

**INITIAL EXPRESS TERMS
FOR PROPOSED BUILDING STANDARDS
OF THE STATE FIRE MARSHAL
REGARDING THE 2019 CALIFORNIA RESIDENTIAL CODE,
CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 2.5
(**[RULEMAKING FILE #]**)**

The State agency shall draft the regulations in plain, straightforward language, avoiding technical terms as much as possible and using a coherent and easily readable style. The agency shall draft the regulation in plain English. A notation shall follow the express terms of each regulation listing the specific statutes authorizing the adoption and listing specific statutes being implemented, interpreted, or made specific (Government Code Section 11346.2(a)(1)).

LEGEND FOR EXPRESS TERMS (Based on model codes - Parts 2, 2.5, 3, 4, 5, 9, 10)

1. Model Code language appears upright.
 2. Existing California amendments appear in *italics*.
 3. Amended model code or new California amendments appear *underlined and in italics*.
 4. Repealed model code language appears ~~upright and in strikeout~~.
 5. Repealed California amendments appear in ~~*italics and strikeout*~~.
 6. Ellipsis indicates existing text remains unchanged.
 7. Associated section numbers are identified as being contingent on each proposal being approved together as one.
 8. Related section numbers are those sections which fall within the same topic, but can stand alone for approval.
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INITIAL EXPRESS TERMS

**Item 1. CHAPTER 2
DEFINITIONS**

Section: 202 Definitions: Battery System. Stationary Storage (Delete), Energy Storage System ESS (New)

~~**[RB] BATTERY SYSTEM, STATIONARY STORAGE.** A rechargeable energy storage system consisting of electrochemical storage batteries, battery chargers, controls and associated electrical equipment designed to provide electrical power to a building. The system is typically used to provide standby or emergency power, an uninterruptable power supply, load shedding, load sharing or similar capabilities.~~

[RB] ENERGY STORAGE SYSTEM (ESS). *One or more devices, assembled together, capable of storing energy in order to supply electrical energy at a future time.*

[ENERGY STORAGE SYSTEMS 2019 INTERVENING PROPOSALS]

[Associated sections in Part 2.5, California Residential Code]:

R202 (New definition), R327, R327.1, R327.2, R327.3, R327.3.1 (New), 327.3.2 (New), R327.3.3 (New), R327.3.4, R327.3.5, R327.3.6, R327.3.7 (New), Table R327.3.7 (New), R327.3.7.1 (New), R327.3.7.2 (New), R327.3.8 (New), R327.4 (New), R327.5 (New), R327.5.1 (New)

Notation:

Authority: Health and Safety Code Sections 1250, 1569.72, 1569.78, 1568.02, 1502, 1597.44, 1597.45, 1597.46, 1597.54, 1597.65, 13108, 13108.5, 13113, 13113.5, 13114, 13143, 13132, 13132.7, 13132, 13133, 13135, 13143.2, 13143.6, 13146, 13210, 13211, 17921, 18928, 18949.2, 25500-25545, Government Code Section 51189, Education Code 17074.50

Reference(s): Health and Safety Code Sections 13143, 13143.1, 13143.9, 13211, 18949.2, 25500 through 25545, Government Code Sections 51176, 51177, 51178, 51179, Public Resources Code Sections 4201-4204

**Item 2. CHAPTER 3
BUILDING PLANNING**

Sections: R327, R327.1, R327.2, R327.3, R327.3.1 (New), 327.3.2 (New), R327.3.3 (New), R327.3.4, R327.3.5, R327.3.6, R327.3.7 (New), Table R327.3.7 (New), R327.3.7.1 (New), R327.3.7.2 (New), R327.3.8 (New), R327.4 (New), R327.5 (New), R327.5.1 (New)

**SECTION R327
~~STATIONARY ENERGY STORAGE BATTERY SYSTEMS~~**

R327.1 General. ~~Stationary storage battery system shall comply with the provisions of this section.~~ Energy Storage Systems (ESS) shall comply with the provisions of this section.

Exceptions:

1. ESS listed and labeled in accordance with UL 9540 and marked “For use in residential dwelling units”, where installed in accordance with the manufacturer’s instructions and California Electrical Code.

2. ESS less than 1 kWh (3.6 megajoules).

R327.2 Equipment listings. ~~Stationary storage battery systems~~ ESS shall be listed and labeled for residential use in accordance with UL 9540.

