



Planning & Development
Building & Safety Division

CITY OF BERKELEY
Planning and Development, Building & Safety Division
2120 Milvia Street
Berkeley, CA 94704
510.981.7440

GUIDELINE: **RESTRICTIONS IN FIRE ZONES**

ISSUE DATE: **February 19, 2003**

LAST REVISION DATE: **August 14, 2012**

This guideline is intended to enhance local consistency in application and enforcement of the California Building and Residential Codes. Application of this guideline is project specific and does not authorize any violation of local or state code, ordinance or law in conjunction with the proposed work

CODE REFERENCES:

BMC Section 19.29.040 / 2010 CRC Section R327, Materials and Construction Methods for Exterior Wildfire Exposure

BMC Section 19.28.030 / 2010 CBC Chapter 7A, Materials and Construction Methods for Exterior Wildfire Exposure

CITY OF BERKELEY FIRE ZONES

FIRE ZONE ONE encompasses the entire City of Berkeley except for Fire Zones Two and Three. Buildings or structures complying with the requirements of the California Building Standards Code may be erected, constructed, expanded, altered, repaired, moved within or into Fire Zone One

FIRE ZONE TWO encompasses those areas designated as Combined Hillside District in the Official Zoning map of the City of Berkeley and those areas designated as Very High in the official Fire Hazard Severity Zones (FHSZ) map of The Department of Forestry and Fire Protection (CAL FIRE), as they may be amended from time to time. Please refer to BMC Sections 19.28.030 and 19.28.040 for a complete description

FIRE ZONE THREE encompasses those areas designated as Environmental Safety – Residential Districts on the Official Zoning Map of the City of Berkeley, as it may be amended from time to time

RESTRICTIONS IN FIRE ZONE TWO

Effective July 1, 2008, the following requirements, standards, and provisions apply to the construction, re-construction, addition, alteration, repair and re-roofing of any building and or structure located in Fire Zone Two:

1. **Roofs** shall be a Class A minimum. Roofs shall have a roofing assembly installed in accordance with its listing and the manufacturer's installation instructions. Wooden shakes and shingles are prohibited roof coverings regardless of the assembly rating of the roof system.

Exception: Replacement of less than 50% of the roof area within a 5 year period.

2. **Roof Profile:** where the roof profile allows a space between the roof covering and roof decking, the spaces shall be constructed to prevent the intrusion of flames and embers, be fire-stopped with approved materials, or have one layer of minimum 72 pound mineral-surfaced nonperforated cap sheet complying with ASTM D 3909 installed over the combustible decking.
3. **Roof Valley Flashings** shall not be less than 0.019-inch (#26 galvanized steel gage) corrosion-resistant material installed over a minimum 36 inches wide underlayment consisting of one layer of minimum 72 pound mineral-surfaced nonperforated cap sheet complying with ASTM D 3909, at least 36" wide running the full length of the valley..
4. **Roof Gutters** shall be provided with the means to prevent the accumulation of leaves and debris in the gutter.
5. **Spark Arrestors.** All chimneys of fireplaces, stoves, barbecues or heating appliances using solid fuel shall be provided with an approved spark arrestor whenever modification has been made to any of these appliances, or whenever a structure is re-roofed. The net free area of the spark arrestor shall be not less than four times the net free area of the outlet of the chimney. The spark arrestor shall have heat and corrosion resistance equivalent to twelve-gauge wire, nineteen gauge galvanized wire, or twenty-four-gauge stainless steel. Openings shall not permit the passage of spheres having a diameter larger than one-half inch and shall not block the passage of spheres having a diameter of less than three-eighths inch. The arrestor shall be securely attached to the chimney or stovepipe and shall be adequately supported. The use of bands, mollies, masonry anchors or mortar ties are recommended depending upon the individual need.
6. **Eave Vents** shall not be installed on the underside of eaves and cornices unless:
 - a. Eave vents incorporate features which inhibit intrusion of flames and burning embers OR
 - b. Attic is fully protected by an approved automatic sprinkler system OR
 - c. Exterior wall covering and exposed underside of the eaves are of noncombustible material or ignition-resistant materials and the eave vents are located more than 12 ft above the ground or walking surface
7. **Exterior Siding** shall be one of the following:
 - a. Ignition-resistant material (shall bear identification issued by ICC-ES or a testing agency recognized by the State Fire Marshal) OR
 - b. Noncombustible material OR
 - c. Heavy-timber assembly OR
 - d. Materials providing protection from the intrusion of flames and embers in accordance with Standard SFM 12-7A-1. Exterior wall siding material listings approved by the office of the State Fire Marshall are available on line at:
www.osfm.fire.ca.gov/strucfireengineer/pdf/bml/wuiproducts.pdf **OR**
 - e. One layer of 5/8" Type X gypsum sheathing applied behind the exterior covering or cladding on the exterior side of the framing OR
 - f. The exterior portion of an approved "listed" one-hour fire-resistance rated exterior wall assembly designed for exterior fire exposure

