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Docket Number:	17-BSTD-02
Project Title:	2019 Title 24, Part 6, Building Energy Efficiency Standards Rulemaking
TN #:	222465
Document Title:	2-5-18 Presentation on Proposed 2019 Energy Code Subchapter 7
Description:	Presentation given by Jeff Miller at the 2-5-18 Commissioner Hearing on the proposed 2019 Energy Code.
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Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	2/7/2018 4:17:36 PM
Docketed Date:	2/7/2018

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

California Energy Commission

Hearing Room A

(Arthur Rosenfeld Room)

February 5, 2018

Peter Stait

Jeff Miller, P.E.

Subchapter 7

Section 150.0

SUBCHAPTER 7
LOW-RISE RESIDENTIAL BUILDINGS – MANDATORY FEATURES AND DEVICES

§150.0 – Mandatory Features And Devices

§150.0(c) – Wall Insulation

- Modified the mandatory minimum wall insulation requirement to R-20 in 2x6 framing

§150.0(d) – Raised-floor Insulation for Wood Framed Assembly

- Changes made to clarify that the requirement of 150.0(d) only applies to raised wood-framed floor assemblies

§150.0(k) – Residential Lighting

§150.0(k)1 – Luminaire Requirements

- Removed redundancy, clarified phrasing
- Added step lights and path lights to the Section for night lights
- Clarified that elevated temperature requirements apply to lamps and similar separable light sources (not integrated SSLs)
- Added “lighting internal to drawers, cabinetry or closets” to Table 150.0-A

§150.0(k) – Residential Lighting

§150.0(k)2 – Interior Lighting Switching Devices and Controls

- Removed redundancy, clarified phrasing
- Added Exception for ceiling fans using remote controls
- Allowed occupant sensors provided they are initially configured for manual on behavior

§150.0(k)3, 4, 5, and 6

- Removed redundancy, clarified phrasing

§150.0(m) – Air-Distribution and Ventilation System Ducts, Plenums, and Fans.

§150.0(m)1 – CMC Compliance

- Clarify duct insulation R-value requirements
  - R-6.0 minimum, otherwise R4.2 if duct system is entirely in conditioned space as verified by RA3.1.4.3.8.
  - Exception for portions of ducts located in wall cavities inside the thermal envelope.
  - Exception for portions of ducts completely exposed and surrounded by directly conditioned space.

§150.0(m) – Air-Distribution and Ventilation System Ducts, Plenums, and Fans.

§150.0(m)12A – Air Filtration Requirements According to System Types

- Require air filtration for:
  - Ducted mechanical space conditioning systems.
  - Supply ventilation systems.
  - The supply side of balanced ventilation systems

§150.0(m) – Air-Distribution and Ventilation System Ducts, Plenums, and Fans.

§150.0(m)12B – Air Filtration Requirements – Design and Installation

Air filter sizing compliance options for space conditioning systems:

- Two-inch minimum depth filter, or
- Allow use of one-inch depth filter if:
  - The filter face area is sized to allow maximum 150 ft/min face velocity, and
  - Filters installed meet a maximum clean filter maximum pressure drop in 150.0(m)12Dii (0.1 inch water)

§150.0(m) – Air-Distribution and Ventilation System Ducts, Plenums, and Fans.

§150.0(m)12C – Air Filtration Efficiency

Increase minimum air filter particle size efficiency from MERV 6 to MERV 13

§150.0(m)12D–Air Filtration Pressure Drop

For space conditioning systems:

- 2-inch depth filter: allowable pressure drop determined by the system designer.
- 1-inch depth filter: pressure drop maximum 0.1 inches water at the design airflow rate.

For ventilation systems:

- Filter pressure drop determined by the system designer

§150.0(m) – Air-Distribution and Ventilation System Ducts, Plenums, and Fans.

§150.0(m)13A, B, C, D – Residential HVAC Furnace Fan Efficacy

- Revise the maximum fan efficacy requirement in Sections 150.0(m)13 and 150.1(c)10.
  - Add requirement for ≤ 0.45 W/cfm for gas furnace air-handling units (existing requirement is ≤ 0.58 W/cfm).
  - Add requirements for small duct high velocity cooling systems:
    - ≥ 250 cfm/ton
    - ≤ 0.62 W/cfm

§150.0(m) – Air-Distribution and Ventilation System Ducts, Plenums, and Fans.

§150.0(m)13A, B, C, D – Residential HVAC Furnace Fan Efficacy

- Fan efficacy is a mandatory requirement – Section 150.0(m)13
- Fan efficacy is also a prescriptive requirement in Section 150.1(c)10 for central fan integrated (CFI) ventilation systems.
- Table 150.0-B and 150.0-C return duct design compliance alternative:
  - changed air filter pressure drop requirement to 0.1 inch water (was 0.05 inch water)

§150.0(o) – Requirements for Ventilation and Indoor Air Quality

§150.0(o)1 –Amendments to ASHRAE 62.2

- **Single Family Dwelling Units §150.0(o)1C**
  - The required ventilation rate will be based on a default dwelling unit enclosure leakage of 2 ACH_{50} for the infiltration credit
  - Otherwise if HERS verified enclosure leakage values are less than 2ACH_{50}, the HERS verified value will be used for calculating the required dwelling unit ventilation rate.

§150.0(o) – Requirements for Ventilation and Indoor Air Quality

§150.0(o)1 –Amendments to ASHRAE 62.2

- **Multifamily Dwelling Units §150.0(o)1E**
  - The required ventilation rate will use ASHRAE 62.2 Section 4.1.1: $Q_{tot} = 0.03A_{floor} + 7.5(N_{br} + 1)$

    and comply with one of 2 alternatives:
    - Use a balanced ventilation system, otherwise
    - If HERS verified enclosure leakage is ≤ 0.3 cfm per ft^2 of enclosure area (blower door test), then the dwelling may use:
      - Continuously operating exhaust-only ventilation systems, or
      - Continuously operating supply-only ventilation systems.

§150.0(o) – Requirements for Ventilation and Indoor Air Quality

§150.0(o)1 – Amendments to ASHRAE 62.2

- Multifamily Building Central Ventilation Systems that serve multiple dwelling units §150.0(o)1F
  - Ventilation airflow rates to each dwelling unit served shall be balanced to be:
    - Greater than or equal to ASHRAE 62.2 dwelling unit ventilation airflow rate, and
    - Not more than 10% greater than the ASHRAE 62.2 dwelling unit ventilation airflow rate.

§150.0(o) – Requirements for Ventilation and Indoor Air Quality

§150.0(o)2 – Field Verification of Ventilation Systems

- Kitchen Range hoods §150.0(o)2B
  - HERS verification to confirm the installed range hood is rated by HVI to meet:
    - The minimum ventilation airflow rate specified in Section 5 of ASHRAE 62.2 (100 cfm).
    - The maximum sound rating specified in section 7.2.2 of ASHRAE 62.2 (3 sone at airflow greater than or equal to 100 cfm).

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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