

City of Walnut Creek
Development Review Services
 1666 N. Main Street, Walnut Creek, CA 94596
 (925) 943-5834 phone (925) 256-3500 fax

Revised December 23, 2014

Policy Bulletin No. PB-045

**Summary of Automatic Sprinkler Thresholds
 for Commercial and Multifamily Residential Projects**

This bulletin summarizes automatic sprinkler thresholds for commercial and multifamily residential projects according to occupancy, use and specific areas. The requirements are based on the 2013 California Fire Code (CFC) and California Building Code (CBC).

Highlighted portions denote local amendments adopted by the City of Walnut Creek and the Contra Costa County Fire Protection District. These local amendments generally lower the fire area thresholds for new buildings, additions and changes of occupancy classification. The effective date of these amendments is March 6, 2014.

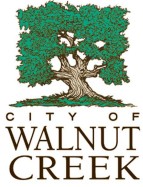
The Contra Costa County Fire Protection District will perform plan review and inspection services related to automatic fire sprinkler systems. Therefore, please verify the requirements in this bulletin with the Fire Protection District as they apply to your specific project.

NEW BUILDINGS

The table below lists code provisions for fire sprinkler triggers and thresholds. For new commercial buildings, the local amendments generally lower the fire area trigger to 5,000 sq. ft., as highlighted.

Summary of Use- and Occupancy-Related Automatic Sprinkler Thresholds for New Buildings
 Based on 2013 CFC and CBC
 City amendments **highlighted** (effective March 6, 2014)

Occupancy	Sprinkler Threshold	Location of Sprinkler System	Exception	Code Reference
A-1	Fire area > 5,000 sq. ft.	Throughout floor area where occupancy is located, and in all floors from level containing occupancy to nearest level of exit discharge serving occupancy	—	CFC/CBC 903.2.1, Muni Code 9-19.02
	or Fire area occupant load \geq 300			
	or Fire area above or below level of exit discharge			
	or Fire area contains multitheater complex			
A-2	Fire area > 5,000 sq. ft.	Throughout floor area where occupancy is located, and in all floors from level containing occupancy to nearest level of exit discharge serving occupancy	—	CFC/CBC 903.2.1
	or Fire area occupant load \geq 100			
	or Fire area above or below level of exit discharge			
	or Structure > 5,000 sq. ft, contains more than 1 fire area containing A-2, and is separated into 2 or more buildings by fire walls of < 4-hour rating without openings			
A-3	Fire area > 5,000 sq. ft.	Throughout floor area where occupancy is located, and in all floors from level containing	—	CFC/CBC 903.2.1, Muni Code 9-19.02
	or Fire area occupant load \geq 300			
	or Fire area above or below level of exit discharge			

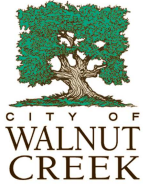


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	or Structure > 10,000 sq. ft, contains more than 1 fire area containing exhibition and display rooms, and is separated into 2 or more buildings by fire walls of < 4-hour rating without openings	occupancy to nearest level of exit discharge serving occupancy		
A-4	Fire area > 5,000 sq. ft. or Fire area occupant load \geq 300 or Fire area above or below level of exit discharge	Throughout floor area where occupancy is located, and in all floors from level containing occupancy to nearest level of exit discharge serving occupancy	—	CFC/CBC 903.2.1, Muni Code 9-19.02
A-5	Accessory areas > 1,000 sq. ft.	Concessions stands, retail areas, press boxes and other accessory areas	—	CFC/CBC 903.2.1
Ambulatory Care Facility	\geq 4 care recipients incapable of self-preservation or Any care recipient incapable of self-preservation above or below level of exit discharge	Throughout floor containing ambulatory care facility and where ambulatory care is provided on levels other than level of exit discharge, entire floor where care is provided and all floors below and between level of ambulatory care and nearest level of exit discharge, including level of exit discharge	—	CFC/CBC 903.2.2, CBC 422.6, CFC 914.11
B	Fire area > 5,000 sq. ft.	Throughout occupancy	—	CFC 903.2.1.6, Muni Code 9-19.02
E	Fire area > 5,000 sq. ft. or Any area below level of exit discharge	Throughout fire area Throughout area below level of exit discharge	— Sprinklers not required where every classroom has exterior exit door at grade	CFC/CBC 903.2.3, Muni Code 9-19.02

