

NFPA® 1984

Standard on Respirators for Wildland Fire-Fighting Operations

2016 Edition



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NFPA® 1984

Standard on

Respirators for Wildland Fire-Fighting Operations

2016 Edition

This edition of NFPA 1984, *Standard on Respirators for Wildland Fire-Fighting Operations*, was prepared by the Technical Committee on Respiratory Protection Equipment and released by the Correlating Committee on Fire and Emergency Services Protective Clothing and Equipment.

It was issued by the Standards Council on February 13, 2015, with an effective date of March 5, 2015, and supersedes all previous editions.

Origin and Development of NFPA 1984

In October 2006, the NFPA Standards Council received a request that NFPA develop a new respiratory standard for fire fighters in wildland fire operations. In November of 2006, the NFPA Standards Council voted to publish a notice of receipt of the request soliciting opinions on the need to address the subject matter, information on resources available on the topic, those interested in participating if approved, and other organizations actively involved in the subject.

At its October 2007 meeting, the Council voted to proceed with the request to develop a new document on respiratory standards for wildland fire fighting. The Council asked the Technical Correlating Committee (TCC) on Fire and Emergency Services Protective Clothing and Equipment to clarify whether this document would be assigned to an existing technical committee (TC) under the project or if a new TC was being contemplated. In addition, the Council directed the TCC to submit a new or revised TC scope, and that a start-up roster for any new TC be submitted.

At its March 2009 meeting, the TCC on Fire and Emergency Services Protective Clothing and Equipment reported to the Council that the TCC had assigned the development of the new document to the TC on Respiratory Protection Equipment. The Council directed the TCC to review the membership on the TC and make any recommendations necessary to ensure that the TC had the appropriate wildland fire-fighting expertise to develop the document. The Council subsequently determined that the TC on Respiratory Protection Equipment had the necessary expertise to develop the document, and instructed the TC to proceed with the development of a draft, ballot the TC and TCC, and make a request to the Council to enter an appropriate revision cycle.

The draft of NFPA 1984, *Standard on Respirators for Wildland Fire-Fighting Operations*, was published in the Report on Proposals (ROP) and released for public review and comment on December 8, 2009. Following the public review period, which closed on March 5, 2010, the Report on Comments (ROC) was processed in the Spring of 2010. The TCC on Fire and Emergency Services Protective Clothing and Equipment processed the proposed NFPA 1984 at its meeting in June 2010 and approved the document to go forward.

The 2016 edition of NFPA 1984 incorporates TIA-11-1, issued by the Standards Council on March 1, 2011. This TIA addresses NIOSH certification of wildland fire fighter respirators in accordance with 42 CFR 84. This edition also features two new tests for breathing resistance and air-purifying respirators (APR) air purification component capacity.



Documents

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Correlating Committee on Fire and Emergency Services Protective Clothing and Equipment

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Eric J. Beck, *Secretary*
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Rep. Compressed Gas Association

Jason L. Allen, Intertek Testing Services, NY [RT]
Joseph Arrington, San Antonio Fire Department, TX [U]
Roger L. Barker, North Carolina State University, NC [SE]
James E. Brinkley, International Association of Fire Fighters, DC [L]
Rep. International Association of Fire Fighters
Steven D. Corrado, UL LLC, NC [RT]
Cristine Z. Fargo, International Safety Equipment Association, VA [M]
Robert A. Freese, Globe Manufacturing Company, NH [M]
Patricia A. Gleason, Safety Equipment Institute (SEI), VA [RT]
Beverly F. Guldedge, Tyco/Scott Safety, NC [M]
David V. Haston, U.S. Department of Agriculture, ID [E]
Kimberly M. Henry, PBI Performance Products, Inc. NC [M]
Thomas M. Hosea, U.S. Department of the Navy, FL [RT]
James S. Johnson, Lawrence Livermore National Laboratory, CA [RT]

