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Comments on Draft 2022 Energy Code Express Terms (TN # 237717) and Draft 2022 Reference Appendices Express Terms (TN# 237714)

Additional submitted attachment is included below.

VIA DOCKET SUBMITTAL

Docket No. 21-BSTD-01
California Energy Commission
Dockets Office MS-4
1516 Ninth Street Sacramento
California 95814-5512

Re: Comments on Draft 2022 Energy Code Express Terms (TN # 237717) and Draft 2022 Reference Appendices Express Terms (TN# 237714)

I am writing on behalf of the National Energy Management Institute Committee (NEMIC) to comment in response to the Draft 2022 Energy Code Express Terms (TN # 237717) and Draft 2022 Reference Appendices Express Terms (TN# 237714), both docketed on May 6, 2021. NEMIC has been approved by the California Energy Commission (CEC), as an Acceptance Test Technician Certification Provider (ATTCP), to provide training, certification, and oversight functions for Acceptance Test Technicians (ATTs). The following comments concern or involve requirements for Mechanical Acceptance Testing.

- I. Request for clarification of added language in section 10-103(a)4B of the Draft 2022 Energy Code Express Terms

10-103(a)4B

B. Contingent upon approval of data registry(s) by the Commission, for all nonresidential buildings, high-rise residential buildings, and hotels and motels, when designated to allow use of an occupancy group or type regulated by Part 6 the person(s) responsible for the Certificate(s) of Acceptance shall submit the Certificate(s) for registration and retention to a data registry approved by the Commission, excluding all Certificates of Acceptance recorded by an acceptance test technician certification provider (10-103.1 and 10-103.2). The submittals to the approved data registry shall be made electronically in accordance with the specifications in Reference Joint Appendix JA7

The added language “excluding all Certificates of Acceptance recorded by an acceptance test technician certification provider (10-103.1 and 10-103.2).” requires clarification. The added language, as it stands, does not provide clear direction or intent.

- II. New Acceptance Mechanical Acceptance tests for Multifamily have conflicting certification requirements. Clarity is required to ensure the correct workforce standards match the required skillset and knowledgebase.

Section 120.5 and adds four new acceptance tests exclusively for multifamily (Section 160.3(c)3A).

Section 160.3(c)3B requires an MATT.

*B. When certification is required by Title 24, Part 1, Section 10-103.2, the acceptance testing specified by Section 160.3(c)3A 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.*

However, the Express Terms 2022 Energy Code, Reference Appendices refers to a **HERS rater** for NA7.18.1 and NA7.18.2.

Multifamily acceptance tests:

NA7.18.1 - Dwelling Unit Ventilation Acceptance

- NA7.18.1.1.2 states - **Step 2: Obtain HERS Rater field verification as specified in Reference Nonresidential Appendix**

NA7.18.2 - Dwelling Unit Enclosure Leakage Acceptance

- NA7.18.1.2.2 states - **Obtain HERS Rater field verification as specified in Reference Nonresidential Appendix**

NA7.18.3 - Central Ventilation System Duct Leakage Acceptance

NA7.18.4 - Rated Central Ventilation System Heat Recovery or Energy Recovery Acceptance

In addition to the conflict with Section 160.3(c)3B, the HERS program is not appropriate to address the requirements, safety, and health concerns of Multifamily Buildings. Multifamily Buildings should follow the same requirements as commercial buildings due to similar components, modes of operation, and safety concerns. The HERS program is designed for single-family residences making HERS raters inappropriate for multifamily projects.

To avoid confusion in the field and appropriately address Multifamily Building concerns, HERS NA7.18.1.1.2 and NA7.18.1.2.2 should be removed. NA7.18.1, NA7.18.2, NA7.18.3 and NA7.18.4 workforce standards requirements should be limited to an MATT.

- III. The procedure listed under Section NA7.18.3, follows a HERS leakage testing method. The HERS method, as adapted from ASTM E1554-07 Test Method D¹, is not appropriate for Multifamily Buildings. The HERS method should be limited to single family residences. NA7.18.3.2 should be amended to require testing in conformance with the California Mechanical Code (CMC) 603.10.1.

