



Significant Changes for the 2019 CA Building Codes

The following changes are not inclusive of all code changes. They are a brief summary of changes intended to assist you during the development of your project. To access the complete collection of the California Building codes visit the California Building Standards Commission website by clicking the following link. <https://www.dgs.ca.gov/BSC/Codes#@ViewBag.JumpTo>

2019 California Residential Code Changes Summary

Section R101.2 Language added to allow certain types of small care facilities to be regulated under the CRC. The language now aligns with the related scoping provisions of the CBC.

Section R106.1.5 Newly added requirement for exterior balconies and elevated walking surfaces exposed to water from direct or blowing rain, snow or irrigation. Plans shall include details for all elements of the impervious moisture barrier system. Manufacturer's installation instructions shall be included in the construction documents.

Section R109.1.5.3 Newly added requirement. All elements of the moisture barrier system required by CRC, R106.1.5 shall not be concealed until inspected and approved.

Section R202 Provides newly added or revised definitions, including access, ready access, crawl space and new terms relating to solar energy.

Section R301.2.2.1 Seismic Design Category; a revised seismic map potentially allows a lower seismic design category based on determination of soil type.

Section R301.2.2.6 The irregular building section of the code has been rearranged for greater ease of use. No technical changes were intended by the reformat.

Table R301.5 Deck Live Load: The Live Load for decks has been increased from 40 to 60 lbs. per square foot. This will help to minimize deck failures when they may be overloaded with people.

Table R302.1(1) & 302.1(2) Minimum Fire Separation Distance: The minimum fire distance separation for fire rated walls is now allowed to be 0-feet. In addition, the Projections in the table has added Heavy Timber or Fire-Retardant Wood as an equivalent to a 1-hour rating depending on the separation distance.

Section R302.1 Fire-resistant construction of exterior walls: language has been added to the associated tables to offer additional options for fire rating the underside of projections. Changes to the footnotes of associated tables has been added to clarify alternative compliance methods in lieu of fire rating the underside of projections.

Section R302.2 Walls separating townhouses; former code language referred only to a "common wall". **New language has been added to address the common construction method of using 2 separate walls between units.**

Section R302.3 A new reference to section 703.3 of the CBC has been added which provides alternatives for determining the fire-resistance rating of wall and floor/ceilings assemblies for separation of dwelling units.

Section R302.4.2 Listed Luminaires that have been tested for the application are specifically permitted for fire-resistant-rated ceiling membrane penetrations.

Section R302.5 An automatic-closing device is now permitted as an alternative to a self-closing device for the door between the garage and dwelling.

Section 308.4.7 Figure R308.4.7 has been amended to better demonstrate hazardous glazing locations at bottom stair landings.

Section R310.1 Under certain conditions, sleeping rooms in a basement can be compliant without an emergency escape and rescue opening within the room.

Section R310.3 A change in terminology replaces "Bulkhead Enclosures" with "Area Wells" and provisions for ladders and steps for area wells have been added to better describe their function and clarify the application of the code.

Section R311.7.3 The maximum rise of a flight of stairs has been increased from 147 to 151 inches (12'7").

Section R311.7.11, R311.7.12 Alternating tread devices and ships ladders are now allowed as a means of egress component to a loft or similar area of 200 gross square feet or less, provided that such devices do not provide exclusive access to a kitchen or bathroom.

Section R317.1.6 Enclosed framing in exterior balconies and elevated walking surfaces that are exposed to rain or drainage are now required to be vented. This new section has been added to help reduce catastrophic failures of balconies and elevated walking surfaces that are exposed to rain, snow or drainage from irrigation.

Section R317.3 Staples in preservative-treated wood and fire-retardant-treated wood are now required to be made of stainless steel.

Section R324.4.1.1- R324.4.1.2 Revised requirements for design of live loads, dead loads and wind loads for roofs containing photovoltaic panel systems.

Section R507 Exterior decks. The bulk of this section has been reorganized, and now includes provisions for deck foundations and connections thereto.

Section R703.3.1 New provisions have been added to address the construction of exterior soffits at roof eaves.

Section R802.4 Several subsections have been rewritten to clarify conventional framing requirements for ridges, hips, valleys, rafters, rafter ties, ceiling joists, and purlins.

