

NFPA® 1952

Standard on Surface Water Operations Protective Clothing and Equipment

2015 Edition



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NFPA® 1952

Standard on

Surface Water Operations Protective Clothing and Equipment

2015 Edition

This edition of NFPA 1952, *Standard on Surface Water Operations Protective Clothing and Equipment*, was prepared by the Technical Committee on Special Operations Protective Clothing and Equipment and released by the Correlating Committee on Fire and Emergency Services Protective Clothing and Equipment. It was issued by the Standards Council on November 11, 2014, with an effective date of December 1, 2014, and supersedes all previous editions.

A Tentative Interim Amendment (TIA) to 8.5.1 was issued on November 11, 2014. For further information on tentative interim amendments, see Section 5 of the Regulations Governing the Development of NFPA Standards, available at: <http://www.nfpa.org/regs>.

This edition of NFPA 1952 was approved as an American National Standard on December 1, 2014.

Origin and Development of NFPA 1952

The Technical Committee on Special Operations Protective Clothing and Equipment began work on the first edition of NFPA 1952 in 2005 to answer the need for personal protective equipment for fire and emergency services personnel operating at surface water operations. Surface water operations are technical rescue activities requiring water functional capabilities involving surface water, swift water, tidal water, surf, and ice that do not require underwater respiratory equipment.

The technical committee developed NFPA 1952, *Standard on Surface Water Operations Protective Clothing and Equipment*, with the goal of establishing protection requirements for protective clothing and equipment to reduce the safety risks and health risks associated with exposure of personnel to the hazards of surface water operations.

The majority of performance criteria in this standard were based on the September 1993 U.S. Fire Administration Study "Protective Clothing and Equipment Needs of Emergency Responders for Urban Search and Rescue Missions" (FA-136, Federal Emergency Management Agency). That report documented the protective clothing and equipment needs for emergency responders engaged in technical rescue activities. Input was obtained from an emergency responder user requirements committee and resulted in proposed criteria based on a needs and risk analysis. The U.S. Fire Administration report contains survey results and test data for a number of materials. The jurisdiction of the Technical Committee on Special Operations Protective Clothing and Equipment does not include the respiratory protection that is necessary for these operations; the appropriate respiratory protection needs to be addressed by emergency responder organizations.

This standard specifies requirements for the following types of surface water protective clothing and equipment:

- (1) Dry suits, wet suits, and ice suits
- (2) Dry suit gloves, wet suit gloves, and ice suit gloves
- (3) Dry suit footwear, wet suit footwear, and ice suit footwear
- (4) Helmets
- (5) PFDs

It is left to emergency services organizations to select the appropriate items for the protection of their emergency responders based on the expected and anticipated surface water incidents to which the organizations will or could respond.

In the 2015 edition, the Technical Committee updated the recertification table, added text to include performance requirements for the evaluation of strength of closures other than zippers, and made several changes to more adequately evaluate performance, including in relation to chemical hazard protection: (1) the committee added representative challenges

in various chemical groupings that are soluble in water, which is the possible hazard; (2) it addressed closure testing by incorporating penetration methodology currently used in other hazmat documents in the PPE project; (3) it removed requirements for flexing and abrading zippers/closures due to the testing challenges, followed methods for testing currently used in other hazmat documents in the PPE project; and (4) it updated requirements and methods to reflect the use of cumulative permeation mass as an endpoint for permeation testing.

Further, the Technical Committee acknowledged that the permeation test procedures were not standardized for the use of cumulative permeation. Therefore, the revised procedures are based on NFPA 1994 to provide a standardized methodology for measuring permeation resistance as established in other standards. The list of chemicals selected more adequately represents potential hazards and various chemical groupings. The committee also added a penetration test to align with other standards in the PPE project and updated and improved other test methods as necessary to reflect code changes.

The Technical Committee would like to recognize the important contributions made to this edition by the late Steve Hudson.



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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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Committee Scope: This Committee shall have primary responsibility for documents on special operations protective clothing and protective equipment, except respiratory equipment, that provides hand, foot, torso, limb, head, and interface protection for fire fighters and other emergency services responders during incidents involving special operations functions including, but not limited to, structural collapse, trench rescue, confined space entry, urban search and rescue, high angle/mountain rescue, vehicular extraction, swift water or flooding rescue, contaminated water diving, and air operations. This Committee shall also have primary responsibility for documents on station/work uniform garments that are not of themselves primary protective garments but can be combined with a primary protective garment to serve dual or multiple functions. Additionally, this Committee shall have primary responsibility for documents on the selection, care, and maintenance of special operations protective clothing and equipment by fire and emergency services organizations and personnel.

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

Chapter 1 Administration**1.1* Scope.**

1.1.1* This standard shall specify the minimum design, performance, testing, and certification requirements for protective clothing and equipment items, including full body suits, helmets, gloves, footwear, and personal flotation devices designed to provide limited protection from physical, environmental, thermal, and certain common chemical and biological hazards for emergency services personnel during surface water operations.

1.1.2* This standard shall specify requirements for protective clothing and protective equipment used during operations in surface water, swift water, tidal water, surf, and ice.

1.1.3 This standard shall not specify requirements for protective clothing and protective equipment for any offshore water operations or any dive operations.

1.1.4* This standard shall not specify requirements for protective clothing and protective equipment for any other technical rescue operation, any fire-fighting operations, or any hazardous materials emergencies.

1.1.5* This standard shall specify requirements for any accessories or enhancements built into, attached to, or sold with surface water operations protective clothing and equipment by the protective clothing and equipment manufacturer for later attachment, and shall be tested with the protective clothing and equipment with the accessories and enhancements installed or attached, as specified in 4.3.9.4, to assure the per-

formance and functions of the surface water operations protective clothing and equipment.

1.1.6 This standard shall not be construed as addressing all of the safety concerns associated with the use of compliant surface water operations protective clothing and equipment. It shall be the responsibility of the persons and organizations that use compliant surface water operations protective clothing and equipment to establish safety and health practices and to determine the applicability of regulatory limitations prior to use.

1.1.7 This standard shall not be construed as addressing all of the safety concerns, if any, associated with the use of this standard by testing facilities. It shall be the responsibility of the persons and organizations that use this standard to establish safety and health practices and to determine the applicability of regulatory limitations prior to use of this standard for designing, manufacturing, and testing.

1.1.8 Certification of surface water operations protective clothing and equipment to the requirements of this standard shall not preclude certification to additional appropriate standards where the protective clothing or equipment meets all the applicable requirements of each standard.

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 protection for emergency services personnel assigned to or involved in surface water search and rescue operations or other surface water 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 emergency services 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, and certification of new surface water operations protective clothing and equipment.

1.3.2 This standard shall not apply to any surface water operations protective clothing and equipment manufactured to the requirements of any other organization's standards.

