

**STANDARDS PRESENTATION
TO
CALIFORNIA OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD**

PROPOSED STATE STANDARD,
TITLE 8, DIVISION 1, CHAPTER 4

Article 10.1 Personal Protective Clothing and Equipment for Fire Fighters

§3401. Application

§3402. Definitions.

§3402.1 Personal Protective Equipment Purchase Quality Standards for Structural and Proximity Fire Fighting.

§3402.2 Personal Protective Equipment Purchase Quality Standards for Wildland Fire Fighting.

§3402.3 Selection, Inspection, and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting.

§3403. Head, Eye, and Face Protection.

§3404. ~~Eye and Face Protection.~~ Ear and Neck Protection and Protective Hood Interface.

§3405. ~~Ear and Neck Protection.~~ Body Protection.

§3406. ~~Body Protection.~~ Hand and Wrist Protection.

§3407. ~~Hand and Wrist Protection.~~ Foot Protection.

~~§3407.1 CBRN Protective Ensemble for Structural and Proximity Fire Fighting Ensembles~~

§3408. ~~Foot Protection.~~ Personal Alert Safety Systems (PASS).

§3409. Respiratory Protection.

§3410. ~~Wildland Fire Fighting Requirements~~ Selection, Inspection, and Maintenance of Protective Ensembles for Wildland Firefighting.

§3410.1 Personal Protective Equipment for Wildland Firefighting.

Blue- notes and relevant information for discussion

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Amend §3401 to read:

§3401. Application.

(a) These Orders establish minimum requirements for personal protective clothing and equipment for fire fighters when exposed to the hazards of fire fighting activity and take precedence over any other Safety Order with which they are inconsistent.

Sections ~~3403-3409~~ 3402.1, 3402.3 through 3409, inclusive, apply to proximity and structural fire fighting as defined in Section 3402.

(b) General Requirements.

(1) Personal protective clothing and equipment specified in these Orders shall be provided and used whenever such employees are required to work in a hazardous environment that may be encountered during fire fighting activities or under similar conditions during training activities.

(2) The employer shall ensure the availability, maintenance, and use of all protective clothing and equipment in accordance with these Orders.

(3) Employees shall be instructed to wear or utilize appropriate personal protective clothing and equipment when directed to work in a hazardous environment until such time as the officer in charge determines that such protection is no longer required.

(4) Personal protective clothing and equipment that has become damaged or otherwise defective to the point of voiding its intended protection shall be removed from service.

(5) Fire fighters and other employees engaged in emergency activities requiring special protective techniques and equipment shall be trained in the appropriate techniques and provided with the necessary protective equipment.

(6) Employers shall develop and require use of a written plan covering the safe use, maintenance, utilization, and replacement of the equipment required in these Orders, and all affected employees shall be trained in accordance with such plan.

Note to (b)(6): See Section 3402.3. Selection, Inspection, and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting

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(7) Employers shall ensure that new protective clothing and equipment provided be furnished with a statement of performance declaring that the product has been tested and meets the requirements of these Orders.

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

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Amend §3402 to read:

§3402. Definitions. ~~[After the proposal is finalized, the terminology that are not used in Article 10.1 will be deleted]~~

~~After Flame. The time a test specimen continues to flame after the flame source has been removed. (When subjected to flame resistance test.)~~ ~~[Procedures for flame resistance test found in NFPA 1971]~~

~~After Glow. The time a test specimen continues to glow after it has ceased to flame. (When subjected to flame resistance test.)~~ ~~[not found in NFPA 1971, not used in the standard]~~

~~Break-away Device. A type of chin strap or chin strap connection designed so that excessive pressure exerted on the helmet in the form of upward force will cause the chin strap to open and release the helmet from the head.~~ ~~[contradicts NFPA 1971]~~

Buddy-Breathing Device. An accessory to self-contained breathing apparatus which permits a second person to share the same air supply as that of the wearer of the apparatus. ~~[Replaced by EBSS in the NFPA 1981 (2013) edition]~~

~~Char Length. The distance from the end of the specimen which was exposed to flame source, to the upper edge of the charred, burned, or void area. (When subjected to flame resistance test.)~~ ~~[described in NFPA 1971]~~

~~Education. The process of imparting knowledge or skill through systematic instruction. It does not require formal classroom instruction.~~ ~~[not used in Article 10.1]~~

Emergency Pick-Up Labor. Personnel consisting of National Guard, military forces, forest product workers, farm workers, ranchers, and other persons who may be recruited from time to time to help contain and control wildland fires.

Enclosed Structure. A structure with a roof or ceiling and at least two walls which may present fire hazards to employees; such as, accumulations of smoke, toxic gases and heat, similar to those found in buildings.

~~Energy Absorption System. A material or suspension system, or combination thereof, placed inside the helmet between the exterior shell and the wearer's head to absorb and distribute impact energy.~~ ~~[NFPA 1971, energy absorbing system]~~

Face Shield. A heat and flame resistant device worn in front of the eyes and face, whose predominant function is protection of the eyes and face. ~~[Defined in NFPA 1971 and ANSI Z87.1]~~

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Fire Fighter. An employee who is assigned to fire fighting activity, and is required to respond to alarms and perform emergency action at the location of a fire or fire related danger. Included are the employees of fire departments, fire protection districts, state fire agencies, organized fire companies, and private fire brigades when engaged in fire fighting activity. The term does not apply to emergency pick-up labor or other persons who may perform first-aid fire extinguishment as collateral to their regular duties.

Fire Fighting Activity. Physical action taken in the direct act of fire suppression, and rescue or hazardous duties performed at the location of a fire emergency.

~~**Fire Fighting, Structural.** The comprehensive physical fire suppression activity of public fire departments as determined by Sections 25210.5 and 25643 of the California Government Code.~~ [Removed this definition, the government code below does not define structural fire fighting]

~~**Flame Resistance.** A property of materials which causes resistance to ignition or combustion, provided through the use of inherently flame resistant materials, or materials treated to be flame resistant in a manner that the treatment will remain effective for the service life of the material under conditions anticipated for its use.~~ [NFPA 1971 uses the term [inherent flame resistance](#)]

~~**Harmful Exposure.** An exposure to oxygen deficient atmosphere, or to dusts, fumes, mists, vapors, chemicals or gases of such concentration and duration as to cause injury. An exposure to dusts, fumes, mists, vapors, or gases:~~

~~(a) In excess of any permissible limit prescribed by Section 5155; or~~

~~(b) Of such a nature by inhalation as to result in, or have a probability to result in, injury, illness, disease, impairment, or loss of function.~~

Hazardous Environment. A place where a fire fighter is likely to receive a harmful exposure to a hazardous substance, or be exposed to physical or mechanical hazards which are likely to cause injury.

