CHAPTER 7A [SFM]

MATERIALS AND CONSTRUCTION METHODS FOR EXTERIOR WILDFIRE EXPOSURE

SECTION 701A
SCOPE, PURPOSE AND APPLICATION

701A.1 ***Scope.*** *This chapter applies to building materials, systems and/or assemblies used in the exterior design and construction of new buildings located within a Wildland-Urban Interface Fire Area as defined in Section 702A.*

701A.2 ***Purpose.*** *The purpose of this chapter is to establish minimum standards for the protection of life and property by increasing the ability of a building located in any Fire Hazard Severity Zone within State Responsibility Areas or any Wildland-Urban Interface Fire Area to resist the intrusion of flames or burning embers projected by a vegetation fire and contributes to a systematic reduction in conflagration losses.*

701A.3 ***Application.*** *New buildings located in any Fire Hazard Severity Zone within State Responsibility Areas or any Wildland-Urban Interface Fire Area designated by the enforcing agency for which an application for a building permit is submitted on or after December 1, 2005, shall comply with the following sections:*

1. *704A.1—Roofing*
2. *704A.2—Attic Ventilation*

701A.3.1 ***Alternates for materials, design, tests, and methods of construction.*** *The enforcing agency is permitted to modify the provisions of this chapter for site-specific conditions in accordance with Appendix Chapter 1, Section 104.10. When required by the enforcing agency for the purposes of granting modifications, a fire protection plan shall be submitted in accordance with the California Fire Code, Chapter 47.*

701A.3.2 ***New buildings located in any fire hazard severity zone.*** *New buildings located in any Fire Hazard Severity Zone shall comply with one of the following:*

1. ***State Responsibility Areas.*** *New building located in any Fire Hazard Severity Zone within State Responsibility Areas, for which an application for a building permit is submitted on or after January 1, 2008, shall comply with all sections of this chapter.*
2. ***Local Agency Very-High Fire Hazard Severity Zone.*** *New buildings located in any Local Agency Very-High Fire Hazard Severity Zone for which an application for a building permit is submitted on or after July 1, 2008, shall comply with all sections of this chapter.*
3. ***Wildland-Urban Interface Fire Area designated by the enforcing agency.*** *New buildings located in any Wildlan d-Urban Interface Fire Area designated by the enforcing agency for which an application for a building permit is submitted on or after January 1, 2008, shall comply with all sections of this chapter.*

701A.3.2.1 ***Inspection and certification.*** *Building permit applications and final completion approvals for buildings within the scope and application of this chapter shall comply with the following:*

701A.3.2.2 The local building official shall, prior to construction, provide the owner or applicant a certification that the building as proposed to be built complies with all applicable state and local building standards, including those for materials and construction methods for wildfire exposure as described in this chapter.

701A.3.2.3 The local building official shall, upon completion of construction, provide the owner or applicant with a copy of the final inspection report that demonstrates the building was constructed in compliance with all applicable state and local building standards, including those for materials and construction methods for wildlife exposure as described in this chapter.

701A.3.2.4 Prior to building permit final approval the property shall be in compliance with the vegetation clearance requirements prescribed in California Public Resources Code 4291 California Government Code Section 51182.

SECTION 702A
DEFINITIONS

For the purposes of this chapter, certain terms are defined below:

CDF DIRECTOR *means the Director of the California Department of Forestry and Fire Protection.*

FIRE PROTECTION PLAN *is a document prepared for a specific project or development proposed for a Wildland Urban Interface Fire Area. It describes ways to minimize and mitigate potential for loss from wildfire exposure.*

The Fire Protection Plan shall be in accordance with this chapter and the California Fire Code, Chapter 47. When required by the enforcing agency for the purposes of granting modifications, a fire protection plan shall be submitted. Only locally adopted ordinances that have been filed with the California Building Standards Commission or the Department of Housing and Community Development in accordance with Section 101.8 shall apply.

FIRE HAZARD SEVERITY ZONES *are geographical areas designated pursuant to California Public Resources Codes Sections 4201 through 4204 and classified as Very High, High, or Moderate in State Responsibility Areas or as Local Agency Very High Fire Hazard Severity Zones designated pursuant to California Government Code, Sections 51175 through 51189. See California Fire Code Article 86.*

The California Code of Regulations, Title 14, Section 1280, entitles the maps of these geographical areas as "Maps of the Fire Hazard Severity Zones in the State Responsibility Area of California."