1.3.3 This standard shall not apply to the use of any surface water operations protective clothing and equipment, as such use requirements for fire departments are specified in NFPA 1500 and the use requirements specified by other emergency services organizations.

1.3.4 This standard shall apply to protective clothing and protective equipment used during operations in surface water, swift water, tidal water, surf, and ice.

1.3.5 This standard shall not apply to protective clothing and protective equipment for any offshore water operations or any dive operations.

1.3.6 This standard shall not apply to protective clothing and protective equipment for any other technical rescue operation, any fire-fighting operations, or any hazardous materials emergencies.



1.3.7 This standard shall not apply to protection from all biological agents or to protection from all hazardous chemicals.

1.3.8* This standard shall apply to any accessories or enhancements built into, attached to, or sold with the surface water operations protective clothing and equipment by the protective clothing and equipment manufacturer for later attachment, and shall be tested with the protective clothing and equipment with the accessories and enhancements installed or attached, as specified in 4.3.9.4, to assure the performance and functions of the surface water operations protective clothing and equipment.

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 might be 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 1670, *Standard on Operations and Training for Technical Search and Rescue Incidents*, 2014 edition.

2.3 Other Publications.

2.3.1 AATCC Publications. American Association of Textile Chemists and Colorists, P.O. Box 12215, Research Triangle Park, NC 27709.

AATCC 42, *Water Resistance: Impact Penetration Test*, 2007.

AATCC 70, *Test Method for Water Repellency: Tumble Jar Dynamic Absorption Test*, 2010.

AATCC 135, *Dimensional Changes in Automatic Home Laundering of Woven and Knit Fabrics*, 2012.

2.3.2 ASTM Publications. ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959.

ASTM B 117, *Standard Practice for Operating Salt Spray (Fog) Apparatus*, 2011.

ASTM D 471, *Standard Test Method for Rubber Property — Effects of Liquids*, 2012.

ASTM D 751, *Standard Method of Testing Coated Fabrics*, 2006 (revised 2011).

ASTM D 2061, *Standard Test Methods for Strength Tests for Zippers*, 2007 (revised 2013).

ASTM D 2062, *Standard Test Methods for Operability of Zippers*, 2003 (revised 2009).

ASTM D 2582, *Standard Test Method for Puncture-Propagation Tear Resistance of Plastic Film and Thin Sheeting*, 2009.

ASTM D 3884, *Standard Test Method for Abrasion Resistance of Textile Fabrics (Rotary Platform, Double-Head Method)*, 2009 (revised 2013).

ASTM D 4157, *Standard Test Method for Abrasion Resistance of Textile Fabrics (Oscillatory Cylinder Method)*, 2013.

ASTM D 4966, *Standard Test Method for Abrasion Resistance of Textile Fabrics*, 2012(e. 2013).

ASTM D 5034, *Standard Test Method for Breaking Strength and Elongation of Textile Fabrics (Grab Test)*, 2009 (revised 2013).

ASTM E 810, *Standard Test Method for Coefficient of Retroreflection of Retroreflective Sheeting Utilizing the Coplanar Geometry*, 2003 (revised 2013).

ASTM F 392, *Standard Test Method for Flex Durability of Flexible Barrier Materials*, 2011.

ASTM F 739, *Standard Test Method for Permeation of Liquids and Gases through Protective Clothing Materials under Conditions of Continuous Contact*, 2012.

ASTM F 903, *Standard Test Method for Resistance of Materials Used in Protective Clothing to Penetration by Liquids*, 2010.

ASTM F 1001, *Standard Guide for Selection of Chemicals to Evaluate Protective Clothing Materials*, 2012.

ASTM F 1342, *Standard Test Method for Resistance of Protective Clothing Materials to Puncture*, 2005.

ASTM F 1359, *Standard Practice for Determining Liquid-Tight Integrity of Chemical Protective Suits or Ensembles under Static Conditions*, 2013.

ASTM F 1446, *Standard Test Methods for Equipment and Procedures Used in Evaluating the Performance Characteristics of Protective Headgear*, 2013.

ASTM F 1671, *Standard Test Method for Resistance of Materials Used in Protective Clothing to Penetration by Blood-Borne Pathogens Using Phi-X174 Bacteriophage as a Test System*, 2013.

ASTM F 1790, *Test Methods for Measuring Cut Resistance of Materials Used in Protective Clothing*, 2005.

ASTM F 1868, *Standard Test Method for Thermal and Evaporative Resistance of Clothing Materials Using a Sweating Hot Plate*, 2012.

ASTM F 2010, *Standard Test Method for Evaluation of Glove Effects on Wearer Hand Dexterity Using a Modified Pegboard Test*, 2010.

ASTM F 2913, *Standard Test Method for Measuring the Coefficient of Friction for Evaluation of Slip Performance of Footwear and Test Surfaces/Flooring Using a Whole Shoe Tester*, 2011.

2.3.3 CAN/CGSB Publications. Canadian General Standards Board, 11 Laurier Street, Gatineau, Quebec K1A 1G6 Canada

CAN/CGSB 65.16, *Immersion Suit Systems*, 2005.

2.3.4 ISO Publications. International Organization for Standardization, 1 ch. de la Voie-Creuse, Case postale 56, CH-1211, Geneva 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 1817, *Rubber, vulcanized or thermoplastic—Determination of the effect of liquids*, 2011.

ISO 9001, *Quality management systems — requirements*, 2008.

ISO/IEC 17011, *Conformity assessments — 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*, 2011.

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

2.3.5 SAE Publications. Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096.

SAE J211, *Instrumentation for Impact Test*, 2007.

2.3.6 UL Publications. Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096.

ANSI/UL 1123, *Standard for Marine Buoyant Devices*, 2008, Revised 2011.

ANSI/UL 1197, *Standard of Safety for Immersion Suits*, 2007, Revised 2010.

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

Title 46, Code of Federal Regulations, Part 164.018, “Retroreflective Material for Lifesaving Equipment.”

2.3.8 Other Publications.

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

2.4 References for Extracts in Mandatory Sections.

NFPA 1951, *Standard on Protective Ensembles for Technical Rescue Incidents*, 2013 edition.

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* Basic Plane. The anatomical plane that includes the superior rim of the external auditory meatus, the upper edge of the external openings of the ear, and the interior margin of the orbit, which is the lowest point of the floor of the eye socket.

3.3.2 Body Borne Pathogen. An infectious bacteria or virus carried in human, animal, or clinical body fluids, organs, or tissues.

3.3.3 Body Fluids. Fluids that are produced by the body including, but not limited to, blood, semen, mucus, feces, urine, vaginal secretions, breast milk, amniotic fluid, cerebrospinal fluid, synovial fluid, and pericardial fluid.

3.3.4 Bootie. A sock-like extension of the garment or suit leg that covers the entire foot.

3.3.5 Brim. A part of the shell of the helmet extending around the entire circumference of the helmet.

3.3.6 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.

