



# Oregon

Tina Kotek, Governor



Building  
Codes  
Division

Department of Consumer  
and Business Services

## 2023 Oregon Residential Specialty Code ORSC Approved Wildfire Hazard Mitigation Provisions

### SECTION R327 WILDFIRE HAZARD MITIGATION

**R327.1 General.** The provisions of this section shall apply to dwellings and their accessory structures required by a local municipality via local ordinance to be protected against wildfire.

Nothing in the code prevents a local municipality from modifying the requirements of this section for any lot, property or dwelling, or the remodel, replacement or reconstruction of a dwelling within the jurisdiction, as provided in Section R104.10.

**R327.1.1 Local adoption.** The provisions of this section may be adopted in whole by a municipality via local ordinance without following ORS 455.040 or OAR 918-020-0370. Where a municipality chooses to adopt these provisions locally, the following shall be included in the adopting ordinance:

1. Identification of areas subject to the additional construction standards of Section R327.
2. A transition plan or other measures to address subdivisions already under development at the time of local adoption.
3. A local appeals process for customers to follow.

Where a municipality has previously adopted the provisions of Section R327 locally, the requirements of Section R327.1.1 do not apply and the existing local ordinance may continue without change, to include those based on prior iterations of this section.

**R327.1.2 Notification.** Where a municipality adopts Section R327 locally, or where a municipality has previously adopted Section R327 locally, the municipality shall notify the State of Oregon Building Codes Division and provide a copy of the locally adopted map identifying areas of the jurisdiction where the additional construction standards of Section R327 are required.

#### Senate Bills 762 (2021) and 80 (2023)

The local adoption provisions of §R327.1.1 and the application set forth by §R327.1.3 may be impacted by ongoing efforts to implement Senate Bills 762 (2021) and 80 (2023). These provisions will be updated accordingly to align with any actions taken by the legislature.

**R327.1.3 Application.** Where required by a municipality via local ordinance, newly constructed dwellings, their accessory structures, and new additions to existing dwellings and their accessory structures, located in areas designated by the municipality shall be protected against wildfire in accordance with this section. Where existing exterior elements that are within the scope of this section are replaced in their entirety, the replacement shall be made in accordance with the provisions of this section.

#### **Exceptions:**

1. Nonhabitable detached accessory structures with a floor area of not greater than 400 square feet, (37.2 m<sup>2</sup>) located not less than 50 feet (15 240 mm) from all other structures on the lot.
2. Partial repairs made in accordance with R105.2.2.

**R327.2 Definitions.** The following words and terms shall, for purposes of Section R327, have the meanings shown herein. See 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-groove 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 10<sup>1</sup>/<sub>2</sub> 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.

**R327.3 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 on structures in areas designated by the *municipality*.

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 nonperforated cap sheet complying with ASTM D3909 not less than 36-inch-wide (914 mm) running the full length of the valley.

**R327.3.1 Gutters.** Where 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.

**R327.3.2 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  $\frac{1}{16}$ -inch (1.6 mm) and a maximum of  $\frac{1}{8}$ -inch (3.2 mm) in any dimension.

**R327.3.2.1 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* 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 R327.3.2 may be installed on the underside of eaves, soffits or cornices where the opening is located 12 feet (3658 mm) or greater above *grade* or the surface below.

**R327.3.3 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 R327.3.3.2.

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

1. One layer of  $\frac{5}{8}$ -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-resistance-rated *exterior wall* assembly designed for exterior fire exposure including assemblies using exterior gypsum panel and sheathing products listed in the Gypsum Association *Fire Resistance and Sound Control Design Manual*.

**R327.3.3.1 Extent of exterior wall covering.** *Exterior wall coverings* shall extend from the top of the foundation to the roof and terminate at 2-inch (50.8 mm) nominal solid wood blocking between rafters at all roof overhangs, or in the case of enclosed eaves or soffits, shall terminate at the underside of the enclosure.

**R327.3.3.2 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 do 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 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.

**R327.3.4 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.

**R327.3.4.1 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 (3658 mm) 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-resistance-rated 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 and Sound Control Design Manual.
5. Soffit assemblies with an underside surface that meets the performance criteria in Section R327.3.4.5 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 (3658 mm) 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.

**R327.3.4.2 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 (3658 mm) above grade shall be protected by one of the following:

1. Noncombustible material.
2. Ignition-resistant material.
3. One layer of 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-resistance-rated 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 R327.3.4.5 when tested in accordance with the test procedures set forth in ASTM E2957.

**Exception:** Architectural trim boards.

**R327.3.4.3 Floor projections.** The exposed underside of cantilevered floor projections less than 12 feet (3658 mm) 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 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-resistance-rated 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 R327.3.4.5 when tested in accordance with ASTM E2957.

**Exception:** Architectural trim boards.

**R327.3.4.4 Underfloor protection.** The underfloor area of elevated structures shall be enclosed to grade in accordance with the requirements of this section, 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 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-resistance-rated 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 R327.3.4.5 when tested in accordance with ASTM E2957.

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

**R327.3.4.5 Conditions of acceptance.** ASTM E2957 tests shall be conducted in triplicate, and the following conditions of acceptance shall be met. If any one of the three replicates do 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.

**R327.3.5 Walking surfaces.** Deck, porch and balcony walking surfaces located greater than 30 inches and less than 12 feet (3658 mm) above grade or the surface below shall be constructed with one of the following materials:

1. Materials that comply with the performance requirements of Section R327.3.5.1 when tested in accordance with both ASTM E2632 and ASTM E2726.
2. Ignition-resistant materials that comply with the performance requirements of Section R327.2 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 R327.3.5.2 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.

**Exception:** Walking surfaces of decks, porches and balconies not greater than 200 square feet (18.58 m<sup>2</sup>) in area, where the surface is constructed of nominal 2-inch (51 mm) lumber.

**R327.3.5.1 Requirements for R327.3.5, Item 1.** The material shall be tested in accordance with ASTM E2632 and ASTM E2726, and shall comply with the conditions of acceptance in Sections R327.3.5.1.1 and R327.3.5.1.2. The material shall also comply with the performance requirements of Section R327.2 for ignition-resistant material when tested in accordance with ASTM E84 or UL 723.

**R327.3.5.1.1 Conditions of acceptance.** ASTM E2632 tests shall be conducted in triplicate and the following conditions of acceptance shall be met. If any one of the three replicates do 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.

**R327.3.5.1.2 Conditions of acceptance.** ASTM E2762 tests shall be conducted in triplicate and the following conditions of acceptance shall be met. If any one of the three replicates do 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.

**R327.3.5.2 Requirements for R327.3.5, Item 6.** The material shall be tested in accordance with ASTM E2632 and shall comply with the following conditions 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 do not meet the conditions of acceptance, three additional tests shall be conducted. All of the additional tests shall meet the conditions of acceptance.

**R327.3.6 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.