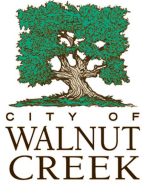


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Occupancy	Sprinkler Threshold	Location of Sprinkler System	Exception	Code Reference
	or Area with special hazards such as labs and vocational shops where hazardous material quantities used or stored are \leq maximum allowable quantity	In areas with special hazards	—	
	or Structure > 10,000 sq. ft., containing > 1 fire area, and separated into \geq 2 buildings by fire walls < 4 hours without openings	Throughout Group E structure	—	
	or Public school state funded construction project (see CFC/CBC 903.2.19)	All occupancies	Sprinklers not required for a , a relocatable building that is sited with intent to be at site for <3years on temporary foundation or detached buildings for non-instructional purposes that meet the requirements for that occupancy including concession stands, press boxes, restroom facilities, shade structures, snack bars, storage buildings or ticket booths	
F-1	Fire area > 5,000 sq. ft.	Throughout building containing Group F-1	—	CFC/CBC 903.2.4, Muni Code 9-19.02
	or Fire area located > 3 stories above grade plane			
	or Combined fire area on all floors including any mezzanine > 10,000 sq. ft.			
	or Manufacturing of upholstered furniture or mattresses > 2,500 sq. ft.			
	or Woodworking operations > 2,500 sq. ft.	Throughout F-1 fire area containing woodworking operations > 2,500 sq. ft.	—	
H	Sprinklers required	Throughout occupancy	—	CFC/CBC 903.2.5
I	Sprinklers required	Throughout building containing Group I	—	CFC/CBC 903.2.6
L	Sprinklers required	Throughout building containing Group L	—	CFC/CBC 903.2.16

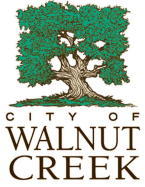


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M	Fire area > 5,000 sq. ft.	Throughout building containing Group M	—	CFC/CBC 903.2.7, Muni Code 9-19.02
	or Fire area located > 3 stories above grade plane			
	or Combined fire area on all floors including any mezzanine > 10,000 sq. ft.			
	or Display and sale of upholstered furniture > 5,000 sq. ft.			
	or Structure > 10,000 sq. ft., containing > 1 fire area, and separated into ≥ 2 buildings by fire walls < 4 hours			
	or High-piled storage			
R-1	Sprinklers required	Throughout building	—	CFC/CBC 903.2.8
R-2	Sprinklers required	Throughout building	—	CFC/CBC 903.2.8
R-2.1	Sprinklers required	Throughout building	See CFC/CBC 903.2.8 Exceptions 3 and 4	CFC/CBC 903.2.8, CBC 425.7
R-4	Sprinklers required	Throughout building	See CFC/CBC 903.2.8 Exceptions 3 and 4	CFC/CBC 903.2.8, CBC 425.7
S-1	Fire area > 5,000 sq. ft.	Throughout building containing Group S-1	—	CFC/CBC 903.2.9, Muni Code 9-19.02
	or Fire area located > 3 stories above grade plane			
	or Combined fire area on all floors including any mezzanine > 10,000 sq. ft.			
	or Fire area for storage of commercial trucks and buses where fire area > 5,000 sq. ft.			
	or Storage of upholstered furniture or mattresses > 2,500 sq. ft.			
S-1 Repair Garage	Fire area containing repair garage > 5,000 sq. ft.	Throughout building used as repair garage	—	CFC/CBC 903.2.9, Muni Code 9-19.02
	or Repair garage servicing vehicles in basement			
S-1 Bulk storage of tires	Tire storage > 20,000 cu. ft.	Throughout building and structures	—	CFC/CBC 903.2.9
S-2 Enclosed Parking Garage	Fire area > 5,000 sq. ft.	Throughout building classified as enclosed parking garage	—	CFC/CBC 903.2.10, Muni Code 9-19.02
	or Located beneath other occupancy groups			

