

# Garment Manufacturing and Contractors

## ***Examination Study Materials***

Pertinent Regulations Governing  
Occupational Safety and Health Examination  
and  
Reporting of Work Related Injuries

The Regulations quoted in this document do not represent the entire text of all regulations which govern the responsibilities of employers to ensure the safety and health of their employees. Rather, they are provided in pertinent part as a reference and guidance for employers in the Garment Manufacturing industry as those that may most likely be applicable to businesses in that industry. They should not be relied upon as a compilation of all requirements for compliance. It is strongly recommended that all employers make themselves familiar with all regulations which may pertain to their business. Full text of all regulations can be found at the website of the Department of Industrial Relations at <http://www.dir.ca.gov/samples/search/query.htm>

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**Title 8, Division 1, Chapter 4. Division of Industrial Safety  
Subchapter 7. General Industry Safety Orders**

**INTRODUCTION**

**§3200. Purpose.**

To fulfill the expressed social public policy of the State of California set forth in Article XX, Section 21 of the Constitution, to make full provision for securing safety in places of employment, these General Industry Safety Orders are promulgated for the guidance of employers and employees alike. Compliance with these orders may not in itself prevent occupational injuries or diseases, but will, it is believed, provide a safe environment which is a fundamental prerequisite in controlling injuries. Every employer should provide their supervisory staff with a copy of these orders and assure that each supervisor is familiar with those sections pertaining to the operations under their supervision.

**§3201. Title.**

These safety orders shall be known as General Industry Safety Orders.

**§3202. Application.**

(a) These orders establish minimum standards and apply to all employments and places of employment in California as defined by Labor Code Section 6303; provided, however, that when the Occupational Safety and Health Standards Board has adopted or adopts safety orders applying to certain industries, occupations or employments exclusively, in which like conditions and hazards exist, those orders shall take precedence wherever they are inconsistent with the General Industry Safety Orders hereinafter set forth.

NOTE: Unless otherwise designated in this subchapter, the phrase "division" refers to the current Division of Occupational Safety and Health or any of its predecessors including the former Division of Industrial Safety or the Division of Occupational Safety and Health Administration. Reference to the former Division of Industrial Safety or Division of Occupational Safety and Health Administration in these orders is meant to refer to their successor, the Division of Occupational Safety and Health, or any subsequent successor agency.

(b) After the date on which these Orders become effective, all installations shall conform to these Orders.

EXCEPTION: (1) Existing installations which are in compliance with safety orders, or variations therefrom, in effect prior to the effective date of these safety orders, unless the hazard presented by the installation or equipment is, in the judgment of the Chief of the Division, of such severity as to warrant control by the application of the applicable sections of these orders.

(2) Facsimiles, replicas, reproductions, or simulations when used for exhibition purposes when such compliance would be detrimental to their use for such purposes unless the hazard presented by the installation is, in the judgment of the Chief of the Division, of such severity as to warrant control by the application of the applicable sections of these Orders.

(c) Regulations herein affecting building standards, apply to any building, or building alteration, or building modification for which construction is commenced after the effective date of the regulations. Date of commencement of construction, for the purpose of this section, shall be:

(1) The advertising date for invitation of bids for State and local government projects.

(2) The building permit issuance date for other projects. (Title 24, Part 2, Section 2-109.)




NOTE: Identification of Building Regulations. The basic building regulations for employments and places of employment contained in Title 24, State Buildings Standards Code, California Administrative Code are part of these safety orders. Pursuant to Health and Safety Code Section 18943(c), such building regulations are identified in these safety orders by the addition of a reference to the appropriate section of the State Building Standards Code (Title 24), which is added to the end of the safety order section: (Title 24, Part X, Section XXXX.)

(d) Nothing contained in these regulations shall be considered as abrogating the provisions relating to public safety of any ordinance, rule or regulation of any governmental agency, providing such local ordinance, rule or regulation is not less stringent than these minimum standards.

NOTE: The filing date 12-19-49 shown in the History Note of Section 3200 is for the sections originally filed. The filing date of sections subsequently adopted or revised is shown in the History Note at the end of the section. Orders become effective 30 days after filing. (Title 24, T8-3202)

### **§3203. Injury and Illness Prevention Program.**

[Cal/OSHA Workplace Injury and Illness Prevention Program, with checklists for self-inspection](http://www.dir.ca.gov/dosh/dosh_publications/iipp.pdf) || 

[Prevention Model Program for High Hazard Employers](http://www.dir.ca.gov/dosh/dosh_publications/iiphizemp.pdf) ||  printable version)

[Prevention Model Program for Non-High Hazard Employers](http://www.dir.ca.gov/dosh/dosh_publications/iipnonhigh.pdf) ||  printable version)

[Prevention Model Program for Employers with Intermittent Workers](http://www.dir.ca.gov/dosh/dosh_publications/iipintermit.pdf) ||  printable version)

[Prevention Model Program for Employers with Intermittent Workers in Agriculture](http://www.dir.ca.gov/dosh/dosh_publications/AgSafety_En.pdf) ||  printable version)

[Prevention Model Program for Workplace Security](http://www.dir.ca.gov/dosh/dosh_publications/iipsecurity.pdf) ||  printable version)

(a) Effective July 1, 1991, every employer shall establish, implement and maintain an effective Injury and Illness Prevention Program (Program). The Program shall be in writing and, shall, at a minimum:

(1) Identify the person or persons with authority and responsibility for implementing the Program.

(2) Include a system for ensuring that employees comply with safe and healthy work practices. Substantial compliance with this provision includes recognition of employees who follow safe and healthful work practices, training and retraining programs, disciplinary actions, or any other such means that ensures employee compliance with safe and healthful work practices.

(3) Include a system for communicating with employees in a form readily understandable by all affected employees on matters relating to occupational safety and health, including provisions designed to encourage employees to inform the employer of hazards at the worksite without fear of reprisal. Substantial compliance with this provision includes meetings, training programs, posting, written communications, a system of anonymous notification by employees about hazards, labor/management safety and health committees, or any other means that ensures communication with employees.

EXCEPTION: Employers having fewer than 10 employees shall be permitted to communicate to and instruct employees orally in general safe work practices with specific instructions with respect to hazards unique to the employees' job assignments as compliance with subsection (a)(3).

(4) Include procedures for identifying and evaluating work place hazards including scheduled periodic inspections to identify unsafe conditions and work practices. Inspections shall be made to identify and evaluate hazards.

(A) When the Program is first established;

EXCEPTION: Those employers having in place on July 1, 1991, a written Injury and Illness Prevention Program complying with previously existing section 3203.

(B) Whenever new substances, processes, procedures, or equipment are introduced to the workplace that represent a new occupational safety and health hazard; and

(C) Whenever the employer is made aware of a new or previously unrecognized hazard.

(5) Include a procedure to investigate occupational injury or occupational illness.

(6) Include methods and/or procedures for correcting unsafe or unhealthy conditions, work practices and work procedures in a timely manner based on the severity of the hazard:

(A) When observed or discovered; and,

(B) When an imminent hazard exists which cannot be immediately abated without endangering employee(s) and/or property, remove all exposed personnel from the area except those necessary to correct the existing condition. Employees necessary to correct the hazardous condition shall be provided the necessary safeguards.

(7) Provide training and instruction:

(A) When the program is first established;

EXCEPTION: Employers having in place on July 1, 1991, a written Injury and Illness Prevention Program complying with the previously existing Accident Prevention Program in Section 3203.

(B) To all new employees;

(C) To all employees given new job assignments for which training has not previously been received;

(D) Whenever new substances, processes, procedures or equipment are introduced to the workplace and represent a new hazard;

(E) Whenever the employer is made aware of a new or previously unrecognized hazard; and,

(F) For supervisors to familiarize themselves with the safety and health hazards to which employees under their immediate direction and control may be exposed.

(b) Records of the steps taken to implement and maintain the Program shall include:

(1) Records of scheduled and periodic inspections required by subsection (a)(4) to identify unsafe conditions and work practices, including person(s) conducting the inspection, the unsafe conditions and work practices that have been identified and action taken to correct the identified unsafe conditions and work practices. These records shall be maintained for at least one (1) year; and

EXCEPTION: Employers with fewer than 10 employees may elect to maintain the inspection records only until the hazard is corrected.

(2) Documentation of safety and health training required by subsection (a)(7) for each employee, including employee name or other identifier, training dates, type(s) of training, and training providers. This documentation shall be maintained for at least one (1) year.

EXCEPTION NO. 1: Employers with fewer than 10 employees can substantially comply with the documentation provision by maintaining a log of instructions provided to the employee with respect to the hazards unique to the employees' job assignment when first hired or assigned new duties.

EXCEPTION NO. 2: Training records of employees who have worked for less than one (1) year for the employer need not be retained beyond the term of employment if they are provided to the employee upon termination of employment.

Exception No. 3: For Employers with fewer than 20 employees who are in industries that are not on a designated list of high-hazard industries established by the Department of Industrial Relations (Department) and who have a Workers' Compensation Experience Modification Rate of 1.1 or less, and for any employers with fewer than 20 employees who are in industries on a designated list of low-hazard industries established by the Department, written documentation of the Program may be limited to the following requirements:

A. Written documentation of the identity of the person or persons with authority and responsibility for implementing the program as required by subsection (a)(1).

B. Written documentation of scheduled periodic inspections to identify unsafe conditions and work practices as required by subsection (a)(4).

C. Written documentation of training and instruction as required by subsection (a)(7).

Exception No. 4: Local governmental entities (any county, city, city and county, or district, or any public or quasi-public corporation or public agency therein, including any public entity, other than a state agency, that is a member of, or created by, a joint powers agreement) are not required to keep records concerning the steps taken to implement and maintain the Program.

Note 1: Employers determined by the Division to have historically utilized seasonal or intermittent employees shall be deemed in compliance with respect to the requirements for a written Program if the employer adopts the Model Program prepared by the Division and complies with the requirements set forth therein.

Note 2: Employers in the construction industry who are required to be licensed under Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code may use records relating to employee training provided to the employer in connection with an occupational safety and health training program approved by the Division, and shall only be required to keep records of those steps taken to implement and maintain the program with respect to hazards specific to the employee's job duties.

(c) Employers who elect to use a labor/management safety and health committee to comply with the communication requirements of subsection (a)(3) of this section shall be presumed to be in substantial compliance with subsection (a)(3) if the committee:

(1) Meets regularly, but not less than quarterly;

(2) Prepares and makes available to the affected employees, written records of the safety and health issues discussed at the committee meetings and, maintained for review by the Division upon request. The committee meeting records shall be maintained for at least one (1) year;

(3) Reviews results of the periodic, scheduled worksite inspections;

(4) Reviews investigations of occupational accidents and causes of incidents resulting in occupational injury, occupational illness, or exposure to hazardous substances and, where appropriate, submits suggestions to management for the prevention of future incidents;

(5) Reviews investigations of alleged hazardous conditions brought to the attention of any committee member. When determined necessary by the committee, the committee may conduct its own inspection and investigation to assist in remedial solutions;

(6) Submits recommendations to assist in the evaluation of employee safety suggestions; and

(7) Upon request from the Division, verifies abatement action taken by the employer to abate citations issued by the Division.

## **GROUP 1. GENERAL PHYSICAL CONDITIONS AND STRUCTURES ORDERS**

### **Article 1. Definitions**

#### **§3207. Definitions.**

(a) The following terms are defined for general use in these regulations; specialized definitions appear in individual articles. (See Definitions in the Index)

**Access.** A means of reaching a work space of a work area.

**Accessible.** Within reach from a work space or work area.

**Accessible Location.** A location which can be reached by an employee standing on the floor, platform, runway, or other permanent working area.

**Adequate.** Sufficient to reduce the risk to an acceptable minimum.

**Agricultural Building.** A building located on agricultural property and used to shelter farm implements, hay, grain, poultry, livestock, or other farm produce, in which there is no human habitation, and which is not used by the public.

**Alternating Tread Stairs.** A stair on which the treads are approximately one-half the width of the stair and alternate from right to left, consecutively, for the length of the stair.

**ANSI.** American National Standards Institute.

**Approvals.** See Section 3206.

**Assembly Building.** A building or portion of a building:

(A) Used or intended to be used for the gathering together of 50 or more persons for such purposes of amusement, entertainment, instruction, deliberation, worship, drinking, or dining, awaiting transportation or education, or;

(B) Any building or structure or portion thereof used or intended to be used for the showing of motion pictures when an admission fee is charged and when such buildings or structure is open to the public and has a capacity of 10 or more persons.

**Attic Story.** Any story immediately below the roof and wholly or partly within the roof framing, designed, arranged, or built for business or storage use.

**Authorized** (in reference to an employee's assignment). Selected by the employer for that purpose.

**Balcony, Exterior Exit.** A landing or porch projecting from the wall of a building, and which serves as a required means of egress. The long side shall be at least 50 percent open, and the open area above the guardrail shall be so distributed as to prevent the accumulation of smoke or toxic gases.

**Basement.** That portion of a building between floor and ceiling, which is partly below and partly above grade but so located that the vertical distance from grade to the floor below is less than the vertical distance from grade to ceiling. (See "Story.")

**Bite.** The nip point between two in-running rolls.

**Boiler, High Pressure.** A boiler furnishing steam at pressures in excess of 15 pounds per square inch or hot water at temperatures in excess of 250° F, or at pressures in excess of 160 pounds per square inch.

Boiler, Low Pressure Hot Water. A boiler furnishing hot water at pressures not exceeding 160 pounds per square inch, or at temperatures of 250 degrees and below.

Boiler, Low Pressure Steam. A boiler furnishing steam at or below 15 pounds per square inch.

Boiler Room. Any room containing a steam or hot water boiler.

Bond. An electrical connection from one conductive element to another for the purpose of minimizing potential differences or providing suitable conductivity for fault current or for mitigation of leakage current and electrolytic action.

Building. Any structure as to which state agencies have regulatory power, built for support, shelter, housing or enclosure of persons, animals, chattels, equipment, or property of any kind, and also includes structures wherein things may be grown, made, produced, kept, handled, stored, or disposed of. All appendages, accessories, apparatus, appliances, and equipment installed as a part of a building or structure shall be deemed to be a part thereof, but "building" shall not include machinery, equipment, or appliances installed for manufacture or process purposes only, nor shall it include any construction installations which are not a part of a building, any tunnel, mine shaft, highway, or bridge, or include any house trailer or vehicle which conforms to the Vehicle Code.

Building, Existing. See Section 3202.

CAC. California Administrative Code.

Calendar. A machine equipped with two or more metal rolls revolving in opposite directions and used for continuously sheeting or plying up rubber and plastics compounds and for frictioning or coating materials with rubber and plastics compounds.

Catwalk (Maintenance Runway). Narrow elevated level or inclined walkway not intended as a routine passageway, but normally used as access for special purposes such as light maintenance, adjustment, inspection, or observation.

Cellar. That portion of a building between floor and ceiling which is wholly or partly below grade and so located that the vertical distance from grade to the floor below is equal to or greater than the vertical distance from grade to ceiling. (See "Story.")

Certified Safety Professional or CSP. A safety professional who has met education and experience standards, has demonstrated by examination the knowledge that applies to professional safety practice, continues to meet recertification requirements established by the Board of Certified Safety Professionals (BCSP), and is authorized by BCSP to use the Certified Safety Professional designation.

Court. An open, uncovered and unoccupied space, unobstructed to the sky, bounded on three or more sides by exterior building walls.

Court (enclosed). A court bounded on all sides by the exterior walls of a building or exterior walls and lot lines on which walls are allowable.

Crossover. A means to allow employees to pass over or cross a horizontal belted or live roller conveyor without the employee's feet coming into contact with moving or movable elements of the conveyor. Such means shall include, but are not limited to, catwalks as specified in Section 3273 of these Orders, non-continuous, slip resistant (e.g. raised diamond-studded) metal "stepping stones" (e.g. "walking pads"), or replacing conveyor rollers with continuous parallel metal strip walking surfaces ("crosswalks").

Dead Load. The dead load of a building shall include the weight of the walls, permanent partitions, framing, floors, roofs, and all other permanent stationary construction entering into and becoming a part of a building.

Division. The Division of Occupational Safety and Health.

Dockboard (Dock Plate). A portable or fixed device for spanning the gap or compensating for difference in level between loading platforms and carriers.

Doors.

(A) Automatic-Closing Doors are those which are normally open but will close at the time of fire. A door may be made automatic closing by the installation of a closing device and a separate, labeled, fail-safe door-holder/release device or a hold-open mechanism which may be an integral part of the basic closing device, provided the hold-open mechanism is released by one or a combination of automatic fire detectors acceptable to the authority having jurisdiction.

(B) Power-Operated Fire Doors are those which are normally opened and closed by power. They shall be equipped with a releasing device which will automatically disconnect the power operator at the time of fire, allowing a self-closing or automatic device to close the door irrespective of power failure or manual operation.

(C) Self-Closing Doors are those which, when opened, return to the closed position. The door shall swing easily and freely and shall be equipped with a closing device to cause the door to close and latch each time it is opened. The closing mechanism shall not have a hold-open feature.

Emergency Action Plan. A plan for a workplace, or parts thereof, describing what procedures the employer and employees must take to ensure employee safety from fire or other emergencies.

Emergency Escape Route. The route that employees are directed to follow in the event they are required to evacuate the workplace or seek a designated refuge area.

Equivalent. An alternate design, feature, device, or protective action which provides an equal degree of safety.

Exit. A continuous and unobstructed means of egress to a public way, and shall include intervening doors, doorways, corridors, exterior exit balconies, ramps, stairways, smokeproof enclosures, horizontal exits, exit passageways, exit courts, and yards.

Exit Passageway. An enclosed means of egress connecting a required exit or exit court with a public way.

Fire Wall. A fire wall may be broadly defined as a wall erected to prevent the spread of fire. To be effective, fire walls must have sufficient fire resistance to withstand the effects of the most severe fire that may be expected to occur in the building and must provide a complete barrier to the spread of fire. Any openings in a fire wall must be suitably protected.

Floor Area. The area included within the surrounding exterior walls of a building or portion thereof, exclusive of vent shafts and courts. The floor area of a building, or portion thereof, not provided with surrounding exterior walls shall be the usable area under the horizontal projection of the roof or floor above.

Floor Hole. Any opening in a floor or platform which is smaller than a floor opening.

Floor Opening. An opening in any floor or platform, 12 inches or more in the least horizontal dimension. It includes stairway floor openings, ladderway floor openings, hatchways, and chute floor openings.

Flume. An elevated artificial channel or trough for conducting water. Water flumes may be constructed of wood, metal or concrete or combination of the preceding. They may be either open on top or partially covered by rigid members (caps) laid across the flume perpendicular to the water flow.

Flume Patrol. The on-site assessment/inspection of a flume's physical condition, and/or structural integrity conducted by a qualified person. The qualified person may inspect the flume or portions thereof from ground level, and/or from an elevated catwalk/walkway located above or along the flume.

Frequent. For the purpose of these orders frequent shall mean more than twelve times each year unless specifically stated otherwise in individual orders.

Fumigant. A substance or mixture of substances, used to kill pests or prevent infestation, which is a gas or is rapidly or progressively transformed to the gaseous state, even though some nongaseous or particulate matter may remain and be dispersed in the treatment space.

Gantry Truck. An automotive vehicle so designed and constructed that it straddles the load to be transported, and by means of appropriate mechanisms, picks up the load and supports it during transportation.

**Grade (Adjacent Ground Elevation).** The lowest point of elevation of the finished surface of the ground, paving or sidewalk, within the area between the building and the property line, or when the property line is more than 5 feet from the building, between the building and a line 5 feet from the building.

**Grounded, Effectively.** Intentionally connected to earth through a ground connection or connections of sufficiently low impedance and having sufficient current-carrying capacity to prevent the build-up of voltages which may result in undue hazard to connected equipment or persons.

**Guardrail.** A vertical barrier erected along the open edges of a floor opening, wall opening, ramp, platform, runway, or other elevated area to prevent falls of persons.

**Handrail.** A device to be used as a handhold.

**Hazard, Extra.** Areas where the amount of combustibles or flammable liquids present is such that fires of severe magnitude may be expected. These may include woodworking, auto repair, aircraft servicing, warehouses with high-piled (over 15 feet in solid piles, over 12 feet in piles that contain horizontal channels) combustibles and processes such as flammable liquid handling, painting, dipping, etc.

**Hazard, High.** Areas where the contents are classified as liable to burn with extreme rapidity or from which poisonous fumes or explosions are to be feared in the event of fire.

**Hazard, Light.** Areas where the amount of combustibles or flammable liquids present is such that fires of small size may be expected. These may include offices, schoolrooms, churches, assembly halls, telephone exchanges, etc.

