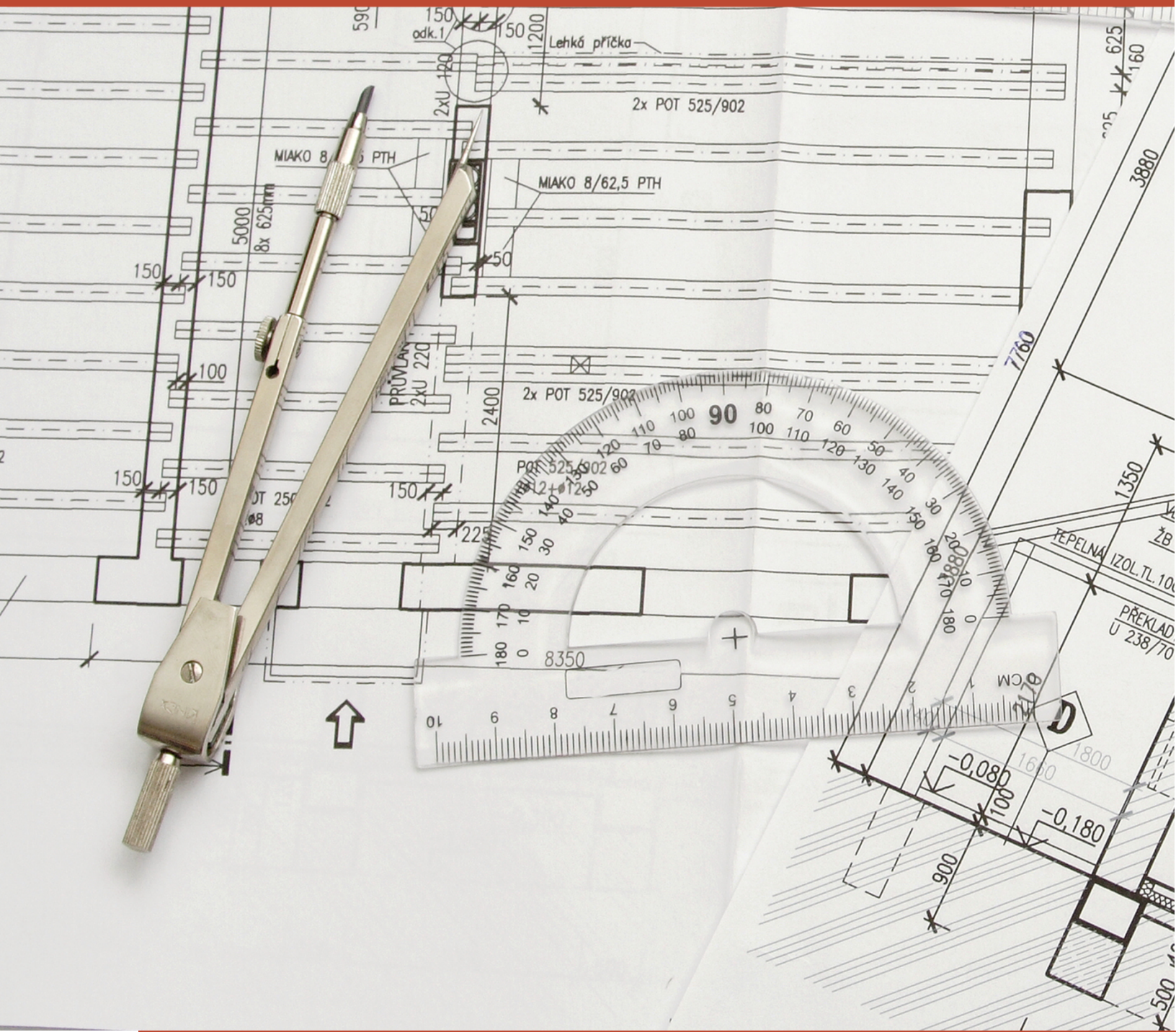
Insurance Institute for Business & Home Safety®

Model Ordinance For Construction in WUI Area

September 2023



Wildfire-Resistant Construction Codes Supplement

The threat of wildfire has grown across the United States. When wildfires enter a community, catastrophe unfolds far too often. Strongly enforced building and defensible space codes and ordinances provide communities with a critical tool to strengthen resilience to this peril.

To help communities reduce their vulnerability to the embers, flames, and radiant heat associated with wildfires, the Insurance Institute for Business & Home Safety (IBHS) created the Wildfire-Resistant Construction Code Supplement ("Supplement") to provides municipalities and other local jurisdictions with wildfire resistance code/ordinance options for one- and two-family dwellings. The Supplement provides options for both new construction and retrofits of existing housing stock. Each of the three tiers of the Supplement is designed to be adopted and enforced alongside the building code in place within the jurisdiction.

The Supplement bridges wildfire protection gaps between the existing International Code Council's (ICC) model "I-Codes" (International Building Code and International Residential Code), the ICC Wildland-Urban Interface Code, and the IBHS Wildfire Prepared Home standard[1]. The Supplement consists of three tiers:

- **Baseline** – The "Baseline" tier of the Supplement provides a bridge between the existing IRC/IBC residential construction requirements and the IBHS Wildfire Prepared Home "base" designation requirements. Provisions focus on critical areas for ember defense and reducing pathways for fire to reach a home (e.g., roof material, 0–5-foot home ignition zone, also referred to as Zone 0, vents, 5–30-foot defensible space elements). The Baseline tier is specifically tailored for suburban wildland interface environments and is ideal for retrofit provisions.