R802.5.2.1 Newly added code provision: wood structural panel roof sheathing may cantilever nine inches beyond the supporting gable end wall without support.

Section R806.2 Clarifies that net free ventilation may be less than 1/150 only if both required conditions are met. and added Language has been revised to indicate that lower vents must be located in the bottom 1/3 of the attic space, matching CBC language.

Section R806.5 Adds subsection 5.2 as an alternative path for un-vented attic and rafter assemblies. The new option is limited to climate zones 3-15 and has 10 requirements to address in the installation of air-permeable insulation.

Table R905.1.1(2) & R905.17: This table and new code section describe the underlayment requirement and installation provisions for Building-integrated Photovoltaic (BIPV) roof panels applied directly to the roof deck.

Section R905.17 New code section; although building integrated photovoltaic (BIPV) shingles are already regulated by the code, BIPV panels have not been included until now. Additionally, a new definition for BIPV is added in Chapter 2 and new text in R324 points to the technical requirements in this section.

Section R1005.8 Factory-built chimneys are now required to have an insulation shield where passing through insulated assemblies to help protect against the start of a fire from the chimney.

Appendix Q

This new appendix chapter contains limited provisions for tiny house construction. Tiny homes must comply with all relevant CRC provisions, except as modified in this appendix. Appendix Q provides a number of reduced requirements relating to ceiling height and access/egress from lofts

Appendix S

Adds seven new figures illustrating strawbale wall systems and their components. Tables have been updated and sections AS106.2 “Building Limitations”, AS106.12.3 “Roof-Bearing Assembly”, AS106.12.3.1 “Roof-Bearing Assembly Spanning Openings”, AS106.15 Post-and-Beam with Strawbale Infill” have been added to this section.

2019 California Electrical Code Changes Summary

Article 110.14 has been added to describe tightening torque requirements for electrical equipment. A calibrated torque tool shall be used to achieve the indicated torque value unless the manufacturer has provided installation instructions for an alternative method of achieving the required torque.

Article 210.8(B) Other Than Dwelling Units – All single-phase receptacles rated 150V to ground or less, 50 amperes or less and three-phase receptacles rated 150 volts to ground or less, 100 amperes or less installed in the following locations shall have ground-fault circuit-interrupter protection for personnel.

(9) Crawl spaces – at or below grade level

(10) Unfinished portions or areas of the basement not intended as habitable rooms

Article 210.8(E) has been added to require GFCI protection for lighting outlets not exceeding 120 volts installed in crawl spaces. **Crawl Space Lighting Outlets** – GFCI protection shall be provided for lighting outlets not exceeding 120 volts installed in crawl spaces.

Article 210.11.C(4) is a new section requiring at least one 120-volt, 20-ampere branch circuit be installed to supply receptacle outlets in attached garages and in detached garages with electric power. This circuit shall have no other outlets except readily accessible outdoor receptacle outlets.

Article 210.12(C) Guest Room and Guest Suites – All 120 volt, single-phase, 15- and 20-ampere branch circuits supplying outlets and devices installed in guest rooms and guest suites of hotels and motels shall be protected by any of the means described in 210.12(A)(1) through (6).

Article 210.64 Electric Service Areas – At least one 125-volt, single-phase, 15- or 20-ampere-rated receptacle outlet shall be installed in an accessible location within 25 ft of the indoor electrical service equipment. The required receptacle outlet shall be located within the same room or area as the service equipment.

Article 210.71 Meeting Rooms – (A) General - Each meeting room of not more than 1000 sq ft in other than dwelling units shall have outlets for nonlocking-type, 125-volt, 15- or 20-ampere receptacles. The outlets shall be installed in accordance with 210.71(B). Where a room or space is provided with movable partition(s), each room size shall be determined with the partition in the position that results in the smallest size meeting room.

(B) Receptacle Outlets Required – The total number of receptacle outlets, including floor outlets and receptacle outlets in fixed furniture, shall not be less than as determined in (1) and (2). These receptacle outlets shall be permitted to be located as determined by the designer or building owner.

(1) Receptacle Outlets in Fixed Walls – Receptacle outlets shall be installed in accordance with 210.52(A)(1) through (A)(4).

