Ballistic Protective Equipment Guidance & Recommendations for Fire/Rescue/EMS

Maryland Active Assailant

Interdisciplinary Work Group

Acknowledgments

Thank you to the following organizations who contributed resources and supported the development of this document:

- AAIWG First Responder Guidelines Subcommittee
- Montgomery County
- Harford County
- Prince George's County
- Ocean City

Additional Resources:

- MD AAIWG Equipment Guidance Recommendations, 2022
- National Institute of Justice (NIJ) Standards 0101.06, Body Armor Selection, Care, and Maintenance

A. Purpose

This document details the considerations for Fire and Emergency Medical Services (EMS) first responders when procuring ballistic personal protective equipment (PPE), or body armor, and placing that equipment in service for staff involved in active assailant response or other high threat or volatile response. The information contained herein was compiled through various studies and documents authored by subject matter experts and aims to serve as guidance and recommendations, not as prescriptive requirements for first response entities. This document can be used as a guide to develop a robust and comprehensive program that includes familiarization training, opportunities for practicing donning and doffing equipment, and proper storage and maintenance.

B. Background

As discussed in the Active Assailant Interdisciplinary Work Group's Equipment Guidance & Recommendations document published in October 2022 ballistic protection should be provided for EMS/Fire/Rescue personnel who are expected to operate in the active assailant environment. While guidance on this topic may vary, it is a best practice for all personnel operating in areas of direct or indirect threat (Hot and Warm Zones) to wear ballistic protection.

Keeping with the national preparedness model of plan-organize-equip-train-exercise, organizations considering the purchase of ballistic PPE should consider all aspects of preparedness, including the need to develop and implement appropriate policies and procedures, and the need to provide training and exercise opportunities to familiarize staff with the appropriate use of body armor. Purchasing body armor should be one aspect of a comprehensive ballistic PPE program.

It is important to note that each local emergency medical response agency and/or organization establishes its own policies regarding the use of body armor. While some jurisdictions or companies may require wearing a soft protective vest as part of their daily uniform, others may not have a policy regarding use of ballistic protective gear.

C. Considerations for Purchase of Ballistic Protective Equipment

When creating a ballistic protective equipment program, and prior to purchase of any equipment, it is important to consider the intended use policy, as some considerations may influence the type, quantity, or style of ballistic protective equipment an organization opts to purchase.

While this document provides recommendations, the actual supplies procured and carried by local first responders should be consistent with the operational procedures, and response model selected by those programs and the appropriate training, certification, and licensure levels of the providers. The AAIWG does not require any minimum level of ballistic protection, nor does it endorse any specific brand or type of body armor.

Prior to Purchase

The National Institute of Justice (NIJ) Body Armor Selection, Care, and Maintenance standards urges agencies to research vests prior to making a purchasing decision to learn about the equipment's features and confirm the level of protection offered. Specifically, the NIJ recommends considering sizing and fit, safe storage, and the need for replacement of expired or damaged gear when making determinations on who should be issued gear and how it will be distributed.

The funding source used to purchase body armor could also impact the type and availability of ballistic protective equipment, as specific funding streams may include requirements surrounding selection, use, and maintenance.

Equipment Specifications – *per MD AAIWG Equipment Guidance Recommendations, 2022*

Ballistic-Resistance Performance Requirement Compliance

Models that meet the NIJ ballistic-resistance performance requirements can be found on the Compliant Products List (CPL) at www.policearmor.org. Only armor listed in the CPL is NIJ-compliant. Armor not listed in the CPL does not qualify for Bureau of Justice Assistance funding. The NIJ mark visual identifier pictured (right) is an indicator of NIJ-compliant body armor.

