CODE COMPLIANCE MATRIX BY OCCUPANCY

~~2013~~ versus 2016 California Codes

Integrated Engineering Services

The information contained herein is intended to identify general requirements and differences for various occupancy classifications within a sprinklered building, in accordance with the 2016 *California Building, Fire and Mechanical Codes*. However, it is not intended to be all-inclusive or to represent code in all cases. It is the responsibility of the user to verify all code requirements for their specific application.

	DESCRIPTION	B (Business) F1 (Factory) & S1 (Storage) OCCUPANCY	H-2 OCCUPANCY (Explosion Hazards)	H-3 OCCUPANCY (Physical Hazards)	H-4 OCCUPANCY (Health Hazards)	H-5 OCCUPANCY (Semiconductor Manufacturing)	L OCCUPANCY (Laboratory R&D) CBC ~~§443~~ §453
BUILDING CODE REQUIREMENTS	**SEPARATION OF OCCUPANCIES** (Where provided Fire Barriers required to be labeled.)	Not required. *Exception: control areas shall be separated by a 1-hour fire barrier, or 2-hour fire barrier on the 5th story and above.*	Occupancy shall be separated by a 2-hour fire barrier.	Occupancy shall be separated by a 1-hour fire barrier.	Occupancy shall be separated by a 1-hour fire barrier.	Occupancy shall be separated by a 1-hour fire barrier.	1-hour fire barrier, or 2-hour fire barrier on the 5th story and above.
	MAXIMUM ALLOWABLE QUANTITY (MAQ) OF HAZARDOUS MATERIALS	Hazardous materials are restricted in accordance with CBC Table 307.1(1) and (2). The MAQ and number of control areas are prorated by floor.	Hazardous materials posing a deflagration hazard or hazard from accelerated burning are unlimited. *Note; reactive materials may require detached building.*	Hazardous materials that support combustion or pose a physical hazard are unlimited. *Note; reactive materials may require detached building.*	Hazardous materials posing a health hazard are unlimited. Materials posing a physical hazard are restricted per CBC Table 307.1(1)	Hazardous materials posing a health hazard are unlimited. Quantities of hazardous materials posing a physical hazard are limited-based on density, e.g. gal/sf per CFC Chapter 27	Hazardous materials are restricted in accordance with CBC 443.7.3.1. However, the MAQ's and numbers of lab suites are less restrictive than those for control areas on the 4th floor and above.
	SEISMIC RISK CATEGORY I_e for building/structural components, I_p for non-structural components.	Risk Category II (I_e = 1.0), or Risk Category III for occupancies with an occupant load > 5000. (I_e = 1.5)	Risk Category II (I_e = 1.25), or Risk Category III if explosive (I_e = 1.5).	Risk Category II (I_e = 1.0)	Risk Category III (I_e = 1.25), or Risk Category IV if highly-toxic (I_e = 1.5).	Risk Category III (I_e = 1.25), or Risk Category IV if highly-toxic (I_e = 1.5).	Risk Category II (I_e = 1.0), or Risk Category III for adult educational facilities, e.g. universities, with occupant load > 500.
	SPECIAL INSPECTION Periodic inspection required for installation of non-structural components, i.e. process piping, ducting and electrical systems.	Required for non-structural components containing toxic, highly-toxic, or explosive substances which pose a threat to the public if released.	Required for non-structural components containing hazardous materials. (I_p = 1.25, or I_p = 1.5 if explosive)	Required for non-structural components containing toxic, highly-toxic, or explosive substances which pose a threat to the public if released.	Required for non-structural components containing hazardous materials. (I_p = 1.25, or I_p = 1.5 if highly-toxic)	Required for non-structural components containing hazardous materials. (I_p = 1.25, or I_p = 1.5 if highly-toxic)	Required for non-structural components containing toxic, highly-toxic, or explosive substances which pose a threat to the public if released.
	DISTANCE TO PROPERTY LINE RELATIVE TO FIRE RATING OF EXTERIOR WALL	10ft for Type IIB & VB construction, or 30 ft. for other types of construction unless exterior wall is fire-rated.	30 ft. unless exterior wall is fire-rated and area is less than 1,000 sf.	30 ft. unless exterior wall is fire-rated.	30 ft. unless exterior wall is fire-rated.	30 ft. unless exterior wall is fire-rated.	30 ft. unless exterior wall is fire-rated.
	LOCATION OF OCCUPANCY RELATIVE TO EXTERIOR WALL	N/A	Liquid use, dispensing & mixing rooms > 500 sf requires 25% of perimeter to be on an exterior wall.	Liquid storage rooms > 1,000 sf requires 25% of perimeter to be on an exterior wall.	N/A	N/A	N/A
	NUMBER OF EXITS	2 exits required if occupant load >49	2 exits required if occupant load >3	2 exits required if occupant load >3	2 exits required if occupant load >10	2 exits required if occupant load >10	2 exits required when lab containing hazardous materials is >500 sf