**Hazard, Low.** Areas where the contents are classified as being of such low combustibility that no self propagating fire therein can occur and that consequently the only probable danger requiring the use of emergency exits will be from panic, fumes, or smoke, or fire from some external source.

**Hazard, Ordinary.** Where the amount of combustibles or flammable liquids present is such that fires of moderate size may be expected. These may include mercantile storage and display, auto showrooms, parking garages, light manufacturing, warehouses not classified as extra hazard, school shop areas, etc.

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

**Horizontal Exit.** A way of passage from one building to an area of refuge in another building on approximately the same level, or a way of passage through or around a wall or partition to an area of refuge on approximately the same level in the same building, which affords safety from fire or smoke from the area of escape and areas communicating therewith.

**Inaccessible Location.** A location to which access is provided only by portable ladders or other portable temporary means.

**Industrial Stairs.** A series of steps leading from one level or floor to another, or leading to platforms, pits, boiler rooms, crossovers, or around machinery, tanks, and other equipment. A series of steps and landings having three or more risers constitutes an industrial stair or stairway.

**Installation.** An entire plant with all its accessories or any machine, tool, equipment, process, apparatus, subject or item covered under these orders.

**Institutional Occupancy.** The occupancy or use of a building or structure or any portion thereof by persons harbored or detained to receive medical, charitable or other care or treatment, or by persons involuntarily detained.

**Landing.** An extended step or platform breaking a continuous run of steps or ramps.

**Listed.** See Section 3206, Approvals.

**Live Load.** The live load includes all loads except dead and lateral loads.

**Loading Ramp.** A readily moveable or portable surface of fixed or adjustable slope designed to facilitate transfer of cargo or materials handling equipment to bridge the space between a vehicle and a receiving level or area.

**Mercantile Occupancy.** The occupancy or use of a building or structure or any portion thereof for the displaying, selling or buying of goods, wares, or merchandise.

**Mezzanine or Mezzanine Floor.** An intermediate floor placed in any story or room. When the total area of any such "Mezzanine Floor" exceeds 33 1/3 percent of the total floor area in that room, it shall be considered as constituting an additional "Story." The clear height above or below a "Mezzanine Floor" construction shall be not less than 7 feet.

**Mill.** A machine consisting of two adjacent metal rolls, set horizontally, which revolve in opposite directions (i.e., toward each other as viewed from above) used for the mechanical working of rubber and plastics compounds.

**Nationally Recognized Testing Laboratory (NRTL).** A laboratory which has been recognized by the Department of Labor, Occupational Safety and Health Administration (OSHA) as meeting the requirements of 29 CFR 1910.7.

**New Installation.**

(A) An installation made after these Orders become effective.

(B) An existing fixed installation materially altered or otherwise materially changed after the date these Orders become effective. Materially altered or materially changed as used above does not mean the replacement of parts, maintenance, or the installation of devices designed to decrease the hazard of installation.

**Noncombustible as applied to building construction material** means a material which, in the form in which it is used, is either one of the following:

1. Material of which no part will ignite and burn when subjected to fire. Any material conforming to U.B.C. Standard No. 4-1 shall be considered noncombustible within the meaning of this section.

2. Material having a structural base of noncombustible material as defined in Item No. 1 above, with a surfacing material not over 1/8 inch thick which has a flame-spread rating of 50 or less.

"Noncombustible" does not apply to surface finish materials. Material required to be noncombustible for reduced clearances to flues, heating appliances or other sources of high temperature shall refer to material conforming to Item No. 1. No material shall be classed as noncombustible which is subject to increase in combustibility or flame-spread rating, beyond the limits herein established, through the effects of age, moisture or other atmospheric condition. Flame-spread rating as used herein refers to rating obtained according to tests conducted as specified in U.B.C. Standard No. 42-1.

**Nose, Nosing.** That portion of a tread projecting beyond the face of the riser immediately below.

**Occupancy.** The purpose for which a building is used or intended to be used. The term shall also include the building or room housing such use. Change of occupancy is not intended to include change of tenants or proprietors.

**Office Occupancy.** The occupancy or use of a building or structure or any portion thereof for the transaction of business, or the rendering or receiving of professional services.

**Occupant Load.** The total number of persons that may occupy a building or portion thereof at any one time.

**Open Riser.** The air space between the treads of stairways without upright members (risers).

**Panic Hardware.** A bar which extends not less than one-half the width of each door leaf, not less than 30 nor more than 44 inches above the floor, which will unlatch the door when a force to the bar not to exceed 15 pounds is applied in the direction of exit travel.

**Personal Fall Arrest System.** A system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, body harness and may include a lanyard, deceleration device, lifeline, or suitable combinations of the aforementioned components/devices.

**Personal Fall Protection System.** A personal fall protection system includes personal fall arrest systems, positioning device systems, fall restraint systems, safety nets and guardrails.



**Personal Fall Restraint System.** A system used to prevent an employee from falling. It consists of an anchorage, connectors, and body belt/harness. It may include, lanyards, lifelines, and rope grabs designed for that purpose.

**Platform.** An elevated working level for persons. Storage platforms, balconies and open-sided floors are considered platforms for the purpose of these orders.

**Positioning Device System.** A body belt or body harness system rigged to allow an employee to be supported on an elevated surface, such as a wall, and work with both hands free while leaning.

**Private Stairway.** A stairway serving one tenant only.

**Public Way.** Any parcel of land unobstructed from the ground to the sky, more than 10 feet in width, appropriated to the free passage of the general public.

**Pyroxylin Plastic.** Any plastic substance, material, compound, other than nitro-cellulose film, having soluble cotton or similar nitro-cellulose as a base, including celluloid, fiber-loid, pyralin, viscoloid, zylonite and similar products, materials and compounds by whatever name known, when in the form of blocks, slabs, sheets, tubes or fabricated shapes.

**Qualified Person, Attendant or Operator.** A person designated by the employer who by reason of his training and experience has demonstrated his ability to safely perform his duties and, where required, is properly licensed in accordance with federal, state, or local laws and regulations.

**Ramp.** Inclined passageway connecting two levels and usually used for pedestrian traffic; does not include catwalks or stairs.

**Ramp, Industrial.** Permanently installed inclined passageway connecting two levels and designed primarily for industrial trucks; does not include portable ramps, dockboards, dock levelers, or catwalks.

**Required Exit.** A means of egress required by these orders.

**Rise.** The vertical distance from the top of a tread to the top of the next higher tread.

**Riser.** The upright member of a step situated at the back of a lower tread and near the leading edge of the next higher tread.

**Rope Access.** The use of rope access equipment where ropes are used as the primary means of support, as a means of protection or positioning, and where an employee descends or ascends on a rope, or traverses along a rope.

**Rope Access Equipment.** Specialized equipment approved for use with rope access techniques to suspend, support, position or protect an employee.

**Runway.** An elevated passageway. Runways are sometimes referred to as catwalks, footwalks, elevated walkways, oilers' platforms or maintenance runways.

**Shall.** A mandatory requirement.

**Shear Point.** The immediate area where two or more machine elements pass in close contact, creating a shearing action hazardous to employees. The elements may be in any form of motion, or one may be at rest.

**Ship Stair (Ships Ladder).** A fixed ladder within the pitch range of 50 to 75 degrees with the horizontal, equipped with treads and stair rails.

**Should.** A recommendation.

**Skirt Guard.** In relation to vertical closing shear hazards a vertical member which prohibits entry of human body parts within the vertical plane of the shear zone.

**Spiral stairway (Circular Stairway.)** One with closed circular form, uniform sector-shaped treads and a supporting column.

**Stair Railing.** A vertical barrier constructed along the open side or sides of stairways and as intermediate stair rails where required on wide stairways.

**Stairway.** Two or more risers shall constitute a stairway.

**Storage Access Aisle.** An aisle, from which pedestrian traffic is excluded during truck operation, designed for the passage of a single industrial truck.

**Story.** That portion of a building included between the upper surface of any floor and the upper surface of the floor next above, except that the topmost story shall be that portion of a building included between the upper surface of the topmost floor and the ceiling or roof above. If the finished floor level directly above a basement, cellar or unused underfloor space is more than 6 feet above grade as defined herein for more than 50 percent of the total perimeter or is more than 12 feet above grade as defined herein at any point, such basement, cellar or unused underfloor space shall be considered as a story.

**Structure.** That which is built or constructed, an edifice or building of any kind, or any piece of work artificially built up or composed of parts joined together in some definite manner.

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

**Toeboard.** A vertical barrier erected along the open edges of floor openings or floor holes, platforms, and runways.

**Toe Plate (deflector type).** In relation to vertical closing shear hazards a smooth metal plate not less than 8 inches wide and not less than 11 gauge thickness, attached flush with the vertical edge of the upper member of the shear, slanted downward and inward at an angle of approximately 30 degrees from the vertical.

**Traffic Aisle.** An aisle used by industrial vehicles and pedestrians during normal operations.

**Tread.** The horizontal member of a step.

**Tread Depth.** The horizontal distance from front to back of tread including nosing when used.

**Tread Run.** The horizontal distance from the leading edge of a tread to the leading edge of an adjacent tread.

**Wall Opening.** An opening in a wall or partition not provided with glazed sash, having a height of at least 30 inches and a width of at least 18 inches, through which a person might fall to a level 30 inches or more below.

**Water Heater.** An appliance intended to provide hot water for domestic purposes and complying with all of the following:

(A) The heater does not have more than 120-gallon capacity.

(B) The heater is used only for heating service water.

(C) The operating control on all automatically controlled heaters is installed by the manufacturer and is of a type that cannot be regulated to increase the water temperature at the top of the heater to more than 200° F.

(D) A non-adjustable control is installed on all automatically controlled heaters by the manufacturer and set to shut off the heat input when the temperature at the top of the heater is 210° F or less. This control and the necessary fuel valve, switch, etc., shall be separate from the operating mechanisms required in (C) above.

(E) The heater is protected against over-pressure with an ASME or AGA rated relief valve set to open at not more than the maximum allowable working pressure of the heater and having a relieving capacity in BTU/hr at least equal to the burner output.

**Working Level or Working Area.** A platform, walkway, runway, floor or similar area fixed with reference to the hazard and used by employees in the course of their employment. This does not include ladders or portable or temporary means used for access, repair or maintenance, provided such means are removed immediately upon completion of the work.

**Yard.** An open, unoccupied space, other than a court, unobstructed from the ground to the sky.

Yard Hole. An opening in a yard or pavement smaller than a yard opening.

Yard Opening. An opening in a yard or pavement, 12 inches or more in the least horizontal dimension.

## **Article 2. Standard Specifications**

### **§3214. Stair Rails and Handrails.**

- (a) Stairways shall have handrails or stair railings on each side, and every stairway required to be more than 88 inches in width shall be provided with not less than one intermediate stair railing for each 88 inches of required width. Intermediate stair railings shall be spaced approximately equal within the entire width of the stairway.

Note: Intermediate stair railings may be of single rail construction.

Exceptions:

- 1) Stairways less than 44 inches in width may have one handrail or stair railing except that such stairways open on one or both sides shall have stair railings provided on the open side or sides.
- (2) Stairways having less than four risers need not have handrails or stair railings.(
- (3) Stairways giving access to portable work stands less than 30 inches high.
- (4) Stairs that follow the contour of tanks or other cylindrical or spherical structures where the construction requires the inside clearance between the inside stair stringer and wall or tank side to be 8 inches or less, shall not be considered an "open side."
- (5) Guardrails may be erected provided a handrail is attached.

- (b) A stair railing shall be of construction similar to a guardrail (see Section 3209) but the vertical height shall be in compliance with Section 3214(c). Stair railings on open sides that are 30 inches or more above the surface below shall be equipped with midrails approximately one half way between the steps and the top rail.

Note: Local building standards may require 4-inch spacing of intermediate vertical members.

- (c) The top of stair railings, handrails and handrail extensions installed on or after April 3, 1997, shall be at a vertical height between 34 and 38 inches above the nosing of treads and landings. For stairs installed before April 3, 1997, this height shall be between 30 and 38 inches. Stair railings and handrails shall be continuous the full length of the stairs and, except for private stairways, at least one handrail or stair railing shall extend in the direction of the stair run not less than 12 inches beyond the top riser nor less than 12 inches beyond the bottom riser. Ends shall be returned or shall terminate in newel posts or safety terminals, or otherwise arranged so as not to constitute a projection hazard.

- (d) A handrail shall consist of a lengthwise member mounted directly on a wall or partition by means of brackets attached to the lower side of the handrail so as to offer no obstruction to a smooth surface along the top and both sides of the handrail. The handrail shall be designed to provide a grasping surface to avoid the person using it from falling. The spacing of brackets shall not exceed 8 feet.

- (e) Handrails projecting from a wall shall have a space of not less than 1 1/2 inches between the wall and the handrail.

- (f) The mounting of handrails shall be such that the completed structure is capable of withstanding a load of at least 200 pounds applied in any direction at any point on the rail.

Exception: Handrails and stair rails on flights of stairs serving basements or cellars that are covered by a trap door, removable floor or grating when not in use, shall stop at the floor level or entrance level so as not to interfere with the cover in the closed position. (Title 24, Part 2, Section 1006.9.2.7a.)

### **§3215. Means of Egress.**

(a) These regulations contain general fundamental requirements essential to providing a safe means of egress from buildings in the event of fire and other emergencies. Nothing in these regulations shall be construed to prohibit a better type of building construction, more exits, or otherwise safer conditions than the minimum requirements specified in these regulations.

(b) Exits from vehicles, vessels, or other mobile structures are not covered under these regulations except when in fixed locations and occupied as buildings.

(c) In every building or structure of such size, arrangement, or occupancy that a fire may not itself provide adequate warning to occupants, fire alarm facilities or procedures, including an evacuation plan, shall be provided where necessary to warn occupants of the existence of fire so that they may escape or to facilitate the orderly conduct of fire exit drills.

(d) Any device or alarm installed to restrict the use of an exit shall be so designed and installed that it cannot, even in cases of failure, impede or prevent emergency use of such exit. (Title 24, Part 2, Section 2-3301.)

(e) Whenever the building is occupied, exit paths shall be lighted so that they may be easily recognized and all exit and directional signs shall be clearly visible.

Artificial lighting sufficient to enable objects to be seen and egress made under emergency conditions shall be provided when natural lighting is inadequate. (Title 24, Part 2, Section 2-3312(a).)

(f) No building or structure under construction shall be occupied in whole or in part until all exit facilities required for the part occupied are completed and ready for use.

(g) No existing building shall be occupied during repairs or alterations unless all existing exits and any existing fire protection, or equivalent exits and fire protection is provided and maintained.

### **§3216. Exit Signs.**

(a) Luminance. Exit and directional signs shall have a luminance on the face of such signs of not less than 50 lux. The words used on such signs shall be in block letters at least 6 inches in height with a stroke of not less than 3/4 inch. Exception: Existing signs may have the word "EXIT" in lettering not less than 5 inches high with principal strokes of letters of not less than 1/2 inch. Letters shall be of such color or design as to be in strong contrast to the background of the sign. Arrows or other directional symbols shall be of equal visibility to that stipulated herein for letters.

(b) Location. Exit or directional signs, or both, shall be provided at every exit door, at the intersection of corridors, at exit stairways or ramps and at such other locations and intervals as are necessary to provide the occupants with knowledge of the various means of egress available. Exit or directional signs need not be provided for the following:

(1) Any room or building having an occupant load of 50 or less;

(2) Dwellings units in Group R, Division 1 Occupancies;

(3) When approved, the main exterior exit doors obviously and clearly identifiable as exits. (Title 24, Part 2, Section 2-3312(c)(3).)

(c) Electrically Illuminated Signs. Exit and exit directional signs which are required to be electrically illuminated shall be lighted with two electric lamps, either one of which shall be sufficient to provide the required luminance on the face of the sign. NOTE: Radioactive isotope self powered signs with a luminance of not less than 0.02 lamberts during its useful life will be acceptable.

### **§3219. Maintenance of Fire Protection Equipment, Materials and Assemblies.**

All fire protection equipment, materials and assemblies, where required, shall be maintained in proper operating condition, and such periodic inspections and tests shall be made as are necessary to assure this.

NOTE: For further guidance see Title 19, Article 6, Section 574.1 et seq., California Code of Regulations.

### **§3220. Emergency Action Plan.**

(a) Scope and Application. This section applies to all emergency action plans. The emergency action plan shall be in writing, except as provided in the last sentence of subsection (e)(3) of this section, and shall cover those designated actions employers and employees must take to ensure employee safety from fire and other emergencies.

(b) Elements. The following elements, at a minimum, shall be included in the plan:

- (1) Emergency escape procedures and emergency escape route assignments;
- (2) Procedures to be followed by employees who remain to operate critical plant operations before they evacuate;
- (3) Procedures to account for all employees after emergency evacuation has been completed;
- (4) Rescue and medical duties for those employees who are to perform them;
- (5) The preferred means of reporting fires and other emergencies; and
- (6) Names or regular job titles of persons or departments who can be contacted for further information or explanation of duties under the plan.

(c) Alarm System.

- (1) The employer shall establish an employee alarm system which complies with Article 165.
- (2) If the employee alarm system is used for alerting fire brigade members, or for other purposes, a distinctive signal for each purpose shall be used.

(d) Evacuation. The employer shall establish in the emergency action plan the types of evacuation to be used in emergency circumstances.

(e) Training.

- (1) Before implementing the emergency action plan, the employer shall designate and train a sufficient number of persons to assist in the safe and orderly emergency evacuation of employees.
- (2) The employer shall advise each employee of his/her responsibility under the plan at the following times:
  - (A) Initially when the plan is developed,
  - (B) Whenever the employee's responsibilities or designated actions under the plan change, and
  - (C) Whenever the plan is changed.
- (3) The employer shall review with each employee upon initial assignment those parts of the plan which the employee must know to protect the employee in the event of an emergency. The written plan shall be kept at the workplace and made available for employee review. For those employers with 10 or fewer employees the plan may be communicated orally to employees and the employer need not maintain a written plan.

### **§3221. Fire Prevention Plan.**

(a) Scope and Application. This section applies to all fire prevention plans. The fire prevention plan shall be in writing, except as provided in the last sentence of subsection (d)(2) of this section.

(b) Elements. The following elements, at a minimum, shall be included in the fire prevention plan:

(1) Potential fire hazards and their proper handling and storage procedures, potential ignition sources (such as welding, smoking and others) and their control procedures, and the type of fire protection equipment or systems which can control a fire involving them;

(2) Names or regular job titles of those responsible for maintenance of equipment and systems installed to prevent or control ignitions or fires; and

(3) Names or regular job titles of those responsible for the control of accumulation of flammable or combustible waste materials.

(c) Housekeeping. The employer shall control accumulations of flammable and combustible waste materials and residues so that they do not contribute to a fire emergency. The housekeeping procedures shall be included in the written fire prevention plan.

(d) Training.

(1) The employer shall apprise employees of the fire hazards of the materials and processes to which they are exposed.

(2) The employer shall review with each employee upon initial assignment those parts of the fire prevention plan which the employee must know to protect the employee in the event of an emergency. The written plan shall be kept in the workplace and made available for employee review. For those employers with 10 or fewer employees, the plan may be communicated orally to employees and the employer need not maintain a written plan.

(e) Maintenance. The employer shall regularly and properly maintain, according to established procedures, equipment and systems installed in the workplace to prevent accidental ignition of combustible materials.

### **§3222. Arrangement and Distance to Exits.**

(a) Arrangement of Exits. If only two exits are required, they shall be placed a distance apart equal to not less than one-half the length of the maximum overall diagonal dimension of the building or area to be served measured in a straight line between exits.

EXCEPTION: Where exit enclosures are provided as the required means of egress and are interconnected by a corridor conforming to the requirements of Section 3326, exit separations may be measured in a direct line of travel within the exit corridor. Enclosure walls shall be not less than 30 feet apart at any point in a direct line of measurement. Where three or more exits are required, they shall be arranged a reasonable distance apart so that if one becomes blocked the others will be available. (Title 24, Part 2, Section 3302(c).)

(b) Distance to Exits. The maximum distance of travel from any point to an exterior exit door, horizontal exit, exit passageway or an enclosed stairway in a building not equipped with an automatic sprinkler system throughout shall not exceed 150 feet or 200 feet in a building equipped with an automatic sprinkler system throughout. These distances may be increased 100 feet when the last 150 feet is within a corridor complying with Section 3226.

EXCEPTION: Every area used mainly for the storage of materials liable to burn, with extreme rapidity or from which poisonous fumes or explosions will result upon exposure to fire, shall have an exit within 75 feet of any point in the area where employees may be present. Where automatic sprinkler protection is provided, distances may be increased to 100 feet. (Title 24, Part 2, Section 2-3302(d) Exception 1.)

