



Standard Specification for Indoor Ballistic Test Ranges for Small Arms and Fragmentation Testing of Ballistic-resistant Items¹

This standard is issued under the fixed designation E3062; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

^{ε1} NOTE—Editorially corrected 3.2.1 in December 2016.

1. Scope

1.1 This standard specifies indoor ballistic test range requirements for small arms and fragmentation testing of the following ballistic-resistant items: soft body armor, hard armor plates, body armor accessories, shields, and helmets. The specification includes requirements for range geometry (for example, dimensions, alignment, spacing), range conditions (for example, temperature, humidity, lighting), test equipment (for example, receiver, mounting, test barrels, backing assembly mounting), instrumentation (for example, light screens, high speed cameras, radar), and measurement procedures (for example, projectile velocity, yaw).

1.2 The purpose of this standard is to specify critical test range parameters in order to achieve consistency/repeatability among test ranges.

1.3 This specification is not applicable for “contact” shots taken on the test item (that is, the muzzle rests on the strike face of the test item).

1.4 *Units*—The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not to be considered standard.

1.5 *This standard does not address environmental concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate practices and determine the applicability of regulatory requirements prior to use.*

1.6 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards*:²

E3005 Terminology for Body Armor

2.2 *SAAMI Standard*:³

SAAMI Glossary of Industry Terms

3. Terminology

3.1 For terms not defined in this specification, the following definitions of Terminology E3005 apply: angle of incidence, backing assembly, backing material, backing fixture, body armor, hard armor, plates, soft body armor, stop, strike face, test item, and yaw.

3.2 *Definitions of Terms Specific to This Standard*:

3.2.1 *test item mounting system, n*—an assembly consisting of a test stand and the test item fixture, backing assembly, witness panel, or any combination thereof. The system allows rotation of the test item around one or more axes and allows translation of the test item.

3.2.2 *test stand, n*—a rigid or massive component of the test item mounting system that supports other components.

3.2.3 *universal receiver, n*—a heavy duty mechanical device into which chambered barrels are secured for testing ammunition (SAAMI).

4. Significance and Use

4.1 U.S. Department of Defense and U.S. Department of Justice standards for assessing the performance of ballistic-resistant personal protective equipment require the use of properly configured indoor test ranges. This specification is one of several standards that will help to ensure that testing results between test ranges are comparable.

¹ This specification is under the jurisdiction of ASTM Committee E54 on Homeland Security Applications and is the direct responsibility of Subcommittee E54.04 on Personal Protective Equipment (PPE).

Current edition approved July 15, 2016. Published July 2016. DOI: 10.1520/E3062-16E01.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from Sporting Arms and Ammunition Manufacturers' Institute (SAAMI), 11 Mile Hill Rd, Newtown, CT 06470, www.saami.org.