- **Enhanced –** The "Enhanced" tier of the Supplement increases protections for direct flame and radiant heat (i.e., fire resistant enhancements for windows, doors, wall cover materials) above what is contained in the "Baseline" tier. The Enhanced tier meets the requirements of the IBHS Wildfire Prepared Home "Plus" designation. The Enhanced tier is designed for use in suburban, traditional wildland-urban interface areas, and rural environments.

- **Optimum –** The "Optimum" tier provides the highest level of protection based on current wildfire and fire science knowledge. It goes beyond the Enhanced tier to require fully noncombustible materials, addresses all three ignition mechanisms, and includes provisions to reduce fire spread and conflagration potential. The Optimum tier is designed for use in the most extreme wildfire prone areas and/or environments with dense residential construction near high density wildland fuels.

The Supplement is based on the latest research from both IBHS and the broader wildfire science and engineering communities. To learn more: https://ibhs.org/wildfire/suburban-wildfire-adaptation-roadmaps/

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ADDENDUM TO THE _____ COUNTY RESIDENTIAL AND BUILDING CODE
APPENDIX A – CONSTRUCTION REGULATIONS IN WILDLAND-URBAN INTERFACE (WUI) ZONE

CHAPTER A1
SCOPE AND ADMINISTRATION

SECTION A101
SCOPE AND GENERAL REQUIREMENTS

A101.1 Scope. The provisions of this appendix shall apply to building materials, systems and/or assemblies used in the construction of new one and two-family dwellings not more than three stories above the grade plane that are located within the WUI zone in _____ County/City/Town.

A101.2 Objective. The purpose of this appendix is to establish minimum requirements to mitigate the risk to life, and structures located in a WUI zone from intrusion of flames, radiant heat and/or burning embers from wildlands and adjacent structures.

A101.3 Retroactivity. The provisions of this appendix shall apply to conditions arising after the adoption thereof, conditions not legally in existence at the adoption of this appendix and conditions that, in the opinion of the code official, constitute a distinct hazard to life or property.
Exception: Provisions of this appendix that specifically apply to existing conditions are retroactive.

A101.4 Additions or alterations. Additions or alterations shall be permitted to be made to any building or structure without requiring the existing building or structure to comply with all the requirements of this appendix, provided that the addition or alteration conforms to that required for a new building or structure.
Exception: Provisions of this appendix that specifically apply to existing conditions are retroactive.
Additions or alterations shall not be made to an existing building or structure that will cause the existing building or structure to be in violation of any of the provisions of this appendix nor shall such additions or alterations cause the existing building or structure to become unsafe. An unsafe condition shall be deemed to have been created if an addition or alteration will cause the existing building or structure to become structurally unsafe or overloaded; will not provide adequate access in compliance with the provisions of this appendix or will obstruct existing exits or access; will create a fire hazard; will reduce required fire resistance or will otherwise create conditions dangerous to human life.

A101.5 Maintenance. Buildings, structures, landscape materials, vegetation, defensible space or other devices or safeguards required by this appendix shall be maintained in conformance to the code edition under which installed. The owner or the owner's authorized agent shall be responsible for the maintenance of buildings, structures, landscape materials, and vegetation.

A101.6 Conflict or inconsistency with Residential Code. In the event of any conflict or inconsistency between the requirements in this appendix and the _____ County/City/Town, the requirements of this appendix shall control with respect to one and two-family dwellings not more than three stories above the grade plane located in a WUI zone.

A101.1.2 Effective date. This appendix shall become effective on _____ and shall apply to all permits applied for after _____.

CHAPTER A2
DEFINITIONS

SECTION A201
GENERAL

A201.1 Scope. Unless otherwise expressly stated, the following words and terms shall, for the purposes of this code, have the meanings shown in this chapter.

A201.2 Interchangeability. Words stated in the present tense include the future; words stated in the masculine gender include the feminine and neuter; and the singular number includes the plural and the plural the singular.

A201.3 Terms defined in other codes. Where terms are not defined in this code and are defined in other International Codes, such terms shall have the meanings ascribed to them as in those codes.

A201.4 Terms not defined. Where terms are not defined through the methods authorized by this section, such terms shall have their ordinarily accepted meanings such as the context implies.

SECTION A202
DEFINITIONS

ACCESSORY STRUCTURE. A building or structure used to shelter or support any material, equipment, chattel, or occupancy other than a habitable building.

ACCESSORY DWELLING UNIT (ADU). An attached or detached dwelling unit that provides complete independent living facilities for one or more persons and is located on a lot with a proposed or existing primary residence. It shall include permanent provisions for living, sleeping, eating, cooking, and sanitation on the same parcel as the single-family or multifamily dwelling is or will be situated.

CERTIFICATE OF COMPLETION. Written documentation that the project or work for which a permit was issued has been completed in conformance with requirements of this appendix.