Exception: Where less than 50% of any wall surface is being replaced or repaired, and the matching of the new plane to the existing plane on that wall is not possible.

8. **Exterior Windows and Glazed Openings within Exterior Doors** shall be one of the following:
 - a. Multipane glazing with a minimum of one tempered pane
 - b. Glass block units
 - c. 20-minute rated when tested according to NFPA 257
 - d. Conform to the performance requirements of Standard SFM 12-7A-2
9. **Exterior Doors** shall be one of the following:
 - a. Exterior surface or cladding of noncombustible or ignition-resistant material
 - b. Solid core wood with stiles not less than 1- 3/8" thick and raised panels not less than 1- 1/4" thick
 - c. 20-minute rated when tested according to NFPA 252
 - d. Conform to the performance requirements of Standard SFM 12-7A-1
10. **Decking:** exterior walking surfaces of decks, porches, balconies and stairs shall be one of the following:
 - a. Ignition-resistant material that complies with the performance requirements of both SFM Standard 12-7A-4 (materials shall bear identification issued by ICC-ES or a testing agency recognized by the State Fire Marshal) and SFM Standard 12-7A-5
 - b. Exterior fire retardant treated wood
 - c. Approved non-combustible materials
 - d. Materials passing performance requirements of SFM 12-7A-4A, when attached exterior wall covering is also either noncombustible or ignition resistant. Decking material listings approved by the office of the State Fire Marshall are available on line at:
www.osfm.fire.ca.gov/strucfireengineer/pdf/bml/wuiproducts.pdf
Exception: wall covering may be of any approved material when the decking surface material complies with the performance requirements of ASTM E 84 with a class B flame spread rating
11. **Open Roof Eaves:** the exposed roof deck at unenclosed roof eaves shall consist of one of the following:
 - a. Noncombustible material OR
 - b. Ignition-resistant material (shall bear identification issued by ICC-ES or a testing agency recognized by the State Fire Marshal) OR
 - c. One layer of 5/8" Type X gypsum sheathing applied behind an exterior covering on the underside of roof deck OR
 - d. The exterior portion of an approved "listed" one-hour fire-resistance rated assembly applied to the underside of the roof deck

Exception: gable end overhangs and roof assembly projections beyond an exterior wall other than at the lower end of the rafter tails.
12. **Enclosed Roof Eaves, Soffits and Porch Ceilings:** the exposed underside of roof eaves and porch ceilings shall be protected by one of the following:
 - a. Noncombustible material OR
 - b. Ignition-resistant material (shall bear identification issued by ICC-ES or a testing agency recognized by the State Fire Marshal) OR

- c. One layer of 5/8" Type X gypsum sheathing applied behind the exterior covering on the underside of the projection OR
- d. The exterior portion of an approved "listed" one-hour fire-resistance rated assembly applied to the underside of the projection OR
- e. Underside materials that meet the performance criteria in accordance with SFM Standard 12-7A-3. Material listings approved by the office of the State Fire Marshall are available on line at: www.osfm.fire.ca.gov/strucfireengineer/pdf/bml/wuiproducts.pdf

