WASHINGTON STATE BUILDING CODE

CHAPTER 51-55 WAC

2021 WASHINGTON WILDLAND-URBAN INTERFACE CODE

First Edition

Washington State Building Code Council

First Edition Effective July 1, 2023

Copies of the State Building Codes and

complete copies of the 2021 Washington Wildland-Urban Interface Code
as published by the International Code Council
may be obtained from:

Washington Association of Building Officials

Post Office Box 7310

Olympia, Washington 98507-7310

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First Edition

Washington Wildland-Urban Interface Code

Chapter 51-55 WAC

Effective July 1, 2023

First Edition based on

WSR 23-02-056

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Preface

Authority: The Washington Wildland-Urban Interface Code (Chapter 51-55 WAC) is adopted by the Washington State Building Code Council pursuant to Chapters 19.27 and 70.92 RCW. The Washington State Building Code was first adopted by reference by the Washington State Legislature in 1974. In 1985, the Legislature delegated the responsibility of adoption and amendment of these codes to the State Building Code Council. The first adoption of the International Residential Code was in 2004.

Code Precedence: The State Building Code Act, Chapter 19.27 RCW, establishes the following order of precedence among the documents adopted as parts of the State Building Code:

International Building Code, Standards and amendments – WAC 51-50.

International Residential Code, Standards and amendments – WAC 51-51.

International Mechanical Code, Standards and amendments – WAC 51-52.

International Fire Code, Standards and amendments – WAC 51-54A.

Washington Wildland-urban Interface Code – WAC 51-55

Uniform Plumbing Code, Standards and amendments – WAC 51-56.

Where there is a conflict between codes, an earlier named code takes precedence over a later named code. In the case of conflict between the duct insulation requirements of the International Mechanical Code and the duct insulation requirements of the Energy Code, the Energy Code, or where applicable, a local jurisdiction's energy code, shall govern.

Where, in any specific case, different sections of this Code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is conflict between a general requirement and a specific requirement, the specific requirement shall be applicable.

Organization and Numbering: These rules are written to allow compatible use with the International Mechanical Code. All sections which are amended, deleted, or added are referenced.

Enforcement: The State Building Code Act requires that each local jurisdiction enforce the State Building Code within its jurisdiction. Any jurisdiction can contract with another jurisdiction or an inspection agency to provide the mandated enforcement activities.

Amendments to the State Building Code:

The State Building Code Council has adopted review procedures and approval criteria for local amendments. These procedures and criteria are found in Chapter 51-04 WAC. The Council has exempted from its review any amendments to the administrative provisions of the various codes.

Forms for proposing statewide amendments to the State Building Code are available from the State Building Code Council staff.

A. **Amendments of Statewide Application**: On a yearly basis the State Building Code Council will consider proposals to amend the State Building Code. The Council is not scheduled to enter formal rulemaking until 2021 as part of its consideration of adoption of the 2021 series of codes.

   Proposals to amend the State Building Code shall be made on forms provided by the Building Code Council.

B. **Local Amendments**: Any jurisdiction may amend the State Building Code provided the amendments do not reduce the minimum performance standards of the codes. There are two areas where local amendments are limited or prohibited:

Prohibited Amendments: Residential provisions of the State Energy Code (WAC 51-11R and WAC 51-11C); any provision of the International Building Code or International Residential Code affecting accessibility; and standards specifically adopted in Chapters 19.27 and 19.27A WAC cannot be amended by any local jurisdiction.

Residential Amendments: Amendments by local jurisdictions which affect the construction of single family and multi-family residential buildings must be reviewed and approved by the State Building Code Council before such amendments can be enforced. The State Building Code Act provides the following definition:

> Multi-family residential building means common wall residential buildings that consist of four or fewer units, that do not exceed two stories in height, that are less than 5,000 square feet in area, and that have a one-hour fire-resistive occupancy separation between units.

Application forms for Council review of local amendments are available from the State Building Code Council Staff.

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Printing Format: This version of the rules is published as a series of insert or replacement pages and is intended to be printed as a two-sided document. Each page provides instructions for installing them in the model code book. Amendments to the model code, are indicated by a double line in the margin next to the revised portions. Any portion of the model code that has been deleted in the amendment will be marked with a **>** symbol

Effective Date: These rules were adopted by the State Building Code Council on November 18, 2022. The rules are effective throughout the state on July 1, 2023. This code is based on WAC 51-55 as published in WSR 23-02-056. It is subject to review by the State Legislature during the 2024 session.

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Building Permit Fees: The activities of the State Building Code Council are supported by permit fees collected by each city and county. Section 19.27.085 of the State Building Code Act requires that a fee of $6.50 be imposed on each residential permit and $25.00 on each commercial building permit issued by each city and county. In addition, a fee of $2.00 per unit shall be imposed for each dwelling unit after the first unit, on each building containing more than one residential unit. For the purpose of this fee, WAC 365-110-035 defines building permits as any permit to construct, enlarge, alter, repair, move, improve, remove, convert or demolish any building or structure regulated by the Building Code. Exempt from the fee are plumbing, electrical, mechanical permits, permits issued to install a mobile/manufactured home, commercial coach or factory-built structure, or permits issued pursuant to the International Fire Code.

Each city and county shall remit moneys collected to the state treasury quarterly. No remittance is required until a minimum of $50.00 has accumulated.