Hazardous Substance. One which by reason of being explosive, flammable, poisonous, corrosive, oxidizing, irritant or otherwise harmful, is likely to cause injury.

Heat Resistance. The ability of a material to retain its original properties such as shape, size, strength, hardness, resilience, non-conductivity, or appearance when subjected to temperatures specified in heat resistance tests.

Helmet. A device consisting of a shell, energy absorption system, and retention system intended to be worn to provide protection for the head or portions thereof against impact, flying or falling objects,

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electric shock, penetration, heat and flame, or any combination thereof. ~~[NFPA defines structural and proximity fire fighting helmet]~~

~~Incipient Stage Fire. A fire which is in the initial or beginning stage and which can be controlled or extinguished by portable fire extinguishers, Class II standpipe, small hose systems, or other methods without the need for protective clothing or breathing apparatus.~~

~~Independent Service Provider (ISP). See Section 3402.3(g) [defined in NFPA 1851]~~

Injury. Includes work related illness, disease, impairment, disfigurement, loss of function of any part of the body, as well as symptoms of significant adverse effects or damage.

Interior Structural Fire Fighting Activities (Private Fire Brigades). The physical activity of fire suppression, rescue or both, inside of buildings or enclosed structures which are involved in a fire situation beyond the incipient stage.

~~Lining. A material attached to the inside of the outer shell of a garment for the purpose of thermal protection and padding.~~

Long Duration Breathing Device. A self-contained respiratory protective device designed to provide the user with a respirable atmosphere for a minimum service time of one hour.

~~Outer Shell. The exterior layer of material on the fire coat and protective trousers which forms the outermost barrier between the fire fighter and the environment. It is attached to the vapor barrier and liner and is usually constructed with a storm flap, suitable closures, and pockets.~~

Primary Eye Protection. A protective device specifically intended to shield the eyes from certain hazards while permitting vision.

Private Fire Brigade. An organized group of private industry fire personnel who may also be assigned to other functions, but who have priority obligation to fire protection. Fire fighting responsibility may be independent, under mutual-aid agreement, or supported by regular fire service assistance.

Protective Clothing. Outer garments other than turnout clothing consisting of trousers, jackets, or coveralls.

Proximity Fire Fighting. Specialized fire fighting operations that can include the activities of rescue, fire suppression, and property conservation at incidents involving fire producing high levels of radiant heat as well as conductive and convective heat.

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Quick Disconnect Valve. A device which starts the flow of air by inserting of the hose (which leads from the facepiece) into the regulator of self-contained breathing apparatus, and stops the flow of air by disconnection of the hose from the regulator.

Respiratory Protective Device (RPD). A breathing device designed to protect the wearer from oxygen-deficient, or hazardous atmosphere.

(A) **Self-contained breathing apparatus (SCBA).** A portable respiratory protective device, normally designed to be worn by the user by means of an incorporated harness assembly, with its own supply of air, oxygen or oxygen generating material. It is normally equipped with a full facepiece. Self-contained breathing apparatus is further described in 30 CFR Chapter 1, Part 11, Subpart H.

(B) **Closed-Circuit Self-Contained Breathing Apparatus.** A device in which exhaled breath is scrubbed of CO₂ and recycled.

(C) **Open-Circuit Self-Contained Breathing Apparatus.** A device in which compressed air is released to the face piece from a storage cylinder, and exhaled air is expelled to the atmosphere. (Oxygen supply is not permitted in open-circuit breathing apparatus used in fire fighting activities.)

(D) **Demand-Type Breathing Apparatus.** Equipment in which pressure inside the facepiece is slightly negative on inhalation, and positive on exhalation.

(E) **Positive-Pressure Type Breathing Apparatus.** Equipment in which the pressure inside the facepiece is positive during both inhalation and exhalation.

(F) **Combination Breathing Apparatus-Respirator.** A combination of compressed air self-contained breathing apparatus and National Institute of Occupational Safety and Health (NIOSH) Type C supplied-air respiratory protective device of the positive-pressure type. Combination respirator equipment is further described in 30 CFR, Chapter 1, Part 11, Subparts H and J.

~~Retention System. The complete assembly by which the helmet is retained on the head. Included are a chin strap and adjustable or fitted liner for a proper fit. [described in NFPA 1971]~~

Self-Extinguishing. A term applied to a material which when subjected to flaming ignition, may ignite and propagate only until removal of the source of ignition.

~~Service Time. The period of time that a respirator has been rated by NIOSH to provide protection to the wearer. [not used in the standard]~~

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Training. The process of making proficient through instruction and hands-on practice in the operation of equipment, including respiratory protection equipment, that is expected to be used and in the performance of assigned duties.

~~Trousers.~~ A garment worn to cover the lower part of the human body from the waist to the ankles. [\[term used in NFPA 1971\]](#)

~~Turnout Clothing.~~ Protective clothing consisting of a coat and trousers as specified in NFPA 1971 (1981) "Protective Clothing for Structural Fire Fighting" except as modified by Section 3406(b) of these Orders.

~~Vapor Barrier.~~ That material used to prevent or substantially inhibit the transfer of water, corrosive liquids and steam or other hot vapors from the outside of a garment to the wearer's body. [\[NFPA 1971 does not use the term vapor barrier, but uses the term moisture barrier\]](#)

Wildlands. Sparsely populated geographical areas covered primarily by grass, brush, trees, crops, or combination thereof.

~~Winter Liner.~~ A detachable extra lining worn inside turnout garments and head protection to give added protection to the wearer against the effects of cold weather and wind. [\[used in NFPA 1971\]](#)

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

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Add new section to read:

§3402.1 Personal Protective Equipment Purchase Quality Standards for Structural and Proximity Fire Fighting.

(a) Helmets ordered or purchased on or after July 1, 2017, for use in structural fire fighting or proximity fire fighting shall meet the certification, labeling, design, performance, and testing requirements of the National Fire Protection Association (NFPA) 1971, Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting, 2013 Edition, which is hereby incorporated by reference. In addition to any other applicability, the aforementioned purchase quality standards apply to discretionary equipment orders or purchases.

Exception: Protective ensemble or ensemble elements meeting the most current NFPA 1971 edition will be deemed as meeting the standard.

(b) Eye or face protection ordered or purchased on or after July 1, 2017, for use in structural firefighting or proximity fire fighting shall meet the certification, labeling, design, performance, and testing requirements of NFPA 1971, Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire fighting, 2013 Edition, which is hereby incorporated by reference. In addition to any other applicability, the aforementioned purchase quality standards apply to discretionary equipment orders or purchases.

