



# Fire Department

## HEADQUARTERS

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## CODE SUMMARY

### GROUP H OCCUPANCIES – HAZARDOUS BUSINESSES

A code summary is a compilation of code sections related to a specific occupancy or permit. This code summary lists sections of code pertaining to Hazardous Buildings as defined by the **California Fire Code**. Under each heading you will find the correlating code language and the reference cited. These requirements pertain to existing buildings. New construction may be subject to additional requirements. Please feel free to direct any questions to the Fire Prevention Division at (805) 681-5500.

#### SCOPE

##### **Group H Occupancy defined:**

Includes, among others, the use of a building or structure, or portion thereof, which involves the manufacturing, processing, generation or storage of materials that constitute a physical or health hazard in quantities in excess of those allowed in control areas. [CFC Table 5003.1.1(1)]

**Group H-1 defined:** Buildings or structures which contain materials that pose a detonation hazard, including, but not limited to: explosives, organic peroxides, unclassified detonatable oxidizers, Class 4 detonatable (reactive) materials, and Class 3 detonatable and Class 4 detonatable pyrophoric materials.

**Group H-2 defined:** Buildings or structures which contain materials that pose a deflagration hazard or a hazard from accelerated burning. Such materials shall include, but not be limited to: Class I, II, or IIIA flammable or combustible liquids in open containers or systems, or in closed containers or pressurized at more than 15 psi, combustible dusts, cryogenic liquids, flammable gases, organic peroxides, Class I oxidizers, Class 3 pyrophoric liquids, solids or gases, unstable (reactive) materials, Class 3 water-reactive materials.

**Group H-3 defined:** Buildings or structures which contain materials that readily support combustion or pose a physical hazard. Such materials shall include, but not be limited to: aerosols, Level 2 and Level 3, Class I, II, or IIIA flammable or combustible liquids used or stored in normally closed containers pressurized at less than 15 psi, combustible fibers, consumer fireworks, cryogenic liquids, flammable solids, organic peroxides, Class II and Class III oxidizers, used or stored in normally closed containers or pressurized at less than 15 psi and Class 2 water reactive materials.

**Group H-4 defined:** Buildings or structures which contain materials that are a health hazard. Such materials shall include, but not be limited to: corrosives, highly toxic materials, and toxic materials.

**Group H-5 defined:** Semiconductor fabrication facilities and comparable research and development areas in which hazardous production materials are used and the aggregate quantity of materials is in excess of those listed in Tables 307.7(1) and 307.7(2) of the International Building Code.

#### **1. Extinguishers Required:**

- A. One Class 2-A rated fire extinguisher shall be provide for each 6000 sq. ft. of light hazard fuel load or one Class 2-A rated fire extinguisher for each 3000 sq. ft. of ordinary hazard fuel load. Travel distance shall not exceed 75 feet. (CFC 906.3.1)

B. A Class B rated fire extinguisher shall be provided in accordance with Table 906.3(2) of the CFC. (CFC 906.3.2)

TYPE OF HAZARD	BASIC MINIMUM EXTINGUISHER RATING	MAXIMUM TRAVEL DISTANCE TO EXTINGUISHERS	
		(in feet)	(in meters)
<i>Light (low)</i>	<i>5B</i>	30	9.15
	<i>10B</i>	50	15.25
<i>Ordinary (moderate)</i>	<i>10B</i>	30	9.15
	<i>20B</i>	50	15.25
<i>Extra (high)</i>	<i>40B</i>	30	9.15
	<i>80B</i>	50	15.25

- C. Fire extinguisher shall not be obstructed or obscured from view. (CFC 906.6)
- D. Fire extinguishers not housed in cabinets, shall be installed on the hangers or brackets supplied. Hangers or brackets shall be securely anchored to the mounting surface in accordance with the manufacturer's installation instructions. (CFC 906.7)
- E. Extinguishers shall be inspected monthly by the building owner or occupant, or electronically monitored. (T19 Sec. 574.1)
- F. Extinguishers shall be subject to maintenance annually by licensed technician. (T19 Sec. 575.1)

