

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-048

**Summary of Automatic Residential Fire Sprinkler Thresholds
 for Single-Family and Duplex Residential,
 Garage and Carport Accessory to Residential,
 and Residential Care Facility Projects**

This bulletin summarizes automatic residential fire sprinkler thresholds for single-family residential, duplex residential, garage and carport accessory to residential, and residential care facility projects. The requirements are based on the 2013 California Residential Code (CRC), California Fire Code (CFC) and California Building Code (CBC).

In accordance with the R-3.1 occupancy classification in CRC, CFC and CBC and the Health and Safety Code, R-3.1 occupancies (residential care facilities) are to be regulated as R-3 single-family and duplex residential structures for construction purposes.

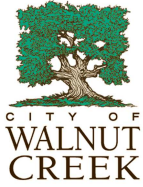
Highlighted portions denote local amendments adopted by the City of Walnut Creek and the Contra Costa County Fire Protection District. These local amendments generally lower the sprinkler thresholds for residential additions. The effective date of these amendments is March 6, 2014.

When an automatic residential fire sprinkler system is required, it must be in accordance with CRC Section R313.3, or NFPA 13D with amendments in CRC with Chapter 44.

The Contra Costa County Fire Protection District will perform plan review and inspection services related to automatic residential 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

Occupancy	Project Type	Residential Sprinkler Requirement	Location of Residential Sprinkler System	Exception	Code Reference
R-3	New Single-Family Residence or Duplex	Sprinklers required	Residential sprinklers throughout	Sprinklers not required at the following locations (see CRC R313.3.1.1): 1) Attics and crawl spaces without fuel-fired appliances 2) Closets and pantries ≤ 24 sf, with smallest dimension ≤ 3', with gypsum board at wall and ceiling 3) Bathrooms ≤ 55 sf 4) Open attached porches ; unheated entry areas adjacent to exterior door (e.g., mud room)	CRC R313.2
R-3.1	New Residential Care Facility	Sprinklers required	Residential sprinklers throughout	See CRC R325.5.1 Exceptions; or CFC/CBC 903.2.8 Exceptions. Same as R-3. Sprinklers not required	CRC R325.5; or CFC/CBC 903.2.8, CBC 425.7.1



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U Accessory to R-3	New Attached garage	Sprinklers required	Residential sprinklers throughout	—	CRC R309.6; or CFC/CBC 903.2.18
	New Detached garage	Sprinklers not required	—	—	CRC R313.3.1.1 Exception 4
	New Carport with Habitable Space Above	Sprinklers required	Residential sprinklers throughout	—	CRC R309.6; or CFC/CBC 903.2.18
	New Carport without Habitable Space Above	Sprinklers not required	—	—	CRC R313.3.1.1 Exception 4

ADDITIONS AND EXPANSIONS

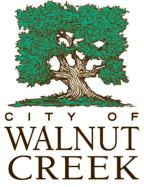
❖ For additions and expansions to existing *non-sprinklered* R-3 single-family and duplex residential buildings, existing *non-sprinklered* garage or carport accessory to R-3, or existing *non-sprinklered* R-3.1 residential care facilities, residential sprinklers *throughout the building (not just the addition)* 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 > 3,600 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.

Refer to the last section of this bulletin for the definition of fire area.



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For a Group R-3 single-family residence with a Group U attached garage or carport where the garage or carport separation from the dwelling does not meet the definition and requirement of a fire wall, fire barrier or horizontal assembly, when determining the R-3 fire area, the garage or carport is considered part of the fire area. See the example below.

[Code Reference: CFC/CBC 903.2.8, Muni Code 9-19.02] [CRC R313.2 Exception superseded; CRC R309.6 Exception superseded or CFC/CBC 903.2.18 Exception superseded]

❖ For existing *sprinklered* R-3 single-family and duplex residential buildings, existing *sprinklered* garage or carport accessory to R-3, or existing *sprinklered* R-3.1 residential care facilities, all additions and expansions must be sprinklered regardless of fire area added.

• Example:

(E) R-3 residence	= 2,000 sf	No sprinklers
(E) U attached garage	= 400 sf	No sprinklers
Proposed R-3 addition	= 980 sf	
Proposed U attached garage addition	= 240 sf	

Dwelling/garage separation does not meet the definition and requirement of a fire wall, fire barrier or horizontal assembly.

Fire area = R-3 + U

Check criterion 1: Addition of new fire area > 50% of existing fire area
 (In other words, the expansion increases the existing fire area by more than 50%)

$$\frac{980 + 240}{2000 + 400} = \frac{1220}{2400} = 50.8\% > 50\%$$

Check criterion 2: The resulting new total fire area > 3,600 sq. ft.

$$2000 + 400 + 980 + 240 = 3620 > 3600$$

Both criteria are met.

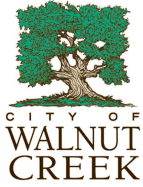
Residential fire sprinklers are required.

Per the Fire Protection District, the sprinklers are required throughout the building, including the attached garage.

R-3.1 CONVERTED FROM EXISTING R-3

For Group R-3.1 occupancies (residential care facilities) that are converted from existing Group R-3 occupancies (single-family and duplex residential buildings), residential fire sprinklers are required throughout if any of the following conditions occurs:

- ≥ 2 bedridden clients
- or ≥ 1 bedridden client and does not comply with CRC R325.6.3.3 or CBC 425.8.3.3
- or Nonambulatory client above 1st floor
- or Any client above 2nd floor



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[Code Reference: CRC R325.5.1 Exceptions 1 and 2; or CFC/CBC 903.2.8 Exceptions 1 and 2, CBC 425.7.1]

• Example:

(E) R-3 is being converted to R-3.1. Addition of bedrooms and bathrooms are also proposed.

(E) R-3 residence = 2,000 sf No sprinklers

(E) U attached garage = 400 sf No sprinklers

Proposed R-3 addition = 980 sf

No proposed U attached garage addition

Dwelling/garage separation does not meet the definition and requirement of a fire wall, fire barrier or horizontal assembly.

There is no bedridden client, no nonambulatory client above the 1st floor, and no client above the 2nd floor.

Step 1. Check addition as R-3.

Fire area = R-3 + U

Check criterion 1: Addition of new fire area > 50% of existing fire area

(In other words, the expansion increases the existing fire area by more than 50%)

$$\frac{980}{2000 + 400} = \frac{980}{2400} = 40.8\% < 50\%$$

Check criterion 2: The resulting new total fire area > 3,600 sq. ft.

$$2000 + 400 + 980 = 3380 < 3600$$

Neither criterion is met. Sprinklers are not required at this point. Proceed to step 2.

Step 2. Check the conversion of the total R-3 to R-3.1.

Determine the type and location of the clients.

Since there is no bedridden client, no nonambulatory client above the 1st floor, and no client above the 2nd floor, this meets CRC R325.5.1 Exception 1.

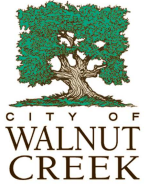
Residential fire sprinklers are not required.

Reversing steps 1 and 2 yields the same results.

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)



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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)