Ballistic Threat Levels from NIJ Standard 0101.06

Level	Threat	Velocity	Typical Use
IIA	9 mm FMJ 124 gr .40 FMJ S&W 180 gr	373 m/s 352 m/s	Soft, concealable body armor
II	9 mm FMJ 124 gr .357 Magnum JSP 158 gr	398 m/s 436 m/s	Soft, concealable body armor
IIIA	.357 SIG FMJ 125 gr .44 Magnum SJHP 240 gr	448 m/s 436 m/s	External soft body armor
III	7.62 mm FMJ 147 gr	847 m/s	Hard armor plate inserts
IV	.30 caliber armor-piercing 166 gr	878 m/s	Hard armor plate inserts

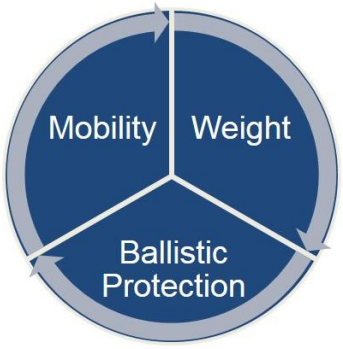
NIJ recommends issuing Fire/EMS first responders operating in the Warm Zone a minimum of Level IIIA soft ballistic vests. Some jurisdictions have started requiring Fire/EMS first responders to wear soft body armor as part of their standard uniform. In these cases, plates can be carried separately and inserted into the vest if needed. A simple plate carrier vest with Level III ballistic plates can be quickly donned over either concealable or external soft armor vests for an active assailant response or other high-threat or volatile response.

The soft ballistic vest should provide Level IIIA coverage of the sides as well as the front and back. Level III hard armor plates for the front and back vital areas may be warranted if the active shooter is known to be using a rifle. Plates can be carried separately and quickly inserted into the front and rear plate pockets. However, as discussed previously, this decision must be made recognizing the physical performance costs in decreased mobility and endurance.

Jurisdictions should consider using lightweight, high-density polyethylene hard armor plates to reduce the weight burden on the wearer. Polyethylene also has the added benefit of being more durable and resisting cracking from rough handling and abuse unlike other materials such as ceramic. In addition, Level IIIA helmets with eye protection for Warm Zone operations are recommended.

Purchasing Considerations

Selecting body armor requires balancing the competing requirements for mobility, weight, and ballistic protection. Purchasing decision-makers should select body armor for personnel during active assailant response or other high-threat or volatile response operations that balances the potential threat against retaining endurance, agility, and mobility to move tactically and provide care to multiple wounded patients under stressful conditions.



Other considerations include whether gear will be worn full-time or as needed. Additionally, when purchasing consider whether gear will be issued to a specific individual, available to the station/jurisdiction, or assigned to a specific transport unit. Ballistic protective gear is most effective when fitted to the individual, however, budgetary and storage space limitations may make purchasing individualized body armor for Fire/EMS personnel unrealistic. If body armor will be purchased to be available at the station or on a specific unit, a variety of sizes will need to be purchased.

Style Options Overview

All protective equipment should be covered by a manufacturer's warranty and meet National Institute of Justice standards (NIJ-0106.01). Equipment not under warranty should be taken out of service. Ballistic protective vests should have a clearly identifiable department/company EMS label or patch, such as EMS in large font and the jurisdiction/company in smaller font.

Specific ballistic protection may consist of a ballistic helmet (Level IIIA) and a ballistic plate carrier vest (Level IIIA) with front and back ballistic plates (Level III) equipped with radio pocket or other approved attachments. Modular attachments to the ballistic vest may increase mobility or allow the provider to carry fewer supplies in their Initial Warm Zone Medical Care (IWZMC) Kit. Attachments may be assigned to a unit or to an individual staff member. Optional attachments may be approved for use, including:

- Radio pouch
- Flashlight with angled head for treating patients in low-light environments
- Triage tape/tags
- Ballistic eye protection with hard case
- Trauma shears with lanyard
- Compact tactical litter (attached to rear of vest)
- Individual/buddy first aid kit (IFAK)
- Tourniquets

Recommended Criteria for Proper Fit

Ballistic protection works best when it is properly utilized and well-fitted. Equipment should be selected to accommodate a majority of body shapes and sizes as well as considerations surrounding equipment weight, thickness, fastener type, and other available features. Other factors to consider include any services the supplier offers to support a particular model, such as fitting, adjustment, training, repairs, and warranties.

