



# California Energy Commission

## 2022 Building Energy Efficiency Standards

### What's New for Single-Family Residential

#### Single-Family What's New for 2022 Summary

The most significant change in the 2022 Building Energy Efficiency Standards (Energy Code) affecting single-family residential buildings is a single fuel prescriptive heat pump baseline for either water heating or space heating, depending on the climate zone. There are significant changes in requirements for indoor air quality (IAQ). There are also new requirements and revisions for additions and alterations. The definition for single-family buildings is updated and all multifamily requirements are moved to Sections 160.0 to 180.4.

#### Mandatory Requirements

- New roof deck insulation maximum area-weighted average U-factor requirement of U-0.184 in climate zones 4 and 8-16. §150.0(a)1
- Simplifies hot water piping language and defers to California Plumbing Code. §150.0(j)
- Simplifies and reorganizes language for lighting requirements. §150.0(k)
- Ducts in conditioned space do not require insulation if specific criteria are met, and ducts are located entirely inside the building's thermal envelope. §150.0(m)1B
- Filter racks or grilles shall be gasketed or sealed to prevent air from bypassing the filter. §150.0(m)12Bv
- Gas water heater installations must provide a designated space for a future heat pump water heater (HPWH) installation. §150.0(n)
- New requirements for central fan integrated ventilation systems requiring a motorized controlled damper, damper controls, and variable ventilation. §150.0(o)1B
- Vented kitchen range hoods require ventilation rates or capture efficiencies based on conditioned floor area and fuel type (see Tables 150.0-E, F, & G). §150.0(o)1G
- Installed heat recovery ventilation (HRV) and energy recovery ventilation (ERV) systems must have a Home Energy Rating System (HERS) verified maximum fan efficacy of 1.0 W/cfm. §150.0(o)2C
- New energy storage system (ESS) ready requirements, including interconnection equipment or a dedicated raceway, a minimum of four branch circuits, a minimum busbar rating of 225 amps, and space for future installation of a system isolation equipment or transfer switch. §150.0(s)
- New electric ready requirements for space heating, cooking, and clothes dryers when gas equipment is installed. Electrical infrastructure must be provided and reserved to the equipment location for the future installation of electrical appliances. §150.0(t)-(v)

#### Performance Compliance:

- New energy design rating (EDR) metrics – EDR1, based on source energy; efficiency EDR and solar generation/flexibility EDR are now under EDR2. Compliance requires separately meeting EDR1, efficiency EDR2, and total EDR2. §150.1(b)1

#### Prescriptive Compliance:

- Space heating equipment must be a heat pump in climate zones 3, 4, 13, and 14. In other climate zones it can be either a heat pump or a gas heating system. §150.1(c)6
- Water heating equipment must be a HPWH meeting certain criteria or solar water heating system with electric backup. §150.1(c)8
- In climate zones 3, 4, 13, and 14, a gas instantaneous water heater (max input 200,000 Btu/h, no storage tank) is allowed if the space conditioning system is a heat pump. §150.1(c)8
- New dwelling units with a conditioned floor area 500 square feet (SF) or less may install an instantaneous electric water heater with point of use distribution. §150.1(c)8
- New dwelling units with a conditioned floor area 500 SF or less do not require a whole-house fan. §150.1(c)12
- Revises and updates photovoltaic (PV) language for clarity, including solar access roof area (SARA). §150.1(c)14



# California Energy Commission

## 2022 Building Energy Efficiency Standards

### What's New for Single-Family Residential

- No PV system required when size is less than 1.8 kWdc. §150.1(c)14

#### **Additions and Alterations:**

- For additions, duct leakage testing applicable when extending any length of existing ducting. §150.2(a)
- New or replacement space heating systems serving an addition may be a heat pump or gas heating system. §150.2(a)
- In climate zones 1, 2, 4, and 8-16, additions less than 700 SF, roof and ceiling insulation in a vented attic must meet a maximum overall assembly U-factor of 0.025. If wood-framed, may install insulation of R-38 or greater. §150.2(a)1Bi
- In climate zones 3 and 5-7, additions less than 700 SF, roof and ceiling insulation in a vented attic must meet a maximum overall assembly U-factor of 0.031. If wood-framed, may install insulation of R-30 or greater. §150.2(a)1Bi
- Junior Accessory Dwelling Units (JADU) that are additions to an existing building are exempt from the whole-dwelling unit mechanical ventilation airflow requirements. §150.2(a)1Cia2
- Water heater options for additions updated for more specificity across all types. §150.2(a)1D
- For HVAC duct alterations, duct leakage testing now triggered when more than 25 feet of ducts are replaced or installed. §150.2(b)1D
- HPWHs are allowed for alterations in all climate zones. §150.2(b)1Hiii
- Consumer electric water heaters may replace an existing electric resistance water heater. §150.2(b)1Hiii
- Cool roof requirements expanded to additional climate zones for alterations. §150.2(b)1I
- New roof and vented attic ceiling insulation requirements for alterations. §150.2(b)1Iib & §150.2(b)1J
- IAQ and mechanical exhaust requirements amended and revised to clarify applicability for alterations. §150.2(b)1L&M
- Alterations that add door area must meet prescriptive U-factor requirements. §150.2(b)1N