FINAL DRAFT

TASK FORCE RECOMMENDATIONS ON REVISIONS TO

BUILDING CODE CHAPTER 7A

MATERIALS AND CONSTRUCTION METHODS FOR EXTERIOR WILDFIRE EXPOSURE

FOR
PROPOSED BUILDING STANDARDS OF THE
OFFICE OF THE STATE FIRE MARSHAL (SFM)
REGARDING THE ADOPTION BY REFERENCE OF THE
2009 EDITION OF THE INTERNATIONAL BUILDING CODE (IBC)
WITH AMENDMENTS INTO THE 2010 CALIFORNIA BUILDING CODE (CBC)
CALIFORNIA CODE OF REGULATIONS TITLE 24, PART 12
CHAPTER 7A
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 flame 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 or any Wildland-Urban Interface Fire Area designated by the enforcing agency constructed after the application date shall comply with the provisions of this chapter.

Exceptions:

1. Detached trellises, patios, carports, gazebos, and similar buildings open on all sides when located at least 10 feet from an applicable building.

2. Buildings of an accessory character classified as a Group U occupancy and not exceeding 120 square feet in floor area, when located at least 30 feet from an applicable building.

3. Buildings of an accessory character classified as Group U occupancy of any size located least 50 feet an applicable building.

4. Buildings classified as a Group U Agricultural Building, as defined in Section 202 of this code, when located at least 50 feet from an applicable building.

5. Additions to and remodels of buildings originally constructed prior to the applicable application date.

701A.3.1 Application date and where required. New buildings for which an application for a building permit is submitted on or after July 1, 2008 located in any Fire Hazard Severity Zone or Wildland Interface Fire Area shall comply with all sections of this chapter, including all of the following areas:

1. All unincorporated lands designated by the State Board of Forestry and Fire Protection as State Responsibility Area (SRA) including:
   a. Moderate Fire Hazard Severity Zones
b. High Fire Hazard Severity Zones

c. Very-High Fire Hazard Severity Zones

2. Land designated as Very-High Fire Hazard Severity Zone by cities and other local agencies.

3. Land designated as Wildland Interface Fire Area by cities and other local agencies.

Exceptions:

1. New buildings 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. New buildings located in any Fire Hazard Severity Zone within State Responsibility Areas or any Wildland Interface Fire Area designated by cities and other local agencies for which an application for a building permit is submitted on or after December 1, 2005 but prior to July 1, 2008, shall only comply with the following sections of this chapter:

   a. 704A.1 – Roofing

   b. 704A.2 – Attic Ventilation

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. Issuance of a building permit by the local building official for the proposed building shall be considered as complying with this section.

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 wildfire exposure as described in this Chapter. Issuance of a certificate of occupancy by the local building official for the proposed building shall be considered as complying with this section.

701A.3.2.4 Prior to building permit final approval, the property shall be in compliance with the vegetation management requirements prescribed in California Fire Code section 4906, including California Public Resources Code 4291 or California Government Code Section 51182.
Acceptable methods of compliance inspection and documentation shall be determined by the enforcing agency and may include any of the following:

1. Local, state, or federal fire authority or designee authorized to enforce vegetation management requirements.
2. Enforcing agency building official.
3. Third party inspection and certification authorized to enforce vegetation management requirements.
4. Property owner certification authorized by the enforcing agency.
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 49. 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** A type of building material that resists ignition or sustained flaming combustion sufficiently so as to reduce losses from wildland-urban interface conflagrations under worst-case weather and fuel conditions with wildfire exposure of burning embers and small flames, as prescribed in Section 703A and SFM 12-7A-5, Ignition-resistant Material.

**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.
SECTION 703A – STANDARDS OF QUALITY

703A.1 General. Building material, systems, assemblies and methods of construction used in this Chapter shall be in accordance with Section 703A.

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. Material and material assemblies approved and listed by the State Fire Marshal or identified in a current ICC-ES/ICBO-ES report as compliant with this chapter shall be acceptable.

703A.3 Approved agency. Testing shall be performed by a testing agency approved by the State Fire Marshal or one identified in an ICC-ES/ICBO-ES report.

703A.4 Labeling. Material and material assemblies tested in accordance with the requirements of section 703A shall bear an identification label showing the fire test results. That identification label shall be issued by a testing and/or inspecting agency approved by the State Fire Marshal or identified by an ICC-ES/ICBO-ES report and contain the following information:

1. Identification mark of the approved testing and/or inspecting agency.
2. Contact and identification information of the manufacturer.
3. Model number or identification of the product or material.
4. Pre-test weathering (if any).
5. Compliance standard as described under Section 703A.7.

703A.5 Weathering and surface treatment protection.

703A.5.1 General. Material and material assemblies tested in accordance with the requirements of section 703A shall maintain their fire test performance under conditions of use.

703A.5.2 Weathering. Fire-retardant-treated materials consisting of wood shall meet the fire test performance requirements of this Chapter after being subjected to the weathering conditions contained in the following standards, as applicable to the materials and the conditions of use.

703A.5.2.2 Fire-retardant-treated wood shingles and shakes. Fire-retardant-treated wood shingles and shakes shall be approved and listed by the State Fire Marshal in accordance with Section 208(c), Title 19 California Code of Regulations.

703A.5.3 Surface treatment protection. The use of paints, coatings, stains, or other surface treatments are not an approved method of protection as required in this Chapter.

703A.6 Alternates for materials, design, tests, and methods of construction. With the exception of Section 703A.5.2.2, the enforcing agency is permitted to modify the provisions of this chapter for site-specific conditions in accordance with Section 111.2.4§. 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.

