

## DOCKETED

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# 2019 Building Energy Efficiency Standards Lead Commissioner Hearing For 45-Day Language

California Energy Commission  
Hearing Room A  
(Arthur Rosenfeld Room)

February 5, 2018

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Subchapter 8  
Section 150.1



**SUBCHAPTER 8  
LOW-RISE RESIDENTIAL BUILDINGS –  
PERFORMANCE AND PRESCRIPTIVE COMPLIANCE  
APPROACHES**

**§150.1 – Performance And Prescriptive Compliance  
Approaches for Low-Rise Residential Buildings**



## **§150.1(c)1A – Roof and Ceiling Insulation**

- Removed the above deck insulation option

## **§150.1(c)1B – Wall Insulation**

- Changes made to separate framed, unframed and mass walls into 3 subsections

## **§150.1(c)1E – Quality Insulation Installation (QII)**

- Added requirement for QII to the prescriptive package



## **§150.1(c)3A – Fenestration**

- Changed threshold for glazed doors to follow NFRC

## **§150.1(c)5 – Doors**

- Added requirement for Doors to the prescriptive package

## **§150.1(c)11 – Roofing Products**

- Changes made in order to clarify that the Exceptions are dependent on weight
  - Exception 2 to Section 150.1(c)11



## TABLE 150.1-A – COMPONENT PACKAGE – Single Family Standard Building Design

- Removed the option for above deck insulation
- Removed the options/value for ‘no air space’
- Increased the below deck insulation requirement to R-19 in CZs 4 & 8-16
- Reduced the above grade framed wall U-factor to  $U=0.048$  in CZs 1-5 & 8-16
- Added a row for Quality Insulation Installation (QII) required in all CZs
- Reduced the fenestration U-factor requirement to 0.30 in all CZs
- Reduced the fenestration SHGC requirement to 0.23 in CZs 2, 4, & 6-15
- Changed the fenestration SHGC requirement to ‘NR’ for CZ 16
- Added a row for Doors required in all CZs
- Changed footnote #4 to remove the term “thermal” from “heat capacity”



## TABLE 150.1-B – COMPONENT PACKAGE – Multifamily Standard Building Design

- Removed the option for above deck insulation
- Removed the options/values for ‘no air space’
- Increased the below deck insulation requirement to R-19 in CZs 4, 8, 9 & 11-15
- Added a row for Quality Insulation Installation (QII) required in CZs 1-6 & 8-16
- Reduced the fenestration U-factor requirement to 0.30 in all CZs
- Reduced the fenestration SHGC requirement to 0.23 for CZs 2, 4, & 6-15
- Changed the fenestration SHGC requirement to ‘NR’ for CZ 16
- Added a row for Doors required in all CZs
- Changed footnote #4 to remove the term “thermal’ from “heat capacity”



## §150.1(b)–Performance Standards

- Revised for clarity
- The Energy Budget for newly constructed buildings is now expressed as an EDR
  - Energy Efficiency EDR
  - Solar Electric Generation and Demand Flexibility EDR
  - Combined to arrive at Total EDR
  - Exception for community shared solar and battery storage system to offset part or all of rooftop PV
- Energy Budget for additions and alterations continues to be expressed as TDV energy





## §150.1(b)–Performance Standards

### §150.1(b)3B – Field Verification

Add references for new field verification protocols in Residential Appendix Section RA3.3

- ◆ HSPF Rating - Section RA3.4.4.1
- ◆ Heat Pump Rated Heating Capacity - Section RA 3.4.4.2
- ◆ Whole House Fan – Section RA3.9



## **§150.1(c)8A–Domestic Water-Heating Systems serving individual dwelling units**

- Delete option ii for gas storage type water heater under 55 gallons
  - This option is superseded with QII being a prescriptive requirement for 2019.
- Additional Drain Water Heat Recovery option for gas storage type water heater above 55 gallons
  - Currently requires either compact hot water distribution or HERS verified pipe insulation.



## **§150.1(c)8A–Domestic Water-Heating Systems serving individual dwelling units**

- Add new prescriptive option iii for heat pump water heaters
  - Require additional kW larger than the prescriptive PV requirement in Section 150.1(c)14
    - For CZ 2 through 15, additional capacity of 0.3 kW
    - For CZ 1 and 16, additional capacity of 1.1 kW
  - Alternatively, installation of DWHR and Compact Distribution (15-day)
- Add new prescriptive option iv. Require installation of heat pump water heater that meets NEEA Advanced Water Heater Specification Tier 3 or higher.
  - For CZ 1 and 16, additional capacity of 0.3 kW required in addition to a NEEA Tier 3 HPWH



## **§150.1(c)8B–Domestic Water-Heating Systems serving multiple dwelling units**

- Add new prescription option for reduced solar fraction requirement if a Drain Water Heat Recovery (DWHR) system are installed
  - Current requirements are solar fraction of 0.2 in CZ 1 through 9 and 0.35 in CZ 10 through 16
  - With a DHWR system, the solar fraction requirement reduced to 0.15 in CZ 1 through 9 and 0.3 in CZ 10 through 16
  - The DHWR system must have at least a CSA rated effectiveness of 42 percent and recover heat from at least half of the showers above the first floor



## §150.1(c)14 – Photovoltaic Requirements

- Add new prescription requirement for low-rise residential buildings to have a photovoltaic system. System output shall equal the dwelling's annual electrical usage and meets the requirements of JA11
  - Exception for limited solar ready zones less than 80 contiguous SF due to natural or manmade barriers
  - Reduced PV requirement for Climate Zone 15
  - Reduced PV requirement for 2 story single and multifamily homes
  - Reduced PV requirement for 3 story multifamily and 3 or more stories single family homes
  - Accommodations for plans approved prior to Jan 1, 2020
  - Reduced PV size if installed in conjunction with a battery storage system



## How to submit written comments

- **We strongly encourage submitting written comments via e-file.** Comments on the proposed 2019 Energy Code can be submitted to: <https://efiling.energy.ca.gov/EComment/EComment.aspx?docketnumber=17-BSTD-02>.
- Comments on the proposed 2019 CALGreen can be submitted to: <https://efiling.energy.ca.gov/EComment/EComment.aspx?docketnumber=17-BSTD-03>.
- Comments can also be submitted physically or by e-mail, here:

California Energy Commission

Dockets Office, MS-4

Re: Docket No. 17-BSTD-02 (for CALGreen, 03)

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