3.3.7 Chin Strap. An adjustable strap for the helmet that fits under or around the chin to secure the helmet to the head.

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



3.3.9 Compliant Product. Product that is covered by this standard and has been certified as meeting all applicable requirements of this standard that pertain to the product.

3.3.10 Component(s). Any material, part, or subassembly used in the construction of the compliant product.

3.3.11 Composite. The layer or layers of materials or components.

3.3.12 Crown. The portion of the helmet that covers the head above the reference plane.

3.3.13 Crown Straps. The part of the helmet suspension that passes over the head.

3.3.14 Dry Suit. See 3.3.46, Surface Water Operations Protective Dry Suit.

3.3.15 Energy Absorbing System. A material or system used to attenuate impact energy.

3.3.16 Flotation Device. See 3.3.53, Surface Water Operations Protective Personal Flotation Device.

3.3.17 Fluorescence. The process by which radiant flux of certain wavelengths is absorbed and reradiated nonthermally in other, usually longer, wavelengths.

3.3.18 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.

3.3.19 Footwear. See 3.3.47, Surface Water Operations Protective Dry Suit Footwear; 3.3.51, Surface Water Operations Protective Ice Suit Footwear; and 3.3.55, Surface Water Operations Protective Wet Suit Footwear.

3.3.20 Garment Closure. The garment component designed and configured to allow the wearer to don (put on) and doff (take off) the garment. [1951, 2013]

3.3.21 Garment Closure Assembly. The combination of the garment closure and the seam attaching the garment closure to the garment, including any protective flap or cover. [1951, 2013]

3.3.22 Glove. See 3.3.48, Surface Water Operations Protective Dry Suit Gloves; 3.3.52, Surface Water Operations Protective Ice Suit Gloves; and 3.3.56, Surface Water Operations Protective Wet Suit Gloves.

3.3.23 Glove Body. The part of the glove that extends from the tip of the fingers to the wrist crease or a specified distance beyond the wrist crease.

3.3.24 Glove Liner. The innermost component of the glove body composite that comes into contact with the wearer's skin.

3.3.25 Hardware. Non-fabric components of the protective clothing and equipment including, but not limited to, those made of metal or plastic.

3.3.26 Headform. A device that simulates the configuration of the human head.

3.3.27 Helmet. See 3.3.49, Surface Water Operations Protective Helmet.

3.3.28 Horizontal Center Plane. Any plane passing through the helmet whose intersection with the helmet surface is equidistant from the top of the helmet at all points.

3.3.29 Ice Suit. See 3.3.50, Surface Water Operations Protective Ice Suit.

3.3.30 Insole. The inner component of the footwear upon which the foot rests.

3.3.31 Liquidborne Pathogen. See 3.3.3, Body Fluids.

3.3.32 Manufacturer. The entity that directs or 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.

3.3.33* Model. The collective term used to identify a group of individual items, elements, or 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.

3.3.34 Product. See 3.3.9, Compliant Product.

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

3.3.36 Reference Plane. A dimensionally defined plane, parallel to the basic plane, that is measured from the top of the applicable headform or the basic plane.

3.3.37 Rescue Operations. Those activities operations directed at locating and removing endangered persons, and removing endangered persons from danger, treating the injured at an emergency incident, and providing transport to an appropriate health care facility.

3.3.38 Retention System. The complete assembly by which the helmet is retained in position on the head.

3.3.39 Retroreflection/Retroreflective. The reflection of light in which the reflected rays are preferentially returned in the direction close to the opposite of the direction of the incident rays, with this property being maintained over wide variations of the direction of the incident rays.

3.3.40 Sample. The equipment, equipment component, ensemble, element, item, component, or composite that is conditioned for testing. (See also 3.3.42, *Specimen*.)

3.3.41 Seam. Any permanent attachment of two or more materials, in a line formed by joining the separate material pieces.

3.3.42 Specimen. The conditioned equipment, equipment component, ensemble, element, product, item, composite, or component, or opposite that is tested. Specimens are taken from samples. (See also 3.3.40, *Sample*.)

3.3.43 Suit. See 3.3.46, Surface Water Operations Protective Dry Suit; 3.3.50, Surface Water Operations Protective Ice Suit; and 3.3.54, Surface Water Operations Protective Wet Suit.

3.3.44 Suit Material. The primary protective principal material(s) used in the construction of surface water operations protective suits.

3.3.45 Surface Water Operations. Technical rescue activities requiring water functional capabilities involving surface water, swift water, tidal water, surf, and ice that do not require underwater respiratory equipment.

3.3.46* Surface Water Operations Protective Dry Suit. A suit that provides exposure protection for water operations.

3.3.47 Surface Water Operations Protective Dry Suit Footwear.

An item of protective clothing used with surface water protective dry suits that are designed to provide minimum protection to the foot, ankle, and lower leg.

3.3.48 Surface Water Operations Protective Dry Suit Gloves. An item of protective clothing used with surface water protective dry suits that are designed to provide minimum protection to fingers, thumb, hand, and wrist.

3.3.49 Surface Water Operations Protective Helmet. An item of protective equipment designed to provide minimum protection to the head.

3.3.50* Surface Water Operations Protective Ice Suit. A suit that provides thermal and flotation protection for extreme cold water conditions.

3.3.51 Surface Water Operations Protective Ice Suit Footwear. An item of protective clothing used with surface water protective ice suits that are designed to provide minimum protection to the foot, ankle, and lower leg.

3.3.52 Surface Water Operations Protective Ice Suit Gloves. An item of protective clothing used with surface water protective ice suits that are designed to provide minimum protection to fingers, thumb, hand, and wrist.

3.3.53 Surface Water Operations Protective Personal Flotation Device. An item of protective equipment designed to provide flotation assistance to the wearer.

3.3.54* Surface Water Operations Protective Wet Suit. A permeable suit that preserves body heat by trapping water in between the suit and the body.

3.3.55 Surface Water Operations Protective Wet Suit Footwear. An item of protective clothing used with surface water protective wet suits that are designed to provide minimum protection to the foot, ankle, and lower leg.

3.3.56 Surface Water Operations Protective Wet Suit Gloves. An item of protective clothing used with surface water protective wet suits that are designed to provide minimum protection to fingers, thumb, hand, and wrist.

3.3.57 Surface Water Rescue. Rescue of a victim who is accessible from the surface of a body of water.

3.3.58 Suspension. An energy attenuating system of the helmet that is made up of the headband and crown strap.

3.3.59 Swiftwater. Water moving at a rate of greater than 1 knot (1.85 km/hr).

3.3.60* Tidal Water. Ocean water or bodies of water that are connected to oceans that either experience a twice daily rise and fall of their surface caused by the gravitational pull of the moon or experience a corresponding ebb and flow of water in response to the tides.

3.3.61 Trim. See 3.3.62, Visibility Markings.

3.3.62 Visibility Markings. Retroreflective and fluorescent conspicuity enhancements. Retroreflective enhancements improve nighttime conspicuity, and fluorescent enhancements improve daytime conspicuity.

