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Standard Terminology for Homeland Security Applications¹

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^{ε1} NOTE—Editorially transferred terms in January 2014.

^{ε2} NOTE—Editorially transferred terms in January 2017.

^{ε3} NOTE—Editorially transferred terms in January 2019.

1. Scope

1.1 This terminology provides definitions and abbreviations of terms used in ASTM International standards pertaining to homeland security applications.

1.2 *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

D638 Test Method for Tensile Properties of Plastics

D747 Test Method for Apparent Bending Modulus of Plastics by Means of a Cantilever Beam (Withdrawn 2019)³

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

D882 Test Method for Tensile Properties of Thin Plastic Sheeting

D883 Terminology Relating to Plastics

D1129 Terminology Relating to Water

D1424 Test Method for Tearing Strength of Fabrics by Falling-Pendulum (Elmendorf-Type) Apparatus

D3384 Method of Test for Powder Resistance of Floor Polish Films

D5219 Terminology Relating to Body Dimensions for Apparel Sizing

E1301 Guide for Proficiency Testing by Interlaboratory Comparisons (Withdrawn 2012)³

E1765 Practice for Applying Analytical Hierarchy Process (AHP) to Multiattribute Decision Analysis of Investments Related to Projects, Products, and Processes

E2411 Specification for Chemical Warfare Vapor Detector (CWVD) (Withdrawn 2014)³

E2413 Guide for Hospital Preparedness and Response (Withdrawn 2018)³

E2458 Practices for Bulk Sample Collection and Swab Sample Collection of Visible Powders Suspected of Being Biological Agents and Toxins from Nonporous Surfaces

E2520 Practice for Measuring and Scoring Performance of Trace Explosive Chemical Detectors

E2521 Terminology for Evaluating Response Robot Capabilities

E2541 Guide for Stakeholder-Focused, Consensus-Based Disaster Restoration Process for Contaminated Assets (Withdrawn 2019)³

E2542 Specification for Portable Water Heaters Used at Personnel Decontamination Stations

E2543 Specification for Portable Air Heaters Used at Personnel Decontamination Stations and Shelters

E2601 Practice for Radiological Emergency Response

E2639 Test Method for Blast Resistance of Trash Receptacles

E2640 Guide for Resource Management in Emergency Management and Homeland Security (Withdrawn 2019)³

E2668 Guide for Emergency Operations Center (EOC) Development (Withdrawn 2019)³

E2677 Test Method for Determining Limits of Detection in Explosive Trace Detectors

E2731 Specification for Materials to Mitigate the Spread of Radioactive Contamination after a Radiological Dispersion Event (Withdrawn 2018)³

E2732 Practice for Responder Family Support Service

E2739 Specification for Personnel Decontamination System to be Used During a Chemical Event (Withdrawn 2019)³

E2740 Specification for Trash Receptacles Subjected to Blast Resistance Testing

¹ This terminology is under the jurisdiction of ASTM Committee E54 on Homeland Security Applications and is the direct responsibility of Subcommittee E54.92 on Terminology.

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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.

³ The last approved version of this historical standard is referenced on www.astm.org.

