



Standard Test Method for Blast Resistance of Trash Receptacles¹

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1. Scope

1.1 This test method provides a procedure for characterizing the performance of a trash receptacle when an explosive is detonated within the receptacle.

1.1.1 The procedure determines the extent and location of fragments produced during the explosion, and whether breaches are created in the exterior surfaces of the trash receptacle.

1.1.2 **Appendix X1** provides guidance for determining the magnitude of blast waves (that is, external overpressures) developed.

1.1.3 Effects due to a fireball resulting from the detonation of an explosive within a trash receptacle are beyond the scope of the test method.

1.2 This test method is intended to be performed in open-air test arenas.

1.3 The values stated in SI units are to be regarded as the standard. The values stated in parentheses are for information only.

1.4 *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

D638 Test Method for Tensile Properties of Plastics

D747 Test Method for Apparent Bending Modulus of Plastics by Means of a Cantilever Beam

D790 Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials

¹ This test method is under the jurisdiction of ASTM Committee E54 on Homeland Security Applications and is the direct responsibility of Subcommittee E54.08 on Operational Equipment.

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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.

D882 Test Method for Tensile Properties of Thin Plastic Sheet

D883 Terminology Relating to Plastics

E2740 Specification for Trash Receptacles Subjected to Blast Resistance Testing

2.2 Government Standards:

DOD 4145.26 M Department of Defense: DOD Contractors' Safety Manual for Ammunition and Explosives³

DOD 6055.9 STD Department of Defense: DOD Ammunition and Explosives Safety Standards⁴

Voluntary Product Standard PS 1 Structural Plywood⁵

3. Terminology

3.1 For terminology generally associated with explosives, refer to the glossaries given in DOD 4145.26 M and DOD 6055.9 STD.

3.1.1 Some of the definitions in this standard (3.2) are either adopted as exact copies, or are adapted, from DOD 4145.26 M. Where adapted, changes to the DOD definitions were made only to clarify the meaning or to incorporate related terms that also are defined in this terminology section.

3.1.2 The DOD source is identified parenthetically at the right margin following the definition.

3.2 Definitions:

3.2.1 *alias, n*—a false low-frequency component that appears when reconstructing analog data that are sampled at an insufficient rate.

3.2.2 *detonation, n*—(1) a violent chemical reaction within a chemical compound or mechanical mixture resulting in heat and pressure; (2) a reaction that proceeds through the reacted material toward the unreacted material at a supersonic velocity.

3.2.2.1 *Discussion*—The result of the chemical reaction is exertion of extremely high pressure on the surrounding medium forming a propagating shock wave that is originally of supersonic velocity.

DOD 4145.26 M

³ Available from the Defense Technical Information Center, 8725 John J. Kingman Road, Suite 0944, Ft. Belvoir, VA 22060 6128.

⁴ Available from the worldwide web at: <http://www.doesb.pentagon.mil/DoD6055.9-STD%205%20Oct%202004.pdf>.

⁵ Available from the worldwide web at <http://ts.nist.gov/Standards/Conformity/upload/PS%201%20final%20complete%20w%20cover.pdf>.