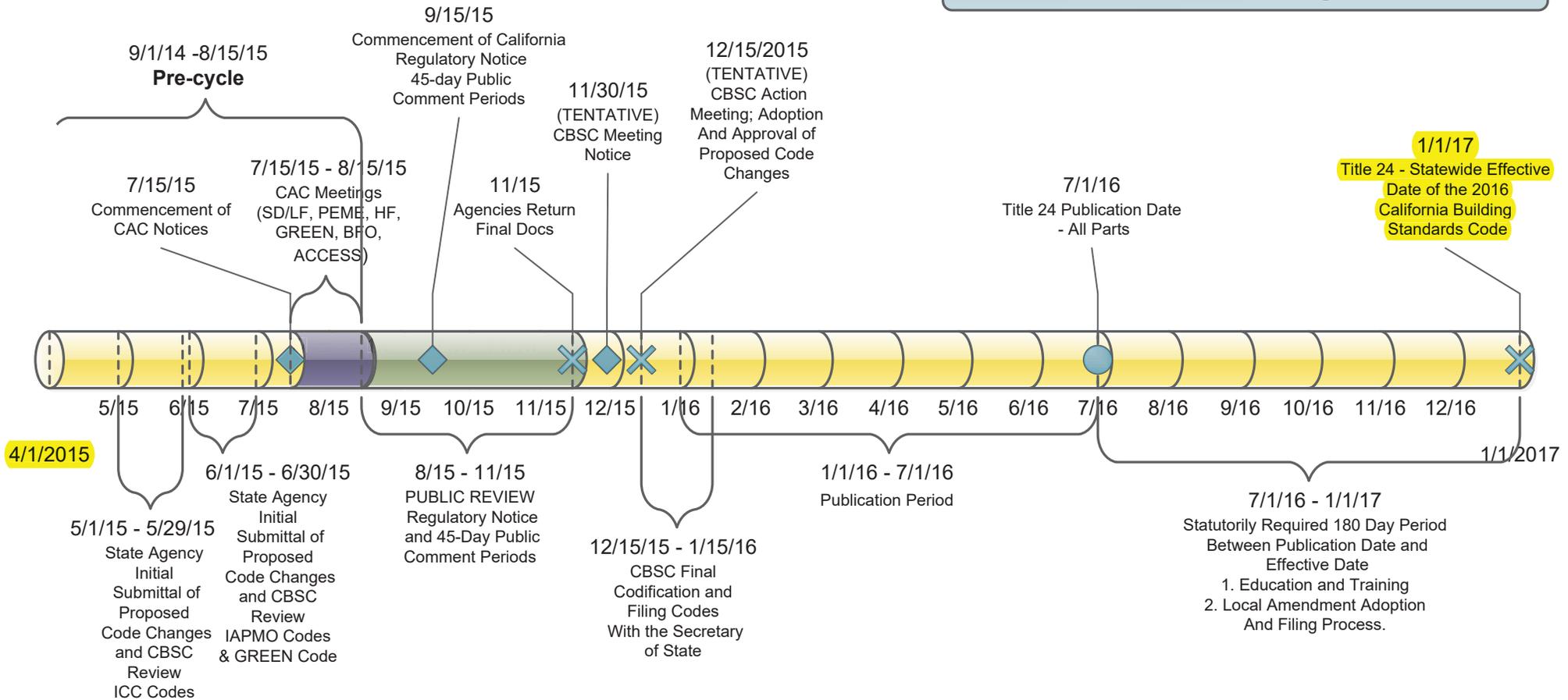


January 1, 2017 Effective Date

2015 Triennial Code Adoption Cycle

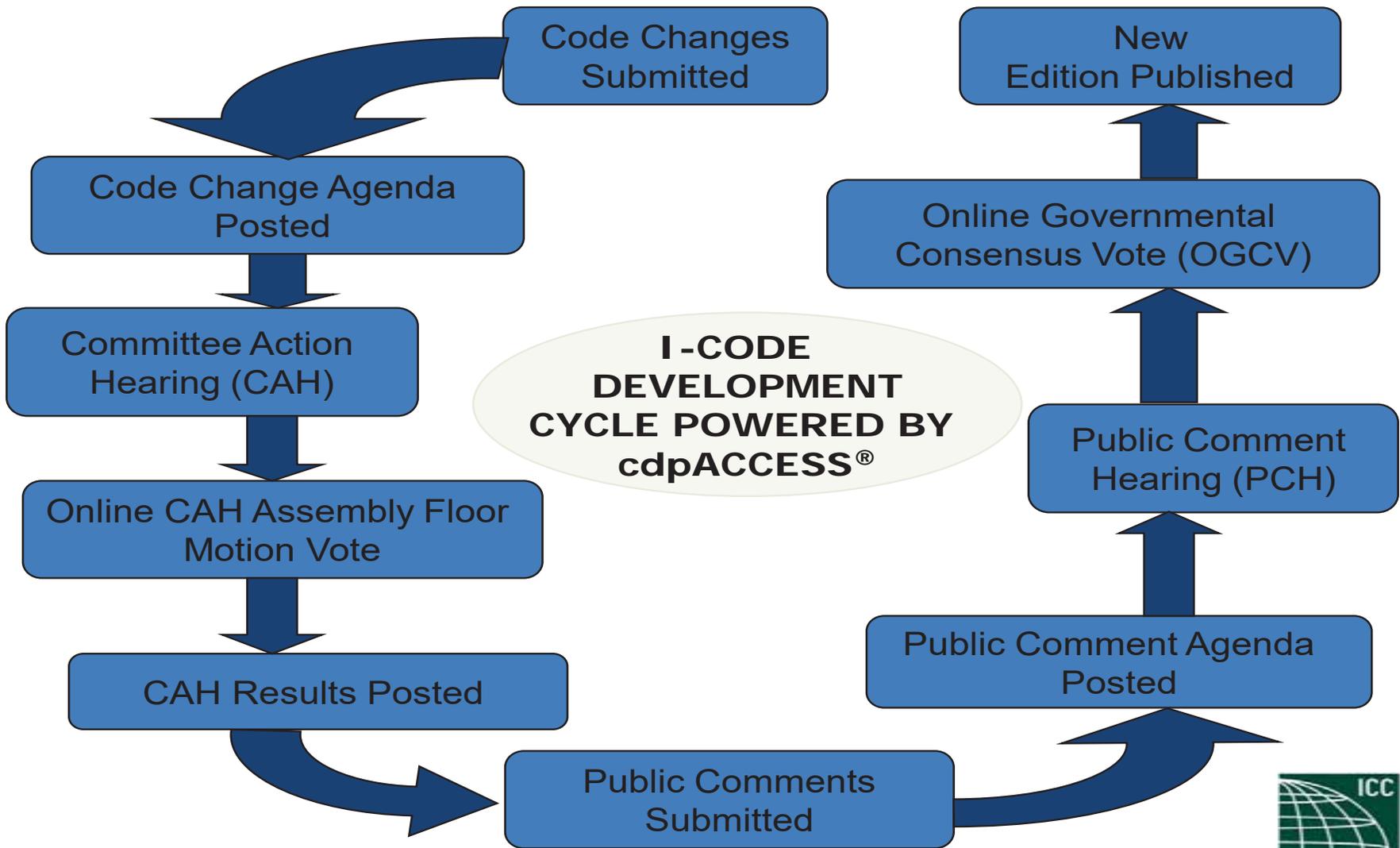
For the 2016 California Building Standards Code



CAC Committees:

- SDLF – Structural Design/ Lateral Forces
- PEME – Plumbing, Electrical, Mechanical & Energy
- HF – Health Facilities
- GREEN – Green Building
- BFO – Building, Fire & Other
- ACCESS – Accessibility

* All dates are subject to change



DRAFT

ORDINANCE XXXX N.S.

AN ORDINANCE OF THE CITY OF EL PASO DE ROBLES; REPEALING, AMENDING, AND REINSTATING CHAPTERS 17.04 AND 17.18 OF TITLE 17 OF THE MUNICIPAL CODE (BUILDINGS AND CONSTRUCTION); AND ADOPTING BY REFERENCE THE 2016 EDITION OF THE CALIFORNIA BUILDING STANDARDS CODE (CALIFORNIA CODE OF REGULATIONS, TITLE 24); INCORPORATING THE 2016 CALIFORNIA ADMINISTRATIVE CODE; 2016 CALIFORNIA BUILDING CODE, 2016 CALIFORNIA RESIDENTIAL CODE, 2016 CALIFORNIA ELECTRICAL CODE, 2016 CALIFORNIA MECHANICAL CODE, 2016 CALIFORNIA PLUMBING CODE, 2016 CALIFORNIA ENERGY CODE, 2016 CALIFORNIA HISTORICAL BUILDING CODE, 2016 CALIFORNIA FIRE CODE, 2016 CALIFORNIA EXISTING BUILDING CODE, 2016 CALIFORNIA REFERENCED STANDARDS CODE, 1997 UNIFORM HOUSING CODE, AND THE 1997 UNIFORM CODE FOR THE ABATEMENT OF DANGEROUS BUILDINGS

WHEREAS, pursuant to California Government Code Section 50022.1 *et seq.* the City of El Paso de Robles may adopt by reference the California Building Standards Code, 2016 Edition as provided in Title 24 of the California Code of Regulations and other model codes; and

WHEREAS, the California Building Standards Commission ("Commission") recently adopted the 2016 Edition of the California Building Standards Code; and

WHEREAS, California Health and Safety Code Section 17958.7 and 18941.5 authorize cities to adopt the California Building Standards Code with modifications determined to be reasonably necessary because of local climatic, geological or topographical conditions; and

WHEREAS, the City desires to adopt the California Building Standards Code and other model codes with the necessary amendments to assure the Codes are tailored to the particular safety needs of the City as required by its unique climatic, geological and topographical conditions; and

WHEREAS, the Building Official has recommended that changes and modifications be made to the California Building Standards Code, and have advised that certain changes and modifications to said Code are reasonably necessary due to local conditions within the City, and have further advised that the remainder of the said changes and modifications are of an administrative or procedural nature, or concern themselves with subjects not covered by the Code, or are reasonably necessary to safeguard life and property within the City; and

WHEREAS, the Building Official has also recommended that changes and modifications be made to the California Building Standards Code, which are necessary for administrative clarification and to establish administrative standards for the effective enforcement of the building standards of the City and do not modify a building standard pursuant to California Health & Safety Code Section 17958, 17958.7, and/or 18941.5; and

WHEREAS, the City held a public workshop on October 17, 2016 at which time all interested persons had the opportunity to appear and be heard on the matter of adopting the Codes as amended herein; and

WHEREAS, the City held a public hearing on November 1, 2016 at which time all interested persons had the opportunity to appear and be heard on the matter of adopting the Codes as amended herein; and

WHEREAS, the City published notice of the aforementioned public hearing pursuant to California Government Code Section 6066 on October xx, 2016 and November xx, 2016;

WHEREAS, any and all other legal prerequisites relating to the adoption of this Ordinance have occurred.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF EL PASO DE ROBLES DOES HEREBY ORDAIN AS FOLLOWS:

SECTION 1. Purpose. The purpose of this ordinance is to adopt by reference the latest edition of the 2016 California Administrative Code; the 2016 California Building Code, which incorporates and amends the 2015 International Building Code; the 2016 California Residential Code, which incorporates and amends the 2015 International Residential Code; the 2016 California Electrical Code, which incorporates and amends the 2014 National Electrical Code; the 2016 California Mechanical Code, which incorporates and amends the 2015 Uniform Mechanical Code; the 2016 California Plumbing Code, which incorporates and amends the 2015 Uniform Plumbing Code; the 2016 California Energy Code; the 2016 California Historical Building Code; the 2016 California Fire Code, which incorporates and amends the 2015 International Fire Code; the 2016 California Existing Building Code, which incorporates and amends the 2015 International Existing Building Code; the 2016 California Green Building Standards Code; the 2016 California Referenced Standards Code; the Uniform Housing Code, 1997 Edition as published by International Conference of Building Officials; and the Uniform Code for the Abatement of Dangerous Buildings, 1997 Edition, as published by International Conference of Building Officials.

SECTION 2. Authority. Pursuant to Government Code section 50022.2, the City Council adopts this ordinance adopting by reference the California Building Standards Code (California Code of Regulations, Title 24) as required and/or permitted by state statutes, including Health and Safety Code sections 17922, 18938 and 18941.5.

SECTION 3. Findings. The City Council hereby finds that the proposed amendments to the Codes are reasonably necessary because of local climatic, geologic or topographic conditions. This finding is supported and based upon the following express findings and determinations, followed by the applicable amendments.

- (a) The City lies within close proximity of the San Andreas Fault and is located over lesser known local fault lines. The location of the San Andreas Fault and other lesser known faults increases the likelihood of seismic disturbances of substantial magnitude occurring in which would cause consequent damage as demonstrated in the 2003 San Simeon Earthquake. (Sections 903.2, 1807.1.7, 1808.8.3.1, 1808.8.3.2, 3103.1, 3105.3 and 3105.4 of the California Building Code; Sections 507.2.3, 903.2 and 903.3.7 of the California Fire Code; Section 230.70.1 of the California Electrical Code; Sections 314.4.1 and 403.9 of the California Plumbing Code)
- (b) The City is subject to climatic extremes with high winds associated with winter storms. The City is subject to climatic extremes where temperatures drop well below freezing at night during the winter months. The City is subject to climatic extremes where high winds can be experienced in both winter and summer months. The high winds can have adverse effects on structures by displacing the structure putting occupants in unsafe conditions and would accelerate burning rates. The City is subject to climatic conditions that produce thick dense fog, particularly in the winter reducing visibility particularly at night. (Sections 903.2, 1507.8.1.2, 1507.9.1.2, 3103.1, and 3105.3 of the California Building Code; Sections 311.1.3, 505.1, 505.1.1, 903.2, 903.3.7, and

5608.2 of the California Fire Code; Section 230.70.1 of the California Electrical Code; Sections 312.6 and 403.9 of the California Plumbing Code)

- (c) The City of Paso Robles has large land areas where constructions of residential building occur in steep terrain. As a result of the grades found on building sites, retaining walls are incorporated in front yard areas where there may be access to public and emergency personnel. Public traversing on the open yards may encounter abrupt changes in the grade causing physical harm. During emergency operations the abrupt changes in elevations created by retaining walls may cause physical harm to emergency personnel. The City, due to geographic and topographic conditions, does not utilize surface water reservoirs but relies on underground aquifers for potable water supplies. Buildings can be located on higher grades up to several hundred feet above the grade of water supply lines. (Sections 1013.1 and 1013.2 of the California Building Code; Sections 603.13.10, 603.3.11 and 608.2.1 of the California Plumbing Code)
- (d) The City is divided by a major highway, rail line and river. Access from the West side to the East side of the City is accomplished by bridge crossings that may be subject to damage or collapse during a seismic event or high flood conditions. Emergency response from the City Main Fire Station on the West side of the City to emergencies could be impeded due to bridge crossing failures. (Section 3103.1 of the California Building Code; Sections 903.2 and 903.3.7 of the California Fire Code)

SECTION 4. Amendment. Chapters 17.04 and 17.18 of the Paso Robles Municipal Code is hereby amended and reinstated in their entirety to read as follows:

Chapter 17.04 - UNIFORM CODES

17.04.010 - Technical building codes adopted—Copies on file.

The ~~fourteen~~ ~~thirteen~~ documents and their respective appendices as outlined herein, one copy of each of which are on file in the office of the city clerk in the city of El Paso de Robles, being marked and designated as the:

A. 2016 California Administrative Code

B. 2016 California Building Code

C. 2016 California Residential Code, including Appendix H- Patio Covers

D. 2016 California Electrical Code

E. 2016 California Mechanical Code

F. 2016 California Plumbing Code

G. 2016 California Energy Code

H. 2016 California Historical Building Code

I. 2016 California Fire Code

J. 2016 California Existing Building Code

K. 2016 California Green Building Standards Code

L. 2016 California Referenced Standards Code

M. Uniform Housing Code, 1997 Edition as published by International Conference of Building Officials.

N. Uniform Code for the Abatement of Dangerous Buildings, 1997 Edition as published by International Conference of Building Officials.

~~A. California Building Code, 2013 Edition, California Residential Code, 2013 Edition, published by the International Code Council, including the generic fire resistive assemblies listed in the Fire Resistance Design Manual, GA-600, published by the Gypsum Association as referenced in Table No. 720.1. Chapter 1 and Appendix I of the California Building Code are included for adoption by this chapter.~~

~~B. California Mechanical Code and appendices, 2013 Edition, published by the International Association of Plumbing and Mechanical Officials. Chapter 1 of the California Plumbing Code is included for adoption by this chapter.~~

~~C. California Plumbing Code and appendices, 2013 Edition, published by the International Association of Plumbing and Mechanical Officials. Chapter 1 of the California Plumbing Code is included for adoption by this chapter.~~

~~D. California Fire Code, 2013 Edition, published by the International Code Council. Chapter 1 and Appendix Chapter 1 and A of the California Fire Code are included for adoption by this chapter.~~

~~E. California Electrical Code, 2013 Edition, as published by the National Fire Prevention Association. Article 89 is included for adoption by this chapter.~~

~~F. California Green Building Standards Code—mandatory measures only, 2013 Edition as published by California Building Standards Commission.~~

~~G. Appendix Chapter A-1 of the International Existing Building Code, 2012 Edition, as published by International Code Council.~~

~~H. International Building Code Handbook, 2012 Edition as published by International Code Council.~~

~~I. Building Codes Illustrated, 2012 Edition as published by John Wiley & Sons, Inc.~~

~~J. Uniform Housing Code, 1997 Edition as published by International Conference of Building Officials.~~

~~K. Uniform Code for the Abatement of Dangerous Buildings, 1997 Edition as published by International Conference of Building Officials.~~

~~L. Uniform Solar Energy Code, 2012 Edition as published by International Association of Plumbing and Mechanical Officials.~~

17.04.020 - Changes or additions to the California Building Code.