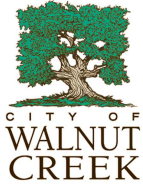


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Occupancy	Sprinkler Threshold	Location of Sprinkler System	Exception	Code Reference
All occupancies except U	Story without openings where floor area > 1,500 sq. ft. and where there is not provided at least one of the types of exterior wall openings specified in CBC 903.2.11.1	Throughout story	—	CFC/CBC 903.2.11.1
All occupancies except U	Building with a floor level \geq 55 feet above fire department vehicle access and occupant load \geq 30	Throughout building	Sprinklers not required for airport control towers, open parking garages, or Group F-2	CFC/CBC 903.2.11.3
All occupancies except U	Rubbish and linen chutes; ducts conveying hazardous exhausts; commercial kitchen exhaust hood and duct systems	See code reference	—	CFC/CBC 903.2.11.2, 903.2.11.4, 903.2.11.5
See Table as noted in code reference for specific buildings and areas where fire suppression systems are required				CFC/CBC Table 903.2.11.6
Refer to codes and any other applicable regulations or standards for other triggers and thresholds				



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ADDITIONS AND EXPANSIONS

For existing commercial and multifamily residential buildings that undergo additions and expansions, sprinklers are required if **both** of the following criteria are met:

- Addition of new fire area > 50% of existing fire area
 (In other words, the expansion increases the existing fire area by more than 50%)
- AND** ● The resulting new total fire area > 5,000 sq. ft.

Sprinklers are not required if neither criterion is met. Sprinklers are not required if only one criterion is met and not the other.

[Code Reference: CFC 903.6, Muni Code 9-19.02]

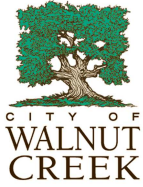
CHANGES OF OCCUPANCY CLASSIFICATION

For existing commercial and multifamily residential buildings that undergo a change of occupancy classification, sprinklers are required if **both** of the following criteria are met:

- Change of occupancy classification results in a higher hazard category based upon the table below
 (In other words, the change of occupancy classification is from a lower hazard category to a higher one)

2012 International Existing Building Code
 Table 1012.5
 Heights and Areas Hazard Categories

Relative Hazard	Occupancy Classifications	Typical Uses
1 (Highest Hazard)	H L	Hazardous materials Laboratories
2	A-1 A-2 A-3 A-4 I R-1 R-2 R-4	Theaters Restaurants Community halls, gyms, churches Indoor sports – arenas, skating rinks Institutional – hospitals, prisons, commercial day care Hotels, motels Apartments Assisted living facilities
3	E F-1 S-1 M	Schools through 12 th grade Factory industrial moderate-hazard Storage moderate-hazard Retail stores
4 (Lowest Hazard)	B F-2 S-2 A-5 R-3, R-3.x U	Offices Factory industrial low-hazard (noncombustible) Storage low-hazard (noncombustible), parking garages Outdoor activities – stadiums Single-family residences and duplexes Accessory, misc. – private garages, carports, sheds



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AND • The new occupancy fire area > 5,000 sq. ft., or the new occupancy meeting any of its sprinkler thresholds in the table for New Buildings above

Sprinklers are not required if change of occupancy classification is made to an equal or lower hazard category. Sprinklers are not required if neither criterion is met. Sprinklers are not required if only one criterion is met and not the other.

[Code Reference: CFC 903.6, Muni Code 9-19.02]

Definitions

Fire Area: The aggregate floor area enclosed and bounded by *fire walls, fire barriers, exterior walls, or horizontal assemblies* of a building. Areas of the building not provided with surrounding walls shall be included in the fire area if such areas are included within the horizontal projection of the roof or floor next above. (CFC/CBC 202)

Fire Wall: A fire-resistance-rated wall having protected openings, which restricts the spread of fire and extends continuously from the foundation to or through the roof, with sufficient structural stability under fire conditions to allow collapse of construction on either side without collapse of the wall. (CFC/CBC 202)

Fire Barrier: A fire-resistance-rated wall assembly of materials designed to restrict the spread of fire in which continuity is maintained. (CFC/CBC 202)

Exterior Wall: A wall, bearing or nonbearing, that is used as an enclosing wall for a building, other than a *fire wall*, and that has a slope of 60 degrees or greater with the horizontal plane. (CFC/CBC 202)

Horizontal Assembly: A fire-resistance-rated floor or roof assembly of materials designed to restrict the spread of fire in which continuity is maintained. (CFC/CBC 202)