NA7.18.3.2

Express Terms Language:

Step 1: Measure and record environmental data at the beginning and conclusion of each test including ambient temperature, indoor temperature and barometric pressure.

Step 2: Install static pressure probe in main plenum pointing into airstream induced by the test. If the test fan is on the roof, the static pressure probe will need to be connected to the measurement device at the test site with a tube long enough to make the connection.

¹ ASTM E1554-07, Standard Test Methods for Determining Air Leakage of Air Distribution Systems by Fan Pressurization, ASTM International, West Conshohocken, PA, 2007, www.astm.org

Step 3: If the test fan is mounted inside, with the building open to the outside, use the building as reference pressure. If the test fan is located on the roof, use the outside as the reference pressure.

Step 4: Attach the test fan to the duct system

- a) For roof top and wall mounted exhaust systems, remove the fan from the curb or opening and seal the test fan to the curb following test equipment manufacturer's instructions, making sure the dampers are open (NOP).
- b) Alternatively, the test fan may be applied to a grille opening on the inside of the building following test equipment manufacturer's instructions.

Step 5: Temporarily seal the system including:

- a) All of the grilles on the system using masking tape and air impermeable sheeting or duck mask made for this application.
- b) Air handler access door or panel (do not use permanent sealing material, metal tape is acceptable).
- c) For systems with an air handler with supply and return plenums, the entire duct system including the air- handler shall be included in the test.

Step 6: Adjust the test fan speed to maintain 25 Pa or 50 Pa at the static pressure probe location.

Step 7: Record the air flow (CFM) and temperature.

Step 8: Determine the nominal fan airflow using the product specifications of the installed equipment for the design static pressure.

Step 9: Divide the duct leakage flow by the nominal fan flow and convert to a percentage. If the duct leakage flow percentage is equal to or less than the target compliance criterion of 6% leakage the system passes. The leakage test can be conducted at rough-in or after the grilles or registers are installed. If the leakage test is conduct at rough-in, the spaces between the grille or register boots and the wallboard shall be sealed, and at least one grille or register must be removed to verify proper sealing. For compliance with the leakage requirements in Section 160.2(b)2Ci, an ATT shall identify a group of up to three central ventilation duct systems in the building from which a sample will be selected for testing.

Recommended Language:

Duct systems shall meet the duct leakage testing requirements of CMC section 603.10.1

Step 1: Measure and record environmental data at the beginning and conclusion of each test including ambient temperature, indoor temperature and barometric pressure.

Step 2: Install static pressure probe in main plenum pointing into airstream induced by the test. If the test fan is on the roof, the static pressure probe will need to be connected to the measurement device at the test site with a tube long enough to make the connection.

Step 3: If the test fan is mounted inside, with the building open to the outside, use the building as reference pressure. If the test fan is located on the roof, use the outside as the reference pressure.

Step 4: Attach the test fan to the duct system

- a) For roof top and wall mounted exhaust systems, remove the fan from the curb or opening and seal the test fan to the curb following test equipment manufacturer's instructions, making sure the dampers are open (NOP).
- b) Alternatively, the test fan may be applied to a grille opening on the inside of the building following test equipment manufacturer's instructions.

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- e) For systems with an air handler with supply and return plenums, the entire duct system including the air- handler shall be included in the test.

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~~Step 8: Determine the nominal fan airflow using the product specifications of the installed equipment for the design static pressure.~~

~~Step 9: Divide the duct leakage flow by the nominal fan flow and convert to a percentage. If the duct leakage flow percentage is equal to or less than the target compliance criterion of 6% leakage the system passes. The leakage test can be conducted at rough-in or after the grilles or registers are installed. If the leakage test is conduct at rough-in, the spaces between the grille or register boots and the wallboard shall be sealed, and at least one grille or register must be removed to verify proper sealing. For compliance with the leakage requirements in Section 160.2(b)2Ci, an ATT shall identify a group of up to three central ventilation duct systems in the building from which a sample will be selected for testing.~~

NEMIC thanks the Commission for the opportunity to provide comments on these proposals.



Christopher Ruch
Director of Training
National Energy Management Institute