

EDITORIAL ENHANCEMENTS TO NONRESIDENTIAL MECHANICAL SYSTEM ACCEPTANCE LANGUAGE

July 17, 2026

California Energy Commission

Docket No. 25-BSTD-03

The California Statewide Codes and Standards Enhancement (CASE) initiative presents recommendations to support the California Energy Commission’s (CEC’s) efforts to update California’s Energy Code (Title 24, Part 6), including revisions to simplify and clarify existing code requirements. Three California Investor-Owned Utilities (IOUs) — Pacific Gas & Electric Company, San Diego Gas & Electric, and Southern California Edison sponsored this effort as a group.

This letter recommends adjustments to the code language for Section 401.2.7 [Section 120.5], “Mechanical System Acceptance” (nonresidential) and Section 403.2.3.5 [Section 160.3(d)], “Mechanical acceptance testing” (multifamily) to improve consistent interpretation and application of the requirements and to support strong compliance.

This letter offers support for the proposed Energy Code change and was developed in collaboration with fellow stakeholders to share research results. Changes suggested in this letter are editorial. This letter does not recommend changes that will increase the stringency of existing requirements or recommend that existing requirements be applied more broadly. As such, a cost-effectiveness analysis or use of the full codes and standards enhancement report template is not required.

1. Measure Description and Justification

1.1 Proposal Description

This proposal includes recommended editorial markups to Section 120.5 of the Energy Code. This section, titled “Required Nonresidential Mechanical System Acceptance,” directs the reader to applicable acceptance testing requirements for a variety of

mandatory and prescriptive mechanical requirements. However, the current list is inconsistent regarding whether the code reference is included in the language. This proposal would add code references to all items on the list for consistency and to improve clarity, which is intended to improve compliance rates.

1.2 Benefits of Proposed Change

As noted above, the current list in Sections 401.2.7 [120.5] and 403.2.3.5.1 [160.3(d)] inconsistently references other code requirements when specifying acceptance test requirements. For example, Section 401.2.7.1 [120.5(a)1] (and the analogous language in the multifamily section) states: “Outdoor air ventilation systems shall be tested in accordance with NA7.5.1.” But Section 401.2.7.3 [120.5(a)3] states: “Duct systems that are subject to testing under Section 401.2.4.7.1 [120.4(g)1], Section 401.5.2.2.3 [141.0(b)2Di] or Section 401.5.2.2.4 [141.0(b)2Dii] shall be tested in accordance with NA7.5.3. The Statewide CASE Team asserts that Sections 401.2.7 [120.5] and 403.2.3.5.1 [160.3(d)1] would be strengthened by consistently connecting each written code requirement (e.g., outdoor air ventilation systems from 401.2.7.1 [120.5(a)1]) with its corresponding Energy Code reference (which, in this case, would be section 401.2.1.1.3 [120.1(c)3], which specifies ventilation requirements that drive the need of an outdoor air ventilation system).

1.3 Background Information

Acceptance tests are a critical step in the code compliance process. Measures included throughout the Energy Code are intended to ensure effective and efficient building performance but it is insufficient to state the requirement without ensuring the system operates as intended in the field. Sections 401.2.7 [120.5] and 403.2.3.5.1 [160.3(d)1] provides the linkage between the code language and the acceptance test language in the standalone 2025 Reference Appendices document.

When developing this comment letter, the Statewide CASE Team cross referenced the code language throughout the Energy Code with the language in the Nonresidential Mechanical Acceptance Tests (NA7.5) and the Nonresidential Compliance Manual. These documents allowed the Statewide CASE Team to piece together all the missing code references for the requirements itemized in Sections 401.7.2 [120.5] and 403.2.3.5.1 [160.3(d)1].

2. Proposed Code Language

2.1 Guide to Markup Language

The proposed changes to the standards, Reference Appendices, and the ACM Reference Manuals are provided below. Changes to the 2025 documents should be marked with dark blue underlining (new language) and ~~strikethroughs~~ (deletions).