***IGNITION-RESISTANT MATERIAL** is any product which, when tested in accordance with ASTM E 84 for a period of 30 minutes, shall have a flame spread of not over 25 and show no evidence of progressive combustion. In addition, the flame front shall not progress more than 10½ feet (3200 mm) beyond the centerline of the burner at any time during the test.*

Materials shall pass the accelerated weathering test and be identified as exterior type, in accordance with ASTM D 2898 and ASTM D 3201. All materials shall bear identification showing the fire performance rating thereof. That identification shall be issued by ICC-ES or a testing facility recognized by the State Fire Marshal having a service for inspection of materials at the factory.

Fire-Retardant-Treated Wood or noncombustible materials as defined in Section 202 shall satisfy the intent of this section.

The enforcing agency may use other definitions of ignition-resistant material that reflect wildfire exposure to building materials and/or their materials, performance in resisting ignition.

***LOCAL AGENCY VERY HIGH FIRE HAZARD SEVERITY ZONE** means an area designated by a local agency upon the recommendation of the CDF Director pursuant to Government Code Sections 51177(c), 51178 and 5118 that is not a state responsibility area and where a local agency, city, county, city and county, or district is responsible for fire protection.*

***STATE RESPONSIBILITY AREA** means lands that are classified by the Board of Forestry pursuant to Public Resources Code Section 4125 where the financial responsibility of preventing and suppressing forest fires is primarily the responsibility of the state.*

***WILDFIRE** is any uncontrolled fire spreading through vegetative fuels that threatens to destroy life, property, or resources as defined in Public Resources Code Sections 4103 and 4104.*

***WILDFIRE EXPOSURE** is one or a combination of radiant heat, convective heat, direct flame contact and burning embers being projected by vegetation fire to a structure and its immediate environment.*

***WILDLAND-URBAN INTERFACE FIRE AREA** is a geographical area identified by the state as a "Fire Hazard Severity Zone" in accordance with the Public Resources Code Sections 4201 through 4204 and Government Code Sections 51175 through 51189, or other areas designated by the enforcing agency to be at a significant risk from wildfires. See Section 706A for the applicable referenced sections of the Government Code and the Public Resources Code.*

SECTION 703A
STANDARDS OF QUALITY

***703A.1 General.** Material, systems, and methods of construction used shall be in accordance with this Chapter.*

***703A.2 Qualification by testing.** Material and material assemblies tested in accordance with the requirements of Section 703A shall be accepted for use when the results and conditions of those tests are met. Testing shall be performed by a testing agency approved by the State Fire Marshal or identified by an ICC-ES report.*

***703A.3 Standards of quality.** The State Fire Marshal standards listed below and as referenced in this chapter are located in the California Referenced Standards Code, Part 12 and Chapter 35 of this code.*

***SFM 12-7A-1,** Exterior Wall Siding and Sheathing.*

***SFM 12-7A-2,** Exterior Window.*

***SFM 12-7A-3,** Under Eave.*

***SFM 12-7A-4,** Decking.*

SECTION 704A
MATERIALS, SYSTEMS AND METHODS OF CONSTRUCTION

704A.1 Roofing.

***704A.1.1 General.** Roofs shall comply with the requirements of Chapter 7A and Chapter 15. Roofs shall have a roofing assembly installed in accordance with its listing and the manufacturer's installation instructions.*

***704A.1.2 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 No. 72 ASTM cap sheet installed over the combustible decking.*

***704A.1.3 Roof valleys.** When provided, valley flashings shall be not less than 0.019-inch (0.48 mm) (No. 26 galvanized sheet gage) corrosion-resistant metal installed over a minimum 36-inch-wide (914 mm) underlayment consisting of one layer of No. 72 ASTM cap sheet running the full length of the valley.*

***704A.1.4** Reserved.*

***704A.1.5 Roof gutters.** Roof gutters shall be provided with the means to prevent the accumulation of leaves and debris in the gutter.*

704A.2 Attic ventilation.

