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American National Standard
For Air-Purifying Respiratory
Protective Smoke Escape Devices

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**American National Standard for
Air-Purifying Respiratory Protective Smoke Escape Devices**

Secretariat
International Safety Equipment Association

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American National Standards Institute, Inc.

American National Standard

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Foreword (This Foreword is not part of American National Standard ANSI/ISEA 110-2009)

The Respiratory Protective Escape Devices (RPED) Group of the International Safety Equipment Association has developed this standard to provide design guidance in the form of a detailed set of performance requirements and testing procedures for manufacturers of hooded air-purifying respiratory protective smoke escape devices (ARPED or RPED). Such devices are intended to be used by persons escaping from fire-generated products of combustion. RPEDs provide head, eye, and respiratory protection from particulate matter, eye irritants, carbon monoxide, and other toxic gases commonly produced by fire.

This revision updates methodologies and procedures to provide criteria that will allow testing laboratories to generate reproducible results, while at the same time removing restrictive language that could impede the testing process. In consultation with testing laboratories, the Consumer Products Safety Commission and the NIOSH National Personal Protective Technologies Laboratory, the revision includes language to ensure that user needs are being met with the addition of criteria for ocular leakage, changes in sizing parameters based on current anthropomorphic studies and to give consideration to current and emerging technologies in RPED product development.

Suggestions for the improvement of this standard are welcome. They should be sent to the ISEA, 1901 N. Moore Street, Suite 808, Arlington, VA 22209 or by email to isea@safetysafetyequipment.org.

This standard was processed and approved using consensus procedures prescribed by the American National Standards Institute. The following organizations were contacted prior to the approval of this standard. Inclusion in this list does not necessarily imply that the organization concurred with the submittal of the proposed standard to ANSI.

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American National Standard for Air-Purifying Respiratory Protective Smoke Escape Devices

1. Scope

This standard specifies the minimum requirements for the design, performance, testing, and certification of air-purifying respiratory protective smoke escape devices for the immediate emergency evacuation without entry/re-entry of adult civilians.

The requirements of this standard specify an air-purifying respiratory protective escape device with a laboratory-tested 15-minute service life intended to provide head, eye and respiratory protection from particulate matter, irritants and toxic gases and vapors commonly produced by fire.

This standard shall not apply to the requirements for provision, installation, or use of air-purifying respiratory protective smoke escape devices.

This standard shall not apply to respiratory protective smoke escape devices that are designed for use in circumstances where an oxygen deficiency (oxygen less than 19.5 percent by volume) exists or might exist.

2. Purpose

The purpose of this standard shall be to provide minimum requirements for respiratory protective escape devices that provide limited protection for 15 minutes for adult civilian escape from the byproducts of fire, including particulate matter, carbon monoxide, other toxic gases, and the effects of radiant heat.

Controlled laboratory tests that are used to determine compliance with the performance requirements of this standard shall not be deemed as establishing performance levels for all situations to which individuals can be exposed.

This standard is not intended to be used as a detailed manufacturing or purchase specification but shall be permitted to be referenced as a

minimum requirement in purchase specifications.

3. Definitions

Air-Purifying Respiratory Protective Smoke Escape Device (RPED). An 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.

Accessory. An item that may be provided with an RPED that does not affect its ability to meet the requirements of this standard.

Approved. Acceptable to the authority having jurisdiction.

Authority Having Jurisdiction. The organization, office, or individual responsible for approving equipment, an installation, or a procedure.

Basic Plane. A term for the plane through the centers of the external ear openings and the lower edges of the eye sockets.

Certification/Certified. A system whereby a certification organization determines that a manufacturer has demonstrated the ability to produce a product that complies with the requirements of this standard, authorizes the manufacturer to use a label on listed products that comply with the requirements of this standard, and establishes a follow-up program conducted by the certification organization as a check on the methods the manufacturer uses to determine continued compliance of labeled and listed products with the requirements of this standard.

Certification Organization. An independent third party organization that determines product compliance with the requirements of this standard with a labeling/listing/follow-up program.

Civilians. Persons who are members of the general public and who are not fire service