



Designation: E2771 – 11<sup>ε2</sup>

## Standard Terminology for Homeland Security Applications<sup>1</sup>

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<sup>ε1</sup> NOTE—Editorially transferred terms in January 2014.

<sup>ε2</sup> NOTE—Editorially transferred terms in January 2017.

### 1. Scope

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

### 2. Referenced Documents

#### 2.1 ASTM Standards:<sup>2</sup>

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

D882 Test Method for Tensile Properties of Thin Plastic Sheeting

D883 Terminology Relating to Plastics

D1129 Terminology Relating to Water

D5219 Terminology Relating to Body Dimensions for Apparel Sizing

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E2411 Specification for Chemical Warfare Vapor Detector (CWVD) (Withdrawn 2014)<sup>3</sup>

E2413 Guide for Hospital Preparedness and Response

E2458 Practices for Bulk Sample Collection and Swab Sample Collection of Visible Powders Suspected of Being Biothreat Agents 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

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

E2668 Guide for Emergency Operations Center (EOC) Development

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

E2732 Practice for Responder Family Support Service

E2739 Specification for Personnel Decontamination System to be Used During a Chemical Event

E2740 Specification for Trash Receptacles Subjected to Blast Resistance Testing

E2770 Guide for Operational Guidelines for Initial Response to a Suspected Biothreat Agent

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

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<sup>2</sup> 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.

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

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

**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

**F1731** Practice for Body Measurements and Sizing of Fire and Rescue Services Uniforms and Other Thermal Hazard Protective Clothing

## 2.2 Government Standards:

**18 U.S.C. 175** Prohibitions with Respect to Biological Weapons<sup>4</sup>

**CPL 02-02-071** Technical Enforcement and Assistance Guidelines for Hazardous Waste Site and RCRA Corrective Action Clean-up Operations<sup>5</sup>

**DOD 4145.26 M** Department of Defense: DOD Contractors' Safety Manual for Ammunition and Explosives<sup>6</sup>

**FEMA US&R-2-FG** Urban Search and Rescue Response System Field Operations Guide<sup>8</sup>

**FIPS 201** Personal Identity Verification (PIV) of Federal Employees and Contractors<sup>7</sup>

**NIMS 2008** National Incident Management System<sup>8</sup>

**NIMS Guide 0002** National Credentialing Definition and Criteria<sup>8</sup>

## 2.3 IAEA Standards:<sup>9</sup>

**IAEA 2006** International Atomic Energy Agency Annual Report 2006

## 2.4 NCRP Standards:<sup>10</sup>

**NCRP Report 165** Responding to a Radiological or Nuclear Terrorism Incident: A Guide for Decision Makers

## 2.5 NFPA Standards:<sup>11</sup>

**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:<sup>12</sup>

**NIJ 0101.06** Ballistic Resistance of Body Armor

## 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**

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

**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**

**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*.

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

**add-on, *n***—in sensors and detectors for homeland security applications, any additional parts that provide tailoring of a personal detector's functionality for specific applications. **E2411**

**AEGL-1, *n***—airborne concentration (expressed as ppm or mg/m<sup>3</sup>) of a substance above which it is predicted that the general population, including susceptible individuals, could experience transient health effects. **E2885**

**AEGL-2, *n***—airborne concentration (expressed as ppm or mg/m<sup>3</sup>) of a substance above which it is predicted that the

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

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

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

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

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

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

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

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

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

general population, including susceptible individuals, could experience irreversible or other serious, long-lasting adverse health effects or an impaired ability to escape. **E2885**

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

**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**

**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**

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

**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 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** 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**

**alarm**, *n*—visual or audible response, or both, from an ETD that signifies the detection of an explosive. **E2520**

**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**

**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**

**alarm threshold value**, *n*—vapor concentration corresponding to an AEGL value (AEGL-1, AEGL-2, or AEGL-3) that activates an HPCVD alarm. **E2885**

**alias**, *n*—a false low-frequency component that appears when reconstructing analog data that are sampled at an insufficient rate. **E2639**

**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**

**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**

**ambient background**, *n*—particular mixture of environmental substances (dust, dirt, etc.) that is collected during swab sampling. **E2520**

**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**

**analyte**, *n*—the particular chemical compound under consideration. **E2677**

**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**

**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. (Adapted from NIJ 0101.06). See also *obliquity*. **E3005**

**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** from Terminology **D5219**

**applicant**, *n*—an individual applying for a credential. **E2842**

**approved**, *adj*—acceptable to the authority having jurisdiction. **E2952**

**areal density**, *n*—a measure of the mass of the armor panel per unit area, usually expressed in kilograms per square meter (kg/m<sup>2</sup>) or pound-mass per square foot (lbm/ft<sup>2</sup>). **E3005**

**armhole**, *n*—in garment construction, the area of a garment through which the arm passes or into which a sleeve is fitted. **E3003** from Practice **F1731**