CRITICAL FIRE WEATHER. A set of weather conditions (usually a combination of low relative humidity and wind) whose effects on fire behavior make control difficult and threaten life safety.

DEFENSIBLE SPACE. An area either natural or manmade, where material capable of allowing a fire to spread unchecked has been treated, cleared, or modified to slow the rate and intensity of an advancing wildfire and to create an area for structure defense operations to occur.

FIRE SEPARATION DISTANCE. [Reserved- *See section of Recommendation of Implementation*.]

FIRE-RESISTANCE-RATED CONSTRUCTION. The use of materials and systems in the design and construction of a building or structure to safeguard against the spread of fire within a building or structure and the spread of fire to or from buildings or structures to the wildland-urban interface area.

FIRE-RETARDANT-TREATED WOOD. Fire-retardant-treated wood is a type of wooden material that resists ignition and shall be identified for exterior use. Fire-retardant-treated wood material shall meet the requirements of Section 2303.2 of the International Building Code.

FLAME SPREAD INDEX. A comparative measure, expressed as a dimensionless number, derived from visual measurements of the spread of flame versus time for a material tested in accordance with ASTM E84.

HOME IGNITION ZONE (HIZ). This zone extends 5 feet out from the edge of the exterior walls of the dwelling and attachments (such as decks, pergolas etc.) or to the property line.

IGNITION-RESISTANT BUILDING 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 A502.4.

LOG WALL CONSTRUCTION. A type of construction in which exterior walls are constructed of solid wood members and where the smallest horizontal dimension of each solid wood member is not less than 6 inches (152 mm).

MULTILAYERED GLAZED PANELS. Window or door assemblies that consist of two or more independently glazed panels installed parallel to each other, having a sealed air gap in between, within a frame designed to fill completely the window or door opening in which the assembly is intended to be installed.

NONCOMBUSTIBLE. As applied to building construction material means a material that, in the form in which it is used, is either one of the following:

1. Material of which no part will ignite and burn when subjected to fire. Any material conforming to ASTM E 136 shall be considered noncombustible within the meaning of this section.
2. Material having a structural base of noncombustible material as defined in Item 1 above, with a surfacing material not over 1/8 inch (3.2 mm) thick, which has a flame spread index of 50 or less. Flame spread index as used herein refers to a flame spread index obtained according to tests conducted as specified in ASTM E84 or UL 723.

"Noncombustible" does not apply to surface finish materials. Material required to be noncombustible for reduced clearances to flues, heating appliances or other sources of high temperature shall refer to material conforming to Item 1. No material shall be classified as noncombustible that is subject to increase in combustibility or flame spread index, beyond the limits herein established, through the effects of age, moisture, or other atmospheric conditions.

NONCOMBUSTIBLE ROOF COVERING. A roof covering consisting of any of the following:

1. Cement shingles or sheets.
2. Exposed concrete slab roof.
3. Ferrous or copper shingles or sheets.
4. Slate shingles.
5. Clay or concrete roofing tile.

6. Approved roof covering of noncombustible material.

ROOF ASSEMBLY. A system designed to provide weather protection and resistance to design loads. The system consists of a roof covering and roof deck or a single component serving as both the roof covering and the roof deck. A roof assembly can include an underlayment, thermal barrier, ignition barrier, insulation, or a vapor retarder.

ROOF COVERING. The covering applied to the roof deck for weather resistance, fire classification or appearance.

ROOF DECK. The flat or sloped surface not including its supporting members or vertical supports.

SLOPE. The variation of terrain from the horizontal; the number of feet (meters) rise or fall per 100 feet (30 480 mm) measured horizontally, expressed as a percentage.

UNENCLOSED ACCESSORY STRUCTURE. An accessory structure without a complete exterior wall system enclosing the area under roof or floor above.

WILDFIRE. An uncontrolled fire spreading through vegetative fuels, exposing and possibly consuming structures.

WILDLAND. An area in which development is essentially nonexistent, except for roads, railroads, power lines and similar facilities.

WILDLAND-URBAN INTERFACE AREA. That geographical area where structures and other human development meets or intermingles with wildland or vegetative fuels.

CHAPTER A3
WILDLAND-URBAN INTERFACE AREA

[Reserved- Define wildfire-prone zones in and around your jurisdiction. *See section Recommendation of Implementation*.]

CHAPTER A4
FIRE PROTECTION REQUIREMENTS

SECTION A401
DEFENSIBLE SPACE REQUIREMENTS

A401.1 Home ignition zone (HIZ) requirements. This zone is the most critical zone of defensible space and requires the most stringent fuel reduction and regular maintenance to protect against wildfire. This includes:

- The roof shall be kept clear of debris.
- Gutters and downspouts shall be kept clear of debris such as leaves and pine needles.
- Ground cover shall be *noncombustible* and kept free of debris. *Noncombustible* hardscape such as gravel or paving stones are recommended. Bare soil is also acceptable.
- No vegetation (trees, shrubs, bushes, plants, grass, weeds, etc.) shall exist within or overhang. Any overhanging limbs or branches from nearby trees and bushes must be trimmed back to be outside the HIZ.
- Only *noncombustible* or *ignition-resistant* items are allowed.
- No boats, RVs, or other vehicles are allowed.

