



**Notice of Permanent Rule  
January 24, 2019**

**Oregon Residential Specialty Code:  
R327.4 Wildfire Hazard Mitigation**

**Purpose of the rule:**

This rule amends the Oregon Residential Specialty Code (ORSC) to include increased construction standards for wildfire hazard mitigation that can be adopted by a local jurisdiction. The applicability of the increased construction standards will be determined by the local jurisdiction in accordance with the standards in the code and identified by the local adopting ordinance.

**Citation:**

Amend: OAR 918-480-0010.

This rule becomes effective January 24, 2019.

**History:**

In 2016 the Residential and Manufactured Structures Board (RMSB) appointed a committee to review the 2015 International Residential Code, public code change proposals, and existing Oregon specific amendments that would become the 2017 ORSC. Appendix W – Wildfire Hazard Mitigation was one of many public proposals reviewed by the committee and forwarded to the RMSB for consideration. In May of 2017 the RMSB reviewed the committee’s recommendations, including Appendix W – Wildfire Hazard Mitigation and recommended that Building Codes Division move the 2017 ORSC to rulemaking. During the division’s review of the RMSB’s recommendations three specific areas of concern were identified regarding Appendix W and the division returned Appendix W to the RMSB for further review. On October 1, 2017, the 2017 ORSC became effective without Appendix W.

On May 29, 2018, the division received a request from the City of Ashland Fire and Rescue to have Appendix W reconsidered by the RMSB. On July 11, 2018, the RMSB reviewed and recommended that the division proceed to rulemaking.

The division engaged stakeholders from the fire service, local government, and homebuilders to develop code standards with consistent and predictable application.

**Effect:**

These rules amend the ORSC to include increased construction standards for wildfire hazard mitigation that can be adopted by a local jurisdiction. These standards are intended to provide increased fire ignition protection of homes from flying embers and debris caused by wildfires.

**Contact:**

If you have questions or need further information, contact Tony Rocco, Structural Program Chief, at 503.373.7529, or [Anthony.J.Rocco@oregon.gov](mailto:Anthony.J.Rocco@oregon.gov).



**918-480-0010****Amendments to the Oregon Residential Specialty Code**

(1) The Oregon Residential Specialty Code is amended pursuant to OAR chapter 918, division 8. Amendments adopted during the code-cycle for inclusion into the Oregon Residential Specialty Code are placed in this rule, showing the section reference and a descriptive caption.

(2) Effective January 24, 2019, the Oregon Residential Specialty Code Section R327 is amended for additional wildfire hazard mitigation provisions that are available for local adoption.

[Publications: Publications referenced are available for review at the division. See division website for information on where to purchase publications.]