**2. Means of Egress:**

- A. Means of egress shall be continuously maintained free from obstructions. (CFC 1003.6)
- B. Means of egress (except aisles) shall be illuminated when the building space is occupied. (CFC 1006.1)
- C. In the event of power supply failure, an emergency electrical system shall automatically illuminate the means of egress. (CFC 1006.3)
- D. Means of egress doors shall travel in direction of egress travel. (CFC 1008.1.2)
- E. Doors shall not be provided with a latch or lock unless it is panic hardware or fire exit hardware. (CFC 1008.1.9.)
- F. Exit and exit access doors shall be marked by approved exit signs readily visible from any direction of egress travel. (CFC 1011.1)
- G. Exit signs shall be internally or externally illuminated at all times; signs shall be connected to an emergency power system that provides illumination for not less than 90 minutes in case of primary power loss. (CFC 1011.5.3)
- H. Every portion of a Group H-1, H-2, or H-3 occupancy having an occupant load more than 3 persons or H-4 and H-5 having an occupant load of more than 10 persons shall be served by at least two exits. (CFC 1015.1)
- I. The maximum length of exit access travel, measured from the most remote point to the entrance to an exit shall be as follows: H-1 75 ft., H-2 100 ft., H-3 150 ft., H-4 175 ft., H-5 200 ft. (CFC 1016.1)
- J. Corridors shall not be less than 44 inches in width for an occupant load capacity of 50 or more, and 36 inches for less than 50. (CFC 1017.2)
- K. Where more than one exit is required, there shall be no dead end corridors more than 20 feet. (CFC 1018.4)

**3. Housekeeping:**

- A. Combustible waste containers larger than 40 gallons shall be constructed of noncombustible material or approved combustible material and provided with a lid. (CFC 304.3)
- B. Combustible waste containers larger than 1.5 cubic yards shall not be stored in buildings or placed within 5 feet of combustible walls, openings or combustible roof eave lines. (CFC 304.3)
- C. Materials subject to spontaneous ignition, such as oily rags, shall be stored in a listed disposal container. (CFC 304.3.1)
- D. Smoking shall be prohibited where conditions are such as to make smoking a hazard, and in spaces where flammable or combustible materials are stored or handled. (CFC 310.2)
- E. Storage of combustible materials shall be orderly, with storage separated from heating devices by a distance or shielded so that ignition cannot occur. (CFC 315.3)
- F. Storage shall be maintained 2 feet or more below the ceiling in nonsprinklered areas or a minimum of 18 inches below sprinkler deflectors in sprinklered areas of buildings. (CFC 315.3.1)

- G. Combustible materials shall not be stored in boiler rooms, mechanical rooms or electrical equipment rooms. (CFC 315.3.3)
- H. Smoking shall be prohibited in flammable vapor areas and hazardous materials storage rooms associated with flammable finish processes. (CFC 2403.2.6)
- I. Smoking shall be prohibited and “No Smoking” signs provided in rooms or areas as follows:
  - a. In rooms or areas where hazardous materials are stored or used in open systems in amounts requiring a permit.
  - b. In rooms or areas where flammable or combustible materials are stored or used.
  - c. Within 25 feet of outdoor storage, dispensing or open use areas.
  - d. In areas within facilities that have been designated as totally “no smoking” shall have “No Smoking” signs place at all entrances to the facility or area. (CFC 2703.7)
- J. Storage of hazardous production materials in fabrication areas shall be within approved or listed storage cabinets, gas cabinets or within a workstation. (CFC 5704.3.4.4)

#### **4. Electrical**

- A. A working space of not less than 30 inches in width, 36 inches in depth, and 78 inches in height shall be provided in front of electrical service equipment. Storage is prohibited within the designated working space. (CFC 605.3)
- B. Multiplug adaptors, such as cube adaptors, unfused plug strips or other such devices not complying with the California Electrical Code shall be prohibited. (CFC 605.4)
- C. Extension cords shall not be affixed to structures, extended through walls, ceilings or floors, or under doors or floor covering nor subject to physical damage. (CFC 605.4.3)
- D. Extension cords shall not be used in place of permanent wiring. (CFC 605.5)
- E. Appliance cords and extension cords shall be maintained in good condition without splices, deterioration or damage. (CFC 605.5.3)
- F. Open junction boxes and open wiring splices shall be prohibited. Approved covers shall be provided for all switch and electrical outlet boxes. (CFC 605.6)
- G. Temporary wiring is allowed for a period not to exceed 90 days; such wiring is allowed for longer periods for construction, remodeling, or repair work. (CFC 605.9)
- H. Electrical wiring and equipment in flammable vapor areas shall be of an explosion proof type approved for use in such hazardous locations. (CFC 1503.2.1)
- I. Electrical wiring in areas where flammable liquids are stored, handled, dispensed or mixed shall comply with Class I electrical installations as described in Table 5703.1.1 of the Fire Code. (CFC 5703.1)