NIJ recommends that armor be sized to the individual to ensure proper fit, which is especially important for those with larger or petite bodies. Proper fit helps reduce fatigue when operating in body armor, as well as maintains proper coverage of the vital areas of protection. Some personnel may not properly fit the ballistic protection purchased and could have specialized equipment procured if needed.

D. Considerations for Ballistic Protective Equipment Program Development

Equipping a jurisdiction or organization with body armor should be just one aspect of a comprehensive ballistic PPE program. Other elements of a holistic Ballistic PPE include the development and implementation of appropriate policies and procedures, as well as training and exercise opportunities to familiarize staff with the appropriate use of body armor. This section details considerations for each aspect of program development.

Use of Ballistic Protective Equipment Policy Considerations

As part of the development of a comprehensive ballistic PPE program, jurisdictions/organizations should develop a consistent policy for use of ballistic protective equipment that best meets their unique needs. Body armor should not be purchased and placed in service without the simultaneous implementation of a use policy. The sections below outline several options for use policies that could be implemented.

a. Full-Time Use

Some EMS organizations require full-time use of issued ballistic protective equipment (e.g., vest), meaning equipment could be worn anytime the employee is mobile or performing first responder-related work. In these circumstances, equipment may not be required to be worn while in the station or while not actively on a call. Equipment may be removed with the permission of the shift supervisor for events of long duration or as required for use of rescue gear or other specific situations.

Ballistic protective gear is designed to absorb force in addition to penetration. Use of ballistic protective equipment full-time may offer some additional protection against traffic collisions or other non-active

assailant events. However, use of ballistic protective gear adds weight and bulk and results in decreased physical mobility and increased fatigue.

Level II protection is typically sufficient for full-time use; however, Level III or IIIA ballistic protection is recommended for any personnel operating in a Warm Zone. This could be worn in place of, or on top of, ballistic protective gear worn full-time (e.g., Level II under-uniform protection). Level III ballistic protective gear is designed to be worn over an EMS uniform but not fire gear (over or under).

b. As-Needed Use and Use in Active Assailant Incidents

If a jurisdiction opts for an as-needed use policy rather than full-time use, there are a variety of ways to structure an appropriate policy. The sections below outline several options and considerations for formulating an as-needed use policy.

Use in Active Assailant Incident Response for Warm Zone Care

For active assailant events, law enforcement should mitigate any active threat prior to Fire and EMS entry into a hostile environment. In the interest of providing optimal and timely lifesaving care, Fire and EMS should recognize potential entry into a Warm Zone with assumed risk to complete lifesaving missions. Ballistic protective equipment is intended as a measure to protect Fire/EMS first responders while reducing fatalities for those with otherwise survivable injuries.

The Maryland Active Assailant Interdisciplinary Work Group 2022 Equipment Recommendation Guidelines states, "while guidance on this topic may vary, it is best practice for all personnel operating in areas of direct or indirect threat (Hot and Warm Zones) to wear ballistic protection". As a best practice, Maryland Fire/EMS first responders facing the threat of an active shooter situation should wear ballistic protection, whether the Zone is Cold, Warm, or Hot.

Montgomery County, MD

Policy Excerpt:
FCGO 18-05: Ballistic PPE (8/27/2018)

BPE can only be used in-response to scenes of violence or potential violence – traditionally events where resources stage until the scene is secured by law enforcement.

The use (donning/wearing) on an event/response of the BPE must be documented.

