

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

PROPOSED STATE STANDARD,  
TITLE 8, CHAPTER 4

Article 37. Confined Spaces in Construction.

Amend Section 1951 as follows:

§1951. Definitions.

The following terms are defined for the purposes of this Article only:

*Acceptable entry conditions* means the conditions that shall exist in a permit space, before an employee may enter that space, to ensure that employees can safely enter into, and safely work within, the space.

*Attendant* means an individual stationed outside one or more permit spaces who assesses the status of authorized entrants and who shall perform the duties specified in Section 1958.

*Authorized entrant* means an employee who is authorized by the entry supervisor to enter a permit space.

*Barrier* means a physical obstruction that blocks or limits access.

*Blanking or blinding* means the absolute closure of a pipe, line, or duct by the fastening of a solid plate (such as a spectacle blind or a skillet blind) that completely covers the bore and that is capable of withstanding the maximum pressure of the pipe, line, or duct with no leakage beyond the plate.

*Competent person*. See Section 1504 for the definition of competent person

*Confined space* means a space that:

- (1) Is large enough and so configured that an employee can bodily enter it;
- (2) Has limited or restricted means for entry and exit; and
- (3) Is not designed for continuous employee occupancy.

*Control* means the action taken to reduce the level of any hazard inside a confined space using engineering methods (for example, by ventilation), and then using these methods to maintain the reduced hazard level. Control also refers to the engineering methods used for this purpose. Personal protective equipment is not a control.

*Controlling contractor* - See Section 336.10(c) Controlling employer.

NOTE: If the controlling contractor owns or manages the property, then it is both a controlling employer and a host employer.

*Double block and bleed* means the closure of a line, duct, or pipe by closing and locking or tagging two in-line valves and by opening and locking or tagging a drain or vent valve in the line between the two closed valves.

*Early-warning system* means the method used to alert authorized entrants and attendants that an engulfment hazard may be developing. Examples of early-warning systems include, but are not limited to: alarms activated by remote sensors; and lookouts with equipment for immediately communicating with the authorized entrants and attendants.

*Emergency* means any occurrence (including any failure of power, hazard control or monitoring equipment) or event, internal or external, to the permit space that could endanger entrants.

*Engulfment* means the surrounding and effective capture of a person by a liquid or finely divided (flowable) solid substance that can be aspirated to cause death by filling or plugging the respiratory

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system or that can exert enough force on the body to cause death by strangulation, constriction, crushing, or suffocation.

*Entry* means the action by which any part of a person passes through an opening into a permit-required confined 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, whether or not such action is intentional or any work activities are actually performed in the space.

*Entry employer* means any employer whose employees ~~decides that an employee it directs will~~ enter a permit space.

~~NOTE: An employer cannot avoid the duties of the standard merely by refusing to decide whether its employees will enter a permit space, and the Division will consider the failure to so decide to be an implicit decision to allow employees to enter those spaces if they are working in the proximity of the space.~~

*Entry permit (permit)* means the written or printed document that is provided by the employer who designated the space a permit space to allow and control entry into a permit space and that contains the information specified in Section 1955.

*Entry rescue* occurs when a rescue service enters a permit space to rescue one or more employees.

*Entry supervisor* means the qualified person (such as the employer, foreman, or crew chief) responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required by this standard.

~~NOTE: An entry supervisor also may serve as an attendant or as an authorized entrant, as long as that person is trained and equipped as required by this standard for each role he or she fills. Also, the duties of entry supervisor may be passed from one individual to another during the course of an entry operation.~~

*Hazard* means a physical hazard or hazardous atmosphere. See definitions below.

*Hazardous atmosphere* means an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from a permit space), injury, or acute illness from one or more of the following causes:

- (1) Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL);
- (2) Airborne combustible dust at a concentration that ~~meets or exceeds its LFL~~ exceeds 20 percent of the minimum explosive concentration (MEC);

~~NOTE to subsection (2): This concentration may be approximated as a condition in which the combustible dust obscures vision at a distance of 5 feet (1.52 meters) or less.~~

- (3) Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent;

- (4) Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in Article 4 of the Construction Safety Orders and Group 16 of the General Industry Safety Orders;

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NOTE subsection (4): An atmospheric concentration of any substance that is not capable of causing death, incapacitation, impairment of ability to self-rescue, injury, or acute illness due to its health effects is not covered by this definition.

(5) Any other atmospheric condition that is immediately dangerous to life or health.

NOTE subsection (5): For air contaminants for which the Division has not determined a dose or permissible exposure limit, other sources of information, such as Safety Data Sheets that comply with the Hazard Communication Standard, Section 5194, published information, and internal documents can provide guidance in establishing acceptable atmospheric conditions.

*Host employer* means the employer that owns or manages the property where the construction work is taking place.