In a one-story Group B, Division 4 Occupancy classified as a factory or warehouse and in one-story airplane hangers, the exit travel distances may be increased to 400 feet if the building is equipped with an automatic sprinkler system throughout and provided with smoke and heat ventilation as specified in Section 3206 of the 1979 Uniform Building Code.

In an open parking garage, the exit travel distance may be increased to 250 feet.

### **§3225. Maintenance and Access to Exits.**

(a) Exits shall be so located and arranged that they are readily accessible at all times. Where exits are not immediately accessible from an open floor area, safe and continuous passageways, aisles, or corridors leading directly to every exit and so arranged as to provide convenient access for each occupant to at least two exits by separate ways of travel shall be maintained, except as a single exit or limited dead ends are permitted by other provisions of these regulations.

(1) Every required exit shall be maintained free of all obstructions or impediments to full instant use in the case of fire or other emergency.

(2) Where exits are not immediately accessible from an open floor area, safe and continuous passageways, aisles, or corridors leading directly to every exit and so arranged as to provide convenient access for each occupant to at least two exits by separate ways of travel shall be maintained, except as a single exit or limited dead ends are permitted by other provisions of these regulations.

(b) Exits from a room may open into an adjoining or intervening room or area, providing such adjoining room is accessory to the area served and provides a direct means of egress to an exit corridor, exit passageway, exit stairway, exterior exit, horizontal exit, or exterior exit balcony.

EXCEPTION: Exits are not to pass through kitchens, storerooms, restrooms, closets or spaces used for similar purposes. Foyers, lobbies, and reception rooms constructed as required for corridors shall not be construed as intervening rooms. (Title 24, Part 2, Section 3302(e).)

Exits will not pass through any room subject to locking. (Title 24, Part 2, Section 2-3302(e).)

(c) No hangings or draperies shall be placed over exit doors or otherwise so located as to conceal or obscure any exit. No mirrors shall be placed on exit doors. No mirrors shall be placed in or adjacent to any exit in such a manner as to confuse the direction of exit. (Title 24, Part 2, Section 2-3302(i).)

(d) Exits shall be so arranged that it will not be necessary to travel toward any area of high hazard occupancy in order to reach the nearest exit, unless the path of travel is effectively shielded from the high hazard location by suitable partitions or other physical barriers. (Title 24, Part 2, Section 2-3302(d).)

### **§3226. Corridors and Exterior Exit Balconies.**

(a) General. This section shall apply to every corridor serving as a required exit for an occupant load of 10 or more. For the purposes of the section, the term "corridor" shall include "exterior exit balconies" and any covered or enclosed exit passageway, including walkways, tunnels and malls. Partitions, rails, counters and similar space dividers not over 5 feet, 9 inches in height above the floor shall not be construed to form corridors. (Title 24, Part 2, Section 3304(a).)

(b) Exit corridors shall be continuous until egress is provided from the building and shall not be interrupted by intervening rooms.

EXCEPTION: Foyers, lobbies or reception rooms constructed as required for corridors shall not be construed as intervening rooms. (Title 24, Part 2, Section 3304(a).)

(c) Height. Corridors and exterior exit balconies shall have a clear height of not less than 7 feet measured to the lowest projection from the ceiling. (Title 24, Part 2, Section 3304(c).)

(d) Projections. The required width of corridors shall be unobstructed.

EXCEPTION: Handrails and doors, when fully opened, shall not reduce the required width by more than 7 inches. Doors in any position shall not reduce the required width by more than one-half. Other nonstructural projections such as trim and similar decorative features may project into required width 1 1/2 inches on each side. (Title 24, Part 2, Section 3304(d).)

(e) Access to Exits. Exits shall be so arranged that it is possible to go in either direction from any point in a corridor to a separate exit, except for dead ends not exceeding 20 feet in length. This subsection shall apply to all occupancies regardless of occupant load. (Title 24, Part 2, Section 2-3304(e).)

(f) Changes in Elevation. When a corridor or exterior exit balcony is accessible to an elevator, changes in elevation of the floor shall be made by means of a ramp. (Title 24, Part 2, Section 2-3304(f).)

(g) Where accumulation of snow or ice is likely because of the climate, the exterior way of exit shall be protected by a roof, unless it serves as the sole normal means of access to the rooms or spaces served, in which case it may be assumed that snow and ice will be regularly removed in the course of normal occupancy. (Title 24, Part 2, Section 2-3304(i).)

(h) Exterior ways of exit shall have smooth, solid floors, substantially level, and shall have guardrails on the unenclosed sides.

(i) A permanent, reasonably straight path of travel shall be maintained over the required exterior way of exit. There shall be no obstruction by railings, barriers, or gates that divide the open space into sections appurtenant to individual rooms, or other uses. Where the Division finds the required path of travel to be obstructed by furniture or other movable objects, the division may require that they be fastened out of the way or the division may require that railings or other permanent barriers be installed to protect the path of travel against encroachment.

### **§3227. Discharge from Exits.**

(a) All exits shall discharge directly to the street, or to a yard, court, or other open space that gives safe access to a public way. The streets to which the exits discharge shall be of width adequate to accommodate all persons leaving the building. Yards, courts, or other open spaces to which exits discharge shall also be of adequate width and size to provide all persons leaving the building with ready access to the street. (Title 24, Part 2, Section 2-3302(k).)

(1) Where any doorway, ramp, walkway, stairway or ladder landing exits directly into the path of vehicular traffic, an adequate barrier and warning shall be installed to prevent workmen stepping directly into such dangerous traffic. (Title 24, Part 2, Section 2-3302(k).)

(b) Exit stairs that continue beyond the floor of discharge shall be interrupted at the floor of discharge by partitions, doors, or other physical barriers. (Title 24, Part 2, Section 2-3302(k)(2).)

(c) Exit Obstruction. No obstructions shall be placed in the required width of an exit except projections permitted by these regulations.

### **§3228. Number of Exits.**

(a) Every building or usable portion thereof shall have at least two exits to permit prompt evacuation of employees and other building occupants during an emergency. The exits shall be located as far away as practicable from each other so that if one exit is inaccessible because of fire or smoke, employees can evacuate using the second exit.

Exception: In accordance with Title 24, Part 2, California Code of Regulations, a single exit shall be permitted where the number of employees, the size of the building, its occupancy or the arrangement of the workplace is such that all employees would be able to evacuate safely during an emergency. In accordance with Title 24, Part 2, California Code of Regulations, a single exit shall be permitted where the number of employees, the size of the building, its occupancy or the arrangement of the workplace is such that all employees would be able to evacuate safely during an emergency.

(b) More than two exits must be provided in a workplace if the number of employees, the size of the building, its occupancy, or the arrangement of the workplace is such that all employees would not be able to evacuate safely during an emergency if only two exits were provided. Note to subsections (a) and (b): For assistance in determining



the number of workplace exits, and the necessary distance between exits, consult Title 24, Part 2, California Code of Regulations, and your local jurisdiction fire department.

### **§3229. Exit Width.**

(a) The total width of exits in feet shall be not less than the total occupant load served divided by 50. Such width of exits shall be divided approximately equally among the separate exits. The total exit width required from any story of a building shall be determined by using the occupant load of that story, plus the percentages of the occupant loads of floors which exit through the level under consideration as follows:

(1) Fifty percent of the occupant load in the first adjacent story above and the first adjacent story below, when a story below exits through the level under consideration.

(2) Twenty-five percent of the occupant load in the story immediately beyond the first adjacent story.

The maximum exit width required from any story of a building shall be maintained. (Title 24, Part 2, Section 3302(b).)

(b) The minimum width of any way of exit shall in no case be less than 28 inches. Where a single way of exit leads to an exit, its capacity in terms of width shall be at least equal to the required capacity of the exit to which it leads. Where more than one way of exit leads to an exit, each shall have a width adequate for the number of persons it must accommodate. (Title 24, Part 2, Section 3302(h).)

(c) Every portion of every building in which are installed seats, tables, merchandise, equipment or similar materials shall be provided with aisles leading to an exit. (Title 24, Part 2, Section 3313(a).)

### **§3235. Doors.**

(a) General.

(1) This section shall apply to every exit door. Buildings or structures used for human occupancy shall have at least one approved exit door. (Title 24, Part 2, Section 2-3303(a).)

(2) Exit doors shall be of the side swinging type.

EXCEPTION: As provided in Section 3235(g). (Title 24, Part 2, Section 2-3303(a).)

(3) Every door required to serve as an exit shall be designed and constructed so that the way of exit travel is obvious and direct. Windows which could be mistaken for doors shall be made inaccessible to occupants by means of barriers or railings.

(b) Width and Height. Every required exit doorway shall be of a size that permits the installation of a door not less than 3 feet in width and not less than 6 feet 8 inches high. When installed in exit doorways, exit doors shall be capable of opening at least 90 degrees and shall be mounted so that the clear width of the exitway is no less than 32 inches. In computing the exit width required, the net dimension of the exitway shall be used.

EXCEPTION: Existing buildings may be less than 3 feet in width if the clear width of the exitway is not less than 28 inches. (Title 24, Part 2, Section 2-3303(e).)

(c) Door Leaf Width. No leaf of an exit door shall exceed 4 feet in width. (Title 24, Part 2, Section 2-3303(f).)

(d) Swing. Exit doors shall swing in the direction of exit travel when serving:

(1) Any assembly building;

(2) Any hazardous area;

(3) An occupant load of 50 or more. (Title 24, Part 2, Section 2-3303(b)(1).)

(e) Locking. Exit doors shall be openable from the direction of exit travel without the use of a key or any special knowledge or effort whenever the building is occupied.

EXCEPTIONS:

(1) Mental, penal, or corrective institutions where supervisory personnel is continually on duty and effective provisions are made to remove occupants in case of fire or other emergency.

(2) This requirement shall not apply to exterior exit doors in Group B occupancies, if such doors are unlocked during business hours and there is a readily visible, durable sign on or adjacent to the door stating "THIS DOOR TO REMAIN UNLOCKED DURING BUSINESS HOURS." The sign shall be in letters not less than one-inch high on a contrasting background. The locking device must be of a type that will be readily distinguishable as locked.

(3) Exit doors in places of employment in Group B occupancies, may be locked whenever the locking device or mechanism is controlled by an effective mechanical/electrical or electronic system acceptable to the Division and approved for the purpose by the State Fire Marshal.

NOTE: 1: Pursuant to the provisions of Health and Safety Code Section 17950 et seq., local enforcement officials may further restrict or prohibit the use of these devices. (Title 24, Part 2, Section 2-3303(e)(1).)

NOTE: 2: Group B occupancies are those defined in Chapter 7 of the Uniform Building Code, 1979 Edition.

(f) Change in Floor Level at Doors. Regardless of the occupant load, there shall be a floor or landing on each side of a door. The floor or landing shall be no more than 1 inch lower than the threshold of the doorway. Where a door opens over a landing, the landing shall be at least as wide as the door, and at least 5 feet long. (Title 24, Part 2, Section 2-3303(i)(1) and (i)(2).)

EXCEPTION: Where the door opens into the stairway of a smokeproof enclosure, the landing need not have a length of 5 feet. (Title 24, Part 2, Section 2-3303(i)(2) Exception 1).

In existing installations where there is no landing, doors shall be conspicuously marked with a sign stating "Danger! Stairway--No Landing" or equivalent wording, and there shall be adequate illumination. (Title 24, Part 2, Section 2-3303(i)(2) Exception 5).

(g) Special Doors. Revolving, sliding, and overhead doors shall not be used as required exits.

EXCEPTIONS:

(1) Manually operated horizontal sliding doors may be used when serving an occupant load of 10 or less.

(2) Power operated doors conforming to SFM 33.1, as shown in Chapter 2-60 of Part 2 of Title 24. (Title 24, Part 2, Section 2-3303(g)(1).)

(h) Power-Operated Doors.

(1) Where a required door is operated by power, such as a door with photo-electric actuated mechanism that opens the door upon the approach of a person, or a door with power-assisted manual operation, the design shall be such that in event of power failure the door may be opened manually to permit exit travel or closed to safeguard means of egress.

(2) No power-operated door shall be considered a required exit unless it also swings by manual means. (Title 24, Part 2, Section 2-3303(g)(2).)

(i) Double Acting (Swinging) Doors.

(1) Doors swinging both ways and located between rooms such as kitchen and dining room, or storeroom and sales floor, shall be provided with view panels. One shall be provided for each door of swinging double doors.

(2) Windows, if used, shall be kept free of dirt or other obstruction to vision.

(3) The bottom of the view panel or window shall be no more than 48 inches above the floor. (Title 24, Part 2, Section 2-3303(b)(2)(C).)

(4) The size of the view panel or window shall be no less than 200 square inches. (Title 24, Part 2, Section 2-3303(b)(2)(B).)

(5) Guards shall be placed over windows which are not of the shatter-proof or wired glass type. (Title 24, Part 2, Section 2-3303(b)(2)(D).)

(6) Glass in swinging doors shall conform to the provisions of Section 3242(d). (Title 24, Part 2, Section 2-3303(b)(2)(E).)

(7) Double acting doors shall not be used as exits serving a tributary occupant load or more than 100, nor shall they be used as part of a fire assembly, nor equipped with panic hardware. (Title 24, Part 2, Section 2-3303(b)(2)(A).)

(j) Turnstiles. Turnstiles shall not be considered as providing any exit width. (Title 24, Part 2, Section 2-3303(n)(1).)

(k) Doors in Folding Partitions. When permanently-mounted folding or movable partitions are used to divide a room into smaller spaces, exits from these enclosures shall be provided as required under Section 3228. (Title 24, Part 2, Section 2-3303(o).)

(l) Bolts. Manually-operated edge bolts or surface-mounted flush bolts and surface bolts are prohibited on required exit doors. When exit doors are installed in pairs and automatic flush bolts are used, the door leaf with these bolts shall have no door knob or surface-mounted hardware. The unlatching of any leaf shall not require more than one operation. (Title 24, Part 2, Section 2-3303(c)(2).)

(m) Panic Hardware.

(1) Panic hardware shall cause the door latch to release when a force not exceeding 15 pounds is applied to the releasing device in the direction of exit traffic.

(2) Hand activated door opening hardware shall be centered between 30 inches and 44 inches above the floor. Latching and locking doors that are hand activated and which are in a path of travel, shall be operable with a single effort by lever type hardware, by panic bars, push-pull activating bars or other hardware designed to provide passage without requiring the ability to grasp the opening hardware. Locked exit doors shall operate as above in the egress direction.

EXCEPTION: Doors to individual hotel or motel units shall operate similarly, except that when the bolt and unlatching operation is key operated from corridor or exterior side of the unit door, large bow keys (2 inch full bow or 1 1/4 inch half bow) shall be provided in lieu of lever type hardware on the corridor side. Separate dead lock activation on room side of the corridor doors in hotels and motels shall have handle or large thumb turn in an easily reached location. (Title 24, Part 2, Section 2-3303(c)(3).)

(3) Panic hardware shall not be equipped with any locking or dogging device, set screw, or other arrangement which can be used to prevent the release of the latch when pressure is applied to the bar.

(4) No lock, padlock, hasp, bar, chain, or other device, or combination thereof, shall be installed or maintained at any time on or in connection with any door on which panic hardware is required, if such device prevents the free use of the door for exiting.

(n) Latches. A latch or other fastening device on a door shall be provided with a knob, handle, panic bar, or other simple type of releasing device, the method of operation of which is obvious. (Title 24, Part 2, Section 2-3303(c).)

### **Article 3. Special Design Requirements**

#### **§3241. Live Loads.**

(a) The live loads for which each floor or portion thereof of a commercial or industrial building is or has been designed shall have such design live loads conspicuously posted by the owner in that part of each story in which they apply, using durable metal signs, and it shall be unlawful to remove or deface such notices. The occupant of the building shall be responsible for keeping the actual load below the allowable limits. (Title 24, Part 2, Section 1607.3.5)

(b) The maximum weight of materials stored on building floors or load carrying platforms, except those built directly on the ground, shall not exceed their safe carrying capacity.

(c) Material, wherever stored, shall not create a hazard. It shall be limited in height and shall be piled, stacked, or racked in a manner designed to prevent it from tipping, falling, collapsing, rolling or spreading. Racks, bins, planks, sleepers, bars, strips, blocks, sheets, shall be used where necessary to make the piles stable.

(d) The buildings, structures, foundations, and fastenings of all prime movers, machines, and equipment shall be maintained to support safely and without dangerous vibration the loads imposed upon them.

(e) Storage racks shall be designed to safely support their intended loads and shall not be loaded in excess of their design capacity as recommended by the manufacturer.

#### **§3241.1. Working Warehouses**

(a) Definitions.

(1) "Sales floor" means any area where the public is invited to shop, whether indoors or outdoors.

(2) "Working warehouse" means a wholesale or retail establishment in which heavy machinery, including, but not limited to, forklifts, is used in any area where the public shops while customers are on the premises, and merchandise is stored on shelves higher than 12 feet above the sales floor.

(3) "Shelf" means a support structure of rigid material such as wood, glass, metal or metal grating to hold or store merchandise. For the purposes of this section, shelves are fixed horizontally to a wall or other vertical surface including upright wood or metal frames and columns that contain structural support, such as shelves, racks, or cantilevered arms for storing merchandise including palletized items.

(b) In addition to the requirements of subsections (c) and (e) of Section 3241, all merchandise on shelves higher than 12 feet above the sales floor of a working warehouse shall be secured. Methods of securing merchandise shall include rails, fencing, netting, security doors, gates, cables, or the binding of items on a pallet into one unit by shrink-wrapping, metal or plastic banding, or by tying items together with a cord.

Note: The height of 12 feet specified in subsections (a)(2) and (b) is the distance measured from the floor to the top plane of the shelf on which merchandise is stored, and not the distance from the floor to the top of the merchandise.

(c) When heavy machinery is used to place or retrieve merchandise on a shelf in a working warehouse, there shall be a safety zone established to temporarily block persons other than the operator from entering areas where merchandise could fall.

## **Article 4. Access, Work Space, and Work Areas**

### **§3272. Aisles, Walkways, and Crawlways.**

(a) Crawlways shall not be less than 24 inches in width and as high as the opening or 30 inches, whichever is greater.

#### **EXCEPTIONS:**

1. Whenever any openings to such equipment are provided in weatherproof enclosures, such openings may be reduced to 15 inches in the least dimension if the equipment can be properly serviced, repaired, or replaced from these openings without removing any permanent construction.

2. Underfloor crawlways shall be not less than 24 inches by 24 inches.

(b) Where aisles or walkways are required, machinery equipment, parts, and stock shall be so arranged and spaced as to provide clear walkways or aisles of not less than 24 inches in width and 6 feet 8 inches clear headroom to a safe means of egress from the building.

In existing installations, which do not comply with the minimum headroom clearance specified above, the obstruction shall be removed, or if this is impracticable, a suitable warning sign shall be placed near or on the obstruction so as to notify employees of its presence. When the nature of the hazard is such that padding it will increase safety, this also shall be done. In no case shall the clear headroom be less than 6 feet.

(c) Permanent aisles, ladders, stairways, and walkways shall be kept reasonably clear and in good repair. Where, due to lack of proper definition, such aisles or walkways become hazardous, they shall be clearly defined by painted lines, curbs, or other method of marking.

(d) Whenever aisles, walkways, or crawlways become slippery, high-friction surfaces, cleats, coverings, or other equivalent protection against slipping will be required.

(e) Where industrial vehicles are in customary use, traffic aisles designed for the passage of a single vehicle shall be at least 2 feet wider than the widest vehicle. Two-way traffic aisles shall be at least 3 feet wider than twice the width of the widest vehicle. The Division will permit the use of suitable turnouts adjacent to one-way traffic aisles for two-way traffic when the use of such turnouts will provide equivalent safety.

**EXCEPTION:** Storage access aisles as defined in Section 3207.

(f) Where normal clearances present a hazard with the use of industrial vehicles, clearance limit warning signs shall be provided.

### **§3273. Working Area.**

(a) Permanent floors and platforms shall be free of dangerous projections or obstructions, maintained in good repair, and reasonably free of oil, grease, or water. Where the type of operation necessitates working on slippery floors, such surfaces shall be protected against slipping by using mats, grates, cleats, or other methods which provide equivalent protection. Where wet processes are used drainage shall be maintained and false floors, platforms, mats, or other dry standing places provided. (Title 24, Part 2, Section 2-2304(f))

(b) Permanent roadways, walkways, and material storage areas in yards shall be maintained free of dangerous depressions, obstructions, and debris.