A. Section 105, Permits, is amended and subsections added as follows:

105.1.3 Start of Construction:

For the purpose of enforcement of this code, it shall be interpreted that any movement of soil or preparation for installation of foundation or utilities, other than that allowed under the jurisdiction of an approved grading permit shall signify the start of construction. Prior to start of construction, a valid building permit shall be secured.

105.1.4 Permit Issuance:

Should a permit be secured by check, later to be returned for insufficient funds or closed account, that this shall show just cause for revocation of any permits and posting of a Stop Work Order. In conjunction with posting of a Stop Work Order, the site shall be noticed for abatement.

105.1.5 Street Dedication as a Condition of Issuance of a Building Permit:

No Building Permit shall be issued for the construction, reconstruction or relocation of any building or structure abutting upon a street having a lesser width than that established by resolution of the City Council unless the following requirements are complied with:

105.1.6 Dedication of Street Right-of-Way:

The owner of the lot shall make a perpetual and irrevocable offer of dedication to the City for public street purposes, and all uses appurtenant thereto, of a depth determined by the City Engineer based upon the Circulation Element of the General Plan and Official Plan Lines adopted by the City Council. It shall be the responsibility of the City Engineer to confirm that the required dedication(s) has/have been provided.

105.1.7 Setbacks:

The required setback shall be maintained for all buildings, structures and improvements, including off-street parking, as measured from the right-of-way width. It shall be the responsibility of the Building Official to confirm that the required setbacks have been provided, based on property monuments established by a licensed surveyor.

B. Section 110, Inspections, is amended and subsections added as follows:

An inspection may be refused if:

110.1.1 The project address is not conspicuously posted on site.

110.1.2 A trash container or enclosure capable of retaining debris associated with construction process is not available on site, or an existing container is not regularly emptied or maintained.

110.1.3 Portable sanitary facilities are not located within reasonable walking distance of the site (75 yards). There shall be not less than one approved type of water closet for each twenty (20) employees or a fractional part thereof, at start of construction.

111.3 Temporary Occupancy:

The exception will be those buildings given prior administrative approval to be erected and used as models of typical construction in conformity with 110.1 above. Upon administrative approval utilities could be established. The required Certificate of Occupancy will be deferred until such time as a request for permanent occupancy is made.

C. Section 113, Board of Appeals, is amended and subsections added as follows:

113.1.1 In order to provide for interpretations of steps necessary to implement the Title 24 of the California Code of Regulations or the technical codes adopted by the Chapter pertaining to access or accommodations for the physically disabled, and those Chapters of Municipal Code where the Board is specifically noted as being the entity responsible for the hearing of appeals, there is hereby

established a City of Paso Robles Housing Advisory and Disabled Access Board of Appeals, (hereinafter sometimes collectively referred to as "Board of Appeals" or "Board").

The Board shall serve as the "local appeals board" specified in sections 19957.5 of the California Health and Safety Code, in appeals relating to accommodations for the physically disabled.

113.2.1 The Board of Appeals shall function as the "Local Appeals Board" and "Housing Appeals Board" and "Disabled Appeals Board" as specified in Sections 17920.5 and 17920.6, respectively, of Division 13, Part 1.5 of the California Health and Safety Code. The Board shall have no authority relative to interpretation of the administrative provisions of the codes adopted by the City, nor shall the Board be empowered to waive requirements of any code adopted by the City.

The authority of the Board shall consist of the ability to consider appeals filed pursuant to this Chapter and give reasonable interpretations of the Chapter and the technical codes. When required to do so, the Board will conduct hearings regarding appeals of notices and/or orders relative to unsafe buildings.

113.3.1 Board of Appeals. The Housing Advisory and Board of Appeals (hereinafter sometimes referred to as "Board of Housing Appeals") shall consist of five members and two (2) alternates; the Disabled Access Board of Appeals shall consist of the five members of the Board of Housing Appeals (two of the members of the board must work in construction as required by Health & Safety Code § 19957.5) and shall be supplemented by two (2) additional members, both of whom shall be physically disabled as defined in section 2-417, Title 24, Part 2 of the California Code of Regulations when the appeal pertains to disabled access.

Members selected to hear an appeal shall reflect an area of expertise reflective of the appeal being heard.

Members of the Board of Appeals shall be qualified by experience and training to pass judgment upon matters pertaining to building construction and/or disabled access, as appropriate. Members of the Board of Appeals shall be appointed by, and serve at the pleasure of the City Council. Each member of the Board shall comply with applicable provisions of the Political Reform Act of 1974, California Government Code Section 8100 et seq. The Building Official shall be an ex officio member of the Board and shall act as secretary to said Board, but shall have no vote upon any matter before the Board.

113.4 Eligibility.

Any individual meeting those criteria as set forth in sub-section 112.3.1 above shall be eligible to serve on the Board of Appeals.

Exception:

Employees of the City shall not be eligible to serve on the Board of Appeals.

113.5 Term.

Terms of initial appointment shall be for a term of two (2) years for two (2) members and four (4) years for three (3) members. Subsequent appointments shall be for a term of four (4) years.

Terms for initial appointment of disabled members for the Disabled Access Appeals shall be two (2) years for one member and four (4) years for the second. Subsequent appointments shall be for a term of four (4) years.

113.6 Rules and Regulations.

The Board of Appeals shall adopt reasonable rules and regulations, subject to approval by the City Council, for conducting its business. The Board Shall render all decisions in writing.

113.7 Appeals Procedure.

Any person aggrieved by a decision of the Building Official for the City pertaining to orders, decisions, or determinations relative to the application and interpretations of the Uniform Housing Code, Uniform Code for Abatement of Dangerous Buildings, Title 24 of the California Code of Regulations or the technical codes adopted by the Chapter pertaining to access or accommodations for the physically disabled, shall have the right to appeal the decision as provided for under this chapter.

Decisions and actions regarding the enforcement of the requirements of Division 13, Part 5.5 of the California Health and Safety Code may be appealed by any person to the Appeals Board for Disabled Access as provided for under this chapter.

113.8 Appeal Hearing Fee.

A fee, as provided for under this sub-section, shall accompany an application for a hearing before any Housing Advisory or Board of Appeals. The purpose of the fee shall be to cover those costs incurred by the City to provide for the appeals process.

Appeal Fees shall be set by resolution, subject to review by City Council. Appeal fees will be reviewed periodically to ensure that the fees charged cover the costs associated with the appeals process.

113.9 Timing and form of appeal.

An appeal shall be filed with the Secretary of the Board of Appeals or Appeals Board for Disabled Access (as applicable) within fifteen (15) working days (holidays observed by the City are not working days) after the rendering of the decision affecting the aggrieved person. Grounds for the appeal shall be set forth in writing in a form to be supplied by the secretary in addition to any other supporting materials the appellant may wish to furnish, setting forth the reasons for the appeal.

Any written reports to be made to the Board shall be filed with the Secretary of the Board and shall be made available to the Board and to the public no less than five (5) working days prior to the date set for the hearing. Any City of Paso Robles Department Manager or designee shall have the right to be heard on any matter coming before the Board.

113.10 Hearing and decision.

The Secretary of the Board shall set the time and place for a hearing the appeal, and a notice of the time and place of the hearing shall be published in a newspaper of general circulation in the City of Paso Robles, and notice shall also be given to the appellant by mailing, postage prepaid, at the address provided by the appellant in the letter of appeal at least ten (10) working days before the hearing date.

~~D.— Section 707.3.1, Shaft Enclosure Required, is amended with subsection as follows:~~

~~**707.3.1 Wood burning appliance shafts.**~~

~~Wood or solid fuel burning appliances shall be provided with a one hour fire rated shaft surrounding the flue, when such appliances penetrate any part of the attic space. Fireplaces fueled only by natural gas shall be considered as gas appliances and may be excluded from the need to install a one hour rated shaft. Shafts shall be Draft Stopped at Floor/Ceiling Roof/Ceiling penetrations with material prescribed in Section 713.3.~~

E. Section 903, Automatic Sprinkler Systems, is amended as follows:

903.2 Where required. Sections 903.2.1 through 903.2.19.1.2.

Unless required by the Code for a lesser square footage, approved automatic sprinkler systems shall be provided in all new buildings and structures where the total combination of both usable and unusable floor area exceeds 5,000 square feet.

- F. Section 1013, Guards, is amended and subsection added as follows:

1013.1 General. Man-made changes in grade such as retaining walls, garden walls, abrupt changes in elevation in excess of 30 inches, sloped grades in excess of one (1) foot vertical to two feet horizontal, or other gradient conditions, which in the opinion of City Health and Safety Officials, may constitute potential hazard should they be left accessible to the public, shall be protected by a suitable fence or guardrail, meeting those height and spacing requirements as noted in the California Building Code.

1013.2 Where required.

Exceptions, added as follows:

8. Landscape or garden terracing, rendered non-accessible to the public by the means of existing perimeter fencing or when protected by the landscape elements (Example: hedge rows).
9. Topographical or Geographical conditions inherent to the property, lying outside that area normally frequented by individuals.

- G. Section 1507.8 Wood Shingles, and Section 1507.9 Wood Shakes, is amended with subsections as follows:

1507.8.1.2 & 1507.9.1.2

The installation of Wood Shingles and Wood Shakes shall comply with the provisions of Section 1505.7, Special purpose roofs. The completed roof assembly shall be such that it shall have a Class A rating.

- H. Section 1807, Foundations Walls, Retaining Walls and Embedded Posts and Poles, is amended with subsections as follows:

1807.1.7 There shall be no stacking of concrete for foundations, piers or stem walls. All foundations, piers or stem walls shall be formed on both sides (inside and out) when exceeding six inches (6") above lowest adjacent grade.

~~**1807.1.8** Any anchorage other than standard foundation bolts required by building design or calculation shall be secured in place at the time of foundation inspection.~~

- ~~I. Section 1907, Minimum Slab Provisions, is amended as follows:~~

~~**1907.1 General.**~~

~~The thickness of concrete floor slabs supported directly on the ground shall be not less than 4"(101 mm). A 6 mill (0.006 inch; 0.15 mm) polyethylene vapor retarder with joints lapped not less than 6 inches (152 mm) shall be placed between the base course or subgrade and the concrete floor slab, or other approved equivalent methods or materials shall be used to retard vapor transmission through the floor slab.~~

~~Where concrete slab floor on grade construction is used and slabs are not poured monolithic with footings, there shall be placed vertically in all perimeter footings three eighths (3/8) inch deformed steel reinforcing bars, spaced four (4) feet center to center. The bars shall be wired in place at time of foundation inspection, not wet set in conjunction with the concrete pour. Said bars shall be bent inward and tied to the six by six (6 x 6) ten/ten (10/10) wire mesh slab reinforcing prior to pouring the slab. Vapor barriers shall not extend over the bearing surface of~~

~~the perimeter footings or stem wall. When floor slabs and footings are poured monolithic, the three eighths (3/8) inch diameter vertical reinforcing may be omitted. All building slabs shall have a minimum six by six (6 x 6) ten/ten (10/10) wire mesh reinforcing. Fill material in trenches and under slabs shall be sand unless native material is approved by the Building Official.~~

J. ~~Section 2111, Masonry Fireplaces, is amended as follows:~~

~~**2111.3 Seismic reinforcing.**~~

~~Masonry or concrete fireplaces shall be constructed, anchored, supported and reinforced as required in this chapter. Masonry and concrete fireplaces shall be reinforced and anchored as detailed in Sections 2111.3.1, 2111.3.2, 2111.4 and 2111.4.1 for chimneys serving fireplaces. Masonry and concrete chimneys shall be reinforced in accordance with the requirements of sections 2101 through 2108.~~

~~**2111.4 Seismic anchorage.**~~

~~Masonry and concrete chimneys shall be anchored at each floor, ceiling or roof line more than 6 feet above grade, except where constructed completely within the exterior walls. Anchorage shall conform to the following requirements.~~

K. ~~Section 2113, Masonry Chimneys, is amended as follows:~~

~~**2113.3 Seismic reinforcing.**~~

~~Masonry or concrete chimneys shall be constructed, anchored, supported and reinforced as required in this chapter. Masonry and concrete chimneys shall be reinforced and anchored as detailed in Sections 2113.3.1, 2113.3.2, 2113.4 and 2111.4.1 for chimneys serving fireplaces. Masonry and concrete chimneys shall be reinforced in accordance with the requirements of sections 2101 through 2108.~~

~~**2113.4 Seismic anchorage.**~~

~~Masonry and concrete chimneys and foundations shall be anchored at each floor, ceiling or roof line more than 6 feet above grade, except where constructed completely within the exterior walls. Anchorage shall conform to the following requirements.~~

L. Section 3103, Temporary Structures, is amended as follows:

3103.1 General.

The provisions of this section shall apply to structures erected for a period of less than 90 (ninety) days. Tents and other membrane structures erected for a period of less than 90 days shall comply with the California Fire Code. Those erected for a longer period of time shall comply with applicable sections of this code. Fences used for the protection of the public around and in conjunction with construction work may be erected by approval of a building permit from the Building Official that is valid for only a limited period of time. Said limited time period is to be ninety (90) days or until a valid permit has expired, has been suspended or revoked. Any extensions of that time period must be approved by City Council. All other buildings shall be termed as "permanent" buildings and required to meet all applicable codes.

Temporary buildings or structures shall be completely removed upon the expiration of the time period specified in the permit. Failure to remove the buildings or structures will result in abatement proceedings and misdemeanor citation as prescribed under Municipal Code.

M. Section 3105, Awnings and Canopies, is amended as follows:

3105.3 Design and Construction.

Awnings and canopies shall be designed and constructed to withstand wind or other lateral loads and live loads as required by Chapter 16 with due allowance for shape, open construction and similar features that relieve the pressures of loads. Awnings and Canopies shall have frames of noncombustible material. Awning frames may be rigid, except when in the opinion of the Fire Chief, emergency access to upper floors will be impeded by the installation of rigid frame awnings. Should this be the case, awnings and canopies shall be collapsible, retractable or capable of being folded against the face of the supporting building. When collapsed, retracted or folded, the design shall be such that the awning or canopy does not block any required exit.

~~3105.4 Canopy materials.~~

~~Awning and canopies shall be constructed of a rigid framework with an approved covering that meets the fire propagation performance criteria of NFPA 701 or has a flame spread index not greater than 25 when tested in accordance with ASTM E 84. Coverings for all exterior awnings and canopies connected or adjacent to buildings shall be made either from fabric that has been made flame resistant through treatment with an approved exterior chemical process by an approved application concern, or from inherently flame resistance fabric approved and listed by the State Fire Marshal for exterior use. Certificates of flame resistance or other documentation acceptable to the Chief shall be available on the premises (Exception: Single family and small two family dwellings not exceeding two stories in height).~~

- N. Section 1808.8.3, Placement of concrete, is amended and subsection added as follows:

1808.8.3.1 There shall be no stacking of concrete for foundations, piers or stem walls. All foundations, piers or stem walls shall be formed on both sides (inside and out) when exceeding six inches (6") above lowest adjacent grade.

~~**1808.8.3.2** Any anchorage other than standard foundation bolts required by building design or calculation shall be secured in place at the time of foundation inspection.~~

- 17.04.030 - Changes or additions to the California Fire Code.

- A. Section 311, Vacant Premises, is amended as follows:

311.1.3 Securing Premises.

The owner, occupant or other persons having under their control of any property, or materials on property, damaged by fire, when access by the public is possible, shall secure the property either by boarding up all openings, fencing, barricading or other appropriate measures as directed by the Fire Chief within 24 hours of the incident.

- B. Section 505, Premises Identification, is amended as follows:

505.1.1 Address Identification.

When the building or group of buildings (five units or more) is served by an alley or interior driveway, the numbers or alphabetical designation shall be displayed on a directory or annunciator board, approved by the Fire Chief, at each driveway or alley entrance. Senior Housing, Retirement Villas, Hotel and Motel annunciator boards shall be of a Graphic type. The property owner, Homeowner's Association or individual in charge of the property shall be responsible for maintaining the directory.

505.1.2~~4~~ Rear Door Address Numbers.

All buildings with access via an alley or other similar roadways shall have the address number provide on the rear door of the building or tenant space.