NOTE: If the owner of the property on which the construction activity occurs has contracted with an entity for the general management of that property, and has transferred to that entity the information specified in Section 1952(h)(1), the Division will treat the contracted management entity as the host employer for as long as that entity manages the property. Otherwise, the Division will treat the owner of the property as the host employer. In no case will there be more than one host employer.

*Hot work* means operations capable of providing a source of ignition (for example, riveting, welding, cutting, burning, and heating).

*Immediately dangerous to life or health (IDLH)* means any condition that would interfere with an individual's ability to escape unaided from a permit space and that poses a threat to life or that would cause irreversible adverse health effects.

NOTE: Some materials—hydrogen fluoride gas and cadmium vapor, for example—may produce immediate transient effects that, even if severe, may pass without medical attention, but are followed by sudden, possibly fatal collapse 12-72 hours after exposure. The victim "feels normal" after recovery from transient effects until collapse. Such materials in hazardous quantities are considered to be "immediately" dangerous to life or health.

*Inerting* means displacing the atmosphere in a permit space by a noncombustible gas (such as nitrogen) to such an extent that the resulting atmosphere is noncombustible.

NOTE: This procedure produces an IDLH oxygen-deficient atmosphere.

*Isolate or isolation* means the process by which employees in a confined space are completely protected against the release of energy and material into the space, and contact with a physical hazard, by such means as: blanking or blinding; misaligning or removing sections of lines, pipes, or ducts; a double block and bleed system; lockout or tagout of all sources of energy; blocking or disconnecting all mechanical linkages; or placement of barriers to eliminate the potential for employee contact with a physical hazard.

NOTE: Title 8, Section 3314, lockout/tagout requirements isolate electro-mechanical hazards, but lockout/tagout in accordance with Section 3314 will not isolate hazards associated with flowable materials such as steam, natural gas, and other substances that can cause hazardous atmospheres in a confined space.

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*Limited or restricted means for entry or exit* means a condition that has a potential to impede an employee's movement into or out of a confined space. Such conditions include, but are not limited to, trip hazards, poor illumination, slippery floors, inclining surfaces and ladders.

*Line breaking* means the intentional opening of a pipe, line, or duct that is or has been carrying flammable, corrosive, or toxic material, an inert gas, or any fluid at a volume, pressure, or temperature capable of causing injury.

*Lockout* means the placement of a lockout device on an energy isolating device, in accordance with an ~~established~~ effective procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

*Lower flammable limit or lower explosive limit* means the minimum concentration of a substance in air needed for an ignition source to cause a flame or explosion.

*Minimum Explosive Concentration* means the minimum concentration of a combustible dust suspending in air, measured in mass per unit volume that will support a deflagration.

*Monitor or monitoring* means the process used to identify and evaluate the hazards after an authorized entrant enters the space. This is a process of checking for changes that is performed in a periodic or continuous manner after the completion of the initial testing or evaluation of that space.

*Non-entry rescue* occurs when a rescue service, usually the attendant, retrieves employees in a permit space without entering the permit space.

*Non-permit confined space* means a confined space that meets the definition of a confined space but does not meet the requirements for a permit-required confined space, as defined in this Article.

*Oxygen deficient atmosphere* means an atmosphere containing less than 19.5 percent oxygen by volume.

*Oxygen enriched atmosphere* means an atmosphere containing more than 23.5 percent oxygen by volume.

*Permit-required confined space (permit space)* means a confined space that has one or more of the following characteristics: (1) Contains or has a potential to contain a hazardous atmosphere; (2) Contains a material that has the potential for engulfing an entrant; (3) Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or (4) Contains any other recognized serious safety or health hazard.

*Permit-required confined space program (permit space program)* means the employer's overall program for controlling, and, where appropriate, for protecting employees from, permit space hazards and for regulating employee entry into permit spaces.

*Physical hazard* means an existing or potential hazard that can cause death or serious physical damage. Examples include, but are not limited to: Examples include, but are not limited to: explosives (as defined by Section 5237, definition of "explosive"); mechanical, electrical, hydraulic and pneumatic energy; radiation; temperature extremes; engulfment; noise; and inwardly converging surfaces. Physical hazard also includes chemicals that can cause death or serious physical damage through skin or eye contact (rather than through inhalation).

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*Prohibited condition* means any condition in a permit space that is not allowed by the permit during the period when entry is authorized. A hazardous atmosphere is a prohibited condition unless the employer can demonstrate that personal protective equipment (PPE) will provide effective protection for each employee in the permit space and provides the appropriate PPE to each employee.

*Qualified person* means one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated the ability to solve or resolve problems relating to the subject matter, the work, or the project.

*Representative permit space* means a mock-up of a confined space that has entrance openings that are similar to, and is of similar size, configuration, and accessibility to, the permit space that authorized entrants enter.

*Rescue* means retrieving, and providing medical assistance to, one or more employees who are in a permit space.