(c) Platforms, runways, ramps, or other elevated working levels, except catwalks, that are 30 inches or more above the floor, ground, or other working area shall be no less than 2 feet wide and have no less than 6 1/2 feet clear headroom. In existing installations where an overhead hazard exists due to clearances of less than 6 1/2 feet above ramps, runways, platforms, or other elevated work areas, such work area shall be relocated and the obstruction removed. If these procedures are impracticable, a suitable warning shall be placed near the obstruction to notify employees of its

presence. Where the nature of the hazard is such that padding will increase safety, it shall be installed. (Title 24, Part 2, Section 2-3320(h)(1))

(d) Catwalks shall be no less than 18 inches wide and have 6 1/2 feet clear headroom. When installed along inclined conveyors, crane booms, etc., where because of structural or load conditions it is unreasonable to comply with basic ramp standards, catwalks may have a slope exceeding 18 degrees. (Title 24, Part 2, Section 2-3320(h)(2))

Exceptions:

1. When required location dictates, a catwalk may have less overhead clearance if a warning and padding are provided as in (c).
2. In bowling alleys at pin-spotting and pin-setting machines, catwalks shall be no less than nominal 8 inches wide and provided with an adequate handrail if the sides are not protected by another structure.

(e) Protection from falling objects:

(1) Where there is employee exposure below an elevated work area, one or more of the following safeguards shall be implemented:

(A) Provide toeboards, screens, or guardrail systems in accordance with Article 2 of these Orders to prevent objects from falling from higher levels; or,

(B) Provide a canopy structure to protect employees from falling objects; or,

(C) Provide a physical barrier such as, but not limited to, fencing, barricades or other equivalent means or methods, to prevent entry into the area to which objects could fall.

(2) Where the type of process or operation, exclusive of repair and maintenance, is such that there are hazards to employees from materials falling through platform or runway openings, the openings shall be limited to a size that prevents materials falling through the openings.

(3) Where platform or runway gratings are used as work areas during repair or maintenance, there shall be provided at such areas suitable safeguards to prevent tools or materials falling on employees below. Such safeguards may be netting suspended below the work area, canvas, planking on the surface of the grating, or barricaded or sheltered areas below the work area.

(f) Lowering objects:

(1) Where there is employee exposure below an elevated work area, all objects, including materials, equipment and tools shall be lowered in a controlled manner, such as but not limited to using enclosed chutes, material handling equipment, or hand lines; or,

(2) When controlled lowering is not practical, or would subject employees to a greater risk of injury, protection from falling objects shall be provided by the use of effective physical barriers, such as but not limited to canopies, fencing, barricades, or barrier tape when the barrier tape is attended by a spotter who is authorized to effectively restrict entry into the area and who is on the same level as the area of the exposure, or other equivalent means or methods.

(A) Signs in accordance with Section 3340 shall be posted at the perimeter of the affected work area to warn employees of the hazard.

(g) Where it is necessary to lubricate or adjust prime movers, machines, or equipment, which extends below the floor line, sufficient work space shall be provided for the safe performance of the work.

(h) Permanently installed prime movers, machines, and equipment shall be located and guarded so that transported material does not strike either the moving parts of machines or the employees at their operating positions.

(i) Machines or equipment shall be located and guarded so that the product, waste stock, or material being worked or processed does not endanger employees.

(j) Where machinery or equipment is installed in a pit and there are shear hazards between the pit edges and parts of the machine or equipment, skirt guards shall be installed to remove such hazards, or such other device used to provide equivalent protection.

(k) Every shop transfer car and equipment carriage operating on rails, together with their loads, shall clear stationary machines, equipment, structures, or piled or stacked material, by at least 24 inches.

(l) Ditches, pits, excavations and surfaces in poor repair shall be guarded by readily visible barricades, rails or other equally effective means.

(m) Existing installations having impaired clearances shall be well posted to indicate the hazards due to such impaired clearance, and shall be guarded by guardrails, barricades, or other means.

Exceptions:

1. Inaccessible monorails, conveyors, and similar equipment operating on rails.
2. Transfer cars or carriages where the process is such that a minimum of clearance is necessary for safe operations.

### ***Group 8. Points of Operation and Other Hazardous Parts of Machinery***

#### **Article 54. Scope and General Definitions**

##### **§4184. Guarding Required.**

(a) Machines as specifically covered hereafter in Group 8, having a grinding, shearing, punching, pressing, squeezing, drawing, cutting, rolling, mixing or similar action, in which an employee comes within the danger zone shall be guarded at the point of operation in one or a combination of the ways specified in the following orders, or by other means or methods which will provide equivalent protection for the employee.

(b) All machines or parts of machines, used in any industry or type of work not specifically covered in Group 8, which present similar hazards as the machines covered under these point of operation orders, shall be guarded at their point of operation as required by the regulations contained in Group 8.

##### **§4185. Foot-Operated Devices.**

All foot-operated devices (i.e., treadles, pedals, levers, bars, valves, and switches) shall be protected from unintended operation, if such operation creates a hazard.

##### **§4186. Maintenance and Use of Point of Operation Tools and Guards.**

(a) All saws, cutting tools, heads, shears, and knives that are part of any machine shall be kept sharp, properly set up, adjusted and firmly secured.

(b) All point of operation guards shall be properly set up, adjusted and maintained in safe and efficient working condition in conformance with Figure G-8 and Table G-3 or other guard configurations which will prevent the operator's hand from entering the point of operation.

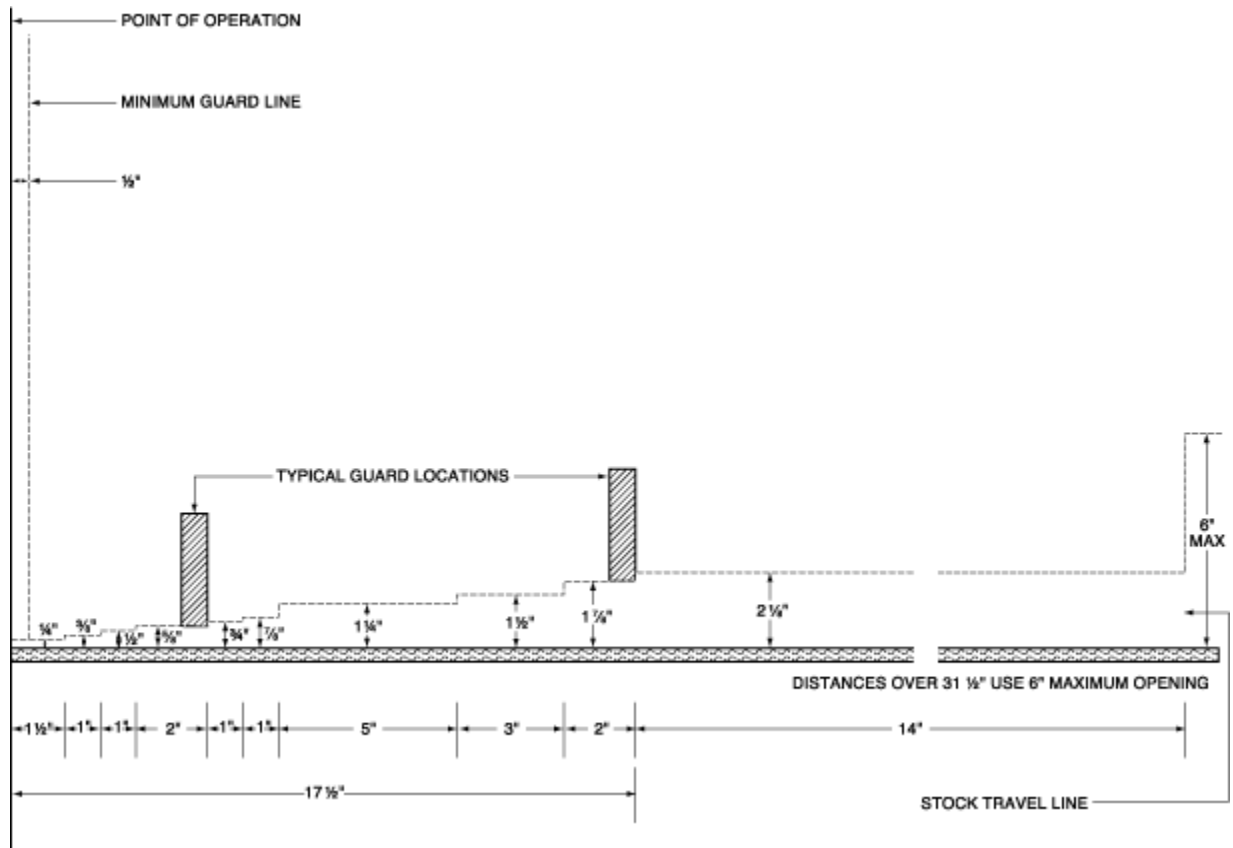
(c) All repair work performed on metal forming and/or cutting machines, such as punch presses, press brakes, forming rolls, shears, power presses, forging presses and hammers, shall be made:

(1) In accordance with the recommendation of the manufacturer(s), or

(2) In accordance with good engineering practice.

Point of Operation Guarding

Figure G-8



Explanation of Above Diagram:

- This diagram shows the accepted safe openings between the bottom edge of a guard and feed table at various distances from the point of operation.
- The minimum guarding line is 1/2-inch from the point of operation. The various openings are such that with average size hands, an operator's fingers will not reach the point of operation.
- After installation of point of operation guards and before a job is released for operation, a check should be made to verify that the guard will prevent the operator's hands from reaching the point of operation.

Table G-3

Distance of Opening from Point of Operation Hazard (Inches)	Maximum Width of Opening (Inches)
1/2 to 1 1/2	1/4
1 1/2 to 2 1/2	3/8
2 1/2 to 3 1/2	1/2
3 1/2 to 5 1/2	5/8
5 1/2 to 6 1/2	3/4
6 1/2 to 7 1/2	7/8
7 1/2 to 12 1/2	1 1/4
12 1/2 to 15 1/2	1 1/2



15 1/2 to 17 1/2..... 1 7/8  
17 1/2 to 31 1/2..... 2 1/8

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Refer to Table G-1 in Section 3944 for the maximum width of openings permitted in guards at various distances from the moving parts of power transmission equipment, prime movers, machines and machine parts.

#### **§4187. Rolls.**

- (a) The in-running side of the rolls shall be protected with a fixed or self-adjusting barrier so arranged that the material can be fed to the rolls without permitting the fingers of the operator to be caught between the rolls or between the guard and the rolls, or
- (b) The control device for the rolls shall be of the constant contact type and shall be so located as to prevent the employees from contacting the danger zone, or
- (c) The prime mover shall be equipped with an effective brake and there shall be installed across the front of the rolls at approximately knee height a control bar, lever or other device which when actuated will stop the motor and apply the brake.

NOTE: (1) The intent of this section is primarily to achieve point of operation guarding as required by Subsection (a) above. Where, because of work procedures or other valid reasons, the requirements of Subsection (a) cannot be achieved, the requirements of Subsection (b) shall control. Where neither the requirements of (a) or (b) can be achieved, compliance with Subsection (c) shall then be mandatory.

NOTE: (2) In those instances where there are other orders covering specific rolls, those orders shall prevail over those contained in this section.

EXCEPTION: Rolls which do not expose any employees to a point of operation hazard.

#### **§4188. Definitions.**

##### **(a) General Definitions.**

**Classes.** The designation "Class-A" with an order means that the rule applies for all kinds of work. The designation "Class-B" means that the order applies unless the nature of the work, type of machinery, or size and shape of material being worked will not permit.

**Danger Zone.** Any place in or about a machine or piece of equipment where an employee may be struck by or caught between moving parts, caught between moving and stationary objects or parts of the machine, caught between the material and a moving part of the machine, burned by hot surfaces or exposed to electric shock.

**Interlock.** A device that operates to prevent the operation of a machine while the cover or door of the machine is open or unlocked, and which will also hold the cover or door closed and locked while the machine is in motion.

**Point of Operation.** That part of a machine which performs an operation on the stock or material and/or that point or location where stock or material is fed to the machine. A machine may have more than one point of operation.

**(b) Specific Definitions for Power Operated Presses. Adjustable Barrier Guard.** A barrier requiring adjustment for each job or die setup.

**Antirepeat.** The part of the clutch/brake control system designed to limit the press to a single stroke if the operating means is held operated. Antirepeat requires release of all tripping mechanisms before another stroke can be initiated. "Antirepeat" is also called single stroke reset or reset circuit.

**Brake.** The mechanism used on a mechanical power press to stop and/or hold the crankshaft, either directly or through a gear train, when the clutch is disengaged.

**Brake Monitor.** A sensor designed, constructed, and arranged to monitor the effectiveness of the press braking system.

**Bolster Plate.** The plate attached to the top of the bed of the press having drilled holes or T-slots for attaching the lower die or die shoe.

**Certification or Certify.** In the case of design certification/validation that the manufacturer has reviewed and tested the design and manufacture, and in the case of installation certification/validation and annual recertification/revalidation that the employer has reviewed and tested the installation, and concludes in both cases that the requirements of sections 4192 through 4211 and Appendix A have been met. The certifications are made to the validation organization.

**Certification/Validation and Certify/Validate.** The combined processes of certification and validation.

**Clutch.** The coupling mechanism used on a mechanical power press to couple the flywheel to the crankshaft, either directly or through a gear train.

(1) **Full Revolution Clutch.** A type of clutch that, when tripped, cannot be disengaged until the crankshaft has completed a full revolution and the press slide a full stroke.

(2) **Part Revolution Clutch.** A type of clutch that can be disengaged at any point before the crankshaft has completed a full revolution and the press slide a full stroke.

**Concurrent.** Acting in conjunction, and is used to describe a situation wherein two or more controls exist in an operated condition at the same time.

**Control System.** Sensors, manual input and mode selection elements, interlocking and decision-making circuitry, and output elements to the press operating mechanism.

**Continuous.** Uninterrupted multiple strokes of the slide without intervening stops (or other clutch control action) at the end of individual strokes.

**Counter-balance.** The mechanism that is used to balance or support the weight of the connecting rods, slide, and slide attachments.

**Device.** A press control or attachment that:

(A) Restrains the operator from inadvertently reaching into the point of operation, or

(B) Prevents normal press operation if the operator's hands are within the point of operation as the dies close.

(C) Automatically withdraws the operator's hands if the operator's hands are within the point of operation as the dies close, or

(D) Prevents the initiation of a stroke, or stops stroke in progress, when there is an intrusion through the sensing field by any part of the operator's body or by any other object, or

(E) Locating single cycle operating controls so that the slide completes its downward travel or stops the ram motion before the operator's hands can reach into the point of operation.

**Combined Stroking-Control Systems.** Combined stroking-control systems are two independent control systems on the same machine, only one of which is used at a time.

**Die.** The tooling used in a press for cutting or forming material. An upper and a lower die make a complete set.

**Die Builder.** Any person who builds dies for power presses.

**Die Set.** A tool holder held in alignment by guide posts and bushings and consisting of a lower shoe, an upper shoe or punch holder, and guide posts and bushings.

**Die Setter.** An individual who places or removes dies in or from mechanical power presses, and who, as a part of his duties, makes the necessary adjustments to cause the tooling to function properly and safely.

**Die Setting.** The process of placing or removing dies in or from a power press, and the process of adjusting the dies, other tooling and safeguarding means to cause them to function properly and safely.

**Die Shoe.** A plate or block upon which a die holder is mounted. A die shoe functions primarily as a base for the complete die assembly, and, when used, is bolted or clamped to the bolster plate or the face of slide.

**Direct Drive.** The type of driving arrangement wherein no clutch is used; coupling and decoupling of the driving torque is accomplished by energization and de-energization of a motor. Even though not employing a clutch, direct drives match the operational characteristics of "part revolution clutches" because the driving power may be disengaged during the stroke of the press.

**Division-Recognized Third Party Validation Organization.** An independent third-party validation organization which has been recognized by the U.S. Labor Department, Occupational Safety and Health Administration (OSHA) in accordance with the requirements specified in Appendix C of paragraph (h), 29 CFR 1910.217, revised March 14, 1988 which is hereby incorporated by reference.

**Ejector.** A mechanism for removing work or material from between the dies.

**Face of Slide.** The bottom surface of the slide to which the punch or upper die is generally attached.

**Feeding.** The process of placing or removing material within or from the point of operation.

**Foot Control.** The foot operated control mechanism designed to be used with a clutch or clutch/brake control system.

**Foot, Kick, and Hand Presses.** Machines actuated by foot or hand power only, and fitted with rams or dies for the purposes of blanking, trimming, drawing, punching or stamping, forming or assembling cold material.

**Foot Pedal.** The foot operated lever designed to operate the mechanical linkage that engages the clutch and/or disengages the brake.

**Gate or Movable Barrier Device.** A movable barrier arranged to enclose the point of operation before the press stroke can be started.

**Guide Post.** The pin attached to the upper or lower die shoe, operating within the bushing on the opposing die shoe, to maintain the alignment of the upper and lower dies.

**Hand Feeding Tool.** Any hand-held tool designed for placing or removing material or parts to be processed within or from the point of operation.

**Holdout or Restraint Device.** A mechanism, including attachments for operator's hands, that when anchored and adjusted, prevent the operator's hands from entering the point of operation.

**Inch.** An intermittent motion imparted to the slide (on machines using part revolution clutches) by momentary operation of the "Inch" operating means. Operation of the "Inch" operating means engages the driving clutch so that a small portion of one stroke or indefinite stroking can occur, depending upon the length of time the "Inch" operating means is held operated. "Inch" is a function used by the die setter for setup of dies and tooling, but is not intended for use during production operations by the operator.

**Jog.** An intermittent motion imparted to the slide by momentary operation of the drive motor, after the clutch is engaged with the flywheel at rest.

Knockout. A mechanism for releasing material from either die.

Liftout. The mechanism also known as knockout.

Manual Feeding. Feeding wherein the material or part being processed is handled by the operator on each stroke of the press.

Operator's Station. The complete complement of controls used by or available to an operator on a given operation for stroking the press.

Pinch Point. Any point other than the point of operation at which it is possible for a part of the body to be caught between the moving parts of a press or auxiliary equipment, or between moving and stationary parts of a press or auxiliary equipment or between the material and moving part or parts of the press or auxiliary equipment.

Point of Operation. (See section 4188(a).)

Power Operated Presses. For the purposes of Article 55, power operated presses include all mechanically powered machines that shear, punch, form, or assemble metal or other materials by means of tools or dies attached to or actuated by slides, commonly referred to as mechanical power presses (punch presses), press brakes, hydraulic power presses (punch presses), and rivet setting machines.

Power Press, Hydraulic (Punch Press). A machine which is hydraulically powered that shears, punches, forms, draws, or assembles metal or other material by means of tools attached to or actuated by slides.

Power Press, Mechanical (Punch Press). A mechanically powered machine that shears, punches, forms or assembles metal or other material by means of cutting, shaping, or combination dies attached to or actuated by slides. A press consists of a stationary bed or anvil, and a slide (or slides) having a controlled reciprocating motion toward and away from the bed surface, the slide being guided in a definite path by the frame of the press.

Power Press, Pneumatic. A machine which derives its primary mechanical action (i.e. shearing, punching, bending, forming, drawing, extruding, assembly or other action) from a pneumatic energy source (i.e. pneumatically driven ram). A fully pneumatic power press differs from a mechanical or hydraulic press which may utilize pneumatic systems to only activate a brake/clutch, slide counterbalance or other system but which uses mechanical means or hydraulic fluid to power the ram.

Presence Sensing Device. A device designed, constructed and arranged to create a sensing field or area that signals the clutch/brake control to deactivate the clutch and activate the brake of the press when any part of the operator's body or a hand tool is within such field or area.

Presence Sensing Device Initiation. An operating mode of indirect manual initiation of a single stroke by a presence sensing device when it senses that work motions of the operator, related to feeding and/or removing parts, are completed and all parts of the operator's body or hand tools are safely clear of the point of operation.

Press Brake, General-Purpose. A mechanically or hydraulically operated machine having only one operator at the front of the machine and with a single operating foot control device which permits the operator to exercise full and final control over the movement of the ram.

Press Brake, Special-Purpose. A machine that can be mechanically or hydraulically operated by one or more operators from the front of the machine, each provided with an operating control station. Concurrent operation of each station being used is required to place the ram in motion.

Ram. See definition for Slide.

Repeat. An unintended or unexpected successive stroke of the press resulting from a malfunction.

Rivet Setting Equipment. Powered machines designed to insert and clinch fasteners commonly called rivets.

**Safety Block.** A prop that, when inserted between the upper and lower dies or between the bolster plate and the face of the slide, prevents the slide from falling of its own deadweight.

**Safety System.** The integrated total system, including the pertinent elements of the press; the controls; the safeguarding, any required supplemental safeguarding, and their interfaces with the operator; and the environment designed, constructed and arranged to operate together as a unit, such that a single failure or single operating error will not cause injury to personnel due to point of operation hazards.

**Setting up Operations.** Operations in which fixtures or tooling which support, secure, or act upon the workpiece are mounted on the machine surfaces or in machine components designed to accept such tooling.