- E2770 Guide for Operational Guidelines for Initial Response to Suspected Biological Agents and Toxins
- E2800 Practice for Characterization of *Bacillus* Spore Suspensions for Reference Materials
- E2831/E2831M Guide for Deployment of Blast Resistant Trash Receptacles in Crowded Places
- E2842 Guide for Credentialing for Access to an Incident or Event Site
- E2851/E2851M Specification for Ruggedness Requirements for HAZMAT Instrumentation
- E2852 Guide for Acquisition, Maintenance, Storage, and Use of Hazardous Material Detection Instrumentation
- E2866 Test Method for Determination of Diisopropyl Methylphosphonate, Ethyl Methylphosphonic Acid, Isopropyl Methylphosphonic Acid, Methylphosphonic Acid and Pinacolyl Methylphosphonic Acid in Soil by Pressurized Fluid Extraction and Analyzed by Liquid Chromatography/Tandem Ma
- E2885 Specification for Handheld Point Chemical Vapor Detectors (HPCVD) for Homeland Security Applications
- E2915 Guide for Emergency Operations Center (EOC) Management
- E2933 Specification for Stationary Point Chemical Vapor Detectors (SPCVD) for Homeland Security Applications
- E2951 Guide for Community Emergency Preparedness for Persons with Disabilities
- E2952 Specification for Air-Purifying Respiratory Protective Smoke Escape Devices (RPED)
- E3002 Practice for Assessing the Comparative Efficacy of Products Used for the Decontamination of Chemical Warfare Agents (CWAs) on Skin
- E3003 Practice for Body Armor Wearer Measurement and Fitting of Armor
- 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
- E3078 Practice for Conditioning of Hard Armor Test Items
- E3086 Practice for Creating Appliques for Use in Testing of Nonplanar Soft Body Armor Designed for Females
- E3095 Guide for Surrogate Materials for Field Evaluation of Nucleic Acid-Based On-Site Biological Assessment Technologies
- E3107 Test Method for Resistance to Penetration and Backface Deformation for Ballistic-resistant Torso Body Armor and Shoot Packs
- E3108 Practice for Conformity Assessment of Protective Gloves Worn by Law Enforcement and Corrections Officers
- E3109 Specification for Protective Gloves Worn by Law Enforcement and Corrections Officers
- E3110 Test Method for Collection of Ballistic Limit Data for Ballistic-resistant Torso Body Armor and Shoot Packs
- E3111/E3111M Test Method for Ballistic Resistant Head Protection
- E3112 Test Method for Ballistic-resistant Products and Shoot Packs
- E3113 Specification for Ballistic-resistant Vehicle Door Panels Used by Public Safety Agencies
- E3131 Specification for Nucleic Acid-Based Systems for Bacterial Pathogen Screening of Suspicious Visible Powders
- E3141/E3141M Test Method for Ballistic Resistant Shields for Law Enforcement
- F1494 Terminology Relating to Protective Clothing
- F1731 Practice for Body Measurements and Sizing of Fire and Rescue Services Uniforms and Other Thermal Hazard Protective Clothing
- F2878 Test Method for Protective Clothing Material Resistance to Hypodermic Needle Puncture
- F2992/F2992M Test Method for Measuring Cut Resistance of Materials Used in Protective Clothing with Tomodynamometer (TDM-100) Test Equipment
- 2.2 *Government Standards:*
- 18 U.S.C. 175 Prohibitions with Respect to Biological Weapons⁴
- 18 U.S.C. 178 Definitions⁴
- CPL 02-02-071 Technical Enforcement and Assistance Guidelines for Hazardous Waste Site and RCRA Corrective Action Clean-up Operations⁵
- DOD 4145.26 M Department of Defense: DOD Contractors' Safety Manual for Ammunition and Explosives⁶
- FEMA US&R-2-FG Urban Search and Rescue Response System Field Operations Guide⁸
- FIPS 201 Personal Identity Verification (PIV) of Federal Employees and Contractors⁷
- NIMS 2008 National Incident Management System⁸
- NIMS Guide 0002 National Credentialing Definition and Criteria⁸
- 2.3 *IAEA Standards:*⁹
- IAEA 2006 International Atomic Energy Agency Annual Report 2006
- 2.4 *NCRP Standards:*¹⁰
- NCRP Report 165 Responding to a Radiological or Nuclear Terrorism Incident: A Guide for Decision Makers

⁴ Available from U.S. Government Printing Office, Superintendent of Documents, 732 N. Capitol St., NW, Washington, DC 20401-0001, <http://www.access.gpo.gov>.

⁵ Available from Occupational Safety and Health Administration (OSHA), 200 Constitution Ave., NW, Washington, DC 20210, <http://www.osha.gov>.

⁶ Available from the Defense Technical Information Center, 8725 John J. Kingman Road, Suite 0944, Ft. Belvoir, VA 23060-6128.

⁸ Available from Federal Emergency Management Agency (FEMA), 500 C St., SW, Washington, DC 20472, <http://www.fema.gov>.

⁷ Available from National Institute of Standards and Technology (NIST), 100 Bureau Dr., Stop 1070, Gaithersburg, MD 20899-1070, <http://www.nist.gov>.

⁹ Available from International Atomic Energy Agency, Vienna International Centre, PO Box 100, 1400 Vienna, Austria, <https://www.iaea.org>.

¹⁰ Available from National Council on Radiation Protection and Measurements, 7910 Woodmont Ave., Suite 400, Bethesda, MD 20814-3095, <http://www.ncrponline.org>.