These permit fees are the amounts current in January 2020. Such fees may be changed by the State Legislature.

Opinions: RCW 19.27.031 grants the council authority to render opinions relating to the building code at the request of a local code official. For the purposes of this section, the term "code official" means the local or state official, or their designee, responsible for implementation and enforcement of the specific code provision on which the opinion is requested.

At the request of a code official, the council will issue opinions relating to the codes adopted under chapters 19.27, 19.27A, and 70.92 RCW, and council amendments to the model codes. At the request of a local code official, the council may issue opinions on the applicability of WAC 51-04-030 to a local government ordinance regulating construction. Council related opinions may be developed and approved by a standing committee of the council. Opinions approved by a standing committee may be reviewed and modified by the council.

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WAC 51-55-001 Authority.

These rules are adopted under the authority of chapter 19.27 RCW.

WAC 51-55-002 Purpose.

The purpose of these rules is to implement the provisions of chapter 19.27 RCW, which provides that the state building code council shall maintain the state building code in a status which is consistent with the purpose as set forth in RCW 19.27.020. In maintaining the codes, the council shall regularly review updated versions of the codes adopted under the act, and other pertinent information, and shall amend the codes as deemed appropriate by the council.

WAC 51-55-003 International Wildland-Urban Interface Code.

The 2021 edition of the *International Urban-Interface Code*, published by the International Code Council, is hereby adopted by reference with the following additions, deletions, and exceptions.

WAC 51-55-008 Implementation.

The International Wildland-Urban Interface Code adopted by this chapter shall become effective in all counties and cities of this state on July 1, 2023.

101.2 Scope. The provisions of this code shall apply to the construction, alteration, movement, repair, maintenance and use of any building, structure, or premises within the wildland-urban interface areas in this jurisdiction.

Buildings or conditions in existence at the time of the adoption of this code are allowed to have their use or occupancy continued, if such condition, use or occupancy was legal at the time of the adoption of this code, provided that such continued use does not constitute an egregious ~~distinct~~ danger to life or property.

Buildings or structures moved into or within the jurisdiction shall comply with the provisions of this code for new buildings or structures.

101.4 Retroactivity. The provisions of the code shall apply to conditions arising after the adoption thereof, conditions not legally in existence at the adoption of this code and conditions that, as determined by ~~in the opinion of~~ the code official, constitute an egregious ~~distinct~~ hazard to life or property.

EXCEPTION: Provisions of this code that specifically apply to existing conditions are retroactive.

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ACCESSORY STRUCTURE. A building or structure used to shelter or support any material, equipment, chattel or occupancy other than a habitable building, or a habitable building or structure that is accessory to and incidental to that of the dwelling(s) and that is located on the same lot.

BUILDING OFFICIAL. Not adopted.

EGREGIOUS DANGER. A danger that if left unmitigated, places the occupants or property in immediate danger.

FUEL, HEAVY. Vegetation consisting of round wood 3 to 8 inches (76 to 203 mm) in diameter. See Fuel Models G, I, J, K, and U described in Chapter 9 ~~Appendix D~~.

FUEL, LIGHT. Vegetation consisting of herbaceous plants and round wood less than 1/4-inch (6.4 mm) in diameter. See Fuel Models A, C, E, L, N, P, R, and S described in Chapter 9 ~~Appendix D~~.

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FUEL, MEDIUM. Vegetation consisting of round wood 1/4 to 3 inches (6.4 mm to 76 mm) in diameter. See Fuel Models B, D, F, H, O, Q, and T described in Chapter 9 ~~Appendix D~~.

HIGH-DENSITY VEGETATED AREA. An area defined by a square determined in accordance with Section 302.3.1, with 75 percent or more vegetation.

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WASHINGTON WILDLAND-URBAN INTERFACE MAP (WA-WUI). The Washington department of natural resources map designating urban areas, wildland-urban interface, wildland-urban intermix, wildlands, and long-term non-buildable areas, designated as the Washington wildland-urban interface as mapped for 2019 by the Washington state department of natural resources—wildfire and forest health divisions under consultation from the USFS Rocky Mountain Research Station.

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

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301.1 Scope. Wildland urban interface areas shall be determined using the Washington wildland urban interface map (WA-WUI). WA-WUI designations are permitted to be modified, upon approval of a finding of fact in accordance with Section 302.
User note: The WA-WUI map is available at https://data-wadnr.opendata.arcgis.com/apps/wildland-urban-interface-viewing-app/explore.

301.2 Construction in wildland-urban interface or intermix areas. Where a structure is proposed to be constructed in an area designated by the WA-WUI map as wildland-urban interface or intermix, the construction shall comply with the provisions of this code.

301.3 Construction in wildlands areas. Where a structure is proposed to be constructed in an area designated by the WA-WUI map as wildlands, the applicable wildland urban interface area designation shall be based on a finding of fact in accordance with Section 302.

302.1 General. Wildland urban interface area designations are permitted to be established in accordance with this section.

302.2 Finding of fact. The applicable wildland urban interface designation shall be based on a finding of fact. The finding of fact shall comply with the provisions of Appendix E or is permitted to be based on the worksheet and procedures in Section 302.3.

302.3 Simplified wildland urban interface designation worksheet. The wildland urban interface designation is permitted to be established using the procedure outlined in Figure 302(1), using the worksheet in Figure 302(2).