(2) Floor Receptacle Outlets – A meeting room that is at least 12 ft wide and that has a floor area of at least 215 sq ft shall have at least one receptacle outlet located in the floor at a distance not less than 6 ft from any fixed wall for each 215 sq ft or major portion of floor space.

Article 240.67 Arc Energy Reduction – Where fuses rated 1200 A or higher are installed, 240.67(A) and (B) shall apply:

- (A) Documentation – Documentation shall be made available to those authorized to design, install, operate, or inspect the installation as to the location of the fuses.
- (B) Method to Reduce Clearing Time – A fuse shall have a clearing time of 0.07 seconds or less at the available arcing current, or one of the following shall be provided

(1) differential relaying

(2) energy-reducing maintenance switching with local status indicator

(3) energy-reducing active arc flash mitigation system

(4) an approved equivalent means

Article 250.30(A)(4) Grounding Electrode – The building or structure grounding-electrode system shall be used as the grounding electrode for the separately derived system. If located outdoors, the grounding electrode shall be in accordance with 250.30(C)

Article 310.15(B)(3)(c) Raceways and Cables Exposed to Sunlight on Rooftops – Where raceways or cables are exposed to direct sunlight on or above rooftops, raceways or cables shall be installed a minimum distance above the roof to the bottom of the raceway or cable of 7/8". Where the distance above the roof to the bottom of the raceway is less than 7/8", a temperature adder of 33 degrees C (60 degrees F) shall be added to the outdoor temperature for application of the correction factors in Table 310.15(B)(2)(a) or Table 310.15(B)(2)(b).

Article 336.10(9) In one- and two-family dwelling units, Type TC-ER cable containing both power and control conductors that is identified for pulling through structural members shall be permitted. Type TC-ER cable used as interior wiring shall be installed per the requirements of Part II of Article 334.

Article 406.12 has been expanded to require Tamper Resistant Receptacles in the following: Preschools and elementary education facilities; Business offices, corridors, waiting rooms and the like in clinics, medical and dental offices and outpatient facilities, and dormitories.

Tamper Resistant Receptacles – All 15- and 20-ampere, 125- and 250-volt nonlocking-type receptacles in the areas specified in 406.12(1) through (7) shall be listed tamper resistant receptacles.

(1) dwelling units in all areas specified in 210.52 and 550.13

(2) guest rooms and guest suites of hotels and motels

(3) child care facilities

(4) preschools and elementary education facilities

(5) business offices, corridors, waiting rooms and the like in clinics, medical and dental offices and outpatient facilities

(6) subset of assembly occupancies described in 518.2 to include places of waiting transportation, gymnasiums, skating rinks, and auditoriums

(7) dormitories

Article 625.40 is a new section that clarifies outlets for Electric Vehicle Charging. Each outlet installed for the purpose of charging electric vehicles shall be supplied by an individual branch circuit. Each circuit shall have no other outlets.

Article 680.14 Corrosive Environment – Areas where pool sanitation chemicals are stored, as well as areas with circulation pumps, automatic chlorinators, filters, open areas under decks adjacent to or abutting the pool structure, and similar locations shall be considered to be a corrosive environment. The air in such areas shall be considered to be laden with acid, chlorine, and bromine vapors, or any combination of acid, chlorine, or bromine vapors.

Article 680.25(A) Feeders - where feeders are installed in corrosive environments as described in 680.14, the wiring method of that portion of the feeder shall be as required in 680.14(B) or shall be liquidtight flexible nonmetallic conduit. Wiring methods installed in corrosive environments as described in 680.14 shall contain an insulated copper equipment grounding conductor sized in accordance with Table 250.122, but not smaller than 12 AWG.

Article 690.47 Grounding Electrode System – a building or structure supporting a PV array shall have a grounding electrode system installed in accordance with Part III of Article 250. PV array equipment grounding conductors shall be connected to the grounding electrode system of the building or structure supporting the PV array in accordance with Part VII of Article 250. This connection shall be in addition to any other equipment grounding conductor requirements in 690.43(C). The PV array equipment grounding conductors shall be sized in accordance with 690.45.

690.53 Direct-Current Photovoltaic Power Source – a permanent label for the dc PV power source indicating the information specified in (1) through (3) shall be provided by the installer at dc PV disconnecting means and at each dc equipment disconnecting means required by 690.15. Where a disconnecting means has more than one dc PV power source, the values in 690.53(1) through (3) shall be specified for each source.

