\_\_\_

Phone \_\_\_\_\_

E-mail \_\_\_\_\_

Trade Name/Brand \_\_\_\_\_



Document Name: NIJ CTP Listee Notification	Approval Date: 31 Mar 2013
Revision: 14 Jun 2013	Implementation Date: 14 Jun 2013
OMB Number: 1121-0321	Expires: 31 Mar 2016

Test ID: \_\_\_\_\_

Model Designation: \_\_\_\_\_

**Listee # 2:**

Company:

Name \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

Point of Contact:

Name \_\_\_\_\_

Title \_\_\_\_\_

Phone \_\_\_\_\_

E-mail \_\_\_\_\_

Trade Name/Brand \_\_\_\_\_

**Listee # 3:**

Company:

Name \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

Point of Contact:

Name \_\_\_\_\_

Title \_\_\_\_\_

Phone \_\_\_\_\_

E-mail \_\_\_\_\_

Trade Name/Brand \_\_\_\_\_

Document Name: NIJ CTP Listee Notification	Approval Date: 31 Mar 2013
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Test ID: \_\_\_\_\_

Model Designation: \_\_\_\_\_

**Applicant Signatory**

(an officer or representative of the Applicant who has the authority to bind it)

(Name/Title): \_\_\_\_\_

Telephone Number: \_\_\_\_\_

E-mail: \_\_\_\_\_

\_\_\_\_\_ additional pages have been attached (each page initialed and dated) to indicate additional manufacturing locations.

The Applicant agrees to the terms of this agreement and warrants that it has made no alterations to its text. The undersigned represents and warrants that he/she is authorized to execute this agreement on behalf of the Applicant and the Multiple Listees referenced here.

\_\_\_\_\_  
Applicant Signatory

\_\_\_\_\_  
Date

NLECTC-National Representative Acknowledgement:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name (Please print/type)



## APPENDIX E.

# Example Procurement Specifications

### Option 1) Specific Quantity

The (jurisdiction) intends to purchase a total of (number spelled out) (number) units of body armor contingent on funding being made available for that purpose.

Of this total, approximately (number spelled out) (number) shall be specifically constructed for issue to female officers. The successful bidder further agrees to supply the same model of armor at the bid unit price offered up to the above quantity of units for an additional period of (select appropriate period of time) months for issue to new officers or for replacement purposes.

### Option 2) Open-Ended Purchase Agreement (Term Contract)

The (jurisdiction) anticipates the purchase of up to a total of (number spelled out) (number) units of body armor during a (appropriate period of time)-month period beginning on or about (date). During this period, purchase orders will be issued for armor as needed at the bid price offered. It is estimated that approximately (number) % of the armor purchased will be specifically designated for issue to female officers. The term of this agreement shall be (appropriate period of time) months; however, the (jurisdiction) does not guarantee the purchase of any specific or minimum quantity of armor during the term of this agreement. The (jurisdiction) may, at its option and subject to agreement by the contractor, extend the term of this agreement at the same contract unit price for an additional period of (appropriate period of time) months.

### *Bidding and award*

Bids shall be submitted (specify standard departmental regulations; e.g., departmental form, letter quotation).

Bids shall be accepted only for armor listed on the Compliant Products List for NIJ Standard-0101.06.

The (jurisdiction) reserves the right to reject or award any or all bids in whole or in part as deemed to be in the best interest of the department.

In determining the most advantageous bid, the (jurisdiction) reserves the right to consider quality, workmanship, service and dependability of the product and supplier, independent of price.

The successful bidder agrees to provide a product label meeting the NIJ Compliance Testing Program (CTP) requirements on the label of each unit of armor.

### *Pre-bid conference*

Specify date, time and location. If attendance is a condition of bid acceptance, this must be noted.

### *Invoicing and delivery*

Specify consistent with the normal procurement practices of the jurisdiction.

### *Warranty and insurance*

Each unit of armor provided under this contract shall be warranted for a minimum of (number spelled out) (number) years to be free from all defects in materials and workmanship.

Each unit of armor provided under this contract shall be warranted for a minimum of (number spelled out) (number) years to meet the ballistic performance requirements of NIJ Standard-0101.06.

Suppliers shall have a product liability performance insurance policy in a minimum amount of (specify per incident, total liability limits and period of coverage as appropriate, based on recommendations of department's legal counsel and insurance commission). All insurance policies shall conform to the rules and regulations of (appropriate jurisdiction).

#### *Armor specifications*

Each unit of armor shall be new, unused and constructed of quality materials and shall:

A) Be constructed identically to the original model tested by the NIJ CTP and found to comply with the minimum performance requirements for Type (appropriate level) armor as specified in NIJ Standard-0101.06.

B) Be labeled in accordance with the requirements of NIJ Standard-0101.06, clearly identifying the exact supplier model and, if appropriate, style specified in the contract document.