A401.2 Other defensible space requirements. The remainder of the property beyond the home must have defensible space that is regularly maintained. This includes:

- Routinely remove fallen pine needles, leaves, and other vegetative debris accumulated in the yard.
- Routinely remove any dead vegetation, including piles from pruning and firewood.
- Vegetation, including plants with canopies within 30 feet of the home:
    - Trees with a trunk of 4 inches in diameter or greater when measured at a height of 4.5 feet above the ground:
        - Must have limbs and branches pruned to a minimum height of 6 feet off the ground.
        - Must have a minimum of 10 horizontal feet of spacing between the tree canopy and the next closest tree, shrub, or bush canopy.

        - May be clustered in small groupings with a combined canopy not larger than 10 feet in horizontal diameter.
    - Must have a minimum of 5 horizontal feet between a tree canopy and the home.
- Shrubs, bushes, and small trees with a trunk less than 4 inches in diameter when measured at a height of 4.5 feet above the ground or less than 4.5 feet tall:
    - Must not be placed under larger trees.
    - Must not have a canopy larger than 10 feet in horizontal diameter.
        - May be clustered in small groupings with a combined canopy not larger than 10 feet in horizontal diameter.
    - Must have a minimum horizontal space between canopies of at least 10 feet.

A401.3 Other maintenance requirements. For unattached accessory structures and outbuildings that are within 30 feet of the home and that have a footprint greater than or equal to 15 square feet (such as sheds, gazebos, accessory dwelling units (ADUs), open covered structures with a solid roof, dog houses, playhouses, etc.):

- No more than 3 total of these structures are allowed within 30 feet of the home.
- Each structure must have its own 5 feet of defensible space (as prescribed under Home Ignition Zone) that does not overlap the 5-foot HIZ required for the home, decks, or other structures within 30 feet of the home.

CHAPTER A5
WILDLAND-URBAN INTERFACE ZONE CONSTRUCTION REGULATIONS

SECTION A501
GENERAL

A501.1 Scope. Building and accessory structures shall be constructed in accordance with the [Place Local jurisdiction's Title of Building Code here] and this appendix.
Exceptions: Agricultural buildings not less than 50 feet (15 240 mm) from buildings containing habitable spaces.

A501.2 Objective. The objective of this chapter is to establish minimum standards to locate, design and construct buildings and structures or portions thereof for the protection of life and property, to resist damage from wildfires, and to mitigate building and structure fires from spreading to wildland fuels.

SECTION A502
WUI CONSTRUCTION AND MATERIAL

A502.1 General. Buildings and structures hereafter constructed, modified, or relocated into or within wildland-urban interface areas shall be established in accordance with [One or more of these sections A503, A504, or A505]. Materials required to be *ignition-resistant building materials* shall comply with the requirements of Sections A502.2 through A502.6.
A502.2 Fire-resistance-rated construction. Where this code requires 1-hour *fire-resistance-rated construction*, the fire-resistance rating of building elements, components or assemblies shall be determined in accordance with the test procedures set forth in ASTM E119 or UL 263.
Exceptions:

1. The fire-resistance rating of building elements, components or assemblies based on the prescriptive designs prescribed in Section 721 of the *International Building Code*.
2. The fire-resistance rating of building elements, components or assemblies based on the calculation procedures in accordance with Section 722 of the *International Building Code*.

A502.3 Noncombustible material. Material shall comply with the requirements for noncombustible materials in Section A202.
A502.4 Ignition resistant building material. Material shall be tested on the front and back faces in accordance with the extended ASTM E84 or UL 723 test, for a total test period of 30 minutes, or with the ASTM E2768 test. The certification of the flame spread index shall be accompanied by a test report stating that all portions of the test specimen ahead of the flame front remained in position during the test. The materials shall bear identification showing the fire test results. Panel products shall be tested with a ripped or cut longitudinal gap of $^1/_8$ inch (3.2 mm). The materials, when tested in accordance with the test procedures set forth in ASTM E84 or UL 723 for a test period of 30 minutes, or with ASTM E2768, shall comply with Sections A503.4.1 through A503.4.3.

Exception: Materials composed of a combustible core and a noncombustible exterior covering made from either aluminum at a minimum 0.019-inch (0.48 mm) thickness or corrosion-resistant steel at a minimum 0.0149 inch (0.38 mm) thickness shall not be required to be tested with a ripped or cut longitudinal gap.

A502.4.1 Flame spread. The material shall exhibit a flame spread index not exceeding 25.

A502.4.2 Flame front. The material shall exhibit a flame front that does not progress more than 10 ½ feet (3200 mm) beyond the centerline of the burner at any time during the test.

A502.4.3 Weathering. Ignition resistant building materials shall maintain their performance in accordance with this section under conditions of use. The materials shall meet the performance requirements for weathering (including exposure to temperature, moisture, and ultraviolet radiation) contained in the following standards, as applicable to the materials and conditions of use.

A502.4.3.1 Evaluation requirements for weathering. Fire-retardant-treated wood, wood-plastic composite materials, and plastic lumber materials shall be evaluated after weathering in accordance with Method A "Test Method for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing" in ASTM D2898.

