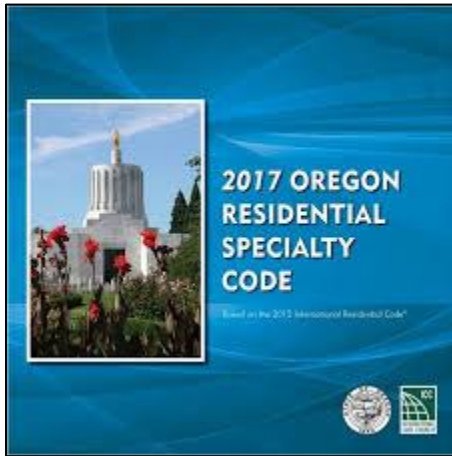


Summary of Oregon Residential Specialty Code R327.4-Wildfire Hazard Mitigation

1) Introduction

In 2018, the Oregon Building Codes Division (BCD) engaged stakeholders from the fire service, local government, and homebuilders to develop wildfire mitigation code standards that have a consistent and predictable application. BCD amended the Oregon Residential Specialty Code (ORSC) section R327 (Wildfire Hazard Mitigation) in January 2019 and made it available for local adoption.



2) Scope

If adopted by a local jurisdiction, the new provisions of ORSC R327.4 shall apply to new dwellings and their accessory structures, with some exceptions, located in a wildfire hazard zone on a *qualifying lot of record*.

What is a qualifying lot of record?

R327.4.1 requires qualifying lots of record to meet all of the following:

1. Be located in a wildfire hazard zone as identified using Oregon Department of Forestry (ODF) criteria (OAR 629-044-0200 through OAR 629-044-0260).
2. The local municipality shall determine if qualifying lots of record consist of individual lots or lots that must be part of a development that contain a minimum number of lots.
3. The local municipality shall determine whether a lot of record is either located within or outside of a wildfire hazard zone. Notification of the finding shall be provided in conjunction with a land use approval.
4. Lots created prior to the effective date of the local ordinance are exempt from the requirements for a period of 3 years from the date of the land use approval.
5. Requirements for lots created after the effective date of the local ordinance shall be valid for 3 years. After 3 years, the lot shall be re-evaluated under the current provisions of the adopting ordinance prior to issuing a building permit.

Exceptions: Dwellings and accessory structures constructed in a subdivision, do not need to comply with R327.4 when at least 50% of the lots have existing dwellings that were not constructed in accordance with R327.4.

The municipality may waive the requirements of R327.4 for any lot, property or dwelling, or the remodel, replacement or reconstruction of a dwelling within the jurisdiction.

The municipality must include a process for resolving of disputes related to the applicability of R327.4.

3) Overview of code requirements

Adoption of ORSC section R327.4 will provide additional wildfire hazard mitigation provisions that affect the following construction materials and/or methods of construction:

(A) Roofing/Gutters R327.4.3

- Roofing shall be asphalt shingles, slate shingles, metal roofing, tile, clay, or concrete shingles or other approved roofing which is equivalent to a minimum Class B rated roof assembly.

WOOD SHINGLE AND SHAKE ROOFS ARE NOT PERMITTED.

- Roof gutters, when required, shall be constructed of non-combustible materials and be provided with a means to prevent accumulation of leaves and debris in the gutter.

FIRE RESISTANT ROOFING MATERIALS:

CLAY TILE	SLATE TILE	CONCRETE TILE (interlocking)	METAL
<ul style="list-style-type: none">+ Attractive+ Long lasting+ Low maintenance+ Variety of colours+ Non combustible	<ul style="list-style-type: none">+ Beautiful appearance+ Fireproof+ Long lasting+ Low maintenance	<ul style="list-style-type: none">+ Durability+ Low maintenance+ Relatively light-weight+ Variety of colours and styles	<ul style="list-style-type: none">+ Durability+ Fire resistant+ Low maintenance+ Energy efficient+ Low weight+ Variety style and colour+ Recyclable+ Can be installed over existing roofs
<ul style="list-style-type: none">- Heavy weight- Some colours may fade away- Expensive- Complex to install- Walking on roof may break tiles	<ul style="list-style-type: none">- Expensive- Heavy weight	<ul style="list-style-type: none">- Expensive	<ul style="list-style-type: none">- High initial cost- May need periodic painting- Difficult to install



(B) Ventilation R327.4.4

- Openings shall be covered with non-combustible corrosion resistant metal wire mesh (openings 1/16"-1/8") or approved alternate.
- Ventilation openings shall not be installed on the underside of eaves, soffits, or cornices.