2.1.1 Energy Code (Title 24, Part 6)

401.2.7 [Section 120.5] Mechanical system acceptance.

Nonresidential and hotel/motel buildings shall comply with the applicable requirements of Sections 401.2.7.1 through 401.2.7.19.

Before an occupancy permit is granted, the following *equipment* and systems shall be certified as meeting the *Acceptance Requirements for Code Compliance*, as specified by the Reference Nonresidential Appendix NA7. A Certificate of Acceptance shall be submitted to the *enforcement agency* that certifies that the *equipment* and systems meet the acceptance requirements.

When certification is required by Title 24, Part 1, Section 10-103.2, the acceptance testing specified by Section 401.2.7 [Section 120.5(a)] shall be performed by a certified mechanical acceptance test technician (CMATT). If the CMATT is operating as an employee, the CMATT shall be employed by a certified mechanical acceptance test employer. The CMATT shall disclose on the certificate of acceptance a valid CMATT certification identification number issued by an approved acceptance test technician certification provider. The CMATT shall complete all certificate of acceptance documentation in accordance with the applicable requirements in Section 10-103(a)4.

Exception to Section 401.2.7: Systems serving *healthcare facilities*.

401.2.7.1 Outdoor air ventilation systems meeting Section 401.2.1.1.3 [Section 120.1(c)3] shall be tested in accordance with NA7.5.1.

401.2.7.2 Constant volume, single zone air conditioning and *heat pump* unit controls, required by Sections 401.2.1.2.2 [Section 120.1(d)2], 401.2.2.1 [Section 120.2(a)], and 401.2.2.2 [Section 120.2(b)], shall be tested in accordance with NA7.5.2.

401.2.7.3 Duct systems that are subject to testing as applicable under Sections 102.5.2 [Section 140.1(a)], 102.5.3 [Section 141.0(a)2], or 102.5.4 [Section 141.0(b)3] or required by Sections 401.2.4.7.1 [Section 120.4(g)1], 401.5.2.2.3 [Section 141.0(b)2Di] or 401.5.2.2.4 [Section 141.0(b)2Dii] shall be tested in accordance with NA7.5.3.

401.2.7.4 *Air economizers, DOAS, HRV or ERV systems* as applicable under Sections 102.5.2 [Section 140.1(a)], 102.5.3 [Section 141.0(a)2], or 102.5.4 [Section 141.0(b)3] or required by Sections 401.3.7 [Section 140.4(e)], 401.3.3.4 [Section 140.4(a)3E], 401.3.17 [Section 140.4(p)], or 401.3.18.1 [Section 140.4(q)] shall be tested in accordance with NA7.5.4.

Exception 1 to Section 401.2.7.4: *Air economizers* installed by the HVAC system manufacturer and certified to the *Commission* as being factory calibrated and tested are not required to comply with the Functional Testing section of the *air economizer* controls acceptance test as described in NA7.5.4.2.

Exception 2 to Section 401.2.7.4: The *DOAS, HRV, or ERV* unit that does not meet the exhaust air heat recovery ratio as specified in Section 401.3.18.1 [Section 140.4(q)1] or does not include bypass or control to disable energy recovery as specified in Section 401.3.18.2 [Section 140.4(q)2].

401.2.7.5 Demand control ventilation systems required by Section 401.2.1.1.3 [Section 120.1(c)3] shall be tested in accordance with NA7.5.5.

401.2.7.6 Supply fan variable flow controls as applicable under Sections 102.5.2 [Section 140.1(a)], 102.5.3 [Section 141.0(a)2], or 102.5.4 [Section 141.0(b)3] or required by Section 401.3.5.2 [Section 140.4(c)2B] shall be tested in accordance with NA7.5.6.

