WILDLAND URBAN INTERFACE FIRE AREAS

SECTION 337.5 ROOFING

337.5.1 GENERAL. Roofs shall comply with the requirements of Chapter R337 and R902..
Roofs shall have a roofing assembly installed in accordance with its listing and the manufacturer's installation instructions.

R337.5.2 ROOF COVERINGS. Where the roof profile allows a space between the roof covering and the roof deck, the spaces shall be constructed to prevent the intrusion of flames and embers, be firestopped 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.

R337.5.3 ROOF VALLEYS. Where valley flashing is installed, the flashing shall be not less than 0.019 inch No. 26 gauge galvanized sheet corrosion-resistant metal installed over not less than one layer of minimum 72-pound mineral-surfaced nonperforated cap sheet complying with ASTM D3909, at least 36" wide running the full length of the valley.

R337.5.4 Roof Gutters.
Roof gutters shall be provided with the means to prevent the accumulation of leaves and debris in the gutters

SECTION R337.6 VENTS

R337.6.1 GENERAL. Where provided, ventilation openings for enclosed attics. enclosed eave soffit spaces, enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters, and underfloor ventilation shall be in accordance with Sections 1203 of the CBC and Sections R337.6.1 through R337.6.3 to resist building ignition from the intrusion of burning embers and flame through the ventilation openings.

R337.6.2 REQUIREMENTS. Ventilation openings for enclosed attics, enclosed eave soffit spaces, enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters, and underfloor ventilation openings shall be fully covered with metal wire mesh, vents or other materials or other devices that meet the following requirements:

1. Listed vents complying with ASTM E2886 and comply with all of the following:

1.1 - There shall be no flaming ignition of the cotton material during the ember intrusion test.
1.2 - There shall be no flaming ignition during the Integrity Test portion of the flame intrusion test. The maximum temperature of the unexposed side of the vent shall not exceed 662 F. (350 C.).

2. Vents complying with all of the following:

2.1 - The dimensions of the openings therein shall be a minimum of 1/16" and shall not exceed 1/8"
2.2 - The materials used shall be non-combustable.

Exception: Vents located under the roof covering, along the ridge of roofs, with the exposed surface of the vent covered by noncombustible wire mesh, may be of combustible materials.

2.3 - The materials used shall be corrosion resistant.

R337.6.3 VENTILATION OPENINGS ON THE UNDERSIDE OF EAVES AND CORNICES. Vents shall not be installs on the underside of eaves and cornices.
Exceptions:

1. Listed vents complying with ASTM E2886.

1.1 - There shall be no flaming ignition of the cotton material during the ember intrusion test
1.2 - There shall be no flaming ignition during the Integrity Test portion of the flame intrusion test. The maximum temperature of the unexposed side of the vent shall not exceed 662 F. (350 C.).

2. The enforcing agency may accept or approve special eave and cornice vents that resist the intrusion of flame and burning embers.

3. Vents complying with the requirements of section 706A.2 may be installed on the underside of eaves and cornices in accordance with either one of the following conditions:

3.1 The attic space being ventilated is fully protected by an automatic sprinkler system installed in accordance with Section 903.3.1.1 of the California Building Code or,
3.2 The exterior wall covering and exposed underside of the eave are of non-combustible materials or ignition resistant materials, as determined in accordance with SFM Standard 12-7A-5 Ignition-Resitance Material and the requirements of section R337.4.3, and the vent is located more than 12 feet from the ground or walking surface of a deck, porch patio or similar surface.

SECTION R337.7 EXTERIOR COVERING.

R337.7.1 Scope.
The provisions of this section shall govern the materials and construction methods used to resist building ignition and / or safegard against the intrusion of flames resulting from small ember and short-term direct flame contact exposure.

R337.7.2 General.
The following exterior covering materials and / or assemblies shall comply with this section:

1. Exterior wall covering material.
2. Exterior wall assembly.
3. Exterior exposed underside of roof eve overhangs.
4. Exterior exposed underside of roof eave soffits.
5. Exposed underside of exterior porch ceilings.
6. Exterior exposed underside of floor projections.
7. Exterior underfloor areas.

Exceptions:

1. Exterior wall architectural trim embellishments, fascias and gutters.
2. Roof or wall top cornice projections and similar assemblies.
3. Roof assembly projections over gable end walls.
4. Solid wood rafter tails and solid wood blocking installed between rafters having minimum dimension 2" nominal.
5. Deck walking surfaces shall comply with Section R337.9 only.