Exception: Protective ensemble or ensemble elements meeting the most current NFPA 1971 edition will be deemed as meeting the standard.

(c) Hoods ordered or purchased after on or after July 1, 2017 for use in structural or proximity fire fighting shall meet the certification, labeling, design, performance, and testing requirements of NFPA 1971, Standard on Protective Ensemble for Structural Fire Fighting and Proximity Fire Fighting, (2013) Edition, which is hereby incorporated by reference. In addition to any other applicability, the aforementioned purchase quality standards apply to discretionary equipment orders or purchases.

Exception: Protective ensemble or ensemble elements meeting the most current NFPA 1971 edition will be deemed as meeting the standard.

(d) Protective garments or clothing ordered or purchased on or after July 1, 2017, for use in structural or proximity fire fighting shall meet the certification, labeling, design, performance, and testing requirements of NFPA 1971, Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting, 2013 Edition, which is hereby incorporated as by reference. In addition to

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any other applicability, the aforementioned purchase quality standards apply to discretionary equipment orders or purchases.

Exception: Protective ensemble or ensemble elements meeting the most current NFPA 1971 edition will be deemed as meeting the standard.

(e) Hand protection ordered or purchased on or after July 1, 2017, for use in structural or proximity fire fighting shall meet the design, performance, testing and certification requirements of NFPA 1971, Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting, 2013 Edition, which is hereby incorporated by reference. In addition to any other applicability, the aforementioned purchase quality standards apply to discretionary equipment orders or purchases.

Exception: Protective ensemble or ensemble elements meeting the most current NFPA 1971 edition will be deemed as meeting the standard.

(f) Protective footwear ordered or purchased on or after July 1, 2017, for use in structural or proximity fire fighting shall meet certification, labeling, design, performance and testing requirements of NFPA 1971, Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting, (2013) Edition , which is hereby incorporated by reference. In addition to any other applicability, the aforementioned purchase quality standards apply to discretionary equipment orders or purchases.

Exception: Protective ensemble or ensemble elements meeting the most current NFPA 1971 edition will be deemed as meeting the standard.

(g) CBRN ensembles, or parts thereof (which include garments, helmet, gloves, footwear interface components, and hood when hood is not already part of protective garment), ordered or purchased on or after July 1, 2017 shall meet the certification, labeling design, performance, and testing requirements of NFPA 1994, Standard on Protective Ensembles for First Responders to CBRN Terrorism Incident, (2012) Edition, which is hereby incorporated by reference. In addition to any other applicability, the aforementioned purchase quality standards apply to discretionary equipment orders or purchases. [This was proposed, but the committee decided not to impose CBRN requirements statewide. State has the HAZWOPER standard and is leaving the decision to purchase CBRN equipment up to the local jurisdiction]

Exception: CBRN ensemble or ensemble elements meeting the most current NFPA 1994 edition will be deemed as meeting the standard.

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(h)-(g) Personal Alert Safety Systems (PASS) Purchase Quality Standards. Alarm devices ordered or purchased on or after July 1, 2017 shall meet the certification, labeling, design, performance and testing requirements of NFPA 1982, Standard on Personal Alert Safety Systems (PASS), 2013 Edition, which is hereby incorporated by reference. In addition to any other applicability, the aforementioned purchase quality standards apply to discretionary equipment orders or purchases.

Exception: Protective ensemble or ensemble elements meeting the most current NFPA 1982 edition will be deemed as meeting the standard.

(i) Open circuit self-contained breathing apparatus (SCBA) purchased on or after July 1, 2017 shall meet the certification, labeling, design, performance and testing requirements of NFPA 1981, Standard on Open Circuit Self-Contained Breathing Apparatus for Emergency Services, 2013 Edition, which is hereby incorporated by reference. In addition to any other applicability, the aforementioned purchase quality standards apply to discretionary equipment orders or purchases.

Exception: Protective ensemble or ensemble elements meeting the most current NFPA 1981 edition will be deemed as meeting the standard.

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

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Add a new section to read:

§3402.2 Personal Protective Equipment Purchase Quality Standards for Wildland Fire Fighting

(a) Wildland fire fighting personal protective clothing and equipment ordered or purchased on or after July 1, 2017 shall meet the requirements of NFPA 1977, Protective Clothing and Equipment for Wildland Fire Fighting, 2011 Edition, which is hereby incorporated by reference. In addition to any other applicability, the aforementioned purchase quality standards apply to discretionary equipment orders or purchases.

Exception: Protective ensemble or ensemble elements meeting the most current NFPA 1977 edition will be deemed as meeting the standard.

(b) Fire Shelter Purchase Quality Standards. Fire shelters ordered or purchased on or after July 1, 2017 shall meet or exceed the US Department of Agriculture, Forest Service Specification for Forest Fire Shelter, 5100-606C (August 22, 2011), which is hereby incorporated by reference. In addition to any other applicability, the aforementioned purchase quality standards apply to discretionary equipment orders or purchases.

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

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Add a new section to read:

§ 3402.3 Selection, Inspection, and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting

(a) NFPA 1851, Standard on Selection, Care, and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting (2014), shall be incorporated by reference except for the following :

(1) In addition to the recordkeeping requirements of Section 4.3 of Chapter 4, Program of the NFPA 1851 (2014), the employer shall maintain records on its structural and proximity fire fighting protective ensemble and ensemble elements for three years from the date of retirement.

(b) Helmets that do not meet the requirements of NFPA 1971 (xxxx) edition shall be retired 10 years from the date it was manufactured.

(c) Effective Dates

(1) Chapter 5 (Selection), Chapter 6.1 (General Inspection) and 6.2 (Routine Inspection), Chapter 7.1. (General Cleaning , and 7.2 (Routine Cleaning) of NFPA 1851(2014) shall be effective xx-xx-xxxx. [1 year from OAL effective date]

(2) Chapter 6.3 (Advanced Inspection), Chapter 7.3 (Advanced Cleaning) , Chapter 8 (Repair), Chapter 9 (Storage), Chapter 10 (Retirement), Chapter 11 (Verification) of NFPA 1851 (2014), and Chapter 12 (Test Procedures) of NFPA 1851 (2014), and Subsection shall be effective xx-xx-xxxx. [5 years after OAL effective date]

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

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Amend §3403 to read:

§3403. Head, Eye and Face Protection.

(a) General. Head protection shall be provided for each fire fighter, and shall be maintained in a location of readiness for immediate response to fires and like emergencies. Head protection shall be worn by fire fighters whenever they are exposed to head injury hazard. Head protection is normally provided for fire fighters through the use of helmets.