302.3.1 Area to be evaluated. For the purposes of establishing structure and vegetation densities, the area covered by a square of 1320 feet on a side (40 acres) shall be evaluated. The square area shall be located such that the site under consideration is in its center, except where the square would overlap a water body shown on the WA-WUI map with a surface area greater than 200,000 square feet, the location shall be adjusted such that no part of the square overlaps the water body.

302.3.2 Structure density category. The structure density category shall be determined by counting the number of structures within the area to be evaluated per Section 302.3.1. The structure density category shall be determined as follows:

UNINHABITED:	0 structures
VERY LOW:	1 structure
LOW:	2 to 8 structures
MEDIUM:	9 to 120 structures
HIGH:	more than 120 structures

302.3.3 Vegetation density category. Vegetation coverage within the area to be evaluated per Section

302.3.1 shall be determined in accordance with Chapter 9. Vegetation density shall be determined by dividing the vegetation coverage by 1,742,400 square feet (40 acres). Where the vegetation density is less than 50 percent, the vegetation density category for the site shall be non-vegetated. Where the vegetation density is 50 percent or more, the vegetation density category for the site shall be vegetated.

302.3.4 Proximity category. The distance from the site being evaluated to a high-density vegetated area shall be measured from the closest edge of the site boundary to the closest edge of the nearest high-density vegetated area. Where the distance is less than 1.5 miles, the proximity category shall be near. Where the distance is 1.5 miles or more, the proximity category shall be distant.

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302.3.5 WUIC applicability. The WUIC shall apply, and the site shall be designated as intermix or interface in accordance with Section 302.3.6 under either of the following conditions:

1. The structure density category is very low to high, and the vegetation density category is vegetated.

2. The structure density category is very low to high, and the proximity category is near.

The WUIC shall not apply under either of the following conditions:

1. The structure density category is uninhabited, and the site is not located within an area designated as intermix or interface on the WA-WUI map.

2. The structure density category is uninhabited to high, the vegetation density category is non-vegetated, and the proximity category is distant.

302.3.6 Wildland urban interface area designation. Where required by Section 302.3.5, the site shall be designated as intermix or interface in accordance with Section 302.3.6.1 or 302.3.6.2.

302.3.6.1 Intermix designation. The site shall be designated as intermix where the structure density category is very low to high, and the vegetation density category is vegetated.

302.3.6.2 Interface designation. The site shall be designated as interface where the structure density category is very low to high, and the proximity category is near.

For the area to be evaluated in Section 302.3.1:

1. Determine structure density category (uninhabited, very low, low, medium, or high).

2. Determine vegetation density category (non-vegetated or vegetated).

3. Determine proximity category (near or distant).

4. Based on structure density, vegetation density, and proximity categories, determine if compliance with this code is required (WUIC applies, WUIC does not apply).

5. Where compliance with this code is required, determine wildland urban interface area designation (intermix or interface).

Figure 302(1).
Outline of simplified procedure for determining wildland interface designation

1. Determine structure density category in accordance with Section 302.3.2. Numbers in table are the number of structures within the area determined by Section 302.3.1.

UNINHABITED	VERY LOW	LOW	MEDIUM	HIGH
0	1	2 TO 8	9 TO 120	MORE THAN 120

2. Determine vegetation density category within the area determined by Section 302.3.1.

NONVEGETATED	VEGETATED
Less than 50% vegetated	50% or more vegetated

3. Determine proximity category to the nearest high-density vegetated area.

NEAR	DISTANT
Less than 1.5 mi (2.414 km)	1.5 mi (2.414 km) or more

4. Use structure density, vegetation density, and proximity categories from above to determine if WUIC applies.

WUIC Applies	WUIC Does Not Apply
• Structure density category is very low to high; and • Vegetation density category is vegetated.	• Structure density category is uninhabited; and • The site is not located within an area designated as intermix or interface on the WA-WUI map.
• Structure density category is very low to high; and • Proximity category is near.	• Structure density category is uninhabited to high; and • Vegetation density category is non-vegetated; and • Proximity category is distant.

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5. Where WUIC applies, the site shall be designated as intermix or interface as follows:

INTERMIX	INTERFACE
• Structure density category is very low to high; and • Vegetation density category is vegetated.	• Structure density category is very low to high; and • Proximity category is near.

Figure 302(2).
Worksheet for simplified procedure for determining wildland interface designation

302.4 Review of wildland-urban interface areas. The *code official* shall review for approval evaluated areas for new or modified findings of fact. Where a new or modified findings of fact are *approved*, the *code official* shall recommend to WADNR a modification to the *wildland-urban interface areas* mapping.

401.1 Scope. *Wildland-urban interface areas* shall be provided with emergency vehicle access and water supply in accordance with this chapter.

401.2 Objective. This section is not adopted.

401.3 General safety precautions. This section is not adopted.

402.1 Subdivisions. Subdivisions shall comply with locally adopted standards.

402.1.1 Access. This section is not adopted.

402.1.2 Water supply. This section is not adopted.

402.2 Individual structures. Individual structures shall comply with Sections 402.2.1 and 402.2.2.

402.2.1 Access. Individual structures hereafter constructed or relocated into or within *wildland-urban interface areas* shall be provided with ~~fire apparatus access in accordance with the International Fire Code and~~ driveways in accordance with Section 403.2 and locally adopted standards. Marking of fire protection equipment shall be provided in accordance with Section 403.5 and address markers shall be provided in accordance with Section 403.6.