*Rescue service* means the personnel designated to rescue employees from permit spaces.

*Retrieval system* means the equipment (including a retrieval line, chest or full body harness, wristlets or anklets, if appropriate, and a lifting device or anchor) used for non-entry rescue of persons from permit spaces.

*Serious physical damage* means an impairment or illness in which a body part is made functionally useless or is substantially reduced in efficiency. Such impairment or illness may be permanent or temporary and includes, but is not limited to, loss of consciousness, disorientation, or other immediate and substantial reduction in mental efficiency. Injuries involving such impairment would usually require treatment by a physician or other licensed health-care professional.

*Tagout* means:

(1) Placement of a tagout device on a circuit or equipment that has been deenergized, in accordance with an ~~established~~ effective procedure, to indicate that the circuit or equipment being controlled may not be operated until the tagout device is removed; ~~and~~

(2) The employer ensures that:

(A) tagout provides equivalent protection to lockout, or

(B) that lockout is infeasible and the employer has relieved, disconnected, restrained and otherwise rendered safe stored (residual) energy.

*Test or testing* means the process by which the hazards that may confront entrants of a permit space are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit space.

NOTE: Testing enables employers both to devise and implement adequate control measures for the protection of authorized entrants and to determine if acceptable entry conditions are present immediately prior to, and during, entry.

*Ventilate or ventilation* means controlling a hazardous atmosphere using continuous forced-air mechanical systems that meet the requirements of Section 1530, General Requirements for Mechanical Ventilation Systems.

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

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Amend Section 1952 as follows:

§1952. General Requirements.

~~(a) Before it begins work at a worksite, each employer shall ensure that a competent person identifies all confined spaces in which one or more of the employees it directs may work, and identifies each space that is a permit space, through consideration and evaluation of the elements of that space, including testing as necessary.~~

(a) Identification of Confined Spaces and Evaluation of Permit Required Confined Spaces.

(1) The employer shall have a competent person conduct an initial survey of its work area for confined spaces.

(2) The employer shall have a competent person periodically inspect its work area for new confined spaces.

(3) The employer shall inform the project constructor, workers and subcontractors of each new confined space discovered or created as a result of construction or demolition activity.

(4) The employer shall have a qualified person assess the hazards of the confined spaces it plans to enter in accordance with subsection (e)(2)(C).

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~~(d) If any employer decides that employees it directs will enter a permit space, If an employee enters a permit space, that their employer shall have a written permit space program that complies with Section 1953 implemented at the construction site. The written program shall be made available prior to and during entry operations for inspection by employees and their authorized representatives.~~

(e) An employer may use the alternate procedures specified in Section 1952(e)(2) for entering a permit space only under the conditions set forth in Section 1952(e)(1).

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(2) The following requirements apply to entry into permit spaces that meet the conditions set forth in Section 1952(e)(1):

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(C) Before an employee enters the space, the internal atmosphere shall be tested, with a calibrated direct-reading instrument, for oxygen content, for flammable gases and vapors, and for potential toxic air contaminants, in that order. Concurrent testing for atmospheric hazards may be conducted if the detection of oxygen, flammable gases and vapors, and toxics is performed by a multi-gas

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meter. Any employee who enters the space, or that employee's authorized representative, shall be provided an opportunity to observe the pre-entry testing required by subsection (e).

NOTE: Oxygen reading below 19.5% or above 23.5% may produce an inaccurate flammable gas and vapor reading.

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(h) Permit Space Entry Communication and Coordination.

(1) For multi-employer worksites:

(A) The employer's permit required confined space program shall include communication procedures so that work activities can be coordinated and the operations of one employer will not endanger the employees of another employer.

(2)(1) Before entry operations begin, the host employer shall provide the following information, if it has it, to the controlling contractor:

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(3)(2) Before entry operations begin, the controlling contractor shall:

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(4)(3) Before entry operations begin, each entry employer shall:

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(5)(4) The controlling contractor and entry employer(s) shall coordinate entry operations when:

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(6)(5) After entry operations:

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



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Amend Section 1953 as follows:

§1953. Permit-Required Confined Space Program.

(a) Each entry employer shall:

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(3) Develop and implement effective written procedures, including the means, procedures, and practices necessary for safe permit space entry operations, including, but not limited to, the following:

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(D) Purging, inerting, flushing, or ventilating the permit space as necessary to eliminate or control atmospheric hazards;

~~NOTE to Section 1953(a)(3)(D): When an employer is unable to reduce the atmosphere below 10 percent LFL, the employer may only enter if the employer inertes the space so as to render the entire atmosphere in the space non-combustible, and the employees use PPE to address any other atmospheric hazards (such as oxygen deficiency), and the employer eliminates or isolates all physical hazards in the space.~~

1. No entry shall be made into a permit space where the entry employer is unable to reduce the concentration of flammable gases, mists or vapors below 10 percent of the LFL except when the entry employer complies with all of the following:

a. The permit space is inerted for the duration of entry into the permit space.

b. Entry employees are provided with respiratory protection consistent with Section 5144(d)(2) "Respirators for IDLH atmospheres".

c. The entry employer eliminates or isolates all additional physical hazards within the permit space.