(b) Minimum Requirements, Structural Fire Fighting. [The proposal §3402.3 (c) was changed to a 5 year phase in for retirement. In the meantime, in service PPE has to meet the existing standard]

(1) Helmet shell, energy absorbing system, retention system, fluorescent and retroreflective trim shall meet the requirements of NFPA 1971, Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting, 2000 edition. [This will become inconsistent with §3402.3 after the transition period is completed. Future rulemaking will be required to make this requirement consistent with §3402.3(c)(2)]

~~(1) Helmets ordered or purchased after January 1, 1988 for use in structural fire fighting shall be labeled as meeting the requirements contained in NFPA 1972 (1985) "Structural Fire Fighters' Helmets." While the helmets are in service:~~

~~(A) Section 3-8 "Ear Covers" shall be optional when protection required by Section 3405 is provided.~~

~~(B) Section 3-9 "Faceshields" shall be optional when protection required by Section 3404 is provided.~~

~~(C) Section 3-10 "Fluorescent Retroreflective Markings" shall be optional~~

~~(2) Helmets ordered, purchased and/or placed in service prior to January 1, 1988, for use in structural fire fighting shall meet the performance, construction, and testing requirements of the National Fire Safety and Research Office, National Fire Prevention and Control Administration, U. S. Department of Commerce contained in "Model Performance Criteria for Structural Fire Fighters' Helmets, dated August, 1977," with the following additional requirements:—[28 year old helmets that were purchased or placed in service prior to July 1, 1998 should already be retired]~~

~~(A) The helmet shall be compatible with the breathing apparatus face piece.~~

~~(B) Visibility and reflectivity shall be optional.~~

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~~(C) Earflaps shall be optional when protection required by Section 3405 is provided.~~

~~(D) A durable label shall be permanently attached and shall include the following information:~~

- ~~1. Name or designation of manufacturer;~~
- ~~2. Month and year of manufacture;~~
- ~~3. Lot Number; and~~
- ~~4. Model designation.~~

(c) Eye and Face Protection [Relocated from 3404]

~~(1) Employees exposed to eye injury hazards shall be protected in accordance with the provisions of Section 3382.~~

(1) Eye protection or eye protection and face protection shall be provided to each firefighter to protect from eye injuries such as punctures, abrasions, contusions, or burns as a result of contact with flying particles, hazardous substances, or projections which are inherent in the work or environment.

~~(2) In addition to the requirements of Section 3382, and wherever eye and face protection is not provided by the breathing apparatus facepiece, the face of the fire fighter engaged in structural fire fighting activities shall be protected by one or more of the following means, or other equivalent methods when exposed to injurious heat or flame:~~

~~(A) Face shield attached to the helmet;~~

~~(B) Heat and flame resistant hood;~~

~~(C) High collar and throat strap.~~

~~(b) Face Shields. Face shields of plastic or glass shall meet the optical qualities, impact resistance and light transmission standards specified in either the ANSI Z87.1 (1979) or ANSI Z87.1 (1989, and revision Z87.1a-1989), "Practice for Occupational and Educational Eye and Face Protection", which are hereby incorporated by reference. Face shields constructed of other materials such as wire mesh, shall provide visibility not less than required by ANSI Z87.1. All face shields shall be capable of withstanding heat in accordance with the provisions of Section 3403(b).~~

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(2) Eye and face protection purchased after July 1, 2017 shall be meet the American National Standard, Practice for Occupational and Educational Eye and Face Protection, Z87.1-2010 which is hereby incorporated by reference. In addition, it shall bear the mark “Z87+”.

(3) Primary eye protection shall be required unless the self-contained breathing apparatus (SCBA) is being used. The full facepiece of SCBA shall be considered as face and eye protection when worn.

(4) If the facepiece has a face-mounted regulator that when disconnected provides a direct path for flying objects to strike the face or eye, the facepiece shall have the regulator attached in order to be considered as face and eye protection.

(5) When operating in a hazardous area at an emergency scene without a full-face respirator, firefighters shall wear primary eye protection that is designed to protect the eyes from the hazard.

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

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Amend §3404 to read:

§3404. Ear and Neck Protection and Protective Hood Interface [Relocated from Section 3405].

(a) Protection against burns or injury to the ears and neck shall be provided by one or more of the following means, ~~or other equivalent methods~~: [Relocated from Section 3405 (a)]

- (1) Helmet configuration;
- (2) Ear flap attachment to helmet;
- (3) Flexible neck protector cape or winter liner worn with helmet;
- (4) Flared neck shield attached to brim of helmet;
- (5) Hood or shroud ~~or snood~~;
- (6) High collar and throat strap.

(b) Hood and Coat Collars. Such devices shall be constructed and tested in accordance with the provisions of Section 3406 Body Protection NFPA 1971, Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting, 2000 edition, which is hereby incorporated by reference. [Relocated from 3404 (c)]

~~(b) Fabric specified in this section shall be constructed and tested in accordance with the provisions of Section 3406, Body Protection.~~ [Relocated from 3405(b)]

~~(c) Non-fabric materials shall meet heat and flame resistance requirements of Section 3403, Head Protection.~~ [Relocated from 3405(c)]

(c) Fabric and non-fabric materials shall meet the requirements of NFPA 1971, Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting, 2000 edition.

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

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Amend §3405 to read:

§3405. ~~Ear and Neck Protection.~~~~[Relocated to Section 3404]~~Body Protection. ~~[Relocated from Section 3406]~~

(a) Body protection shall be provided for each fire fighter when exposed to the hazards of structural and proximity fire fighting activity. Body protection shall consist of turnout clothing or an appropriate combination of a turnout coat and protective clothing meeting the requirements of Section 3406(e). structural or proximity fire protective garments.~~[Relocated from Section 3406(a) with modifications.]~~

(b) ~~Turnout Clothing. Performance, construction, testing and certification of fire fighter turnout clothing shall be at least equivalent to the requirements of National Fire Protection Association (NFPA) publication 1971 (1981), "Protective Clothing for Structural Fire Fighting," with the following permissible variations in those requirements:~~[Existing text from §3406 (b) Should this section be replaced by a different edition? Are 34 year old turn outs still allowed? Notable change in the 2000 edition]

~~(1) Liner may be detachable but the shell shall not be used as turnout clothing without the liner.~~

~~(2) To achieve increased ventilation of trapped body heat, the protective clothing outer shell and impermeable vapor barrier may be penetrated by ventilation openings protected by nonmetallic flame resistant materials equal to this standard. Openings in the coat shall be restricted to the underside of the upper arm, and the upper portion of the front and back. Openings in the trousers shall be restricted to the areas of the groin and the outseam of the leg between the knee and the waist band. Water deflecting flaps shall be required for all openings except underarm and groin area openings. Openings in the liner are not permitted except underarm and groin area unless protected by an insulating flap. Vents shall be made of nonmetallic flame resistant materials equal to this standard.~~