Stat. Auth.: ORS 455.020, 455.110, 455.610

Stats. Implemented: ORS 455.610

Hist.: BCA 18-1993, f. 8-24-93, cert. ef. 8-29-93; BCA 28-1993, f. 10-22-93, cert. ef. 1-1-94; BCA 29-1993, f. 11-24-93, cert. ef. 12-1-93; BCD 6-1995, f. 3-31-95, cert. ef. 4-1-95; BCD 3-1996, f. 2-2-96, cert. ef. 4-1-96; BCD 22-1996(Temp), f. 10-1-96, cert. ef. 10-4-96; BCD 5-1997, f. 3-21-97, cert. ef. 4-1-97; Administrative Reformatting 1-19-98; BCD 3-1998, f. 1-29-98, cert. ef. 4-1-98; BCD 19-1998, f. 9-30-98, cert. ef. 10-1-98; BCD 3-2000, f. 1-14-00 cert. ef. 4-1-00; BCD 19-2000(Temp), f.& cert. ef. 8-15-00 thru 2-10-01; BCD 32-2000, f. 12-27-00, cert. ef. 1-1-01; BCD 3-2001, f. 2-9-01, cert. ef. 3-1-01; BCD 2-2002, f. 3-5-02, cert. ef. 4-1-02; BCD 22-2002(Temp), f. 9-13-02 cert. ef. 10-1-02 thru 3-29-03; BCD 30-2002, f. 12-6-02, cert. ef. 1-1-03; BCD 1-2003(Temp), f. & cert. ef. 1-10-03 thru 3-31-03; BCD 33-2002, f. 12-20-02 cert. ef. 4-1-03; BCD 15-2004, f. 9-10-04, cert. ef. 10-1-04; BCD 5-2005, f. & cert. ef. 3-28-05; BCD 9-2006, f. 6-30-06, cert. ef. 7-1-06; BCD 1-2007, f. 2-15-07, cert. ef. 4-1-07; BCD 5-2008, f. 2-22-08, cert. ef. 4-1-08; BCD 13-2008(Temp), f. & cert. ef. 7-3-08 thru 12-30-08; BCD 21-2008, f. 9-30-08, cert. ef. 10-1-08; BCD 24-2008(Temp), f. & cert. ef. 10-6-08 thru 4-1-09; BCD 1-2009, f. 1-30-09, cert. ef. 2-1-09; BCD 8-2009, f. 9-30-09, cert. ef. 10-1-09; BCD 5-2010, f. 5-14-10, cert. ef. 7-1-10; BCD 19-2010, f. 12-30-10, cert. ef. 1-1-11; BCD

1-2011, f. & cert. ef. 2-15-11; BCD 11-2011(Temp), f. & cert. ef. 4-15-11 thru 9-30-11; BCD 13-2011, f. 5-13-11, cert. ef. 7-1-11; BCD 9-2014, f. 9-25-14, cert. ef. 10-1-14; BCD 3-2015, f. 3-24-15, cert. ef. 4-1-15; BCD 2-2016, f. 1-28-16, cert. ef. 2-1-16; BCD 11-2017, f. 9-14-17, cert. ef. 10-1-17; BCD 16-2017(Temp), f. 12-21-17, cert. ef. 1-1-18 thru 6-29-18; BCD 13-2018(Temp), f. 6-22-18, cert. ef. 6-30-18 thru 12-26-18; BCD 1-2019, f. & cert. ef. 1-24-19

## 2017 Oregon Residential Specialty Code Amendments

### Text denotation:

Underline denotes new text,

~~Strikethrough~~ denotes deleted text.

### SECTION R327 WILDFIRE HAZARD MITIGATION

**R327.1 Purpose.** The purpose of this section is to provide minimum standards for dwellings and their accessory structures located in or adjacent to vegetated areas subject to wildfires, to reduce or eliminate hazards presented by such fires.

**R327.2 Scope.** The provisions of this section shall apply to all dwellings required to be protected against wildfire by a jurisdiction which has adopted wildfire zoning regulations. The additional provisions of Section R327.4 shall apply when a local municipality has adopted a local ordinance specifically recognizing Section R327.4 and consistent with Sections R327.4 through R327.4.8.

**R327.3 ~~Determination. Wildfire hazard zone.~~** ~~A wild fire hazard zone is an area legally determined by a jurisdiction to have special hazards caused by a combination of combustible natural fuels, topography and climatic conditions that result in a significant hazard of catastrophic fire over relatively long periods each year.~~ Wildfire hazard zones shall be determined using criteria established by the Oregon Department of Forestry.

**R327.3.1 Wildfire hazard zone requirements.** Dwellings and their accessory structures shall be protected against wildfire by the following requirement in addition to other requirements of this code. The provisions of Section R327.4 apply only to qualifying lots identified in Section R327.4.1.

**Exception:** Nonhabitable detached accessory structures, with an area of not greater than 400 square feet, located at least 50 feet from all other structures on the lot.

