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<th><strong>Docket Number:</strong></th>
<th>17-BSTD-02</th>
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<td><strong>Project Title:</strong></td>
<td>2019 Title 24, Part 6, Building Energy Efficiency Standards Rulemaking</td>
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<td>2-5-18 Presentation on Proposed 2019 Energy Code Subchapter 8</td>
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<td><strong>Description:</strong></td>
<td>Presentation given by Michael Shewmaker, Maziar Shirakh and Danny Tam at the 2-5-18 Commissioner Hearing on the proposed 2019 Energy Code.</td>
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<td><strong>Filer:</strong></td>
<td>Adrian Ownby</td>
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<td><strong>Organization:</strong></td>
<td>California Energy Commission</td>
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<td><strong>Submitter Role:</strong></td>
<td>Commission Staff</td>
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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

Michael Shewmaker
Maziar Shirakh, P.E.
Danny Tam

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
    o 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
  o 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
  o 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 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


- 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)  
  1516 Ninth Street  
  Sacramento, CA  95814-5512  
  Docket@energy.ca.gov