As-Needed Use

In addition to use during active assailant response, ballistic protective equipment may be designated for use by Fire/EMS first responders during other high-threat or volatile response. If existing policy does not require full-time use of ballistic protective equipment while on duty, then body armor is intended to be used only when indicated. Indications for use should be documented clearly in a use policy. Examples of incidents where wearing body armor would be indicated include but are not limited to:

- The dispatched call type and/or initial scene size-up indicates a high possibility of a threat to responder safety (e.g., assault, domestic violence, shooting, stabbing, etc.)
- Crew assignment to provide warm zone care (e.g., rescue task force, protected corridor, etc.)
- Suspicious package evaluation
- Likelihood/potential for a ballistic or violent event
- When ordered by command or at direction of shift lead/senior crew member

- Department-designated special events where safety against crowd, impact, or projectile objects is desired

Gear may be donned upon dispatch to a call or at a designated staging area while law enforcement secures the scene. During standby or at special events, if ballistic protective equipment is not worn, it must be in a ready state, easy to don if the situation requires.

Cleaning, Maintaining and Storing Ballistic Protection

Another critical component of developing a comprehensive ballistic protective equipment program involves ensuring that procedures for maintaining and storing equipment are documented and followed. Policies should identify who will maintain responsibility for the routine inspection, maintenance, decontamination, and storage of the ballistic protective equipment. Body armor is considered part of personal protective equipment; maintaining equipment allows for optimal use and safety function.

Equipment should be cleaned and maintained before and after each use, in accordance with manufacturer-specific instructions. Some wear and tear on ballistic protective equipment is expected due to use. Heat, moisture, and ultraviolet light will cause body armor to degrade at a quicker rate. Frequent and thorough inspections and proper use and care help maintain the integrity of the product. Each model of body armor is required to have supplier-recommended care instructions. Additionally, inspection requirements may be tied to funding sources (e.g., homeland security grants) used to purchase body armor.

A log with inspection/expiration of ballistic protective gear should be maintained. All gear should be inspected regularly, and any damage (including cuts, tears, fraying thread, or exposed/damaged/missing components) should be immediately reported. Soft and hard armor within the carrier does not need daily inspection, except for where an incident with blunt or penetrating impact to the unit has occurred.

Ballistic protective equipment should be stored flat or supported against a wall in a clean and dry location. Body armor should never be stored or put away when wet or damp.

Training/Exercise Considerations

All staff who may participate in active assailant or other high threat or volatile response should receive training and guidance related to the capabilities of assigned body armor to best assess how to protect themselves when facing a ballistic threat. Training should be provided for issued ballistic protective equipment that includes proper donning and doffing, sizing, and fitting for plate carrier vests as well as helmets. Training should be documented prior to personnel utilizing the equipment in the field.

Familiarization and Use Best Practices

Ballistic protection works best when responders are familiar with appropriate use and understand how body armor feels and impacts their body.

Body armor is for safety use only and is not to be worn during duty workouts. However, specific shift-based or on-duty scenario training is encouraged, such as regularly scheduled time to inspect and don/doff equipment as well as opportunities to utilize body armor and apply mass casualty incident response practices during periodic exercises.

Ocean City, MD

Training Spotlight

Ocean City conducts monthly Rescue Task Force joint scenarios, including equipment familiarization and use.

Best practices for ballistic protective equipment include periodic inspections, which include donning/doffing all body armor and any attachments intended for use in the field. This provides an opportunity for staff to:

- Maintain familiarity with the equipment
- Maintain awareness of physical limitations (movement and respiration) when wearing body armor
- Note any issues specific to fit or equipment degradation
- Reduce necessity for just-in-time training on ballistic protective equipment fit and use in the event of a response requiring use of ballistic protection

Legal Considerations

Prior to purchasing ballistic protective equipment and establishing a comprehensive program of policies, training, etc., organizations should consult with their own legal counsel. Topics for discussion with legal counsel regarding ballistic protective equipment might include: state and federal labor laws, occupational safety rules, procurement requirements, and other legal concerns.

Nothing in this document should be understood to be a legal mandate or policy directive or an opinion of the State of Maryland, 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.