Jeff Legendre, Northborough Fire Department, MA [U]
Karen E. Lehtonen, Lion Apparel, Inc., OH [M]
David G. Matthews, Fire & Industrial (P.P.E) Ltd., United Kingdom [SE]
Rep. International Standards Organization
Michael F. McKenna, Michael McKenna & Associates, LLC, CA [SE]
Anthony D. Putorti, Jr., National Institute of Standards & Technology, MD [RT]
Jack E. Reall, Columbus (OH) Division of Fire, OH [L]
Rep. Columbus Firefighters Union
Jeffrey O. Stull, International Personnel Protection, Inc., TX [M]
Tim W. Tomlinson, Addison Fire Department, TX [C]
Robert D. Tutterow, Jr., Fire Industry Equipment Research Organization (FIERO), NC [U]
Rep. NFPA Fire Service Section
William A. Van Lent, Veridian Ltd., Inc., IA [M]
Rep. Fire & Emergency Manufacturers & Services Association
Bruce H. Varner, BHVarner & Associates, AZ [M]
Rep. International Fire Service Training Association
Harry P. Winer, HIP Consulting LLC, MA [SE]

Alternates

Louis Carpentier, Innotech Inc., Canada [M]
(Alt. to W.A. Van Lent)
Brandi L. Chestang, U.S. Department of the Navy, FL [RT]
(Alt. to T.M. Hosea)
Patricia A. Freeman, Globe Manufacturing Company, LLC, NH [M]
(Alt. to R. A. Freese)
Tim J. Gardner, 3M Company, MN [M]
(Alt. to C. Z. Fargo)
Pamela A. Kavalesky, Intertek Testing Services, NY [RT]
(Alt. to J. L. Allen)
Gary L. Neilson, Sparks, NV [U]
(Alt. to R. D. Tutterow, Jr.)
Amanda H. Newsom, UL LLC, NC [RT]
(Alt. to S. D. Corrado)
Anthony Petrilli, U.S. Department of Agriculture, MT [E]
(Alt. to D. V. Haston)

Stephen R. Sanders, Safety Equipment Institute (SEI), VA [RT]
(Alt. to P. A. Gleason)
Russell Shephard, Australasian Fire & Emergency Service Authorities Council, Australia [SE]
(Alt. to D. G. Matthews)
David P. Stoddard, Michael McKenna & Associates, LLC, CA [SE]
(Alt. to M. F. McKenna)
Grace G. Stull, International Personnel Protection, Inc., TX [M]
(Alt. to J. O. Stull)
Jonathan V. Szalajda, National Institute for Occupational Safety & Health, PA [E]
(Alt. to W. E. Haskell, III)
Donald B. Thompson, North Carolina State University, NC [SE]
(Alt. to R. L. Barker)



Nonvoting

Robert J. Athanas, FDNY/SAFE-IR, Incorporated, NY [U]
Rep. TC on Electronic Safety Equipment
Christina M. Baxter, U.S. Department of Defense, VA [E]
Rep. TC on Hazardous Materials PC
Tricia L. Hock, Safety Equipment Institute (SEI), VA [RT]
Rep. TC on Emergency Medical Services PC&E
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Jeremy Metz, West Metro Fire Rescue, CO [U]
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Brian Montgomery, U.S. Department of Justice, DC [E]
Rep. TC on Nonstructural Fire Fighting SCBA
Daniel N. Rossos, Oregon Department of Public Safety Standards & Training, OR [E]
Rep. TC on Respiratory Protection Equipment
Rick L. Swan, IAFF Local 2881/CDF Fire Fighters, CA [L]
Rep. TC on Wildland Fire Fighting PC&E

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Committee Scope: This Committee shall have primary responsibility for documents on the design, performance, testing, and certification of protective clothing and protective equipment manufactured for fire and emergency services organizations and personnel, to protect against exposures encountered during emergency incident operations. This Committee shall also have the primary responsibility for documents on the selection, care, and maintenance of such protective clothing and protective equipment by fire and emergency services organizations and personnel.

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Oregon Department of Public Safety Standards & Training, OR [E]

Steven H. Weinstein, *Secretary*

Honeywell Safety Products, CA [M]
Rep. International Safety Equipment Association