**R327.3.1.1 Roofing.** Roofing shall be asphalt shingles in accordance with Section R905.2, slate shingles in accordance with Section R905.6, metal roofing in accordance with Section R905.4, tile, clay or concrete shingles in accordance with Section R905.3 and other approved roofing which is deemed to be equivalent to a minimum Class C rated roof covering. Untreated wood shingle and shake roofs are not permitted when the construction site is in a wildfire hazard zone as determined by Section R327.3.

**R327.3.1.2 Reroofing or repair of roofing of existing buildings.** When 50 percent or more of the roof covering of any building is repaired or replaced within one year, the roof covering shall be made to comply with this section and attic ventilation shall be made to comply with this code. Ventilation openings shall be protected with corrosion-resistant wire mesh, not greater than 1/2-inch (12.7 mm) or less than 1/8-inch (3.2 mm) in any dimension.

**R327.4 Scope of additional wildfire hazard mitigation requirements.** The provisions of Section R327.4 shall apply to

new dwellings and their accessory structures located in a wildfire hazard zone on a qualifying lot of record created on or after the effective date in the local adopting ordinance.

**R327.4.1 Qualifying lots of record.** Qualifying lots of record shall meet all the following:

1. Be located in a wildfire hazard zone as identified by the local municipality using criteria established by the Oregon Department of Forestry. The local municipality is not required to include all areas identified by the Oregon Department of Forestry as wildfire hazard zones. The zone shall be detailed in the local adopting ordinance.
2. The local municipality shall determine in the adopting ordinance whether qualifying lots of record shall consist of individual lots or whether qualifying lots must be part of a development that contains a minimum number of lots.
3. The local municipality shall make a determination that the lot of record is either located within the identified wildfire hazard zone as determined by the jurisdiction or that it is located outside of the wildfire hazard zone as determined by the jurisdiction. Notification shall be provided in conjunction with the land use approval under ORS 197.522.
4. Application:
  - 4.1 Lots created prior to the effective date of the local ordinance, that would otherwise qualify under the local adopting ordinance, are exempt from the requirements of the ordinance for a period of three years from the creation date of the land use approval under ORS 197.522.
  - 4.2 For a lot created after the effective date of the local ordinance that receives notification under this section, the determination in the notification shall be valid for three years from the date of the land use approval under ORS 197.522. At the expiration of the three years, a lot of record shall be re-evaluated under the current version of the adopting ordinance prior to the issuance of a building permit.

**Infill exception:** Dwellings or accessory structures constructed on a lot in a subdivision, do not need to comply with Section R327.4 when at least 50 percent of the lots in the subdivision have existing dwellings that were not constructed in accordance with Section R327.4.

Nothing in the code or adopting ordinance prevents a local municipality from waiving the requirements of Section R327.4 for any lot, property or dwelling, or the remodel, replacement or reconstruction of a dwelling within the jurisdiction.

The local *municipality* must include a process for resolving disputes related to the applicability of the local ordinance and this section.

**R327.4.2 Definitions.** The following words and terms shall, for purposes of Section R327.4, have the meanings shown herein. Refer to Chapter 2 for general definitions.

**Heavy Timber.** For the use in this section, *heavy timber* shall be sawn lumber or glue laminated wood with the smallest minimum nominal dimension of 4 inches (102 mm). *Heavy timber* walls or floors shall be sawn or glue-laminated planks splined, tongue- and-grove, or set close together and well spiked.

**Ignition-Resistant Material.** A type of building material that resists ignition or sustained flaming combustion sufficiently so as to reduce losses from wildland-urban interface conflagrations under worst-case weather and fuel conditions with *wildfire exposure* of burning embers and small flames. Such materials include any product designed for exterior exposure that, when tested in accordance with ASTM E84 or UL 723 for surface burning characteristics of building materials, extended to a 30-minute duration, exhibits a flame spread index of not more than 25, shows no evidence of significant progressive combustion, and whose flame front does not progress more than 10½ feet (3.2 m) beyond the centerline of the burner at any time during the test.