A502.4.3.2 Wood-plastic composite materials. Wood-plastic composite materials shall also demonstrate acceptable fire performance after weathering by the following procedure: first testing in accordance with ASTM E1354 at an incident heat flux of 50 kW/m2 in the horizontal orientation, then weathering in accordance with ASTM D7032 and then retesting in accordance with ASTM E1354 and exhibiting an increase of no more than 10 percent in peak rate of heat release when compared to the peak heat release rate of the nonweathered material.

A502.4.3.3 Plastic lumber materials. Plastic lumber materials shall also demonstrate acceptable fire performance after weathering by the following procedure: first testing in accordance with ASTM E1354 at an incident heat flux of 50 kW/m2 in the horizontal orientation, then weathering in accordance with ASTM D6662 and then retesting in accordance with ASTM E1354 and exhibiting an increase of no more than 10 percent in peak rate of heat release when compared to the peak heat release rate of the nonweathered material.

A502.5 Fire-retardant-treated wood. Fire-retardant-treated wood shall be identified for exterior use and shall meet the requirements of Section 2303.2 of the International Building Code.

A502.6 Fire-retardant-treated wood roof coverings. Roof assemblies containing fire-retardant-treated wood shingles and shakes shall comply with the requirements of Section 1505.6 of the *International Building Code* and shall be classified as Class A roof assemblies as required in Section 1505.2 of the *International Building Code*.

SECTION A503
OPTIMUM WILDFIRE RESISTANT CONSTRUCTION

A503.1 General. Optimum wildfire resistant construction shall be in accordance with sections A503.2 through A503.14.

A503.2 Roof assembly. Roofs shall have a roof assembly with an approved *noncombustible* roof covering. For roof assemblies where the profile allows a space between the roof covering and roof deck, the space at the eave ends shall be firestopped to preclude entry of flames or embers or have one layer of cap sheet complying with ASTM D3909 installed over the combustible roof deck.

A503.2.1 Roof valleys. Where 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 72-pound (32.4 kg) mineral-surfaced, nonperforated cap sheet complying with ASTM D3909 running the full length of the valley.

A503.3 Protection of eaves. Eaves and soffits shall be protected on the exposed underside with materials approved for not less than 1-hour *fire-resistance-rated construction* on the exterior side. The exterior covering of such assembly shall be constructed with *noncombustible* materials. Fascia is required and shall be constructed with materials approved for not less than 1-hour *fire-resistance-rated construction*. Such fascia shall be protected on the backside by *noncombustible* materials.

A503.4 Gutters and downspouts. Gutters and downspouts shall be constructed of *noncombustible* material. Gutters shall be covered with a *noncombustible* material to prevent the accumulation of debris within the gutter.

A503.5 Exterior walls. Exterior walls of buildings or structures shall be constructed with materials approved for not less than 1-hour *fire-resistance-rated construction* on the exterior side. The exterior siding of such wall shall be constructed with *noncombustible* materials. Such material shall extend from the top of the foundation to the underside of the roof sheathing.

A503.6 Underfloor enclosure. Buildings or structures shall have underfloor areas enclosed to the ground, with exterior walls in accordance with Section A503.5.

Exception: Complete enclosure shall not be required where the underside of exposed floors and exposed structural columns, beams and supporting walls are protected as required for exterior 1-hour *fire-resistance-rated construction* and the exterior covering of such assembly is protected with *noncombustible* materials.

503.7 Appendages and projections. Unenclosed accessory structures attached to buildings such as decks shall be constructed with *noncombustible* walking surface. Where there is gap in

walking surface, the horizontal surface between walking surface and joists and girders (beams) shall be covered with a *noncombustible* material (such as foil-faced tape products).
Exception: Coated materials shall not be used as the walking surface of decks.

A503.7.1 Underfloor areas. The underfloor area of appendages and projections shall be enclosed to the ground, with exterior walls construction in accordance with Section A503.5.

Exception: underfloor areas enclosure shall not be required for appendages and projections where the underside of exposed floors and exposed structural columns, beams and supporting walls are constructed with materials approved for not less than 1-hour *fire-resistance-rated construction* on the exterior side. The exterior siding of such assembly shall be constructed with *noncombustible* materials.

A503.8 Exterior glazing. Exterior windows, window walls and glazed doors, windows within exterior doors, and skylights shall have a fire protection rating of not less than 45 minutes.

Exception: Exterior windows, window walls and glazed doors, windows within exterior doors, and skylights with multipaned glass with at least two tempered panes, glass blocks (windows only) are permitted when such an exterior glazing is protected with fire-resistant-rated shutters constructed in accordance with section A503.10 on the exterior side.

A503.9 Exterior doors. Exterior doors shall be approved noncombustible construction, solid core wood not less than 13/4 inches thick (44 mm) or have a fire protection rating of not less than 20 minutes. Windows within doors and glazed doors shall be in accordance with Section 503.8. Such an exterior door assembly shall be protected with fire-resistant-rated shutters constructed in accordance with section A503.10 on the exterior side.

Exception: Vehicle access doors.

