

Lightweight Armor-Piercing Multi-Hit Insert (LAPMI)

An Introduction

With the increasing array and severity of ballistic threats on the 21st-century battlefield, many countries are turning to advanced body armor upgrade plates to provide greater ballistic protection to the vital organs than can be provided by a stand-alone vest. Simula Safety Systems, Inc. offers a wide range of upgrade plates that provide enhanced ballistic protection. These upgrade plates vary in weight, performance, and cost, depending on the specific needs of the customer. Minimal weight has become increasingly important, as personnel are required to carry more essential equipment into the battlefield. Simula Safety Systems designed and developed the Small Arms Protective Insert (SAPI) to meet the demanding requirements of the United States armed services Interceptor program and is continuing to move forward, increasing performance levels, with the LAPMI



Advantages

- Lightweight
- Optimized for fit and comfort
- Variety of sizes is available
- Durable
- Interchangeable from front to back

Features

The LAPMI has many unique features, including the following:

- *Multi-curved geometry that is designed to optimize the fit and comfort to the soldier*
- *Interchangeable from front to back*
- *Available in five different sizes, covering the range of the 5th percentile female to the 95th percentile male*
- *Provides three-shot multi-hit protection against four different rounds, while minimizing blunt trauma*
- *Optional durability cover that allows the plate to be dropped on the strike face without ballistic degradation to the plate*
- *Provides ballistic protection after exposure to:*
 - ▶ *Hot or cold temperatures*
 - ▶ *Diesel fuel, water, and oil*
 - ▶ *Severe vibration*
 - ▶ *Direct flame exposure*

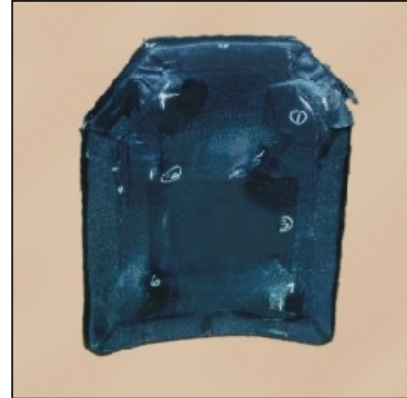


Advanced upgrade armor plates, providing greater ballistic protection

Performance

The LAPMI plate performance has been verified through physical, environmental, and ballistic first-article testing. The LAPMI plate ballistic performance is verified through lot conformance testing during production. Specific product performance is as follows:

- *Multi-hit (3 to 6 shots) ballistic protection (with acceptable back-face deformation) against the*
 - ▶ 7.62- x 51-mm M-80 Ball round
 - ▶ 7.62- x 54R-mm Type LPS Dragunov round
 - ▶ 5.56- x 45 mm M855 armor-piercing round
 - ▶ 7.62-mm APM2
- *Full containment of spall, debris, and residual penetrator ejecta after ballistic impact*
- *Weatherometer resistance*
- *Temperature and temperature shock resistance (-50 °C to 70 °C) (-122 °F to 158 °F)*
- *Fluid resistance when exposed to diesel fuel, oil, and salt water*
- *High altitude (12,300 m) (40,354 ft) pressure resistance*
- *Fungus growth resistance*



Weight

Finished LAPMI plate weights are as follows:

- *Extra-small - 1.27 kg (2.8 lb)*
- *Small - 1.59 kg (3.5 lb)*
- *Medium - 1.82 kg (4.0 lb)*
- *Large - 2.09 kg (4.6 lb)*
- *Extra-large - 2.40 kg (5.3 lb)*

Proven Capabilities

Simula Safety Systems has been manufacturing lightweight inserts for the U.S. Marine Corps and the U.S. Army since mid-1999. These armor plates are made in high volume, with delivery of the 100,000th unit anticipated in 2002. Since the original contract, Simula has continually upgraded the protection levels of the plates to provide increased performance and lower weight.

For more information contact:

Robert Monks • Armor Product Manager
Simula Safety Systems, Inc. • 7822 South 46th Street • Phoenix, Arizona 85044 USA
Voice: 602.643.7233 (SAFE) • e-mail: monksr@sssi.simula.com • www.simula.com

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