(1) maximum voltage

(2) maximum circuit current

(3) maximum rated output current of the charge controller or dc-to-dc converter (if installed)

695.15 Surge Protection – a listed surge protection device shall be installed in or on the fire pump controller.

Article 691 New Code Section: Large Scale Photovoltaic (PV) Electric Power Production Facility (min. 5,000kw)

Article 706 New Code Section: Energy Storage Systems

Article 710 New Code Section: Stand Alone Systems

Article 712 New Code Section: Direct Current Microgrids (DC Microgrids)

2019 California Building Code Part 2 Volume 1 Changes Summary

Section 107.2.5 New Section. Requires that submitted plans contain details for all elements of the impervious moisture barrier system and the manufacturers installation instructions for exterior balconies and elevated walking surfaces.

Chapter 2 New Definitions:

Adult Changing Facility, Carbon Monoxide Alarm, Carbon Monoxide Detector, Delayed Action Closer, Greenhouse, Periodic Special Inspection, Relocatable Building, Repair Garage, Roof Coating.

Chapter 2 Revised Definitions:

Change of Occupancy, Common Path of Egress Travel, Existing Building, Historic Buildings, Sleeping Unit.

Section 302.1 Occupancy Classifications. New language added specifying the classification of occupied roofs.

Section 302.2 Use Designation. New Section addressing occupancy groups containing subordinate uses.

Section 303.4 Greenhouse. Added to Group A-3 uses, where the greenhouse space provides public access for the conservation and exhibition of plants.

308.5.2; 308.5.3; 308.5.4 New Sections. New sections clarifying occupancy group classification and state licensing for custodial care facilities.

Section 311.1.1 Accessory Storage Spaces. Accessory storage spaces are no longer limited to less than 100 square feet to be classified as part of that same occupancy.

Section 312.1.1 Greenhouses. Greenhouses not classified as another occupancy shall be classified as Use Group U.

Section 503.1.4 New Section. New section on occupied roofs

Table 509

1. Stationary Storage Batteries. New reference to CFC Table 1206.2.
2. Electrical Installations and Transformers. Fire resistive separation requirements from the CEC are now referenced.

Section 704.2 Exception. An exception was added to this section for columns meeting the limitations of 704.4.1.

Section 705.2.3.1 Balconies and similar projections. Requirements were previously in Chapter 14.

Section 708.4 Vertical Continuity of Fire Partitions. The required extent of fire partitions has been clarified.

Section 716. Section 716 has been reformatted.

716.2.6.5 Delayed Action Closers. Doors not required to be automatic closing, are allowed delayed action closing devices.

Sections 803.11, 803.12 New Sections. New sections on laminated products with a wood substrate and wood veneers that are site applied over a wood substrate.

Section 1004.8 and Table 1004.5 Concentrated Business Use Areas. The occupant load factor for determining the occupant load in business areas has been modified.

Section 1006.3 Egress from Stories or Occupied Roofs. The language "Separate and distinct exits or access to exits" has been added.

Section 1030.1 Emergency Escape and Rescue Openings. The requirements for emergency escape and rescue openings no longer apply to Group R-1 occupancies.

Section 11B-213.3.6 Bathing Facilities. Transfer type showers are now allowed in certain specified facilities.

Section 11B-233.3.4.3 Alterations to Residential Dwelling Units with Adaptable Features. The requirements for adaptable features within public housing facilities has been revised to coordinate with 1102A.2 and the Fair Housing Amendments Act. (March 13, 1991).

Sections 11B-248, 11B-249 New Sections. New sections on common use and employee work areas and adult changing facilities.

Sections 11B-608.2.1, 11B-608.3.1, 11B-608.7 Transfer Type Shower Compartments. Requirements for transfer type showers are now shown.

Section 11B-813 Adult Changing Facilities. Requirements for adult changing facilities are now shown.

2019 California Building Code Part 2 Volume 2 Changes Summary

Section 1603.1. The construction document requirements for design loads have been updated.

Section 1607.3.7. New limitations on the deflection of framing elements that support glazing.

Section 1604.10. The development of loads for storm shelters is to be based on ICC 500.