3.3.63 Wet Suit. See 3.3.54, Surface Water Operations Protective Wet Suit.

Chapter 4 Certification**4.1 General.**

4.1.1 The process of certification for surface water operations protective clothing and equipment as being compliant with NFPA 1952 shall meet the requirements of Section 4.1, General; Section 4.2, Certification Program; Section 4.3, Inspection and Testing; Section 4.4, Annual Verification of Product Compliance; Section 4.5, Manufacturer's Quality Assurance Program; Section 4.6, Hazards Involving Compliant Product; Section 4.7, Manufacturers' Investigation of Complaints and Returns; and Section 4.8, Manufacturers' Safety Alert and Product Recall Systems.

4.1.2 All compliant surface water operations protective clothing and equipment that is labeled as being compliant with this standard shall meet or exceed all applicable requirements specified in this standard and shall be certified.

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

4.1.4 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 1952, in any statements about their respective item(s) unless the item(s) is certified as compliant to this standard.

4.1.5 All compliant protective clothing and equipment shall be labeled.

4.1.6 All compliant surface water protective clothing and equipment items shall be listed by the certification organization. This listing shall uniquely identify the certified product, for example, by style, model number, or part number.

4.1.7 All compliant surface water protective clothing and equipment items shall also have a product label that meets the requirements specified in Section 5.1, Product Label Requirements.

4.1.8* The certification organization's label, symbol, or identifying mark shall be attached to the product label, shall be part of the product label, or shall be immediately adjacent to the product label.

4.1.9 The certification organization shall not permit any manufacturer to continue to label any protective ensembles or ensemble elements that are certified as compliant with the 2010 edition of NFPA 1952 on November 11, 2014.

4.1.10 The certification organization shall require manufacturers to remove all certification labels and product labels indicating compliance with the 2010 edition of NFPA 1952 from all protective ensembles and ensemble elements that are under the control of the manufacturer on November 11, 2014, and the certification organization shall verify this action is taken.

4.2 Certification Program.

4.2.1* The certification organization shall not be owned or controlled by manufacturers or vendors of the items being certified.

4.2.2 The certification organization shall be primarily engaged in certification work and shall not have a monetary interest in the product's ultimate profitability.

4.2.3 The certification organization shall be accredited for personal protective equipment in accordance with ISO/IEC Guide 65, *General requirements for bodies operating product certification systems*. The accreditation shall be issued by an accreditation body operating in accordance with ISO/IEC Guide 17011, *Conformity assessment — General requirements for accreditation bodies accrediting conformity assessment bodies*.

4.2.4 The certification organization shall refuse to certify products to this standard that do not comply with all applicable requirements of this standard.

4.2.5* The contractual provisions between the certification organization and the manufacturer shall specify that certification is contingent on compliance with all applicable requirements of this standard.

4.2.5.1 The certification organization shall not offer or confer any conditional, temporary, or partial certifications.

4.2.5.2 Manufacturers shall not be authorized to use any label or reference to the certification organization on products that are not compliant with all applicable requirements of this standard.

4.2.6* The certification organization shall have laboratory facilities and equipment available for conducting proper tests to determine product compliance.

4.2.6.1 The certification organization laboratory facilities shall have a program in place and functioning for calibration of all instruments, and procedures shall be in use to ensure proper control of all testing.

4.2.6.2 The certification organization laboratory facilities shall follow good practice regarding the use of laboratory manuals, form data sheets, documented calibration and calibration routines, performance verification, proficiency testing, and staff qualification and training programs.

4.2.7 The certification organization shall require the manufacturer to establish and maintain a quality assurance program that meets the requirements of Section 4.5, Manufacturer's Quality Assurance Program.

4.2.7.1* The certification organization shall require the manufacturer to have a product recall system as specified in Section 4.8, Manufacturers' Safety Alert and Product Recall Systems, as part of the manufacturer's quality assurance program.

4.2.7.2 The certification organization shall audit the manufacturer's quality assurance program to ensure that the quality assurance program provides continued product compliance with this standard.

4.2.8 The certification organization and the manufacturer shall evaluate any changes affecting the form, fit, or function of the compliant product to determine its continued certification to this standard.

4.2.9* The certification organization shall have a follow-up inspection program of the manufacturing facilities of the compliant product with at least two random and unannounced visits per 12-month period.

4.2.9.1 As part of the follow-up inspection program, the certification organization shall select sample compliant product

at random from the manufacturer's production line, from the manufacturer's in-house stock, or from the open market.

4.2.9.2 Sample product shall be inspected and tested by the certification organization to verify the product's continued compliance.

4.2.9.3 The certification organization shall be permitted to conduct specific testing to verify the product's continued compliance.

4.2.9.4 For products, components, and materials where prior testing, judgment, and experience of the certification organization have shown results to be in jeopardy of not complying with this standard, the certification organization shall conduct more frequent testing of sample product, components, and materials acquired in accordance with 4.2.9.1 against the applicable requirements of this standard.

4.2.10 The certification organization shall have in place a series of procedures, as specified in Section 4.6, Hazards Involving Compliant Product, that address report(s) of situation(s) in which a compliant product is subsequently found to be hazardous.

4.2.11 The certification organization's operating procedures shall provide a mechanism for the manufacturer to appeal decisions. The procedures shall include the presentation of information from both sides of a controversy to a designated appeals panel.

4.2.12 The certification organization shall be in a position to use legal means to protect the integrity of its name and label. The name and label shall be registered and legally defended.

4.3 Inspection and Testing.

4.3.1 For both initial certification and recertification of items, the certification organization shall conduct both inspection and testing as specified in this section.

4.3.2 All inspections, evaluations, conditioning, and testing for certification or for recertification shall be conducted by a certification organization's testing laboratory that is accredited in accordance with the requirements of ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories*.

4.3.2.1 The certification organization's testing laboratory's scope of accreditation to ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories*, shall encompass testing of personal protective equipment.

4.3.2.2 The accreditation of a certification organization's testing laboratory shall be issued by an accreditation body operating in accordance with ISO/IEC Guide 17011, *Conformity assessment — General requirements for accreditation bodies accrediting conformity assessment bodies*.

4.3.3 A certification organization shall be permitted to utilize conditioning and testing results conducted by a product or component manufacturer for certification or recertification provided the manufacturer's testing laboratory meets the requirements specified in 4.3.3.1 through 4.3.3.5.

4.3.3.1 The manufacturer's testing laboratory shall be accredited in accordance with the requirements of ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories*.

4.3.3.2 The manufacturer's testing laboratory's scope of accreditation to ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories*, shall encompass testing of personal protective equipment.

4.3.3.3 The accreditation of a manufacturer's testing laboratory shall be issued by an accreditation body operating in accordance with ISO/IEC Guide 17011, *Conformity assessment — General requirements for accreditation bodies accrediting conformity assessment bodies*.