The supplier may, at its option, include a catalog number for supplier or distributor convenience, provided that such number is properly identified and totally separate from the model designation line. Labels shall remain readable throughout the warranty period.

C) Be designed to be concealable under the standard (jurisdiction) uniform shirt. Provide full torso coverage with front-to-back side overlap of ballistic panels. (Alternately, state other side protection requirements or other intended manner of use; e.g., specific type of outerwear, tactical armor.)

D) Provide adjustment for the chest, waist and shoulders with the minimum relief under arms, neck and shoulder necessary to ensure adequate coverage.

E) Be designed in such a manner as to prevent the armor from "riding up" on the wearer during normal duty activities.

F) Not include closure, fastening or accessory attachment devices made of materials that present a "secondary projectile" or "ricochet" hazard if struck by a bullet.

G) Incorporate a carrier for the ballistic panel that is (appropriate choice) in color. Coloring shall be permanent and not bleed onto other garments.

H) Be free from any defects affecting durability, serviceability, appearance or user safety. Workmanship and construction details, cutting, stitching and finishing shall be in all cases in accordance with commercial textile standard practices for the intended purpose.

I) Be custom fitted. Custom fitting will take place at (location). (Person) will perform the measuring. Measurements shall be performed as per ASTM-E2902-12.

#### *Termination*

The (jurisdiction) may terminate the agreement for cause or for the convenience of the agency upon 30-day written notice. The (jurisdiction) may cancel the agreement if officers find the armor received to be unacceptable, or if the supplier is noncompliant with agreement terms, even though the armor itself may be fully compliant with the procurement specifications. Additionally, revocation of an armor's compliance status (i.e., removal of the model from the CPL) is justifiable cause for termination of the agreement. The (jurisdiction) may also terminate the agreement if the armor is not delivered in a reasonable timeframe according to the predetermined shipping schedule. Receipt of a substandard product is also cause for termination.

#### *Items to be submitted with bid*

A) Example of armor model being bid, labeled in accordance with the requirements above (item B, armor specifications).

Note: The example provided by the successful bidder will become the property of (jurisdiction) and be retained in archives for comparison with armor delivered under the resulting contract.

B) Copy of the NIJ Compliance Letter for the specific model.

C) Proof of liability insurance.



## About the Law Enforcement and Corrections Standards and Testing Program

The National Institute of Justice (NIJ) Standards and Testing Program is sponsored by the NIJ Office of Science and Technology within the U.S. Department of Justice, Office of Justice Programs. The program responds to provisions in the Homeland Security Act of 2002 that authorize the NIJ Office of Science and Technology to establish and maintain performance standards (in accordance with the National Technology Transfer and Advancement Act of 1995) for law enforcement technologies that may be used by federal, state and local law enforcement agencies, and to test and evaluate those technologies. The Homeland Security Act of 2002 also authorizes the NIJ Office of Science and Technology to establish and maintain a program to certify, validate and mark or otherwise recognize law enforcement technology products that conform to the standards mentioned above.

The NIJ Standards and Testing Program works to identify the needs of state and local criminal justice system practitioners for equipment standards and test protocols, develops voluntary performance standards for specific criminal justice tools and technologies, establishes conformity assessment requirements for demonstrating that commercially available equipment conforms to those standards, and publishes listings of product models that have been tested through one or more specified organizations and found to comply with the standards. The standards development process begins with the operational needs and requirements of practitioners in the field being defined, and, based on those needs, the standards are developed principally by a special technical committee led by criminal justice practitioners and including testing and conformity assessment experts, other technical experts, federal partners and members from practitioner stakeholder organizations. Manufacturers, vendors and other interested parties are provided with an opportunity to review and comment on draft standards prior to their publication.

As indicated above, all NIJ standards developed through the Standards and Testing Program are voluntary standards. There is no requirement or obligation for manufacturers, law enforcement agencies or others to follow or adopt these voluntary law enforcement technology equipment standards. The primary intent of these standards is to provide the end user of a model of equipment found to be compliant with a particular standard with performance information on key equipment characteristics, provide a level of confidence in that particular model's fitness for use in specified circumstances and allow comparison of product models based on standardized testing methods and performance requirements. These standards do not specify a particular solution but rather define what a potential solution must accomplish. The ultimate goal is to help ensure to the degree possible that law enforcement technology equipment is safe, reliable and effective.

Publications related to the Standards and Testing Program, including the voluntary standards and associated documents, are available at no charge through the National Law Enforcement and Corrections Technology Center-National (NLECTC-National) and also are available online at <http://www.nij.gov/standards> and <http://www.justnet.org>. To request a document or additional information, please call (800) 248-2742 or send an e-mail to [asknlectc@justnet.org](mailto:asknlectc@justnet.org).

Users of NIJ standards are advised to check with <http://www.nij.gov/standards> on a regular basis to determine whether a particular law enforcement technology equipment standard has been revised or superseded, or the compliance status of a particular model has changed.

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Office of Justice Programs  
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