703A.7 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 Windows.

SFM 12-7A-3, Under Eave.

SFM Standard 12-7A-4, Decking

SFM 12-7A-4A, Decking Alternate Method A.

SFM 12-7A-5, Ignition-resistant building material.

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SECTION 704A – IGNITION-RESISTANT CONSTRUCTION

704A.1 General. The materials prescribed herein for ignition resistance shall conform to the requirements of this chapter.

704A.2 Ignition-resistant Material. Ignition-resistant material shall be determined in accordance with the test procedures set forth in SFM 12-7A-5 “Ignition-resistant material” or in accordance with this section.

704A.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.

3. **Fire-retardant-treated wood shingles and shakes.** Fire-retardant-treated wood shingles and shakes, as defined in section 1505.6 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.

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705A ROOFING

705A.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.

705A.2 Roof coverings. Where the roof profile allows for a space between the roof covering and a combustible roof deck, an ASTM E-108 Class A cap sheet shall be installed over the roof deck.

705A.3 Roof valleys. Where valley flashings 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 an ASTM E-108 Class A cap sheet running the full length of the valley.

705A.4 Roof Gutters. Roof gutters shall be provided with the means to prevent the accumulation of leaves and debris in the gutter.
706A Vents.

706A.1 General. When provided, vents for enclosed attics, 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 and this section to resist building ignition from the intrusion of burning embers and flame through the ventilation openings.

706A.2 Requirements. Ventilation openings for enclosed attic 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 that meet the following requirements:

1. The size of openings therein shall be a minimum of 1/16\textsuperscript{th} inch (1.6 mm) and shall not exceed 1/8\textsuperscript{th} inch (3.2mm).

2. The material or vent shall be of noncombustible material.

706A.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 attic space being ventilated is fully protected by an automatic sprinkler system installed in accordance with section 903.3.1.1.

2. Vents which comply with requirements of this section may be installed on the underside of eaves when the exterior wall covering and exposed underside of the eave are of noncombustible material or Ignition-resistant material in accordance with Section 707A.3.

3. The enforcing agency may accept or approve special eave and cornice vents that resist the intrusion of flame and burning embers.
707A EXTERIOR WALLS, PROJECTIONS, AND UNDERFLOOR PROTECTION.

707A.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.

707A.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 eave overhangs,
4. Exterior exposed underside of soffits, exterior balconies, and similar cantilevered projections extending beyond the floor area.
5. Exterior exposed underside of floor projections.
6. Exterior exposed underside of unenclosed underfloor areas.

Exceptions:
1. Exterior wall architectural trim, embellishments, cornices, facias, and gutters.
2. Solid wood rafter tails and solid wood blocking installed between rafters having minimum dimension 2 inch (50.8 mm) nominal.
3. Decks shall comply with Section 709A.4 only.

707A.3. Exterior Walls, Projections, and Underfloor Protection Requirements. The exterior covering materials and/or assemblies specified in this section shall comply with one of the following requirements:

1. Non-combustible 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 for fire resistance.

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-inch type X gypsum sheathing applied behind the exterior
covering or cladding on the exterior side of the studs.

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

707A.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.

707A.3.2 Exposed underside of open eave overhangs. The underside of exposed roof deck between rafter tails or covering material applied directly to the rafter tails shall comply with protection requirements of this section.

Exception:

1. Solid wood rafter tails and solid wood blocking installed between rafters exposed on the underside of open eave overhangs having minimum dimension 2 inch (50.8 mm) nominal are not required to have any protection.
708A. EXTERIOR WINDOWS AND DOORS

708A.1 General

708A.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.

708A.2.1 Exterior windows and exterior glazed door assembly requirements. Exterior windows and exterior glazed 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 2406 Safety Glazing, or
2. Be constructed of glass block units, 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 12-7A-2.

708A.2.2 Structural glass veneer. The wall assembly behind structural glass veneer shall comply with section 707A.3.

708A.3 Exterior doors. Exterior doors shall comply with one of the following:

1. The exterior surface or cladding shall be of noncombustible or Ignition-resistant material, or
2. Shall be constructed of 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
3. Shall have a fire-resistance rating of not less than 20 minutes when tested according to NFPA 252.
   Exception: Solid doors having a fire-resistance rating of not less than 20 minutes may have untested glazing that complies with section 708A.2.
4. Shall be tested to meet the performance requirements of standard SFM 12-7A-1.

708A.3.1 Exterior door glazing. Glazing in exterior doors shall comply with Section 708A.2.1.
709A.4 DECKING

709A.4.1 General  The walking surface material of decks, porches, balconies and stairs shall comply with the requirements of this section.

709A.4.2 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 (3048 mm) of the building.

709A.4.3 Decking Surfaces.  The walking surface material of decks, porches, balconies and stairs shall be constructed with one of the following materials:

1. Ignition-resistant material that complies with the performance requirements of both SFM 12-7A-5 and SFM 127A-4.
2. Exterior fire retardant treated wood
3. Noncombustible material.
4. Any material that complies with the performance requirements of SFM 12-7A-4A when attached exterior wall covering is also either noncombustible or ignition-resistant material.

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

710A. ACCESSORY STRUCTURES

710A.1 General.  When required by the enforcing agency trellises, patios, carports, gazebos, and similar structures of an accessory character located within 10 feet of an applicable building shall conform to provisions of this section.

710A.2 Requirements.  When required by the enforcing agency accessory structures shall be constructed of noncombustible or ignition-resistant materials.