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(I) Prohibiting work involving the use of flame, arc, spark, or other source of ignition within a permit space (or any adjacent space having common walls, floor, or ceiling with the permit space) which contains flammable atmosphere and/or explosive substances which cannot be controlled, or may foreseeably develop oxygen enrichment; and

(J) Operating procedures shall include provisions for the surveillance of the surrounding area to avoid hazards such as drifting vapor from tanks, piping and sewers.

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(5) Evaluate permit space conditions in accordance with the following Section 1953(a)(5)(A) through (a)(5)(F) when entry operations are conducted:

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(C) When testing for atmospheric hazards, test first for oxygen, then for combustible gases and vapors, and then for toxic gases and vapors. Concurrent testing for atmospheric hazards may be conducted if the detection of oxygen, flammable gases and vapors, and toxics are performed by a multi-gas meter.

NOTE: Oxygen reading below 19.5% or above 23.5% may produce an inaccurate flammable gas and vapor reading.

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

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Amend Section 1955 as follows:

§1955. Entry Permit.

(a) The entry permit that documents compliance with this section and authorizes entry to a permit space shall identify:

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(9) The measures used to isolate the permit space and to eliminate or control permit space hazards before entry;

NOTE to Section 1955(a)(9): See definition of “isolate and isolation” in Section 1951. Those measures can include, but are not limited to, the lockout or tagging of equipment and procedures for purging, inerting, ventilating, and flushing permit spaces.

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

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Amend Section 1956 as follows:

§1956. Training.

(a) The employer shall provide training to each employee whose work is regulated by this standard, at no cost to the employee, and ensure that the employee possesses the understanding, knowledge, and skills necessary for the safe performance of the duties assigned under this standard.

(1) ~~This~~ The training shall result in an understanding of the written procedures [per Section 1953(a)(3)]; hazards in the permit space; and ~~the~~ methods used to isolate, control or in other ways protect employees from these hazards; and for those employees not authorized to perform entry rescues, in the dangers of attempting such rescues.

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

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Amend Section 1960 as follows:

§1960. Rescue and Emergency Services.

(a) The entry employer shall ensure that the rescue service at the site are trained, immediately available, properly equipped, and capable of performing rescue and emergency services.

~~(b)(a)~~ An employer who designates rescue and emergency services, pursuant to Section 1953(a)(9), shall:

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~~(c)(b)~~ An employer whose employees have been designated to provide permit space rescue and/or emergency services shall take the following measures and provide all equipment and training at no cost to those employees:

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~~(d)(e)~~ Non-entry rescue is required unless the retrieval equipment would increase the overall risk of entry or would not contribute to the rescue of the entrant. The employer shall designate an entry rescue service whenever non-entry rescue is not selected. Whenever non-entry rescue is selected, the entry employer shall ensure that retrieval systems or methods are used whenever an authorized entrant enters a permit space, and shall confirm, prior to entry, that emergency assistance would be available in the event that non-entry rescue fails. Retrieval systems shall meet the following requirements:

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~~(e)(d)~~ If an injured entrant is exposed to a substance for which a Safety Data Sheet (SDS) or other similar written information is required to be kept at the worksite, that SDS or written information shall be made available to the medical facility treating the exposed entrant.

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

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Article 108. Confined Spaces.

Amend Section 5156 as follows:

§5156. Scope, Application and Definitions.

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(b) Application and definitions.

(1) For operations and industries not identified in subsection (b)(2), the confined space definition along with other definitions and requirements of section 5157, Permit-Required Confined Spaces shall apply.

(2) The confined space definition along with other definitions and requirements of section 5158, Other Confined Space Operations shall apply to:

~~(A)~~ ~~Construction operations regulated by section 1502;~~

~~(B)~~ (A) Agriculture operations (including cotton gins) defined by section 3437;

~~(C)~~ (B) Marine terminal operations defined in section 3460;

~~(D)~~ (C) Telecommunication manholes and unvented vaults regulated by section 8616;

~~(E)~~ (D) Grain handling facilities regulated by section 5178.

~~(F)~~ (E) Natural gas utility operation within distribution and transmission facility vaults defined in Title 49 Code of Federal Regulations Parts 191, 192 and 193; or

~~(G)~~ (F) Electric utility operations within underground vaults. See section 2700 for a definition of vault.

NOTE: Shipyard operations are regulated by section 8355.

NOTE: Construction operations are regulated by Article 37 of the Construction Safety Orders.

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