401.2.7.7 Hydronic system variable flow controls as applicable under Sections 102.5.2 [Section 140.1(a)], 102.5.3 [Section 141.0(a)2], or 102.5.4 [Section 141.0(b)3] or required by Sections 401.3.13.1 [Section 140.4(k)1], 401.3.13.5 [Section 140.4(k)5], or 401.3.13.6 [Section 140.4(k)6] shall be tested in accordance with NA7.5.7 and NA7.5.9.

401.2.7.8 Boiler or chillers that require pump isolation controls as applicable under Sections 102.5.2 [Section 140.1(a)], 102.5.3 [Section 141.0(a)2], or 102.5.4 [Section 141.0(b)3] or required as specified by Sections 401.3.13.2 [Section 140.4(k)2], or Section 401.3.13.3 [Section 140.4(k)3] shall be tested in accordance with NA7.5.7.

401.2.7.9 Hydronic systems with supply water temperature reset controls as applicable under Sections 102.5.2 [Section 140.1(a)], 102.5.3 [Section 141.0(a)2], 102.5.4 [Section 141.0(b)3] or required by Section 401.3.13.4 [Section 140.4(k)4], shall be tested in accordance with NA7.5.8.

401.2.7.10 *Automatic* demand shed controls meeting Section 400.6 [Section 110.12] or required by Sections 401.2.2.2.4 [Section 120.2(b)4], 401.2.2.10 [Section 120.2(j)], or 401.5.2.2.2.1 [Section 141.0(b)2E] shall be tested in accordance with NA7.5.10.

401.2.7.11 Fault Detection and Diagnostics (FDD) for Packaged Direct-Expansion Units [required by Section 401.2.2.9 \[Section 120.2\(i\)\]](#), shall be tested in accordance with NA7.5.11.

401.2.7.12 *Automatic* fault detection and diagnostics (FDD) for [new](#) air handling units and zone terminal units [required by Section 401.2.2.9 \[Section 120.2\(i\)\]](#), shall be tested in accordance with NA7.5.12.

401.2.7.13 Distributed Energy Storage DX AC Systems [as applicable under Sections 102.5.2 \[Section 140.1\(a\)\], 102.5.3 \[Section 141.0\(a\)2\], or 102.5.4 \[Section 141.0\(b\)3\]](#) shall be tested in accordance with NA7.5.13.

401.2.7.14 Thermal Energy Storage (TES) Systems [as applicable under Sections 102.5.2 \[Section 140.1\(a\)\], 102.5.3 \[Section 141.0\(a\)2\], or 102.5.4 \[Section 141.0\(b\)3\]](#) shall be tested in accordance with NA7.5.14.

401.2.7.15 Supply air temperature reset controls [as applicable under Sections 102.5.2 \[Section 140.1\(a\)\], 102.5.3 \[Section 141.0\(a\)2\], or 102.5.4 \[Section 141.0\(b\)3\]](#) or required by Section 401.3.8 [\[Section 140.4\(f\)\]](#) shall be tested in accordance with NA7.5.15.

401.2.7.16 Water-cooled chillers served by cooling towers with condenser water reset controls [as applicable under Sections 102.5.2 \[Section 140.1\(a\)\], 102.5.3 \[Section 141.0\(a\)2\], or 102.5.4 \[Section 141.0\(b\)3\]](#) shall be tested in accordance with NA7.5.16.

401.2.7.17 ~~[When an energy management control system is installed, it shall functionally meet all of the applicable requirements of Part 6: Reserved.](#)~~

401.2.7.18 Occupant sensing zone controls [required by Section 401.2.2.5.3 \[Section 120.2\(e\)3\]](#) shall be tested in accordance with NA7.5.17.

401.2.7.19 Conductivity controls and overflow alarms [required](#) for open and *closed-circuit cooling towers* [by Section 400.5.5 \[Section 110.2\(e\)\]](#) shall be tested according to NA7.5.18.

403.2.3.5 [Section 160.3(d)] Mechanical acceptance testing.

403.2.3.5.1 [Section 160.3(d)1] Common use areas.