Exceptions:

4. Where approved, repurposed unlisted battery systems from electric vehicles are allowed to be installed outdoors or in detached sheds located not less than 5 feet (1524 mm) from exterior walls, property lines and public ways.
2. ~~Battery systems that are an integral part of an electric vehicle are allowed provided that the installation complies with Section 625.48 of the California Electrical Code.~~
3. ~~Battery systems less than 1 kWh (3.6 megajoules).~~

R327.3 Installation. ~~Stationary storage battery systems~~ ESS shall be installed in accordance with the manufacturer's instructions and their listing, if applicable, and shall not be installed within the habitable space of a dwelling unit.

R327.3.1 Spacing *Individual units shall be separated from each other by not less than three feet (914 mm) except where smaller separation distances are documented to be adequate based on large scale fire testing complying with Section 1206.1.5 of the California Fire Code.*

R327.4 Locations. *ESS shall be installed only in the following locations:*

1. Detached garages and detached accessory structures.
2. Attached garages separated from the dwelling unit living space in accordance with Section R302.6
3. Outdoors or on the exterior side of exterior walls located not less than 3 feet (914 mm) from doors and windows directly entering the dwelling unit.
4. Enclosed utility closets, basements, storage or utility spaces within dwelling units with finished or noncombustible walls and ceilings. Walls and ceilings of unfinished wood-framed construction shall be provided with not less than 5/8 inch Type X gypsum wallboard.

ESS shall not be installed in sleeping rooms, or closets or spaces opening directly into sleeping rooms.

R327.5 Energy ratings. *Individual ESS units shall have a maximum rating of 20 kWh. The aggregate rating of the ESS shall not exceed:*

1. 40 kWh within utility closets, basements, and storage or utility spaces.
2. 80 kWh in attached or detached garages and detached accessory structures.

3. 80 kWh on exterior walls.

4. 80 kWh outdoors on the ground.

ESS installations exceeding the permitted individual or aggregate ratings shall be installed in accordance with Sections 1206.1 through 1206.9 of the California Fire Code.

R327.46 Electrical installation. Stationary storage battery systems ESS shall be installed in accordance with *the California Electrical Code*. Inverters shall be listed and labeled in accordance with UL 1741 or provided as part of the UL 9540 listing. Systems connected to the utility grid shall use inverters listed for utility interaction.

R327.7 Fire detection. Rooms and areas within dwellings units, basements, and attached garages in which ESS are installed shall be protected by smoke alarms in accordance with Section R314. A heat detector, listed and interconnected to the smoke alarms, shall be installed in locations within dwelling units and attached garages where smoke alarms cannot be installed based on their listing.

R327.68 Protection from impact. Stationary storage battery systems ESS installed in a location subject to vehicle damage shall be protected by approved barriers.

R327.59 Ventilation. Indoor installations of stationary storage battery systems ESS that include batteries that produce hydrogen or other flammable gases during charging shall be provided with mechanical ventilation in accordance with *the California Mechanical Code*.

R327.10 Electric vehicle use. The temporary use of an owner or occupant's electric powered vehicle to power a dwelling unit while parked in an attached or detached garage or outdoors shall comply with the vehicle manufacturer's instructions and the California Electrical Code

**SECTION R337
MATERIALS AND CONSTRUCTION
METHODS FOR EXTERIOR WILDFIRE EXPOSURE**

**SECTION R337.1
SCOPE, PURPOSE AND APPLICATION**

Section: R337.1.1

R337.1.1 Scope. *This chapter applies to building materials, systems and or assemblies used in the exterior design and construction of new buildings located within a Wildland-Urban Interface Fire Area as defined in Section R337.2A.*

**[WILDLAND URBAN INTERFACE 2019 INTERVENING PROPOSALS]
[Related Sections in Part 2.5, California Residential Code]:**

R337.5.1, R337.5.2, R337.6.2, R337.6.2.1 (New), R337.6.3, R337.9.1.1 (New),
R337.9.3

[Related Sections in Part 2, California Building Code]:

705A.1, 705A.2, 706A.2, 706A.2.1 (New), 706A.3, 709A.1, 709A.1.1 (New),
709A.3

**SECTION R337.5
ROOFING**

Sections: R337.5.1, R337.5.2

R337.5.1 General. *Roofs shall comply with the requirements of Sections R337 and R902. Roofs shall have a roofing assembly installed in accordance with its listing and the manufacturer's installation instructions. Roof assemblies in the Fire Hazard Severity Zones shall be Class A rating when tested in accordance with ASTM E108 or UL790.*