4.3.3.4 The certification organization shall approve the manufacturer's testing laboratory.

4.3.3.5 The certification organization shall determine the level of supervision and witnessing of the conditioning and testing for certification or recertification conducted at the manufacturer's testing laboratory.

4.3.4 Sampling levels for testing and inspection shall be established by the certification organization and the manufacturer to ensure a reasonable and acceptable reliability at a reasonable and acceptable confidence level that products certified to this standard are compliant, unless such sampling levels are specified herein.

4.3.5 Inspection and evaluation by the certification organization shall include a review of all product labels to ensure that all required label attachments, compliance statements, certification statements, and other product information are at least as specified for the product in Section 5.1, Product Label Requirements.

4.3.6 Inspection and evaluation by the certification organization shall include an evaluation of any symbols and pictorial graphic representations used on product labels or in user information, as permitted by 5.1.5, to ensure that the symbols are clearly explained in the product's user information package.

4.3.7 Inspection and evaluation by the certification organization shall include a review of the user information required by Section 5.2, User Information, to ensure that the information has been developed and is available.

4.3.8 Inspection and evaluation by the certification organization for determining compliance with the design requirements specified in Chapter 6 shall be performed on whole or complete products.

4.3.9 Testing by the certification organization to determine product compliance with the performance requirements specified in Chapter 7 shall be conducted in accordance with the specified testing requirements of Chapter 8.

4.3.9.1 Testing shall be performed on new product.

4.3.9.2 Testing shall be performed on specimens representative of materials and components used in the actual construction of the compliant product.

4.3.9.3 The certification organization also shall be permitted to use sample materials cut from a representative product.

4.3.9.4 Where there are any accessories, enhancements, or both that are built into, or attachable to, or detachable from the surface water operations protective clothing and equipment, the certification organization shall inspect and evaluate the protective clothing and equipment as specified in Chapter 6 and shall test the protective clothing and equipment as specified in Chapter 8, and the protective clothing and equip-

ment shall meet the performance requirements specified in Chapter 7 with those accessories and enhancements installed or attached.

4.3.10 The certification organization shall accept from the manufacturer, for evaluation and testing for certification, only product or product components that are the same in every respect to the actual final product or product component.

4.3.11 The certification organization shall not allow any modifications, pretreatment, conditioning, or other such special processes of the product or any product component prior to the product's submission for evaluation and testing by the certification organization.

4.3.12 The certification organization shall not allow the substitution, repair, or modification, other than as specifically permitted herein, of any product or any product component during testing.

4.3.13 The certification organization shall not allow test specimens that have been conditioned and tested by one method to be reconditioned and tested by another test method unless specifically permitted in the test method.

4.3.14 Where certification testing includes product with one or more accessories, the product with each accessory shall be certified as complying with 4.3.9.4.

4.3.15 Any change in the design, construction, or materials of a compliant product shall necessitate new inspection and testing to verify compliance to all applicable requirements of this standard that the certification organization determines can be affected by such change. This recertification shall be conducted before labeling the modified product as being compliant with this standard.

4.3.16 The manufacturer shall maintain all design and performance inspection and test data from the certification organization used in the certification of the manufacturer's compliant product. The manufacturer shall provide such data, upon request, to the purchaser or authority having jurisdiction.

4.4 Annual Verification of Product Compliance.

4.4.1 All products that are labeled as being compliant with this standard shall undergo recertification on an annual basis. This recertification shall include the following:

- (1) Inspection and evaluation to all design requirements as required by the standard on all manufacturer models and components
- (2) Testing to all performance requirements as specified in Table 4.4.1 on all manufacturer models and components within the following protocol:
 - (a) Where a test method incorporates testing both before and after the laundering preconditioning specified in 8.1.3 and the test generates quantitative results, recertification testing shall be limited to the conditioning that yielded the worst-case test result during the initial certification for the model or component.
 - (b) Where a test method incorporates testing both before and after the laundering preconditioning specified in 8.1.3 and the test generates nonquantitative results, recertifications shall be limited to a single conditioning procedure in any given year. Subsequent annual recertification shall cycle through the

- remaining conditioning procedure to ensure that all required conditionings are included over time.
- (c) Where a test method requires the testing of three specimens, a minimum of one specimen shall be tested for annual certification.
- (d) Where a test method requires the testing of five or more specimens, a minimum of two specimens shall be tested for annual certification.

Table 4.4.1 Recertification Schedule

Product	Test	Time
Wet Suit	7.1.1 Overall Donning Efficiency Test	Initial certification only
Wet Suit	7.1.2 Breaking Strength Test	Every year
Wet Suit	7.1.3 Puncture Propagation Tear Resistance Test	Every year
Wet Suit	7.1.4 Seam/Closure Breaking Strength Test	Every year
Wet Suit	7.1.5 Liquid Absorption Resistance	Every year
Wet Suit	7.1.6 Retroreflectivity Test	Initial certification only
Wet Suit	7.1.7 Zipper Strength Test	Every year
Wet Suit	7.1.8 Resistance to Twist Test	Every year
Wet Suit	7.1.9 Opening and Closing of Zippers Test	Every year
Wet Suit	7.1.10 Corrosion Resistance Test	Every year
Wet Suit	7.1.11 Label Durability and Legibility Test	Every year
Dry Suit	7.2.1 Air Retention Test	Every year
Dry Suit	7.2.2 Overall Liquid Integrity Test One	Every year
Dry Suit	7.2.3 Overall Donning Efficiency Test	Initial certification only
Dry Suit	7.2.4 Water Penetration and Air Evacuation Test	Every year
Dry Suit	7.2.5 Breaking Strength Test	Every year
Dry Suit	7.2.6 Puncture Propagation Tear Resistance Test	Every year
Dry Suit	7.2.7 Cleaning Shrinkage Resistance Test	Every two years
Dry Suit	7.2.8 Seam/Closure Breaking Strength Test	Every year
Dry Suit	7.2.9 Liquid Absorption Resistance Test	Every year
Dry Suit	7.2.10 Liquid Penetration Resistance Test	Every year
Dry Suit	7.2.11 Viral Penetration Resistance Test	Seams only – Every year
Dry Suit	7.2.12 Zipper Strength Test	Every year
Dry Suit	7.2.13 Resistance to Twist of Pull and Slider Test	Every year
Dry Suit	7.2.14 Opening and Closing of Zippers Test	Every year
Dry Suit	7.2.15 Zipper Point Breaking Strength Test	Every year
Dry Suit	7.2.16 Zipper Leak Resistance Test	Every year
Dry Suit	7.2.17 Zipper Opening and Closing Force Test	Every year
Dry Suit	7.2.18 Retroreflectivity Test	Initial certification only
Dry Suit	7.2.21 Corrosion Resistance Test	Every year
Dry Suit	7.2.24 Label Durability and Legibility Test	Every year
Ice Suit	7.3.1 Overall Liquid Integrity Test One	Every year
Ice Suit	7.3.2 Air Retention Test	Every year
Ice Suit	7.3.3 Viral Penetration Resistance Test	Seams only – Every year
Ice Suit	7.3.4 Overall Donning Efficiency Test	Initial certification only
Ice Suit	7.3.5 Thermal Insulation Test	Every year
Ice Suit	7.3.6 Breaking Strength Test	Every year
Ice Suit	7.3.7 Puncture Propagation Tear Resistance Test	Every year
Ice Suit	7.3.8 Seam/Closure Breaking Strength Test	Every year
Ice Suit	7.3.9 Liquid Absorption Resistance Test	Every year
Ice Suit	7.3.10 Liquid Penetration Resistance Test	Every year
Ice Suit	7.3.11 Retroreflectivity Test	Initial certification only
Ice Suit	7.3.12 Water Penetration and Air Evacuation Test	Every year
Ice Suit	7.3.13 Buoyancy Test	Every year
Ice Suit	7.3.14 Corrosion Resistance Test	Every year
Ice Suit	7.3.15 Label Durability and Legibility Test	Every year
Ice Suit	7.3.16 Zipper Point Breaking Strength Test	Every year
Ice Suit	7.3.17 Zipper Leak Resistance Test	Every year
Ice Suit	7.3.18 Opening and Closing of Zippers Test	Every year
Ice Suit	7.3.19 Zipper Opening and Closing Force Test	Every year