Jason L. Allen, Intertek Testing Services, NY [RT]
Christopher Anaya, California State Fire Fighters Association, CA [C]
Rep. California State Firefighters Association
David T. Bernzweig, Columbus (OH) Division of Fire, OH [L]
Rep. Columbus Firefighters Union
A. Paul Bull, Charles Town, WV [SE]
Rodney V. Colbert, Fairfax County Fire & Rescue Department, MD [U]
Brian H. Cox, Clovis Fire Department, CA [U]
William Dickson, Bauer Compressors, Inc., VA [M]
Joseph W. Domitrovich, U.S. Department of Agriculture, MT [RT]
Robin R. Gainey, Jacksonville Fire Rescue Department, FL [L]
Rep. International Association of Fire Fighters
Deborah L. Gaudet, City of Virginia Beach Fire Department, VA [U]
Ed Golla, TRI/Air Testing, TX [RT]
Beverly F. Gulledge, Tyco/Scott Safety, NC [M]
Rep. Tyco Fire Suppression & Building Products
A. Ira Harkness, U.S. Department of the Navy, FL [RT]
John Jarboe, Grace Industries, Inc., MD [M]
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Clint Kaller, Los Angeles County Fire Department, CA [U]
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John F. Kuhn, Mine Safety Appliances Company, PA [M]
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Ian Maxwell, Interspiro AB, Sweden [M]
Stephen T. Miles, National Institute for Occupational Safety & Health, WV [E]
Rep. National Institute for Occupational Safety & Health
William T. Mundy, Fire Department City of New York, NY [U]
Ruby Ochoa, Trace Analytics LLC, TX [RT]
Samuel C. Pitts, U.S. Marine Corps Systems Command, VA [E]
Timothy M. Radtke, U.S. Department of the Interior, CO [E]
Stephen R. Sanders, Safety Equipment Institute (SEI), VA [RT]
Robert Sell, Draeger Safety, Inc., PA [M]
Jonathan V. Szalajda, National Institute for Occupational Safety & Health, PA [E]
Rep. National Institute for Occupational Safety & Health
Mark Trudgeon, Luxfer Gas Cylinders, CA [M]
Kenton D. Warner, KDW Consulting, LLC, FL [SE]

Alternates

Hans O. Almqvist, Createc Consulting LLC, CT [SE]
(Alt. to K. D. Warner)
Marshall J. Black, U.S. Department of the Navy, FL [RT]
(Alt. to A. I. Harkness)
Ryan Brubaker, Clovis Fire Department, CA [U]
(Alt. to B. H. Cox)
Kevin Campbell, Fairfax County Fire & Rescue Department, VA [U]
(Alt. to R. V. Colbert)
John P. Campman, Grace Industries, Inc., PA [M]
(Alt. to J. Jarboe)
J. Michael Carlson, TRI Air Testing, TX [RT]
(Alt. to E. Golla)
Craig E. Colton, 3M Company, MN [M]
(Alt. to S. H. Weinstein)
David V. Haston, U.S. Department of Agriculture, ID [RT]
(Alt. to J. W. Domitrovich)
David Hodson, DAH Consultant, United Kingdom [M]
(Alt. to R. Sell)
George Hoppe, Jr., Bauer Compressors, Inc., VA [M]
(Alt. to W. Dickson)
Beth C. Lancaster, U.S. Department of Defense, VA [E]
(Alt. to S. C. Pitts)
Clint Mayhue, Avon Protection Systems, MD [M]
(Alt. to C. Martin)

Timothy R. Merinar, National Institute for Occupational Safety & Health, WV [E]
(Alt. to S. T. Miles)
Dean D. Moran, Safety Equipment Institute (SEI), VA [RT]
(Alt. to S. R. Sanders)
Chad A. Morey, Intertek Testing Services, NY [RT]
(Alt. to J. L. Allen)
Kenneth A. Pravetz, City of Virginia Beach Fire Department, VA [U]
(Alt. to D. L. Gaudet)
Thomas Richardson, Fire Department City of New York, NY [U]
(Alt. to W. T. Mundy)
Steve Saksa, Columbus (OH) Division of Fire, OH [L]
(Alt. to D. T. Bernzweig)
Dick Smith, Trace Analytics LLC, TX [RT]
(Alt. to R. Ochoa)
Jay L. Tarley, National Institute for Occupational Safety & Health, WV [E]
(Alt. to J. V. Szalajda)
Marco Tekelenburg, Mine Safety Appliance Company, PA [M]
(Alt. to J. F. Kuhn)

Nonvoting

Matthew I. Chibbaro, U.S. Department of Labor, DC [E]

David G. Trebisacci, NFPA Staff Liaison

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Committee Scope: This Committee shall have primary responsibility for documents on respiratory equipment, including breathing air, for fire and emergency services personnel during incidents involving hazardous or oxygen deficient atmospheres. This Committee shall also have primary responsibility for documents on the selection, care, and maintenance of respiratory protection equipment and systems by fire and emergency services organizations and personnel.



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Information on referenced publications can be found in Chapter 2 and Annex B.