- C. Section 507, Fire Protection Water Supplies, is amended with subsection added as follows:

507.2.3 Installation Requirements.

Private fire service mains and water tank installation plans shall be reviewed and approved by the Fire Department prior to installation. The Fire Code Official shall conduct field verification for compliance with approved plans prior to the issuance of a Certificate of Occupancy.

D. Section 903, Automatic Sprinkler Systems, is amended as follows:

903.2 Where required. Sections 903.2.1 through 903.2.12

Unless required by the Code for a lesser square footage, approved automatic sprinkler systems shall be provided in all new buildings and structures where the total combination of both usable and unusable floor area exceeds 5,000 square feet.

Exceptions:

1. Group R Occupancies per Section 903.2.8 "Exceptions:"

New Construction:

1. The area of mezzanines and additional stories above and below the ground floor shall be included in determining the areas where sprinklers are required. This requirement shall not preclude the installation of any separation walls required by other sections of the Code.
2. The square footage of a building shall be computed using a combination of both usable and unusable floor area. Vent shafts and concealed spaces shall be considered when computing building area. Areas of buildings may not be reduced, subdivided, or compartmentalized into areas less than 5,000 square feet by the installation of separation walls. Courts meeting the requirements of Section 1206 of the California Building Code shall not be included in the calculation.
3. Plans for Fire Sprinkler systems shall be submitted for review prior to inspection of the structural frame.
4. Occupancies within Commercial Zones, in which the type of tenant is not known at the time of permit (i.e. Shell Buildings), shall have the sprinkler system hydraulically designed to a minimum standard of N.F.P.A. #13, Ordinary Hazard Group III.
5. Occupancies within Industrial or Manufacturing Zones, when the type of tenant is not known at the of construction, shall have the sprinkler system hydraulically designed to a minimum standard N.F.P.A. hazard group, as determined by the Code Official.

Existing Construction:

An automatic fire sprinkler system shall be installed in all rooms, buildings or structures when the following conditions are determined to exist:

1. In conjunction with any change in the occupancy group assigned the structure under the California Building Code, and the floor area exceeds 5,000 square feet.
2. The area of mezzanines shall be included in determining the areas where sprinklers are required. This requirement shall not preclude the installation of any separation walls required by the Code.
3. The square footage of a building shall be computed using outside wall areas. Vent shafts and concealed spaces shall be considered when computing building area. Areas of buildings may not be reduced, subdivided, or compartmentalized into areas less than 5,000 square feet by the installation of separation walls. Courts meeting the

requirements of Section 1206 of the California Building Code shall not be included in the calculation.

903.3.7 Fire department connections.

Connections shall be located on the addressed side of the building and within 150 feet of a fire hydrant, with the exact location to be specified by the Fire Code Official.

Exceptions:

1. The Fire Code Official may require locations other than the addressed side when impractical due to response needs or unusual building configuration.

E. Section 103.2, Appointment, is hereby deleted in its entirety without replacement.

F. Section 108, Board of Appeals, is amended and restated in its entirety as follows:

108.1 Board of Appeals.

Any appeal of orders, decisions or determinations made hereunder relative to the application and interpretation of this code shall be made to the board of appeals established pursuant to Section 17.04.020(~~DC~~) of the Paso Robles Municipal Code and in accordance with the procedure stated therein.

G. Section 109, Violations, is amended as follows:

109.4 Violation Penalties

Any person, firm or corporation violating any of the provisions of the code adopted by reference in this chapter is guilty of a misdemeanor and, upon conviction, shall be punished as provided in Paso Robles Municipal Code Chapter 1.02.

H. Section 5608, Fireworks Display, is amended with subsection added as follows:

5608.2 Fireworks Prohibited.

No person shall sell, display for sale, possess, store, or manufacture, use, light, fire, discharge, explode or set off any fireworks, including "Safe and Sane" fireworks anywhere within the city, except as allowed by the Fire Code Official.

17.04.040 - Changes or additions to the California Electrical Code.

Changes or additions to the California Electrical Code, referenced to in Section 17.04.010 of this chapter are as follows:

A. Article 230.70, Service Equipment-Disconnecting Means, General, is amended with subsection as follows:

230.70.1 All electric services shall have a single main disconnect to disconnect all conductors in a building or structure. In all new construction and remodels involving fifty percent or more of the total square footage of the building, when the required disconnect is located within the building or in an area not readily accessible, an emergency disconnect shall be provided in a readily accessible location on the exterior of the building as designated by the fire chief. The disconnecting device shall be located within an approved security enclosure (such as a Knox Box) and a key provided the fire department.

17.04.050 - Changes or additions to the California Plumbing Code.

Changes or additions to the California Plumbing Code referred to in Section 17.04.010 of this chapter are as follows:

- A. Section 312.0, Protection of Piping, Materials and Structures, is amended with subsection as follows:

312.6 No water, soil, or waste pipe shall be installed or permitted outside of a building, ~~attic space in attics or crawl spaces, underfloor area~~ or in an exterior wall unless, where necessary, adequate provision is made to protect such pipe from freezing. Potable water piping located on outside of a building, in attic spaces, exterior walls and underfloor areas shall be covered with insulation providing a minimum resistance factor of R-3 or greater. The R-3 insulation shall be in addition to any wall or attic insulation required by California Energy Standards. Insulation must completely cover all portions of water piping with no gaps or openings.

A dedicated 20 amp, 120-volt receptacle, capable of supporting the loads associated with commercially available heat tapes shall be located within five feet of any backflow/check valve assembly associated with a fire suppression system.

Commercial and residential fire suppression systems shall be provided with an insulation cover providing a minimum resistance factor of R-3. The insulation used must be of a minimum Class III flame spread index, with a smoke density no greater than 450.

- B. Section 314.0, Trenching, Excavation, and Backfill, is amended with subsection as follows:

~~314.4.1~~**314.1.1** Plumbing trenches under buildings or concrete work shall be backfilled with sand unless native material is approved by Administrative Authority.

- C. Section ~~403.0401.3~~**401.3**, Water-Conserving Fixtures and Fittings, is amended with subsections as follows:

~~403.9401.3.1~~**401.3.1** Equipment installed in automatic and coin operated car washes shall be capable of recycling a minimum of fifty percent (50%) of the water required for their daily operation.

- D. Section 603.3, Backflow Prevention Devices, Assemblies, and Methods, is amended with subsections as follows:

603.3.10 All new Commercial, Industrial, and Multi-family developments (two units or more) shall protect the city water supply through the installation of a Backflow - Reduced Pressure Device Prevention Device. Approval of the type and location of the device shall be the responsibility of the City Public Works Department.

603.3.11 Existing Commercial, Industrial, and Multi-family developments (two units or more) originally constructed without backflow - reduced pressure devices, shall retrofit and install a backflow - reduced pressure device in conjunction with the issuance of any building or plumbing permit when the value of the work associated with the permit exceeds \$2500.00. Approval of the type and location of the device shall be the responsibility of the City Public Works Department.

- E. Section 608.2, Excessive Water Pressure, is amended with subsection as follows:

608.2.1 For potable water services up to and including one and one half (1-1/2) inch (38.1 mm) regulators, provision shall be made to prevent pressure on the building side of the regulator from exceeding main supply pressure. Approved regulators with integral by-passes are acceptable.

As a result of excessive water pressures found within the City of El Paso de Robles, pressure regulators complying with 608.2 above shall be installed on all new construction, and on all remodels consisting of changes to, or increases of the floor space in excess of 50% of the existing gross square footage.

F. Section 612.0, Residential Fire Sprinkler Systems, is amended with subsection as follows:

612.1.2 Passive purge fire sprinkler systems are a type of residential fire sprinkler system that serves a single toilet in addition to the fire sprinklers. The toilet shall be on a remote portion of the sprinkler system or the system shall be designed as a loop so that the water moves through a majority of the fire sprinkler system piping when the toilet is flushed. Passive purge system non-metallic pipe and fittings shall be designed to withstand a working pressure of not less than 130 psi (8.9 bar) at 120 degrees (49C).]

17.04.060 - ~~Changes or additions to building permit, energy permit, energy review, and demolition fees~~Building Permit Fees.

~~The city council shall, by resolution, establish the fees to be charged and collected for the issuance of building permits for construction, electrical, mechanical, and plumbing work including plan review; for energy review; inspections and for plan review and inspections of demolished structures. Any fees imposed by this section shall be a civil debt owing to the city from the owner of the property where the service is performed.~~Building Permit Fees shall be as established in the City Master Fee Schedule, as adopted by the City Council.

17.04.070 - ~~Changes or additions to p~~Penalty for violation.

~~Any person who violates any of the provisions of this chapter, or fails to comply with any order made thereunder, or who builds in violation of any detailed statement of specifications or plans submitted and approved thereunder, or any certificate or permit issued thereunder, and from which no appeal has been taken or who fails to comply with such an order as affirmed or modified by the jurisdiction, within the time affixed herein,~~ shall severally for each and every violation and noncompliance, respectively, be guilty of a misdemeanor.

Chapter 17.18 - AMENDMENTS TO THE ~~INTERNATIONAL-CALIFORNIA~~ EXISTING BUILDING CODE, APPENDIX A, CHAPTER A1

Sections:

17.18.010 - ~~International-California~~ Existing Building Code.

The ~~2012 Edition of the International~~California Existing Building Code, Appendix A, Chapter A1 entitled Seismic Strengthening Provisions for Unreinforced Masonry Bearing Wall Buildings, with the amendments set forth in this chapter, is adopted.

17.18.020 - Scope.

Chapter section A102 entitled "Scope" is amended to read as follows:

Section A102 Scope

A102.1 General. The provisions of this chapter shall apply to all existing buildings having at least one unreinforced masonry bearing wall. The elements regulated by this chapter shall be determined in accordance with Table A1 -A. Except as provided herein, all other provisions of the California Building Code shall apply.

~~**A102.2 Essential and hazardous facilities.** The provisions of this chapter are not intended to apply to the strengthening of buildings or structures in Seismic Use Groups II and III, where Seismic Design Categories C, D, E, and F as defined in the 2012 International Building Code are required. Such buildings or structures shall be strengthened to meet the requirements of the California Building Code for new buildings of the same occupancy category.~~

A102.3 Exceptions. The provisions of this chapter shall not apply to detached one-or two-family dwellings and detached apartment houses containing less than five dwelling units and used solely for residential purposes.

17.18.030 - Definitions.

Chapter section A103 entitled "Definitions" is amended to include the following additional definitions:

- A. "Qualified Historical Building" means any structure included on the National Register of Historic Buildings or the state list of Significant Historic Buildings.
- B. "Qualified Zones" means that zone or geographic area referenced under the State [California] Building Code establishing the potential earthquake hazard of a given area.
- C. "Seismic Retrofit" means all work necessary to comply with the requirements of this chapter.

The above definitions shall be in addition to those contained in the California Building Code and the International Existing Building Code Section A103.

17.18.040 - Administrative provisions.

New chapter section A115 entitled "Administrative Provisions" is added to read as follows:

Section A115 Administrative provisions

A115.1 Compliance requirements.

A115.1.1 Structural analysis. The owner of each building within the scope of this chapter shall, upon service of an order and within the time limits set forth in this chapter, cause a structural analysis to be made of the building by an engineer or architect licensed by the state to practice as such and, if the building does not comply with earthquake standards specified in this chapter, the owner shall cause it to be structurally altered to conform to such standards or shall cause the building to be demolished.

A115.1.2 Twelve-month compliance requirements. Within twelve (12) months of the date of service of the order, the owner of a building within the scope of this chapter shall obtain one of the following from the Building Official:

1. A building permit to construct the seismic retrofit improvements identified in a structural analysis and plans for structural alteration of the building to comply with this chapter; or

2. A letter from the Building Official stating that he or she concurs with a structural analysis, which demonstrates that the building meets the minimum requirements of this chapter and therefore does not require seismic retrofitting; or
3. A permit for the demolition of the building. Issuance of a permit for demolition of a building shall be subject to compliance with the provisions of Chapter 17.16 (Demolition of Buildings and Structures) of the Municipal Code.

In order to meet the deadline set forth above, owners of buildings within the scope of this chapter must submit structural analyses, plans for structural alteration of the building, and/or applications to demolish their buildings at least 105 calendar days prior to the deadline to allow for the Building Official to review the analyses, plans, and/or applications to demolish and to find them to be in compliance with this chapter.

A115.1.3 Thirty-month compliance requirements. Within thirty (30) months of the date of service of the order, the owner of a building within the scope of this chapter shall complete construction of structural alterations or complete demolition of the building, as applicable.

A115.2 Historical buildings. Alterations or repairs to qualified historical buildings shall comply with the State Historical Building Code (Title 24, Building Standards, Part 8), in addition to this chapter.

A115.3 Order.

A115.3.1 Service. The building official shall issue an order as provided in this section to the owner of each building within the scope of this chapter. The order shall be in writing and shall be served either personally or by certified or registered mail upon the owner as shown on the last equalized assessment roll, and upon the person, if any, in apparent charge or control of the building. The order shall specify that the building has been determined by the Building Official to be within the scope of this chapter and, therefore, is required to meet the minimum seismic standards of this chapter. The order shall be accompanied by a copy of Section A115.1, which sets forth time limits for compliance.

A115.4 Recordation.

1. At the time that the Building Official serves the order as provided in Subsection A115.3.1, the Building Official shall also file with the San Luis Obispo County Clerk-Recorder's Office a certificate stating that the subject building is within the scope of this chapter and is a potentially earthquake hazardous building. The certificate shall also state that the owner thereof has been ordered to structurally analyze the building and to structurally alter or demolish it where compliance with this chapter has not been demonstrated.
2. If the building is either 1) demolished, 2) found not to be within the scope of this chapter or 3) is structurally capable of resisting minimum seismic forces required by this chapter as a result of structural alterations or an analysis, the Building Official shall file with the San Luis Obispo County Clerk-Recorder's Office a form terminating the status of the subject building as being classified within the scope of this chapter.

A115.5 Appeal. Appeals or requests for modifications from any determinations, actions, or orders by the Building Official pursuant to this chapter shall be made to the City Council. Such appeal shall be filed with the City Council within sixty (60) days of the rendering of the decision being appealed. Such appeal shall be made in writing on appropriate forms provided therefore by the Building Official and the grounds thereof shall be stated clearly and concisely.

A115.6 Enforcement.

1. If the owner in charge or control of the subject building fails to comply with any order issued by the Building Official pursuant to this Chapter within the time limits set forth in Section

A115.1, the Building Official shall verify that the recorded owner of this building has been properly served.

- B. If the order has been served on the record owner, then the Building Official may order that the entire building, or any portion thereof, be vacated and that the building, or any portion thereof, remain vacated until such order has been complied with.
- C. If compliance with such order has not been accomplished within ninety (90) days after the date the building has been ordered vacated or such additional time as may have been granted, the building is hereby declared a public nuisance, The Building Official shall order abatement of the building.
- D. Any person who violates any provision of this chapter is guilty of a misdemeanor and is subject to the penalty as provided for in Section 1.02.010 of the Municipal Code.
- E. Appeals or requests for modifications from any determinations, actions, or orders by the Building Official pursuant to this Subsection shall be handled in the manner set forth in Section A115.5.

A115.7 Full strengthening required prior to time frames set forth in section A115.1. The Building Official shall require full compliance with the minimum seismic standards contained within this chapter before the time frames set forth in Section A115.1 upon the occurrence of any one of the following conditions:

- 1. Any change or conversion of an unreinforced masonry structure from its existing use to that of a more intensive use;
- 2. The remodel of a structure covered by this chapter, in an amount equaling fifty percent of the structure's value as determined using the latest edition of the Building Standards Valuation, published by the International Conference of Building Officials; and/or
- 3. The Building Official may, upon receipt of a written request from the owner, order such owner to bring his building into compliance with this chapter prior to the normal service date for such building.

A115.8 Certificate of compliance.

- 1. In accordance with Chapter 3, Section 70(d)(3) of the Revenue and Taxation Code, the Building Division shall, upon the completion of a seismic retrofit, file a certificate of compliance with the County Assessor's Office on or before the following April 15th.
- 2. The certificate of compliance shall establish that the work associated with the seismic retrofit was the result of a local ordinance related to seismic safety, and therefore shall not add value to the assessment role.

A115.9 Requirements for structural alteration plans - structural engineering.

The following construction information shall be included in the structural alteration plans submitted to the Building Official pursuant to Section A115.1 of this chapter:

- 1. Dimensioned floor and roof plans showing existing walls and the size and spacing of floor and roof framing member and sheathing materials. The plans shall indicate all existing and new crosswalls and their materials of construction. The location of the crosswalls and their openings shall be fully dimensioned or drawn to scale on the plans;
- 2. Dimensioned wall elevations showing openings, thicknesses, heights, the type of veneer, its thickness and its bonding and/or ties to the structural wall masonry;
- 3. The extent and type of existing wall anchorage to floors and roof when used in the design;

4. The extent and type of parapet corrections which were previously performed, if any; and
5. Repair details, if any, of cracked or damaged unreinforced masonry walls.

A115.10 Material requirements.

A115.10.1 General. All materials permitted by this chapter, including their appropriate allowable design values substantiated by testing, may be utilized to meet the requirements of this chapter.

