DOCKETED	
Docket Number:	24-BSTD-01
Project Title:	2025 Energy Code Rulemaking
TN #:	255324-2
Document Title:	Staff Supplement to 2025 CASE Report - Multifamily Indoor Air Quality
Description:	N/A
Filer:	Javier Perez
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	3/28/2024 4:36:52 PM
Docketed Date:	3/28/2024

CALIFORNIA ENERGY COMMISSION

Staff Supplement to California Statewide Codes and Standards Enhancement (CASE) Team Measure Proposal on Multifamily Indoor Air Quality and Single Family Mandatory Indoor Air Quality System Accessibility and Prescriptive Fault Indicator Display Requirements.

Date: **March 28, 2024**

Pages: **6 pages**

Author: **Anushka Raut**

Description of Proposed Regulatory Changes

The measure change proposal submitted by California Statewide Codes and Standards Enhancement (CASE) team and titled “Multifamily Indoor Air Quality” proposes to make the following changes to the Standards:

2025 Title 24, Part 6, proposed requirements for ventilation strategy and compartmentalization for new construction Multifamily dwelling units

1. Revise Mandatory requirements in Section 160.2(b)2Aiv such that all new construction multifamily units must have both:

    - Balanced or supply-only ventilation, AND
    - Meet a compartmentalization requirement of $\leq$ 0.3 cfm at 50 pascals per square foot (cfm50/ft^2) of dwelling unit enclosure area.
    - Use of exhaust-only ventilation strategy could not be used for whole dwelling unit ventilation.
    - Local exhaust systems should still be used to meet local exhaust requirements such as in bathrooms, kitchens, and dryers, and exhaust fans could be used as a part of a balanced ventilation approach.

        - Staff agrees with the proposed changes to Section 160.2(b)2Aiv and have incorporated substantially similar changes into the proposed Express Terms.

2. Revise the Prescriptive requirement in Section 170.2(c)3Biv such that:

- All new constructed multifamily dwelling units in Climate Zones 1, 2, 4, 11 through 14, and 16 must use balanced ventilation with Heat or Energy Recovery Ventilator (HRV or ERV).
- Update the climate zones that trigger the prescriptive Heat or Energy Recovery Ventilator (HRV/ERV) requirement, by adding Climate Zone 4 and removing Climate Zone 15. This is because cost effectiveness using the latest energy modeling software, weather files, and cost estimates show that the measure is cost effective in Climate Zone 4, but not cost effective in Climate Zone 15.

    - Staff agrees with the proposed changes to Section 170.2(c)3Biv and have incorporated substantially similar changes into the proposed Express Terms.

<u>2025 Title 24, Part 6, proposed requirements for Indoor Air Quality (IAQ) System Accessibility and Fault Indicator Display (FID) for whole- dwelling unit mechanical ventilation for Single family detached dwelling units, townhouses, and Multifamily dwelling units</u>

1A. Revise Mandatory requirements in Section 150.0(o)1C such that balanced, and supply ventilation systems shall meet the following requirements for accessibility:

- IAQ Filter and HRV/ERV Accessibility: All system air filters, and HRV/ERV heat / energy recovery cores shall be located such that they are accessible for regular service from within occupiable space, basements, garages, balconies, or accessible rooftops. Filters and heat / energy recovery cores behind access panels, access doors, or grilles located no more than 10 ft above a walking surface comply with this requirement.
- <u>Exception:</u> IAQ filters and heat or energy recovery cores for ventilation systems located in an accessible attic and having an FID meeting the requirements of Reference Appendix JA17.
- IAQ System Component Accessibility. Fans, motors, heat exchangers, and other serviceable components shall meet all applicable requirements of California Mechanical Code Section 304.0 Accessibility for Service.

1B. Revise Mandatory requirements in Section 160.2(b)2A such that balanced, and supply ventilation systems shall meet the following requirements for accessibility:

- IAQ Filter and HRV/ERV Accessibility: All system air filters, and HRV/ERV heat / energy recovery cores shall be located such that they are accessible for regular service from within occupiable space, basements, garages, balconies, or accessible rooftops. Filters and heat / energy recovery cores behind access panels, access doors, or grilles located no more than 10 ft above a walking surface comply with this requirement.
- Exception: IAQ filters and heat or energy recovery cores for ventilation systems located in an accessible attic and having an FID meeting the requirements of Reference Appendix JA17.
- IAQ System Component Accessibility. Fans, motors, heat exchangers, and other serviceable components shall meet all applicable requirements of California Mechanical Code Section 304.0 Accessibility for Service.

    - Staff agrees with the IAQ filter and HRV/ERV accessibility requirement of having IAQ system filters and heat/energy recovery cores behind access panels, access doors, or grilles to be located no more than 10 ft above a walking surface but proposes to remove accessible rooftops in single-family requirements only (1.A) as it does not apply to the list and add mechanical closets to the list of accessible spaces for regular services in both 1.A and B.
    - Staff disagrees with the exception for IAQ filters and recovery cores for ventilation systems to be in accessible attic spaces. It is acknowledged that accessibility issues and timely maintenance challenges can persist regardless of the type of attic space due to unfavorable conditions of attic spaces. Staff proposes to have an exception for systems that require servicing from inside the attic space to have an FID meeting the requirements of Reference Joint Appendix JA17, an attic access door located in a wall or, where attic access is provided through a ceiling, an attic access hatch that includes an integrated ladder, and a walkway from the attic access door to the HRV/ERV.