Chapter 1 Administration**1.1 Scope.**

1.1.1 This standard shall specify the minimum design, performance, testing, and certification requirements for respirators to provide protection from inhalation hazards for personnel conducting wildland fire-fighting operations.

1.1.2 This standard shall specify only respirator requirements for use in non-IDLH (immediately dangerous to life and health) wildland environments during wildland fire-fighting operations.

1.1.3 This standard shall specify requirements for any accessories or enhancements built into, attached to, or sold with the certified wildland fire-fighting respirator by the respirator manufacturer for later attachment and which shall be tested with the wildland fire-fighting respirator and with those accessories and enhancements installed or attached, as specified in 4.3.11 and 4.3.11.1.

1.1.4 This standard shall not specify requirements for any wildland fire-fighting protective clothing and protective equipment other than that identified in 1.1.1 through 1.1.3.

1.1.5 This standard shall not specify requirements for respirators for any other fire-fighting operations other than those identified in 1.1.1 and 1.1.2, any technical rescue operation, any hazardous materials emergencies, or any CBRN incident operations.

1.1.6 Certification of respirators for wildland fire-fighting operations to the requirements of this standard shall not preclude certification to additional appropriate standards where the respirator meets all the applicable requirements of each standard.

1.1.7 This standard shall not be construed as addressing all of the safety concerns associated with the use of compliant respirators. It shall be the responsibility of the persons and organizations that use compliant respirators to establish safety and health practices and to determine the applicability of regulatory limitations prior to use.

1.1.8 This standard shall not be construed as addressing all of the safety concerns, if any, associated with the use of this stan-

dard by testing facilities. It shall be the responsibility of the persons and organizations that use this standard to conduct testing of respirators to establish safety and health practices and to determine the applicability of regulatory limitations prior to using this standard for any designing, manufacturing, and testing.

1.1.9 Nothing herein shall restrict any jurisdiction or manufacturer from exceeding these minimum requirements.

1.2 Purpose.

1.2.1 The purpose of this standard shall be to establish minimum levels of respiratory protection for personnel assigned to or involved in wildland fire-fighting incident operations.

1.2.2 Controlled laboratory tests used to determine compliance with the performance requirements of this standard shall not be deemed as establishing performance levels for all situations to which wildland fire-fighting personnel might be exposed.

1.2.3 This standard is not intended as a detailed manufacturing or purchase specification, but shall be permitted to be referenced in purchase specifications as minimum requirements.

1.3 Application.

1.3.1 This standard shall apply to the design, manufacture, testing, and certification of new wildland fire-fighting respirators.

1.3.2 This standard shall apply to wildland fire-fighting respirators used during wildland fire-fighting incident operations.

1.3.3 This standard shall apply only to respirator requirements for use in non-IDLH (immediately dangerous to life and health) wildland environments during wildland fire-fighting operations.

1.3.4 This standard shall apply to any accessories or enhancements built into, attached to, or sold with the certified wildland fire-fighting respirator by the respirator manufacturer for later attachment and shall be tested with the wildland fire-fighting respirator and with those accessories and enhancements installed or attached, as specified in 4.3.11 and 4.3.11.1.

1.3.5 This standard shall not apply to any wildland fire-fighting respirators manufactured to the requirements of any other organization's standards, nor shall this standard apply to any other type of respirator.

1.3.6 This standard shall not apply to the use of any wildland fire-fighting respirators, as such use requirements for fire services organizations are specified in NFPA 1500.

1.3.7 This standard shall not apply to any other protective clothing and protective equipment for wildland fire-fighting operations.

1.3.8 This standard shall not apply to protective clothing, equipment, or respirators for any other fire-fighting operations, any technical rescue operations, any hazardous materials emergencies, or any CBRN incident operations.

1.4* Units.

1.4.1 In this standard, values for measurement are followed by an equivalent in parentheses, but only the first stated value shall be regarded as the requirement.

1.4.2 Equivalent values in parentheses shall not be considered as the requirement as these values are approximate.

Chapter 2 Referenced Publications

2.1 General. The documents or portions thereof listed in this chapter are referenced within this standard and shall be considered part of the requirements of this document.

2.2 NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.

NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*, 2013 edition.

NFPA 1977, *Standard on Protective Clothing and Equipment for Wildland Fire Fighting*, 2016 edition.