402.2.2 Water supply. Individual structures hereafter constructed or relocated into or within *wildland-urban interface areas* shall be provided with a conforming water supply in accordance with locally adopted standards ~~Section 404~~.
EXCEPTIONS: Not Adopted

402.3 Existing conditions. This section is not adopted.

403.2.1 Dimensions. This section is not adopted.

403.2.2 Length. This section is not adopted.

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403.2.3 Service limitations. This section is not adopted.

403.2.4 Turnarounds and turnouts. *Driveways* in excess of three hundred feet in length shall be provided with turnarounds. *Driveways* in excess of five hundred feet in length and less than twenty feet in width shall be provided with turnouts and turnarounds. Turnarounds and turnouts shall be designed as required by locally adopted standards.

403.2.5 Turnouts. This section is not adopted.

403.3 Fire apparatus access road. Where required, fire apparatus access roads shall be provided and maintained as required by locally adopted street, road, and access standards ~~all-weather roads with a minimum width of 20 feet (6096 mm) and a clear height of 13 feet 6 inches (4115 mm); shall be designed to accommodate the loads and turning radii for fire apparatus; and shall have a gradient negotiable by the specific fire apparatus normally used at that location within the jurisdiction. Dead-end roads in excess of 150 feet (45 720 mm) in length shall be provided with turnarounds as approved by the code official. An all-weather road surface shall be any surface material acceptable to the code official that would normally allow the passage of emergency service vehicles typically used to respond to that location within the jurisdiction~~.

403.4 Marking of roads. This section is not adopted.

403.4.1 Sign construction. This section is not adopted.

404.1 General. Water supply shall be provided and maintained as required by locally adopted standards.

404.2 Water sources. This section is not adopted.

404.3 Draft sites. This section is not adopted.

404.3.1 Access. This section is not adopted.

404.3.2 Pumper access points. This section is not adopted.

404.4 Hydrants. This section is not adopted.

404.5 Adequate water supply. This section is not adopted.

404.6 Fire department. This section is not adopted.

404.7 Obstructions. This section is not adopted.

404.8 Identification. This section is not adopted.

404.9 Testing and maintenance. This section is not adopted.

404.10 Reliability. This section is not adopted.

404.10.1 Objective. This section is not adopted.

404.10.2 Clearance of fuel. This section is not adopted.

404.10.3 Standby power. This section is not adopted.

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501.1 General. Buildings and structures ~~shall be~~ hereafter constructed, modified, or relocated into or within the *wildland-urban interface area* shall meet the construction requirements of Sections 501.4 through 501.8. ~~in accordance with the International Building Code and this code~~

EXCEPTIONS:
1. Buildings and structures with fire hazard severity determined in Section 502 and with ignition-resistant construction classification determined in Section 503.
2. Accessory structures not exceeding 200 square feet (11 m2) in floor area and where located not less than 50 feet (15,240 mm) from buildings or structures containing habitable spaces.
3. Agricultural buildings located not less than 50 feet (15,240 mm) from buildings or structures containing habitable spaces.

501.2 Objective. This section is not adopted.

501.4 Roof covering. Roofs shall have a roof assembly that complies with a Class A rating when tested in accordance with ASTM E108 or UL 790. For roof assemblies where the profile allows a space between the roof covering and roof deck, the space at the eave ends shall be fire-stopped to preclude entry of flames or embers or have one layer of 72-pound (32.4 kg) mineral-surfaced, nonperforated cap sheet complying with ASTM D3909 installed over the combustible roof deck.

EXCEPTIONS:
1. Class A roof assemblies including those with coverings of brick, masonry, or an exposed concrete roof deck.
2. Class A roof assemblies also include ferrous or copper shingles or sheets, metal sheets and shingles, clay or concrete roof tile or slate installed on noncombustible decks or ferrous, copper or metal sheets installed without a roof deck on noncombustible framing.
3. Class A roof assemblies include minimum 16 oz/sq. ft. (0.0416 kg/m2) copper sheets installed over combustible roof decks.

501.4.1 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.

501.5 Exterior walls and projections other than decks. Exterior walls and projections other than decks, of buildings, or structures, or *accessory structures* attached to buildings or structures with habitable spaces, shall be constructed with one of the following methods, with materials extending from the top of the foundation to the underside of the roof sheathing:

1. Materials approved for not less than one hour fire-resistance rated construction on the exterior side.
2. Approved noncombustible materials.
3. Heavy timber or log wall construction.
4. Fire-retardant-treated wood on the exterior side. The fire-retardant-treated wood shall be labeled for exterior use and meet the requirements of Section 2303.2 of the International Building Code; or
5. Ignition-resistant materials, complying with Section 503.2 on the exterior side.

EXCEPTION: Unenclosed accessory structures attached to buildings with habitable spaces and projections, such as decks, attached to the first floor of a building, if when the structure is built with building materials at least two inches nominal depth and the area below the unenclosed accessory structure is screened with material with openings no greater than 1/4-inch maximum to prevent accumulation of combustibles and to prevent embers from coming in underneath.