Exceptions: Special vents manufactured to resist intrusion of flame and burning embers **OR** vent openings located at least 12' above grade or surface below.

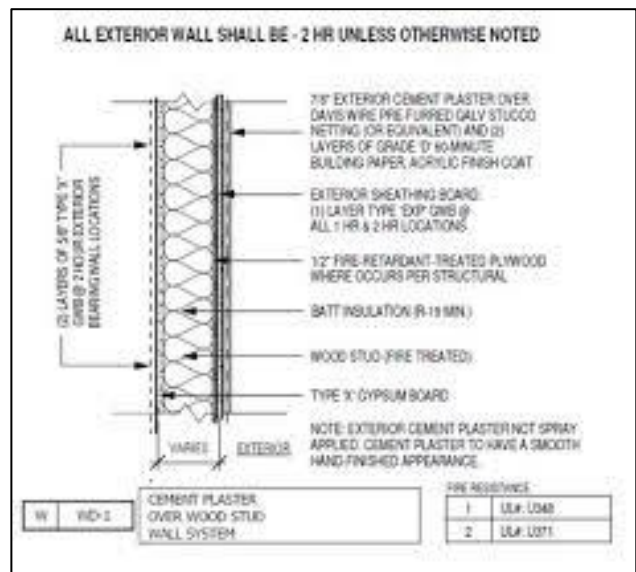


(C) Exterior Walls R327.4.5

- Exterior wall coverings shall comply with one of the following requirements:

- Non-combustible material
- Ignition-resistant material
- Heavy timber assembly
- Log wall construction assembly
- Wall assemblies tested in accordance with ASTM E2707 and ORSC section R327.4.5.2

Exceptions: Install one layer of 5/8" Type X exterior gypsum sheathing behind the exterior wall covering on the exterior side of the framing **OR** install the exterior portion of a 1-hour fire resistive exterior wall assembly.



(D) Overhanging projections (e.g. exterior balconies, carports, decks, patio covers porch ceilings, unenclosed roofs and floors, overhanging buildings, and similar projections) R327.4.6

1. Enclosed roof eaves, soffits, and cornices shall be protected by one of the following:
 - Non-combustible material
 - Ignition-resistant material
 - One layer of 5/8" Type X exterior gypsum sheathing applied behind an exterior covering on the underside of the rafter/truss tails or soffit
 - Exterior portion of a 1-hour fire resistive exterior wall assembly applied to the underside of the rafter/truss tails or soffit
 - Assemblies tested in accordance with ASTM E2957 and section R327.4.6.5

Exception: Protection not required when all framing members are at least 12' above grade.

2. Exterior patio and porch ceilings
 - Exposed underside of exterior patio and porch ceilings greater than 200 sq. ft. in area and less than 12' above grade shall be protected by one of the methods described in (D)(1) above.
3. Floor projections
 - The exposed underside of cantilevered floor projections less than 12' above grade or surface below shall be protected by one of the methods described in (D)(1) above.
4. Underfloor protection
 - The underfloor area of elevated structures shall be enclosed to grade OR the underside of the exposed underfloor shall be protected by one of the methods described in (D)(1) above.

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



(E) Walking surfaces R327.4.7

1. Deck, porch, and balcony walking surfaces located greater than 30" and less than 12' above grade or surface below shall be constructed with one of the materials listed below.