R337.7.3 Exterior walls
Exterior wall covering or wall assembly shall comply with on of the following requirements:

1. Non-combustible material.
2. Ignition-resistance material.
3. Heavy Timber exterior wall assembly.
4. Log wall construction assembly.
5. Wall assemblies that meet the performance criteria in accordance with the test procedures for a 10-minute direct flame contact exposure tests set forth in ASTM E2707 with the conditions of acceptance shown in Section R337.7.3.1.
6. Wall assemblies that meet the performance criteria in accordance with the test procedures for a 10-minute direct flame contact exposure tests set forth in SFM Standard 12-7A-1.

Exception: Any of the following shall be deemed to meet the assembly performance criteria and intent of this section:

1. One layer of 5/8" Type 'X' gypsum sheathing applied behind the exterior covering or cladding on the exterior side of the framing.

2. The exterior portion of a 1-hour fire resistive exterior wall assembly designed for exterior fire exposure including assemblies using gypsum panel and sheathing products in the Gypsum Association Fire Resistance Design Manual.

R337.7.3.2 EXTENT OF EXTERIOR WALL COVERING.
Exterior wall coverings shall extend from the top of the foundation to the roof, and terminate at 2" nominal solid wood blocking between rafters at all roof overhangs, or in the case of enclosed eaves, terminate at the enclosure.

R337.7.4 OPEN ROOF EAVES.
The exposed roof decking on the underside of unenclosed roof eaves shall consist of one of the following:

1. Non-combustible material.of roof eave soffits.
2. Ignition-resistant material.
3. One layer of 5/8" Type 'X' gypsum sheathing applied behind an exterior covering on the underside exterior of the roof deck.
4. The exterior portion of a 1-hour fire resistive exterior wall assembly applied to the underside of the roof deck designed for exterior fire exposure including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual.

Exceptions: The following materials do not require protection:

1. Solid wood rafter tails on the exposed underside of open roof eaves having a minimum nominal dimension of 2"
2. Solid wood blocking installed between rafter tails on the exposed underside of open roof eaves having a minimum nominal dimension of 2"
3. Gable end overhangs and roof assembly projections beyond an exterior wall other than at the lower end of the rafter tails.
4. Fascia and other architectural trim boards.

R337.7.5 ENCLOSED ROOF EAVES AND ROOF EAVE SOFFITS.
The exposed underside of enclosed roof eaves having wither a boxed-in roof eave soffit with a horizontal underside, or sloped rafter tails with an exterior covering applied to the underside of the rafter tails, shall be protected by one of the following:
1. Non-combustible material.
2. Ignition-resistant material.
3. One layer 5/8" Type 'X' gypsum sheathing applied behind an exterior covering on the underside of the rafter tails or soffit.
4. The exterior portion of a 1-hour fire resistive exterior wall assembly appled to the underside of the rafter tails or soffit including assemblies using the gypsum panel ans sheathing products listed in the Gypsum Association Fire Resistance Design Manual.
5. Boxed-in roof eave soffit assemblies with horizontal underside that meet the performance criteria in Section R337.7.10 when tested in accordance with test procedures set forth in ASTM E2957.
6. Boxed-in roof eave soffit assemblies with horizontal underside that meet the performance criteria in accordance with test procedures set forth in SFM Standard 12-7A-3.

Exceptions: The following materials do not require protection:
1. Gable end overhangs and roof assembly projections beyond an exterior wall other than at the lower end of the rafter tails.
2. Fascia and other architectural trim boards.

R337.7.6 EXTERIOR PORCH CEILINGS.
The exposed underside of exterior porch ceilings shall be protected by one of the following:

1. Non-combustible material.
2. Ignition-resistant material.
3. One layer 5/8" Type 'X' gypsum sheathing applied behind the exterior covering on the underside of the ceiling.
4. The exterior portion of a 1-hour fire resistive exterior all assembly applied to the underside of the ceiling assembly including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual.
5. Porch and ceiling assemblies with a horizontal underside that meet the performance criteria in Section R337.7.10 when tested in accordance with the test procedures set forth in ASTM E2957.
6. Porch and ceiling assemblies with a horizontal underside that meet the performance criteria in accordance with the test procedures set forth in SFM 12-7A-3.

