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<th>Docket Number:</th>
<th>17-BSTD-02</th>
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<td>Project Title:</td>
<td>2019 Title 24, Part 6, Building Energy Efficiency Standards Rulemaking</td>
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<tr>
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<td>2-5-18 Presentation on Proposed 2019 Energy Code Subchapter 7</td>
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<td>Description:</td>
<td>Presentation given by Jeff Miller at the 2-5-18 Commissioner Hearing on the proposed 2019 Energy Code.</td>
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<td>Filer:</td>
<td>Adrian Ownby</td>
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<td>Organization:</td>
<td>California Energy Commission</td>
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<td>Submitter Role:</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

Peter Stait
Jeff Miller, P.E.

Subchapter 7
Section 150.0
§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)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\textsubscript{50} for the infiltration credit

  – Otherwise if HERS verified enclosure leakage values are less than 2ACH\textsubscript{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:
    \[ Q_{\text{tot}} = 0.03A_{\text{floor}} + 7.5(N_{\text{br}} + 1) \]
  and comply with one of 2 alternatives:
  • Use a balanced ventilation system, otherwise
  • If HERS verified enclosure leakage is \( \leq 0.3 \text{ cfm per ft}^2 \) 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


• 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