2.5 NFPA Standards:¹¹

NFPA 472 Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents

NFPA 1561 Standard on Emergency Services Incident Management System and Command Safety

NFPA 1600 Standard on Disaster/Emergency Management and Business Continuity Programs

2.6 NIJ Standards:¹²

NIJ 0101.06 Ballistic Resistance of Body Armor

2.7 ISO/IEC Standards:¹³

ISO/IEC 17000 Conformity assessment – Vocabulary and general principles

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

ISO Guide 34 General Requirements for the Competence of Reference Material Producers

2.8 AOAC Standards:¹⁴

SMPR 2010.003 Standard Method Performance Requirements for Polymerase Chain Reaction (PCR) Methods for Detection of *Bacillus anthracis* in Aerosol Collection Filters and/or Liquids

accessory, *n*—item that may be provided with an RPED that does not affect its ability to meet the requirements of this specification. **E2952 – 17**

accreditation, *n*—third-party attestation related to a conformity assessment body conveying formal demonstration of its competence to carry out specific conformity assessment tasks. **E3108 – 18** from **ISO/IEC 17000**

accuracy, *n*—closeness of agreement between a test result and the accepted reference values. **E3131 – 18**
E3095 – 17 from **E1301**

advertised protective area, *n*—an area of a glove stated by the supplier as having specific protection. **E3109 – 18**

AEGL-1, *n*—airborne concentration (expressed as ppm or mg/m³) of a substance above which it is predicted that the general population, including susceptible individuals, could experience transient health effects. **E2885 – 13**
E2933 – 13

AEGL-2, *n*—airborne concentration (expressed as ppm or mg/m³) of a substance above which it is predicted that the general population, including susceptible individuals, could experience irreversible or other serious, long-lasting adverse health effects or an impaired ability to escape. **E2885 – 13**
E2933 – 13

AEGL-3, *n*—airborne concentration (expressed as ppm or mg/m³) of a substance above which it is predicted that the general population, including susceptible individuals, could experience life-threatening health effects or death. **E2885 – 13**
E2933 – 13

affected stakeholder, *n*—any individual, group, company, organization, government, tribe, or other entity which may be directly affected by the outcome of the specific restoration planning process. **E2541 – 10**

affiliation, *adj*—the association of a non-credentialed individual or group of individuals under the supervision of an AHJ-compliant credentialed responder for the purpose of gaining access to accomplish a specific incident or event mission. **E2842 – 14**

agreements, *n*—advance written (preferred) and/or oral arrangements between and among entities that provide a mechanism to share resources and obtain assistance. **E2640 – 10** from **NFPA 1600/NIMS 2008**

air-purifying respiratory protective smoke escape device, **RPED**, *n*—air-purifying respirator used to protect a person while escaping from a fire by removing certain contaminants of fire-generated products of combustion from the inhaled air. **E2952 – 17**

ALARA (as low as reasonably achievable), *n*—a principle of radiation protection philosophy that requires that exposures to ionizing radiation should be kept as low as reasonably achievable, economic and social factors being taken into

3. Significance and Use

3.1 In this terminology, definitions used in other ASTM International standards are indicated by following the definition with the designation of the standard.

4. Terminology

4.1 Definitions:

30-minute Acute Exposure Guideline Levels for Selected Airborne Chemicals, (30-min AEGL value), *n*—represent exposure limits for the general public and are applicable to emergency exposure periods for 30 minutes. **E2885 – 13**
E2933 – 13

abrasion, *n*—the wearing away of any part of a material by rubbing against another surface. **E3109 – 18** from **D3384**

abstain, *v*—robot manufacturer or designated operator declaring not to perform a particular test or not to have the test result disseminated. **E2521 – 16**

accessory, *n*—a body armor component that is detachable or removable from the body armor and is intended to provide extended area of coverage protection against threats that may include ballistic threats, stabbing, fragmentation, blunt impact, or a combination of threats. **E3005 – 18**

DISCUSSION—Accessories are typically attachments to tactical body armor providing protection to areas not covered by the vest, such as the shoulders, upper arms, neck, sides, pelvis, and groin. See *tactical body armor*. See *vest*.

¹¹ Available from National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, MA 02169-7471, <http://www.nfpa.org>.

¹² Available from National Institute of Justice (NIJ), 810 7th St., NW, Washington, DC 20531, <http://nij.gov>.

¹³ 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>.

¹⁴ Available from AOAC International, 2275 Research Blvd., Suite 300, Rockville, MD 20850-3250, <http://www.aoac.org>.

account; the ALARA principle is satisfied when the expenditure of further resources would be unwarranted by the reduction in exposure that would be achieved.