R337.5.2 Roof coverings. *~~Where the roof profile allows a space between the roof covering and roof decking, the spaces shall be constructed to resist the intrusion of flames and embers, be firestopped 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 the roofing profile has an airspace under the roof covering, installed over a combustible deck, a 72 lb. (32.7kg) cap sheet complying with ASTM D3909 Standard Specification for "Asphalt Rolled Roofing (Glass Felt) Surfaced with Mineral Granules", shall be installed over the roof deck.*

Exception: *Cap sheet is not required when no less than 1" of mineral wool board or other non-combustible material is located between the roofing material and wood framing or deck.*

Alternately, a class A fire rated roof underlayment, tested in accordance with ASTM E108, shall be permitted to be used. If the sheathing consists of exterior rated fire retardant treated wood, the underlayment shall not be required to comply with a Class A classification. Bird stops shall be used at the eaves when the profile fits, to prevent debris at the eave. Hip and ridge caps shall be mudded in to prevent intrusion of fire or embers.

[WILDLAND URBAN INTERFACE 2019 INTERVENING PROPOSALS]

[Related Sections in Part 2.5, California Residential Code]:

R337.5.1, R337.5.2, R337.6.2, R337.6.2.1 (New), R337.6.3, R337.9.1.1 (New),
R337.9.3

**SECTION R337.6
VENTS**

Sections: R337.6.2, R337.6.2.1 (New), R337.6.3

R337.6.2 Requirements. *Ventilation openings for enclosed attics, enclosed eave soffit spaces, enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters, and underfloor ventilation openings shall be fully covered with Wildland Flame and Ember Resistant (WUI) vents approved and listed by the California State Fire Marshal, or WUI vents listed to ASTM E2886, by complying with all metal wire mesh, vents, other materials or other devices that meet one of the following requirements:*

1. Vents shall be listed to ASTM E2886 and comply with all of the following:

1.1. 1. There shall be no flaming ignition of the cotton material during the Ember Intrusion Test.

1.2. 2. There shall be no flaming ignition during the Integrity Test portion of the Flame Intrusion Test.

1.3. 3. The maximum temperature of the unexposed side of the vent shall not exceed 662°F (350°C).

2. Vents shall comply with all of the following:

2.1. The dimensions of the openings therein shall be a minimum of 1/16-inch (1.6 mm) and shall not exceed 1/8-inch (3.2 mm).

2.2. The materials used shall be noncombustible.

Exception: *Vents located under the roof covering, along the ridge of roofs, with the exposed surface of the vent covered by noncombustible wire mesh, may be of combustible materials.*

2.3. The materials used shall be corrosion resistant.

R337.6.2.1 *The requirements of 706.A.2 shall apply to gable ends, ridge ends, crawl spaces (foundations) and all other ventilation vents that mount on a vertical wall.*

R337.6.3 Ventilation openings on the underside of eaves and cornices. *Vents shall not be installed on the underside of eaves and cornices unless the vents are Wildland Flame and Ember Resistant (WUI) vents approved and listed by the California State Fire Marshal, or WUI vents listed to ASTM E2886, by complying with all of the following requirements:*

Exceptions:

1. Vents listed to ASTM E2886 and complying with all of the following:

1.1. 1. There shall be no flaming ignition of the cotton material during the Ember Intrusion Test.

1.2. 2. There shall be no flaming ignition during the Integrity Test portion of the Flame Intrusion Test.

1.3. 3. The maximum temperature of the unexposed side of the vent shall not exceed 662°F (350°C).