A503.9.1 Vehicle access door perimeter gap. Exterior vehicle access doors shall resist the intrusion of embers from entering by preventing gaps between doors and door openings, at the bottom, sides, and tops of doors, from exceeding 1/8 inch (3.2 mm). Gaps between doors and door openings shall be controlled by one of the following methods:

1. Weather-stripping products made of materials that: (a) have been tested for tensile strength in accordance with ASTM D638 (Standard Test Method for Tensile Properties of Plastics) after exposure to ASTM G155 (Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials) for a period of 2,000 hours, when the maximum allowable difference in tensile strength values between exposed and non-exposed samples does not exceed 10%; and (b) exhibit a V-2 or better flammability rating when tested to UL 94 (Standards for Tests for Flammability of Plastic Materials for Parts in Devices and Appliances).
2. Door overlaps onto jambs and headers.
3. Vehicle access door jambs and headers covered with metal flashing.

A503.9.2 Vehicle access door automatic openers. Residential vehicle access door automatic openers must have a battery backup function so that the vehicle access door automatic opener is operational without interruption during an electrical outage.

A503.10 Fire-resistant-rated shutters. The fire-resistant shutter shall:

- Protect the entire window or door assembly including framing and glazing; and
- Consist of *noncombustible* material; and
- Be fixed to the building and be non-removable; and
- Be capable of being closed manually from either inside or outside or motorized shutter systems, where they are not reliant on main power to close; and
  Note: if power-assisted shutter systems are used then that system is powered with continuous back-up energy such as a battery system.
- When in the closed position, have no gap greater than 1/8-in (3.2 mm) between the shutter and the wall, frame, or sill; and
- Where perforated, have uniformly distributed perforations with a maximum aperture of 1/8 inch and a perforated area no greater than 20% of the shutter.

A503.11 Vents. Attics and enclosed rafters shall be unvented in accordance with Section 1202.3 of the *International Building Code* or Section R806.5 of the *International Residential Code*. In residential buildings underfloor spaces shall be unvented in accordance with Section R408.3 of *International Residential Code*.

Exception: In existing buildings, ventilation openings for enclosed attics, gable ends, ridge ends, enclosed eave soffit spaces, enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters, underfloor ventilation openings, foundation or underfloor vents or other ventilation openings in vertical exterior walls and vents through roofs shall not exceed 144 square inches (0.0929 m2) each. Gable end, crawl space and other vents that mount on a vertical wall or in the under-eave area shall be tested in accordance with ASTM E2886 and approved to prevent flame or ember penetration into the structure. Those vents that are excluded from the scope of ASTM E2886 such as roof ridge and off-ridge (field) vents shall be protected with *noncombustible* corrosion-resistant mesh screen size not to exceed 1/8 inch (3.2 mm).

A503.12 Detached accessory structures. Detached accessory structures shall be constructed in accordance with Sections A503.2 through A503.11.
Exception: Accessory structures not exceeding 120 square feet (11 m2) in floor area where located not less than 50 feet (15 240 mm) from buildings containing habitable spaces.

A503.13 Spark arrestor. Chimneys serving fireplaces, barbecues, incinerators, or decorative heating appliances in which solid or liquid fuel is used, shall be provided with a spark arrestor. Spark arrestors shall be constructed of woven or welded wire screening of 12 USA standard gage wire (0.1046 inch) (2.66 mm) having openings not exceeding 1/2 inch (12.7 mm).

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.

A503.14 Fences. All fences within the property line shall be constructed with noncombustible materials.

SECTION A504
ENHANCED WILDFIRE RESISTANT CONSTRUCTION

A504.1 General. Enhanced wildfire resistant construction shall be in accordance with sections A504.2 through A504.14.

A504.2 Roof assembly. Roofs shall have a roof assembly that complies with a Class A rating when tested in accordance with ASTM E108 or UL 790, or an approved *noncombustible* roof covering. For roof assemblies where the profile allows a space between the roof covering and roof deck, the space at the eave ends shall be firestopped to preclude entry of flames or embers or have one layer of cap sheet complying with ASTM D3909 installed over the combustible roof deck.

A504.2.1 Roof valleys. (Reserved

A504.3 Protection of eaves. Eaves and soffits shall be protected on the exposed underside by *ignition-resistant building materials*, *noncombustible* materials, materials approved for not less than 1-hour *fire-resistance-rated construction*, or 2-inch (51 mm) nominal dimension lumber.

A504.4 Gutters and downspouts. Gutters and downspouts shall be constructed of *noncombustible* material. Gutters shall be covered with a *noncombustible* material to prevent the accumulation of debris within the gutter.

A504.5 Exterior walls. Exterior wall covering (siding or cladding) of buildings or structures shall be *noncombustible*, *ignition-resistant building material* or *fire-retardant-treated wood*. Decorative shutters mounted on exterior wall covering shall be *noncombustible, fire-retardant-treated wood or ignition-resistant building material*. A minimum of 6 inches of *noncombustible* material applied vertically on the exterior of the wall shall be installed at the ground, decking, and roof intersections.

A504.6 Underfloor enclosure. Buildings or structures shall have underfloor areas enclosed to the ground, with exterior walls in accordance with Section A504.5 or with *noncombustible* corrosion-resistant mesh screen size not to exceed 1/8 inch (3.2 mm).