**Single Stroke.** One complete stroke of the slide, usually initiated from a full open (or up) position.

**Single Stroke Control.** An arrangement used to limit the travel of the slide to one complete stroke at each engagement of the clutch.

**Slide.** A reciprocating part of the machine or press. It is also referred to as a ram, plunger, platen, or mandrel.

**Stop Control.** An operator control designed to immediately deactivate the clutch control and activate the brake to stop slide motion.

**Stripper.** A mechanism or die part for removing the parts of material from the punch.

**Stroking Selector.** The part of the clutch/brake control that determines the type of stroking when the operating means is actuated. The stroking selector generally includes positions for "Off" (Clutch Control), "Inch," "Single Stroke," and "Continuous" (when continuous is furnished).

**Trip or (tripping).** Activation of the clutch to "run" the press.

**Turnover Bar.** A bar used in die setting to manually turn the crankshaft of the press.

**Unitized Tooling.** A type of die in which the upper and lower members are incorporated into a self-contained unit so arranged as to hold the die members in alignment.

**Validation or Validate.** For PSDI safety systems that a Division-recognized third-party validation organization:

(A) For design certification/validation has reviewed the manufacturer's certification that the PSDI safety system meets the requirements of sections 4192 through 4211 and Appendix A and the underlying tests and analyses performed by the manufacturer, has performed additional tests and analyses which may be required by sections 4192 through 4211 and Appendix A, and concludes that the requirements of sections 4192 through 4211 and Appendix A have been met; and

(B) For installation certification/validation and annual recertification/revalidation has reviewed the employer's certification that the PSDI safety system meets the requirements of sections 4192 through 4211 and Appendix A and the underlying tests performed by the employer, has performed additional tests and analyses which may be required by sections 4192 through 4211 and Appendix A, and concludes that the requirements of sections 4192 through 4211 and Appendix A have been met.

## **Article 66. Textiles**

### **§4456. General.**

The requirements of this Article for textile safety apply to the design, installation, processes, operation, and maintenance of textile machinery, equipment, and other plant facilities in all plants engaged in the manufacture and processing of textiles, except those processes used exclusively in the manufacture of synthetic fibers.

#### **§4457. Definitions.**

**Cards.** Cylinders of various sizes and in certain cases flats covered with card clothing and set in relation to each other so that fibers in staple form may be separated into individual relationship.

**Card Clothing.** The material with which many of the surfaces of a card are covered; e.g., the cylinder, doffer, etc. It consists of a thick foundation material, usually made of textile fabrics, through which are pressed many fine, closely spaced, specially bent wires.

**Comber.** A machine for combing fibers of cotton, wool, etc. The essential parts are a device for feeding forward a fringe of fibers at regular intervals and an arrangement of combs or pins which, at the right time, pass through the fringe. All tangled fibers, short fibers, and neps are removed and the long fibers are laid parallel.

**Drying Cans.** Hollow cylindrical drums mounted in a frame so they can rotate. They are heated with steam and are used to dry fabrics or yarn as it passes around the perimeter of the can.

**Dye Jig.** A machine for dyeing piece goods. The cloth, at full width, passes from a roller through the dye liquor in an open vat and is then wound on another roller. The operation is repeated until the desired shade is obtained.

**Garnett Machine.** Any of a number of types of machines for opening hard twisted waste of wool, cotton, silk, etc. Essentially, such machines consist of a licker-in; one or more cylinders, each having a complement worker and stripper rolls; and a fancy roll and doffer. The action of such machines is somewhat like that of a wool card, but it is much more severe in that the various rolls are covered with garnett wire instead of card clothing.

**Loom.** A machine for effecting the interlacing of two series of yarns crossing one another at right angles. The warp yarns are wound on a warp beam and pass through heddles and reed. The filling is shot across in a shuttle and settled in place by reed and lay, and the fabric is wound on a cloth beam.

**Nip.** The point of contact between two in-running rolls.

**Ribbon Lapper.** A machine used to prepare laps for feeding a cotton comb; its purpose is to provide a uniform lap in which the fibers have been straightened as much as possible.

**Shearer.** A machine used in shearing cloth. Cutting action is provided by a number of steel blades spirally mounted on a roller. The roller rotates in close contact with a fixed ledger blade. There may be from one to six such rollers on a machine.

**Sliver Lapper.** A machine in which a number of parallel card slivers are drafted slightly, laid side by side in a compact sheet, and wound into a cylindrical package.

**Warper.** Any machine for preparing and arranging the yarns intended for the warp of a fabric, specifically, a beam warper.

#### **4458. Warpings.**

Swiveled double-bar gates shall be installed on all warpings operating in excess of 450 yards per minute. These gates shall be so interlocked that the machine cannot be operated until the gate is in the "closed position," except when inching or jogging.

NOTE: "Closed position" shall mean that the top bar of the gate shall be at least 42 inches from the floor or working platform; and the lower bar shall be at least 21 inches from the floor or working platform; and the gate shall be located 15 inches from the vertical tangent to the beam head.

#### **§4459. Drawing Frames, Slubbers, Roving Parts, Cotton Combers, Ring Spinning Frames, Twisters.**

Gear housing covers on all installations of drawing frames, slubbers, roving frames, cotton combers, ring spinning frames, and twisters shall be equipped with interlocks.

#### **§4460. Shuttles.**

All looms shall have a shuttle guard constructed in such a manner as to prevent shuttle flying from machine.

#### **§4461. Cards.**

(a) The cylinder cover on revolving flat type cards, shall be provided with an interlock, be securely bolted in place, or shall be provided with a stripping device so arranged that the operator cannot come in contact with the point of operation.

(b) A licker-in cover shall be provided on all cards and shall be bolted securely in place so that it cannot be readily opened by the operator. Thumb screws or wing nuts shall not be used.

(c) On operations calling for flat strippings which are allowed to fall on the doffer cover, where such strippings are removed by hand, the doffer cover shall be kept closed and securely fastened to prevent the opening of the cover while the machine is in operation. When it becomes necessary to clean the cards while they are in motion, a long-handled brush or dust mop shall be used.

#### **§4462. Carpet Frayer or Rag Shredder.**

Cylinder door or cover shall be provided with an interlock so constructed that the cover cannot be opened while the roller is revolving or the cover shall be clamped in place and the slot be so constructed and guarded that the operator's fingers cannot come in contact with the roller.

#### **§4463. Carpet Trimmer.**

Revolving knives shall be guarded.

#### **4464. Circular Knife.**

Circular knives or discs shall be equipped with a guard which will prevent contact with the cutting edges while the machine is in operation.

#### **§4465. Cotton Picker, Opener and Willower.**

The beater cover shall be provided with an interlocking device so arranged that the cover cannot be opened while the beater is revolving.

#### **§4466. Picker Machines.**

All machines used in picking wool, hair, rags or other material shall have the rolls completely covered, except the opening necessary to feed stock. This opening shall be so constructed or guarded that the employees' fingers cannot come into contact with the rolls.

EXCEPTION: Machines covered by 4465.

#### **§4467. Pile Cutter or Shearer.**

Knife rolls shall be provided with a cover or guard which will prevent the employees' fingers from coming in contact with the rolls.

#### **§4468. Napper.**

Rolls shall be provided with a cover or guard so arranged that the employees' fingers cannot be caught in the rolls while feeding the material.

**§4469. Sliver and Ribbon Lap Machines (Doublers).**

A device or cover shall be provided and so arranged that the employees' hands cannot be caught under the lap roll.

**§4470. Garnett Machine.**

Openings in lower frame and between lower frame and floor shall be guarded.

**§4471. Dye Jigs.**

Roll arms on dye jigs shall be built to prevent the center bar from being forced off, causing the batch to fall.

**§4472. Drying Cans.**

Drying cans which are not designed to prevent vacuum collapse, each can shall be equipped with one or more vacuum relief valves with openings of sufficient size to prevent collapse of the can if vacuum occurs.

**§4473. Hand Bailing Machine.**

A handle stop guard shall be installed at the right angle to the frame of the machine. The stop guard shall be so designed and so located that it will prevent the handle from traveling beyond the vertical position should the handle slip from the operator's hand when the pawl has been released from the teeth of the takeup gear.

**§4474. Cuttle or Swing Folder (Overhead Type).**

The bottom of the overhead folders shall be located not less than 7 feet from the floor or working surface.

**§4475. Commercial Sewing Machines.**

(a) The lower pulley nip points shall be guarded.

(b) The upper pulley nip points shall be guarded by a plate or structural shape the thickness of the minimum width of the v-belt. This guard shall fit between the runs of the v-belt and extend from at least three inches from the pulley's outer rim to within 1/8-inch of and conforming to the arc of the perimeter of the pulley groove.

(c)(1) On sewing machines having the pulley outboard of the handwheel or no handwheel at all, a disc guard with a rolled edge shall be installed on the outside of the pulley. The diameter of the disc shall be at least one and one-half inches greater than the root diameter of the v-belt pulley.

(2) On sewing machines with the pulley inboard of the handwheel, the diameter of the handwheel shall be at least one and one-half inches greater than the root diameter of the pulley, or a disc guard as described in (1) above shall be installed on the outside of the handwheel.

**§4476. Cloth Cutters.**

(a)(1) On reciprocating knife machines, a guard shall be provided in front of the knife blade. The clearance between the guard and blade shall not exceed two inches.

(2) Rotary knife machines shall be guarded by retractable or fixed guards.

(A) Retractable guards shall enclose the blades and adjust automatically to the thickness of and remain in contact with the material being cut.

(B) Fixed guards shall be in front of the rotary knife blade; the clearance between the fixed guard and the forward edge of the rotary knife blade shall not exceed one inch.



## **Article 67. Laundry and Dry Cleaning Equipment**

### **§4480. Marking Machine.**

- (a) Each power marking machine shall be equipped with a spring compression device of such design as to prevent injury to finger bones should they be caught between the marking plunger and platen, or
- (b) The marking machine shall be equipped with a control mechanism which will require the simultaneous action of both hands to operate the machine, or
- (c) There shall be a guard which will interpose a barrier in front of the marking plunger.

### **§4481. Washing Machines.**

- (a) Each washing machine shall be equipped with a substantial cover of not less than No. 20 gauge material, or equivalent, to cover the opening in the case or shell.
- (b) Each washing machine shall be equipped with an interlock that will disconnect the current to the drive motor and prevent starting rotation of the cylinder when the access door to the machine is open. The interlock shall, however, enable the operator to inch the machine with the access door open.

EXCEPTION: This requirement does not apply to washing machines of 50 pounds capacity or less and which does not rotate more than 100 RPM.

- (c) Each washing machine or washer/extractor shall be provided with a means to prevent accidental self-closing of the shell or cylinder doors while loading or unloading the machine.

EXCEPTION: This requirement does not apply to sideward-hinged or over-the-center doors that tend to remain open.

### **§4482. Extractors.**

- (a) Each extractor shall be equipped with a metal cover of at least No. 20 gauge, or its equivalent, which shall entirely cover the opening of the outer shell.
- (b) Each centrifugal extractor or washer/extractor shall be equipped with an interlock that will disconnect the current to the drive motor and prevent starting rotation of the cylinder when the access door to the machine is open. The interlock shall further prevent opening of the access door or cover while the cylinder is rotating. The interlock shall, however, allow the operator to rotate the basket by manual control or inch the basket for loading or unloading while the access door or cover is open.
- (c) The exterior of the basket, including hoops or bands, shall be inspected at least every year to determine condition of basket. The extractor shall be dismantled and the bearings, bearing blocks, and basket shall be inspected at least every two years and all necessary repairs or replacements made. A basket that shows signs of weakness, shall not be used. A record of the inspection, including the date and name of person who made the inspection, shall be kept on file in the plant.
- (d) Each extractor shall be equipped with a mechanically or electrically operated brake to stop the basket when the power driving the basket is shut off.
- (e) Each squeeze extractor shall be provided with a cover operated by two-hand controls, and an interlock to prevent unloading the machine unless the pressure has been released and also to prevent applying pressure unless the cover has been properly closed. Gages in front of the machine shall indicate the applied pressure. A steam, hydraulic- or pneumatic-operated device shall be provided with a pressure relief valve set to open if the applied pressure exceeds by 10% the maximum operating pressure which shall be shown on the machine nameplate.

#### **§4483. Power Wringer.**

Each power wringer shall be equipped with a guard across the entire front of the feed or first pressure rolls, so arranged that when struck the machine will immediately stop.

#### **§4485. Drying Tumbler, End Loading.**

(a) Each tumbler shall be equipped with a device that will prevent energizing the drive motor which rotates the cylinder unless the shell door is closed. The device shall, however, allow for the momentary inching of the tumbler to facilitate loading and unloading.

(b) Each tumbler shall be provided with means to prevent accidental self-closing of the shell door during loading and unloading of the machine. This requirement does not apply to sideward-hinged doors that tend to remain open.

EXCEPTION:

1. This requirement does not apply to sideward-hinged doors that tend to remain open.
2. Tumblers designed without doors where the work is continuously loaded and discharged.

#### **§4486. Shaker (Clothes Tumbler, Batch Type).**

(a) Each shaker or clothes tumbler shall be equipped with:

(1) A device that will prevent the tumbler from moving while the door is open. The tumbler shall be enclosed or guarded so as to prevent accidental contact.

(2) Brakes or other positive locking devices to prevent the inside cylinder from moving when the machine is being loaded or unloaded.

NOTE: "Inching devices" are permitted.

#### **§4487. Drying Box or Cabinets.**

Access doors to drying boxes or cabinets shall have door latches or locks that will enable an operator to open the doors readily from the inside and the outside. Doors that cannot be opened from the inside without a key, wrench, or tool shall not be used on drying boxes or cabinets.

#### **§4489. Ironer (Flatwork Type).**

(a) Each flatwork and collar ironer shall be equipped with a guard across the entire front of the feed or first pressure rolls, so arranged that when struck the machine will immediately stop.

(b) The pressure rolls shall be guarded or covered so that an employee cannot reach into the rolls.

#### **§4490. Ironer (Body Type).**

Each body ironer, roll or shoe type, including sleeve and band ironers, shall be equipped with a guard across the entire length of the feed roll or shoe, so designed that when struck the machine will immediately stop.

#### **§4491. Ironer (Rotary-Body Type).**

Each combined rotary bosom and coat-ironer shall be equipped with a guard across the entire length of the feed roll or shoe, so designed that when struck the machine will immediately stop.

#### **§4492. Ironer (Press Type).**

Every ironing press (except hand- or foot-power presses) used in the ironing or finishing of textiles and/or other materials shall be equipped with a guard or controls of such design, construction, and installation that will prevent the operator, or other person, from being caught between the ironing surfaces.

#### **§4493. Boilers and Pressure Vessels.**

(a) Boilers and pressure vessels shall comply with the Boiler and Fired Pressure Vessel Safety Orders and the Unfired Pressure Vessel Safety Orders.

(b) Where pressure-reducing valves are used, a safety relief valve shall be provided on the low-pressure side of the reducing valve to prevent pressure build-up in excess of the maximum allowable working pressure. The safety relief valve shall be located as close as possible to the reducing valve, and it shall be vented to the atmosphere in a manner to avoid injury or damage caused by escaping fluid. The relief valve and vent system discharge capacity shall be sized so that the pressure rating of the low-pressure piping and equipment are not exceeded if the reducing valve sticks or fails to close.

NOTE: The relief valve may be omitted if the pressure before the reducing valve does not exceed the maximum working pressure of the equipment.

#### **§4494. Operating Rules.**

(a) Employees shall be properly instructed on the hazards of their work and on safe practices by either bulletins, printed rules, verbal instructions, or periodic safety meetings.

(b) Markers, sorters, and other persons handling soiled clothes shall be warned by signs in their work area against touching eyes, mouth, or any part of the body on which the skin has been broken, abraded, or injured, and against touching or eating food unless their hands have been thoroughly washed.

### ***Article 68. Leather and Composition Goods Machines***

#### **§4510. Dinking and Clicking Machines.**

Every dinking machine shall be guarded by at least one of the following methods:

(a) Dies known as "safety type" shall be used. Such dies shall be at least three inches in height with safety grooves or flanges which reduce danger of operator's fingers being caught between top of die and beam, or they shall be provided with horizontal or vertical handles at least two and one-half inches in height above the die proper, or

(b) The machine shall be provided with a sliding table or swinging head which does not require the operator's hands to be placed under the beam or head, or

(c) There shall be a two-handed device that requires both hands of the operator to be removed from under the beam at the time of tripping the machine.

(d) The point of operation shall be guarded on all sides. The end guards shall be fixed and the front and back guards shall be gate guards of the elevating interlocking type.

#### **§4511. Embossing Machines (Power or Foot Driven).**

Embossers of the head type shall be equipped with at least one of the following:

(a) A fixed guard enclosing front and sides of platen with stock feeding slots too narrow to allow insertion of operator's fingers, or

(b) An interlocking gate guard connected with the operating mechanism in such a way that it will automatically protect the front and sides of platen during the power stroke, ensuring that the operator's hand cannot be caught by the platen, or

(c) A starting device which requires the simultaneous action of both hands of the employee or employees when two or more employees are operating the press, or

(d) A sliding or revolving table or other feeding device which does not require the operator's hands to be placed under the platen, or

(e) A mechanically operated guard which throws the hands of the operator out of the way as the platen descends. Such a guard should be padded to prevent injury should it strike the operator's hand or wrist.

#### **§4512. Heel Compressing Machine.**

(a) Heel compressing machines shall be equipped with a control device that requires a simultaneous action of both hands, or they shall be provided with a mechanical feeding device.

(b) The plunger shall be guarded either by a complete enclosure or by a barrier guard in front of the plunger.

#### **§4513. Skiving Machines (Roll Feed).**

Feed rolls shall be so arranged that material must be fed through a slot or under a metal rod or strip directly in front of the feed and running the full length of the rolls.

#### **§4514. Splitter (Stationary Knife).**

Feed rolls shall be so arranged that material must be fed through a slot or under a fixed metal rod or strip directly in front of the feed and running the full length of the roll.

#### **§4515. Splitter (Band Knife).**

(a) All exposed portions of the knife as well as band wheels shall be enclosed and feed rolls shall be guarded.

(b) An extension of the stopping device shall be installed across the entire front of the top of the feed roll so installed that it can be readily operated from the operator's working position.

#### **§4516. Stripper (Class B).**

Strippers shall be provided with a control device which requires the simultaneous action of both hands during the cutting movement of the knife.

#### **§4517. Tanning Drums.**

Horizontal revolving drums shall be guarded and the drum shall be provided with a substantial device to prevent the movement of the drum while loading or unloading.

#### **§4518. Roll Type Machines.**

The in-running side of corrugating, crimping, embossing, pleating, printing, and graining rolls shall be guarded.

#### **§4519. Unhairing Machines.**

All knives used in removing hair from hides and skins shall be enclosed except such opening as is necessary to feed stock.

#### **§4520. Fleshing Machines.**

The pinch rolls and cylindrical knife shall be enclosed except such opening as is necessary to feed the stock.

#### **§4521. Fleshing and Unhairing Machines--Special Types.**

All fleshing and unhairing machines in which the cylinders have a secondary motion in addition to a rotary one shall be equipped with a two hand control. This control shall be arranged so that the simultaneous and continuous action is required to set the machine in motion.

#### **§4522. Whitening Machines.**

The moving parts of the heads of whitening machines shall be enclosed except such opening as is necessary to feed the stock.

**Article 71. Rubber and Composition Working Machines** – see <http://www.dir.ca.gov/Title8/sb7g8a71.html>

**Article 72. Plastic Processing Machinery** – see <http://www.dir.ca.gov/Title8/sb7g8a72.html>

### **Group 15. Occupational Noise**

<http://www.dir.ca.gov/Title8/sb7g15a105.html>

#### **§5095. General.**

(a) Scope and Application. Article 105 establishes requirements for controlling occupational exposures to noise. Agriculture, construction, and oil and gas well drilling and servicing operations are exempt from the provisions of Sections 5097 through 5100.

(b) Definitions.

**Action Level.** An 8-hour time-weighted average of 85 decibels measured on the A-scale, slow response, or equivalently, a dose of fifty percent.

**Audiogram.** A chart, graph, or table resulting from an audiometric test showing an individual's hearing threshold levels as a function of frequency.

**Audiologist.** A professional, specializing in the study and rehabilitation of hearing, who is certified by the American Speech, Hearing and Language Association or licensed by a state board of examiners.

**Baseline Audiogram.** The audiogram against which future audiograms are compared.

**Criterion Sound Level.** A sound level of 90 decibels.

**Decibel (dB).** Unit of measurement of sound level.

**dB(A) (Decibels-A-Weighted).** A unit of measurement of sound level corrected to the A-weighted scale, as defined in ANSI S1.4-1971 (R1976), using a reference level of 20 micropascals (0.00002 Newton per square meter).

