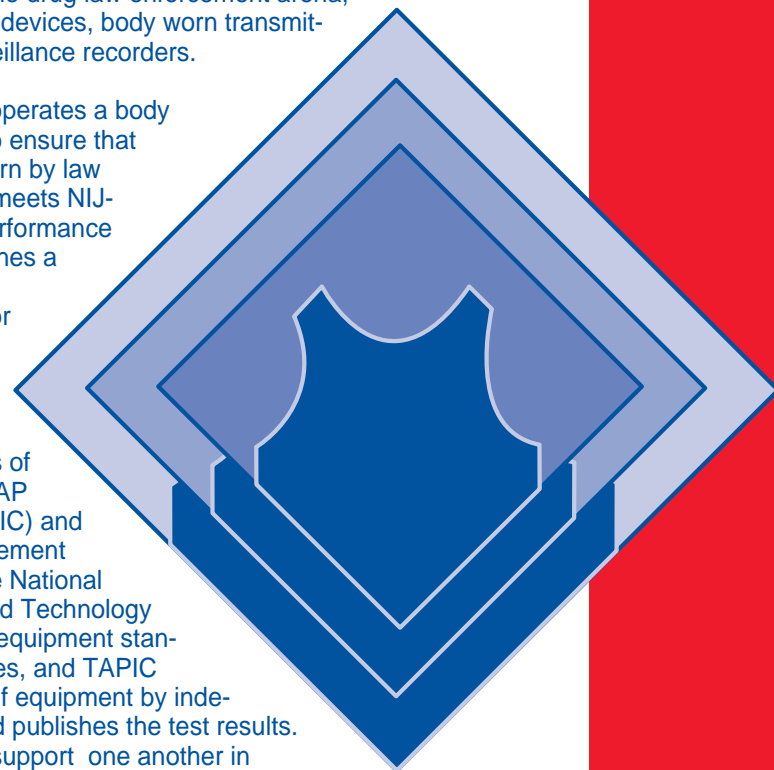


**A**s the research and development agency of the U.S. Department of Justice, the National Institute of Justice (NIJ) pursues a wide range of research and development programs to prevent crime and improve the criminal justice system. The Institute's Technology Assessment Program (TAP) explores new technologies that benefit the criminal justice community and also helps agencies make informed equipment-purchasing decisions. A few examples are NIJ's research and field demonstrations of less-than-lethal weapons that police can use in situations where lethal force is not justified or there are risks of injury or death to innocent victims or bystanders; DNA analysis that identifies suspects or eliminates suspicion from the innocent; and surveillance technology that aids in the drug law enforcement arena, such as vehicle tracking devices, body worn transmitters, and miniature surveillance recorders.

Through TAP, NIJ also operates a body armor testing program to ensure that protective equipment worn by law enforcement personnel meets NIJ-established minimum performance requirements and publishes a list of complying armor models in the body armor *Consumer Product List*.

To accomplish program tasks, NIJ coordinates the activities of two organizations: the TAP Information Center (TAPIC) and the Office of Law Enforcement Standards (OLES) of the National Institute of Standards and Technology (NIST). OLES prepares equipment standards, reports, and guides, and TAPIC coordinates the testing of equipment by independent laboratories and publishes the test results. OLES, TAPIC, and NIJ support one another in accomplishing TAP's tasks and goals.

*Because of NIJ-sponsored research in the early 1970's, many police officers and other law enforcement personnel today have lightweight body armor to protect them against many of the ballistic threats they face on the streets.*



- ◆ **DO** drip dry the armor indoors.
  - ◆ **DO** regularly inspect your armor for cuts, tears, and other damage to the carrier and ballistic elements.
  - ◆ **DO** contact the manufacturer with any questions about cleaning the armor.
- \* \* \*
- ◆ **DO NOT** machine wash or dry your armor; machine laundering can affect the ballistic material.
  - ◆ **DO NOT** use bleach or products containing bleach in laundering your armor.
  - ◆ **DO NOT** use commercial laundries because they may use harsh chemicals that can affect your armor's protective capabilities.
  - ◆ **DO NOT** dry clean your armor because dry cleaning solvents can affect your armor's protective capabilities.
  - ◆ **DO NOT** dry your armor outdoors. Some ballistic fabrics degrade as a result of ultraviolet exposure.
  - ◆ **DO NOT** attempt to make repairs to your armor. Armor should be returned to the manufacturer for repairs or replacement.