Exception: gable end overhangs and roof assembly projections beyond an exterior wall other than at the lower end of the rafter tails

13. **Floor Projections:** the exposed underside of cantilevered floor projections extending beyond exterior walls shall be protected by one of the following per CRC Section R327.7.7:

- a. Ignition-resistant material (shall bear identification issued by ICC-ES or a testing agency recognized by the State Fire Marshal) OR
- b. Noncombustible material OR
- c. One layer of 5/8" Type X gypsum sheathing applied behind an exterior covering on the underside of the floor projection OR
- d. The exterior portion of an approved "listed" one-hour fire-resistive exterior wall assembly applied to the underside of the floor projection OR
- e. Materials providing protection from the intrusion of flames and embers in accordance with the test procedures set forth in SFM Standard 12-7A-3. Material listings approved by the office of the State Fire Marshall are available on line at: www.osfm.fire.ca.gov/strucfireengineer/pdf/bml/wuiproducts.pdf

14. **Underfloor Protection:** the underfloor areas of elevated or overhanging buildings/additions shall be enclosed to grade in accordance with the requirements for exterior walls OR the underside of the exposed underfloor shall consist of one of the following:

- a. Ignition-resistant material (shall bear identification issued by ICC-ES or a testing agency recognized by the State Fire Marshal) OR
- b. Noncombustible material OR
- c. One layer of 5/8" Type X gypsum sheathing applied behind an exterior covering on the underside of the floor area OR
- d. The exterior portion of an approved "listed" one-hour fire-resistive exterior wall assembly applied to the underside of the floor area OR
- e. Materials providing protection from the intrusion of flames and embers in accordance with the test procedures set forth in SFM Standard 12-7A-3. Material listings approved by the office of the State Fire Marshall are available on line at: www.osfm.fire.ca.gov/strucfireengineer/pdf/bml/wuiproducts.pdf

Exception: heavy-timber structural columns and beams do not require protection

15. **Accessory Structures:** gazebos, carports, patio covers, trellises, arbors and similar accessory structures shall be constructed of noncombustible or ignition-resistant materials.

16. **Underground Utility Connections:** For new construction in the Wildland-Urban Interface Fire Zone Two provisions shall be made for the undergrounding of all utilities, including but not limited to electrical, telephone, cable televisions, etc. by the installation of appropriately sized underground conduits extending from the street.

RESTRICTIONS IN FIRE ZONE THREE

Buildings or structures erected, constructed, moved, altered, added, or repaired within Fire Zone Three shall comply with the requirements for buildings or structures in Fire Zone Two and in addition shall meet the following requirements:

17. **Fire Warning System:** All residential units shall be equipped with a Fire Warning System as specified by the residential smoke detector requirements of the current edition of the California Building Code and with an audible exterior alarm. The exterior alarm must meet the requirements of NFPA 72 or equivalent and generate 45 decibels ten feet from the alarm, or more.
18. **Automatic Fire Sprinklers:** Any new construction or new additions to existing structures requiring a permit determined to be \$100,000 or more in construction costs shall be required to install automatic fire sprinklers throughout the existing structure.
19. **Utilities:** Utilities, pipes, furnaces, water heaters or other mechanical devices located in an exposed underfloor area of a building or structure shall be enclosed with material as required for exterior one hour fire resistive construction. Adequate covered access openings for servicing and ventilation of such facilities shall be provided as required by appropriate codes.
20. **Control of Brush or Vegetation:** Brush and vegetation shall be controlled as required in the Berkeley Fire Code
21. **Special Conditions.** The following additional conditions must be met:
 - a. Public access roads and fire trails. No person(s) shall use any public access road or fire trail for the storage of any construction material, stationary construction equipment, construction office, portable refuse container, or earth from any grading or excavating.
 - b. Water Service. The water service to the site shall be installed with a 3/4" hose bib connection prior to beginning any wood framing. The person responsible for the construction shall have at the site a 75 ft 3/4" hose available.