

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

PROPOSED STATE STANDARD,
TITLE 8, CHAPTER 4

Amend Section 8354 to add the following definitions in alphabetical order:

§ 8354. Definitions.

(a) Definitions.

Accessible Surface. A surface capable of being worked upon without changing, altering, or dismantling the parts concerned.

Adjacent Spaces. Those spaces bordering a subject space in all directions, including all points of contact, corners, diagonals, decks, tank tops, and bulkheads.

Alarm. A signal or message from a person or device that indicates that there is a fire, medical emergency, or other situation that requires emergency response or evacuation. At some shipyards this may be called an “incident” or a “call for service.”

Alarm System. A system that warns employees at the worksite of danger.

Barge. An unpowered, flat bottom, shallow draft vessel including scows, carfloats, and lighters. For purposes of these orders, the term does not include ship-shaped or deep draft barges.

Body Harness. A system of straps that may be secured about the employee in a manner that will distribute the fall arrest forces over at least the thighs, shoulders, chest and pelvis, with means for attaching it to other components of a personal fall arrest system.

Certified Industrial Hygienist (CIH). An industrial hygienist who is certified by the American Board of Industrial Hygiene.

Chief. The Chief of the Division of Occupational Safety and Health or designee.

Class II Standpipe System. A 1½ inch (3.8 cm) hose system which provides a means for the control or extinguishment of incipient stage fires.

Coast Guard Authorized Person. An individual who meets the requirement of Appendix B to section 8355 for tank vessels, for passenger vessels, and for cargo and miscellaneous vessels.

Cofferdam. The space between two bulkheads located close together.

Cold Work. Any operation which does not involve heat, fire, or sparks.

Compartment. A subdivision of space or room in a ship.

Contract Employer. An employer, such as a painter, joiner, carpenter, or scaffolding sub-contractor, who performs work under a contract to the host employer or to another employer under contract to the host employer at the host employer’s worksite. This excludes employers who provide incidental services that do not influence shipyard employment (such as mail delivery or office supply services).

Dangerous Atmosphere. An atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (i.e., escape unaided from a confined or enclosed space), injury, or acute illness.

Designated Area. An area established for hot work after an inspection that is free of fire hazards.

Division. Division of Occupational Safety and Health.

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Drop Test. A method utilizing gauges to ensure the integrity of an oxygen fuel gas burning system. The method requires that the burning torch is installed to one end of the oxygen and fuel gas lines and then the gauges are attached to the other end of the hoses. The manifold or cylinder supply valve is opened and the system is pressurized. The manifold or cylinder supply valve is then closed and the gauges are watched for at least sixty (60) seconds. Any drop in pressure indicates a leak.

Emergency Operations. Activities performed by fire response organizations that are related to: rescue, fire suppression, emergency medical care, and special operations or activities that include responding to the scene of an incident and all activities performed at that scene.

Enter with Restrictions. Denotes a space where entry for work is permitted only if engineering controls, personal protective equipment, clothing, and time limitations are as specified by the Marine Chemist, Certified Industrial Hygienist, or the shipyard competent person.

Entry. The action by which a person passes through an opening into a space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space.

Fire Hazard. A condition or material that may start or contribute to the spread of a fire.

Fire Protection. Methods of providing fire prevention, response, detection, control, extinguishment, and engineering.

Fire Response. The activity taken by the employer at the time of an emergency incident involving a fire at the worksite, including fire suppression activities carried out by internal or external resources or a combination of both, or total or partial employee evacuation of the area exposed to the fire.

Fire Response Employee. A shipyard employee who carries out the duties and responsibilities of shipyard firefighting in accordance with the fire safety plan.

Fire Response Organization. An organized group knowledgeable, trained, and skilled in shipyard firefighting operations that responds to shipyard fire emergencies, including: fire brigades, shipyard fire departments, private or contractual fire departments, and municipal fire departments.

Fire Suppression. The activities involved in controlling and extinguishing fires.

Fire Watch. A person having knowledge of and qualified in fire prevention and suppression techniques, whose duties include: patrolling areas for the purpose of fire prevention; checking areas that are potential fire hazards, reporting potential fire hazards directly to the nearest person in charge of the job; suppressing any small fires, and immediately reporting all fires to the yard fire department and/or immediate supervisor of the operation.

Fixed Extinguishing System. A permanently installed fire protection system that either extinguishes or controls fire occurring in the space it protects.

Flammable Liquid. Any liquid having a flashpoint below 100 °F (37.8 °C), except any mixture having components with flashpoints of 100 °F (37.8 °C) or higher, the total of which make up 99 percent or more of the total volume of the mixture.