Section 1607.1 Live load on balconies and decks updated to 1.5 times the live load for the area served to be consistent with the ASCE 7.

Section 1609 Updated wind speed maps. Terminology for describing wind speeds has been changed with ultimate design wind speeds now called basic design wind speeds.

Section 1704.6.1. New requirements for Structural Observation.

Section 1705.5.2. New special inspection requirements of metal-plate-connected wood trusses for trusses 60 inches or greater in height.

Section 1705.12.6. New special inspection requirements for equipment where automatic fire sprinkler systems are installed.

Section 1901.2. New requirement for the design of precast concrete diaphragms to use ASCE 7 Section 14.2.4.

Section 2207.1. New referenced standard for the design of open-web steel joists.

Section 2211. 2015 editions of the AISI standards for cold-formed steel now adopted.

Section 2304.9.3.2. New alternative fastener schedule for construction of mechanically laminated decking.

Section 2304.11 Heavy Timber Construction. Reformatted, numerous provisions previously located in 602.4 are now in 2304.11.

Section 2304.12.2.5. New slope requirements for the impervious moisture barrier system protecting the structure supporting floors.

Section 2603.13. New section specifying the requirements for cladding attachment over foam sheathing to wood framing.

Section 2702.1.2 Fuel Line Piping Protection. New section duplicating the requirements found in 403.4.8.2.

Section 3001.2 Emergency Elevator Communication Systems. New requirements for emergency two way communications system in elevators.

Section 3112. New section on greenhouses.

Section 3113. New section on relocatable buildings.

Section 3314. Provisions for fire watch at construction sites, where required by the fire code official.

2019 California Plumbing Code Changes Summary

Section 407.2.4 Metered faucets shall deliver a maximum of 0.2 gallons per minute per metering cycle. (Down from 0.25 gallons in the 2016 CPC §407.2.2)

Section 422.2.1. Single user toilet facilities and family or assisted use toilet facilities shall be identified with signage indicating the use be either sex. (In line with AB1732)

Table A

(A-occupancies: Auditoriums / Worship place) Excludes restaurants: Where fixed seating is provided, use (1/2) one half the number of fixed seating when calculating the occupancies for restroom use.

Section 601.2.1 Sub-meters. (Water meters) now in compliance with SB7-2016 and SB750-2013 for HCD projects.

Section 1211.2. Bonding of CSST gas piping requirement changes.

California Mechanical Code Changes Summary

Section 303.8 Appliances on roofs: New code requirements, including: Load capacity, fasteners and clearances.

Section 401.2. MERV 13 filtration required in air handling units; this section has been moved from 2016 CPC §503.3 to 2019 CPC §401.2 and the rating has been increased from MERV 8 to MERV 13.

Table 403.7- New minimum ventilation rates for shower rooms now included in the code.

Section 504.4.2.1 Clothes dryer exhaust duct power ventilator added to the code as an exception to increase the length limitation of the vent.

Section 505.0 Product conveying exhaust systems, expanded regulation for deflagration venting, use of fire dampers, fire alarm and extinguishing systems, and inter-lock controls.

Section 506.3 New requirement that allows exhaust ducts to penetrate fire barriers of 2 hours or more.

Section 603.5 Added regulation for flexible air ducts.

Section 603.10.1 Added regulation for duct leakage test.

Section 1107.0 Added regulation for refrigeration machinery room requirements.

Chapter 13 See 2019 CA Plumbing Code Change Summary

2019 California Energy Code Changes Summary

RESIDENTIAL

Refers to “Low-Rise Residential”; occupancy groups R-3, U (located on a residential site) and R-2 in buildings with 3 habitable stories or less.

Mandatory Measures:

Section §150.0(c)2. Walls with 2x6 framing require R-20 insulation (if wood framed) and must be designed to achieve a U-factor not exceeding a .071.

Section §150.0(o). Modifications to the indoor air quality requirements of AHRAE 62.2 have been added to this section for various building and dwelling unit configurations such as horizontally attached buildings, or central ventilation systems. A balanced or continuously operating supply or exhaust ventilation system is required. HERS verification is required for kitchen hoods used to comply with indoor air quality requirements.

Section §150.0(m)12 MERV rating (Minimum efficiency reporting value) of air filters for heating/cooling or ventilations systems has been increased from 6 to 13 (or equivalent).