**Noncombustible Material.** Any material that in the form in which it is used and under the conditions anticipated, will not ignite, burn, support combustion, or release flammable vapors when subjected to fire or heat in accordance with ASTM E136.

**Wildfire.** Any uncontrolled fire spreading through vegetative fuels that threatens to destroy life, property, or resources.

**Wildfire Exposure.** One or a combination of circumstances exposing a structure to ignition, including radiant heat, convective heat, direct flame contact and burning embers being projected by a vegetation fire to a structure and its immediate environment.

**R327.4.3 Roofing.** Roofing shall be asphalt shingles in accordance with Section R905.2, slate shingles in accordance with Section R905.6, metal roofing in accordance with Section R905.4, tile, clay or concrete shingles in accordance with Section R905.3 or other *approved* roofing which is deemed to be equivalent to a minimum Class B rated roof assembly. Wood shingle and shake roofs are not permitted in a wildfire hazard zone.

Where the roof profile allows a space between the roof covering and roof decking, the spaces shall be constructed to prevent the intrusion of flames and embers, be fireblocked with *approved* materials, or have one layer of minimum 72 pound (32.4 kg) mineral-surfaced nonperforated cap sheet complying with ASTM D3909 installed over the combustible decking.

Where valley flashing is installed, the flashing shall be not less than 0.019-inch (0.48 mm) No. 26 gage galvanized sheet corrosion-resistant metal installed over not less than one layer of minimum 72 pound (32.4 kg) mineral-surfaced non-

perforated cap sheet complying with ASTM D3909 at least 36-inch-wide (914 mm) running the full length of the valley.

**R327.4.3.1 Gutters.** When required, roof gutters shall be constructed of *noncombustible materials* and be provided with a means to prevent accumulation of leaves and debris in the gutter.

**R327.4.4 Ventilation.** Where provided, the minimum net area of ventilation openings for enclosed attics, enclosed soffit spaces, enclosed rafter spaces, and underfloor spaces shall be in accordance with Sections R806 and R408.

All ventilation openings shall be covered with noncombustible corrosion-resistant metal wire mesh, vents designed to resist the intrusion of burning embers and flame, or other *approved* materials or devices.

Ventilation mesh and screening shall be a minimum of 1/16-inch (1.6mm) and a maximum of 1/8-inch (3.2mm) in any dimension.

**R327.4.4.1 Eaves, soffits, and cornices.** Ventilation openings shall not be installed on the underside of eaves, soffits, or cornices.

**Exceptions:**

1. The *building official* may *approve* special eave, soffit, or cornice vents that are manufactured to resist the intrusion of flame and burning embers.
2. Ventilation openings complying with the requirements of Section R327.4.4 may be installed on the underside of eaves, soffits, or cornices where the opening is located 12 feet or greater above *grade* or the surface below.

**R327.4.5 Exterior walls.** The *exterior wall covering* or wall assembly shall comply with one of the following requirements:

1. *Noncombustible material*.
2. *Ignition-resistant* material.
3. *Heavy timber* assembly.
4. Log wall construction assembly.
5. Wall assemblies that have been tested in accordance with the test procedures for a 10- minute direct flame contact exposure test set forth in ASTM E2707, complying with the conditions of acceptance listed in Section R327.4.5.2.

**Exception:** Any of the following shall be deemed to meet the assembly performance criteria and intent of this section:

1. One layer of 5/8-inch Type X exterior gypsum sheathing applied behind the *exterior wall covering* or cladding on the exterior side of the framing.
2. The exterior portion of a 1-hour fire resistive *exterior wall* assembly designed for exterior fire exposure including assemblies using exterior gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual.

**R327.4.5.1 Extent of exterior wall covering.** *Exterior wall coverings* shall extend from the top of the foundation to the

roof, and terminate at 2 inch (50.8 mm) nominal solid wood blocking between rafters at all roof overhangs, or in the case of enclosed eaves or soffits, shall terminate at the underside of the enclosure.