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Gangway. Any ramp-like or stair-like means of access provided to enable personnel to board or leave a vessel including accommodation ladders, gangplanks and brows.

Hazardous Substance. A substance likely to cause injury by reason of being explosive, flammable, poisonous, corrosive, oxidizing, an irritant, or otherwise harmful.

Horse. A device or structure generally used in multiple for supporting a platform of boards or planks. It consists essentially of a single header or ledger supported at each end by two legs assembled in the form of A-frames.

Hose Systems. Fire protection systems consisting of a water supply, approved fire hose, and a means to control the flow of water at the output end of the hose.

Host Employer. An employer who is in charge of coordinating work or who hires other employers to perform work at a multi-employer workplace.

Hot work. Any activity involving riveting, welding, burning, the use of powder-actuated tools or similar fire-producing operations. Grinding, drilling, abrasive blasting, or similar spark-producing operations are also considered hot work except when such operations are isolated physically from any atmosphere containing more than 10 percent of the lower explosive limit of a flammable or combustible substance.

Immediately Dangerous to Life or Health (IDLH). An atmosphere that poses an immediate threat to life or that is likely to result in acute or immediate severe health effects.

Incident Management System. A system that defines the roles and responsibilities to be assumed by personnel and the operating procedures to be used in the management and direction of emergency operations; the system is also referred to as an "incident command system" (ICS).

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

Inert or Inerted Atmosphere. An atmospheric condition where:

- (1) The oxygen content of the atmosphere in the space is maintained at a level equal to or less than 8.0 percent by volume or at a level at or below 50 percent of the amount required to support combustion, whichever is less; or
- (2) The space is flooded with water and the vapor concentration of flammable or combustible materials in the free space atmosphere above the water line is less than 10 percent of the lower explosive limit for the flammable or combustible material.

Inerting. The displacement of the atmosphere in a permit space by noncombustible gas (such as nitrogen) to such an extent that the resulting atmosphere is noncombustible. This procedure produces an IDLH oxygen-deficient atmosphere.

Interior Structural Firefighting Operations. The physical activity of fire response, rescue, or both involving a fire beyond the incipient stage inside of buildings, enclosed structures, vessels, and vessel sections.

Labeled. Identified with a sign, placard, or other form of written communication, including pictograms, that provides information on the status or condition of the work space to which it is attached.

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Ledger. The horizontal member of a scaffold that runs at right angles to the structure and directly supports the planking of the platform.

Lower Explosive Limit (LEL). The minimum concentration of vapor in air below which propagation of a flame does not occur in the presence of an ignition source.

Marine Chemist. An individual who possesses a current Marine Chemist Certificate issued by the National Fire Protection Association.

Multi-Employer Workplace/site. A workplace where there is a host employer and at least one contract employer.

Not Safe for Hot Work. Denotes a space where hot work may not be performed because the conditions do not meet the criteria for Safe for Hot Work.

Nationally Recognized Testing Laboratory (NRTL). An organization recognized by the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA), in accordance with Appendix A of Title 29 Code of Federal Regulations section 1910.7, which tests for safety and lists or labels or accepts equipment and materials that meet all the criteria found in section 1910.7(b)(1) through (b)(4)(ii).

NIOSH. The National Institute for Occupational Safety and Health, U.S. Department of Health and Human Services, or designated representative.

Not Safe for Workers. Denotes a space where an employee may not enter because the conditions do not meet the criteria for Safe for Workers.

Oxygen-Deficient Atmosphere. An atmosphere having an oxygen concentration of less than 19.5 percent by volume.

Oxygen-Enriched Atmosphere. An atmosphere that contains 22.0 percent or more oxygen by volume.

Personal Alert Safety System (PASS). A device that sounds a loud signal if the wearer becomes immobilized or is motionless for 30 seconds or more.

Physical Isolation. The elimination of a fire hazard by removing the hazard from the work area (at least 35 feet for combustibles), by covering or shielding the hazard with fire-resistant material, or physically preventing the hazard from entering the work area.

Physically Isolated. Positive isolation of the supply from the distribution piping of a fixed extinguishing system. Examples of ways to physically isolate include: removing a spool piece and installing a blank flange; providing a double block and bleed valve system; or completely disconnecting valves and piping from all cylinders or other pressure vessels containing extinguishing parts.

Platform. A floored elevated area. It may be erected in the scaffolding independent of the staging or elsewhere.