Exception: Architectural trim boards

R337.7.7 FLOOR PROJECTIONS.
The exposed underside of a cantilevered floor projection where a floor assembly extends over an exterior wall shall be protected by one of the following:

1. Non-combustible material.
2. Ignition-resistant material.
3. One layer 5/8" Type 'X' gypsum sheathing applied behind the exterior covering on the underside of the floor projection.
4. The exterior portion of a 1-hour fire resistive exterior all assembly applied to the underside of the floor projection including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual.
5. The underside of the floor projection assembly that meet the performance criteria in Section R337.7.10 when tested in accordance with the test procedures set forth in ASTM E2957. with the test procedures set forth in SFM Standard 12-7A-3
6. The underside of the floor projection assembly that meet the performance criteria in accordance with the test procedures set forth in SFM Standard 12-7A-3

Exception: Architectural trim boards.

R337.7.8 UNDERFLOOR PROTECTION.
The underfloor area of elevated or overhanging buildings shall be enclosed to grade in accordance with the requirements of this chapter or the underside of the exposed underfloor shall consist of one of the following:

1. Non-combustible material.
2. Ignition-resistant material.
3. One layer 5/8" Type 'X' gypsum sheathing applied behind the exterior covering on the underside of the floor projection.
4. The exterior portion of a 1-hour fire resistive exterior all assembly applied to the underside of the floor including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual.
5. The underside of the floor assembly that meet the performance criteria in Section R337.7.10 when tested in accordance with the test procedures set forth in ASTM E2957. with the test procedures set forth in SFM Standard 12-7A-3
6. The underside of the floor assembly that meet the performance criteria in accordance with the test procedures set forth in SFM Standard 12-7A-3

Exceptions:
Heavy timber structural columns and beams do not require protection.

R337.7.8 UNDERSIDE OF APPENDAGES.
When required by enforcing agency the underside of overhanging appendages shall be enclosed to grade in accordance with the requirements of this chapter or the underside of the exposed under floor shall consist of one of the following:

1. Non-combustible material.
2. Ignition-resistant material.
3. One layer 5/8" Type 'X' gypsum sheathing applied behind the exterior covering on the underside of the floor projection.
4. The exterior portion of a 1-hour fire resistive exterior all assembly applied to the underside of the floor including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual.
5. The underside of the floor assembly that meet the performance criteria in Section R337.7.10 when tested in accordance with the test procedures set forth in either of the following:
   5.1 - SFM Standard 12-7A-3
   5.2 - ASTM E2957.

Exceptions:
Heavy timber structural columns and beams do not require protection.

SECTION R337.8 EXTERIOR WINDOWS, SKYLIGHTS & DOORS

R337.8.2 EXTERIOR GLAZING.
The following exterior glazing materials and/or assemblies shall comply with this section:

1. Exterior windows.
2. Exterior glazed doors.
3. Glazed openings within exterior doors.
4. Glazed openings within exterior garage doors.
5. Exterior structural glass veneer.
6. Skylights
7. Vents

R337.8.2.1 EXTERIOR WINDOWS, SKYLIGHTS AND EXTERIOR GLAZED DOOR ASSEMBLY REQUIREMENTS.
Exterior windows and exterior door assemblies shall comply with one of the following requirements:

1. Be constructed of multi-pane glazing with a minimum of one tempered pane meeting the requirements of section R308 Safety Glazing, or
2. Be constructed of glass block, or
3. Have a fire-resistance rating of not less than 20 minutes when tested according to NFPA 257, or
4. Be tested to meet the performance requirements of SFM Standard 12-7A-2

R337.8.2 STRUCTURAL GLASS VENEER.
The wall assembly behind structural glass veneer shall comply with Section R337.7.3.

R337.8.3 EXTERIOR DOORS.
Exterior doors shall comply with one of the following:

1. The exterior surface or cladding shall be of non-combustible or
2. The exterior surface or cladding shall be of ignition-resistance material, or
3. The exterior door shall be constructed of solid core wood that comply with the following requirements:

   3.1 Stiles and rails shall be not less than 1 3/8" thick.
   3.2 Panels shall not be less than 1 1/4" thick, except for the exterior perimeter of the raised panel that may taper to a tongue not less than 3/8" thick.

