



Designation: E3107 – 17

Standard Test Method for Resistance to Penetration and Backface Deformation for Ballistic-resistant Torso Body Armor and Shoot Packs¹

This standard is issued under the fixed designation E3107; 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.

1. Scope

1.1 This test method addresses resistance to ballistic penetration and to backface deformation (BFD) for ballistic-resistant torso body armor and shoot packs.

1.2 This test method is intended for testing of soft body armor, hard armor plates, in conjunction with armor, and shoot packs mounted on a clay block as the backing assembly.

NOTE 1—This test method does not apply to ballistic helmets, inserts, trauma packs, trauma plates, or accessories.

1.3 The test method does not specify performance criteria or usage of the test results.

1.4 This test method does not address conditioning of test items.

1.5 It is anticipated that this test method will be referenced by certifiers, purchasers, or other users in order to meet their specific needs.

1.5.1 Purchasers and other users will specify the ballistic test threats to be used. Within this test method, the reference defining the ballistic test threats is called the “test threats document.”

1.5.2 In this test method, “other standards and specifications” and “unless specified elsewhere” refer to documents (for example, military standards, purchase specifications) that require the use of this test method. Purchasers and other users are responsible for the “other standards and specifications” and for specifying any requirements that supersede those of this test method.

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

1.7 *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 appro-*

priate safety and health practices and determine the applicability of regulatory limitations prior to use.

1.8 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

E3004 Specification for Preparation and Verification of Clay Blocks Used in Ballistic-Resistance Testing of Torso Body Armor

E3005 Terminology for Body Armor

E3062 Specification for Indoor Ballistic Test Ranges for Small Arms and Fragmentation Testing of Ballistic-resistant Items

E3068 Test Method for Contact Measurement of Backface Deformation in Clay Backing During Body Armor Testing

E3086 Practice for Creating Appliques for Use in Testing of Nonplanar Soft Body Armor Designed for Females

2.2 *ISO Standard:*³

ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories

2.3 *NIJ Standard:*⁴

NIJ Standard-0101.06 Ballistic Resistance of Body Armor

3. Terminology

3.1 For terms not defined in this test method, the following definitions of Terminology **E3005** apply: accessories, angle of incidence, backface deformation, backing assembly, backing material, backing fixture, body armor, complete penetration, fair hit, hard armor, obliquity, partial penetration, plates, shoot

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 International Organization for Standardization (ISO), ISO Central Secretariat, BIBC II, Chemin de Blandonnet 8, CP 401, 1214 Vernier, Geneva, Switzerland, <http://www.iso.org>.

⁴ Available from National Institute of Justice (NIJ), 810 7th St., NW, Washington, DC 20531, <http://nij.gov>.

¹ This test method 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).

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