Protected Space. Any space into which a fixed extinguishing system can discharge.

Proximity Firefighting. Specialized firefighting operations that require specialized thermal protection and may include the activities of rescue, fire suppression, and property conservation at incidents involving fires that produce very high levels of conductive, convective and radiant heat such as aircraft fires, bulk flammable gas fires, and bulk flammable liquid fires. Proximity

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firefighting operations usually are exterior operations but may be combined with structural firefighting operations. Proximity firefighting is not entry firefighting.

Psi. Pounds per square inch.

Qualified Instructor. A person with specific knowledge, training, and experience in fire response or fire watch activities to cover the material found in Section 8397.13(b) or (c).

Rescue. Locating endangered persons at an emergency incident, removing those persons from danger, treating the injured, and transporting the injured to an appropriate health care facility.

Ribbon. The horizontal member in a scaffold which runs from upright to upright parallel to the hull or structure and is normally placed directly under the ledger.

Safe for Hot Work. Denotes a space that meets all of the following criteria:

- (1) The oxygen content of the atmosphere does not exceed 22.0 percent by volume;
- (2) The concentration of flammable vapors in the atmosphere is less than 10 percent of the lower explosive limit;
- (3) The residues or materials in the space are not capable of producing a higher concentration than permitted in subsection (1) or (2) of the above, under existing atmospheric conditions in the presence of hot work and while maintained as directed by the Marine Chemist or competent person, and
- (4) All adjacent spaces have been cleaned, or inerted, or treated sufficiently to prevent the spread of fire.

Safe for Workers. Denotes a space that meets the following criteria:

- (1) The oxygen content of the atmosphere is at least 19.5 percent and below 22 percent by volume;
- (2) The concentration of flammable vapors is below 10 percent of the lower explosive limit (LEL);
- (3) Any toxic materials in the atmosphere associated with cargo, fuel, tank coatings, or inerting media are within permissible concentrations at the time of the inspection; and
- (4) Any residues or materials associated with the work authorized by the Marine Chemist, Certified Industrial Hygienist, or competent person will not produce uncontrolled release of toxic materials under existing atmospheric conditions while maintained as directed.

Scaffolding. The structure erected and maintained for the purpose of supporting the staging planks.

Service Line. A small rope or hand line used for hoisting and lowering light loads by hand.

Shipbreaking. Any breaking down of a vessel's structure for the purpose of scrapping the vessel, including the removal of gear, equipment or any component part of a vessel.

Shipbuilding. The construction of a vessel, including the installation of machinery and equipment.

Shiprepair. Repair of a vessel including, but not restricted to, alterations, conversions, installations, cleaning, painting, and maintenance work.

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Shipyard Firefighting. The activity of rescue, fire suppression, and property conservation involving buildings, enclosed structures, vehicles, vessels, aircraft, or similar properties involved in a fire or emergency situation.

Small Hose System. A system of hoses ranging in diameter from 5/8" (1.6 cm) up to 1½" (3.8 cm) which is for the use of employees and which provides a means for the control and extinguishment of incipient stage fires.

Space. An area on a vessel or vessel section or within a shipyard such as, but not limited to: cargo tanks or holds; pump or engine rooms; storage lockers; tanks containing flammable or combustible liquids, gases, or solids; rooms within buildings; crawl spaces; tunnels or accessways. The atmosphere within a space is the entire area within its bounds.

Staging. The runways or walkways supported by the scaffolding, and from which or upon which the employees work.

Standard Guardrail. See Article 16, Construction Safety Orders.

Standpipe. A fixed fire protection system consisting of piping and hose connections used to supply water to approved hose lines or sprinkler systems. The hose may or may not be connected to the system.

Suitable. Capable of performing with safety the particular function specified in these orders.

Toeboard. A board set on edge in the same vertical plane as the railing and whose lower edge is no more than 1/4-inch from the top of the staging, platform or runway.

Upper Explosive Limit (UEL). The maximum concentration of flammable vapor in air above which propagation of flame does not occur on contact with a source of ignition.

Vessel. Includes every description of watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on water, including special purpose floating structures not primarily designed for or used as a means of transportation on water.

Vessel Section. A sub-assembly, module, or other component of a vessel being built, repaired, or broken.

Visual Inspection. The physical survey of the space, its surroundings and contents to identify hazards such as, but not limited to, restricted accessibility, residues, unguarded machinery, and piping or electrical systems.

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

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Amend Section 8397.12 to read:

§ 8397.12 Fire Response.