**R327.4.5.2 Conditions of acceptance.** ASTM E2707 tests shall be conducted in triplicate and the conditions of acceptance below shall be met. If any one of the three replicates does not meet the conditions of acceptance, three additional tests shall be conducted. All additional tests shall meet the conditions of acceptance.

1. Absence of flame penetration through the wall assembly at any time during the test.
2. Absence of evidence of glowing combustion on the interior surface of the assembly at the end of the 70 minute test.

**R327.4.6 Overhanging projections.** All exterior projections (exterior balconies, carports, decks, patio covers, porch ceilings, unenclosed roofs and floors, overhanging buildings and similar architectural appendages and projections) shall be protected as specified in this section.

**R327.4.6.1 Enclosed roof eaves, soffits, and cornices.** The exposed underside of rafter or truss eaves and enclosed soffits, where any portion of the framing is less than 12 feet above *grade* or similar surface below, shall be protected by one of the following:

1. *Noncombustible material.*
2. *Ignition-resistant material.*
3. One layer of  $\frac{5}{8}$ -inch Type X exterior gypsum sheathing applied behind an exterior covering on the underside of the rafter tails, truss tails, or soffit.
4. The exterior portion of a 1-hour fire resistive *exterior wall* assembly applied to the underside of the rafter tails or soffit including assemblies using exterior gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual.
5. Soffit assemblies with an underside surface that meets the performance criteria in Section R327.4.6.5 when tested in accordance ASTM E2957.

**Exceptions:** The following materials do not require protection required by this section:

1. Eaves and soffits where all portions of the framing members are 12 feet or greater above *grade*, and 2-inch nominal eave fireblocking is provided between roof framing members from the wall top plate to the underside of the roof sheathing.
2. Gable end overhangs and roof assembly projections beyond an *exterior wall* other than at the lower end of the rafter tails.
3. Fascia and other architectural trim boards.

**R327.4.6.2 Exterior patio and porch ceilings.** The exposed underside of exterior patio and porch ceilings greater than 200 square feet in area and less than 12 feet above *grade* shall be protected by one of the following:

1. *Noncombustible material.*

2. *Ignition-resistant material.*

3. One layer of  $\frac{5}{8}$ -inch Type X exterior gypsum sheathing applied behind the exterior covering on the underside of the ceiling.

4. The exterior portion of a 1-hour fire resistive *exterior wall* assembly applied to the underside of the ceiling assembly including assemblies using exterior gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual.

5. Porch ceiling assemblies with a horizontal underside that meet the performance criteria in Section R327.4.6.5 when tested in accordance with the test procedures set forth in ASTM E2957.

**Exception:** Architectural trim boards.

**R327.4.6.3 Floor projections.** The exposed underside of cantilevered floor projections less than 12 feet above *grade* or the surface below shall be protected by one of the following:

1. *Noncombustible material.*

2. *Ignition-resistant material.*

3. One layer of  $\frac{5}{8}$ -inch Type X exterior gypsum sheathing applied behind an exterior covering on the underside of the floor projection.

4. The exterior portion of a 1-hour fire resistive *exterior wall* assembly applied to the underside of the floor projection, including assemblies using exterior gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual.

5. An assembly that meets the performance criteria in Section R327.4.6.5 when tested in accordance with ASTM E2957.

**Exception:** Architectural trim boards.

**R327.4.6.4 Underfloor protection.** The underfloor area of elevated structures shall be enclosed to *grade* in accordance with the requirements of Section R327.4, or the underside of the exposed underfloor shall be protected by one of the following:

1. *Noncombustible material.*

2. *Ignition-resistant material.*

3. One layer of  $\frac{5}{8}$ -inch Type X exterior gypsum sheathing applied behind an exterior covering on the underside of the floor assembly.

4. The exterior portion of a 1-hour fire resistive *exterior wall* assembly applied to the underside of the floor, including assemblies using exterior gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual.