**Hertz (Hz).** Unit of measurement of frequency, numerically equal to cycles per second.

**Medical Pathology.** A disorder or disease. For purposes of this regulation, a condition or disease affecting the ear, which should be treated by a physician specialist.

**Otolaryngologist.** A physician specializing in diagnosis and treatment of disorders of the ear, nose and throat.

Representative Exposure. Measurements of an employee's noise dose or 8-hour time-weighted average sound level that the employer deems to be representative of exposures of other employees in the workplace.

Sound Level. Ten times the common logarithm of the ratio of the square of the measured A-weighted sound pressure to the square of the standard reference pressure of 20 micropascals. Unit: decibels (dB). For use with this regulation, SLOW time response, in accordance with ANSI S1.4-1971 (R1976), is required.

Sound Level Meter. An instrument for the measurement of sound level.

**§5096. Exposure Limits for Noise.** - <http://www.dir.ca.gov/Title8/5096.html>

**§5097. Hearing Conservation Program.** - <http://www.dir.ca.gov/Title8/5097.html>

**§5098. Hearing Protectors.**

(a) General.

(1) Employers shall make hearing protectors available to all employees exposed to an 8-hour time-weighted average of 85 decibels or greater at no cost to the employees. Hearing protectors shall be replaced as necessary.

(2) Employers shall ensure that hearing protectors are worn by all employees:

(A) Who are required by Section 5096(b) to wear personal protective equipment; or

(B) Who are exposed to an 8-hour time-weighted average of 85 decibels or greater, and who:

1. Are required by Section 5097(c)(9) to wear hearing protectors because baseline audiograms have not yet been established; or

2. Have experienced a standard threshold shift.

(3) Employees shall be given the opportunity to select their hearing protectors from a variety of suitable hearing protectors provided by the employer.

(4) The employer shall provide training in the use and care of all hearing protectors provided to employees.

(5) The employer shall ensure proper initial fitting and supervise the correct use of all hearing protectors.

(b) Hearing Protector Attenuation.

(1) The employer shall evaluate hearing protector attenuation for the specific noise environments in which the protector will be used. The employer shall use one of the methods described in Appendix E, Methods for Estimating the Adequacy of Hearing Protector Attenuation.

(2) Hearing protectors must attenuate employee exposure at least to an 8-hour time-weighted average of 90 decibels as required by Section 5096(b).

(3) For employees who have experienced a standard threshold shift, hearing protectors must attenuate employee exposures to an 8-hour time-weighted average of 85 decibels or below.

(4) The adequacy of hearing protector attenuation shall be reevaluated whenever employee noise exposures increase to the extent that the hearing protectors provided may no longer provide adequate attenuation. The employer shall provide more effective hearing protectors where necessary.

## **§5099. Training Program.**

### (a) General.

(1) The employer shall institute a training program for all employees who are exposed to noise at or above an 8-hour time-weighted average of 85 dBA, and shall ensure employee participation in such program.

(2) The training program shall be repeated annually for each employee included in the hearing conservation program. Information provided in the training program shall be updated to be consistent with changes in protective equipment and work processes.

(3) The employer shall ensure that each employee is informed of the following:

(A) The effects of noise on hearing;

(B) The purpose of hearing protectors, the advantages, disadvantages, and attenuation of various types, and instructions on selection, fitting, use, and care; and

(C) The purpose of audiometric testing, and an explanation of the test procedures.

### (b) Access to Information and Training Materials.

(1) The employer shall make available to affected employees or their representatives copies of Article 105 and shall also post a copy in the workplace.

(2) The employer shall provide to affected employees any informational materials pertaining to this standard that are supplied to the employer by U.S. Department of Labor, Occupational Safety and Health Administration.

(3) The employer shall provide, upon request, all materials related to the employer's training and education program pertaining to this standard to authorized representatives of the Chief of the Division and the Director, National Institute for Occupational Safety and Health.

## **§5100. Recordkeeping - <http://www.dir.ca.gov/Title8/5100.html>**

Appendix A – Noise Exposure Computation - <http://www.dir.ca.gov/Title8/sb7g15a105apa.html>

Appendix B – Audiometric measuring instruments <http://www.dir.ca.gov/Title8/sb7g15a105apb.html>

Appendix C - Audiometric test rooms - <http://www.dir.ca.gov/Title8/sb7g15a105apc.html>

Appendix D – Acoustic Calibration of Audiometers <http://www.dir.ca.gov/Title8/sb7g15a105apd.html>

Appendix E - Methods for Estimating the Adequacy of Hearing Protector -

<http://www.dir.ca.gov/Title8/sb7g15a105ape.html>

Appendix F - Determination and Application of Age Corrections to Audiograms –

<http://www.dir.ca.gov/Title8/sb7g15a105apf.html>

## **Article 106. Ergonomics**

### **§5110. Repetitive Motion Injuries.**

#### **[ERGONOMICS -- HISTORY OF CALIFORNIA STANDARD http://www.dir.ca.gov/DOSH/ergohist.htm](http://www.dir.ca.gov/DOSH/ergohist.htm)**

(a) Scope and application. This section shall apply to a job, process, operation where a repetitive motion injury (RMI) has occurred to more than one employee under the following conditions:

(1) Work related causation. The repetitive motion injuries (RMIs) were predominantly caused (i.e. 50% or more) by a repetitive job, process, or operation;

(2) Relationship between RMIs at the workplace. The employees incurring the RMIs were performing a job process, or operation of identical work activity. Identical work activity means that the employees were performing the same repetitive motion task, such as but not limited to word processing, assembly or, loading;

(3) Medical requirements. The RMIs were musculoskeletal injuries that a licensed physician objectively identified and diagnosed; and

(4) Time requirements. The RMIs were reported by the employees to the employer in the last 12 months but not before July 3, 1997.

(b) Program designed to minimize RMIs. Every employer subject to this section shall establish and implement a program designed to minimize RMIs. The program shall include a worksite evaluation, control of exposures which have caused RMIs and training of employees.

(1) Worksite evaluation. Each job, process, or operation of identical work activity covered by this section or a representative number of such jobs, processes, or operations of identical work activities shall be evaluated for exposures which have caused RMIs.

(2) Control of exposures which have caused RMIs. Any exposures that have caused RMIs shall, in a timely manner, be corrected or if not capable of being corrected have the exposures minimized to the extent feasible. The employer shall consider engineering controls, such as work station redesign, adjustable fixtures or tool redesign, and administrative controls, such as job rotation, work pacing or work breaks.

(3) Training. Employees shall be provided training that includes an explanation of:

- (A) The employer's program;
- (B) The exposures which have been associated with RMIs;
- (C) The symptoms and consequences of injuries caused by repetitive motion;
- (D) The importance of reporting symptoms and injuries to the employer; and
- (E) Methods used by the employer to minimize RMIs.

(c) Satisfaction of an employer's obligation. Measures implemented by an employer under subsection (b)(1), (b)(2), or (b)(3) shall satisfy the employer's obligations under that respective subsection, unless it is shown that a measure known to but not taken by the employer is substantially certain to cause a greater reduction in such injuries and that this alternative measure would not impose additional unreasonable costs.

**Group 16. Control of Hazardous Substances - <http://www.dir.ca.gov/Title8/sb7g16.html>**

- Article 107. Dusts, Fumes, Mists, Vapors and Gases (Sections 5139 - 5155)
- Article 108. Confined Spaces (Sections 5156 - 5159)
- Article 109. Hazardous Substances and Processes (Sections 5160 - 5199)
- Article 110. Regulated Carcinogens (Sections 5200 - 5220)
- Article 111. Fumigation (Sections 5221 - 5223)
- Article 112. Labeling of Injurious Substances (Sections 5225 - 5230)

**Group 20. Flammable Liquids, Gases and Vapors - <http://www.dir.ca.gov/Title8/sb7g20.html>**

- Article 134. Definitions (Section 5415)
- Article 135. General (Sections 5416 - 5420)
- Article 136. Dip Tanks (Sections 5426 - 5439)
- Article 137. Spray Coating Operations (Sections 5445 - 5461)
- Article 138. Hydrogen (Sections 5465 - 5498)
- Article 139. Oxygen (Sections 5500 - 5509)
- Article 140. Electrical Equipment (Section 5530)
- Article 141. Container and Portable Tank Storage (sections 5531 - 5543)
- Article 142. Industrial Plants (Sections 5545 - 5551)
- Article 143. Processing Plants (Sections 5554 - 5562)
- Article 144. Service Stations (Sections 5565 - 5581)
- Article 145. Tank Storage (Sections 5583 - 5605)
- Article 146. Piping, Valves and Fittings (5606 - 5612)
- Article 147. Bulk Plants (Sections 5614 - 5624)
- Article 148. Refineries, Chemical Plants, Wineries and Distilleries (Section 5629)
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## **Group 27. Fire Protection**

### **Article 156. Definitions**

#### **§6150. Definitions.**

(a) Definitions.

(1) Aqueous Film Forming Foam (AFFF). A fluorinated surfactant with a foam stabilizer which is diluted with water to act as a temporary barrier to exclude air from mixing with the fuel vapor by developing an aqueous film on the fuel surface of some hydrocarbons which is capable of suppressing the generation of fuel vapors.

(2) Automatic Fire Detection Device. A device designed to automatically detect the presence of fire by heat, flame, light, smoke or other products of combustion.

(3) Carbon Dioxide. A colorless, odorless, electrically nonconductive inert gas (chemical formula CO<sub>2</sub>) that is a medium for extinguishing fires by reducing the concentration of oxygen or fuel vapor in the air to the point where combustion is impossible.

(4) Dry Chemical. An extinguishing agent composed of very small particles of chemicals such as, but not limited to, sodium bicarbonate, potassium bicarbonate, urea-based potassium bicarbonate, potassium chloride, or monoammonium phosphate supplemented by special treatment to provide resistance to packing and moisture absorption (caking) as well as to provide proper flow capabilities. Dry chemical does not include dry powders.

(5) Dry Powder. A compound used to extinguish or control Class D fires.

(6) Extinguisher Rating. The numerical rating given to an extinguisher which indicates the extinguishing potential of the unit based on standardized tests developed by Underwriters Laboratories, Inc.

(7) Fire Extinguishers, Portable.

(A) Portable fire extinguishers are classified for use on certain classes of fires and rated for relative extinguishing effectiveness at a temperature of plus 70 degrees Fahrenheit by nationally recognized testing laboratories. This is based upon the classification of fires and the fire-extinguishment potentials as determined by fire tests.

(B) The classification and rating system described in this standard is that used by Underwriters' Laboratories, Inc., and Underwriters' Laboratories of Canada and is based on extinguishing preplanned fires of determined size and description as follows:

1. Class A Rating--Wood and excelsior.
2. Class B Rating--Two-inch depth n-heptane fires in square pans.
3. Class C Rating--No fire test. Agent must be a nonconductor of electricity.
4. Class D Rating--Special tests on specific combustible metal fires.

(8) Fires.

(A) Class A. Fires in ordinary combustible materials, such as wood, cloth, paper, rubber, and many plastics.

(B) Class B. Fires in flammable or combustible liquids, gases, greases and similar materials and some rubber and plastic materials.

(C) Class C. Fires which involve energized electrical equipment where the electrical nonconductivity of the extinguishing media is of importance. (When electrical equipment is de-energized, extinguishers for Class A or B fires may be used safely.)

(D) Class D. Fires in combustible metals, such as magnesium, titanium, zirconium, sodium, and potassium.

(9) Fixed Extinguishing System. A permanently installed system that either extinguishes or controls a fire at the location of the system.

(10) Foam. A stable aggregation of small bubbles which flow freely over a burning liquid surface and form a coherent blanket which seals combustible vapors and thereby extinguishes the fire.

(11) Gaseous Agent. A fire extinguishing agent which is in the gaseous state at normal room temperature and pressure. It has low viscosity, can expand or contract with changes in pressure and temperature, and has the ability to diffuse readily and to distribute itself uniformly throughout an enclosure.

(12) Halon 1211. A colorless, faintly sweet smelling, electrically nonconductive liquefied gas (chemical formula  $\text{CBrClF}_2$ ) which is a medium for extinguishing fires by inhibiting the chemical chain reaction of fuel and oxygen. It is also known as bromochlorodifluoromethane.

(13) Halon 1301. A colorless, odorless, electrically nonconductive gas (chemical formula  $\text{CBrF}_3$ ) which is a medium for extinguishing fires by inhibiting the chemical chain reaction of fuel and oxygen. It is also known as bromotrifluoromethane.

(14) Inspection. A visual check of fire protection systems and equipment to ensure that they are in place, charged, and ready for use in the event of fire.

(15) Local Application Systems. A fixed fire suppression system which has a supply of extinguishing agent, with nozzles arranged to discharge extinguishing agent directly on the burning material to extinguish or control a fire.

(16) Maintenance. The performance of services on fire protection equipment and systems to assure that they will perform as designed in the event of a fire. Maintenance differs from inspection in that maintenance requires the checking of internal fittings, devices and agent supplies.

(17) Multipurpose Dry Chemical. A dry chemical which is approved for use on Class A, Class B and Class C fires.

(18) Pre-Discharge Employee Alarm. An alarm which will sound at a set time prior to actual discharge of an extinguishing system so that employees may evacuate the discharge area prior to system discharge.

(19) Small Hose System. A system of hose ranging in diameter from 5/8-inch to 1 1/2-inch (1.8 cm to 3.8 cm) which is for the use of employees and which provides a means for the control and extinguishment of incipient stage fires.

(20) Sprinkler Alarm. A local alarm unit is an assembly of apparatus approved for the service and so constructed and installed that any flow of water from a sprinkler system equal to or greater than that from a single automatic sprinkler will result in an audible alarm signal on the premises.

(21) Sprinkler System. A sprinkler system, for fire protection purposes, is an integrated system of underground and overhead piping designed in accordance with fire protection engineering standards. The installation includes a water supply, such as a gravity tank, fire pump, reservoir or pressure tank and/or connection by underground piping to a city main.

The portion of the sprinkler system above ground is a network of specially sized or hydraulically designed piping installed in a building, structure or area, generally overhead, and to which sprinklers are connected in a systematic pattern. The system includes a controlling valve and a device for actuating an alarm when the system is in operation. The system is usually activated by heat from a fire and discharges water over the fire area.

(22) Standpipes.

(A) Class.

1. Class I. For use by fire departments and those trained in handling heavy fire streams (not less than 2 1/2-inch hose).

Class I Service shall be capable of furnishing the effective fire streams required during the more advanced stages of fire on the inside of buildings or for exposure fire.

2. Class II. For use primarily by the building occupants until the arrival of the fire department (1 1/2-inch hose).

Class II Service shall afford a ready means for the control of incipient fires by the occupants of buildings during working hours, and by watchmen and those present during the night time and holidays.

3. Class III. For use by either fire departments and those trained in handling heavy hose streams or by the building occupants.

Class III Service shall be capable of furnishing the effective fire streams required during the more advanced stages of fire on the inside of buildings as well as providing a ready means for the control of fires by the occupants of the building.

(B) Type. Standpipe systems may be of the following types:

1. Wet standpipe system having supply valve open and water pressure maintained at all times.
2. Standpipe system so arranged through the use of approved devices as to admit water to the system automatically by opening a hose valve.
3. Standpipe system arranged to admit water to the system through manual operation of approved remote control devices located at each hose station.
4. Dry standpipe having no permanent water supply. (Title 24, T8-6150)

(23) Total Flooding System. A fixed suppression system which is arranged to automatically discharge a predetermined concentration of agent into an enclosed space for the purpose of fire extinguishment or control.

### **Article 157. Portable Fire Extinguishers**

#### **§6151. Portable Fire Extinguishers.**

(a) Scope and Application. The requirements of this Section apply to the placement, use, maintenance, and testing of portable fire extinguishers provided for the use of employees. Section (d) of this section does not apply to extinguishers provided for employee use on the outside of workplace buildings or structures. Where extinguishers are provided but are not intended for employee use and the employer has an emergency action plan and a fire prevention plan which meet the requirements of Sections 3220 and 3221 then only the requirements of Sections (e) and (f) of this Section apply.

(b) Exemptions.

(1) Where the employer has established and implemented a written fire safety policy which requires the immediate and total evacuation of employees from the workplace upon the sounding of a fire alarm signal and which includes an emergency action plan and a fire prevention plan which meet the requirements of Sections 3220 and 3221 and when extinguishers are not available in the workplace, the employer is exempt from all requirements of this section unless a specific Section in Title 8 requires that a portable fire extinguisher be provided.

(2) Where the employer has an emergency action plan meeting the requirements of Section 3220 which designates certain employees to be the only employees authorized to use the available portable fire extinguishers, and which requires all other employees in the fire area to immediately evacuate the affected work area upon the sounding of the fire alarm, the employer is exempt from the distribution requirements in Section (d) of this Section.

(c) General Requirements.

(1) The employer shall provide portable fire extinguishers and shall mount, locate and identify them so that they are readily accessible to employees without subjecting the employees to possible injury.

(2) Only approved portable fire extinguishers shall be used to meet the requirements of this section.

(3) The employer shall not provide or make available in the workplace portable fire extinguishers using carbon tetrachloride or chlorobromomethane extinguishing agents.

(4) The employer shall assure that portable fire extinguishers are maintained in a fully charged and operable condition and kept in their designated places at all times except during use.

(5) The employer shall permanently remove from service by January 1, 1982, all soldered or riveted shell self-generating soda acid or self-generating foam or gas cartridge water type portable fire extinguishers which are operated by inverting the extinguisher to rupture the cartridge or to initiate an uncontrollable pressure generating chemical reaction to expel the agent.

(d) Selection and Distribution.

(1) Where portable fire extinguishers are provided for employee use, they shall be selected and distributed based on the classes of anticipated work place fires and on the size and degree of hazard which would affect their use.

(2) The employer shall distribute portable fire extinguishers for use by employees on Class A fires so that the travel distance for employees to any extinguisher is 75 feet (22.9m) or less.

(3) The employer may use uniformly spaced standpipe systems or hose stations connected to a sprinkler system installed for emergency use by employees instead of Class A portable fire extinguishers, provided that such systems meet the respective requirements of Articles 158 or 159, that they provide total coverage of the area to be protected, and that employees are trained at least annually in their use.

(4) The employer shall distribute portable fire extinguishers for use by employees on Class B fires so that the travel distance from the Class B hazard area to any extinguisher is 50 feet (15.2m) or less.

(5) The employer shall distribute portable fire extinguishers used for Class C hazards on the basis of the appropriate pattern for the existing Class A or Class B hazards.

(6) The employer shall distribute portable fire extinguishers or other containers of Class D extinguishing agent for use by employees so that the travel distance from the combustible metal working area to any extinguishing agent is 75 feet (22.9m) or less. Portable fire extinguishers for Class D hazards are required in those combustible metal working areas where combustible metal powders, flakes, shavings, or similarly sized products are generated at least once every two weeks.

(e) Inspection, Maintenance and Testing.

(1) The employer shall be responsible for the inspection, maintenance and testing of all portable fire extinguishers in the workplace.

(2) Portable extinguishers or hose used in lieu thereof under Subsection (d)(3) of this Section shall be visually inspected monthly.

(3) Portable fire extinguishers shall be subjected to an annual maintenance check. Stored pressure extinguishers do not require an internal examination. The employer shall record the annual maintenance date and retain this record for one year after the last entry or the life of the shell, whichever is less. The record shall be available to the Chief upon request.

(4) Stored pressure dry chemical extinguishers that require a 12-year hydrostatic test shall be emptied and subjected to applicable maintenance procedures every 6 years. Dry chemical extinguishers having non-refillable disposable

containers are exempt from this requirement. When recharging or hydrostatic testing is performed, the 6-year requirement begins from that date.

(5) Alternate equivalent protection shall be provided when portable fire extinguishers are removed from service for maintenance and recharging.

(f) Hydrostatic Testing.

(1) The employer shall assure that hydrostatic testing is performed by trained persons with suitable testing equipment and facilities.

(2) The employer shall assure that portable extinguishers are hydrostatically tested at the intervals listed in Table L-1 of this Section, except under any of the following conditions:

(A) when the unit has been repaired by soldering, welding, brazing, or use of patching compounds;

(B) when the cylinder or shell threads are damaged;

(C) when there is corrosion that has caused pitting, including corrosion under removable name plate assemblies;

(D) when the extinguisher has been burned in a fire; or

(E) when a calcium chloride extinguishing agent has been used in a stainless steel shell.

