It is now 30 years since NIJ introduced the first ballistic-resistant body armor standard. Developed in response to a dramatic rise in fatalities among law enforcement officers during the 1960’s, the standard truly is a success story. Vests tested and worn in accordance with the standard are credited with saving more than 2,500 lives. Now recognition and acceptance of the standard has grown worldwide, making it the performance benchmark for bullet-resistant vests.

History of the Standard

Prior to 1972, military flack jackets were the only type of personal protection worn by police officers. But flack jackets only protected against shrapnel and bullet fragments—they did nothing to lessen the direct impact of a bullet.

In 1972, NIJ initiated development of a lightweight body armor that officers could wear on duty. The result was NIJ’s funding of the production of 5,000 vests made from Kevlar®, a ballistic-resistant fabric. Although the first version of the vest consisted only of square front and back panels with nylon straps, within 6 months this simple design was credited with saving a police officer’s life.

WHAT DOES “BULLET-RESISTANT” MEAN?

Unfortunately, there is no such thing as bulletproof armor. Although body armor can provide protection against a significant number of handguns, officers must keep in mind that the armor was selected on the basis of limited threat protection. Additional protection should be worn for SWAT team, hostage rescue, or Special Operations assignments, when officers may be exposed to a weapon threat greater than the protection provided by regular duty armor.
WHAT IS THE STANDARD?

The NIJ bullet-resistant vest standard validates manufacturers’ product claims through a performance-based evaluation system. The standard establishes minimum performance levels so that—at the very least—the product should perform as outlined in the standard.

The standard was originally intended to give law enforcement and corrections officials an independent way to test and confirm manufacturers’ claims about bullet-resistant body armor. The law enforcement community, however, lacked the budget and expertise to test every body armor product in use. In the early 1970’s, NIJ established an independent testing program to ensure that personal body armor met minimum performance levels. Once that program was set up, in 1972, a manufacturer could not label its product as being in compliance until it was tested and approved through the NIJ program.

The NIJ standards development process is cooperative in nature, involving fiber producers, weavers, and manufacturers; law enforcement and corrections personnel; and NIJ.

Production of body armor for law enforcement officers subsequently took off. Currently, more than 90 body armor manufacturers worldwide participate in NIJ’s voluntary testing program.

The 1972 ballistic body armor standard has been revised four times. Each revision has made the standard more detailed, addressing increasingly sophisticated technologies, particularly in weaponry and ammunition. The current standard, updated in 2000, upgrades the testing methods for measuring ballistic protection, incorporates current threats from ammunition, and tries to ensure consistent laboratory testing of body armor.

Purposes of the Standard

An Educational Process. Education of the law enforcement community about body armor is an ongoing process, and NIJ’s National Law Enforcement and Corrections Technology Center (NLECTC) is a key resource. NLECTC’s user-friendly video, Surviving a Shooting: Your Guide to Personal Body Armor, explains what body armor is, what it can and cannot protect against, how to select it, and how to wear and care for it properly. The video shows how NIJ tests and validates body armor and how the Office of Law Enforcement Standards develops its performance levels. An updated publication, Selection and Application Guide to Police Body Armor, published by NIJ, explains the selection and use of body armor and discusses common concerns, helps law enforcement and corrections personnel determine the level of protection needed by officers, and details NIJ’s recent stab-resistant standard. (See “Stab- and Puncture-Resistant Armor,” page 27.)

A Funding Mechanism. The Bulletproof Vest Partnership Grant Act of 1998 (BVP) allows most law enforcement and corrections agencies to afford body armor. The Bureau of Justice Assistance and NIJ offer an online application and reimbursement system for law enforcement and corrections agencies seeking BVP funds. The BVP Web page provides a direct link to NLECTC’s compliance database as well as to manufacturers and products.

BVP funds can only be used to buy a product that has been tested and approved by NIJ, making it the first law of its kind to tie use of funding under the Act to a product’s compliance with a national standard. Agencies

Vests tested and worn in accordance with the standard are credited with saving more than 2,500 lives. Now recognition and acceptance of the standard has grown worldwide, making it the performance benchmark for bullet-resistant vests.
The Future of Body Armor

Because advances in weapons and ammunition technology constantly pose new threats, the need for research and development of more effective personal body armor is ongoing. Among the next challenges for ballistic-resistant armor is to produce a lighter weight vest that provides maximum comfort as well as optimal protection.

Multihit Capability of Ballistic-Resistant Armor. No current standard exists for a vest that can withstand multiple gun shots within a very small target area. To address this need, NIJ is partnering with the Royal Canadian Mounted Police and Canada’s Defense Research Establishment Valcartier to develop a testing protocol and specifications for providing multihit testing capability. A revision of the current standard to include this capability is expected in 3–5 years.

Life Expectancy of Vests. Armor is typically worn as an undergarment, and if it is not properly cared for, its ballistic capabilities can significantly degrade. Most manufacturers limit their warranties to 5 years. In response to the concerns of public safety advocates about the life cycle of a vest after its 5-year warranty ends, NIJ, through the Technical Support Working Group, is conducting age-regression studies on ballistic panels exposed to simulated aging to measure their protective capabilities.

Ballistic Helmets. In response to law enforcement reports that officers increasingly need to wear ballistic helmets, NIJ is updating its 1981 ballistic helmets standard to take into account more current ammunition threats. This testing program is exploring better ways of measuring the blunt trauma and internal damage to the head from a high-velocity bullet striking a helmet. A draft of the revised standard is expected later this year.

Ballistic Materials. A general ballistic materials standard update will cover other types of protective equipment, including blankets,
bunkers, and shields, as well as protected facilities, such as the courts, that use bullet-resistant glass and other ballistic-resistant materials such as reinforced concrete.

**NIJ’s Leadership Role**

NIJ’s technology portfolios, which now include a full range of criminal justice issues, trace their beginnings to the introduction of the bullet-resistant vest standard. In fact, NIJ’s leadership role in the field has inspired the agency to partner with other countries to establish similar ballistic-resistant armor standards worldwide. In this way the agency contributes daily to the safety of law enforcement and corrections personnel around the globe.

**For More Information**

**Publications**


**Web Sites**

- Bulletproof Vest Grant Partnership Program. Available at http://www.vests.ojp.gov.

**STAB- AND PUNCTURE-RESISTANT ARMOR**

In September 2000, NIJ published the first national minimum performance requirements for stab- and puncture-resistant body armor. This new standard addresses the danger posed to corrections officers from stab wounds from knives, picks, and prison-made shivs (sharp-edged, pointed weapons). The standard is the result of a 3-year collaboration involving the Office of Law Enforcement Standards, the U.S. Secret Service, and the Police Scientific Development Branch of the United Kingdom, where more officers are attacked with knives than with firearms. To date, more than 120 body armor models comply with the new stab standard.

**Although the first version of the vest consisted only of square front and back panels with nylon straps, within 6 months this simple design was credited with saving a police officer’s life.**