5. An assembly that meets the performance criteria in Section R327.4.6.5 when tested in accordance with ASTM E2957.

**Exception:** *Heavy timber* structural columns and beams do not require protection.

**R327.4.6.5 Conditions of acceptance.** ASTM E2957 tests shall be conducted in triplicate, and the conditions of acceptance below shall be met. If any one of the three replicates does not meet the conditions of acceptance, three additional tests shall be conducted. All additional tests shall meet the following conditions of acceptance:

1. Absence of flame penetration of the eaves or horizontal projection assembly at any time during the test.
2. Absence of structural failure of the eaves or horizontal projection subassembly at any time during the test.
3. Absence of sustained combustion of any kind at the conclusion of the 40 minute test.

**R327.4.7 Walking surfaces.** Deck, porch and balcony walking surfaces located greater than 30 inches and less than 12 feet above grade or the surface below shall be constructed with one of the materials listed below.

**Exception:** Walking surfaces of decks, porches and balconies not greater than 200 square feet in area, where the surface is constructed of nominal 2-inch lumber.

1. Materials that comply with the performance requirements of Section R327.4.7.1 when tested in accordance with both ASTM E2632 and ASTM E2726.
2. Ignition resistant materials that comply with the performance requirements of Section R327.4.2 when tested in accordance with ASTM E84 or UL 723.
3. Exterior fire retardant treated wood.
4. Noncombustible material.
5. Any material that complies with the performance requirements of Section R327.4.7.2 where tested in accordance with ASTM E2632, where the exterior wall covering of the structure is noncombustible or ignition-resistant material.
6. Any material that complies with the performance requirements of ASTM E2632, where the exterior wall covering of the structure is noncombustible or ignition-resistant material.

**Exception:** Wall covering material may be of any material that otherwise complies with this chapter when the decking surface material complies with the performance requirements ASTM E84 with a Class B flame spread rating.

**R327.4.7.1 Requirements for R327.4.7, item 1.** The material shall be tested in accordance with ASTM E2632 and ASTM E2726, and shall comply with the conditions of acceptance below. The material shall also comply with the performance requirements of Section R327.4.2 for ignition resistant material when tested in accordance with ASTM E84 or UL 723.

**R327.4.7.1.1 Conditions of acceptance.** ASTM E2632 tests shall be conducted in triplicate and the conditions of acceptance below shall be met. If any one of the three replicates does not meet the conditions of acceptance, three additional tests shall be conducted. All additional tests shall meet the following conditions of acceptance:

1. Peak heat release rate of less than or equal to 25 kW/ft<sup>2</sup> (269 kW/m<sup>2</sup>)
2. Absence of sustained flaming or glowing combustion of any kind at the conclusion of the 40-minute observation period.
3. Absence of falling particles that are still burning when reaching the burner or floor.

**R327.4.7.1.2 Conditions of acceptance.** ASTM E2762 tests shall be conducted in triplicate and the conditions of acceptance below shall be met. If any one of the three replicates does not meet the conditions of acceptance, three additional tests shall be conducted. All of the additional tests shall meet the following conditions of acceptance:

1. Absence of sustained flaming or glowing combustion of any kind at the conclusion of the 40-minute observation period.
2. Absence of falling particles that are still burning when reaching the burner or floor.

**R327.4.7.2 Requirements for R327.4.7, item 6.** The material shall be tested in accordance with ASTM E2632 and shall comply with the following condition of acceptance. The test shall be conducted in triplicate and the peak heat release rate shall be less than or equal to 25 kW/ft<sup>2</sup> (269 kW/m<sup>2</sup>). If any one of the three replicates does not meet the conditions of acceptance, three additional tests shall be conducted. All of the additional tests shall meet the conditions of acceptance.

**R327.4.8 Glazing.** Exterior windows, windows within exterior doors, and skylights shall be tempered glass, multilayered glazed panels, glass block, or have a fire resistance rating of not less than 20 minutes.