2. Revise Prescriptive requirements in Section 170.2(c)3B such that add a point iii for dwelling unit ventilation system requirements:

- All balanced and supply ventilation systems serving individual dwelling units shall have a Fault Indicator Display (FID) that is field verified as specified in Joint Appendix 17 (JA17).
    - Staff disagrees with the proposed changes to Section 170.2(b)2Aiv. Upon further research and discussions, it has been acknowledged that FIDs for supply or balanced systems without heat or energy recovery ventilation systems have limited market availability. Thus, Staff proposes modifications to the proposal to prescriptively require only HRV/ERV systems serving individual dwelling units to have an FID that is field verified as specified in Joint Appendix 17.

<u>2025 Title 24, Part 6, proposed requirements for additions and alterations in Multifamily dwelling units</u>

- For additions, it is proposed to add an exception to Section 180.1(a)2 that specifies dwelling unit air leakage test is not required for additions and to add another exception to Section 180.1(a)2Aii that specifies mechanical ventilation systems in additions shall be exhaust, supply, or balanced ventilation systems for whole dwelling unit ventilation. Thus, there would be no changes to additions, and compartmentalization is not required.
    - Staff agrees with the proposed changes to Section 180.1(a)2 and have incorporated substantially similar changes into the proposed Express Terms.
    - Staff disagrees with the proposed changes to Section 180.1(a)2Aii. The proposed language permits <u>balanced, supply or exhaust ventilation system type, irrespective of a previous permit requirement. This is a</u> deviation from the proposed requirements in Section 160.2(b)2Aiv. Thus, to maintain clarity and consistency within the Energy Code language, staff proposes modifications to the proposed exception clarifying that mechanical ventilation systems in additions shall comply with supply, balanced, or existing ventilation type.
- For alterations, it is proposed to add an exception to Section 180.2(b)5 that specifies that a dwelling unit air leakage test is not required for alterations, and to add another exception to Section 180.2(b)5.A that specifies new or replacement ventilation systems in existing dwelling units shall be an exhaust, supply, or balanced ventilation system. There would be no changes to alterations for ventilation strategy and compartmentalization is not required.

- Staff agrees with the proposed changes to Section 180.2(b)5 and have incorporated substantially similar changes into the proposed Express Terms.
- Staff disagrees with the proposed changes to Section 180.2(b)5.A. The proposed language permits balanced, supply or exhaust ventilation system type, irrespective of a previous permit requirement. This is a deviation from the requirements mentioned in Section 180.2(b)5Bib which has conditional requirements based on requirements associated with previous building permits for altered ventilation systems. Staff proposes adding an exception to Section 180.2(b)5A that specifies, new or replacement ventilation type to be supply, balanced, or existing ventilation type being replaced and adding point (a) for additional clarity in Section 180.2(b)5Bi that specifies altered ventilation system to be supply, balanced, or the existing ventilation type being altered for clarity and consistency.

<u>2025 Title 24, Part 6, proposed requirements for addition of Reference Joint Appendix 17 (JA17)</u>

- Addition of a new Joint Appendix 17 (JA17) to the Reference Appendices that includes qualification requirements for indoor air quality (IAQ) system fault indicator displays (FIDs).
    - Staff agrees with the proposed changes to add Joint Appendix 17 JA17 and have incorporated substantially similar changes into the proposed Express Terms.

<u>2025 Title 24, Part 6, proposed requirements for Reference Appendices</u>

- Addition of Multi-point air tightness test in Residential Appendix 3.8.3 for enclosure leakage measurement procedures specified in RESNET 380 Section 4.4.2.
- Addition of Multi-point air tightness test in Nonresidential Appendix 2.3.3 for enclosure leakage measurement procedures specified in RESNET 380 Section 4.4.2.
    - Staff agrees with the proposed changes to the Residential Appendix 3.8.3 and Non-residential 2.3.3 and have incorporated substantially similar changes into the proposed Express Terms.

- Proposed changes to add language in Nonresidential appendix NA1.9.1 for allowing ATTs to use sampling in field verification and diagnostic testing of multifamily dwelling unit enclosures.
    - Staff disagrees with the proposed changes to add the proposed language that allows ATTs to use group sampling. ATTs are assumed by the Energy Code to be installing contractors and may act as subcontractors to perform acceptance tests or field verification and diagnostic tests. Group sampling regulations require the installing contractor (or subcontractor) to perform field verification and diagnostic testing on each installation so that the Home Energy Rating System (HERS) rater may test one member of the group to verify the accuracy of the installing contractor. Thus, the ATTs cannot sample the installations and remain compliant with the group sampling regulations.
    - Additionally, the Energy Commission after additional internal discussions it was decided not to require HERS rater sampling tests when an ATT performs the installer's test as the ATT is required to submit those results to the ATTCP database functionally equivalent to the HERS provider data registry.

Staff Analysis and Conclusion

Staff has analyzed the submitted proposal and reached the following conclusions for the measures included in the Express Terms:

- Based on the evidence presented in the proposal, the measures, as proposed, is cost effective and the author has appropriately followed the Energy Commission's Life Cycle Cost methodology.
- Measure costs premiums presented in the proposal are reasonable and appropriate for the measure proposed.
- Measure energy savings presented in the proposal are appropriately modeled and appear credible.

Measure environmental impacts presented in the proposal are reasonable and appropriate for the measure proposed.