Section §150.0(m)13B, C and D New fan efficacy requirements added for air handling units:

Fan efficacy requirements are .45 watts/cubic feet per minute (W/CFM) or less for gas furnace air handling units, or .58 W/CFM for air handling units that are not gas furnaces. New fan efficacy requirement for small-duct high velocity forced-air systems is .62 W/CFM or less.

Prescriptive Compliance:

Section §150.1(c) Table 150.1-A has been expanded into 2 separate tables; 150.A-1 for single family standard design and 150.1-B for multifamily design.

Section §150.1(c)1A Roof insulation; Option “A” for above deck roof insulation has been removed.

Section §150.1(c)1B. The minimum required wall U-factor has been changed from .051 to .048 in single family buildings in all climate zones except zones 6-7.

Section §150.1(c)5 Doors which separate conditioned spaces from non-conditioned spaces are now required to meet new U-factor requirements, except for garage/dwelling doors which are required to have a fire-resistance rating.

The threshold for percentage of glazing in doors has been changed from 50% to 25%; doors with 25% or more glazing shall meet fenestration product requirements.

Section §150.1(c)1E Quality Insulation Installation (QII) is now a prescriptive requirement for all new single-family buildings and additions greater than 700sf in all climate zones, and multifamily buildings in all climate zones except zone 7. QII always requires HERS testing.

Section §150.1(c)8, §150.2(a)1D and §150.2(b)1H There are new prescriptive options for heat pump water heaters for newly constructed buildings, additions and alterations. Previous code did not allow prescriptive options for electric water heaters.

Section 150.1(c)14 All new low-rise residential buildings must have a photovoltaic (PV) system.

Performance Compliance:

Section §150.1(b)1 New performance software required. All compliance software programs approved by the Energy Commission use the same compliance engine as the public domain software. Compliance metric is now determined based on three components of an Energy Design Rating (EDR); (1) an efficiency EDR, (2) a PV and demand flexibility EDR and (3) a total EDR. More information is available in the 2019 Residential ACM Reference Manual and chapter 8 of the 2019 Residential Compliance Manual.

Additions and Alterations:

Section §150.2(a)1 Reduced requirement for prescriptive compliance for additions greater than 700sf; if wood siding is not removed, there is no requirement for continuous insulation. Only cavity insulation is required.

Section §150.2(a)1B. The prescriptive requirement for quality insulation installation (QII) is not required for additions that are 700sf or less.

Section §100.1 (definitions) New definition has been added; “Natural Gas Availability” - The determining factor for whether natural gas is “available” for newly constructed buildings is if a gas service line can be connected to the site without a gas main extension. For additions, natural gas is only “available” if a gas service line is connected to the existing building.

Section §150.2(b)H This section has been reorganized and expanded to clarify specific requirements for altered or replaced water heating systems.

NON-RESIDENTIAL

Mechanical

Section §110.2 Space conditioning equipment, updated efficiencies to align with ASHRA 90.1-2016

Section §110.5 Pilot lights prohibited: Prohibits continuously burning pilot light for indoor and outdoor fireplaces.

Section §120.1 Ventilation systems requirements are broken out by building type:

- §120.1 (b) high rise residential (ASHRAE 62.2)
- §120.1 (c) nonresidential, hotel/motel (ASHRAE 62.1)

Section §120.1

- Filtration required for central space conditioning systems and supply side of ventilation systems.
- MERV 13 filter efficiency required.

Section §120.1(b)1 High-rise residential air filtration: Filters for space conditioning systems:

- 2” depth filter: allowable pressure-drop determined by the system designer
- 1” filter if sized according to equation 120.1-A with maximum pressure drop of 0.1” of water.

Section §120.1(b)1 High-rise residential air filtration: Filters for ventilation systems:

- System must be designed to accommodate the filter pressure drop determined by the system designer
- Filters must be labeled with the design airflow rate, and pressure drop at the design airflow rate.

Section §120.1(b)2 High-rise residential air ventilation:

Dwelling ventilation rates and indoor air quality aligned with ASHRAE 62.2 with California amendments:

- Window operation is not allowed for providing ventilation.
- Continuous operation of the central system air handlers used in central fan integrated system is not allowed.