E2601 – 15 from NCRP Report No. 165

alarm, *n*—sound, light, vibration, and/or data communication signal to the operator(s) indicating that the handheld point chemical vapor detector (HPCVD) has detected the presence of a chemical vapor of interest at or above the alarm threshold value.

E2885 – 13

E2933 – 13

alarm, *n*—visual or audible response, or both, from an ETD that signifies the detection of an explosive.

E2520 – 15

alarm rule, *n*—user-selectable explosive trace detector (ETD) response requirements that, if met during an analysis, result in a detection alarm for a particular compound.

E2601 – 14

DISCUSSION—An alarm rule is a logistical pattern in the detection response matrix for an analysis. The simplest alarm rule would require only a single positive detection response, whereas a more selective rule (useful for minimizing alpha risk) may require two positive responses in any of three channels and perhaps a negative response in another channel.

alarm threshold, *n*—see detection threshold.

E2677 – 14

alarm threshold value, *n*—vapor concentration corresponding to an AEGL value (AEGL-1, AEGL-2, or AEGL-3) that activates an HPCVD alarm.

E2885 – 13

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

E2639 – 12 (2018)

all-hazards, *adj*—hazard is an inherent property of an event, product, or object that represents a threat to human life, property, or the environment. In this context, all-hazards refers to any incident or event that could pose such a threat.

E2413 – 04 (2009)

DISCUSSION—These may include special equipment and processes that are used less frequently on a daily basis and require routine training to be most effective during a major incident.

alpha, α , risk, *n*—probability of obtaining a positive detection outcome, or alarm, when analyzing a process blank in a properly-operating ETD.

E2677 – 14

ambient background, *n*—particular mixture of environmental substances (dust, dirt, etc.) that is collected during swab sampling.

E2520 – 15

DISCUSSION—The chemical background collected on swabs is expected to be highly variable, compositionally and temporally, comprised of a nearly unlimited number of possible chemical species and formulations. Background challenge materials (BCMs) should mimic important types of chemical background found in ETD deployment areas.

ammunition, *n*—one or more loaded cartridges consisting of case, primer, propellant, and one or more projectiles.

E3005 – 18

analyte, *n*—the particular chemical compound under consideration.

E2677 – 14

DISCUSSION—Pure analyte is used to make reference solutions by quantitative dissolution into a known amount of solvent. Quantitative depositions of reference solutions are subsequently used to prepare reference swabs containing known amounts of analyte.

analytical column, *n*—the particles of the solid stationary phase fill the whole inside volume of a tube (column) that the mobile phase passes through using the pressure generated by the liquid chromatography system.

E2866 – 12 (2016)

angle of incidence, *n*—the angle between the test threat line of aim and the line normal to a reference plane based on the front surface of the backing assembly or witness panel. See also *obliquity*.

E3110 – 18

DISCUSSION—Some standards have used the terms *angle of incidence* and *obliquity* as synonyms, but in this standard, they are defined differently.

apex, *n*—the greatest protrusion of the breast as seen from the side.

E3003 – 15 from Terminology **D5219**

applicant, *n*—an individual applying for a credential.

E2842 – 14

applique, *n*—a three-dimensional item molded from backing material that is shaped and sized for testing or conditioning a nonplanar test item.

E3086 – 17

E3005 – 18

DISCUSSION—Some appliques are designed for the purpose of filling the entire space behind a nonplanar test item; other appliques are designed to assess features of a nonplanar test item.

applique, *n*—backing material intended to fill the space behind a nonplanar test item during testing or conditioning procedures.

E3068 – 17

applique, *n*—for hard armor testing, backing material intended to fill the space behind the test item during testing or conditioning procedures.

E3078 – 17

applique pattern, *n*—a replica of the final product (that is, applique) used for preparing the applique mold cavity.

E3086 – 17

approved, *adj*—acceptable to the authority having jurisdiction.

E2952 – 17

areal density, *n*—a measure of the mass of the armor panel per unit area, usually expressed in kilograms per square meter (kg/m^2) or pound-mass per square foot (lbm/ft^2).

E3005 – 18

armhole, *n*—in garment construction, the area of a garment through which the arm passes or into which a sleeve is fitted.

E3003 – 15 from Practice **F1731 – 96 (2013)**

armor carrier, *n*—See *carrier*.

E3005 – 18