501.6 Decks and appendages. The material of decks, porches, balconies, and stairs shall be constructed with any of the following materials:

1. Ignition-resistant material that complies with the minimum performance requirement of Section 503.2.

2. Exterior fire-retardant-treated wood.

3. Noncombustible material.

4. Any material that complies with the minimum performance requirements of Section 503.2 when attached exterior wall covering is also either noncombustible or ignition-resistant material.

5. Heavy timber construction consisting of the following:

5.1. Posts shall be a minimum of 6 inches x 6 inches nominal dimension.

5.2. Beams shall be a minimum of 6 inches x 8 inches nominal dimension.

5.3. Joists shall be a minimum of 4 inches x 8 inches nominal dimension spaced at no greater than 24 inches on center.

501.6.1 Clearance. Decks with less than 48 inches of clearance from finished grade to deck joists shall be enclosed with screen material with openings no greater than 1/4-inch maximum to prevent accumulation of combustibles and to prevent embers from coming in underneath.

501.6.2 Walking 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 Section 503.2.

2. Exterior fire-retardant-treated wood.

3. Noncombustible material.

4. Where the deck, porch, balcony, or stairs are constructed of heavy timber in accordance with Section 501.6, natural wood decking products shall be:

4.1. 2-inch nominal dimension lumber; or

4.2. 5/4-inch nominal hardwood (i.e., teak, mahogany, or other approved hardwood).

5. Material that complies with the performance requirements of Section 501.6.2.1 when tested in accordance with ASTM E2632 and when attached exterior wall covering is also composed of only noncombustible or ignition-resistant materials.

EXCEPTION: Wall material shall be permitted to be of any material that otherwise complies with Section 501.5 when the decking surface material complies with the performance requirements of ASTM E84 with a Class B flame spread index.

501.6.2.1 Material in Section 501.6.2, Item 5. The walking surface material shall be tested in accordance with ASTM E2632 and shall comply with the following condition of acceptance. The ASTM E2632 test shall be conducted on a minimum of three test specimens and the peak heat release rate shall be less than or equal to 25 kW/ft2 (269 kW/m2). If any one of the three tests does not meet the conditions of acceptance, three additional tests shall be run. All the additional tests shall meet the condition of acceptance.

501.7 Exterior glazing. Exterior windows, window walls and glazed doors, windows within exterior doors, and skylights shall be tempered glass, multilayered glazed panels, glass block, or have a fire protection rating of not less than 20 minutes.

501.8 Vents. Attic 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. Such vents shall be covered with noncombustible corrosion-resistant mesh with openings not to exceed 1/4 inch (6.4 mm) or shall be designed and approved to prevent flame or ember penetration into the structure.

1. Attic ventilation openings shall not be located in soffits, in eave overhands, between rafters at eaves, or in other overhang areas. Gable end and dormer vents shall be located not less than 10 feet (3048 mm) from lot lines. Underfloor ventilation openings shall be located as close to grade as possible.

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502.1 General. The fire hazard severity of building sites for buildings hereafter constructed, modified, or relocated into *wildland-urban interface areas* shall be established in accordance with Table 502.1. See also, Chapter 8.~~Appendix C~~

502.2 Fire hazard severity reduction. The fire hazard severity identified in Table 502.1 is allowed to be reduced by implementing a vegetation management plan in accordance with Chapter 7.~~Appendix B~~

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504.7 Appendages and projections. ~~Unenclosed~~ *Accessory structures* attached to buildings with habitable spaces and projections ~~such as~~ other than decks, porches, balconies, or stairs, shall be not less than 1-hour fire-resistance-rated construction, *heavy timber construction*, or constructed of one of the following:

1. *Approved noncombustible* materials.

2. Fire-retardant-treated wood identified for exterior use and meeting the requirements of Section 2303.2 of the *International Building Code*.

3. Ignition-resistant building materials in accordance with Section 503.2.

EXCEPTION: Not Adopted

504.8 Decks and appendages. The material of decks, porches, balconies, and stairs shall be constructed with any of the following materials:

1. Ignition-resistant material that complies with the minimum performance requirement of Section 503.2.

2. Exterior fire-retardant-treated wood.

3. Noncombustible material.

4. Any material that complies with the minimum performance requirements of Section 503.2 when attached exterior wall covering is also either noncombustible or ignition-resistant material.

5. Heavy timber construction consisting of the following:

5.1. Posts shall be a minimum of 6 inches x 6 inches nominal dimension.

5.2. Beams shall be a minimum of 6 inches x 8 inches nominal dimension.

5.3. Joists shall be a minimum of 4 inches x 8 inches nominal dimension spaced at no greater than 24 inches on center.

504.8.1 Clearance. Decks with less than 48 inches of clearance from finished grade to deck joists shall be enclosed with screen material with openings no greater than 1/4-inch maximum to prevent accumulation of combustibles and to prevent embers from coming in underneath.

504.8.2 Walking 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 Section 503.2.

2. Exterior fire-retardant-treated wood.

3. Noncombustible material.

4. Where the deck, porch, balcony, or stairs are constructed of heavy timber in accordance with Section 501.6, natural wood decking products shall be:

4.1. 2-inch nominal dimension lumber; or

4.2. 5/4-inch nominal hardwood (i.e., teak, mahogany, or other approved hardwood).

5. Material that complies with the performance requirements of Section 504.8.2.1 when tested in accordance with ASTM E2632 and when attached exterior wall covering is also composed of only noncombustible or ignition-resistant materials.