Ventilation system must be one of the following:

- Balanced ventilation system, or
- Continuously operating supply or exhaust ventilation systems are allowed if the dwelling unit envelope leakage is verified by a HERS Rater to be ≤ 0.3 cfm.

Section §120.1(b)2 Central ventilation systems serving multiple dwelling units:

- Ventilation rate in each dwelling unit must be equal to the rate calculated using equation 120.1-B or up to 20% higher.
- System must be balanced for each dwelling unit.
- Tested in accordance with Reference Nonresidential Appendix NA7.18.1

Section §120.1(b)2 Kitchen range hoods:

- Minimum airflow of 100 CFM
- Maximum rated sound of 3 sones
- Certified to the home ventilation institute (HVI)
- Tested in accordance with Reference Nonresidential Appendix NA7.18.1

Section §120.1(c)1 Nonresidential and hotel/motel air filtration:

- Filters required for both space conditioning and ventilation systems.
- MERV 13 filter.
- 2" depth filter.
- 1" filter if sized according to equation 120.1-A

Section §120.1(c)2 Nonresidential and hotel/motel ventilation:

Natural Ventilation:

- Maximum distance from operable opening is based on location, number of opening, and ceiling height.
- Size of opening must be $>4\%$ of ventilated floor area.
- Adjoining rooms without outside air openings must have a permanently opened area not less than 8% of the unventilated room floor area but not less than 25 SQFT.
- Must also include ventilation (120.1 (c) 3) unless meeting exceptions.

§120.1(c)4 Exhaust ventilation:

- New minimum exhaust ventilation rates are listed in Table 120.1-B (aligns with ASHRAE 62.1)

Section §120.1(g) New section that limits the recirculation or transfer of air classification of an occupancy

Table 120.1-A, B and C designates the air classification for each occupancy.

Section §120.1(d)3 Direct control ventilation (DCV) DVC is required if the system serving the space (25 or more per 1000 SQFT) has one of the following:

- An air economizer, or
- Modulating outside air control, or
- A design outdoor airflow rate is > 3000 CFM

Section §120.2(e)3

- Occupancy sensors are now mandatory for HVAC control.
- System must be placed in occupied standby mode after 5 minutes of vacancy.

Electrical

Section 140.6. Indoor lighting power allowances have been reduced by 37% for the Complete Building Method (see Table 140.6-B) and 29% for the Area Category Method (see Table 140.6-C).

Section 140.7 Outdoor lighting power allowances have been reduced. See Table 141.0-F.

Section 141.0(b)2I Indoor alteration requirements have been simplified and consolidated into new Table 141.0-F

Section 150.0(n) Gas or propane water heaters installed in new dwelling units shall include a dedicated 120v receptacle fed by a 10/3 with ground “home run” installed within 3’ of the water heater. This installation shall be available to convert to a future 240v heat pump water heater.

Section 150.1(c)14 All low-rise residential buildings shall have photovoltaic systems installed, sized to an equation provided in section 150.1(c)14. Some exceptions are included.

Covered Processes

Section §120.6(7) Refrigeration system acceptance testing.

- Adiabatic condensers shall be tested in accordance with NA7.10.3.3.
- Variable speed compressors shall be tested in accordance with NA7.10.4

Commissioning

Section §100.12 Demand management requirements updated:

- Must be certified either as open ADR 2.0a or b virtual end node (VEN) or
- Be capable or responding to an open ADR 2.0b VEN

Section §120.1(b)2 Ventilation system must be one of the following:

- Balanced ventilation system, or
- Continuously operating supply or exhaust ventilation systems are allowed if the dwelling unit envelope leakage is verified by a HERS Rater to be \leq 0.3 cfm.

Section §120.1(b)2 Kitchen range hoods:

- Minimum rated sound of 3 sones
- Certified to the home ventilation institute (HVI)
- Tested in accordance with Reference Nonresidential Appendix NA7.18.1

Section §120.2(e)3 Occupancy sensors are now mandatory for HVAC control.

- System must be placed in occupied standby mode after 5 minutes of vacancy.
- Occupant sensing zone controls tested per NA7.5.17

Section §120.6(7) Refrigeration system acceptance testing.

- Adiabatic condensers shall be tested in accordance with NA7.10.3.3.
- Variable speed compressors shall be tested in accordance with NA7.10.4