4. The exterior door shall have a fire-resistance rating of not less than 20 minutes when tested according to NFPA 252.
5. The exterior surface or cladding shall be tested to meet the performance requirements of ASTM E2707.
6. The exterior surface or cladding shall be tested to meet the performance requirements of SFM Standard 12-7A-1

R337.8.3.1 EXTERIOR DOOR GLAZING.
Glazing in exterior doors shall comply with Section R337.8.2.1

R337.8.4 WEATHER STRIPPING.
Exterior garage doors shall be provided with weather stripping to resist the intrusion of embers from entering through gaps between doors and door openings when visible gaps exceed 1/8". Weather stripping or seals shall be installed on the bottom, sides and tops of doors to reduce gaps between doors and door openings to 1/8" or less.

SECTION R337.9 DECKING

R337.9.1 GENERAL.
The walking surface materials of decks, porches balconies and stairs shall comply with the requirements of this section.

R337.9.2 WHERE REQUIRED.
The walking surface material of decks, porches, balconies and stairs shall comply with the requirements of this section when any portion of such surface is within 10 feet of the building.

R337.9.3 DECKING SURFACES. The walking surface material of decks, porches, balconies and stairs shall be constructed with one of the following materials:

1. Material that complies with the performance requirements of Section R337.9.4 when tested in in accordance with both ASTM E2632 and ASTM E2726.
2. Ignition-resistane material that complies with the performance requirements of Section R337.4.3 when tested in accordance with ASTM 84 or UL 723.
3. Material that complies with the performance requirements of both SFM Standard 12-7A-4 and SFM Standard 12-7A-5.
4. Exterior fire retardant wood.
5. Non-combustible material
6. Any material that complies with the performance requirements of SFM Standard 12-7A-4A when attached exterior wall covering is also composed of non-combustible or ignition-resistant material.

Exception: Wall material may be of any material that otherwise complies with this chapter when decking surface material complies with the performance requirements ASTM 84 with a Class B flame spread rating.

7. Any material that complies with the performance requirements of Section R337.9.5 when tested in accordance with ASTM E2632 and when attached exterior wall covering is also composed of only non-combustible or ignition resistant materials.

Exception: Wall material shall be permitted to be of any material that otherwise complies with this chapter when the decking surface material complies with the performance requirements of ASTM E84 with a class B flame spread index.

R337.10 ACCESSORY STRUCTURES:

R337.10.1 GENERAL.
Accessory buildings and miscellaneous structures defined in this section that have the potential to pose a significant exterior fire exposure hazard to applicable buildings during wildfires shall be constructed to conform to the requirements of this section.

R337.10.2 APPLICABILITY.
The provisions of this section shall apply to the buildings covered by Section R337.1.3 Exception 1. This section shall also apply to specified attached and detached miscellaneous structures that require a building permit, including but not limited to; trellises, arbors, patio covers, carports, gazebos, and similar structures.

Exceptions:
1. Decks shall comply with the requirements of Section R337.9.
2. Awnings and canopies shall comply with the requirements of Section 3105 of the CBC.
3. Exterior wall architectural trim, embellishments, and fascias.
4. Roof or wall top cornice projections and similar assemblies.

R337.10.3 WHERE REQUIRED.
No requirements shall apply to accessory buildings or miscellaneous structures when located at least 50 feet from an applicable building. Applicable accessory buildings and attached miscellaneous structures, or detached miscellaneous that are installed at a distance of less than 3 feet from an applicable building, shall comply with this section. When required by the enforcing agency, detached miscellaneous structures that are installed at a distance of more than 3 feet but less than 50 feet from an applicable building shall comply with the requirements of this section.

R337.10.3.1 ACCESSORY BUILDING REQUIREMENTS.
Applicable accessory buildings that are less than 120 square feet in floor area and are located more than 50 feet from an applicable building shall be constructed of noncombustible materials or of ignition resistant materials as described in Section R337.4.2.

R337.10.3.2 ATTACHED MISCELLANEOUS STRUCTURE REQUIREMENTS.
Applicable miscellaneous structures that are attached to, or installed at a distance of less than 3 feet from, an applicable building shall be constructed of noncombustible materials or of ignition resistant materials as described in Section R337.4.2.

R337.10.3.3 DETACHED MISCELLANEOUS STRUCTURE REQUIREMENTS.
When required by the enforcing agency, applicable detached miscellaneous structures that are installed at a distance of more than 3 feet but less than 50 feet from an applicable building shall be constructed of noncombustible materials or of ignition resistant materials as described in Section R337.4.3.