\* If the ballistic element is removed from its carrier, the manufacturer may provide separate cleaning instructions for the carrier.

NIJ works to see that you have access to body armor that continues to meet its standard. However, NIJ believes that its responsibility does not stop there. It is hoped that in providing you with this guide, you can use the information to help extend the life of the armor that may one day save your life.

Write or call the Technology Assessment Program at Box 6000, Rockville, MD 20850 or call 800-248-2742 (301-251-5060 in Maryland and Metropolitan Washington, D.C.).

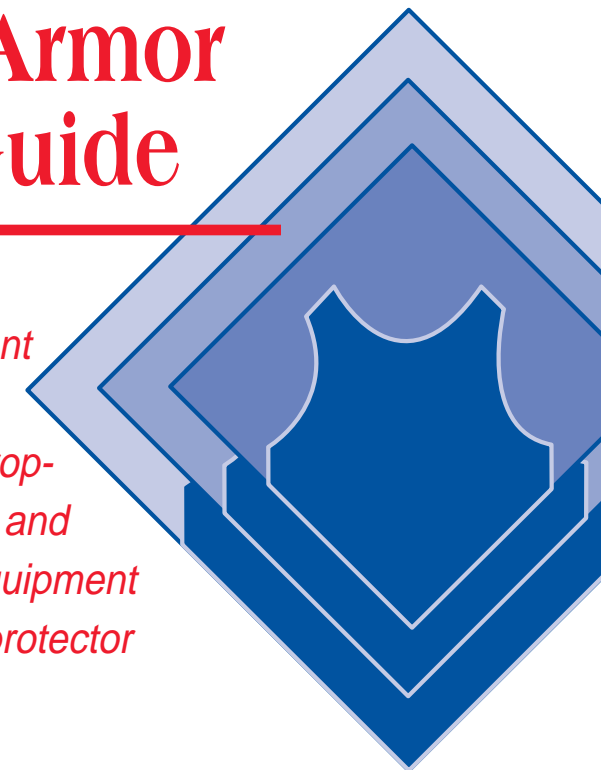
NIJ's *Consumer Product List* is the only sure way to determine whether a particular vest complies with NIJ Standard-0101.03; this cannot always be determined from the label on the armor. Even though some manufacturers may affix a label certifying compliance with the NIJ standard, their armor may not have been submitted to NIJ for verification.

NIJ's Body Armor Compliance Testing Program verifies only that an armor's design meets the NIJ standard. Any changes in production methods, materials, and quality control can affect the armor's conformance with the standard. NIJ recommends that police department purchasers conduct acceptance testing of the vests they purchase to ensure that those production units meet NIJ's standard.



## Body Armor User Guide

*Law enforcement officers protect the lives and property of citizens, and one piece of equipment is the primary protector of police*



This user guide is your information tool. It lists the many benefits of wearing armor, along with the few limitations of which you should be aware. It provides detailed safety information and lists specific instructions on the care and maintenance of body armor that will extend its effective usefulness.

## Benefits of NIJ-Listed Body Armor

*Body armor saves lives.* According to industry estimates, more than 1,200 officers have been saved from death or serious injury because they were wearing their armor. This figure includes lives saved and serious injury avoided from assaults and accidents as well as from ballistic threats. NIJ-listed body armor offers flexibility to the wearer in a number of ways:

- ◆ It is available in various levels of protection to accommodate the range of ballistic threats facing wearers (including street assaults and the officers' own weapons and ammunition).\*
- ◆ It can be worn as a concealable undergarment; incorporated into a uniform shirt, vest, coat, or other type of outer garment; or worn over the uniform and easily recognizable (such as armor worn by special tactical teams).
- ◆ Many NIJ-listed models are available in a variety of coverages—some armor panels cover the front and back of the torso, while others also wrap around the sides.
- ◆ Ballistic panels can be removed from the carrier on some models so the carrier can be thrown into the washing machine.
- ◆ Many different types of carrier materials are available.

\* **Type I armor** provides multiple-hit protection against .38 Special RN lead bullets and .22 LRHV lead bullets.  
**Type II-A armor** provides multiple-hit protection against .357 Magnum JSP bullets and 9 mm FMJ bullets.  
**Type II armor** provides multiple-hit protection against higher velocity .357 Magnum JSP bullets and 9 mm FMJ bullets.  
**Type III-A armor** provides multiple-hit protection against .44 Magnum lead SWC gas checked bullets and 9 mm FMJ bullets.  
**Type III armor** provides multiple-hit protection against 7.62 mm (308 Winchester) FMJ bullets.  
**Type IV armor** provides at least single-hit protection against 30–06 AP bullets.