2.3 Other Publications.

2.3.1 ANSI Publications. American National Standards Institute, Inc., 25 West 43rd Street, 4th floor, New York, NY 10036.

ANSI S3.2, *Method for Measuring the Intelligibility of Speech over Communication Systems*, 1989.

2.3.2 ASTM Publications. ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

ASTM B117, *Standard Practice for Operating Salt Spray (Fog) Apparatus*, 2009.

ASTM D1003, *Standard Test Method for Haze and Luminous Transmittance of Transparent Plastics*, 2007e1.

2.3.3 ISO Publications. International Standards Organization, 1 rue de Varembe, Case Postale 56 CH-1211, Genève 20, Switzerland.

ISO Guide 27, *Guidelines for corrective action to be taken by a certification body in the event of misuse of its mark of conformity*, 1983.

ISO/IEC Guide 65, *General requirements for bodies operating product certification systems*, 1996.

ISO 9001, *Quality management systems — Requirements*, 2000.

ISO/IEC 17011, *Conformity assessment — General requirements for accreditation bodies accrediting conformity assessment bodies*, 2004.

ISO/IEC 17021, *Conformity assessment — Requirements for bodies providing audit and certification of management systems*, 2006.

ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories*, 2005.

2.3.4 U.S. Government Publications. U.S. Government Printing Office, Washington, DC 20402.

Title 29, Code of Federal Regulations, Part 1910.134, “Respiratory Protection.”

Title 42, Code of Federal Regulations, Part 84, “Approval of Respiratory Protective Devices, Tests for Permissibility.”

2.3.5 Other Publications. Merriam-Webster’s Collegiate Dictionary, 11th edition, Merriam-Webster, Inc., Springfield, MA, 2003.

2.4 References for Extracts in Mandatory Sections. (Reserved)

Chapter 3 Definitions

3.1 General. The definitions contained in this chapter shall apply to the terms used in this standard. Where terms are not defined in this chapter or within another chapter, they shall be defined using their ordinarily accepted meanings within the context in which they are used. Merriam-Webster’s Collegiate Dictionary, 11th edition, shall be the source for the ordinarily accepted meaning.

3.2 NFPA Official Definitions.

3.2.1* Approved. Acceptable to the authority having jurisdiction.

3.2.2* Authority Having Jurisdiction. An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure.

3.2.3 Labeled. Equipment or materials to which has been attached a label, symbol, or other identifying mark of an organization that is acceptable to the authority having jurisdiction and concerned with product evaluation, that maintains periodic inspection of production of labeled equipment or materials, and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner.

3.2.4* Listed. Equipment, materials, or services included in a list published by an organization that is acceptable to the authority having jurisdiction and concerned with evaluation of products or services, that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services, and whose listing states that either the equipment, material, or service meets appropriate designated standards or has been tested and found suitable for a specified purpose.

3.2.5 Shall. Indicates a mandatory requirement.

3.2.6 Should. Indicates a recommendation or that which is advised but not required.

3.2.7 Standard. An NFPA Standard, the main text of which contains only mandatory provisions using the word “shall” to indicate requirements and that is in a form generally suitable for mandatory reference by another standard or code or for adoption into law. Nonmandatory provisions are not to be considered a part of the requirements of a standard and shall be located in an appendix, annex, footnote, informational note, or other means as permitted in the NFPA Manuals of Style. When used in a generic sense, such as in the phrase “standards development process” or “standards development activities,” the term “standards” includes all NFPA Standards, including Codes, Standards, Recommended Practices, and Guides.

3.3 General Definitions.

3.3.1 Accessory. An item or items, or enhancements that could be built into, or attached to, or sold with a certified product by the product manufacturer for later attachment.

3.3.2 Air Purification Component. The air purification part of air purifying respirators (APRs) and powered air purifying respirators (PAPRs) that remove gases, vapors, and solid or liquid aerosols from the inspired air.

3.3.3 Air Purifying Respirator (APR). A respirator that removes specific air contaminants by passing ambient air through one or more air purification components.

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

3.3.5 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. (See also 3.3.15, *NIOSH-Certified*.)

3.3.6 Compliance/Compliant. Meeting or exceeding all applicable requirements of this standard.

3.3.7 Component. Any material, part, or subassembly used in the construction of the compliant product.

3.3.8 Drip. To run or fall in drops or blobs.

3.3.9 Facepiece. A tight-fitting respiratory inlet covering; a half facepiece covers the wearer's nose and mouth; a full facepiece covers the wearer's nose, mouth, and eyes.