(continues)

Table 4.4.1 *Continued*

Product	Test	Time
Surface Water Helmet	7.4.1 Helmet Bucketing Test	Initial certification only
Surface Water Helmet	7.4.2 Top Impact Resistance Test (Force)	Every year
Surface Water Helmet	7.4.3 Physical Penetration Resistance Test	Every year
Surface Water Helmet	7.4.4 Suspension System Retention Test	Every year
Surface Water Helmet	7.4.5 Retention System Test	Every year
Surface Water Helmet	7.4.6 Corrosion Resistance Test	Every year
Surface Water Helmet	7.4.7 Retroreflectivity Test	Initial certification only
Surface Water Helmet	7.4.8 Label Durability and Legibility Test	Every year
Surface Water Helmet	7.4.9 Floatability Test	Initial certification only
Surface Water Helmet	7.4.10 Impact Resistance Test - Acceleration	Every year
Surface Water Helmet	7.4.11 Helmet Roll Off Test	Initial certification only
Surface Water Helmet	7.4.12 Helmet Water Absorption Test	Initial certification only
Wet Suit Glove	7.5.1 Cut Resistance Test	Every year
Wet Suit Glove	7.5.2 Puncture Resistance Test	Every year
Wet Suit Glove	7.5.3 Abrasion Resistance Test Two	Every year
Wet Suit Glove	7.5.4 Glove Hand Function Test	Every year
Wet Suit Glove	7.5.5 Grip Test	Every year
Wet Suit Glove	7.5.6 Glove Donning Test	Every year
Wet Suit Glove	7.5.7 Corrosion Resistance Test	Every year
Wet Suit Glove	7.5.8 Label Durability and Legibility Test	Every year
Dry Suit Glove	7.6.1 Cut Resistance Test	Every year
Dry Suit Glove	7.6.2 Puncture Resistance Test	Every year
Dry Suit Glove	7.6.3 Abrasion Resistance Test Two	Every year
Dry Suit Glove	7.6.4 Glove Hand Function Test	Every year
Dry Suit Glove	7.6.5 Grip Test	Every year
Dry Suit Glove	7.6.6 Glove Donning Test	Every year
Dry Suit Glove	7.6.7 Corrosion Resistance Test	Every year
Dry Suit Glove	7.6.8 Liquid Penetration Resistance Test	Every year
Dry Suit Glove	7.6.9 Viral Penetration Resistance Test	Seams only - Every year
Dry Suit Glove	7.6.10 Overall Liquid Integrity Test Two	Every year
Dry Suit Glove	7.6.11 Label Durability and Legibility Test	Every year
Ice Suit Glove	7.7.1 Cut Resistance Test	Every year
Ice Suit Glove	7.7.2 Puncture Resistance Test	Every year
Ice Suit Glove	7.7.3 Abrasion Resistance Test Two	Every year
Ice Suit Glove	7.7.4 Glove Hand Function Test	Every year
Ice Suit Glove	7.7.5 Grip Test	Every year
Ice Suit Glove	7.7.6 Glove Donning Test	Every year
Ice Suit Glove	7.7.7 Corrosion Resistance Test	Every year
Ice Suit Glove	7.7.8 Liquid Penetration Resistance Test	Every year
Ice Suit Glove	7.7.9 Viral Penetration Resistance Test	Seams only - Every year
Ice Suit Glove	7.7.10 Label Durability and Legibility Test	Every year
Ice Suit Glove	7.7.11 Thermal Insulation Test	Every year
Wet Suit Footwear	7.8.1 Footwear Drainage Test	Every year
Wet Suit Footwear	7.8.2 Abrasion Resistance Test Two (Upper)	Every year
Wet Suit Footwear	7.8.3 Cut Resistance Test	Every year
Wet Suit Footwear	7.8.4 Puncture Resistance Test (Upper)	Every year
Wet Suit Footwear	7.8.5 Abrasion Resistance Test Two (Sole)	Every year
Wet Suit Footwear	7.8.6 Puncture Resistance Test (Sole)	Every year
Wet Suit Footwear	7.8.7 Slip Resistance Test	Every year
Wet Suit Footwear	7.8.8 Corrosion Resistance Test	Every year
Wet Suit Footwear	7.8.9 Label Durability and Legibility Test	Every year
Dry Suit Footwear	7.8.1 Footwear Drainage Test	Every year
Dry Suit Footwear	7.8.2 Abrasion Resistance Test Two (Upper)	Every year
Dry Suit Footwear	7.8.3 Cut Resistance Test	Every year