- (e) Personal protective clothing and equipment for fire response employees.
- (1) General requirements: The employer shall:

(7) Personal Alert Safety System (PASS) devices. The employer shall:

(i) Provide each fire response employee involved in firefighting operations with a PASS device; and

(ii) Ensure that each PASS device meets the recommendations in NFPA1982-1998 Standard on Personal Alert Safety Systems (PASS), which is hereby incorporated by reference.

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

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Add new Section 8397.14 to read:

§ 8397.14. Precautions for Hot Work.

(a) General requirements.

(1) Designated Areas. The employer may designate areas for hot work in sites such as vessels, vessel sections, fabricating shops, and subassembly areas that are free of fire hazards.

(2) Non-designated Areas.

(A) Before authorizing hot work in a non-designated area, the employer must visually inspect the area where hot work is to be performed, including adjacent spaces, to ensure the area is free of fire hazards, unless a Marine Chemist's certificate or Shipyard Competent Person's log is used for authorization.

(B) The employer shall authorize employees to perform hot work only in areas that are free of fire hazards, or that have been controlled by physical isolation, fire watches, or other positive means.

Note to subsection (a)(2): The requirements of subsection (a)(2) apply to all hot work operations in shipyard employment except those covered by Articles 4 and 7 of these Orders.

(b) Specific requirements.

(1) Maintaining fire hazard-free conditions. The employer must keep all hot work areas free of new hazards that may cause or contribute to the spread of fire. Unexpected energizing and energy release are covered by Section 8397.2 and the Electrical Safety Orders. Exposure to toxic and hazardous substances is covered in General Industry Safety Orders, Article 107, Section 5155.

(2) Fuel gas and oxygen supply lines and torches. The employer must make sure that:

(A) No unattended fuel gas and oxygen hose lines or torches are in confined spaces;

(B) No unattended charged fuel gas and oxygen hose lines or torches are in enclosed spaces for more than 15 minutes;

(C) All fuel gas and oxygen hose lines are disconnected at the supply manifold at the end of each shift;

(D) All disconnected fuel gas and oxygen hose lines are rolled back to the supply manifold or to open air to disconnect the torch; or extended fuel gas and oxygen hose lines are not reconnected at the supply manifold unless the lines are given a positive means of identification when they were first connected and the lines are tested using a drop test or other positive means to ensure the integrity of fuel gas and oxygen burning system.

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

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Add new Section 8397.15 to read:

§ 8397.15. Fire Watches.

(a) Written fire watch policy. The employer must create and keep current a written policy that specifies the following requirements for employees performing fire watch in the workplace:

(1) The training employees must be given (Section 8397.13(c) contains detailed fire watch training requirements);

(2) The duties employees are to perform;

(3) The equipment employees must be given; and

(4) The personal protective equipment (PPE) that must be made available and worn as required by Article 10 of the General Industry Safety Orders.

(b) Posting fire watches. The employer must post a fire watch if during hot work any of the following conditions are present:

(1) Slag, weld splatter, or sparks might pass through an opening and cause a fire;

(2) Fire-resistant guards or curtains are not used to prevent ignition of combustible materials on or near decks, bulkheads, partitions, or overheads;

(3) Combustible material closer than 35 ft. (10.7m) to the hot work in either the horizontal or vertical direction cannot be removed, protected with flame-proof covers, or otherwise shielded with metal or fire-resistant guards or curtains;

(4) The hot work is carried out on or near insulation, combustible coatings, or sandwich-type construction that cannot be shielded, cut back, or removed, or in a space within a sandwich type construction that cannot be inerted;

(5) Combustible materials adjacent to the opposite sides of bulkheads, decks, overheads, metal partitions, or sandwich-type construction may be ignited by conduction or radiation;

(6) The hot work is close enough to cause ignition through heat radiation or conduction on the following:

(A) Insulated pipes, bulkheads, decks, partitions, or overheads; or

(B) Combustible materials and/or coatings;

(7) The work is close enough to unprotected combustible pipe or cable runs to cause ignition; or

(8) A Marine Chemist, a Coast Guard-authorized person, or a shipyard Competent Person, as defined in Section 8355 of these Orders, requires that a fire watch be posted.

(c) Assigning employees to fire watch duty.

(1) The employer must not assign other duties to a fire watch while the hot work is in progress.

