Designation: E2731 – 09

Standard Specification for Materials to Mitigate the Spread of Radioactive Contamination after a Radiological Dispersion Event[1]

This standard is issued under the fixed designation E2731; 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 specification is intended to provide a basis for identification of materials used to immobilize radioactive contamination, minimize exposure, and facilitate subsequent decontamination.[2]

1.2 This standard provides a set of specifications describing a stabilizer (coating or coating system) to be used to prevent the spread of radioactive contamination. Some of these specifications may prove difficult to meet. A product that meets some, but not all, of the performance specifications herein may have value, and this specification may be used as a guide by which to evaluate such products.

1.3 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 considered standard.

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:*[3]

D412 Test Methods for Vulcanized Rubber and Thermoplastic Elastomers—Tension

D1004 Test Method for Tear Resistance (Graves Tear) of Plastic Film and Sheeting

D4060 Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser

D4541 Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers

E108 Test Methods for Fire Tests of Roof Coverings

3. Terminology

3.1 *Definitions:*

3.1.1 *stabilizer, n*—film-forming product used to physically or chemically hold or bind radioactive particulates. In the case of a muti-part material (for example, compounded) or multi-step process, the term stabilizing system may be used interchangeably with stabilizer.

3.1.1.1 *Discussion*—Stabilization does not mean affecting the radioactivity or the decay process of the radioactive contamination.

3.1.2 *stabilizing agent, n*—active ingredient or compound within the stabilizer that immobilizes radioactive particulates.

3.1.3 *stabilizing film, n*—material that results from the application of the stabilizer.

3.1.4 *stabilizing system, n*—one or more products or procedures, or both, that, when used together, form a stabilizing film to hold or bind particulates that may be radioactive.

3.1.5 *immobilize, v*—to fix in place; to prevent movement or reaerosolization of particulates due to mechanical or environmental forces such as by tracking, precipitation, or wind.

4. Significance and Use

4.1 This specification establishes performance specifications for a stabilizer that is intended to immobilize dispersible radioactive contamination deposited on buildings and equipment as might result from a radiological dispersal device (RDD) event.

4.2 The intended use of the stabilizer addressed in this specification is primarily in an urban environment; however, it may be used in other environments such as suburban or rural areas.

4.3 The stabilizer is intended to be removable during subsequent decontamination and recovery operations. It is intended to reduce: (*1*) migration of the contamination into or

[1] This test method is under the jurisdiction of ASTM Committee E54 on Homeland Security Applications and is the direct responsibility of Subcommittee E54.03 on Decontamination.

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[2] A list of the radionuclides of interest for the purposes of this specification can be obtained from the U.S. Department of Health and Human Services (HHS) at http://www.remm.nlm.gov/rdd.htm#isotopes. Additional information is available from the Department of Homeland Security (DHS), Protective Action Guides for Radiological Dispersal Device (RDD) and Improvised Nuclear Device (IND) Incidents (PDF - 481 KB) (DHS/FEMA draft document, published in Federal Register January 3, 2006, Z-RIN 1660-ZA02).

[3] 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.