Table L-1

<i>Type of Extinguishers</i>	<i>Test Interval (years)</i>
Soda acid (soldered brass shells) (until 1/1/82).....	(1)
Soda acid (stainless steel shell).....	5
Cartridge operated water and/or antifreeze.....	5
Stored pressure water and/or antifreeze.....	5
Wetting agent.....	5
Foam (soldered brass shells) (until 1/1/82)...	(1)
Foam (stainless steel shell).....	5
Aqueous Film Forming Foam (AFFF).....	5
Loaded stream.....	5
Dry chemical with stainless steel.....	5
Carbon dioxide.....	5
Dry chemical, stored pressure, with mild steel, brazed brass or aluminum shells.....	12
Dry chemical, cartridge or cylinder operated, with mild steel shells.....	12
Halon 1211.....	12
Halon 1301.....	12
Dry powder, cartridge or cylinder operated with mild steel shells.....	12

<sup>1</sup> Extinguishers having shells constructed of copper or brass joined by soft solder or rivets shall not be hydrostatically tested and shall be removed from service by January 1, 1982 (Not permitted).

(3) In addition to an external visual examination, the employer shall assure that an internal examination of cylinders and shells to be tested is made prior to the hydrostatic tests.

- (4) The employer shall assure that portable fire extinguishers are hydrostatically tested whenever they show new evidence of corrosion or mechanical injury, except under the conditions listed in subsection (f)(2)(A)-(E) of this Section.
- (5) The employer shall assure that hydrostatic tests are performed on extinguisher hose assemblies which are equipped with a shut-off nozzle at the discharge end of the hose. The test interval shall be the same as specified for the extinguisher on which the hose is installed.
- (6) The employer shall assure that carbon dioxide hose assemblies with a shut-off nozzle are hydrostatically tested at 1,250 psi (8,620 kPa).
- (7) The employer shall assure that dry chemical and dry powder hose assemblies with a shut-off nozzle are hydrostatically tested at 300 psi (2,070 kPa).
- (8) Hose assemblies passing a hydrostatic test do not require any type of recording or stamping.
- (9) The employer shall assure that hose assemblies for carbon dioxide extinguishers that require a hydrostatic test are tested within a protective cage device.
- (10) The employer shall assure that carbon dioxide extinguishers and nitrogen or carbon dioxide cylinders used with wheeled extinguishers are tested every 5 years at 5/3 of the service pressure as stamped into the cylinder. Nitrogen cylinders which comply with 49 CFR 173.34(e)(15) may be hydrostatically tested every 10 years.
- (11) The employer shall assure that all stored pressure and Halon 1211 types of extinguishers are hydrostatically tested at the factory test pressure not to exceed two times the service pressure.
- (12) The employer shall assure that acceptable self-generating type soda acid and foam extinguishers are tested at 350 psi (2,410 kPa).
- (13) Air or gas pressure may not be used for hydrostatic testing.
- (14) Extinguishers shells, cylinders, or cartridges which fail a hydrostatic pressure test, or which are not fit for testing shall be removed from service and from the workplace.
- (15) The equipment for testing compressed gas type cylinders shall be of the water jacket type. The equipment shall be provided with an expansion indicator which operates with an accuracy within one percent of the total expansion or 0.1cc of liquid.
- (A) The equipment for testing non-compressed gas type cylinders shall consist of the following:
1. A hydrostatic test pump, hand or power operated, capable of producing not less than 150 percent of the test pressure, which shall include appropriate check valves and fittings;
  2. A flexible connection for attachment to fittings to test through the extinguisher nozzle, test bonnet, or hose outlet, as is applicable; and
  3. A protective cage or barrier for personal protection of the tester, designed to provide visual observation of the extinguisher under test.
- (16) The employer shall maintain and provide upon request to the Chief of Division evidence that the required hydrostatic testing of fire extinguishers has been performed at the time intervals shown in Table L-1. Such evidence shall be in the form of a certification record which includes the date of the test, the signature of the person who performed the test and the serial number, or the other identifier, of the fire extinguisher that was tested. Such records shall be kept until the extinguisher is hydrostatically retested at the time interval specified in Table L-1 or until the extinguisher is taken out of service.

(g) Training and Education.

(1) Where the employer has provided portable fire extinguishers for employee use in the workplace, the employer shall also provide an educational program to familiarize employees with the general principles of fire extinguisher use and the hazards involved with incipient stage fire fighting.

(2) The employer shall provide the education required in subsection (g)(1) of this Section upon initial employment and at least annually thereafter.

(3) The employer shall provide employees who have been designated to use fire fighting equipment as part of an emergency action plan with training in the use of the appropriate equipment.

(4) The employer shall provide the training required in subsection (g)(3) of this Section upon initial assignment to the designated group of employees and at least annually thereafter.

**Article 158. Standpipe and Hose Systems**

**§6165. Standpipe and Hose Systems.**

(a) Scope and Application.

(1) Scope. This Section applies to all small hose, Class II, and Class III standpipe systems.

(b) General.

(1) Where standpipe and hose systems are provided they shall meet the design requirements of the National Fire Protection Association's Standard for the Installation of Standpipe and Hose Systems NFPA 141978 and the requirements of this Article.

(c) Protection of Standpipes.

(1) The employer shall assure that standpipes are located or otherwise protected against mechanical damage. Damaged standpipes shall be repaired promptly.

(d) Equipment.

(1) Reels and Cabinets. Where reels or cabinets are provided to contain fire hose, the employer shall assure that they are designed to facilitate prompt use of the hose valves, the hose, and other equipment at the time of a fire or other emergency. The employer shall assure that the reels and cabinets are conspicuously identified and used only for fire equipment.

(2) Hose Outlets and Connections.

(A) The employer shall assure that hose outlets and connections are located high enough above the floor to avoid being obstructed and to be accessible to employees.

(B) The employer shall standardize screw threads or provide appropriate adapters throughout the system and assure that the hose connections are compatible with those used on the supporting fire equipment.

(3) Hose.

(A) The employer shall assure that every 1 1/2" (3.8 cm) or smaller hose outlet used to meet this standard is equipped with hose connected and ready for use. In extremely cold climates where such installation may result in damaged equipment, the hose may be stored in another location provided it is immediately available and can be connected when needed.

(B) Standpipe systems installed after July 1, 1981, for use by employees, shall be equipped with lined hose. Unlined hose may remain in use on existing systems. However, after the effective date of this standard, unlined hose which becomes unserviceable shall be replaced with lined hose.

(C) Beginning July 1, 1981, the employer shall provide hose of such length that friction loss resulting from water flowing through the hose will not decrease the pressure at the nozzle below 30 psi (210 kPa). The dynamic pressure at the nozzle shall be within the range of 30 psi (210 kPa) to 125 psi (860 kPa).

(4) Nozzles. Beginning July 1, 1981, the employer shall assure that all lined standpipe hose is equipped with shut-off type nozzles.

(e) Water Supply.

(1) The minimum water supply for standpipe and hose systems, which are provided for the use of employees, shall be sufficient to provide 100 gallons per minute (6.3 l/s) for a period of at least thirty minutes.

(f) Tests and Maintenance.

(1) Acceptance Tests.

(A) The employer shall assure that the piping of Class II and Class III systems installed after July 1, 1981, including yard piping, is hydrostatically tested for a period for at least 2 hours at not less than 200 psi (1380 kPa), or at least 50 psi (340 kPa) in excess of normal pressure when such pressure is greater than 150 psi (1030 kPa).

(B) The employer shall assure that hose on all standpipe systems installed after July 1, 1981, is hydrostatically tested with couplings in place, at a pressure of not less than 200 psi (1380 kPa), before it is placed in service. This pressure shall be maintained for at least 15 seconds and not more than one minute during which time the hose shall not leak nor shall any jacket thread break during the test.

(2) Maintenance.

(A) The employer shall assure that water supply tanks are kept filled to the proper level except during repairs. When pressure tanks are used, the employer shall assure that proper pressure is maintained at all times except during repairs.

(B) The employer shall assure that valves in the main piping connections to the automatic sources of water supply are kept fully open at all times except during repair.

(C) The employer shall assure that hose systems are inspected at least annually and after each use to assure that all of the equipment and hose are in place, available for use, and in serviceable condition.

(D) When the system or any portion thereof is found not to be serviceable, the employer shall remove it from service immediately and replace it with equivalent protection such as extinguishers and fire watches.

(E) Hemp or linen hose on existing systems shall be inspected for deterioration at least annually. Defective hose shall be replaced in accordance with Section 6165(d)(3)(B).

(F) The employer shall designate trained persons to conduct all inspections required under this Section.

## **Article 159. Automatic Sprinkler Systems**

### **§6170. Automatic Sprinkler Systems.**

(a) Scope and Application.

(1) The requirements of this section apply to all automatic sprinkler systems.



(2) For automatic sprinkler systems used to meet Title 8 requirements and installed prior to the effective date of this standard, compliance with the National Fire Protection Association (NFPA) or the National Board of Fire Underwriters (NBFU) standard in effect at the time of the system's installation will be acceptable as compliance with this Section.

(3) When required automatic sprinkler systems are provided they shall meet design requirements of the National Fire Protection Association's Standard for the Installation of Sprinkler Systems NFPA No. 13-1978.

(b) Exemptions.

(1) Automatic sprinkler systems installed in workplace, but not required by Title 8, are exempt from the requirements of this Section.

(c) General Requirements.

(1) Design.

(A) All automatic sprinkler designs used to comply with this standard shall provide the necessary discharge patterns, densities, and water flow characteristics for complete coverage in a particular workplace or zoned subdivision of the workplace.

(B) The employer shall assure that only approved equipment and devices are used in the design and installation of automatic sprinkler systems used to comply with this standard.

(2) Maintenance.

(A) The employer shall properly maintain an automatic sprinkler system installed to comply with this Section. The employer shall assure that a main drain flow test is performed on each system annually. The inspector's test valve shall be opened at least every two years to assure that the sprinkler system operates properly.

NOTE: See NFPA 131978 for further guidance, and Section 6181 where applicable.

(3) Acceptance Tests. The employer shall conduct proper acceptance tests on sprinkler systems installed for employee protection after July 1, 1981, and record the dates of such tests. Proper acceptance tests include the following:

(A) Flushing of underground connections;

(B) Hydrostatic tests of piping in system;

(C) Air tests in dry-pipe systems;

(D) Dry-pipe valve operation; and

(E) Test of drainage facilities.

(4) Water Supplies. The employer shall assure that every automatic sprinkler system is provided with at least one automatic water supply capable of providing design water flow for at least 30 minutes. An auxiliary water supply or equivalent protection shall be provided when the automatic water supply is out of service, except for systems of 20 or fewer sprinklers.

(5) Hose Connections for Fire Fighting Use. The employer may attach hose connections for fire fighting use to wet pipe sprinkler systems provided that the water supply satisfies the combined design demand for sprinklers and standpipes.

(6) Protection of Piping. The employer shall assure that automatic sprinkler system piping is protected against freezing and exterior surface corrosion.

(7) Drainage. The employer shall assure that all dry sprinkler pipes and fittings are installed so that the system may be totally drained.

(8) Sprinklers.

(A) The employer shall assure that only approved sprinklers are used on systems.

(B) The employer may not use older style sprinklers to replace standard sprinklers without a complete engineering review of the altered part of the system.

(C) The employer shall assure that sprinklers are protected from mechanical damage.

(9) Sprinkler Alarms. On all sprinkler systems having more than twenty (20) sprinklers, the employer shall assure that a local waterflow alarm is provided which sounds an audible signal on the premises upon water flow through the system equal to the flow from a single sprinkler.

(10) Sprinkler Spacing. The employer shall assure that sprinklers are spaced to provide a maximum protection area per sprinkler, a minimum of interference to the discharge pattern by building or structural members or building contents and suitable sensitivity to possible fire hazards. The minimum vertical clearance between sprinklers and material below shall be 18 inches (45.7cm).

(11) Hydraulically Designed Systems. The employer shall assure that hydraulically designed automatic sprinkler systems or portions thereof are identified and that the location, number of sprinklers in the hydraulically designed section, and the basis of the design is indicated. Central records may be used in lieu of signs at sprinkler valves provided the records are available for inspection and copying by the Division.

## **Article 160. Fixed Extinguishing Systems**

### **§6175. Fixed Extinguishing Systems.**

(a) Scope and Application.

(1) This Section applies to all fixed extinguishing systems except for automatic sprinkler systems which are covered by Article 159.

(2) This Section also applies to fixed systems not installed to meet a particular Title 8 section, but which, by means of their operation, may expose employees to possible injury, death, or adverse health consequences caused by the extinguishing agent. Such systems are only subject to the requirements of subsection (b)(4) through (b)(7) and (c) of this Section.

(3) Systems otherwise covered in subsection (a)(2) of this Section which are installed in areas with no employee exposure are exempted from the requirements of this section.

(b) General Requirements.

(1) Fixed extinguishing system components and agents shall be designed and approved for use on the specific fire hazards they are expected to control or extinguish.

(2) If for any reason a fixed extinguishing system becomes inoperable, the employer shall notify employees and take the necessary temporary precautions to assure their safety until the system is restored to operating order. Any defects or impairments shall be properly corrected by trained personnel.

(3) The employer shall provide a distinctive alarm or signaling system which complies with Article 165 and is capable of being perceived above ambient noise or light levels, on all extinguishing systems in those portions of the workplace covered by the extinguishing system to indicate when the extinguishing system is discharging. Discharge alarms are not required on systems where discharge is immediately recognizable.

(4) The employer shall provide effective safeguards to warn employees against entry into discharge areas where the atmosphere remains hazardous to employee safety or health.

(5) The employer shall post hazard warning or caution signs at the entrance to, and inside of, areas protected by fixed extinguishing systems which use agents in concentrations known to be hazardous to employee safety and health.

(6) The employer shall assure that fixed systems are inspected annually by a person knowledgeable in the design and function of the system to assure that the system is maintained in good operating condition.

(7) The employer shall assure that the weight and pressure of refillable containers is checked at least semi-annually. If the container shows a loss in net content or weight of more than 5 percent, or a loss in pressure of more than 10 percent, it shall be subjected to maintenance.

EXCEPTION: Systems using refillable, high-pressure carbon dioxide cylinders shall meet the requirements of Section 6181(b)(1).

(8) The employer shall assure that factory charged nonrefillable containers which have no means of pressure indication are weighed at least semi-annually. If a container shows a loss in net weight of more than 5 percent it shall be replaced.

(9) The employer shall assure that inspection and maintenance dates are recorded on the container, on a tag attached to the container, or in a central location. A record of the last semi-annual check shall be maintained until the container is checked again or for the life of the container, whichever is less.

(10) The employer shall train employees designated to inspect, maintain, operate, or repair fixed extinguishing systems and annually review their training to keep them up to date in the functions they are to perform.

(11) The employer shall not use chlorobromomethane or carbon tetrachloride as an extinguishing agent where employees may be exposed.

(12) The employer shall assure that systems installed in the presence of corrosive atmospheres are constructed of non-corrosive material or otherwise protected against corrosion.

(13) Automatic detection equipment shall be approved, installed and maintained in accordance with Article 164.

(14) The employer shall assure that all systems designed for and installed in areas with climatic extremes shall operate effectively at the expected extreme temperatures.

(15) The employer shall assure that at least one manual station is provided for discharge activation of each fixed extinguishing system.

(16) The employer shall assure that manual operating devices are identified as to the hazard against which they will provide protection.

(17) The employer shall provide and assure the use of the personal protective equipment needed for immediate rescue of employees trapped in hazardous atmospheres created by an agent discharge.

(c) Total Flooding Systems with Potential Health and Safety Hazards to Employees.

(1) The employer shall provide an emergency action plan in accordance with Section 3220 for each area within a workplace that is protected by a total flooding system which provides agent concentrations exceeding the maximum safe levels set forth in Subsections (b)(4) and (b)(5) of Article 162.

(2) Systems installed in areas where employees cannot enter during or after the system's operation are exempt from the requirements of Subsection (c) of this Section.

(3) On all total flooding systems the employer shall provide a pre-discharge employee alarm which complies with Article 165, and is capable of being perceived above ambient light or noise levels before the system discharges, which will give employees time to safely exit from the discharge area prior to system discharge.

(4) The employer shall provide automatic actuation of total flooding systems by means of an approved fire detection device installed and interconnected with a pre-discharge employee alarm system to give employees time to safely exit from the discharge area prior to system discharge.

### ***Article 161. Fixed Extinguishing Systems, Dry Chemical***

#### **§6180. Fixed Extinguishing Systems; Dry Chemical.**

(a) Scope and Application.

(1) This Section applies to all fixed extinguishing systems, using dry chemical as the extinguishing agent. These systems shall also comply with Article 160.

(2) When dry chemical extinguishing systems are provided they shall meet the design requirements of the National Fire Protection Association's "Standard for Dry Chemical Extinguishing Systems" NFPA No. 171980 and the requirements of this section, and Section 6175 where applicable.

(b) Specific Requirements.

(1) The employer shall assure that dry chemical agents are compatible with any foams or wetting agents with which they are used.

(2) The employer may not mix together dry chemical extinguishing agents of different compositions. The employer shall assure that dry chemical systems are refilled with the chemical stated on the approval nameplate or an equivalent compatible material.

(3) When dry chemical discharge may obscure vision, the employer shall provide a pre-discharge employee alarm which complies with Article 165 and which will give employees time to safely exit from the discharge area prior to system discharge.

(4) The employer shall sample the dry chemical supply of all but stored pressure systems at least annually to assure that the dry chemical supply is free of moisture which may cause the supply to cake or form lumps.

(5) The employer shall assure that the rate of application of drychemicals is such that the designed concentration of the system will be reached within 30 seconds of initial discharge.

### ***Article 162. Fixed Extinguishing Systems, Gaseous Agents***

#### **§6181. Gaseous Systems.**

(a) Scope and Application.

(1) Scope. This Section applies to all fixed extinguishing systems, using a gas as the extinguishing agent. These systems shall also comply with Article 160. In some cases, the gas may be in a liquid state during storage.

(2) Application. The requirements of Subsections (b)(5) and (b)(6) shall apply only to total flooding systems.

(b) General Requirements.

(1) When carbon dioxide extinguishing systems are provided they shall meet the design, inspection, maintenance, and instruction requirements of the National Fire Protection Association's "Standard on Carbon Dioxide Extinguishing Systems" NFPA No. 121977.

(2) In any proposed use of carbon dioxide where there is a possibility that employees may be trapped in, or enter into atmospheres made hazardous by a carbon dioxide discharge suitable safeguards shall be provided to insure prompt evacuation of and to prevent entry into such atmospheres and also to provide means for prompt rescue of any trapped personnel. Suitable safeguards include personnel training, warning signs, discharge alarms, predischARGE alarms and breathing apparatus any one or more of which may be necessary for particular carbon dioxide extinguishing system installation.

(3) Agents used for initial supply and replenishment shall be of the type approved for the system's application. Carbon dioxide obtained by dry ice conversion to liquid is not acceptable unless it is processed to remove excess water and oil.

(4) Except during overhaul, the employer shall assure that the designed concentration of gaseous agents is maintained until the fire has been extinguished or is under control.

(5) Employees shall not be exposed to toxic levels of gaseous agent or its decomposition products.

(6) The employer shall assure that the designed extinguishing concentration is reached within 30 seconds of initial discharge except for Halon systems which must achieve design concentration within 10 seconds.

(7) The employer shall provide a distinctive pre-discharge employee alarm capable of being perceived above ambient light or noise levels when agent design concentrations exceed the maximum safe level for employee exposure. The pre-discharge employee alarm shall provide employees time to safely exit the discharge area prior to system discharge.

(8) Egress.

(A) Where egress from an area cannot be accomplished within one minute, the employer shall not use Halon 1301 in concentrations greater than 7 percent.

(B) Where egress takes greater than 30 seconds but less than one minute, the employer shall not use Halon 1301 in a concentration greater than 10 percent.

(C) Halon 1301 concentrations greater than 10 percent are only permitted in areas not normally occupied by employees provided that any employee in the area can escape within 30 seconds. The employer shall assure that no unprotected employees enter the area during agent discharge.

### ***Article 163. Fixed Fire Extinguishing Systems--Water-Spray, and Foam-Water Sprinkler Systems***

#### **§6182. Water-Spray Fixed Systems, Foam-Water Sprinkler Systems.**

(a) Scope and Application. This Section applies to all water-spray fixed extinguishing systems and to all foam-water sprinkler systems. This Section does not apply to automatic sprinkler systems which are covered in Article 159.

When water-spray fixed systems or foam-water sprinkler systems are provided, they shall meet the design requirements of the National Fire Protection Association's (NFPA) standards on "Water Spray Fixed Systems for Fire Protection" or "Foam-Water Spray Systems," NFPA Nos. 15-1977 or 16-1974, respectively. The systems shall also comply with Article 160.

(b) General Requirements.