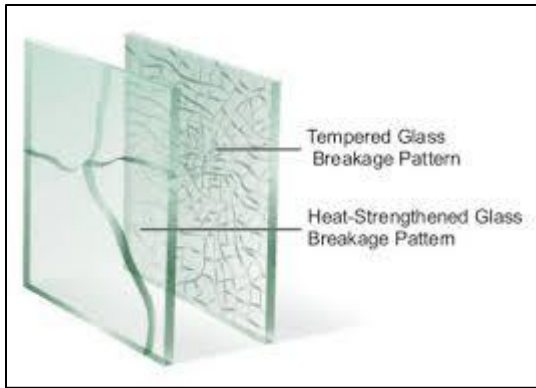
- Exterior fire retardant treated wood
- Noncombustible material
- Materials that comply with the performance requirements of specific nationally recognized testing standards. See code section for details.

Exception: Decks, porches, and balconies not greater than 200 sq. ft. where the walking surface is constructed of nominal 2-inch lumber.



(F) Glazing R327.4.8

- Exterior windows, windows within exterior doors, and skylights shall be tempered glass, multilayered glazed panels, glass block, or have a 20 minute fire rating.



4) Housing cost impact

Oregon Building Codes Division estimates the increased provisions in section R327.4 will add approximately \$2,500-\$3,000 to the existing cost of a typical 1,200 square foot single family home.¹



¹ See BCD's Housing Cost Impact Statement – 12/18/19 (Available at www.ashland.or.us/R327)

R327.4 Wildfire Hazard Mitigation Construction Guide for Wildfire Hazard Zones



Underfloor and Attic Vents ORSC Section R327.4.4

All Vents:
All vents shall have screening made of corrosion-resistant metal mesh with minimum 1/16" and maximum 1/8" grid **or** be designed to resist flame and ember intrusion (ASTM E2886).
Eave, Soffit, and Cornice Vents less than 12' above grade or surface:
All vents shall have screening made of corrosion-resistant metal mesh with minimum 1/16" and maximum 1/8" grid **and** be designed to resist flame and ember intrusion (ASTM E2886).

Roofing ORSC Section R327.4.3

Roofing shall be asphalt, slate, metal, tile, clay, concrete, or equivalent minimum Class B. **Wood shingle or shake materials are prohibited.** Cap off or fire block spaces between roofing and roof deck to prevent flame and ember intrusion and provide galvanized valley flashing where valley flashing is installed.

Walking Surfaces ORSC Section R327.4.7

Deck, porch, and balcony walking surfaces greater than 30" and less than 12' above grade or the surface below shall be constructed of minimum 2" nominal lumber for decks <= 200 sq. ft., non-combustible, ignition-resistant conforming to ASTM E84 or UL 723, exterior fire retardant treated wood, meets ASTM E2632 and ASTM 2726 criteria, or meets ASTM E2632 with ignition-resistant wall covering.

Rain Gutters ORSC Section R327.4.3.1

Non-combustible materials with provisions to prevent the accumulation of leaves and debris in the gutters (Non-combustible corrosion resistant metal screening).

Exterior Wall Covering ORSC Section R327.4.5

Wall covering materials shall be noncombustible, ignition-resistant, heavy timber, log wall, or wall assemblies tested in accordance with ASTM E2707. Alternatively, one layer of minimum 5/8" exterior grade Type X applied behind the exterior wall covering or cladding or 1-hour fire resistive exterior wall assembly. Exterior wall coverings shall extend from the top of the foundation to the roof, and terminate at 2" 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.

Underfloor Protection ORSC Section R327.4.6.4

Underfloor area of elevated structures shall be enclosed or meet non-combustible material, ignition-resistant material, ASTM E2957 compliant, one layer of minimum 5/8" exterior grade Type X applied behind the exterior covering of the underside, or 1-hour fire resistive exterior wall assembly.

Windows, Doors, Skylights Glazing ORSC Section R327.4.8

Exterior windows, windows within exterior doors, and skylights shall be tempered glass, multilayered glazed panels (typical dual pane), glass block, or have a minimum fire-resistant rating of 20 minutes.

Overhanging Projections ORSC R327.4.6.1; R327.4.6.2; R327.4.6.3

All enclosed roof eaves, soffits, cornices, exterior patio/porch ceilings and floor projections less than 12' above grade or the surface below shall be covered with either non-combustible material, ignition-resistant material, ASTM E2957 compliant, one layer of minimum 5/8" ext. Type X applied behind the exterior covering, or 1-hour fire resistive exterior wall assembly (Gable end overhangs are exempt).