EXCEPTION: Wall material shall be permitted to be of any material that otherwise complies with Section 501.5 when the decking surface material complies with the performance requirements of ASTM E84 with a Class B flame spread index.

504.8.2.1 Material in Section 504.8.1, Item 5. The walking surface material shall be tested in accordance with ASTM E2632 and shall comply with the following condition of acceptance. The ASTM E2632 test shall be conducted on a minimum of three test specimens and the peak heat release rate shall be less than or equal to 25 kW/ft2 (269 kW/m2). If any one of the three tests does not meet the conditions of acceptance, three additional tests shall be run. All the additional tests shall meet the condition of acceptance.

504.9~~8~~ Exterior glazing. Exterior windows, window walls and glazed doors, windows within exterior doors, and skylights shall be tempered glass, *multilayered glazed panels*, glass block or have a fire protection rating of not less than 20 minutes.

504.10~~9~~ Exterior doors. Exterior doors shall be *approved* noncombustible construction, solid core wood not less than 1 3/4 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 504.8.

EXCEPTION: Vehicle access doors.

504.11~~10~~ Vents. Attic 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. Such vents shall be covered with *noncombustible* corrosion-resistant mesh with openings not to exceed 1/4 inch (6.4 mm) or shall be designed and *approved* to prevent flame or ember penetration into the structure.

504.11~~10~~.1 Vent locations. Attic ventilation openings shall not be located in soffits, in eave overhangs, between rafters at eaves, or in other overhang areas. Gable end and dormer vents shall be located not less than 10 feet (3048 mm) from lot lines. Underfloor ventilation openings shall be located as close to grade as practical.

504.12~~11~~ Detached accessory structures. Detached accessory structures located less than 50 feet (15,240 mm) from a building containing habitable space shall have exterior walls constructed with materials *approved* for not less than 1-hour *fire-resistance-rated construction*, heavy timber, *log wall construction*, or constructed with *approved noncombustible* materials or fire-retardant-treated wood on the exterior side. The fire-retardant-treated wood shall be labeled for exterior use and meet the requirements of Section 2303.2 of the *International Building Code*.

504.12~~11~~.1 Underfloor areas. Where the detached structure is located and constructed so that the structure or any portion thereof projects over a descending slope surface greater than 10 percent, the area below the structure shall have underfloor areas enclosed to within 6 inches (152 mm) of the ground, with exterior wall construction in accordance with Section 504.5 or underfloor protection in accordance with Section 504.6.

EXCEPTION: The 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* or *heavy timber construction* or fire-retardant-treated wood on the exterior side. The fire-retardant-treated wood shall be labeled for exterior use and meet the requirements of Section 2303.2 of the *International Building Code*.

505.7 Appendages and projections. ~~Unenclosed~~ *Accessory structures* attached to buildings with habitable spaces and projections, ~~such as~~ other than decks, porches, balconies, or stairs, shall be not less than 1-hour *fire-resistance-rated construction*, *heavy timber construction* or constructed of one of the following:

1. *Approved noncombustible* materials.

2. Fire-retardant-treated wood identified for exterior use and meeting the requirements of Section 2303.2 of the *International Building Code*.

3. Ignition-resistant building materials in accordance with Section 503.2.

EXCEPTION: Not adopted.

505.8 Decks and appendages. The material of decks, porches, balconies, and stairs shall be constructed with any of the following materials:

1. Ignition-resistant material that complies with the minimum performance requirement of Section 503.2.

2. Exterior fire-retardant-treated wood.

3. Noncombustible material.

4. Any material that complies with the minimum performance requirements of Section 503.2 when attached exterior wall covering is also either noncombustible or ignition-resistant material.

5. Heavy timber construction consisting of the following:

5.1. Posts shall be a minimum of 6 inches x 6 inches nominal dimension.

5.2. Beams shall be a minimum of 6 inches x 8 inches nominal dimension.

5.3. Joists shall be a minimum of 4 inches x 8 inches nominal dimension spaced at no greater than 24 inches on center.

505.8.1 Clearance. Decks with less than 48 inches of clearance from finished grade to deck joists shall be enclosed with screen material with openings no greater than 1/4-inch maximum to prevent accumulation of combustibles and to prevent embers from coming in underneath.

505.8.2 Walking 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 Section 503.2.

2. Exterior fire-retardant-treated wood.

3. Noncombustible material.

4. Where the deck, porch, balcony, or stairs are constructed of heavy timber in accordance with Section 501.6, natural wood decking products shall be:

4.1. 2-inch nominal dimension lumber; or

4.2. 5/4-inch nominal hardwood (i.e., teak, mahogany, or other approved hardwood).

5. Material that complies with the performance requirements of Section 505.8.1.1 when tested in accordance with ASTM E2632 and when attached exterior wall covering is also composed of only noncombustible or ignition-resistant materials.

EXCEPTION: Wall material shall be permitted to be of any material that otherwise complies with Section 501.5 when the decking surface material complies with the performance requirements of ASTM E84 with a Class B flame spread index.

505.8.2.1 Material in Section 505.8.1, Item 5. The walking surface material shall be tested in accordance with ASTM E2632 and shall comply with the following condition of acceptance. The ASTM E2632 test shall be conducted on a minimum of three test specimens and the peak heat release rate shall be less than or equal to 25 kW/ft2 (269 kW/m2). If any one of the three tests does not meet the conditions of acceptance, three additional tests shall be run. All the additional tests shall meet the condition of acceptance.