(2) Employers must ensure that employees assigned to fire watch duty:

(A) Have a clear view of and immediate access to all areas included in the fire watch;

(B) Are able to communicate with workers exposed to hot work;

(C) Are authorized to stop work if necessary and restore safe conditions within the hot work area;

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Add a new Section 8397.15 to read (continued):

(D) Remain in the hot work area for at least 30 minutes after completion of the hot work, unless the employer or its representative surveys the exposed area and makes a determination that there is no further fire hazard;

(E) Are trained to detect fires that occur in areas exposed to the hot work;

(F) Attempt to extinguish any incipient stage fires in the hot work area that are within the capability of available equipment and within the fire watch's training qualifications, as defined in Section 8397.13.

(G) Alert employees of any fire beyond the incipient stage; and

(H) If unable to extinguish fire in the areas exposed to the hot work, activate the alarm.

(3) The employer must ensure that employees assigned to fire watch are physically capable of performing these duties.

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

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Add new Section 8397.16 to read:

§ 8397.16. Land-side Fire Protection Systems.

(a) Employer responsibilities. The employer must ensure all fixed and portable fire protection systems needed to meet an OSHA standard for employee safety or employee protection from fire hazards in land-side facilities, including, but not limited to, buildings, structures, and equipment, meet the requirements of this section.

(b) Portable fire extinguishers and hose systems.

(1) The employer must select, install, inspect, maintain, and test all portable fire extinguishers according to NFPA 10-1998 Standard for Portable Fire Extinguishers, which is hereby incorporated by reference.

(2) The employer is permitted to use Class II or Class III hose systems, in accordance with NFPA 10-1998, as portable fire extinguishers if the employer selects, installs, inspects, maintains, and tests those systems according to the specific recommendations in NFPA 14-2000 Standard for the Installation of Standpipe, Private Hydrant, and Hose Systems, which is hereby incorporated by reference.

(c) General requirements for fixed extinguishing systems. The employer must:

(1) Ensure that any fixed extinguishing system component or extinguishing agent is approved by an OSHA Nationally Recognized Testing Laboratory, meeting the requirements of General Industry Safety Order, Section 3206 for use on the specific hazards the employer expects it to control or extinguish;

(2) Notify employees and take the necessary precautions to ensure employees are safe from fire if for any reason a fire extinguishing system stops working, until the system is working again;

(3) Ensure all repairs to fire extinguishing systems and equipment are done by a qualified technician or mechanic;

(4) Provide and ensure employees use proper personal protective equipment when entering discharge areas in which the atmosphere remains hazardous to employee safety or health, or provide safeguards to prevent employees from entering those areas. See Section 8355 of these Orders for additional requirements applicable to safe entry into spaces containing dangerous atmospheres;

(5) Post hazard warning or caution signs at both the entrance to and inside of areas protected by fixed extinguishing systems that use extinguishing agents in concentrations known to be hazardous to employee safety or health; and

(6) Select, install, inspect, maintain, and test all automatic fire detection systems and emergency alarms according to NFPA 72-1999 National Fire Alarm Code, which is hereby incorporated by reference.

(d) Fixed extinguishing systems. The employer must select, install, maintain, inspect, and test all fixed systems required by OSHA as follows:

(1) Standpipe and hose systems according to NFPA 14-2000 Standard for the Installation of Standpipe, Private Hydrant, and Hose Systems, which is hereby incorporated by reference;

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Add new Section 8397.16 to read (continued):

(2) Automatic sprinkler systems according to NFPA 25-2002 Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems, which is hereby incorporated by reference, and either NFPA 13-1999 Standard for the Installation of Sprinkler Systems, which is hereby incorporated by reference or NFPA 750-2000 Standard on Water Mist Fire Protection Systems, which is hereby incorporated by reference.

(3) Fixed extinguishing systems that use water or foam as the extinguishing agent according to NFPA 15-2001 Standard for Water Spray Fixed Systems for Fire Protection, which is hereby incorporated by reference; NFPA 11-1998 Standard for Low-Expansion Foam, which is hereby incorporated by reference; and NFPA 11A-1999 Standard for Medium- and High-Expansion Foam Systems, which is hereby incorporated by reference;

(4) Fixed extinguishing systems using dry chemical as the extinguishing agent according to NFPA 17-2002 Standard for Dry Chemical Extinguishing Systems, which is hereby incorporated by reference; and

(5) Fixed extinguishing systems using gas as the extinguishing agent according to NFPA 12-2000 Standard on Carbon Dioxide Extinguishing Systems, which is hereby incorporated by reference; NFPA 12A-1997 Standard on Halon 1301 Fire Extinguishing Systems, which is hereby incorporated by reference; and NFPA 2001-2000 Standard on Clean Agent Fire Extinguishing Systems, which is hereby incorporated by reference.

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