Table 4.4.1 *Continued*

Product	Test	Time
Dry Suit Footwear	7.8.4 Puncture Resistance Test (Upper)	Every year
Dry Suit Footwear	7.8.5 Abrasion Resistance Test Two (Sole)	Every year
Dry Suit Footwear	7.8.6 Puncture Resistance Test (Sole)	Every year
Dry Suit Footwear	7.8.7 Slip Resistance Test	Every year
Dry Suit Footwear	7.8.8 Corrosion Resistance Test	Every year
Dry Suit Footwear	7.8.9 Label Durability and Legibility Test	Every year
Ice Suit Footwear	7.9.1 Abrasion Resistance Test Two (Upper)	Every year
Ice Suit Footwear	7.9.2 Cut Resistance Test	Every year
Ice Suit Footwear	7.9.3 Puncture Resistance Test (Upper)	Every year
Ice Suit Footwear	7.9.4 Abrasion Resistance Test Two (Sole)	Every year
Ice Suit Footwear	7.9.5 Puncture Resistance Test (Sole)	Every year
Ice Suit Footwear	7.9.6 Slip Resistance Test	Every year
Ice Suit Footwear	7.9.7 Liquid Penetration Resistance Test	Every year
Ice Suit Footwear	7.9.8 Viral Penetration Resistance Test	Seams only - Every year
Ice Suit Footwear	7.9.9 Corrosion Resistance Test	Every year
Ice Suit Footwear	7.9.10 Label Durability and Legibility Test	Every year
Ice Suit Footwear	7.9.11 Thermal Insulation Test	Every year
Personal Flotation Device	7.10.1 Buoyancy Test — SG3& 20 of UL 1123	Initial certification
Personal Flotation Device	7.10.2 Label Durability and Legibility Test	Initial certification
Personal Flotation Device	7.10.3 Corrosion Resistance Test	Initial certification
Personal Flotation Device	6.11.1 Water Entry Test – SG3& 16 of UL 1123	Initial certification
Personal Flotation Device	6.11.1 Flotation Stability Test – SG3 & 17 of UL 1123	Initial certification
Personal Flotation Device	6.11.1 Buoyancy Distribution Test– SG3 & 19 of UL 1123	Initial certification
Personal Flotation Device	6.11.1 Tensile Test – SG3 & 24 of UL 1123	Initial certification
Personal Flotation Device	6.11.1 730 Pound Shoulder Tensile Test – SG3, SG10, & 24 of UL 1123	Initial certification
Personal Flotation Device	6.11.1 55 Pound Release Test – SG7 of UL 1123	Initial certification
Personal Flotation Device	6.11.1 730 Pound Harness Strength Test (without accelerated weathering) – SG9 of UL 1123	Initial certification
Personal Flotation Device	6.11.1 Pamphlet Strength of Attachment Test – SG3 & 35 of UL 1123	Initial certification
Personal Flotation Device	6.11.1 Pull Toggle Security of Attachment Test – SG7A of UL 1123	Initial certification

4.4.1.1 This recertification shall include inspection and evaluation to all design requirements and testing to all performance requirements as required by this standard on all manufacturer’s models and components as required by 4.4.3.

4.4.1.2 Any change that affects the product’s performance under design or performance requirements of this standard shall constitute a different model.

4.4.1.3 For the purpose of this standard, models shall include each unique pattern, style, or design of the product.

4.4.2 Any change that affects the element’s performance under the design or performance requirements of this standard shall constitute a different model.

4.4.3 For the purpose of this standard, models shall include each unique pattern, style, or design of the individual element.

4.4.4 Samples of manufacturer models and components for recertification shall be acquired as part of the follow-up program in accordance with 4.2.7 and shall be permitted to be used toward annual recertification.

4.4.5 The manufacturer shall maintain all design, inspection, performance, and test data from the certification organization used in the recertification of manufacturer models and components. The manufacturer shall provide such data, upon request, to the purchaser or authority having jurisdiction.

4.5 Manufacturers’ Quality Assurance Program.

4.5.1 The manufacturer shall provide and operate a quality assurance program that meets the requirements of this section and that includes a product recall system as specified in 4.2.7.1, and Section 4.8, Manufacturers’ Safety Alert and Product Recall Systems.

4.5.2 The operation of the quality assurance program shall evaluate and test compliant product production to the requirements of this standard to assure production remains in compliance.

4.5.3 The manufacturer shall be registered to ISO 9001, *Quality management systems – requirements*.

4.5.3.1 Registration to the requirements of ISO 9001, *Quality management systems – requirements*, shall be conducted by a registrar that is accredited for personal protective equipment in accordance with ISO/IEC 17021, *Conformity assessment– Requirements for bodies providing audit and certification of management systems*.

4.5.3.2 The scope of the ISO registration shall include at least the design and manufacturing systems management for the personal protective equipment being certified.

4.5.3.3 The registrar shall affix the accreditation mark on the ISO registration certificate.

4.5.4* Any entity that meets the definition of manufacturer specified in Section 3.3, General Definitions, and therefore is considered to be the “manufacturer,” but does not manufacture or assemble the compliant product, shall meet the requirements specified in this Section 4.5.

4.5.5* Where the manufacturer uses subcontractors in the construction or assembly of the compliant product, the locations and names of all subcontractor facilities shall be documented and the documentation shall be provided to the manufacturer’s ISO registrar and the certification organization.

4.6 Hazards Involving Compliant Product.

4.6.1* The certification organization shall establish procedures to be followed where situation(s) are reported in which a compliant product is subsequently found to be hazardous. These procedures shall comply with the provisions of ISO Guide 27, *Guidelines for corrective action to be taken by a certification body in the event of misuse of its mark of conformity*, and as modified herein.

4.6.2* Where a report of a hazard involved with a compliant product is received by the certification organization, the validity of the report shall be investigated.

4.6.3 With respect to a compliant product, a hazard shall be a condition, or create a situation, that results in exposing life, limb, or property to an imminently dangerous or dangerous condition.

4.6.4 Where a specific hazard is identified, the determination of the appropriate action for the certification organization and the manufacturer to undertake shall take into consideration the severity of the hazard and its consequences to the safety and health of users.

4.6.5 Where it is established that a hazard is involved with a compliant product, the certification organization shall determine the scope of the hazard including products, model numbers, serial numbers, factory production facilities, production runs, and quantities involved.

4.6.6 The certification organization’s investigation shall include, but not be limited to, the extent and scope of the problem as it might apply to other compliant product or compliant product components manufactured by other manufacturers or certified by other certification organizations.

4.6.7 The certification organization shall also investigate reports of a hazard where compliant product is gaining widespread use in applications not foreseen when the standard was written, such applications in turn being ones for which the product was not certified, and no specific scope of application has been provided in the standard, and no limiting scope of application was provided by the manufacturer in written material accompanying the compliant product at the point of sale.

4.6.8 The certification organization shall require the manufacturer of the compliant product, or, if applicable, the manufacturer of the compliant product component, to assist the certification organization in the investigation and to conduct its own investigation as specified in Section 4.7, Manufacturers’ Investigation of Complaints and Returns.

4.6.9 Where the facts indicating a need for corrective action are conclusive and the certification organization’s appeal procedures referenced in 4.2.11 have been followed, the certification organization shall initiate corrective action immediately, provided there is a manufacturer to be held responsible for such action.

4.6.10 Where the facts are conclusive and corrective action is indicated but there is no manufacturer to be held responsible, such as when the manufacturer is out of business or the manufacturer is bankrupt, the certification organization shall immediately notify relevant governmental and regulatory agencies and issue a notice to the user community about the hazard.