~~(3) Tearing strength of the outer shell shall be a minimum of eight pounds in any direction.~~

~~(4) Flame resistance, including that of trim, shall not exceed:~~

~~(A) 2.0 seconds after flame (maximum)~~

~~(B) 8.0 seconds after glow (maximum).~~

~~(5) The outer shell and lining may char or discolor but must retain heat resistance as specified in Section 3406(b)(4) and shall not separate or melt when placed in a forced air laboratory oven at a temperature of 500 F (260° C) for a period of 5 minutes.~~

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(b) Fire fighting protective garments shall meet the performance, construction, testing and certification requirements of the National Fire Protection Association (NFPA) 1971 Standard on Protective Ensemble for Structural Fire Fighting, 2000 edition or NFPA 1971, Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting, 2007 or 2013 edition.

~~(c) Protective Clothing, other than turn-out clothing. Protective clothing, other than turnout clothing, shall meet the following minimum performance requirements: [Existing text from Section 3406 (c)]~~

~~(1) Flame Resistance. When tested in accordance with Federal Test 191, Method 5903.2, "Flame Resistance of Cloth, Vertical" (Standard small scale test), test results shall not exceed the following limits: [Flame Test Method for the 2000 edition is Method 5903.1, Flame Resistance of Cloth: Vertical of Federal Method 191A. Textile Test Methods shall be used. The 191A does not have (A)(B)(C). Controlled flame is held at the bottom edge of the garment for 12 seconds.]~~

~~(A) 2.0 seconds after flame (maximum)~~

~~(B) 8.0 seconds after glow (maximum)~~

~~(C) 6.0 inches average char length.~~

~~(2) Ignition of the material shall not produce any melting and dripping of molten or flaming material. It is specifically required that upon exposure to flaming ignition, or to heat sufficient to char the fabric, the material will not adhere to the skin of the wearer so as to cause or contribute to the severity of burns.~~

~~EXCEPTION: Outer garments of 100% wool, with a weight of at least 14 ounces per lineal yard of 54-inch width shall be considered as sufficiently flame resistant for such use.~~

~~(3) Certification. Garments shall be certified to meet the requirements of Section 3406(c)(1), flame resistance; and as defined in Section 3402. [Flame resistance definition is different from the 2000 edition of NFPA]~~

~~(4) A durable label shall be permanently attached and shall include the following information:~~

~~(A) Lot Number;~~

~~(B) Name and number of specified test; and~~

~~(C) Date of specified test.~~

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(c) Turnout coats in combination with turnout trousers, or turnout coats and protective clothing meeting the requirements of Section ~~3405(b)~~ ~~3406(e)~~ shall be worn on all structural and proximity fires. Body protection provided for other than structural fires shall be appropriate for the potential hazards. [\[Existing text from Section 3406 \(d\)\]](#)

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

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Amend §3406 to read: [\[Relocated from 3407\(a\)\]](#)

§3406. Hand and Wrist Protection

(a) Protective gloves shall be provided for each fire fighter when exposed to the hazards of structural and proximity fire fighting activity. Such protective gloves shall be properly sized and suitable to the hazards encountered in fires and fire related emergencies.

(b) Protective gloves for fire fighters shall be made of durable outer material designed to withstand the effects of flame, heat, vapor, liquids, sharp objects and other hazards that are encountered in fire fighting.

~~(c) Thermal insulation for protective gloves shall be sufficient to limit the inside surface temperature of the glove material (in contact with the hand) to no more than 111° F (44° C) when subjected to the tests specified in subparagraphs 1, 2 and 3:~~

~~(1) Gloves shall be preconditioned in accordance with Federal Test 191, Method 5903.2.~~

~~(2) The palm of the glove shall be exposed to a conductive heat load of 9320 F (5000 C) for a period of 5 seconds at 4 psi pressure using an object made of iron with 3.14 in² surface area and sufficient mass to induce the pressure without assistance.~~

~~(3) The back of the glove shall be exposed to a stable 1.0 watt/cm² radiant heat load for a period of 1 minute.~~

~~(d) Protective glove material and pattern shall allow the dexterity of hand and finger movement, a sense of feel for objects, when handling fire fighting equipment, and a satisfactory grip when handling halyards. Gloves shall have separate finger compartments and shall have an integral wristlet not less than 4 inches in length unless other wrist protection is provided as permitted in Section 3407(e).~~

~~(1) Dexterity. Dexterity shall be evaluated using a standardized procedure known as the Bennett Dexterity Test. No more than 130% of baseline time shall be accomplished.~~

~~(2) Grip Test. Grip testing shall be evaluated with the use of a 3/8-inch diameter Manila halyard attached to a spring scale. Bare handed lift capability shall be baseline weight. Weight pulling capacity dry shall be no less than 80% of baseline. Weight pulling capacity wet shall be no less than 70% of baseline. Gloves and halyards shall be preconditioned dry and wet prior to test.~~

~~(3) Preconditioning:~~

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~~Dry~~ Gloves and halyards shall be preconditioned at 25o C. for a period of 4 hours.

~~Wet~~ Gloves and halyards shall be thoroughly soaked by immersing in water for a minimum of 30 minutes prior to testing.

~~(4) Test Requirements. Gloves shall be tested dry, then water soaked as required and tested (without re-drying) within one minute after removal from the soak.~~

~~(e) Protection against burns or injury to the wrist shall be provided by one or more of the following means or other equivalent methods:~~

~~(1) A minimum 4 inch wristlet attached to the gloves.~~

~~(2) An extended wristlet of sufficient length, attached to the sleeve of the turnout coat, to completely cover the wrist area under all conditions.~~

~~(f) Fabric specified in this section shall be constructed and tested in accordance with the provisions of Section 3406, Body Protection.~~

~~(g) (c) A durable label in accordance with NFPA 1971(2013) shall be permanently attached to each glove. Labeling may be accomplished by stamping, embossing, affixing, or other suitable method. and shall include the following information:~~

~~(1) Lot Number;~~

~~(2) Reference to specified test; and~~

~~(3) Date of successful test.~~

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

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Amend §3407 to read:

§3407. Foot Protection [Relocated from 3408]

(a) Foot protection shall be provided in accordance with Section 3385-to and worn by fire fighters while engaged in structural and proximity fire fighting activity.

(b) The use of foot protection shall be coordinated with the wearing of the protective clothing system to ensure full body protection.