A115.10.2 Existing materials. All existing materials utilized as part of the required vertical load-carrying or lateral force-resisting system shall be tested or shall be repaired or removed and replaced with new materials.

A115.11 Upgrade design—requirements for expanded or continued use of a structure.

1. Except as modified herein, the analysis and design relating to the alteration of, or addition to, an existing building shall be in accordance with the California Building Code.
2. Contractors providing structural upgrades shall be licensed by the State of California in the trade(s) being performed to accomplish the upgrade.
3. Design documents and specifications pertaining to structural upgrades shall be prepared by an architect, structural engineer or civil engineer specializing in structural work, licensed by the State of California to practice as such.
4. Design documents and specifications shall comply with this chapter.

A115.12 Special requirements for qualified historical buildings.

A115.12.1 Purpose and Intent of this Section A115.11. The purpose and intent of this Section A115.11 shall be to minimize the effects of seismic strengthening on the exterior appearance of qualified historical buildings.

A115.12.2 Review by Development Review Committee. Plans for seismic upgrading of qualified historical buildings shall be reviewed by the Development Review Committee. The basis of review shall be the design guidelines established by this chapter and the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitation of Historic Properties, with the following special requirements:

1. Features of architectural or historical significance shall be retained and reattached, braced or stabilized, as required by applicable codes and/or the Building Official.
2. In-wall anchors shall be used on qualified historical buildings instead of through-wall anchors, especially on the principal facade.
3. Through-wall anchors on other facades may be permitted, provided that their locations and treatment are approved by the Development Review Committee.
4. Closure of historic openings on the principal facade shall not be permitted and shall be discouraged on secondary facades. If closure of such openings on secondary facades is unavoidable, the materials used shall be compatible with the existing exterior materials of the secondary facade wall.
5. Historic parapets shall be braced rather than removed.
6. Historic architectural veneer posing a safety hazard shall be stabilized and re-anchored to the building.

A115.12.3 Building Exterior.

1. In order to minimize the effect on the exterior appearance of a qualified historical building, plans showing proposed shear-test locations shall be submitted for review and approval by the Community Development Director or his or her designee, prior to any testing of the structure taking place.
2. Repairs after testing shall match the original adjacent existing building facade materials.

A115.13 Buildings with brick veneers, cornice work and/or parapets.

A115.13.1 Buildings constructed prior to 1972. The owner of each building constructed prior to 1972 with a brick veneer shall, upon service of an order and within the time limits set forth in this chapter, cause an analysis to be made of the veneer by an engineer or architect licensed by the state to practice as such and have such veneer examined to determine if it is anchored to the building structure in a manner consistent with the anchorage requirements contained in this chapter.

1. The owners of buildings within the scope of this Subsection shall be served written orders in the manner set forth in Sections A115.3 informing them of the requirements of this Subsection.
2. Within twelve (12) months of the date of service of the order, the owner of a building within the scope of this Subsection shall obtain from the Building Official a building permit to construct the seismic retrofit improvements identified in a structural analysis and plans for structural alteration of the brick veneer to comply with this Subsection.
3. Within thirty (30) months of the date of service of the order, the owner of a building within the scope of this Subsection shall complete anchoring of the brick veneer to meet the anchoring requirements of this chapter.

In order to meet the deadline set forth above, owners of buildings within the scope of this Subsection must submit structural analyses and plans for structural alteration of the building, and/or applications to demolish their buildings at least 105 calendar days prior to the deadline to allow for the Building Official to review the analyses, plans, and/or applications to demolish and to find them to be in compliance with this Chapter.

A115.13.2 Buildings from which brick veneers, cornice work, and/or parapets were removed as a result of the December 22, 2003 earthquake. Each owner of a building from which brick veneers, cornice work and/or parapets were removed as a result of the December 22, 2003 earthquake shall replace said veneers, cornices, and/or parapets.

1. The owners of buildings within the scope of this Subsection shall be served written orders in the manner set forth in Sections A115.3 informing them of the requirement to replace said veneers, cornices, and/or parapets. Said order shall inform building owners that veneers, cornice work and/or parapets shall be replaced with materials providing the same architectural/historical features originally removed.
2. Within twelve (12) months of the date of service of the order, the owner of a building within the scope of this Subsection shall obtain from the Building Official a building permit to construct the seismic retrofit improvements identified in a structural analysis and plans for structural alteration of the brick veneer, cornice, and/or parapet to comply with this Subsection.
3. Within thirty (30) months of the date of service of the order, the owner of a building within the scope of this Subsection shall complete all replacement work.

In order to meet the deadline set forth above, owners of buildings within the scope of this Subsection must submit structural analyses and plans for structural alteration of the building and/or applications to demolish their buildings at least 105 calendar days prior to the deadline to allow for the

Building Official to review the analyses, plans, and/or applications to demolish and to find them to be in compliance with this Chapter.

A115.13.3 Appeals. Appeals of orders specified in this Section A115.12 shall be handled in the manner set forth in Section A115.5.

A115.14 Report to City Council. Within thirty (30) days of the deadlines established in Sections A115.1 and A115.12, the Building Official shall make a written report to the City Council explaining the status of compliance for each building served notice as set forth in Section A115.3.

5. Conflicting Ordinances Repealed. All former ordinances or parts conflicting or inconsistent with the provisions of this ordinance or of the codes adopted by this ordinance and any other ordinance in conflict herewith are hereby repealed.

6. Severability. The provisions of this ordinance are severable, and the invalidity, unenforceability or unconstitutionality of any section, portion or part of this ordinance shall not affect the validity of the remainder of the ordinance.

7. CEQA. The City Council hereby finds and determines that it can be seen with certainty that there is no possibility that this ordinance may have a significant adverse effect on the environment, since it adopts updated building and safety standards, which the City had previously adopted in substantial form. Thus, the adoption of this ordinance is exempt from the requirements of the California Environmental Quality Act ("CEQA") pursuant to Section 15061(b)(3) of the CEQA Guidelines.

8. Publication. The City Clerk shall certify to the adoption of this ordinance and shall cause a summary thereof to be published in a newspaper of general circulation at least five (5) days prior to the meeting at which the proposed ordinance is to be adopted and shall post a certified copy of the proposed ordinance in the office of the City Clerk, and within fifteen (15) days of its adoption, shall cause a summary of it to be published, including the vote for and against the same, and shall post a certified copy of the adopted ordinance in the office of the City Clerk, in accordance with California Government Code Section 36933.

9. Effective Date. This ordinance shall take effect upon the later of thirty (30) days after its adoption or January 1, 2017.

Introduced at a regular meeting of the City Council held on November 01, 2016, and passed and adopted by the City Council of the City of El Paso de Robles on the ____ day of ____, 2016 by the following roll call vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

STEVE MARTIN, MAYOR

KRISTEN BUXKEMPER, DEPUTY CITY CLERK

404.9, 404.10

Egress Travel through an Atrium



Egress travel through an atrium

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CHANGE TYPE: Clarification

CHANGE SUMMARY: The three distinct travel distance conditions that could potentially occur for areas open to an atrium are now each addressed individually in order to clarify their application.

2016 CODE: 404.9 Exit Access Travel Distance. In other than the lowest level of the atrium, where the required means of egress is through the atrium space, the portion of exit access travel distance within the atrium space shall be not greater than 200 feet (60 960 mm). The travel distance requirements for areas of buildings open to the atrium and where access to the exits is not through the atrium, shall comply with the requirements of Section 1016. Exit access travel distance for areas open to an atrium shall comply with the requirements of this section.

404.9.1 Egress Not Through the Atrium. Where required access to the exits is not through the atrium, exit access travel distance shall comply with Section 1017.

404.9.2 Exit Access Travel Distance at the Level of Exit Discharge. Where the path of egress travel is through an atrium space, exit access travel distance at the level of exit discharge shall be determined in accordance with Section 1017.

404.9.3 Exit Access Travel Distance at Other Than the Level of Exit Discharge. Where the path of egress travel is not at the level of exit discharge from the atrium, that portion of the total permitted exit access travel distance that occurs within the atrium shall be not greater than 200 feet (60 960 mm).

404.10 Interior Exit Stairways. A maximum of 50 percent of interior exit stairways are permitted to egress through an atrium on the level of exit discharge in accordance with Section 1028.

CHANGE SIGNIFICANCE: Of the special requirements in Section 404 applicable to atriums, there is limited focus on means-of-egress issues. The general provisions of Chapter 10 have been applicable under all conditions except for travel distance limitations on egress travel that occurs within the atrium space at other than the atrium level. Although there are no technical changes to the provisions, Section 404.9 has been reformatted to clarify the intent. The three distinct travel distance conditions that could potentially occur are now each addressed individually. Where travel does not occur through the atrium, or where travel within the atrium occurs only at the level of exit discharge, the general provisions of Section 1017 continue to apply. Where means-of-egress travel occurs at other than the level of exit discharge, the limitation of 200 feet of travel within the atrium also continues to apply.

A new provision addresses the extension of interior exit stairways through an atrium at the level of exit discharge. It has been clarified that if the atrium complies with the interior exit discharge provisions established in Exception 1 of Section 1028, a maximum of 50 percent of the interior exit stairways may egress through the atrium space at the discharge level.

CHANGE TYPE: Modification

CHANGE SUMMARY: In coordination with the CFC, the list of the required posting of occupant load has expanded.

2016 CODE: 1004.3 Posting of occupant load. Every room or space ~~that is an assembly occupancy which is used for assembly, classroom, dining, drinking, or similar purposes having an occupant load of 50 or more~~ shall have the occupant load of the room or space posted in a conspicuous place, near the main exit or exit access doorway from the room or space. Posted signs shall be of an approved legible permanent design and shall be maintained by the owner or the owner's authorized agent.

CHANGE SIGNIFICANCE: In coordination with the 2016 *California Fire Code*, a more comprehensive list of the uses requiring posted occupant loads is provided. The one use that was not included in the previous edition of the CBC is the classroom use, since all such uses no matter the occupant load if in a school setting, are Group E occupancies.

1004.3

Posting of Occupant Load

306.2

Food Processing Facilities and Commercial Kitchens

CHANGE TYPE: Modification

CHANGE SUMMARY: A classification of Group F-1 is now applied only to larger-sized food processing facilities and commercial kitchens not associated with dining facilities.

2016 CODE: 306.2 Moderate-Hazard Factory Industrial, Group F-1. Factory industrial uses which are not classified as Factory Industrial F-2 Low Hazard shall be classified as F-1 Moderate Hazard and shall include, but not be limited to, the following:

- Aircraft (manufacturing, not to include repair)
- Appliances
- Athletic equipment
- Automobiles and other motor vehicles
- Bakeries
- Beverages; over 16-percent alcohol content
- Bicycles
- Boats
- Brooms or brushes
- Business machines
- Cameras and photo equipment
- Canvas or similar fabric
- Carpets and rugs (includes cleaning)
- Clothing
- Construction and agricultural machinery
- Disinfectants
- Dry cleaning and dyeing



Commercial catering facility

Electric generation plants
Electronics
Engines (including rebuilding)
Food processing establishments and commercial kitchens not associated with restaurants, cafeterias and similar dining facilities more than 2,500 square feet (232 m²) in area
Furniture
Hemp products
Jute products
Laundries
Leather products
Machinery
Metals
Millwork (sash and door)
[SFM] Motion picture and television production studio Sound Stages, Approved Production Facilities and production locations (without live audiences)
Musical instruments
Optical goods
Paper mills or products
Photographic film
Plastic products
Printing or publishing
Recreational vehicles
Refuse incineration
Shoes
Soaps and detergents
Textiles
Tobacco
Trailers
Upholstering
Wood; distillation
Woodworking (cabinet)

CHANGE SIGNIFICANCE: Food processing facilities and commercial kitchens not directly associated with dining facilities have traditionally been considered as Group F-1 occupancies due to the moderate-level hazards that are often encountered. Establishments where food is prepared in a commercial kitchen for carry-out purposes have also been sometimes considered as Group F-1 occupancies. Consistent with a modification to the Group B classification category, the floor area of the facility is now the determining factor in the proper occupancy classification of the use.

Where the food processing facility or establishment, or where the commercial kitchen not directly associated with dining activities, has a floor area exceeding 2500 square feet, a Group F-1 classification is warranted. Where the floor area of such a use does not exceed the 2500-square-foot limitation, a Group B classification is to be applied.

CHANGE TYPE: Modification

CHANGE SUMMARY: Small food processing establishments and commercial kitchens not associated with dining facilities are now considered as Group B occupancies.

2016 CODE: 304.1 Business Group B. Business Group B occupancy includes, among others, the use of a building or structure, or a portion thereof, for office, professional or service-type transactions, including storage of records and accounts. Business occupancies shall include, but not be limited to, the following:

Airport traffic control towers

Ambulatory care facilities serving five or fewer patients (see Section 308.4.2 for facilities serving more than five patients)

Animal hospitals, kennels and pounds

Banks

Barber and beauty shops

Car wash

Civic administration

Clinic, outpatient [SFM] (not classified as Group I-2.1)

Dry cleaning and laundries: pickup and delivery stations and self-service

Educational occupancies for students above the 12th grade

Electronic data processing

Food processing establishments and commercial kitchens not associated with restaurants, cafeterias and similar dining facilities not more than 2500 square feet (232 m²) in area.

304.1 continues



© International Code Council

Carry-out business with commercial kitchen

304.1

Food Processing Facilities and Commercial Kitchens

304.1 *continued*

Laboratories: testing and research and [SFM] instruction

Motor vehicle showrooms

Post offices

Print shops

Professional services (architects, attorneys, dentists, physicians, engineers, etc.)

Radio and television stations

Telephone exchanges

Training and skill development not within a school or academic program (this shall include, but not be limited to, tutoring centers, martial arts studios, gymnastics and similar uses regardless of the ages served, and where not classified as a Group A occupancy).

CHANGE SIGNIFICANCE: Facilities used for food processing and/or preparation have traditionally been considered as Group F-1 occupancies unless directly related to a dining activity. The Group F-1 classification has been applied to large-scale operations, such as food processing plants; moderate-scale uses, such as catering operations; and small-scale establishments, such as bakeries, carry-out pizza tenants and other uses that are open to the public. It is not uncommon for such small-scale food processing facilities to occur in mixed-occupancy buildings with retail sales, offices and restaurant tenants. For this reason, these establishments have sometimes been classified as Group M retail sales or Group B business occupancies.

Classifying such establishments as Group F-1 occupancies is now considered inappropriate where the floor area of the building or tenant space is relatively small. In addition, a Group M classification is considered not fully representative of the hazards involved with the food processing/public occupancy activity. Therefore, a Group B classification is to be applied where the facility does not exceed 2500 square feet in floor area. This classification also assumes the facility is not used for assembly purposes, such as a café or bar. This allowance is also extended to commercial kitchens such as those used for catering operations. Where the floor area exceeds the 2500-square-foot threshold, then a classification of Group F-1 continues to be appropriate.

CHANGE TYPE: Modification

CHANGE SUMMARY: In coordination with the CFC, the list of the required posting of occupant load has expanded.

2016 CODE: 1004.3 Posting of occupant load. Every room or space ~~that is an assembly occupancy which is used for assembly, classroom, dining, drinking, or similar purposes having an occupant load of 50 or more~~ shall have the occupant load of the room or space posted in a conspicuous place, near the main exit or exit access doorway from the room or space. Posted signs shall be of an approved legible permanent design and shall be maintained by the owner or the owner's authorized agent.

CHANGE SIGNIFICANCE: In coordination with the 2016 *California Fire Code*, a more comprehensive list of the uses requiring posted occupant loads is provided. The one use that was not included in the previous edition of the CBC is the classroom use, since all such uses no matter the occupant load if in a school setting, are Group E occupancies.

1004.3

Posting of Occupant Load

R314

Smoke Alarms

CHANGE TYPE: Modification

CHANGE SUMMARY: Battery-operated smoke alarms are permitted for satisfying the smoke alarm power requirements when alterations, repairs, and additions occur. Household fire alarm systems no longer require monitoring by an approved supervising station. New provisions address smoke alarms installed near bathrooms and cooking appliances.

2016 CODE: R314.1 General. Smoke alarms shall comply with NFPA 72 and Section R314.

R314.1.1 Listings. Smoke alarms shall be listed in accordance with UL 217. Combination smoke and carbon monoxide alarms shall be listed in accordance with UL 217 and UL 2034. Systems and components shall be California State Fire Marshal listed and approved in accordance with California Code of Regulations, Title 19, Division 1 for the purpose for which they are installed.

R314.2 Where Required. Smoke alarms shall be provided in accordance with this section.

R314.2.1 New Construction. Smoke alarms shall be provided in dwelling units.

R314.2.2 Alterations, Repairs, and Additions. Where alterations, repairs, or additions requiring a permit occur, or where one or more sleeping rooms are added or created in existing dwellings, the individual dwelling unit shall be equipped with smoke alarms located as required for new dwellings.

Exception: See Section R314.6.

