



Community Planning & Permitting

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Building Safety & Inspection Services Team

**BOULDER COUNTY BOARD OF REVIEW COMMITTEE
DOCKET # BORC-22-0001
PUBLIC HEARING
BOULDER COUNTY BUILDING CODE AMENDMENTS
WILDFIRE ZONE 2 UPDATE
April 6th, 2022 from 2:00pm - 4:00pm
Boulder County Community Planning & Permitting
Virtual meeting via Zoom
Register to attend at: www.boco.org/BOR**

Staff: Ron Flax, Deputy Director of Community Planning and Permitting / Chief Building Official / Secretary to the Boulder County Board of Review Committee

Boulder County is currently divided into two Wildfire Zones. Wildfire Zone 1 which is the mountains / forested portion of Boulder County, and Wildfire Zone 2 which is the plains / grasslands of Boulder County (see map below). In response to the many wildfire events in the history of Boulder County, the Boulder County Building Code has adopted comprehensive ignition resistant construction requirements in Wildfire Zone 1. Wildfire Zone 2 has historically had relatively few fire events that have resulted in widespread structure losses.

The Marshall Fire which started in the final days of 2021 and destroyed structures on over 150 parcels in Unincorporated Boulder County compels us to acknowledge that our current codes which address the hazards of the Wildland Urban Interface of the forested portion of Boulder County (Wildfire Zone 1) do not adequately address the hazards of a changing climate to properties in the grasslands (Wildfire Zone 2). The intention of this update is to revise the Boulder County Building Code to ensure a minimum level of ignition resistance for all structures in Wildfire Zone 2.

This update is an urgent matter, which is why it is being addressed as a stand-alone update. Staff are currently engaged in a more in-depth evaluation and examination this topic as part of the larger code update that involves moving from the 2015 Codes, to the 2021 Codes. This larger update and review will consider requirements for all wildfire zones as well as the possibility of creating a new, more nuanced framework for categorizing and regulating wildfire hazards county wide. Our intention is that after this interim update, further updates and refinements will occur on a regular schedule along with the full body of the Boulder County Building Code Amendments.

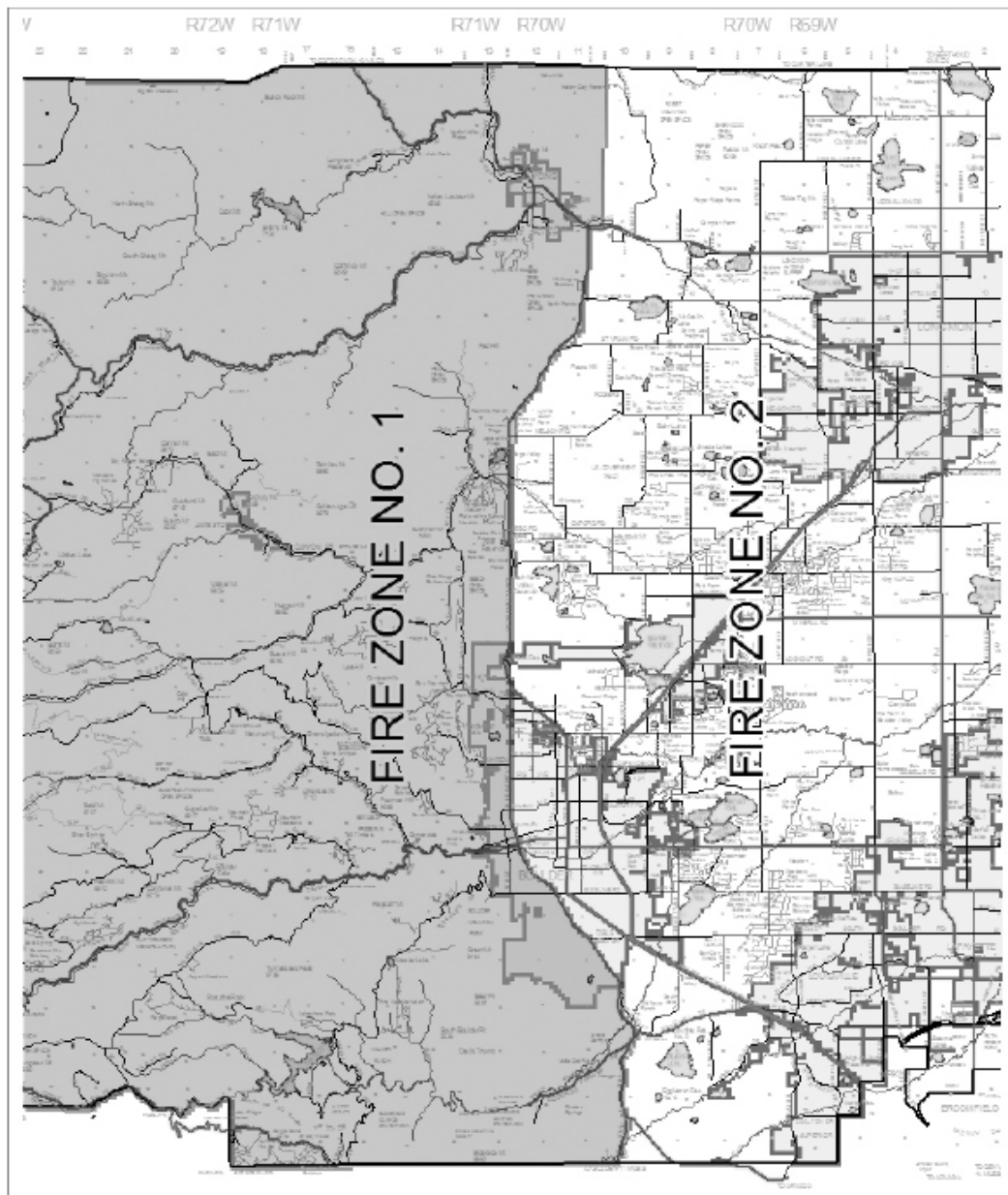
Matt Jones County Commissioner **Claire Levy** County Commissioner **Marta Loachamin** County Commissioner