505.9~~8~~ Exterior glazing. Exterior windows, window walls and glazed doors, windows within exterior doors, and skylights shall be tempered glass, *multilayered glazed panels*, glass block or have a fire protection rating of not less than 20 minutes.

505.10~~9~~ Exterior doors. Exterior doors shall be *approved noncombustible* construction, solid core wood not less than 1 3/4 inches thick (45 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 505.8.

EXCEPTION: Vehicle access doors.

Insert Page 5-5 #1
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505.11~~10~~ Vents. Attic 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. Such vents shall be covered with *noncombustible* corrosion-resistant mesh with openings not to exceed 1/4 inch (6.4 mm) or shall be designed and *approved* to prevent flame or ember penetration into the structure.

505.11~~10~~.1 Vent locations. Attic ventilation openings shall not be located in soffits, in eave overhangs, between rafters at eaves, or in other overhang areas. Gable end and dormer vents shall be located not less than 10 feet (3048 mm) from lot lines. Underfloor ventilation openings shall be located as close to grade as practical.

505.12~~11~~ Detached accessory structures. Detached accessory structures located less than 50 feet (15,240 mm) from a building containing habitable space shall have exterior walls constructed with materials *approved* for not less than 1-hour *fire-resistance-rated construction*, heavy timber, *log wall construction*, or constructed with *approved noncombustible* materials or fire-retardant-treated wood on the exterior side. The fire-retardant-treated wood shall be labeled for exterior use and meet the requirements of Section 2303.2 of the *International Building Code*.

505.12~~11~~.1 Underfloor areas. Where the detached *accessory structure* is located and constructed so that the structure or any portion thereof projects over a descending slope surface greater than 10 percent, the area below the structure shall have underfloor areas enclosed to within 6 inches (152 mm) of the ground, with exterior wall construction in accordance with Section 505.5 or underfloor protection in accordance with Section 505.6.

EXCEPTION: The 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* or heavy-timber construction or fire-retardant-treated wood on the exterior side. The fire-retardant-treated wood shall be labeled for exterior use and meet the requirements of Section 2303.2 of the *International Building Code*.

507.1 General. The *roof covering* on buildings or structures in existence prior to the adoption of this code that are replaced or have ~~25~~ 50 percent or more replaced in a 12-month period shall be replaced with a *roof covering* required ~~for new construction~~ by Section 501.4 or based on the type of ignition-resistant construction ~~specified in accordance with Section 503~~ as determined by Section 501.1 Exception 1.

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602.1 General. An *approved* automatic sprinkler system shall be installed ~~in all occupancies in new buildings required to meet the requirements for Class 1 ignition-resistant construction in Chapter 5~~ when required by the authority having jurisdiction. ~~The installation of the automatic sprinkler systems shall be in accordance with nationally recognized standards.~~

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Chapter 7
Vegetation management plan.
(See Appendix B on Page B-1)

User note: *About this chapter: ~~It's~~ The purpose of this chapter is to provide criteria for submitting vegetation management plans, specifying their content and establishing a criterion for considering vegetation management as being a fuel modification.*

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Chapter 8
Fire hazard severity form.
(See Appendix C on Page C-1)

User note: *About this ~~appendix~~ chapter: ~~While not part of the code, it can become part of the code (replacing Table 502.1) when specifically included in the adopting ordinance. It's~~ The purpose of this chapter is to provide an alternative methodology to using Table 502.1 for analyzing the fire hazard severity of building sites using a preassigned value/scoring system for each feature that impacts the hazard level of a building site. Included in the evaluation are site access, types and management of vegetation, percentage of defensible space on the site, site topography, class of roofing and other construction materials used on the building (existing or to be constructed on the site), fire protection water supply, and whether utilities are installed above or below ground.*

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Chapter 9
Fire danger rating system.
(See Appendix D on Page D-1)

User note: *About this ~~appendix~~ chapter: The fuel models included in ~~Appendix D~~ Chapter 9 are only general descriptions because they represent all wildfire fuels from Florida to Alaska and from the East Coast to California.*

The National Fire Danger Rating System (NFDRS) is a set of computer programs and algorithms that allows land management agencies to estimate today's or tomorrow's fire danger for a given rating area. NFDRS characterizes fire danger by evaluating the approximate upper limit of fire behavior in a fire danger rating area during a 24-hour period based on fuels, topography and weather, or what is commonly called the fire triangle. Fire danger ratings are guides for initiating pre-suppression activities and selecting the appropriate level of initial response to a reported wildfire in lieu of detailed, site- and time-specific information.

Predicting the potential behavior and effects of wildland fire are essential tasks in fire management. Surface fire behavior and fire effects models and prediction systems are driven in part by fuel-bed inputs such as load, bulk density, fuel particle size, heat content and moisture content. To facilitate use in models and systems, fuel-bed inputs have been formulated into fuel models. A fuel model is a set of fuel-bed inputs needed by a particular fire behavior or fire effects model. Different kinds of fuel models are used in fire spread models in a variety of fire behavior modeling systems. The fuel models in this appendix correlate with the light, medium, and heavy fuel definitions found in Chapter 2 of the code.