(c) Turnout Boots. Fire fighter turnout boots shall meet the requirements of MIL-B-2885D (5-23-73)-NFPA 1971, 2013 edition, which is hereby incorporated by reference.

~~(d) In addition to the requirements of Section 3408(a), protective footwear other than turnout boots shall also provide:~~

~~(1) Slip resistant outsoles.~~

~~(2) Sole penetration as required in MIL-B2885D (1973) and amendment dated 1975 "Military Specifications for Firemen's Boots."~~

~~(3) Permanently attached, corrosion resistant midsoles.~~

~~(4) Firm ankle support in horizontal and vertical working loads.~~

~~(5) If used, corrosion resistant, lockable fasteners.~~

~~(6) Toe protection meeting the requirements of either the ANSI Z41 (1983) or (1991), classification 75, which are hereby incorporated by reference.~~

~~(7) Corrosion resistant ladder shanks.~~

~~(8) Durable outer shell materials withstanding the effects of flame, heat, sharp objects and other hazards encountered in fire fighting activities.~~

(e) Toe protection shall be optional for those fire fighters who are regularly engaged in structural and wildlands fire fighting activities.

NOTE: Authority and reference cited: Section 142.3, Labor Code.

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Amend §3408 to read:

§3408. Foot Protection. Personal Alert Safety Systems (PASS) [Relocated from Section 3401]

(a) Firefighters shall be provided with and use a PASS device in emergency situations that involve entrapment hazards due to a possible structural collapse of any type or atmospheric hazards such as immediately dangerous to life and health (IDLH) atmospheres. PASS shall also be worn when directed by the incident commander or incident safety officer.

(b) Personal Alarms.

(1) Every fire fighter engaged in interior structural fire fighting activities requiring the use of self-contained breathing apparatus shall be provided and use with a personal alarm device. Alarm devices ordered or purchased after January 1, 1986, shall meet the requirements of Section 3401(e)(3)(B) and NFPA 1982 (1983) 2007 edition.

(2) Operation.

(A) Controls shall be incorporated in alarm devices for manual activation and reset, and shall be protected against accidental deactivation. Such controls shall be designed to be operated by a gloved hand.

(B) Alarm devices shall contain a motion detector which will activate the alarm if the fire fighter is motionless for not less than twenty (20) seconds nor more than forty (40) seconds. The alarm shall also include a pre-warning device to signal the fire fighter that the alarm is approaching the point of activation.

(3) Performance.

(A) Alarm devices shall emit a signal with a sound pressure level of not less than 85 dba measured at a distance of three (3) meters for not less than one (1) hour using an eighty percent (80%) charged battery. Signal frequency used shall not be less than 2000 Hz nor more than 4000 Hz.

(B) The alarm shall operate in a temperature range of -10° C to 80° C and for a period of two minutes at 140° C.

(C) Alarm devices shall be designed to withstand damage created by deterioration of the type of battery recommended by the manufacturer for use in such devices.

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~~(D) Alarm devices shall remain operable after being submerged in sea water for at least one hour at a depth of two meters.~~

~~(E) Alarm devices shall be impact and shock resistant, and shall be designed to remain operable after being dropped six (6) successive times from random positions onto a concrete floor from a height of not less than two meters.~~

~~(F) Alarm devices shall not weigh more than 350 grams, including batteries.~~

~~(4) Safety.~~

~~(A) Alarm devices shall be equipped with a visual or audible device to indicate when the battery has been discharged to not less than 80 percent of its rated capacity.~~

~~(B) Alarm devices shall be equipped with an audible means to warn of the malfunction of the motion sensing circuitry.~~

~~(C) Alarm devices shall be intrinsically safe for use in a flammable or explosive atmosphere.~~

~~(5)(2) Certification.~~

Alarm devices shall be labeled or otherwise certified to indicate compliance with this section.

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

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Amend §3409 to read:

§3409. Respiratory Protection.

(a) Approved Equipment.

(1) Approvals. Fire fighters exposed to harmful exposure in the course of their assigned activities shall be provided with, and shall use respiratory protective devices that are approved and certified in accordance with Section 5144, and the methods and requirements specified by the National Institute of Occupational Safety and Health (NIOSH) under 42 CFR part 84.

~~(b) (2) Self-Contained Breathing Apparatus (SCBA). Permissible Devices~~

~~(A) (1) Respiratory protective devices provided for and used by fire fighters in structural fire fighting activity shall be limited to those types classified as self-contained breathing apparatus (SCBA), and combination breathing apparatus of the supplied-air positive-pressure type.~~

~~(2) SCBAs shall be selected, cleaned, inspected, and maintained in accordance with NFPA 1852, Standard on Selection, Care, and Maintenance of Open-Circuit Self-Contained Breathing Apparatus (SCBA), 2013 Edition, which is hereby incorporated by reference.~~

~~(A) If available and in keeping with NIOSH approvals, the facepieces of SCBAs shall be upgraded to facepieces that meet the Lens Radiant Heat Resistance Performance and Elevated Temperature Heat and Flame Resistance Performance requirements of NFPA 1981 (2013) edition.~~

~~(B) (3) Closed-circuit self-contained breathing apparatus shall not be used by fire fighters except where it has been demonstrated that long duration breathing apparatus is necessary. If such breathing devices are used, quantitative fit tests providing a minimum protection factor of 5,000 shall be performed on each individual using the long duration breathing apparatus. The quantitative fit test procedures shall be available for inspection by the Division.~~

~~(A) Close-circuit SCBA shall be NIOSH certified with a minimum rated life of at least 2 hours and shall operate in the positive pressure mode only.~~

~~(b) (c) General Requirements.~~

(1) Written Standard Procedures. The employer shall develop and implement comprehensive written standard operating procedures for the use, care, maintenance, and training relating to respiratory

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protective equipment in accordance with Section 5144 and ANSI Z88.2 (1980), "Practices for Respiratory Protection," and ANSI Z88.5 (1981), "Practices for Respiratory Protection for the Fire Service." The operating procedures required by this subsection are exempt from the prohibition of the use of contact lenses specified in ANSI Z88.2(1980) and ANSI Z88.5(1981).

~~(2) When emergency conditions require the urgent multi-person use of the same facepiece, requirements of Section 5144(h) pertaining to cleaning and sanitation of the facepiece shall not apply.~~

(2) SCBA shall be worn during overhaul operations unless the employer can demonstrate that a lesser level of protection is appropriate.

(3) Operating Service Time. Respiratory protective devices provided for use by fire fighters shall have a rated service time of at least 30 minutes in accordance with the methods and requirements specified by NIOSH 42 CFR part 84.