3.3.10 Follow-up Program. The sampling, inspections, tests, or other measures conducted by the certification organization on a periodic basis to determine the continued compliance of labeled and listed products that are being produced by the manufacturer to the requirements of this standard.

3.3.11 Haze. Light that is scattered as a result of passing through a transparent object.

3.3.12 Manufacturer. The entity that directs and controls any of the following: compliant product design, compliant product manufacturing, or compliant product quality assurance; or the entity that assumes the liability for the compliant product or provides the warranty for the compliant product.

3.3.13 Melt. A response to heat by a material resulting in evidence of flowing or dripping.

3.3.14 Model. The collective term used to identify a group of individual items of the same basic design and components from a single manufacturer produced by the same manufacturing and quality assurance procedures that are covered by the same certification.

3.3.15 NIOSH-Certified. Tested and certified by the National Institute for Occupational Safety and Health (NIOSH), National Personal Protective Equipment Laboratory (NPPTL), in accordance with the requirements of 42 CFR 84.

3.3.16 PAPR. See 3.3.19, Powered Air Purifying Respirator (PAPR).

3.3.17 Particulate Matter. Finely divided solid or liquid matter (particles).

3.3.18 Pink Noise. Noise that contains constant energy per octave band.

3.3.19 Powered Air Purifying Respirator (PAPR). An air-purifying respirator that uses a powered blower to force the ambient air through one or more air purifying components to the respiratory inlet covering.

3.3.20* Product Label. A label or marking provided by the manufacturer for each compliant product containing compliance statements, certification statements, manufacturer and model information, or similar data.

3.3.21 Respirator. The complete assembly including the respiratory inlet covering, air purification components, electronics, batteries, harness, cables, and hoses where applicable; designed to protect the wearer from inhalation of atmospheres containing harmful gases, vapors, or particulate matter.

3.3.22 Sample. The equipment, equipment component, ensemble, element, item, composite, or component that is conditioned for testing. (See also 3.3.25, *Specimen*.)

3.3.23 Separate. A material response evidenced by splitting or delaminating.

3.3.24* Service Life. The length of time required for an air purification component to reach a specific effluent concentration.

3.3.25 Specimen. The conditioned equipment, equipment component, ensemble, element, item, composite, or component that is tested. Specimens are taken from samples. (See also 3.3.22, *Sample*.)

3.3.26 Wildland Fire. Accidental or planned outdoor fires burning vegetation such as woodlands, forests, grasslands, brush, and prairies.

3.3.27 Wildland Fire Fighting. The activities of fire suppression and property conservation in woodlands, forests, grasslands, brush, prairies, and other such vegetation, or any combination of vegetation, that is involved in a fire situation but is not within buildings or structures.

3.3.28 Wildland Fire-Fighting Respirator. A respirator that has been certified for providing respiratory protection during wildland fire-fighting operations by NIOSH under 42 CFR 84, and certified as compliant with NFPA 1984.

Chapter 4 Certification

4.1 General.

4.1.1 The process of certification for wildland fire-fighting respirators as being compliant with NFPA 1984 shall meet the requirements of Section 4.1 through Section 4.8.

4.1.2* Prior to certification of wildland fire-fighting respirators to this standard, respirators shall be certified by NIOSH as an air-purifying respirator, or as a powered air-purifying respirator.

4.1.3 All respirators for wildland fire-fighting operations that are labeled as being compliant with this standard shall meet or exceed all applicable requirements specified in this standard and shall be certified.

4.1.4 All certification shall be performed by a certification organization that meets at least the requirements specified in Section 4.2, and that is accredited for personal protective equipment in accordance with ISO 65, *General requirements for bodies operating product certification systems*. The accreditation shall be issued by an accreditation body operating in accordance with ISO 17011, *General requirements for accreditation bodies accrediting conformity assessment bodies*.

4.1.5 Manufacturers shall not claim compliance with portions or segments of the requirements of this standard and shall not use the NFPA name or the name or identification of this standard, NFPA 1984, in any statements about their respective wildland fire-fighting respirators unless the respirator is certified as compliant to this standard.

4.1.6 All compliant wildland fire-fighting respirators shall be labeled.

4.1.7 All compliant wildland fire-fighting respirators shall be listed by the certification organization. This listing shall uniquely