A504.7 Appendages and projections. Unenclosed *accessory structures* attached to buildings such as decks shall be constructed in accordance with one of the following methods:

A504.7.1 New construction. All the components including posts, joists, railings, stairs, and walking surfaces are constructed with *noncombustible, fire-retardant-treated wood* or *ignition-resistant building materials*.

A504.7.1.1 underfloor areas. Reserved.

A504.7.2 Existing structures.

- Deck walking surfaces constructed with a solid core, *noncombustible* material without any gap;
- Railings within 5 feet of the building constructed of a *noncombustible* material, including where railings attach to the building.
- Deck posts with a minimum of 6 vertical inches of *noncombustible* material at grade.
- For staircases 4 feet in width or less that attach to a deck and open underneath shall have one of the following requirements:
  - Open risers (no solid risers)
    - Shall have a minimum of 6 vertical inches of the bottom of stairs constructed with *noncombustible* material.
    - Stair treads shall be a solid core without any gaps, *noncombustible* material.
  - Closed risers
    - Shall have a minimum of 6 vertical inches of the bottom of stairs made from *noncombustible* material.
    - Stair treads and risers should be a solid core without any gaps, noncombustible material.
- For staircases wider than 4 feet that attach to a deck, the staircase shall be cleared underneath and enclosed with noncombustible material with openings not to exceeded 1/8-inch, such as 1/8-inch or finer metal mesh and include the following requirements:
  - Closed risers
    - Shall have a minimum of 6 vertical inches of the bottom of stairs made from *noncombustible* material.
    - Stair treads and risers shall be a solid core without any gaps, *noncombustible* material.

A504.7.2.1 Underfloor areas. For appendages and projections 4 feet or less above the ground when measured nominally from the walking surface to the ground at the location where this distance is maximum, the underfloor area shall be fully enclosed to the ground, with exterior walls constructed in accordance with Section A504.5 or fully enclosed with *noncombustible*, corrosion-resistant mesh screen size not to exceed 1/8 inch (3.2 mm).

A504.8 Exterior glazing. Exterior windows, window walls and glazed doors, windows within exterior doors, and skylights shall be multipaned glass with at least two tempered panes, glass blocks (windows only), or have a fire protection rating of not less than 20 minutes.

A504.9 Exterior doors. Exterior doors shall be solid core with an exterior surface with *noncombustible* or *ignition-resistant building material* or have a fire protection rating of not less than 20 minutes. Exterior doors threshold shall be *noncombustible* material. Glazing within doors shall be in accordance with Section A504.8. Doors constructed with combustible material are allowed where a *noncombustible* exterior storm door is installed as the outermost door.
Exception: Vehicle access doors.
A504.9.1 Vehicle access door perimeter gap. Reserved.
A504.9.2 Vehicle access door automatic openers. Reserved.

A504.10 Fire-resistant-rated shutters. Reserved.

A504.11 Vents Ventilation openings for enclosed attics, gable ends, ridge ends, enclosed eave soffit spaces, enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters, underfloor ventilation, foundations, and crawl spaces; under eaves and cornices; or for any other opening intended to permit ventilation, either in a horizontal or vertical surface, shall meet one of the following requirements:

Performance-based requirements: Corrosion-resistant ember and flame-resistant vents conforming with the ASTM E2886 test requirements:

- No flaming ignition of the cotton material during the Ember Intrusion Test.
- No flaming ignition during the Integrity Test portion of the Flame Intrusion Test.
- Temperature of the unexposed side of the vent does not exceed 662°F.

Prescriptive-based requirements: Vents must be made of a noncombustible material and covered with noncombustible corrosion-resistant mesh with openings not to exceed 1/8 inch.

Exceptions: Dryer vents shall have a solid metal louver or flap in lieu of mesh. Plumbing vents are excluded from these requirements.

A504.12 Detached accessory structures. Detached accessory structures located less than 50 feet (15,240 mm) from a building containing habitable space and all detached accessory structures exceeding 120 square feet (11 m^2) in floor area shall be constructed in accordance with Sections A504.2 through A504.11. All detached accessory structures greater than or equal to 15 square feet in floor area shall be located at least 30 feet away from the building.

A504.13 Spark arrestor. Reserved.

A505.14 Fences. All fences within 5 feet of the structure shall be constructed with noncombustible materials. Back-to-back fencing (separate fences that are closer than 5 feet apart) are not allowed.
Exceptions: Back-to-back fencing is allowed when one of the fences is constructed with *noncombustible* materials.

SECTION A505
BASLINE WILDFIRE RESISTANT CONSTRUCTION

A505.1 General. Baseline wildfire resistant construction shall be in accordance with sections A505.2 through A505.14.

A505.2. Roof. Roofs shall have a roof assembly that complies with a Class A rating when tested in accordance with ASTM E108 or UL 790, or an approved noncombustible roof covering. For roof assemblies where the profile allows a space between the roof covering and roof deck, the space at the eave ends shall be firestopped to preclude entry of flames or embers.

A505.2.1 Roof valleys. Reserved.

A505.3 Protection of eaves. Reserved.

A505.4. Gutters and Downspouts. Gutters and downspouts shall be constructed of *noncombustible* material.

A505.5 Exterior walls. A minimum of 6 inches of *noncombustible* material applied vertically on the exterior of the wall shall be installed at the ground, decking, and roof intersections.