RECOMMENDATION:

Staff recommends that Section R327.5 Restrictions in Wildfire Zone 2, which currently only requires Class B roofing materials be expanded to include the ignition resistant construction requirements of Wildfire Zone 1 with exceptions for window and door requirements and defensible space requirements. A minimum three-foot non-combustible perimeter around the home will still be required.

Attachment A: Redlined version of the Boulder County Building Code Amendments

FIGURE R327.2
WILDFIRE ZONE MAP



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June 6, 2003
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In the currently adopted Building Code, Section R327.5 Restrictions in Wildfire Zone No. 2 contains a single item "R327.5.1 Roof covering" which requires a Class B roof covering. The text below expands and modifies the requirements of Wildfire Zone 2 to include all of the current requirements of Wildfire Zone 1 except the portions with strikeout text.

R327.5 Restrictions in Wildfire Zone No. 2. Buildings constructed in Wildfire Zone 2 shall comply with this section.

R327.5.1 Roof covering. Roof covering materials installed in Wildfire Zone 2 shall be listed Class A roof covering materials or be constructed as a Class A roof assembly. For roof coverings where the profile allows a space between the roof covering and roof decking, 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, non-perforated cap sheet complying with ASTM D 3909 installed over the combustible decking.

R327.5.1.1 Roof valleys. When provided, valley flashings shall be not less than 0.019 inch (No. 26 galvanized sheet gage) corrosion-resistant metal installed over a minimum 36-inch-wide underlayment consisting of one layer of 72-pound mineral-surfaced, non-perforated cap sheet complying with ASTM D 3909 running the full length of the valley.

R327.5.2 Gutters and downspouts. Gutters, downspouts, and gutter covering devices shall be constructed of noncombustible material. Gutters shall be provided with an approved means to prevent the accumulation of leaves, pine needles and debris in the gutter.

Exception: Buildings meeting one of the exceptions to Section R401.3 of this code may be constructed without gutters and downspouts.

R327.5.3 Spark arrestors. Chimneys serving fireplaces, barbecues, incinerators or decorative heating appliances in which solid or liquid fuel is used shall be protected with a spark arrester. Spark arresters shall be constructed of woven or welded wire screening of 12 USA standard gauge wire (0.1046 inch)(2.66 mm) having openings not exceeding ½ inch (12.7 mm). The net free area of the spark arrester shall not be less than four times the net free area of the outlet of the chimney.

R327.5.4 Fences, retaining walls and similar appurtenances. Fences, retaining walls or other appurtenances that connect to buildings must be constructed of *noncombustible materials* or *ignition-resistant materials* for a distance of 3 feet beyond the exterior walls.

R327.5.5 Protection of eaves. The leading edge of the roof at the fascia must be finished with a metal drip edge so that no wood sheathing is exposed.

Eaves, fascia, and soffits, covered decks or covered porch ceilings shall be protected on the enclosed underside by one of the following materials or methods:

1. *Noncombustible materials.*
2. *Ignition-resistant materials.*

3. Materials approved for a minimum of 1-hour fire-resistance-rated construction.
4. 2-inch-thick nominal dimension lumber.
5. 1-inch-thick nominal *fire-retardant-treated wood*.
6. $\frac{3}{4}$ -inch-thick nominal *fire retardant-treated* plywood labeled for exterior use.
7. Any materials permitted by this code.