R314 continues

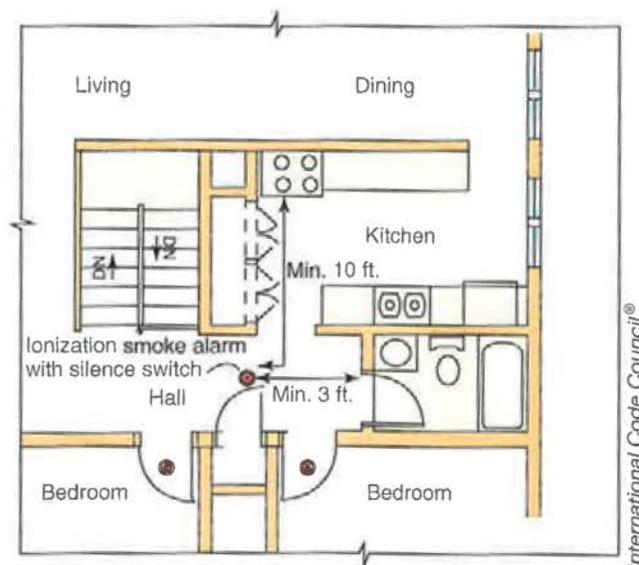


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Smoke alarm

*R314 continued***R314.3 Location.** Smoke alarms shall be installed in the following locations:

1. In each sleeping room.
2. Outside each separate sleeping area in the immediate vicinity of the bedrooms.
3. On each additional story of the dwelling, including basements and habitable attics ~~but~~ **and** not including crawl spaces and uninhabitable attics. In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.
4. Smoke alarms shall be installed not less than 3 feet (914 mm) horizontally from the door or opening of a bathroom that contains a bathtub or shower unless this would prevent placement of a smoke alarm required by Section R314.3.

R314.3.1 Installation Near Cooking Appliances. See Section R314.3.3 for specific location requirements.**R314.3.2 Smoke Alarms.** *Smoke alarms shall be tested and maintained in accordance with the manufacturer's instructions. Smoke alarms that no longer function shall be replaced.***R314.4 Interconnection.** *Where more than one smoke alarm is required to be installed within an individual dwelling or sleeping unit, the smoke alarms shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed.*

Smoke alarm distances from bathrooms and cooking appliances

Exceptions:

1. Interconnection is not required in buildings that are not undergoing alterations, repairs or construction of any kind.
2. Smoke alarms in existing areas are not required to be interconnected where alterations or repairs do not result in the removal of interior wall or ceiling finishes exposing the structure, unless there is an attic, crawl space or basement available which could provide access for interconnection without the removal of interior finishes.
3. Smoke alarms are not required to be interconnected where repairs or alterations are limited to the exterior surfaces of dwellings, such as the replacement of roofing or siding, or the addition or replacement of windows or doors, or the addition of a porch or deck.
4. Smoke alarms are not required to be interconnected when work is limited to the installation, alteration or repairs of plumbing or mechanical systems or the installation, alteration or repair of electrical systems which do not result in the removal of interior wall or ceiling finishes exposing the structure.

R314.5 Combination Alarms. Combination smoke and carbon monoxide alarms shall be permitted to be used in lieu of smoke alarms. Systems and components shall be California State Fire Marshal listed and approved in accordance with California Code of Regulations, Title 19, Division 1 for the purpose for which they are installed.

R314.4 R314.6 Power Source. Smoke alarms shall receive their primary power from the building wiring provided that such wiring is served from a commercial source and shall be equipped with a battery backup. Smoke alarms with integral strobes that are not equipped with battery backup shall be connected to an **emergency** electrical system. Smoke alarms shall emit a signal when the batteries are low. Wiring shall be permanent and without a disconnecting switch other than as required for overcurrent protection.

Exceptions:

1. Smoke alarms are permitted to be solely battery operated in existing buildings where no construction is taking place.
2. Smoke alarms are permitted to be solely battery operated in buildings that are not served from a commercial power source.
3. Smoke alarms are permitted to be solely battery operated in existing areas of buildings undergoing alterations or repairs that do not result in the removal of interior walls or ceiling

R314 continued

finishes exposing the structure, unless there is an attic, crawl space or basement available which could provide access for building wiring without the removal of interior finishes.

4. *Smoke alarms are permitted to be solely battery operated where repairs or alterations are limited to the exterior surfaces of dwellings, such as the replacement of roofing or siding, or the addition or replacement of windows or doors, or the addition of a porch or deck.*
5. *Smoke alarms are permitted to be solely battery operated when work is limited to the installation, alteration or repairs of plumbing or mechanical systems or the installation, alteration or repair of electrical systems which do not result in the removal of interior wall or ceiling finishes exposing the structure.*

R314.7 Fire Alarm Systems. Fire alarm systems shall be permitted to be used in lieu of smoke alarms and shall comply with Sections R314.7.1 through R314.7.4.

R314.2 Smoke Detection Systems: R314.7.1 General. Fire alarm systems shall comply with the provisions of this code and the household fire warning equipment provisions of NFPA 72. Smoke detectors shall be listed in accordance with UL 268. Systems and components shall be California State Fire Marshal listed and approved in accordance with California Code of Regulations, Title 19, Division 1 for the purpose for which they are installed. Household fire alarm systems installed in accordance with NFPA 72 that include smoke alarms, or a combination of smoke detector and audible notification device installed as required by this section for smoke alarms, shall be permitted. The household fire alarm system shall provide the same level of smoke detection and alarm as required by this section for smoke alarms.

R314.7.2 Location. Smoke detectors shall be installed in the locations specified in Section R314.3.

R314.2 Smoke Detection Systems: R314.7.3 Permanent Fixture. Where a household fire alarm system is installed using a combination of smoke detector and audible notification device(s), it shall become a permanent fixture of the occupancy and, owned by the homeowner. The system shall be monitored by an approved supervising station and be maintained in accordance with NFPA 72.

R314.7.4 Combination Detectors. Combination smoke and carbon monoxide detectors shall be permitted to be installed in fire alarm systems in lieu of smoke detectors, provided that they are listed in accordance with UL 268 and UL 2075.

(Some 2016 CRC provisions not shown for brevity and clarity.)

CHANGE SIGNIFICANCE: The smoke alarm provisions in Section R314 have been reorganized in a user-friendly sequential order to clarify their application. For example, the household fire alarm system provisions have been placed in a separate Section R314.7 following all of the smoke alarm provisions in Sections R314.1 through R314.6. In addition, new charging sections have been added to clarify the scope and make the provisions easier to locate.

New provisions specifically permit the installation of combination smoke and carbon monoxide alarms complying with the applicable standards. Combination alarms are commonly installed outside of bedroom areas in residential construction as an acceptable method for satisfying both smoke alarm and carbon monoxide alarm provisions in the CRC, and this change simply recognizes a method that is already in practice.

The changes to the smoke alarm provisions in Section R314 are largely editorial and in most cases do not intend to create any technical changes. However, there is a minor change in the language regarding power requirements for smoke alarms installed in existing buildings. Smoke alarms are one of the few requirements that are retroactive in the CRC. Interior remodeling work and room additions that require permits do trigger the installation of smoke alarms in the same locations as are required for new dwellings. Previous editions of the code have generally required these smoke alarms to also meet the power and interconnection requirements. An exception has recognized that it is not always feasible to install the additional wiring necessary to bring electricity to the devices or to connect the devices so that when one alarm sounds all alarms in the dwelling activate. Therefore, hard wiring of smoke alarms in existing areas was not required if the alterations or repairs did not result in the removal of interior wall or ceiling finishes exposing the structure. The code further stated that if there existed an attic, crawl space, or basement that could provide access for hard wiring without the removal of interior finishes, then connection to the dwelling unit electrical system was required. Otherwise, the code permitted the installation of battery-operated smoke alarms in these existing areas. This has always been a judgment call on the part of the building official, and many jurisdictions have developed procedures or guidelines for determining if it is feasible to bring power to new smoke alarms in existing buildings. Although installing a battery-operated smoke alarm is relatively easy and inexpensive, installing electrical wiring in an existing building can be very costly. The new language in the 2016 CRC does not address the feasibility of connecting to the electrical system in existing buildings. Exception 2 of Section R314.6 says that smoke alarms installed in accordance with Section R314.2.2 for alterations, repairs, and additions are permitted to be battery powered. The change to more prescriptive language will simplify the administration of the code and encourage consistency in the application during remodeling of existing buildings without imposing excessive costs, while at the same time providing an acceptable level of safety with the installation of battery-operated smoke alarms in all of the locations required for new buildings.

The provisions for interconnecting smoke alarms in existing areas have not changed from the 2013 edition. The exception in Section R314.4 requires interconnection of smoke alarms in existing areas where interior wall or ceiling finishes are removed or where there is an attic, crawl

R314 continued

space, or basement available that could provide access for interconnection without the removal of interior finishes. As an alternative, the code specifically allows wireless interconnection of smoke alarms in lieu of physical interconnection.

Another new approach in the 2016 CRC intends to reduce nuisance alarms by requiring minimum separation distances between smoke alarms and cooking appliances, and between smoke alarms and bathrooms. The new requirements are similar to those in NFPA 72, *National Fire Alarm Code*, which is a referenced standard in the smoke alarm provisions of Section R314. The code now requires a minimum separation of 3 feet from bathrooms because steam and water vapor produced by bathtubs and showers can trigger operation of the smoke alarm. The minimum separation requirements from permanently installed cooking appliances vary based on the type of smoke alarm installed. Ionization smoke alarms generally require a separation distance of 20 feet, but that distance may be reduced to 10 feet if the smoke alarm has an alarm-silencing switch. Photoelectric smoke alarms are less susceptible to activation by smoke and cooking vapors and are permitted to be located as close as 6 feet from a permanently installed cooking appliance. The intent is to regulate separation distance from built-in cook tops and ovens as well as stand-alone kitchen ranges. The word “permanent” intends to exclude movable countertop cooking appliances from the separation requirements.

For installation in proximity to both bathrooms and cooking appliances, exceptions permit installation less than the prescribed separation distances if such installation is required by the location requirements of Section R314.3. For example, in a small house the kitchen, bathroom, and bedroom may be grouped closely together. The code would require installation of a smoke alarm in the hallway outside the bedroom even though the location does not meet the separation requirements from the bathroom or cooking appliance. The primary concern is safety by providing early warning of a fire for the occupants, particularly if they are sleeping, and nuisance alarms are of secondary importance. In most cases builders follow the manufacturer’s installation instructions and industry-accepted practices to provide adequate separation from cooking appliances and bathrooms, and to avoid costly callbacks from unhappy customers.

As an alternative to the individual smoke alarm requirements, the code permits the installation of a household fire alarm system installed in accordance with NFPA 72. These fire alarm systems rely on separate detection devices installed in the same required locations as smoke alarms and separate annunciating devices installed in various locations of the home in accordance with the design. These systems become a permanent fixture of the occupancy and are owned by the homeowner as prescribed in the code. This provision intends to avoid systems that are leased to the homeowner by an alarm company, and could subsequently be removed by the alarm company if the homeowner discontinued service, leaving the home with no smoke detection and notification protection. The permanent fixture and ownership provisions remain in the 2016 CRC. However, there has been confusion regarding the requirement for systems to be monitored by an approved supervising station, and this requirement was considered difficult to enforce. Proponents reasoned that a system that provides local alarm notification satisfies the intent of the code to provide early warning to occupants and that it was difficult to justify the extra costs associated with monitoring by a supervising station. The code

does not prohibit monitoring, but it is now an option rather than a requirement. In addition, the reference in Section R314.2 of the 2013 CRC to systems being maintained in accordance with NFPA 72 has been removed because it was considered outside the scope and intent of the CRC.

CHANGE TYPE: Modification

CHANGE SUMMARY: The maximum height for accessory structures has been increased from two to three stories above grade plane. Technical requirements have been removed from the definition, and accessory structures are now permitted to be unlimited in area.

2016 CODE: R101.2 Scope. The provisions of the *California Residential Code for One- and Two-family Dwellings* shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, removal and demolition of detached one- and two-family dwellings and townhouses not more than three stories above grade plane in height with a separate means of egress and their accessory structures not more than three stories above grade plane in height.

SECTION R202 DEFINITIONS

ACCESSORY STRUCTURE. A structure ~~not greater than 3,000 square feet (279 m²) in floor area, and not more than two stories in height, the use of which that is customarily accessory to and incidental to that of the dwelling(s) and which that is located on the same lot.~~

CHANGE SIGNIFICANCE: In previous editions of the CRC, the definition in Section R202 placed limitations of 3,000 square feet in area and two stories on accessory structures. The 3,000-square-foot limitation was introduced in the 2006 IRC based on a concern of the potential fire load in residential accessory buildings. The area limitation has been removed

R101.2, R202 continues



Accessory building

R101.2, R202

Scope—Accessory Structures

R101.2, R202 continued

from the 2016 CRC based on the residential setting of these buildings, the need for larger accessory buildings in rural areas, and the fact that dwellings and townhomes constructed under the CRC are unlimited in area. The change also recognizes that zoning regulations typically set limits for area and height of accessory buildings based on the density of housing and other factors unique to the individual jurisdiction. It was judged more appropriate to allow jurisdictions to decide what limits are placed on accessory buildings. For example, in rural areas with large lots and acreages, very large accessory buildings are routinely constructed for vehicle and farm equipment storage and to house hobby shops and workshops. In addition, definitions are not intended to contain technical requirements such as area and height limitations, which should be addressed in the applicable sections in the body of the code. The definition maintains the key elements for permitting accessory buildings to be constructed under the CRC—that they must be accessory to and incidental to that of the dwelling and located on the same lot as the dwelling.

The height limitation for accessory buildings has also been removed from the definition and placed in the scoping provisions of the CRC. The maximum height has increased to three stories above grade plane for consistency with the height limitations for dwellings and townhomes.

CHANGE TYPE: Modification

CHANGE SUMMARY: Unprotected roof overhangs are now permitted to project to within 2 feet of the property line when fireblocking is installed between the top of the wall and the roof sheathing. In most cases, projections are not permitted less than 2 feet from the property line. For dwellings with or without fire sprinkler protection, penetrations of exterior walls do not require fire-resistant protection unless they are located less than 3 feet from the property line.

2016 CODE: R302.1 Exterior Walls. Construction, projections, openings and penetrations of exterior walls of dwellings and accessory buildings shall comply with Table R302.1(1); or dwellings *and accessory buildings* equipped throughout with an automatic sprinkler system installed in accordance with Section R313 shall comply with Table R302.1(2).

Exceptions: (No change to text.)

R302.1 continues

TABLE R302.1(1) Exterior Walls

Exterior Wall Element		Minimum Fire-Resistance Rating	Minimum Fire Separation Distance
Walls	Fire-resistance rated	1 hour—tested in accordance with ASTM E119 or UL 263 with exposure from both sides	< 5 feet
	Not fire-resistance rated	0 hours	≥ 5 feet
Projections	<u>Not allowed</u>	<u>N/A</u>	<u>< 2 feet</u>
	Fire-resistance rated	1 hour on the underside ^{a,b}	≥ 2 feet to < 5 feet
	Not fire-resistance rated	0 hours	≥ 5 feet
Openings in walls	Not allowed	N/A	< 3 feet
	25% maximum of wall area	0 hours	3 feet
	Unlimited	0 hours	5 feet
Penetrations	All	Comply with Section R302.4	< <u>3</u> feet
		None required	<u>3</u> feet

For SI: 1 foot = 304.8 mm.

N/A = Not Applicable

a. Roof eave fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the eave if fireblocking is provided from the wall top plate to the underside of the roof sheathing.

b. Roof eave fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the eave provided gable vent openings are not installed.

R302.1

Exterior Walls

R302.1 continued

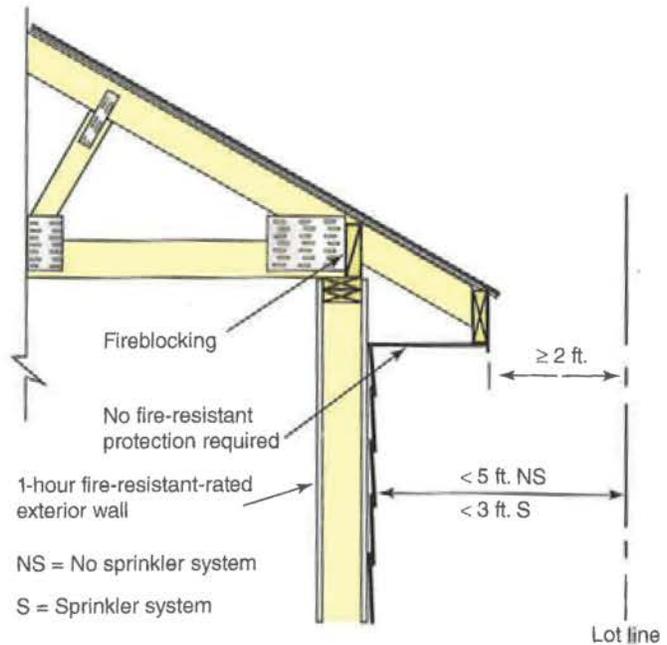
TABLE R302.1(2) Exterior Walls—Dwellings and Accessory Buildings with Automatic Residential Fire Sprinkler Protection

Exterior Wall Element		Minimum Fire-Resistance Rating	Minimum Fire Separation Distance
Walls	Fire-resistance rated	1 hour—tested in accordance with ASTM E119 or UL 263 with exposure from the outside	0 feet
	Not fire-resistance rated	0 hours	3 feet ^a
Projections	<u>Not allowed</u>	<u>N/A</u>	<u>< 2 feet</u>
	Fire-resistance rated	1 hour on the underside ^{b,c}	2 feet ^a
	Not fire-resistance rated	0 hours	3 feet
Openings in walls	Not allowed	N/A	< 3 feet
	Unlimited	0 hours	3 feet ^a
Penetrations	All	Comply with Section R302.4	< 3 feet
		None required	3 feet ^a

For SI: 1 foot = 304.8 mm.

