

# The Best Body Armor for Law Enforcement

## *Comparing Body Armor Types: Steel vs. Ceramic vs. Polyethylene Plates*

Whether you serve on a police squad, sheriff's office, or SWAT team in a large city where violence and active threats arise daily or you're in a smaller community that rarely sees such action, you've likely considered the question: *What's the best body armor for my needs?*

We conducted extensive, in-depth conversations with a number of law enforcement officers who are constantly investigating how to best protect themselves in gun related active threat scenarios. There are many distinct differences within the body armor industry: Exactly how do armor options compare to each other? What armor materials make the most sense for a specific situation? What materials are strongest? Which ones are lightest? The list goes on and on.

ShotStop® Ballistics focuses mostly on polyethylene and alloy/composite armor and completely understands that we're not the right fit for every armor need. To determine which solution is best for you, we believe breaking down the best body armor for law enforcement options will help in your decision. Before we identify each specific armor type and weigh the pros and cons, it's important to note the factors we consider essential when evaluating ballistic armor solutions.

### **WE EVALUATE ALL BODY ARMOR BASED UPON:**

- **Stopping Power:** What National Institute of Justice (NIJ) and other third party ratings do the body armor plates qualify for?
- **Weight:** How heavy, restrictive, and cumbersome is the armor?
- **Comfort:** Are the plates comfortable to wear or do they create bulk and restrict movement?
- **Cost:** What is the overall cost of the plates especially when keeping all key variables like weight and thickness in mind?
- **Warranty:** What is the warranty (number of years) and what requirements exist to ensure the warranty can be enacted? We often consider the warranty the "product's life."



Considering the above factors, ask yourself these three questions to decide what's the best body armor for you or your department:

### **1. HOW OFTEN DO YOU NEED/WANT TO HAVE RIFLE PROTECTION?**

Different positions or roles will offer different answers to this question. As a SWAT team officer or K9 Handler, for example, you may be wearing body armor frequently or possibly even every day. In this case, weight and comfort are critical. You have soft body armor that you wear every day and need hard plates when in an active shooter situation. Wearing armor every day over the course of a career can ultimately add thousands of pounds of wear and tear over the days, weeks, months, and years, impacting your back, knees, hips, ankles, neck, and joints over a long period. Plus, the lighter the weight, the greater your stamina and maneuverability during intense active threat scenarios.

On the other side of the equation, for a police officer or private security individual who doesn't face active shooter scenarios and life-threatening situations frequently, comfort and weight might take a backseat to stopping power, budget, and product lifetime value.

## 2. WHAT SPECIFIC THREATS DO YOU NEED/WANT TO BE PROTECTED FROM?

If you're a police officer, sheriff, or commissioner looking for the best body armor solutions for your department, it's important to consider the increasing likelihood of facing "green tip" (and M855 A1) rounds, which only **special-threat** NIJ Level III+ armor can stop.

## 3. HOW OFTEN DO YOU NEED/WANT TO REPLACE OR UPDATE YOUR BODY ARMOR SOLUTION?

Warranties should be considered "product life expectations" for body armor. In our research, the average warranty for body armor is around five years. The warranty (or how long the product is designed to keep you safe) is of utmost importance. We strongly suggest looking closely at the warranty, as it may not only address the effectiveness of the body armor plate, but it can also affect your overall investment by 20, 30 or even 50 percent when there is a longer warranty.

### FOR EXAMPLE:

If the "product life" (warranty) of a polyethylene plate is twice that of a ceramic plate (say, ten years instead of five), ultimately, you'll be paying just as much for the product that expires in five years since you'll have to buy a new plate that lasts another five years, even though it costs half up front.

- 5-Year Warranty: Single Ceramic Plate Cost is \$250 5 year "Product Lifetime" = \$50/year

- 10-Year Warranty: Single Poly Plate Cost is \$500 10 year "Product Lifetime" = \$50/year

## Now for the different types of armor (US produced):

Standard NIJ Level III+ SAPI Cut	STEEL Body Armor	CERAMIC Body Armor	POLYETHYLENE Body Armor
Weight	Heavy	Lighter than Steel	Lightest
Thickness	0.25" to 0.5"	0.8" to 1.5"	.5 to 1.5
Price	\$65-150	\$200-500+	\$250-800+

## There are 3 Different Types of Body Armor in the Market Today with Multiple Variations

### STEEL BODY ARMOR

Steel body armor is cost effective, extremely heavy, and very uncomfortable for frequent wear. If you don't wear armor often, this option can be a good, budget-conscious fit. The warranty is five years on average, however it could last up to 20 years with proper care. Some manufacturers report their steel armor products have eliminated spalling, deflection, and fragmentation issues, but at some bullet impact angles, this risk remains.

### CERAMIC BODY ARMOR

Ceramic body armor reduces weight when compared with steel; however, spalling, ricocheting and crack risks during daily wear and tear remain a concern. Since ceramic body armor is layered in ceramic tile, it often cannot sustain multiple shots. "Micro fractures" (cracks) to ceramic, which spread sporadically on the strike face, can compromise ceramic armor. Newer (higher priced) ceramic plate designs utilize a matrix design that separates the ceramic face into individual blocks to help reduce the 'glass crack' effect. Reviews have been mixed on the



effectiveness of the matrix face design. As with any newer technology, it may be prudent to do your own agency range testing. For these reasons, wearers of ceramic body armor plates have to be extra careful they don't drop them or place something too heavy on them. Due to the fragile nature of ceramic, most manufacturers require proof of midterm x-ray for warranty compliance.

## **ULTRA HIGH MOLECULAR WEIGHT POLYETHYLENE (UHMWPE) OR POLYETHYLENE BODY ARMOR**

UHMWPE is the latest advancement in body armor. Polyethylene (poly) technology offers the best protection at the lowest weight, thinnest, and greatest warranty ("product life") over other materials. The drawback of poly plates is that the cost per plate is typically higher than steel and can often be more expensive than ceramic alternatives; however, this price differentiation is decreasing as the development of poly and other alloy composites improves. It's important to also consider how much the warranty factors into the overall lifetime cost of ownership of the plates. *(See example in the Warranty section above.)*

We hope the information here gives you the tools necessary to choose the best body armor solution for your specific situation. At ShotStop, we believe that knowledge, along with innovative technology, will help to prevent the unimaginable happening and we offer that extra confidence that you'll make it home safe.



## **We really want to hear from you!**

- Did this information help you select the right body armor solution?
- If you applied this information, what points did you find most helpful?
- What other questions do you have related to body armor?

**Let us know. You can email us at [sales@venture-tactical.com](mailto:sales@venture-tactical.com)**