Exceptions:

1. Vinyl or plastic soffits, fascia or *trim* are not permitted.
2. Rafter tails or roof beam ends may be exposed if they are *heavy timber* having minimum dimensions not less than 6 inch nominal in width and not less than 8 inches nominal in depth.

R327.5.6 Exterior walls. Exterior walls of buildings or structures shall be constructed with one of the following methods:

1. *Noncombustible materials* approved for a minimum of 1-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* labeled for exterior use on the exterior side.
5. *Ignition-resistant materials* on the exterior side.

Such material shall extend from the top of the foundation to the underside of the roof sheathing.

Exception: *Trim* is not required to meet the materials requirements for exterior walls.

R327.5.7 Unenclosed under floor protection. Buildings or structures shall have all underfloor areas enclosed to the ground with exterior walls in accordance with Section R327.4.6. For decks, see Section R327.4.8.

Exception: Complete enclosure may be omitted where the underside of all exposed floors and all 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* labeled for exterior use.

R327.5.8 Decks, appendages, and projections. Decks and other unenclosed accessory structures attached to buildings shall be constructed of the following materials:

R327.5.8.1 Deck surface: *Non-combustible* material, approved wood thermoplastic composite lumber with an ASTM E84 flame- spread index no greater than 200, *ignition-resistant building materials* or any *approved* Class A roof assembly.

R327.5.8.2 Deck framing: Deck framing shall be constructed of one of the following:

1. 1-hour fire resistance-rated construction
2. *Heavy timber* construction.
3. Approved *noncombustible materials*.
4. *Fire-retardant-treated wood* labeled for exterior use.
5. *Ignition-resistant building materials*.
6. Wood with a minimum nominal thickness of at least 2 inches for joists and 4 inches for beams and columns or posts.

~~**R327.4.9 Exterior windows and glazing.** Exterior windows, window walls, glazed doors, windows within exterior doors, and skylights shall be tempered glass, multi-layered glazing, glass block, or have a fire protection rating of not less than 20 minutes. Unless they are part of a fire-rated assembly, window frames and sashes may be of any material permitted by this code.~~

~~**Exception:** Windows with unreinforced vinyl frames or sashes are not permitted.~~

~~**R327.4.10 Exterior doors.** Exterior doors and garage doors shall be approved noncombustible construction, metal clad, solid core wood not less than 1 3/4 inches in thickness, or have a fire protection rating of not less than 20 minutes. Windows within doors and glazed doors shall be in accordance with Section R327.4.9.~~

~~**Exception:** Vehicle access doors.~~

Sections R327.5.9 and R327.5.10 have been omitted.

R327.5.11 Vents. Attic ventilation openings, foundation or under-floor vents, or other ventilation openings in vertical exterior walls and vents through roofs shall not exceed 144 square inches each.

Such vents shall be covered with noncombustible corrosion-resistant mesh with openings not to exceed 1/8 inches or shall be designed and *approved* to prevent flame or ember penetration into the structure. Gable end and dormer vents shall be located at least 15 feet from property lines and shall be designed and *approved* to prevent flame or ember penetration into the structure. Underfloor ventilation openings shall be located as close to grade as practical.

R327.5.12 Detached accessory structures. Detached accessory structures shall have exterior walls constructed in accordance with Section R327.4.6.

R327.5.12.1 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 all underfloor areas enclosed to within 6 inches of the ground with exterior wall construction in accordance with Section R327.4.6 or underfloor protection in accordance with Section R327.4.7.

Exception: The enclosure shall not be required where the underside of all exposed floors and all 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.

~~**R327.4.13 Defensible space.** Individual buildings or structures on a property must be provided with a fuel modification zone in accordance with the *defensible space standard*. When additions requiring a permit occur, both existing and new structures must be provided with *defensible space* in accordance with this section. The fuel modification zone must be maintained at all times.~~

Exceptions:

- ~~1. The implementation and completion of an *approved wildfire mitigation plan* prior to final inspection approval for the project.~~
- ~~2. Participation in the *Wildfire Partners* program and the issuance of a *Wildfire Partners* certificate prior to final inspection approval for the project.~~

R327.5.13 Weed barrier and gravel or crushed rock. A weed barrier and gravel or crushed rock not less than 3/4-inch in diameter applied at least 2 inches thick must be installed beneath decks, unenclosed floors, and around the perimeter of the building to extend at least 3 feet beyond the exterior walls and at least 2 feet beyond the driplines of decks, bay windows and other eaves and overhangs.

Exception: Noncombustible surfaces, such as poured concrete or asphalt, or other *approved noncombustible* materials, such as a weed barrier and brick, concrete or stone pavers, may satisfy this requirement.