N/A = Not Applicable

- a. For residential subdivisions where all dwellings are equipped throughout with an automatic sprinkler system installed in accordance with Section R313, the fire separation distance for nonrated exterior walls and rated projections shall be permitted to be reduced to 0 feet, and unlimited unprotected openings and penetrations shall be permitted, where the adjoining lot provides an open setback yard that is 6 feet or more in width on the opposite side of the property line.
- b. The roof eave fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the eave if fireblocking is provided from the wall top plate to the underside of the roof sheathing.
- c. The roof eave fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the eave provided that gable vent openings are not installed.



Fire-resistance rating is not required for roof eave projections when fireblocking is installed.

CHANGE SIGNIFICANCE: The code has long recognized the effectiveness of providing space between the exterior wall and the lot line in preventing the spread of fire from a building on one property to a building on another property. Unless the exterior wall is constructed to provide a 1-hour fire-resistance rating in accordance with either ASTM E119 or UL 263, a minimum fire separation distance is required from the lot line. The consensus as to the minimum distance necessary to provide a sufficient buffer against the spread of fire has changed somewhat over the years, settling on a minimum distance of 5 feet in the 2006 edition of the IRC. Beginning with the 2013 edition of the CRC, the code reduces the threshold for non-rated walls to 3 feet of separation when the building is protected with an automatic fire sprinkler system. The 5-foot rule still applies to buildings without sprinkler systems. The choice of providing either adequate fire separation distance or fire-resistant-rated construction also extends to openings, penetrations, and projections—some fire-resistance measures must be provided when the fire separation distance to the property line falls below the code-prescribed dimension.

Roof eaves constructed without fire-resistant protection are permitted to project to not less than 5 feet from the lot line for buildings without fire sprinkler systems and not less than 3 feet from the lot line for buildings with sprinklers. For eave projections with a separation distance less than those dimensions, the code requires 1-hour fire-resistant protection on the underside of the overhang. The 2016 CRC provides an option to builders to eliminate the soffit protection when fireblocking is installed between the top plate of the exterior fire-resistant-rated wall and the roof sheathing. For a fire originating on the adjacent property, the fireblocking above the wall protects against the spread of fire through the overhang into the attic area. This effectively extends a measure of fire resistance at the exterior wall to the roof line and is considered equivalent protection to a 1-hour-rated soffit. In this case, the unprotected eave projection is viewed as expendable because the barrier to the spread of fire is established at the exterior wall line.

In almost all circumstances, the code does not permit any portion of a roof overhang, with or without fire protection, to be constructed less than 2 feet from a lot line. This point is clarified by the addition of a line in Tables R302.1(1) and R302.1(2) which states that projections are not allowed with a fire separation distance of less than 2 feet. However, there are a couple of exceptions to this rule that have not changed and are still in effect. Exception 4 to the exterior wall provisions of Section R302.1 specifically allows a maximum 4-inch roof eave projection for detached garages located within 2 feet of a lot line. For example, a detached garage that is accessory to the dwelling on the same lot and has an exterior wall located 1 foot from the lot line requires 1-hour fire-resistant-rated construction for that exterior wall. Under the exception, a 4-inch overhang that would project to 8 inches from the lot line is permitted in this case. Most code users have inferred that 1-hour protection is required on the underside of this overhang in accordance with the applicable table and that the exception **only** applies to the permitted location of the overhang, not the fire-resistance provisions.

The second exception that permits projections less than 2 feet from the lot line first appeared in the 2013 edition of the CRC. Footnote a of Table R302.1(2) allows rated projections with a fire separation distance of 0 feet when other criteria are satisfied. All dwellings in the subdivision require

R302.1 continues

R302.1 continued

TABLE 3-2 Fire Resistance of Roof Overhang Projections

Condition	Minimum Fire Separation Distance			
	5 feet	3 feet	2 feet	0 feet
Dwellings Without Sprinkler System	0 hours	1 hour on underside	1 hour on underside	NP
Dwellings with Sprinkler System	0 hours	0 hours	1 hour on underside	NP
Fireblocking above Top Plate	0 hours	0 hours	0 hours	NP
Sprinklers in All Dwellings and 6-Foot Setback on Adjoining Lot	N/A	N/A	N/A	1 hour on underside
4-Inch Overhang on Detached Garage	N/A	N/A	N/A	1 hour on underside

NP = Not Permitted

N/A = Not Applicable

automatic fire sprinkler systems and buildings on the adjoining property require an open setback yard that is not less than 6 feet. This required setback on the opposite side of the lot line ensures that a minimum 6-foot separation distance is maintained between the exterior walls of the two buildings. With the added protection of a fire sprinkler system, the 6-foot separation is consistent with the provisions for unrated walls and unlimited openings in Table R302.1(2), which requires a 3-foot fire separation distance for each building. Although there are no fire-resistance requirements for the exterior wall under this exception, the 1-hour protection on the underside of the projection is still required. Table 3-2 summarizes the fire separation distance requirements for projections.

In the 2013 edition of the CRC, where wall assemblies are required to be fire-resistance rated, penetrating items require protection to maintain the fire resistance of the wall. For dwellings with automatic fire sprinkler systems, the trigger point for installing a rated wall assembly and penetration protection is a fire separation distance of less than 3 feet. For dwellings without sprinklers, the dimension has been less than 5 feet. However, the CRC has allowed a limited amount of unprotected openings such as windows and doors in exterior walls of unsprinklered dwellings when the fire separation distance was less than 5 feet but not less than 3 feet. In the 2016 CRC, this same allowance is applied to penetrations—fire protection of the penetration is not required unless the exterior wall is less than 3 feet from the lot line. The penetration provisions for exterior walls now match for dwellings with sprinklers and those without. This is considered a reasonable accommodation for small penetrations such as hose bibbs, dryer vent terminations, mechanical draft terminals, and electrical equipment without impairing the effectiveness of the fire-resistant-rated assembly. For penetrations less than 3 feet from the lot line, Section R302.4 prescribes the methods of protection to prevent the passage of flame and hot gases at the penetrations.

CHANGE TYPE: Modification

CHANGE SUMMARY: Anchor bolts are now required to be placed in the middle third of the sill plate. Approved anchors may be used instead of ½-inch anchor bolts.

2016 CODE: R403.1.6 Foundation Anchorage. Wood sill Sill plates and wood walls supported directly on continuous foundations shall be anchored to the foundation in accordance with this section.

Cold-formed steel framing shall be anchored directly to the foundation or fastened to wood sill plates anchored to the foundation. Anchorage of cold-formed steel framing and sill plates supporting cold-formed steel framing shall be in accordance with this section and Sections R505.3.1 or R603.3.1.

Wood sole plates at all exterior walls on monolithic slabs, wood sole plates of braced wall panels at building interiors on monolithic slabs and all wood sill plates shall be anchored to the foundation with minimum ½-inch-diameter (12.7 mm) anchor bolts spaced a maximum of 6 feet (1829 mm) on center or approved anchors or anchor straps spaced as required to provide equivalent anchorage to ½-inch-diameter (12.7 mm) anchor bolts. Bolts shall ~~be at least ½ inch (12.7 mm) in diameter and shall~~ extend a minimum of 7 inches (178 mm) into concrete or grouted cells of concrete masonry units. The bolts shall be located in the middle third of the width of the plate. A nut and washer shall be tightened on each anchor bolt. There shall be a minimum of two bolts per plate section with one bolt located not more than 12 inches (305 mm) or less than seven bolt diameters from each end of the plate section. Interior bearing wall sole plates on monolithic slab foundation that are not part of a braced wall panel

R403.1.6 continues

R403.1.6

Foundation Anchorage



Anchor bolt placement—centered in sill plate

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Alternate anchorage

Photo courtesy of Peter Kulczyk

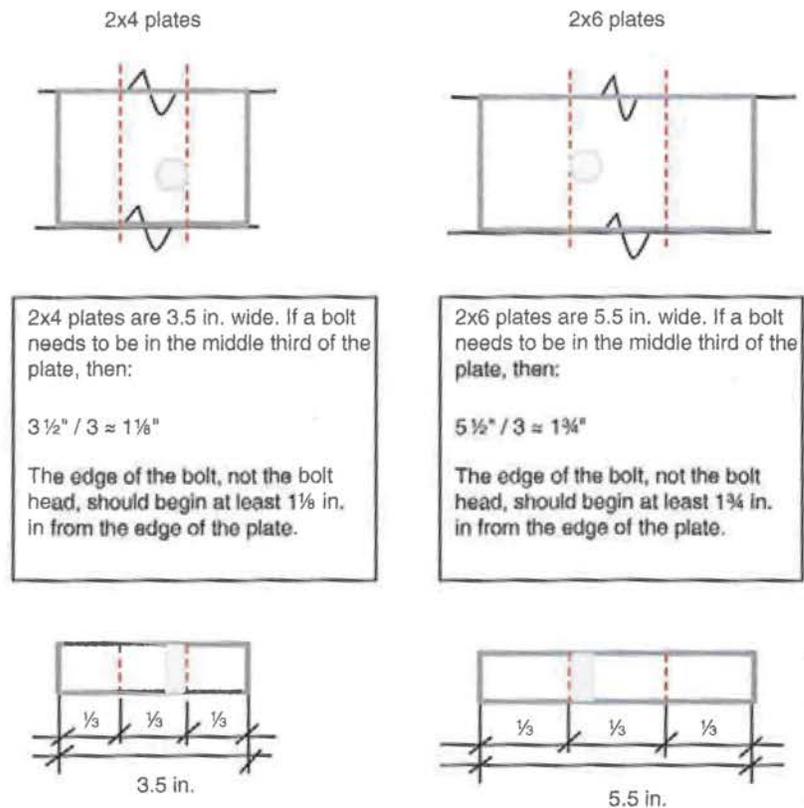
R403.1.6 continued

shall be positively anchored with approved fasteners. Sill plates and sole plates shall be protected against decay and termites where required by Sections R317 and R318. ~~Gold-formed steel framing systems shall be fastened to wood sill plates or anchored directly to the foundation as required in Section R505.3.1 or R603.3.1.~~

Exceptions:

1. ~~Foundation anchorage, spaced as required to provide equivalent anchorage to 1/2-inch diameter (12.7 mm) anchor bolts.~~
- 1.2. Walls 24 inches (610 mm) total length or shorter connecting offset *braced wall panels* shall be anchored to the foundation with a minimum of one anchor bolt located in the center third of the plate section and shall be attached to adjacent *braced wall panels* at corners, as shown in Item 9 of Table R602.3(1).
- 2.3. Connection of walls 12 inches (305 mm) total length or shorter connecting offset *braced wall panels* to the foundation without anchor bolts shall be permitted. The wall shall be attached to adjacent *braced wall panels* at corners, as shown in Item 9 of Table R602.3(1).

CHANGE SIGNIFICANCE: It is common to see an anchor bolt placed near the edge of a wood sole plate. The general industry standard is for the bolt to be located at least two bolt diameters from the plate's edge, but there have been no provisions in the CRC to govern edge distance. Requirements of



2x4 plates are 3.5 in. wide. If a bolt needs to be in the middle third of the plate, then:

$$3\frac{1}{2}'' / 3 \approx 1\frac{1}{8}''$$

The edge of the bolt, not the bolt head, should begin at least 1 1/8 in. in from the edge of the plate.

2x6 plates are 5.5 in. wide. If a bolt needs to be in the middle third of the plate, then:

$$5\frac{1}{2}'' / 3 \approx 1\frac{3}{4}''$$

The edge of the bolt, not the bolt head, should begin at least 1 3/4 in. in from the edge of the plate.

Minimum edge distance

the 2013 CRC included two bolts per plate, within 12 inches of the end of the plate, and spaced no more than 6 feet apart. Adding a requirement for placement of a bolt within the middle third of the wood plate width allows some flexibility while providing for a minimum edge distance.

Testing has demonstrated that a bolt loses anchoring capacity when placed closer than $1\frac{3}{4}$ inches from the plate's edge. Manufacturers of anchor bolts require a minimum plate edge distance of $1\frac{3}{4}$ inches in their installation and technical documents. This code change places an anchor bolt at least $1\frac{1}{8}$ inches from the edge of a 2×4 sill plate. With 2×6 construction, the bolt is a minimum of $1\frac{3}{4}$ inches from the plate edge.

Foundation anchorage requirements for alternate foundation anchor systems providing equivalent capacity to $\frac{1}{2}$ -inch anchor bolts spaced at 6 feet on center (or as otherwise required by the code or design) are moved from the exceptions into the main text. Revised language is similar to the 2013 *California Building Code* (CBC) Section 2308.6. The provision allows use of anchors such as foundation anchors (mudsill anchors), wedge anchors, expansion anchors, adhesive anchors, and other alternatives approved by the building official as alternates to cast-in-place anchor bolts within Section R403.1.6.

Anchorage requirements for cold-formed steel framing systems have been separated from the requirements for wood. The new provision points to appropriate cold-formed steel provisions in Chapters 5 (Floors) and 6 (Walls). In addition, language is revised to clarify that both provisions of Section R403.1.6 and the applicable provisions of Section R505.3.1 (for cold-formed steel floor framing) and Section R603.3.1 (for cold-formed steel wall framing) need to be followed. The change adds a pointer to anchor bolt spacing and embedment requirements specific to cold-formed steel.

CHANGE TYPE: Modification

CHANGE SUMMARY: The provision requiring that the guard height be measured from the surface of adjacent fixed seating has been removed from the code.

2016 CODE: R312.1.2 Height. Required guards at open-sided walking surfaces, including stairs, porches, balconies, or landings, shall be not less than 42 inches (1067 mm) high in height as measured vertically above the adjacent walking surface, ~~adjacent fixed seating~~ or the line connecting the leading edges of the treads.

Exceptions:

1. Guards on the open sides of stairs shall have a height not less than 34 inches (864 mm) measured vertically from a line connecting the leading edges of the treads.
2. Where the top of the guard ~~also~~ serves as a handrail on the open sides of stairs, the top of the guard shall be not less than 34 inches (864 mm) and not more than 38 inches (965 mm) as measured vertically from a line connecting the leading edges of the treads.

CHANGE SIGNIFICANCE: The requirement to extend a guard 42 inches above the surface of fixed seating that is adjacent to a required guard, which appeared in the 2010 and 2013 CRC, has been removed from the code. A similar requirement appeared in the 2010 CBC but was deleted from the 2013 CBC. The provision was initially placed in the code due to the concern of children climbing on fixed seating and falling over the

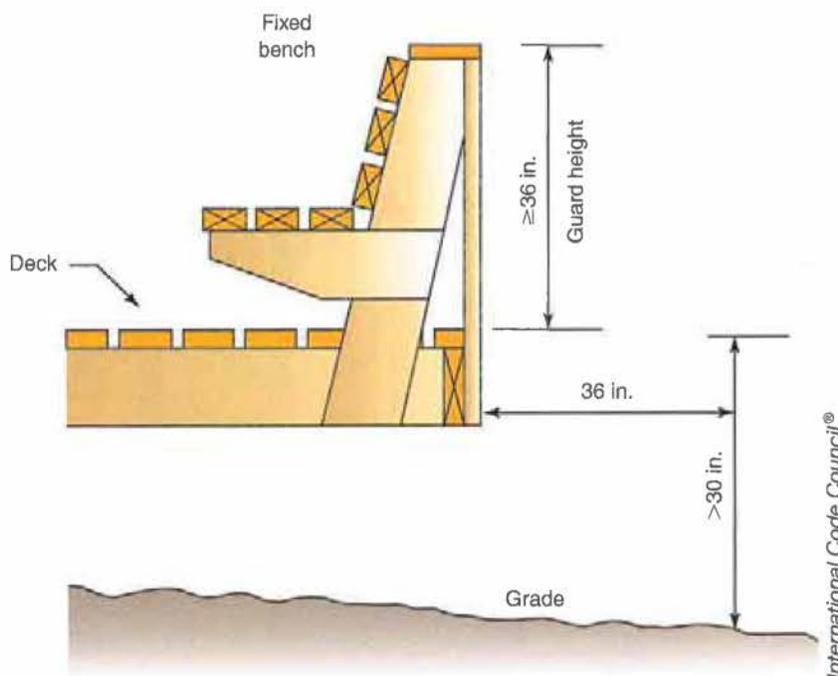
R312.1.2 Guard Height



Example of a guard with fixed seating

© Anne Kitzman/Shutterstock.com

R312.1.2 continues



Measuring guard height at fixed seating

R312.1.2 continued

usual guard that had a height of 42 inches above the walking surface of the deck. With the removal of the provision, the CRC and CBC are now consistent with each other in this area. Proponents of this change reasoned that there was no technical justification to raise the height of the guard at the back of fixed seating when it was placed in the code and that the requirement was overly restrictive. There also were concerns that there has been no definition of fixed seating. Consensus held that fixed seating, similar to movable furniture and other objects found adjacent to guards on a deck, should not be regulated as a walking surface.

