

of a 150 kW intensity direct flame exposure for a 10 minutes duration.

**SFM Standard 12-7A-2, Exterior Windows.** A fire resistance test standard consisting of a 150 kW intensity direct flame exposure for a 8 minutes duration.

**SFM Standard 12-7A-3, Horizontal Projection Under-side A** fire resistance test standard consisting of a 300 kW intensity direct flame exposure for a 10 minute duration.

**SFM Standard 12-7A-4, Decking.** A two-part test consisting of a heat release rate (Part A) deck assembly combustion test with an under deck exposure of 80 kW intensity direct flame for a 3 minute duration, and a (Part B) sustained deck assembly combustion test consisting of a deck upper surface burning ember exposure with a 12 mph wind for 40 minutes using a 2.2 lb (1 kg) burning "Class A" size 12" x 12" x 2.25" (300 mm x 300 mm x 57 mm) roof test brand.

**SFM Standard 12-7A-4A, Decking Alternate Method A.** A heat release rate deck assembly combustion test with an under deck exposure of 80 kW intensity direct flame for a 3 minute duration.

**SFM Standard 12-7A-5, Ignition-Resistant Material.** A generic building material surface burning flame spread test standard consisting of an extended 30 minute ASTM E84 or UL 723 test method as is used for Fire-Retardant-Treated wood.

## SECTION R327.4

### IGNITION RESISTANT CONSTRUCTION

**R327.4.1 General.** The materials prescribed herein for ignition resistance shall conform to the requirements of this chapter.

**R327.4.2 Ignition-resistant material.** Ignition-resistant material shall be determined in accordance with the test procedures set forth in SFM Standard 12-7A-5 "Ignition-Resistant Material" or in accordance with this section.

**R327.4.3 Alternative methods for determining Ignition-resistant material.** Any one of the following shall be accepted as meeting the definition of ignition-resistant material:

1. **Noncombustible material.** Material that complies with the definition for noncombustible materials in Section 202
2. **Fire-retardant-treated wood.** Fire-retardant-treated wood identified for exterior use that complies with the requirements of Section 2303.2 of the California Building Code.
3. **Fire-retardant-treated wood shingles and shakes.** Fire-retardant-treated wood shingles and shakes, as defined in Section 1505.6 of the California Building Code and listed by State Fire Marshal for use as "Class B" roof covering, shall be accepted as an

Ignition-resistant wall covering material when installed over solid sheathing.

## SECTION R327.5 ROOFING

**R327.5.1 General.** Roofs shall comply with the requirements of Sections R327 and R902. Roofs shall have a roofing assembly installed in accordance with its listing and the manufacturer's installation instructions.

**R327.5.2 Roof coverings.** 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 firestopped with approved materials or have one layer of minimum 72 pound (32.4 kg) mineral-surfaced nonperforated cap sheet complying with ASTM D 3909 installed over the combustible decking.

**R327.5.3 Roof valleys.** Where valley flashing is installed, the flashing shall be not less than 0.019-inch (0.48 mm) No. 26 gage galvanized sheet corrosion-resistant metal installed over not less than one layer of minimum 72-pound (32.4 kg) mineral-surfaced nonperforated cap sheet complying with ASTM D 3909, at least 36-inch-wide (914 mm) running the full length of the valley.

**R327.5.4 Roof gutters.** Roof gutters shall be provided with the means to prevent the accumulation of leaves and debris in the gutter.

## SECTION R327.6 VENTS

**R327.6.1 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 Section 1203 of the California Building Code and Sections R327.6.1 through R327.6.3 of this section to resist building ignition from the intrusion of burning embers and flame through the ventilation opening.

**R327.6.2 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, other materials, or other devices that meet the following requirements:

1. The dimensions of the openings therein shall be a minimum of  $\frac{1}{16}$  inch (1.6 mm) and shall not exceed  $\frac{1}{8}$  inch (3.2 mm).
2. The materials used shall be noncombustible.

**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.

3. The materials used shall be corrosion resistant.

**R327.6.3 Ventilation openings on the underside of eaves and cornices.** Vents shall not be installed on the underside of eaves and cornices.

**Exceptions:**

1. The enforcing agency may accept or approve special eave and cornice vents that resist the intrusion of flame and burning embers.
2. Vents complying with the requirements of Section R327.6.2 may be installed on the underside of eaves and cornices in accordance with either one of the following conditions:
  - 2.1. 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,
  - 2.2. The exterior wall covering and exposed underside of the eave are of noncombustible material, or ignition-resistant materials as determined in accordance with SFM Standard 12-7A-5 Ignition-Resistant Material and the vent is located more than 12 feet from the ground or walking surface of a deck, porch, patio, or similar surface.

## SECTION R327.7 EXTERIOR COVERING

**R327.7.1 Scope.** The provisions of this section shall govern the materials and construction methods used to resist building ignition and/or safeguard against the intrusion of flames resulting from small ember and short-term direct flame contact exposure.

**R327.7.2 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 eave 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 inch (50.8 mm) nominal.
5. Deck walking surfaces shall comply with Section R327.9 only.

**R327.7.3 Exterior walls.** The exterior wall covering or wall assembly shall comply with one of the following requirements:

1. Noncombustible material.
2. Ignition-Resistant 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 test 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  $\frac{5}{8}$ -inch 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 the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual.

**R327.7.3.1 Extent of exterior wall covering.** Exterior wall coverings shall extend from the top of the foundation to the roof, and terminate at 2 inch (50.8 mm) nominal solid wood blocking between rafters at all roof overhangs, or in the case of enclosed eaves, terminate at the enclosure.

**R327.7.4 Open roof eaves.** The exposed roof deck on the underside of unenclosed roof eaves shall consist of one of the following:

1. Noncombustible material.
2. Ignition-Resistant material.
3. One layer of  $\frac{5}{8}$ -inch 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 inch (50.8 mm).
2. Solid wood blocking installed between rafter tails on the exposed underside of open roof eaves having a minimum nominal dimension of 2 inch (50.8 mm).
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.