Before an occupancy permit is granted, the following systems and *equipment* serving multifamily common areas shall be certified as meeting the *Acceptance Requirements for Code Compliance*, as specified by Reference Nonresidential Appendix NA7. These systems and *equipment* shall also comply with the applicable requirements of Section 403.2.3.5.3 [Section 160.3(d)3]. A Certificate of Acceptance

shall be submitted to the *enforcement agency* that certifies that the *equipment* and systems meet the acceptance requirements

403.2.3.5.1.1 Outdoor air ventilation systems meeting Section 403.2.2.5 [Section 160.2(c)2 and 3] shall be tested in accordance with NA7.5.1.

403.2.3.5.1.2 Constant volume, single zone air conditioning and *heat pump* unit controls required by Sections 403.2.3.2.1 [Section 160.3(a)2A], 403.2.3.2.2 [Section 160.3(a)2B], or 403.2.2.7 [Section 160.2(c)5] shall be tested in accordance with NA7.5.2.

403.2.3.5.1.3 Duct systems that are subject to testing as applicable under Sections 102.5.2 [Section 170.1(a)], 102.5.3 [Section 180.1(b)], or 102.5.4 [Section 180.2(c)], or required by under Sections 403.2.3.4.2.7 [Section 160.3(c)2H], Section 403.5.2.2.9 [Section 180.2(b)2Bi], or Section 403.5.2.2.10.2 [Section 180.2(b)2Bii] shall be tested in accordance with NA7.5.3.

403.2.3.5.1.4 Air economizers, DOAS, HRV or ERV systems as applicable under Sections 102.5.2 [Section 170.1(a)], 102.5.3 [Section 180.1(b)], or 102.5.4 [Section 180.2(c)] or required by Sections 403.3.2.4.1 [Section 170.2(c)4C], 403.3.2.14 [Section 170.2(c)4N], or 403.3.2.15 [Section 170.2(c)4O] shall be tested in accordance with NA7.5.4.

Exception 1 to Section 403.2.3.5.1.4: Air economizers installed by the HVAC system manufacturer and certified to the *Commission* as being factory calibrated and tested are not required to comply with the Functional Testing section of the air economizer controls acceptance test as described in NA7.5.4.2.

403.2.3.5.1.5 Demand control ventilation systems required by Section 403.2.2.7 [Section 160.2(c)5] shall be tested in accordance with NA7.5.5.

403.2.3.5.1.6 Supply fan variable flow controls systems as applicable under Sections 102.5.2 [Section 170.1(a)], 102.5.3 [Section 180.1(b)], or 102.5.4 [Section 180.2(c)] or required by Section 403.3.2.2.2 [Section 170.2(c)4Aii] shall be tested in accordance with NA7.5.6.

403.2.3.5.1.7 Hydronic system variable flow controls as applicable under Sections 102.5.2 [Section 170.1(a)], 102.5.3 [Section 180.1(b)], or 102.5.4 [Section 180.2(c)] or required by Section 403.3.2.10.1 [Section 170.2(c)4li], 403.3.2.10.5 [Section 170.2(c)4lv], or 403.3.2.10.6 [Section 170.2(c)4lvi] shall be tested in accordance with NA7.5.7 and NA7.5.9.

403.2.3.5.1.8 Boiler or chillers that require pump isolation controls as applicable under Sections 102.5.2 [Section 170.1(a)], 102.5.3 [Section 180.1(b)], or 102.5.4 [Section 180.2(c)] or required as specified by Sections 403.3.2.10.2 [Section

170.2(c)4lii], or [Section 103.3.2.10.3](#) [Section 170.2(c)4lii] shall be tested in accordance with NA7.5.7.

403.2.3.5.1.9 Hydronic systems with supply water temperature reset controls [as applicable under Sections 102.5.2 \[Section 170.1\(a\)\], 102.5.3 \[Section 180.1\(b\)\], or 102.5.4 \[Section 180.2\(c\)\] or required by Section 403.3.2.10.4 \[Section 170.2\(c\)4liv\]](#) shall be tested in accordance with NA7.5.8.