R302.13

Fire Protection of Floors

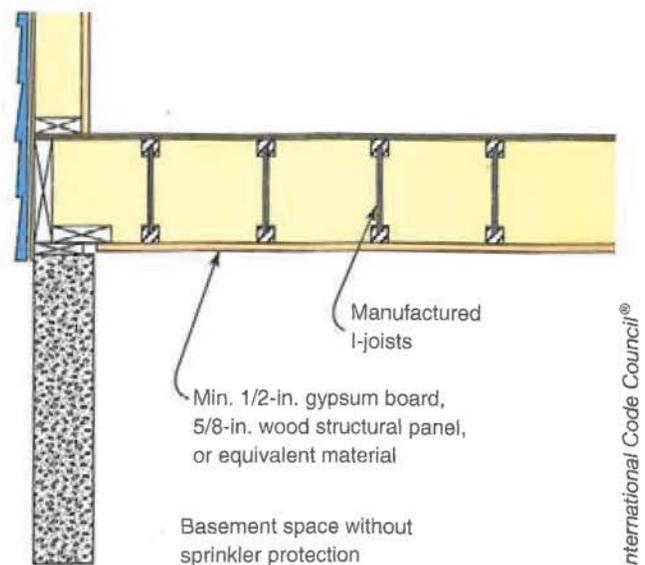
CHANGE TYPE: Clarification

CHANGE SUMMARY: The provisions for fire protection of floors have been relocated from Chapter 5 to the fire-resistant construction provisions of Section R302. New language clarifies that the code does not regulate penetrations or openings in the fire protection membrane.

2016 CODE: R501.3 R302.13 Fire Protection of Floors. Floor assemblies; that are not required elsewhere in this code to be fire-resistance rated, shall be provided with a 1/2-inch (12.7 mm) gypsum wallboard membrane, 5/8-inch (16 mm) wood structural panel membrane, or equivalent on the underside of the floor framing member. Penetrations or openings for ducts, vents, electrical outlets, lighting, devices, luminaires, wires, speakers, drainage, piping and similar openings or penetrations shall be permitted.

Exceptions: (No change to text.)

CHANGE SIGNIFICANCE: Fire protection of floors first appeared in Section R501.3 of the 2013 CRC. The provisions call for installation of 1/2-inch gypsum board, 5/8-inch wood structural panel, or other approved material on the underside of floor assemblies of buildings constructed under the CRC. The application of gypsum wallboard or other approved material intends to provide some protection to the floor system against the effects of fire and delay collapse of the floor. This provision primarily is aimed at light-frame construction consisting of I-joists, manufactured floor trusses, cold-formed steel framing, and other materials and manufactured products considered most susceptible to collapse in a fire. Solid-sawn lumber and structural composite lumber perform fairly well in retaining adequate strength under fire conditions, and floors framed of



Fire protection of floors



International Code Council®

Open web floor trusses requiring membrane protection on the underside

nominal 2×10 s or larger of these materials are exempt from these fire protection requirements. Fire protection also is not required if sprinklers are installed to protect the space below the floor assembly.

In the 2010 CRC, there was an effort to organize all of the fire-resistance provisions into a single section to make the code more user-friendly. Because the installation of the code-prescribed membrane intends to provide some limited protection against the effects of fire to the floor system, the requirements have been relocated to the fire-resistant construction provisions of Section R302.

Similar to the fire separation requirements for an attached garage in Section R302.6, the membrane applied to the underside of the floor system does not form a fire-resistant-rated assembly. The membrane acts to shield light-frame floor systems from the heat of a fire originating in the space below the floor. The intent is for the floor system to perform similarly to unprotected 2×10 solid-sawn lumber floor joists and to delay structural collapse of the floor system. For that reason, the code does not require any special treatment of joints, penetrations, or openings in the ceiling membrane. For example, the taping of the gypsum board joints is not required and penetrations for electrical boxes and plumbing pipes do not require any firestopping materials. The added language intends to simply clarify that the code does not regulate openings and penetrations in the membrane applied to the underside of the floor system.

R309.8

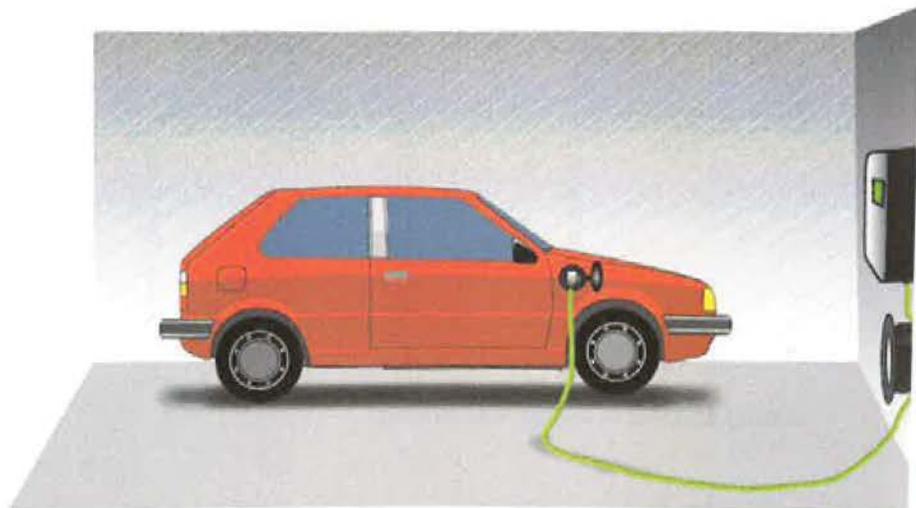
Electric Vehicle (EV) Charging Infrastructure

CHANGE TYPE: Addition

CHANGE SUMMARY: New single- and two- family dwellings and townhouses are ready for EV charger installations.

2016 CODE: **R309.8 Electric Vehicle (EV) Charging Infrastructure.** *Newly constructed one- and two-family dwellings and townhouses with attached private garages shall comply with EV infrastructure requirements in accordance with the California Green Building Standards Code, Chapter 4, Division 4.1.*

CHANGE SIGNIFICANCE: The State of CA has added a pointer to the requirement for providing the conduit, wiring, etc. necessary for EV charger installations in single-family, duplex and townhouse projects when they have attached garages. This new section and other Cal Green referencing sections may also be used by the State if they should decide to include the Cal Green requirements in the other Parts of Title 24 and eliminate the *California Green Building Standards Code* in the future.



Electric Vehicle (EV) Charging Station



WHAT'S NEW IN THE 2016 CODE? RESIDENTIAL LIGHTING

Changes to mandatory lighting requirements in California's 2016 Building Energy Efficiency Standards

California's new residential Building Energy Efficiency Standards take effect on January 1, 2017. The 2016 Standards focus on several key areas to improve the energy efficiency of newly constructed buildings, additions and alterations to existing buildings. The most significant efficiency improvements address attics, walls, water heating and lighting. The California Energy Commission estimates that the 2016 standards will deliver approximately 281 gigawatt-hours of electricity savings annually and reduce statewide greenhouse gas emissions by 160,000 metric tons. This is enough electricity to power 500,000 California homes each year.

These standards represent a major step towards meeting California's residential Zero Net Energy (ZNE) goal by the year 2020. Updates enhance and simplify previous requirements and lay the foundation for additional efficiency improvements slated for 2019 code. This publication offers an overview of important requirements and major updates to the 2016 residential lighting energy efficiency code.

MAJOR CHANGES



ALL HIGH EFFICACY LIGHTING

Indoor and outdoor lighting for new homes must be high efficacy.



JA8 UPDATED

Joint Appendix JA8 regulations now contain requirements for more types of residential high efficacy lamps and luminaires. In the 2013 Standards, JA8 regulations only applied to LED sources.



SIMPLIFIED CONTROL REQUIREMENTS

Lighting control requirements for indoor spaces are now simpler. Control requirements are based, in nearly all cases, on the type of lamp or luminaire installed, not the space.

This guide is not intended to be used in lieu of California's Building Energy Efficiency Standards, and it is not a substitute for the code itself. Please visit energy.ca.gov/title24/2016standards to download the official 2016 Title 24 Building Energy Efficiency Standards, Errata, Reference Appendices, and the Nonresidential Compliance Manual.

INDOOR LIGHTING REQUIREMENTS

High Efficacy Lighting

New regulations require that lighting in new homes be high efficacy, while also expanding the types of lighting that qualify as high efficacy. This change eliminates most space by space requirements and ensures that a variety of lighting technologies and techniques are available to builders and contractors. This also removes the need for calculating the wattage of low versus high efficacy luminaires in kitchens.

JAB COMPLIANT LAMPS & LUMINAIRES

The definition of “high efficacy luminaires” includes all light sources identified as “efficient” under the 2013 Standards. This includes linear fluorescent, pin based compact fluorescent, GU-24 base CFL, HID, and induction. High efficacy products include any luminaire that contains a JAB-compliant lamp or other light source. In other words, any luminaire can qualify as high efficacy as long as it meets the requirements of **Section 150.0 (k)** and **Joint Appendix JAB**. Manufacturers must test their products at an accredited test laboratory and submit the results to the California Energy Commission to gain JAB certification. A list of compliant products may be found at <https://cacertappliances.energy.ca.gov>.

For lamps to qualify as high efficacy under JAB, they must be certified and marked as either JAB-2016 or JAB-2016-E. These markings mean the light source meets the requirements of **Joint Appendix JAB**, and the product is listed in the Energy Commission product database. Requirements assure lamps and luminaires provide high color quality, have a long life and are energy efficient.

JAB compliance markings are located on the lamp bulb or base. The marking “JAB-2016-E” indicates that the light source has been tested to provide long life at elevated temperatures in addition to the requirements listed for JAB-2016. Only “JAB-2016-E” lamps may be used in enclosed and recessed luminaires.

Construction & Inspection

The builder must now provide new homeowners with a luminaire schedule that includes a list of installed lamps and luminaires. This ensures that homeowners know what lighting products they are entitled to when they take possession of a new home.

This also makes lighting inspections much more straight forward as all luminaires are high efficacy, and there is a completed luminaire schedule for the owner.

Appendix JAB: Qualification Requirements for High Efficacy Light Sources – Partial List

Specification	Requirement
Initial Efficacy	≥ 45 lumens/Watt
Power Factor at Full Rated Power	≥ 0.90
Correlated Color Temperature (CCT)	For inseparable SSL luminaires, LED light engines and GU24 LED lamps, ≤4000 Kelvin. For all other sources, ≤3000 Kelvin.
Color Rendering Index (CRI)	≥ 90
R9	≥ 50
Rated Life	≥ 15,000 hours
Minimum Dimming Level	≤ 10%
Flicker	< 30% for frequencies of 200 Hz or below, at 100% and 20% light output.

This table contains a partial list of requirements. Additional qualification requirements may be found in JAB.



PHOTO: CLTC, UC DAVIS



Switching Devices & Controls

Lighting control requirements for indoor spaces are now simpler. Control requirements are based, in nearly all cases, on the type of lamp or luminaire installed. Any JA8-compliant lamp or luminaire must be controlled by a vacancy sensor or dimmer. In practice, this requirement translates to any screw-base luminaire, ceiling recessed downlight, dedicated LED luminaire, or luminaire with an LED lamp. In addition, all undercabinet lighting must be switched separately from other lighting in the home.

Screw-Base Luminaires

Under the 2016 Standards, all luminaires that utilize a screw-based socket, excluding hard-wired ballasted HID, must contain lamps that comply with JA8 high efficacy requirements. All enclosed, screw-base luminaires, must utilize a compliant lamp rated for elevated temperatures. Recessed downlight luminaires with screw based sockets are no longer permitted under the 2016 Standards.

2016 Indoor Residential Lighting Requirements: Luminaires

Mandatory Measure	Screw-Base Luminaire	Pin-Base ¹ Luminaire	Recessed Downlight	Inseparable SSL ⁵ Luminaire (LED)	Night Lights ²	All Other
High Efficacy (required)	Yes—All	Yes—All	Yes—All	Yes—All	No	Yes—All
High Efficacy Qualification via JA8 lamps and luminaires³	All, excluding hard-wired ballasted HID	Only GU-24 LED lamps	All types, and certified compliant for elevated temperatures	All, except colored-decorative	No	All types
Automatic Qualification as High Efficacy: Listed in Table 150.0-A, Column 1 <i>(JA8 compliance not required)</i>	Hard-wired, ballasted HID only	All types, excluding GU-24 LED	None	Colored-decorative	No	None
Dimmer, Vacancy Control or EMCS⁴	Yes—All	Not mandatory, except for GU-24 LED	Yes—All	All, except colored-decorative	No	All
Other Requirements	Cannot be a recessed downlight	Must use an electronic ballast	Airtight, IC-rated and maintenance per § 150(k)1.C	None	Must consume 5W or less	None

¹ Excludes recessed downlights

² Permanently installed or integral to luminaire or exhaust fan

³ Enclosed luminaires must use JA8 lamps certified for use at elevated temperatures

⁴ Excludes luminaires in closets less than 70 ft² and hallways

⁵ Solid-state lighting such as LED where the LED source is permanently attached to the luminaire

Control Requirements by Space

Most space-specific indoor control requirements have been eliminated with one exception. Now, at least one luminaire in the bathroom, garage, laundry room and utility room must be controlled

by a vacancy sensor or dimmer. Preset scene controllers and EMCS can take the place of dimmers as long as the functionality meets code requirements.

2016 Indoor Residential Lighting Requirements: Spaces & Lighting Controls

Residential Space	Manual ON/OFF Controls	Vacancy Sensor or Dimmer ¹	Separate Switching: Exhaust Fans	Separate Switching: Undercabinet Lighting
Hallways & Closets ²	Required for all spaces	Not required	Exhaust fans must be switched separate from lighting or utilize a device where lighting can be turned OFF while the fan is running. Excludes kitchen exhaust hoods.	Undercabinet lighting must be switched separate from all other lighting.
Kitchens		Based on installed luminaire or lamp type ³		
Bathrooms		At least one luminaire controlled by a vacancy sensor and all other based on installed lamp or luminaire type		
Laundry Rooms / Utility Rooms				
Garage				
All Other		Based on installed luminaire or lamp type ³		

¹ May be achieved with an EMCS or programmable scene controller with required functionality.

² Closets less than 70ft². For all other closets, requirements based on installed lamp or luminaire type.

³ See page 3 for a list of requirements by lamp and luminaire type.

OUTDOOR LIGHTING REQUIREMENTS

All outdoor lighting must now be high efficacy. In addition, for single family homes, lighting mounted to any building on the lot must be controlled by one of the following combinations:

1. Photocell and motion sensor
2. Photocell and time switch
3. Astronomical time clock
4. EMCS with features of astronomical time clock, does not allow the luminaire to be ON during the day, and may be programmed to automatically turn lighting OFF at night.

For low-rise, multifamily residential buildings, outdoor lighting for private patios, balconies, entrances, and porches must also meet these requirements or comply with the applicable nonresidential standards.

Requirements for carports and parking lots vary based on the number of parking spaces they contain. Carports, parking garages and parking lots with eight or more spaces must comply with the nonresidential standards. Smaller parking areas may comply with either the residential or nonresidential standards.

ABOUT THE CALIFORNIA LIGHTING TECHNOLOGY CENTER: *The California Lighting Technology Center was created in 2003 by the California Energy Commission in collaboration with the U.S. Department of Energy and the National Electrical Manufacturers Association. Part of the Department of Design at the University of California, Davis, CLTC is dedicated to accelerating the development and deployment of energy-efficient lighting and daylighting technologies.*

ABOUT ENERGY CODE ACE: *Developed and provided by the California Statewide Codes & Standards Program, Energy Code Ace offers free energy code training, tools and resources for those who need to understand and meet the requirements of Title 24, Part 6 and Title 20. The program aims to advance the adoption and effective implementation of energy efficiency measures and building practices to lock in long-term energy savings. For more information, visit energycodeace.com.*



1.4 STRATEGIC PLANNING PROCESS

Decision 07-10-032 outlined the key goals, content, and development process for this Plan. During November and December 2007 and January 2008, working groups for four “vertical” market sectors — residential, including low-income, commercial, industrial, and agricultural — and seven cross-cutting areas — Heating, Ventilation and Air Conditioning (HVAC) systems; Demand Side Management (DSM) Coordination and Integration; Workforce Education and Training (WET); Marketing Education and Outreach (ME&O); Research and Technology; Codes and Standards; and Local Governments — held 36 public stakeholder workshops.