Exception: Respiratory protective devices of less than 30 minutes rated service time shall only be used for escape, rescue and observation.

~~(4) Automatic Warning Signal. Respiratory protective devices provided for use by fire fighters shall be equipped with an automatic device that produces an audible signal to warn the user that the remaining service time of the unit has been reduced to 20-25%. Means shall be designed and incorporated to indicate to the user that his alarm has been activated. [NFPA 1981 would have the specifications for the automatic warning system]~~

~~(5)~~(4) Buddy-Breathing. Approved self-contained breathing apparatus may be equipped with either a "buddy-breathing" device or a quick disconnect valve, even if these devices are not certified by NIOSH. If these accessories are used, they shall not cause damage to the apparatus, or obstruct the normal operation of the apparatus. ~~[EBSS replaced buddy-breathing for the NFPA 1981(2013) edition]~~

~~(5)~~(6) Air Cylinders. Approved self-contained compressed air breathing apparatus may be used with approved cylinders from other approved self-contained compressed air breathing apparatus provided that such cylinders are of the same capacity and pressure rating. All compressed air cylinders used with self-contained breathing apparatus shall meet United States Department of Transportation (DOT) and NIOSH criteria.

~~(e)~~ (d) Positive Pressure. Except as permitted in Section 3409(a)(2)(B), all compressed air self-contained breathing apparatus used in fire fighting activity shall be of positive pressure type.

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code

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§3410. Wildland Fire Fighting Requirements. [Relocate to 3410.1] Selection, Inspection, and Maintenance of Protective Ensembles for Wildland Firefighting

(a) The employer shall perform a risk assessment prior to the selection of personal protective equipment. The risk assessment shall include, but not be limited to, the hazards that can be encountered by wildland firefighters based on the following:

- (1) Type of duties performed while wearing wildland PPE
- (2) Identification and characterization of hazards of the duties while wearing wildland PPE
- (3) Geographic location, elevation, and climate
- (4) Seasonal effect
- (5) Type and density of vegetation
- (6) Garment configurations of the wildland PPE, single layer or multi-layer
- (7) Organizational experience and lessons learned with current wildland firefighter PPE
- (8) Proximity and location of private residences and other habitable structures in relation to wildland vegetation and areas of refuge.

(b) Selection. The employer shall determine the operational requirements for wildland firefighting PPE in relation to their risk assessment

- (1) Identify the garment configuration and garment component.
- (2) Specify performance criteria for each wildland firefighter PPE garment and components
 - (A) The employer shall consider the following:
 - a. Compliance with NFPA 1977 (2011) edition
 - b. Radiant Protection Performance (RPP)
 - c. Thermal Health Loss (THL)
- (3) Identify other selection factors, for example, design features, comfort, compatibility, sizing.

(c) Inspection

- (1) Personal protective equipment shall be inspected before and after every use.
- (2) PPE shall be inspected for the following:
 - (A) contamination and soiling
 - 1. If the garment is contaminated by blood or other potentially infectious material, the garment shall be handled in accordance with Section 5193.
 - (B) rips, tears, holes and any other irregularities
 - (C) damage to pockets
 - (D) fabric damage
 - (E) discoloration
 - (F) embrittlement
 - (G) burns, char
 - (H) seam integrity
 - (I) closures
 - (J) hardware

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(K) reinforcements

(3) Defective PPE shall be repaired in accordance with the manufacturer's specification or, removed from service and replaced.

(d) Cleaning. The employer shall establish procedures for cleaning PPE. The procedures shall include the following:

(1) Frequency. The end user shall determine if the garment shall be spot cleaned or machine washed after every use.

(A) Protective garments shall be completely washed in a washing machine as often as necessary to remove soiling.

(2) Cleaning agents. The employer shall identify that type of cleaning agents appropriate for the garments and other PPE.

(3) Spot cleaning and machine washing procedures

(4) Drying procedures

(5) Determination if ironing is permitted

(e) Training. Employees shall be trained on:

(1) Proper fit or sizing of PPE

(2) Limitations of the PPE

(3) Proper use of the PPE

(4) Donning and doffing

(3) Cleaning procedures

(4) Inspection procedures and frequencies

(5) Storage of PPE

(6) Deployment of the fire shelter at least annually.

(f) Retirement

(1) Protective garments shall be retired 10 years from the date of manufacture.

(2) Personal protective equipment that do not meet the requirements of NFPA 1977 (2013) shall be retired by July 1, 2021. [The year will be decided during the meeting]

(g) Recordkeeping

(1) Training records demonstrating the implementation of Subsection (e) shall be maintained for 3 years. Records shall include employee name or other identifier, training dates, type(s) of training, make (manufacturer), model and serial number of assigned PPE.

(2) Records of retired PPE shall be maintained for 3 years.

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§3410.1 Personal Protective Equipment for Wildland Firefighting

(a) Head Protection.

(1) Head protection shall be worn by fire fighters whenever they are exposed to head injury hazard. Head protection shall be provided for each fire fighter, and shall be maintained in a location of ready availability to the fire fighter.

(2) Emergency Pick-up Labor. Head protection shall be provided for emergency pick-up labor in a hazardous environment on wildland fires, ~~and shall consist of structural fire fighting helmets or industrial hard hats or military helmet liners. Helmets and liners shall meet ANSI Z89.1 (1969) standards, and may be either Type 1 or 2 any Class.~~

[Emergency Pick-Up Labor. Personnel consisting of National Guard, military forces, forest product workers, farm workers, ranchers, and other persons who may be recruited from time to time to help contain and control wildland fires.]

(3) Helmets. ~~Minimum Helmet Requirements. Configuration. The helmet shall conform to ANSI Z89.1 (1969) full brim (Type 1) Class D, or brimless with peak (Type 2) Class A, or structural fire helmets as specified in Section 3403.~~ Head protection shall conform to one of the following:

(A) Structural firefighting helmet in accordance with Section 3403.

(B) Type I or Type II, Class G or Class E helmets as specified in ANSI/ISEA Z89.1 (2014), American National Standard for Industrial Head Protection, which is hereby incorporated by reference.

[Type I helmets are intended to reduce the force of impact resulting from a blow only to the top of the head

Type II helmets are intended to reduce the force of impact resulting from a blow to the top or sides of the head.

Class G (Electrical) helmets are intended to reduce the danger of contact with low voltage conductors. Test samples shall be proof-tested at 2200 volts (phase to ground). This voltage is not intended as an indication of the voltage at which the helmet protects the wearer]

(C) NFPA 1977 (2005 or 2011) edition, Standard On Protective Clothing and Equipment for Wildland Fire Fighting, which is hereby incorporated by reference.