103.2.3.5.1.10 Automatic demand shed controls [meeting Section 400.6 \[Section 110.12\] or required by Sections 403.2.3.2.2 \[Section 160.3\(a\)2Biv\], 403.2.3.2.11 \[Section 160.3\(a\)2I\] or 403.5.2.2.10.1 \[Section 180.2\(b\)2Biia\]](#) shall be tested in accordance with NA7.5.10.

403.2.3.5.1.11 Fault Detection and Diagnostics (FDD) for Packaged Direct-Expansion Units [required by Section 403.2.3.2.10 \[Section 160.3\(a\)2H\]](#) shall be tested in accordance with NA7.5.11.

403.2.3.5.1.12 Automatic fault detection and diagnostics (FDD) for [new](#) air handling units and zone terminal units [required by Section 403.2.3.2.10 \[Section 160.3\(a\)2H\]](#), shall be tested in accordance with NA7.5.12.

403.2.3.5.1.13 Distributed Energy Storage DX AC Systems [as applicable under Sections 102.5.2 \[Section 170.1\(a\)\], 102.5.3 \[Section 180.1\(b\)\], or 102.5.4 \[Section 180.2\(c\)\]](#) shall be tested in accordance with NA7.5.13.

403.2.3.5.1.14 Thermal Energy Storage (TES) Systems [as applicable under Sections 102.5.2 \[Section 170.1\(a\)\], 102.5.3 \[Section 180.1\(b\)\], or 102.5.4 \[Section 180.2\(c\)\]](#) shall be tested in accordance with NA7.5.14.

403.2.3.5.1.15 Supply air temperature reset controls [as applicable under Sections 102.5.2 \[Section 170.1\(a\)\], 102.5.3 \[Section 180.1\(b\)\], or 102.5.4 \[Section 180.2\(c\)\] or required by Section 403.3.2.5 \[Section 170.2\(c\)4D\]](#) shall be tested in accordance with NA7.5.15.

403.2.3.5.1.16 Water-cooled chillers served by cooling towers with condenser water reset controls [as applicable under Sections 102.5.2 \[Section 170.1\(a\)\], 102.5.3 \[Section 180.1\(b\)\], or 102.5.4 \[Section 180.2\(c\)\]](#) shall be tested in accordance with NA7.5.16.

403.2.3.5.1.17 ~~[When an energy management control system is installed, it shall functionally meet all of the applicable requirements of Part 6. Reserved.](#)~~

403.2.3.5.1.18 Occupant sensing zone controls [required Section 403.2.2.7 \[Section 160.2\(c\)5E\]](#) shall be tested in accordance with NA7.5.17.

403.2.3.5.1.19 Conductivity controls and overflow alarms required for open and closed-circuit cooling towers by Section 400.5.5 [Section 110.2(e)] shall be tested according to NA7.5.18.

403.2.3.5.2 [Section 160.3(d)2] Dwelling units.

Before an occupancy permit is granted, the following systems and *equipment* serving multifamily *dwelling units* shall be certified as meeting the *acceptance requirements for code compliance*, as specified by the Reference Nonresidential Appendix NA7. These systems and *equipment* shall also comply with the applicable requirements of Section 403.2.3.5.3 [Section 160.3(d)3]. A Certificate of Acceptance shall be submitted to the *enforcement agency* that certifies that the *equipment* and systems meet the acceptance requirements:

1. *Multifamily building* central ventilation ducts subject to Section 403.2.2.3.13 [Section 160.2(b)2C] shall be leak tested in accordance with NA7.18.3.
2. *Multifamily building* central ventilation system heat recovery or energy recovery systems in *multifamily buildings* with four or more habitable stories as applicable under Sections 102.5.2 [Section 170.1(a)], 102.5.3 [Section 180.1(b)], or 102.5.4 [Section 180.2(c)] or required by Section 403.3.1.2.4 [Section 170.2(c)3Biv] shall be tested in accordance with NA7.18.4.