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ASTM
E2632-2020: Standard Test Method for Evaluating the Under-Deck Fire Test Response of Deck Materials
501.6

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CHAPTER 7
VEGETAION MANAGEMENT PLAN

User note: *About this chapter: ~~It's~~ The purpose of this chapter is to provide criteria for submitting vegetation management plans, specifying their content and establishing a criterion for considering vegetation management as being a fuel modification.*

~~B~~17~~0~~01.1 Scope. Vegetation management plans shall be submitted to the *code official where required* for review and approval as part of the plans required for a permit.

~~B~~17~~0~~01.2 Plan content. Vegetation management plans shall describe all actions that will be taken to prevent a fire from being carried toward or away from the building. A vegetation management plan shall include the following information:

1. A copy of the site plan.

2. Methods and timetables for controlling, changing, or modifying areas on the property. Elements of the plan shall include removal of slash, snags, vegetation that may grow into overhead electrical lines, other ground fuels, ladder fuels and dead trees, and the thinning of live trees.

3. A plan for maintaining the proposed fuel-reduction measures.

~~B~~17~~0~~01.3 Fuel modification. To be considered a *fuel modification* for purposes of this code, continuous maintenance of the clearance is required.

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CHAPTER 8
FIRE HAZARD SEVERITY FORM

User note: *About this ~~appendix~~ chapter: ~~While not part of the code, it can become part of the code (replacing Table 502.1) when specifically included in the adopting ordinance. It's~~ The purpose of this chapter is to provide an alternative methodology to using Table 502.1 for analyzing the fire hazard severity of building sites using a preassigned value/scoring system for each feature that impacts the hazard level of a building site. Included in the evaluation are site access, types and management of vegetation, percentage of defensible space on the site, site topography, class of roofing and other construction materials used on the building (existing or to be constructed on the site), fire protection water supply, and whether utilities are installed above or below ground.*

~~C~~18801 Fire hazard severity form. Where adopted, Table 801.1 is permitted to be used as an alternative to Table 502.1 for analyzing the fire hazard severity of building sites.

TABLE ~~C~~18801.1
FIRE HAZARD SEVERITY FORM
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CHAPTER 9
FIRE DANGER RATING SYSTEM

User note: *About this ~~appendix~~ chapter: The fuel models included in ~~Appendix D~~ Chapter 9 are only general descriptions because they represent all wildfire fuels from Florida to Alaska and from the East Coast to California.*

The National Fire Danger Rating System (NFDRS) is a set of computer programs and algorithms that allows land management agencies to estimate today's or tomorrow's fire danger for a given rating area. NFDRS characterizes fire danger by evaluating the approximate upper limit of fire behavior in a fire danger rating area during a 24-hour period based on fuels, topography, and weather, or what is commonly called the fire triangle. Fire danger ratings are guides for initiating pre-suppression activities and selecting the appropriate level of initial response to a reported wildfire in lieu of detailed, site- and time-specific information.

Predicting the potential behavior and effects of wildland fire are essential tasks in fire management. Surface fire behavior and fire effects models and prediction systems are driven in part by fuel-bed inputs such as load, bulk density, fuel particle size, heat content and moisture content. To facilitate use in models and systems, fuel-bed inputs have been formulated into fuel models. A fuel model is a set of fuel-bed inputs needed by a particular fire behavior or fire effects model. Different kinds of fuel models are used in fire spread models in a variety of fire behavior modeling systems. The fuel models in this appendix correlate with the light, medium, and heavy fuel definitions found in Chapter 2 of the code.

~~D1~~9~~01~~.1 General. The Fuel Model Key is provided in Table 901.1. Fuel Models are described in Sections 901.1.1 through 901.1.20.

TABLE ~~D1~~9~~01~~.1
FUEL MODEL KEY
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~~D1~~901.1.1 FUEL MODEL A. (No change to the text)

~~D1~~901.1.2 FUEL MODEL B. (No change to the text)

~~D1~~901.1.3 FUEL MODEL C. (No change to the text)

~~D1~~901.1.4 FUEL MODEL D. (No change to the text)

~~D1~~901.1.5 FUEL MODEL E. (No change to the text)

~~D1~~901.1.6 FUEL MODEL F. (No change to the text)

~~D1~~901.1.7 FUEL MODEL G. (No change to the text)

~~D1~~901.1.8 FUEL MODEL H. (No change to the text)

~~D1~~901.1.9 FUEL MODEL I. (No change to the text)

~~D1~~901.1.10 FUEL MODEL J. (No change to the text)

~~D1~~901.1.11 FUEL MODEL K. (No change to the text)

~~D1~~901.1.12 FUEL MODEL L. (No change to the text)

~~D1~~901.1.13 FUEL MODEL N. (No change to the text)

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~~D1~~9901.1.14 FUEL MODEL O. (No change to the text)

~~D1~~9901.1.15 FUEL MODEL P. (No change to the text)

~~D1~~9901.1.16 FUEL MODEL Q. (No change to the text)

~~D1~~9901.1.17 FUEL MODEL R. (No change to the text)

~~D1~~9901.1.18 FUEL MODEL S. (No change to the text)

~~D1~~9901.1.19 FUEL MODEL T. (No change to the text)

~~D1~~9901.1.20 FUEL MODEL U. (No change to the text)

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