The objective of these workshops was to facilitate information exchange and develop an action plan for each market sector and each cross-cutting sector. In January 2008, these

plans (“Convener Reports”) were provided to the IOUs to inform their strategic planning efforts.

Throughout this process, the CPUC acted as a centralized information hub via a specially built webportal, disseminating team updates and reports and providing models for teams to look to in recording their findings.

As required by the CPUC, the IOUs filed a draft Plan on February 8, 2008. On March 6, 2008, the IOUs filed a revised draft Plan, supplementing the February draft pursuant to Commission direction. Three stakeholder workshops were then held in San Diego, Los Angeles, and San Francisco.²²

All public comments, workshop transcripts, IOU and CPUC staff materials, and convener reports have been archived and are available on the strategic planning website: www.californiaenergyefficiency.com.

“BIG BOLD” ENERGY EFFICIENCY STRATEGIES



In order to guide market transformation in a number of key sectors, this Plan embraces four specific programmatic goals, known as the “Big Bold Energy Efficiency Strategies” (BBEES), established by the CPUC in D.07-10-032 and D.07-12-051. These goals were selected not only for their potential impact, but also for their easy comprehension and their ability to galvanize market players.

1. All new residential construction in California will be zero net energy by 2020;
2. All new commercial construction in California will be zero net energy by 2030;
3. Heating, Ventilation and Air Conditioning (HVAC) will be transformed to ensure that its energy performance is optimal for California’s climate; and
4. All eligible low-income customers will be given the opportunity to participate in the low income energy efficiency program by 2020.

Goal 1 envisions a continual and dramatic increase in the demand for and supply of lower energy homes based on new technologies, new building principles, and policy support to achieve a statewide standard of zero net energy (ZNE) for all new homes built in 2020.

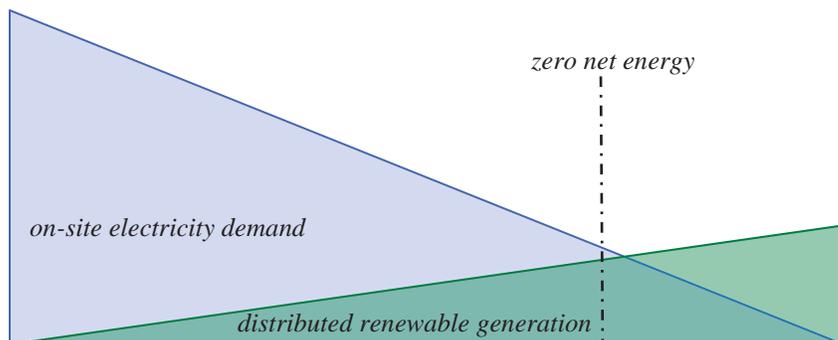
A ZNE home employs a combination of energy efficiency design features, efficient appliances, clean distributed generation, and advanced energy management systems to result in no net purchases of energy from the grid. The CPUC has defined “Zero Net Energy” at the level of a single “project” seeking development entitlements and building code permits in order to enable a wider range of technologies to be considered and deployed, including district heating and cooling systems and/or small-scale renewable energy projects that serve more than one home or business.

A wide range of design features may be considered to achieve zero net energy, including building orientation (relative to the daily and seasonal position of the sun), window and door type and placement, insulation type and values of the building elements, weatherization, the efficiency of heating, cooling, lighting and other equipment, as well as local climate.

Heating and cooling loads are lowered by using high-efficiency equipment, added insulation, high-efficiency windows, in addition to passive solar and other design elements; water heating loads can be alleviated by using heat recovery units and high-efficiency water heating equipment; lighting energy needs are reduced by daylighting and fluorescent and LED fixtures; while plug loads are managed by efficient appliances and minimized standby power.

WHAT IS ZERO NET ENERGY?

Zero net energy is a general term applied to a building with a net energy consumption of zero over a typical year. To cope with fluctuations in demand, zero energy buildings are typically envisioned as connected to the grid, exporting electricity to the grid when there is a surplus, and drawing electricity when not enough electricity is being produced.



- The amount of energy provided by on-site renewable energy sources is equal to the amount of energy used by the building.
- A ZNE building may also consider embodied energy – the quantity of energy required to manufacture and supply to the point of use, the materials utilized for its building.²⁹

Interim milestones for this programmatic goal are that by 2011, 50 percent of new homes will be 35 percent more efficient than 2005 Title 24

standards (coincident with the Energy Commission’s Tier II standard for incentives under the New Solar Homes Partnership³⁰) and 10 percent will be 55 percent more efficient; and

2016 BUILDING ENERGY EFFICIENCY STANDARDS

FREQUENTLY ASKED QUESTIONS

What are Building Energy Efficiency Standards?

Building Energy Efficiency Standards are designed to ensure new and existing buildings achieve energy efficiency and preserve outdoor and indoor environmental quality.

These measures (Title 24, Part 6) are listed in the California Code of Regulations.

The California Energy Commission is responsible for adopting, implementing and updating building energy efficiency. Local city and county enforcement agencies have the authority to verify compliance with applicable building codes, including energy efficiency.

Why are energy standards important?

Since 1978, Energy Efficiency Standards make buildings more comfortable, lower energy costs and reduce greenhouse gas emissions. Standards ensure that builders use the most energy efficient technologies and construction.

Why do the standards need to be updated?

The Energy Commission is required by law to adopt standards every three years that are cost effective for homeowners over the 30-year lifespan of a building. The standards are updated to consider and incorporate new energy efficient technologies and construction methods. The standards save energy, increase electricity supply reliability, increase indoor comfort, avoid the need to construct new power plants and help preserve the environment.

The effective date of the Standards is January 1, 2017.

How much will these standards add to the cost of a new home?

On average, the 2016 Building Energy Efficiency Standards will increase the cost of constructing a new home by about \$2,700, but will save \$7,400 in energy and maintenance costs over 30 years. In other words, when factored into a 30-year mortgage with a 5 percent interest rate, the standards will add about \$11 per month for the average home, but will save consumers roughly \$31 on monthly heating, cooling, and lighting bills.

How much energy will the 2016 standards save?

Single family homes built to the 2016 standards will use about 28 percent less energy for lighting, heating, cooling, ventilation, and water heating than those built to the 2013 standards. In 30 years, California will have saved enough energy to power 2.2 million homes, reducing the need to build 12 additional power plants.

Do the 2016 residential standards get us to zero net energy?

In 2008, California set bold energy-use reduction goals, targeting zero net energy (ZNE) use in all new homes by 2020 and commercial buildings by 2030. The ZNE goal means new buildings must use a combination of improved efficiency and distributed renewable energy generation to meet 100 percent of their annual energy need.

The 2016 standards will not get us to ZNE. However, they do get us very close to our goal and make important steps toward changing residential building practices in California. The 2019 standards will take the final step to achieve ZNE for newly constructed residential buildings throughout California.

Who supports the standards?

The California Building Industry Association supports the adopted standards as does the Natural Resources Defense Council and other environmental groups, investor owned utilities such as Pacific Gas & Electric and Southern California Edison, and publically owned utilities such as the Sacramento Municipal Utility District.

What buildings are covered by the standards?

All new construction of, and additions and alterations to, residential and nonresidential buildings are covered except hospitals, nursing homes, correctional centers, jails, and prisons.

Why do the standards vary by climate zone?

Measures that are cost effective in more extreme climates may not be cost effective in milder climates. Requiring measures by climate zone ensure that a building will have the most energy efficient features for that area. There are 16 climate zones in the state (www.energy.ca.gov/maps/renewable/building_climate_zones.html).

How can I learn more about the Standards?

Contact the Energy Commission's Energy Standards Hotline toll-free at (800) 772-3300 or (916) 654-5106 or email title24@energy.ca.gov.

Additionally, the Energy Commission's Blueprint newsletter is available at: www.energy.ca.gov/efficiency/blueprint/

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Commissioners
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David Hochschild
Andrew McAllister
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CALIFORNIA
ENERGY COMMISSION

Overview

The [2016 update to the Residential Building Energy Efficiency Standards](#) (Energy Standards) requires new and altered homes to become more efficient in several ways to create energy and environmental savings for Californians. See Figure 1 below for building systems that include updates under the new 2016 Energy Standards.

The 2016 Energy Standards have been adopted, and once approved, will be implemented for projects permitted on or after January 1, 2017. For more detailed information, see the [CEC FAQ Sheet](#).



Figure 1: [Title 24, Part 6 2016 Update Infographic by CEC](#)

Statewide Savings

The incremental changes to California's energy code mean big savings across the state for ratepayers. Per the California Energy Commission (CEC), new residential requirements for the 2016 code cycle mean real savings for homeowners—around \$7,400 over a 30 year mortgage. A single family home that meets the 2016 standards could see 28% more energy savings in regulated loads than those built under the 2013 Energy Standards. See the [Adoption Hearing Presentation](#) for more 2016 Energy Standards energy impacts.

California's Energy Goals

[California's Energy Efficiency Strategic Plan](#) describes energy efficiency as the "least cost, most reliable, and most environmentally sensitive resource, and minimizes our contribution to climate change."

The Strategic Plan goes on to outline four "Big Bold Strategies" to guide the market transformation necessary to meet the State's energy goals. A short description of the "Big Bold Strategies" and overview of the Strategic Plan is included in a summary [Fact Sheet](#).

Energy codes and standards is one of six themes identified in the Energy Efficiency Strategic Plan to achieve the Big Bold Strategy related to residential construction. The Strategic Plan describes the role of codes and standards as:

"Adopt aggressive and progressive minimum energy codes and standards for buildings and plug loads, effective code compliance and enforcement, and parallel, tiered voluntary energy efficiency standards that pull the market along and set a higher bar for subsequent standards."

The updates made to the Energy Standards described in this fact sheet are meant to take action on the codes and standards theme outlined in the Strategic Plan.

Envelope Highlights

Mandatory Measures §150.0

There are several new thresholds for mandatory envelope requirements including:

- ★ Ceiling/Roof insulation maximum = 0.043 U-factor (R-22 wood framing)
- ★ Non-framed (mass) wall maximum = 0.102 U-factor
 - ✦ Equivalency to R-13 wood framing
- ★ Maximum fenestration U-factor = 0.58 (same as 2013)
 - ✦ New exception allows for 30 sqft for dual glazed greenhouse windows
- ★ Doors (including pet doors) must meet maximum 0.3 cfm/ft² air leakage

Prescriptive High Performance Walls §150.1

In Climate Zones 1-5 & 8-16, above grade framed wall assemblies must not exceed a maximum U-factor of 0.051:

- ★ 2x6 @ 16" OC framing—R19 cavity + R5 continuous
- ★ 2x4 @ 16" OC framing—R15 cavity + R8 continuous

In Climate Zones 6 & 7, the maximum U-Factor is 0.065

Prescriptive High Performance Attics §150.1

There are three options that may be used to comply:

- ★ Option A: Ducts and air handler may be located in the attic
 - ✦ Install attic radiant barrier (Zones 2-15)
 - ✦ Install R-38 insulation at ceiling (R-30 in zones 3 & 5-7)
 - ✦ Install continuous roof deck insulation (Zones 4 & 8-16)
 - R-6 with air space above insulation/ R-8 with no space
- ★ Option B: Ducts and air handler may be located in the attic
 - ✦ Install attic radiant barrier (Zones 2,3 & 5-7)
 - ✦ Install R-38 insulation at ceiling (R-30 in Zones 3 & 5-7)
 - ✦ Install below roof deck insulation (at rafter) (Zones 4 & 8-16)
 - R-13 with air space above insulation/ R-18 with no space
- ★ Option C: Ducts and air handler must be located in conditioned space
 - ✦ Install attic radiant barrier (Zones 2-15)
 - ✦ Install R-38 insulation at ceiling (R-30 in Zones 3 & 5-7)

Prescriptive Additions §150.2

There are several options that allow for extensions of existing wood-framed walls to retain the same dimensions.

- ★ Install R-15 in 2x4 framing
- ★ Install R-19 in a 2x6 framing

Mechanical Highlights

Updates were made to both mandatory and prescriptive HVAC requirements under the 2016 Standards:

Mandatory Measures §150.0(m)

- ★ All ducts in conditioned spaces must include R-4.2 insulation.
- ★ Duct leakage requirement has been reduced to 5% maximum for single family homes.

Prescriptive Measures §150.1

- ✦ High performance attics with ducts in attic (options A and B)
 - ✦ R-8 duct insulation in Zones 1-2, 4, 8-16
 - ✦ R-6 duct insulation in Zones 3, and 5-7
- ✦ High performance attics with ducts in conditioned space (option C)
 - ✦ R-6 in all zones
- ✦ Whole house fans must supply 1.5 cfm/sf (reduced from 2 cfm/sf). Attic vent area also reduced to 1 sf/ 750 cfm of airflow.

Domestic Hot Water Highlights

Increased Prescriptive Efficiency for Water Heaters (3 options) §150.1(c)8

1. Tankless (gas or propane): minimum energy factor of 0.82
2. Tank ≤ 55 gal (gas or propane): minimum energy factor of 0.60. Additional HERS verification: HERS verified Quality Insulation Installation (QII) and either HERS verified compact hot water distribution system or HERS verified DHW pipe insulation required.
3. Tank ≥ 55 gal (gas or propane): minimum energy factor of 0.76. Additional HERS verification: HERS verified compact hot water distribution system or HERS verified DHW pipe insulation required.

Prescriptive Isolation Valves §110.3(c)7

- ✦ Instantaneous water heaters with an input rating of 6.8kBtu/hr (2 kW) or greater need an isolation valve on cold water supply and hot water leaving water heater.
- ✦ Each valve needs a hose bibb or other fitting allowing for flushing the water heater when the valves are closed.

Mandatory Water Heater Pipe Insulation §150.2(b)1G

- ✦ For water heater replacements, install piping insulation per mandatory measures and insulate all existing accessible piping.

Onsite Renewable Systems Highlights

The compliance credit for installing PV systems is only available if the project meets the following conditions:

- ✓ The Performance Approach is used
- ✓ The project is in Climate Zones 1-5, 8-16
- ✓ The system is ≥ 2 kWdc* for Single Family
- ✓ The system is ≥ 1 kWdc* for Multi Family
- ✓ The amount of credit will depend upon the Climate Zone and the Conditioned Floor Area of the dwelling.

Note: Taking the PV system credit does not require HERS verification unless getting a rebate from the New Solar Homes Partnership (NSHP).

Lighting Highlights

Mandatory High Efficacy Lighting §150.0(k)



High efficacy lighting is essential to reducing energy load in homes and dwelling units, and the 2016 Standards makes it mandatory that all residential lighting be high efficacy. The Standards do not allow trade-offs between lighting and other features when using the Performance Method.

These mandatory requirements apply to permanently installed light fixtures, including screw-based which must contain JA8 compliant

lamps. Table 150.0-A summarized below, lists light source technologies qualified as high efficacy.

Table 150.0-A: High Efficacy Light Sources

✦ Pin-based linear or compact fluorescent lamps light sources using electronic ballasts
✦ Pulse-start metal halide lamps
✦ High pressure sodium lamps
✦ GU-24 sockets containing light sources other than LEDs
✦ Inseparable SSL luminaires that are installed outdoors
✦ Inseparable SSL luminaires containing colored light sources that are installed to provide decorative lighting

Light sources not listed in Table 150.0-A above may be certified to the CEC as high efficacy in accordance with Joint Appendix 8 (JA8).

JA8 compliant light sources must be marked as "JA8-2016" or "JA8-2016-E." "JA8-2016-E" designates light sources that have passed the Elevated Temperature Life Test and are deemed appropriate for use in enclosed luminaires.

JA8 compliant light sources shown in the table below must be controlled by vacancy sensors or dimmers (exceptions for closets <70 SF and hallways, §150.0(k)2K).

Table 150.0-A & JA8: High Efficacy Light Sources

✦ Light sources in ceiling recessed downlight luminaires
✦ LED luminaires with integral sources
✦ Pin-based LED lamps (MR-16, AR-111, etc.)
✦ GU-24 based LED light source

Screw Based Luminaires §150.0(k)G

- ✦ Screw based luminaires must contain JA8 compliant light sources.
- ✦ Recessed downlight luminaires in ceilings must not contain screw-based sockets.
- ✦ Incandescent sources are prohibited from having a GU-24 base (per Title 20 Section 1605.3(k)).

Blank Electrical Boxes §150.0(k)B

- ✦ The number of blank electrical boxes more than 5 feet above the finished floor shall not be greater than the number of bedrooms.
- ✦ Additionally, these electrical boxes must be served by a dimmer, vacancy sensor, or fan speed control.

Bathrooms, Garages, Laundry Rooms, and Utility Rooms §150.0(k)2J

- ✦ At least one fixture must be controlled by a vacancy sensor.

Under Cabinet Lighting §150.0(k)2L

- ✦ Any under cabinet lighting (including kitchen) must be switched separately from other lighting systems.

Outdoor Lighting §150.0(k)3

- ✦ Must be high efficacy like indoor lighting.
- ✦ Must include manual on/off switch and one of the following:
 - ✦ Photocontrol and motion sensor
 - ✦ Photocontrol and automatic time switch control
 - ✦ Astronomical time switch control
 - ✦ Energy Management Control System