Exceptions:

~~2.1.~~ *The enforcing agency shall be permitted to accept or approve special eave and cornice vents that resist the intrusion of flame and burning embers.*

~~3.2.~~ *Vents complying with the requirements of Section 706A.2 shall be permitted to be installed on the underside of eaves and cornices in accordance with all ~~either one~~ of the following conditions:*

~~3.1.2.1.~~ *The attic space being ventilated is fully protected by an automatic sprinkler system installed in accordance with Section 903.3.1.1 and ~~or~~,*

~~3.2.2.2.~~ *The exterior wall covering and exposed underside of the eave are of noncombustible materials, or ignition-resistant materials, as determined in accordance with SFM Standard 12-7A-5 Ignition-Resistant Material and the requirements of Section 704A.3, and the vent is located more than 12 feet (3.66 m) from the ground or walking surface of a deck, porch, patio or similar surface.*

[WILDLAND URBAN INTERFACE 2019 INTERVENING PROPOSALS]

[Related Sections in Part 2.5, California Residential Code]:

R337.5.1, R337.5.2, R337.6.2, R337.6.2.1 (New), R337.6.3, R337.9.1.1 (New), R337.9.3

**SECTION R337.9
DECKING**

Sections: R337.9.1.1 (New), R337.9.3

R337.9.1 General. *The walking surface material of decks, porches, balconies and stairs shall comply with the requirements of this section.*

R337.9.1.1 Flashing. *A minimum of a 6 in. (150 mm) metal flashing, applied vertically on the exterior of the wall, shall be installed at all deck-to-wall intersections.*

R337.9.3 Decking Surfaces. *The walking surface material of decks, porches, balconies and stairs shall be constructed with one of the following materials:*

1. *Material that complies with the performance requirements of Section 709A.4*

when tested in accordance with both ASTM E2632 and ASTM E2726.

2. Ignition-resistant material that complies with the performance requirements of 704A.3 when tested in accordance with ASTM E84 or UL 723.

3. Material that complies with the performance requirements of both SFM Standard 12-7A-4 and SFM Standard 12-7A-5.

4. Exterior fire retardant treated wood

5. Noncombustible material

6. Any material that complies with the performance requirements of SFM Standard 12-7A-4A when attached exterior wall covering is also composed of noncombustible or ignition-resistant material.

Exception: *Wall material ~~shall be permitted to~~ 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 index rating.*

7. Any material that complies with the performance requirements of Section 709A.5 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 this chapter when the decking surface material complies with the performance requirements ASTM E84 with a Class B flame spread index rating.*

[WILDLAND URBAN INTERFACE 2019 INTERVENING PROPOSALS]

[Related Sections in Part 2.5, California Residential Code]:

R337.5.1, R337.5.2, R337.6.2, R337.6.2.1 (New), R337.6.3, R337.9.1.1 (New), R337.9.3

[Related Sections in Part 2, California Building Code]:

705A.1, 705A.2, 706A.2, 706A.2.1 (New), 706A.3, 709A.1, 709A.1.1 (New), 709A.3

Notation:

Authority: Health and Safety Code Sections 1250, 1569.72, 1569.78, 1568.02, 1502, 1597.44, 1597.45, 1597.46, 1597.54, 1597.65, 13108, 13108.5, 13113, 13113.5, 13114, 13143, 13132, 13132.7, 13132, 13133, 13135, 13143.2, 13143.6, 13146, 13210, 13211, 17921, 18928, 18949.2, 18928, 25500-25545, Government Code Section 51189, Education Code 17074.50

Reference(s): Health and Safety Code Sections 13143, 13143.1, 13143.9, 13211, 18949.2, 25500 through 25545, Government Code Sections 51176, 51177, 51178, 51179, Public Resources Code Sections 4201-4204

**Item 3. CHAPTER 44
REFERENCED STANDARDS**

NFPA National Fire Protection Association
1 Batterymarch Park
Quincy, MA 02169-7471

68—13:
Standard on Explosion Protection by Deflagration Venting

UL Underwriters Laboratories LLC
333 Pfingsten Road
Northbrook IL 60062

1974 -17:
Evaluation for Re-purposing Batteries

9540A-17:
Standard for Safety Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems

Notation:

Authority: Health and Safety Code Sections 1250, 1569.72, 1569.78, 1568.02, 1502, 1597.44, 1597.45, 1597.46, 1597.54, 1597.65, 13108, 13108.5, 13113, 13113.5, 13114, 13143, 13132, 13132.7, 13132, 13133, 13135, 13143.2, 13143.6, 13146, 13210, 13211, 17921, 18928, 18949.2, 25500-25545, Government Code Section 51189, Education Code 17074.50

Reference(s): Health and Safety Code Sections 13143, 13143.1, 13143.9, 13211, 18949.2, 25500 through 25545, Government Code Sections 51176, 51177, 51178, 51179, Public Resources Code Sections 4201-4204