(4) Accessories. Provision shall be incorporated for attachment of accessories without shell penetration. Retention shall be provided by chin strap, nape strap or other equivalent mean.

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Class E (Electrical) are intended to reduce the danger of contact with higher voltage conductors. Test samples are proof-tested at 20,000 volts (phase to ground). This voltage is not intended as an indication of the voltage at which the helmet protects the wearer.

Class C (Conductive) helmets are not intended to provide protection against contact with

~~(4) Weight. Head protection, except the helmets specified in Section 3403, complete with suspension and headband, but exclusive of accessories, shall not weigh more than 20 ounces. [No weight requirements in NFPA 1977 and ANSI]~~

~~(5) Heat Resistance. When placed in a forced air laboratory oven at a temperature of 300o F (149o C) for a period of five minutes, the helmet shell shall not undergo softening, melting, shrinking or other visible distortion. [Heat resistance test has changed, see NFPA 1977]~~

~~(6)~~ (5) Each helmet shall be durably and legibly labeled or embossed/engraved in a manner such that the label can be easily read without removing padding or any other permanent part, and shall include the following information:

Name or designation of manufacturer

Month and year of manufacture

Lot number

Model designation

~~(b) Eye Protection. Employees exposed to eye injury hazards shall be protected in accordance with the provisions of Section 3382 by using protective goggles, which meets ANSI Z87.1 (2010), American National Standard for Occupational and Educational Personal Eye and Face Protection Devices. Eye protection shall have a means of attachment that is designed to be used with head protection.~~

~~(c) Thermal Protection of the Ears and Neck.-Protection against burns on the ear and neck shall be provided by one or more of the following means, or other equivalent methods, when fire fighters engaged in wildland fire fighting are exposed to injurious heat and flame: flared neck shield attached to brim of helmet; hood, shroud or snood; high collar with throat strap. Fabric specified for this purpose shall be constructed and tested in accordance with the provisions of NFPA 1977, Standard On Protective Clothing and Equipment for Wildland Fire Fighting, 2011 edition. ~~Section 3410(d) for body protection.~~ Similar protection shall be provided emergency pick-up labor when exposed to injurious heat and flame. –~~

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(d) Body Protection.

(1) Body protection shall be provided to each fire fighter exposed to wildland firefighting. Protective garments used by firefighters shall meet the requirements of NFPA 1977, Standard On Protective Clothing and Equipment for Wildland Fire Fighting, 2005 or 2011 edition, which is hereby incorporated by reference. Clothing directly exposed to fire environment and subject to flame impingement shall meet the requirements of Section 3406(e).

(2) Emergency Pick-up Labor. Flame resistant protective shirts shall be provided as soon as reasonably possible. Heavy-duty work trousers of 100 percent cotton or 100 percent wool shall be considered as sufficiently flame resistant for the type of fire exposure normally experienced by this class of fire fighter and may be worn in lieu of other flame-resistant type clothing.

(3) Chainsaw protectors. Chainsaw protectors shall be provided to and used by firefighters (including inmate firefighters) who operate chainsaws. The chainsaw protectors (chaps) shall meet the requirements of NFPA 1977, Standard On Protective Clothing and Equipment for Wildland Fire Fighting, 2011 edition, which is hereby incorporated by reference. [Difference with chainsaw protectors NFPA approved vs. regular chaps is heat resistance]

(e) ~~Hand and Wrist Protection.~~ Protective Gloves

(1) Protective gloves shall be provided ~~to for each~~ wildland fire fighters (including inmate firefighters). Gloves shall be properly sized and suitable to the hazards encountered in wildland fire fighting activities. Fire fighters shall wear protective gloves whenever exposed to a hazardous environment that may cause injury to the hand or wrist.

(2) Protective gloves shall meet the design and performance requirements of NFPA 1977, Standard on Protective Clothing and Equipment for Wildland Fire Fighting, 2011 edition, which is hereby incorporated by reference.

~~(A) Minimum Requirements. Protective gloves shall have a durable outer material of leather or treated fabric designed to withstand the effects of heat, flame or other hazards encountered in wildland fire fighting. Glove material and pattern shall allow dexterity of hand movement and sense of feel for objects. The exterior of the gloves shall be designed to be free of potential snags. Gloves shall be of the gunn cut pattern.~~

~~(2) Wrist protection fabric shall meet the requirements of Section 3406(e) and shall consist of either:~~

~~(A) Integral knit wristlets of not less than four inches in length, attached to the gloves and designed to protect the wrist area when the arms are extended upward and outward from the body; or~~

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~~(B) Wristlets, of sufficient length to completely cover the wrist area under all conditions, attached to the sleeves of the outer garment.~~

(3) Emergency Pick-up Labor. Emergency pick-up labor exposed to hand injury hazard, and not equipped with gloves, shall be provided with gloves which meet these standards.

(f) Foot Protection.

(1) Protective footwear shall be worn by fire fighters (including inmate firefighters), while engaged in wildland fire fighting activities.

(2) Protective footwear shall meet the requirements of NFPA 1977, Standard On Protective Clothing and Equipment for Wildland Fire Fighting, 2011 edition.

~~(2) Minimum Requirements. Protective footwear for fire fighters and emergency pick-up labor engaged in wildland fire fighting shall consist of heavy duty lace type work boots with non-slip soles and heels, and shall provide firm ankle support. Leather tops shall be at least six inches in height measured from the bottom of the shoe heel.~~

(g) Fire Shelters. A fire shelter shall be provided and made immediately available for every fire fighter (including inmate firefighter) when engaged in fire fighting activities in wildlands as defined in these orders. The fire shelter shall meet or exceed U.S. Department of Agriculture, Forest Service Specification for Forest Fire Shelter, ~~5100-320D~~ 5100-606C.

(h) Respiratory Protection

(1) Firefighters exposed or who could become foreseeably exposed to harmful exposure in the course of their assigned activities shall be provided with, and shall use respiratory protective devices that are approved and certified in accordance with Section 5144, and the methods and requirements specified by the National Institute of Occupational Safety and Health (NIOSH) under 42 CFR part 84.

(2) Wildland air purifying respirator shall be NIOSH approved as complying with NFPA 1984, Standard on Respirators for Wildland Fire Fighting Operations, 2016 edition or equivalent. [There is currently no NIOSH approved respirators that meet NFPA 1984]

(i) Load carrying equipment for carrying gear shall be provided to firefighters (including inmate firefighters). Load carrying equipment shall be meet the requirements of NFPA 1977, Standard On Protective Clothing and Equipment for Wildland Fire Fighting, 2007 or 2011 edition.