(1) The employer shall assure that foam and water spray systems are designed to be effective in at least controlling fire in the protected area or on protected equipment.

(2) The employer shall assure that drainage of water spray systems is directed away from areas where employees are working and that no emergency egress is permitted through the drainage path

## **Article 164. Fire Detection Systems**

### **§6183. Fire Detection Systems.**

(a) Scope and Application. This Section applies to all automatic fire detection systems.

(b) Installation and Restoration.

(1) All devices and equipment shall be designed, installed, and maintained in accordance with this Section and applicable parts of NFPA 721978 series and shall be approved for the purpose for which they are intended.

(2) The employer shall restore all fire detection systems and components to normal operating condition as promptly as possible after each test or alarm.

(c) Maintenance and Testing.

(1) The employer shall maintain all systems in an operable condition except during repairs or maintenance.

(2) Fire detectors and fire detection systems shall be tested and adjusted as often as needed to maintain proper reliability and operating condition except that factory calibrated detectors need not be adjusted after installation.

(3) Pneumatic and hydraulic operated detection systems installed after July 1, 1981, shall be equipped with supervised systems.

(4) Servicing, maintenance and testing of fire detection systems, including cleaning and necessary sensitivity adjustments shall be performed by a trained person knowledgeable in the operations and functions of the systems.

(5) Fire detectors shall be cleaned as necessary to assure proper operation.

(d) Protection of Fire Detectors.

(1) Fire detection equipment installed outdoors or in the presence of corrosive atmospheres shall be protected from corrosion. The employer shall provide a canopy, hood, or other suitable protection for detection equipment requiring protection from the weather.

(2) The employer shall locate or otherwise protect detection equipment so that it is protected from mechanical or physical impact which might render it inoperable.

(3) The employer shall assure that detectors are supported independently of their attachment to wires or tubing.

(e) Response Time.

(1) The employer shall assure that fire detection systems installed for the purpose of actuating fire extinguishment or suppression systems shall be designed to operate in time to control or extinguish a fire.

(2) Fire detection systems installed for the purpose of employee alarm and evacuation shall be designed and installed to provide a warning for emergency action and safe escape of employees.

(3) The employer shall not delay alarms or devices initiated by fire detector actuation for more than 30 seconds unless such delay is necessary for the immediate safety of employees. When such delay is necessary, it shall be addressed in an emergency action plan meeting the requirements of Section 3220.

(f) Number, Location and Spacing of Detecting Devices.

(1) The number, spacing and location of fire detectors shall be based upon design data obtained from field experience, or tests, engineering surveys, the manufacturer's recommendations, or a recognized testing laboratory listing.

## **Article 165. Employee Alarm Systems**

### **§6184. Employee Alarm Systems.**

#### (a) Scope and Application.

(1) This Section applies to all emergency employee alarms. This section does not apply to those discharge or supervisory alarms required on various fixed extinguishing systems or to supervisory alarms on fire suppression, alarm or detection systems unless they are intended to be employee alarm systems.

(2) The requirements in this Section that pertain to maintenance, testing and inspection shall apply to all local fire alarm signaling systems used for alerting employees regardless of the other functions of the system.

(3) All pre-discharge employee alarms shall meet the requirements of subsection (b)(1) through (b)(4), (c) and (d)(1) of this Section.

(4) The employee alarm shall be distinctive and recognizable as a signal to evacuate the work area or to perform actions designated under the emergency action plan.

(5) All employees shall be made aware of means and methods of reporting emergencies. These methods may be but not limited to manual pull box alarms, public address systems, radio or telephones. When telephones are used as a means of reporting an emergency, telephone numbers shall be conspicuously posted nearby. Where a communication system also serves as the employee alarm system, all emergency messages shall have priority over all non-emergency messages.

(6) The employer shall establish procedures for sounding emergency alarms in the workplace. For those employers with 10 or fewer employees in a particular workplace, direct voice communication is an acceptable procedure for sounding the alarm provided all employees can hear the alarm. Such workplaces need not have a back-up system.

#### (b) General Requirements.

(1) Where local fire alarm signaling systems are required by these orders, they shall meet the design requirements of the National Fire Protection Association's "Standard for the Installation, Maintenance, and Use of Local Protective Signaling Systems for Watchman, Fire Alarm and Supervisory Service," NFPA No. 72A1975 and the requirements of this Section.

(2) The employee alarm system shall provide warning for necessary emergency action as called for in the emergency action plan, or for reaction time for safe escape of employees from the workplace or the immediate work area, or both.

(3) The employee alarm shall be capable of being perceived above ambient noise or light levels by all employees in the affected portions of the workplace. Tactile devices may be used to alert those employees who would not otherwise be able to recognize the audible or visual alarm.

#### (c) Installation and Restoration.

(1) The employer shall assure that all devices, components, combinations of devices or systems constructed and installed to comply with this standard shall be approved. Steam whistles, air horns, strobe lights or similar lighting devices, or tactile devices meeting the requirements of this Section are considered to meet this requirement for approval.

(2) All employee alarm systems shall be restored to normal operating condition as promptly as possible after each test or alarm.

#### (d) Maintenance and Testing.

(1) All employee alarm systems shall be maintained in operating condition except when undergoing repairs or maintenance.

(2) A test of the reliability and adequacy of non-supervised employee alarm systems shall be made every two months. A different actuation device shall be used in each test of a multi-actuation device system so that no individual device is used for two consecutive tests.

(3) The employer shall maintain or replace power supplies as often as is necessary to assure a fully operational condition. Back-up means of alarm, such as employee runners or telephones, shall be provided when systems are out of service.

(4) Employee alarm circuitry installed after July 1, 1981, shall be supervised and provide positive notification to assigned personnel whenever a deficiency exists in the system. All supervised employee alarm systems shall be tested at least annually for reliability and adequacy.

(5) Servicing, maintenance and testing of employee alarms shall be performed by persons trained in the designed operation and functions necessary for reliable and safe operations of the system.

(e) Manual Operation.

(1) Manually operated actuation devices for use in conjunction with employee alarms shall be unobstructed, conspicuous and readily accessible.



**Division 1. Department of Industrial Relations**  
**Chapter 7. Division of Labor Statistics and Research**  
**Subchapter 1. Occupational Injury or Illness Reports and Records**

**Article 1. Reporting of Occupational Injury or Illness**

**§14000. Definitions.**

As used in this Article:

Computer input media. Techniques and means by which information or data can be entered into a computer system. Examples include magnetic tape, diskette, and telecommunications.

Division. The Division of Labor Statistics and Research of the Department of Industrial Relations.

Occupational illness. Any abnormal condition or disorder caused by exposure to environmental factors associated with employment, including acute and chronic illnesses or diseases which may be caused by inhalation, absorption, ingestion, or direct contact.

Self-insured employer. An employer who has secured from the Director of Industrial Relations a certificate of consent to self-insure against workers' compensation claims pursuant to Labor Code Section 3700.

**§14001. Employer.**

(a) Every employer shall file a complete report of every occupational injury or occupational illness to each employee which results in lost time beyond the date of such injury or illness or which requires medical treatment beyond first aid, as defined in Labor Code Section 5401(a). As used in this subdivision, "lost time" means absence from work for a full day or shift beyond the date of the injury or illness.

(b) In the event an employer has filed a report of injury or illness pursuant to subdivision 14001(a), and the employee subsequently dies as a result of the reported injury or illness, the employer shall file an amended report indicating such death, within five days after the employer is notified or learns of the death.

(c) The report(s) required by subdivisions 14001(a) and (b) shall be made on Form 5020, Rev. 6, Employer's Report of Occupational Injury or Illness, reproduced in accordance with Section 14005, or by use of computer input media, prescribed by the Division and compatible with the Division's computer equipment. However, reports may be submitted on Form 5020, Rev. 5 until June 30, 1993.

(d) In the case of a self-insured employer, the reports required by subdivision 14001(a) and (b) shall be filed directly with the Division within five days after the employer obtains knowledge of the injury, illness or death. In addition, the self-insured employer shall transmit the doctor's report filed in accordance with Section 14003 to the Division within five days of receipt.

(e) In the case of an insured employer, the report required by subdivisions 14001(a) and (b) shall be filed with the insurer within five days after such insured employer obtains knowledge of the injury, illness or death.

(f) To assure timely filing of the doctor's first report, the employer, upon request by the physician, shall immediately disclose the name and address of the employer's workers' compensation insurance provider.

**§14004. Employer's Report of Occupational Injury or Illness, Form 5020, Rev. 7**

See <http://www.dir.ca.gov/DOSH/DoshReg/Form5020.pdf> for fillable, downloadable form

## **Article 2. Employer Records of Occupational Injury or Illness.**

### **§14300. Purpose.**

The purpose of this rule (Article 2) is to require employers to record work-related fatalities, injuries and illnesses.

Note 1: Recording a work-related injury, illness, or fatality does not mean that the employer or employee was at fault, that a Cal/OSHA regulation has been violated, or that the employee is eligible for workers' compensation or other benefits.

Note 2: All employers covered by the California Occupational Safety and Health Act are covered by the provisions of Article 2. However, because of the partial exemptions provided by Sections 4300.1 and 14300.2, most employers do not have to keep OSHA injury and illness records unless they are asked in writing to do so by OSHA, the Bureau of Labor Statistics (BLS), or a state agency operating under the authority of OSHA or the BLS. For example, employers with 10 or fewer employees and establishments in certain industry classifications listed in Section 14300.2, Appendix A, are partially exempt from keeping Cal/OSHA injury and illness records.

### **§14300.1. Partial Exemption for Employers with 10 or Fewer Employee**

(a) Basic requirement.

(1) If your company had ten (10) or fewer employees at all times during the last calendar year, you do not need to keep Cal/OSHA injury and illness records unless OSHA or the BLS informs you in writing that you must keep records under the provisions of Section 14300.41 or Section 14300.42. However, all employers must continue to file reports of occupational injuries and illnesses with the Division of Labor Statistics and Research as required by Article 1 of this subchapter, and to immediately report to the Division of Occupational Safety and Health any workplace incident that results in serious injury or illness, or death, as required by Title 8 Section 342.

(2) If your company had more than ten (10) employees at any time during the last calendar year, you must keep Cal/OSHA injury and illness records unless your establishment is classified as a partially exempt industry under Section 14300.2.

(b) Implementation.

(1) Is the partial exemption for size based on the size of my entire company or on the size of an individual establishment?

The partial exemption for size is based on the number of employees in the entire company.

(2) How do I determine the size of my company to find out if I qualify for the partial exemption for size?

To determine if you are exempt because of size, you need to determine your company's peak employment during the last calendar year. If you had 10 or fewer employees at all times in the last calendar year, your company qualifies for the partial exemption for size.

### **§14300.4. Recording Criteria.**

(a) Basic requirement. Each employer required by this article to keep records of fatalities, injuries, and illnesses must record each fatality, injury and illness that:

(1) Is work-related; and

(2) Is a new case; and

(3) Meets one or more of the general recording criteria of Section 14300.7 or the application to specific cases of Section 14300.8 through Section 14300.12.

(b) Implementation.

What sections of this rule describe recording criteria for recording work-related injuries and illnesses?

The list below indicates which sections of the rule address each topic

(1) Determination of work-relatedness. See Section 14300.5;

(2) Determination of a new case. See Section 14300.6;

(3) General recording criteria. See Section 14300.7; and

(4) Additional criteria. (Needlestick and sharps injury cases, medical removal cases, hearing loss cases, tuberculosis cases, and musculoskeletal disorder cases.) See Section 14300.8 through Section 14300.12.

### **§14300.5. Determination of Work-Relatedness.**

(a) Basic requirement. You must consider an injury or illness to be work-related if an event or exposure in the work environment either caused or contributed to the resulting condition or significantly aggravated a pre-existing injury or illness. Work-relatedness is presumed for injuries and illnesses resulting from events or exposures occurring in the work environment, unless an exception in Section 14300.5(b)(2) specifically applies.

(b) Implementation.

(1) What is the "work environment"?

Work environment is defined as "the establishment and other locations where one or more employees are working or are present as a condition of their employment. The work environment includes not only physical locations, but also the equipment or materials used by the employee during the course of his or her work."

(2) Are there situations where an injury or illness occurs in the work environment and is not considered work-related?

Yes. An injury or illness occurring in the work environment that falls under one of the following exceptions is not work-related, and therefore is not recordable:

(A) At the time of the injury or illness, the employee was present in the work environment as a member of the general public rather than as an employee.

(B) The injury or illness involves signs or symptoms that surface at work but result solely from a non-work-related event or exposure that occurs outside the work environment.

(C) The injury or illness results solely from voluntary participation in a wellness program or in a medical, fitness, or recreational activity such as blood donation, physical examination, flu shot, exercise class, racquetball, or baseball.

(D) The injury or illness is solely the result of an employee eating, drinking, or preparing food or drink for personal consumption (whether bought on the employer's premises or brought in). For example, if the employee is injured by choking on a sandwich while in the employer's establishment, the case would not be considered work-related.

Note: If the employee is made ill by ingesting food contaminated by workplace contaminants (such as lead), or gets food poisoning from food supplied by the employer, the case would be considered work-related.

(E) The injury or illness is solely the result of an employee doing personal tasks (unrelated to their employment) at the establishment outside of the employee's assigned working hours.

(F) The injury or illness is solely the result of personal grooming, self-medication for a non-work-related condition, or is intentionally self-inflicted.

(G) The injury or illness is caused by a motor vehicle accident and occurs on a company parking lot or company access road while the employee is commuting to or from work.

(H) The illness is the common cold or flu (Note: contagious diseases such as tuberculosis, brucellosis, hepatitis A, or plague are considered work-related if the employee is infected at work).

(I) The illness is a mental illness. Mental illness will not be considered work-related unless the employee voluntarily provides the employer with an opinion from a physician or other licensed health care professional with appropriate training and experience (psychiatrist, psychologist, psychiatric nurse practitioner, etc.) stating that the employee has a mental illness that is work-related.

(3) How do I handle a case if it is not obvious whether the precipitating event or exposure occurred in the work environment or occurred away from work?

In these situations, you must evaluate the employee's work duties and environment to decide whether or not one or more events or exposures in the work environment either caused or contributed to the resulting condition or significantly aggravated a pre-existing condition.

(4) How do I know if an event or exposure in the work environment "significantly aggravated" a pre-existing injury or illness?

A pre-existing injury or illness has been significantly aggravated, for purposes of Cal/OSHA injury and illness recordkeeping required by this Article, when an event or exposure in the work environment results in any of the following:

(A) Death, provided that the pre-existing injury or illness would likely not have resulted in death but for the occupational event or exposure.

(B) Loss of consciousness, provided that the pre-existing injury or illness would likely not have resulted in loss of consciousness but for the occupational event or exposure.

(C) One or more days away from work, or days of restricted work, or days of job transfer that otherwise would not have occurred but for the occupational event or exposure.

(D) Medical treatment in a case where no medical treatment was needed for the injury or illness before the workplace event or exposure, or a change in medical treatment was necessitated by the workplace event or exposure.

(5) Which injuries and illnesses are considered pre-existing conditions?

An injury or illness is a pre-existing condition if it resulted solely from a non-work-related event or exposure that occurred outside the work environment.

(6) How do I decide whether an injury or illness is work-related if the employee is on travel status at the time the injury or illness occurs?

Injuries and illnesses that occur while an employee is on travel status are work-related if, at the time of the injury or illness, the employee was engaged in work activities "in the interest of the employer." Examples of such activities include travel to and from customer contacts, conducting job tasks, and entertaining or being entertained to transact, discuss, or promote business (work-related entertainment includes only entertainment activities being engaged in at the direction of the employer).

Injuries or illnesses that occur when the employee is on travel status do not have to be recorded if they meet one of the following exceptions:

**EXCEPTION 1:** When a traveling employee checks into a hotel, motel, or other temporary residence, he or she establishes a "home away from home." You must evaluate the employee's activities after he or she checks into the hotel, motel, or other temporary residence for their work-relatedness in the same manner as you evaluate the activities

of a non-traveling employee. When the employee checks into the temporary residence, he or she is considered to have left the work environment. When the employee begins work each day, he or she re-enters the work environment. If the employee has established a "home away from home" and is reporting to a fixed worksite each day, you also do not consider injuries or illnesses work-related if they occur while the employee is commuting between the temporary residence and the job location.

EXCEPTION 2: Injuries or illnesses are not considered work-related if they occur while the employee is on a personal detour from a reasonably direct route of travel (e.g., has taken a side trip for personal reasons).

(7) How do I decide if a case is work-related when the employee is working at home?

Injuries and illnesses that occur while an employee is working at home, including work in a home office, will be considered work-related if the injury or illness occurs while the employee is performing work for pay or compensation in the home, and the injury or illness is directly related to the performance of work rather than to the general home environment or setting. For example, if an employee drops a box of work documents and injures his or her foot, the case is considered work-related. If an employee's fingernail is punctured by a needle from a sewing machine used to perform garment work at home, becomes infected and requires medical treatment, the injury is considered work-related. If an employee is injured because he or she trips on the family dog while rushing to answer a work phone call, the case is not considered work-related. If an employee working at home is electrocuted because of faulty home wiring, the injury is not considered work-related.

#### **§14300.6. Determination of New Cases.**

(a) Basic requirement. You must consider an injury or illness to be a "new case" if:

(1) The employee has not previously experienced a recorded injury or illness of the same type that affects the same part of the body, or

(2) The employee previously experienced a recorded injury or illness of the same type that affected the same part of the body but had recovered completely (all signs and symptoms had disappeared) from the previous injury or illness and an event or exposure in the work environment caused the signs or symptoms to reappear.

(b) Implementation.

(1) When an employee experiences the signs or symptoms of a chronic work-related illness, do I need to consider each recurrence of signs or symptoms to be a new case?

No. For occupational illnesses where the signs or symptoms may recur or continue in the absence of an exposure in the workplace, the case must only be recorded once. Examples may include occupational cancer, asbestosis, byssinosis and silicosis.

(2) When an employee experiences the signs or symptoms of an injury or illness as a result of an event or exposure in the workplace, such as an episode of occupational asthma, must I treat the episode as a new case?

Yes. Because the episode or recurrence was caused by an event or exposure in the workplace, the incident must be treated as a new case.

(3) May I rely on a physician or other licensed health care professional to determine whether a case is a new case or a recurrence of an old case?

You are not required to seek the advice of a physician or other licensed health care professional. However, if you do seek such advice, you must follow the physician or other licensed health care professional's recommendation about whether the case is a new case or a recurrence. If you receive recommendations from two or more physicians or other licensed health care professionals, you must make a decision as to which recommendation is the most authoritative (best documented, best reasoned, or most authoritative), and record the case based upon that recommendation.

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See <http://www.dir.ca.gov/T8/ch7sb1.html> for additional detailed information and forms:

- §14300.7. General Recording Criteria.
- §14300.8. Recording Criteria for Needlestick and Sharps Injuries.
- §14300.9. Recording Criteria for Cases Involving Medical Removal Under Cal/OSHA Standards.
- §14300.10. Recording Criteria for Cases Involving Occupational Hearing Loss.
- §14300.11. Recording Criteria for Work-Related Tuberculosis Cases.
- §14300.12. Recording Criteria for Cases Involving Work-Related Musculoskeletal Disorders.
- §14300.13 - §14300.28 - Reserved
- §14300.29. Forms.
- §14300.30. Multiple Establishments.
- §14300.31. Covered Employees.
- §14300.32. Annual Summary.
- §14300.33. Retention and Updating.
- §14300.34. Change in Establishment Ownership.
- §14300.35 Employee Involvement.
- §14300.36 Not used
- §14300.37 Not used
- § 14300.36. Prohibition Against Discrimination.
- §14300.38. Variances from the Recordkeeping Rule.
- §14300.40. Providing Records to Government Representatives.
- §14300.41. Annual OSHA Injury and Illness Survey.
- §14300.42. Requests from the Bureau of Labor Statistics for Data.
- §14300.43. Annual Summary and Posting of the 2001 Data.
- §14300.44. Retention and Updating of Old Forms.
- §14300.46. Definitions.
- §14300.47. Recordkeeping Requirements for Employers Covered by the Federal Mine Safety and Health Act.
- §14300.48. Effective Date.

#### Appendix A - G for Title 8 Sections 14300 - 14300.48

- Appendix A - Cal/OSHA Form 300-(pdf, 309KB)
- Appendix B - Cal/OSHA Form 300A (pdf, 153KB)
- Appendix C - Cal/OSHA Form 301 (pdf, 755KB)
- Appendix D - Required Elements for the Cal/OSHA Form 300
- Appendix E - Required Elements for the Cal/OSHA Form 300A
- Appendix F - Required Elements for the Cal/OSHA Form 301
- Appendix G - Optional Worksheet for the Cal/OSHA Form 300A