	COMMON PATH OF EGRESS TRAVEL	100 ft.	25 ft.	25 ft.	75 ft.	75 ft.	75 ft.
	EXIT ACCESS TRAVEL DISTANCE	B-Occupancy: 300 ft. F1,S1 Occupancy ~~250~~ 400 ft.	100 ft.	150 ft.	175 ft.	200 ft for fabrication areas	200 ft.
	EXIT CORRIDORS	Non-Rated in sprinklered buildings.	1-hour Fire Rated	1-hour Fire Rated	1-hour Fire Rated if Occupant Load > 30	1-hour Fire Rated if Occupant Load > 30	1-hour Fire Rated if Occupant Load > 30
FIRE AND MECHANICAL CODES	**FIRE SPRINKLERS**	Light Hazard (0.10 gpm/sq.ft.)	Extra Hazard Group-2 (0.4 gpm/sq.ft.)	Extra Hazard Group-1 (0.3 gpm/sq.ft.)	Ordinary Hazard Group-2 (0.2 gpm/sq.ft.)	Ordinary Hazard Group-2 (0.2 gpm/sq.ft.)	Ordinary Hazard Group 2 (Lab) Group 1 (Non-Lab)
	SMOKE / FIRE DAMPERS	Generally not required Corridors and non-hazardous occupancies not required to be separated	Required at fire barriers. Product conveying ducts may not be dampered.	Required at fire barriers. Product conveying ducts may not be dampered.	Required at fire barriers. Product conveying ducts may not be dampered.	Required at fire barriers. Product conveying ducts may not be dampered.	Required at fire barriers. Product conveying ducts may not be dampered.
	VENTILATION	0.15 cfm/sq.ft. for B-Office, or 0.075 cfm/sq.ft. for F1-Manufacturing.	1.0 cfm/sf, or 1.5 cfm/sf for chemical storage rooms. Increased ventilation may be used as an alternate means to explosion venting.	1.0 cfm/sf, or 1.5 cfm/sf for chemical storage rooms.	1.0 cfm/sf, or 1.5 cfm/sf for chemical storage rooms.	1.0 cfm/sf	1.0 cfm/sf
	EXHAUST ABATEMENT	Generally not required.	May be required for VOCs if emissions are greater than 10 lbs/day.	May be required for VOCs if emissions are greater than 10lbs/day.	Required for toxic and highly-toxic gases, solids and liquids. May also be required for corrosives.	Required for toxic and highly-toxic gases, solids and liquids. May also be required for VOCs if >10 lbs/day and corrosives.	Generally not required.
	SECONDARY CONTAINMENT (When required, sized to contain the largest container plus 20 minutes of fire sprinkler flow.)	Spill control required to contain the largest container. However, containment of fire sprinkler flow is not required.	Required if largest container is > 55 gallons, if aggregate quantity stored is > 1000 gallons, or quantity dispensed is > 100 gallons.	Required if largest container is > 55 gallons, or aggregate quantity is > 1000 gallons.	Required if largest container is > 55 gallons, or aggregate quantity is > 1000 gallons.	Required if largest container is > 55 gallons, or aggregate quantity is > 1000 gallons.	Spill control required to contain the largest container. Containment of fire sprinkler flow is not required, but floors must be liquid tight.
	HAZARDOUS PROCESS PIPING ROUTING	Not permitted above in concealed spaces or above corridors.	Not permitted above in concealed spaces.	Not permitted above in concealed spaces.	Permitted throughout.	Permitted throughout.	Not permitted above in concealed space or above corridors.
	RATED ELECTRICAL FOR HAZARDOUS LOCATIONS	Required where flammable/combustible liquids are dispensed.	Class-I, Division-1 for flammable/combustible gas or vapors. Class-II for combustible dusts.	Class-I, Division-2 for flammable/combustible gas or vapors.	Required where flammable/combustible liquids are dispensed.	Not required in area when 4 cfm/sf. ventilation is provided.	Required where flammable/combustible liquids are dispensed.
	EMERGENCY AND STANDBY POWER	Not required - except for emergency exit lighting.	Standby power required. Emergency power required for pyrophorics.	Standby power required.	Emergency power required.	Emergency power required.	Emergency power required.
	BATTERY SYSTEMS (Lead-acid battery systems having a liquid capacity > 50 gallons.)	Requires 1-hour occupancy separation, 1 cfm/sq.ft. ventilation, spill control, smoke detection.	Requires 1-hour occupancy separation, 1 cfm/sq.ft. ventilation, spill control, smoke detection.	Requires 1-hour occupancy separation, 1 cfm/sq.ft. ventilation, spill control, smoke detection.	Requires 1-hour occupancy separation, 1 cfm/sq.ft. ventilation, spill control, smoke detection.	Requires 1-hour occupancy separation, 1 cfm/sq.ft. ventilation, spill control, smoke detection.	Requires 1-hour occupancy separation, 1 cfm/sq.ft. ventilation, spill control, smoke detection.
	EMERGENCY ALARM SYSTEM	Required only for special uses or conditions such as high-rise & assembly buildings	Required for H-Occupancy area.	Required for H-Occupancy area.	Required for H-Occupancy area.	Emergency alarm system required throughout building.	Emergency alarm system required throughout building. Pull stations required at each lab suite.