***704A.2.1 General.** When required by Chapter 15, roof and attic vents shall resist the intrusion of flame and embers into the attic area of the structure, or shall be protected by corrosion-resistant, noncombustible wire mesh with ¼-inch (6 mm) openings or its equivalent.*

***704A.2.2 Eave or cornice vents.** Vents shall not be installed in eaves and cornices.*

> ***Exception:** Eave and cornice vents may be used provided they resist the intrusion of flame and burning embers into the attic area of the structure.*

***704A.2.3 Eave protection.** Eaves and soffits shall meet the requirements of SFM 12-7A-3 or shall be protected by igni-*

tion-resistant materials or noncombustible construction on the exposed underside.

704A.3 Exterior walls.

704A.3.1 General. *Exterior walls shall be approved noncombustible or ignition-resistant material, heavy timber, or log wall construction or shall provide protection from the intrusion of flames and embers in accordance with standard SFM 12-7A-1.*

704A.3.1.1 Exterior wall coverings. *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.*

704A.3.2 Exterior wall openings. *Exterior wall openings shall be in accordance with this section.*

704A.3.2.1 Exterior wall vents. *Unless otherwise prohibited by other provisions of this code, vent openings in exterior walls shall resist the intrusion of flame and embers into the structure or vents shall be screened with a corrosion-resistant, noncombustible wire mesh with $^1/_4$- inch (6 mm) openings or its equivalent.*

704A.3.2.2 Exterior glazing and window walls. *Exterior windows, window walls, glazed doors, and glazed openings within exterior doors shall be insulating-glass units with a minimum of one tempered pane, or glass block units, or have a fire-resistance rating of not less than 20 minutes, when tested according to ASTM E 2010, or conform to the performance requirements of SFM 12-7A-2.*

704A.3.2.3 Exterior door assemblies. *Exterior door assemblies shall conform to the performance requirements of standard SFM 12-7A-1 or shall be of approved noncombustible construction, or solid core wood having stiles and rails not less than $1^3/_8$ inches thick with interior field panel thickness no less than $1^1/_4$ inches thick, or shall have a fire-resistance rating of not less than 20 minutes when tested according to ASTM E 2074.*

Exception: *Noncombustible or exterior fire-retardant treated wood vehicle access doors are not required to comply with this chapter.*

704A.4 Decking, floors and underfloor protection.

704A.4.1 Decking.

704A.4.1.1 Decking surfaces. *Decking, surfaces, stair treads, risers, and landings of decks, porches, and balconies where any portion of such surface is within 10 feet (3048 mm) of the primary structure shall comply with one of the following methods:*

1. *Shall be constructed of ignition-resistant materials and pass the performance requirements of SFM 12-7A-4, Parts A and B.*
2. *Shall be constructed with heavy timber, exterior fire-retardant-treated wood or approved noncombustible materials.*
3. *Shall pass the performance requirements of SFM 12-7A-4, Part A, 12-7A-4.7.5.1 only with a net peak heat release rate of 25kW/sq-ft for a 40-minute observation period and:*
   a. *Decking surface material shall pass the accelerated weathering test and be identified as exterior type, in accordance with ASTM D 2898 and ASTM D 3201 and;*
   b. *The exterior wall covering to which it the deck is attached and within 10 (3048 mm) feet of the deck shall be constructed of approved noncombustible or ignition resistant material.*

   Exception: *Walls are not required to comply with this subsection if the decking surface material conforms to ASTM E-84 Class B flame spread.*

The use of paints, coatings, stains, or other surface treatments are not an approved method of protection as required in this chapter.

704A.4.2 Underfloor and appendages protection.

704A.4.2.1 Underside of appendages and floor projections. *The underside of cantilevered and overhanging appendages and floor projections shall maintain the ignition-resistant integrity of exterior walls, or the projection shall be enclosed to the grade.*

704A.4.2.2 Unenclosed underfloor protection. *Buildings shall have all underfloor areas enclosed to the grade with exterior walls in accordance with Section 704A.3.*

Exception: *The complete enclosure of under floor areas may be omitted where the underside of all exposed floors, exposed structural columns, beams and supporting walls are protected as required with exterior ignition-resistant material construction or be heavy timber.*

704A.5 Ancillary buildings and structures.

704A.5.1 Ancillary buildings and structures. *When required by the enforcing agency, ancillary buildings and structures and detached accessory structures shall comply with the provisions of this chapter.*