- ◆ Purchasers can choose from several different types of ballistic materials (for example, KEVLAR®, Twaron®, SpectraShield®, Spectra®) available from more than 24 armor manufacturers.

## No Armor Protects From All Ballistic Threats

Although some restrictions apply, the advantages of wearing NIJ-listed body armor far outweigh any limitations. Note the following restrictions:

- ◆ Soft body armor is not designed to protect against rifle bullets or edged or pointed weapons.
- ◆ Hard or tactical armor, designed to defeat rifle bullets, incorporates metal or ceramic plates and is generally too heavy, bulky, and conspicuous for routine wear.
- ◆ Armor that incorporates ballistic plates designed to defeat rifle bullets offers protection only from rifle bullets that impact the limited areas covered by the plates. However, the soft armor supporting the plates will provide ballistic protection against handgun ammunition that the soft armor is labeled to defeat.
- ◆ Armor designed to defeat armor-piercing bullets may provide protection only against a single-bullet impact on the ballistic plate. Again, the soft armor supporting the plates will provide ballistic protection against handgun ammunition that the soft armor is labeled to defeat.
- ◆ Armor cannot be expected to provide adequate protection from ballistic threats that strike too close to the edge of an armor, or too close to another impact.

Although manufacturers have recently come out with new fabrics that claim to be more comfortable, there generally is a tradeoff between comfort and protection. The higher the level of protection worn, the more layers of ballistic material and stitching are required, adding to an armor's weight and bulk. Although discomfort may result from an armor's weight, bulk, or stiffness, such discomfort may be due to a bad fit or the strapping on of armor too tightly. If possible, conduct a wear test before purchasing armor.

## Safety Instructions

*Remember: No body armor is bulletproof.* Manufacturers rate armor in accordance with the NIJ standard threat levels. Although NIJ-listed body armor will generally protect against bullets identified by manufacturers' at those specific threat levels, the armor could be penetrated if impacted by a bullet of a higher threat level. Remember, bullets may also penetrate armor when the impact is too close to the edge of the armor or too close to another impact. Follow these guidelines for safe use of your armor:

- ◆ Be sure to read the label on your armor. Familiarize yourself with its level of protection. Labels on NIJ-listed armor must identify designated levels of protection and warn if the armor does not protect against rifle fire or sharp-edged or pointed instruments. Manufacturers may also add additional safety instructions or information to labels.
- ◆ Read and retain for future reference any safety literature accompanying your armor.
- ◆ Follow care and maintenance instructions to ensure your armor's intended performance (see "Care and Maintenance").
- ◆ Seek medical attention if you are shot while wearing your armor—even if the bullet does not penetrate. Although NIJ-listed armor protects against blunt trauma from nonpenetrating bullets, internal injuries requiring medical attention may still result.
- ◆ Replace your armor immediately if it has been impacted by a bullet or damaged in any way. Some manufacturers replace armor free of charge if they are provided with official documentation concerning the incident.
- ◆ Make sure your vest's level of protection corresponds to the types of threats you face on the streets and that your vest protects against your service weapon and ammunition.
- ◆ Remember that proper fit aids in your armor's effectiveness and comfort.
- ◆ Conduct visual inspections of your armor.
- ◆ Become educated about proper cleaning methods (see "Care and Maintenance").
- ◆ Follow the inspection/replacement procedures recommended by the manufacturer and your department.
- ◆ Keep manufacturer addresses and telephone numbers handy. Many manufacturers provide a toll-free 800 number for their customers.
- ◆ **Wear your armor.**

## Care and Maintenance

Studies show that age alone does not cause the ballistic resistance of armor to deteriorate. The kind of care and maintenance the garment receives is a more important factor. Although the label on NIJ-listed body armor provides general guidelines for the care and maintenance of your armor, follow these additional DO's and DON'Ts:\*

- ◆ **DO** follow the manufacturer's instructions for the care and maintenance of your armor.
- ◆ **DO** handwash your armor with a mild detergent in cold or warm water, and rinse it thoroughly to remove all traces of detergent.