



CITY OF HUNTINGTON BEACH
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2019 CALIFORNIA ENERGY CODE - SIGNIFICANT CHANGES

2019 CALIFORNIA ENERGY CODE SIGNIFICANT CHANGE SUMMARY

The following changes are not inclusive of all code changes. Please refer to the 2019 California Energy Code for all changes.

PART 6

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.

SECTION	NOTES
Mandatory Measures:	
§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.
§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 <i>required</i> . HERS verification is required for kitchen hoods used to comply with indoor air quality requirements.
§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).
§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:	
§150.1(c)	Table 150.1-A has been expanded into 2 separate tables; <ul style="list-style-type: none"> • 150.A-1 for single family standard design and • 150.1-B for multifamily design.
§150.1(c)1A	Roof insulation: Option “A” for above deck roof insulation has been removed.
§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.

§150.1(c)5 §100.1(definitions)	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.
§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.
§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.
150.1(c)14	All new low-rise residential buildings must have a photovoltaic (PV) system.
Performance Compliance:	
§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 <i>2019 Residential ACM Reference Manual</i> and chapter 8 of the <i>2019 Residential Compliance Manual</i> .
Additions and Alterations:	
§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.
§150.2(a)1B	The prescriptive requirement for quality insulation installation (QII) is not required for additions that are 700sf or less.
§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.
§150.2(b)H	This section has been reorganized and expanded to clarify specific requirements for altered or replaced water-heating systems .

NON-RESIDENTIAL

SECTION	NOTES
Mechanical	
§110.2	Space conditioning equipment , updated efficiencies to align with ASHRA 90.1-2016
§110.5	Pilot lights prohibited: Prohibits continuously burning pilot light for indoor and outdoor fireplaces.
§120.1	Ventilation systems requirements are broken out by building type: <ul style="list-style-type: none"> §120.1 (b) high rise residential (ASHRAE 62.2)

	§120.1 (c) nonresidential, hotel/motel (ASHRAE 62.1)
§120.1	<ul style="list-style-type: none"> • Filtration required for central space conditioning systems and supply side of ventilation systems. • MERV 13 filter efficiency required.
§120.1(b)1	<p>High-rise residential air filtration:</p> <p>Filters for space conditioning systems:</p> <ul style="list-style-type: none"> • 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
§120.1(b)1	<p>High-rise residential air filtration:</p> <p>Filters for ventilation systems:</p> <ul style="list-style-type: none"> • 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.
§120.1(b)2	<p>High-rise residential air ventilation:</p> <p>Dwelling ventilation rates and indoor air quality aligned with ASHRAE 62.2 with California amendments.</p> <ul style="list-style-type: none"> • 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. <p>Ventilation system must be one of the following:</p> <p>Balanced ventilation system, or</p> <ul style="list-style-type: none"> • 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.
§120.1(b)2	<p>Central ventilation systems serving multiple dwelling units:</p> <ul style="list-style-type: none"> • 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
§120.1(b)2	<p>Kitchen range hoods:</p> <ul style="list-style-type: none"> • 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
§120.1(c)1	<p>Nonresidential and hotel/motel air filtration:</p> <ul style="list-style-type: none"> • 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
§120.1(c)2	<p>Nonresidential and hotel/motel ventilation:</p> <p>Natural Ventilation:</p> <ul style="list-style-type: none"> • Maximum distance from operable opening is based on location, number of opening, and ceiling height.

	<ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • New minimum exhaust ventilation rates are listed in Table 120.1-B (aligns with ASHRAE 62.1)
§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.
§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: <ul style="list-style-type: none"> • An air economizer, or • Modulating outside air control, or • A design outdoor airflow rate is > 3000 CFM
§120.2(e)3	<ul style="list-style-type: none"> • 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
Electrical	
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).
140.7	Outdoor lighting power allowances have been reduced. See Table 141.0-F.
141.0(b)2I	Indoor alteration requirements have been simplified and consolidated into new Table 141.0-F
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.
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	
§120.6(7)	Refrigeration system acceptance testing. <ul style="list-style-type: none"> • 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	
§100.12	Demand management requirements updated: <ul style="list-style-type: none"> • 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
§120.1(b)2	Ventilation system must be one of the following: <ul style="list-style-type: none"> • 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.

§120.1(b)2	Kitchen range hoods: <ul style="list-style-type: none"> • Minimum rated sound of 3 sones • Certified to the home ventilation institute (HVI) • Tested in accordance with Reference Nonresidential Appendix NA7.18.1
§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
§120.6(7)	Refrigeration system acceptance testing. <ul style="list-style-type: none"> • Adiabatic condensers shall be tested in accordance with NA7.10.3.3. • Variable speed compressors shall be tested in accordance with NA7.10.4