4.6.11* Where the facts are conclusive and corrective action is indicated, the certification organization shall take one or more of the following corrective actions:

- (1) Notify parties authorized and responsible for issuing a safety alert when, in the opinion of the certification organization, such a notification is necessary to inform the users
- (2) Notify parties authorized and responsible for issuing a product recall when, in the opinion of the certification organization, such a recall is necessary to protect the users
- (3) Remove the mark of certification from the product
- (4) Where a hazardous condition exists and it is not practical to implement (1), (2), or (3); or the responsible parties refuse to take corrective action, notify relevant governmental and regulatory agencies and issue a notice to the user community about the hazard

4.6.12 The certification organization shall provide a report to the organization or individual identifying the reported hazardous condition and notify them of the corrective action indicated or that no corrective action is indicated.

4.6.13* Where a change to an NFPA standard(s) is felt to be necessary, the certification organization shall also provide a copy of the report and corrective actions indicated to the National Fire Protection Association and shall also submit either a Public Input for a proposed change to the next revision of the applicable standard or a proposed Temporary Interim Amendment (TIA) to the current edition of the applicable standard.

4.7* Manufacturers’ Investigation of Complaints and Returns.

4.7.1 Manufacturers shall provide corrective action in accordance with ISO 9001, *Quality management systems – requirements*, for investigating written complaints and returned products.

4.7.2 Manufacturers’ records of returns and complaints related to safety issues shall be retained for at least 5 years.

4.7.3 Where the manufacturer discovers, during the review of specific returns or complaints, that a compliant product or compliant product component can constitute a potential safety risk to end users that is possibly subject to a safety alert or product recall, the manufacturer shall immediately contact the certification organization and provide all information about the review to assist the certification organization with its investigation.

4.8 Manufacturers’ Safety Alert and Product Recall Systems.

4.8.1 Manufacturers shall establish a written safety alert system and a written product recall system that describes the procedures to be used in the event that it decides, or is directed by the certification organization, to either issue a safety alert or conduct a product recall.

4.8.2 The manufacturers’ safety alert and product recall system shall provide the following:

- (1) The establishment of a coordinator and responsibilities by the manufacturer for the handling of safety alerts and product recalls

- (2) A method of notifying all dealers, distributors, purchasers, users, and the NFPA about the safety alert or product recall that can be initiated within a one-week period following the manufacturer's decision to issue a safety alert or to conduct a product recall, or after the manufacturer has been directed by the certification organization to issue a safety alert or conduct a product recall
- (3) Techniques for communicating accurately and understandably the nature of the safety alert or product recall and, in particular, the specific hazard or safety issue found to exist
- (4) Procedures for removing product that is recalled and for documenting the effectiveness of the product recall
- (5) A plan for either repairing or replacing, or compensating purchasers for, returned product

Chapter 5 Labeling and Information

5.1 Product Label Requirements.

5.1.1* Each item of protective clothing and equipment shall have a product label or labels permanently and conspicuously located inside each product when the product is properly assembled with all layers and components in place.

5.1.2 Multiple label pieces shall be permitted in order to carry all statements and information required to be on the product label. However, all label pieces comprising the product label shall be located adjacent to each other.

5.1.3* The certification organization's label, symbol, or identifying mark shall be permanently attached to the product label or shall be part of the product label. All letters shall be at least 2.5 mm ($\frac{3}{32}$ in.) high. The label, symbol, or identifying mark shall be at least 6 mm ($\frac{1}{4}$ in.) in height and shall be placed in a conspicuous location.

5.1.4 All worded portions of the required product label shall be printed at least in English.

5.1.5 Symbols and other pictorial graphic representations shall be permitted to be used to supplement worded statements on the product label(s). Such graphic representations shall be consistent and clearly communicate the intended message.

5.1.6 The following statement shall be printed legibly on the product label. The appropriate term for the item type (suit type, helmet, glove type, footwear type, personal flotation device) shall be inserted in this compliance statement text where indicated. All letters shall be at least 2.5 mm ($\frac{3}{32}$ in.) in height.

“THIS SURFACE WATER OPERATIONS [insert appropriate item term here] MEETS THE REQUIREMENTS OF NFPA 1952, STANDARD ON SURFACE WATER OPERATIONS PROTECTIVE CLOTHING AND EQUIPMENT, 2015 EDITION.

DO NOT REMOVE THIS LABEL!”

5.1.7 Where dry suits are certified as compliant with the non-optional requirements of this standard and also certified as compliant with the optional protection against chemical hazards specified in 7.2.19, the following statement shall be printed legibly on the product label. All letters shall be at least 2.5 mm ($\frac{3}{32}$ in.) high.

“THIS SURFACE WATER OPERATIONS [insert appropriate item term here] MEETS THE REQUIREMENTS OF NFPA 1952, STANDARD ON SURFACE WATER OPERATIONS PROTECTIVE CLOTHING AND EQUIPMENT, 2015 EDITION, AND THE OPTIONAL PROTECTION AGAINST CHEMICAL HAZARDS REQUIREMENTS OF NFPA 1952 .

DO NOT REMOVE THIS LABEL!”

5.1.8 The following information shall also be printed legibly on the product label. All letters shall be at least 1.6 mm ($\frac{1}{16}$ in.) high.

- (1) Manufacturer's name, identification, or designation
- (2) Manufacturer's address
- (3) Country of manufacture
- (4) Manufacturer's identification number, lot number, or serial number
- (5) Month and year of manufacture (not coded)
- (6) Model name, number, or design
- (7) Size
- (8) Materials of construction of the composite
- (9) Cleaning precautions
- (10) For suits, the clo value specified in 7.1.2 or 7.3.5
- (11) Total heat loss (THL) as required by 6.2.11

5.1.9 Supplementary Product Labels.

5.1.9.1 Where the protective clothing items consist of items or layers that can be separated from each other, each separable layer shall have a supplementary product label permanently attached.

5.1.9.2 Supplementary product labels shall also meet the requirements of 5.1.4 and 5.1.5.

5.2 User Information.

5.2.1 The manufacturer shall provide user information including, but not limited to, warnings, information, and instructions with each item.

5.2.2 The manufacturer shall attach the required user information, or packaging containing the user information, to the item in such a manner that it is not possible to use the item without being aware of the availability of the information.

5.2.3 The required user information, or packaging containing the user information, shall be attached to the item so that a deliberate action is necessary to remove it. The product manufacturer shall provide notice that the user information is to be removed ONLY by the end user.

5.2.4* The item manufacturer shall provide instructions and information regarding at least the following with each item:

- (1) Pre-use information, including the following:
 - (a) Safety considerations
 - (b) Limitations of use
 - (c) Marking recommendations and restrictions
 - (d) A statement that most performance properties of the item cannot be tested by the user in the field
 - (e) Warranty information
- (2) Preparation for use, including the following:
 - (a) Sizing/adjustment
 - (b) Recommended storage practices
- (3) Inspection, including inspection frequency and details