A505.6 Underfloor enclosure. Buildings or structures shall have underfloor areas enclosed to the ground with exterior walls in accordance with Section A505.5 or with *noncombustible* corrosion-resistant mesh screen size not to exceed 1/8 inch (3.2 mm).

505.7 Appendages and projections. Unenclosed *accessory structures* attached to buildings such as decks shall be constructed with underfloor areas protected in accordance with Section A505.7.1.

A505.7.1 Underfloor areas. For appendages and projections 4 feet or less above the ground when measured nominally from the walking surface to the ground at the location where this distance is maximum, the underfloor area shall be enclosed with exterior walls constructed in accordance with Section A505.5 or with *noncombustible* corrosion-resistant mesh screen size not to exceed 1/8 inch (3.2 mm).

A505.8 Exterior glazing. Reserved.

A505.9 Exterior doors. Reserved.

A505.9.1 Vehicle access door perimeter gap. Reserved.

A505.9.2 Vehicle access door automatic doors. Reserved.

A505.10 Fire-resistant-rated shutters. Reserved.

A505.11. Vents. Ventilation openings for enclosed attics, gable ends, ridge ends, enclosed eave soffit spaces, enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters, underfloor ventilation, foundations, and crawl spaces; under eaves and cornices; or for any other opening intended to permit ventilation, either in a horizontal or vertical

surface, shall resist the intrusion of burning embers and flames by meeting one of the following requirements:

Performance-based requirements: Corrosion-resistant ember and flame-resistant vents conforming with the ASTM E2886 test requirements.

Prescriptive-based requirements: Vents must be made of a noncombustible material and covered with noncombustible corrosion-resistant mesh with openings not to exceed 1/8 inch.

Exceptions: Dryer vents shall have a solid louver or flap in lieu of mesh. Plumbing vents are excluded from these requirements.

A505.12. Detached accessory structures. Detached accessory structures such as sheds, gazebos, open covered structures with solid roofs, dog houses, playhouses, etc. within 30 feet of a building that have a footprint greater than or equal to 15 square feet shall constructed with underfloor areas in accordance with Section A505.12.1.

A505.12.1 Underfloor Areas. The underfloor area of all detached accessory structures shall be enclosed to the ground with exterior walls in accordance with Section A505.5.

Exception: Complete enclosure shall not be required where the underside of exposed floors and exposed structural columns, beams and supporting walls are protected in accordance with Section A505.5.

A505.13 Spark Arrestor. Reserved.

A505.14 Fences. All fences within 5 feet of the structure shall be constructed with noncombustible materials.

RECOMMENDATION OF IMPLEMENTATION

CHAPTER A3
WILDLAND-URBAN INTERFACE AREA

SECTION A301
GENERAL

A301.1 Scope. The provisions of this chapter provide methodology to establish and record *wildland-urban interface areas* based on the findings of fact.

A301.2 Objective. The objective of this chapter is to provide baseline criteria for the classification of *wildland-urban interface areas* in accordance with the severity of fire hazard expected to prevail in those areas.

SECTION A302
WILDLAND-URBAN INTERFACE AREA

A302.1 Declaration. The legislative body shall declare the wildland-urban interface areas within the jurisdiction. The wildland-urban interface areas shall be based on the findings of fact. The wildland-urban interface area boundary shall correspond to natural or man-made features.

A302.2 Mapping. Classification of land into *wildland-urban interface areas* shall be based on fuel loading, slope, *critical fire weather*, and other factors present that influence the potential intensity of uncontrolled wildfires. For the purpose of this appendix, the *wildland-urban interface area* shall include such territory or portions of the County/City/Town as shown in Figure A301, the *Wildland-Urban Interface Area* Map. The W*ildland-Urban Interface Areas* Map shall be available for inspection by the public.

A302.3 Review of wildland-urban interface areas. *Wildland-urban interface areas* shall be reevaluated in accordance with Section A302.1 on a 3-year basis or more frequently as deemed necessary by the legislative body.

[County/City/Town WUI MAP]

Figure A301. The Wildland-Urban Interface Area Map.

CHAPTER A5
WILDLAND-URBAN INTERFACE ZONE CONSTRUCTION REGULATIONS

A502.1 General. Buildings and structures hereafter constructed, modified, or relocated into or within *wildland-urban interface areas* shall be established in accordance with Table A502.1 and Sections A503, A504, and A505, respectively. Materials required to be *ignition-resistant building materials* shall comply with the requirements of Section A502.2.

FIRE SEPARATION DISTANCE. [Reserved- If you are adopting this table, add this definition to section A202] The distance measured from the building face to one of the following:
1. The closest interior lot line.
2. To the centerline of a street, an alley or public way.
3. To an imaginary line between two buildings on the lot.

The distance shall be measured at right angles from the face of the wall.

Table A502.1
WUI CONSTRUCTION

Minimum Fire Separation Distance (ft)	Construction Classification
> 100 ft	BASELINE
30 ft < Fire Separation =< 100 ft	ENHANCED
Fire Separation =< 30 ft	OPTIMUM

Note: In case when the intention is to adopt all three different classes Section A502.1 shall be replaced with provided section above.