#### **5. Flammable and Combustible Liquids:**

- A. An operational permit is required for the storage, handling or use of more than 5 gallons of flammable liquid indoors or 10 gallons of flammable liquid outdoors. (CFC 105.6.16)
- B. An operational permit is required for the storage, handling or use of more than 25 gallons of combustible liquid indoors or 60 gallons of combustible liquid outdoors. (CFC 105.6.16)
- C. An operational permit is required to conduct spraying or dipping operation utilizing flammable or combustible liquids or the application of combustible powders. (CFC 105.6.41)
- D. Spray finishing operations shall be conducted in a spray room, spray booth or limited spraying space approved for such use. (CFC 2404.2)
- E. Ventilation of spraying areas shall be provided such that the average air velocity over the open face of the booth shall not be less than 100 feet per minute. (CFC 2404.7)
- F. Quantities of flammable and combustible liquids in excess of 10 gallons used for maintenance purposes and operation of equipment shall be stored in liquid storage cabinets. (CFC 5704.3.4.4)
- G. Containers having a capacity less than 30 gallons shall not be stacked more than 3 feet or two containers high, whichever is greater, unless stacked on fixed shelving. (CFC 5704.3.5.2)
- H. Class 1, Class II and Class IIIA liquids shall be transferred by pumps or pressured systems described in Sections 5705.2 – 5705.3 (CFC 5705.2-5705.3).

## 6. Miscellaneous:

- A. An operational permit is required to store, handle or use hazardous production materials. (CFC 105.6.21)
- B. Material Data Safety Sheets shall be readily available on the premises for materials regulated by the hazardous materials chapter of the California Fire Code. (CFC 407.2)
- C. All buildings shall have approved address numbers or building numbers placed in a position to be plainly legible from the street or road fronting the property. (CFC 505.1)
- D. An approved fire apparatus access road not less than 20 wide shall be provided for access to within 150 feet of all portions of the building. (CFC 503.1.1)
- E. Fire access roads shall be marked with approved signs or markings that state "NO PARKING FIRE LANE". Marking shall be maintained in clean, legible condition and repaired when necessary. (CFC 503.3)
- F. Fire access roads shall not be obstructed in any manner, including the parking of vehicles. (CFC 503.4)
- G. Exterior doors and their function cannot be eliminated without approval. If approved, and door retains the appearance as a functional, door shall be posted on the exterior "THIS DOOR BLOCKED". (CFC 504.2)
- H. An approved fire safety and evacuation plan shall be prepared and maintained for Group H occupancies. CFC 404.2
- I. An approved sprinkler system shall be installed in Group H occupancies. (CFC 903.2.5)
- J. Certain portions of fire alarm systems shall be inspected, tested and maintained semi-annually; the entire system shall be inspected annually by a licensed technician according to Chapter 14 of NFPA 72. (CFC 907.8)
- K. Portions of fire sprinkler systems shall be inspected monthly and the entire system shall be inspected annually. Testing shall occur every 5 years. Testing shall be conducted by state licensed technician and records shall be kept on site. (CFC 901.6.1)
- L. Standpipe systems shall be inspected annually and tested every 5 years in accordance with NFPA 25. Testing shall be conducted by state licensed technician and records shall be kept on site. (CFC 901.6.1)
- M. In H-5 facilities, training shall be provided to employees during new employee orientation and at least annually thereafter; training shall include fire prevention, evacuation training, and fire safety training. (CFC 406.1)
- N. In addition to requirement "L" above, an on-site emergency response team shall be designated and an emergency drill shall be conducted not less than once every 3 months in H-5 occupancies. (CFC 408.4)
- O. A manual fire alarm system shall be installed in Group H-5 occupancies and in occupancies used for the manufacture of organic coatings. (CFC 907.2.5)
- P. An emergency control station shall be provided on the premises at an approved location outside of the semiconductor fabrication areas, and shall be continuously staffed by trained personnel. (CFC 2703.1)
- Q. The emergency control station above shall receive signals from emergency equipment and alarm and detection systems from, in part, sprinkler systems, manual fire alarm systems, emergency alarm systems, gas-detection systems, smoke detection systems, and emergency power systems. (CFC 2703.1)
- R. An emergency alarm system shall be provided in service corridors, exit access corridors, exit enclosures, liquid storage rooms, Hazardous Production Material rooms, and gas rooms of semiconductor fabrication facilities. (CFC 2703.12)
- S. A continuous gas detection system shall be provided for Hazardous Production Materials gases when the physiological warning properties of the gas are at a higher level than the acceptable permissible exposure limit (PEL) for the gas and for the flammable gases. (CFC 2703.13)

**Create a supplement for Semi-conductor fabrication facilities (H-5) permits, REMOVE – M thru S in Misc. above FROM H Occupancy guidelines.**